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

1. **SITE PLAN ITEMS**

1. CY34-24

Request of ISG with permission of the property owner(s) for an amendment to the previously approved preliminary plat of Hotel Mankato Redevelopment plat and for final plat approval for Hotel Mankato Redevelopment plat. The subject properties are described as Lot 1, Block 1, Key City Renewal Fifth Addition; and, the easterly 102.5 feet of the Northerly 23 feet of Lot 9 and the Easterly 102.5 feet of Lot 10, Block 14, City of Mankato; and All that part of the north – south running alley dedicated in Block 14, Map of Mankato, according to the recorded plat thereof, lying north of the Westerly extension of the north line of Lot 7, Block 14, Map of Mankato, according to the recorded plat thereof, City of Mankato, Blue Earth County, Minnesota, EXCEPT the west half of said alley adjacent to Lots 3 and 4, Block 14, Map of Mankato; and, The Westerly 55 feet of the Northerly 99 feet of Lots 9 and 10, Block 14, Map of Mankato; and, Commencing at the Southwest Corner of Lot 9, Block 14, Map of Mankato, on the east line of the alley running on the west side of said Lot 9, running thence in a southeasterly direction and at right angles with said alley 55 feet, thence in a northeasterly direction and at right angles with said last mentioned line 33 feet; thence in a northwesterly direction and at right angles with last described line 55 feet and thence in a southwesterly direction and at right angles with said last described line 33 feet to the place of beginning; and, Lot 8, Block 14, Map of Mankato, except the Southerly 6 feet of the Easterly 60 feet; and, The Southerly 43 feet of the Easterly 102 1/2 feet of Lot 9, Block 14, Map of Mankato; and, Beginning at the Southwesterly corner of Lot 8, Block 14, Map Of Mankato, according to the recorded plat thereof; thence easterly 66.00 feet along the southerly line of said Lot 8 to a point on the northerly extension of the westerly line of Lot 4, Spencer's Subdivision Of Lots 6 And 7 In Block 14 Mankato, according to the recorded plat thereof; thence southerly along said northerly extension 12.00 feet to the northwesterly corner of said Lot 4; thence westerly along the westerly extension of the northerly line of said Lot 4 to the westerly line of said Block 14; thence northerly along the westerly line of said Block 14 to the point of beginning; and, All that part of the 12.00 foot alley dedicated per the Spencer's Subdivision Of Lots 6 And 7 In Block 14 Mankato, according the recorded plat (alley being now vacated per recorded document 600CR931) described as follows: Being bound on the west by the northerly extension of the west line of Lot 4 of said Spencer's Subdivision; and, Being bound on the east by a line being 60.00 feet west of the northerly extension of the easterly line of said Spencer's Subdivision (101 E. Main, 121 and 123 E. Main, and 118 S. 2nd Street).

2. CY35-24

Request by Jacob Hummer to rezone a property to R-T, Residential Transition, from B-1, Community Business District. The subject property is described as the south 80 feet of lot 13 and the east 10 feet of the south 68 feet of lot 14, Block 175, Plan of West Mankato subdivision).

3. CY36-24

Request of Orthopaedic and Fracture Clinic for an amendment to the Planned Unit Development to allow for a use to operate outside the completely enclosed structure for an outdoor physical therapy area at the existing building within the medical campus. The subject property is described as Lot 1, Block 1, Mankato Clinic First Addition, etal (1431 Premier Drive).

4. CY37-24

Request of Civil Site Group, on behalf of the property owner, for a conditional use permit to allow a drive-thru between the primary building and the frontage and for a certificate of design compliance for the construction of a new, approximately 5,200 square foot structure in the Highway Gateway Overlay District. The subject property is described as Lot 8, Block 1, River Hills Mall Addition (1896 Adams Street).

5. CY38-24

Request of Graham Engineering, on behalf of the property owner, for a certificate of design compliance for the construction of a new, approximately 10,700 square foot structure in the Highway Gateway Overlay District. The subject property is described as Lot 3, Block 2, Victory Commercial Park, (Blue Earth County PID R010904300021 and R010909102004).

6. CYL39-24

Request of New Energy Equity, on behalf of the property owner, for an interim use permit to allow for a one-megawatt community solar garden in the Lime Township Rural Conservation zoning district. The subject property is described as The Northeast Quarter of the Northwest Quarter, except railroad right of ways, and the Northwest Quarter of the Northeast Quarter, both in Section 29, Township 109, Range 26, excepting from said Northwest Quarter Northeast Quarter that part of said Northwest Quarter Northeast Quarter described as, beginning at a point 1315.8 feet South of the Northeast corner of Section 29-109-26, thence West 1808.8 feet to the East line of the Right of Way of the Chicago & Northwestern Railway, thence southwesterly along the said Right of Way line, 1264.6 feet, thence East 1692.3 feet to the East line of said Section 29, thence North along the section line 1249.8 feet to the place of beginning. A strip of land one (1) rod wide now used as a road, extending from East to West upon, over and across the North side of the Northwest Quarter of the Northwest Quarter (NW1/4 NW1/4) of Section 29, Township 109 North of Range 26 West, beginning at or near the Northeast corner of said NW1/4 NW1/4 of Sec. 29, and thence West along or near the North line of said NW1/4 NW1/4 of said Sec. 29, to the public highway known as the Mankato and St. Peter Road. The East 302.00 feet of the Northwest Quarter of the Northwest Quarter of Section 29, Township 109, Range 26, Blue Earth County, Minnesota, except the South 16.5 feet thereof. Except therefrom: Part of the Northwest Quarter of the Northwest Quarter and part of the Northeast Quarter of the Northwest Quarter of Section 29, Township 109 North, Range 26 West, Blue Earth County, Minnesota described as: Commencing at the Southeast corner of said Northwest Quarter of the Northwest Quarter; thence North 89 degrees 41

minutes 42 seconds West (bearings are based on Blue Earth County Coordinates NAD83, 1996 Adjustment) on the south line of said Northwest Quarter of the Northwest Quarter, a distance of 78.00 feet; thence North 12 degrees 41 minutes 56 seconds East, a distance of 16.89 feet to the north line of the south 16.5 feet of said Northwest Quarter of the Northwest Quarter and the point of beginning; thence North 12 degrees 41 minutes 56 seconds East, a distance of 589.95 feet to the westerly right of way of the abandoned Chicago, Milwaukee, St. Paul and Pacific Railroad Company; thence South 05 degrees 40 minutes 37 seconds West on said westerly right of way, a distance of 558.85 feet to the east line of said Northwest Quarter of the Northwest Quarter; thence South 00 degrees 11 minutes 26 seconds West on said east line, a distance of 19.81 to the north line of the south 16.5 feet of said Northwest Quarter of the Northwest Quarter; thence North 89 degrees 41 minutes 42 seconds West on said north line, a distance of 74.34 feet to the point of beginning. (23759 3rd Avenue; Blue Earth County PID R400429200017).

7. CYV01-24 **Request of Shawn Griffiths and Denise Schweim for a variance from Section 10.13, Subd.6.C of the Mankato City Code to reduce the rear yard setback from 25 feet to 15.2 feet. The variance is being requested in order to construct a 26' X 29.5' attached garage addition. The property is described as Lot 16, Block 3, Copperfield No. 2, City of Mankato, Minnesota (102 Uriah Court).**

8. *****SITE PLAN COMMITTEE REVIEW ONLY - Exemption for bench/tree of life in Highland Park**

9. *****SITE PLAN COMMITTEE REVIEW ONLY. Discussion regarding vacation of excess Right of Way in Germania Park Phase 1.**

2. **TRAFFIC ITEMS**

1. **License to Encroach - 129 S. 6th Street**

Site Plan and Traffic Advisory Review Committee **CY34-24**

Meeting Date: 08/13/2024

Title

Request of ISG with permission of the property owner(s) for an amendment to the previously approved preliminary plat of Hotel Mankato Redevelopment plat and for final plat approval for Hotel Mankato Redevelopment plat. The subject properties are described as Lot 1, Block 1, Key City Renewal Fifth Addition; and, the easterly 102.5 feet of the Northerly 23 feet of Lot 9 and the Easterly 102.5 feet of Lot 10, Block 14, City of Mankato; and All that part of the north – south running alley dedicated in Block 14, Map of Mankato, according to the recorded plat thereof, lying north of the Westerly extension of the north line of Lot 7, Block 14, Map of Mankato, according to the recorded plat thereof, City of Mankato, Blue Earth County, Minnesota, EXCEPT the west half of said alley adjacent to Lots 3 and 4, Block 14, Map of Mankato; and, The Westerly 55 feet of the Northerly 99 feet of Lots 9 and 10, Block 14, Map of Mankato; and, Commencing at the Southwest Corner of Lot 9, Block 14, Map of Mankato, on the east line of the alley running on the west side of said Lot 9, running thence in a southeasterly direction and at right angles with said alley 55 feet, thence in a northeasterly direction and at right angles with said last mentioned line 33 feet; thence in a northwesterly direction and at right angles with last described line 55 feet and thence in a southwesterly direction and at right angles with said last described line 33 feet to the place of beginning; and, Lot 8, Block 14, Map of Mankato, except the Southerly 6 feet of the Easterly 60 feet; and, The Southerly 43 feet of the Easterly 102 1/2 feet of Lot 9, Block 14, Map of Mankato; and, Beginning at the Southwesterly corner of Lot 8, Block 14, Map Of Mankato, according to the recorded plat thereof; thence easterly 66.00 feet along the southerly line of said Lot 8 to a point on the northerly extension of the westerly line of Lot 4, Spencer's Subdivision Of Lots 6 And 7 In Block 14 Mankato, according to the recorded plat thereof; thence southerly along said northerly extension 12.00 feet to the northwesterly corner of said Lot 4; thence westerly along the westerly extension of the northerly line of said Lot 4 to the westerly line of said Block 14; thence northerly along the westerly line of said Block 14 to the point of beginning; and, All that part of the 12.00 foot alley dedicated per the Spencer's Subdivision Of Lots 6 And 7 In Block 14 Mankato, according the recorded plat (alley being now vacated per recorded document 600CR931) described as follows: Being bound on the west by the northerly extension of the west line of Lot 4 of said Spencer's Subdivision; and, Being bound on the east by a line being 60.00 feet west of the northerly extension of the easterly line of said Spencer's Subdivision (101 E. Main, 121 and 123 E. Main, and 118 S. 2nd Street).

Applicant

The applicant is ISG, with the permission of the property owner.

Request

The applicant is seeking review of an amendment to the preliminary plat of Hotel Mankato Redevelopment, and final plat review and approval for Hotel Mankato Redevelopment.

Location

he redevelopment project encompasses properties addressed as 101 E. Main Street, 118 S. Second Street, and 121 and 123 E. Main Street. The vacation portion of the request also includes property adjacent to 117 S. Front Street and 119 S. Front Street. The subject properties are legally described as Lot 1, Block 1, Key City Renewal Fifth Addition; and, the easterly 102.5 feet of the Northerly 23 feet of Lot 9 and the Easterly 102.5 feet of Lot 10, Block 14, City of Mankato; and All that part of the north – south running alley dedicated in Block 14, Map of Mankato, according to the recorded plat thereof, lying north of the Westerly extension of the north line of Lot 7, Block 14, Map of Mankato, according to the recorded plat thereof, City of Mankato, Blue Earth County, Minnesota, EXCEPT the west half of said alley adjacent to Lots 3 and 4, Block 14, Map of Mankato; and, The Westerly 55 feet of the Northerly 99 feet of Lots 9 and 10, Block 14, Map of Mankato; and, Commencing at the Southwest Corner of Lot

9, Block 14, Map of Mankato, on the east line of the alley running on the west side of said Lot 9, running thence in a southeasterly direction and at right angles with said alley 55 feet, thence in a northeasterly direction and at right angles with said last mentioned line 33 feet; thence in a northwesterly direction and at right angles with last described line 55 feet and thence in a southwesterly direction and at right angles with said last described line 33 feet to the place of beginning; and, Lot 8, Block 14, Map of Mankato, except the Southerly 6 feet of the Easterly 60 feet; and, The Southerly 43 feet of the Easterly 102 1/2 feet of Lot 9, Block 14, Map of Mankato; and, Beginning at the Southwesterly corner of Lot 8, Block 14, Map Of Mankato, according to the recorded plat thereof; thence easterly 66.00 feet along the southerly line of said Lot 8 to a point on the northerly extension of the westerly line of Lot 4, Spencer's Subdivision Of Lots 6 And 7 In Block 14 Mankato, according to the recorded plat thereof; thence southerly along said northerly extension 12.00 feet to the northwesterly corner of said Lot 4; thence westerly along the westerly extension of the northerly line of said Lot 4 to the westerly line of said Block 14; thence northerly along the westerly line of said Block 14 to the point of beginning; and, All that part of the 12.00 foot alley dedicated per the Spencer's Subdivision Of Lots 6 And 7 In Block 14 Mankato, according the recorded plat (alley being now vacated per recorded document 600CR931) described as follows: Being bound on the west by the northerly extension of the west line of Lot 4 of said Spencer's Subdivision; and, Being bound on the east by a line being 60.00 feet west of the northerly extension of the easterly line of said Spencer's Subdivision.

Existing Land Use

The redevelopment site consists of the former City Center Hotel property and the Landmark building. The project also includes a portion of the to-be vacated public alley.

Zoning

The subject properties are zoned CBD-C, Central Business District Core.

Other Board or Commission

The Planning Commission reviewed the preliminary plat, the alley vacation, a conditional use permit and a certificate of design compliance at their June 26, 2024 meeting. Final action on that request is anticipated at the August 12, 2024 City Council meeting.

Environmentally Sensitive Areas

There are no known environmentally sensitive areas on the site.

Public Utilities

The site is currently served by public utilities and the proposed redevelopment will continue the use public infrastructure.

City Code

Mankato City Code Chapter 11 provides standards for Subdivision and Development Regulations (platting).

Review

ISG, on behalf of the property owner Hotel Mankato, LLC, is requesting the review of an amended preliminary plat for Hotel Mankato Redevelopment, and review of the final plat.

The property proposed for redevelopment is bordered by S. 2nd Street, E. Main Street and South Riverfront Drive. The current addresses associated to the plat are 101 E. Main Street, 121 and 123 E Main Street, and 118 S. 2nd Street.

An amended preliminary plat and the proposed final plat of Hotel Mankato Redevelopment has been presented for consideration. The amendment to the preliminary plat and the final plat is consistent with the original in the creation of a one lot, one block subdivision, however the amendment makes provisions for the applicant obtaining a 7.5’ strip of the vacated alley from the adjacent property owner and this area is now included in the proposed plats.

The previously reviewed and approved hotel development project is consistent with the prior approvals, and the

only request with this submission is for the amendment to the preliminary plat, and consideration of the final plat.

The proposed subdivision combines the underlying 9 parcels along with the vacated alley into a new one-lot, one block subdivision that encompasses 2.05 acres.

Attachments

General Location Map
Aerial Plan
Preliminary Plat
Final Plat

General Location Map



Date: July 2024

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



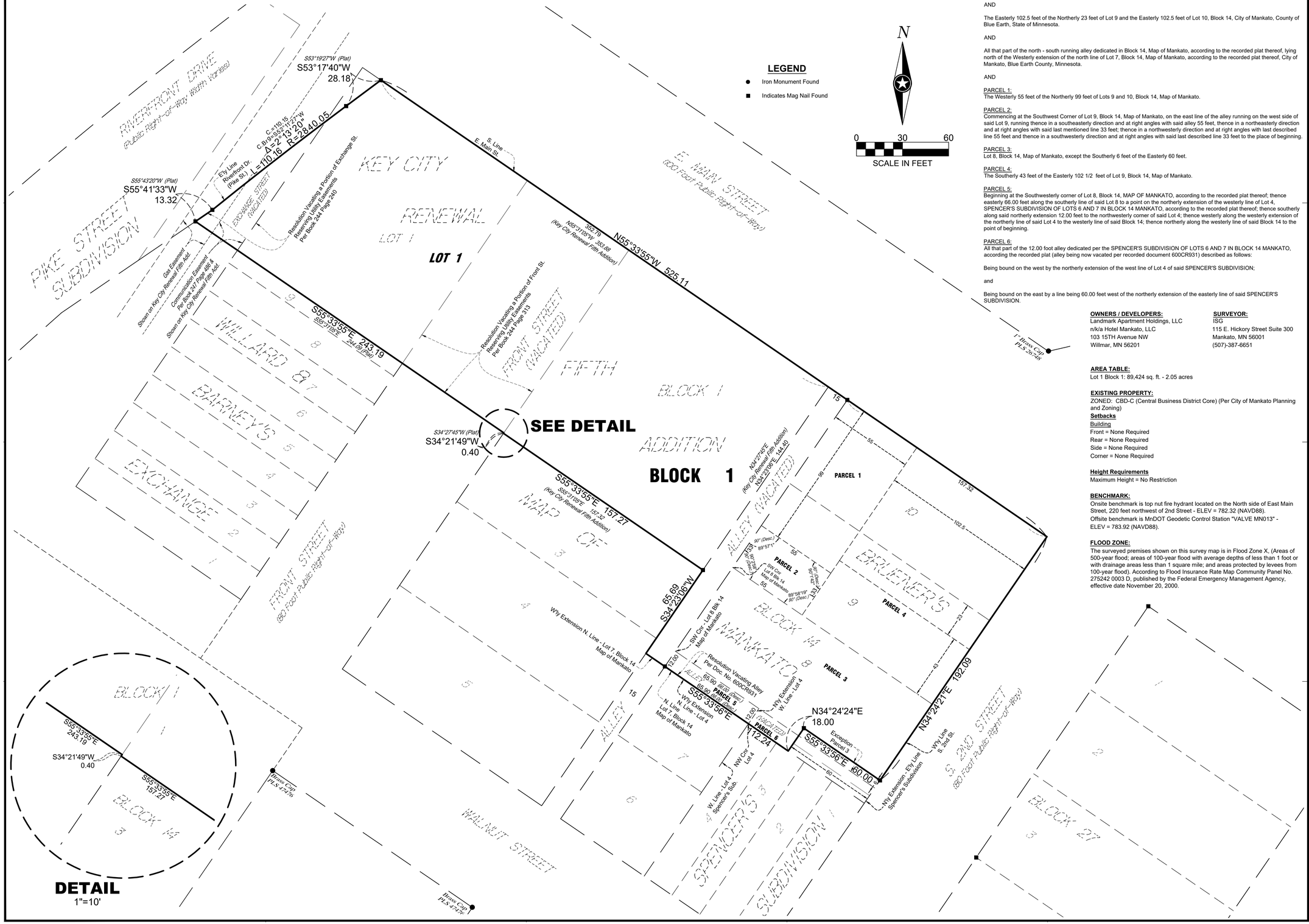
Date: July 2024

Author:

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HOTEL MANKATO REDEVELOPMENT



EXISTING LEGAL DESCRIPTION:
(per client)

Lot 1, Block 1, Key City Renewal Fifth Addition, Blue Earth County, State of Minnesota.

AND

The Easterly 102.5 feet of the Northerly 23 feet of Lot 9 and the Easterly 102.5 feet of Lot 10, Block 14, City of Mankato, County of Blue Earth, State of Minnesota.

AND

All that part of the north - south running alley dedicated in Block 14, Map of Mankato, according to the recorded plat thereof, lying north of the Westerly extension of the north line of Lot 7, Block 14, Map of Mankato, according to the recorded plat thereof, City of Mankato, Blue Earth County, Minnesota.

AND

PARCEL 1:
The Westerly 55 feet of the Northerly 99 feet of Lots 9 and 10, Block 14, Map of Mankato.

PARCEL 2:
Commencing at the Southwest Corner of Lot 9, Block 14, Map of Mankato, on the east line of the alley running on the west side of said Lot 9, running thence in a southeasterly direction and at right angles with said alley 55 feet, thence in a northeasterly direction and at right angles with said last mentioned line 33 feet; thence in a northwesterly direction and at right angles with last described line 55 feet and thence in a southwesterly direction and at right angles with said last described line 33 feet to the place of beginning.

PARCEL 3:
Lot 8, Block 14, Map of Mankato, except the Southerly 6 feet of the Easterly 60 feet.

PARCEL 4:
The Southerly 43 feet of the Easterly 102 1/2 feet of Lot 9, Block 14, Map of Mankato.

PARCEL 5:
Beginning at the Southwesterly corner of Lot 8, Block 14, MAP OF MANKATO, according to the recorded plat thereof; thence easterly 66.00 feet along the southerly line of said Lot 8 to a point on the northerly extension of the westerly line of Lot 4, SPENCER'S SUBDIVISION OF LOTS 6 AND 7 IN BLOCK 14 MANKATO, according to the recorded plat thereof; thence southerly along said northerly extension 12.00 feet to the northwesterly corner of said Lot 4; thence westerly along the westerly extension of the northerly line of said Lot 4 to the westerly line of said Block 14; thence northerly along the westerly line of said Block 14 to the point of beginning.

PARCEL 6:
All that part of the 12.00 foot alley dedicated per the SPENCER'S SUBDIVISION OF LOTS 6 AND 7 IN BLOCK 14 MANKATO, according the recorded plat (alley being now vacated per recorded document 600CR931) described as follows:

Being bound on the west by the northerly extension of the west line of Lot 4 of said SPENCER'S SUBDIVISION;

and

Being bound on the east by a line being 60.00 feet west of the northerly extension of the easterly line of said SPENCER'S SUBDIVISION.

OWNERS / DEVELOPERS:
Landmark Apartment Holdings, LLC
n/k/a Hotel Mankato, LLC
103 15TH Avenue NW
Willmar, MN 56201

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

AREA TABLE:
Lot 1 Block 1: 89,424 sq. ft. - 2.05 acres

EXISTING PROPERTY:
ZONED: CBD-C (Central Business District Core) (Per City of Mankato Planning and Zoning)

Setbacks
Building
Front = None Required
Rear = None Required
Side = None Required
Corner = None Required

Height Requirements
Maximum Height = No Restriction

BENCHMARK:
Onsite benchmark is top nut fire hydrant located on the North side of East Main Street, 220 feet northwest of 2nd Street - ELEV = 782.32 (NAVD88).
Offsite benchmark is MnDOT Geodetic Control Station "VALVE MN013" - ELEV = 783.92 (NAVD88).

FLOOD ZONE:
The surveyed premises shown on this survey map is in Flood Zone X, (Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood). According to Flood Insurance Rate Map Community Panel No. 275242 0003 D, published by the Federal Emergency Management Agency, effective date November 20, 2000.

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.

DANIEL L. STUEBER

DATE 6/25/24 LIC. NO. 43110

SHEET NOT VALID UNLESS THIS TEXT IS COLOR.

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PROJECT

HOTEL

MANKATO

Lot 1, Block 1, Key City Renewal Fifth Addition and part of Block 14, Map of Mankato, City of Mankato, Blue Earth County, Minnesota.

REVISION SCHEDULE

DATE	DESCRIPTION	BY
6/25/24	Included full width of entire alley vacation	KH
	Removed easement in vacated Front Street	

PROJECT NO.	23-30180
FILE NAME	30180 PPLAT
DRAWN BY	KH
DESIGNED BY	---
REVIEWED BY	---
ORIGINAL ISSUE DATE	6/17/24
CLIENT PROJECT NO.	-

TITLE

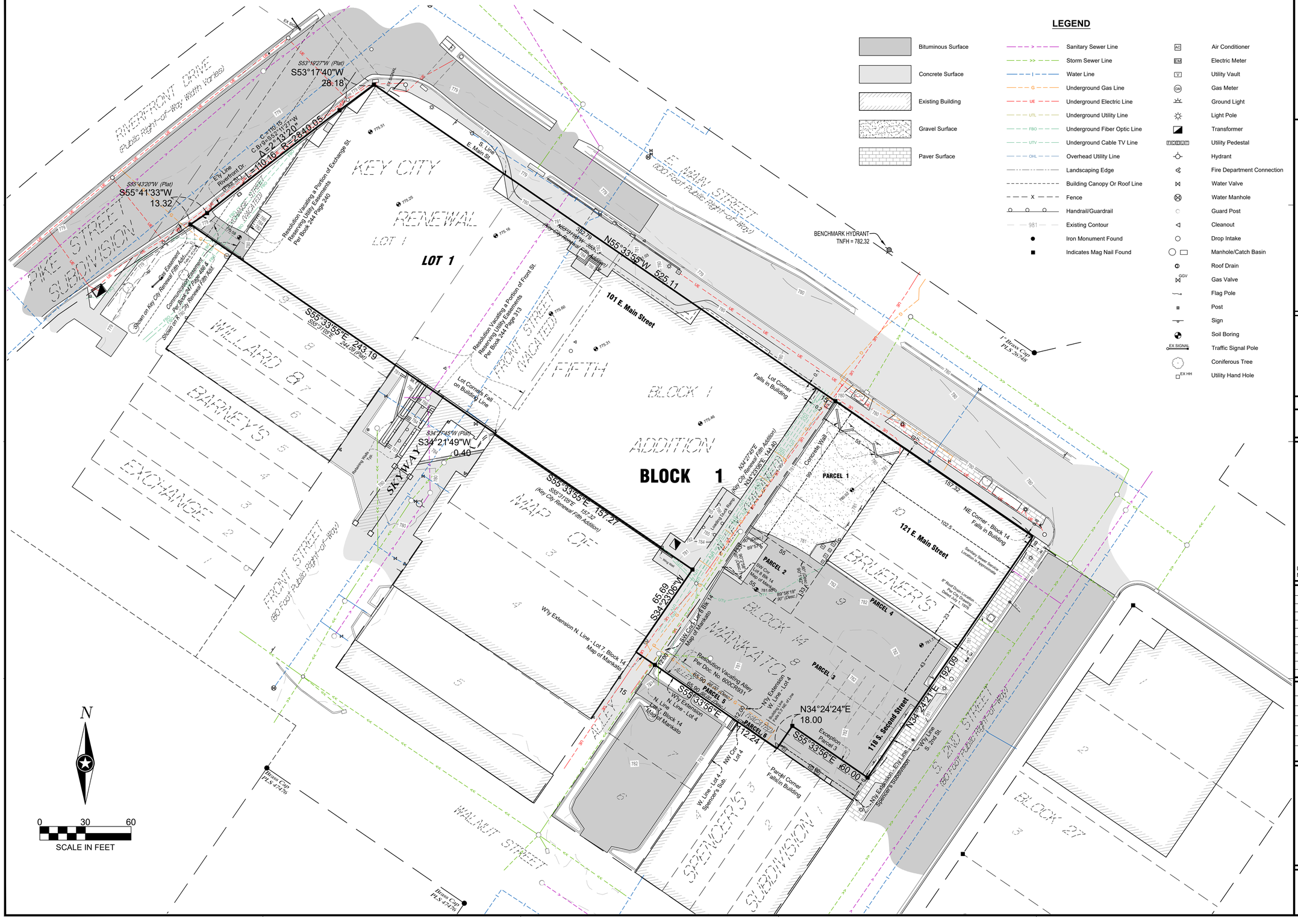
PRELIMINARY PLAT

SHEET

1

OF 2

HOTEL MANKATO REDEVELOPMENT



LEGEND

- Bituminous Surface
- Concrete Surface
- Existing Building
- Gravel Surface
- Paver Surface
- Sanitary Sewer Line
- Storm Sewer Line
- Water Line
- Underground Gas Line
- Underground Electric Line
- Underground Utility Line
- Underground Fiber Optic Line
- Underground Cable TV Line
- Overhead Utility Line
- Landscaping Edge
- Building Canopy Or Roof Line
- Fence
- Handrail/Guardrail
- Existing Contour
- Iron Monument Found
- Indicates Mag Nail Found
- Air Conditioner
- Electric Meter
- Utility Vault
- Gas Meter
- Ground Light
- Light Pole
- Transformer
- Utility Pedestal
- Hydrant
- Fire Department Connection
- Water Valve
- Water Manhole
- Guard Post
- Cleanout
- Drop Intake
- Manhole/Catch Basin
- Roof Drain
- Gas Valve
- Flag Pole
- Post
- Sign
- Soil Boring
- Traffic Signal Pole
- Coniferous Tree
- Utility Hand Hole

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.

DANIEL L. STUEBER

DATE 6/25/24 LIC. NO. 43110

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PROJECT

HOTEL MANKATO

Lot 1, Block 1, Key City Renewal Fifth Addition and part of Block 14, Map of Mankato, City of Mankato, Blue Earth County, Minnesota.

REVISION SCHEDULE

DATE	DESCRIPTION	BY
6/25/24	Included full width of entire alley vacation	KH
	Removed easement in vacated Front Street	

PROJECT NO.	23-30180
FILE NAME	30180 PPLAT
DRAWN BY	KH
DESIGNED BY	---
REVIEWED BY	---
ORIGINAL ISSUE DATE	6/17/24
CLIENT PROJECT NO.	-

TITLE

PRELIMINARY PLAT

SHEET

2 OF 2

HOTEL MANKATO REDEVELOPMENT

INSTRUMENT OF DEDICATION

KNOW ALL PERSONS BY THESE PRESENTS: That Landmark Apartment Holdings, LLC n/k/a Hotel Mankato, LLC, a Minnesota limited liability company, owner of the following described property:

Lot 1, Block 1, Key City Renewal Fifth Addition, Blue Earth County, State of Minnesota.

AND

All that part of the north - south running alley dedicated in Block 14, Map of Mankato, according to the recorded plat thereof, lying north of the Westerly extension of the north line of Lot 7, Block 14, Map of Mankato, according to the recorded plat thereof, City of Mankato, Blue Earth County, Minnesota.

AND

The Easterly 102.5 feet of the Northerly 23 feet of Lot 9 and the Easterly 102.5 feet of Lot 10, Block 14, City of Mankato, County of Blue Earth, State of Minnesota.

AND

The Westerly 55 feet of the Northerly 99 feet of Lots 9 and 10, Block 14, Map of Mankato.

AND

Commencing at the Southwest Corner of Lot 9, Block 14, Map of Mankato, on the east line of the alley running on the west side of said Lot 9, running thence in a southeasterly direction and at right angles with said alley 55 feet, thence in a northeasterly direction and at right angles with said last mentioned line 33 feet; thence in a northwesterly direction and at right angles with last described line 55 feet and thence in a southwesterly direction and at right angles with said last described line 33 feet to the place of beginning.

AND

Lot 8, Block 14, Map of Mankato, except the Southerly 6 feet of the Easterly 60 feet.

AND

The Southerly 43 feet of the Easterly 102 1/2 feet of Lot 9, Block 14, Map of Mankato.

AND

Beginning at the Southwesterly corner of Lot 8, Block 14, MAP OF MANKATO, according to the recorded plat thereof; thence easterly 66.00 feet along the southerly line of said Lot 8 to a point on the northerly extension of the westerly line of Lot 4, SPENCER'S SUBDIVISION OF LOTS 6 AND 7 IN BLOCK 14 MANKATO, according to the recorded plat thereof; thence southerly along said northerly extension 12.00 feet to the northwesterly corner of said Lot 4; thence westerly along the westerly extension of the northerly line of said Lot 4 to the westerly line of said Block 14; thence northerly along the westerly line of said Block 14 to the point of beginning.

AND

All that part of the 12.00 foot alley dedicated per the SPENCER'S SUBDIVISION OF LOTS 6 AND 7 IN BLOCK 14 MANKATO, according the recorded plat (alley being now vacated per recorded document 600CR931) described as follows:

Being bound on the west by the northerly extension of the west line of Lot 4 of said SPENCER'S SUBDIVISION;

and

Being bound on the east by a line being 60.00 feet west of the northerly extension of the easterly line of said SPENCER'S SUBDIVISION.

Has caused the same to be surveyed and platted as **HOTEL MANKATO REDEVELOPMENT**.

In witness whereof said Landmark Apartment Holdings, LLC n/k/a Hotel Mankato, LLC, a Minnesota limited liability company, has caused these presents to be signed by its proper officer this _____ day of _____, 20_____.

Signed: Landmark Apartment Holdings, LLC n/k/a Hotel Mankato, LLC

_____
Bryan Sowers, Vice President

State of _____

County of _____

This instrument was acknowledged before me on _____, 20_____ by Bryan Sowers, Vice President, of Landmark Apartment Holdings, LLC n/k/a Hotel Mankato, LLC, a Minnesota limited liability company.

_____(sign)

_____(print)

Notary Public _____

My Commission Expires _____

SURVEYOR'S CERTIFICATE

I, Daniel L. Stueber, 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 L. Stueber, Licensed Land Surveyor
Minnesota License No. 43110

State of Minnesota
County of Blue Earth

This instrument was acknowledged before me on _____, 20_____ by Daniel L. Stueber, Licensed Land Surveyor.

_____
Kent A. Hays
Notary Public, Minnesota
My Commission Expires Jan. 31, 2025

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 **HOTEL MANKATO REDEVELOPMENT**.

_____ _____
Chair Person Secretary

CITY COUNCIL, CITY OF MANKATO, MINNESOTA

This plat of **HOTEL MANKATO REDEVELOPMENT**, 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, Abbie S. Olson, 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.

_____
Abbie S. Olson, 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

COUNTY RECORDER, BLUE EARTH COUNTY, MINNESOTA

I hereby certify that this plat of **HOTEL MANKATO REDEVELOPMENT** 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. _____.

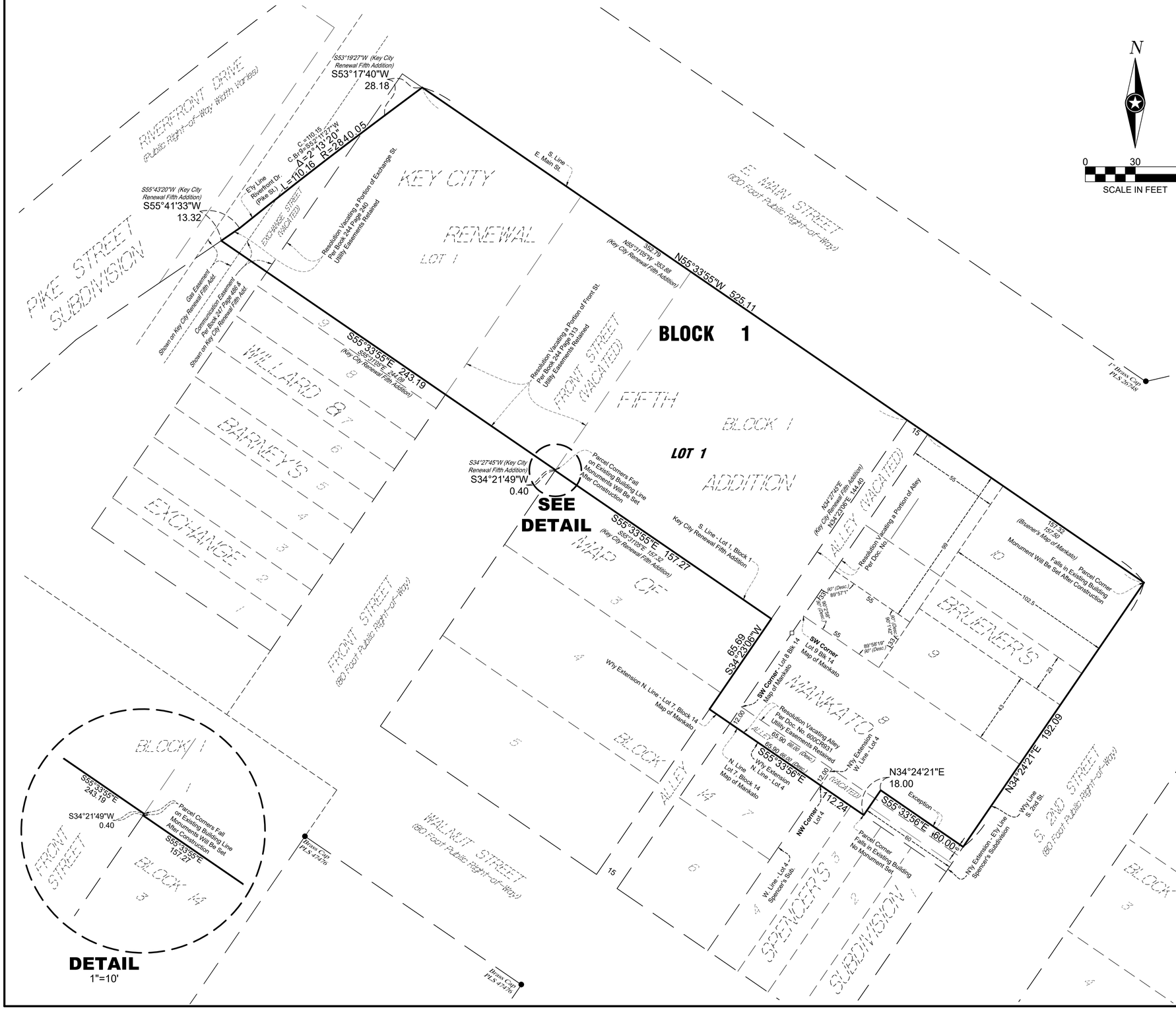
_____
Blue Earth County, County Recorder

ISG

JOB # 30180 DATE: 6/25/24

FINAL PLAT FOR REVIEW

HOTEL MANKATO REDEVELOPMENT

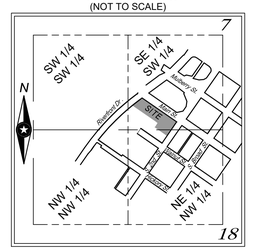


N

0 30 60

SCALE IN FEET

VICINITY MAP
(NOT TO SCALE)



SEC. 7 & 18, TWP. 108, RGE. 26
Blue Earth County, Minnesota

LEGEND

- ● Iron Monument Found
- ■ Mag Nail Found
- □ Indicates Mag Nail Set

BEARING NOTE:
The orientation of this bearing system is based on the south line of East Main Street. Said line bears North 55 degrees 33 minutes 55 seconds West.

ISG

JOB # 30160 DATE: 6/25/24

Site Plan and Traffic Advisory Review Committee **CY35-24**

Meeting Date: 08/13/2024

Title

Request by Jacob Hummer to rezone a property to R-T, Residential Transition, from B-1, Community Business District. The subject property is described as the south 80 feet of lot 13 and the east 10 feet of the south 68 feet of lot 14, Block 175, Plan of West Mankato subdivision).

Applicant

The applicant is Jacob Hummer.

Request

The applicant is proposing to rezone the property from B-1, Community Business District, to R-T, Residential Transition District.

Location

The property is described as the south 80 feet of lot 13 and the east 10 feet of the south 68 feet of lot 14, Block 175, Plan of West Mankato Subdivision (1918 S. Riverfront Drive).

Existing Land Use

There is currently a single-family dwelling on the property.

Zoning

The property is zoned B-1, Community Business District. The Land Use Plan designates the property as Commercial.

Review

The property located at 1918 S. Riverfront Drive has a zoning designation of B-1, Community Business District. However, the current use of the property is a single-family residence. The property owner is seeking a rezoning of the property from the current B-1, Community Business District, to R-T, Residential Transition, to be more in line with the current use. The rezoning to R-T is intended to serve as an area of transition between residential development and commercial and industrial development and the uses that are allowed in the district are limited to existing one- and two-family dwellings. The change in zoning will allow limited future residential improvement on the property.

The rezoning of the subject parcel from B-1 to R-T has occurred in this neighborhood before. Just to the Northeast of the subject property, nearby properties, located at 521 and 523 Park Lane have also been rezoned from B-1 to R-T. This occurred in 2002 and also served as the catalyst for the rezoning of six other adjacent lots on Block 183 of the Plat of West Mankato from Commercial to Residential zones. Despite all this rezoning in the neighborhood, none of the real land uses changed. The subject parcel, aforementioned lots, and adjacent lots have continued to operate as single-family homes since at least the 1890s - early 1900s. Therefore, the rezoning of the subject parcel would not impact the overall character of existing developments in the immediate vicinity. This also demonstrates that the proposed rezoning is consistent with the goals, objectives, and policies of the Comprehensive Land Use Plan, as it has been judged so in the past.

As previously stated, the change in zoning from commercial to residential would allow for limited future residential improvement on the property, particularly a garage.

Attachments

General Location Map
Aerial Map
Existing Land Use Map
Existing Zoning Map

General Location Map



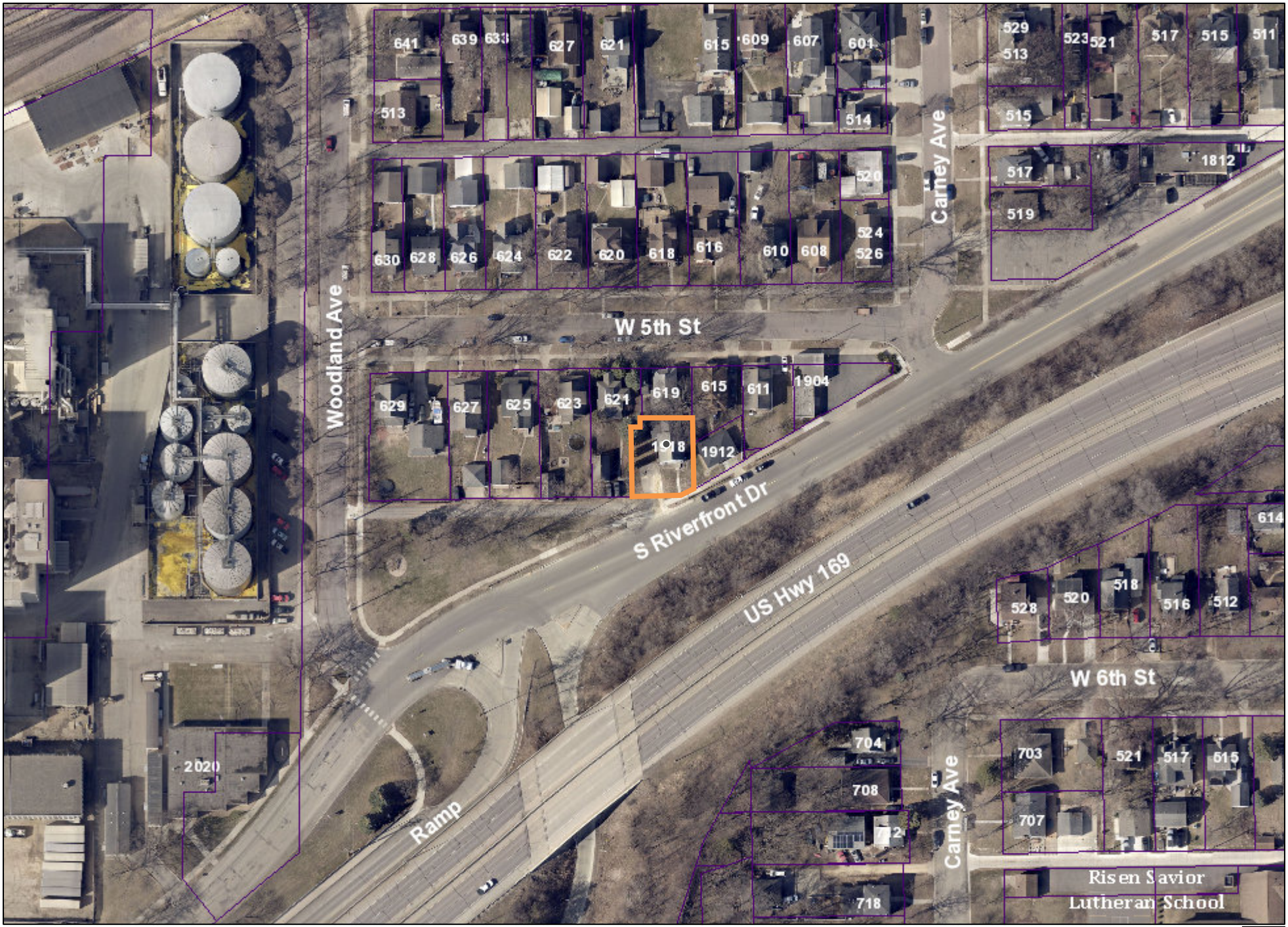
Date: July 2024

Author:

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N

Aerial Map



Date: July 2024

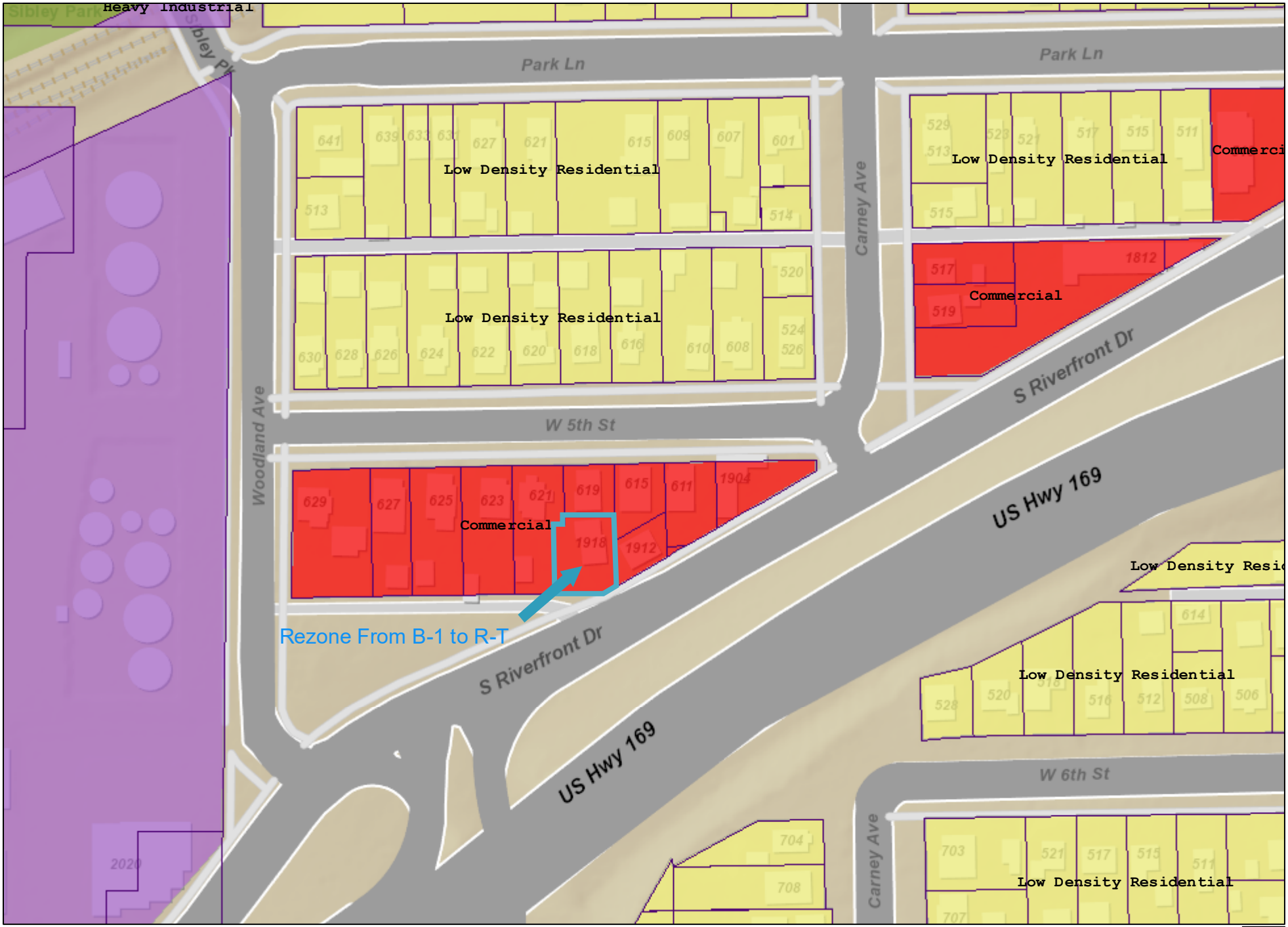
Author:

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Rezone - Existing Land Use Map

Proposed Rezoning Request



Date: August 2024

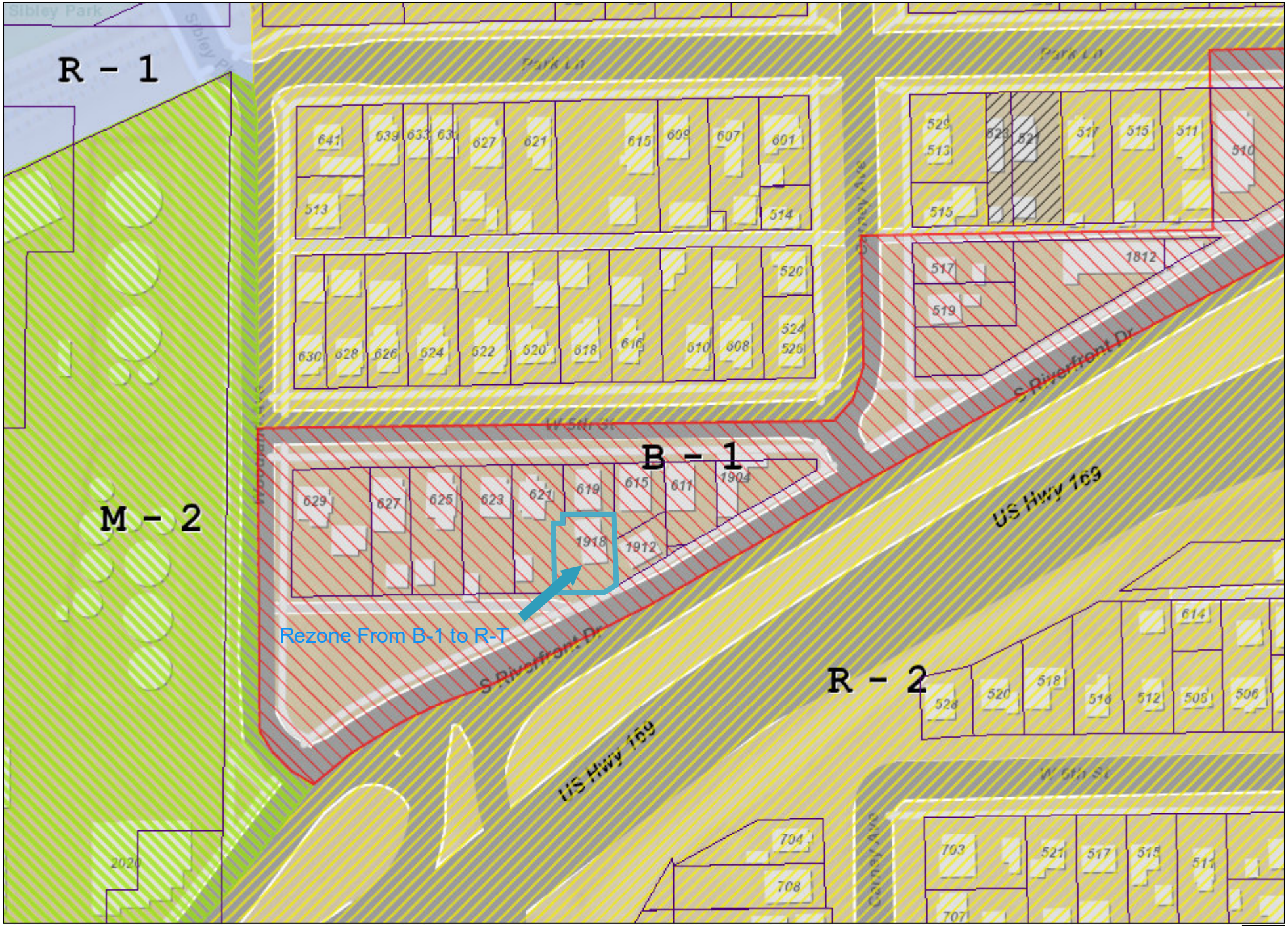
Author:

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Rezone - Existing Zoning Map

Proposed Rezoning Request



Date: August 2024

Author:

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N

Site Plan and Traffic Advisory Review Committee **CY36-24**

Meeting Date: 08/13/2024

Title

Request of Orthopaedic and Fracture Clinic for an amendment to the Planned Unit Development to allow for a use to operate outside the completely enclosed structure for an outdoor physical therapy area at the existing building within the medical campus. The subject property is described as Lot 1, Block 1, Mankato Clinic First Addition, etal (1431 Premier Drive).

Applicant

The applicant is the Orthopaedic and Fracture Clinic.

Request

The applicant is requesting an amendment to the Planned Unit Development to allow for a use to operate outside the completely enclosed structure for an outdoor physical therapy area at the existing building within the medical campus.

Location

The subject property is described as Lot 1, Block 1, Mankato Clinic First Addition, etal (1431 Premier Drive).

Existing Land Use

The property is currently used for The Orthopaedic & Fracture Clinic.

Zoning

The property is zoned OR, Office Residential District.

Other Board or Commission

The following items directly pertain to previous actions taken on the subject site:

Mankato Clinic, LTD, requested annexation, a planned unit development, rezoning, and a final plat on November 6, 2000. These requests were presented to and approved by the City Council on this date. The final plat was CY 41-00.

CY 48-02: A Preliminary and Final Plat Review for Amended Planned Unit Development of the Wickersham Addition was presented to and approved by the City Council on October 9th, 2002.

CY 11-13: A resolution amending Planned Unite Development and approved Certificate of Design compliance and Vacating Utility easements for the expansion of Wickersham Health Campus was presented to the planning commission and approved on April 8th, 2013. A final plat review of Mankato Clinic Second Addition was also approved on this date.

CY 25-24: A resolution amending the Planned Unit Development to allow for an approximately 5,000 square foot addition to an existing building within the medical campus and for a certificate of design compliance for the proposed modifications to the property located within the Highway Gateway Overlay District was approved by the Planning Commission on 06/26/2024 and was later approved by City Council on 07/08/2024.
- The amendment being proposed was originally part of this item but was removed shortly before the PC meeting.

Review

The applicant is requesting an amendment to the previously issued Planned Unit Development. The amendment would allow for a use to operate outside of a completely enclosed structure for an outdoor physical therapy area at the existing Orthopaedic and Fracture Clinic building within the Wickersham medical campus in the OR Zoning District.

The planned unit development provisions in City Code allow the City Council the authority in approving any planned unit development to change, alter, modify, or waive any portion of the applicable standards as they apply to the proposed planned unit development. In allowing flexibility, the City Council shall find that the proposed planned unit development will achieve the purpose of a planned unit development and will not violate the general purpose, goals, and objectives of this chapter and of any plans adopted by the Planning Agency or the City Council.

The applicant is requesting that the Planned Unit Development be amended to allow for an exception to Mankato City Code Sec. 10.52. Subd. 2. Permitted Uses, which states: "Except as specifically limited herein, the following uses are permitted in the O-Office District. Every use shall be operated in its entirety, within a completely enclosed structure, including the storage of all materials, products, and equipment". The use of the property as a medical clinic is considered a Permitted Use in the OR Zoning District, although this only applies to those uses that operate entirely within a completely enclosed structure. The aforementioned exception, despite its relation to a permitted use in a Planned Unit Development, could be viewed as conforming on the basis that '*Sec 10.93. Subd. 4. B. Uses Allowed.'* of the Mankato City Code be considered applicable in this context. The language of this ordinance, as it pertains to use, reads: "*... Uses not listed as permitted or conditional in a specific district shall not be allowed in a Planned Unit Development unless it is found that the use is complementary to the functionality of the development and the other uses found therein*.". The applicant's narrative states that the operation of physical therapy on a dedicated exterior turf area would be complementary to the functionality of the development as a medical clinic and physical therapy operations. This is not dissimilar to outdoor operations for child-care facilities or restaurants.

The applicant makes a case for its complimentary use in their original narrative, stating that: "T*he entire property is a medical campus. Due to the unique medical use of this property, special considerations for spaces and materials must be made to accommodate the therapy setting for recovering patients. The outdoor synthetic turf area is meant to stimulate outdoor environmental conditions as a rehabilitative therapy tool. A combined indoor/outdoor therapy experience better prepares rehabilitation patients for life after recovery."*

As previously stated, the applicant's submission states that the code allows for unlisted uses that are complimentary to the functionality of the planned unit development. The applicant states that the outdoor turf area to be used for enhanced physical therapy should be considered as complimentary to the development's function as an Orthopaedic and Fracture Clinic. This modification would be allowed as an amendment to the Planned Unit Development on the basis that the modification of the regulation will achieve the purpose for which a planned unit development may be approved pursuant to this section, and that it will not violate the general purpose, goals, and objectives of this chapter and of any plans adopted by the Planning Agency or the City Council. The Code also offers the limitation that no change can be made unless the regulation expressly authorizes such a change, alteration, modification or waiver. The aforementioned excerpt from the section regarding 'uses allowed', which permits unlisted uses to be approved if they are found to be complimentary to the functionality of the development.

The applicant's narrative states that the outdoor turf will be for patient use and that it will provide a more comprehensive rehabilitation experience with a connection to the outdoors, allowing patients to learn to adapt to the external conditions they will face when they have completed their physical therapy. They explain that different surfaces allow patients to simulate navigation of the many terrains they will encounter, such as sidewalks, curbs, pavement, natural grass, and synthetic turf. They stated that the added exterior turf area allows for enhanced on-campus rehabilitation opportunities by mimicking an actual outdoor experience. A combined indoor/outdoor therapy experience enhances rehabilitation efforts and results for patients. This enhanced physical therapy experience is something they believe is not currently available in the Mankato area. They also believe that synthetic turf, in lieu of sod, would provide better performance under expected use by patients during their rehabilitation activities. The proposed hours of operation for the outdoor area are from 8:00am to 8:00pm.

A condition will be included that prohibits the storage of all materials, products, and equipment used in the

operation of physical therapy in the outdoor synthetic turf area. The applicant confirmed that there will be "no storage of materials, products, or equipment on the exterior turf area" in the originally provided narrative.

Regarding physical changes proposed in the amendment, the creation of an outdoor area of synthetic turf is shown on the site plan and other associated documents. The synthetic turf area is shown to be 60-feet long by 14' wide, or 840 square feet. The area projects out of the Northeastern corner of the recently approved addition to the physical therapy area of the Orthopaedic and Fracture Clinic toward the new parking area.

The applicant is proposing to screen the outdoor turf area from the parking area using landscaping and a 4' ornamental fence. The fence will fully enclose the outdoor turf area and limit access to the area. Access to the turf area will only be available from the garage-type door of the physical therapy. Therefore, access to the external use (physical therapy) will only be provided in conjunction with the internal, complementary use (physical therapy).

Attachments

General Location Map
Aerial Map
Site Plan
Landscaping Plan
Narrative - PUD Amendment
Original Narrative

General Location Map



Date: July 2024

Author:

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N

Aerial Map



Date: July 2024

Author:

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N

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	45° BEND	1000.07	EX-CB	999.97	8	PVC	SCH 40	2.00%	5
P-2	45° BEND	1000.22	45° BEND	1000.07	8	PVC	SCH 40	2.00%	7
P-3	45° BEND	1000.93	45° BEND	1000.22	8	PVC	SCH 40	2.00%	36
P-4	BLDG	1001.06	45° BEND	1000.93	8	PVC	SCH 40	2.00%	7

PAVEMENT LEGEND

SYMBOL	DESCRIPTION
	BITUMINOUS PAVEMENT
	HEAVY DUTY CONCRETE PAVEMENT
	CONCRETE WALK
	REVERSE PITCH CONCRETE CURB AND GUTTER

COUNTY ROAD 26

UE UE UE UE UE UE UI

G G G

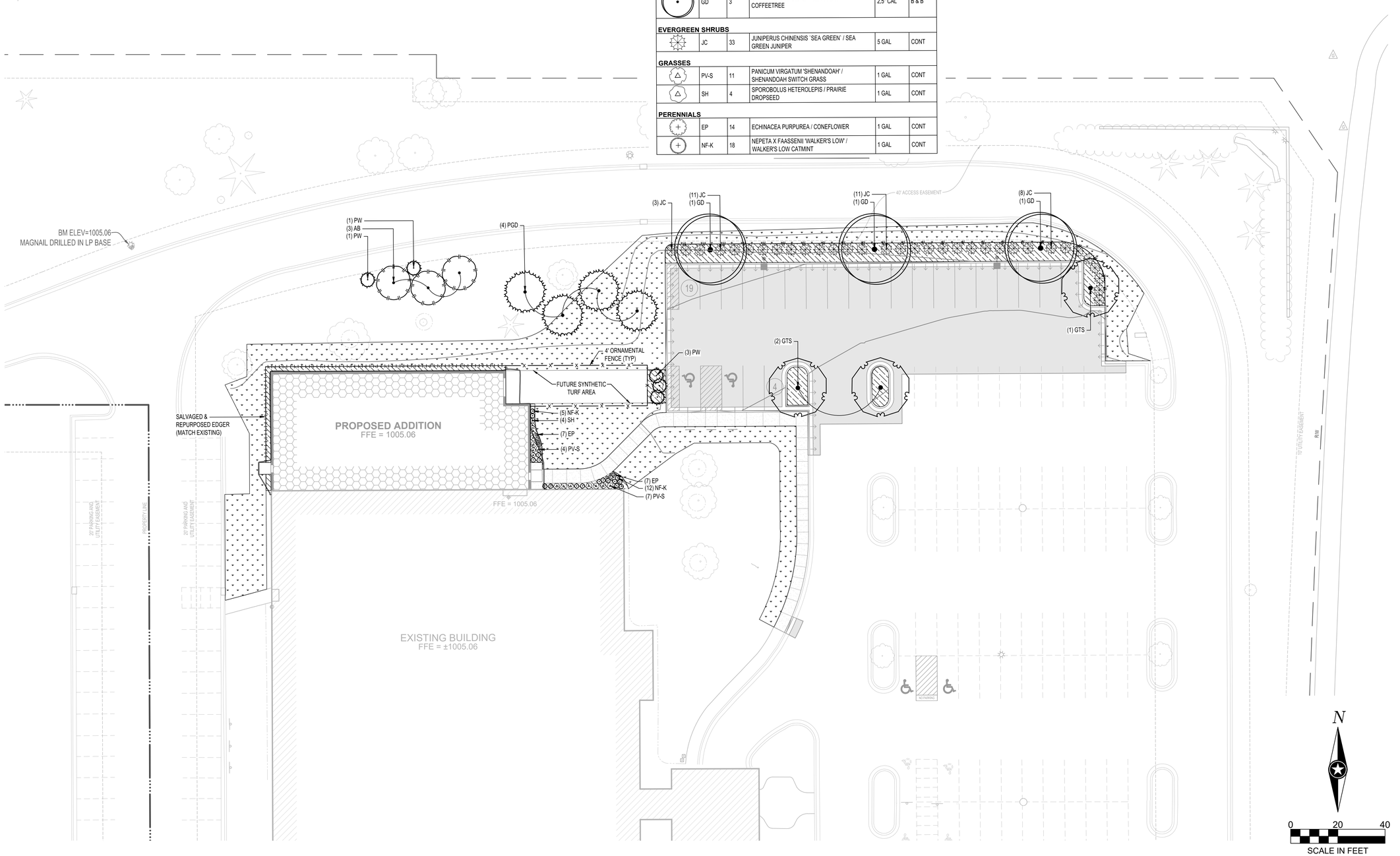
LANDSCAPE CODE SUMMARY	
ZONING	OR- OFFICE RESIDENTIAL / OFFICE
PARKING LOT PERIMETER LANDSCAPING SHADE TREES REQUIRED / PERIMETER LANDSCAPING TREES PROVIDED	1 SHADE TREE/ 50 LF OF PARKING PERIMETER LENGTH, 290 LF = 6 SHADE TREES REQUIRED/ 6 SHADE TREES PROPOSED
PARKING LOT PERIMETER LANDSCAPING EVERGREEN TREES REQUIRED / PERIMETER LANDSCAPING TREES PROVIDED	1 EVERGREEN SHRUB/ 25 LF OF PARKING PERIMETER LENGTH, 290 LF = 12 EVERGREEN SHRUBS REQUIRED / 12 EVERGREEN SHRUBS PROPOSED
LANDSCAPE SIZING REQUIREMENTS	
MINIMUM OVERSTORY TREE SIZE	2.5" CALIPER
MINIMUM EVERGREEN TREE SIZE	6' HEIGHT

RESTORATION SCHEDULE

SYMBOL	QTY	DESCRIPTION
MULCH		
	2,481 SF	RIVER ROCK MULCH (MATCH EXISTING)
SEEDING		
	8,736 SF	TURF SOD
EDGER		
	215 LF	USE CONCRETE PAVER EDGER (MATCH EXISTING)
	150 LF	SALVAGED AND REPURPOSED EDGER

PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	ROOT
EVERGREEN TREES					
	AB	3	ABIES BALSAMEA / BALSAM FIR	6` HT MIN	
	PGD	4	PICEA GLAUCA `DENSATA` / BLACK HILLS SPRUCE	6` HT MIN	B & B
	PW	5	PINUS CEMBRA 'HERMAN' TM / PRAIRIE STATESMAN SWISS STONE PINE	6` HT MIN	B & B
SHADE TREES					
	GTS	3	GLEDITSIA TRIACANTHOS `SKYLINE` / SKYLINE HONEYLOCUST	2.5" CAL	B & B
	GD	3	GYMNOCLADUS DIOICA / KENTUCKY COFFEETREE	2.5" CAL	B & B
EVERGREEN SHRUBS					
	JC	33	JUNIPERUS CHINENSIS `SEA GREEN` / SEA GREEN JUNIPER	5 GAL	CONT
GRASSES					
	PV-S	11	PANICUM VIRGATUM 'SHENANDOAH' / SHENANDOAH SWITCH GRASS	1 GAL	CONT
	SH	4	SPOROBOLUS HETEROLEPIS / PRAIRIE DROPSEED	1 GAL	CONT
PERENNIALS					
	EP	14	ECHINACEA PURPUREA / CONEFLOWER	1 GAL	CONT
	NF-K	18	NEPETA X FAASSENII 'WALKER'S LOW' / WALKER'S LOW CATMINT	1 GAL	CONT



PLOT DATE: 7/24/2024 4:04 PM

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ISG

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.

DATE _____ LIC. NO. _____

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 LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

MITCHELL R. WORKMON

DATE _____ LIC. NO. 53748

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PROJECT

WICKERSHAM HEALTH CAMPUS

OFC RENOVATION AND ADDITION

MANKATO MINNESOTA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

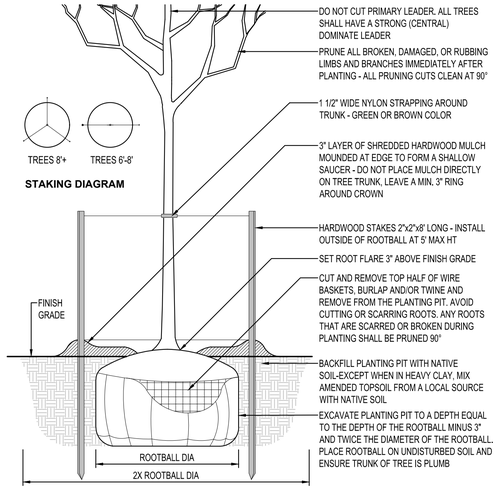
PROJECT NO.	24-30313
FILE NAME	30313-C5-LAND
DRAWN BY	LHH
DESIGNED BY	LHH
REVIEWED BY	BMP
ORIGINAL ISSUE DATE	--/--/--
CLIENT PROJECT NO.	-

TITLE

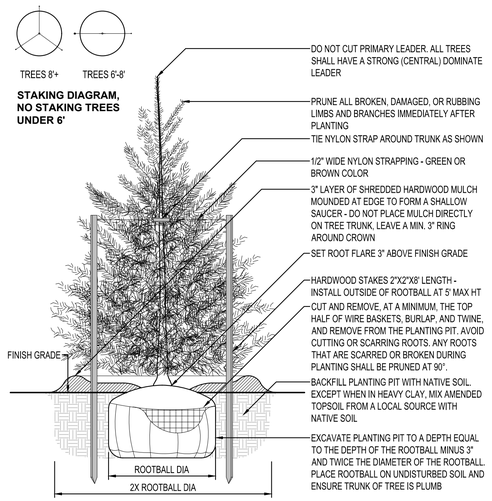
PLANTING AND RESTORATION PLAN

SHEET

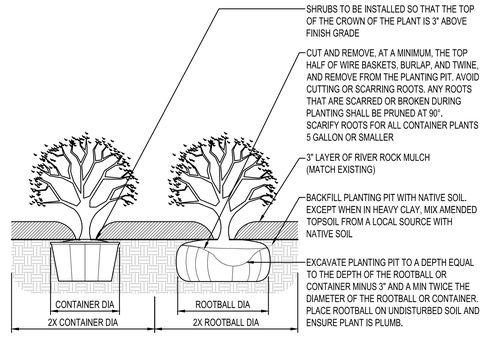
C5-10



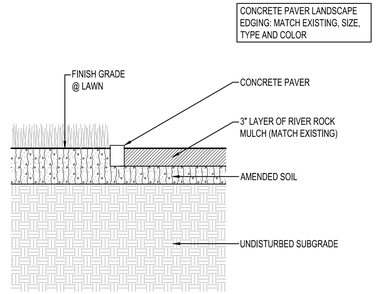
DECIDUOUS TREE PLANTING
NTS



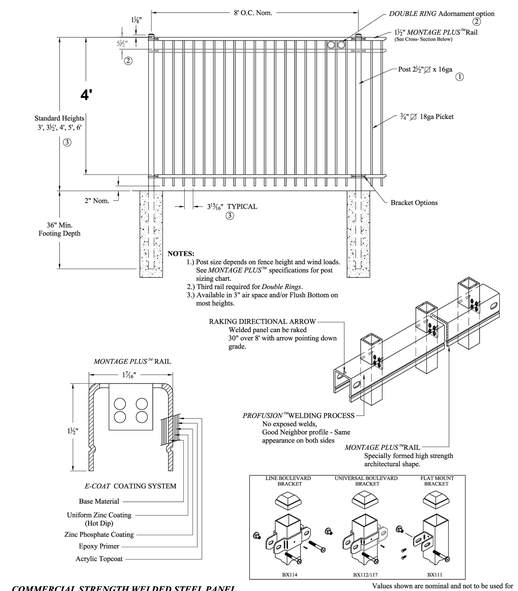
EVERGREEN TREE PLANTING
NTS



SHRUB PLANTING
NTS



LANDSCAPE EDGING
NTS



4' ORNAMENTAL FENCE
NTS

PLANTING NOTES

1. COORDINATE LOCATION OF ALL UTILITIES (LINES, DUCTS, CONDUITS, SLEEVES, FOOTINGS, ETC.) WITH LOCATIONS OF PROPOSED LANDSCAPE ELEMENTS (FENCE, FOOTINGS, TREE ROOTBALLS, ETC.). CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO OWNER'S REPRESENTATIVE PRIOR TO CONTINUING WORK.
2. SAVE AND PROTECT ALL EXISTING TREES NOT NOTED TO BE REMOVED.
3. REMOVE ALL CONSTRUCTION DEBRIS AND MATERIALS INJURIOUS TO PLANT GROWTH FROM PLANTING PITS AND BEDS PRIOR TO BACKFILLING WITH PLANTING MIX.
4. REFER TO PLANTING DETAILS FOR AMENDED SOIL DEPTH IN PLANTING BEDS AND SURROUNDING TREES.
5. FIELD STAKE PLANTINGS ACCORDING TO PLAN. OWNER'S REPRESENTATIVE SHALL APPROVE ALL PLANT LOCATIONS PRIOR TO INSTALLATION. OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO REVISE PLANTING LAYOUT AT TIME OF INSTALLATION.
6. ALL PLANT MATERIALS SHALL BE TRUE TO THEIR SCIENTIFIC NAME AND SIZE AS INDICATED IN THE PLANT SCHEDULE.
7. IF DISCREPANCIES EXIST BETWEEN THE NUMBER OF PLANTS DRAWN ON THE PLANTING PLAN AND THE NUMBER OF PLANTS IN THE SCHEDULE, THE PLANTING PLAN SHALL GOVERN.
8. ANY PROPOSED SUBSTITUTIONS OF PLANT SPECIES SHALL BE MADE WITH PLANTS OF EQUIVALENT OVERALL FORM, HEIGHT, BRANCHING HABIT, FLOWER, LEAF, COLOR, FRUIT AND CULTURE, AND ONLY AFTER WRITTEN APPROVAL OF THE OWNER'S REPRESENTATIVE.
9. ALL PLANT MATERIALS MUST CONFORM TO AMERICAN STANDARDS FOR NURSERY STOCK (ANSI Z60.1), LATEST EDITION PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, WASHINGTON D.C. LARGER SIZED PLANT MATERIALS OF THE SPECIES LISTED MAY BE USED IF THE STOCK CONFORMS TO ANSI Z60.1.
10. ALL PLANT MATERIAL SHALL BE GUARANTEED BY THE CONTRACTOR TO BE IN A LIVE AND HEALTHY GROWING CONDITION FOR ONE FULL GROWING SEASON (ONE YEAR) AFTER FINAL PROJECT ACCEPTANCE OR SHALL BE REPLACED BY THE CONTRACTOR FREE OF CHARGE WITH THE SAME GRADE AND SPECIES.
11. ALL TREES SHALL HAVE A STRONG CENTRAL LEADER. ANY TREES DEEMED NOT TO HAVE A STRONG CENTRAL LEADER SHALL BE REJECTED.
12. CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE DUE TO CONSTRUCTION OPERATIONS. ANY AREAS THAT ARE DISTURBED SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER.
13. PROVIDE RIVER ROCK MULCH (MATCH EXISTING) SURROUNDING ALL PROPOSED TREES (5' Ø) AND WITHIN PLANTING BEDS TO A 3" MINIMUM DEPTH AS SHOWN IN TREE PLANTING DETAIL. DO NOT USE AN UNDERLAYMENT SUCH AS PLASTIC SHEET OR LANDSCAPE FABRIC. APPLY PRE-EMERGENT TO ALL PLANTING BEDS PRIOR TO MULCHING. REFER TO PLANS FOR ADDITIONAL DETAILS. REFER TO STORMWATER DETAILS FOR BASIN CONSTRUCTION AND MULCH APPLICATION.
14. MULCHING MATERIAL SHALL BE SHREDDED HARDWOOD MULCH, WITH NO INDIVIDUAL PIECES LARGER THAN 3", FREE OF GROWTH OR GERMINATION INHIBITING INGREDIENTS, 3" MINIMUM DEPTH. MINIMUM DEPTHS AT LOCATIONS INDICATED ON DRAWINGS.
15. CONTRACTOR SHALL PROVIDE SAMPLE OF MULCH TO BE APPROVED BY THE LANDSCAPE ARCHITECT.
16. INDICATED QUANTITIES ARE ESTIMATES AND SHALL BE CONFIRMED BY THE CONTRACTOR.
17. ADJUST SPACING OF PLANT MATERIALS AROUND ADJACENT UTILITY STRUCTURES.

ISG

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MITCHELL R. WORKMON

DATE _____ LIC. NO. 53748

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PROJECT

WICKERSHAM HEALTH CAMPUS

OFC RENOVATION AND ADDITION

MANKATO MINNESOTA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	24-30313
FILE NAME	30313-C5-LAND
DRAWN BY	LHH
DESIGNED BY	LHH
REVIEWED BY	BMP
ORIGINAL ISSUE DATE	--/--/--
CLIENT PROJECT NO.	-

TITLE

PLANTING NOTES AND DETAILS

SHEET

C5-30

PRELIMINARY NOT FOR CONSTRUCTION

PLOT DATE: 7/24/2024 3:52 PM

MicrosoftTeams-image (5)

AUGUST 7, 2024

Molly Westman
Planning Coordinator
City of Mankato
10 Civic Center Plaza
Mankato, MN 56002
mwestman@mankatomn.gov

RE: PUD AMENDMENT NARRATIVE
ORTHOPAEDIC AND FRACTURE CLINIC (OFC) – 1431 PREMIER DRIVE, MANKATO, MN 56001

Molly,

Thank you for reviewing the PUD Amendment Application and associated materials in support of the Orthopaedic and Fracture Clinic Project. The PUD Amendment request is outlined in further detail within the following narrative.

The Orthopaedic and Fracture Clinic is proposing an interior renovation of approximately 1,900 SF to improve the existing clinical and scheduling spaces and an approximately 5,000 SF physical therapy addition to the existing clinic to expand the physical therapy patient care area.

Additionally, there will be an outdoor synthetic turf area for patient use (weather permitting). The turf area will be enclosed by a 4-foot ornamental fence to screen the area. This will provide a more comprehensive rehabilitation experience with a connection to the outdoors allowing patients to learn to adapt to the external conditions they will face when they have completed their physical therapy. Different surfaces allow patients to simulate navigation of the many terrains they will encounter, such as sidewalks, curbs, pavement, natural grass, and synthetic turf. Typical hours of operation will be from 8:00am-8:00pm. It is expected there will be no increased noise impact. Lighting will meet Mankato ordinances for exterior space and security.

Thank you again for your consideration of this PUD Amendment request. Please contact me at 507.387.6651 or via email at Emily.Nepp@ISGInc.com with any questions or if there is any additional information we can provide in support of this project.

Sincerely,

Emily Nepp

Emily Nepp
Development Services Coordinator
Emily.Nepp@ISGInc.com

JULY 23, 2024

Molly Westman
Planning Coordinator
City of Mankato
10 Civic Center Plaza
Mankato, MN 56002
mwestman@mankatomn.gov

RE: VARIANCE NARRATIVE
ORTHOPAEDIC AND FRACTURE CLINIC (OFC) – 1431 PREMIER DRIVE, MANKATO, MN 56001

Molly,

Thank you for reviewing the attached Variance Application and associated materials in support of the Orthopaedic and Fracture Clinic Project. The variance request is outlined in further detail within the following narrative.

The Orthopaedic and Fracture Clinic is proposing an interior renovation of approximately 1,900 SF to improve the existing clinical and scheduling spaces. The renovation adds four additional exam rooms and connects the existing circulation corridors across the front of the clinic to improve flow. The four new exam rooms will alleviate peak patient day volumes allowing more time in the exam room for the patient. The surgery scheduling area is changing to a private model to ensure patient confidentiality with three new private scheduling bays.

Since the interior renovation displaces 1,000 SF of existing physical therapy space, in addition to already smaller than industry standard square footage for the volume of patients, OFC is also proposing an approximately 5,000 SF physical therapy addition to the existing clinic to expand the physical therapy patient care area. The new addition right-sizes the physical therapy space and includes a larger agility area, two indoor turf lanes, and additional cardiac and weight equipment space for improved patient rehabilitation post injury or surgery.

The space may also be used for group classes as a community benefit. The new addition is adjacent to the existing physical therapy area, allowing patient and staff flows to remain consistent with current flows. The existing building is sprinkled, and the new addition will be also.

There will also be a small portion of outdoor turf for patient use (weather permitting). This will provide a more comprehensive rehabilitation experience with a connection to the outdoors allowing patients to learn to adapt to the external conditions they will face when they have completed their physical therapy. Different surfaces allow patients to simulate navigation of the many terrains they will encounter, such as sidewalks, curbs, pavement, natural grass, and synthetic turf. This enhanced physical therapy experience is something not currently available in the Mankato area.

The proposed variance meets all the criteria of Chapter 10.Sec.10.42.Subd.2 as described below.

VARIANCE CRITERIA

OFC is requesting review and approval of a variance to allow natural landscaping and plantings to effectively screen the proposed synthetic turf activity area in lieu of a fully enclosed structure.

(a) Specify the section of the ordinance from which a variance is sought.

The section of the ordinance is Chapter 10.Sec.10.42.Subd.2 Permitted Uses. Except as specifically limited herein, the following uses are permitted in the O-Office District. Every use shall be operated in its entirety, within a completely enclosed structure, including the storage of all materials, products, and equipment.

(b) Explain how you wish to vary from the applicable provisions of the ordinance.

OFC intends to provide an exterior synthetic turf area on the east side of the proposed addition. This will provide a more comprehensive rehabilitation experience with a connection to the outdoors allowing patients to learn to adapt to the external conditions they will face when they have completed their physical therapy. Different surfaces allow patients to simulate navigation of the many terrains they will encounter, such as sidewalks, curbs, pavement, natural grass, and synthetic turf. This enhanced physical therapy experience is something not currently available in the Mankato area.

(c) In your opinion, is the variance in harmony with the purposes and intent of the ordinance.

Yes, there will be no storage of materials, products, or equipment on the exterior turf area. The exterior turf is proposed to be screened by plantings as shown on the attached landscape plan.

(d) In your opinion, is the variance consistent with the comprehensive plan.

Yes, the variance is consistent with the comprehensive plan.

(e) In your opinion, does the proposal put the property to use in a reasonable manner.

Yes, there is no change in use. The added exterior turf area allows for enhanced on-campus rehabilitation opportunities by mimicking an actual outdoor experience. A combined indoor/outdoor therapy experience enhances rehabilitation efforts and results for patients.

(f) In your opinion, are there circumstances unique to the property.

Yes, the entire property is a medical campus. Due to the unique medical use of this property, special considerations for spaces and materials must be made to accommodate the therapy setting for recovering patients. The outdoor synthetic turf area is meant to stimulate outdoor environmental conditions as a rehabilitative therapy tool. A combined indoor/outdoor therapy experience better prepares rehabilitation patients for life after recovery.

(g) In your opinion, will the variance maintain the essential character of the locality:

Yes, synthetic turf is being proposed in lieu of sod. The durability of the synthetic turf will perform better under the expected use by patients during their rehabilitation activities.

Thank you again for your consideration of this variance request. Please contact me at 507.387.6651 or via email at Emily.Nepp@ISGInc.com with any questions or if there is any additional information we can provide in support of this project.

Sincerely,

Emily Nepp

Emily Nepp
Development Services Coordinator
Emily.Nepp@ISGInc.com

Site Plan and Traffic Advisory Review Committee **CY37-24**

Meeting Date: 08/13/2024

Title

Request of Civil Site Group, on behalf of the property owner, for a conditional use permit to allow a drive-thru between the primary building and the frontage and for a certificate of design compliance for the construction of a new, approximately 5,200 square foot structure in the Highway Gateway Overlay District. The subject property is described as Lot 8, Block 1, River Hills Mall Addition (1896 Adams Street).

Applicant

The applicant is Civil Site Group, on behalf of the property owner.

Request

The applicant is requesting a conditional use permit to allow a drive-thru between the primary building and the frontage and for a certificate of design compliance for the construction of a new, approximately 5,200 square foot structure in the Highway Gateway Overlay District.

Location

The subject property is located 1896 Adams Street, and is legally described as Lot 8, Block 1, River Hills Mall Addition.

Existing Land Use

An existing building located on the site, and is proposed for demolition with the current proposal.

Zoning

The property is zoned B-3, Highway Commercial District.

Review

Civil Site Group, on behalf of the property owner, is seeking consideration for a conditional use permit to allow a drive-thru between the primary building and the frontage and for a certificate of design compliance for the construction of a new, approximately 5,200 square foot structure in the Highway Gateway Overlay District.

The subject property is located at 1896 Adams Street and is legally described as Lot 8, Block 1, River Hills Mall Addition.

Plans submitted by the applicant show the removal of the existing structure on the lot located on the easterly side of River Hills Mall adjacent to Highway 22.

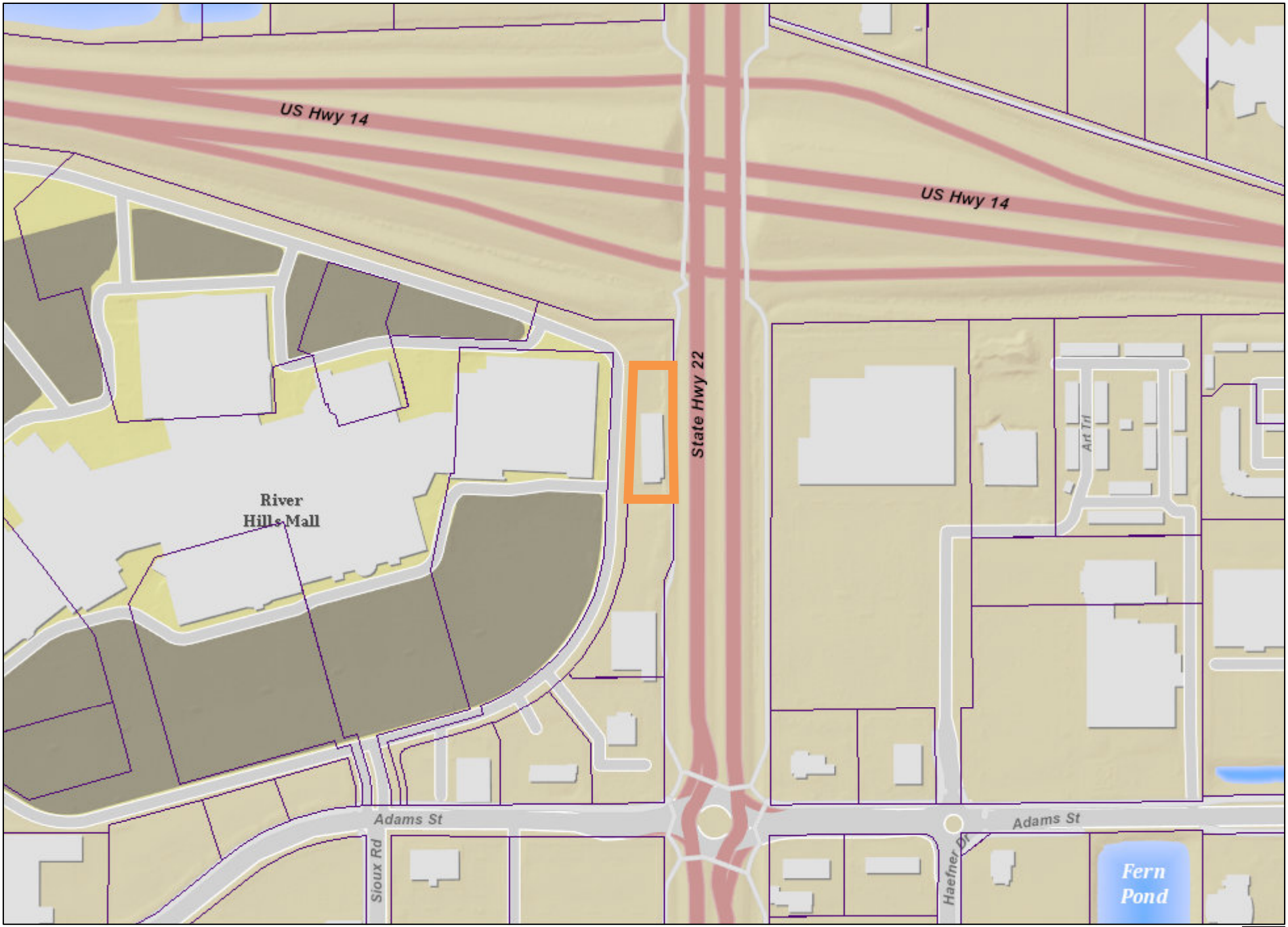
Proposed construction includes a new, approximately 5,200 square foot car wash building, which will be location of Tsunami Express Car Wash. The use is allowed in the B-3 zoning district, and given the location of the drive thru, a conditional use permit is being sought. Site plans also show an approximately 100 square foot employee sales booth, a 100 square foot vacuum pump house and a dumpster enclosure.

The applicant is also seeking a certificate of design compliance for the new structure. Because the lot is located in the Highway Gateway Overlay District, the new structure will need to achieve the district's locational and design criteria. The proposed building will be situated approximately 16' from the easterly property line, and will be constructed of a mixture of brick, cast stone, split face concrete masonry units, a stucco-like product, EIFS, metal and aluminum storefront window systems.

Attachments

General Location Map
Aerial Plan
Plans
Photometric Plan

General Location Map



Date: July 2024

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: July 2024

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 REDMOND COMPANY

YOUR PREMIER DESIGN/BUILD PARTNER

22 July 2024

Planning Department – City of Mankato
10 Civic Center Plaza
Mankato, MN 56002

RE: Tsunami Express Carwash – 1896 Adams Street

To Whom It May Concern,

Tsunami Express Carwash ("Tsunami") is proudly presenting the proposed development plans for a state-of-the-art facility that will serve Mankato (the "City") and the surrounding communities.

Introduction

The proposed development is located directly East of the Target at the River Hills Mall near the intersection of US-14 and MN-22, and the parcel number is R01.09.09.426.034. The property is a 1.74 acre site currently occupied by an abandoned building. The site is currently zoned as B-3 "Commercial" and is also in the Gateway Overlay District The B-3 zoning district allows a car wash as a special use. The proposed facility is a single-story 5,200 SF building including the car wash bay, mechanical room, storage, office, and restroom. Accessory buildings include a 100 SF employee sales booth, 100 SF vacuum pump house, and dumpster enclosure.

Business Operations

Tsunami Express Carwash ("Tsunami") is a high-quality express car wash that uses state-of-the-art equipment and provides customers with a wide variety of services. For washes, Tsunami offers several levels of memberships, or customers can pay for a single wash at every visit. The wash cycles are offered at varying price points to suit the needs of each customer.

The site will house 9 vacuums to serve 18 parking stalls. These stalls will be 13'-0" wide and 18'-6" deep. This is wider than the average parking stall to allow for more maneuverability around the vehicle. The vacuums will be available to customers for free regardless of whether they go through the wash. The free vacuums will only be available for use during regular business hours.

In addition to regular business operations, Tsunami also fosters community connections and is an advocate for supporting local organizations. They offer an opportunity to host fundraisers, giving a modern spin on the famous "community car wash" that was once a popular method of raising funds for various community organizations. Supporters of the organizations will receive a high-quality car wash, and the organization receives 50% of the proceeds from every wash donated back to them.

Regular business hours extend from 7:00 am to 8:00 pm daily. There will be attendants on duty for the full duration of the operating hours to assist customers and maintain the cleanliness of the site. Each shift will employ 2-3 employees with a total staff of approximately 8-10 employees. During these hours, Tsunami expects to service 200-400 customers per day.

PLAN | DESIGN | BUILD

Tsunami currently has five (5) facilities in the Milwaukee area including: Oak Creek, Greenfield, Waukesha, on Fond du Lac Avenue. They are excited to expand into and invest in the communities in Minnesota.

Entitlement Strategy & Timeline

Tsunami will comply with the local approval process by submitting applications for a Conditional Use Permit and Certificate of Design Compliance for Plan Commission consideration. They anticipate receiving municipal approvals in Fall of 2024 with single-phase construction beginning shortly thereafter. The facility is anticipated to be open and operational in summer of 2025.

Site Plan

The site is arranged such that the main car wash building is located on the east side of the site and is oriented to be parallel to MN-22. Tsunami strives to place themselves in areas that make access to their services convenient, allowing their customers to easily incorporate a car wash into their weekly errands.

- Layout: The plan shows (20) parking stalls with (2) being dedicated ADA spaces. The entrance to the wash includes (2) pay stations that allow space for the stacking of up to (15) vehicles.
- Vacuum Design & Placement: The vacuums are aligned along both sides of the parking lot with one vacuum post serving two parking stalls. Each vacuum has (2) hoses that are attached to a central vacuum system that routes to either the main building or the detached pump house at the southeast corner of the site. Each vacuum station is also equipped with a trash bin, a mat clip for easy vacuuming, and a central blower system to help clean those hard-to-reach places.
- Landscaping/Screening: There is ample landscaping throughout the site that has been designed by a professional landscape architect. The dumpster is screened by an enclosure constructed of materials that match the main building, and the pump house is a fully-enclosed secondary building also constructed of similar materials.
- Access: The main entrance to the site is located at the southwest corner of the site off Adams Street. Immediately after entering the site, vehicles can turn left to access the free vacuums, or they can continue straight on to enter the queue for the pay booths and wash. After exiting the wash tunnel, they can proceed straight to an exit-only drive connecting to Adams Street, or they can turn left to access the free vacuums or exit the site at the south.
- Signage: A full signage package complying with all code standards will be submitted for approval. There will be signage on the building as well as one monument sign on the north end of the site directly adjacent to the exit-only onto Adams Street.
- Lighting: The proposed lighting plan includes general pole lighting, wall packs, and canopy lighting that provide an average illumination of 2.0 footcandles. Additional information on each proposed lighting fixture has also been provided.

Architecture

The design of the building consists of beige split-faced concrete block, gray masonry, clear anodized aluminum storefront windows, and a blue standing seam metal roof. The long façade

is broken up with brick accent piers. The windows located in the mechanical room will be spandrel glazing.

The main structure of the building consists of structural CMU walls, precast hollow core planks for the roof of the wash tunnel, steel joists and metal deck for the roof of the mechanical/support rooms and poured-in-place concrete foundation walls.

The tunnel contains dual overhead doors at both the entrance and the exit. The interior door will be insulated metal with vision lites to provide thermal protection and security during non-operational hours; the exterior overhead door will be vinyl roll-up doors that will correspond with Tsunami's blue and yellow branding. These vinyl doors are intended to provide protection from the elements in the winter months when the metal doors are open.

Conclusion

Tsunami Express Carwash is excited for the opportunity to submit their state-of-the-art facility to the Plan Commission to be considered for this site. They will prove to be a valuable addition to the Mankato community.

Documents

Accompanying this narrative are all the documents required for the City to review and consider the project for approval. Also included are supplemental documents that provide additional information that may be of use to the Plan Commission while reviewing our submittal. These supplemental documents include:

- **Exhibit 1:** Lighting Cut Sheets Specific information on all proposed lighting fixtures to supplement the site photometric plan. *(Included in digital submittal only to conserve paper.)*
- **Exhibit 2:** Reclaim System & Equipment Information regarding the reclaim system and equipment.
- **Exhibit 3:** Letter of Approval Letter of recommendation from the River Hills Mall expressing formal support of the project.

Other documents are available upon request. These documents include a geotechnical survey and safety data sheets for all chemicals used for operations.

A sound study is planned be conducted for this site specifically to show the car wash's noise impact on the adjacent properties. The final report will be available and shared with the city as soon as it is received.

Please do not hesitate to contact us with any additional questions.

Sincerely,

Miranda R. Seals

Miranda R. Seals, AIA, NCARB
Architect
The Redmond Company

TSUNAMI EXPRESS CARWASH

MANKATO, MINNESOTA

ISSUED FOR: CITY SUBMITTAL



PROJECT CONTACTS		
	NAME & ADDRESS	CONTACT
CIVIL ENGINEER	CIVIL SITE GROUP 5000 GLENWOOD AVE GOLDEN VALLEY, MN 55422	DAVID KNABLE 612-615-0060 DKNABLE@CIVILSITEGROUP.COM
LANDSCAPE ARCHITECT	CIVIL SITE GROUP 5000 GLENWOOD AVE GOLDEN VALLEY, MN 55422	ROB BINDER 612-615-0060 RBINDER@CIVILSITEGROUP.COM
DEVELOPER	TSUNAMI EXPRESS CAR WASH, LLC. 4800 MEADOWS ROAD, SUITE 300 LAKE OSWEGO, OR 97035	CHRIS SCHULDT 920-744-9882 CHRIS@TSUNAMIEXPRESS.COM
PROPERTY OWNER	TSUNAMI EXPRESS CAR WASH, LLC. 4800 MEADOWS ROAD, SUITE 300 LAKE OSWEGO, OR 97035	CHRIS SCHULDT 920-744-9882 CHRIS@TSUNAMIEXPRESS.COM
ARCHITECT	THE REDMOND COMPANY W228 N745 WESTMOUND DRIVE WAUKESHA, WI, 53186	MIRANDA SEALS 262-549-9600 MSEALS@THEREDMONDCO.COM
SURVEYOR	CIVIL SITE GROUP 5000 GLENWOOD AVE GOLDEN VALLEY, MN 55422	RORY SYNSTELIEN 612-615-0060 X 712 RORY@CIVILSITEGROUP.COM
GEOTECHNICAL ENGINEER	TBD.	TBD.

ALL EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE. CONTACT "GOPHER STATE ONE CALL" (651-454-0002 OR 800-252-1166) FOR UTILITY LOCATIONS, 48 HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY UTILITIES THAT ARE DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.

Know what's **below.**
Call before you dig.

ALL PROJECT WORK SHALL CONFORM TO THE CITY OF MANKATO STANDARD SPECIFICATIONS, CITY ENGINEERS ASSOCIATION OF MINNESOTA (CEAM) "STANDARD UTILITY SPECIFICATIONS" CURRENT EDITION, AND MINNESOTA DEPARTMENT OF TRANSPORTATION (MNDOT) "STANDARD SPECIFICATIONS FOR CONSTRUCTION" CURRENT EDITION IN THAT ORDER. IMMEDIATELY NOTIFY ENGINEER FOR CLARIFICATION PRIOR TO CONSTRUCTION.

SHEET INDEX	
SHEET NUMBER	SHEET TITLE
C0.0	TITLE SHEET
C1.0	REMOVALS PLAN
C2.0	SITE PLAN
C3.0	GRADING PLAN
C4.0	UTILITY PLAN
C5.0	CIVIL DETAILS
C5.1	CIVIL DETAILS
C5.2	CIVIL DETAILS
C5.3	CIVIL DETAILS
L1.0	LANDSCAPE PLAN
L1.1	LANDSCAPE PLAN NOTES & DETAILS
SW1.0	SWPPP - EXISTING CONDITIONS
SW1.1	SWPPP - PROPOSED CONDITIONS
SW1.2	SWPPP - DETAILS
SW1.3	SWPPP - NARRATIVE
SW1.4	SWPPP - ATTACHMENTS
SW1.5	SWPPP - ATTACHMENTS

CivilSite GROUP
Civil Engineering • Surveying • Landscape Architecture
5000 Glenwood Avenue
Golden Valley, MN 55422
civilsitegroup.com 612-615-0060

PRELIMINARY: NOT FOR CONSTRUCTION

PROJECT
TSUNAMI EXPRESS CAR WASH
1896 ADAMS ST., MANKATO, MN 56001

OWNER
TSUNAMI EXPRESS CAR WASH, LLC.
4800 MEADOWS ROAD, #300, LAKE OSWEGO, OREGON 97035

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.

David J. Knaeble
DATE 07/23/24 LICENSE NO. 48776

ISSUE/SUBMITTAL SUMMARY

DATE	DESCRIPTION
7/23/24	CITY SUBMITTAL

PROJECT MANAGER	DAVID KNABLE
CONTACT NUMBER	612-615-0060
DRAWN BY	DK, BB
REVIEWED BY	DK
PROJECT NUMBER	24290

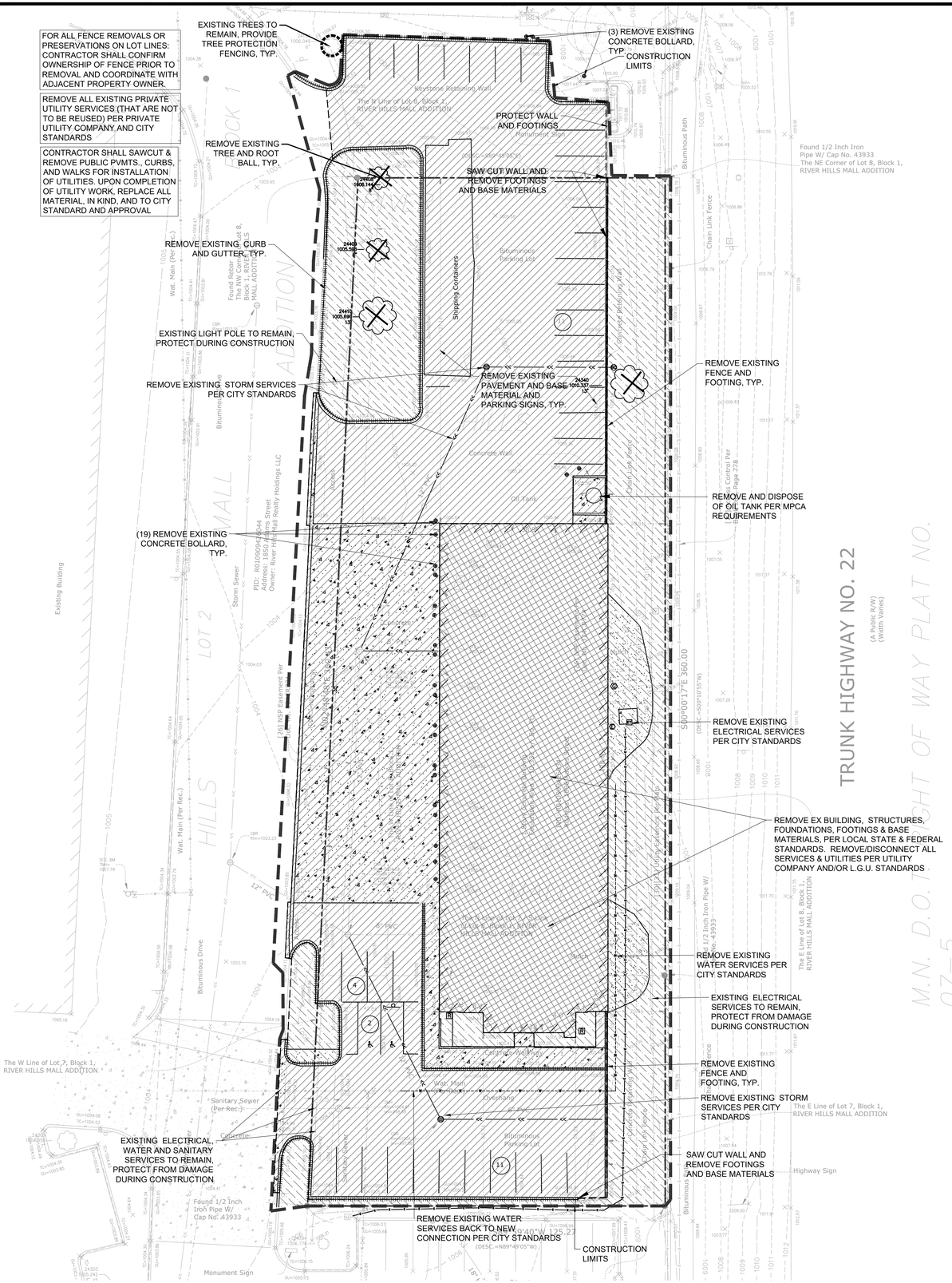
REVISION SUMMARY

DATE	DESCRIPTION

TITLE SHEET

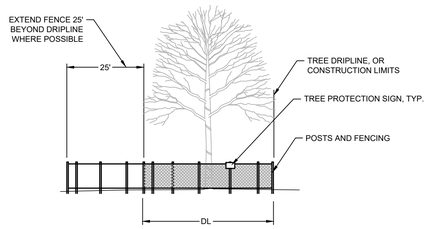
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REMOVAL NOTES:

1. ALL EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE. CONTACT "GOPHER STATE ONE CALL" (651-454-0002 OR 800-252-1166) FOR UTILITY LOCATIONS, 48 HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY UTILITIES THAT ARE DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.
2. SEE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) PLAN FOR CONSTRUCTION STORM WATER MANAGEMENT PLAN.
3. REMOVAL OF MATERIALS NOTED ON THE DRAWINGS SHALL BE IN ACCORDANCE WITH MNDOT, STATE AND LOCAL REGULATIONS.
4. REMOVAL OF PRIVATE UTILITIES SHALL BE COORDINATED WITH UTILITY OWNER PRIOR TO CONSTRUCTION ACTIVITIES.
5. EXISTING PAVEMENTS SHALL BE SAWCUT IN LOCATIONS AS SHOWN ON THE DRAWINGS OR THE NEAREST JOINT FOR PROPOSED PAVEMENT CONNECTIONS.
6. REMOVED MATERIALS SHALL BE DISPOSED OF TO A LEGAL OFF-SITE LOCATION AND IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS.
7. ABANDON, REMOVAL, CONNECTION, AND PROTECTION NOTES SHOWN ON THE DRAWINGS ARE APPROXIMATE. COORDINATE WITH PROPOSED PLANS.
8. EXISTING ON-SITE FEATURES NOT NOTED FOR REMOVAL SHALL BE PROTECTED THROUGHOUT THE DURATION OF THE CONTRACT.
9. PROPERTY LINES SHALL BE CONSIDERED GENERAL CONSTRUCTION LIMITS UNLESS OTHERWISE NOTED ON THE DRAWINGS. WORK WITHIN THE GENERAL CONSTRUCTION LIMITS SHALL INCLUDE STAGING, DEMOLITION AND CLEAN-UP OPERATIONS AS WELL AS CONSTRUCTION SHOWN ON THE DRAWINGS.
10. MINOR WORK OUTSIDE OF THE GENERAL CONSTRUCTION LIMITS SHALL BE ALLOWED AS SHOWN ON THE PLAN AND PER CITY REQUIREMENTS. FOR ANY WORK ON ADJACENT PRIVATE PROPERTY, THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM THE ADJACENT PROPERTY OWNER PRIOR TO ANY WORK.
11. DAMAGE BEYOND THE PROPERTY LIMITS CAUSED BY CONSTRUCTION ACTIVITY SHALL BE REPAIRED IN A MANNER APPROVED BY THE ENGINEER/LANDSCAPE ARCHITECT OR IN ACCORDANCE WITH THE CITY.
12. PROPOSED WORK (BUILDING AND CIVIL) SHALL NOT DISTURB EXISTING UTILITIES UNLESS OTHERWISE SHOWN ON THE DRAWINGS AND APPROVED BY THE CITY PRIOR TO CONSTRUCTION.
13. SITE SECURITY MAY BE NECESSARY AND PROVIDED IN A MANNER TO PROHIBIT VANDALISM, AND THEFT, DURING AND AFTER NORMAL WORK HOURS, THROUGHOUT THE DURATION OF THE CONTRACT. SECURITY MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY.
14. VEHICULAR ACCESS TO THE SITE SHALL BE MAINTAINED FOR DELIVERY AND INSPECTION ACCESS DURING NORMAL OPERATING HOURS. AT NO POINT THROUGHOUT THE DURATION OF THE CONTRACT SHALL CIRCULATION OF ADJACENT STREETS BE BLOCKED WITHOUT APPROVAL BY THE CITY PRIOR TO CONSTRUCTION ACTIVITIES.
15. ALL TRAFFIC CONTROLS SHALL BE PROVIDED AND ESTABLISHED PER THE REQUIREMENTS OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD) AND THE CITY. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, SIGNAGE, BARRICADES, FLASHERS, AND FLAGGERS AS NEEDED. ALL PUBLIC STREETS SHALL REMAIN OPEN TO TRAFFIC AT ALL TIMES. NO ROAD CLOSURES SHALL BE PERMITTED WITHOUT APPROVAL BY THE CITY.
16. SHORING FOR BUILDING EXCAVATION MAY BE USED AT THE DISCRETION OF THE CONTRACTOR AND AS APPROVED BY THE OWNERS REPRESENTATIVE AND THE CITY PRIOR TO CONSTRUCTION ACTIVITIES.
17. STAGING, DEMOLITION, AND CLEAN-UP AREAS SHALL BE WITHIN THE PROPERTY LIMITS AS SHOWN ON THE DRAWINGS AND MAINTAINED IN A MANNER AS REQUIRED BY THE CITY.
18. ALL EXISTING SITE TRAFFIC/REGULATORY SIGNAGE TO BE INVENTORIED AND IF REMOVED FOR CONSTRUCTION SHALL BE RETURNED TO LGU.
19. ALL EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE. CONTACT "GOPHER STATE ONE CALL" (651-454-0002 OR 800-252-1166) FOR UTILITY LOCATIONS, 48 HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY UTILITIES THAT ARE DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.



FURNISH A AND INSTALL TEMPORARY FENCE AT THE TREE'S DRIP LINE OR CONSTRUCTION LIMITS AS SHOWN ON PLAN, PRIOR TO ANY CONSTRUCTION. WHERE POSSIBLE PLACE FENCE 25' BEYOND DRIP LINE. PLACE TREE PROTECTION SIGN ON POSTS, ONE PER INDIVIDUAL TREE (FACING CONSTRUCTION ACTIVITY), OR ONE EVERY 100' LF ALONG A GROVE OR MULTI-TREE PROTECTION AREA.

1 TREE PROTECTION
N T S

CITY OF MANKATO REMOVAL NOTES:

1. RESERVED FOR CITY SPECIFIC REMOVAL NOTES.

OWNER INFORMATION

TSUNAMI EXPRESS CAR WASH, LLC.
4800 MEADOWS ROAD, SUITE 300
LAKE OSWEGO, OR 97035
CHRIS SCHULDT
920-744-9882
CHRIS@TSUNAMIEXPRESS.COM

EROSION CONTROL NOTES:

SEE SWPPP ON SHEETS SW1.0 - SW1.3

REMOVALS PLAN LEGEND:

- REMOVAL OF PAVEMENT AND ALL BASE MATERIAL, INCLUDING BIT., CONC., AND GRAVEL PVMTS.
- REMOVAL OF STRUCTURE INCLUDING ALL FOOTINGS AND FOUNDATIONS.
- REMOVAL OF TREES AND VEGETATION INCLUDING STUMPS AND ROOT SYSTEMS
- CONSTRUCTION LIMITS
- PROPERTY LINE
- REMOVE CURB AND GUTTER. IF IN RIGHT-OF-WAY, COORDINATE WITH LOCAL GOVERNING UNIT.
- TREE PROTECTION
- TREE REMOVAL - INCLUDING ROOTS AND STUMPS

811 Know what's below. Call before you dig.

N

1" = 20'-0"
10'-0" 0 20'-0"

CivilSite GROUP
Civil Engineering • Surveying • Landscape Architecture
5000 Glenwood Avenue
Golden Valley, MN 55422
civilsitegroup.com 612-615-0060

PRELIMINARY: NOT FOR CONSTRUCTION

PROJECT: TSUNAMI EXPRESS CAR WASH
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4800 MEADOWS ROAD, #300, LAKE OSWEGO, OREGON 97035

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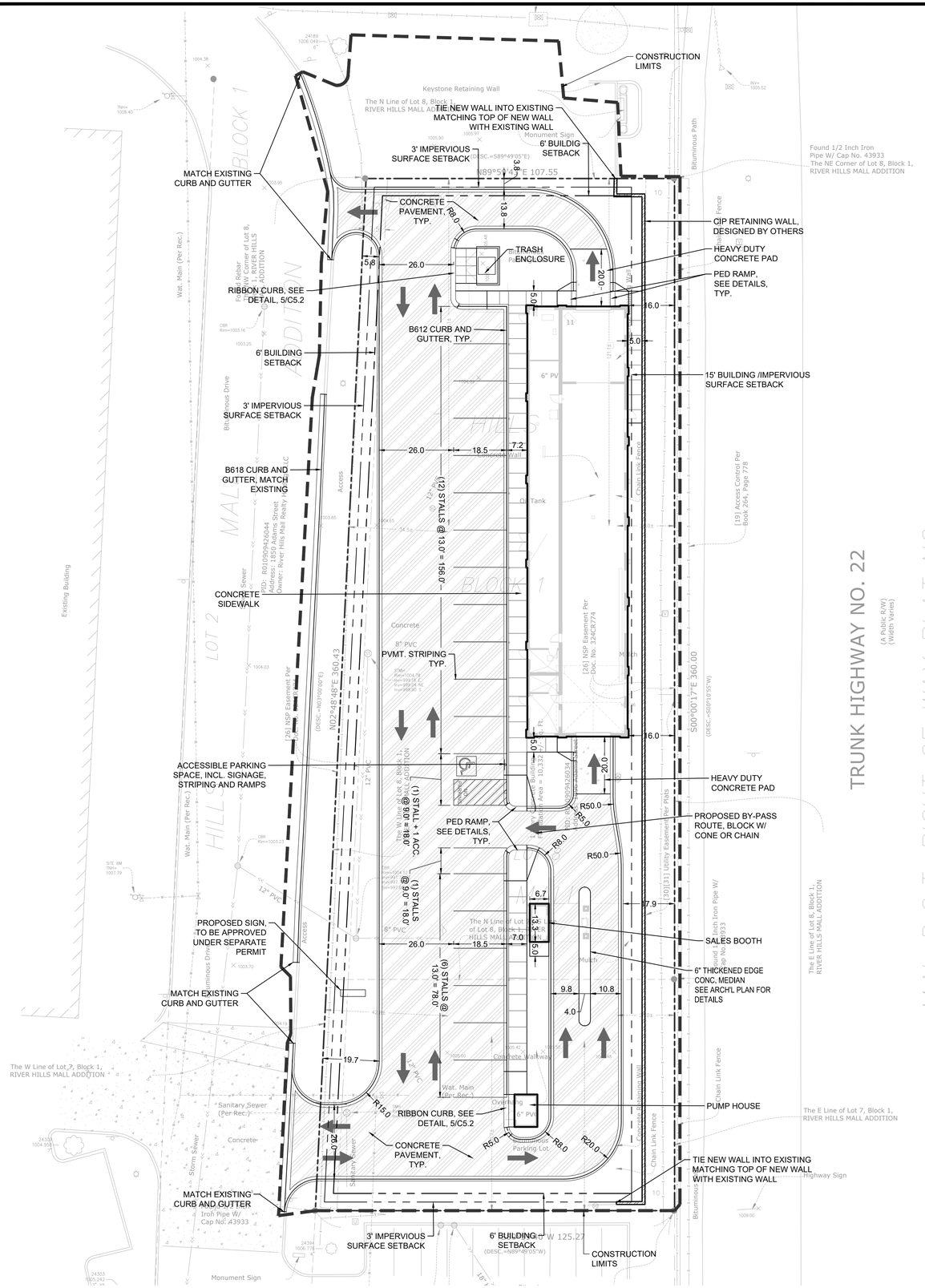
REVISION SUMMARY

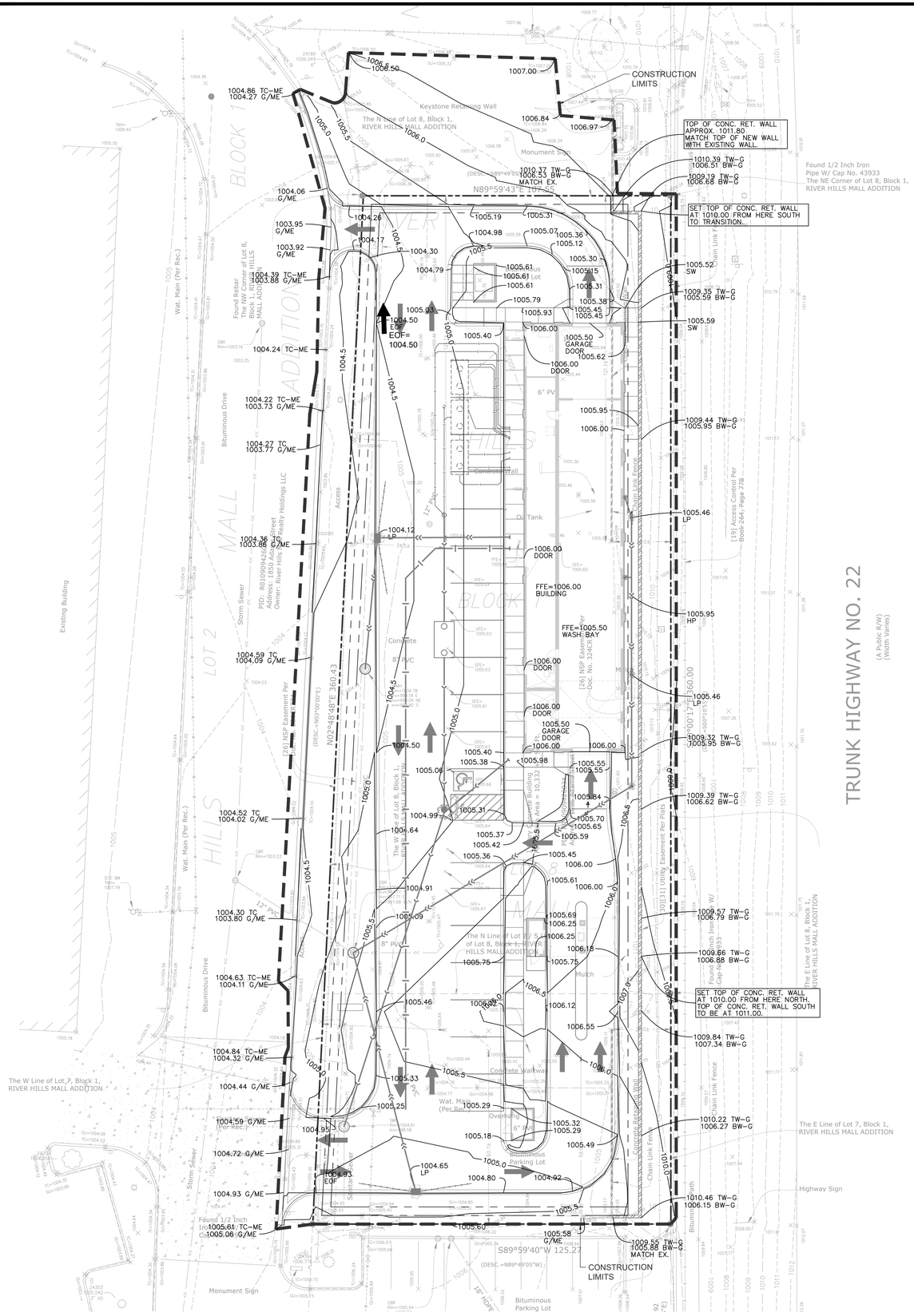
DATE	DESCRIPTION

REMOVALS PLAN

C1.0

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CONSTRUCTION LIMITS
Keystone Retaining Wall
The N Line of Lot 8, Block 1, RIVER HILLS MALL ADDITION
TIE NEW WALL INTO EXISTING MATCHING TOP OF NEW WALL WITH EXISTING WALL
Monument Sign
3' IMPERVIOUS SURFACE SETBACK
6' BUILDING SETBACK
(DESC.=S89°49'05"E)
N89°50'43"E 107.55
MATCH EXISTING CURB AND GUTTER
CONCRETE PAVEMENT, TYP.
R8.0
13.8
CIP RETAINING WALL, DESIGNED BY OTHERS
TRASH ENCLOSURE
HEAVY DUTY CONCRETE PAD
PED RAMP, SEE DETAILS, TYP.
5.0
26.0
20.0
16.0
RIBBON CURB, SEE DETAIL, 5/C5.2
B612 CURB AND GUTTER, TYP.
6' BUILDING SETBACK
15' BUILDING /IMPERVIOUS SURFACE SETBACK
3' IMPERVIOUS SURFACE SETBACK
B618 CURB AND GUTTER, MATCH EXISTING
18.5
7.2
(12) STALLS @ 13.0' = 156.0'
CONCRETE SIDEWALK
Concrete
8" PVC
PVMT. STRIPING TYP.
ACCESSIBLE PARKING SPACE, INCL. SIGNAGE, STRIPING AND RAMPS
HEAVY DUTY CONCRETE PAD
PROPOSED BY-PASS ROUTE, BLOCK W/ CONE OR CHAIN
PED RAMP, SEE DETAILS, TYP.
R50.0
R5.0
R8.0
(1) STALL + 1 ACC. @ 8.0' = 18.0'
(1) STALLS @ 8.0' = 18.0'
6.7
3.5
5.9
17.9
PROPOSED SIGN, TO BE APPROVED UNDER SEPARATE PERMIT
SALES BOOTH
6" THICKENED EDGE CONC. MEDIAN SEE ARCH'L PLAN FOR DETAILS
(6) STALLS @ 13.0' = 78.0'
9.8
10.8
4.0
MATCH EXISTING CURB AND GUTTER
19.7
R15.0
R20.0
RIBBON CURB, SEE DETAIL, 5/C5.2
PUMP HOUSE
CONCRETE PAVEMENT, TYP.
TIE NEW WALL INTO EXISTING MATCHING TOP OF NEW WALL WITH EXISTING WALL
3' IMPERVIOUS SURFACE SETBACK
6' BUILDING SETBACK
(DESC.=N89°49'05"W)
CONSTRUCTION LIMITS
Found 1/2 Inch Iron Pipe W/ Cap No. 43933 The NE Corner of Lot 8, Block 1, RIVER HILLS MALL ADDITION
Bituminous Path
Chain Link Fence
[19] Access Control Per Book 264, Page 778
[26] NSP Easement Per Doc. No. 324CR774
[30][31] Utility Easement Per Plats
TRUNK HIGHWAY NO. 22
(A Public R/W) (Width Varies)
M.N. D.O.T. RIGHT OF WAY PLAT NO. 07–5
Found 1/2 Inch Iron Pipe W/ Cap No. 43933
The E Line of Lot 8, Block 1, RIVER HILLS MALL ADDITION
The W Line of Lot 7, Block 1, RIVER HILLS MALL ADDITION
The E Line of Lot 7, Block 1, RIVER HILLS MALL ADDITION
Highway Sign
Existing Building
Bituminous Drive
Access
Wat. Main (Per Rec.)
Sanitary Sewer (Per Rec.)
Storm Sewer
Curb Inlet
Control
Mulch
Concrete Walkway
Parking Lot
Chain Link Fence
Owner: Sign
6" PV
6" PV
12" PVC
6" PVC
Found 1/2 Inch Iron Pipe W/ Cap No. 43933
The W Line of Lot 8, Block 1, RIVER HILLS MALL ADDITION
[26] NSP Easement Per Doc. No. 324CR774
(DESC.=N02°48'46"E 360.43')
S00°00'17"E 360.00
(DESC.=S00°01'55"W)
N89°49'05"E 125.27
Monument Sign
Iron Pipe W/ Cap No. 43933
Sanitary Sewer (Per Rec.)
Concrete
Storm Sewer
Curb Inlet
Control
Bituminous Drive
Access
Wat. Main (Per Rec.)
Existing Building
Bituminous Path
Chain Link Fence



GENERAL GRADING NOTES:

1. **CONTRACTOR SHALL VERIFY ALL BUILDING ELEVATIONS, (FFE, LFE, GFE), PRIOR TO CONSTRUCTION BY CROSS CHECKING WITH ARCHITECTURAL, STRUCTURAL AND CIVIL ELEVATIONS FOR EQUIVALENT "100" ELEVATIONS. THIS MUST BE DONE PRIOR TO EXCAVATION AND INSTALLATION OF ANY FOOTING MATERIALS. VERIFICATION OF THIS COORDINATION SHALL BE CONFIRMED IN WRITING BY CIVIL, SURVEYOR, ARCHITECTURAL, STRUCTURAL AND CONTRACTOR PRIOR TO CONSTRUCTION.**
2. ALL EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE. CONTACT "GOPHER STATE ONE CALL" (651-454-0002 OR 800-252-1166) FOR UTILITY LOCATIONS, 48 HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY UTILITIES THAT ARE DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.
3. SEE SITE PLAN FOR HORIZONTAL LAYOUT & GENERAL GRADING NOTES.
4. THE CONTRACTOR SHALL COMPLETE THE SITE GRADING CONSTRUCTION (INCLUDING BUT NOT LIMITED TO SITE PREPARATION, SOIL CORRECTION, EXCAVATION, EMBANKMENT, ETC.) IN ACCORDANCE WITH THE REQUIREMENTS OF THE OWNER'S SOILS ENGINEER. ALL SOIL TESTING SHALL BE COMPLETED BY THE OWNER'S SOILS ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED SOIL TESTS AND INSPECTIONS WITH THE SOILS ENGINEER.
5. ANY ELEMENTS OF AN EARTH RETENTION SYSTEM AND RELATED EXCAVATIONS THAT FALL WITHIN THE PUBLIC RIGHT OF WAY WILL REQUIRE A "RIGHT OF WAY EXCAVATION PERMIT". CONTRACTOR IS RESPONSIBLE FOR AQUIRING THIS PERMIT PRIOR TO CONSTRUCTION IF APPLICABLE
6. GRADING AND EXCAVATION ACTIVITIES SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT REQUIREMENTS & PERMIT REQUIREMENTS OF THE CITY.
7. PROPOSED SPOT GRADES ARE FLOW-LINE FINISHED GRADE ELEVATIONS, UNLESS OTHERWISE NOTED.
8. GRADES OF WALKS SHALL BE INSTALLED WITH 5% MAX. LONGITUDINAL SLOPE AND 1% MIN. AND 2% MAX. CROSS SLOPE, UNLESS OTHERWISE NOTED.
9. PROPOSED SLOPES SHALL NOT EXCEED 3:1 UNLESS INDICATED OTHERWISE ON THE DRAWINGS. MAXIMUM SLOPES IN MAINTAINED AREAS IS 4:1.
10. PROPOSED RETAINING WALLS, FREESTANDING WALLS, OR COMBINATION OF WALL TYPES GREATER THAN 4' IN HEIGHT SHALL BE DESIGNED AND ENGINEERED BY A REGISTERED RETAINING WALL ENGINEER. DESIGN DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF GRADE STAKES THROUGHOUT THE DURATION OF CONSTRUCTION TO ESTABLISH PROPER GRADES. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR A FINAL FIELD CHECK OF FINISHED GRADES ACCEPTABLE TO THE ENGINEER/LANDSCAPE ARCHITECT PRIOR TO TOPSOIL AND SODDING ACTIVITIES.
12. IF EXCESS OR SHORTAGE OF SOIL MATERIAL EXISTS, THE CONTRACTOR SHALL TRANSPORT ALL EXCESS SOIL MATERIAL OFF THE SITE TO AN AREA SELECTED BY THE CONTRACTOR, OR IMPORT SUITABLE MATERIAL TO THE SITE.
13. EXCAVATE TOPSOIL FROM AREAS TO BE FURTHER EXCAVATED OR REGRADED AND STOCKPILE IN AREAS DESIGNATED ON THE SITE. THE CONTRACTOR SHALL SALVAGE ENOUGH TOPSOIL FOR RESPREADING ON THE SITE AS SPECIFIED. EXCESS TOPSOIL SHALL BE PLACED IN EMBANKMENT AREAS, OUTSIDE OF BUILDING PADS, ROADWAYS AND PARKING AREAS. THE CONTRACTOR SHALL SUBCUT CUT AREAS, WHERE TURF IS TO BE ESTABLISHED, TO A DEPTH OF 6 INCHES. RESPREAD TOPSOIL IN AREAS WHERE TURF IS TO BE ESTABLISHED TO A MINIMUM DEPTH OF 6 INCHES.
14. FINISHED GRADING SHALL BE COMPLETED. THE CONTRACTOR SHALL UNIFORMLY GRADE AREAS WITHIN LIMITS OF GRADING, INCLUDING ADJACENT TRANSITION AREAS. PROVIDE A SMOOTH FINISHED SURFACE WITHIN SPECIFIED TOLERANCES, WITH UNIFORM LEVELS OR SLOPES BETWEEN POINTS WHERE ELEVATIONS ARE SHOWN, OR BETWEEN SUCH POINTS AND EXISTING GRADES. AREAS THAT HAVE BEEN FINISH GRADED SHALL BE PROTECTED FROM SUBSEQUENT CONSTRUCTION OPERATIONS, TRAFFIC AND EROSION. REPAIR ALL AREAS THAT HAVE BECOME RUTTED BY TRAFFIC OR ERODED BY WATER OR HAS SETTLED BELOW THE CORRECT GRADE. ALL AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO EQUAL OR BETTER THAN ORIGINAL CONDITION OR TO THE REQUIREMENTS OF THE NEW WORK.
15. PRIOR TO PLACEMENT OF THE AGGREGATE BASE, A TEST ROLL WILL BE REQUIRED ON THE STREET AND/OR PARKING AREA SUBGRADE. THE CONTRACTOR SHALL PROVIDE A LOADED TANDEM AXLE TRUCK WITH A GROSS WEIGHT OF 25 TONS. THE TEST ROLLING SHALL BE AT THE DIRECTION OF THE SOILS ENGINEER AND SHALL BE COMPLETED IN AREAS AS DIRECTED BY THE SOILS ENGINEER. THE SOILS ENGINEER SHALL DETERMINE WHICH SECTIONS OF THE STREET OR PARKING AREA ARE UNSTABLE. CORRECTION OF THE SUBGRADE SOILS SHALL BE COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF THE SOILS ENGINEER. NO TEST ROLL SHALL OCCUR WITHIN 10' OF ANY UNDERGROUND STORM RETENTION/DETENTION SYSTEMS.
16. TOLERANCES
    - 16.1. THE BUILDING SUBGRADE FINISHED SURFACE ELEVATION SHALL NOT VARY BY MORE THAN 0.30 FOOT ABOVE, OR 0.30 FOOT BELOW, THE PRESCRIBED ELEVATION AT ANY POINT WHERE MEASUREMENT IS MADE.
    - 16.2. THE STREET OR PARKING AREA SUBGRADE FINISHED SURFACE ELEVATION SHALL NOT VARY BY MORE THAN 0.05 FOOT ABOVE, OR 0.10 FOOT BELOW, THE PRESCRIBED ELEVATION OF ANY POINT WHERE MEASUREMENT IS MADE.
    - 16.3. AREAS WHICH ARE TO RECEIVE TOPSOIL SHALL BE GRADED TO WITHIN 0.30 FOOT ABOVE OR BELOW THE REQUIRED ELEVATION, UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
    - 16.4. TOPSOIL SHALL BE GRADED TO PLUS OR MINUS 1/2 INCH OF THE SPECIFIED THICKNESS.
17. MAINTENANCE
    - 17.1. THE CONTRACTOR SHALL PROTECT NEWLY GRADED AREAS FROM TRAFFIC AND EROSION, AND KEEP AREA FREE OF TRASH AND DEBRIS.
    - 17.2. CONTRACTOR SHALL REPAIR AND REESTABLISH GRADES IN SETTLED, ERODED AND RUTTED AREAS TO SPECIFIED TOLERANCES. DURING THE CONSTRUCTION, IF REQUIRED, AND DURING THE WARRANTY PERIOD, ERODED AREAS WHERE TURF IS TO BE ESTABLISHED SHALL BE RESEEDED AND MULCHED.
    - 17.3. WHERE COMPLETED COMPACTED AREAS ARE DISTURBED BY SUBSEQUENT CONSTRUCTION OPERATIONS OR ADVERSE WEATHER, CONTRACTOR SHALL SCARIFY, SURFACE, RESHAPE, AND COMPACT TO REQUIRED DENSITY PRIOR TO FURTHER CONSTRUCTION.

CITY OF MANKATO GRADING NOTES:

1. RESERVED FOR CITY SPECIFIC GRADING NOTES.

GRADING PLAN LEGEND:

1125	EX. 1' CONTOUR ELEVATION INTERVAL
1137	1.0' CONTOUR ELEVATION INTERVAL
41.26	SPOT GRADE ELEVATION (GUTTER/FLOW LINE UNLESS OTHERWISE NOTED)
891.00 G	SPOT GRADE ELEVATION GUTTER
891.00 TC	SPOT GRADE ELEVATION TOP OF CURB
891.00 BS/TS	SPOT GRADE ELEVATION BOTTOM OF STAIRS/TOP OF STAIRS
891.00 ME	SPOT GRADE ELEVATION MATCH EXISTING
SB	GRADE BREAK - HIGH POINTS
TO	CURB AND GUTTER (T.O = TIP OUT)
EOF=1004.50	EMERGENCY OVERFLOW
	CONSTRUCTION LIMITS

EROSION CONTROL NOTES:

SEE SWPPP ON SHEETS SW1.0 - SW1.3

Know what's **below.** **Call** before you dig.

1" = 20'-0"
10'-0" 0 20'-0"

CivilSite GROUP
Civil Engineering · Surveying · Landscape Architecture
5000 Glenwood Avenue
Golden Valley, MN 55422
civilsitegroup.com 612-615-0060

PRELIMINARY: NOT FOR CONSTRUCTION

PROJECT: TSUNAMI EXPRESS CAR WASH
1896 ADAMS ST., MANKATO, MN 56001

OWNER: TSUNAMI EXPRESS CAR WASH, LLC.
4800 MEADOWS ROAD, #300, LAKE OSWEGO, OREGON 97035

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.

David J. Knaeble
DATE 07/23/24 LICENSE NO. 48776

ISSUE/SUBMITTAL SUMMARY

DATE	DESCRIPTION
7/23/24	CITY SUBMITTAL

PROJECT MANAGER	DAVID KNABLE
CONTACT NUMBER	612-615-0060
DRAWN BY	DK, BB
REVIEWED BY	DK
PROJECT NUMBER	24290

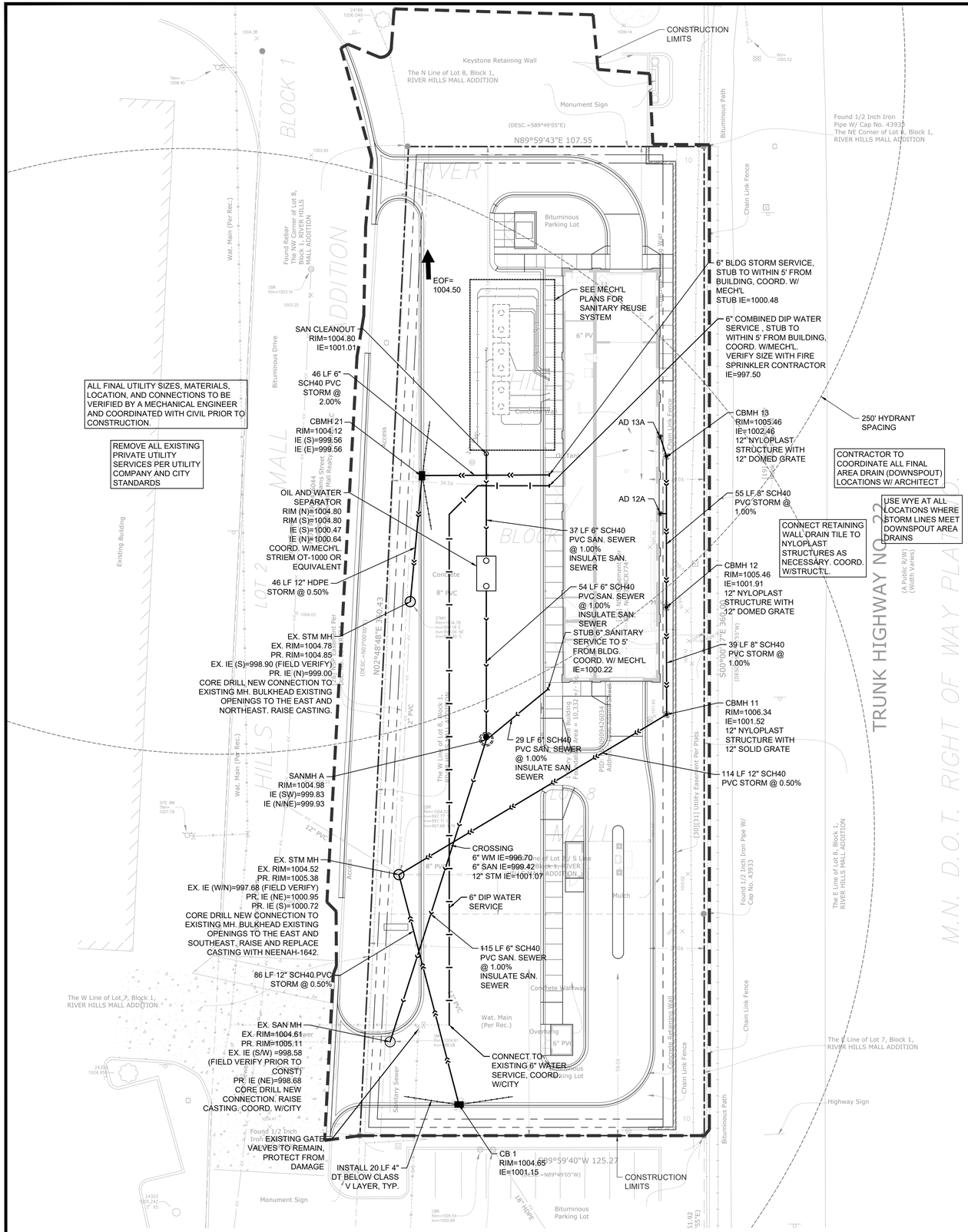
REVISION SUMMARY

DATE	DESCRIPTION

GRADING PLAN

C3.0

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GENERAL UTILITY NOTES:

1. ALL EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE. CONTACT "GOPHER STATE ONE CALL" (651-454-0002 OR 800-252-1166) FOR UTILITY LOCATIONS, 48 HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY UTILITIES THAT ARE DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.
2. SEE SITE PLAN FOR HORIZONTAL DIMENSIONS AND LAYOUT.
3. CONTRACTOR SHALL FIELD VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES AND TOPOGRAPHIC FEATURES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF DISCREPANCIES OR VARIATIONS FROM THE PLANS.
4. UTILITY INSTALLATION SHALL CONFORM TO THE CURRENT EDITION OF "STANDARD SPECIFICATIONS FOR WATER MAIN AND SERVICE LINE INSTALLATION" AND "SANITARY SEWER AND STORM SEWER INSTALLATION" AS PREPARED BY THE CITY ENGINEERS ASSOCIATION OF MINNESOTA (CEAM), AND SHALL CONFORM WITH THE REQUIREMENTS OF THE CITY AND THE PROJECT SPECIFICATIONS.
5. CASTINGS SHALL BE SALVAGED FROM STRUCTURE REMOVALS AND RE-USED OR PLACED AT THE DIRECTION OF THE OWNER.
6. ALL WATER PIPE SHALL BE CLASS 52 DUCTILE IRON PIPE (DIP) AWWA C151, ASME B16.4, AWWA C110, AWWA C153 UNLESS OTHERWISE NOTED.
7. ALL SANITARY SEWER SHALL BE SDR 26 POLYVINYL CHLORIDE (PVC) ASTM D3034 & F679, OR SCH 40 ASTM D1785, 2665, ASTM F794, 1866) UNLESS OTHERWISE NOTED.
8. ALL STORM SEWER PIPE SHALL BE HDPE ASTM F714 OR F2306 WITH ASTM D3212 SPEC FITTINGS UNLESS OTHERWISE NOTED.
9. PIPE LENGTHS SHOWN ARE FROM CENTER TO CENTER OF STRUCTURE OR TO END OF FLARED END SECTION.
10. UTILITIES ON THE PLAN ARE SHOWN TO WITHIN 5' OF THE BUILDING FOOTPRINT. THE CONTRACTOR IS ULTIMATELY RESPONSIBLE FOR THE FINAL CONNECTION TO BUILDING LINES. COORDINATE WITH ARCHITECTURAL AND MECHANICAL PLANS.
11. CATCH BASINS AND MANHOLES IN PAVED AREAS SHALL BE SUMPED 0.04 FEET. ALL CATCH BASINS IN GUTTERS SHALL BE SUMPED 0.15 FEET PER DETAILS. RIM ELEVATIONS SHOWN ON THIS PLAN DO NOT REFLECT SUMPED ELEVATIONS.
12. ALL FIRE HYDRANTS SHALL BE LOCATED 5 FEET BEHIND BACK OF CURB UNLESS OTHERWISE NOTED.
13. HYDRANT TYPE, VALVE, AND CONNECTION SHALL BE IN ACCORDANCE WITH CITY REQUIREMENTS. HYDRANT EXTENSIONS ARE INCIDENTAL.
14. A MINIMUM OF 8 FEET OF COVER IS REQUIRED OVER ALL WATERMAIN, UNLESS OTHERWISE NOTED. EXTRA DEPTH MAY BE REQUIRED TO MAINTAIN A MINIMUM OF 18" VERTICAL SEPARATION TO SANITARY OR STORM SEWER LINES. EXTRA DEPTH WATERMAIN IS INCIDENTAL.
15. A MINIMUM OF 18 INCHES OF VERTICAL SEPARATION AND 10 FEET OF HORIZONTAL SEPARATION IS REQUIRED FOR ALL UTILITIES, UNLESS OTHERWISE NOTED.
16. ALL CONNECTIONS TO EXISTING UTILITIES SHALL BE IN ACCORDANCE WITH CITY STANDARDS AND COORDINATED WITH THE CITY PRIOR TO CONSTRUCTION.
17. CONNECTIONS TO EXISTING STRUCTURES SHALL BE CORE-DRILLED.
18. COORDINATE LOCATIONS AND SIZES OF SERVICE CONNECTIONS WITH THE MECHANICAL DRAWINGS.
19. COORDINATE INSTALLATION AND SCHEDULING OF THE INSTALLATION OF UTILITIES WITH ADJACENT CONTRACTORS AND CITY STAFF.
20. ALL STREET REPAIRS AND PATCHING SHALL BE PERFORMED PER THE REQUIREMENTS OF THE CITY. ALL PAVEMENT CONNECTIONS SHALL BE SAWCUT. ALL TRAFFIC CONTROLS SHALL BE PROVIDED BY THE CONTRACTOR AND SHALL BE ESTABLISHED PER THE REQUIREMENTS OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD) AND THE CITY. THIS SHALL INCLUDE BUT NOT BE LIMITED TO SIGNAGE, BARRICADES, FLASHERS, AND FLAGGERS AS NEEDED. ALL PUBLIC STREETS SHALL BE OPEN TO TRAFFIC AT ALL TIMES. NO ROAD CLOSURES SHALL BE PERMITTED WITHOUT APPROVAL BY THE CITY.
21. ALL STRUCTURES, PUBLIC AND PRIVATE, SHALL BE ADJUSTED TO PROPOSED GRADES WHERE REQUIRED. THE REQUIREMENTS OF ALL OWNERS MUST BE COMPLIED WITH. STRUCTURES BEING RESET TO PAVED AREAS MUST MEET OWNERS REQUIREMENTS FOR TRAFFIC LOADING.
22. CONTRACTOR SHALL COORDINATE ALL WORK WITH PRIVATE UTILITY COMPANIES.
23. CONTRACTOR SHALL COORDINATE CONNECTION OF IRRIGATION SERVICE TO UTILITIES. COORDINATE THE INSTALLATION OF IRRIGATION SLEEVES NECESSARY AS TO NOT IMPACT INSTALLATION OF UTILITIES.
24. CONTRACTOR SHALL MAINTAIN AS-BUILT PLANS THROUGHOUT CONSTRUCTION AND SUBMIT THESE PLANS TO ENGINEER UPON COMPLETION OF WORK.
25. ALL JOINTS AND CONNECTIONS IN STORM SEWER SYSTEM SHALL BE GASTIGHT OR WATERTIGHT. APPROVED RESILIENT RUBBER JOINTS MUST BE USED TO MAKE WATERTIGHT CONNECTIONS TO MANHOLES, CATCHBASINS, OR OTHER STRUCTURES.
26. ALL PORTIONS OF THE STORM SEWER SYSTEM LOCATED WITHIN 10 FEET OF THE BUILDING OR WATER SERVICE LINE MUST BE TESTED IN ACCORDANCE WITH MN RULES, CHAPTER 4714, SECTION 1109.0.
27. FOR ALL SITES LOCATED IN CLAY SOIL AREAS, DRAIN TILE MUST BE INSTALLED AT ALL LOW POINT CATCH BASINS 25' IN EACH DIRECTION. SEE PLAN AND DETAIL. INSTALL LOW POINT DRAIN TILE PER PLANS AND GEOTECHNICAL REPORT RECOMMENDATIONS AND REQUIREMENTS.

CITY OF MANKATO UTILITY NOTES:

1. RESERVED FOR CITY SPECIFIC UTILITY NOTES.

CASTING SCHEDULE

CATCH BASIN/MANHOLE/RISER	GRATE TYPE (NEENAH)	REMARKS
CB 1, CBMH 21	R-3067-V	STORM CURB INLET
SAN MH A	R-1733	SANITARY MANHOLE

NOTE:
1. CASTINGS SHALL BE NEENAH FOUNDRY CASTINGS OR APPROVED EQUIVALENT.
2. CASTINGS SHALL BE STAMPED WITH APPROPRIATE UTILITY NAME ("STORM SEWER", "SANITARY SEWER")

CASTING SCHEDULE
N T S

DRAWN @ 0.5 size

AREA DRAIN SCHEDULE (SEE DETAILS)

AREA DRAIN NUMBER	RIM	INVERT	INVERT WYE	INVERT PIPE/MH	PIPE SIZE AND MATERIAL	PIPE LENGTH (FT)	PIPE SLOPE (FT/FT)
AD 12A	1006.00	1002.46	1002.42	1002.25	6" PVC SCH 40	2	0.0200
AD 13A	1006.00	1002.60	1002.46	1002.46	6" PVC SCH 40	7	0.0200

UTILITY PLAN LEGEND:

- CATCH BASIN
- MANHOLE
- GATE VALVE AND VALVE BOX
- PROPOSED FIRE HYDRANT
- DRAINTILE
- WATER MAIN
- SANITARY SEWER
- STORM SEWER
- FES AND RIP RAP
- TRENCH DRAIN
- CONSTRUCTION LIMITS

Know what's below. Call before you dig.

1" = 20'-0"
10'-0" 0 20'-0"

CivilSite GROUP
Civil Engineering · Surveying · Landscape Architecture
5000 Glenwood Avenue
Golden Valley, MN 55422
civilsitegroup.com 612-615-0060

PRELIMINARY: NOT FOR CONSTRUCTION

PROJECT TSUNAMI EXPRESS CAR WASH
1896 ADAMS ST., MANKATO, MN 56001

OWNER TSUNAMI EXPRESS CAR WASH, LLC.
4800 MEADOWS ROAD, #300, LAKE OSWEGO, OREGON 97035

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David J. Knaeble
DATE 07/23/24 LICENSE NO. 48776

ISSUE/SUBMITTAL SUMMARY

DATE	DESCRIPTION
7/23/24	CITY SUBMITTAL

PROJECT MANAGER	DAVID KNABLE
CONTACT NUMBER	612-615-0060
DRAWN BY	DK, BB
REVIEWED BY	DK
PROJECT NUMBER	24290

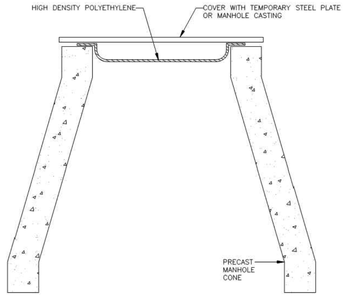
REVISION SUMMARY

DATE	DESCRIPTION

UTILITY PLAN

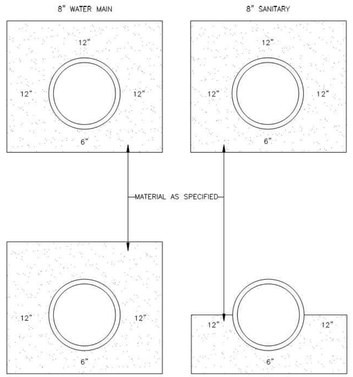
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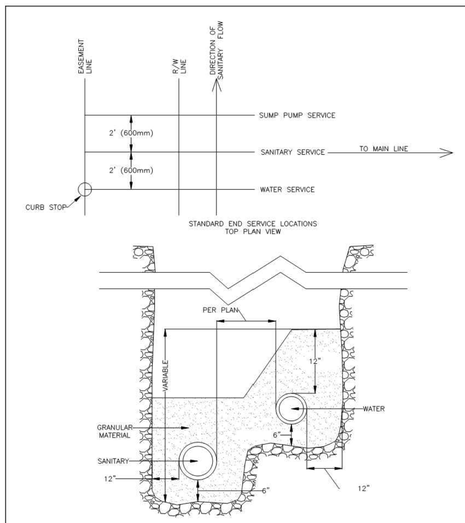


NOTE:
FOR ALL SANITARY MANHOLE AND STORM DRAINS THAT DO NOT HAVE INLET PROTECTION

APPROVED	CITY OF MANKATO ENGINEERING	SPECIFICATION REFERENCE	STANDARD PLATE NO.
Michael J McCarty Digitally signed by Michael J McCarty Date: 2022.10.28 12:14:03-05'00' CITY ENGINEER	TEMPORARY MANHOLE INSERTS		2002A 1 OF 1

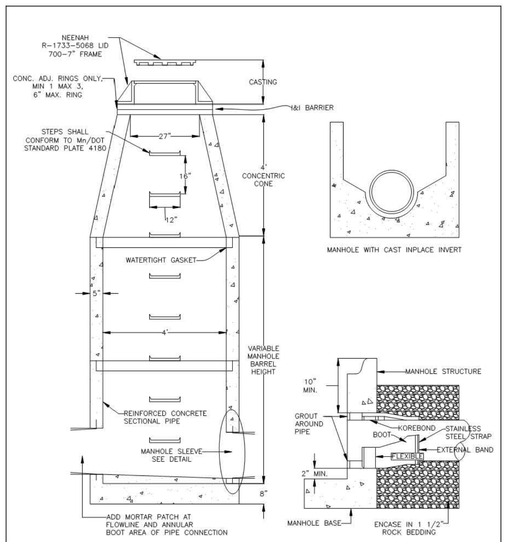


APPROVED	CITY OF MANKATO ENGINEERING	SPECIFICATION REFERENCE	STANDARD PLATE NO.
Michael J McCarty Digitally signed by Michael J McCarty Date: 2022.10.28 12:14:09-05'00' CITY ENGINEER	GRANULAR BEDDING & ENCASEMENT		2100A 1 OF 1



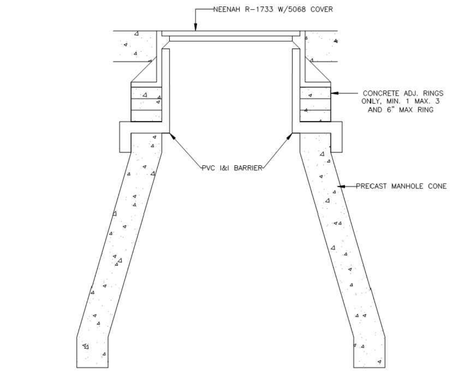
NOTE:
1. GRANULAR MATERIAL IN THIS ZONE SHALL BE INCIDENTAL TO PIPE INSTALLATION.
2. IF THE SANITARY SEWER LOCATION IS ABOVE THE WATERMAIN, THE SANITARY SEWER PIPE MATERIAL SHALL BE WATERMAIN SPECIFICATION CLASS 160 SDR 26/35 PRESSURE PIPE.
3. WATER SERVICE WILL ALWAYS BE UP STREAM FROM OTHER SERVICES.
4. SANITARY, WATER AND SUMP PUMP SERVICE STUBS SHALL BE CONSTRUCTED TO THE EASEMENT LINE ON NEW CONSTRUCTION AND TO THE RIGHT OF WAY LINE ON RECONSTRUCTS.

APPROVED	CITY OF MANKATO ENGINEERING	SPECIFICATION REFERENCE	STANDARD PLATE NO.
Michael J McCarty Digitally signed by Michael J McCarty Date: 2022.10.28 12:14:13-05'00' CITY ENGINEER	DETAIL OF SANITARY & WATER IN THE SAME TRENCH		2101B 1 OF 1



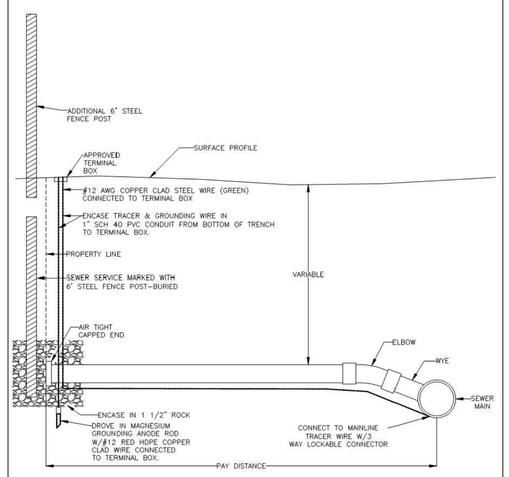
NOTE:
1. ALL CASTINGS SHALL HAVE A SOLID COVER WITH CONCEALED LIFT HOLES AND SELF SEALING FEATURE.
2. ON PIPES 12" OR LESS CAST INVERT TO MATCH PIPE FLOWLINE WITH INVERT DIMENSIONS ONE PIPE SIZE LARGER THAN INCOMING PIPE.

APPROVED	CITY OF MANKATO ENGINEERING	SPECIFICATION REFERENCE	STANDARD PLATE NO.
Michael J McCarty Digitally signed by Michael J McCarty Date: 2022.10.28 12:14:19-05'00' CITY ENGINEER	SANITARY SEWER MANHOLE		2200A 1 OF 1



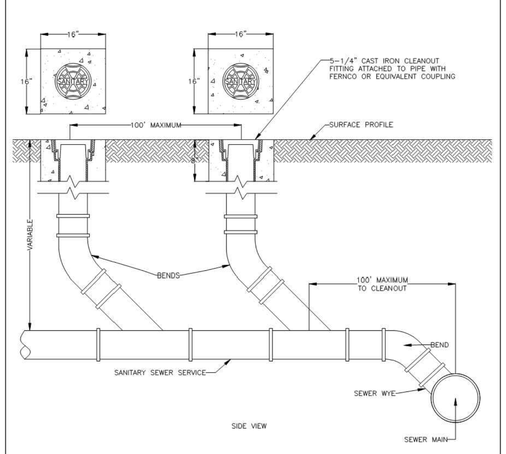
NOTE:
1. INTERIOR RUBBER CHIMNEY SEALS ARE APPROVED I&I BARRIERS ALSO.

APPROVED	CITY OF MANKATO ENGINEERING	SPECIFICATION REFERENCE	STANDARD PLATE NO.
Michael J McCarty Digitally signed by Michael J McCarty Date: 2022.10.28 12:14:29-05'00' CITY ENGINEER	PVC I&I BARRIER		2203A 1 OF 1



NOTE:
WHEN CONNECTING TO EXISTING SERVICES OF A DIFFERENT SIZE AN ECCENTRIC PVC ADAPTOR OR APPROVED EQUAL MUST BE USED.

APPROVED	CITY OF MANKATO ENGINEERING	SPECIFICATION REFERENCE	STANDARD PLATE NO.
Michael J McCarty Digitally signed by Michael J McCarty Date: 2022.10.28 12:14:33-05'00' CITY ENGINEER	STANDARD SANITARY SERVICE		2240A 1 OF 1



NOTE:
CLEANOUT IS TO BE WITHIN EASEMENT AREA BUT OUT OF DRIVING SURFACE, GRANULAR MATERIAL TO BE PLACED AROUND ALL PIPE.

APPROVED	CITY OF MANKATO ENGINEERING	SPECIFICATION REFERENCE	STANDARD PLATE NO.
Michael J McCarty Digitally signed by Michael J McCarty Date: 2022.10.28 12:14:36-05'00' CITY ENGINEER	SANITARY SERVICE CLEANOUT		2242A 1 OF 1

CivilSite GROUP
Civil Engineering • Surveying • Landscape Architecture
5000 Glenwood Avenue
Golden Valley, MN 55422
civilsitegroup.com 612-615-0060

PRELIMINARY: NOT FOR CONSTRUCTION

PROJECT
TSUNAMI EXPRESS CAR WASH
1896 ADAMS ST., MANKATO, MN 56001

OWNER
TSUNAMI EXPRESS CAR WASH, LLC.
4800 MEADOWS ROAD, #300, LAKE OSWEGO, OREGON 97035

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REVIEWED BY	DK
PROJECT NUMBER	24290

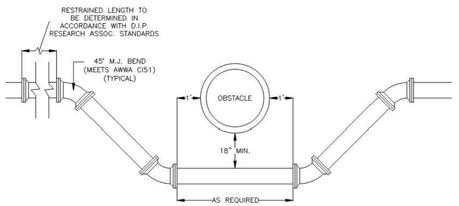
REVISION SUMMARY

DATE	DESCRIPTION

CIVIL DETAILS

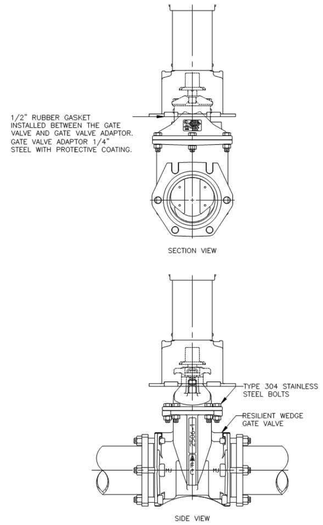
C5.0

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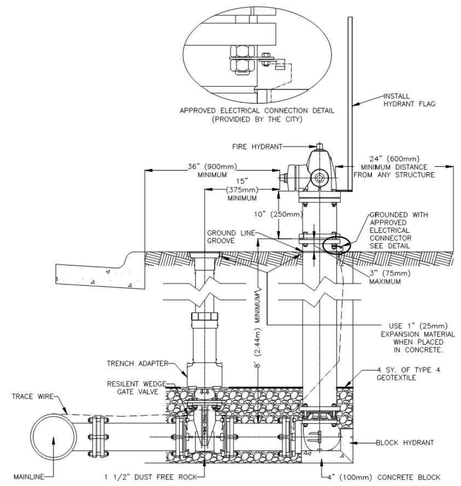


NOTES:
1. FITTINGS SHALL BE RESTRAINED WITH THE USE OF APPROVED MECHANICAL JOINT RESTRAINING GLANDS.
2. FITTINGS AND GLANDS SHALL BE EPOXY COATED, FLUORCARBON COATED BOLTS SHALL BE BLUE WITH TWO ZINC ANODES ATTACHED PER GLAND.

APPROVED	CITY OF MANKATO ENGINEERING	SPECIFICATION REFERENCE	STANDARD PLATE NO.
Michael J McCarty Digitally signed by Michael J McCarty Date: 2022.10.28 12:14:41-05'00' CITY ENGINEER	WATERMAIN CONSTRUCTION AROUND OBSTACLES		2320A 1 OF 1

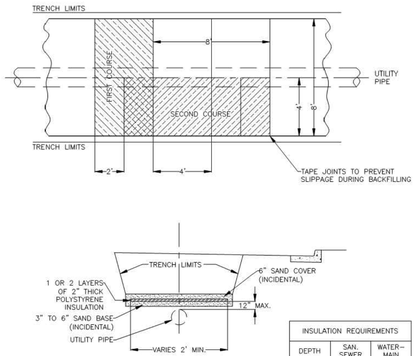


APPROVED	CITY OF MANKATO ENGINEERING	SPECIFICATION REFERENCE	STANDARD PLATE NO.
Michael J McCarty Digitally signed by Michael J McCarty Date: 2022.10.28 12:14:43-05'00' CITY ENGINEER	GATE VALVE ADAPTOR		2321A 1 OF 1



NOTES:
1. WHEN PVC WATERMAIN IS USED; THE TRACE WIRE SHALL BE EXTENDED AND ATTACHED TO THE FLANGE OF THE HYDRANT WITH APPROVED ELECTRICAL CONNECTOR.
2. VALVE SHALL BE TIED INDEPENDENTLY TO MAIN LINE AND HYDRANT SHALL BE TIED INDEPENDENTLY TO VALVE USING APPROVED MECHANICAL JOINT RESTRAINING GLANDS.
3. 5 1/4" x 8'(133mm x 2.4m) HYDRANT SHALL BE: WATEROUS WB67 MODEL, MODIFIED KENNEDY GUARDIAN OR APPROVED EQUAL.
4. HYDRANT BREAK: OFF 0.33' TO 0.5' ABOVE TOP BACK OF CURB.
5. HYDRANT FLAG: ORANGE 48 INCH FLEXSTAKE MARKERS.

APPROVED	CITY OF MANKATO ENGINEERING	SPECIFICATION REFERENCE	STANDARD PLATE NO.
Michael J McCarty Digitally signed by Michael J McCarty Date: 2022.10.28 12:14:45-05'00' CITY ENGINEER	HYDRANT DETAIL		2322A 1 OF 1

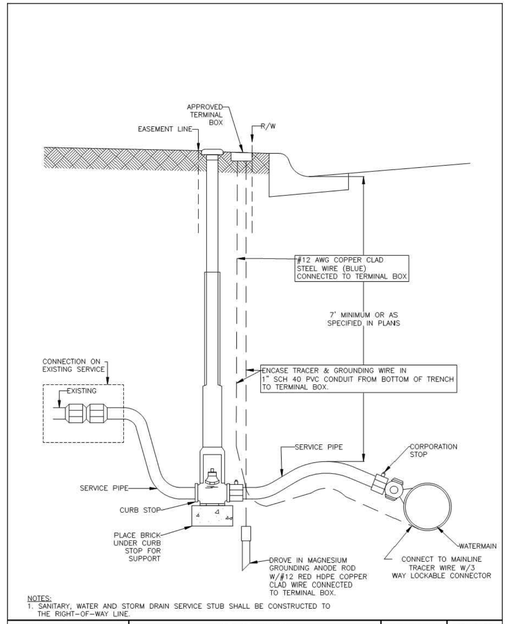


TYPICAL LAYOUT FOR POLYSTYRENE INSULATION

INSULATION REQUIREMENTS		
DEPTH	SAN. SEWER	WATER-MAIN
5'	4"	4"
5'-7'	2"	2"
>7'	0	0

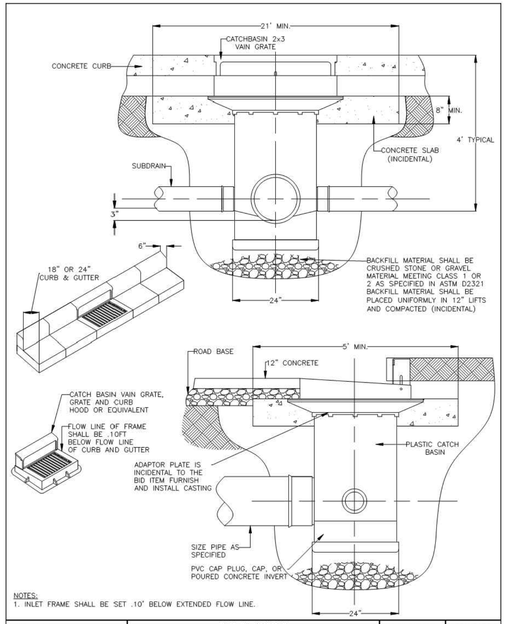
NOTES:
1. INSULATION BOARD SHALL BE AS PER MN/DOT SPEC. 3760.
2. FOR WATERMAIN WITH NO SERVICE CONNECTIONS OR FOR WATERMAIN OUTSIDE OF PAVED AREAS WHERE SNOW IS NOT REMOVED, NO INSULATION IS REQUIRED IF COVER IS AT LEAST 6'.
3. INSULATION BOARD SHALL BE PAID FOR AS 2503.604 2" OR 4" INSULATION WHERE APPLICABLE AT THE PRICE BID PER SQ. YD.
4. DEPTH FOR SANITARY AND STORM SHALL BE TO INVERT. DEPTH FOR WATERMAIN SHALL BE TO THE TOP OF THE PIPE.

APPROVED	CITY OF MANKATO ENGINEERING	SPECIFICATION REFERENCE	STANDARD PLATE NO.
Michael J McCarty Digitally signed by Michael J McCarty Date: 2022.10.28 12:14:47-05'00' CITY ENGINEER	POLYSTYRENE INSULATION		2323A 1 OF 1



NOTES:
1. SANITARY, WATER AND STORM DRAIN SERVICE STUB SHALL BE CONSTRUCTED TO THE RIGHT-OF-WAY LINE.

APPROVED	CITY OF MANKATO ENGINEERING	SPECIFICATION REFERENCE	STANDARD PLATE NO.
Michael J McCarty Digitally signed by Michael J McCarty Date: 2022.10.28 12:14:50-05'00' CITY ENGINEER	WATER SERVICE		2340B 1 OF 1

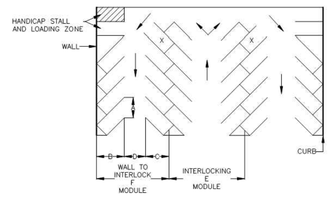


NOTES:
1. INLET FRAME SHALL BE SET .10' BELOW EXTENDED FLOW LINE.

APPROVED	CITY OF MANKATO ENGINEERING	SPECIFICATION REFERENCE	STANDARD PLATE NO.
Michael J McCarty Digitally signed by Michael J McCarty Date: 2022.10.28 12:14:54-05'00' CITY ENGINEER	MANKATO STD. CATCH BASIN NUMBER 3		2402C 1 OF 1

FULL & COMPACT PARKING STANDARDS

	A STALL WIDTH PARALLEL TO AISLE	B STALL DEPTH TO WALL	C STALL DEPTH TO INTERLOCK	D AISLE WITH	WALL TO WALL	E INTERLOCK TO INTERLOCK
0 DEG						
9.0 STALL	23	9	9	12	31	30
10.0 STALL	23	10	10	12	33	32
45 DEG						
8.5 STALL	12	19.5	16.5	13	52	46
9.0 STALL	12.7	19.5	16.5	12	51	45
9.5 STALL	13.4	19.5	16.5	11	50	44
60 DEG						
8.5 STALL	9.8	20.5	18.5	18	59	55
9.0 STALL	10.4	20.5	18.5	16	57	53
9.5 STALL	11.0	20.5	18.5	15	56	52
75 DEG						
8.5 STALL	8.3	20.0	19.0	25	65	63
9.0 STALL	9.3	20.0	19.0	23	63	61
9.5 STALL	9.8	20.0	19.0	22	62	60
90 DEG						
8.5 STALL	8.5	18.5	18.5	28	65	65
9.0 STALL	9.0	18.5	18.5	26	63	62
9.5 STALL	9.5	18.5	18.5	25	62	62



NOTES:
1. PARKING LAYOUT DIMENSION (SHOWN IN FT) FOR 9' x 18' STALLS AT VARIOUS ANGLES.
2. ALL PARKING MUST MEET THE FOLLOWING:
   - HARD SURFACING
   - APPROVED DRAINAGE
   - LANDSCAPING
   - STRIPING
   - SIGNING
3. HANDICAP STALLS
   - THE NUMBER OF MANDICAP STALLS AND UNLOADING AREA SHALL BE DETERMINED BY THE MOST CURRENT BUILDING CODE.
   - THE MINIMUM WIDTH FOR A HANDICAPPED STALL SHALL BE 96" WITH A EQUAL LOADING ZONE.

APPROVED	CITY OF MANKATO ENGINEERING	SPECIFICATION REFERENCE	STANDARD PLATE NO.
Michael J McCarty Digitally signed by Michael J McCarty Date: 2022.10.28 12:15:02-05'00' CITY ENGINEER	PARKING STANDARDS		2700A 1 OF 1

CivilSite GROUP
Civil Engineering • Surveying • Landscape Architecture
5000 Glenwood Avenue
Golden Valley, MN 55422
civilsitegroup.com 612-615-0060

PRELIMINARY: NOT FOR CONSTRUCTION

PROJECT TSUNAMI EXPRESS CAR WASH
1896 ADAMS ST., MANKATO, MN 56001

OWNER TSUNAMI EXPRESS CAR WASH, LLC.
4800 MEADOWS ROAD, #300, LAKE OSWEGO, OREGON 97035

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.

David J. Knaeble
DATE 07/23/24 LICENSE NO. 48776

ISSUE/SUBMITTAL SUMMARY

DATE	DESCRIPTION
7/23/24	CITY SUBMITTAL

PROJECT MANAGER	DAVID KNABLE
CONTACT NUMBER	612-615-0060
DRAWN BY	DK, BB
REVIEWED BY	DK
PROJECT NUMBER	24290

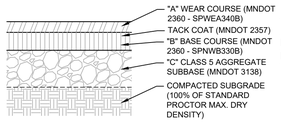
REVISION SUMMARY

DATE	DESCRIPTION

CIVIL DETAILS

C5.1

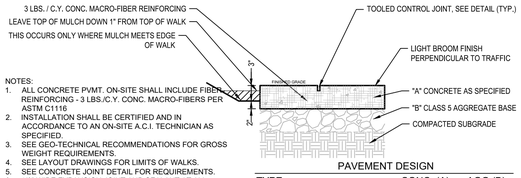
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PAVEMENT DESIGN			
TYPE	WEAR (A)	BASE (B)	AGG.(C)
LIGHT DUTY	X"	X"	X"
HEAVY DUTY	X"	X"	X"

NOTE:
IF NO DESIGN IS DEFINED IN ABOVE CHART, SEE GEOTECH REPORT FOR FINAL PAVEMENT SECTION. IF DESIGN IS DEFINED IN ABOVE CHART, IT SHOULD BE CONSIDERED FOR BIDDING PURPOSES ONLY. REFER TO GEOTECH FOR FINAL PAVEMENT SECTION.

1 BITUMINOUS PAVEMENT - ALL TYPES
N T S

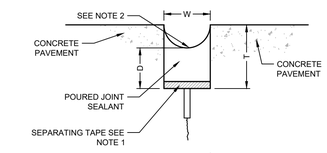


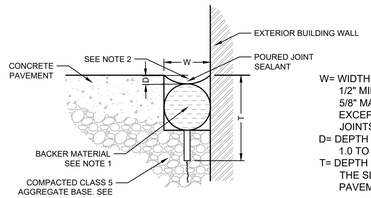
NOTES:
1. ALL CONCRETE PVMT. ON-SITE SHALL INCLUDE FIBER REINFORCING - 3 LBS./C.Y. CONC. MACRO-FIBERS PER ASTM C1116
2. INSTALLATION SHALL BE CERTIFIED AND IN ACCORDANCE TO AN ON-SITE A.C.I. TECHNICIAN AS SPECIFIED.
3. SEE GEO-TECHNICAL RECOMMENDATIONS FOR GROSS WEIGHT REQUIREMENTS.
4. SEE LAYOUT DRAWINGS FOR LIMITS OF WALKS.
5. SEE CONCRETE JOINT DETAIL FOR REQUIREMENTS.
6. 1/2" WIDE EXPANSION JOINT AND SEALANT AT ALL CURBS.
7. IF NO DESIGN IS DEFINED IN CHART, SEE GEOTECH REPORT FOR FINAL PAVEMENT SECTION.
8. IF DESIGN IS DEFINED IN CHART, IT SHOULD BE CONSIDERED FOR BIDDING PURPOSES ONLY. REFER TO GEOTECH FOR FINAL PAVEMENT SECTION.

PAVEMENT DESIGN		
TYPE	CONC. (A)	AGG.(B)
WALKS	5"	6"
CONC. PVMT.	6"	8"

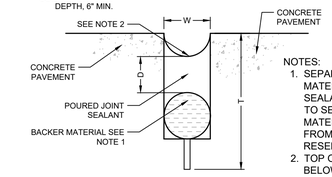
1. CURING:
1.1. APPLY CURING COMPOUNDS IMMEDIATELY UPON FINISHING OF CONC. SURFACE.
1.2. ALL CONC. SURFACES SHALL HAVE CURING COMPOUNDS ALLIED PER ASTM C-309 AT 200 S.F. PER GAL.
1.3. ALL CURING COMPOUNDS SHALL BE TYPE 1 (CLEAR) AND CONTAIN ACRYLIC BASED CLASS B RESTRICTED RESIN SOLIDS.

2 CONCRETE PVMT./WALK/PAD
N T S (PRIVATE PROPERTY)



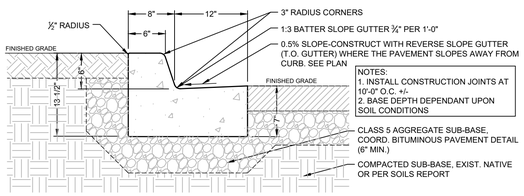


W= WIDTH OF SEALANT RESERVOIR
1/2" MINIMUN
5/8" MAXIMUM
EXCEPT FOR 3/4" EXPANSION JOINTS
D= DEPTH OF SEALANT
1.0 TO 1.5 TIMES W
T= DEPTH OF INTIAL SAWCUT, 1/4 OF THE SLAB THINKNESS FOR PAVEMENT LESS THAN 12"



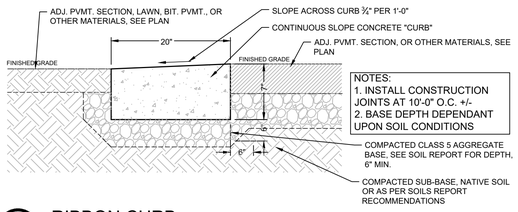
NOTES:
1. SEPARATING TAPE OR BACKER MATERIAL REQUIRED TO PREVENT JOINT SEALANT FROM FLOWING INTO SAWCUT, TO SEPARATE NONCOMPATIBLE MATERIALS AND TO PREVENT SEALANT FROM BONDING TO BOTTOM OF RESERVOIR.
2. TOP OF SEALANT WILL BE 1/8" TO 1/4" BELOW TOP OF PAVEMENT.

3 EXPANSION JOINT SEALANT DETAILS
N T S



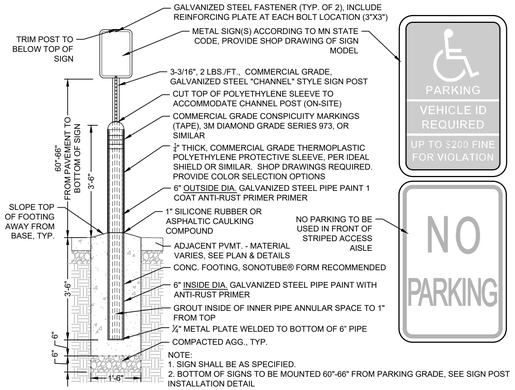
NOTES:
1. INSTALL CONSTRUCTION JOINTS AT 10'-0" O.C. +/-
2. BASE DEPTH DEPENDANT UPON SOIL CONDITIONS

4 B-612 CONCRETE CURB AND GUTTER
N T S



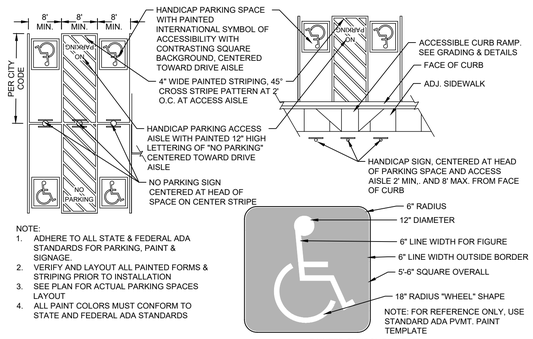
NOTES:
1. INSTALL CONSTRUCTION JOINTS AT 10'-0" O.C. +/-
2. BASE DEPTH DEPENDANT UPON SOIL CONDITIONS

5 RIBBON CURB
N T S



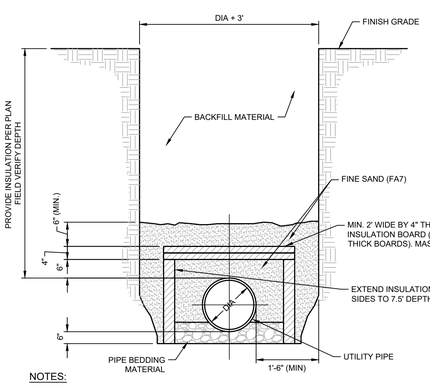
NOTE:
1. SIGN SHALL BE AS SPECIFIED.
2. BOTTOM OF SIGNS TO BE MOUNTED 60"-66" FROM PARKING GRADE, SEE SIGN POST INSTALLATION DETAIL
3. VERIFY POST PAINT COLOR WITH LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

6 ACCESSIBLE SIGN & CHANNEL POST - LOT LOCATION
N T S



NOTE:
1. ADHERE TO ALL STATE & FEDERAL ADA STANDARDS FOR PARKING, PAINT & SIGNAGE.
2. VERIFY AND LAYOUT ALL PAINTED FORMS & STRIPING PRIOR TO INSTALLATION
3. SEE PLAN FOR ACTUAL PARKING SPACES LAYOUT
4. ALL PAINT COLORS MUST CONFORM TO STATE AND FEDERAL ADA STANDARDS

7 ACCESSIBLE PARKING PAVEMENT MARKING
N T S



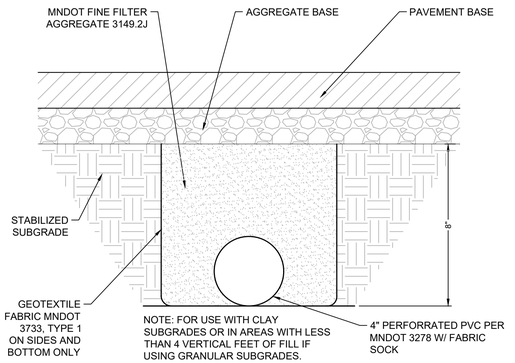
NOTES:

1. INSULATION BOARD TO BE CLOSED CELL. EXTRUDED POLYSTYRENE FOAM MEETING ASTM 578, TYPE VI, 40PSI COMPRESSING STRENGTH (ASTM D1621) 0.1%MAX. WATER ABSORPTION (ASTM C272).

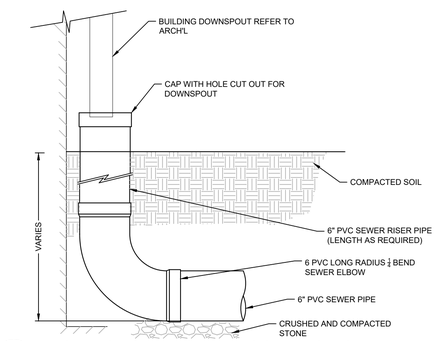
2. BACKFILL MATERIAL AROUND INSULATION MUST BE FINE SAND FREE FROM ROOT, ORGANIC MATERIAL, OR OTHER INJURIOUS MATERIALS.

3. OVERLAP ALL INSULATION BOARD JOINTS.

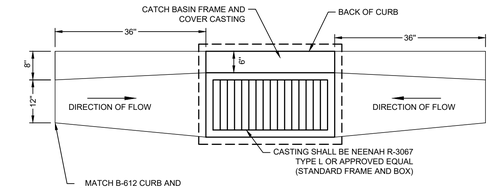
8 UTILITY PIPE INSULATION DETAIL
N T S



9 4" PVC DRAIN TILE DETAIL
N T S



10 DOWNSPOUT TO PIPE CONNECTION
N T S



NOTE: CATCH BASIN TO BE DEPRESSED BELOW DESIGN GUTTER GRADE PER DETAIL 110 ON SHEET C5.2

11 B-612 CURB AND GUTTER CONSTRUCTION AT CATCH BASIN
N T S

CivilSite GROUP
Civil Engineering · Surveying · Landscape Architecture
5000 Glenwood Avenue
Golden Valley, MN 55422
civilsitegroup.com 612-615-0060

PRELIMINARY: NOT FOR CONSTRUCTION

PROJECT
TSUNAMI EXPRESS CAR WASH
1896 ADAMS ST., MANKATO, MN 56001

OWNER
TSUNAMI EXPRESS CAR WASH, LLC.
4800 MEADOWS ROAD, #300, LAKE OSWEGO, OREGON 97035

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.

David J. Knaeble
DATE 07/23/24 LICENSE NO. 48776

ISSUE/SUBMITTAL SUMMARY

DATE	DESCRIPTION
7/23/24	CITY SUBMITTAL

PROJECT MANAGER	DAVID KNABLE
CONTACT NUMBER	612-615-0060
DRAWN BY	DK, BB
REVIEWED BY	DK
PROJECT NUMBER	24290

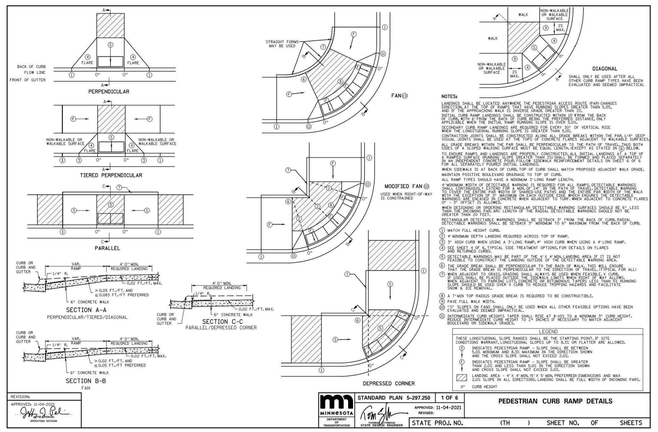
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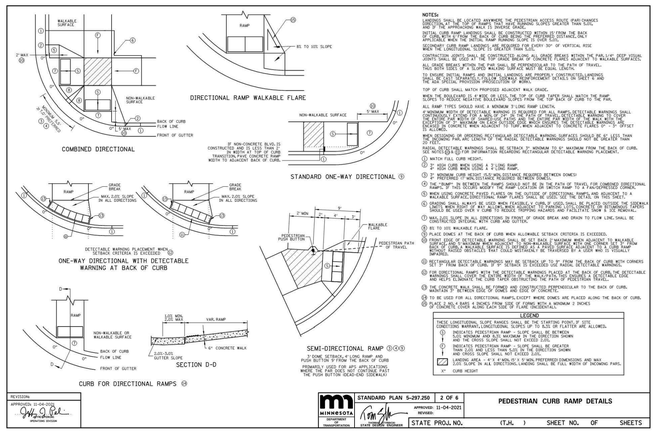
DATE	DESCRIPTION

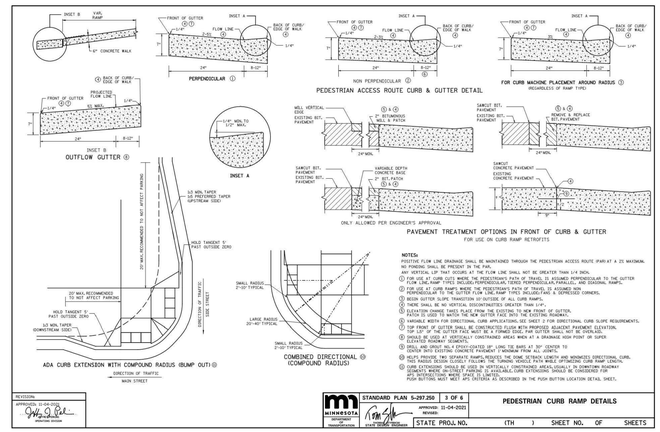
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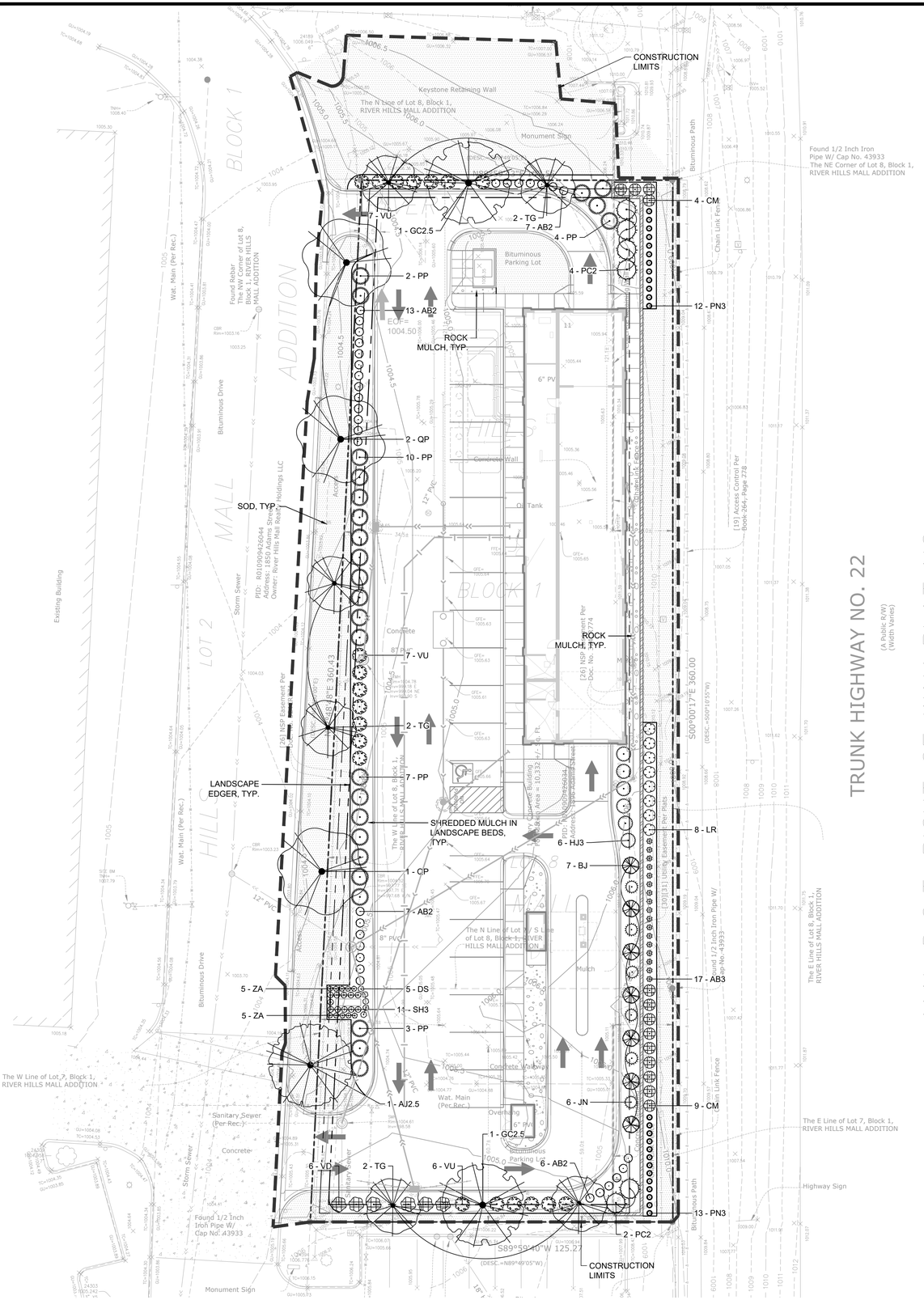
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EXPANSION MATERIAL PLACEMENT
FOR CONCRETE ROADWAYS
CURB LINE REINFORCEMENT ②
PLACEMENT ON BITUMINOUS ROADWAYS
SECTION VIE



LANDSCAPE NOTES:

1. ALL EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE. CONTACT "GOPHER STATE ONE CALL" (651-454-0002 OR 800-252-1166) FOR UTILITY LOCATIONS, 48 HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY UTILITIES THAT ARE DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.
2. REFERENCE MULCH SCHEDULE FOR MULCH MATERIALS AND LOCATIONS.
3. ALL TREES SHALL BE MULCHED WITH SHREDDED CEDAR MULCH TO OUTER EDGE OF SAUCER OR TO EDGE OF PLANTING BED, IF APPLICABLE. ALL MULCH SHALL BE KEPT WITHIN A MINIMUM OF 2" FROM TREE TRUNK.
4. IF SHOWN ON PLAN, RANDOM SIZED LIMESTONE BOULDERS COLOR AND SIZE TO COMPLIMENT NEW LANDSCAPING. OWNER TO APPROVE BOULDER SAMPLES PRIOR TO INSTALLATION.
5. PLANT MATERIALS SHALL CONFORM WITH THE AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS AND SHALL BE OF HARDY STOCK, FREE FROM DISEASE, DAMAGE AND DISFIGURATION. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING PLUMPNESS OF PLANT MATERIAL FOR DURATION OF ACCEPTANCE PERIOD.
6. UPON DISCOVERY OF A DISCREPANCY BETWEEN THE QUANTITY OF PLANTS SHOWN ON THE SCHEDULE AND THE QUANTITY SHOWN ON THE PLAN, THE PLAN SHALL GOVERN.
7. CONDITION OF VEGETATION SHALL BE MONITORED BY THE LANDSCAPE ARCHITECT THROUGHOUT THE DURATION OF THE CONTRACT. LANDSCAPE MATERIALS PART OF THE CONTRACT SHALL BE WARRANTED FOR TWO (2) FULL GROWING SEASONS FROM SUBSTANTIAL COMPLETION DATE.
8. ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL RECEIVE 6" LAYER TOPSOIL AND SOD AS SPECIFIED UNLESS OTHERWISE NOTED ON THE DRAWINGS.
9. COORDINATE LOCATION OF VEGETATION WITH UNDERGROUND AND OVERHEAD UTILITIES, LIGHTING FIXTURES, DOORS AND WINDOWS. CONTRACTOR SHALL STAKE IN THE FIELD FINAL LOCATION OF TREES AND SHRUBS FOR REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
10. ALL PLANT MATERIALS SHALL BE WATERED AND MAINTAINED UNTIL ACCEPTANCE.
11. REPAIR AT NO COST TO OWNER ALL DAMAGE RESULTING FROM LANDSCAPE CONTRACTOR'S ACTIVITIES.
12. SWEEP AND MAINTAIN ALL PAVED SURFACES FREE OF DEBRIS GENERATED FROM LANDSCAPE CONTRACTOR'S ACTIVITIES.
13. PROVIDE SITE WIDE IRRIGATION SYSTEM DESIGN AND INSTALLATION. SYSTEM SHALL BE FULLY PROGRAMMABLE AND CAPABLE OF ALTERNATE DATE WATERING. THE SYSTEM SHALL PROVIDE HEAD TO HEAD OR DRIP COVERAGE AND BE CAPABLE OF DELIVERING ONE INCH OF PRECIPITATION PER WEEK. SYSTEM SHALL EXTEND INTO THE PUBLIC RIGHT-OF-WAY TO THE EDGE OF PAVEMENT/BACK OF CURB.
14. CONTRACTOR SHALL SECURE APPROVAL OF PROPOSED IRRIGATION SYSTEM INCLUDING PRICING FROM OWNER, PRIOR TO INSTALLATION.

PLANTING SEASON SCHEDULE

SEASON	CONIFEROUS	DECIDUOUS	REMARKS
SPRING PLANTING	APRIL 15 - JUNE 15	APRIL 15 - JUNE 15	
FALL PLANTING	AUGUST 21 - SEPTEMBER 30	AUGUST 15 - NOVEMBER 15	
NOTE: ADJUSTMENTS TO PLANTING DATES MUST BE APPROVED IN WRITING BY THE LANDSCAPE ARCHITECT.			

MULCH SCHEDULE

AREA	MULCH TYPE	EDGING	FABRIC	REMARKS
TREE RINGS	4" DEPTH, SHREDDED HARDWOOD	YES	NO	SEE DETAIL SHT. L1.1 FOR DETAILS AND LANDSCAPE PLANTING NOTES
PLANTING BEDS	4" DEPTH, SHREDDED HARDWOOD	YES	NO	SEE DETAIL SHT. L1.1 FOR DETAILS AND LANDSCAPE PLANTING NOTES
MAINT. STRIP AT BUILDING FOUNDATION	WASHED RIVER ROCK	YES	YES	SEE GROUND COVER SCHEDULE SHEET L1.0 AND DETAIL SHT. L1.1
NOTE: COORDINATE ALL MULCH AND PLANTING BED MATERIAL PRIOR TO INSTALLATION, PROVIDE SAMPLES AND SHOP DRAWINGS/PHOTOS/DATA SHEETS OF ALL MATERIALS				

LANDSCAPE PLAN LEGEND:

PLANT SCHEDULE

SYMBOL	COMMON / BOTANICAL NAME	QTY	SIZE
GROUND COVERS			
	Mulch Maintenance Strip 1"- 3" Washed river rock, uniform in size over filter fabric, composed of round rocks that may be varied in color. Include aluminum edging as shown on plan, or as needed. See detail.	1,249 sf	Mulch
	Blue Grass Based / Sod Commercial grade, locally grown, well rooted sod blend of improved Kentucky Bluegrass w/ uniform color, leaf texture, density and varieties consisting of a minimum of two and no more than four common cultivars.	13,900 sf	Sod
	SUBTOTAL:	15,149 sf	

PROPOSED CANOPY TREE SYMBOLS - SEE PLANT SCHEDULE AND PLAN FOR SPECIES AND PLANTING SIZES

PROPOSED EVERGREEN TREE SYMBOLS - SEE PLANT SCHEDULE AND PLAN FOR SPECIES AND PLANTING SIZES

PROPOSED ORNAMENTAL TREE SYMBOLS - SEE PLANT SCHEDULE AND PLAN FOR SPECIES AND PLANTING SIZES

PROPOSED DECIDUOUS AND EVERGREEN SHRUB SYMBOLS - SEE PLANT SCHEDULE AND PLAN FOR SPECIES AND PLANTING SIZES

PROPOSED PERENNIAL PLANT SYMBOLS - SEE PLANT SCHEDULE AND PLAN FOR SPECIES AND PLANTING SIZES

EDGING - SHALL BE COMMERCIAL GRADE, 4" DEPTH ALUMINUM, BLACK OR DARK GREEN IN COLOR, INCLUDE ALL CONNECTORS, STAKES, & ALL APPURTENANCES PER MANUF. INSTALL PER MANUF. INSTRUC./SPECS.

CONSTRUCTION LIMITS

SEE SHEET L1.1 FOR PLANTING SCHEDULE
SEE SHEET L1.1 FOR LANDSCAPE PLANTING NOTES
SEE SHEET LT1.0 FOR EXTERIOR LIGHTING PLAN

Know what's below. Call before you dig.

1" = 20'-0"
10'-0" 0 20'-0"

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Golden Valley, MN 55422
civilsitegroup.com 612-615-0060

PRELIMINARY: NOT FOR CONSTRUCTION

PROJECT: TSUNAMI EXPRESS CAR WASH
1896 ADAMS ST., MANKATO, MN 56001

OWNER: TSUNAMI EXPRESS CAR WASH, LLC.
4800 MEADOWS ROAD, #300, LAKE OSWEGO, OREGON 97035

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 LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

Robert L. Binder
DATE 07/23/24 LICENSE NO. 25821

ISSUE/SUBMITTAL SUMMARY

DATE	DESCRIPTION
7/23/24	CITY SUBMITTAL

PROJECT MANAGER	DAVID KNABLE
CONTACT NUMBER	612-615-0060
DRAWN BY	DK, BB
REVIEWED BY	DK
PROJECT NUMBER	24290

REVISION SUMMARY

DATE	DESCRIPTION

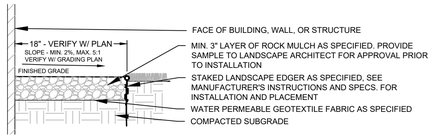
LANDSCAPE PLAN

L1.0

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PLANT SCHEDULE

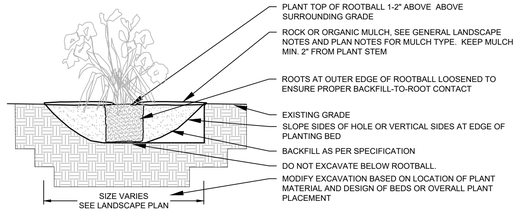
CODE	COMMON / BOTANICAL NAME	QTY	CONT	NATIVE PLANTS	POLLINATOR FRIENDLY
TREES					
BJ	Parkland Pillar® Asian White Birch / Betula platyphylla 'Jefpark'	7	2" CAL. B&B	NOT NATIVE	Y
	SUBTOTAL:	7			
2.5" OVERSTORY TREE					
AJ2.5	Autumn Fest® Sugar Maple / Acer saccharum 'JFS-KW8'	1	2.5" CAL. B&B	NATIVE CULTIVAR	Y
GC2.5	True North™ Kentucky Coffeetree / Gymnocladus dioica 'UMNSynergy'	2	2.5" CAL. B&B	NATIVE CULTIVAR	N
QP	American Dream® Oak / Quercus bicolor 'JFS-KW12'	3	2.5" CAL. B&B	NATIVE CULTIVAR	N
TG	Greenspire Littleleaf Linden / Tilia cordata 'Greenspire'	6	2.5" CAL. B&B	NATIVE CULTIVAR	Y
	SUBTOTAL:	12			
6` HT. B&B					
PC2	Chalet Swiss Stone Pine / Pinus cembra 'Chalet'	6	6` B&B	NOT NATIVE	N
	SUBTOTAL:	6			
CODE	COMMON / BOTANICAL NAME	QTY	SIZE	NATIVE PLANTS	POLLINATOR FRIENDLY
SHRUBS					
AB2	Low Scape Hedger Black Chokeberry / Aronia melanocarpa 'UCONNAM166' TM	33	#5 CONT	NATIVE CULTIVAR	Y
CM	Muskingham Gray Dogwood / Cornus racemosa `Muskingham`	13	#5 CONT	NATIVE CULTIVAR	Y
LR	Kodiak® Orange Diervilla / Diervilla x 'G2X88544'	8	#5 CONT	NATIVE CULTIVAR	Y
HJ3	Cobalt and Gold Kalm St. Johnswort / Hypericum kalmianum 'PIIHYP-I'	6	#2 CONT	NATIVE CULTIVAR	Y
JN	Grey Guardian Juniper / Juniperus virginiana `Greguard` TM	6	#5 CONT	NATIVE	N
PP	Dwarf Mugo Pine / Pinus mugo 'Pumilio'	26	#5 CONT	NOT NATIVE	N
VD	Blue Muffin Arrowwood Viburnum / Viburnum dentatum 'Christom'	6	#5 CONT	NATIVE CULTIVAR	Y
VU	Glitters & Glows® Arrowood Viburnum / Viburnum dentatum deamii	20	#5 CONT	NATIVE CULTIVAR	Y
	SUBTOTAL:	118			
GRASSES					
AB3	Blackhawks Big Bluestem / Andropogon gerardii 'Blackhawks'	17	#1 CONT	NATIVE CULTIVAR	Y
DS	Schottland Hair Grass / Deschampsia cespitosa `Schottland`	5	#1 CONT	NATIVE	Y
PN3	Northwind Switch Grass / Panicum virgatum `North Wind`	25	#1 CONT	NATIVE CULTIVAR	Y
SH3	Prairie Dropseed / Sporobolus heterolepis	11	#1 CONT	NATIVE	Y
	SUBTOTAL:	58			
PERENNIALS					
ZA	Golden Alexander / Zizia aurea	10	#1 CONT	NATIVE	Y
	SUBTOTAL:	10			



1 AGGREGATE MAINTENANCE STRIP

NTS

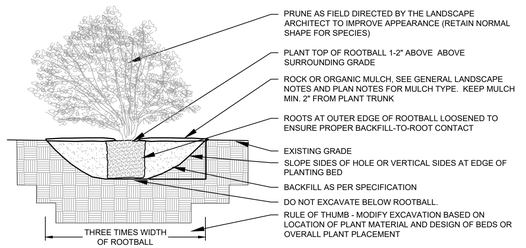
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2 PERENNIAL BED PLANTING

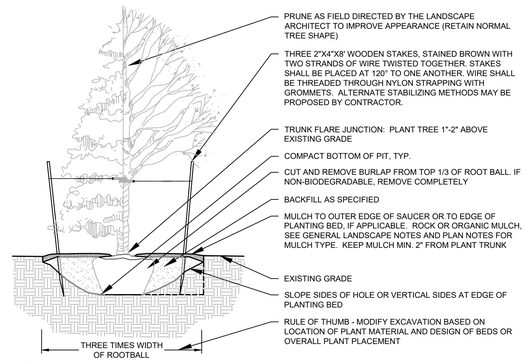
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3 DECIDUOUS & CONIFEROUS SHRUB PLANTING

NTS



4 DECIDUOUS & CONIFEROUS TREE PLANTING

NTS

IRRIGATION NOTES:

1. ENTIRE SITE SHALL BE FULLY IRRIGATED. THE CONTRACTOR SHALL SUBMIT IRRIGATION SHOP DRAWINGS FOR REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
2. PROVIDE SITE WIDE IRRIGATION SYSTEM DESIGN AND INSTALLATION. SYSTEM SHALL BE FULLY PROGRAMMABLE AND CAPABLE OF ALTERNATE DATE WATERING. THE SYSTEM SHALL PROVIDE HEAD TO HEAD OR DRIP COVERAGE AND BE CAPABLE OF DELIVERING ONE INCH OF PRECIPITATION PER WEEK. SYSTEM SHALL EXTEND INTO THE PUBLIC RIGHT-OF-WAY TO THE EDGE OF PAVEMENT/BACK OF CURB.
3. CONTRACTOR SHALL SECURE APPROVAL OF PROPOSED IRRIGATION SYSTEM INLCUDING PRICING FROM OWNER, PRIOR TO INSTALLATION.
4. SEE MECHANICAL AND ELECTRICAL PLANS AND SPECIFICATIONS FOR IRRIGATION WATER, METER, AND POWER CONNECTIONS.
5. CONTRACTOR TO VERIFY LOCATION OF ALL UNDERGROUND/ABOVE GROUND FACILITIES PRIOR TO ANY EXCAVATION/INSTALLATION. ANY DAMAGE TO UNDERGROUND/ABOVE GROUND FACILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND COSTS ASSOCIATED WITH CORRECTING DAMAGES SHALL BE BORNE ENTIRELY BY THE CONTRACTOR.
6. SERVICE EQUIPMENT AND INSTALLATION SHALL BE PER LOCAL UTILITY COMPANY STANDARDS AND SHALL BE PER NATIONAL AND LOCAL CODES. EXACT LOCATION OF SERVICE EQUIPMENT SHALL BE COORDINATED WITH THE LANDSCAPE ARCHITECT OR EQUIVALENT AT THE JOB SITE.
7. CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY COMPANY FOR THE PROPOSED ELECTRICAL SERVICE AND METERING FACILITIES.
8. IRRIGATION WATER LINE CONNECTION SIZE IS 1-½" AT BUILDING. VERIFY WITH MECHANICAL PLANS.
9. ALL MAIN LINES SHALL BE 18" BELOW FINISHED GRADE.
10. ALL LATERAL LINES SHALL BE 12" BELLOW FINISHED GRADE.
11. ALL EXPOSED PVC RISERS, IF ANY, SHALL BE GRAY IN COLOR.
12. CONTRACTOR SHALL LAY ALL SLEEVES AND CONDUIT AT 2'-0" BELOW THE FINISHED GRADE OF THE TOP OF PAVEMENT. EXTEND SLEEVES TO 2'-0" BEYOND PAVEMENT.
13. CONTRACTOR SHALL MARK THE LOCATION OF ALL SLEEVES AND CONDUIT WITH THE SLEEVING MATERIAL "ELLED" TO 2'-0" ABOVE FINISHED GRADE AND CAPPED.
14. FABRICATE ALL PIPE TO MANUFACTURE'S SPECIFICATIONS WITH CLEAN AND SQUARE CUT JOINTS. USE QUALITY GRADE PRIMER AND SOLVENT CEMENT FORMULATED FOR INTENDED TYPE OF CONNECTION.
15. BACKFILL ALL TRENCHES WITH SOIL FREE OF SHARP OBJECTS AND DEBRIS.
16. ALL VALVE BOXES AND COVERS SHALL BE BLACK IN COLOR.
17. GROUP VALVE BOXES TOGETHER FOR EASE WHEN SERVICE IS REQUIRED. LOCATE IN PLANT BED AREAS WHENEVER POSSIBLE.
18. IRRIGATION CONTROLLER LOCATION SHALL BE VERIFIED ON-SITE WITH OWNER'S REPRESENTATIVE.
19. CONTROL WIRES: 14 GAUGE DIRECT BURIAL, SOLID COPPER IRRIGATION WIRE. RUN UNDER MAIN LINE. USE MOISTURE-PROOF SPLICES AND SPLICE ONLY AT VALVES OR PULL BOXES. RUN SEPARATE HOT AND COMMON WIRE TO EACH VALVE AND ONE (1) SPARE WIRE AND GROUND TO FURTHEST VALVE FROM CONTROLLER. LABEL OR COLOR CODE ALL WIRES.
20. AVOID OVER SPRAY ON BUILDINGS, PAVEMENT, WALLS AND ROADWAYS BY INDIVIDUALLY ADJUSTING RADIUS OR ARC ON SPRINKLER HEADS AND FLOW CONTROL ON AUTOMATIC VALVE.
21. ADJUST PRESSURE REGULATING VALVES FOR OPTIMUM PRESSURE ON SITE.
22. USE SCREENS ON ALL HEADS.
23. A SET OF AS-BUILT DRAWINGS SHALL BE MAINTAINED ON-SITE AT ALL TIMES IN AN UPDATED CONDITION.
24. ALL PIPE 3" AND OVER SHALL HAVE THRUST BLOCKING AT EACH TURN.
25. ALL AUTOMATIC REMOTE CONTROL VALVES WILL HAVE 3" MINIMUM DEPTH OF 3/4" WASHED GRAVEL UNDERNEATH VALVE AND VALVE BOX. GRAVEL SHALL EXTENT 3" BEYOND PERIMETER OF VALVE BOX.
26. THERE SHALL BE 3" MINIMUM SPACE BETWEEN BOTTOM OF VALVE BOX COVER AND TOP OF VALVE STRUCTURE.

LANDSCAPE PLANTING NOTES:

1. SEE PLANTING SEASON SCHEDULE FOR PLANT INSTALLATION DATES. IF PLANT MATERIAL ARE INSTALLED OUTSIDE OF THOSE TIME PERIODS, CONTRACTOR MUST PROVIDE AND ADDITIONAL SPRING SEASON OF WARRANTY BEYOND THE STANDARD 1 YEAR MATERIAL & INSTALLATION WARRANTY SPECIFIED BY CONTRACT
2. PLANT MATERIAL SHALL COMPLY WITH THE CURRENT EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1. UNLESS NOTED OTHERWISE, DECIDUOUS SHRUBS SHALL HAVE AT LEAST 5 CANES AT THE SPECIFIED HEIGHT. ORNAMENTAL TREES SHALL HAVE NO 'V' CROTCHES AND SHALL BEGIN BRANCHING NO LOWER THAN 3' FEET ABOVE THE ROOT BALL. STREET AND BOULEVARD TREES SHALL BEGIN BRANCHING NO LOWER THAN 6' ABOVE PAVED SURFACE.
3. STAKE PROPOSED PLANTING LOCATIONS PER PLAN FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO INSTALL
4. COORDINATE INSTALLATION OF PLANT MATERIAL WITH GENERAL CONTRACTOR.
5. SEE PLANTING DETAILS FOR INSTALLATION OF PLANT MATERIAL
6. SUBSTITUTION REQUESTS FOR PLANT MATERIAL TYPE & SIZE SHALL BE SUBMITTED TO THE LANDSCAPE ARCHITECT FOR CONSIDERATION PRIOR TO INSTALLATION.
7. MINOR, ON-SITE ADJUSTMENTS IN LOCATION OF PROPOSED PLANT MATERIALS MAY BE NEEDED IN FIELD. MORE SUBSTANTIAL ADJUSTMENTS MUST BE REVIEWED AND APPROVED BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
8. FERTILIZE PLANT MATERIAL UPON INSTALLATION WITH MNDOT 3881-B4 TYPE 4 FERTILIZER MIXED IN WITH THE PLANTING SOIL (PER THE MANUFACTURER'S INSTRUCTIONS) OR TREAT FOR SUMMER AND FALL INSTALLATION WITH AN APPLICATION OF GRANULAR 10-0-5 OF 12 OZ. PER 2.5" CALIPER TREE AND 6 OZ. PER SHRUB WITH AN ADDITIONAL APPLICATION OF 10-0-10 THE FOLLOWING SPRING IN THE TREE SAUCER.
9. INSTALL 12" DEPTH OF PLANTING SOIL IN AREAS RECEIVING GROUND COVER, PERENNIALS, AND ANNUALS. PLANTING SOIL SHALL CONSIST OF MNDOT 3877-B MODIFIED TO CONTAIN A MAXIMUM OF 30% SAND, A PH OF 7.1 MAX, OR AS OTHERWISE SPECIFIED IN THE PROJECT SPECIFICATIONS MANUAL. AMEND THE TOPSOIL WITH 4 INCHES OF MNDOT 3890 - B GRADE 2 COMPOST.
10. PROVIDE TREE TRUNK DAMAGE PROTECTION FOR SMOOTH-BARKED DECIDUOUS TREES PLANTED IN THE FALL PRIOR TO DECEMBER 1. REMOVE WRAPPING AFTER MAY THE NEXT SPRING. WRAPPING MATERIAL SHALL BE TWO-WALLED PLASTIC SHEETING APPLIED FROM TRUNK FLARE TO FIRST BRANCH.
11. PRIOR TO PLANTING, APPLY PRE-EMERGENT HERBICIDE (PREEN OR APPROVED EQUAL) IN ANNUAL, PERENNIAL, AND SHRUB BEDS FOLLOWED BY MULCH AS SPECIFIED.
12. WHERE SHOWN, SHRUB & PERENNIAL BEDS SHALL BE MULCHED PER SCHEDULE(S)
13. ALL TREES SHALL BE MULCHED WITH MNDOT 3882 - E TYPE 6 MULCH TO OUTER EDGE OF SAUCER OR TO EDGE OF PLANTING BED, IF APPLICABLE. ALL MULCH SHALL BE KEPT WITHIN A MINIMUM OF 4" FROM TREE TRUNK. SEE MULCH SCHEDULE.
14. PLANT MATERIALS SHALL CONFORM WITH THE AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS AND SHALL BE OF HARDY STOCK, FREE FROM DISEASE, DAMAGE AND DISFIGURATION. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING PLUMPNESS OF PLANT MATERIAL FOR DURATION OF ACCEPTANCE PERIOD.
15. UPON DISCOVERY OF A DISCREPANCY BETWEEN THE QUANTITY OF PLANTS SHOWN ON THE SCHEDULE AND THE QUANTITY SHOWN ON THE PLAN, THE PLAN SHALL GOVERN.
16. CONDITION OF VEGETATION SHALL BE MONITORED BY THE LANDSCAPE ARCHITECT THROUGHOUT THE DURATION OF THE CONTRACT. LANDSCAPE MATERIALS PART OF THE CONTRACT SHALL BE WARRANTED FOR ONE (1) FULL GROWING SEASONS FROM SUBSTANTIAL COMPLETION DATE.
17. ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL RECEIVE MIN. 6" LAYER MNDOT 3877-A COMMON TOPSOIL BORROW. IF NOT SPECIFICED ON PLAN, INCLUDE SOD OR SEED (TO MATCH SURROUNDING AND/OR ADJACENT GROUND COVERING).
18. COORDINATE LOCATION OF VEGETATION WITH UNDERGROUND AND OVERHEAD UTILITIES, LIGHTING FIXTURES, DOORS AND WINDOWS. CONTRACTOR SHALL STAKE IN THE FIELD FINAL LOCATION OF TREES AND SHRUBS FOR REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
19. ALL PLANT MATERIALS SHALL BE WATERED AND MAINTAINED UNTIL ACCEPTANCE.
20. REPAIR AT NO COST TO OWNER ALL DAMAGE RESULTING FROM LANDSCAPE CONTRACTOR'S ACTIVITIES.
21. SWEEP AND MAINTAIN ALL PAVED SURFACES FREE OF DEBRIS GENERATED FROM LANDSCAPE CONTRACTOR'S ACTIVITIES.

SEE SHEET L1.0 FOR GENERAL LANDSCAPE NOTES & LEGEND

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Golden Valley, MN 55422
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PRELIMINARY: NOT FOR CONSTRUCTION

PROJECT
TSUNAMI EXPRESS CAR WASH
1896 ADAMS ST., MANKATO, MN 56001

OWNER
TSUNAMI EXPRESS CAR WASH, LLC.
4800 MEADOWS ROAD, #300, LAKE OSWEGO, OREGON 97035

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Robert L. Binder
DATE 07/23/24 LICENSE NO. 25821

ISSUE/SUBMITTAL SUMMARY

DATE	DESCRIPTION
7/23/24	CITY SUBMITTAL

PROJECT MANAGER	DAVID KNABLE
CONTACT NUMBER	612-615-0060
DRAWN BY	DK, BB
REVIEWED BY	DK
PROJECT NUMBER	24290

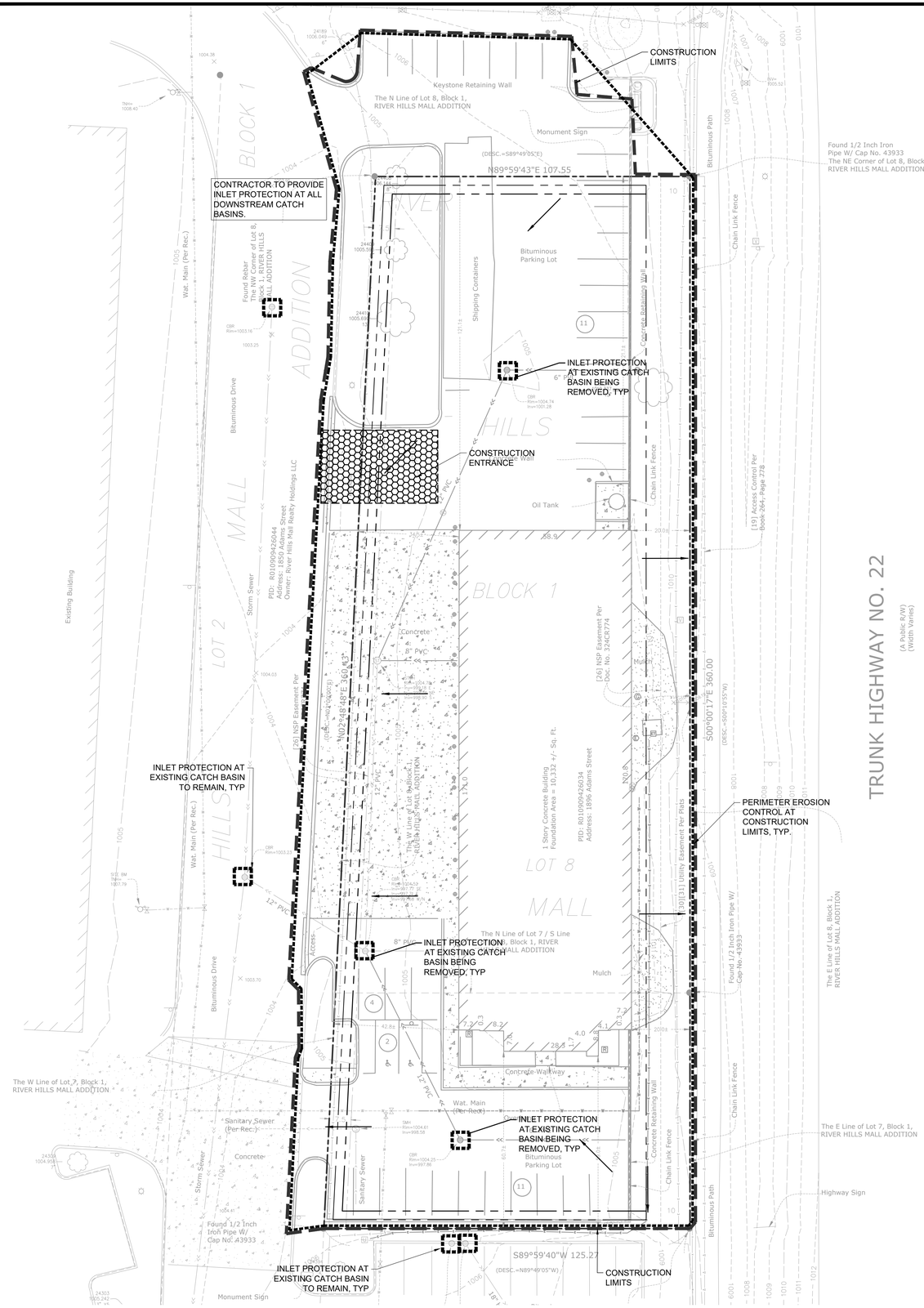
REVISION SUMMARY

DATE	DESCRIPTION

LANDSCAPE PLAN NOTES & DETAILS

L1.1

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SWPPP NOTES:

1. ALL EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE. CONTACT "GOPHER STATE ONE CALL" (651-454-0002 OR 800-252-1166) FOR UTILITY LOCATIONS, 48 HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY UTILITIES THAT ARE DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.
2. THIS PROJECT IS GREATER THAN ONE ACRE AND WILL REQUIRE AN MPCA NPDES PERMIT. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY EROSION CONTROL PERMITS REQUIRED BY THE CITY.
3. SEE SHEETS SW1.0 - SW1.3 FOR ALL EROSION CONTROL NOTES, DESCRIPTIONS, AND PRACTICES.
4. SEE GRADING PLAN FOR ADDITIONAL GRADING AND EROSION CONTROL NOTES.
5. CONTRACTOR IS RESPONSIBLE FOR SWPPP IMPLEMENTATION, INSPECTIONS, AND COMPLIANCE WITH NPDES PERMIT.

ALL SPECIFIED EROSION AND SEDIMENT CONTROL PRACTICES, AND MEASURES CONTAINED IN THIS SWPPP ARE THE MINIMUM REQUIREMENTS. ADDITIONAL PRACTICES MAY BE REQUIRED DURING THE COURSE OF CONSTRUCTION.

CITY OF MANKATO EROSION CONTROL NOTES:

1. RESERVED FOR CITY SPECIFIC EROSION CONTROL NOTES.

SWPPP LEGEND:

- 1125 — EX. 1' CONTOUR ELEVATION INTERVAL
- DRAINAGE ARROW
- SILT FENCE / BIOROLL - GRADING LIMIT
- INLET PROTECTION
- STABILIZED CONSTRUCTION ENTRANCE

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David J. Knaeble
DATE 07/23/24 LICENSE NO. 48776

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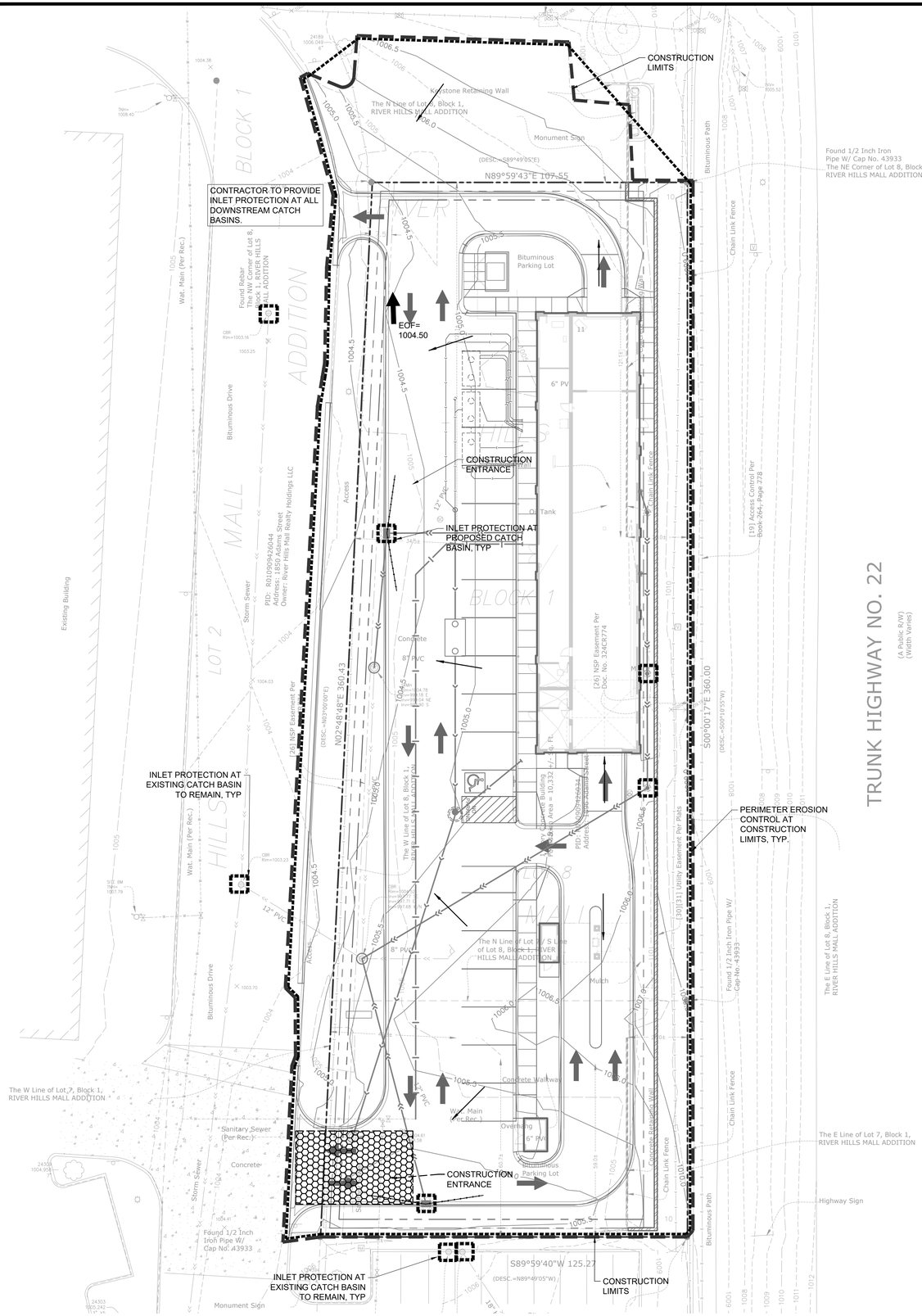
REVISION SUMMARY

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SWPPP - EXISTING CONDITIONS

SW1.0

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SWPPP LEGEND:

- 1125 — EX. 1' CONTOUR ELEVATION INTERVAL
- 1137 — 1.0' CONTOUR ELEVATION INTERVAL
- DRAINAGE ARROW
- SILT FENCE / BIOROLL - GRADING LIMIT
- INLET PROTECTION
- STABILIZED CONSTRUCTION ENTRANCE
- EROSION CONTROL BLANKET

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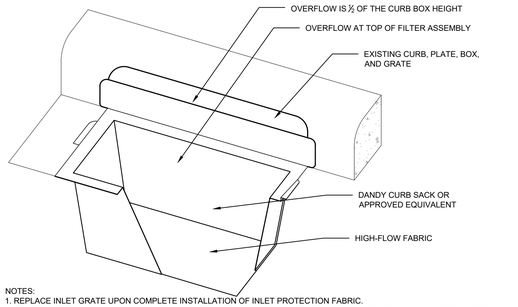
REVISION SUMMARY

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SWPPP - PROPOSED CONDITIONS

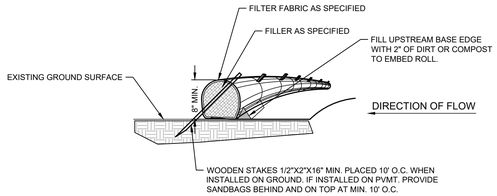
SW1.1

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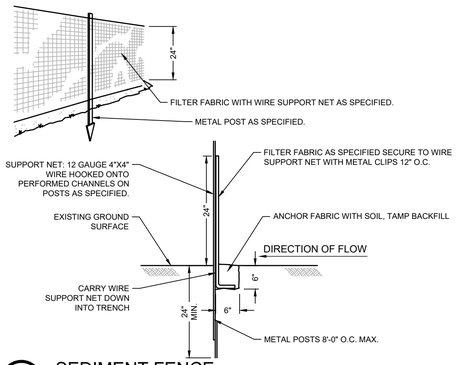
NOTES:
1. REPLACE INLET GRATE UPON COMPLETE INSTALLATION OF INLET PROTECTION FABRIC.
2. CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM THE SURFACE OF THE SYSTEM AFTER EACH STORM EVENT AND AT THE COMPLETION OF THE CONTRACT.
3. CONTRACTOR SHALL USE DANDY SACK OR APPROVED EQUIVALENT FOR STRUCTURES WITHOUT CURBING.

1 CURB INLET SACK
NTS

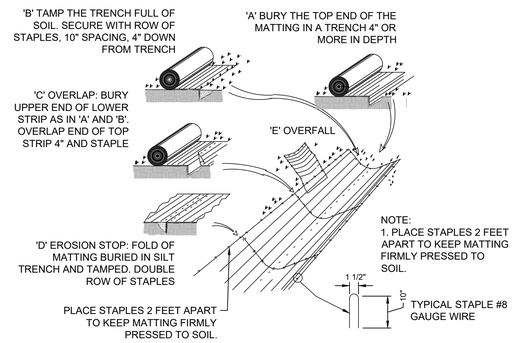


NOTE:
1. COMPOST FILTER LOGS (BIO ROLLS) SHALL BE FILTREXX EROSION CONTROL SOXX OR APPROVED EQUAL.
2. COMPOST FILLER TO BE MADE FROM A COMPOST BLEND 30%-40% GRADE 2 (SPEC 3890) AND 60%-70% PARTIALLY DECOMPOSED WOOD CHIPS, PER MNDOT SPEC 3897.
3. FILTER FABRIC SHALL BE GEOTEXTILE KNITTED MATERIAL WITH MAX. OPENINGS OF 3/8".
4. IF MULTIPLE ROLLS NEEDED, OVERLAP BY MIN. 12" AT ENDS AND STAKE.
5. SILT SHALL BE REMOVED ONCE IT REACHES 80% OF THE HEIGHT OF THE ROLL OR AS DEEMED NECESSARY BY SITE CONTRACTOR TO MAINTAIN PROPER FUNCTION.

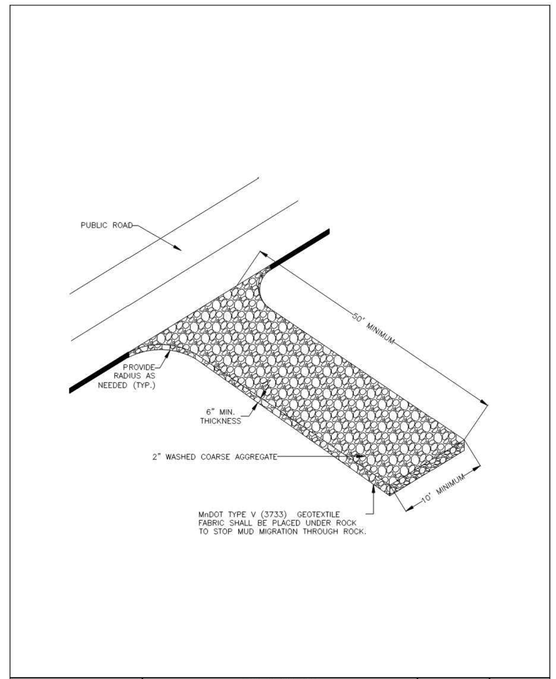
4 SEDIMENT BIO-ROLL / COMPOST FILTER LOG
NTS



2 SEDIMENT FENCE
NTS



3 EROSION BLANKET
NTS



APPROVED	CITY OF MANKATO ENGINEERING	SPECIFICATION REFERENCE	STANDARD PLATE NO.
Michael J McCarty Digitally signed by Michael J McCarty Date: 2022.10.28 12:14:06-05'00' CITY ENGINEER	STABILIZED CONSTRUCTION EXIT		2003A 1 OF 1

CivilSite GROUP
Civil Engineering · Surveying · Landscape Architecture
5000 Glenwood Avenue
Golden Valley, MN 55422
civilsitegroup.com 612-615-0060

PRELIMINARY: NOT FOR CONSTRUCTION

PROJECT TSUNAMI EXPRESS CAR WASH
1896 ADAMS ST., MANKATO, MN 56001

OWNER TSUNAMI EXPRESS CAR WASH, LLC.
4800 MEADOWS ROAD, #300, LAKE OSWEGO, OREGON 97035

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.

David J. Knaeble
DATE 07/23/24 LICENSE NO. 48776

ISSUE/SUBMITTAL SUMMARY

DATE	DESCRIPTION
7/23/24	CITY SUBMITTAL

PROJECT MANAGER	DAVID KNABLE
CONTACT NUMBER	612-615-0060
DRAWN BY	DK, BB
REVIEWED BY	DK
PROJECT NUMBER	24290

REVISION SUMMARY

DATE	DESCRIPTION

SWPPP - DETAILS

SW1.2

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THE CONTRACTOR AND ALL SUBCONTRACTORS INVOLVED WITH A CONSTRUCTION ACTIVITY THAT DISTURBS SITE SOIL OR WHO IMPLEMENT A POLLUTANT CONTROL MEASURE IDENTIFIED IN THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) MUST COMPLY WITH THE REQUIREMENTS OF THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT (DATED AUGUST 1, 2018 # MNR100001) AND ANY LOCAL GOVERNING AGENCY HAVING JURISDICTION CONCERNING EROSION AND SEDIMENTATION CONTROL.

STORMWATER DISCHARGE DESIGN REQUIREMENTS

SWPPP

THE NATURE OF THIS PROJECT WILL BE CONSISTENT WITH WHAT IS REPRESENTED IN THIS SET OF CONSTRUCTION PLANS AND SPECIFICATIONS. SEE THE SWPPP PLAN SHEETS AND SWPPP NARRATIVE (ATTACHMENT A: CONSTRUCTION SWPPP TEMPLATE) FOR ADDITIONAL SITE SPECIFIC SWPPP INFORMATION. THE PLANS SHOW LOCATIONS AND TYPES OF ALL TEMPORARY AND PERMANENT EROSION PREVENTION AND SEDIMENT CONTROL BMP'S. STANDARD DETAILS ARE ATTACHED TO THIS SWPPP DOCUMENT.

THE INTENDED SEQUENCING OF MAJOR CONSTRUCTION ACTIVITIES IS AS FOLLOWS:
1. INSTALL STABILIZED ROCK CONSTRUCTION ENTRANCE
2. INSTALLATION OF SILT FENCE AROUND SITE
3. INSTALL ORANGE CONSTRUCTION FENCING AROUND INFILTRATION AREAS
4. INSTALL INLET PROTECTION AT ALL ADJACENT AND DOWNSTREAM CATCH BASINS
5. CLEAR AND GRUB FOR TEMPORARY SEDIMENT BASIN / POND INSTALL
6. CONSTRUCT TEMPORARY SEDIMENT BASIN / POND (SECTION 14)
7. CLEAR AND GRUB REMAINDER OF SITE
8. STRIP AND STOCKPILE TOPSOIL
9. ROUGH GRADING OF SITE
10. STABILIZE DENUDED AREAS AND STOCKPILES
11. INSTALL SANITARY SEWER, WATER MAIN STORM SEWER AND SERVICES
12. INSTALL SILT FENCE / INLET PROTECTION AROUND CB'S
13. INSTALL STREET SECTION
14. INSTALL CURB AND GUTTER
15. BITUMINOUS ON STREETS
16. FINAL GRADE BOULEVARD, INSTALL SEED AND MULCH
17. REMOVE ACCUMULATED SEDIMENT FROM BASIN / POND
18. FINAL GRADE POND / INFILTRATION BASINS (DO NOT COMPACT SOILS IN INFILTRATION AREAS.)
19. WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND THE SITE IS STABILIZED BY EITHER SEED OR SOD/LANDSCAPING, REMOVE SILT FENCE AND RESEED ANY AREAS DISTURBED BY THE REMOVAL.

RECORDS RETENTION:

THE SWPPP (ORIGINAL OR COPIES) INCLUDING, ALL CHANGES TO IT, AND INSPECTIONS AND MAINTENANCE RECORDS MUST BE KEPT AT THE SITE DURING CONSTRUCTION BY THE PERMITTEE WHO HAS OPERATIONAL CONTROL OF THAT PORTION OF THE SITE. THE SWPPP CAN BE KEPT IN EITHER THE FIELD OFFICE OR IN AN ON SITE VEHICLE DURING NORMAL WORKING HOURS.

ALL OWNER(S) MUST KEEP THE SWPPP, ALONG WITH THE FOLLOWING ADDITIONAL RECORDS, ON FILE FOR THREE (3) YEARS AFTER SUBMITTAL OF THE NOT AS OUTLINED IN SECTION 4. THIS DOES NOT INCLUDE ANY RECORDS AFTER SUBMITTAL OF THE NOT.

1. THE FINAL SWPPP;
2. ANY OTHER STORMWATER RELATED PERMITS REQUIRED FOR THE PROJECT;
3. RECORDS OF ALL INSPECTION AND MAINTENANCE CONDUCTED DURING CONSTRUCTION (SEE SECTION 11, INSPECTIONS AND MAINTENANCE);
4. ALL PERMANENT OPERATION AND MAINTENANCE AGREEMENTS THAT HAVE BEEN IMPLEMENTED, INCLUDING ALL RIGHT OF WAY, CONTRACTS, COVENANTS AND OTHER BINDING REQUIREMENTS REGARDING PERPETUAL MAINTENANCE; AND
5. ALL REQUIRED CALCULATIONS FOR DESIGN OF THE TEMPORARY AND PERMANENT STORMWATER MANAGEMENT SYSTEMS.

SWPPP IMPLEMENTATION RESPONSIBILITIES:

1. THE OWNER AND CONTRACTOR ARE PERMITTEE(S) AS IDENTIFIED BY THE NPDES PERMIT.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE IMPLEMENTATION OF THE SWPPP, INCLUDING THE ACTIVITIES OF ALL OF THE CONTRACTOR'S SUBCONTRACTORS.
3. CONTRACTOR SHALL PROVIDE A PERSON(S) KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BMPS TO OVERSEE ALL INSTALLATION AND MAINTENANCE OF BMPS AND IMPLEMENTATION OF THE SWPPP
4. CONTRACTOR SHALL PROVIDE PERSON(S) MEETING THE TRAINING REQUIREMENTS OF THE NPDES PERMIT TO CONDUCT INSPECTION AND MAINTENANCE OF ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPS IN ACCORDANCE WITH THE REQUIREMENTS OF THE PERMIT. ONE OF THESE INDIVIDUAL(S) MUST BE AVAILABLE FOR AN ONSITE INSPECTION WITHIN 72 HOURS UPON REQUEST BY MPCA. CONTRACTOR SHALL PROVIDE TRAINING DOCUMENTATION FOR THESE INDIVIDUAL(S) AS REQUIRED BY THE NPDES PERMIT. THIS TRAINING DOCUMENTATION SHALL BE RECORDED IN OR WITH THE SWPPP BEFORE THE START OF CONSTRUCTION OR AS SOON AS THE PERSONNEL FOR THE PROJECT HAVE BEEN DETERMINED. DOCUMENTATION SHALL INCLUDE:
   - 4.1. NAMES OF THE PERSONNEL ASSOCIATED WITH THE PROJECT THAT ARE REQUIRED TO BE TRAINED PER SECTION 21 OF THE PERMIT.
   - 4.2. DATES OF TRAINING AND NAME OF INSTRUCTOR AND ENTITY PROVIDING TRAINING.
   - 4.3. CONTENT OF TRAINING COURSE OR WORKSHOP INCLUDING THE NUMBER OF HOURS OF TRAINING.
5. FOLLOWING FINAL STABILIZATION AND THE TERMINATION OF COVERAGE FOR THE NPDES PERMIT, THE OWNER IS EXPECTED TO FURNISH LONG TERM OPERATION AND MAINTENANCE (O & M) OF THE PERMANENT STORM WATER MANAGEMENT SYSTEM.

CONSTRUCTION ACTIVITY REQUIREMENTS

SWPPP AMENDMENTS (SECTION 6):

1. ONE OF THE INDIVIDUALS DESCRIBED IN ITEM 21.2.A OR ITEM 21.2.B OR ANOTHER QUALIFIED INDIVIDUAL MUST COMPLETE ALL SWPPP CHANGES. CHANGES INVOLVING THE USE OF A LESS STRINGENT BMP MUST INCLUDE A JUSTIFICATION DESCRIBING HOW THE REPLACEMENT BMP IS EFFECTIVE FOR THE SITE CHARACTERISTICS.
2. 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.
3. PERMITTEES MUST AMEND THE SWPPP TO INCLUDE ADDITIONAL OR MODIFIED BMPS AS NECESSARY TO CORRECT PROBLEMS IDENTIFIED 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 APPROVED TMDL.

BMP SELECTION AND INSTALLATION (SECTION 7):

1. PERMITTEES MUST SELECT, INSTALL, AND MAINTAIN THE BMPS IDENTIFIED IN THE SWPPP AND IN THIS PERMIT IN AN APPROPRIATE AND FUNCTIONAL MANNER AND IN ACCORDANCE WITH RELEVANT MANUFACTURER SPECIFICATIONS AND ACCEPTED ENGINEERING PRACTICES.

EROSION PREVENTION (SECTION 8):

1. BEFORE WORK BEGINS, PERMITTEES MUST DELINEATE THE LOCATION OF AREAS NOT TO BE DISTURBED.
2. PERMITTEES 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 (E.G., SLOPE DRAINING AND TERRACING).
3. PERMITTEES MUST STABILIZE ALL EXPOSED SOIL AREAS, INCLUDING STOCKPILES. STABILIZATION MUST BE INITIATED IMMEDIATELY TO LIMIT SOIL EROSION WHEN CONSTRUCTION ACTIVITY HAS PERMANENTLY OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS. STABILIZATION MUST BE COMPLETED NO LATER THAN 14 CALENDAR DAYS AFTER THE CONSTRUCTION ACTIVITY HAS CEASED. STABILIZATION IS NOT REQUIRED ON CONSTRUCTED BASE COMPONENTS OF ROADS, PARKING LOTS AND SIMILAR SURFACES. STABILIZATION IS NOT REQUIRED ON TEMPORARY STOCKPILES WITHOUT SIGNIFICANT SILT, CLAY OR ORGANIC COMPONENTS (E.G., CLEAN AGGREGATE STOCKPILES, DEMOLITION CONCRETE STOCKPILES, SAND STOCKPILES) BUT PERMITTEES MUST PROVIDE SEDIMENT CONTROLS AT THE BASE OF THE STOCKPILE.
4. FOR PUBLIC WATERS THAT THE MINNESOTA DNR HAS PROMULGATED "WORK IN WATER RESTRICTIONS" DURING SPECIFIED FISH SPAWNING TIME FRAMES, PERMITTEES MUST COMPLETE STABILIZATION OF ALL EXPOSED SOIL AREAS WITHIN 200 FEET OF THE WATER'S EDGE, AND THAT DRAIN TO THESE WATERS, WITHIN 24 HOURS DURING THE RESTRICTION PERIOD.
5. 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 AFTER CONNECTING TO A SURFACE WATER OR PROPERTY EDGE AND CONSTRUCTION IN THAT PORTION OF THE DITCH TEMPORARILY OR PERMANENTLY CEASES.
6. TEMPORARY OR PERMANENT DITCHES OR SWALES BEING USED AS A SEDIMENT CONTAINMENT SYSTEM DURING CONSTRUCTION (WITH PROPERLY DESIGNED ROCK-DITCH CHECKS, BIO ROLLS, SILT DIKES, ETC.) DO NOT NEED TO BE STABILIZED. PERMITTEES MUST STABILIZE THESE AREAS WITHIN 24 HOURS AFTER THEIR USE AS A SEDIMENT CONTAINMENT SYSTEM CEASES
7. PERMITTEES MUST NOT USE MULCH, HYDROMULCH, TACKIFIER, POLYACRYLAMIDE OR SIMILAR EROSION PREVENTION PRACTICES WITHIN ANY PORTION OF THE NORMAL WETTED PERIMETER OF A TEMPORARY OR PERMANENT DRAINAGE DITCH OR SWALE SECTION WITH A CONTINUOUS SLOPE OF GREATER THAN 2 PERCENT.
8. PERMITTEES MUST PROVIDE TEMPORARY OR PERMANENT ENERGY DISSIPATION AT ALL PIPE OUTLETS WITHIN 24 HOURS AFTER CONNECTION TO A SURFACE WATER OR PERMANENT STORMWATER TREATMENT SYSTEM.
9. PERMITTEES MUST NOT DISTURB MORE LAND (I.E., PHASING) THAN CAN BE EFFECTIVELY INSPECTED AND MAINTAINED IN ACCORDANCE WITH SECTION 11.

SEDIMENT CONTROL (SECTION 9):

1. PERMITTEES MUST ESTABLISH SEDIMENT CONTROL BMPS ON ALL DOWNGRADIENT PERIMETERS OF THE SITE AND DOWNGRADIENT AREAS OF THE SITE THAT DRAIN TO ANY SURFACE WATER, INCLUDING CURB AND GUTTER SYSTEMS. PERMITTEES MUST LOCATE SEDIMENT CONTROL PRACTICES UPGRADIENT OF ANY BUFFER ZONES. PERMITTEES MUST INSTALL SEDIMENT CONTROL PRACTICES BEFORE ANY UPGRADIENT LAND-DISTURBING ACTIVITIES BEGIN AND MUST KEEP THE SEDIMENT CONTROL PRACTICES IN PLACE UNTIL THEY ESTABLISH PERMANENT COVER.
2. IF DOWNGRADIENT SEDIMENT CONTROLS ARE OVERLOADED, BASED ON FREQUENT FAILURE OR EXCESSIVE MAINTENANCE REQUIREMENTS, PERMITTEES MUST INSTALL ADDITIONAL UPGRADIENT SEDIMENT CONTROL PRACTICES OR REDUNDANT BMPS TO ELIMINATE THE OVERLOADING AND AMEND THE SWPPP TO IDENTIFY THESE ADDITIONAL PRACTICES AS REQUIRED IN ITEM 6.3.
3. TEMPORARY OR PERMANENT DRAINAGE DITCHES AND SEDIMENT BASINS DESIGNED AS PART OF A SEDIMENT CONTAINMENT SYSTEM (E.G., DITCHES WITH ROCK-CHECK DAMS) REQUIRE SEDIMENT CONTROL PRACTICES ONLY AS APPROPRIATE FOR SITE CONDITIONS.
4. A FLOATING SILT CURTAIN PLACED IN THE WATER IS NOT A SEDIMENT CONTROL BMP TO SATISFY ITEM 9.2 EXCEPT WHEN WORKING ON A SHORELINE OR BELOW THE WATERLINE, IMMEDIATELY AFTER THE SHORT TERM CONSTRUCTION ACTIVITY (E.G., INSTALLATION OF RIP RAP ALONG THE SHORELINE) IN THAT AREA IS COMPLETE, PERMITTEES MUST INSTALL AN UPLAND PERIMETER CONTROL PRACTICE IF EXPOSED SOILS STILL DRAIN TO A SURFACE WATER.
5. PERMITTEES MUST RE-INSTALL ALL SEDIMENT CONTROL PRACTICES ADJUSTED OR REMOVED TO ACCOMMODATE SHORT-TERM ACTIVITIES SUCH AS CLEARING OR GRUBBING, OR PASSAGE OF VEHICLES, IMMEDIATELY AFTER THE SHORT-TERM ACTIVITY IS COMPLETED. PERMITTEES MUST RE-INSTALL SEDIMENT CONTROL PRACTICES BEFORE THE NEXT PRECIPITATION EVENT EVEN IF THE SHORT-TERM ACTIVITY IS NOT COMPLETE.
6. PERMITTEES MUST PROTECT ALL STORM DRAIN INLETS USING APPROPRIATE BMPS DURING CONSTRUCTION UNTIL THEY ESTABLISH PERMANENT COVER ON ALL AREAS WITH POTENTIAL FOR DISCHARGING TO THE INLET.
7. PERMITTEES MAY REMOVE INLET PROTECTION FOR A PARTICULAR INLET IF A SPECIFIC SAFETY CONCERN (E.G. STREET FLOODING/FREEZING) IS IDENTIFIED BY THE PERMITTEES OR THE JURISDICTIONAL AUTHORITY (E.G., CITY/COUNTY/TOWNSHIP/MINNESOTA DEPARTMENT OF TRANSPORTATION ENGINEER). PERMITTEES MUST DOCUMENT THE NEED FOR REMOVAL IN THE SWPPP.
8. PERMITTEES MUST PROVIDE SILT FENCE OR OTHER EFFECTIVE SEDIMENT CONTROLS AT THE BASE OF STOCKPILES ON THE DOWNGRADIENT PERIMETER.
9. PERMITTEES MUST LOCATE STOCKPILES OUTSIDE OF NATURAL BUFFERS OR SURFACE WATERS, INCLUDING STORMWATER CONVEYANCES SUCH AS CURB AND GUTTER SYSTEMS UNLESS THERE IS A BYPASS IN PLACE FOR THE STORMWATER.
10. PERMITTEES MUST INSTALL A VEHICLE TRACKING BMP TO MINIMIZE THE TRACK OUT OF SEDIMENT FROM THE CONSTRUCTION SITE OR ONTO PAVED ROADS WITHIN THE SITE.
11. PERMITTEES MUST USE STREET SWEEPING IF VEHICLE TRACKING BMPS ARE NOT ADEQUATE TO PREVENT SEDIMENT TRACKING ONTO THE STREET.
12. PERMITTEES MUST INSTALL TEMPORARY SEDIMENT BASINS AS REQUIRED IN SECTION 14.
13. IN ANY AREAS OF THE SITE WHERE FINAL VEGETATIVE STABILIZATION WILL OCCUR, PERMITTEES MUST RESTRICT VEHICLE AND EQUIPMENT USE TO MINIMIZE SOIL COMPACTION.
14. PERMITTEES MUST PRESERVE TOPSOIL ON THE SITE, UNLESS INFEASIBLE.
15. PERMITTEES MUST DIRECT DISCHARGES FROM BMPS TO VEGETATED AREAS UNLESS INFEASIBLE.
16. PERMITTEES MUST PRESERVE A 50 FOOT NATURAL BUFFER OR, IF A BUFFER IS INFEASIBLE ON THE SITE, PROVIDE REDUNDANT (DOUBLE) PERIMETER SEDIMENT CONTROLS WHEN A SURFACE WATER IS LOCATED WITHIN 50 FEET OF THE PROJECT'S EARTH DISTURBANCES AND STORMWATER FLOWS TO THE SURFACE WATER. PERMITTEES MUST INSTALL PERIMETER SEDIMENT CONTROLS AT LEAST 5 FEET APART UNLESS LIMITED BY LACK OF AVAILABLE SPACE. NATURAL BUFFERS ARE NOT REQUIRED ADJACENT TO ROAD DITCHES, JUDICIAL DITCHES, COUNTY DITCHES, STORMWATER CONVEYANCE CHANNELS, STORM DRAIN INLETS, AND SEDIMENT BASINS. IF PRESERVING THE BUFFER IS INFEASIBLE, PERMITTEES MUST DOCUMENT THE REASONS IN THE SWPPP. SHEET PILING IS A REDUNDANT PERIMETER CONTROL IF INSTALLED IN A MANNER THAT RETAINS ALL STORMWATER.
17. PERMITTEES MUST USE POLYMERS, FLOCCULANTS, OR OTHER SEDIMENTATION TREATMENT CHEMICALS IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICES, DOSING SPECIFICATIONS AND SEDIMENT REMOVAL DESIGN SPECIFICATIONS PROVIDED BY THE MANUFACTURER OR SUPPLIER. THE PERMITTEES MUST USE CONVENTIONAL EROSION AND SEDIMENT CONTROLS PRIOR TO CHEMICAL ADDITION AND MUST DIRECT TREATED STORMWATER TO A SEDIMENT CONTROL SYSTEM FOR FILTRATION OR SETTLEMENT OF THE FLOC PRIOR TO DISCHARGE.

DEWATERING AND BASIN DRAINING (SECTION 10):

1. PERMITTEES MUST DISCHARGE TURBID OR SEDIMENT-LADEN WATERS RELATED TO DEWATERING OR BASIN DRAINING (E.G., PUMPED DISCHARGES, TRENCH/DITCH CUTS FOR DRAINAGE) TO A TEMPORARY OR PERMANENT SEDIMENT BASIN ON THE PROJECT SITE UNLESS INFEASIBLE. PERMITTEES MAY DEWATER TO SURFACE WATERS IF THEY VISUALLY CHECK TO ENSURE ADEQUATE TREATMENT HAS BEEN OBTAINED AND NUISANCE CONDITIONS (SEE MINN. R. 7050.0210, SUBP. 2) WILL NOT RESULT FROM THE DISCHARGE. IF PERMITTEES CANNOT DISCHARGE THE WATER TO A SEDIMENTATION BASIN PRIOR TO ENTERING A SURFACE WATER, PERMITTEES MUST TREAT IT WITH APPROPRIATE BMPS SUCH THAT THE DISCHARGE DOES NOT ADVERSELY AFFECT THE SURFACE WATER OR DOWNSTREAM PROPERTIES.
2. IF PERMITTEES MUST DISCHARGE WATER CONTAINING OIL OR GREASE, THEY MUST USE AN OIL-WATER SEPARATOR OR SUITABLE FILTRATION DEVICE (E.G., CARTRIDGE FILTERS, ABSORBENTS PADS) PRIOR TO DISCHARGE.
3. PERMITTEES MUST DISCHARGE ALL WATER FROM DEWATERING OR BASIN-DRAINING ACTIVITIES IN A MANNER THAT DOES NOT CAUSE EROSION OR SCOUR IN THE IMMEDIATE VICINITY OF DISCHARGE POINTS OR INUNDATION OF WETLANDS IN THE IMMEDIATE VICINITY OF DISCHARGE POINTS THAT CAUSES SIGNIFICANT ADVERSE IMPACT TO THE WETLAND.
4. IF PERMITTEES USE FILTERS WITH BACKWASH WATER, THEY MUST HAUL THE BACKWASH WATER AWAY FOR DISPOSAL, RETURN THE BACKWASH WATER TO THE BEGINNING OF THE TREATMENT PROCESS, OR INCORPORATE THE BACKWASH WATER INTO THE SITE IN A MANNER THAT DOES NOT CAUSE EROSION.

INSPECTIONS AND MAINTENANCE (SECTION 11):

1. PERMITTEES MUST ENSURE A TRAINED PERSON, AS IDENTIFIED IN ITEM 21.2.B, WILL INSPECT THE ENTIRE CONSTRUCTION SITE AT LEAST ONCE EVERY SEVEN (7) DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 1/2 INCH IN 24 HOURS.
2. PERMITTEES MUST INSPECT AND MAINTAIN ALL PERMANENT STORMWATER TREATMENT BMPS.
3. PERMITTEES MUST INSPECT ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPS AND POLLUTION PREVENTION MANAGEMENT MEASURES TO ENSURE INTEGRITY AND EFFECTIVENESS. PERMITTEES MUST REPAIR, REPLACE OR SUPPLEMENT ALL NONFUNCTIONAL BMPS WITH FUNCTIONAL BMPS BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY UNLESS ANOTHER TIME FRAME IS SPECIFIED IN ITEM 11.5 OR 11.6. PERMITTEES MAY TAKE ADDITIONAL TIME IF FIELD CONDITIONS PREVENT ACCESS TO THE AREA.
4. DURING EACH INSPECTION, PERMITTEES MUST INSPECT SURFACE WATERS, INCLUDING DRAINAGE DITCHES AND CONVEYANCE SYSTEMS BUT NOT CURB AND GUTTER SYSTEMS, FOR EVIDENCE OF EROSION AND SEDIMENT DEPOSITION. PERMITTEES MUST REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS, INCLUDING DRAINAGE WAYS, CATCH BASINS, AND OTHER DRAINAGE SYSTEMS AND RESTABILIZE THE AREAS WHERE SEDIMENT REMOVAL RESULTS IN EXPOSED SOIL. PERMITTEES MUST COMPLETE REMOVAL AND STABILIZATION WITHIN SEVEN (7) CALENDAR DAYS OF DISCOVERY UNLESS PRECLUDED BY LEGAL, REGULATORY, OR PHYSICAL ACCESS CONSTRAINTS. PERMITTEES MUST USE ALL REASONABLE EFFORTS TO OBTAIN ACCESS. IF PRECLUDED, REMOVAL AND STABILIZATION MUST TAKE PLACE WITHIN SEVEN (7) DAYS OF OBTAINING ACCESS. PERMITTEES ARE RESPONSIBLE FOR CONTACTING ALL LOCAL, REGIONAL, STATE AND FEDERAL AUTHORITIES AND RECEIVING ANY APPLICABLE PERMITS, PRIOR TO CONDUCTING ANY WORK IN SURFACE WATERS.
5. PERMITTEES MUST INSPECT CONSTRUCTION SITE VEHICLE EXIT LOCATIONS, STREETS AND CURB AND GUTTER SYSTEMS WITHIN AND ADJACENT TO THE PROJECT FOR SEDIMENTATION FROM EROSION OR TRACKED SEDIMENT FROM VEHICLES. PERMITTEES MUST REMOVE SEDIMENT FROM ALL PAVED SURFACES WITHIN ONE (1) CALENDAR DAY OF DISCOVERY OR, IF APPLICABLE, WITHIN A SHORTER TIME TO AVOID A SAFETY HAZARD TO USERS OF PUBLIC STREETS.
6. PERMITTEES MUST REPAIR, REPLACE OR SUPPLEMENT ALL PERIMETER CONTROL DEVICES WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/2 OF THE HEIGHT OF THE DEVICE.
7. PERMITTEES MUST DRAIN TEMPORARY AND PERMANENT SEDIMENTATION BASINS AND REMOVE THE SEDIMENT WHEN THE DEPTH OF SEDIMENT COLLECTED IN THE BASIN REACHES 1/2 THE STORAGE VOLUME.
8. PERMITTEES MUST ENSURE THAT AT LEAST ONE INDIVIDUAL PRESENT ON THE SITE (OR AVAILABLE TO THE PROJECT SITE IN THREE (3) CALENDAR DAYS) IS TRAINED IN THE JOB DUTIES DESCRIBED IN ITEM 21.2.B.
9. PERMITTEES MAY ADJUST THE INSPECTION SCHEDULE DESCRIBED IN ITEM 11.2 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.
10. PERMITTEES MUST RECORD ALL INSPECTIONS AND MAINTENANCE ACTIVITIES WITHIN 24 HOURS OF BEING CONDUCTED AND THESE RECORDS MUST BE RETAINED WITH THE SWPPP. THESE RECORDS MUST INCLUDE:
    - a. DATE AND TIME OF INSPECTIONS; AND
    - b. NAME OF PERSONS CONDUCTING INSPECTIONS; AND
    - c. ACCURATE FINDINGS OF INSPECTIONS, INCLUDING THE SPECIFIC LOCATION WHERE CORRECTIVE ACTIONS ARE NEEDED; AND
    - d. CORRECTIVE ACTIONS TAKEN (INCLUDING DATES, TIMES, AND PARTY COMPLETING MAINTENANCE ACTIVITIES); AND
    - e. DATE OF ALL RAINFALL EVENTS GREATER THAN 1/2 INCHES IN 24 HOURS, AND THE AMOUNT OF RAINFALL FOR EACH EVENT. PERMITTEES MUST OBTAIN RAINFALL AMOUNTS BY EITHER A PROPERLY MAINTAINED RAIN GAUGE INSTALLED ONSITE, A WEATHER STATION THAT IS WITHIN ONE (1) MILE OF YOUR LOCATION, OR A WEATHER REPORTING SYSTEM THAT PROVIDES SITE SPECIFIC RAINFALL DATA FROM RADAR SUMMARIES; AND
    - f. 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, SETTLED OR SUSPENDED SOLIDS, OIL SHEEN, AND OTHER OBVIOUS INDICATORS OF POLLUTANTS); AND
    - g. ANY AMENDMENTS TO THE SWPPP PROPOSED AS A RESULT OF THE INSPECTION MUST BE DOCUMENTED AS REQUIRED IN SECTION 6 WITHIN SEVEN (7) CALENDAR DAYS.

POLLUTION PREVENTION MANAGEMENT (SECTION 12):

1. PERMITTEES MUST PLACE BUILDING PRODUCTS AND LANDSCAPE MATERIALS UNDER COVER (E.G., PLASTIC SHEETING OR TEMPORARY ROOFS) OR PROTECT THEM BY SIMILARLY EFFECTIVE MEANS DESIGNED TO MINIMIZE CONTACT WITH STORMWATER. PERMITTEES ARE NOT REQUIRED TO COVER OR PROTECT PRODUCTS WHICH ARE EITHER NOT A SOURCE OF CONTAMINATION TO STORMWATER OR ARE DESIGNED TO BE EXPOSED TO STORMWATER.
2. PERMITTEES MUST PLACE PESTICIDES, FERTILIZERS AND TREATMENT CHEMICALS UNDER COVER (E.G., PLASTIC SHEETING OR TEMPORARY ROOFS) OR PROTECT THEM BY SIMILARLY EFFECTIVE MEANS DESIGNED TO MINIMIZE CONTACT WITH STORMWATER.
3. PERMITTEES MUST STORE HAZARDOUS MATERIALS AND TOXIC WASTE, (INCLUDING OIL, DIESEL FUEL, GASOLINE, HYDRAULIC FLUIDS, PAINT SOLVENTS, PETROLEUM-BASED PRODUCTS, WOOD PRESERVATIVES, ADDITIVES, CURING COMPOUNDS, AND ACIDS) IN SEALED CONTAINERS TO PREVENT SPILLS, LEAKS OR OTHER DISCHARGE. STORAGE AND DISPOSAL OF HAZARDOUS WASTE MATERIALS MUST BE IN COMPLIANCE WITH MINN. R. CH. 7045 INCLUDING SECONDARY CONTAINMENT AS APPLICABLE.
4. PERMITTEES MUST PROPERLY STORE, COLLECT AND DISPOSE SOLID WASTE IN COMPLIANCE WITH MINN. R. CH. 7035.
5. PERMITTEES MUST POSITION PORTABLE TOILETS SO THEY ARE SECURE AND WILL NOT TIP OR BE KNOCKED OVER. PERMITTEES MUST PROPERLY DISPOSE SANITARY WASTE IN ACCORDANCE WITH MINN. R. CH. 7041.
6. PERMITTEES MUST TAKE REASONABLE STEPS TO PREVENT THE DISCHARGE OF SPILLED OR LEAKED CHEMICALS, INCLUDING FUEL. FUELING AND VEHICLE MAINTENANCE AREAS WHERE FUEL WILL BE LOADED OR UNLOADED INCLUDING THE USE OF DRIP PANS OR ABSORBENTS UNLESS INFEASIBLE. PERMITTEES MUST ENSURE ADEQUATE SUPPLIES ARE AVAILABLE AT ALL TIMES TO CLEAN UP DISCHARGED MATERIALS AND THAT AN APPROPRIATE DISPOSAL METHOD IS AVAILABLE FOR RECOVERED SPILLED MATERIALS. PERMITTEES MUST REPORT AND CLEAN UP SPILLS IMMEDIATELY AS REQUIRED BY MINN. STAT. 115.061, USING DRY CLEAN UP MEASURES WHERE POSSIBLE.
7. PERMITTEES MUST LIMIT VEHICLE EXTERIOR WASHING AND EQUIPMENT TO A DEFINED AREA OF THE SITE. PERMITTEES MUST CONTAIN RUNOFF FROM THE WASHING AREA IN A SEDIMENT BASIN OR OTHER SIMILARLY EFFECTIVE CONTROLS AND MUST DISPOSE WASTE FROM THE WASHING ACTIVITY PROPERLY. PERMITTEES MUST PROPERLY USE AND STORE SOAPS, DETERGENTS, OR SOLVENTS.
8. PERMITTEES MUST PROVIDE EFFECTIVE CONTAINMENT FOR ALL LIQUID AND SOLID WASTES GENERATED BY WASHOUT OPERATIONS (E.G., CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS) RELATED TO THE CONSTRUCTION ACTIVITY. PERMITTEES MUST PREVENT LIQUID AND SOLID WASHOUT WASTES FROM CONTACTING THE GROUND AND MUST DESIGN THE CONTAINMENT SO IT DOES NOT RESULT IN RUNOFF FROM THE WASHOUT OPERATIONS OR AREAS. PERMITTEES MUST PROPERLY DISPOSE LIQUID AND SOLID WASTES IN COMPLIANCE WITH MPCA RULES. PERMITTEES MUST INSTALL A SIGN INDICATING THE LOCATION OF THE WASHOUT FACILITY.

PERMIT TERMINATION (SECTION 4 AND SECTION 13):

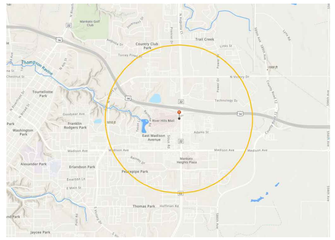
1. PERMITTEES MUST SUBMIT A NOT WITHIN 30 DAYS AFTER ALL TERMINATION CONDITIONS LISTED IN SECTION 13 ARE COMPLETE.
2. PERMITTEES MUST SUBMIT A NOT WITHIN 30 DAYS AFTER SELLING OR OTHERWISE LEGALLY TRANSFERRING THE ENTIRE SITE, INCLUDING PERMIT RESPONSIBILITY FOR ROADS (E.G., STREET SWEEPING) AND STORMWATER INFRASTRUCTURE FINAL CLEAN OUT, OR TRANSFERRING PORTIONS OF A SITE TO ANOTHER PARTY. THE PERMITTEES' COVERAGE UNDER THIS PERMIT TERMINATES AT MIDNIGHT ON THE SUBMISSION DATE OF THE NOT.
3. PERMITTEES MUST COMPLETE ALL CONSTRUCTION ACTIVITY AND MUST INSTALL PERMANENT COVER OVER ALL AREAS PRIOR TO SUBMITTING THE NOT. VEGETATIVE COVER MUST CONSIST OF A UNIFORM PERENNIAL VEGETATION WITH A DENSITY OF 70 PERCENT OF ITS EXPECTED FINAL GROWTH. VEGETATION IS NOT REQUIRED WHERE THE FUNCTION OF A SPECIFIC AREA DICTATES NO VEGETATION, SUCH AS IMPERVIOUS SURFACES OR THE BASE OF A SAND FILTER.
4. PERMITTEES MUST CLEAN THE PERMANENT STORMWATER TREATMENT SYSTEM OF ANY ACCUMULATED SEDIMENT AND MUST ENSURE THE SYSTEM MEETS ALL APPLICABLE REQUIREMENTS IN

ATTACHMENT A: SITE SPECIFIC SWPPP DOCUMENT

PROJECT LOCATION			
ADDRESS	1896 ADAMS ST.	CITY/TOWNSHIP	MANKATO
STATE	MN	COUNTY	BLUE EARTH
ZIP CODE	56001	PROJECT SIZE	1.3 ACRES
LATTITUDE/LONGITUDE OF APPROX. CENTROID OF PROJECT		44.17309 N, -93.94961 E	
METHOD OF LAT/LONG COLLECTION		ONLINE TOOL	
PROJECT TYPE		COMMERCIAL	
IMPERVIOUS SURFACES (ACRES)			
EXISTING		0.7	
PROPOSED		0.7	
DIFFERENCE		0.0 (2473 SF DECREASE)	
ESTIMATED CONSTRUCTION TIMELINE			
START	10/1/24	END	10/1/25
CONSTRUCTION ACTIVITY		NEW CAR WASH BUILDING	
SOIL TYPES		CLAY LOAMS	

RECEIVING WATER BODIES					
	WATER BODY ID	NAME OF WATER BODY	WATER BODY TYPE	SPECIAL WATER (Y/N)	IMPAIRED WATER (Y/N)
1		LAKE DOROTHY	STORMWATER POND	N	N
2					
3					
4					

SITE LOCATION MAP -



GENERAL SITE INFORMATION (5.1)
1. DESCRIBE THE LOCATION AND TYPE OF ALL TEMPORARY AND PERMANENT EROSION PREVENTION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMP'S). INCLUDE THE TIMING FOR INSTALLATION AND PROCEDURES USED TO ESTABLISH ADDITIONAL TEMPORARY BMP'S AS NECESSARY. (5.5)
THE PROJECT IS PROTECTED BY TWO (W) MAIN BMP'S, SILT FENCE AND INLET PROTECTION DEVICES. THE SILT FENCE WILL BE INSTALLED AT THE DOWNHILL LOCATIONS OF THE SITE AND MONITORED AS NECESSARY. INLET PROTECTION DEVICES WILL BE INSTALLED IN ALL CATCH BASINS ON THE SITE AND ANY OFF SITE THAT WILL RECEIVE STORMWATER RUNOFF FROM THIS SITE. AS THE PROJECT PROGRESSES ADDITIONAL BMP'S SUCH AS EROSION CONTROL BLANKET MAY BE UTILIZED.
2. ATTACH TO THIS SWPPP A TABLE WITH THE ANTICIPATED QUANTITIES FOR THE LIFE OF THE PROJECT FOR ALL EROSION PREVENTION AND SEDIMENT CONTROL BMP'S (5.7).
SEE PAGE SW1.3
3. ATTACH TO THIS SWPPP A SITE MAP THAT INCLUDES THE FOLLOWING FEATURES (5.9):
EXIST AND FINAL GRADES, INCLUDING DIVIDING LINES AND DIRECTION OF FLOW FOR ALL PRE AND POST-CONSTRUCTION STORMWATER RUNOFF DRAINAGE AREAS LOCATED WITHIN THE PROJECT LIMITS.

LOCATIONS OF IMPERVIOUS SURFACES AND SOIL TYPES.
- EXISTING AND FINAL GRADES, INCLUDING DIVIDING LINES AND DIRECTION OF FLOW FOR ALL PRE AND POST-CONSTRUCTION STORMWATER RUNOFF DRAINAGE AREAS LOCATED WITHIN PROJECT LIMITS.
- LOCATIONS OF AREAS NOT TO BE DISTURBED.
- LOCATION OF AREAS OF PHASED CONSTRUCTION.
- ALL SURFACE WATERS AND EXISTING WETLANDS WITHIN ONE MILE FROM THE PROJECT BOUNDARIES THAT WILL RECEIVE STORMWATER RUNOFF FROM THE SITE (IDENTIFIABLE ON MAPS SUCH AS USGS 7.5 MINUTE QUADRANGLE MAPS OR EQUIVALENT. WHERE SURFACE WATERS RECEIVING RUNOFF ASSOCIATED WITH CONSTRUCTION ACTIVITY WILL NOT FIT ON THE PLAN SHEET, THEY MUST BE IDENTIFIED WITH AN ARROW, INDICATING BOTH DIRECTION AND DISTANCE TO THE SURFACE WATER.
- METHODS TO BE USED FOR FINAL STABILIZATION OF ALL EXPOSED SOIL AREA

4. WERE STORMWATER MITIGATION MEASURES REQUIRED AS THE RESULT OF AN ENVIRONMENTAL, ARCHAEOLOGICAL, OR OTHER REQUIRED LOCAL, STATE OR FEDERAL REVIEW OF THE PROJECT?
NO
IF YES, DESCRIBE HOW THESE MEASURES WERE ADDRESSED IN THE SWPPP. (5.16)
N/A
5. IS THE PROJECT LOCATED IN A KARST AREA SUCH THAT ADDITIONAL MEASURES WOULD BE NECESSARY TO PROJECT DRINKING WATER SUPPLY MANAGEMENT AREAS AS DESCRIBED IN MINN. R. CHAPTERS 7050 AND 7060?
NO
IF YES, DESCRIBE THE ADDITIONAL MEASURES TO BE USED. (SECTION 23)
N/A
6. DOES THE SITE DISCHARGE TO A CALCEREOUS FEN LISTED IN MINN. R. 7050.0180, SUBP. 6.B?
NO
IF YES, A LETTER OF APPROVAL FROM THE MINNESOTA DEPARTMENT OF NATURAL RESOURCES MUST BE OBTAINED PRIOR TO APPLICATION FOR THIS PERMIT.
7. DOES THE SITE DISCHARGE TO A WATER THAT IS LISTED AS IMPAIRED FOR THE FOLLOWING POLLUTANT(S) OR STRESSOR(S): PHOSPHORUS, TURBIDITY, DISSOLVED OXYGEN OR BIOTIC IMPAIRMENT? USE THE SPECIAL AND IMPAIRED WATERS SEARCH TOOL AT: WWW.PCA.STATE.MN.US/WATER/STORMWATER/STORMWATER-C.HTML
YES
IF NO, SKIP TO TRAINING
DOES THE IMPAIRED WATER HAVE AN APPROVED TOTAL MAXIMUM DAILY LOADS (TMDL) WITH AN APPROVED WASTE LOAD ALLOCATION FOR CONSTRUCTION ACTIVITY?
YES
IF YES:
A. LIST THE RECEIVING WATER, THE AREAS OF THE SITE DISCHARGING TO IT, AND THE POLLUTANT(S) IDENTIFIED IN THE TMDL.
B. LIST THE BMP'S AND ANY OTHER SPECIFIC CONSTRUCTION STORMWATER RELATED IMPLEMENTATION ACTIVITIES IDENTIFIED IN THE TMDL.
IF THE SITE HAS A DISCHARGE POINT WITHIN ONE MILE OF THE IMPAIRED WATER AND THE WATER FLOWS TO THE IMPAIRED WATER BUT NO SPECIFIC BMPS FOR CONSTRUCTION ARE IDENTIFIED IN THE TMDL, THE ADDITIONAL BMPS IN SECTION 23 MUST BE ADDED TO THE SWPPP AND IMPLEMENTED (15.19). THE ADDITIONAL BMPS ONLY APPLY TO THOSE PORTIONS OF THE PROJECT THAT DRAIN TO ONE OF THE IDENTIFIED DISCHARGE POINTS.
N/A
8. IDENTIFY ADJACENT PUBLIC WATERS WHERE THE MINNESOTA DEPARTMENT OF NATURAL RESOURCES (DNR) HAS DECLARED "WORK IN WATER RESTRICTIONS" DURING FISH SPAWNING TIMEFRAMES
N/A

SELECTION OF A PERMANENT STORMWATER MANAGEMENT SYSTEM (SECTION 15)
1. WILL THE PROJECT CREATE A NEW CUMULATIVE IMPERVIOUS SURFACE GREATER THAN OR EQUAL TO ONE ACRE?
YES
IF YES, A WATER QUALITY VOLUME OF ONE INCH OF RUNOFF FROM THE CUMULATIVE NEW IMPERVIOUS SURFACES MUST BE RETAINED ON SITE (SEE 16.7 OF THE PERMIT) THROUGH INFILTRATION UNLESS PROHIBITED DUE TO ONE OF THE REASONS IN ITEMS 16.4 THROUGH 16.21. IF INFILTRATION IS PROHIBITED IDENTIFY OTHER METHOD OF MEETING WATER QUALITY REQUIREMENTS (E.G., FILTRATION SYSTEM, WET SEDIMENTATION BASIN, REGIONAL PONDING OR EQUIVALENT METHOD
2. DESCRIBE WHICH METHOD WILL BE USED TO TREAT RUNOFF FROM THE NEW IMPERVIOUS SURFACES CREATED BY THE PROJECT:
INCLUDE ALL CALCULATIONS AND DESIGN INFORMATION FOR THE METHOD SELECTED. SEE SECTION 23 OF THE PERMIT FOR SPECIFIC REQUIREMENTS ASSOCIATED WITH EACH METHOD.
INFILTRATION / REGIONAL PONDING
CALCULATIONS ARE WITHIN THE SITE STORM WATER MANAGEMENT REPORT AND PART OF THIS SWPPP AS ATTACHMENT D.
3. IF IT IS NOT FEASIBLE TO MEET THE TREATMENT REQUIREMENT FOR THE WATER QUALITY VOLUME, DESCRIBE WHY. THIS CAN INCLUDE PROXIMITY TO BEDROCK OR ROAD PROJECTS WHERE THE LACK OF RIGHT OF WAY PRECLUDES THE INSTALLATION OF ANY PERMANENT STORMWATER MANAGEMENT PRACTICES. DESCRIBE WHAT OTHER TREATMENT, SUCH AS GRASS SWALES, SMALLER PONDS, OR GRIT CHAMBERS, WILL BE IMPLEMENTED TO TREAT RUNOFF PRIOR TO DISCHARGE TO SURFACE WATERS. (15.8)
IT IS NOT FEASIBLE TO MEET REQUIREMENT FOR WATER QUALITY VOLUME.
4. FOR PROJECTS THAT DISCHARGE TO TROUT STREAMS, INCLUDING TRIBUTARIES TO TROUT STREAMS, IDENTIFY METHOD OF INCORPORATING TEMPERATURE CONTROLS INTO THE PERMANENT STORMWATER MANAGEMENT SYSTEM.
N/A

SOILS INFORMATION



MAP UNIT SYMBOL	MAP UNIT NAME
109	CORDOVA CLAY LOAM
286	SHOREWOOD SILTY CLAY LOAM

EROSION PREVENTION PRACTICES (SECTION 8.1)
DESCRIBE THE TYPES OF TEMPORARY EROSION PREVENTION BMP'S EXPECTED TO BE IMPLEMENTED ON THIS SITE DURING CONSTRUCTION:
1. DESCRIBE CONSTRUCTION PHASING, VEGETATIVE BUFFER STRIPS, HORIZONTAL SLOPE GRADING, AND OTHER CONSTRUCTION PRACTICES TO MINIMIZE EROSION. DELINEATE AREAS NOT TO BE DISTURBED (E.G., WITH FLAGS, STAKES, SIGNS, SILT FENCE, ETC.) BEFORE WORK BEGINS.
SILT FENCE WILL BE INSTALLED AT THE DOWNHILL LOCATIONS OF THE SITE.
2. DESCRIBE METHODS OF TEMPORARILY STABILIZING SOILS AND SOIL STOCKPILES (E.G., MULCHES, HYDRAULIC TACKIFIERS, EROSION BLANKETS, ETC.):
TEMPORARY EROSION PROTECTION WILL BE SEED AND MULCH AND EROSION BLANKETS WHERE REQUIRED, WITH PERMANENT COVER BEING EITHER SOD OR LANDSCAPE FEATURES.
3. DESCRIBE METHODS OF DISSIPATING VELOCITY ALONG STORMWATER CONVEYANCE CHANNELS AND AT CHANNEL OUTLETS (E.G., CHECK DAMS, SEDIMENT TRAPS, RIP RAP, ETC.):
SOD WILL BE UTILIZED ALONG CHANNELS AND RIP RAP AT CHANNEL.
4. DESCRIBE METHODS TO BE USED FOR STABILIZATION OF DITCH AND SWALE WETTED PERIMETERS (NOTE THAT MULCH, HYDRAULIC SOIL TACKIFIERS, HYDROMULCHES, ETC. ARE NOT ACCEPTABLE SOIL STABILIZATION METHODS FOR ANY PART OF A DRAINAGE DITCH OR SWALE)
FINAL STABILIZATION OF SWALES WILL BE SOD
5. DESCRIBE METHODS TO BE USED FOR ENERGY DISSIPATION AT PIPE OUTLETS (E.G., RIP RAP, SPLASH PADS, GABIONS, ETC.)
RIP RAP WILL BE UTILIZED AT PIPE OUTLETS
6. DESCRIBE METHODS TO BE USED TO PROMOTE INFILTRATION AND SEDIMENT REMOVAL ON THE SITE PRIOR TO OFFSITE DISCHARGE, UNLESS INFEASIBLE (E.G., DIRECT STORMWATER FLOW TO VEGETATED AREAS): DISCONNECTED IMPERVIOUS AREA AND INFILTRATION AREAS WILL BE UTILIZED
7. FOR DRAINAGE OR DIVERSION DITCHES, DESCRIBE PRACTICES TO STABILIZE THE NORMAL WETTED PERIMETER WITHIN 200 LINEAL FEET OF THE PROPERTY EDGE OR POINT OF DISCHARGE TO SURFACE WATER. THE LAST 200 LINEAL FEET MUST BE STABILIZED WITHIN **24 HOURS** AFTER CONNECTING TO SURFACE WATERS AND CONSTRUCTION IN THAT PORTION OF THE DITCH HAS TEMPORARILY OR PERMANENTLY CEASED FOR ALL DISCHARGES TO SPECIAL, IMPAIRED OR "WORK IN WATER RESTRICTIONS". ALL OTHER REMAINING PORTIONS OF THE TEMPORARY OR PERMANENT DITCHES OR SWALES WITHIN 14 CALENDAR DAYS AFTER CONNECTING TO A SURFACE WATER, PROPERTY EDGE AND CONSTRUCTION IN THAT AREA HAS TEMPORARILY OR PERMANENTLY CEASED.
N/A, NO DITCHES ON SITE
8. DESCRIBE ADDITIONAL EROSION PREVENTION MEASURES THAT WILL BE IMPLEMENTED AT THE SITE DURING CONSTRUCTION (E.G., CONSTRUCTION PHASING, MINIMIZING SOIL DISTURBANCE, VEGETATIVE BUFFERS, HORIZONTAL SLOPE GRADING, SLOPE DRAINING/TERRACING, ETC.):
OTHER EROSION CONTROL PRACTICES INCLUDE BUT ARE NOT LIMITED TO; MINIMIZING SITE EXPOSURE WHEN POSSIBLE.
9. IF APPLICABLE, INCLUDE ADDITIONAL REQUIREMENTS IN APPENDIX A PART C.3 REGARDING MAINTAINING A 100-FOOT BUFFER ZONE OR INSTALLING REDUNDANT BMPS FOR PORTIONS OF THE SITE THAT DRAIN TO SPECIAL WATERS).
N/A
10. IF APPLICABLE, DESCRIBE ADDITIONAL EROSION PREVENTION BMPS TO BE IMPLEMENTED AT THE SITE TO PROTECT PLANNED FILTRATION AREAS
MINIMIZE SITE EXPOSURE IN AREAS ADJACENT TO FILTRATION AREAS.

SEDIMENT CONTROL PRACTICES (SECTION 9.1)
DESCRIBE THE METHODS OF SEDIMENT CONTROL BMPS TO BE IMPLEMENTED AT THIS SITE DURING CONSTRUCTION TO MINIMIZE SEDIMENT IMPACTS TO SURFACE WATERS, INCLUDING CURB AND GUTTER SYSTEMS
1. DESCRIBE METHODS TO BE USED FOR DOWN GRADIENT PERIMETER CONTROL:
SILT FENCE WILL BE INSTALLED AROUND THE ENTIRE PERIMETER OF THE SITE
2. DESCRIBE METHODS TO BE USED TO CONTAIN SOIL STOCKPILES:
SEED AND MULCH AS WELL AS EROSION CONTROL BLANKETS WILL BE UTILIZED AS NECESSARY
3. DESCRIBE METHODS TO BE USED FOR STORM DRAIN INLET PROTECTION:
SEE INLET PROTECTION DETAILS
4. DESCRIBE METHODS TO MINIMIZE VEHICLE TRACKING AT CONSTRUCTION EXITS AND STREET SWEEPING ACTIVITIES:
THE PROJECT WILL UTILIZE A ROCK CONSTRUCTION ENTRANCE.
5. DESCRIBE METHODS, IF APPLICABLE, ADDITIONAL SEDIMENT CONTROLS (E.G., DIVERSION BERMS) TO BE INSTALLED TO KEEP RUNOFF AWAY FROM PLANNED INFILTRATION AREAS WHEN EXCAVATED PRIOR TO FINAL STABILIZATION OF THE CONTRIBUTING DRAINAGE AREA:
SILT FENCE TO BE INSTALLED IMMEDIATELY AFTER GRADING TO PROTECT INFILTRATION AREAS.
6. DESCRIBE METHODS TO BE USED TO MINIMIZE SOIL COMPACTION AND PRESERVE TOP SOIL (UNLESS INFEASIBLE) AT THIS SITE:
LIGHT TRACKED EQUIPMENT WILL BE USED, TOPSOIL WILL BE STRIPPED AND STOCKPILED
7. DESCRIBE PLANS TO PRESERVE A 50-FOOT NATURAL BUFFER BETWEEN THE PROJECT'S SOIL DISTURBANCE AND A SURFACE WATER OR PLANS FOR REDUNDANT SEDIMENT CONTROLS IF A BUFFER IS INFEASIBLE:
DOUBLE ROW OF SILT FENCE WILL BE INSTALLED ALONG WETLAND. PROJECT WILL NOT DISTURB WITHIN 200 FEET OF WETLAND.
8. DESCRIBE PLANS FOR USE OF SEDIMENTATION TREATMENT CHEMICALS (E.G., POLYMERS, FLOCCULANTS, ETC.) SEE PART 9.18 OF THE PERMIT:
N/A
9. IS THE PROJECT REQUIRED TO INSTALL A TEMPORARY SEDIMENT BASIN DUE TO 10 OR MORE ACRES DRAINING TO A COMMON LOCATION OR 5 ACRES OR MORE IF THE SITE IS WITHIN 1 MILE OF A SPECIAL OR IMPAIRED WATER?
YES
IF YES, DESCRIBE (OR ATTACH PLANS) SHOWING HOW THE BASIN WILL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH SECTION 14.
PROPOSED FILTRATION BASINS WILL SERVE AS TEMPORARY SEDIMENTS BASINS THAT WILL THEN BE CONVERTED TO PERMANENT FILTRATIONS BASINS.

DEWATERING AND BASIN DRAINING (SECTION 10.1)
1. WILL THE PROJECT INCLUDE DEWATERING OR BASIN DRAINING?
NO
IF YES, DESCRIBE MEASURES TO BE USED TO TREAT/DISPOSE OF TURBID OR SEDIMENT-LADEN WATER AND METHOD TO PREVENT EROSION OR SCOUR OF DISCHARGE POINTS (SEE 10.2 THROUGH 10.5 OF THE PERMIT):
N/A
2. WILL THE PROJECT INCLUDE USE OF FILTERS FOR BACKWASH WATER?
NO
IF YES, DESCRIBE HOW FILTER BACKWASH WATER WILL BE MANAGED ON THE SITE OR PROPERLY DISPOSED (10.6):
N/A

ADDITIONAL BMP'S FOR SPECIAL WATERS AND DISCHARGES TO WETLANDS (SECTION 23.1)
1. SPECIAL WATERS. DOES YOUR PROJECT DISCHARGE TO SPECIAL WATERS?
YES
2. IF PROXIMITY TO BEDROCK OR ROAD PROJECTS WHERE THE LACK OF RIGHT OF WAY PRECLUDES THE INSTALLATION OF ANY OF THE PERMANENT STORMWATER MANAGEMENT PRACTICES, THEN OTHER TREATMENT SUCH AS GRASSED SWALES, SMALLER PONDS, OR GRIT CHAMBERS IS REQUIRED PRIOR TO DISCHARGE TO SURFACE WATERS. DESCRIBE WHAT OTHER TREATMENT WILL BE PROVIDED.
N/A
3. DESCRIBE EROSION AND SEDIMENT CONTROLS FOR EXPOSED SOIL AREAS WITH A CONTINUOUS POSITIVE SLOPE TO A SPECIAL WATERS, AND TEMPORARY SEDIMENT BASINS FOR AREAS THAT DRAIN FIVE OR MORE ACRES DISTURBED AT ONE TIME.
N/A
4. DESCRIBE THE UNDISTURBED BUFFER ZONE TO BE USED (NOT LESS THAN 100 LINEAR FEET FROM THE SPECIAL WATER).
N/A
5. DESCRIBE HOW THE PERMANENT STORMWATER MANAGEMENT SYSTEM WILL ENSURE THAT THE PRE AND POST PROJECT RUNOFF RATE AND VOLUME FROM THE 1, AND 2-YEAR 24-HOUR PRECIPITATION EVENTS REMAINS THE SAME.
N/A
6. DESCRIBE HOW THE PERMANENT STORMWATER MANAGEMENT SYSTEM WILL MINIMIZE ANY INCREASE IN THE TEMPERATURE OF TROUT STREAM RECEIVING WATERS RESULTING IN THE 1, AND 2-YEAR 24-HOUR PRECIPITATION EVENTS.
N/A
7. **WETLANDS.** DOES YOUR PROJECT DISCHARGE STORMWATER WITH THE POTENTIAL FOR SIGNIFICANT ADVERSE IMPACTS TO A WETLAND (E.G., CONVERSION OF A NATURAL WETLAND TO A STORMWATER POND)?
YES OR NO
IF YES, DESCRIBE THE WETLAND MITIGATION SEQUENCE THAT WILL BE FOLLOWED IN ACCORDANCE WITH SECTION 22 OF THE PERMIT.
N/A

INSPECTIONS AND MAINTENANCE (SECTION 11.1)
DESCRIBE PROCEDURES TO ROUTINELY INSPECT THE CONSTRUCTION SITE:
- ONCE EVERY SEVEN (7) DAYS DURING ACTIVE CONSTRUCTION AND
- WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS, AND WITHIN (7) DAYS AFTER THAT

INSPECTIONS MUST INCLUDE STABILIZED AREAS, EROSION PREVENTION,AND SEDIMENT CONTROL BMP'S AND INFILTRATION AREAS.
INSPECTOR WILL FOLLOW REQUIREMENTS SPECIFIED ABOVE AND FILL OUT "ATTACHMENT B - CONSTRUCTION STORMWATER INSPECTION CHECKLIST"
1. DESCRIBE PRACTICES FOR STORAGE OF BUILDING PRODUCTS WITH A POTENTIAL TO LEACH POLLUTANTS TO MINIMIZE EXPOSURE TO STORMWATER:
ALL BUILDING PRODUCTS WILL BE SEALED AND STORED IN A MANNER TO MINIMIZE EXPOSURE
2. DESCRIBE PRACTICES FOR STORAGE OF PESTICIDES, HERBICIDES, INSECTICIDES, FERTILIZERS, TREATMENT CHEMICAL, AND LANDSCAPE MATERIALS:
ALL LANDSCAPE TREATMENT CHEMICALS WILL BE SEALED AND STORED IN A MANNER TO MINIMIZED EXPOSURE
3. DESCRIBE PRACTICES FOR STORAGE AND DISPOSAL OF HAZARDOUS MATERIALS OR TOXIC WASTE (E.G., OIL, FUEL, HYDRAULIC FLUIDS, PAINT SOLVENTS, PETROLEUM-BASED PRODUCTS, WOOD PRESERVATIVE, ADDITIVES, CURING COMPOUNDS, AND ACIDS) ACCORDING TO MINN. R. CH. 7045, INCLUDING RESTRICTED ACCESS AND SECONDARY CONTAINMENT:
ALL HAZARDOUS WASTE WILL BE APPROPRIATELY DISPOSED OF OFF SITE ACCORDING TO LOCAL AND STATE LAWS.
4. DESCRIBE COLLECTION, STORAGE AND DISPOSAL OF SOLID WASTE IN COMPLIANCE WITH MINN. R. CH. 7035:
ALL CONSTRUCTION DEBRIS AND SOLID WASTER WILL BE APPROPRIATELY DISPOSED OF OFF SITE ACCORDING TO LOCAL AND STATE LAWS
5. DESCRIBE MANAGEMENT OF PORTABLE TOILETS TO PREVENT TIPPING AND DISPOSAL OF SANITARY WASTES IN ACCORDANCE WITH MINN. R. CH. 7040:
SANITARY AND SEPTIC SERVICES WILL BE PROVIDED TO WORKERS WITH PORTABLE FACILITIES MAINTAINED AS NEEDED BY THE PROVIDER.
6. DESCRIBE SPILL PREVENTION AND RESPONSE FOR FUELING AND EQUIPMENT OR VEHICLE MAINTENANCE:
EMPLOYEES WILL BE TRAINED IN TECHNIQUES DESIGNED TO MINIMIZE SPILLS. VEHICLES AND EQUIPMENT SHALL BE CHECKED FOR LEAKS.
7. DESCRIBE CONTAINMENT AND DISPOSAL OF VEHICLE AND EQUIPMENT WASH WATER AND PROHIBITING ENGINE DEGREASING ON THE SITE:
ALL CONSTRUCTION VEHICLES SHALL BE WASHED OFF SITE
8. DESCRIBE STORAGE AND DISPOSAL OF CONCRETE AND OTHER WASHOUT WASTES SO THAT WASTES DO NOT CONTACT THE GROUND:
ALL CONCRETE WASHOUT SHALL OCCUR OFF SITE.

FINAL STABILIZATION (25.22)
1. DESCRIBE METHOD OF FINAL STABILIZATION (PERMANENT COVER) OF ALL DISTURBED AREAS:
FINAL STABILIZATION WILL BE ACCOMPLISHED WITH PAVEMENT, SOD AND LANDSCAPE MATERIALS.
2. DESCRIBE METHODS USED TO CLEAN ALL STORMWATER TREATMENT SYSTEMS AND STORMWATER CONVEYANCE SYSTEMS OF ACCUMULATED SEDIMENT (25.22):
CLEANING OF STORMWATER TREATMENT SYSTEMS SHALL BE DONE BY HAND SUCH AS THE USE OF A SHOVEL.
3. DESCRIBE METHODS FOR REMOVING ALL TEMPORARY SYNTHETIC EROSION PREVENTION AND SEDIMENT CONTROL BMP'S:
REMOVAL OF TEMPORARY SYNTHETIC EROSION PREVENTION AND SEDIMENT CONTROL BMP'S CAN BE DONE BY HAND AND PROPERLY DISPOSED OF.

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PRELIMINARY: NOT FOR CONSTRUCTION

PROJECT
TSUNAMI EXPRESS CAR WASH
1896 ADAMS ST., MANKATO, MN 56001

OWNER
TSUNAMI EXPRESS CAR WASH, LLC.
4800 MEADOWS ROAD, #300, LAKE OSWEGO, OREGON 97035

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.

David J. Knaeble
DATE 07/23/24 LICENSE NO. 48776

ISSUE/SUBMITTAL SUMMARY

DATE	DESCRIPTION
7/23/24	CITY SUBMITTAL

PROJECT MANAGER	DAVID KNABLE
CONTACT NUMBER	612-615-0060
DRAWN BY	DK, BB
REVIEWED BY	DK
PROJECT NUMBER	24290

REVISION SUMMARY

DATE	DESCRIPTION

SWPPP - ATTACHMENTS

SW1.4

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ATTACHMENT B: SWPPP INSPECTION FORM

NOTE: THIS INSPECTION REPORT DOES NOT ADDRESS ALL ASPECTS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM/STATE DISPOSAL SYSTEM (NPDES/SDS) CONSTRUCTION STORMWATER PERMIT (PERMIT) ISSUED ON AUGUST 1, 2018. THE COMPLETION OF THIS CHECKLIST DOES NOT GUARANTEE THAT ALL PERMIT REQUIREMENTS ARE IN COMPLIANCE; IT IS THE RESPONSIBILITY OF THE PERMITTEE(S) TO READ AND UNDERSTAND THE PERMIT REQUIREMENTS.

FACILITY INFORMATION

SITE NAME:
SITE ADDRESS: PERMIT NUMBER:
CITY: STATE: ZIP CODE:

INSPECTION INFORMATION

INSPECTOR NAME: _____ PHONE NUMBER: _____
ORGANIZATION/COMPANY MAN: _____
DATE (MM/DD/YYYY): _____ TIME: _____ AM / PM

	Y	N
IS THE INSPECTOR CERTIFIED IN SEDIMENT AND EROSION CONTROL AND IS IT DOCUMENTED IN THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP)?	☐	☐

IS THIS INSPECTION ROUTINE OR IN RESPONSE TO A STORM EVENT:

7 DAY	RAIN
☐	☐

	Y	N
RAINFALL AMOUNT (IF APPLICABLE): _____		
IS SITE WITHIN ONE AERIAL MILE OF SPECIAL OR IMPAIRED WATER THAT CAN POTENTIALLY RECEIVE DISCHARGE FROM THE SITE? IF YES, FOLLOW SECTION 23 AND OTHER APPLICABLE PERMIT REQUIREMENTS	☐	☐

NOTE: IF N/A IS SELECTED AT ANY TIME, SPECIFY WHY IN THE COMMENT AREA FOR THAT SECTION.

EROSION CONTROL REQUIREMENT (SECTION 8.1)

	Y	N	N/A
1. ARE SOILS STABILIZED WHERE NO CONSTRUCTION ACTIVITY HAS OCCURRED FOR 14 DAYS (INCLUDING STOCKPILES)? (7 DAYS WHERE APPLICABLE, OR 24 HOURS DURING MINNESOTA DEPARTMENT OF NATURAL RESOURCES [DNR] FISH SPAWNING RESTRICTIONS)	☐	☐	☐
2. HAS THE NEED TO DISTURB STEEP SLOPES BEEN MINIMIZED?	☐	☐	☐
3. IF STEEP SLOPES ARE DISTURBED, ARE STABILIZATION PRACTICES DESIGNED FOR STEEP SLOPES USED?	☐	☐	☐
4. ALL DITCHES/SWALES STABILIZED 200' BACK FROM POINT OF DISCHARGE OR PROPERTY EDGE WITHIN 24 HOURS? (MULCH, HYDROMULCH, TACKIFIER, OR SIMILAR BEST MANAGEMENT PRACTICES [BMPS] ARE NOT ACCEPTABLE IN DITCHES/SWALES IF THE SLOPE IS GREATER THAN 2%)ARE APPROPRIATE BMP'S INSTALLED PROTECTING INLETS/OUTLETS?	☐	☐	☐
5. DO PIPE OUTLETS HAVE ENERGY DISSIPATION (WITHIN 24 HOURS OF CONNECTION)?	☐	☐	☐
6. IS CONSTRUCTION PHASING BEING FOLLOWED IN ACCORDANCE WITH THE SWPPP?	☐	☐	☐
7. ARE AREAS NOT TO BE DISTURBED MARKED OFF (FLAGS, SIGNS, ETC.)?	☐	☐	☐

COMMENTS:

SEDIMENT CONTROL REQUIREMENTS (SECTION 9.1)

	Y	N	N/A
1. ARE PERIMETER SEDIMENT CONTROLS INSTALLED PROPERLY ON ALL DOWN GRADIENT PERIMETERS?	☐	☐	☐
2. ARE APPROPRIATE BMPS INSTALLED PROTECTING INLETS, CATCH BASINS, AND CULVERT INLETS?	☐	☐	☐
3. IS A 50 FOOT NATURAL BUFFER PRESERVED AROUND ALL SURFACE WATERS DURING CONSTRUCTION?	☐	☐	☐
3.1. IF NO, HAVE REDUNDANT SEDIMENT CONTROLS BEEN INSTALLED?	☐	☐	☐
4. DO ALL ERODIBLE STOCKPILES HAVE PERIMETER CONTROL IN PLACE?	☐	☐	☐
5. IS THERE A TEMPORARY SEDIMENT BASIN ON SITE, AND IS IT BUILT AS REQUIRED IN SECTION 14 OF THE PERMIT?	☐	☐	☐
6. IS SOIL COMPACTION BEING MINIMIZED WHERE NOT DESIGNED FOR COMPACTION?	☐	☐	☐
7. IS TOPSOIL BEING PRESERVED UNLESS INFEASIBLE?	☐	☐	☐
8. IF CHEMICAL FLOCCULANTS ARE USED, IS THERE A CHEMICAL FLOCCULANT PLAN IN PLACE?	☐	☐	☐

COMMENTS:

MAINTENANCE AND INSPECTIONS (SECTION 11)

	Y	N	N/A
1. ARE ALL PREVIOUSLY STABILIZED AREAS MAINTAINING GROUND COVER?	☐	☐	☐
2. ARE PERIMETER CONTROLS MAINTAINED AND FUNCTIONING PROPERLY, SEDIMENT REMOVED WHEN ONE-HALF FULL?	☐	☐	☐
3. ARE INLET PROTECTION DEVICES MAINTAINED AND ADEQUATELY PROTECTING INLETS?	☐	☐	☐
4. ARE THE TEMPORARY SEDIMENT BASINS BEING MAINTAINED AND FUNCTIONING PROPERLY?	☐	☐	☐
5. ARE VEHICLE TRACKING BMPS AT SITE EXISTS IN PLACE AND MAINTAINED AND FUNCTIONING PROPERLY?	☐	☐	☐
6. IS ALL TRACKED SEDIMENT BEING REMOVED WITHIN 24 HOURS?	☐	☐	☐
7. HAVE ALL SURFACE WATERS, DITCHES, CONVEYANCES, AND DISCHARGE POINTS BEEN INSPECTED?	☐	☐	☐
8. WERE ANY DISCHARGES SEEN DURING THIS INSPECTION (I.E., SEDIMENT, TURBID WATER, OR OTHERWISE)?	☐	☐	☐

IF YES, RECORD THE LOCATION OF ALL POINTS OF DISCHARGE. PHOTOGRAPH AND DESCRIBE THE DISCHARGE (SIZE, COLOR, ODOR, FOAM, OIL SHEEN, TIME, ETC.). DESCRIBE HOW THE DISCHARGE WILL BE ADDRESSED. WAS THE DISCHARGE A SEDIMENT DELTA? IF YES, WILL THE DELTA BE RECOVERED WITHIN SEVEN DAYS AND IN ACCORDANCE WITH ITEM 11.5 OF THE PERMIT?

COMMENTS:

POLLUTION PREVENTION (SECTION 12)

	Y	N	N/A
1. ARE ALL CONSTRUCTION MATERIALS THAT CAN LEACH POLLUTANTS UNDER COVER OR PROTECTED?	☐	☐	☐
2. ARE HAZARDOUS MATERIALS BEING PROPERLY STORED?	☐	☐	☐
3. ARE APPROPRIATE BMPS BEING USED TO PREVENT DISCHARGES ASSOCIATED WITH FUELING AND MAINTENANCE OF EQUIPMENT OR VEHICLES?	☐	☐	☐
4. ARE ALL SOLID WASTES BEING PROPERLY CONTAINED AND DISPOSED OF?	☐	☐	☐
5. IS THERE A CONCRETE/OTHER MATERIAL WASHOUT AREA ON SITE AND IS IT BEING USED?	☐	☐	☐
6. IS THE CONCRETE WASHOUT AREA MARKED WITH A SIGN?	☐	☐	☐
7. ARE THE CONCRETE/OTHER MATERIAL WASHOUT AREAS PROPERLY MAINTAINED?	☐	☐	☐

COMMENTS:

OTHER

	Y	N	N/A
1. IS A COPY OF THE SWPPP, INSPECTION RECORDS, AND TRAINING DOCUMENTATION LOCATED ON THE CONSTRUCTION SITE, OR CAN IT BE MADE AVAILABLE WITHIN 72 HOURS?	☐	☐	☐
2. HAS THE SWPPP BEEN FOLLOWED AND IMPLEMENTED ON SITE, AND AMENDED AS NEEDED?	☐	☐	☐
3. IS ANY DEWATERING OCCURRING ON SITE? IF YES, WHAT BMPS ARE BEING USED TO ENSURE THAT CLEAN WATER IS LEAVING THE SITE AND THE DISCHARGE IS NOT CAUSING EROSION OR SCOUR?	☐	☐	☐
4. WILL A PERMANENT STORMWATER MANAGEMENT SYSTEM BE CREATED FOR THIS PROJECT IF REQUIRED AND IN ACCORDANCE WITH SECTION 15 OF THE PERMIT (IF ADDING AN ACRE OR MORE OF NEW IMPERVIOUS SURFACE)? IF YES, DESCRIBE:	☐	☐	☐
5. IF INFILTRATION/FILTRATION SYSTEMS ARE BEING CONSTRUCTED, ARE THEY MARKED AND PROTECTED FROM COMPACTION AND SEDIMENTATION?	☐	☐	☐

6. DESCRIPTION OF AREAS OF NON-COMPLIANCE NOTED DURING THE INSPECTION, REQUIRED CORRECTIVE ACTIONS, AND RECOMMENDED DATE OF COMPLETION OF CORRECTIVE ACTIONS:

7. PROPOSED AMENDMENTS TO THE SWPPP:

8. POTENTIAL AREAS OF FUTURE CONCERN:

9. ADDITIONAL COMMENTS

DISCLOSURES:

- AFTER DISCOVERY, THE PERMIT REQUIRES MANY OF THE DEFICIENCIES THAT MAY BE FOUND ON SITE BE CORRECTED WITHIN A SPECIFIED PERIOD OF TIME. SEE PERMIT FOR MORE DETAILS.
- THE PERMITTEE(S) IS/ARE RESPONSIBLE FOR THE INSPECTION AND MAINTENANCE OF TEMPORARY AND PERMANENT WATER QUALITY MANAGEMENT BMPS AS WELL AS EROSION PREVENTION AND SEDIMENT CONTROL BMPS UNTIL ANOTHER PERMITTEE HAS OBTAINED COVERAGE UNDER THIS PERMIT ACCORDING TO SECTION 3, OR THE PROJECT HAS MET THE TERMINATION CONDITIONS OF THE PERMIT AND A NOTICE OF TERMINATION HAS BEEN SUBMITTED TO THE MINNESOTA POLLUTION CONTROL AGENCY.

ATTACHMENT C: MAINTENANCE PLAN FOR PERMANENT STORM WATER TREATMENT SYSTEM

CivilSite GROUP
Civil Engineering · Surveying · Landscape Architecture
5000 Glenwood Avenue
Golden Valley, MN 55422
civilsitegroup.com 612-615-0060

PRELIMINARY: NOT FOR CONSTRUCTION

PROJECT
TSUNAMI EXPRESS CAR WASH
1896 ADAMS ST., MANKATO, MN 56001

OWNER
TSUNAMI EXPRESS CAR WASH, LLC.
4800 MEADOWS ROAD, #300, LAKE OSWEGO, OREGON 97035

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.

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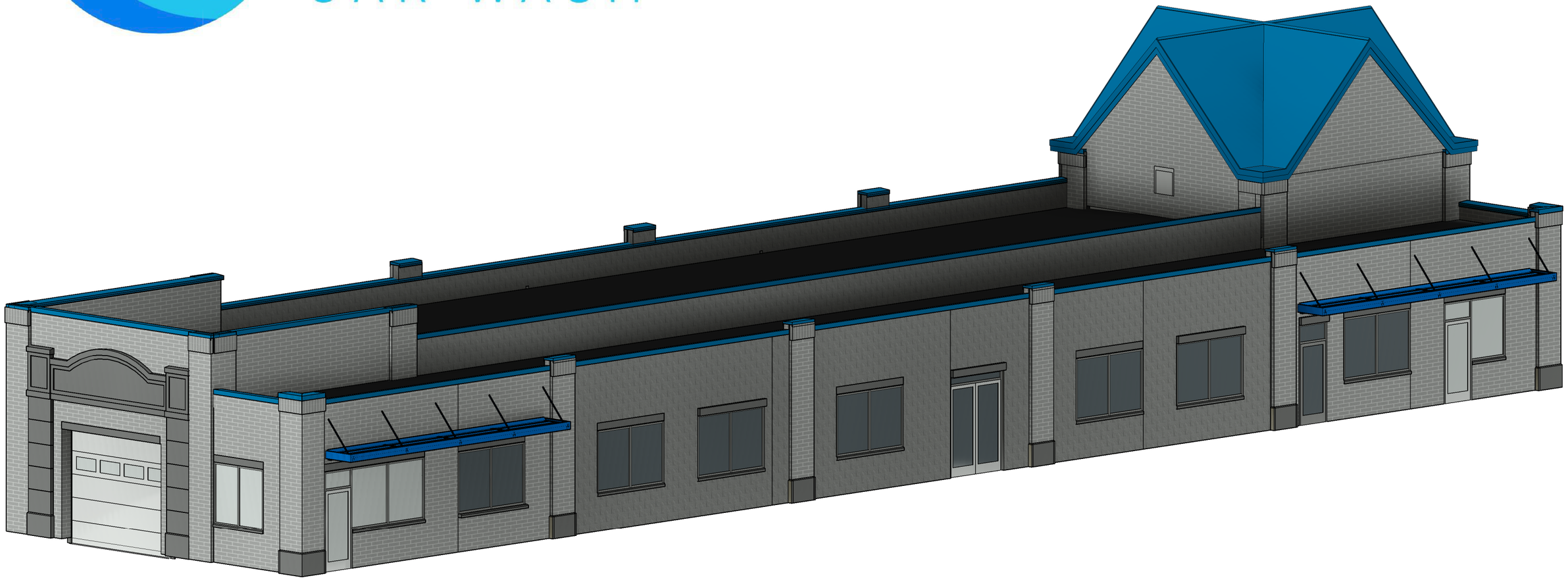
DATE	DESCRIPTION

SWPPP - ATTACHMENTS

SW1.5

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TSUNAMI EXPRESS
CAR WASH



Tsunami Express Car Wash

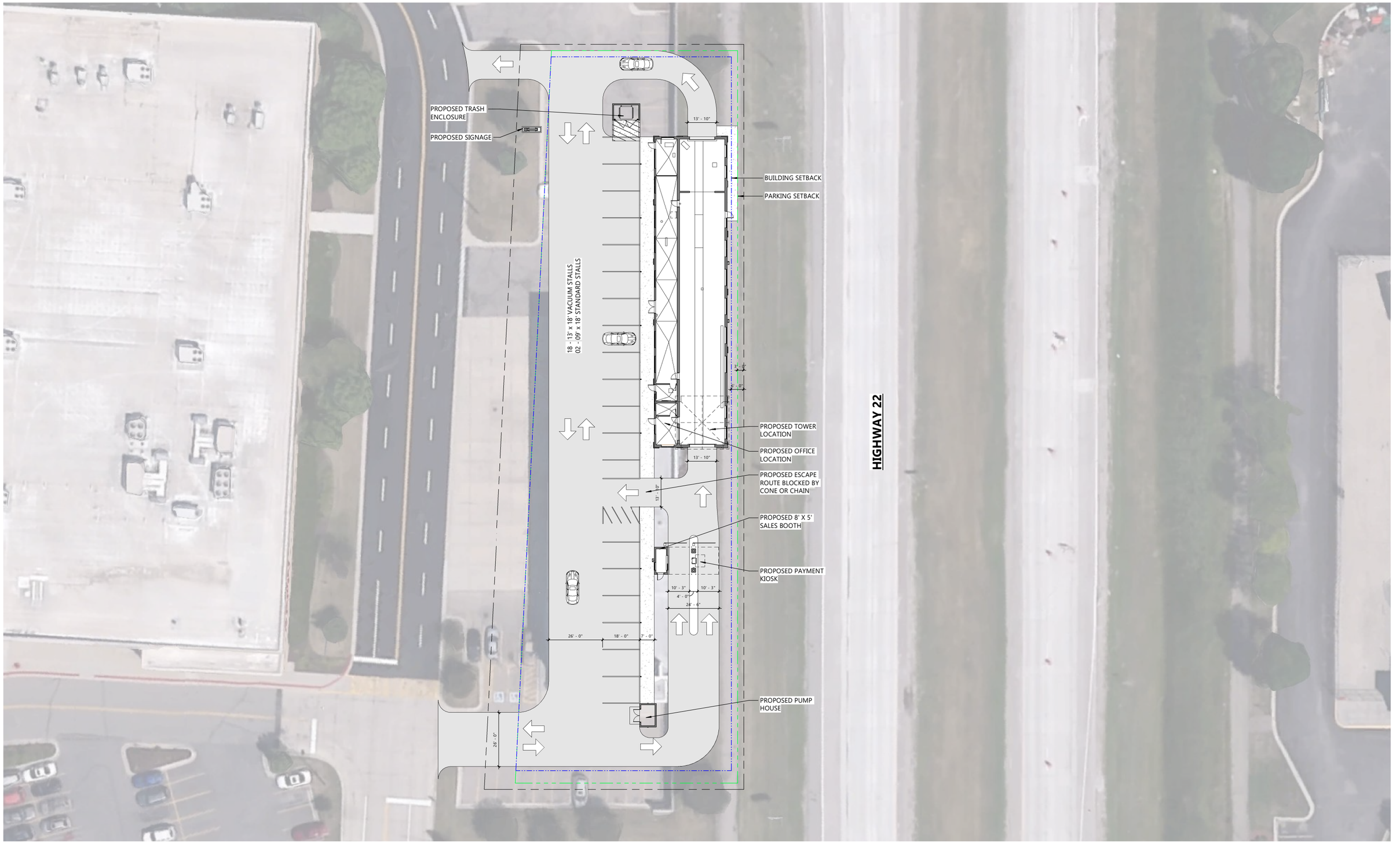
THE REDMOND COMPANY

Cover Sheet

24032

06.11.2024

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Tsunami Express Car Wash

SITE PLAN - 1896 Adams St, Mankato, MN - Option 3

THE REDMOND COMPANY

23040

05.23.2024

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3 EXIT ELEVATION
3/16" = 1'-0"



4 ENTRANCE ELEVATION
3/16" = 1'-0"

KEYNOTES PER SHEET

0420-01	BRICK VENEER
0420-07	4" BRICK VENEER
0420-08	8" STRUCTURAL BRICK (TYP)
0420-09	8" SPLIT FACE CMU
0420-10	12" STRUCTURAL BRICK (TYP)
0473-01	CAST STONE SILL
0473-02	CAST STONE HEADER
0473-03	CAST STONE PIER
0724-01	EIFS (SEE EXTERIOR MATERIAL SCHEDULE)
0771-04	PREFINISHED ALUMINUM DOWNSPOUT. DOWNSPOUT TO HUG BUILDING PROFILE (SEE EXTERIOR MATERIAL LEGEND FOR COLOR). LOCATION TO BE FIELD DETERMINED AND DISCHARGED TO GREEN SPACE. CONNECT TO STORM SEWER; SEE CIVIL DRAWING.
0771-05	PREFINISHED ALUMINUM SCUPPER W/ DOWNSPOUT (TYP.) SEE EXTERIOR MATERIAL LEGEND FOR COLOR. CONNECT TO STORM SEWER; SEE CIVIL DRAWINGS.
0771-06	PREFINISHED ALUMINUM COPING ANCHORED TO EXTERIOR GRADE WOOD BLOCKING
1070-02	PREFABRICATED ALUMINUM CANOPY
B2010-A	4" X 4" X 16" STRUCTURAL BRICK, ANCHORED WITH ADJUSTABLE METAL WALL TIES, VENTED WEEP INSERTS AT TOP AND BOTTOM OF WALL AT 24" O.C. (MAX.), WITH FLUID APPLIED VAPOR PERMEABLE AIR BARRIER ON 5/8" GLASS-MAT FACED GYPSUM SHEATHING ON COLD FORMED METAL STUD FRAMING (SEE STRUCTURAL DRAWINGS)
B2012-G	8" X 4" X 16" SINGLE WYTHE STRUCTURAL BRICK (SEE STRUCTURAL DRAWINGS) 5/8" MOISTURE RESISTANT GYP BD ON 1 5/8" FURRING AT 24" O.C. WITH CONTINUOUS XPS INSULATION AT INTERIOR SIDE OF WALL.

EXTERIOR MATERIAL LEGEND

(BR-X): STRUCTURAL BRICK
MANUFACTURER: COUNTY MATERIALS
PRODUCT: HERITAGE (STRUCTURAL BRICK)
COLOR: GRAYSTONE
MORTAR COLOR: SPECMIX SM100 GREY

(BR-1): 4" X 4" X 16" STRUCTURAL BRICK
(BR-2): 8" X 4" X 16" STRUCTURAL BRICK
(BR-3): 12" X 4" X 16" STRUCTURAL BRICK

(CS-X): CAST STONE
MANUFACTURER: MARCSTONE
COLOR: DARK SHALE
(SEE CAST STONE PROFILES)

(CMU-X): - SPLIT FACE CMU
MANUFACTURER: COUNTY MATERIALS
PRODUCT: SPLIT FACE
COLOR: STEEL GRAY

(CMU-1): 8" X 8" X 16"
(CMU-2): 12" X 8" X 16"

(MR-1:) STANDING SEAM METAL ROOF:
MANUFACTURER: PAC-CLAD
PRODUCT:
COLOR: AWARD BLUE

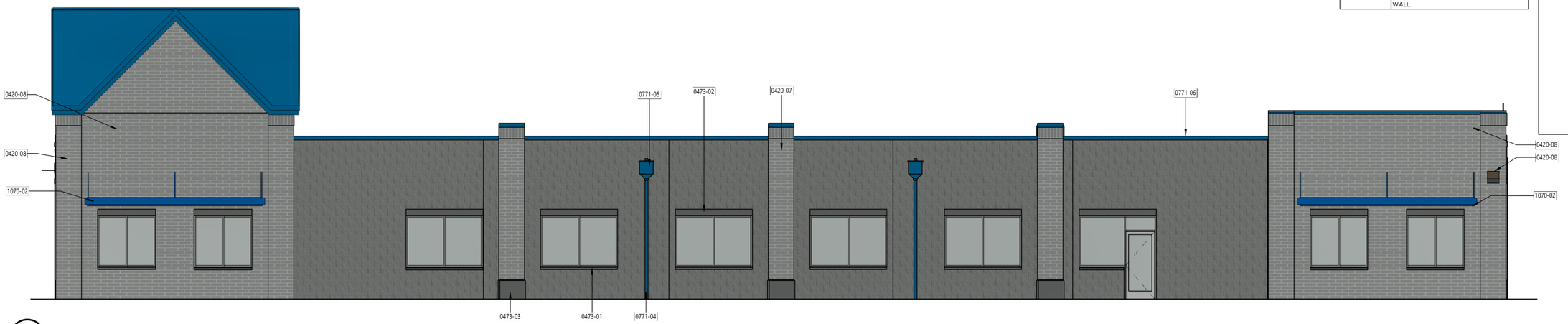
(EIFS-1): EXTERIOR FINISH SYSTEM
MANUFACTURER: DRYVIT
PRODUCT: OUTSULATION PLUS MD
COLOR: #SW 7068 GRIZZLE GRAY
FINISH: SANDBLAST

(AC-1): PREFINISHED ALUMINUM COPING
MANUFACTURER: PAC-CLAD
PRODUCT: PAC-TITE COPING-TAPERED
COLOR: PACIFIC BLUE

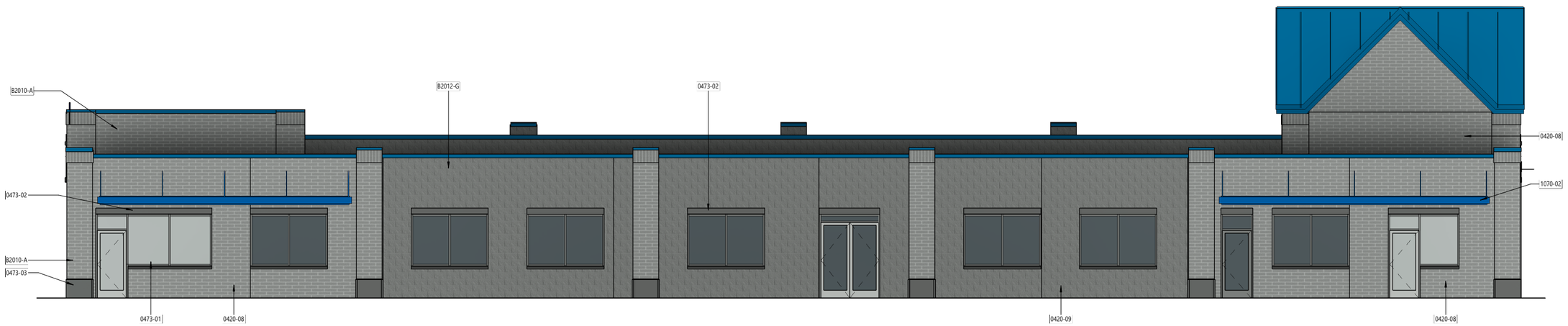
(AF-1): PREFINISHED ALUMINUM FASCIA
MANUFACTURER: PAC-CLAD
PRODUCT: FORMED ALUMINUM
COLOR: PACIFIC BLUE

(AS-1): PREFINISHED ALUMINUM SOFFIT PANEL
MANUFACTURER: PAC-CLAD
PRODUCT: VENTED ALUMINUM PANEL
COLOR: PACIFIC BLUE

(GTR-1): PREFINISHED ALUMINUM GUTTER/DOWNSPOUT
MANUFACTURER: PAC-CLAD
PRODUCT: 5" BEVELED PROFILE GUTTERS
COLOR: PACIFIC BLUE



2 BACK ELEVATION
3/16" = 1'-0"



1 FRONT ELEVATION
3/16" = 1'-0"

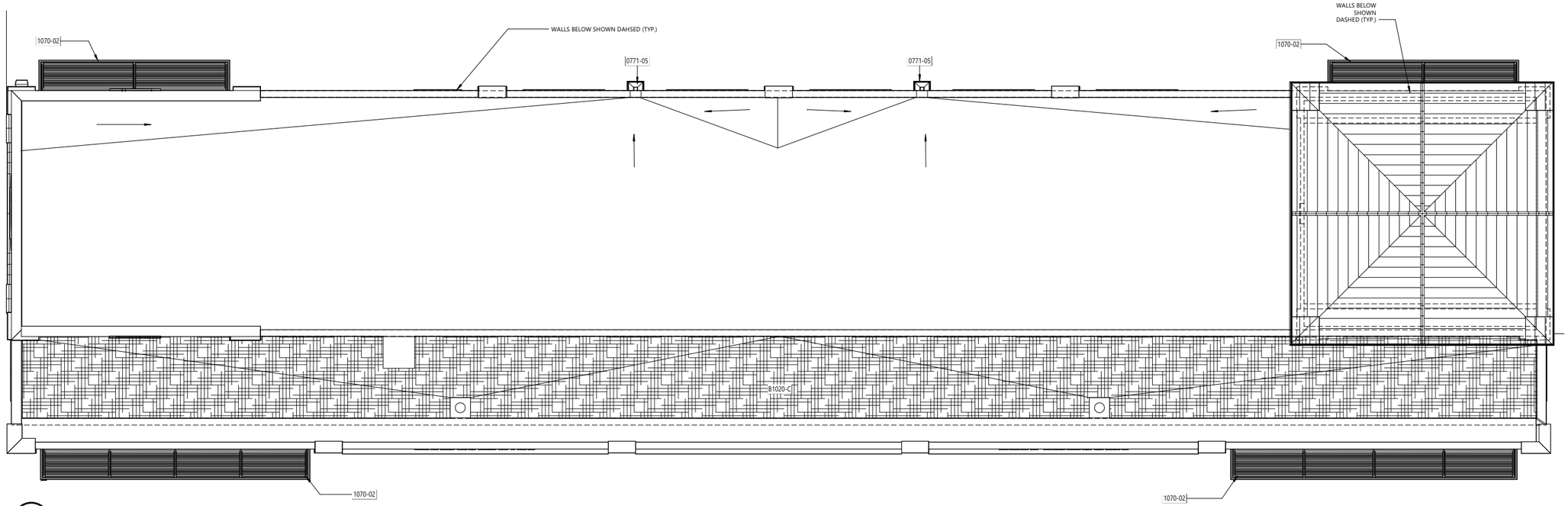
Tsunami Express Car Wash

150_EN_DE_Exterior Elevations

24032 06.11.2024

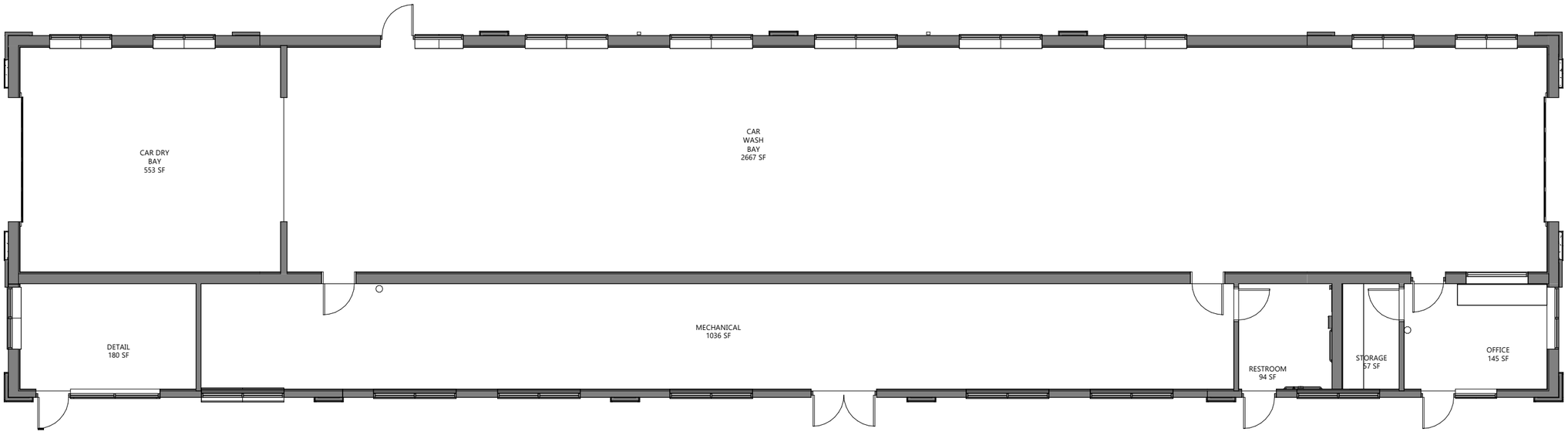
THE REDMOND COMPANY

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N 2 H_150_EN_DE_ROOF PLAN PRESENTATION
3/16" = 1'-0"

KEYNOTES PER SHEET	
0771-05	PREFINISHED ALUMINUM SCUPPER W/ DOWNSPOUT (TYP.) SEE EXTERIOR MATERIAL LEGEND FOR COLOR. CONNECT TO STORM SEWER; SEE CIVIL DRAWINGS.
1070-02	PREFABRICATED ALUMINUM CANOPY
B1020-C	FULLY ADHERED 60 MIL EPDM MEMBRANE ROOFING OVER 4" (R-30) MIN POLYISOCYANURATE RIGID INSULATION (FORMED FROM 2 LAYERS, WITH JOINTS OFFSET, BOTTOM LAYER MECHANICALLY ATTACHED, TOP LAYER ADHERED). OVER STRUCTURAL METAL DECK. PROVIDE CRICKETS AND SADDLES FROM XPS RIGID INSULATION TO MAINTAIN 1/4" PER FOOT (MIN.) POSITIVE DRAINAGE TO ROOF DRAINS.



N 1 H_150_EN_DE_FLOOR PLAN PRESENTATION
3/16" = 1'-0"

Tsunami Express Car Wash

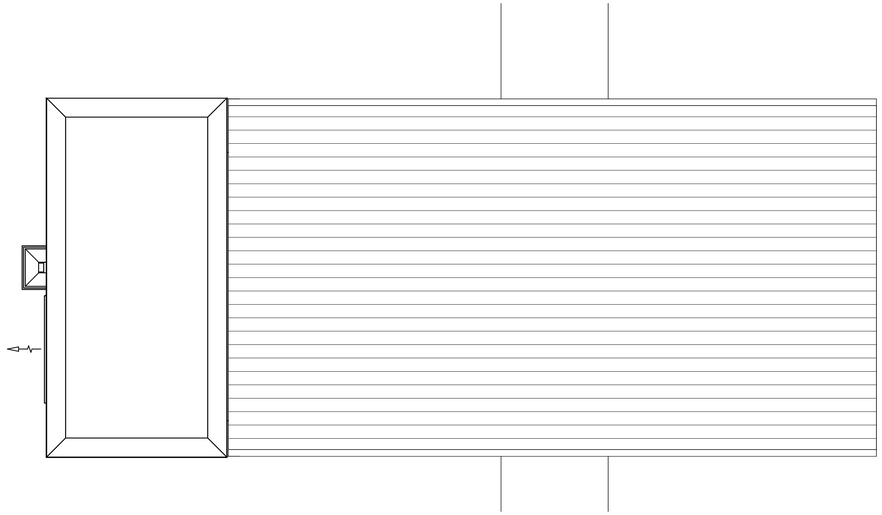
150_EN_DE_First Floor & ROOF PLAN

24032

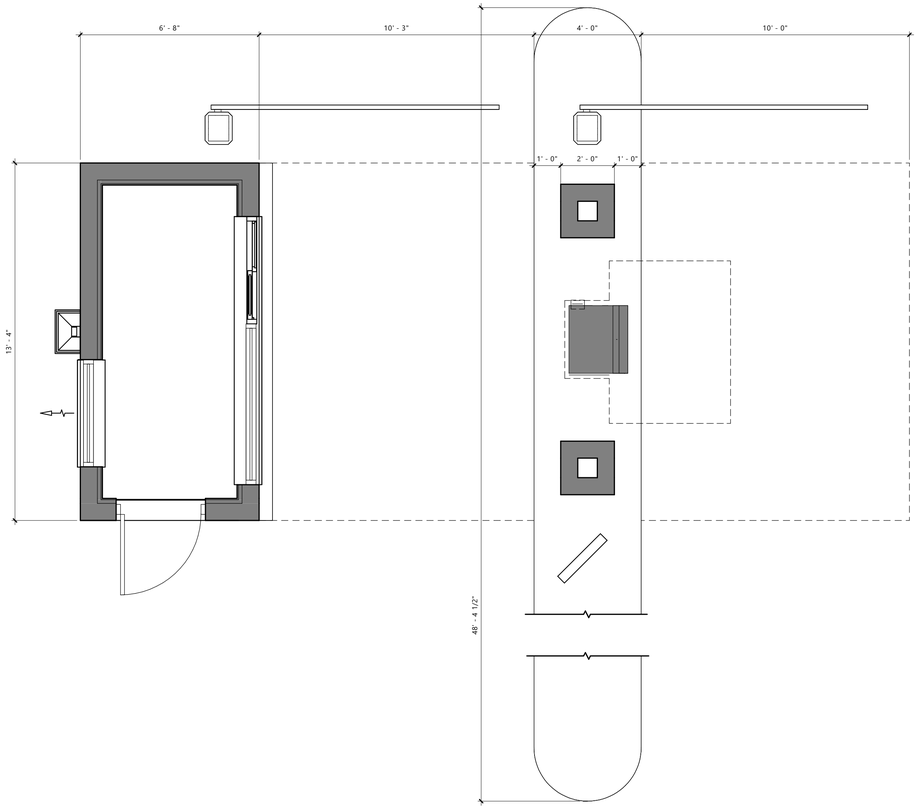
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2 SALES BOOTH - ROOF PLAN
3/8" = 1'-0"



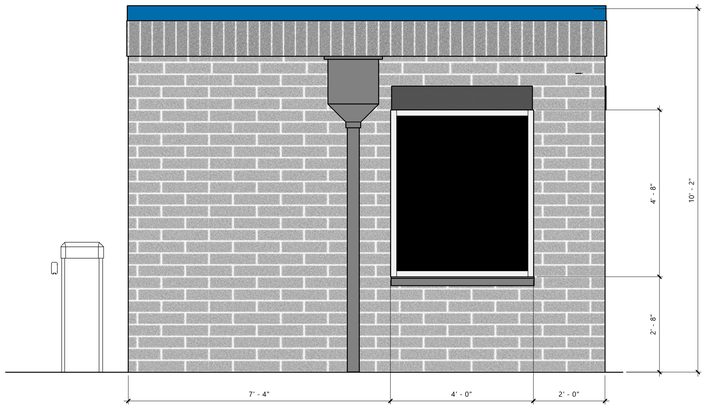
1 SALES BOOTH - FLOOR PLAN
3/8" = 1'-0"

Tsunami Express Car Wash

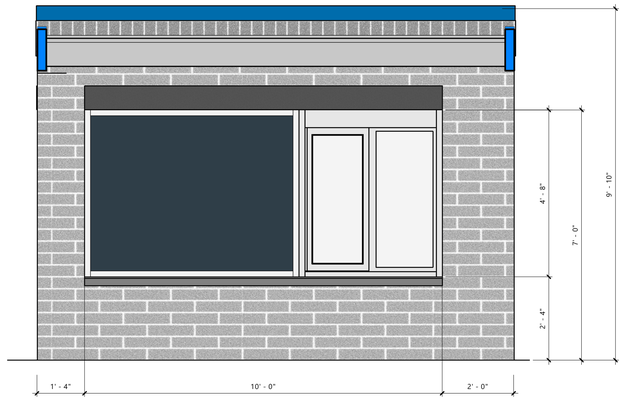
DE_Sales Booth - 2 Lane_Presentation

24056 07.17.24

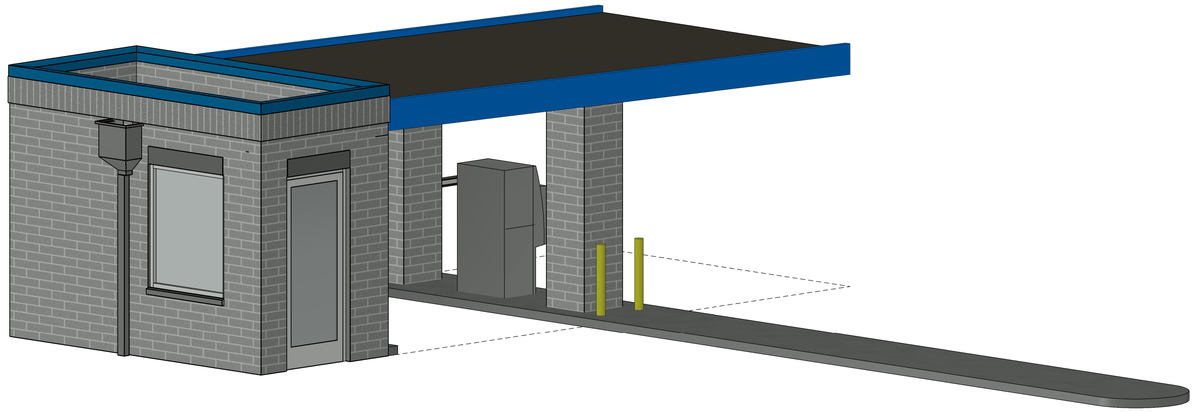
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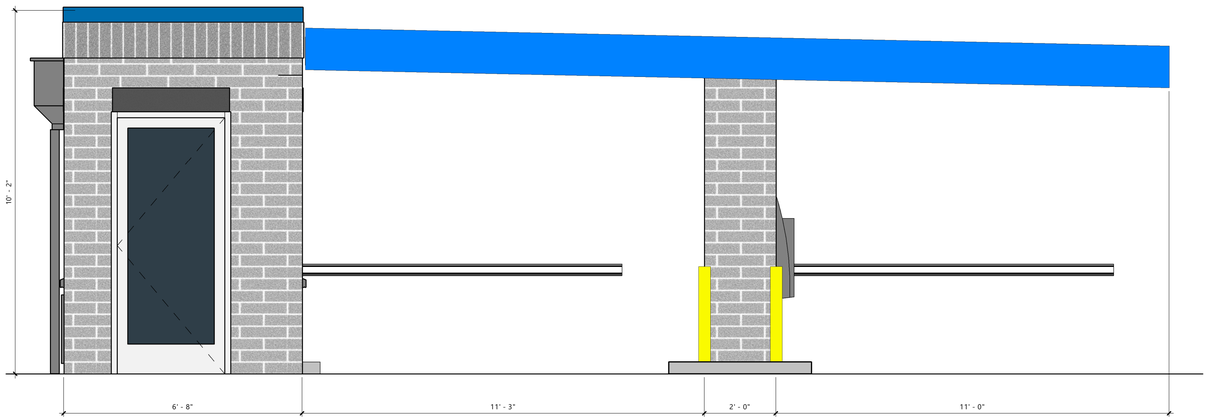
4 SALES 2 LANE - BACK ELEV
1/2" = 1'-0"



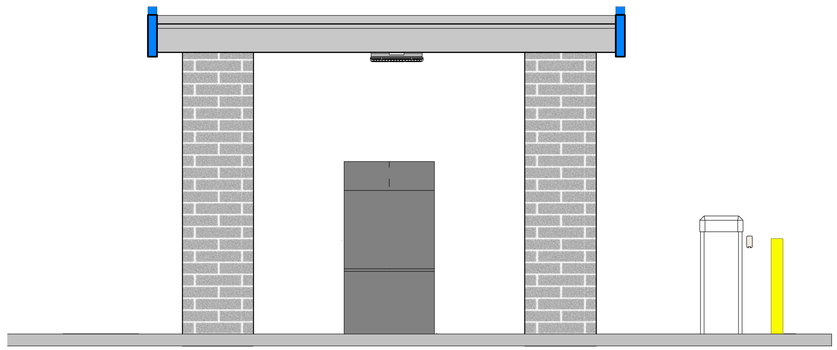
3 SALES - 2 LANE FRONT ELEV
1/2" = 1'-0"



5 SALES BOOTH - 3D VIEW



1 SALES 2 LANE - APPROACH
1/2" = 1'-0"



2 SALES BOOTH - SALES LANE ELEVATION
1/2" = 1'-0"

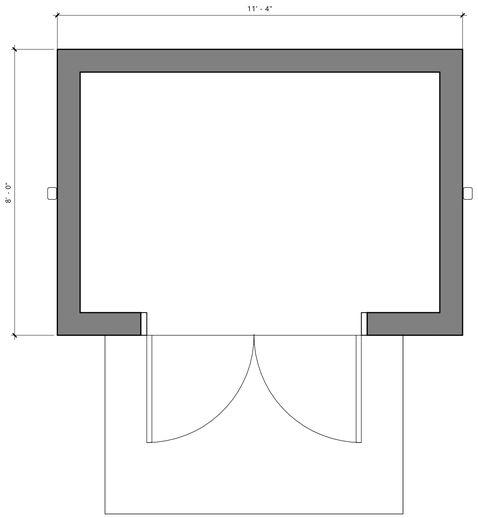
Tsunami Express Car Wash

DE_Sales Booth - 2 Lane_Presentation

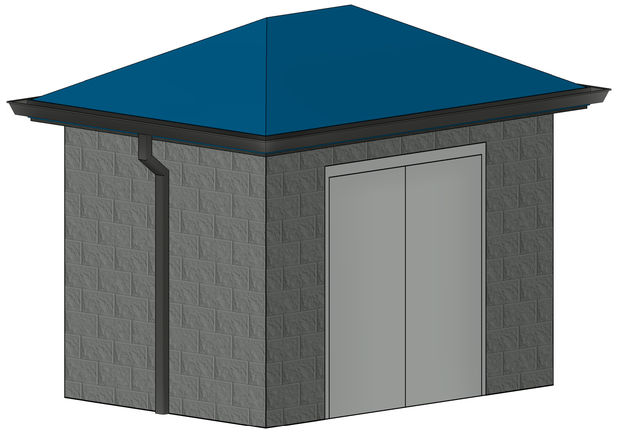
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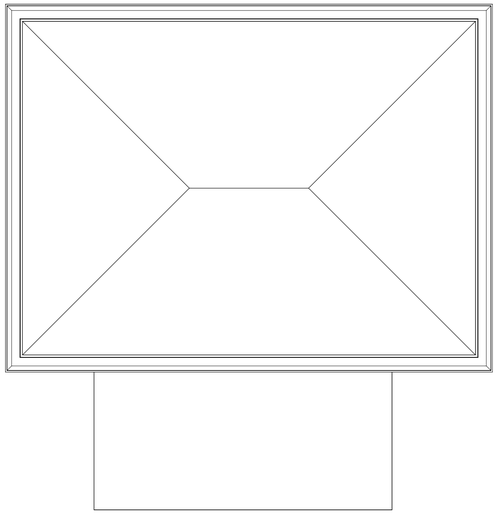
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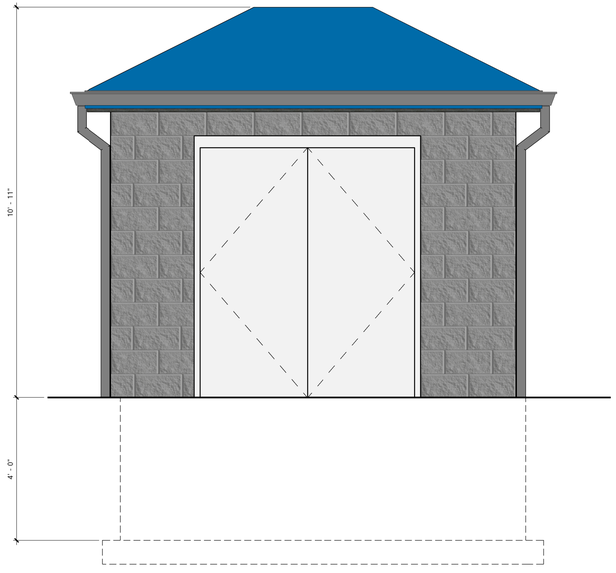
3 H_PUMP HOUSE - FLOOR PLAN PRESENTATION
1/2" = 1'-0"



4 3D - PUMP Only



1 H_PUMP HOUSE - ROOF PLAN PRESENTATION
1/2" = 1'-0"



2 H_PUMP HOUSE - FRONT ELEVATION PRESENTATION
1/2" = 1'-0"

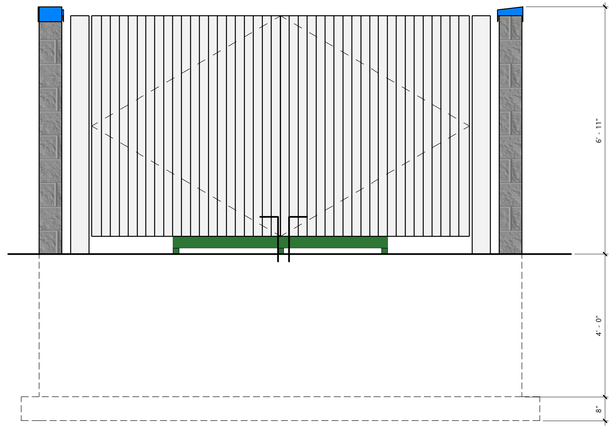
Tsunami Express Car Wash

SEP_Pump Bldg_Presentation

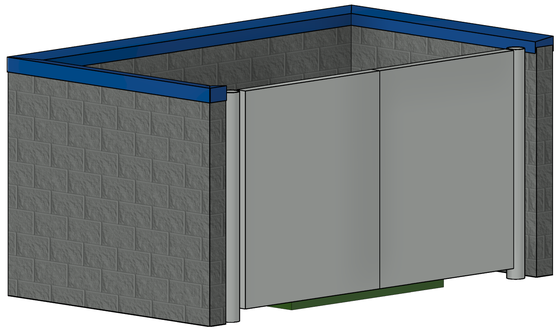
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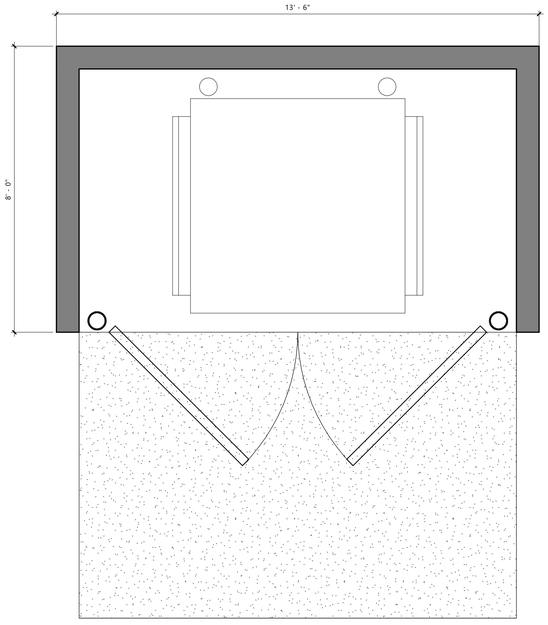
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2 H_TRASH ENCLOSURE - FRONT ELEVATION PRESENTATION
1/2" = 1'-0"



3 3D - TRASH Only



1 H_TRASH ENCLOSURE - PLAN PRESENTATION
1/2" = 1'-0"

Tsunami Express Car Wash

SEP_Trash Bldg_Presentation

24023 06.07.2024

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TYPOGRAPHY, ARROWS, FINISHES & VINYLS

LOGOS

TSUNAMI
EXPRESS
CAR WASH

(VERTICAL VERSION)

TSUNAMI
EXPRESS
CAR WASH

(HORIZONTAL VERSION)

ARROWS



TYPOGRAPHY

T-01

Aa

UNIVA PRO BLACK

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z
1 2 3 4 5 6 7 8 9 0 ! @ # $ % & * ( ) ? / ” ’ : ; , .

T-02

Aa

MONTSERRAT REGULAR

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z
1 2 3 4 5 6 7 8 9 0 ! @ # $ % & * ( ) ? / ” ’ : ; , .

FINISHES

- P-01 - TO MATCH PMS BLACK C
- P-02 - WHITE, SATIN FINISH
- P-03 - TO MATCH PMS 2382 C (BLUE)
- P-04 - TO MATCH PMS 915 U (LT. BLUE)
- P-05 - TO MATCH PMS 7548 XGC (YELLOW)
- P-06 - TO MATCH PMS 2420 C (GREEN)
- P-07 - TO MATCH EXISTING BUILDING (TBD)
- P-08 - TO MATCH PMS 4715 C (DK BRICK RED)

VINYLS

- V-01 - 3M 7725-12 BLACK
- V-02 - 3M 7725-10 WHITE
- V-03 - DIGITALLY PRINTED ON 3M 7725-10 WHITE VINYL TO MATCH PMS 2382 C (BLUE)
- V-04 - DIGITALLY PRINTED ON 3M 7725-10 WHITE VINYL TO MATCH PMS 915 U (LT. BLUE)
- V-05 - DIGITALLY PRINTED ON 3M 7725-10 WHITE VINYL TO MATCH PMS 7548 XGC (YELLOW)
- V-06 - DIGITALLY PRINTED ON 3M 7725-10 WHITE VINYL TO MATCH PMS 2420 C (GREEN)
- V-07 - DIGITALLY PRINTED ON 3M 7725-10 WHITE VINYL TO MATCH 33% OF PMS 915 U (LT. BLUE)
- V-08 - DIGITALLY PRINTED ON 3M 7725-10 WHITE VINYL TO MATCH 10% OF PMS 915 U (LT. BLUE)
- V-09 - DIGITALLY PRINTED ON 3M 3635-210 PERFORATED WHITE VINYL

FASTSIGNS of KANKAKEE

PROJECT TITLE:
TSUNAMI CAR WASH

ENGINEER OF RECORD SEAL:

ENGINEER OF RECORD SIGNATURE/DATE:

REVISION HISTORY

NO.	DATE	PREV DRWG	DESCRIPTION

PRODUCT TYPE:
PROJECT LOGO(S), TYPOGRAPHY, ARROWS, FINISHES, & VINYLS

DRAWING TYPE:
CONCEPTUAL

PROJECT NO.	TASK NO.	QTY.
93745	233633	-

DWG. NO.	SHEET
13323CH	2 OF 20

MN-2 SECONDARY MONUMENT SIGN

GENERAL NOTES:

ILLUMINATED: YES
S/F OR D/F: D/F
EXACT INSTALL LOCATION TO BE COORDINATED WITH G.C.
ELECTRIC TO INSTALL LOCATION TO BE COORDINATED WITH E.C. AND TO BE PROVIDED BY THE E.C.

NOTES:

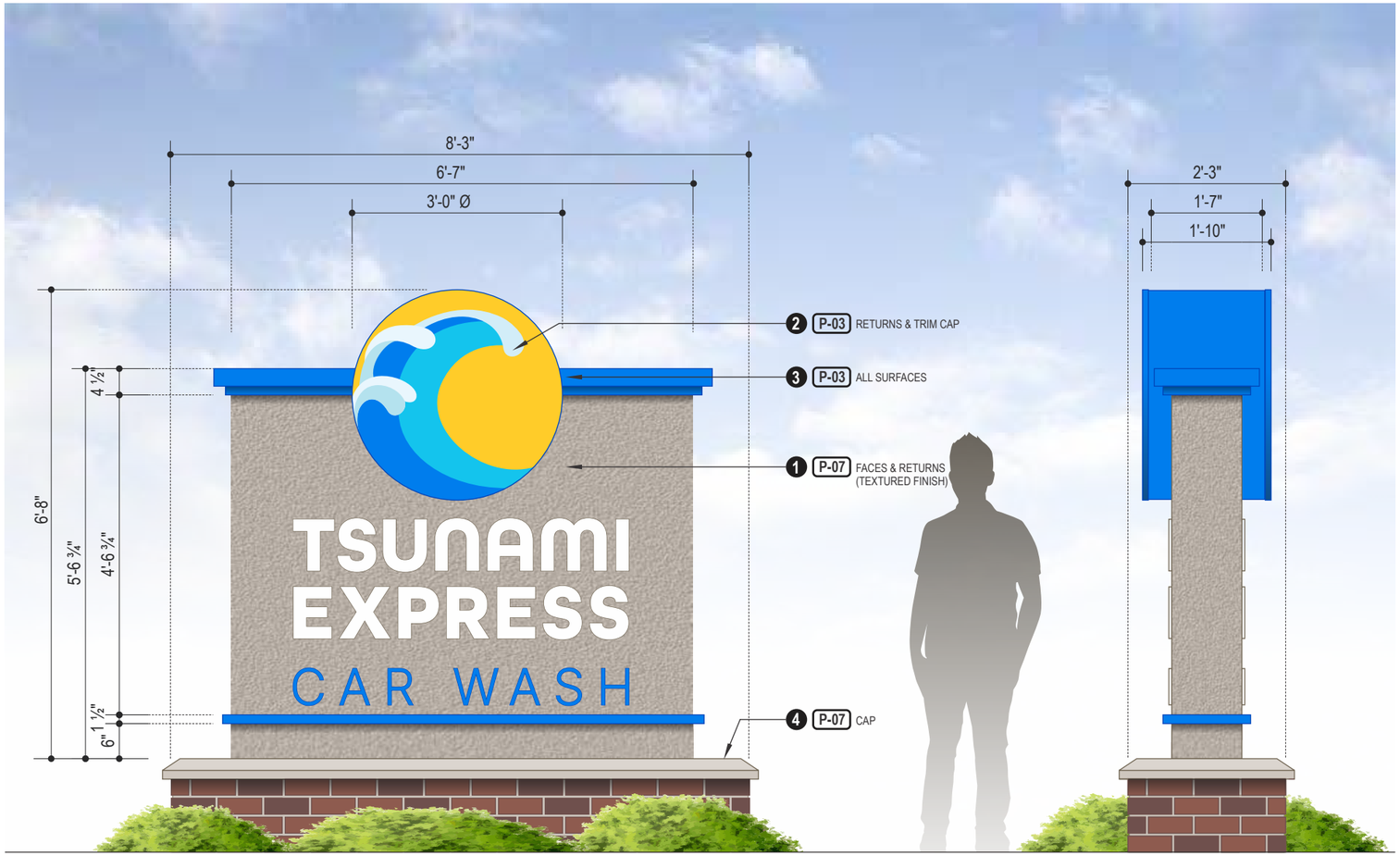
1. **CABINET:** D/F INTERNALLY ILLUMINATED CABINET. 1'-0" DEEP. ALUMINUM FACES & RETURNS OVER ALUMINUM ANGLE FRAME. FACES & OUTER RETURN TO HAVE A PAINTED TEXTURED FINISH. FACES TO HAVE ROUTED OUT W/ PUSHED THRU ACRYLIC COPY GRAPHICS. PUSHED THRU ACRYLIC TO BE CLEAR W/ APPLIED TRANS. VINYL OVERLAID ONTO THE FACES. INTERNAL ILLUMINATION TO BE WHITE LED'S. CABINET MOUNTED TO INSIDE OF BRICK COLUMN & BOTTOM CABINET VIA INTERNAL MAIN STEEL SUPPORT.

2. **LOGO CABINETS:** (2) S/F INTERNALLY ILLUMINATED 5" DEEP FAB'D CHANNEL CABINET. RETURNS & BACKS TO BE ALUMINUM & TO HAVE A PAINTED FINISH. FACES TO BE TRANS. WHITE ACRYLIC WITH APPLIED VINYL GRAPHICS. FACES ATTACHED TO RETURNS VIA 1" PLASTIC TRIM CAP. TRIM CAP FINISH TO MATCH RETURNS FINISH. INTERNALLY ILLUMINATED VIA WHITE LED'S. MOUNTED TO TOP CABINET.

3. **ACCENT MOLDING:** ALUMINUM TUBE DIMENSIONAL MOLDING. MOLDING TO HAVE A PAINTED FINISH. MOLDING MOUNTED TO CABINET FACE & OUTER RETURNS.

4. **BRICK BASE:** FAB'D STEEL FRAME WITH CEMENT BOARD CLADDING & BRICK VENEER W/ MORTAR. MOUNTED TO CONCRETE SLAB. BRICK VENEER TO MATCH BRICK ON EXISTING BUILDING. CAP TO BE FAB'D ALUMINUM WITH A PAINTED FINISH.

5. **BRICK COLUMN:** FAB'D STEEL FRAME WITH CEMENT BOARD CLADDING & BRICK VENEER W/ MORTAR. MOUNTED TO TOP OF BRICK BASE. INTERIOR OF COLUMN TO HAVE A STEEL TUBE SUPPORT. BRICK VENEER TO MATCH BRICK ON EXISTING BUILDING.



1 ELEVATION VIEW

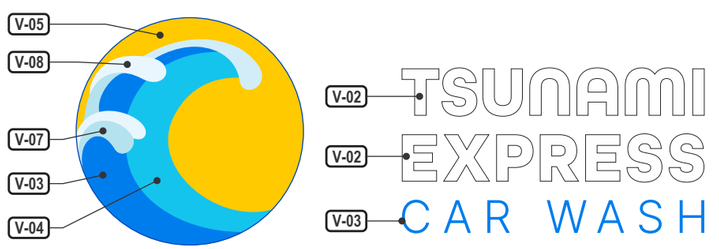
SCALE: 1/2" = 1' - 0"

PAINTED FINISHES:

- P-03 - TO MATCH PMS 2382 C (BLUE)
- P-07 - TO MATCH EXISTING BUILDING (TBD)

VINYLS:

- V-02 - 3M 7725-10 WHITE
- V-03 - DIGITALLY PRINTED ON 3M 7725-10 WHITE VINYL TO MATCH PMS 2382 C (BLUE)
- V-04 - DIGITALLY PRINTED ON 3M 7725-10 WHITE VINYL TO MATCH PMS 915 U (LT. BLUE)
- V-05 - DIGITALLY PRINTED ON 3M 7725-10 WHITE VINYL TO MATCH PMS 7548 XGC (YELLOW)
- V-07 - DIGITALLY PRINTED ON 3M 7725-10 WHITE VINYL TO MATCH 33% OF PMS 915 U (LT. BLUE)
- V-08 - DIGITALLY PRINTED ON 3M 7725-10 WHITE VINYL TO MATCH 10% OF PMS 915 U (LT. BLUE)



3 VINYL CALL OUTS

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

FASTSIGNS of KANKAKEE

PROJECT TITLE:
TSUNAMI CAR WASH

ENGINEER OF RECORD SEAL:

ENGINEER OF RECORD SIGNATURE/DATE:

REVISION HISTORY

NO.	DATE	PREV DRWG	DESCRIPTION

PRODUCT TYPE:
SECONDARY MONUMENT SIGN

DRAWING TYPE:
CONCEPTUAL

PROJECT NO.	TASK NO.	QTY.
93745	233633	1

DWG. NO.	SHEET
13323CH	6 OF 20

IDX-1 BUILDING ID - CAR WASH ENTRANCE

GENERAL NOTES:

ILLUMINATED: YES
S/F OR D/F: S/F
EXACT INSTALL LOCATION TO BE COORDINATED WITH G.C.
ELECTRIC TO INSTALL LOCATION TO BE COORDINATED WITH E.C. AND TO BE PROVIDED BY THE E.C.

NOTES:

1. **LOGO CABINET:** S/F INTERNALLY ILLUMINATED 5" DEEP FAB'D CHANNEL CABINET. RETURNS & BACK TO BE ALUMINUM & TO HAVE A PAINTED FINISH. FACE TO BE TRANS. WHITE ACRYLIC w/ APPLIED VINYL GRAPHICS. FACE ATTACHED TO RETURNS VIA 1" PLASTIC TRIM CAP. TRIM CAP FINISH TO MATCH RETURNS FINISH. INTERNALLY ILLUMINATED VIA WHITE LED'S. FLUSH MOUNTED TO EXISTING BRICK BUILDING.

2. **CHANNEL LETTERS:** INTERNALLY ILLUMINATED 5" DEEP FAB'D CHANNEL LETTERS. RETURNS & BACKS TO BE ALUMINUM & TO HAVE A PAINTED FINISH. FACES TO BE TRANS. WHITE ACRYLIC. FACES ARE ATTACHED TO RETURNS VIA 1" PLASTIC TRIM CAP. TRIM CAP FINISH TO MATCH RETURNS FINISH. INTERNALLY ILLUMINATED VIA WHITE LED'S. FLUSH MOUNTED TO EXISTING BRICK BUILDING.

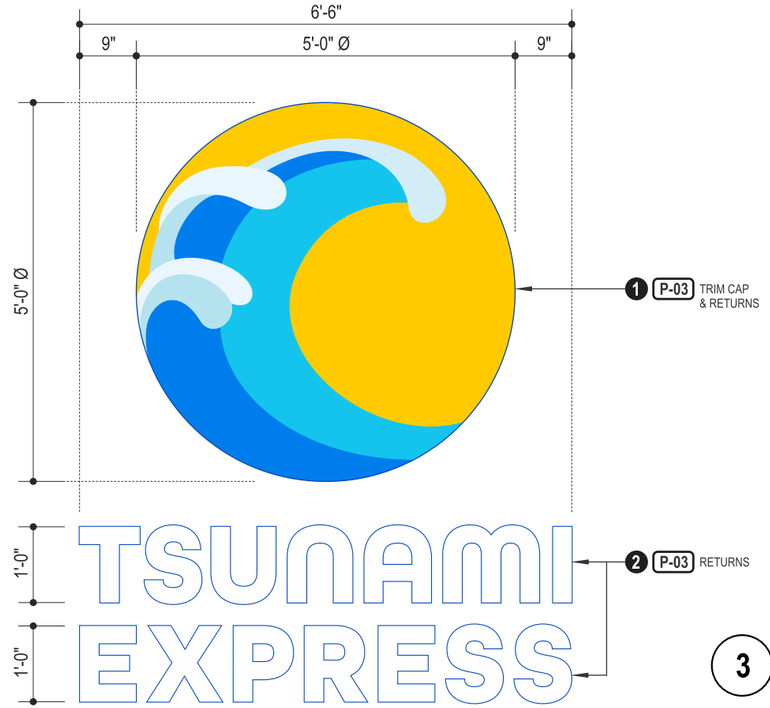
3. **CAR WASH CABINET:** S/F INTERNALLY ILLUMINATED 5" DEEP FAB'D CABINET. RETURNS & BACK TO BE ALUMINUM & TO HAVE A PAINTED FINISH. FACE TO BE ALUMINUM - FAB'D ALUMINUM "SHOE BOX" STYLE w/ 1 1/2" WELDED ALUMINUM RETURNS. FACE AND WELDED RETURNS TO HAVE A PAINTED FINISH. COPY TO BE ROUTED OUT OF ALUMINUM FACE. THE ROUTED OPENINGS TO BE BACKED w/ TRANS. WHITE ACRYLIC. FACE ATTACHED TO CABINET RETURNS VIA 1 1/2" WELDED ALUMINUM RETURNS. INTERNALLY ILLUMINATED VIA WHITE LED'S. FLUSH MOUNTED TO EXISTING BRICK BUILDING.

PAINTED FINISHES:

- P-03 - TO MATCH PMS 2382 C (BLUE)

VINYLS:

- V-03 - DIGITALLY PRINTED ON 3M 7725-10 WHITE VINYL TO MATCH PMS 2382 C (BLUE)
- V-04 - DIGITALLY PRINTED ON 3M 7725-10 WHITE VINYL TO MATCH PMS 915 U (LT. BLUE)
- V-05 - DIGITALLY PRINTED ON 3M 7725-10 WHITE VINYL TO MATCH PMS 7548 XGC (YELLOW)
- V-07 - DIGITALLY PRINTED ON 3M 7725-10 WHITE VINYL TO MATCH 33% OF PMS 915 U (LT. BLUE)
- V-08 - DIGITALLY PRINTED ON 3M 7725-10 WHITE VINYL TO MATCH 10% OF PMS 915 U (LT. BLUE)



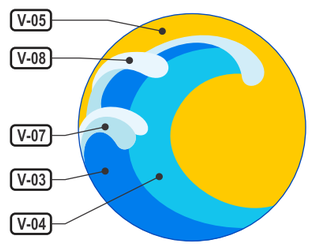
1 ELEVATION DETAIL
SCALE: 1/2" = 1' - 0"



3 PROPOSED ELEVATION VIEW
SCALE: NTS



2 ELEVATION DETAIL
SCALE: 1/2" = 1' - 0"



4 VINYL CALL OUTS
SCALE: NTS

FASTSIGNS of KANKAKEE

PROJECT TITLE:
TSUNAMI CAR WASH

ENGINEER OF RECORD SEAL:

ENGINEER OF RECORD SIGNATURE/DATE:

REVISION HISTORY

NO.	DATE	PREV DRWG	DESCRIPTION

PRODUCT TYPE:
SECONDARY MONUMENT SIGN

DRAWING TYPE:
CONCEPTUAL

PROJECT NO.	TASK NO.	QTY.
93745	233633	1 SET

DWG. NO.	SHEET
13323CH	7 OF 20

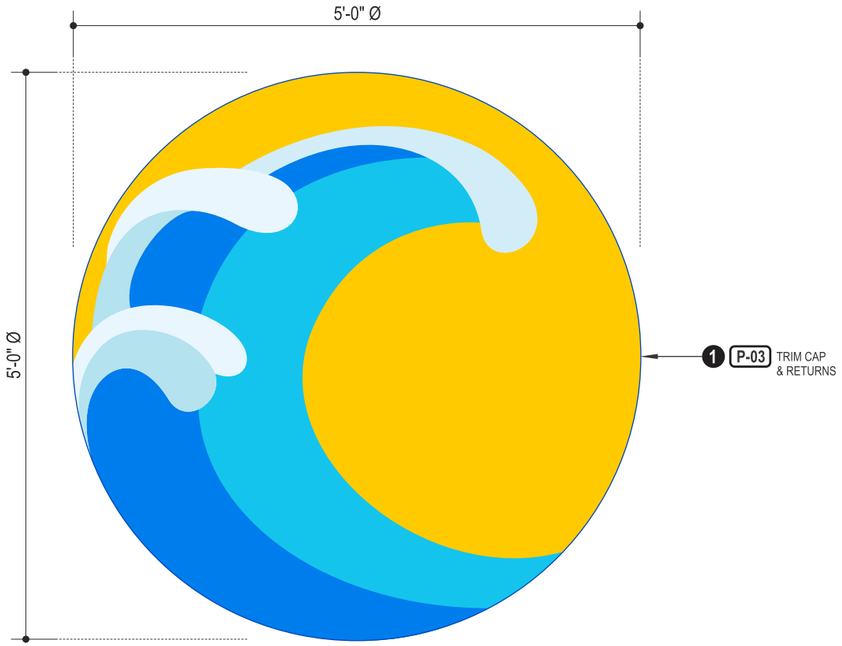
IDX-2 BUILDING ID - TOWER SIDES

GENERAL NOTES:

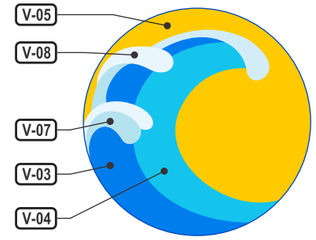
ILLUMINATED: YES
S/F OR D/F: S/F
EXACT INSTALL LOCATION TO BE COORDINATED WITH G.C.
ELECTRIC TO INSTALL LOCATION TO BE COORDINATED WITH E.C. AND TO BE PROVIDED BY THE E.C.

NOTES:

1. **LOGO CABINET:** S/F INTERNALLY ILLUMINATED 5" DEEP FAB'D CHANNEL CABINET. RETURNS & BACK TO BE ALUMINUM & TO HAVE A PAINTED FINISH. FACE TO BE TRANS. WHITE ACRYLIC WITH APPLIED VINYL GRAPHICS. FACE ATTACHED TO RETURNS VIA 1" PLASTIC TRIM CAP. TRIM CAP FINISH TO MATCH RETURNS FINISH. INTERNALLY ILLUMINATED VIA WHITE LED'S. FLUSH MOUNTED TO EXISTING BRICK BUILDING.



1 **ELEVATION DETAIL**
SCALE: 3/4" = 1' - 0"



4 **VINYL CALL OUTS**
SCALE: NTS

PAINTED FINISHES:

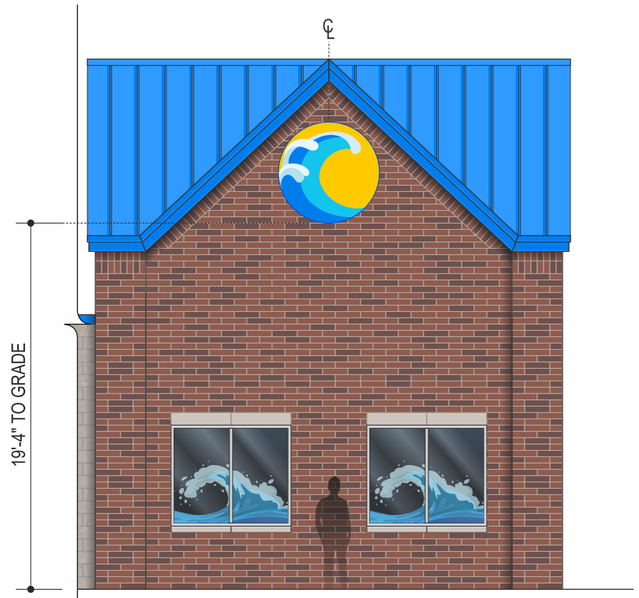
P-03 - TO MATCH PMS 2382 C (BLUE)

VINYLS:

- V-03 - DIGITALLY PRINTED ON 3M 7725-10 WHITE VINYL TO MATCH PMS 2382 C (BLUE)
- V-04 - DIGITALLY PRINTED ON 3M 7725-10 WHITE VINYL TO MATCH PMS 915 U (LT. BLUE)
- V-05 - DIGITALLY PRINTED ON 3M 7725-10 WHITE VINYL TO MATCH PMS 7548 XGC (YELLOW)
- V-07 - DIGITALLY PRINTED ON 3M 7725-10 WHITE VINYL TO MATCH 33% OF PMS 915 U (LT. BLUE)
- V-08 - DIGITALLY PRINTED ON 3M 7725-10 WHITE VINYL TO MATCH 10% OF PMS 915 U (LT. BLUE)



2 **SOUTH ELEVATION VIEW - PARTIAL**
SCALE: 1/8" = 1' - 0"



3 **NORTH ELEVATION VIEW - PARTIAL**
SCALE: 1/8" = 1' - 0"

FASTSIGNS of KANKAKEE

PROJECT TITLE:
TSUNAMI CAR WASH

ENGINEER OF RECORD SEAL:

ENGINEER OF RECORD SIGNATURE/DATE:

REVISION HISTORY

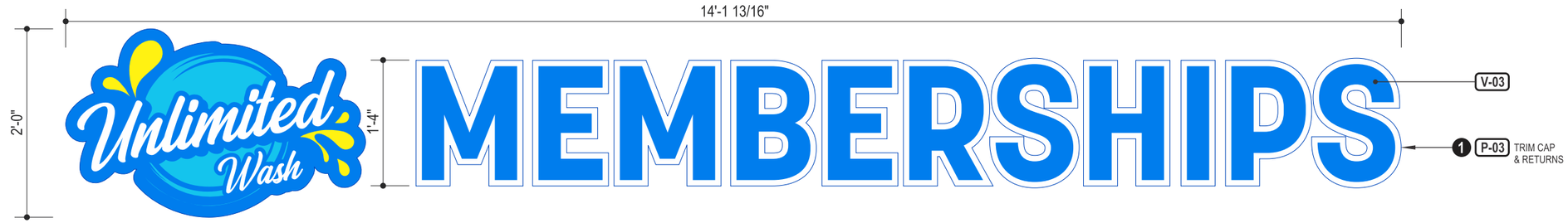
NO.	DATE	PREV DRWG	DESCRIPTION

PRODUCT TYPE:
SECONDARY MONUMENT SIGN

DRAWING TYPE:
CONCEPTUAL

PROJECT NO.	TASK NO.	QTY.
93745	233633	2

DWG. NO.	SHEET
13323CH	8 OF 20



1 ELEVATION DETAIL

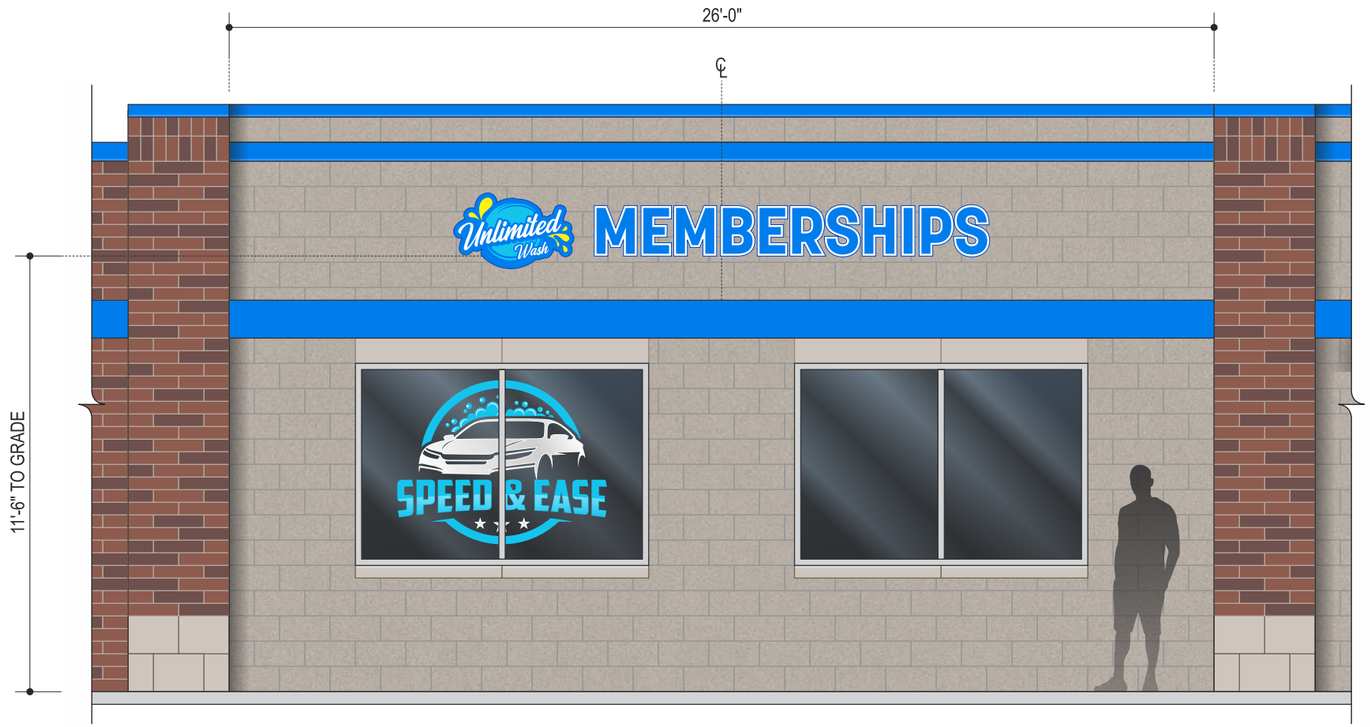
SCALE: 3/4" = 1' - 0"

GENERAL NOTES:

ILLUMINATED: YES
S/F OR D/F: S/F
EXACT INSTALL LOCATION TO BE COORDINATED WITH G.C.
ELECTRIC TO INSTALL LOCATION TO BE COORDINATED WITH E.C. AND TO BE PROVIDED BY THE E.C.

NOTES:

1 **CHANNEL LETTERS:** INTERNALLY ILLUMINATED 5" DEEP FAB'D CHANNEL LETTERS. RETURNS & BACKS TO BE ALUMINUM & TO HAVE A PAINTED FINISH. FACES TO BE TRANS. WHITE ACRYLIC w/ APPLIED VINYL INLAYS. FACES ARE ATTACHED TO RETURNS VIA 1" PLASTIC TRIM CAP. TRIM CAP FINISH TO MATCH RETURNS FINISH. INTERNALLY ILLUMINATED VIA WHITE LED'S. FLUSH MOUNTED TO CMU BLOCK OF EXISTING BUILDING.



2 SOUTH ELEVATION VIEW - PARTIAL

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

PAINTED FINISHES:

P-03 - TO MATCH PMS 2382 C (BLUE)

VINYLS:

V-03 - DIGITALLY PRINTED ON 3M 7725-10 WHITE VINYL TO MATCH PMS 2382 C (BLUE)

FASTSIGNS of KANKAKEE

PROJECT TITLE:
TSUNAMI CAR WASH

ENGINEER OF RECORD SEAL:

ENGINEER OF RECORD SIGNATURE/DATE:

REVISION HISTORY

NO.	DATE	PREV DRWG	DESCRIPTION

PRODUCT TYPE:
CHANNEL LETTERS

DRAWING TYPE:
CONCEPTUAL

PROJECT NO.	TASK NO.	QTY.
93745	233633	1 SET

DWG. NO.	SHEET
13323CH	9 OF 20

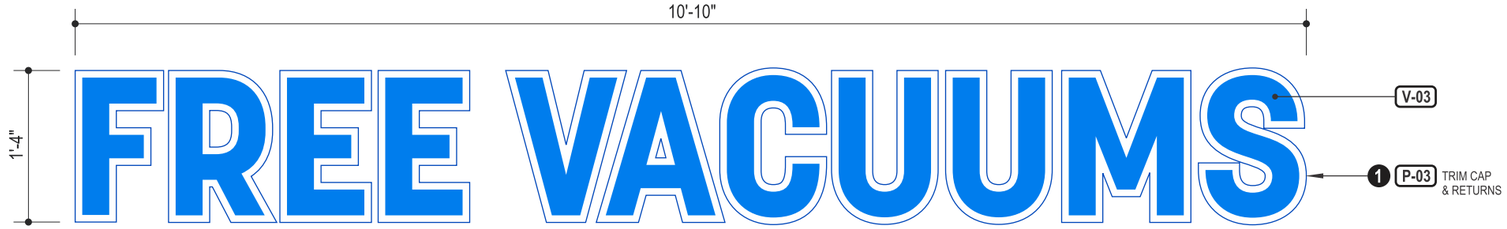
CL-2 CHANNEL LETTERS

GENERAL NOTES:

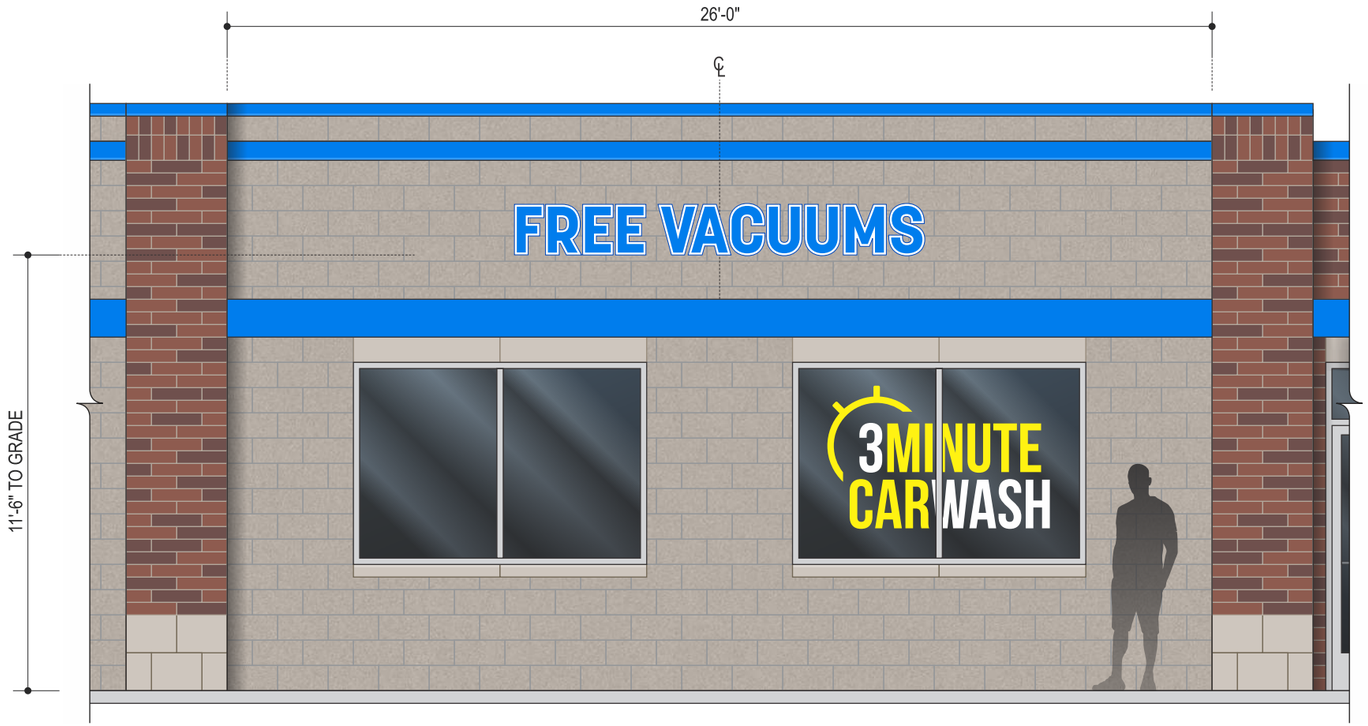
ILLUMINATED: YES
S/F OR D/F: S/F
EXACT INSTALL LOCATION TO BE COORDINATED WITH G.C.
ELECTRIC TO INSTALL LOCATION TO BE COORDINATED WITH E.C. AND TO BE PROVIDED BY THE E.C.

NOTES:

1. **CHANNEL LETTERS:** INTERNALLY ILLUMINATED 5" DEEP FAB'D CHANNEL LETTERS. RETURNS & BACKS TO BE ALUMINUM & TO HAVE A PAINTED FINISH. FACES TO BE TRANS. WHITE ACRYLIC w/ APPLIED VINYL INLAYS. FACES ARE ATTACHED TO RETURNS VIA 1" PLASTIC TRIM CAP. TRIM CAP FINISH TO MATCH RETURNS FINISH. INTERNALLY ILLUMINATED VIA WHITE LED'S. FLUSH MOUNTED TO CMU BLOCK OF EXISTING BUILDING.



1 **ELEVATION DETAIL**
SCALE: 3/4" = 1' - 0"



2 **SOUTH ELEVATION VIEW - PARTIAL**
SCALE: 1/4" = 1' - 0"

PAINTED FINISHES:

P-03 - TO MATCH PMS 2382 C (BLUE)

VINYLS:

V-03 - DIGITALLY PRINTED ON 3M 7725-10 WHITE VINYL TO MATCH PMS 2382 C (BLUE)

FASTSIGNS of KANKAKEE

PROJECT TITLE:
TSUNAMI CAR WASH

ENGINEER OF RECORD SEAL:

ENGINEER OF RECORD SIGNATURE/DATE:

REVISION HISTORY

NO.	DATE	PREV DRWG	DESCRIPTION

PRODUCT TYPE:
CHANNEL LETTERS

DRAWING TYPE:
CONCEPTUAL

PROJECT NO.	TASK NO.	QTY.
93745	233633	1 SET

DWG. NO.	SHEET
13323CH	10 OF 20

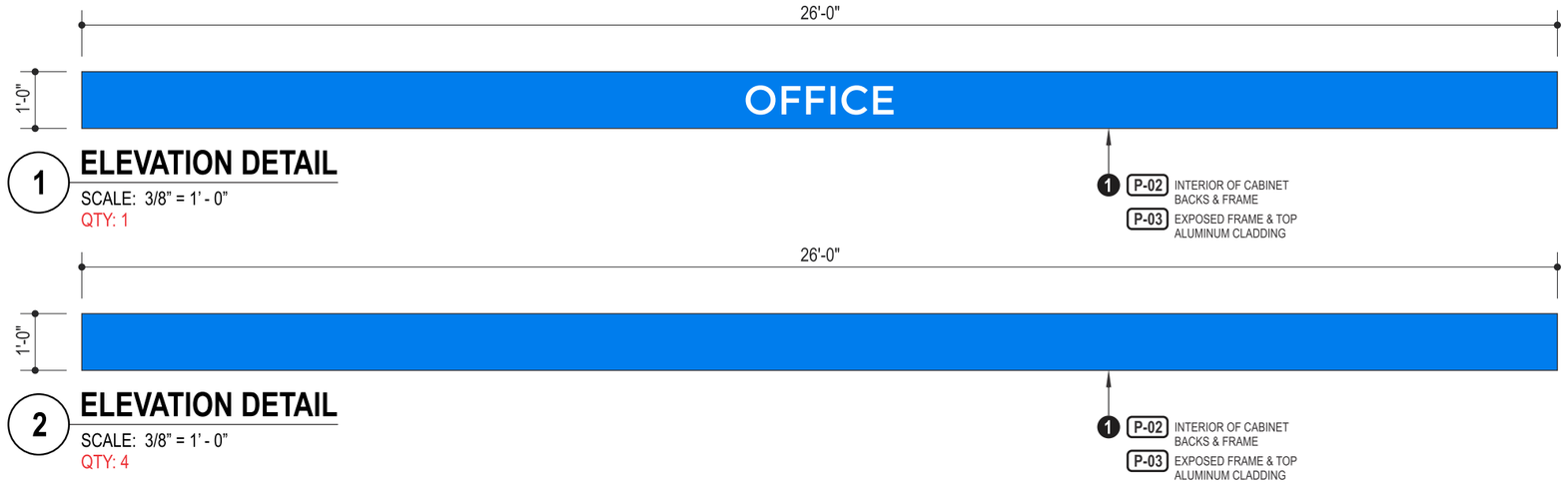
LB-1 LIGHT BANDS

GENERAL NOTES:

ILLUMINATED: YES
S/F OR D/F: S/F
EXACT INSTALL LOCATION TO BE COORDINATED WITH G.C.
ELECTRIC TO INSTALL LOCATION TO BE COORDINATED WITH E.C. AND TO BE PROVIDED BY THE E.C.

NOTES:

1. **LIGHT BAND:** INTERNALLY ILLUMINATED 6" DEEP FAB'D ALUMINUM TUBE FRAME. TOPS & BACKS TO HAVE ALUMINUM CLADDING. CLADDING TO HAVE A PAINTED FINISH. FACE TO BE #5025 REFLEX BLUE COOLEY BRITE®. COPY ON THE TWO OUTER LIGHT BANDS TO BE ERADICATED FROM COOLEY MATERIAL. BOTTOM OF LIGHT BAND CABINET TO HAVE TRANS. WHITE ACRYLIC LENS. INTERNALLY ILLUMINATED VIA WHITE LED'S. FLUSH MOUNTED TO CMU BLOCK OF EXISTING BUILDING.



1 ELEVATION DETAIL
SCALE: 3/8" = 1' - 0"
QTY: 1

2 ELEVATION DETAIL
SCALE: 3/8" = 1' - 0"
QTY: 4



3 SOUTH ELEVATION VIEW
SCALE: 3/32" = 1' - 0"

PAINTED FINISHES:

P-02 - WHITE, SATIN FINISH

P-03 - TO MATCH PMS 2382 C (BLUE)

FASTSIGNS of KANKAKEE

PROJECT TITLE:
TSUNAMI CAR WASH

ENGINEER OF RECORD SEAL:

ENGINEER OF RECORD SIGNATURE/DATE:

REVISION HISTORY

NO.	DATE	PREV DRWG	DESCRIPTION

PRODUCT TYPE:
LIGHT BANDS

DRAWING TYPE:
CONCEPTUAL

PROJECT NO.	TASK NO.	QTY.
93745	233633	AS NOTED

DWG. NO.	SHEET
13323CH	11 OF 20

LB-1 LIGHT BANDS



1 **SOUTH ELEVATION VIEW - EVENING VIEW**

SCALE: 3/32" = 1' - 0"

FASTSIGNS of KANKAKEE

PROJECT TITLE:
TSUNAMI CAR WASH

ENGINEER OF RECORD SEAL:

ENGINEER OF RECORD SIGNATURE/DATE:

REVISION HISTORY

NO.	DATE	PREV DRWG	DESCRIPTION

PRODUCT TYPE:
LIGHT BANDS

DRAWING TYPE:
CONCEPTUAL

PROJECT NO.	TASK NO.	QTY.
93745	233633	AS NOTED

DWG. NO.	SHEET
13323CH	12 OF 20

DIR-1 DIRECTIONAL SIGN

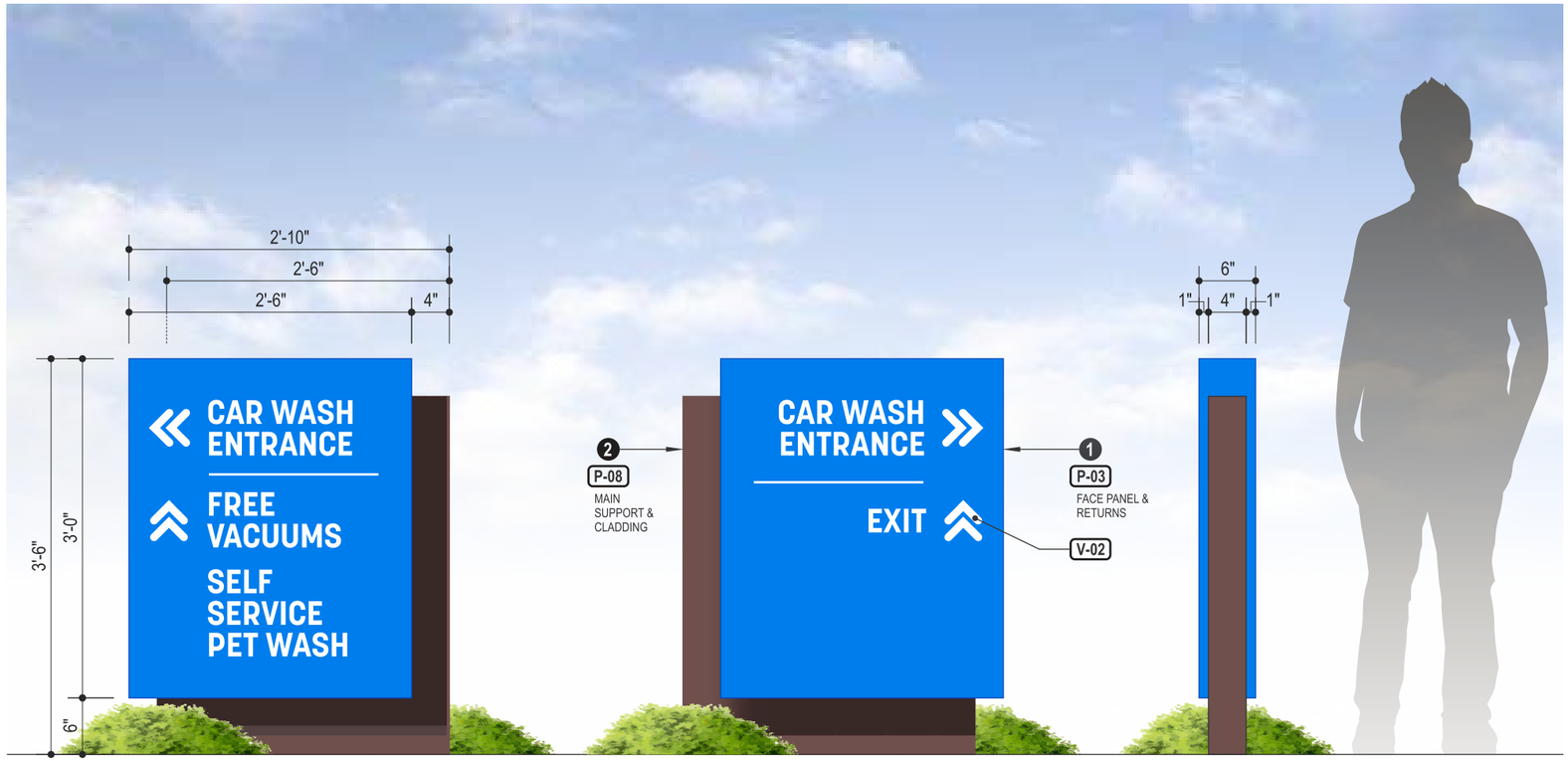
GENERAL NOTES:

ILLUMINATED: NO
S/F OR D/F: D/F
EXACT INSTALL LOCATION TO BE COORDINATED WITH G.C.

NOTES:

1. **FACE PANEL:** D/F 6" DEEP FAB'D ALUMINUM PANEL. PANEL TO HAVE A PAINTED FINISH. WHITE VINYL GRAPHICS APPLIED TO FACE. FLAG MOUNTED TO MAIN SUPPORT.

2. **MAIN SUPPORT:** (1) ALUMINUM TUBE SUPPORT w/ ALUMINUM CLADDING TO WRAP UNDER FACE PANEL TO GRADE. CLADDING TO HAVE A PAINTED FINISH. MAIN SUPPORT TO BE MOUNTED TO GROUND VIA CONCRETE FOOTER. MAIN SUPPORT TO BE DIRECTLY BURIED INTO CONCRETE FOOTER.



1 **TYPICAL ELEVATION VIEW**
SCALE: 3/4" = 1' - 0"

2 **SIDE VIEW**
SCALE: 3/4" = 1' - 0"

PAINTED FINISHES:

P-03 - TO MATCH PMS 2382 C (BLUE)

P-08 - TO MATCH PMS 4715 C (DK BRICK RED)

VINYLS:

V-02 - 3M 7725-10 WHITE

FASTSIGNS of KANKAKEE

PROJECT TITLE:
TSUNAMI CAR WASH

ENGINEER OF RECORD SEAL:

ENGINEER OF RECORD SIGNATURE/DATE:

REVISION HISTORY

NO.	DATE	PREV DRWG	DESCRIPTION

PRODUCT TYPE:
DIRECTIONAL SIGN

DRAWING TYPE:
CONCEPTUAL

PROJECT NO.	TASK NO.	QTY.
93745	233633	3

DWG. NO.	SHEET
13323CH	17 OF 20

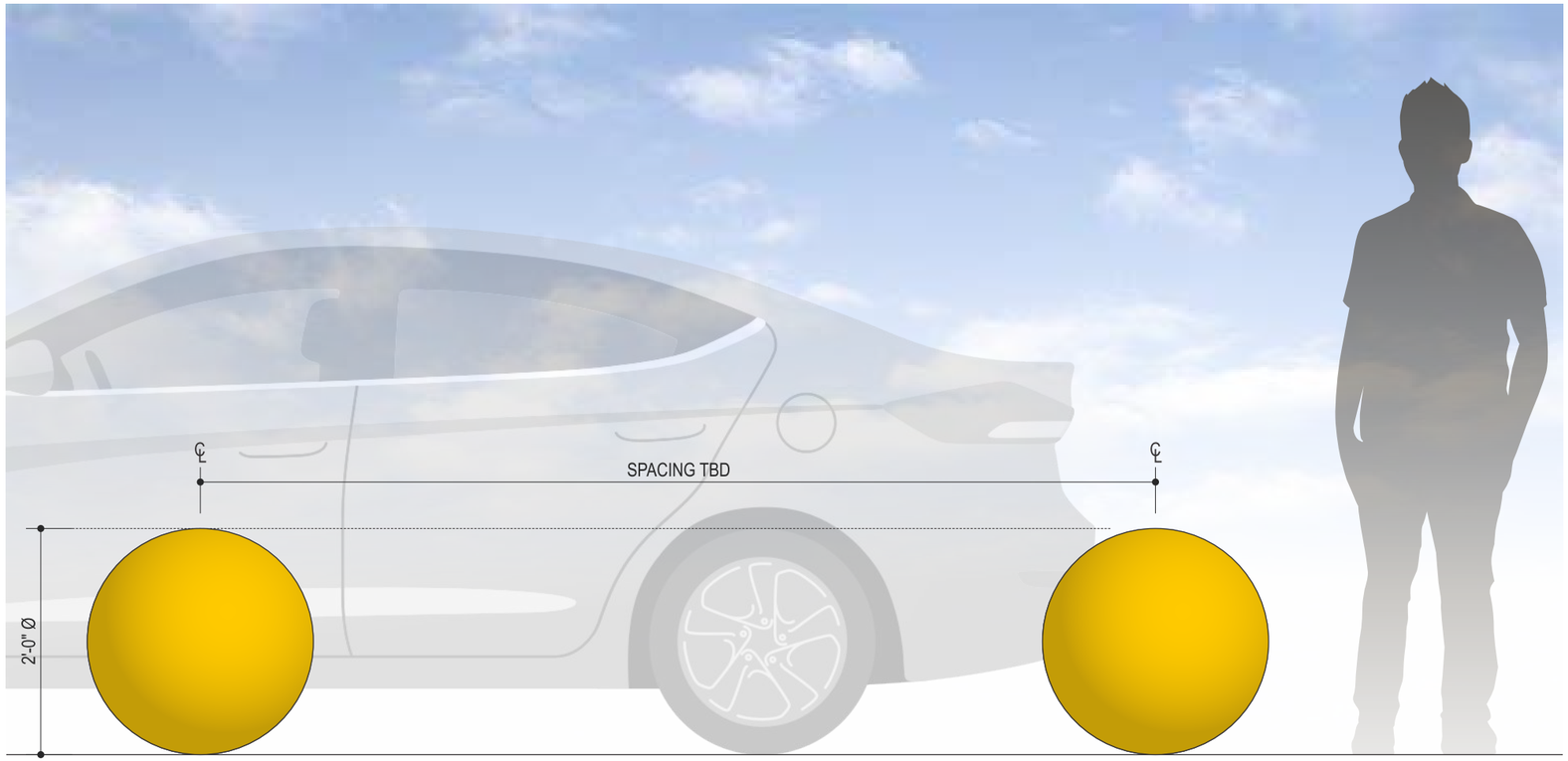
BOL-1 CONCRETE SPHERE BOLLARDS

GENERAL NOTES:

ILLUMINATED: NO
S/F OR D/F: N/A
EXACT INSTALL LOCATION TO BE COORDINATED WITH G.C.

NOTES:

1. **CONCRETE BOLLARDS:** 2'-0"Ø PRE-CAST CONCRETE SPHERES. BOLLARDS TO HAVE A STAINED FINISH. BOLLARDS ARE PLACED ON OUTSIDE PERIMETER OF PATH TO THE CAR WASH IN THE GRASS AREA.



1 **TYPICAL ELEVATION VIEW**
SCALE: 3/4" = 1' - 0"





2 **EXAMPLES OF CONCRETE SPHERE BOLLARDS**
SCALE: NTS

PAINTED FINISHES:

P-05 - TO MATCH PMS 7548 XGC (YELLOW)

FASTSIGNS of KANKAKEE

PROJECT TITLE:
TSUNAMI CAR WASH

ENGINEER OF RECORD SEAL:

ENGINEER OF RECORD SIGNATURE/DATE:

REVISION HISTORY

NO.	DATE	PREV DRWG	DESCRIPTION

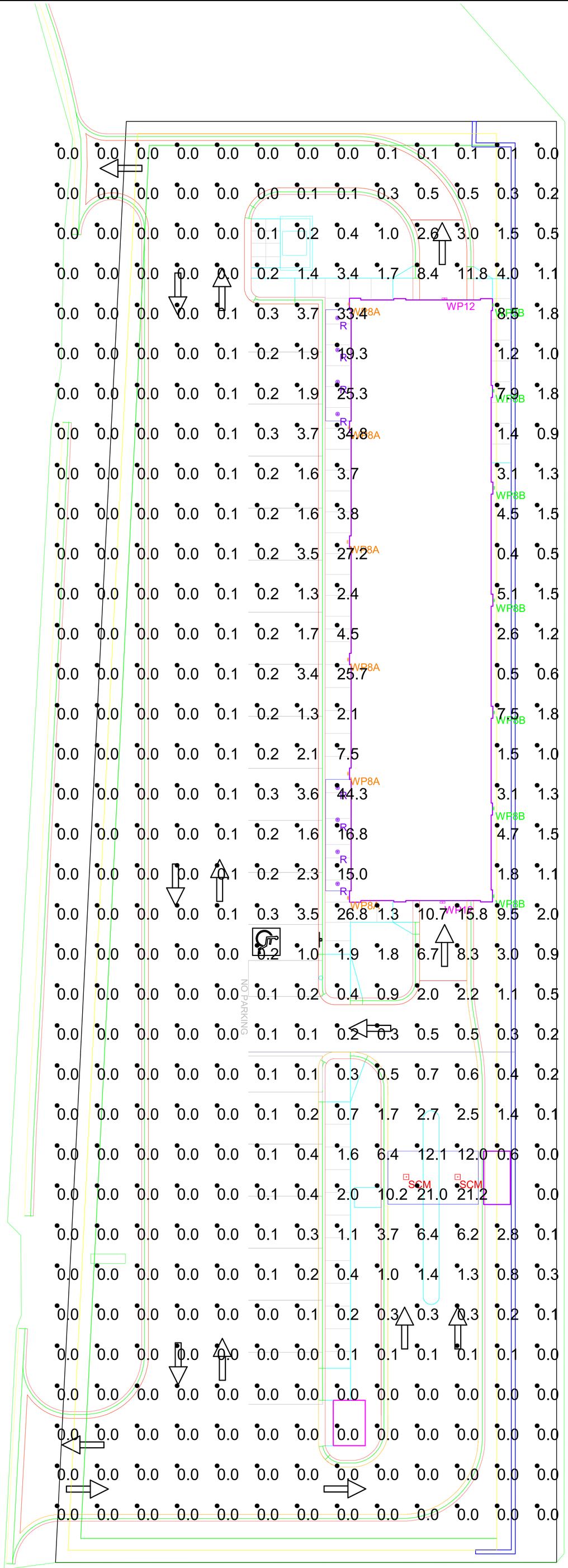
PRODUCT TYPE:
CONCRETE SPHERE BOLLARDS

DRAWING TYPE:
CONCEPTUAL

PROJECT NO.	TASK NO.	QTY.
93745	233633	14

DWG. NO.	SHEET
13323CH	18 OF 20

These drawings are for conceptual use only and are not intended for construction. Fixture runs and quantities should be verified prior to order. Values represented are an approximation generated from manufacturers photometric inhouse or independent lab tests with data supplied by lamp manufacturers.



Scale: 1 inch= 10 Ft.

Luminaire Schedule

Symbol	Qty	Label	Arrangement	Lum. Lumens	LLF	Description	Lum. Watts	Arr. Watts	Total Watts
	2	SCM	Single	7983	0.900	SCM-LED-08L-SC-40	55.4	55.4	110.8
	6	WP8A	Single	4053	0.900	WPSLS-04L-40	37.05	37.05	222.3
	7	WP8B	Single	1286	0.900	WPSLS-01L-40	12.34	12.34	86.38
	2	WP12	Single	6957	0.900	WPSLL-06L-40	58.14	58.14	116.28
	8	R	Single	976	0.900	IAD6R_LCD6-LED-14L-40-WF-TR6RL-HAZ	14	14	112

Calculation Summary

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
CalcPts_1	Illuminance	Fc	1.60	44.3	0.0	N.A.	N.A.

Page Size:	Project:	Luma Sales: Steve Hahn
36 x 44	Tsunami Car Wash	Layout By: Joe Frey
IPA-d.com Project #	Details:	Date:7/23/2024
LS952-4204	Site Lighting	Filename: LS952-4204 Tsunami Car Wash.AGI

Luma Sales Associates
Lighting and Controls

Site Plan and Traffic Advisory Review Committee **CY38-24**

Meeting Date: 08/13/2024

Title

Request of Graham Engineering, on behalf of the property owner, for a certificate of design compliance for the construction of a new, approximately 10,700 square foot structure in the Highway Gateway Overlay District. The subject property is described as Lot 3, Block 2, Victory Commercial Park, (Blue Earth County PID R010904300021 and R010909102004).

Applicant

The applicant is Graham Engineering.

Request

The applicant is requesting a certificate of design compliance for the construction of a new, approximately 10,700 square foot structure in the Highway Gateway Overlay District.

Location

The subject property is described as Lot 3, Block 2, Victory Commercial Park, (Blue Earth County PID R010904300021 and R010909102004).

Existing Land Use

The property is currently vacant.

Zoning

B-3, Highway Commercial District.

Review

The applicant is requesting a certificate of design compliance for the new construction of a new approximately 10,700 square foot structure located in the Highway Gateway Overlay District. The subject property is described as Lot 3, Block 2, Victory Commercial Park, (Blue Earth County PID R010904300021 and R010909102004).

The applicant is requesting a certificate of design compliance for the construction of an approximately 10,700 square foot structure that is located within the highway gateway overlay district. The proposed use, a vehicle repair shop, is a permitted use within the B-3 zoning district.

The site plan shows two entrances to the development from the proposed road, Interlachen Drive. The building is situated in the center of the lot. The interior drive lane wraps around the building and goes under a canopy on the western side of the building. As for parking, there is parking surrounding the building on the east and south sides. The applicant is providing 42 parking stalls; the code requires 35. A landscaping plan was submitted showing landscaping around the perimeter of the lot. The trash enclosure is located under the canopy.

The floor plan shows a sales area, showroom, lounge area, restrooms, vending hallway, employee lounge, employee restroom, managers' office, and training room. In the service area, there are service bays and a bullpen.

The exterior renderings show a mix of different pre-cast concrete panels in the color grizzle gray, integral white, and carriage door. Around the exterior canopy there is refinished standing seam metal roofing panels in dark bronze.

Attachments

General Location Map
Aerial Location Map
Civil Plans
Floor Plans
Renderings
Material Sample Board
Photometric

General Location Map



Date: July 2024

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: July 2024

Author:

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N

DESIGN REVIEW DRAWINGS

PREPARED FOR

LES SCHWAB TIRE CENTERS

LOT 3 VICTORY COMMERCIAL PARK, MANKATO, MN 56601

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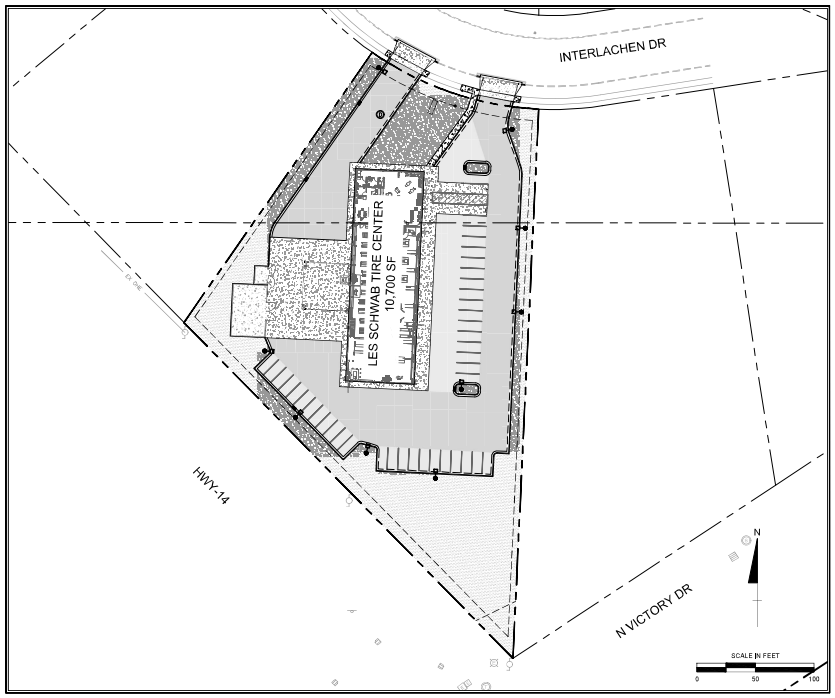
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Boise, ID 83703
Phone: 208-345-1462
Email: chad.p@psarch.com



VICINITY MAP
(NOT TO SCALE)



SITE MAP

SHEET INDEX	
SHEET	DISCRIPTION
C1.0	COVER SHEET
C1.1	SITE PLAN
C1.2	DRAINAGE PLAN
C1.3	UTILITY PLAN
L1.0	OVERALL SITE LANDSCAPE PLAN
L3.0	PLANTING PLAN
L5.0	LANDSCAPE DETAILS & NOTES
A1.1	FLOOR PLANS
A2.1	EXTERIOR ELEVATIONS
A2.2	EXTERIOR ELEVATIONS
A2.3	MATERIALS BOARD
E1.0	SITE PHOTOMETRIC PLAN
E2.0	SITE FIXTURE CUT SHEETS

REVISIONS

DATE	DESCRIPTION

GRAHAM ENGINEERING
GRAHAM ENGINEERING LLC

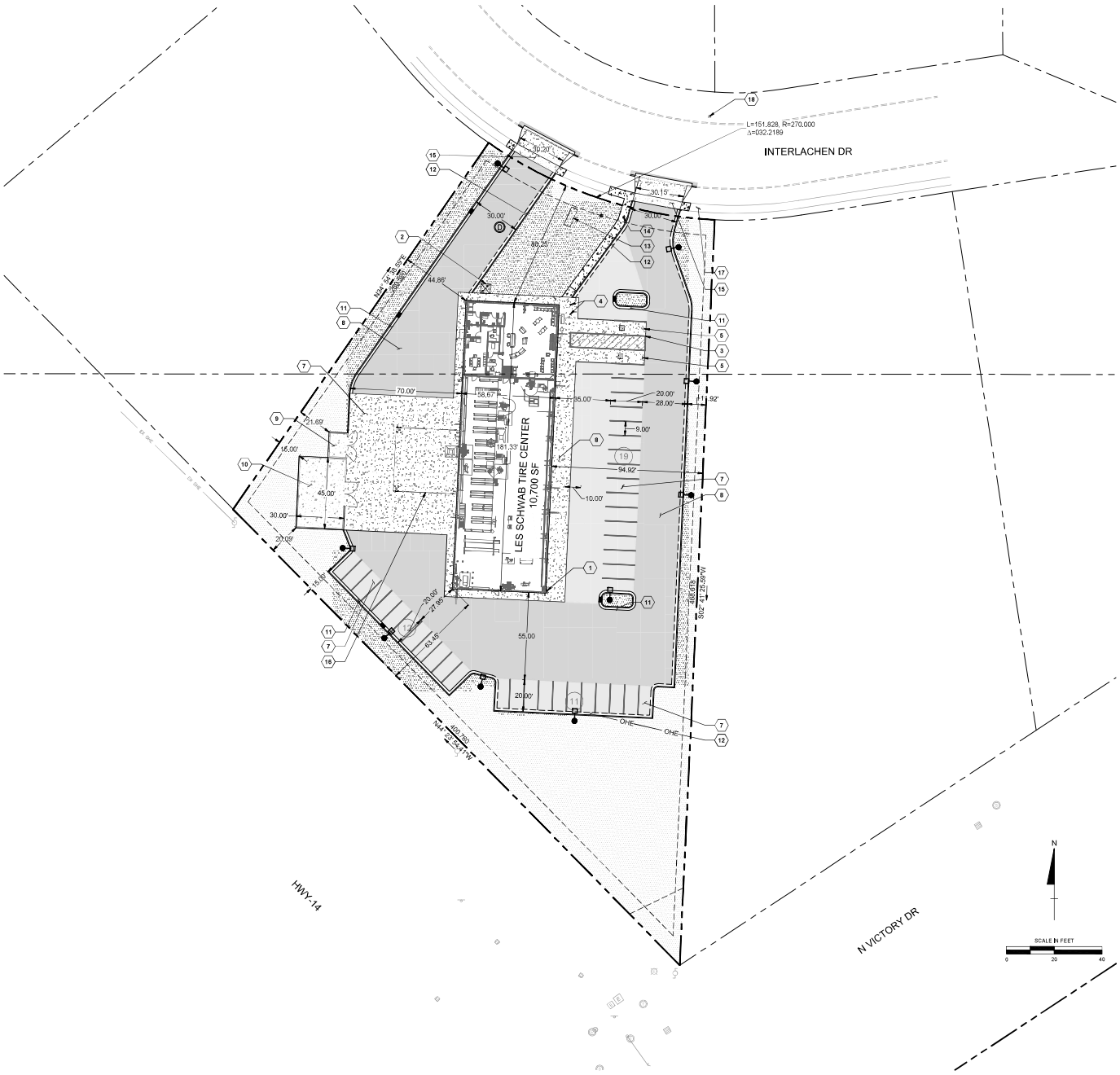
PRELIMINARY - NOT FOR CONSTRUCTION

FOR CITY OF MANKATO DESIGN REVIEW ONLY

COVER SHEET
LOT 3, VICTORY COMMERCIAL PARK
LES SCHWAB TIRE CENTERS
MANKATO, MN
PROJECT NO: 24003_LSBM_MANKATO
Drawn: DJK
Checked: ZWG

ORIGINAL DATE: 2024.07.23
PERMIT DATE:
IFC DATE:
DRAWING NUMBER:
C1.0

Plot Date: 10/2/2024 12:59 PM
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LEGEND

- SITE LIGHTING
- PROPOSED EDGE OF SIDEWALK
- PROPOSED CURB & GUTTER
- PROPOSED STRIPING
- PROPOSED WATER VALVE
- PROPOSED LANDSCAPED AREA
- PROPOSED CONCRETE PAVEMENT
- PROPOSED REGULAR DUTY ASPHALT PAVEMENT
- PROPOSED HEAVY DUTY ASPHALT PAVEMENT
- EXISTING CURB & GUTTER
- EXISTING EASEMENT

KEYNOTES

1. PROPOSED FIRE DEPARTMENT CONNECTION
2. PROPOSED TRANSFORMER PAD LOCATION
3. PROPOSED ADA STRIPING
4. PROPOSED BOLLARD (11)
5. PROPOSED ADA PARKING SIGN
6. PROPOSED CONCRETE PAVEMENT - SEE DETAIL 3/C400
7. PROPOSED REGULAR DUTY ASPHALT PAVEMENT
8. PROPOSED HEAVY DUTY ASPHALT PAVEMENT
9. PROPOSED TRASH ENCLOSURE - SEE ARCH PLANS
10. PROPOSED BULLPEN - SEE ARCH PLANS
11. PROPOSED CATCH CURB & GUTTER
12. PROPOSED SPILL CURB & GUTTER
13. PROPOSED MONUMENT SIGN - SEE SIGN PACKAGE
14. PROPOSED SIDEWALK PAVEMENT
15. PROPOSED DRIVEWAY PER MNDOT STD PLAN 5-297.254
16. PROPOSED CANOPY
17. EXISTING SIDEWALK - TO REMAIN
18. EXISTING FIRE HYDRANT

SITE DATA BLOCK

PROPERTY AREA	2.02 ACRES (87,858 SF)		
BUILDING AREA	10,700 SF		
ADDRESS	LOT 3, VICTORY COMMERCIAL PARK HWY 14 & N VICTORY DR		
ZONING	B-3 (HIGHWAY COMMERCIAL DISTRICT)		
PERMITTED USE AS "AUTOMOBILE REPAIR GARAGE"			
PARKING	REQUIRED*	PROVIDED	
	35	42	
(3) SPACES PER SERVICE STALL, PLUS (1) PER EMPLOYEE			

YARD SETBACKS	FRONT	SIDE	REAR
PER GC	15'	3'/15'*	3'
BLDG COVERAGE:	12%	MAX:	75%

*CORNER SIDE YARD SETBACK ALONG SECONDARY STREET FRONTAGE OF A CORNER LOT

BUILDING REQUIREMENTS
MAX HEIGHT = NC REQUIREMENT

SIGN ALLOWANCE: (1) MONUMENT SIGN PER LOT ALLOWED
MONUMENT - ALLOWED, MAX HEIGHT = 20', MAX AREA = NOT TO EXCEED THE LINEAL FRONTAGE OF THE LOT

REVISIONS

DATE	DESCRIPTION

GRAHAM ENGINEERING
GRAHAM ENGINEERING LLC

PRELIMINARY - NOT FOR CONSTRUCTION

FOR CITY OF MANKATO DESIGN REVIEW ONLY

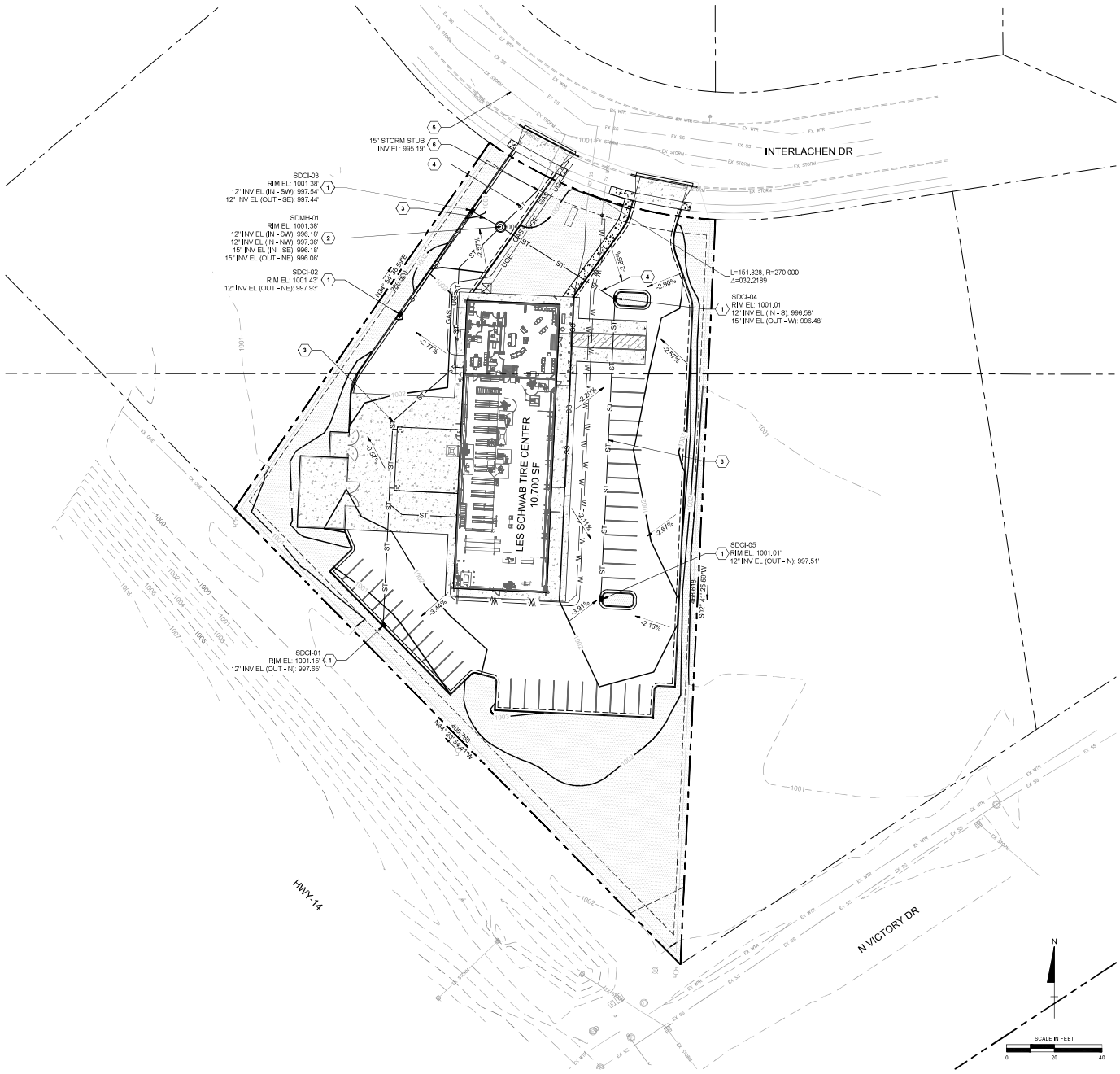
SITE PLAN
LOT 3, VICTORY COMMERCIAL PARK
LES SCHWAB TIRE CENTERS
MANKATO, MN

Drawn: DJK | Checked: ZWG
PROJECT NO: 24003_LSBM_MANKATO

ORIGINAL DATE: 2024.07.23
PERMIT DATE:
IFC DATE:
DRAWING NUMBER:

C1.1

Plot Date: 10/2/2024 12:02 PM
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LEGEND

- SITE LIGHTING
- PROPOSED EDGE OF SIDEWALK
- PROPOSED CURB & GUTTER
- PROPOSED STRIPING
- PROPOSED WATER SERVICE
- PROPOSED STORM PIPE
- PROPOSED SEWER SERVICE
- PROPOSED UNDERGROUND POWER
- PROPOSED BURIED TELEPHONE
- PROPOSED NATURAL GAS
- PROPOSED WATER VALVE
- EXISTING EASEMENT

KEYNOTES

1. PROPOSED STORM CURB INLET - SEE C1.2
2. PROPOSED STORM MANHOLE - SEE C1.2
3. PROPOSED 12" STORM PIPE @ 0.5% MIN
4. PROPOSED 15" STORM PIPE @ 0.5% MIN
5. EXISTING 24" STORM PIPE
6. EXISTING 15" STORM STUB

REVISIONS

DATE	DESCRIPTION

Les Schwab Tires

GRAHAM ENGINEERING
GRAHAM ENGINEERING LLC

PRELIMINARY - NOT FOR CONSTRUCTION

FOR CITY OF MANKATO DESIGN REVIEW ONLY

DRAINAGE PLAN

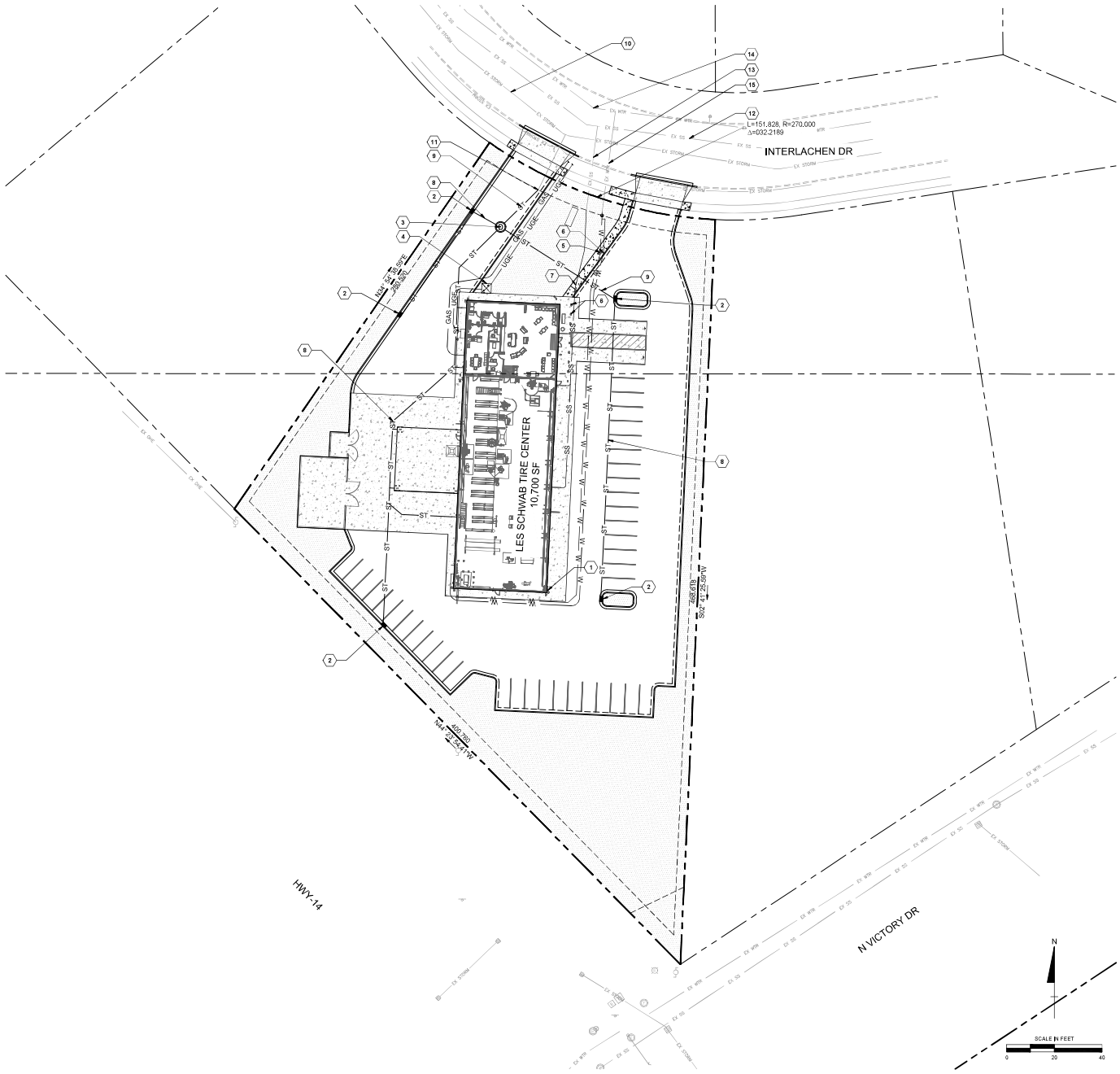
LOT 3, VICTORY COMMERCIAL PARK
LES SCHWAB TIRE CENTERS
MANKATO, MN

PROJECT NO: 24003_LSBM_MANKATO
Drawn: DJK
Checked: ZWG

ORIGINAL DATE: 2024.07.17
PERMIT DATE:
IFC DATE:
DRAWING NUMBER:

C1.2

Plot Date: 7/19/2024 11:59 AM
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LEGEND

- SITE LIGHTING
- PROPOSED EDGE OF SIDEWALK
- PROPOSED CURB & GUTTER
- PROPOSED STRIPING
- PROPOSED WATER SERVICE
- PROPOSED STORM PIPE
- PROPOSED SEWER SERVICE
- PROPOSED UNDERGROUND POWER
- PROPOSED BURIED TELEPHONE
- PROPOSED NATURAL GAS
- PROPOSED WATER VALVE
- EXISTING EASEMENT

KEYNOTES

1. PROPOSED FIRE DEPARTMENT CONNECTION
2. PROPOSED STORM CURB INLET - SEE C1.2
3. PROPOSED STORM MANHOLE - SEE C1.2
4. PROPOSED TRANSFORMER PAD LOCATION
5. PROPOSED 8" FIRE SERVICE
6. PROPOSED 1½" DOMESTIC SERVICE
7. PROPOSED 6" SEWER SERVICE @ 1.0% MIN
8. PROPOSED 12" STORM PIPE @ 0.5% MIN
9. PROPOSED 15" STORM PIPE @ 0.5% MIN
10. EXISTING 24" STORM PIPE
11. EXISTING 15" STORM STUB
12. EXISTING 8" SEWER MAIN
13. EXISTING 8" SEWER STUB
14. EXISTING 10" WATER MAIN
15. EXISTING 8" WATER STUB

REVISIONS

DATE	DESCRIPTION

GRAHAM ENGINEERING
GRAHAM ENGINEERING LLC

PRELIMINARY - NOT FOR CONSTRUCTION

FOR CITY OF MANKATO DESIGN REVIEW ONLY

UTILITY PLAN

LOT 3, VICTORY COMMERCIAL PARK
LES SCHWAB TIRE CENTERS
MANKATO, MN

PROJECT NO: 24003 | SBM_MANKATO | Drawn: DJK | Checked: ZWG

ORIGINAL DATE: 2024.07.17
PERMIT DATE:
IFC DATE:
DRAWING NUMBER:

C1.3

Drawing: C:\USERS\DJKRAFT\DROPBOX\CDOCS\DJK\@GRAHAMENG.COM\LES SCHWAB - MANKATO\PROJECTFILES\LES SCHWAB - MANKATO\MPD_C1.2.DWG
Plot Date: 7/19/2024 11:59 AM
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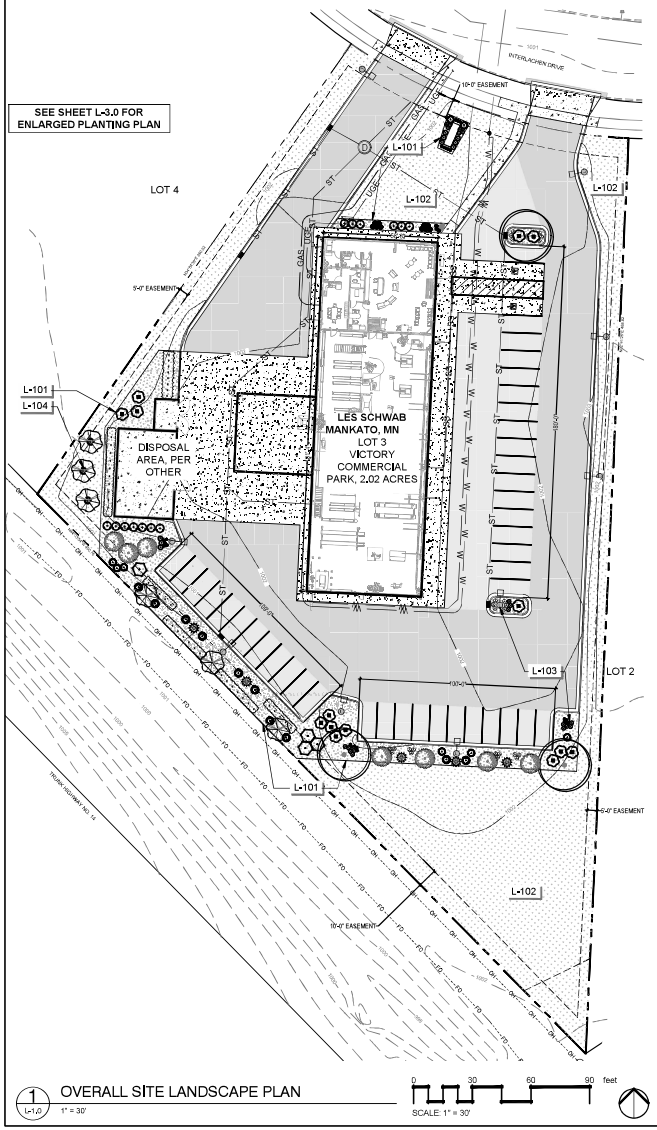
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LANDSCAPE ARCHITECT
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1 L-1.0 OVERALL SITE LANDSCAPE PLAN
1" = 30'

SCALE 1" = 30'
0 30 60 90 feet

MANKATO LES SCHWAB SHEET INDEX

SHEET	DESCRIPTION
L-1.0	OVERALL SITE LANDSCAPE PLAN
L-3.0	PLANTING PLAN
L-5.0	LANDSCAPE DETAILS & NOTES

LANDSCAPE CODE REQUIREMENTS

B-3 HIGHWAY COMMERCIAL DISTRICT, HIGHWAY GATEWAY OVERLAY DISTRICT

SEC. 10.87. - SIGNS SUBD. 9. LANDSCAPING REQUIREMENTS

REQUIRED	PROVIDED
THE GROUND AREA AROUND THE BASE OF THE SIGN OF THE MONUMENT AND GROUND / PYLON SIGNS SHALL BE LANDSCAPED WITH SHRUBS AND GROUND COVER EQUAL TO THE AREA OF 50% OF SIGN FACE. THE LANDSCAPING SHALL CONSIST OF SHRUBS AND GROUND COVERS THAT CAN WITHSTAND THE ENVIRONMENTAL CONDITIONS OF TIE SITE, WILL PROVIDE SEASONAL INTEREST	REQUIRED: SIGN FACE = 56.25 SF PER SIDE, 112.50 SF TOTAL 112.50 X 50% = 56.25 SF PROVIDED: 132 SF OF LANDSCAPING AT BASE OF SIGN, SEE PLANTING PLAN

SEC. 10.48. - GT GATEWAY OVERLAY DISTRICTS SUBD. 3. HIGHWAY GATEWAY OVERLAY DISTRICT

REQUIRED	PROVIDED
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 4 FEET NOR MORE THAN 8 FEET IN HEIGHT, NOR BE LESS THAN 80% OPAQUE. THIS SCREENING MUST BE ACCOMPLISHED IN THE SETBACK AREA BETWEEN 10 FEET AND 15 FEET FROM THE RIGHT-OF-WAY LINE. THE SUM TOTAL OF GROUND AREA THAT MAY BE COVERED BY ALL STRUCTURES LOCATED ON THE ZONING LOT IN THE HIGHWAY GATEWAY OVERLAY DISTRICT SHALL NOT EXCEED 75% OF THE LOT AREA.	MIN. 4' TALL HEDGE ALONG PARKING AREA, SEE PLANTING PLAN AND PLANT SCHEDULE STRUCTURE COMPRISES 12% OF TOTAL LOT AREA

SEC. 10.88. - LANDSCAPING AND SCREENING SUBD. 3. LANDSCAPE PLANS

REQUIRED	PROVIDED
EVERGREENS SHOULD BE INCORPORATED INTO THE LANDSCAPE TREATMENT OF A SITE, PARTICULARLY IN THOSE AREAS SCREENING PARKING LOTS FROM DEDICATED PUBLIC RIGH-OF-WAYS OR PROPERTY ZONED FOR RESIDENTIAL USE. ALL EVERGREENS SHALL HAVE A MINIMUM HEIGHT OF 6 FEET. ALL SHADE TREES SHALL HAVE A MINIMUM TRUNK SIZE AT THE TIME OF INSTALLATION OF 2 ½" IN DIAMETER, AS MEASURED BY A CALIPER 6" ABOVE THE ESTABLISHED GROUND LEVEL.	EVERGREENS INCORPORATED IN LANDSCAPE AT APPROPRIATE PLANTING SIZE, SEE PLANTING PLAN ALL SHADE TREES SPECIFIED AT 2 ½" CALIPER, SEE PLANT SCHEDULE

SEC. 10.88 LANDSCAPING AND SCREENING SUBD. 7. OFF-STREET LOADING AREAS

REQUIRED	PROVIDED
EVERY OFF-STREET LOADING AREA VISIBLE FROM A PUBLIC STREET, SHALL BE SCREENED ON ALL SIDES VISIBLE FROM SUCH LOT OR STREET BY AN OPAQUE FENCE, WALL, OR DENSELY PLANTED EVERGREEN HEDGE OF NOT LESS THAN 6 FEET IN HEIGHT, EXCEPT AS NECESSARY FOR ACCESS.	EVERGREEN HEDGE PROVIDED BETWEEN LOADING AREA AND STREET. SEE PLANTING PLAN

SEC. 10.88 LANDSCAPING AND SCREENING SUBD. 8. REFUSE CONTAINERS

REQUIRED	PROVIDED
ALL REFUSE AND RECYCLABLE MATERIAL CONTAINERS SHALL BE FULLY ENCLOSED BY A GATED OPAQUE FENCE OR WALL OF A SUFFICIENT HEIGHT TO COMPLETELY SCREEN SUCH CONTAINERS FROM VIEW BY ALL ADJOINING PROPERTIES AND ALL STREETS. THE OUTSIDE BASE OF THE WALL OR FENCE SHALL BE LANDSCAPED IF THE WALL OR FENCE FRONTS ON A PUBLIC STREET.	OUTSIDE OF FENCE AROUND REFUSE CONTAINERS IS LANDSCAPED, SEE PLANTING PLAN. FENCE BY OTHERS

SEC. 10.88. - LANDSCAPING AND SCREENING SUBD. 5. PERIMETER LANDSCAPING - OFF-STREET PARKING LOTS

REQUIRED	PROVIDED
EVERY OFF-STREET PARKING LOT CONTAINING 4 OR MORE PARKING STALLS SHALL BE BUFFERED AND SCREENED BY PERIMETER LANDSCAPING CONSISTING OF AN AREA AT LEAST 3 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 1 TREE FOR EVERY 50 LINEAR FEET OF PERIMETER LENGTH OR FRACTION THEREOF. EVERGREEN TREES SHALL BE PROVIDED AT A RATE OF 1 TREE AND SHRUB FOR EVERY 25 LINEAR FEET OF PERIMETER LENGTH OR FRACTION THEREOF. EVERGREEN TREES SHALL BE MAINTAINED AT A HEIGHT OF NOT LESS THAN 3 FEET, 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.	PERIMETER LANDSCAPING ABIDING TO STANDARDS SET FORTH IN THIS SECTION HAS BEEN PROVIDED. SEE PLANTING PLAN. 109' EAST PERIMETER LENGTH: 109 / 50 = 2.18 SHADE TREES REQ'D. 3 SHADE TREES PROVIDED 109 / 25 = 4.36 EVERGREEN TREES AND SHRUBS REQUIRED 5 EVERGREEN TREES AND 11 EVERGREEN SHRUBS PROVIDED 100' SOUTH PERIMETER LENGTH: 100 / 50 = 2 SHADE TREES REQ'D. 2 SHADE TREES PROVIDED 100 / 25 = 4 EVERGREEN TREES AND SHRUBS REQUIRED 7 EVERGREEN TREES AND 5 EVERGREEN SHRUBS PROVIDED

PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	CAL	SPACING	MATURE SIZE
TREES						
	AL	6	AMELANCHIER LAEVIS ALLEGHANY SERVICEBERRY *	2.5" CAL.	PER PLAN	15' - 20' HT X 15' - 20' SP
	GO	3	GLEDITSIA TRIACANTHOS 'NORTHERN ACCLAIM' NORTHERN ACCLAIM HONEY LOCUST *D	2.5" CAL.	PER PLAN	40' - 50' HT X 30' - 35' SP
	PN	7	PINUS NIGRA 'OREGON GREEN' OREGON GREEN AUSTRIAN PINE D	6` HEIGHT MIN.	PER PLAN	18' - 20' HT X 15' SP
	TS	5	THUJA OCCIDENTALIS 'SMARAGD' EMERALD GREEN ARBORVITAE *	6` HEIGHT MIN.	PER PLAN	12' - 14' HT X 3' - 5' SP
SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	SIZE		
SHRUBS						
	CF	13	CORNUS SERICEA 'FARROW' ARCTIC FIRE® RED TWIG DOGWOOD *	5 GAL	PER PLAN	3' - 4' HT X 3' - 4' SP
	CS	4	CORNUS SERICEA 'FLAVIRAMEA' YELLOW TWIG DOGWOOD *	5 GAL	PER PLAN	6' - 8' HT X 7' - 9' SP
	JP	10	JUNIPERUS HORIZONTALIS 'PRINCE OF WALES' PRINCE OF WALES JUNIPER *D	5 GAL	PER PLAN	.25' - .50' HT X 3' - 6' SP
	MC	8	MICROBIOTA DECUSSATA 'PRIDES' CELTIC PRIDE® SIBERIAN CARPET CYPRESS	5 GAL	PER PLAN	1' - 3' HT X 4' - 5' SP
	RG	14	RHUS AROMATICA 'GRO-LOW' GRO-LOW FRAGRANT SUMAC D	5 GAL	PER PLAN	2' - 3' HT X 6' - 8' SP
HEDGES						
	SX	34	SYRINGA X 'JEFLADY' LITTLE LADY™ LILAC	10 GAL	PER PLAN	4' - 5' HT X 4' - 5' SP MAINTAIN AT MIN. 4' HT
	TH	8	THUJA OCCIDENTALIS 'SMARAGD' EMERALD GREEN ARBORVITAE	5 GAL	PER PLAN	12' - 14' HT X 3' - 5' SP MAINTAIN AT MIN. 6' HT
PERENNIALS						
	BB	9	BOUTELOUA GRACILIS 'BLONDE AMBITION' BLONDE AMBITION BLUE GRAMA *D	1 GAL	PER PLAN	2' - 3' HT X 2' - 3' SP
	CR	10	CAREX RADIATA EASTERN STAR SEDGE *	1 GAL	PER PLAN	2' - 3' HT X 2' SP
	GM	3	GERANIUM MACULATUM SPOTTED GERANIUM *D	4" POT	PER PLAN	1' HT X 1' - 2' SP
	WL	19	NEPETA RACEMOSA 'WALKER'S LOW' WALKER'S LOW CATMINT D	1 GAL	PER PLAN	2' - 3' HT X 2' - 3' SP
	RS	23	RUDBECKIA FULGIDA 'LITTLE GOLDSTAR' LITTLE GOLDSTAR CONEFLOWER *	1 GAL	PER PLAN	1' - 1.5' HT X 1' - 1.5' SP
	SS	24	SCHIZACHYRIUM SCOPARIUM 'STANDING OVATION' STANDING OVATION LITTLE BLUESTEM *D	1 GAL	PER PLAN	2' - 4' HT X 2' SP
SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	CONT	SPACING	
GROUND COVERS						
	PW	8	PHLOX DIVARICATA WOODLAND PHLOX *	4"POT	12" o.c.	1' HT X 1' SP

*Minnesota native plant / variety of native plant
DDrought tolerant

REFERENCE NOTES SCHEDULE

SYMBOL	LANDSCAPE DESCRIPTION	QTY
L-101	LANDSCAPE EDGING | COLMET, 4" HT X 3/16" THICK, BLACK POWDER COAT FINISH INSTALL PER MANUFACTURER'S SPECIFICATIONS	555 LF
L-102	LOW-MAINTENANCE LAWN | CONTACT: RAMY TURF, RAMYTURF.COM, 507-387-4091, MANKATO, MN | HYDROSEED ALL AREAS INDICATED ON PLAN WITH "CUT LESS LOW GROWING TURF MIX" BY RAMY TURF. HYDROSEED WITH "TERRA BLEND HYDRO MULCH"- UNLESS SEEDING DORMANTLY IN NOVEMBER. IF DORMANT SEEDING, THEN USE "FLEXTERRA HYDRO MULCH"	23,023 SF
L-103	LANDSCAPE BED, TYP. | CONTACT: TOTAL LANDSCAPE SUPPLY, TOTALLANDSCAPESUPPLYMN.COM, 507-642-7625, MANKATO, MN | MIN. THREE TO FOUR INCH LAYER OF 1 1/2" ST. CLOUD GRANITE ROCK MULCH INSTALLED OVER NON-WOVEN WEED FABRIC	6,823 SF
L-104	TREE RING | 3-FT. DIAMETER TREE RING WITH WESTERN RED CEDAR MULCH FROM TOTAL LANDSCAPE SUPPLY, OR EQUIVALENT. INSTALL AROUND ALL TREES OUTSIDE OF LANDSCAPE BEDS, SEE PLAN AND DETAIL 2 ON SHEET L-5.0	

ALL LANDSCAPED AREAS TO BE IRRIGATED.
IRRIGATION PLANS TO BE PROVIDED.

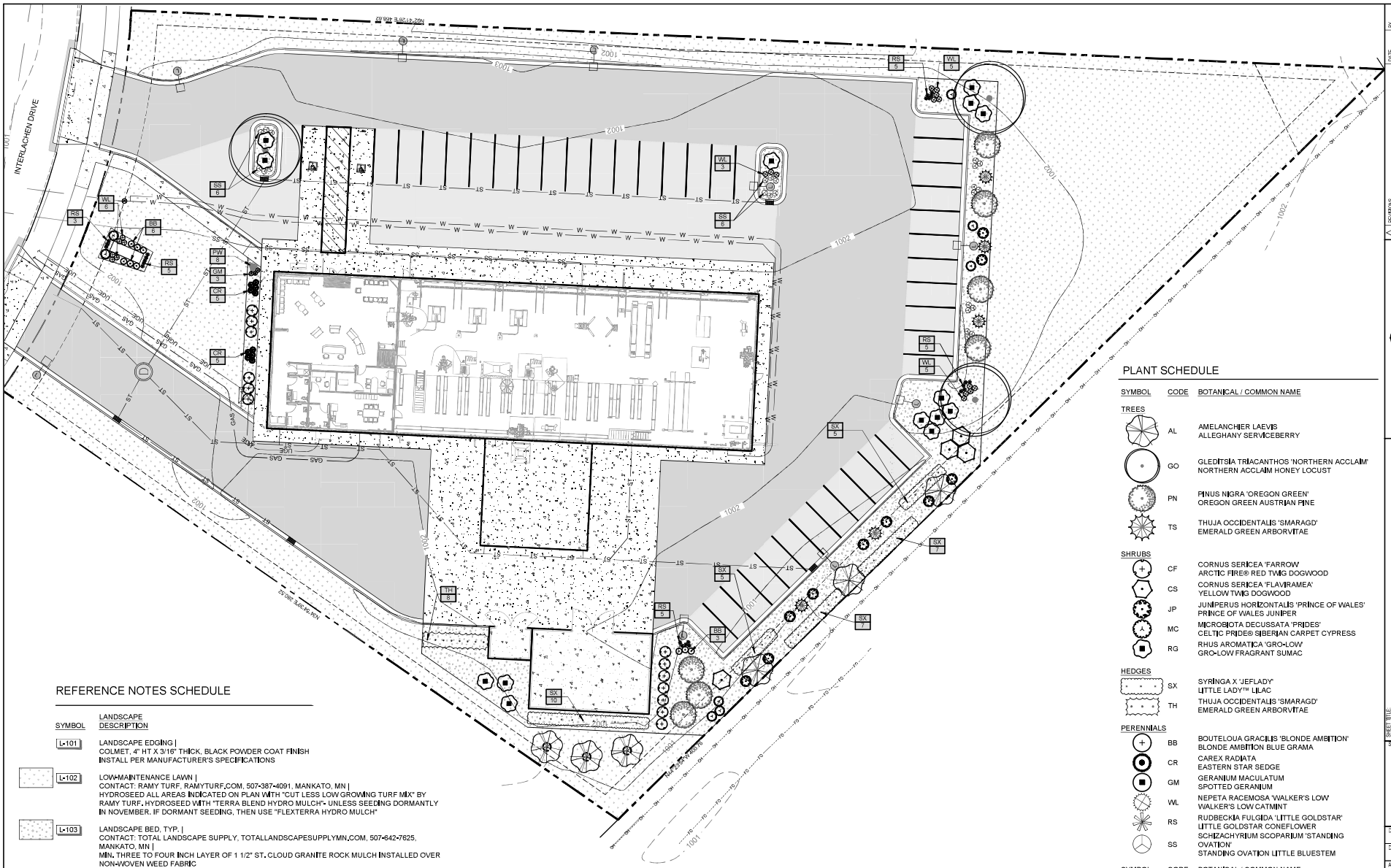
REVISIONS	DATE	BY
HIGHWAY GATEWAY OVERLAY DIST.; DESIGN COMPLIANCE	07/23/2024	MC

SCJ ALLIANCE
CONSULTING SERVICES
1807 FLORENCE AVE, BUTTE, MT 59701
P: 406.792.2020 F: 406.721.1509
SCJALLIANCE.COM

SHEET TITLE: OVERALL SITE LANDSCAPE PLAN
PROJECT NAME: LES SCHWAB TIRE CENTERS
LOT 3, BLOCK 2, VICTORY COMMERCIAL PARK
MANKATO, MN

SEAL: MONTANA LICENSED LANDSCAPE ARCHITECT MARK S. GARFF No. 20067

DESIGNER:	MC
DRAWN BY:	
APPROVED BY:	MG
DATE:	07/03/2024
JOB NO:	7082
DRAWING FILE NO:	
DRAWING NO:	L-1.0
SHEET NO:	01 OF 03



REFERENCE NOTES SCHEDULE

SYMBOL	LANDSCAPE DESCRIPTION
L-101	LANDSCAPE EDGING | COLMET, 4" HT X 3/16" THICK, BLACK POWDER COAT FINISH INSTALL PER MANUFACTURER'S SPECIFICATIONS
L-102	LOW-MAINTENANCE LAWN | CONTACT: RAMY TURF, RAMYTURF.COM, 507-387-4091, MANKATO, MN | HYDROSEED ALL AREAS INDICATED ON PLAN WITH "CUT LESS LOW GROWING TURF MIX" BY RAMY TURF. HYDROSEED WITH "TERRA BLEND HYDRO MULCH"- UNLESS SEEDING DORMANTLY IN NOVEMBER. IF DORMANT SEEDING, THEN USE "FLEXTERRA HYDRO MULCH"
L-103	LANDSCAPE BED, TYP. | CONTACT: TOTAL LANDSCAPE SUPPLY, TOTALLANDSCAPESUPPLYMN.COM, 507-642-7625, MANKATO, MN | MIN. THREE TO FOUR INCH LAYER OF 1 1/2" ST. CLOUD GRANITE ROCK MULCH INSTALLED OVER NON-WOVEN WEED FABRIC
L-104	TREE RING | 3-FT. DIAMETER TREE RING WITH WESTERN RED CEDAR MULCH FROM TOTAL LANDSCAPE SUPPLY, OR EQUIVALENT. INSTALL AROUND ALL TREES OUTSIDE OF LANDSCAPE BEDS, SEE PLAN AND DETAIL 2 ON SHEET L-5.0

PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL / COMMON NAME
TREES		
	AL	AMELANCHIER LAEVIS ALLEGHANY SERVICEBERRY
	GO	GLEDITSIA TRIACANTHOS 'NORTHERN ACCLAIM' NORTHERN ACCLAIM HONEY LOCUST
	PN	PINUS NIGRA 'OREGON GREEN' OREGON GREEN AUSTRIAN PINE
	TS	THUJA OCCIDENTALIS 'SMARAGD' EMERALD GREEN ARBORVITAE
SHRUBS		
	CF	CORNUS SERICEA 'FARROW' ARCTIC FIRE® RED TWIG DOGWOOD
	CS	CORNUS SERICEA 'FLAVIRAMEA' YELLOW TWIG DOGWOOD
	JP	JUNIPERUS HORIZONTALIS 'PRINCE OF WALES' PRINCE OF WALES JUNIPER
	MC	MICROBIOTA DECUSSATA 'PRIDES' CELTIC PRIDE® SIBERIAN CARPET CYPRESS
	RG	RHUS AROMATICA 'GRO-LOW' GRO-LOW FRAGRANT SUMAC
HEDGES		
	SX	SYRINGA X 'JEFLADY' LITTLE LADY™ LILAC
	TH	THUJA OCCIDENTALIS 'SMARAGD' EMERALD GREEN ARBORVITAE
PERENNIALS		
	BB	BOUTELOUA GRACILIS 'BLONDE AMBITION' BLONDE AMBITION BLUE GRAMA
	CR	CAREX RADIATA EASTERN STAR SEDGE
	GM	GERANIUM MACULATUM SPOTTED GERANIUM
	WL	NEPETA RACEMOSA 'WALKER'S LOW' WALKER'S LOW CATMINT
	RS	RUDBECKIA FULGIDA 'LITTLE GOLDSTAR' LITTLE GOLDSTAR CONEFLOWER
	SS	SCHIZACHYRIUM SCOPARIUM 'STANDING OVATION' STANDING OVATION LITTLE BLUESTEM
SYMBOL	**CODE**	**BOTANICAL / COMMON NAME**
GROUND COVERS		
	PW	PHLOX DIVARICATA WOODLAND PHLOX

1 PLANTING PLAN
L-3.0 1/16" = 1'-0"

0 16 32 48 feet
SCALE: 1/16" = 1'-0"

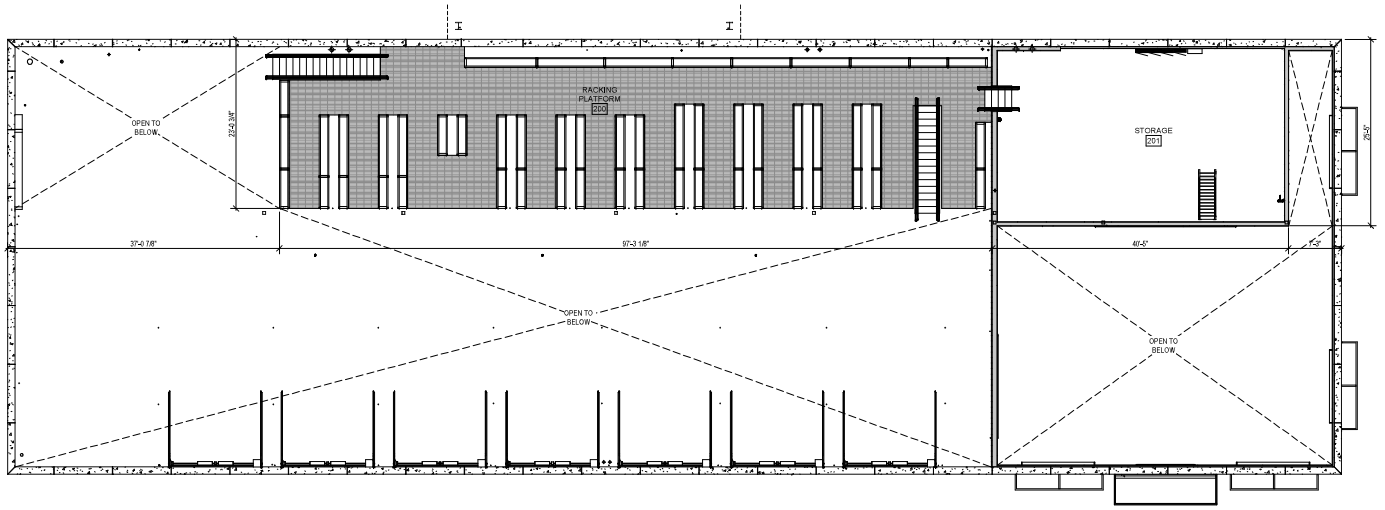
REVISIONS	DATE	BY
HIGHWAY GATEWAY OVERLAY DIST. - DESIGN COMPLIANCE	07/23/2024	MC

SCJ ALLIANCE
CONSULTING SERVICES
1807 FLORENCE AVE, BUTTE, MT 59701
P: 406.723.3567 | F: 406.721.1509
SCJALLIANCE.COM

SHEET TITLE: PLANTING PLAN
PROJECT NAME: LES SCHWAB TIRE CENTERS
LOT 3, BLOCK 2, VICTORY COMMERCIAL PARK
MANKATO, MN

SEAL: MONTANA MARK S. GARFF No. 20067 LICENSED LANDSCAPE ARCHITECT

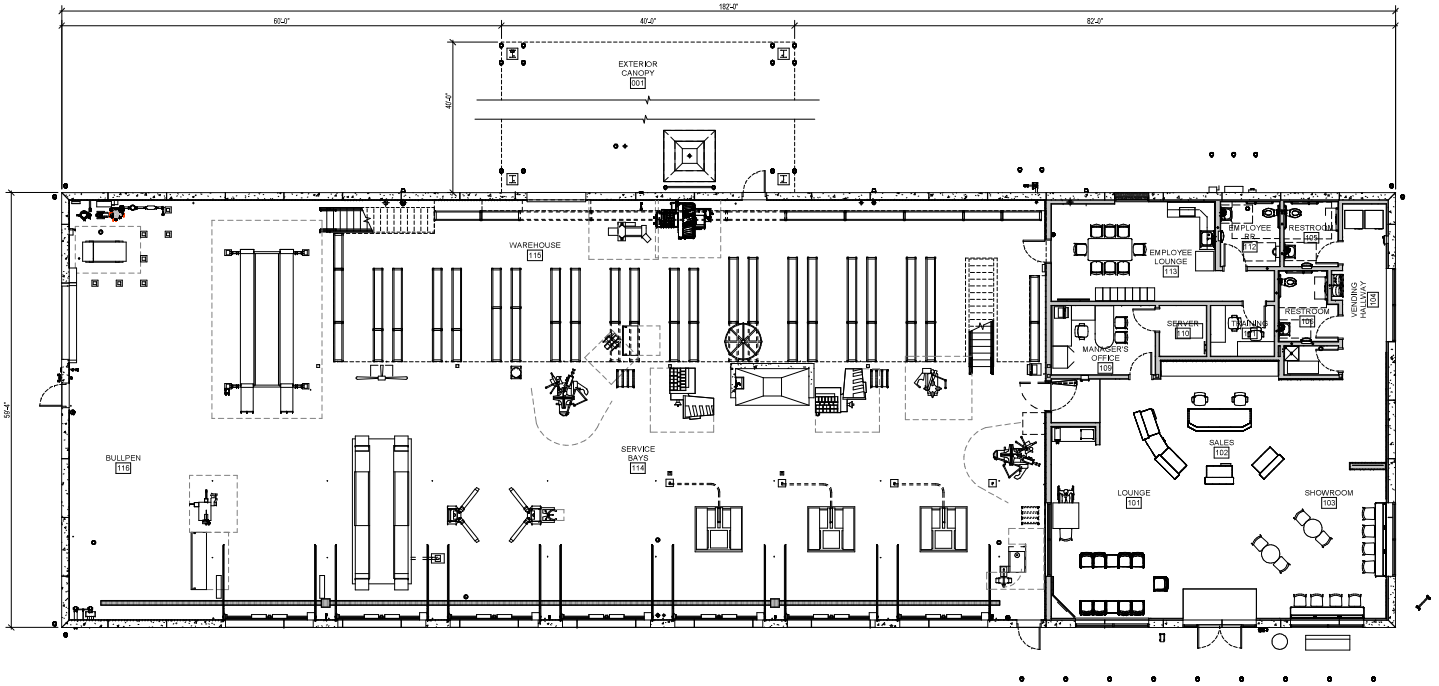
DESIGNER:	MC
DRAWN BY:	
APPROVED BY:	MG
DATE:	07/03/2024
JOB NO:	7082
DRAWING FILE NO:	
DRAWING NO:	L-3.0
SHEET NO:	02 OF 03



STORAGE/RACKING PLATFORM PLAN

1/8" = 1'-0"

NORTH



GROUND FLOOR PLAN

1/8" = 1'-0"

NORTH

BUILDING FOOTPRINT	
GROUND FLOOR	10320 SF
EXTERIOR CANOPY	1600 SF

FLOOR AREAS		
GROUND FLOOR		
WAREHOUSE	S-1 OCCUPANCY	2946 ft²
SERVICE BAYS	S-1 OCCUPANCY	4174 ft²
SHOWROOM / SALES	M OCCUPANCY	1630 ft²
OFFICE/EMPLOYEES/SUPPORT	B OCCUPANCY	726 ft²
EXTERIOR CANOPY	S-1 OCCUPANCY	1600 ft²
BULLPEN	S-1 OCCUPANCY	541 ft²
SECOND FLOOR		
RACKING PLATFORM	S-1 OCCUPANCY	1929 ft²
STORAGE/EQUIPMENT RM	S-1 OCCUPANCY	963 ft²
		14811 ft²

PSA ARCHITECTS, LLP

Tires LES SCHWAB

TBD INTERLACHEN DR., MANKATO, MN
7 BAY LH LINEAR STORE - PROTOTYPE Q2 2024

LES SCHWAB TIRE CENTER - MANKATO, MN

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ENTITLEMENT

07.19.24
PROJECT# | 2417
DESIGNED BY | NC
DRAWN BY | NC
REVISIONS

FLOOR PLANS

A1.1



PERSPECTIVE



FRONT ELEVATION

1/8" = 1'-0"



SHOWROOM ELEVATION

1/8" = 1'-0"

MATERIAL LEGEND:

PC-1	FABCON PRE-CAST PANEL, EXPOSED AGGREGATE W/ 4" HORIZONTAL RELIEF STAIN: SHERWIN WILLIAMS, COLOR: 7068 - GRIZZLE GRAY
PC-2	FABCON PRE-CAST PANEL, EXPOSED AGGREGATE, MFR. FINISH, COLOR: INTREGRAL WHITE
PC-3	FABCON PRE-CAST PANEL, EXPOSED AGGREGATE W/ VERTICAL PATTERNED RELIEF STAIN: SHERWIN WILLIAMS, COLOR 7594 - CARRIAGE DOOR
PC-4	FABCON PRE-CAST PANEL, EXPOSED AGGREGATE W/ VERTICAL PATTERNED RELIEF STAIN: SHERWIN WILLIAMS, COLOR: 7068 - GRIZZLE GRAY
SP-1	SOFFIT PANEL PAC-CLAD FLUSH SOLID W/ PVDF WOOD GRAIN FINISH (COPPER)
SF-1	SITE FURNISHINGS IN DARK BRONZE, TRASH RECEPTICLE AND BENCH
EP-2	PRE-FINISHED METAL AND/OR EXTERIOR PAINT SUPERPAINT EXTERIOR ACRYLIC LATEX SATIN ABSW00151 (MATCH KAWNEER #40 DARK BRONZE)
R-4	PRE-FINISHED STANDING SEAM METAL ROOFING PANELS - DARK BRONZE
F-1	PRE-FINISHED STEEL FENCE & GATE SYSTEM BY ALPINE INDUSTRIAL FENCING - DARK BRONZE

PSA ARCHITECTS, LLP

Tires LES SCHWAB

TBD INTERLACHEN DR., MANKATO, MN
7 BAY LH LINEAR STORE - PROTOTYPE Q2 2024

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07.19.24
PROJECT# | 2417
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DRAWN BY | MARQUETTE
REVISIONS

EXTERIOR ELEVATIONS

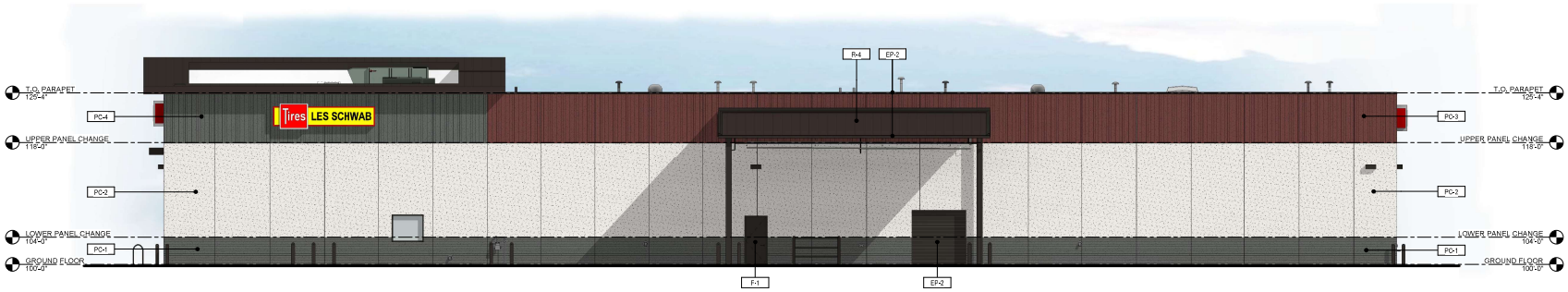
A2.1



PERSPECTIVE

MATERIAL LEGEND:

PC-1	FABCON PRE-CAST PANEL, EXPOSED AGGREGATE W/ 4" HORIZONTAL RELIEF STAIN: SHERWIN WILLIAMS, COLOR: 7068 - GRIZZLE GRAY
PC-2	FABCON PRE-CAST PANEL, EXPOSED AGGREGATE, MFR, FINISH, COLOR: INTREGRAL WHITE
PC-3	FABCON PRE-CAST PANEL, EXPOSED AGGREGATE W/ VERTICAL PATTERNED RELIEF STAIN: SHERWIN WILLIAMS, COLOR 7594 - CARRIAGE DOOR
PC-4	FABCON PRE-CAST PANEL, EXPOSED AGGREGATE W/ VERTICAL PATTERNED RELIEF STAIN: SHERWIN WILLIAMS, COLOR: 7068 - GRIZZLE GRAY
SP-1	SOFFIT PANEL PAC-CLAD FLUSH SOLID W/ PVDF WOOD GRAIN FINISH (COPPER)
SF-1	SITE FURNISHINGS IN DARK BRONZE. TRASH RECEPTICLE AND BENCH
EP-2	PRE-FINISHED METAL AND/OR EXTERIOR PAINT SUPERPAINT EXTERIOR ACRYLIC LATEX SATIN AB9W01151 (MATCH KAWNEER #40 DARK BRONZE)
R-4	PRE-FINISHED STANDING SEAM METAL ROOFING PANELS - DARK BRONZE
F-1	PRE-FINISHED STEEL FENCE & GATE SYSTEM BY ALPINE INDUSTRIAL FENCING - DARK BRONZE



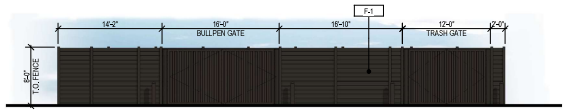
REAR ELEVATION

1/8" = 1'-0"



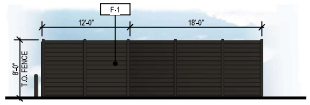
LOADING ELEVATION

1/8" = 1'-0"



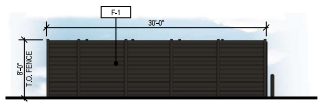
ENCLOSURE FRONT ELEVATION

1/8" = 1'-0"



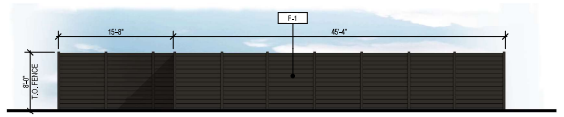
ENCLOSURE RIGHT ELEVATION

1/8" = 1'-0"



ENCLOSURE LEFT ELEVATION

1/8" = 1'-0"



ENCLOSURE REAR ELEVATION

1/8" = 1'-0"

PSA ARCHITECTS, LLP

Tires LES SCHWAB

TBD INTERLACHEN DR., MANKATO, MN
7 BAY LH LINEAR STORE - PROTOTYPE Q2 2024

LES SCHWAB TIRE CENTER - MANKATO, MN

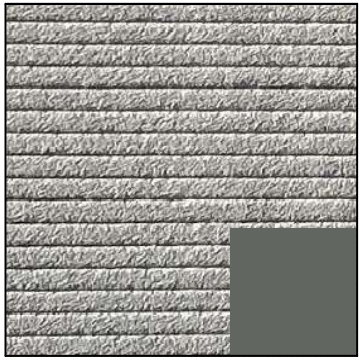
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ENTITLEMENT

07.19.24
PROJECT# | 2417
DESIGNED BY | NC
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REVISIONS

EXTERIOR ELEVATIONS

A2.2



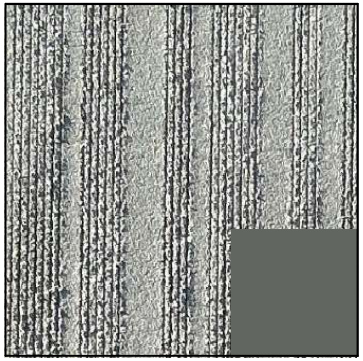
PC-1 EXPOSED AGG. W/ HORIZONTAL RELIEF
SCALE: 1/4" = 1'-0"



PC-2 EXPOSED AGGREGATE
SCALE: 1/4" = 1'-0"



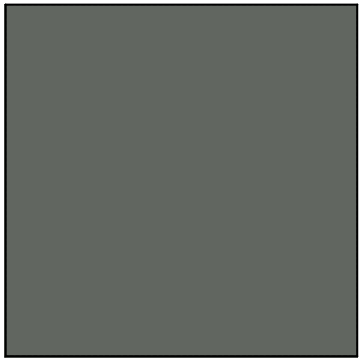
PC-3 EXPOSED AGG. W/ VERTICAL RELIEF
SCALE: 1/4" = 1'-0"



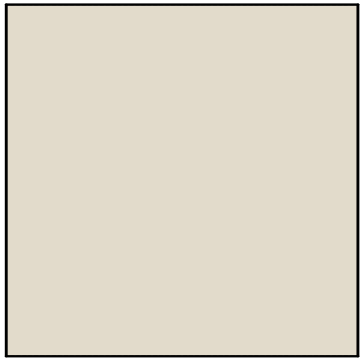
PC-4 EXPOSED AGG. W/ VERTICAL RELIEF
SCALE: 1/4" = 1'-0"



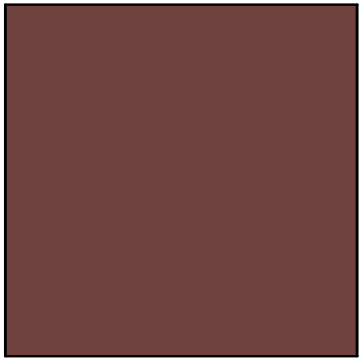
SP-1 WOODGRAIN COPPER
SCALE: 1/4" = 1'-0"



COLOR - GRIZZLE GREY
1/4" = 1'-0"



COLOR - INTREGRAL WHITE
1/4" = 1'-0"



COLOR - CARRIAGE DOOR
1/4" = 1'-0"



COLOR - DARK BRONZE
1/4" = 1'-0"

P.S. ARCHITECTS, LLP

TBD INTERLACHEN DR., MANKATO, MN
7 BAY LH LINEAR STORE - PROTOTYPE Q2 2024

LES SCHWAB TIRE CENTER - MANKATO, MN

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PROJECT# | 2417
DESIGNED BY | NC
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MATERIALS BOARD

A2.3

EXTERIOR LIGHTING FIXTURE SCHEDULE

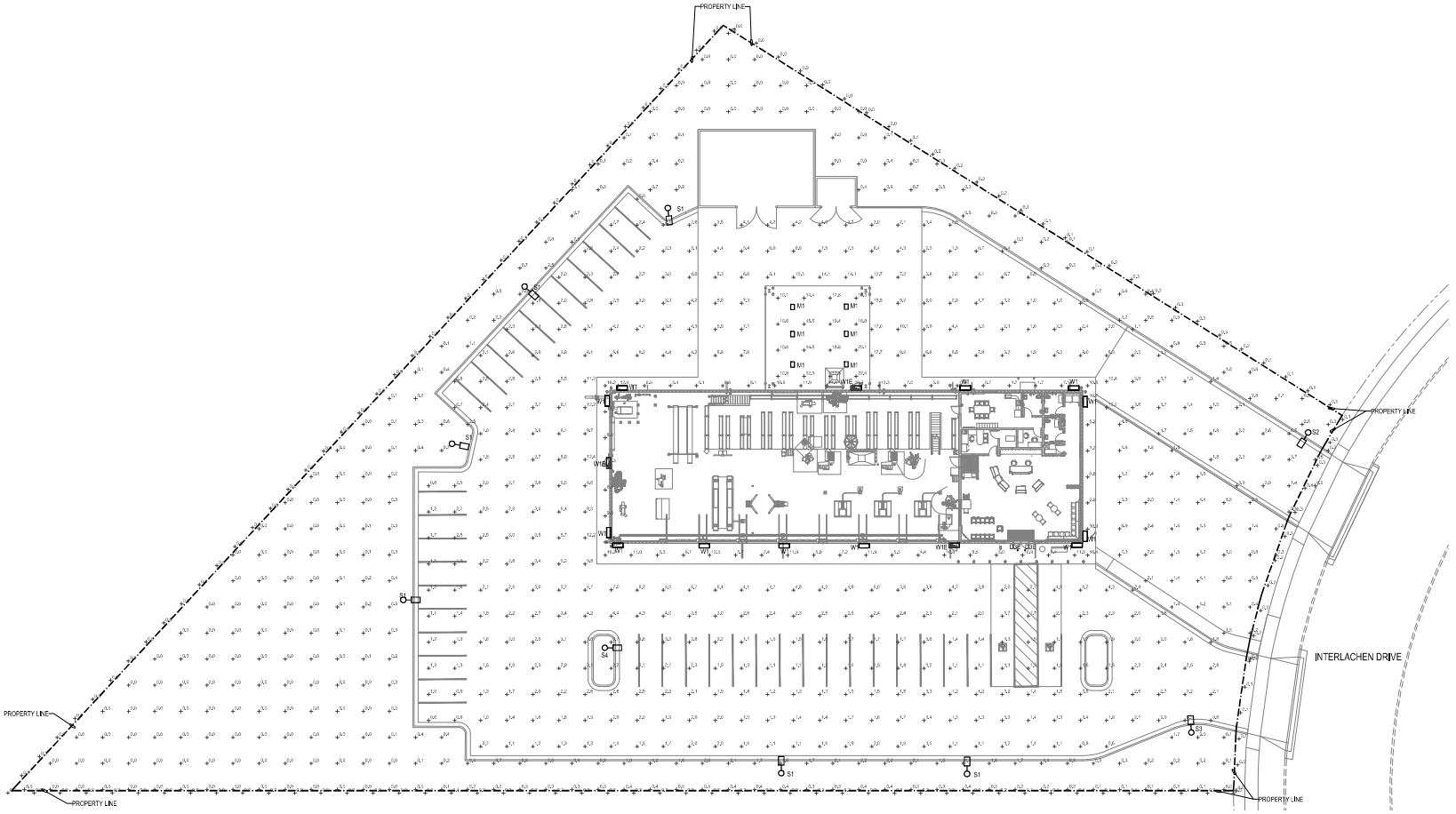
NOTES:
1) COLOR SHALL BE DARK BRONZE. VERIFY FIXTURES AND POLES HAVE MATCHING FINISH.
2) INSTALL FIXTURE HEAD WITH 0° TILT TO PROVIDE FULL-CUTOFF DISTRIBUTION (NO LIGHT OUTPUT EMITTED ABOVE 90 DEGREES AT ANY LATERAL ANGLE AROUND THE FIXTURE).
3) PROVIDE POLE MFR'S RECOMMENDED ANCHOR BOLTS.

POLES: SQUARE STEEL POLE, DARK BRONZE, 25' MOUNTING HEIGHT. COOPER LIGHTING SSS1A25SFN1.

	FIXTURE			MOUNTING				LIGHT SOURCE	
	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	TYPE	HEIGHT	VOLTAGE	VA	LAMP TYPE	NOTES
D3E	5.25" WET LOCATION RECESSED DOWNLIGHT WITH REMOTE EMERGENCY BATTERY	ZUMTOBEL	PANOS D-N-150-R-...-11W-835-CS-W-PE-150DL-R-11W-DA-1 / BODINE BSL-1CC2T1U	RECESSED	B.O. CANOPY	120 V	11.00	LED FURN W/ FIXTURE	
M1	CANOPY MOUNTED LED FIXTURE, SINGLE HEAD, TYPE 5 WIDE DISTRIBUTION, 4000K	COOPER	CNC-E04-LED-E1-CQ	SURFACE	B.O. CANOPY	208 V	97.20	LED, 4000K	
S1	SPECIFICATION GRADE AREA LIGHT WITH IES TYPE IV DISTRIBUTION, SINGLE LIGHT FIXTURE, MOTION SENSOR AND PHOTO CELL.	COOPER	GLEON-SA2B-740-U-LTF-IV-U-SS	POLE	25'	208 V	85.00	LED, 4000K	1, 2, 3
S2	SPECIFICATION GRADE AREA LIGHT WITH IES TYPE 90° SHILL LIGHT ELIMINATOR RIGHT DISTRIBUTION AND HOUSE SIDE SHIELD, SINGLE LIGHT FIXTURE, MOTION SENSOR AND PHOTO CELL.	COOPER	GLEON-SA2B-740-U-SLR-HSS	POLE	25'	208 V	85.00	LED, 4000K	1, 2, 3
S3	SPECIFICATION GRADE AREA LIGHT WITH IES TYPE 90° SHILL LIGHT ELIMINATOR LEFT DISTRIBUTION AND HOUSE SIDE SHIELD, SINGLE LIGHT FIXTURE. MOTION SENSOR AND PHOTO CELL.	COOPER	GLEON-SA2B-740-U-SLL-HSS	POLE	25'	208 V	85.00	LED, 4000K	1, 2, 3
S4	SPECIFICATION GRADE AREA LIGHT WITH IES TYPE V NARROW DISTRIBUTION, SINGLE LIGHT FIXTURE, MOTION SENSOR AND PHOTO CELL.	COOPER	GLEON-SA2C-740-U-SNG	POLE	25'	208 V	113.00	LED, 4000K	1, 2, 3
W1	WALL PACK	COOPER	XTOR6B	SURFACE	14'	120 V	56.00	LED, 4000K	
W1E	WALL PACK WITH BATTERY BACKUP.	COOPER	XTOR6B-W-CBP	SURFACE	14'	120 V	56.00	LED, 4000K	

PHOTOMETRIC CALCULATIONS

	AVERAGE	MAXIMUM	MINIMUM	UNIFORMITY GRADIENT
DRIVE AISLE	3.1 FC	17.7 FC	0.2 FC	15.3
WALKWAY	6.8 FC	28.7 FC	1.2 FC	1.4



SITE PHOTOMETRIC PLAN
SCALE: 1"=20'-0"
NORTH

PS ARCHITECTS, LLP
ENGINEERING CONSULTANTS
303 South Federal Way, Boise, ID 83705
(208) 376-8520 • www.ecboise.com
Les Schwab Tires

HWY 14 & N VICTORY DR, MANKATO, MN
7 BAY RH LINEAR STORE - PROTOTYPE Q4 2023
LES SCHWAB TIRE CENTER - MANKATO, MN

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ISSUED FOR PERMIT

07.23.2024
PROJECT# | 8912A
DESIGNED BY | BL
DRAWN BY | NW
REVISIONS

SITE
PHOTOMETRIC PLAN

E1

Site Plan and Traffic Advisory Review Committee **CYL39-24**

Meeting Date: 08/13/2024

Title

Request of New Energy Equity, on behalf of the property owner, for an interim use permit to allow for a one-megawatt community solar garden in the Lime Township Rural Conservation zoning district. The subject property is described as The Northeast Quarter of the Northwest Quarter, except railroad right of ways, and the Northwest Quarter of the Northeast Quarter, both in Section 29, Township 109, Range 26, excepting from said Northwest Quarter Northeast Quarter that part of said Northwest Quarter Northeast Quarter described as, beginning at a point 1315.8 feet South of the Northeast corner of Section 29-109-26, thence West 1808.8 feet to the East line of the Right of Way of the Chicago & Northwestern Railway, thence southwesterly along the said Right of Way line, 1264.6 feet, thence East 1692.3 feet to the East line of said Section 29, thence North along the section line 1249.8 feet to the place of beginning. A strip of land one (1) rod wide now used as a road, extending from East to West upon, over and across the North side of the Northwest Quarter of the Northwest Quarter (NW1/4 NW1/4) of Section 29, Township 109 North of Range 26 West, beginning at or near the Northeast corner of said NW1/4 NW1/4 of Sec. 29, and thence West along or near the North line of said NW1/4 NW1/4 of said Sec. 29, to the public highway known as the Mankato and St. Peter Road. The East 302.00 feet of the Northwest Quarter of the Northwest Quarter of Section 29, Township 109, Range 26, Blue Earth County, Minnesota, except the South 16.5 feet thereof. Except therefrom: Part of the Northwest Quarter of the Northwest Quarter and part of the Northeast Quarter of the Northwest Quarter of Section 29, Township 109 North, Range 26 West, Blue Earth County, Minnesota described as: Commencing at the Southeast corner of said Northwest Quarter of the Northwest Quarter; thence North 89 degrees 41 minutes 42 seconds West (bearings are based on Blue Earth County Coordinates NAD83, 1996 Adjustment) on the south line of said Northwest Quarter of the Northwest Quarter, a distance of 78.00 feet; thence North 12 degrees 41 minutes 56 seconds East, a distance of 16.89 feet to the north line of the south 16.5 feet of said Northwest Quarter of the Northwest Quarter and the point of beginning; thence North 12 degrees 41 minutes 56 seconds East, a distance of 589.95 feet to the westerly right of way of the abandoned Chicago, Milwaukee, St. Paul and Pacific Railroad Company; thence South 05 degrees 40 minutes 37 seconds West on said westerly right of way, a distance of 558.85 feet to the east line of said Northwest Quarter of the Northwest Quarter; thence South 00 degrees 11 minutes 26 seconds West on said east line, a distance of 19.81 to the north line of the south 16.5 feet of said Northwest Quarter of the Northwest Quarter; thence North 89 degrees 41 minutes 42 seconds West on said north line, a distance of 74.34 feet to the point of beginning. (23759 3rd Avenue; Blue Earth County PID R400429200017).

Applicant

The applicant, New Energy Equity, with permission of the property owner John Bohrer.

Request

Brian Keenan, on behalf of New Energy Equity, with permission of the property owner, has applied for an interim use permit to allow a one-megawatt solar garden on an approximately 7.2-acre site at the site located at 23759 Third Avenue. Access to the site is shown from 3rd Avenue along a proposed 33’ easement. The panels are situated approximately 2000’ from 3rd Avenue.

Location

The subject property is zoned Conservation and is legally described as The Northeast Quarter of the Northwest Quarter, except railroad right of ways, and the Northwest Quarter of the Northeast Quarter, both in Section 29, Township 109, Range 26, excepting from said Northwest Quarter Northeast Quarter that part of said Northwest Quarter Northeast Quarter described as, beginning at a point 1315.8 feet South of the Northeast corner of Section 29-109-26, thence West 1808.8 feet to the East line of the Right of Way of the Chicago & Northwestern Railway, thence southwesterly along the said Right of Way line, 1264.6 feet, thence East 1692.3 feet to the East line of said Section 29, thence North along the section line 1249.8 feet to the place of beginning. A strip of land one (1) rod wide now used as a road, extending from East to West upon, over and across the North side of the Northwest Quarter of the Northwest Quarter (NW1/4 NW1/4) of Section 29, Township 109 North of Range 26 West, beginning at or near the Northeast corner of said NW1/4 NW1/4 of Sec. 29, and thence West along or near the North line of said NW1/4 NW1/4 of said Sec. 29, to the public highway known as the Mankato and St. Peter Road. The East 302.00 feet of the Northwest Quarter of the Northwest Quarter of Section 29, Township 109, Range 26, Blue Earth County, Minnesota, except the South 16.5 feet thereof. Except therefrom: Part of the Northwest Quarter of the Northwest Quarter and part of the Northeast Quarter of the Northwest Quarter of Section 29, Township 109 North, Range 26 West, Blue Earth County, Minnesota described as: Commencing at the Southeast corner of said Northwest Quarter of the Northwest Quarter; thence North 89 degrees 41 minutes 42 seconds West (bearings are based on Blue Earth County Coordinates NAD83, 1996 Adjustment) on the south line of said Northwest Quarter of the Northwest Quarter, a distance of 78.00 feet; thence North 12 degrees 41 minutes 56 seconds East, a distance of 16.89 feet to the north line of the south 16.5 feet of said Northwest Quarter of the Northwest Quarter and the point of beginning; thence North 12 degrees 41 minutes 56 seconds East, a distance of 589.95 feet to the westerly right of way of the abandoned Chicago, Milwaukee, St. Paul and Pacific Railroad Company; thence South 05 degrees 40 minutes 37 seconds West on said westerly right of way, a distance of 558.85 feet to the east line of said Northwest Quarter of the Northwest Quarter; thence South 00 degrees 11 minutes 26 seconds West on said east line, a distance of 19.81 to the north line of the south 16.5 feet of said Northwest Quarter of the Northwest Quarter; thence North 89 degrees 41 minutes 42 seconds West on said north line, a distance of 74.34 feet to the point of beginning. (23759 3rd Avenue; Blue Earth County PID R400429200017).

Existing Land Use

The parcel is made of 84.22 acre and is currently used for agricultural purposes.

Zoning

The property is located in Lime Township and is zoned Rural Conservation.

Environmentally Sensitive Areas

The site has been delineated for wetland through Blue Earth County. Wetlands are located on the parcel, but are not present in the proposed development window for the solar panels.

City Code

The Lime Township Ordinance can be found at this link: Lime Township Ordinances

Review

The applicant, New Energy Equity, is requesting an Interim use permit with permission of the property owner to allow the construction and operation of a 1-megawatt community solar garden, in the Rural conservation district, in Lime Township. The subject property consists of 84.22 acres and the applicant submitted a plan to utilize 7.2 acres of said acres for the solar facilities.

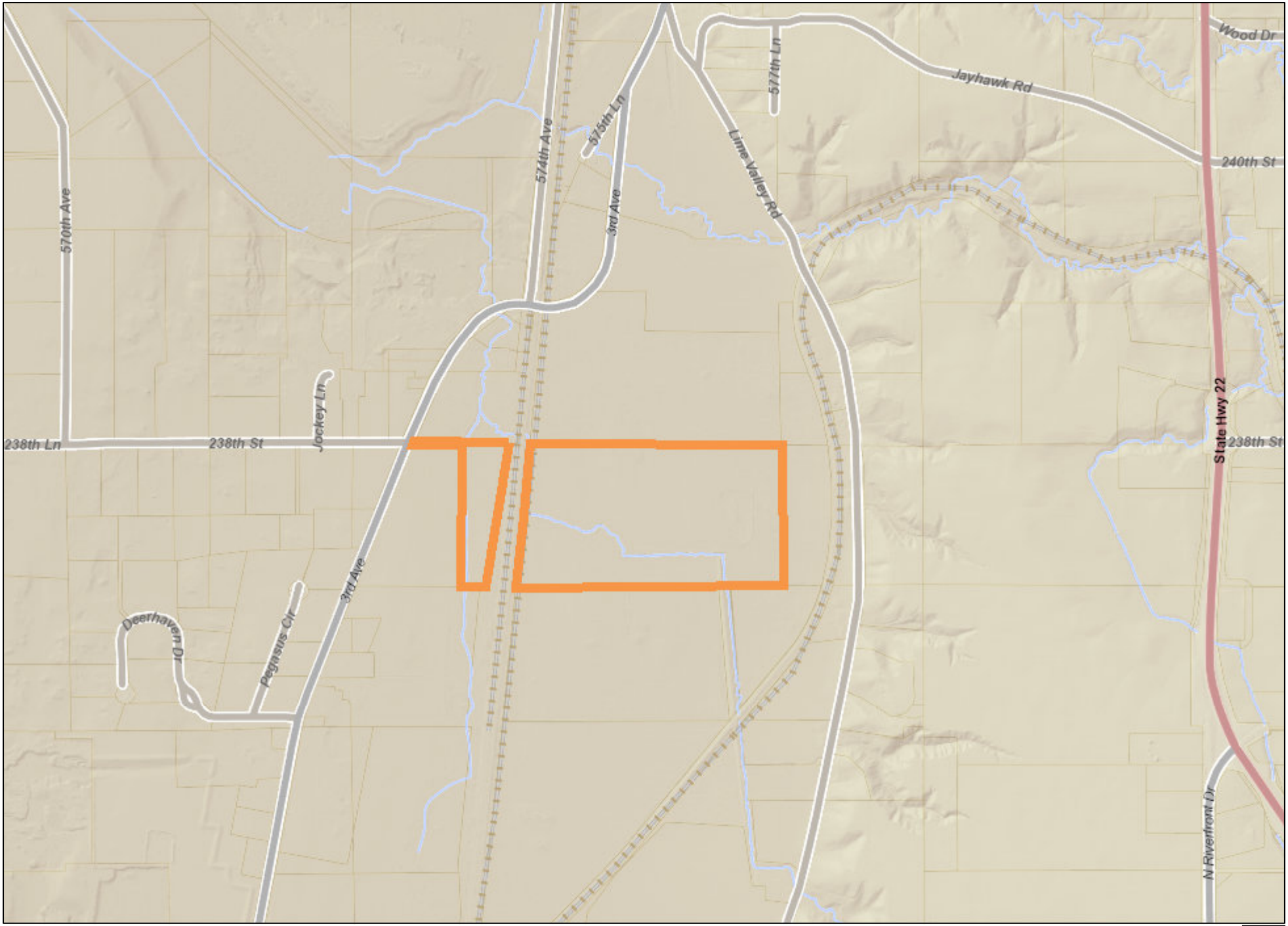
The applicant has requested a 36-year interim use permit for the construction, operation, and ownership of a community solar garden.

The site plan depicts a site entrance off of 3rd Avenue. The garden will consist of approximately 2,592 solar modules that are proposed to be mounted to a driven pile. The installation height will range between 8’ to 12’. The panels will be arranged into rows from north to south. Each row of solar panels will connect to an inverter. The inverters will be connected by directionally bored underground conduit that is housed inside a PVC housing, which will be installed two feet below the surface. The Solar Garden will comply with Minnesota Rules 7030 governing noise.

Attachments

General Location Map
Aerial Map
Site Plan
Interim Use Permit Application
Solar Safety and Equipment
Emergency Response Plan
Site Regulations
Wetland Delineation
Railroad Crossing Deed
Decommissioning Plan
Native Vegetation

General Location Map



Date: February 2024

Author:

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N

Aerial Location Map



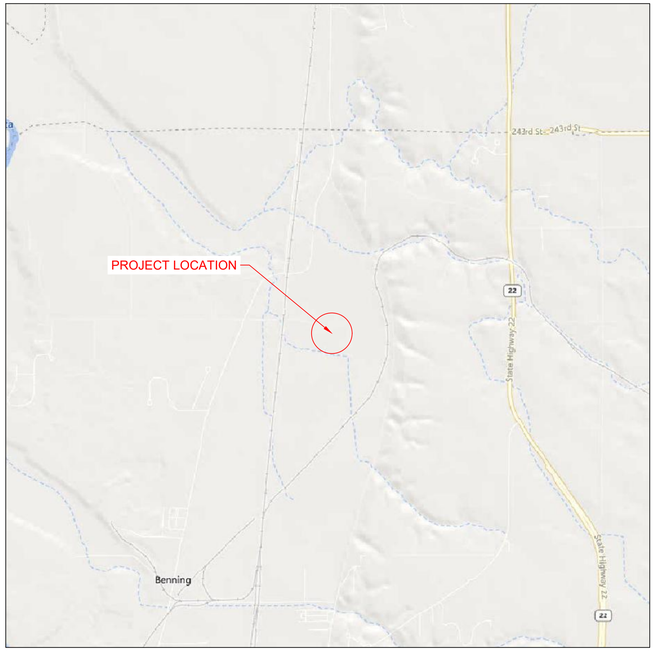
Date: February 2024

Author:

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N

BOHREREAST CSG



1 ARRAY LOCATION

Scale: 1" = 2000'



2 OVERHEAD MAP

Scale: 1" = 400'

PROJECT TEAM

PROJECT OWNER
MN CSG 2019-57 LLC
2530 RIVA ROAD, SUITE 200
ANNAPOLIS, MD 21401
443-267-5012

PROJECT DEVELOPER
NEW ENERGY EQUITY
2530 RIVA ROAD, SUITE 200
ANNAPOLIS, MD 21401
443-267-5012

GENERAL INFO

PROJECT ACREAGE
PARCEL ACREAGE: 84.22 ACRES
MODULE ACREAGE: 1.75 ACRES
FENCE ACREAGE: 7.2 ACRES
LIMITS OF PERMITTING ACREAGE: 10.86 ACRES
LOT COVERAGE (MODULE ACREAGE/PARCEL ACREAGE): 2.08%

PARCEL DESCRIPTION
PROPERTY OWNERS: JOHN BOHRER, AVAMAR PROPERTIES LLC, UNION PACIFIC RAILROAD COMPANY
PARCEL ID NUMBERS: R40.04.29.200.017, R40.04.20.352.013, R40.04.20.501.001
ZONING CLASSIFICATION: RURAL CONSERVATION
APPLICATION TYPE: IUP

SETBACKS
REAR SETBACK: 50' FROM PARCEL LINE TO FENCE
SIDE SETBACK: 50' FROM PARCEL LINE TO FENCE
WETLANDS SETBACK: 30'
NON PARTICIPATING RESIDENTIAL DWELLING SETBACK: 750'

SHEET INDEX

SHEET #	*DESCRIPTION*	*REVISION #*	*REVISION DATE*
T1	TITLE SHEET	1	2/12/2024
PV1	EXISTING CONDITIONS	1	2/12/2024
PV2	SITE PLAN	1	2/12/2024
PV3	SETBACKS MAP	0	2/12/2024
PV4	PID MAP	0	2/12/2024
PV5	SOIL MAP	0	2/12/2024
PV6	TOPOGRAPHY & DRAINAGE PATTERNS	0	2/12/2024
PV7	LIMITS OF PERMITTING	0	2/12/2024
PV8	POLLINATOR DETAIL	0	2/20/2024
PV9	RACKING DETAIL	0	2/12/2024
PV10	FENCE DETAIL	0	2/12/2024
PV11	INFILTRATION BASIN DETAIL	0	2/12/2024
E1	SLD	0	2/12/2024
E2A	EQUIPMENT LABELS 1	0	2/12/2024
E2B	EQUIPMENT LABELS 2	0	2/12/2024
E3	IX PLAN DETAIL	0	2/12/2024

NEW ENERGY EQUITY

PROJECT ENTITY: MN CSG 2019-57 LLC

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

PROJECT ADDRESS
23759 THIRD AVE
MANKATO, MN 56001

LAT: 44.225
LONG: -93.979

SYSTEM SPECIFICATIONS	
SYSTEM SIZE DC	1.503 MW
SYSTEM SIZE AC	POWER LIMITED TO 1.000 MW
DC/AC RATIO	1.503
AZIMUTH	180°
TILT	+/- 52°
MODULE COUNT	2592
MODULE TYPE	HANWA Q.PEAK DUO XL-G11.3_BFG - 580
MODULE STC RATING	580 W
INVERTER COUNT	9
INVERTER TYPE	SMA SUNNY HIGHPOWER PEAK-3 125kW
INVERTER POWER	POWER LIMITED TO 111.111kW
RACKING	TBD
MONITORING	ALSO ENERGY

DESIGN CRITERIA	
MIN/MAX TEMP.	-26°C / 31°C
WIND SPEED (ASCE 7-10)	105 MPH
BUILDING CATEGORY	I
EXPOSURE CATEGORY	C
GROUND SNOW LOAD	50 PSF
BUILDING HEIGHT	0'-0"

OTHER NOTES

CASE NUMBER 05518220

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

24/7 UNESCORTED KEYLESS ACCESS PROVIDED FOR ALL UTILITY ENERGY EQUIPMENT INCLUDING THE METERS AND AC DISCONNECT.

INTERCONNECTION TYPE: SECONDARY

REVISIONS

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3	POLLINATOR BUFFER ADDITION	SP	2/20/2024
4	UPDATED WETLAND DELINIATION	SP	6/4/2024
5	CUP RESUBMISSION	SP	7/18/2024
6			
7			
8			
9			
10			

PROJECT NAME
BOHREREAST CSG

DRAWING TITLE
TITLE SHEET

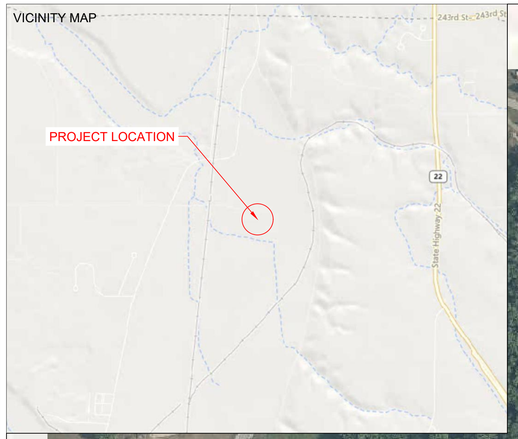
SCALE [1]
AS NOTED 0 1" 2"

SHEET
T1

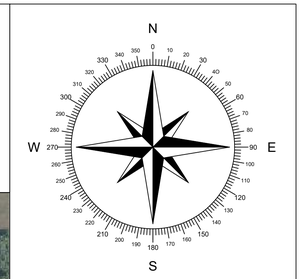
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[1] DRAWING SCALE ACCURATE WHEN THIS PAGE IS PRINTED ON 24"x36" PAPER.

VICINITY MAP



SPACE FOR PE STAMP:



SHEET NOTES:

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

EXISTING RESIDENCE WITHIN PARTICIPATING PROPERTY

238TH RD

THIRD AVE

RAILROAD LINE

LIME VALLEY ROAD

OHW

GAS

LEGEND

PARCEL BOUNDARY (PID:40.04.29.200.017)	
WETLANDS (*30', NTS, NATIONAL WETLANDS INVENTORY*)	
EXISTING 3-PH OVERHEAD UTILITY LINE (*XCEL, 13.8kV*)	OHW
EXISTING SINGLE-PH UTILITY LINE (XCEL, FEEDER SMT082, 7.97kV)	OHW
EXISTING GAS PIPELINE (132' EASEMENT, NTS)	GAS
NON PARTICIPATING RESIDENTIAL DWELLINGS (750' OFFSET, NTS)	

NEW ENERGY EQUITY

PROJECT ENTITY: MN CSG 2019-57 LLC

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

PROJECT ADDRESS	
23759 THIRD AVE MANKATO, MN 56001	LAT: 44.225 LONG: -93.979

SYSTEM SPECIFICATIONS	
SYSTEM SIZE DC	1.503 MW
SYSTEM SIZE AC	POWER LIMITED TO 1.000 MW
DC/AC RATIO	1.503
AZIMUTH	180°
TILT	+/- 52°
MODULE COUNT	2592
MODULE TYPE	HANWA Q.PEAK DUO XL-G11.3_BFG - 580
MODULE STC RATING	580 W
INVERTER COUNT	9
INVERTER TYPE	SMA SUNNY HIGHPOWER PEAK-3 125kW
INVERTER POWER	POWER LIMITED TO 111.111kW
RACKING	TBD
MONITORING	ALSO ENERGY

DESIGN CRITERIA	
MIN/MAX TEMP.	-26°C / 31°C
WIND SPEED (ASCE 7-10)	105 MPH
BUILDING CATEGORY	I
EXPOSURE CATEGORY	C
GROUND SNOW LOAD	50 PSF
BUILDING HEIGHT	0'-0"

OTHER NOTES

CASE NUMBER 05518220

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

24/7 UNESCORTED KEYLESS ACCESS PROVIDED FOR ALL UTILITY ENERGY EQUIPMENT INCLUDING THE METERS AND AC DISCONNECT.

INTERCONNECTION TYPE: SECONDARY

REVISIONS

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2	CUP PACKAGE	SP	2/9/2024
3	POLLINATOR BUFFER ADDITION	SP	2/20/2024
4	UPDATED WETLAND DELINIATION	SP	6/4/2024
5	CUP RESUBMISSION	SP	7/18/2024
6			
7			
8			
9			
10			

PROJECT NAME

BOHREREAST CSG

DRAWING TITLE

EXISTING CONDITIONS

SCALE [1]

1" = 140'

0 1" 2"

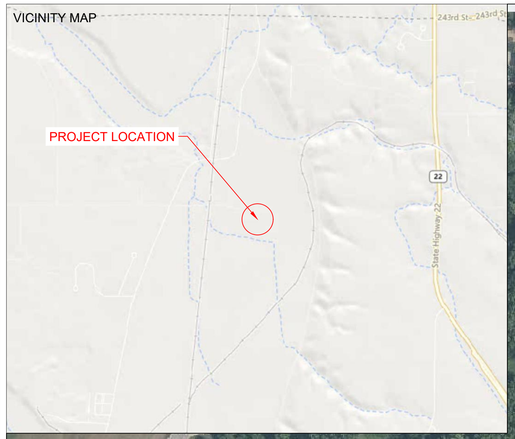
SHEET

PV1

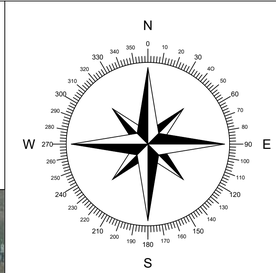
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VICINITY MAP



SPACE FOR PE STAMP:



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LIMITS OF PERMITTING
FOLLOWS ACCESS EASEMENT
~10.86 ACRES

3 NEW OVERHEAD UTILITY POLES WITH MIN 30' POLE SPACINGS; INCLUDING GOAB SWITCH TO BE WITHIN 5' - 10' OF ACCESS ROAD READILY ACCESSIBLE

THIRD AVENUE

238TH LANE

30' TYP

PROPOSED 33' EASEMENT ALONG EXISTING ROAD

RAILROAD LINE

INFILTRATION BASIN

72 MODULE TRACKER (4)

96 MODULE TRACKER (24)

UTILITY TRANSFORMER; READILY ACCESSIBLE; UTILITY POI

EQUIPMENT PAD INCLUDING PRODUCTION & UTILITY METERS AND UTILITY AC DISCONNECT READILY ACCESSIBLE; 10' MAXIMUM DISTANCE BETWEEN UTILITY AC DISCONNECT AND XCEL METER

TEMPORARY LAYDOWN AREA
~10000ft²

33% GCR

GAS

RAILROAD LINE

LIME VALLEY ROAD

LEGEND

PARCEL BOUNDARY (PID:40.04.29.200.017)	
50' SETBACK FROM PARCEL BOUNDARY	
WETLANDS (*30', NTS, AREA M DELINEATION REPORT*)	
EXISTING 3-PH OVERHEAD UTILITY LINE (*XCEL, 13.8kV*)	OHW
EXISTING SINGLE-PH UTILITY LINE (XCEL, FEEDER SMT082, 7.97KV)	OHW
PROPOSED OVERHEAD LINE EXTENSION (*60'*)	OHW
PROPOSED NEW UNDERGROUND ELECTRICAL LINE	
ARRAY FENCE LINE (*2300' AND 7.2 ACRES*)	
12' WIDE ACCESS ROAD (*2675'*)	
ACCESS & UTILITIES EASEMENT (33' AROUND ROAD, NTS)	
EXISTING GAS PIPELINE (132' SETBACK, NTS)	GAS
LIMITS OF PERMITTING (DETAILED ON PV7, ~10.86 ACRES)	
NON PARTICIPATING RESIDENTIAL DWELLINGS (750' OFFSET, NTS)	

NEW ENERGY EQUITY

PROJECT ENTITY: MN CSG 2019-57 LLC

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

PROJECT ADDRESS
23759 THIRD AVE
MANKATO, MN 56001

LAT: 44.225
LONG: -93.979

SYSTEM SPECIFICATIONS	
SYSTEM SIZE DC	1.503 MW
SYSTEM SIZE AC	POWER LIMITED TO 1.000 MW
DC/AC RATIO	1.503
AZIMUTH	180°
TILT	+/- 52°
MODULE COUNT	2592
MODULE TYPE	HANWA Q.PEAK DUO XL-G11.3_BFG - 580
MODULE STC RATING	580 W
INVERTER COUNT	9
INVERTER TYPE	SMA SUNNY HIGHPOWER PEAK-3 125kW
INVERTER POWER	POWER LIMITED TO 111.111kW
RACKING	TBD
MONITORING	ALSO ENERGY

DESIGN CRITERIA	
MIN/MAX TEMP.	-26°C / 31°C
WIND SPEED (ASCE 7-10)	105 MPH
BUILDING CATEGORY	I
EXPOSURE CATEGORY	C
GROUND SNOW LOAD	50 PSF
BUILDING HEIGHT	0'-0"

OTHER NOTES

CASE NUMBER 05518220

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REVISIONS

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6			
7			
8			
9			
10			

PROJECT NAME

BOHREREAST CSG

DRAWING TITLE

SITE PLAN

SCALE [1]

1" = 160'

0 1" 2"

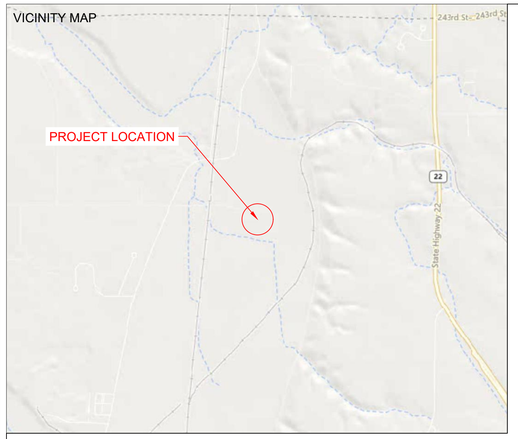
SHEET

PV2

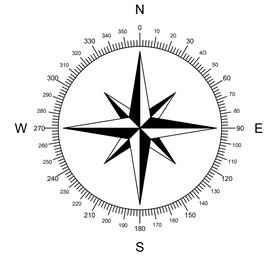
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VICINITY MAP

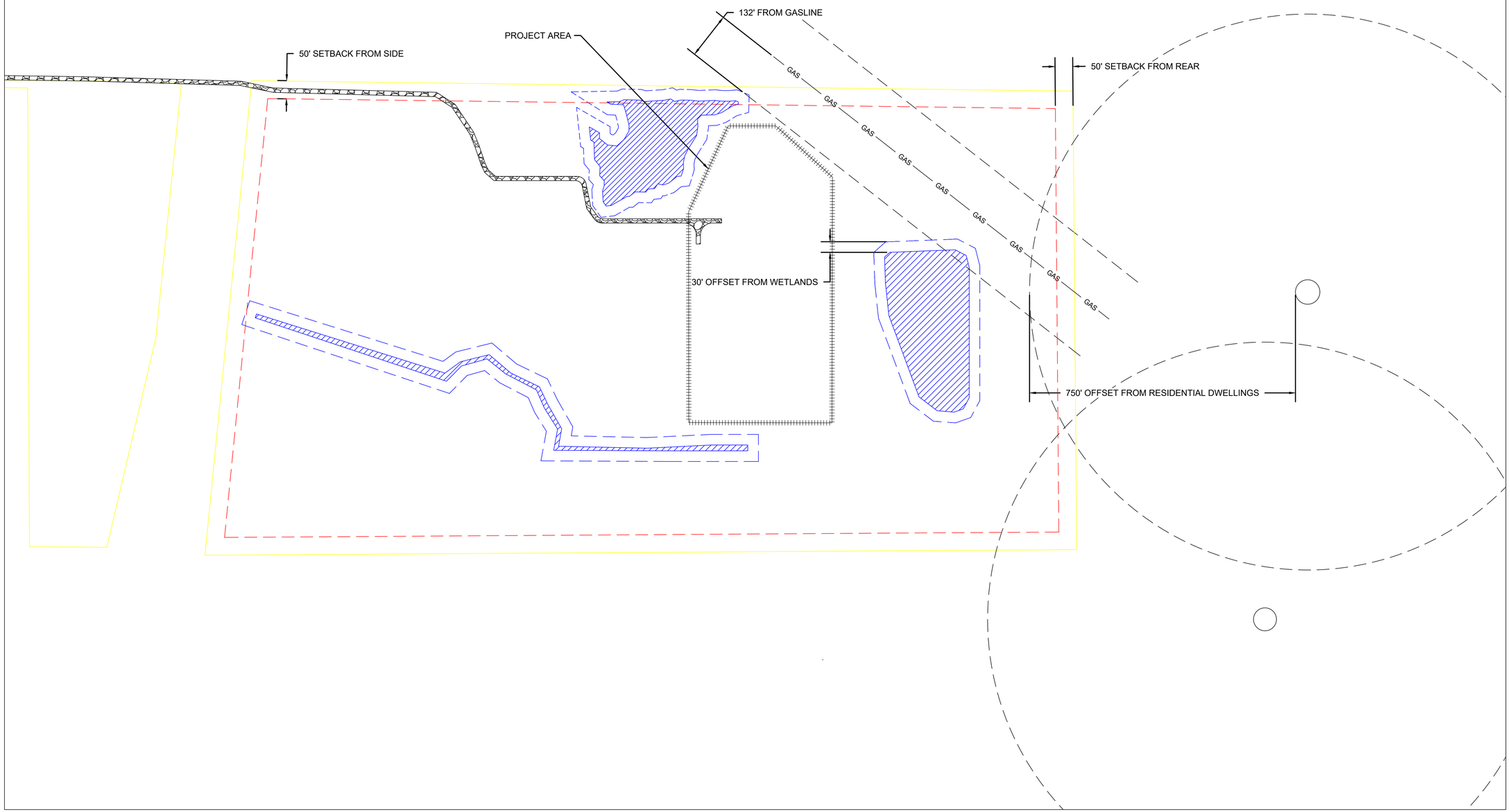


SPACE FOR PE STAMP:



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NEW ENERGY EQUITY

PROJECT ENTITY: MN CSG 2019-57 LLC

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

PROJECT ADDRESS	
23759 THIRD AVE MANKATO, MN 56001	LAT: 44.225 LONG: -93.979

SYSTEM SPECIFICATIONS	
SYSTEM SIZE DC	1.503 MW
SYSTEM SIZE AC	POWER LIMITED TO 1.000 MW
DC/AC RATIO	1.503
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MODULE COUNT	2592
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BUILDING CATEGORY	I
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BUILDING HEIGHT	0'-0"

OTHER NOTES

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5	CUP RESUBMISSION	SP	7/18/2024
6			
7			
8			
9			
10			

PROJECT NAME

BOHREREAST CSG

DRAWING TITLE

SETBACKS MAP

SCALE [1]

1" = 140'

0 1" 2"

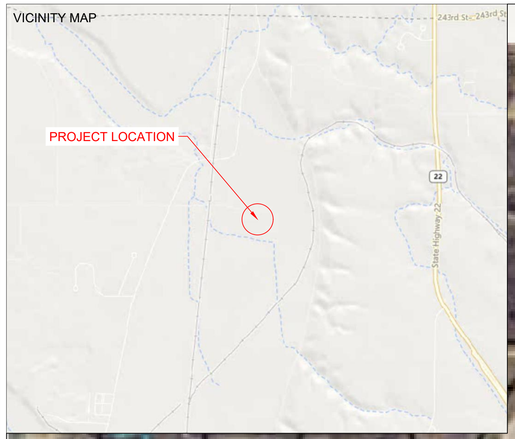
SHEET

PV3

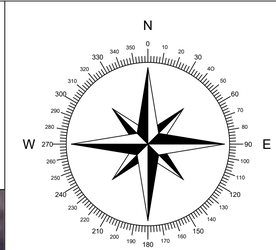
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VICINITY MAP



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PID: 400420501001
UNION PACIFIC RAILROAD COMPANY

R400420400013
VETTER TIMOTHY & BRIAN R

PID: R400420352013
AVAMAR PROPERTIES LLC

R400420400009
ELBERT ARCHIE J & ROSE

R400429200017
BOHRER JOHN

PROJECT AREA

PID: R400429100026
MALMNERG FAMILY FARM LLC

R40042900004
LARSON HENRY

R400429200017
BOHRER JOHN

R400429100007
BOHRER JOHN

R400429200018
CORNEILIUS DAVID ALLEN & PATTI KAY ANN

R400429200015
CORENLIUS DAVID A & PATTI KAY

LEGEND

PARCEL BOUNDARY (PID:400429200017)	

NEW ENERGY EQUITY

PROJECT ENTITY: MN CSG 2019-57 LLC

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

PROJECT ADDRESS
23759 THIRD AVE
MANKATO, MN 56001

LAT: 44.225
LONG: -93.979

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INVERTER TYPE	SMA SUNNY HIGHPOWER PEAK-3 125kW
INVERTER POWER	POWER LIMITED TO 111.111kW
RACKING	TBD
MONITORING	ALSO ENERGY

DESIGN CRITERIA	
MIN/MAX TEMP.	-26°C / 31°C
WIND SPEED (ASCE 7-10)	105 MPH
BUILDING CATEGORY	I
EXPOSURE CATEGORY	C
GROUND SNOW LOAD	50 PSF
BUILDING HEIGHT	0'-0"

OTHER NOTES

CASE NUMBER 05518220

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

24/7 UNESCORTED KEYLESS ACCESS PROVIDED FOR ALL UTILITY ENERGY EQUIPMENT INCLUDING THE METERS AND AC DISCONNECT.

INTERCONNECTION TYPE: SECONDARY

REVISIONS

#	DESCRIPTION	BY	DATE
0	ORIGINAL DESIGN	SP	6/30/2023
1	REMOVED ½ MI FENCE TO FENCE SPACING INCREASE DC SIZE	NGA	7/5/2023
2	CUP PACKAGE	SP	2/9/2024
3	POLLINATOR BUFFER ADDITION	SP	2/20/2024
4	UPDATED WETLAND DELINIATION	SP	6/4/2024
5	CUP RESUBMISSION	SP	7/18/2024
6			
7			
8			
9			
10			

PROJECT NAME

BOHREREAST CSG

DRAWING TITLE

PID MAP

SCALE [1]

1" = 160'

0 1" 2"

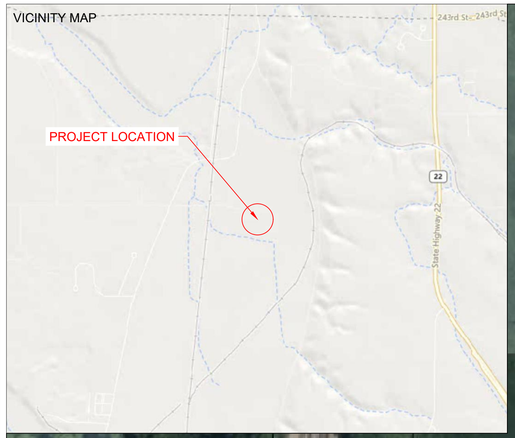
SHEET

PV4

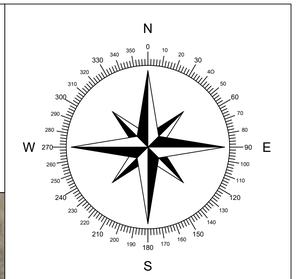
DRAWING SHEETS AND CONTENTS NOT TO BE DISTRIBUTED WITHOUT EXPLICIT WRITTEN CONSENT FROM NEW ENERGY EQUITY LLC.

[1] DRAWING SCALE ACCURATE WHEN THIS PAGE IS PRINTED ON 24"x36" PAPER.

VICINITY MAP



SPACE FOR PE STAMP:



SHEET NOTES:

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



SOIL MAP LEGEND

MAP UNIT SYMBOL	MAP UNIT NAME
85	CALCO SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES OCCASIONALLY FLOODED
1001	ALLUVIAL LAND, OCCASIONALLY FLOODED
35	BLUE EARTH MUCKY SILT LOAM, 0 TO 1 PERCENT SLOPES
160	FIELDON LOAM, 0 TO 2 PERCENT SLOPES
181	LITCHFIELD LOAMY FINE SAND, 1 TO 3 PERCENT SLOPES
321	TILFER SILTY CLAY LOAM
360B	LASA LOAMY FINE SAND, ROCK SUBSTRATUM 1 TO 6 PERCENT SLOPES
1800	CARON MUCKY PEAT

NEW ENERGY EQUITY

PROJECT ENTITY: MN CSG 2019-57 LLC

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

PROJECT ADDRESS
23759 THIRD AVE
MANKATO, MN 56001

LAT: 44.225
LONG: -93.979

SYSTEM SPECIFICATIONS	
SYSTEM SIZE DC	1.503 MW
SYSTEM SIZE AC	POWER LIMITED TO 1.000 MW
DC/AC RATIO	1.503
AZIMUTH	180°
TILT	+/- 52°
MODULE COUNT	2592
MODULE TYPE	HANWA Q.PEAK DUO XL-G11.3_BFG - 580
MODULE STC RATING	580 W
INVERTER COUNT	9
INVERTER TYPE	SMA SUNNY HIGHPOWER PEAK-3 125kW
INVERTER POWER	POWER LIMITED TO 111.111kW
RACKING	TBD
MONITORING	ALSO ENERGY

DESIGN CRITERIA	
MIN/MAX TEMP.	-26°C / 31°C
WIND SPEED (ASCE 7-10)	105 MPH
BUILDING CATEGORY	I
EXPOSURE CATEGORY	C
GROUND SNOW LOAD	50 PSF
BUILDING HEIGHT	0'-0"

OTHER NOTES

CASE NUMBER 05518220

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INTERCONNECTION TYPE: SECONDARY

REVISIONS

#	DESCRIPTION	BY	DATE
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2	CUP PACKAGE	SP	2/9/2024
3	POLLINATOR BUFFER ADDITION	SP	2/20/2024
4	UPDATED WETLAND DELINIATION	SP	6/4/2024
5	CUP RESUBMISSION	SP	7/18/2024
6			
7			
8			
9			
10			

PROJECT NAME
BOHREREAST CSG

DRAWING TITLE
SOIL MAP

SCALE [1]
1" = 60'
0 1" 2"

SHEET
PV5

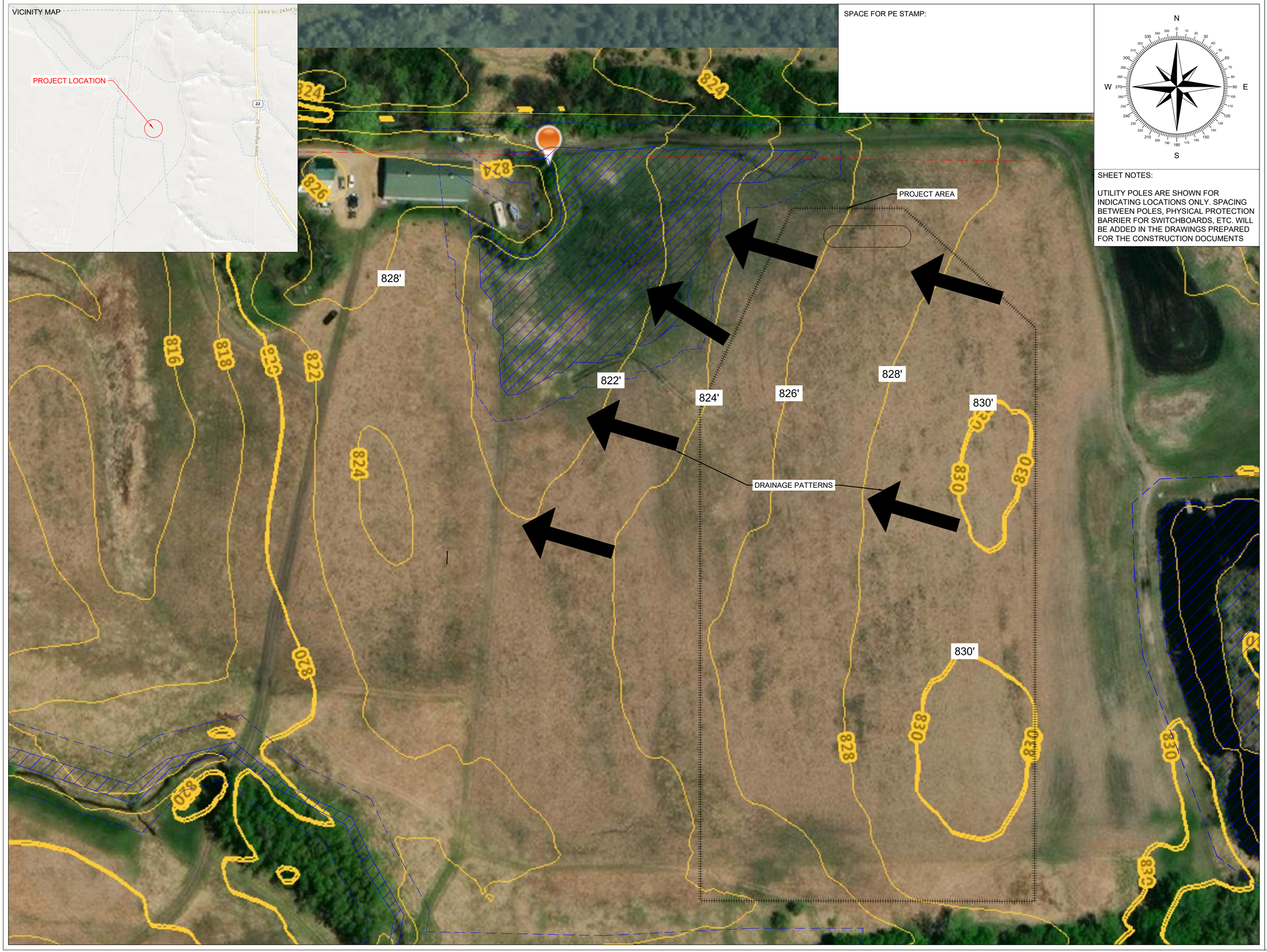
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[1] DRAWING SCALE ACCURATE WHEN THIS PAGE IS PRINTED ON 24"x36" PAPER.

SPACE FOR PE STAMP:

SHEET NOTES:

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NEW ENERGY EQUITY

PROJECT ENTITY: MN CSG 2019-57 LLC

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

PROJECT ADDRESS
23759 THIRD AVE
MANKATO, MN 56001

LAT: 44.225
LONG: -93.979

SYSTEM SPECIFICATIONS	
SYSTEM SIZE DC	1.503 MW
SYSTEM SIZE AC	POWER LIMITED TO 1.000 MW
DC/AC RATIO	1.503
AZIMUTH	180°
TILT	+/- 52°
MODULE COUNT	2592
MODULE TYPE	HANWA Q.PEAK DUO XL-G11.3_BFG - 580
MODULE STC RATING	580 W
INVERTER COUNT	9
INVERTER TYPE	SMA SUNNY HIGHPOWER PEAK-3 125kW
INVERTER POWER	POWER LIMITED TO 111.111kW
RACKING	TBD
MONITORING	ALSO ENERGY

DESIGN CRITERIA	
MIN/MAX TEMP.	-26°C / 31°C
WIND SPEED (ASCE 7-10)	105 MPH
BUILDING CATEGORY	I
EXPOSURE CATEGORY	C
GROUND SNOW LOAD	50 PSF
BUILDING HEIGHT	0'-0"

OTHER NOTES

CASE NUMBER 05518220

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REVISIONS

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4	UPDATED WETLAND DELINIATION	SP	6/4/2024
5	CUP RESUBMISSION	SP	7/18/2024
6			
7			
8			
9			
10			

PROJECT NAME

BOHREREAST CSG

DRAWING TITLE

TOPOGRAPHY & DRAINAGE

SCALE [1]

1" = 50'

0 1" 2"

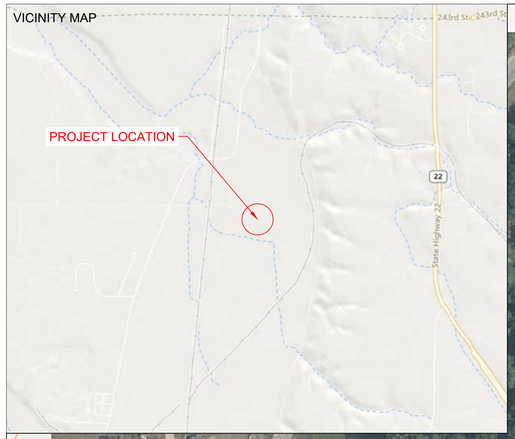
SHEET

PV6

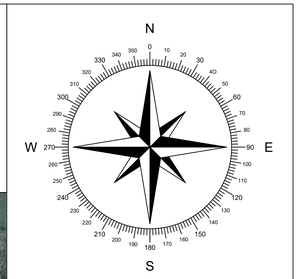
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[1] DRAWING SCALE ACCURATE WHEN THIS PAGE IS PRINTED ON 24"x36" PAPER.

VICINITY MAP



SPACE FOR PE STAMP:



SHEET NOTES:

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LIMITS OF PERMITTING
FOLLOWS ACCESS EASEMENT
~10.86 ACRES

GAS

NEW ENERGY EQUITY

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

PROJECT ADDRESS
23759 THIRD AVE
MANKATO, MN 56001

LAT: 44.225
LONG: -93.979

SYSTEM SPECIFICATIONS	
SYSTEM SIZE DC	1.503 MW
SYSTEM SIZE AC	POWER LIMITED TO 1.000 MW
DC/AC RATIO	1.503
AZIMUTH	180°
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MODULE TYPE	HANWA Q.PEAK DUO XL-G11.3_BFG - 580
MODULE STC RATING	580 W
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OTHER NOTES

CASE NUMBER 05518220

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3	POLLINATOR BUFFER ADDITION	SP	2/20/2024
4	UPDATED WETLAND DELINIATION	SP	6/4/2024
5	CUP RESUBMISSION	SP	7/18/2024
6			
7			
8			
9			
10			

PROJECT NAME
BOHREREAST CSG

DRAWING TITLE
LIMITS OF PERMITTING

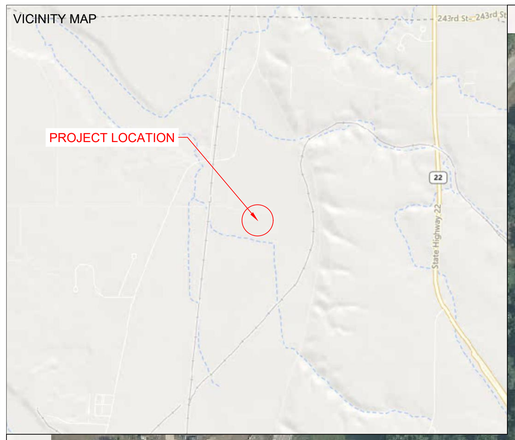
SCALE [1]
1" = 140'
0 1" 2"

SHEET
PV7

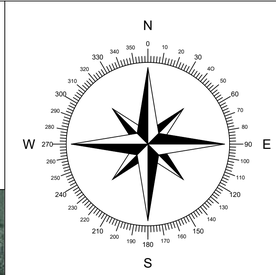
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VICINITY MAP



SPACE FOR PE STAMP:



SHEET NOTES:

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NEW ENERGY EQUITY

PROJECT ENTITY: MN CSG 2019-57 LLC

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

PROJECT ADDRESS
23759 THIRD AVE
MANKATO, MN 56001

LAT: 44.225
LONG: -93.979

SYSTEM SPECIFICATIONS	
SYSTEM SIZE DC	1.503 MW
SYSTEM SIZE AC	POWER LIMITED TO 1.000 MW
DC/AC RATIO	1.503
AZIMUTH	180°
TILT	+/- 52°
MODULE COUNT	2592
MODULE TYPE	HANWA Q.PEAK DUO XL-G11.3_BFG - 580
MODULE STC RATING	580 W
INVERTER COUNT	9
INVERTER TYPE	SMA SUNNY HIGHPOWER PEAK-3 125kW
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RACKING	TBD
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DESIGN CRITERIA	
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OTHER NOTES

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5	CUP RESUBMISSION	SP	7/18/2024
6			
7			
8			
9			
10			

PROJECT NAME

BOHREREAST CSG

DRAWING TITLE

LANDSCAPING PLAN

SCALE [1]

1" = 140'

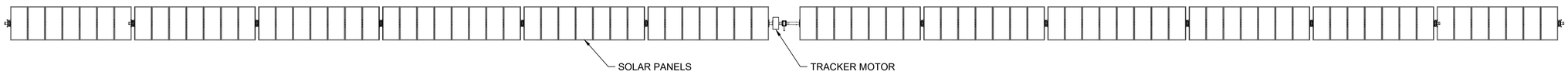
0 1" 2"

SHEET

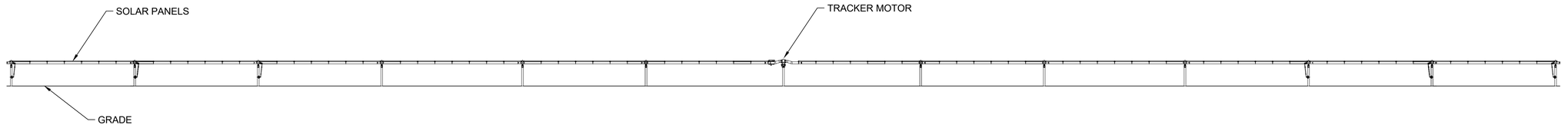
PV8

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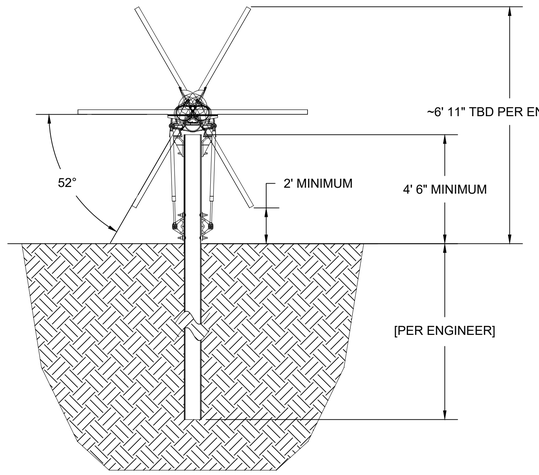
[1] DRAWING SCALE ACCURATE WHEN THIS PAGE IS PRINTED ON 24"x36" PAPER.



1 SINGLE AXIS TRACKER TOP DOWN VIEW
NTS



2 SINGLE AXIS TRACKER EAST-WEST ELEVATION
NTS



3 SINGLE AXIS TRACKER NORTH-SOUTH ELEVATION
NTS

NEW ENERGY EQUITY

PROJECT ENTITY: MN CSG 2019-57 LLC

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

PROJECT ADDRESS	LAT: 44.225
23759 THIRD AVE MANKATO, MN 56001	LONG: -93.979

SYSTEM SPECIFICATIONS	
SYSTEM SIZE DC	1.503 MW
SYSTEM SIZE AC	POWER LIMITED TO 1.000 MW
DC/AC RATIO	1.503
AZIMUTH	180°
TILT	+/- 52°
MODULE COUNT	2592
MODULE TYPE	HANWA Q.PEAK DUO XL-G11.3_BFG - 580
MODULE STC RATING	580 W
INVERTER COUNT	9
INVERTER TYPE	SMA SUNNY HIGHPOWER PEAK-3 125kW
INVERTER POWER	POWER LIMITED TO 111.111kW
RACKING	TBD
MONITORING	ALSO ENERGY

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

OTHER NOTES

CASE NUMBER 05518220

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4	UPDATED WETLAND DELINIATION	SP	6/4/2024
5	CUP RESUBMISSION	SP	7/18/2024
6			
7			
8			
9			
10			

PROJECT NAME

BOHREREAST CSG

DRAWING TITLE

SAT RACKING DETAIL

SCALE [1]

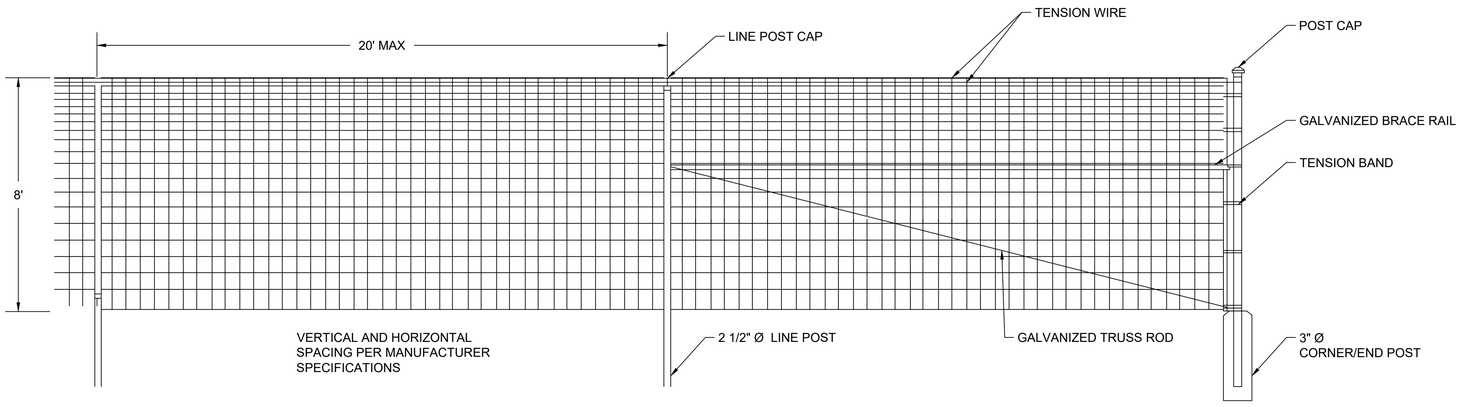
NTS

SHEET

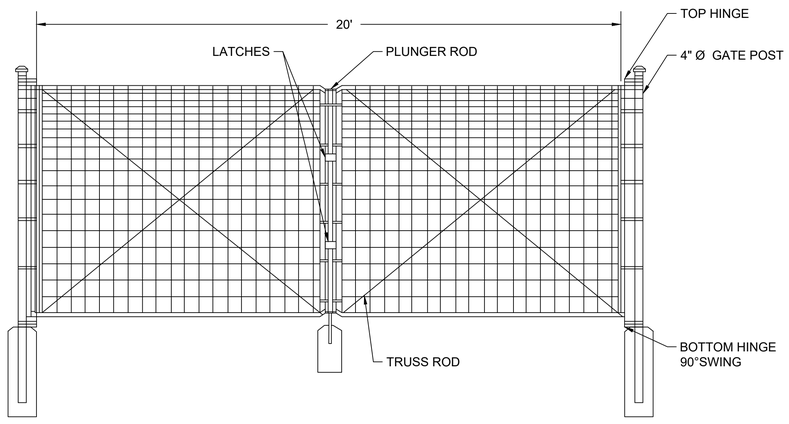
PV9

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[1] DRAWING SCALE ACCURATE WHEN THIS PAGE IS PRINTED ON 24"x36" PAPER.



1 8' FIXED KNOT FENCE
NTS



2 8' FIXED KNOT FENCE GATE
NTS

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

NEW ENERGY EQUITY

PROJECT ENTITY: MN CSG 2019-57 LLC

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

PROJECT ADDRESS
23759 THIRD AVE
MANKATO, MN 56001

LAT: 44.225
LONG: -93.979

SYSTEM SPECIFICATIONS	
SYSTEM SIZE DC	1.503 MW
SYSTEM SIZE AC	POWER LIMITED TO 1.000 MW
DC/AC RATIO	1.503
AZIMUTH	180°
TILT	+/- 52°
MODULE COUNT	2592
MODULE TYPE	HANWA Q.PEAK DUO XL-G11.3_BFG - 580
MODULE STC RATING	580 W
INVERTER COUNT	9
INVERTER TYPE	SMA SUNNY HIGHPOWER PEAK-3 125kW
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RACKING	TBD
MONITORING	ALSO ENERGY

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

OTHER NOTES

CASE NUMBER 05518220

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5	CUP RESUBMISSION	SP	7/18/2024
6			
7			
8			
9			
10			

PROJECT NAME
BOHREREAST CSG

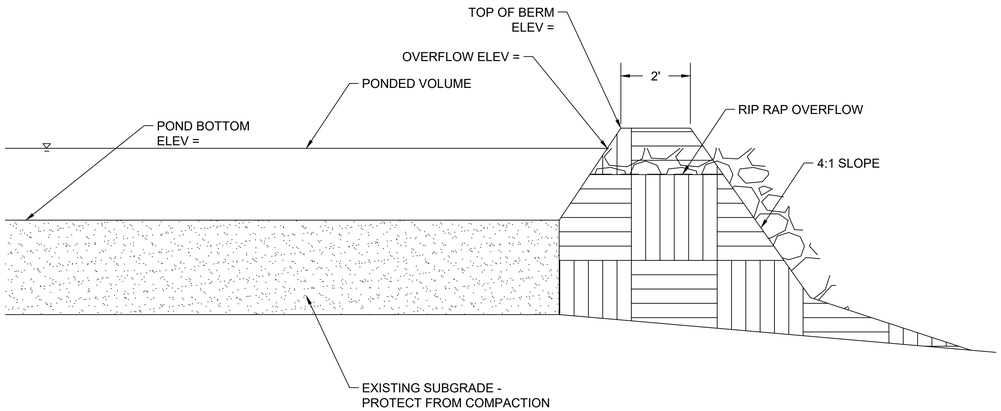
DRAWING TITLE
FENCE DETAIL

SCALE [1]
NTS

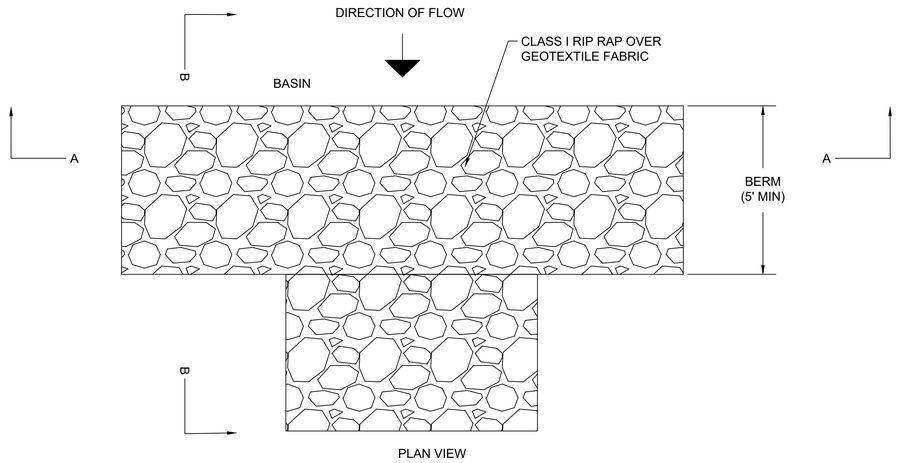
SHEET
PV10

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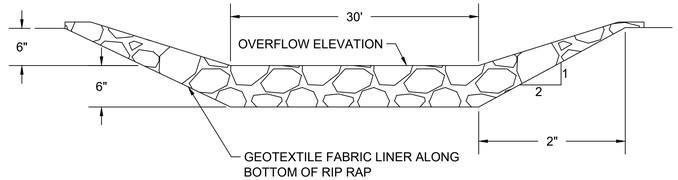
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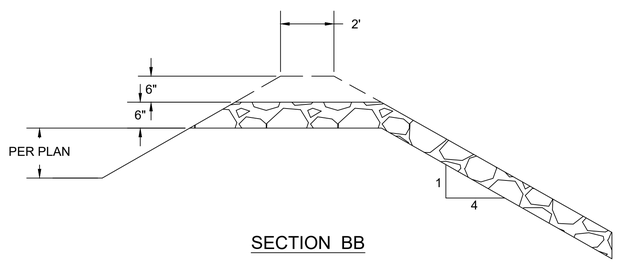
1 INFILTRATION BASIN
NTS



PLAN VIEW



SECTION AA



SECTION BB

2 RIP RAP OVERFLOW
NTS

NEW ENERGY EQUITY

PROJECT ENTITY: MN CSG 2019-57 LLC

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2530 RIVA ROAD, SUITE 200
ANNAPOLIS, MD 21041
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MANKATO, MN 56001

LAT: 44.225
LONG: -93.979

SYSTEM SPECIFICATIONS	
SYSTEM SIZE DC	1.503 MW
SYSTEM SIZE AC	POWER LIMITED TO 1.000 MW
DC/AC RATIO	1.503
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TILT	+/- 52°
MODULE COUNT	2592
MODULE TYPE	HANWA Q.PEAK DUO XL-G11.3_BFG - 580
MODULE STC RATING	580 W
INVERTER COUNT	9
INVERTER TYPE	SMA SUNNY HIGHPOWER PEAK-3 125kW
INVERTER POWER	POWER LIMITED TO 111.111kW
RACKING	TBD
MONITORING	ALSO ENERGY

DESIGN CRITERIA	
MIN/MAX TEMP.	-26°C / 31°C
WIND SPEED (ASCE 7-10)	105 MPH
BUILDING CATEGORY	I
EXPOSURE CATEGORY	C
GROUND SNOW LOAD	50 PSF
BUILDING HEIGHT	0'-0"

OTHER NOTES

CASE NUMBER 05518220

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

24/7 UNESCORTED KEYLESS ACCESS PROVIDED FOR ALL UTILITY ENERGY EQUIPMENT INCLUDING THE METERS AND AC DISCONNECT.

INTERCONNECTION TYPE: SECONDARY

REVISIONS

#	DESCRIPTION	BY	DATE
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6			
7			
8			
9			
10			

PROJECT NAME
BOHREREAST CSG

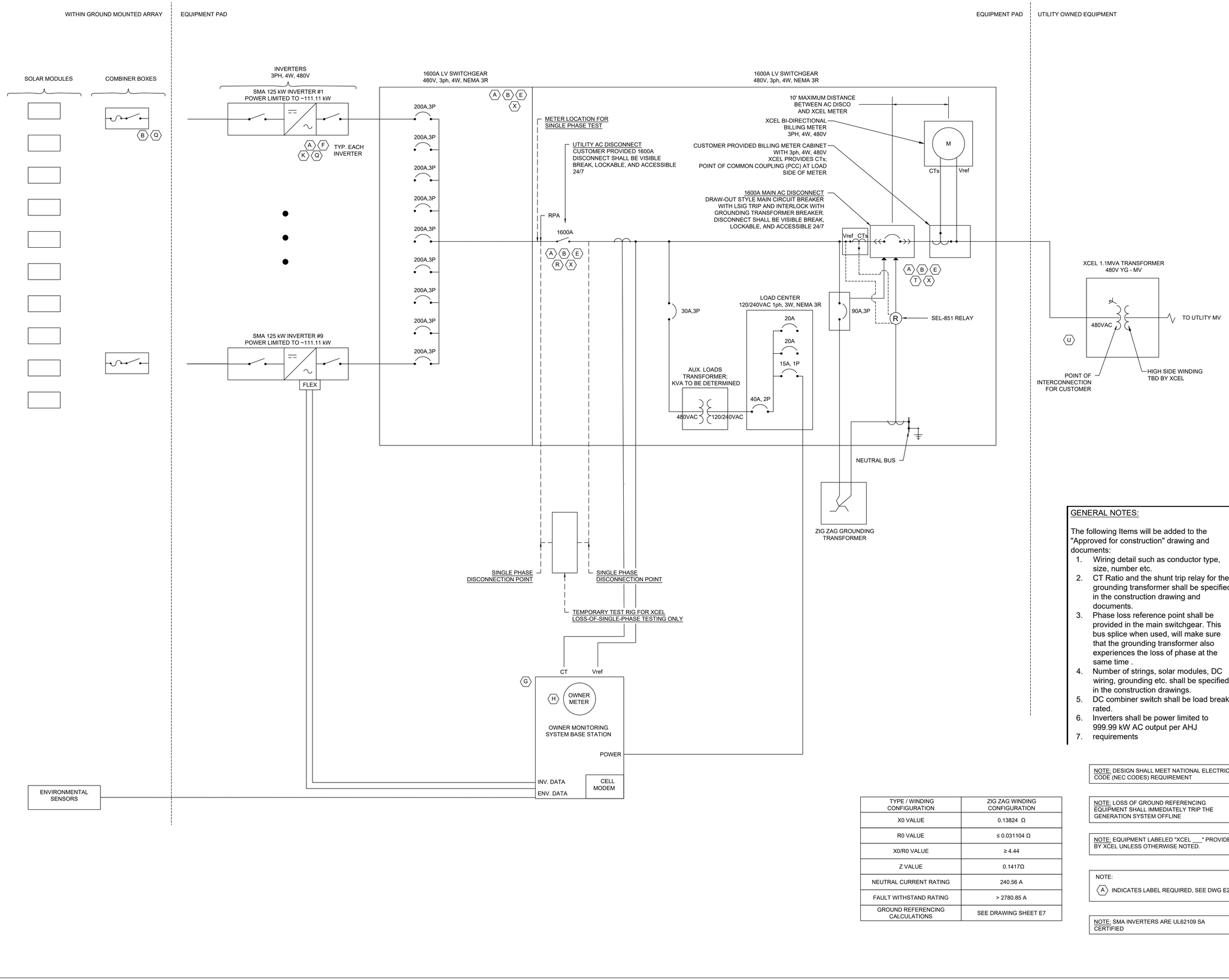
DRAWING TITLE
INFILTRATION BASIN DETAIL

SCALE [1]
NTS

SHEET
PV11

DRAWING SHEETS AND CONTENTS NOT TO BE DISTRIBUTED WITHOUT EXPLICIT WRITTEN CONSENT FROM NEW ENERGY EQUITY LLC.

[1] DRAWING SCALE ACCURATE WHEN THIS PAGE IS PRINTED ON 24"x36" PAPER.



GENERAL NOTES:

The following Items will be added to the "Approved for construction" drawing and documents:

1. Wiring detail such as conductor type, size, number etc.
2. CT Ratio and the shunt trip relay for the grounding transformer shall be specified in the construction drawing and documents.
3. Phase loss reference point shall be provided in the main switchgear. This bus splice when used, will make sure that the grounding transformer also experiences the loss of phase at the same time .
4. Number of strings, solar modules, DC wiring, grounding etc. shall be specified in the construction drawings.
5. DC combiner switch shall be load break rated.
6. Inverters shall be power limited to 999.99 kW AC output per AHJ
7. requirements

TYPE / WINDING CONFIGURATION	ZIG ZAG WINDING CONFIGURATION
X0 VALUE	0.13824 Ω
R0 VALUE	≤ 0.031104 Ω
X0/R0 VALUE	≥ 4.44
Z VALUE	0.1417Ω
NEUTRAL CURRENT RATING	240.56 A
FAULT WITHSTAND RATING	> 2780.85 A
GROUND REFERENCING CALCULATIONS	SEE DRAWING SHEET E7

NOTE: DESIGN SHALL MEET NATIONAL ELECTRIC CODE (NEC CODES) REQUIREMENT

NOTE: LOSS OF GROUND REFERENCING EQUIPMENT SHALL IMMEDIATELY TRIP THE GENERATION SYSTEM OFFLINE

NOTE: EQUIPMENT LABELED "XCEL ___" PROVIDED BY XCEL UNLESS OTHERWISE NOTED.

NOTE:
(A) INDICATES LABEL REQUIRED, SEE DWG E2

NOTE: SMA INVERTERS ARE UL62109 SA CERTIFIED

NEW ENERGY EQUITY

PROJECT ENTITY: MN CSG 2019-57 LLC

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

PROJECT ADDRESS
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MANKATO, MN 56001

LAT: 44.225
LONG: -93.979

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6			
7			
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10			

PROJECT NAME
BOHREREAST CSG

DRAWING TITLE
SINGLE LINE

SCALE [1]
NTS

SHEET
E1

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[1] DRAWING SCALE ACCURATE WHEN THIS PAGE IS PRINTED ON 24"x36" PAPER.

A — 6" × 2½"

⚠ WARNING

ELECTRIC SHOCK HAZARD
TERMINALS ON THE LINE AN LOAD SIDES
MAY BE ENERGIZED IN THE OPEN POSITION

B — 6¼" × 4½"

⚠ WARNING

ARC FLASH AND SHOCK HAZARD
APPROPRIATE PPE REQUIRED

_____ NOMINAL SYSTEM VOLTAGE
_____ FLASH HAZARD BOUNDARY
_____ CAL/CM^2 FLASH HAZARD AT 18"
_____ ARC FLASH PPE CATEGORY
_____ LIMITED APPROACH
_____ RESTRICTED APPROACH
_____ PROHIBITED APPROACH

C — 6" × 2½"

⚠ WARNING

POWER SOURCE OUTPUT CONNECTION
DO NOT RELOCATE THIS OVERCURRENT
DEVICE.

D — 6" × 2½"

⚠ WARNING

THIS EQUIPMENT FED BY MULTIPLE SOURCES. TOTAL RATING OF ALL OVERCURRENT DEVICES EXCLUDING MAIN SUPPLY OVERCURRENT DEVICE SHALL NOT EXCEED AMPACITY OF BUSBAR.

E — 6" × 2½"

⚠ WARNING

TURN OFF PHOTOVOLTAIC AC DISCONNECT
PRIOR TO WORKING INSIDE PANEL

F — 6¾" × 2"

_____ MAXIMUM VOLTAGE
_____ MAXIMUM CIRCUIT CURRENT

_____ MAXIMUM RATED OUTPUT CURRENT OF THE CHARGE CONTROLLER OR DC-TO-DC CONVERTER (IF INSTALLED)

G — 7½" × 1"

SOLAR DATA & MONITORING

H — 7½" × 1"

CUST. GENERATION METER

J — 7½" × 1"

UTILITY BILLING METER

K — 6" × 1½"

XXkW INVERTER #X
_____ OUTPUT CURRENT
_____ OPERATING VOLTAGE

L — 7" × 2"

_____ MAXIMUM OPERATING VOLTAGE

_____ EQUALIZATION VOLTAGE

_____ POLARITY OF GROUNDED CONDUCTOR

M — 6" × 4½"

SOLAR AC COMBINER PANEL #1
_____ OUTPUT CURRENT
_____ OPERATING VOLTAGE

NEUTRAL WIRE IS SIZED PER EGC FOR CURRENT SENSING ONLY. DO NOT CONNECT ADDITIONAL LOADS TO ACCUMULATION PANEL WITHOUT PROPER ENGINEERING SUPERVISION AND PV SYSTEM OWNER'S FORMAL APPROVAL

N — 7¼" × 1½"

WARNING: PHOTOVOLTAIC POWER SOURCE

O — 7¼" × 1½"

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

GENERAL NOTES:

1. Detail such as voltage, ampere, etc. for each labels shall be included in the "Approved for construction" drawing.
2. Calculated values for Arc Flash label will be provided in the "Aprroved for construction" drawing.

P — 7½" × 1"

PV SOLAR AC DISCONNECT

Q — 7½" × 1"

PV SOLAR DC DISCONNECT

R — 6¾" × 2"

UTILITY PV SYSTEM AC DISCONNECT
_____ OUTPUT CURRENT
_____ OPERATING VOLTAGE

S — 6¾" × 2"

PV SYSTEM AC DISCONNECT
_____ OUTPUT CURRENT
_____ OPERATING VOLTAGE

T — 6¾" × 2"

MAIN PV SYSTEM AC DISCONNECT
_____ OUTPUT CURRENT
_____ OPERATING VOLTAGE

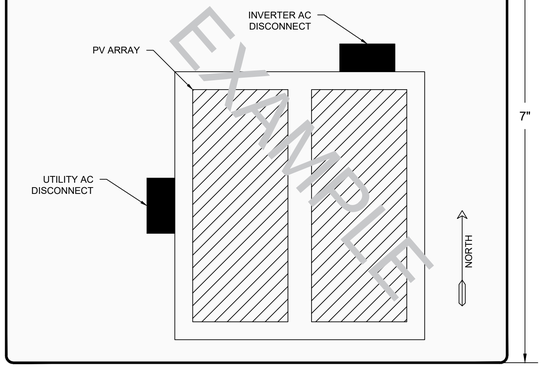
U — 6¾" × 2"

SOLAR SYSTEM POINT OF INTERCONNECTION
_____ OUTPUT CURRENT
_____ OPERATING VOLTAGE

V — 7" × 7"

CAUTION

POWER TO THIS SERVICE IS ALSO SUPPLIED FROM THE FOLLOWING SOURCES WITH DISCONNECTS LOCATED AS SHOWN



NEW ENERGY EQUITY

PROJECT ENTITY: MN CSG 2019-57 LLC

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

PROJECT ADDRESS
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MANKATO, MN 56001

LAT: 44.225
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PROJECT NAME
BOHREREAST CSG

DRAWING TITLE
SYSTEM LABELS A

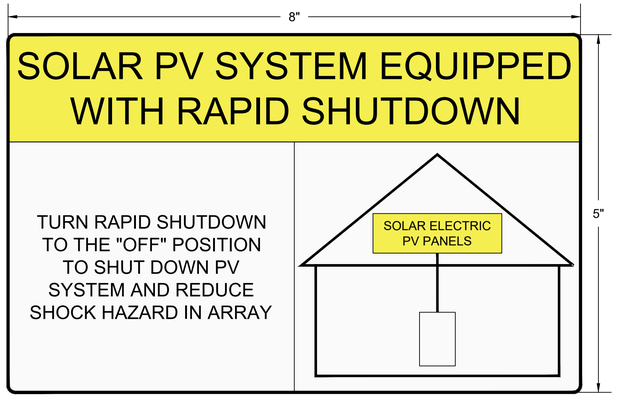
SCALE [1]
NTS

SHEET
E2A

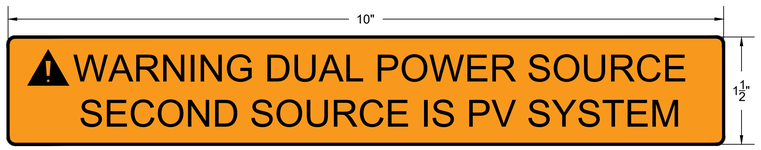
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W



X



GENERAL NOTES:

(1) ALL LABELS MUST COMPLY WITH 2020 NEC 110.21(B):

(2) LABELS AS PROVIDED AND NOTED ON THIS SHEET MEET WARNING, EFFECTIVE WORDING AND COLOR/SYMBOL REQUIREMENTS

(3) LABELS SHALL BE PERMANENTLY AFFIXED TO EQUIPMENT OR WIRING METHOD

(4) LABELS SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED. STICKERS OF PROPER DURABILITY AND ADHESION ARE PREFERRED. REFERENCE ANSI Z535.4-2011 FOR GUIDELINES.

SPECIFIC LABEL NOTES:

A. 2020 NEC 690.13(D)
B. 2020 NEC 110.16
C. 2020 NEC 705.12(B)(1)(b)
D. 2020 NEC 110.27(C)
E. 2020 NEC 110.27(C)
F. 2020 NEC 690.53
G. UTILITY REQUIREMENT
H. UTILITY REQUIREMENT
I. LABEL REMOVED
J. UTILITY REQUIREMENT
K. 2020 NEC 690.54
L. 2020 NEC 690.55
M. LABEL FOR ACCUMULATION PANEL
N. 2020 NEC 690.31(F)
O. 2020 NEC 690.56(C)
P. 2020 NEC 690.13(B)
Q. 2020 NEC 690.13(B)
R. 2020 NEC 690.54
S. 2020 NEC 690.54
T. 2020 NEC 690.13(B)
U. LABEL FOR POINT OF INTERCONNECTION
V. 2020 NEC 705.10 SYSTEM PLACCARD
W. 2020 NEC 690.56(C)(1)
X. 2020 NEC 690.59

EQUIPMENT	LABELS
ACCUMULATION PANELS, COMBINER BOXES, PULL BOXES, ENCLOSURES	A, B, E, M
DC CONDUIT	N
RAPID SHUTDOWN	O, W
ENERGY STORAGE	L
INVERTERS	K
MONITORING EQUIPMENT	G
METERS	H, J, X, Y
DC DISCONNECT	A, F, Q
AC DISCONNECT	A, B, E, O, P, R, S, T, X
POINT OF INTERCONNECTION	A, C, D, U, V, E

NEW ENERGY EQUITY

PROJECT ENTITY: MN CSG 2019-57 LLC

NEW ENERGY EQUITY, LLC
2530 RIVA ROAD, SUITE 200
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LAT: 44.225
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PROJECT NAME
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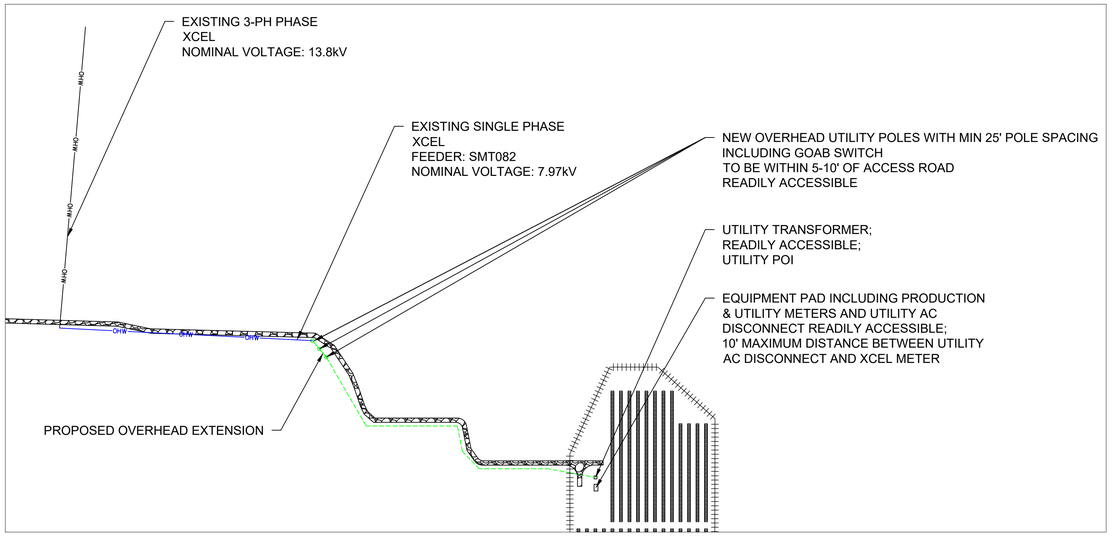
DRAWING TITLE
SYSTEM LABELS B

SCALE [1]
NTS

SHEET
E2B

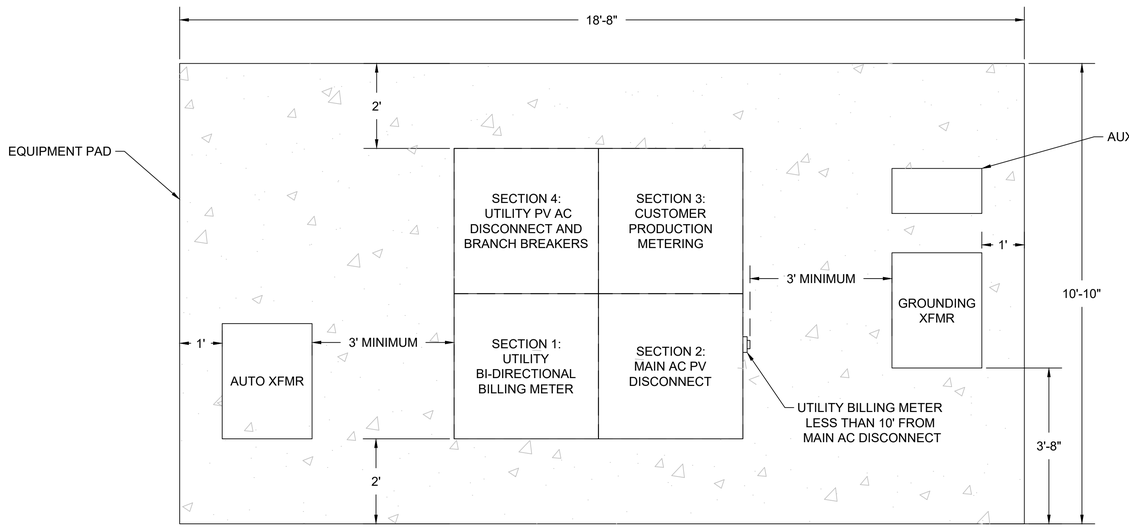
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1 INTERCONNECTION PLAN

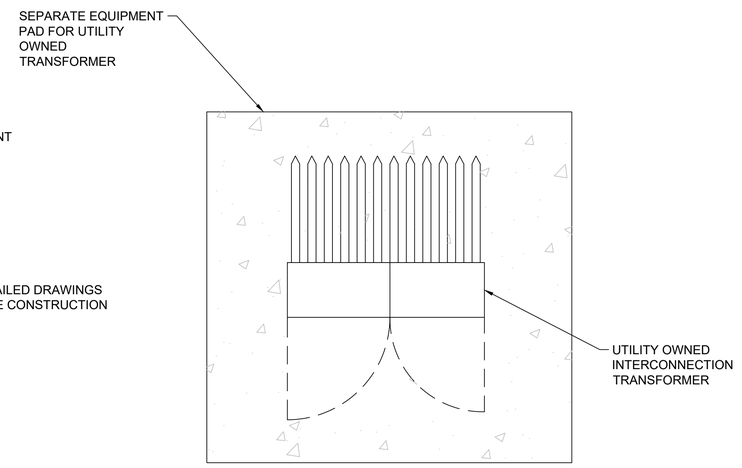
Scale: 1" = 200'



2 EQUIPMENT PAD PLAN

Scale: 3/4" = 1'

NOTE: DETAILED DRAWINGS DUE BEFORE CONSTRUCTION



SHEET NOTES:

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

SPACE FOR PE STAMP:

NEW ENERGY EQUITY

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6			
7			
8			
9			
10			

PROJECT NAME

BOHREREAST CSG

DRAWING TITLE

ELECTRICAL DETAILS

SCALE [1]

AS NOTED

SHEET

E3

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NEW ENERGY EQUITY

AN ALLETE COMPANY

BOHREREAST COMMUNITY SOLAR PROJECT SUMMARY

1 MW COMMUNITY SOLAR GARDEN
23759 Third Ave, Mankato, MN 56001
PID: R40.04.29.100.007

Prepared for:

Lime Township Board
3030 N Airport Rd, Mankato, MN 56001

Prepared by:

MNCSG 2019-57 LLC
C/O New Energy Equity
2670 Patton Rd, Roseville, MN 55113

Introduction and Overview:

MNCSG 2019-57 LLC (Applicant) has prepared this Project Summary for the proposed development, installation, and operation of a 1MW AC community solar photovoltaic facility, including the proposed construction and operation of a permanent access road, interconnection poles and line, (the "Solar Facility") for the purpose of obtaining a Interim Use Permit from the Lime Township Board.

It is the intent of the Applicant to meet or exceed the requirements of all the conditions of the applicable local laws and Zoning without any Variances. Should any misrepresentation or error be found within this project summary and associated exhibits, the Applicant will promptly provide update throughout the permit process.

The Lime Township Ordinance regulates Community Solar Energy Systems under Section 15. The subject property is located within the Rural Conservation zoning district. Pursuant to the Town Zoning Law, a Solar Facility of 1MW, such as this project, is allowed under an Interim Use Permit.
A copy of the completed Zoning Request Application form is attached as **Exhibit A.**

The Solar Facility final design will follow all regulatory, technical, and environmental guidance, requests, rules and requirements of the Utility, County, Involved Agencies, as well as following National Electrical Safety Code, the U.S. Department of Labor and Occupational Safety and Health Standards for the safety and protection of landowners, general public and property.

Interconnection: The Solar Facility will be grid connected to the Xcel service territory, on a distribution level three phase power line that has available hosting capacity and an approved interconnection queue position held by the Applicant. Proof of Project Interconnection Acceptance is attached as **Exhibit B.** The energy generated from the Solar Facility would be distributed to Xcel for daily electrical use by Xcel customers enrolled in the Community Solar Program. The final Solar Facility system size will be determined based on final system design as approved by MN CSG 2019-57 LLC and Xcel.

Table of Contents

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6.	Construction	10
7.	Operations & Emergency Response	13
8.	Decommissioning Plan	18
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10.	Insurance Information	20
11.	Economic Impact Analysis	21
12.	State Code Clarifications	23
13.	Special Use Permit Conditions	23

Exhibit List

	Exhibit Letter
• Zoning Request Application Form	A
• Proof of Project Interconnection Acceptance	B
• Wetland Delineation & Natural Heritage Review	C
• SHPO Review	D
• Site Plan Set	E
• Indicative Equipment Specification Sheets	F
• SGHAT Glare study	G
• Deed	H
• (Reserved)	I
• MN BWSR Habitat Friendly Solar Project Specifications	J
• Draft Site Rules	K
• Draft Emergency Response Plan	L
• Decommissioning Plan Estimate	M
• (Reserved)	N
• Community Solar Site Selection Criteria	O
• About New Energy Equity and Allete	P

1. Design and Interconnection

The proposed location for the Solar Facility is on approximately 7.2 acres of undeveloped land at 23759 Third Ave, Mankato, MN 56001 within the jurisdiction of Lime Township. The parcel is Blue Earth County PID: R40.04.29.200.017.

Applicant has provided a copy of the current Site Plan Set attached as **Exhibit E.** The Site Plan provided has been refined during the development process, working with the landowner, utility company, in consideration of the Town requirements and in recognition of the existing site conditions.

Overview of Solar Facility:

- Grid tied distributed generation system.
- Power generated from a renewable resource free of carbon emissions or any other air pollutants, helping to combat greenhouse gas emissions and reduces our collective dependence fossil fuel.
- The Solar Facility will not use any utility water for electrical power generation.
- Minimal noise generated during solar power generation, none outside project fence, none at night.
- No traffic disturbance during Project operation.
- Minimal visual impact, uniform solar arrays.
- Minimal ground disturbance to the Solar Site, including the surrounding environment.
- Solar panels secured to ground by use of a racking system to minimize ground grading.
- Specified pollinator habitat and fencing to incorporate best practices that ensure the Solar Facility is ready for potential vegetation management via grazing.

Project Description:

The Solar Facility is located on a property is currently used for solar and agricultural purposes.

Description	Total
Land owned by the Property Owner (Acreage)	**84.22**
Solar Facility Permitted Area (Acreage)	**10.82**
Modules Covered Area (Acreage)	**1.99**
Equipment Pads (#)	**3**

The project consists of 2,592 solar modules mounted to a driven pile, single axis tracker system. Both direct current (DC) and alternating current (AC) conductors will be trenched in conduit. After final circuit consolidation at the PV system pad mounted switchboard, the system's voltage will be stepped-up to distribution level at the Xcel owned transformer and interconnected, onto an existing utility distribution circuit.

The racking system manufacturer's engineer will provide certification that the design of the foundations and panels are within accepted professional standards, given local soil and climate controls. The

equipment is designed to withstand wind up to one hundred five MPH and fifty pounds per square foot of snow. Each Solar Facility will have one to two concrete equipment pads, to support interconnection and metering equipment, and above ground typical utility poles to support interconnection of the distribution powerline. Demonstrative equipment specifications are located within the Site Plan Set, and the Indicative Manufacturer Equipment Specification Sheets are attached as **Exhibit F**

The panels will be arranged into rows arranged from North to South. Rows of solar panels will connect to an inverter. The inverters will be connected by directionally bored underground conduit that is housed inside a PVC housing which will be installed two feet below the surface. The conduit will lead to the concrete equipment. The inverters transform the direct current power generated by the photovoltaic system to alternating current power, which is then connected to the existing distribution line at the point of interconnection. All electrical conduits within the array fence will be buried.

Proposed design will not have any adverse effects the neighboring properties, including no odors, dust, gas, smoke, fumes, vibrations, glare, or noise during operation. During construction we intend to follow general good practices and any recommendations from the County or any Involved Agencies. We do not request the county to provide any services or personnel to support the Solar Facility construction or operation.

There will be signage including utility hazard, company information, and contact information on the fence. No exterior lighting is proposed for the project. Due to the facilities size, wildlife corridors are not expected to be needed. The Solar Facility is small in scale and will not impact wildlife movement.

Construction is expected to start in early 2025. The duration of construction is expected to last three to six months, weather dependent.

Purpose:

The overall purpose of the Solar Facility is to provide customers with a cost-effective source of reliable renewable solar electricity. Additional Project objectives include:

- Develop a generation facility that is feasible, quick to construct and easy to operate while providing the local utility and its customers with a cost-effective, cleaner alternative.
- Establish emission-free solar electricity and reduce greenhouse gas (GHG) emissions while avoiding, minimizing, and mitigating the impacts to the environment.
- Generate electricity without utility water supply needs.
- Provide other important economic and environmental benefits to the local utility and the Municipality, including improving local air quality and public health, developing local energy sources, promoting local jobs and diversifying the energy supply; and
- Render solar energy to the community and meet the State's Energy Plan and Clean Energy Standard.

The Applicants preference would be for the residents and businesses of Lime Township to participate in the Applicants Community Solar Program and be the direct beneficiaries of reduced electricity rates.

2. Pre-development Site Conditions

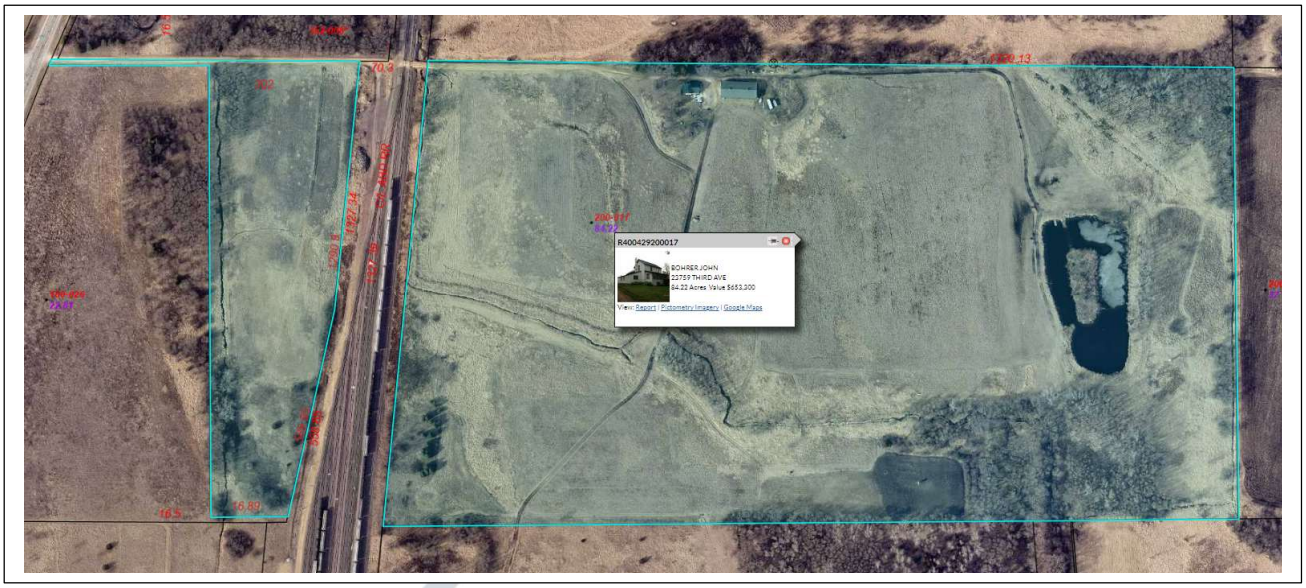


Figure of Aerial depicting Existing Conditions (source Blue Earth County GIS)



Figure of Project Location and adjacent parcels (source Paces.com).



Figure of Topography

Environmental Considerations:

During the planning and development process, the Applicant has completed desktop diligence utilizing internal resources and independent ecological consultants, state, and federal resources to identify Environmental Resources including, but not limited to:

- Significant locations of rare or high-quality wetlands, forests, grasslands, ponds, streams, and other types of habitats, ecosystems, and ecological areas.
- Unique or unusual geological features or landforms.
- Wetlands that are currently mapped under the state's Freshwater Wetlands Act and classified waterbodies.
- Wetlands that are currently mapped by the National Wetlands Inventory
- Animals and plants that are rare in Minnesota, including but not limited to those listed as Endangered and Threatened by the State of MN and/or the U.S. Fish and Wildlife Service.

The applicant involved an independent engineering firm to conduct a level 1 wetland delineation and MN DNR Natural Heritage Information System Review. Reports for both are included in **Exhibit C**. The current Site Plan Set utilizes this combination of data and expertise to avoid and/or minimize impacts, identify as well as identify and implement appropriate setbacks. The Solar Facility as current designed, avoids impact / disturbance of the bed or banks of protected streams, the excavation or placing of fill in navigable waters of the state and/or the U.S., impact of a rare animal or plant, and/or a significant natural community.

The NHIS review listed two State-Listed Species that may be present in the project area. The applicant agrees to comply with the recommendation of the MN DNR provided in the review as well as the MN DNR Rare Species Guide.

The Blue Earth Technical Evaluation Panel met on June 21st to review the submitted report as well as additional aerial imagery. The TEP found the wetland delineation report to be accurate. The property that the project area is on has been visited by the TEP two times in the past for other delineations. This project is to the east of the other delineations and the wetland boundary matches up with the past wetland delineations. Additionally, Blue Earth County did conduct a site visit and verified the boundary.

The TEP also discussed the No-Loss request by the applicant, based off the Bohrereast CSG Site Plan 5.13.24. The TEP determined that access to the project would be from an access road that would not impact the wetland basin identified in the wetland delineation report. The TEP is in concurrence that the project will not impact any wetlands based upon the site plan Bohrereast CSG Site Plan 5,13.24.

The TEP Notice of Decision report is included in Exhibit C

Cultural and Historical:

The applicant has engaged the services of an outside engineering firm to confirm the absence of items of cultural or historical significance on site. This firm has consulted with the MN State Historic Preservation Office (SHPO) to make help make this assessment. A report is included as **Exhibit D**. In addition to that, a field survey will be conducted if a need is indicated by the desktop assessment. It will be complete as soon as possible and prior to application for a building permit. Any cultural resource that would be directly or indirectly impacted, if any, would be subject to further evaluation following SHPO guidelines.

3. Storm Water Management Measures

Indicative stormwater measures are shown on the site plan. A licensed civil engineering firm will determine storm water management measures and a storm water pollution prevention plan ("SWPPP") study will be conducted prior to the submission of the building permit.

Measures will include an analysis of the existing topography, the use of erosion control logs and silt fences where necessary, and establishment a germinated indigenous pollinator friendly vegetative base underneath the project site before construction begins to prevent erosion. The indigenous pollinator friendly seed mix will improve the quality of water and any wetlands nearby by slowing down the velocity of water runoff, improving the permeability of the soil, promoting insect and wildlife habitat, and not using row crop pesticides.

4. Visual Impact Analysis:

Current visual features of the property where the proposed Solar Facility is to be located consist of agricultural fields and rural residence. Adjacent uses consist of railroad lines, former agriculture fields that are now in reserve programs and rural residences.

Harmony with Nearby Residential and Agricultural Property:

- Appearance: Large solar projects have similar characteristics to a greenhouse or other agricultural facilities. Usually no more than 8-12 feet high, solar farms are enclosed by fencing and/or landscaping to minimize visual impacts.

- Noise: Solar projects are effectively silent. Tracking motors and inverters may produce an ambient hum that is not typically audible from outside the enclosure. There is no noise at night.
- Odor: Solar projects do not produce any byproduct or odor.
- Traffic: Solar projects do not attract high volumes of additional traffic as they do not require frequent maintenance after installation. The expected traffic volume is less than a single-family home.
- Hazardous Material: PV modules are constructed with the solar cells laminated with polymers and the minute amounts of heavy metals used in some panels cannot mix with water or vaporize into the air. Product Safety Data Sheets are included in Exhibit D.

Visual resources in the area of the Solar Facility have been affected by past and present actions including mining, active railroads, highway/roadway construction, utility power lines, sewage, utility water pipes and limited commercial and residential development. The existing terrain along with vegetation / tree lines will act as a visual barrier.

Locations of residential, historical or recreation, have been considered during the project planning and development. The combination of a perimeter Solar Facility fence, natural barrier of trees will mitigate views from surrounding roadways. No known inventoried aesthetic resources are located off-site within the potential visual field of the proposed solar arrays.

The project parcel is 84 acres and adjacent to a 57 acre parcel also owned by John Bohrer. There are significant areas of both properties that have dense existing forest that effectively blocks the view of the project from other adjacent parcels. The parcel is positioned well off any public roadways with over 1,400’ to the closest road to the north or east and 2,200’ to the west.

Due to the long distance to adjacent properties and the zoning classification of them, the applicant is not proposing to include any vegetative screening.



Figure of Road Views looking towards proposed Solar Facility Location

Glare:

In general, the concept of efficient solar power is to absorb as much light as possible while reflecting as little light as possible, standard solar panels produce less glare and reflectance than standard window glass. The solar panels will be coated with a anti reflective coating. We have included information in **Exhibit F** that shows the low reflective nature of the solar panels.

Considering the existing terrain and vegetation surrounding the Solar Facility as well anti reflective coatings on the solar panels, roadways, buildings, and flights paths will not be impacted by glare from the panels. A Forge Solar SGHAT glare analysis for several adjacent roads and residences is provided as **Exhibit G**. Due to the 2.6 mile distance from the Mankato Airport aviation glare analysis was not required.

5. Agricultural Soil Preservation:

Agricultural Soils:

When considering the design of this project we have put significant focus on minimizing potential project effects on future agricultural land use. This plan includes measures that have been developed to maintain and / or improve the quality of soil resource with the expectation that the site can be returned to row crop agricultural use at the end of the project operation. The Applicant's goal is to improve and maintain soil health during the operational phase of the project by sustaining soil functions including groundwater recharge, carbon sequestration, water quality and minimizing soil loss due to erosion. The Applicant lease has a 25-year standard operating term with the possibility of 10 years extension.

Allowing the land to rest for 35 years will provide an opportunity for it to regain the benefits of natural organic processes that don't happen when the land is constantly worked with modern farming practices.

Agricultural Soil Protection Practices:

- To the extent practical, the solar facility will be developed without modifying grades.
- Wherever possible facility roads are laid out over existing farm roads.
- While the entire site needs to be accessed during construction, routine access patterns will avoid crossing agriculture soils unless necessary.
- When practical, use lower ground pressure tracked equipment and farm carts to haul construction materials across fields.
- Pile drivers will be track mounted to lessen the soil compaction caused.
- Construction equipment travel will be limited in agricultural fields when soils are visibly saturated.
- Use perimeter roads around fields to avoid crossing fields with heavy equipment such as dump trucks or cement trucks.
- Cover crops and deep-rooted perennial vegetation will be used to promote the development of soil structure and reduce compaction potential.
- When trenches need to be installed across farmland, the topsoil will be segregated from the subsoil and substrata. When the trench is backfilled care will be taken to replace topsoil back at the top of the trench.

Temporary Vegetative Cover:

Vegetative cover is important to promote soil health and minimize erosion losses. Maintaining healthy vegetative cover will help reduce the proliferation of noxious and invasive weeds. The goals of maintaining vegetative cover are:

- Protect soils from erosion losses and promote healthy soil by establishing and maintaining a vegetated surface and healthy root zone during construction and throughout the operational phase.
- Increase organic matter content of the soil to improve soil structure, increase the pool of nutrients available for cycling and promote long term carbon sequestration.
- During construction temporary erosion control will be provided by mulching ad the use of temporary vegetative cover as well as other measures outlined in the storm water management measures.

Permanent Vegetative Cover:

A properly designed and maintained vegetative cover will improve the surrounding agricultural community, surface, and ground water quality, increase biodiversity, and improve onsite soil health. The goal is to have a vegetative community that stabilizes the site to minimize erosion. The permanent vegetative cover is designed to be sustainable with low maintenance and high ecological and agricultural significance. The Applicant will utilize commercially reasonable efforts to contract with a local company to maintain the Solar Facility.

- The seed mix will be chosen to be consistent with Minnesota Statutes section 216B.1642 and using the guidance of the Minnesota State Board of Soil and Water Resources (Minnesota Habitat Friendly Solar Program) for the creation of native insect pollinator habitat, attached as **Exhibit J.**
- During establishment, mowing may be required to initially control undesirable species before they can become established.
- After successful establishment of the permanent vegetative community, mowing may be required for general maintenance and potential weed and shrub control. Mowing will be limited and only used when necessary. Mowing should not occur within 24 hours after a significant rainfall event when the soil would be susceptible to compaction.
- Ground cover within the fenced portion of the array will follow best management practices for the seed type and seasonal conditions but will not grow exceeding 48 inches at any time.

Perennials And Ornamental Grasses:

- Cut back to a few inches in late fall or early spring.

6. Construction:

Typical Process:

The construction process typically takes approximately three to six months, weather dependent to ensure safe site conditions for work personal. A licensed survey team, prior to any commencement of construction, will stake the Solar Site physical boundaries and construction footprints. The survey team will stake the path through any right of ways ("ROWs") for the Interconnection Lines and/or provide a detailed map using GPS coordinates. Construction activities would include installation, operation and maintenance facility construction, road and access construction, Interconnection Line trenching, installation of a buried Interconnection Line, cleanup, and site reclamation.

Temporary construction staging areas, including material laydown, storage, equipment assembly, construction trailers, construction worker parking and portable toilet facilities are anticipated during the duration of construction activities. Construction Operating hours during construction will be 8am-6pm. No water supply will be required.

Applicant will use appropriate temporary (construction-related) erosion and sediment control best management practices through construction. Applicant agrees to the Site Rules attached as **Exhibit K**.

Equipment:

Equipment will be used for construction, including but not limited to passenger vehicles, pickup trucks, excavator, road grader, dump trucks, compactor, trencher, skid steer track loader, piling and drilling machine and forklifts will be on site almost every day throughout the construction process.

Drain Tile:

Applicant will be responsible for maintaining any existing drain tile system underneath the array and replacing any damage to tile occurring during construction, or any time prior to or during

decommissioning.

The applicant has obtained a map of the known existing drain tile lines from the landowner. These drain tile lines will be identified upon the completion of the ALTA survey prior to construction.

Transportation Plan:

Multiple truckloads of equipment, gravel and aggregates will be delivered throughout the construction period. Materials would be sourced locally where available. Construction crews will access to the public roadway as depicted in the Site Plan Set, utilizing a permanent access entrance for operations, and a temporary construction entrance for mobilization and construction. To ensure safe access to the site during and after construction of the Solar Facility, Applicant is committed to incorporating all reasonable road improvements and traffic related recommendations from the Town and Involved Agencies. Construction will involve multiple semi-trailer deliveries. Road access will be controlled for erosion control during construction. Construction crew parking will be located entirely within the site. No additional permanent parking is required unless required by local regulations. Maintenance crews will park within the site access road and turnaround area.

Once installation is complete minimal low frequency access is required, as further described in the Operations and Maintenance Basic Scope of Services.

Legal access to the property across the adjacent rail track parcel owned by Union Pacific Railroad is secured in a deed included as **Exhibit H**. A letter supporting the validity of that crossing easement is also included in **Exhibit H**. The applicant is in process of obtaining a Crossing Agreement with Union Pacific as well.

There is an existing private road used to access the property from Third Ave on the west. This road is located along the centerline of parcels owned by John Bohrer and Avamar Properties LLC. There are existing access easements that total 33' wide that were granted to Union Pacific Railroad Company in 2011. John Bohrer and Avamar Properties have entered into a letter of intent to grant each other reciprocal access easements that are similar in nature to the existing ones granted to Union Pacific.

Temporary Roads and Parking Surfaces:

Existing roads will be utilized as much as possible for temporary access during construction. Temporary roads that are not located along existing roads and that require heavy equipment to cross agricultural fields during construction will use the following:

- Install geotextile matting designed for soil separation over exposed topsoil (or subsoil if topsoil is stripped) surface prior to placing a 4-inch layer of crushed rock for the road surface.
- Complete removal of the temporary access fill and geotextile required for temporary access during construction or decommissioning will be removed upon completion of task.
- The topsoil and subsoil shall be de-compacted by tillage after the roads are removed and seeded as described above.

Waste Materials:

The construction of the Solar Facility will generate a variety of non-hazardous wastes during construction, such as paper, cardboard, plastic, and wooden pallets. Any waste or debris will be the responsibility of the Applicant, gathered in a dumpster that will be removed during construction progress as necessary. A waste management plan will be implemented during construction.

7. Operations & Emergency Response:

General:

The Solar Facility site will operate 7 days a week, generating electricity during daylight hours by a qualified operations and maintenance provider, either internal or external and/or manufacturer warranty services, to be determined (the "Operator").

Service	Description	Frequency
System Monitoring	Operator will monitor the System via the Applicant supplied DAS	Daily
Event Notification	Operator shall create an Event in the Enterprise Asset Management System (Bluepoint) and notify the Asset Manager when: the DAS generates a valid alarm, the System experiences an underperformance condition, or a deficiency is identified onsite during a site visit. Severity: • High Priority events represent conditions that are either causing damage to System or significantly reducing electrical output of System. - Upon Asset Manager approval, truck roll within 24 hours. • Medium Priority events affect System electrical output, but not to a significant degree. - Upon Asset Manager approval, truck roll within 72 hours. • Low Priority events do not impact System electrical output. - Upon Asset Manager approval, truck roll within 7 business days or combined with another previously scheduled visit.	As necessary per occurrence
Diagnostic and troubleshooting	Any diagnostic or troubleshooting work performed on site to develop the Corrective Action Plan, including travel time.	As needed
Equipment Warranty Maintenance and Enforcement	• Operator shall maintain System equipment warranty and perform all preventative maintenance as specified by System equipment manufacturer. • All warranty diagnostic and data collection for the purposes of	As necessary per occurrence

	submitting a system warranty claim included in basic services. • Operator shall perfect and enforce all System warranties and coordinate the corrective actions performed by the manufacturer under the warranty claim. • Operator work performed on System warranty not reimbursed by Manufacturer will be included in Basic Services. • Warranty Maintenance and enforcement that can't be completed due to the good standing and solvency of the System Equipment Manufacturer will be considered Additional Work.	
Warranty Repairs	All labor performed onsite to replace warrantied equipment and return the System to full electrical output.	As needed
Corrective Maintenance	All corrective action, including travel time, performed to complete the Corrective Action Plan.	As needed
Verification of Electric Revenue Meter	Operator shall verify that the electric revenue meter is operational with an accuracy tolerance band of plus or minus 5%. If the Electric Revenue Meter is outside this tolerance band, Operator shall promptly cause the meter to be repaired or replaced pursuant to "Equipment Warranty and Maintenance Enforcement" if considered a warranty claim, or as additional work if not considered a warranty claim.	Once every 5 years
Semi-Annual System Performance Report and Visual and Mechanical Inspection	Will consist of the following: • Performance report (Actual vs Forecast vs Weather adjusted output model) for the report period • List of Events for the report period pulled from Bluepoint • Operator will visit the System between no sooner than five (5) months and no later than seven (7) months after the previous Annual Preventative Maintenance Inspection was completed and complete a visual and mechanical inspection of the System, noting all non-conformances, and documenting through a checklist that will be provided as part of the Semi-Annual System Performance Report.	Once every 6 months
Annual Preventative Maintenance and Performance Report	Will Consist of the Following: TBD	Annually, as mutually agreed upon between Asset Manager and Operator
Annual Report –	Performance report (Actual vs Forecast vs Weather adjusted	Annually, as

Performance Summary	output model) for the report period.	mutually agreed upon between Asset Manager and Operator
Annual Report – Work Order Summary Report	List of Events for the report period from Bluepoint.	Annually, as mutually agreed upon between Asset Manager and Operator
Annual Report – Preventative Maintenance Visual & Mechanical Inspection and Checklist	Visual & Mechanical Inspection checklist which includes inspection and maintenance activities for the following: • General Site Observations • Array • Racking • Tracker (If applicable) • Conduit • Inverters • Accumulation Panel(s) • Disconnect(s) • Transformer(s) • DAS & Weather sensors • Equipment manufacturer warranty maintenance	Annually, as mutually agreed upon between Asset Manager and Operator
Annual Report - Infrared Thermal Imaging	Operator Shall perform infrared thermography of the following: • 25% of system PV modules if handheld IRT is performed. Shall otherwise be 100% completed by aerial drone as part of "Annual Report – System Performance Data" • Hand-held IRT imaging of Inverter enclosures, combiner boxes, accumulation panels, disconnects, and transformers.	Annually, as mutually agreed upon between Asset Manager and Operator
Annual Report - System Performance Data	Operator shall collect one of the following: • Perform I/V curve tracing on a random 25% of the PV Module strings. Comments will accompany any results that suggest there is a problem • Perform Aerial Drone Infrared Thermography of the entire System array. Thermography will be performed at a minimum of 500 w/m2. Drone analysis will be provided to the customer as both a printout and an interactive online report.	Annually, as mutually agreed upon between Asset Manager and Operator
System Performance Analysis	Any System performance analytics, configuration or assessment initiated by Asset Manager will be considered additional work.	As needed

General Requests for Information	Additional System tests, written reports, site visits and other related activities as requested by Asset Manager that are outside of the services detailed in this agreement.	As needed
Solar PV Module Cleaning	Cleaning of the PV Modules as requested by Asset Manager. Operator shall monitor and recommend any special cleaning needs that may be required as a result of System conditions.	As needed
Minimum Vegetation Management and Snow Plowing	Operator shall establish a timeframe for cutting the grass and maintaining other plant material growth in order to maintain the System to the Asset Manager's requirements. Upon Asset Manager's approval, Operator will execute the approved mowing plan.	As needed, estimated 3 x vegetative management trips per year

Emergency Response:

Solar Facility is monitored 24 hours a day, 365 days a year remotely through a computer data acquisition system (DAS) so that appropriate personal can be dispatched to investigate potential problems.

In the event of an onsite emergency, an AC Generator Disconnect (Isolation) Switch provides 24-hour/7-day unlimited access and manual control. The disconnect switch must be rated for the voltage and current requirements of the installation. Disconnecting means shall be rated to interrupt the maximum generator output; meet applicable Underwriters Laboratories (UL), American National Standards Institute (ANSI), and IEEE standards; and shall be installed to meet the NEC and all applicable local, state, and federal codes. It will be clearly marked with permanent larger letters: "Generator Disconnect Switch".

A draft emergency response plan is attached as **Exhibit L.**

Site Security:

Limiting access to the Solar Facility to non-authorized persons is necessary both to ensure the safety of the public and to protect equipment from potential theft and vandalism. The perimeter of the Solar Facility will be fenced with an approximately eight-foot-high knotted wire fence. Surveillance methods such as security cameras, motion detector, or heat sensors may be installed at locations along the Solar Facility boundary as determined necessary. No lighting will be installed.

8. Decommissioning Plan:

General:

The intent of the decommissioning work will be to fully remove the solar facility, dispose of any components, and restore the site to a grassy field.

Applicant has contractual obligations to the landowner regarding decommissioning arising out of Section 4.4 of the lease. These obligations include removal of all equipment, timelines for removal, owner's rights to remove the solar facility upon failure by the Project Company, and establishment of a monetary security for removal in the form of a bond, escrow, or letter of credit.

The purpose of the security is to ensure there is sufficient money available to return the project site to an appropriate condition at the end of the project's useful life, or earlier. The County will be the designated beneficiary of the fund and will be provided a copy of the document establishing the security before construction commences.

The decommissioning process for the Solar Facility is described below:

Summary Statement of Expected Decommissioning Cost:

The expected residual value of the solar facility is the difference between the removal/restoration cost and the salvage value. The decommissioning cost to remove the solar PV facility and reestablish the property back to a grassy field is not expected to exceed a net expenditure of decommissioning cost.

Basis of Decommissioning Plan Narrative:

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

Civil Infrastructure

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

Structural Infrastructure

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

Electrical Infrastructure

- PV modules to be recycled. Assumption is that the modules are 72 cell polysilicon modules, having an approximate dimension of 6' x 3' in dimension.
- Switchgear including transformers will be removed from their respective concrete pads and recycled or returned to the manufacturer.
- Copper wiring will be dug up (if required) and recycled.
- Aluminum wiring will be dug up (if required) and recycled.
- On site riser or interconnection poles shall be removed.
- String inverters/combiner boxes are no more than 130 lbs. in weight and not more than 40" x 25" x 12" in dimension. A two-person crew can dismantle a string inverter and recycle the components.

- Transformers are pad mounted and weigh approximately 8,500 pounds. These are typically dry type transformers, so there is no need for any oil disposal.
- Underground power and communication cables can be removed by excavating with a power trencher or excavator.

Recycling PV Modules:

Recycling solar modules have environmental benefits such as:

- Creating a useful and sustainable method of disposal.
- Providing raw materials for repurposing and reprocessing.
- Recovering up to 90% of the photovoltaic glass and up to 95% of the semiconductor material necessary for further production.
- Recycling of rare earth metal.

Schedule of Removal and Restoration Costs:

The Decommissioning Plan Estimate (the "Engineer's Estimate) is provided in **Exhibit M.** Costs associated with this Engineers Estimate represent a "turnkey" operation for a general contractor to be hired for this work, including permits, mobilization, contingency, etc. Haul costs assume a maximum distance of 60 miles between the project and nearest disposal or recycling facility. "The service life of the facility is assumed to be 35 years. All dollar amounts are in net- present-value. It is assumed that all values will inflate/deflate at consistent with baseline inflation, therefore, the net-present-value comparison of removal cost to salvage value will remain relevant at the end of the service life.

9. Fire Prevention:

This solar array will meet the requirements of the 2012 International Fire Code, specifically to sections 605.11 – 605.11.2 for clearance, markings, and location of underground DC conductors. The Solar Facility will meet the international Building Code (IBC), National Electric Code (NEC), and local electric and fire code. NEC code is produced by the National Fire Protection Agency (NAPA) with safety of the public, contractors, and firefighters as the entire objective. Solar specific Code has been included in the NEC for over a decade. Safety is paramount in our solar PV facilities, as we need them to function optimally for their entire system life.

The local Fire Department will have 24 hour access to the site.

10. Insurance Information:

Applicant's or its successor will provide a certificate of insurance meeting the following requirements:

- Insurance provider must be rated B+ or better by "Best."
- Limits of $2,000,000 for each occurrence.
- Coverage against claims for damages resulting from bodily injury, wrongful death, and property damage arising out of the Interconnection Customer's ownership and/or operating of the Generation System under the interconnection agreement.
- Contain a severability of interest clause of cross-liability insurance.

11. Economic Impact Analysis:

Benefits Summary:

The development of the typical Solar Facility invests approximately $2 million dollars for every megawatt of AC capacity of the Solar Facility:

- Energy supply cost savings to subscribers, which will result in an average savings of 10% off the supply of energy on a subscribers existing energy bill. The estimated annual consumer savings is $30,000 per megawatt AC capacity of the facility. The Applicants preference would be for the residents and businesses of Chippewa County to participate in the Applicants Community Solar Program and be the direct beneficiaries of reduced electricity rates.
- Generate lease dollars for the host landowner annually for the life of the Solar Facility.
- According to the Lawrence Berkeley National Laboratory an acre of solar panels producing zero-emissions electricity saves between 267,526 to 303,513 pounds, or 121 to 138 metric tons, of carbon dioxide per year compared to using a fossil fuel generation. By comparison, according to the EPA, the average acre of forest in the United States sequesters 0.84 metric tons of carbon dioxide per year. Thus, an acre of solar panels reduces approximately 144 to 166 times more carbon dioxide per year than an acre of forest.
- Create or sustain approximately 35 full-time-equivalent on site full-time temporary construction jobs and 2 permanent operations positions.
- The project will incur fees for required applications and construction-related permits.
- No capital expenditures will be required by the City or County to support the project due to the nature of solar facilities and the minimal impact to the regional infrastructure.

Economic Impact Overview:

This Solar Facility is a planned MN Community Solar project. Minnesota's Community Solar program is an effort, established in 2014, which seeks to make solar easier and more affordable through community-driven initiatives.

Community solar is a way of organizing the production and distribution of electricity from solar power.

Community solar refers to local solar facilities shared by multiple community subscribers who receive credit on their electricity bills for their share of the power produced. Community solar facilities provide a means for apartment dwellers, and others living in households without sufficient space to install their own solar panels to use this cleaner source of energy. Some facilities may have an 'anchor' customer who purchases 40% or more of the electricity, such as a business or other large user of electricity.

Development of community solar facilities will generate economic impacts in three distinct phases, each with their own unique set of economic impacts: (1) the development phase, when interested landowners are identified, diligence, planning and development of the Solar Facility occurs (2) the construction phase, when the Solar Facility is being created and being connected to the electrical grid and customers are being recruited; and (3) during the operation phase, when the Solar Facility is fully operational, and customers are receiving electricity.

Understanding Economic Impact:

An "economic impact" is a change in the employment, income, and output in an area based on an activity that affects the local economy, such as construction and operation of community solar facilities. Economic impact includes three components: direct impacts, indirect impacts, and induced impacts.

The direct impacts include the changes in employment, worker income, and total economic activity directly related to the community solar facilities.

- During the development phase these direct impacts will include outreach and identification of lease landowners, development payments received by owners of land where the facilities are desired to be studied, payments to the utility company to apply for and study the locations potential for viability, payments to architectural, engineering and related services, advertising, public relations and related services, real estate services, county clerk's office, permitting and environmental consulting services.
- During the construction phase these direct impacts will include site preparation, installation of solar panels and other equipment onsite, upgrading of electrical lines and equipment to get the electricity produced into electrical networks, and advertising for and recruiting customers.
- During the operation phase, these direct impacts will include operation, maintenance, and repair of the facilities; advertising for and recruiting customers; lease payments received by owners of the land where the facilities are located; and savings accrued by customers of the facilities.

Indirect impacts measure the effect of these direct impacts on the businesses in the economy who sell products or services to the community solar facilities, such as equipment, accounting and legal services, and advertising.

The induced impacts are the effects resulting from changes in spending by employees of the community solar facilities, of employees in other businesses indirectly affected by these facilities, by landowners receiving lease payments, and by consumers who spend the money they saved by subscribing to community solar.

- For example, if employees at an advertising company work more hours because their firm was hired to work on community solar facility-related activities, they'll have more money to spend on things like groceries, clothing, local entertainment, and other household items.

The indirect and induced effects, which measure how money ripples through other sectors of the economy, is also referred to as the Economic Multiplier Effect. These impacts can be measured in three different ways: (1) employment, which reflects the change in full-time equivalent jobs as a result of the community solar facility construction and operation; (2) labor income, which measures the increase in wages, salaries and other remuneration due to these job gains; and (3) output, which reflects the total change in economic activity, including the value of sales and changes in inventory.

12. State Code Clarifications

Intentionally Omitted

13. Interim Use Permit Conditions

The Applicant has compiled this preliminary Project Summary with, to the best of its knowledge, based on the information currently available. The present document is subject to change and may be modified if new information becomes available and as design drawings are finalized prior to construction. The information contained in this document is preliminary and not intended to describe all the relevant information of the Project and is qualified in its entirety by the final application and site plans.

Prior to issuance of a building permit, the Applicant will adhere to the following typical conditions:

- Conduct additional research, studies and/or investigation, including but not limited to Wetlands, ESA, Geotechnical, Title, ALTA and final engineering to fully develop the final Site Plan Set and SWPPP.
- Provide decommissioning bond or surety as required by the local law governing the Interim Use Permit based on the final system size.
- Hold a preconstruction meeting with municipal staff, outside Involved Agencies (as applicable), Project Owner and Project Contractors.

At the request of the Town, additional information can be provided before issuance of the building permit.

We sincerely appreciate all the help we have received from your staff with regard to our application and we look forward to collaborating with you further to develop a great project that we can all be proud of.

EXHIBIT A

City of Mankato
Zoning request application

10 Civic Center Plaza ~ PO Box 3368, Mankato, MN 56002-3368
Phone 311 or 507-387-8600 FAX (507) 387-6845

Primary contact (Check one)	Site address and legal description: 23759 Third Ave, Mankato, MN 56001,(See attached for Legal Description)			
☑	Applicant MN CSG 2019-57 LLC	Address 2530 Riva Rd, Suite 200, Annapolis, MD 21041	Email briank@newenergyequity.com	Phone (612)469-3356
☐	Owner John Bohrer	Address 103 Crestwood Dr, North Mankato, MN 56003	Email johnbohrer6311@yahoo.com	Phone (507)382-7362
☐	Contractor	Address	Email	Phone
☐	Architect/Designer	Address	Email	Phone
☐	Engineer	Address	Email	Phone
☐	Developer New Energy Equity	Address 2530 Riva Rd, Suite 200, Annapolis, MD 21041	Email development@newenergyequity.com	Phone (443)267-5012

☑	**Conditional Use Permit (CUP)** (3104)	Include the items listed below.	$335 plus $2 per notice
☐	**Planned Unit Development (PUD)** (3154)	Include the items listed below.	$335 plus $2 per notice
☐	**Variance residential** (3132)	Indicate variance requested and practical difficulty making variance necessary. Also furnish a site plan on 8 ½" X 11" paper showing size of lot, size of structure, and distance from lot lines. Site plan shall be drawn to a tenth scale (1:10, 1:20, etc.)	$95 plus $2 per notice
☐	**Variance – non-residential** (3133)	Indicate variance requested and practical difficulty making variance necessary. Also furnish a site plan on 8 ½" X 11" paper showing size of lot, size of structure, and distance from lot lines. Site plan shall be drawn to tenth scale (1:10, 1:20, etc.)	$325 plus $2 per notice
☐	**Rezoning** (3108)	Please contact zoning administrator for submittal requirements.	$335 plus $2 per notice
☐	**Ordinance Amendment**	Please contact zoning administrator for submittal requirements.	
☐	**Certificate of Design Compliance (CDC)** (3152)	Include items listed below.	$335 plus $2 per notice
☐	**Combined CUP and CDC** (3156)	Include items listed below.	$670 plus $2 per notice

Zoning request fee: Payable with application (make check payable to City of Mankato):
Hearing notice fee: Payable prior to Planning Commission/Administrative Hearing: _____ notices X $2/notice = $ _____.
Public hearing notices are billed to applicant and **must** be paid prior to the Planning Commission/Administrative Hearing.

Summary of request - Attach additional sheets if necessary.

Interim Use Permit for 1MW Community Solar Garden - See attached

Signature of contractor or authorized agent

Dean Eastlake

Dean Eastlake (Feb 20, 2024 15:08 EST)

Date

02/20/2024

Signature of owner (if not same as above)

John Bohrer

John Bohrer (Feb 19, 2024 16:35 CST)

Date

02/19/2024

☐ a. The location, dimensions, floor area, type of construction and
☐ b. Floor plan showing specific uses within the building.
☐ c. The number, the size and type of dwelling units in each building, and the overall dwelling unit density.
☐ d. The proposed treatment of open spaces and the exterior surfaces of all structures, with sketches of proposed landscaping and structures, including typical elevations.
☐ e. Architectural graphics, including typical floor plans and elevations, profiles, and cross-sections.
☐ f. The number, location, and dimensions of parking spaces and loading docks, with means of ingress and egress.
☐ g. The proposed traffic circulation pattern within the area of the development, including the location and description of public improvements to be installed, including any streets and access easements.
☐ h. The location of all fire hydrants on the property and the location of all fire hydrants within one-hundred fifty (150) feet of the property.
☐ i. The location and dimensions of all accesses for fire and emergency vehicles.
☐ j. Statement of whether or not the building will be sprinkled and fire flow availability for the sprinkler system and fire hydrants.
☐ k. The location, intensity and design of exterior lighting.
☐ l. The location and purpose of any existing or proposed dedication or easement.
☐ m. The general drainage plan for the development tract.
☐ n. The location and dimensions of adjacent properties, abutting public right-of-ways and easements on the property.
☐ o. Significant topographical or physical features of the site including existing trees.
☐ p. Wetland delineations for all wetlands on the site.
☐ q. The location and proposed treatment of any historical structure or other historical design element or feature.
☐ r. Utility service plans (water, sewer, storm).
☐ s. Landscaping plans.

Note: All plans shall be drawn to a tenth scale (1:10, 1:20, etc.)

Note: All plans shall be drawn to a tenth scale (1:10, 1:20, etc.)

For staff use

Date received:

Application number: CY___ ___-___ ___

Parcel ID No.: R40.04.29.200.017

The Northeast Quarter of the Northwest Quarter, except railroad right of ways, and the Northwest Quarter of the Northeast Quarter, both in Section 29, Township 109, Range 26, excepting from said Northwest Quarter Northeast Quarter that part of said Northwest Quarter Northeast Quarter described as, beginning at a point 1315.8 feet South of the Northeast corner of Section 29-109-26, thence West 1808.8 feet to the East line of the Right of Way of the Chicago & Northwestern Railway, thence southwesterly along the said Right of Way line, 1264.6 feet, thence East 1692.3 feet to the East line of said Section 29, thence North along the section line 1249.8 feet to the place of beginning.

A strip of land one (1) rod wide now used as a road, extending from East to West upon, over and across the North side of the Northwest Quarter of the Northwest Quarter (NW1/4 NW1/4) of Section 29, Township 109 North of Range 26 West, beginning at or near the Northeast corner of said NW1/4 NW1/4 of Sec. 29, and thence West along or near the North line of said NW1/4 NW1/4 of said Sec. 29, to the public highway known as the Mankato and St. Peter Road.

The East 302.00 feet of the Northwest Quarter of the Northwest Quarter of Section 29, Township 109, Range 26, Blue Earth County, Minnesota, except the South 16.5 feet thereof.

Except therefrom: Part of the Northwest Quarter of the Northwest Quarter and part of the Northeast Quarter of the Northwest Quarter of Section 29, Township 109 North, Range 26 West, Blue Earth County, Minnesota described as: Commencing at the Southeast corner of said Northwest Quarter of the Northwest Quarter; thence North 89 degrees 41 minutes 42 seconds West (bearings are based on Blue Earth County Coordinates NAD83, 1996 Adjustment) on the south line of said Northwest Quarter of the Northwest Quarter, a distance of 78.00 feet; thence North 12 degrees 41 minutes 56 seconds East, a distance of 16.89 feet to the north line of the south 16.5 feet of said Northwest Quarter of the Northwest Quarter and the point of beginning; thence North 12 degrees 41 minutes 56 seconds East, a distance of 589.95 feet to the westerly right of way of the abandoned Chicago, Milwaukee, St. Paul and Pacific Railroad Company; thence South 05 degrees 40 minutes 37 seconds West on said westerly right of way, a distance of 558.85 feet to the east line of said Northwest Quarter of the Northwest Quarter; thence South 00 degrees 11 minutes 26 seconds West on said east line, a distance of 19.81 to the north line of the south 16.5 feet of said Northwest Quarter of the Northwest Quarter; thence North 89 degrees 41 minutes 42 seconds West on said north line, a distance of 74.34 feet to the point of beginning.

BohrerEast Solar Site Permit Application Form

Final Audit Report 2024-02-20

Created:	2024-02-19
By:	Brian Keenan (briank@newenergyequity.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAAXWVkO9omOYKIx0zrt_TxsFZTT0V4_eFw

"BohrerEast Solar Site Permit Application Form" History

Document created by Brian Keenan (briank@newenergyequity.com)
2024-02-19 - 9:47:23 PM GMT

Document emailed to John Bohrer (johnbohrer6311@yahoo.com) for signature
2024-02-19 - 9:47:27 PM GMT

Document emailed to Dean Eastlake (deastlake@newenergyequity.com) for signature
2024-02-19 - 9:47:27 PM GMT

Email viewed by John Bohrer (johnbohrer6311@yahoo.com)
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Document e-signed by John Bohrer (johnbohrer6311@yahoo.com)
Signature Date: 2024-02-19 - 10:35:09 PM GMT - Time Source: server

Email viewed by Dean Eastlake (deastlake@newenergyequity.com)
2024-02-20 - 8:07:59 PM GMT

Document e-signed by Dean Eastlake (deastlake@newenergyequity.com)
Signature Date: 2024-02-20 - 8:08:17 PM GMT - Time Source: server

Agreement completed.
2024-02-20 - 8:08:17 PM GMT

EXHIBIT B

414 Nicollet Mall
Minneapolis, MN 55401

1-800-895-4999
xcelenergy.com

January 30, 2024

Solar*Rewards Community Study Results

Customer Legal Name: MN CSG 2019-57 LLC
Service Address: 23759 Third Ave Mankato, Blue Earth, MN., 56001
Project Description: 1 MW SRC Project
Project Case Number: 05518220

The New Energy Equity MN CSG 2019-57 LLC project, located at 23759 Third Ave, Mankato, Blue Earth, Minnesota, 56001, is Q7 in feeder queue and Q14 in substation queue. There are 10 MWs ahead of this project in the feeder queue and 20.587 MWs ahead of this project in substation queue. The maximum generation possible at this location is 1.0MW at unity power factor. To achieve this amount of generation the following upgrades are required to mitigate steady state overvoltage:

Distribution:

System Upgrades / Right-of-Way:

- Replace existing fuse with a Viper recloser

Area EPS Interconnection / On-site:

- Distribution 3-phase Extension from PCC to POC Required: ~1,150' of 336AL based on developer site plan.
- Install Viper Recloser and Pole
- Install 277/480 pad-mount transformer

Substation:

- None Required

Transmission:

- None Required

DER Facilities Study Summary	
Disclaimer: The dollar amount shown is an estimate only and the amount owed will be the actual costs for this work to be determined and billed after the work is complete, with payment for actual costs due within 30 days after the final bill is sent.	
Summary of Cost Estimate	
Construction Type	**Subtotal**
Distribution	
System upgrade costs	**$67,600**
Area EPS Interconnection Costs	**$161,300**
Tariffed Metering	**$2,740**
Substation	**$0**
Transmission	**$0**
Cost Estimate Total	**$231,640**
Estimated Design and Construction Time	***7-12* Months**

EXHIBIT C

BOARD OF WATER AND SOIL RESOURCES

Minnesota Wetland Conservation Act
Notice of Decision

Local Government Unit: Blue Earth County	**County:** Blue Earth
Applicant Name: Dean Eastlake – New Energy Equity	**Applicant Representative:** Jonathan Knudsen – Area M Consulting
Project Name: Bohrereast MN CSG 2019-57 Boundary/Type and No-Loss	**LGU Project No. (if any):** PL2024070
Date Application Received by LGU: 6/4/24	
Date of LGU Decision: 7/15/24	
Date this Notice was Sent: 7/15/24	

WCA Decision Type - check all that apply

☒Wetland Boundary/Type ☐Sequencing ☐Replacement Plan ☐Bank Plan (not credit purchase)
☒No-Loss (8420.0415) ☐Exemption (8420.0420)
Part: ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ G ☐ H Subpart: ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9

Replacement Plan Impacts (replacement plan decisions only)

Total WCA Wetland Impact Area:
Wetland Replacement Type: ☐ Project Specific Credits: ☐ Bank 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:

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 Bluer Earth County Technical Evaluation Panel reviewed the request at the June 21st, 2024, Meeting. The TEP reviewed the submitted report and additional aerial imagery resources and found the wetland delineation report to be accurate. The property that the project area is on has been visited by the TEP two times in the past for other delineations. This project is to the east of the other delineations and the wetland boundary matches up with the past wetland delineations. Additional Blue Earth County did conduct a site visit and verified the boundary.
The TEP also discussed the No-Loss request by the applicant, based off the Bohrereast CSG- Site Plan - 5.13.24 the TEP determined that access to the project would be from an access road on a separate solar lease site that would not impact the wetland basin identified in the wetland delineation report. The TEP is in concurrence that the project will not impact any wetlands based upon site plan Bohrereast CSG- Site Plan - 5.13.24.

For more information regarding this application go to:
https://cityview.blueearthcountymn.gov/cityviewportal/Planning/Status?planningId=15086

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

Attached Project Documents

☐ Site Location Map ☒ Project Plan(s)/Descriptions/Reports (specify): Bohereeast MN CSG 2019-57 Boundary-type and No-Loss

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)

Appeal of an LGU staff decision. Send petition and $700.00 fee to:
Blue Earth County Property and Environmental Resources
PO BOX 3566
Mankato, MN 56002

Notice Distribution (include name)

Required on all notices:

☒ SWCD TEP Member: Jake Fritz	☒ BWSR TEP Member: Alyssa Core
☐ LGU TEP Member (if different than LGU contact):	
☒ DNR Representative: Erynn Jenzen	
☐ Watershed District or Watershed Mgmt. Org.:	
☒ Applicant (notice only): Dean Eastlake – New Energy Equity	☒ Agent/Consultant (notice only): Jonathan Knudsen – Area M Consulting

Optional or As Applicable:

☒ Corps of Engineers: Corps of Engineers General Notification	
☐ BWSR Wetland Mitigation Coordinator (required for bank plan applications only):	
☐ Members of the Public (notice only):	☐ Other:

Signature:	**Date:**
Dane Lyssy	7/15/24

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.

PART ONE: Applicant Information

If applicant is an entity (company, government entity, partnership, etc.), an authorized contact person must be identified. If the applicant is using an agent (consultant, lawyer, or other third party) and has authorized them to act on their behalf, the agent's contact information must also be provided.

Applicant/Landowner Name: Dean Eastlake – New Energy Equity
Mailing Address: 2530 Riva Road, Suite 200, Annapolis, MD 21401
Phone: 443-267-5011
E-mail Address: deastlake@newenergyequity.com

Authorized Contact (do not complete if same as above):
Mailing Address:
Phone:
E-mail Address:

Agent Name: Jonathan Knudsen
Mailing Address: 2023 Alameda Street, Roseville, MN 55113
Phone: 208.241.5280
E-mail Address: jknudsen@areamconsulting.com

PART TWO: Site Location Information

County: Blue Earth **City/Township:** Mankato
Parcel ID and/or Address: 23759 THIRD AVE
MANKATO, MN 56001
Legal Description (Section, Township, Range): Section 29 T109N:R26W
Lat/Long (decimal degrees): LAT: 44.223832
LONG: -93.977617
Attach a map showing the location of the site in relation to local streets, roads, highways.
Approximate size of site (acres) or if a linear project, length (feet): 10.5

If you know that your proposal will require an individual Permit from the U.S. Army Corps of Engineers, you must provide the names and addresses of all property owners adjacent to the project site. This information may be provided by attaching a list to your application or by using block 25 of the Application for Department of the Army permit which can be obtained at:

http://www.mvp.usace.army.mil/Portals/57/docs/regulatory/RegulatoryDocs/engform_4345_2012oct.pdf

PART THREE: General Project/Site Information

If this application is related to a delineation approval, exemption determination, jurisdictional determination, or other correspondence submitted ***prior to*** this application then describe that here and provide the Corps of Engineers project number.

Describe the project that is being proposed, the project purpose and need, and schedule for implementation and completion. The project description must fully describe the nature and scope of the proposed activity including a description of all project elements that effect aquatic resources (wetland, lake, tributary, etc.) and must also include plans and cross section or profile drawings showing the location, character, and dimensions of all proposed activities and aquatic resource impacts.

The proposed project is a 1 MW AC community solar garden to be built 3 miles north of Mankato, MN. The Project includes a flat field, currently in CRP. One wetland is present within the review area as delineated by Area M Consulting but will be avoided by all permanent and temporary construction and Project components.

The final proposed Project consists of a short access road, solar array mounted on posts, equipment pads, infiltration basin, and a perimeter fence. The solar panels are made of glass and polysilicon which are fastened to steel racking members which are further attached to steel i-beams. The i-beams are driven into the ground at varying depths dependent on soil characteristics to provide support for the panels and will disturb approximately 3.3 inches of ground surface. A fence will be constructed around the perimeter of the entire area of disturbance. All Project components will avoid aquatic resources, as mapped.

During construction, the project shall utilize erosion control measures to mitigate any silt or material leaving the project site. Upon completion of the project, the site will be seeded using a native grass blend which will be consistent with other uncropped fields in the area. Consequently, the rate, volume, and quality of the surface water runoff is expected to be minimal when compared to runoff generated by a plowed field of row crops. If the project is approved after inspection, it will be operational for at least 35 years. Traffic to the community solar garden will be minimal upon completion of construction—mostly for the purposes of grounds maintenance and performance monitoring. At the completion of the project, once the community solar garden is decommissioned, all project-related fencing and equipment will be removed, and the grounds will be reasonably restored to its initial agricultural use.

PART FOUR: Aquatic Resource Impact[1] Summary

If your proposed project involves a direct or indirect impact to an aquatic resource (wetland, lake, tributary, etc.) identify each impact in the table below. Include all anticipated impacts, including those expected to be temporary. Attach an overhead view map, aerial photo, and/or drawing showing all of the aquatic resources in the project area and the location(s) of the proposed impacts. Label each aquatic resource on the map with a reference number or letter and identify the impacts in the following table.

Aquatic Resource ID (as noted on overhead view)	**Aquatic Resource Type** (wetland, lake, tributary etc.)	**Type of Impact** (fill, excavate, drain, or remove vegetation)	**Duration of Impact** Permanent (P) or Temporary (T)[1]	**Size of Impact**[2]	**Overall Size of Aquatic Resource** [3]	**Existing Plant Community Type(s)** in Impact Area[4]	**County, Major Watershed #, and Bank Service Area #** of Impact Area[5]

[1]If impacts are temporary; enter the duration of the impacts in days next to the "T". For example, a project with a temporary access fill that would be removed after 220 days would be entered "T (220)".
[2]Impacts less than 0.01 acre should be reported in square feet. Impacts 0.01 acre or greater should be reported as acres and rounded to the nearest 0.01 acre. Tributary impacts must be reported in linear feet of impact and an area of impact by indicating first the linear feet of impact along the flowline of the stream followed by the area impact in parentheses). For example, a project that impacts 50 feet of a stream that is 6 feet wide would be reported as 50 ft (300 square feet).
[3]This is generally only applicable if you are applying for a de minimis exemption under MN Rules 8420.0420 Subp. 8, otherwise enter "N/A".
[4]Use *Wetland Plants and Plant Community Types of Minnesota and Wisconsin* 3rd Ed. as modified in MN Rules 8420.0405 Subp. 2.
[5]Refer to Major Watershed and Bank Service Area maps in MN Rules 8420.0522 Subp. 7.

If any of the above identified impacts have already occurred, identify which impacts they are and the circumstances associated with each:

PART FIVE: Applicant Signature

☐ Check here if you are requesting a pre-application consultation with the Corps and LGU based on the information you have provided. Regulatory entities will not initiate a formal application review if this box is checked.

By signature below, I attest that the information in this application is complete and accurate. I further attest that I possess the authority to undertake the work described herein.

Signature: _____ Date: 5/20/2024

I hereby authorize _____ to act on my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this application.

[1] **The term "impact" as used in this joint application form is a generic term used for disclosure purposes to identify activities that may require approval from one or more regulatory agencies. For purposes of this form it is not meant to indicate whether or not those activities may require mitigation/replacement.**

Attachment A
Request for Delineation Review, Wetland Type Determination, or Jurisdictional Determination

By submission of the enclosed wetland delineation report, I am requesting that the U.S. Army Corps of Engineers, St. Paul District (Corps) and/or the Wetland Conservation Act Local Government Unit (LGU) provide me with the following (check all that apply):

☐ **Wetland Type Confirmation**

☒ **Delineation Concurrence**. Concurrence with a delineation is a written notification from the Corps and a decision from the LGU concurring, not concurring, or commenting on the boundaries of the aquatic resources delineated on the property. Delineation concurrences are generally valid for five years unless site conditions change. Under this request alone, the Corps will not address the jurisdictional status of the aquatic resources on the property, only the boundaries of the resources within the review area (including wetlands, tributaries, lakes, etc.).

☐ **Preliminary Jurisdictional Determination**. A preliminary jurisdictional determination (PJD) is a non-binding written indication from the Corps that waters, including wetlands, identified on a parcel may be waters of the United States. For purposes of computation of impacts and compensatory mitigation requirements, a permit decision made on the basis of a PJD will treat all waters and wetlands in the review area as if they are jurisdictional waters of the U.S. PJDs are advisory in nature and may not be appealed.

☐ **Approved Jurisdictional Determination**. An approved jurisdictional determination (AJD) is an official Corps determination that jurisdictional waters of the United States are either present or absent on the property. AJDs can generally be relied upon by the affected party for five years. An AJD may be appealed through the Corps administrative appeal process.

In order for the Corps and LGU to process your request, the wetland delineation must be prepared in accordance with the 1987 Corps of Engineers Wetland Delineation Manual, any approved Regional Supplements to the 1987 Manual, and the *Guidelines for Submitting Wetland Delineations in Minnesota* (2013).
http://www.mvp.usace.army.mil/Missions/Regulatory/DelineationJDGuidance.aspx

Attachment B
Supporting Information for Applications Involving Exemptions, No Loss Determinations, and Activities Not Requiring Mitigation

Complete this part ***if*** you maintain that the identified aquatic resource impacts in Part Four do not require wetland replacement/compensatory mitigation OR ***if*** you are seeking verification that the proposed water resource impacts are either exempt from replacement or are not under CWA/WCA jurisdiction.

Identify the specific exemption or no-loss provision for which you believe your project or site qualifies:

MN Rule 8420.0415 Part A

Provide a detailed explanation of how your project or site qualifies for the above. Be specific and provide and refer to attachments and exhibits that support your contention. Applicants should refer to rules (e.g. WCA rules), guidance documents (e.g. BWSR guidance, Corps guidance letters/public notices), and permit conditions (e.g. Corps General Permit conditions) to determine the necessary information to support the application. Applicants are strongly encouraged to contact the WCA LGU and Corps Project Manager prior to submitting an application if they are unsure of what type of information to provide:

All temporary and permanent disturbance associated with the Project, including posts, pads, access roads, and laydown areas, will avoid wetlands. Due to the absence of wetlands within the area of development, this Project meets the criteria of “No-Loss”, as described in Part A of MN Rule 8420.0415. Project activities, including dredging or filling of wetlands, will not occur. Although posts and pilings may be excluded under the "fill" definition, under the WCA (Commercial Solar Siting Guidance, MDNR 2016), they will still be placed outside of wetlands to avoid potential future impacts. During construction, standard BMPs such as silt fences or waddles will be employed around surface disturbance to prevent run-off or sedimentation into adjacent wetlands/waterbodies. Due to the proposed array layout avoiding wetlands and the placement of run-off prevention BMPs, impacts to wetlands will not occur.

Level 2 Wetland Delineation Report
MN CSG 2019-57 LLC
Blue Earth County, Minnesota



Prepared for:

MN CSG 2019-57 LLC
2530 Riva Road STE 200
Annapolis, MD 21401

Prepared by:

Area M Consulting, LLC
Environmental Consultants
2023 Alameda Street
Roseville, MN 55113
www.areamconsulting.com

AREAM

March 2024

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I certify that, to the best of my knowledge, this wetland delineation and report were completed following current wetland standards as set forth by the USACE and BWSR. Findings in this report represent Area M's best judgement based on conditions and information available at the time of the wetland delineation.



Jonathan Knudsen, WDC, MS
Principal Biologist/Wetland Specialist
MN Certified Wetland Delineator 1307

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Appendix B: Soils Report - Hydric Rating by Soils Unit and Hydric Soil List – All components
Appendix C: Aerial Imagery Slides
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Appendix E: Field Photos
Appendix F: Wetland Data Forms

INTRODUCTION

Area M Consulting (Area M) conducted a wetland delineation for the MN CSG 2019-57 LLC (Project) located within Blue Earth County, Minnesota. The Area M biologist conducted a routine Level 2 Delineation, as defined by the Board of Water and Soil Resources (BWSR), within the entire Project boundaries following procedures and methods outlined by the United States Army Corps of Engineers (USACE) Wetland Delineation Manual (USACE, 1987), Midwest Regional Supplement (USACE, 2012), and BWSR Guidance for Offsite Hydrology/Wetland Determinations (2016). This wetland delineation report is assembled to inform design and to assist the Client with meeting regulatory requirements necessary for permitting a community solar garden (CSG) in Blue Earth County.

PROJECT DESCRIPTION

The Project, encompassing approximately 10.5 acres, is located 3.3 miles north of Mankato, MN in Section 29, T109N:R26W (Study Area) (Appendix A). The Study Area encompasses a gently-rolling, agricultural field bounded to the south by a drainage ditch. The entire Study Area is typically cultivated annually, though the extent of successful crops within the wetland varies by year. This parcel was re-enrolled in CRP in 2024. Natural vegetation was present within the majority of the Study Area during the field survey, though mowed down to 2 inches. A conspicuous emergent wetland, mapped by Area M in 2023, is adjacent and to the west of the Study Area. Open fields border western and eastern boundaries of the Study Area. The surrounding landscape is a mosaic of farmland, gravel pits, wooded ravines, rivers, and infrastructure associated with Mankato. The entire Study Area is on private land.

OFF-SITE REVIEW

Prior to fieldwork, Area M conducted a comprehensive desktop review of data sources available within the public domain to identify the presence/absence and extent of wetlands that could occur within the Study Area. Areas with hydric signatures, suggesting potential wetland conditions, were evaluated in greater detail during the field investigation. The following data sources were reviewed; the analysis of each data set is discussed in greater detail later in this section.

- Hydrologic soil data
- Antecedent precipitation data
- Mapped Wetlands/Waterbodies
  - U.S. Fish and Wildlife Services (USFWS) National Wetland Inventory (NWI)
  - MNDNR updated NWI
  - MNDNR Public Waters Inventory (PWI)
  - National Hydrography Dataset (NHD)
- Elevation Data
  - MN Department of Natural Resources (MNDNR) Light Detection and Ranging (LiDAR) Data

- United States Geological Survey (USGS) topographic maps

Mapped Wetland Data

The NWI (USFWS, 2023), MN NWI update (MNDNR, 2023a), PWI (MNDNR, 2023b), and NHD data sets were reviewed for the presence of mapped wetlands and/or waterbodies within the Study Area. One NHD flowline intersects the southern boundary of the Study Area (Appendix A).

Soils

The Web Soil Survey (NRCS, 2023) was accessed to summarize mapped soil types which occur within the Study Area. Soil units with hydric components are present throughout the entire Study Area. The full list of hydric soils components and attributes is presented in Appendix B.

Topographic Data

Elevation and topographic data from the USGS and MNDNR were reviewed within the Study Area to identify potential basins and depressional areas which could be indicative of wetlands. The Study Area includes a concave area in the northwestern corner of the Study Area (Appendix A). The total topographic relief of the Study Area is approximately 10 feet.

Historic Aerial Photography Review

Historic aerial photographs were analyzed for hydric signatures in conjunction with antecedent precipitation, following the procedures outlined in the Guidance for Offsite Hydrology/Wetland Determinations (BWSR and USACE 2016). Upon review, three areas (Area 1, Area 2, and Area 3) showing potential wetland signatures in the historic imagery was identified within the Study Area; these areas correspond to the concave landforms and NWI features intersecting the northwestern, northern, and southern portions of the Study Area (Appendix C). Exhibit 1 and Exhibit 2, which summarize the data reviewed for the offsite evaluation, are presented in Appendix D. Based on the Decision Matrix in Exhibit 2, two wetlands and one potential wetland are present within the Study Area.

Off-site Summary

Overall, the off-site review suggests two wetlands are present within the Study Area (Appendix A). The entire Study Area was investigated in greater detail during the field survey.

FIELD DELINEATION

Methodology

Suspected wetlands identified during the off-site analysis were investigated in the field using routine on-site delineation methods in accordance with the USACE Wetlands Delineation Manual (USACE, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) (USACE, 2010). This included the characterization of vegetation, soils, and hydrology on-site. Wetlands are defined by the USACE as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." For an area to be delineated as a regulated wetland, the vegetative, hydrologic, and soil characteristics must all be present and consistent with federal and state classification criteria.

Transects were established in representative transition zones, perpendicular between suspected wetland and upland areas. Survey Points were recorded along each transect, moving from upland to wetland to identify the wetland boundary. Wetland criteria were evaluated at each Survey Point and a Wetland Determination Form – Midwest Region (Form) was completed. Additional Survey Points were collected within unique vegetation communities (if present) to document and characterize baseline hydrology, soils, and vegetation within the Study Area. Determination of wetland type was based on the classification system developed by Cowardin et al. (1979) and the USFWS Circular 39 system (Shaw & Fredine 1956). Plant communities were classified using Wetland Plants and Plant Communities of Minnesota and Wisconsin system (Eggers and Reed, 1997). The entire Study Area was surveyed in the field to confirm the absence of additional wetlands.

The location and boundaries of wetland features identified by Area M during field surveys were recorded in the field using a Trimble Geoexplorer 6000 which typically achieves accuracy within 2 feet. A map depicting wetland boundaries, survey points, and transects is included in Appendix A. Representative photographs of the Study Area are included in Appendix E. Field Forms are included in Appendix F.

Antecedent Precipitation Analysis

Antecedent Precipitation conditions were evaluated using the NRCS Method for Evaluating Antecedent Moisture Conditions. Data from the Minnesota Climatology Working Group and Natural Resources Conservation Service. WETS Tables suggest moisture conditions were wetter than normal during the field survey on March 7, 2024 (Table 1). These conditions were taken into consideration when conducting the delineation.

Table 1. Study Area precipitation data.

Value	First Prior Month **February**	Second Prior Month **January**	Third Prior Month **December**
estimated precipitation total for this location:	0.56	0.28	1.86
30% chance this location will have less than:	0.56	0.65	0.68
30% chance this location will have more than:	1.23	1.17	1.46
type of month			Wet
monthly score	3 * 2 = 6	2 * 1 = 2	1 * 3 = 3
Multi-Month Score:			**10 (Normal)**

Field Conditions

Area M conducted the field delineation on March 7, 2024. Field conditions were dry. The temperature was approximately 45 degrees Fahrenheit and mostly sunny with minimal wind. The ground was thawed enough to retrieve soil samples. The entire Study Area had been mowed late 2023 and vegetation was extremely difficult to discern, in addition to the survey being conducted outside of the growing season.

Field Review Summary

Based upon this routine Level 2 Wetland Delineation, it is the professional opinion of Area M that one wetland is present within the Study Area (Appendix A).

Wetland 1: Type 1/Type 2 - Fresh (Wet) Meadow/Seasonally Flooded Basin – 1.52 acres

Wetland 1, within Area 1 and 3, is a Type 1/Type 2 wetland located in a shallow depression in the northern portion of the Study Area. Area 1 and 3 were flagged as wetlands based on the off-site Hydrology Determination (BWSR 2016). At SP 1-1 and SP 2-1, located just inside of the Wetland 1 boundary, soils were hydric, with redox present within a 12-inch stratum (F6). Secondary hydrology indicators were present, including Saturation Visible on Aerial Imagery (C9), FAC-Neutral Test (D5), and Geomorphic Position (D2). The plant community was hydric and dominated by a monoculture of reed canary grass (*Phalaris arundinacea*) during the delineation in 2023. During the recent field visit on March 7, 2024, the plant community could not be evaluated due to it being outside of the growing season. However, reed canary grass could be identified despite being mowed, and was dominant. At SP 1-2 and SP 2-2, adjacent and upland of Wetland 1, the vegetation was evaluated as upland and dominated by reed canary grass, smooth brome (*Bromus inermis*), yarrow (*Achillea millefolium*), and dandelion (*Taraxacum officinale*) in 2023. The plant community was not evaluated in 2024 due to mowing and the survey being conducted outside of the growing season. Soils were non-hydric, with similar matrix coloration. Wetland hydrology indicators were absent. Wetland 1 was mapped by following the slight topographic transition between concave and convex landform and dominance of reed canary grass. The line was extended to include the current Study Area following the extent of wetland signatures and reed canary grass observed in the field. Aerial imagery and lidar review was used to amend the line to coincide with the average of wetland extent during years with normal antecedent precipitation.

Area 2 – Upland

Area 2, identified during off-site review, is located along an irrigation drainage on the southern boundary of the Study Area. Area 2 was flagged as a potential wetland based on the off-site Hydrology Determination (BWSR 2016) and keyed out as needing field verification. Area M determined that an on-site determination was required within Area 2 because the altered cropping patterns were difficult to verify via imagery and contributed to most of the wetland hydrology hits. Many of the images collected in May and June showed Area 2 as not planted yet, potentially due to typical soggy Spring conditions. At SP 4, collected in the center of Area 2, soils were hydric meeting the Depleted Below Dark Surface and Redox Dark Surface indicators (A11, F6). The plant community could not be evaluated due to time of year, but the adjacent Project to the west on the same contour was determined upland. Wetland hydrology indicators were absent. Therefore, Area 2 was confirmed as upland.

RESULTS AND RECOMMENDATIONS

Based upon this routine Level 2 Wetland Delineation, it is the professional opinion of Area M that the Study Area contains one feature (Wetland 1) that satisfies the criteria to be a wetland pursuant to the Army Corps of Engineers' 1987 Manual with subsequent clarification memoranda and pursuant to confirmation by the USACE (Appendix A). Activities impacting wetlands and waterways are regulated through both the Local Government Unit (LGU) and USACE, which administer the Wetland Conservation Act (WCA) and Clean Water Act (CWA), respectively. The wetlands and wetland boundaries described within this report are described based on the conditions in the field at the time of the survey and subject to verification by state, federal, and local agencies, which have final authority over wetland presence, extent, and jurisdictional status.

REFERENCES

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Environmental Laboratory. 1987. *Corp of Engineers Wetlands Delineation Manual*. Wetlands Research Program. Technical Report Y-87-1. Department of the Army, Waterways Experiment Station, US Army *Corp of Engineers*. Vicksburg, Mississippi, USA.

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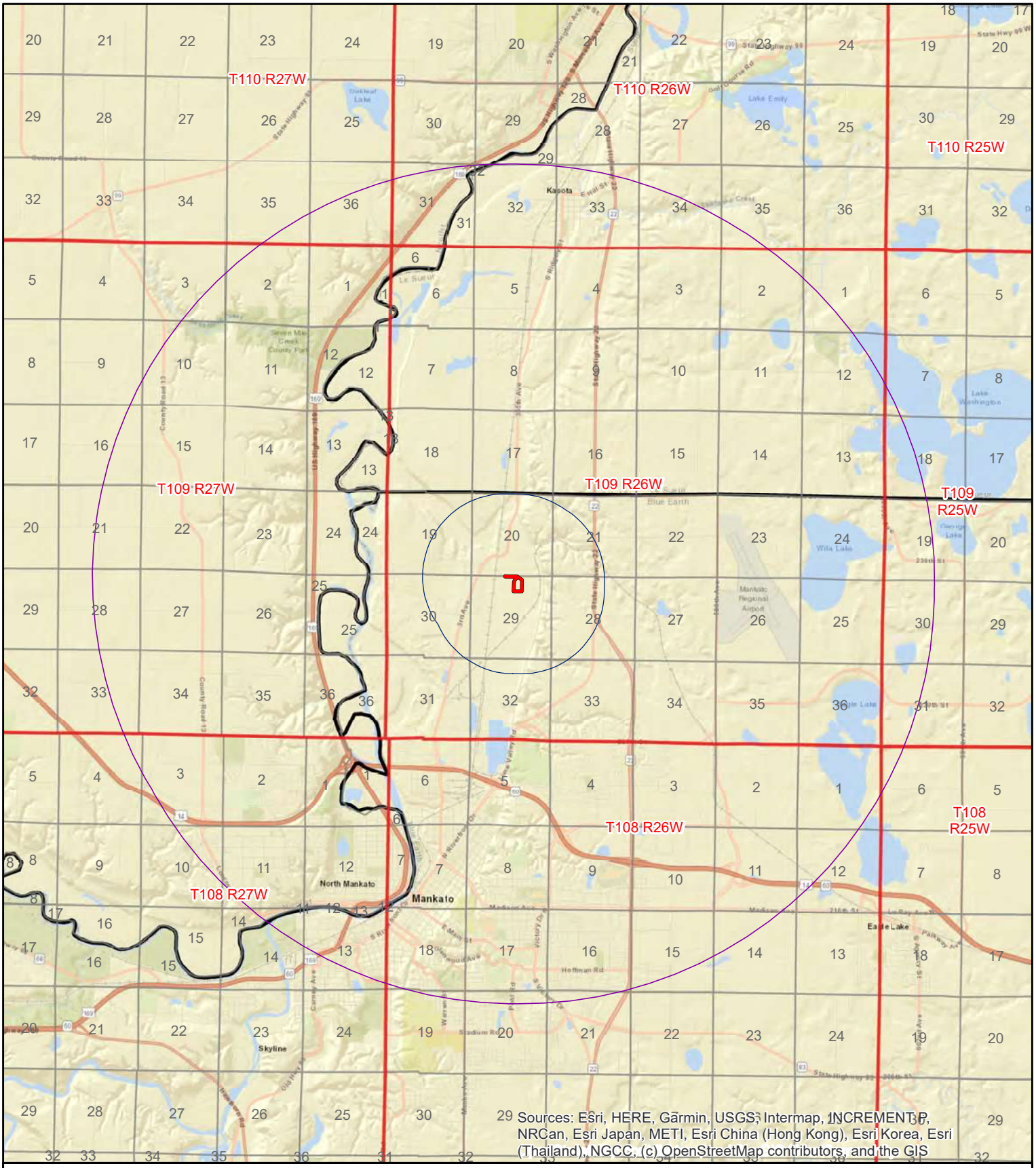
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Minnesota Department of Natural Resources. 2019b. Public Waters Inventory Shapefiles. Downloaded from: https://gisdata.mn.gov/dataset/water-mn-public-waters

Minnesota Department of Natural Resources (MNDNR). 2019c. MN State Climatology Website. MNDNR Ecological and Water Resources Division. State Climatology Office. Retrieved from: http://climate.umn.edu/gridded_data/precip/monthly/monthly_gridded_precip.asp

United States Fish and Wildlife Service (USFWS). 2019. National Wetland Inventory: Wetlands Online Mapper. Retrieved from http://www.fws.gov/wetlands/data/mapper.HTML

Appendix A: Maps



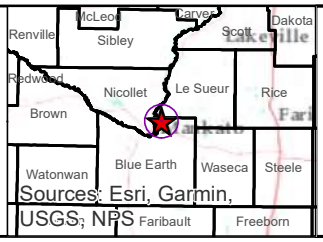
MN CSG 2019-57 LLC

Map 1. Location Map

Blue Earth County, MN

S29 T109N:R26W
10.5 Acres
44.223832 Lat
-93.977617 Long

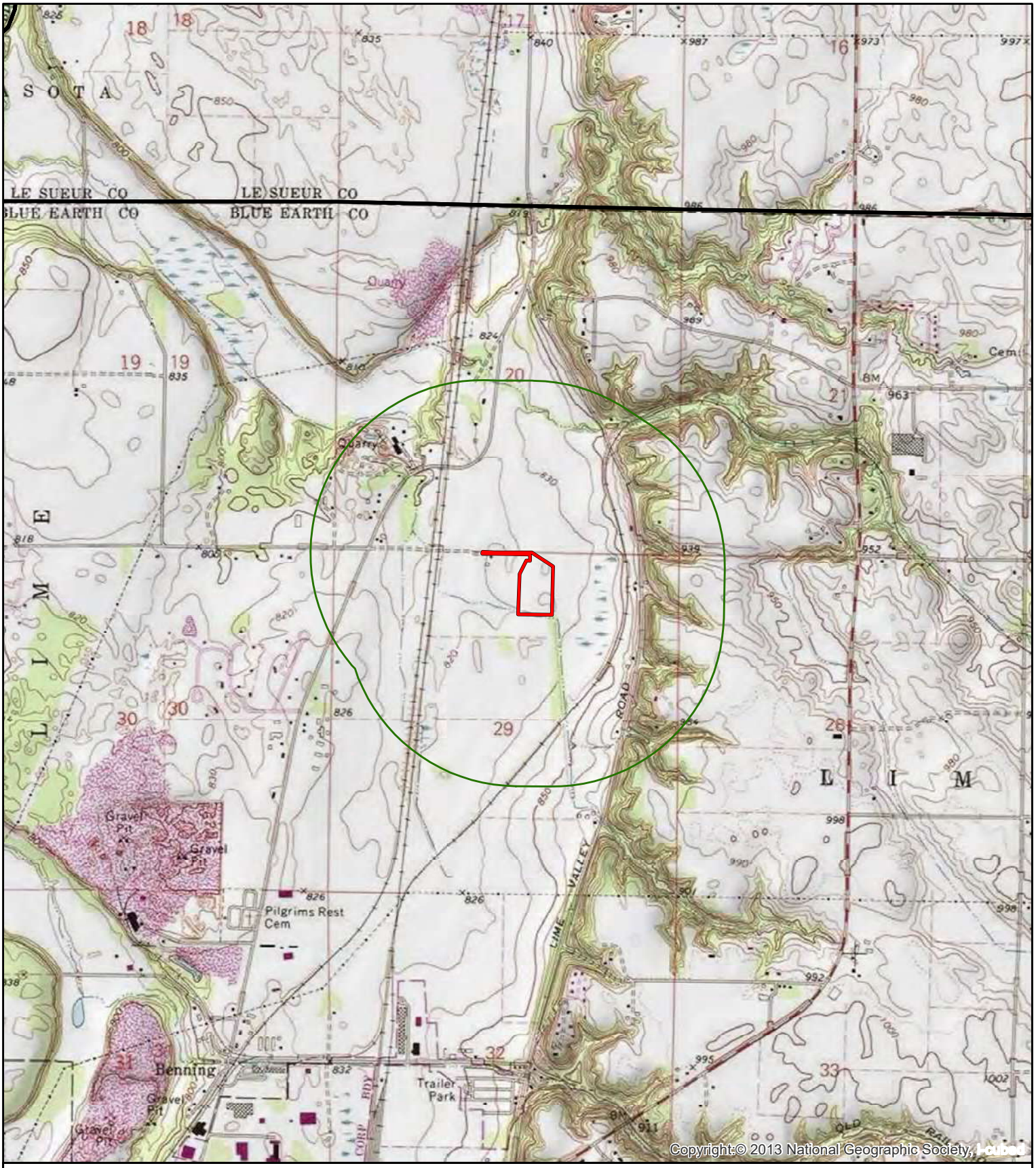
Project Location
Study Area
1-Mile Buffer
5-Mile Buffer
County Boundary
Township Boundary
Section Boundary



N
W
E
S

AREA M

0 2,600 5,200 10,400 Feet
1:100,000



MN CSG 2019-57 LLC

Map 2. 1:24,000 Topographic Map

Blue Earth County, MN

Study Area

County Boundary

0.5-Mile Buffer

N

W E

S

AREA M

0 625 1,250 2,500 Feet

1:24,000



MN CSG 2019-57 LLC

Map 3. Wetland Resources Map

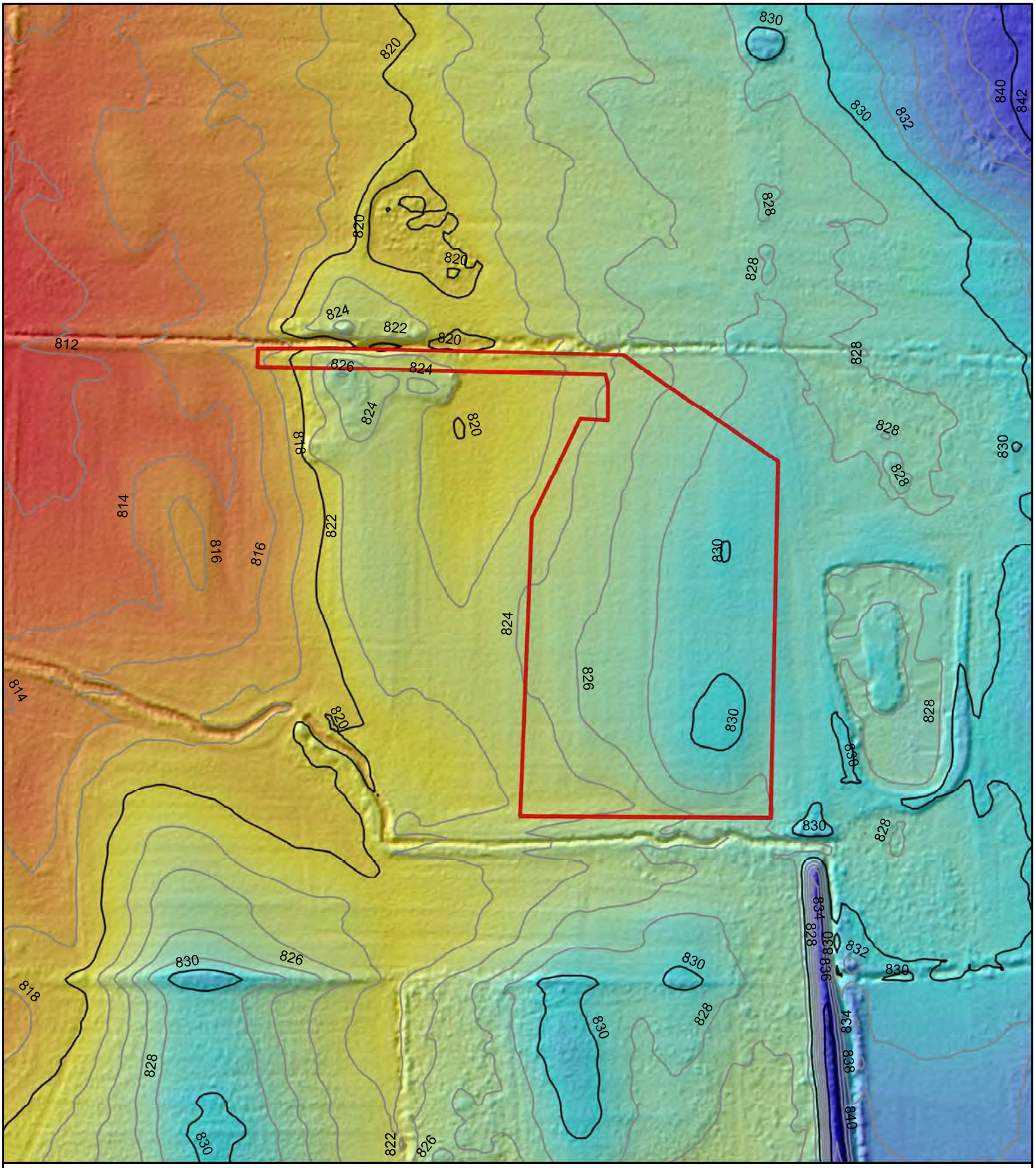
Blue Earth County, MN

Study Area
NWI
Floodway
NHD Flowline
PWI Flowlline
100-Year Floodplain
NHD Waterbody
PWI Waterbody

N
W
E
S

AREAM

0 62.5 125 250 Feet



MN CSG 2019-57 LLC

Map 4. Lidar Map

Blue Earth County, MN

Study Area

Delineated - Amended

Delineated - Original

Contour Interval

Index (10-ft)

Intermediate (2-ft)

High

Low

N

W

E

S

AREAM

0 85 170 340 Feet



MN CSG 2019-57 LLC

Map 5. Delineation Map

Blue Earth County, MN

- Study Area
- Previously-Delineated Wetland
- Dellineated Wetland
- Upland Sampling Point
- Wetland Sampling Point
- Wetland Transect

N
W
E
S

AREAM

Appendix B: Soils Report

Hydric Rating by Soils Unit and Hydric Soil List – All components

Hydric Rating by Map Unit—Blue Earth County, Minnesota
(Bohrereast_PA)



Map Scale: 1:2,460 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 35 70 140 210

Feet
0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

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 21, Sep 10, 2023

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.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
35	Blue Earth mucky silt loam, 0 to 1 percent slopes	100	0.3	2.7%
85	Calco silty clay loam, 0 to 2 percent slopes, occasionaly flooded	95	7.1	70.1%
160	Fieldon loam, 0 to 2 percent slopes	100	0.1	0.9%
181	Litchfield loamy fine sand, 1 to 3 percent slopes	4	0.1	0.8%
1001	Alluvial land, occasionally flooded	100	2.6	25.5%
Totals for Area of Interest			**10.2**	**100.0%**

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

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Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Hydric Soil List - All Components

This table lists the map unit components and their hydric status in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;
3. Soils that are frequently ponded for long or very long duration during the growing season.
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;
4. Map unit components that are frequently flooded for long duration or very long duration during the growing season that:
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;

Hydric Condition: Food Security Act information regarding the ability to grow a commodity crop without removing woody vegetation or manipulating hydrology.

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. Doc. 2012-4733 Filed 2-28-12. February, 28, 2012. Hydric soils of the United States.

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Vasilas, L.M., G.W. Hurt, and C.V. Noble, editors. Version 7.0, 2010. Field indicators of hydric soils in the United States.

Report—Hydric Soil List - All Components

Hydric Soil List - All Components–MN013-Blue Earth County, Minnesota					
Map symbol and map unit name	**Component/Local Phase**	**Comp. pct.**	**Landform**	**Hydric status**	**Hydric criteria met (code)**
35: Blue Earth mucky silt loam, 0 to 1 percent slopes	Blue Earth	75-90	Depressions	Yes	2
	Canisteo	5-15	Rims on depressions,ground moraines	Yes	2
	Harps	1-8	Rims on depressions	Yes	2
	Lemond	0-2	Outwash plains,terraces	Yes	2
85: Calco silty clay loam, 0 to 2 percent slopes, occasionaly flooded	Calco-Occasionally flooded	75-95	Flood plains	Yes	2
	Colo-Occasionally flooded	5-15	Flood plains	Yes	2
	Spillville-Occasionally flooded	0-10	Flood plains	No	—
160: Fieldon loam, 0 to 2 percent slopes	Fieldon	75-95	Lake plains,outwash plains,terraces	Yes	2
	Biscay	5-15	Outwash plains,terraces	Yes	2
	Okoboji	0-10	Lake plains,depressions	Yes	2
181: Litchfield loamy fine sand, 1 to 3 percent slopes	Litchfield	90	Outwash plains	No	—
	Darfur	4	Flats	Yes	2
	Dickinson	3	Outwash plains	No	—
	Estherville	3	Outwash plains	No	—
1001: Alluvial land, occasionally flooded	Alluvial land-Occasionally flooded	90	Flood plains	Yes	2
	Comfrey	10	Flood plains	Yes	2

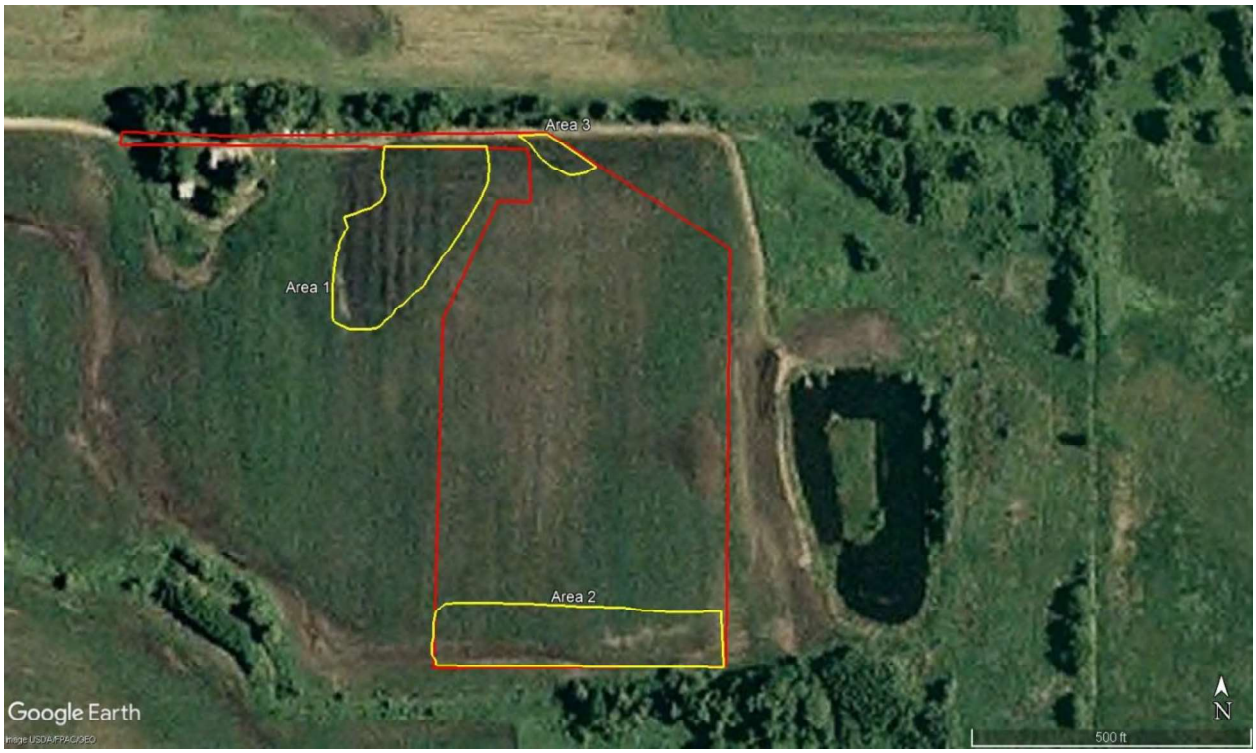
Data Source Information

Soil Survey Area: Blue Earth County, Minnesota
Survey Area Data: Version 21, Sep 10, 2023

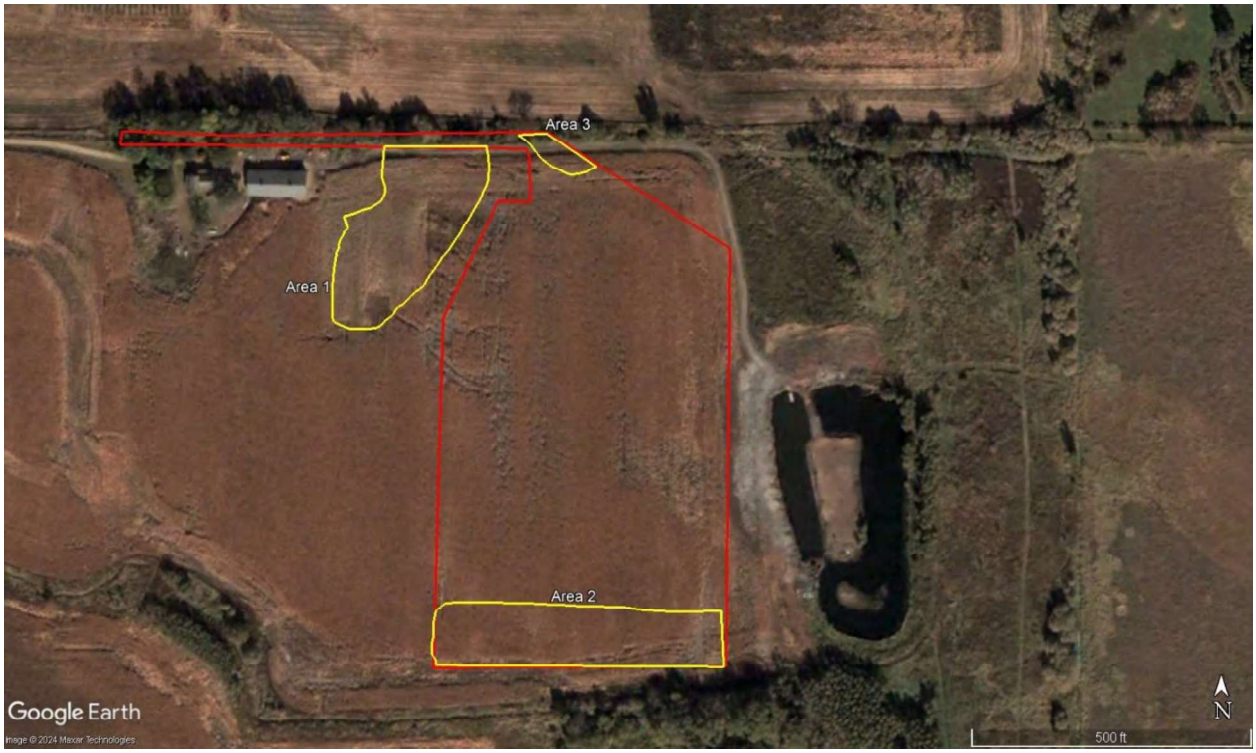
Appendix C: Aerial Imagery Slides



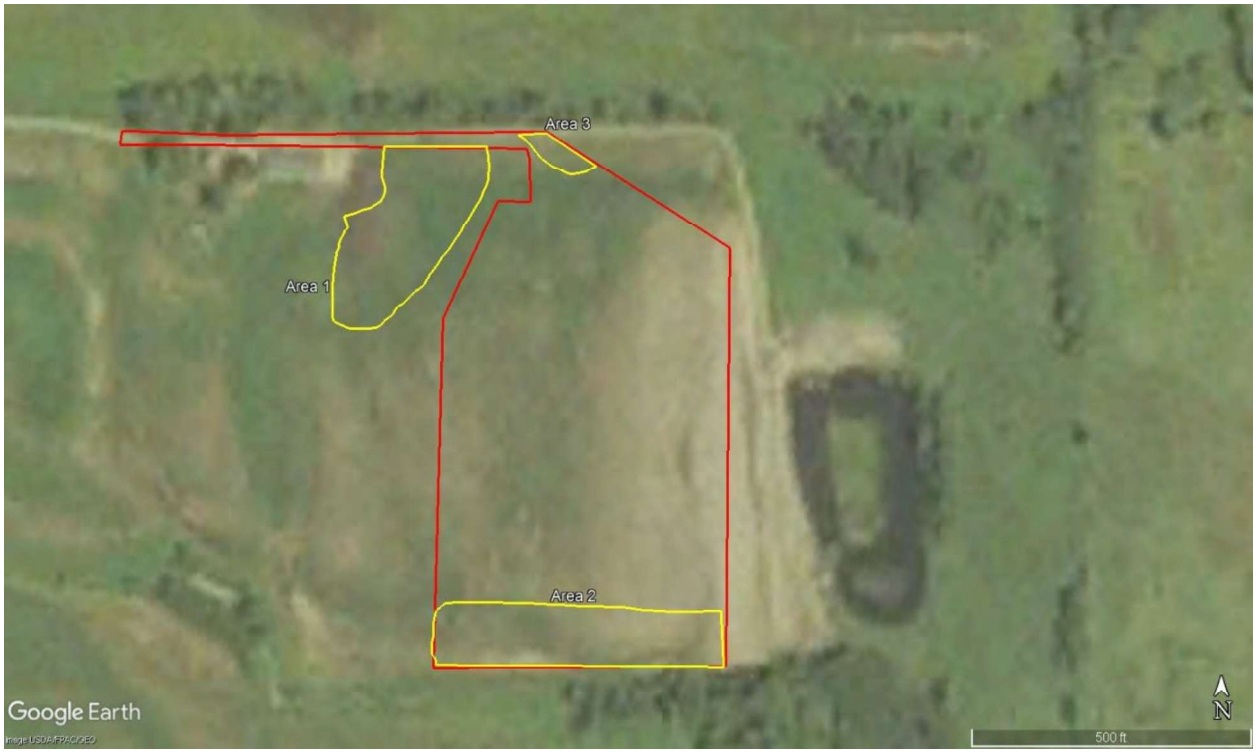
April 1991



June 2003



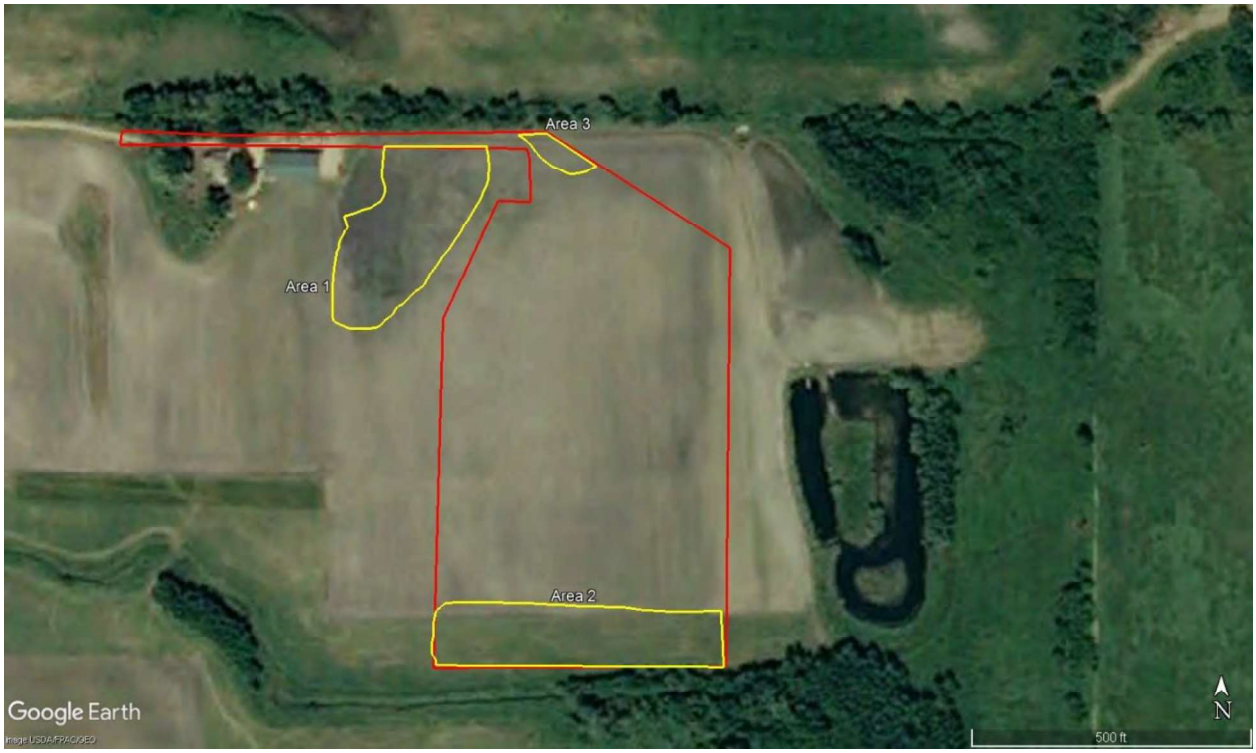
September 2003



August 2004



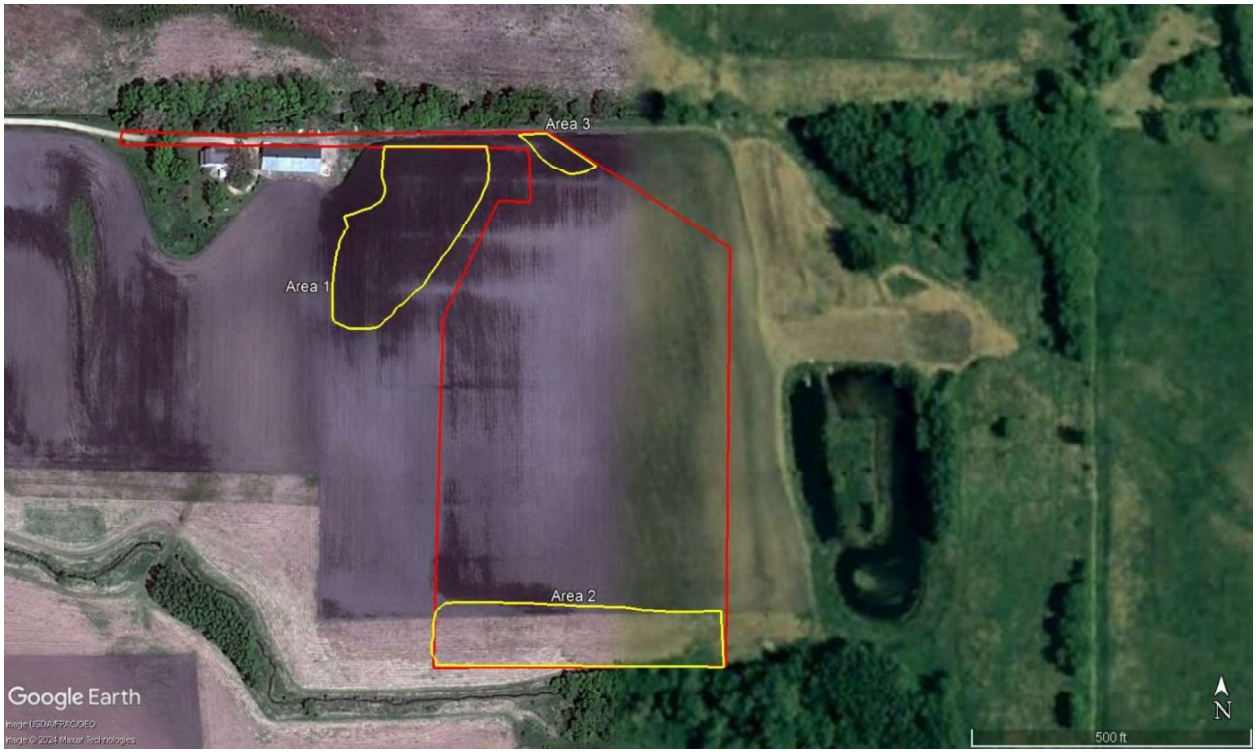
May 2006



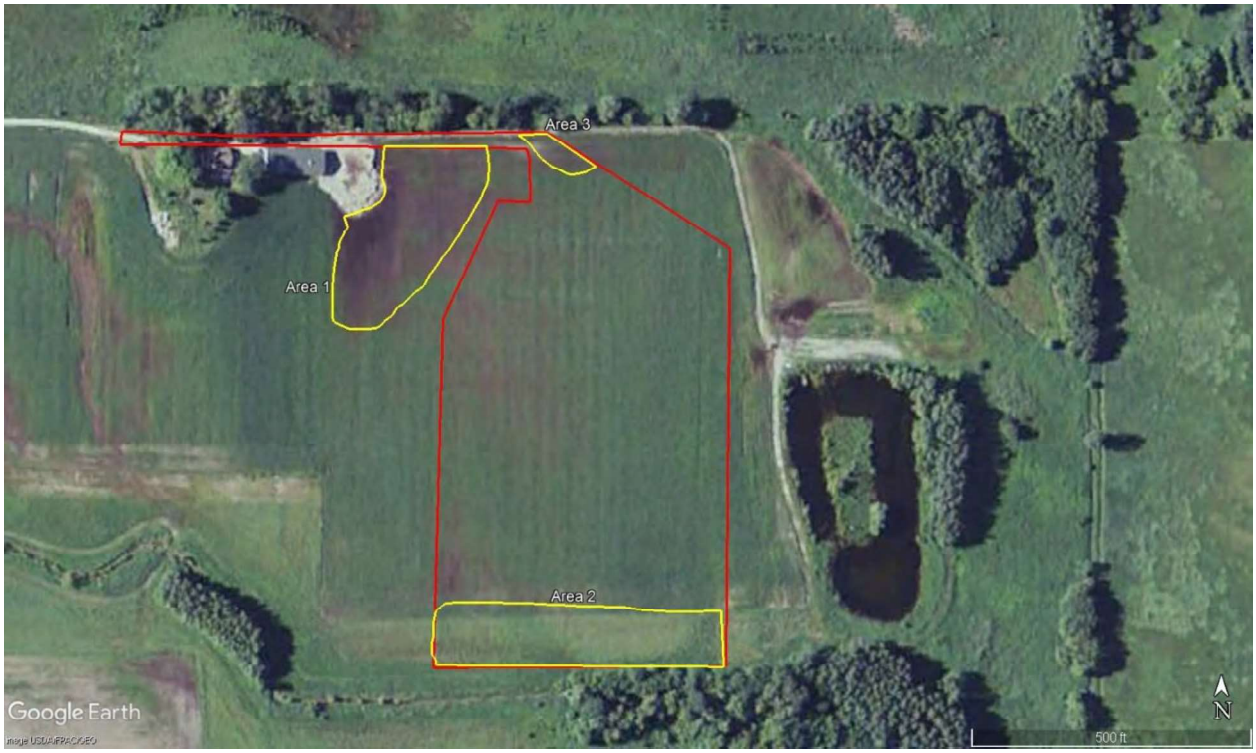
June 2008



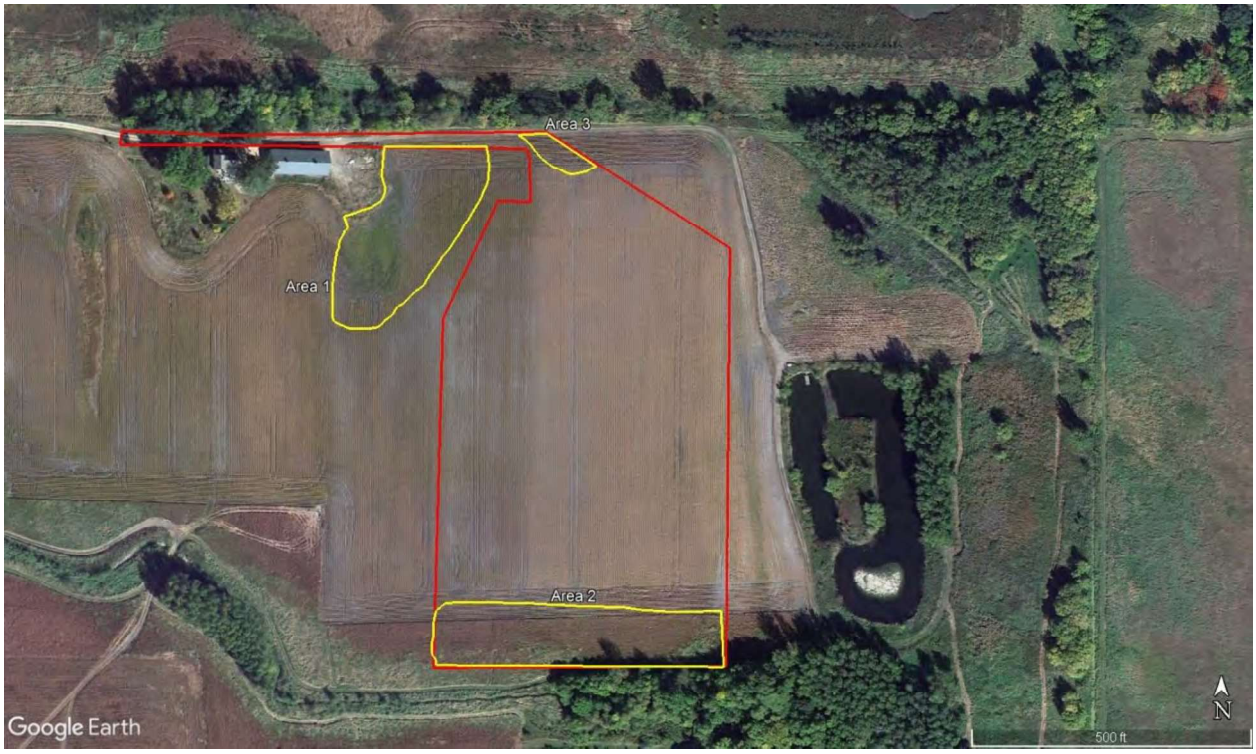
June 2009



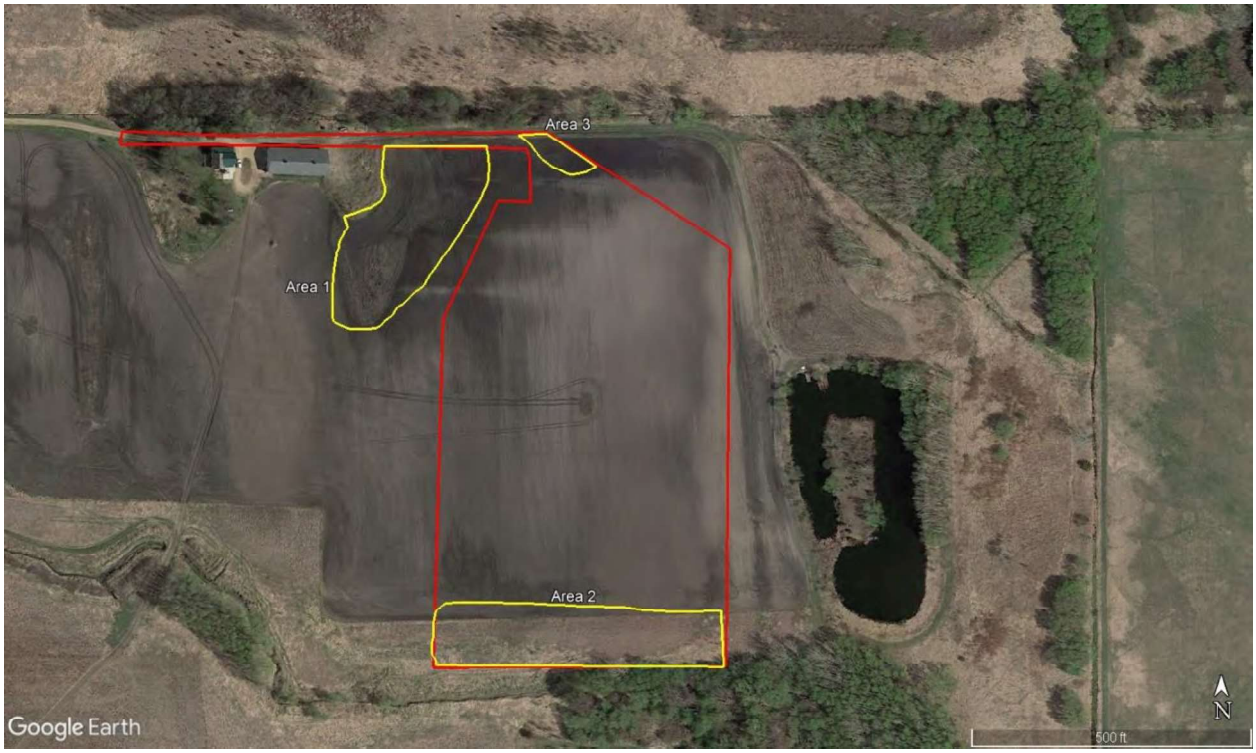
May 2010



June 2010



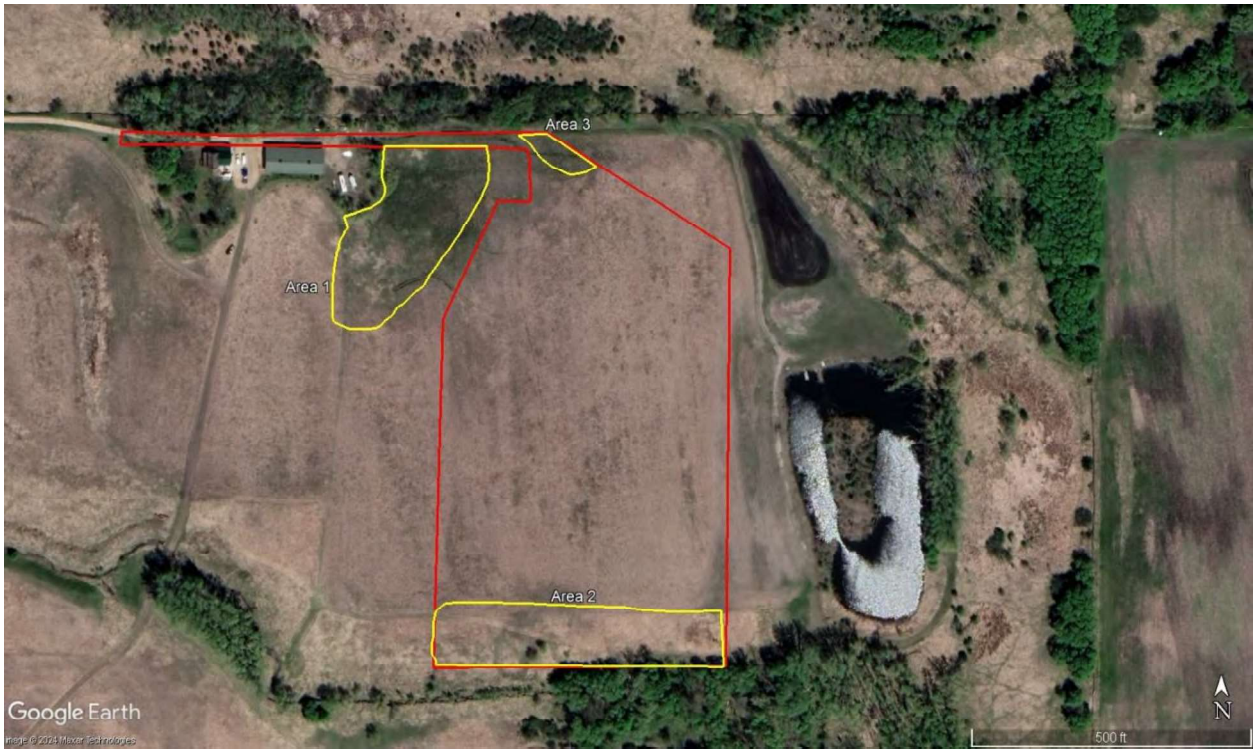
September 2011



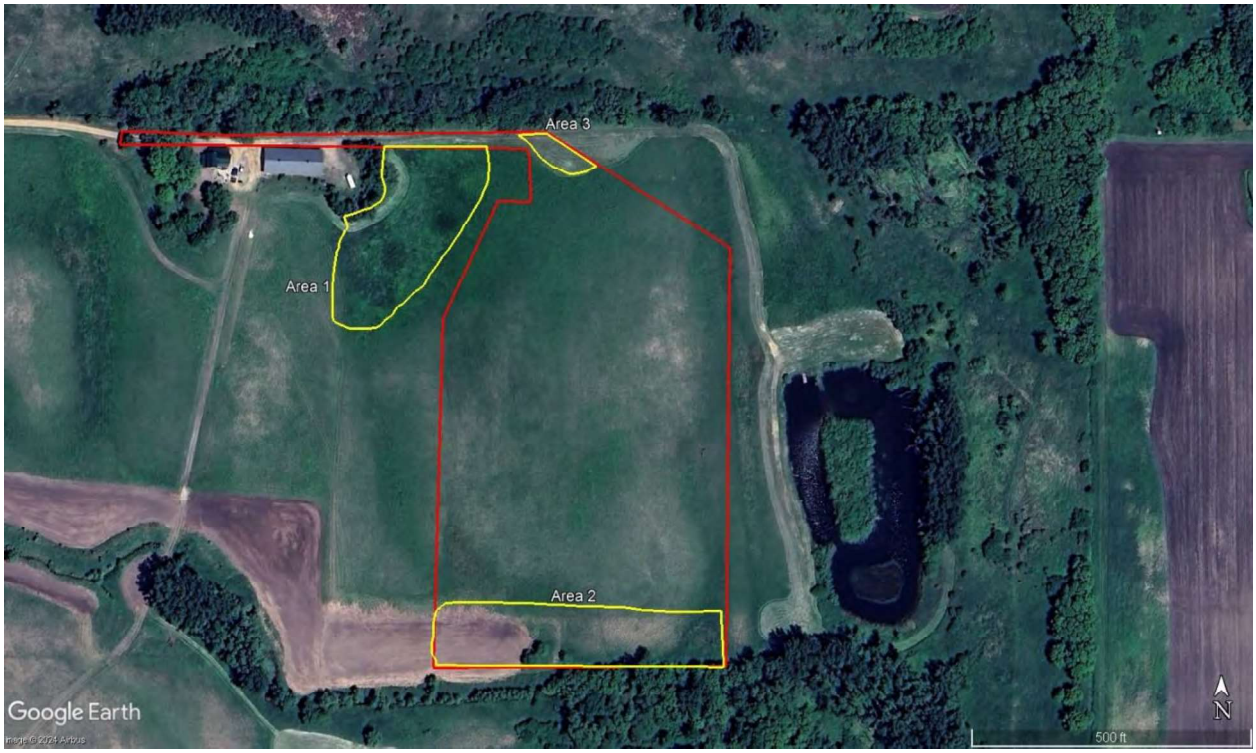
April 2015



August 2020



May 2021



June 2023

Appendix D: Wetland Hydrology from Aerial Imagery – Recording Form

Exhibits 1 & 2

Exhibit 1 Field data sheet reference (if applicable): _____

Wetland Hydrology from Aerial Imagery – Recording Form

Project Name: MN CSG 2019-57 LLC Date: 1/30/2024 County: Blue Earth

Investigator: J Knudsen Legal Description (T, R, S): 109N 26W 29

Summary Table

Date Image Taken (M-D-Y)	Image Source	Climate Condition (wet, dry, normal)[i]	Image Interpretation(s)				
			Area: 1	Area: 2	Area: 3	Area:	Area:
4/1991	USGS	Normal	NV	NV	NV		
6/2003	USDA	Normal	CS	CS	WS		
11/03	Google Earth	Dry	NV	CS	NV		
8/2004	USDA	Wet	CS	NV	NV		
5/2006	USDA	Normal	CS	NV	CS		
6/2008	USDA	Normal	DO	CP	NV		
6/2009	USDA	Dry	WS	CP	NV		
5/2010	USDA	Dry	SS	CP	SS		
6/2010	USDA	Normal	DO	CP	CS		
9/2011	Google Earth	Normal	CS	CP	NV		
4/2015	Google Earth	Dry	WS	CP	NV		
8/2020	Google Earth	Wet	DO	NV	CP		
5/2021	Google Earth	Normal	WS	NV	WS		
6/2021	Google Earth	Dry	WS	NV	NV		
6/2023	Google Earth	Wet	WS	CP	CP		

Normal Climate Condition	Area: 1	Area: 2	Area:	Area:	Area:
Number	7	7	7		
Number with wet signatures	6	5	4		
Percent with wet signatures	86	71	57		

KEY		
WS - wetland signature	SS - soil wetness signature	CS - crop stress
NC - not cropped	AP - altered pattern	NV - normal vegetative cover
DO - drowned out	SW - standing water	NSS – no soil wetness signature
Other labels or comments:		

- Use above key to label image interpretations. It is imperative that the reviewer read and understand the guidance associated with the use of these labels. If alternate labels are used, indicate in box above.
- If less than five (5) images taken during normal climate conditions are available, use an equal number of images taken during wet and dry climate conditions and use as many images as you have available. Describe the results using this methodology in your report.

[i] Use MN State Climatology website to determine climate condition when image was taken.

Exhibit 2 Field data sheet reference (if applicable): _____

Wetland Determination from Aerial Imagery – Recording Form

Project Name: MN CSG 2019-57 LLC Date: 1/30/2024 County: Blue Earth

Investigator: J Knudsen Legal Description (T, R, S): 109N 26W 29

Use the Decision Matrix below to complete Table 1.

Hydric Soils present[1]	Identified on NWI or other wetland map[2]	Percent with wet signatures from Exhibit 1	Field verification required[3]	Wetland?
Yes	Yes	>50%	No	Yes
Yes	Yes	30-50%	No	Yes
Yes	Yes	<30%	Yes	Yes, if other hydrology indicators present
Yes	No	>50%	No	Yes
Yes	No	30-50%	Yes	Yes, if other hydrology indicators present
Yes	No	<30%	No	No
No	Yes	>50%	No	Yes
No	Yes	30-50%	No	Yes
No	Yes	<30%	No	No
No	No	>50%	Yes	Yes, if other hydrology indicators present
No	No	30-50%	Yes	Yes, if other hydrology indicators present
No	No	<30%	No	No

[1] The presence of hydric soils can be determined from the "Hydric Rating by Map Unit Feature" under "Land Classifications" from the Web Soil Survey. "Not Hydric" is the only category considered to not have hydric soils. Field sampling for the presence/absence of hydric soil indicators can be used in lieu of the hydric rating if appropriately documented by providing completed field data sheets.

[2] At minimum, the most updated NWI data available for the area must be reviewed for this step. Any and all other local or regional wetland maps that are publically available should be reviewed.

[3] Area should be reviewed in the field for the presence/absence of wetland hydrology indicators per the applicable 87 Manual Regional Supplement, including the D2 indicator (geomorphic position).

Table 1.

Area	Hydric Soils Present	Identified on NWI or other wetland map	Percent with wet signatures from Exhibit 1	Other hydrology indicators present[1]	Wetland?
1	Yes	No	86	N/A	Yes
2	Yes	No	71	N/A	Field req,
3	Yes	No	57	N/A	Field req.

[1] Answer "N/A" if field verification is not required and was not conducted.

Appendix E: Field Photographs



General upland Project landscape viewed to the east from the western boundary of the Study Area



Wetland 1, viewed to the north from the southern extent of the feature



Wetland 1 (background), viewed to the northwest from the eastern boundary of the Study Area



Northern extent of Wetland 1, a farm road, viewed to the west along the northern boundary of the Study Area



Area 2, viewed to the east along the southern boundary of the Study Area



Excavated pond, viewed to the east from beyond the eastern boundary of the Study Area

Appendix F: Wetland Data Sheets

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: SV CSG Mankato North 1 City/County: Blue Earth Sampling Date: 6/20/2023

Applicant/Owner: Sunvest Solar State: MN Sampling Point: SP 1-1

Investigator(s): J Knudsen Section, Township, Range: 20, 109N, 26W

Landform (hillside, terrace, etc.): Depressional Local relief (concave, convex, none): concave

Slope (%): 2 Lat: 44.224221 Long: -93.979026 Datum: NAD 83

Soil Map Unit Name: 85 - Calco silty clay loam, 0-2 percent slopes, occassionally flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
SP within Area 2 in a depression. Climactic conditions were wetter than normal.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5ft)			
1. *Phalaris arundinacea*	70	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	70 =Total Cover		
Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	70 (A)		140 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
monoculture

SOIL

Sampling Point: SP 1-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/1	95	10YR 5/6	5	C	M	silty loam	Redox in shallow strata
10-20	10YR 3/1	98	10YR 5/6	2	C	M	Silty loam	Slightly lighter - fewer redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Redox at surface

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
offsite aerial review indicated this area is a wetland.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: SV CSG Mankato North 1 City/County: Blue Earth Sampling Date: 6/20/2023

Applicant/Owner: Sunvest Solar State: MN Sampling Point: SP 1-2

Investigator(s): J Knudsen Section, Township, Range: 20, 109N, 26W

Landform (hillside, terrace, etc.): Flat Local relief (concave, convex, none): None

Slope (%): 1 Lat: 44.224128 Long: -93.979066 Datum: NAD 83

Soil Map Unit Name: 85 - Calco silt clay loams, 0-2 percent slopes, occassionally flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
SP on edge of Area 2 adjacent to monoculture of reed canaray grass. Antecedent precipitation condition were wetter than normal.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5ft)			
1. *Phalaris arundinacea*	30	Yes	FACW
2. *Bromus inermis*	30	Yes	FACU
3. *Achillea millefolium*	10	No	FACU
4. *Taraxacum officinale*	10	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	80 =Total Cover		
Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	0	x 3 =	0
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	80 (A)		260 (B)

Prevalence Index = B/A = 3.25

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: SP 1-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/1	100					Silty loam	No redox here
10-20	10YR 3/1	100					Silty loam	No redox here

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ____ **No** X

Remarks:
Mucky

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ____ Depth (inches): ____

Water Table Present? Yes ____ No ____ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Mucky, greasy soils

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: MN CSG 2019-57 LLC | City/County: Blue Earth | Sampling Date: 3/12/2024

Applicant/Owner: NEE | State: MN | Sampling Point: SP 2-1

Investigator(s): J Knudsen | Section, Township, Range: 29, 109N, 26W

Landform (hillside, terrace, etc.): Depressional | Local relief (concave, convex, none): concave

Slope (%): 2 | Lat: 44.224933 | Long: -93.977857 | Datum: NAD 83

Soil Map Unit Name: 85 - Calco silty clay loam, 0-2 percent slopes, occassionally flooded | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
SP within Area 1 in a depression. Portion already delineated in 2023 for adjacent Project. Climactic conditions were normal. Not in growing season..

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5ft)			
1. *Phalaris arundinacea*	30	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	30 =Total Cover		
Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	30 (A)		60 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
RCG could be identified, even though mowed, by color and leaf thickness.

SOIL

Sampling Point: SP 2-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/1	95	10YR 5/6	5	C	M	Clay loam	Redox close to surface
10-20	10YR 4/1	95	10YR 5/6	5	C	M	Clay loam	Lighter stratum with redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:
Redox at surface

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? Yes X No ___ Depth (inches): 3

(includes capillary fringe)

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
offsite aerial review indicated this area is a wetland.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: MN CSG 2019-57 LLC City/County: Blue Earth Sampling Date: 3/12/2024

Applicant/Owner: NEE State: MN Sampling Point: SP 2-2

Investigator(s): J Knudsen Section, Township, Range: 29, 109N, 26W

Landform (hillside, terrace, etc.): Depressional Local relief (concave, convex, none): None

Slope (%): 3 Lat: 44.224933 Long: -93.977857 Datum: NAD 83

Soil Map Unit Name: 85 - Calco silty clay loam, 0-2 percent slopes, occassionally flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
SP outside boundary of aerial imagery wetland signatures. Climactic conditions were normal. Not in growing season..

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	=Total Cover		
Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Vegetation not evaluated or used as wetland criteria due to growing season

SOIL

Sampling Point: SP 2-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 2/1	95	10YR 5/6	5	C	M	Clay loam	Redox close to surface
11-15	10YR 4/1	95	10YR 5/6	5	C	M	Clay loam	Lighter stratum with redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Redox at surface

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? Yes ___ No X Depth (inches): ___
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
offsite aerial review indicated this area beyond wetland boundary.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: MN CSG 2019-57 LLC City/County: Blue Earth Sampling Date: 3/12/2024

Applicant/Owner: NEE State: MN Sampling Point: SP 3

Investigator(s): J Knudsen Section, Township, Range: 29, 109N, 26W

Landform (hillside, terrace, etc.): Field Local relief (concave, convex, none): None

Slope (%): 3 Lat: 44.224165 Long: -93.976633 Datum: NAD 83

Soil Map Unit Name: 1001 - Alluvial land, occassoinally flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
SP on edge of Project area neare excavated pond. Climactic conditions were normal. Not in growing season..

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	=Total Cover		
Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Vegetation not evaluated or used as wetland criteria due to growing season

SOIL

Sampling Point: SP 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/1	95	10YR 5/6	5	C	M	Clay loam	Redox close to surface
8-10	10YR 4/1	95	10YR 5/6	5	C	M	Clay loam	Lighter stratum with redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Redox at surface

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? Yes ___ No X Depth (inches): ___
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
offsite aerial review indicated this area is upland

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: MN CSG 2019-57 LLC City/County: Blue Earth Sampling Date: 3/12/2024

Applicant/Owner: NEE State: MN Sampling Point: SP 4

Investigator(s): J Knudsen Section, Township, Range: 29, 109N, 26W

Landform (hillside, terrace, etc.): Field - mowed Local relief (concave, convex, none): None

Slope (%): 3 Lat: 44.224165 Long: -93.97663 Datum: NAD 83

Soil Map Unit Name: 85 - Calco silty clay loam, 0-2 percent slopes, occassionaly flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
SP on edge of area that is is plowed. Climactic conditions were normal. Not in growing season..

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	=Total Cover		
Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Vegetation not evaluated or used as wetland criteria due to growing season

SOIL

Sampling Point: SP 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/1	95	10YR 5/6	5	C	M	Clay loam	Redox close to surface
10-15	10YR 4/1	95	10YR 5/6	5	C	M	Clay loam	Lighter stratum with redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Redox at surface

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? Yes ___ No X Depth (inches): ___
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
offsite aerial review indicated this area is upland

DEPARTMENT OF NATURAL RESOURCES

Formal Natural Heritage Review - Cover Page

See next page for results of review. A draft watermark means the project details have not been finalized and the results are not official.

Project Name: MN CSG 2019-57 LLC

Project Proposer: Area M Consulting, LLC

Project Type: Power, Solar

Project Type Activities: Wetland impacts (e.g., dewatering, tiling, drainage, discharge, excavation, fill, runoff, sedimentation, changes in hydrology)

TRS: T109 R26 S29

County(s): Blue Earth

DNR Admin Region(s): South

Reason Requested: Other

Project Description: 1-2 MW community solar garden consisting of I-beams supporting the array, and access road, various equipment pads, an infiltration pond, fencing, and vegetative ...

Existing Land Uses: Agricultural, but the parcel has been in CRP until 2023.

Landcover / Habitat Impacted: Cropland and disturbed prairie

Waterbodies Affected: There is a PEM wetland in the northwest corner of the Review Area. There may be additional wetlands, but they have not been delineated at this point.

Groundwater Resources Affected: None - appropriate BMPs will be employed, and wetlands will be avoided where possible.

Previous Natural Heritage Review: No

Previous Habitat Assessments / Surveys: No

SUMMARY OF AUTOMATED RESULTS

Category	Results	Response By Category
Project Details	No Comments	No Further Review Required
Ecologically Significant Area	Comments	Protected Wetlands: Calcareous Fens
State-Listed Endangered or Threatened Species	Needs Further Review	State-protected Species in Vicinity
State-Listed Species of Special Concern	Comments	Recommendations
Federally Listed Species	No Records	Visit IPaC For Federal Review

DEPARTMENT OF NATURAL RESOURCES

February 14, 2024

Project Name: MN CSG 2019-57 LLC
Project Proposer: Area M Consulting, LLC
Project Type: Power, Solar
Project ID: MCE #2024-00184

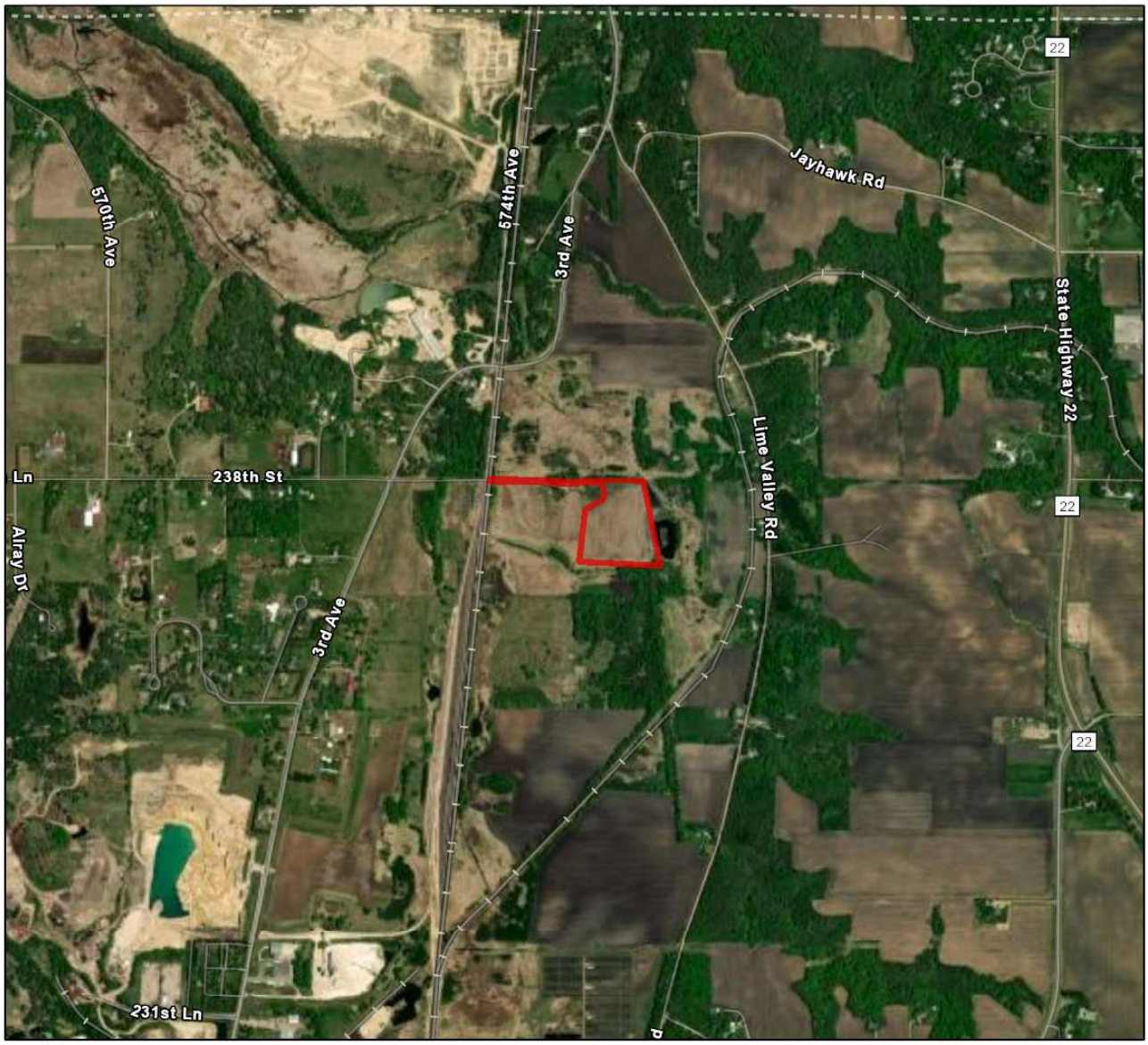
AUTOMATED RESULTS: FURTHER REVIEW IS NEEDED
As requested, the above project has undergone an automated review for potential impacts to rare features. Based on this review, one or more rare features may be impacted by the proposed project and further review by the Natural Heritage Review Team is needed. You will receive a separate notification email when the review process is complete and the Natural Heritage Review letter has been posted.

Please refer to the table on the cover page of this report for a summary of potential impacts to rare features. For additional information or planning purposes, use the Explore Page in Minnesota Conservation Explorer to view the potentially impacted rare features or to create a Conservation Planning Report for the proposed project.

If you have additional information to help resolve the potential impacts listed in the summary results, please attach related project documentation in the Edit Details tab of the Project page. Relevant information includes, but is not limited to, additional project details, completed habitat assessments, or survey results. This additional information will be considered during the project review.

MN CSG 2019-57 LLC

Aerial Imagery With Locator Map



N
W E
S

0 0.13 0.25 0.5 0.75 1 Miles

Project_Boundary

Project Type: Power, Solar

Project Size (acres): 16.11

County(s): Blue Earth

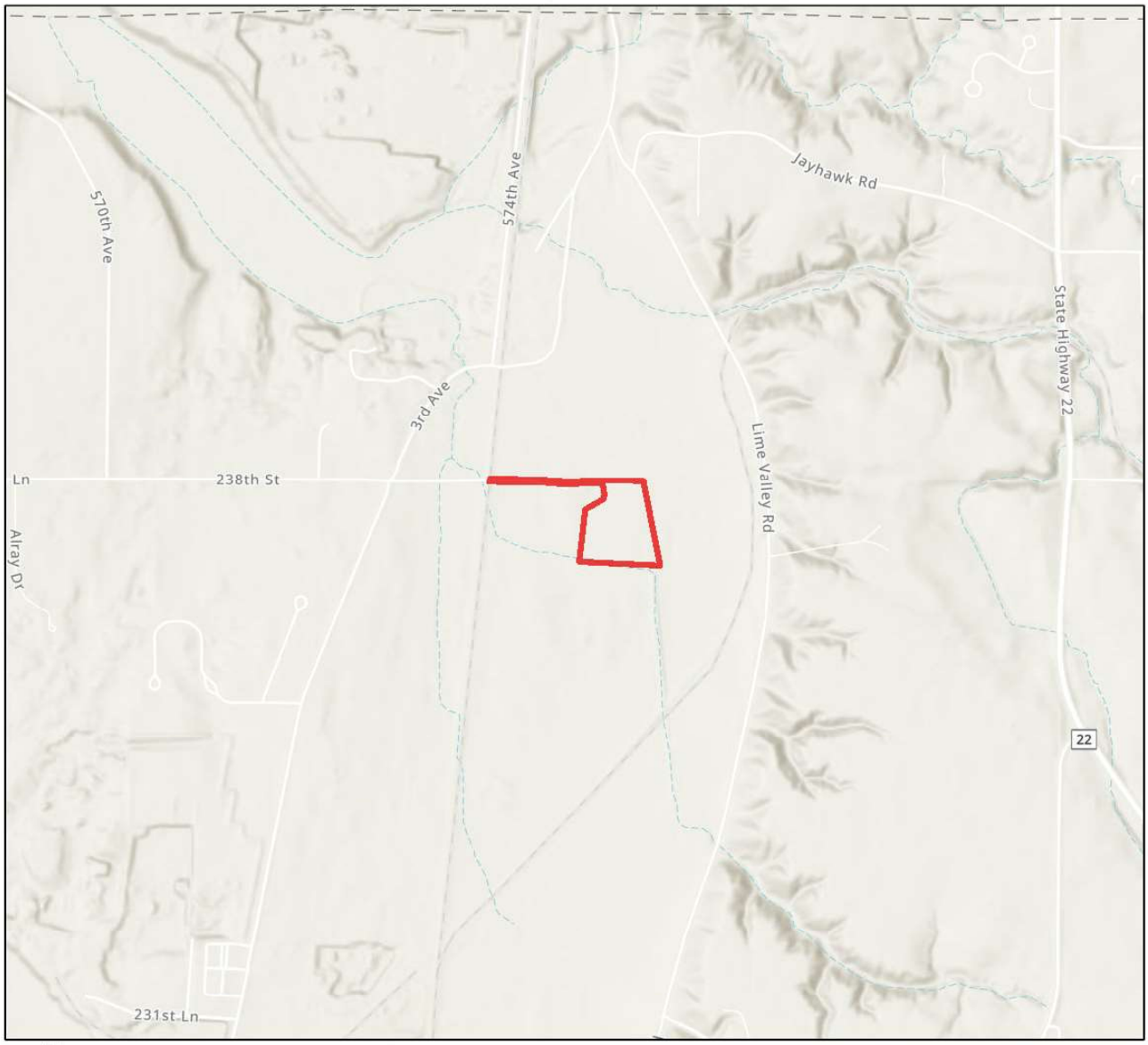
TRS: T109 R26 S29

Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS
Maxar
Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS,



MN CSG 2019-57 LLC

USA Topo Basemap With Locator Map



N
W E
S

0 0.13 0.25 0.5 0.75 1 Miles

Project_Boundary

Project Type: Power, Solar

Project Size (acres): 16.11

County(s): Blue Earth

TRS: T109 R26 S29



Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS
Esri, NASA, NGA, USGS, FEMA
Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS,

Minnesota Department of Natural Resources
Division of Ecological & Water Resources
500 Lafayette Road, Box 25
St. Paul, MN 55155-4025

April 15, 2024

Jonathan Knudsen
Area M Consulting

RE: Natural Heritage Review of the proposed MN CSG 2019-57 LLC,
T109N R26W Section 29; Blue Earth County

Dear Jonathan Knudsen,

For all correspondence regarding the Natural Heritage Review of this project please include the project ID **MCE-2024-00** in the email subject line.

As requested, the Minnesota Natural Heritage Information System has been reviewed to determine if the proposed project has the potential to impact any rare species or other significant natural features. Based on the project details provided with the request, the following rare features may be impacted by the proposed project:

State-listed Species

- The lark sparrow (*Chondestes grammacus*), a state-listed bird species of special concern, has been documented in the vicinity of the project. This bird species is found in open, dry grassland areas with scattered trees and shrubs. They build their nest on the ground, in a shrub or a small tree. **If feasible, avoid initial disturbance to grassland areas and tree/shrub removal from May 15th through August 15th to avoid disturbance of nesting birds.**

- The North American racer (*Coluber constrictor*), a state-listed species of special concern, has been documented in the vicinity of the proposed project and may be encountered on site. These snakes occupy a variety of habitats in the deciduous forest region including forested hillsides, bluff prairies, grasslands, and open woods. Woodland margins and field edges are the preferred summer habitat. During winter months, North American racers hibernate in mammal burrows, caves, rock crevices, gravel banks, stone foundations, and old wells. North American racers have relatively large home ranges, making long-distance movements to and from their hibernacula each year. The North American racer emerges from hibernation in late April. Given the presence

of these rare snakes, the DNR recommends that the use of erosion control mesh, if any, be limited to wildlife-friendly materials.

- Please visit the DNR Rare Species Guide for more information on the habitat use of these species and recommended measures to avoid or minimize impacts.

Federally Protected Species

- To ensure compliance with federal law, conduct a federal regulatory review using the U.S. Fish and Wildlife Service's (USFWS) online Information for Planning and Consultation (IPaC) tool.

Environmental Review and Permitting

- Please include a copy of this letter and the MCE-generated Final Project Report in any state or local license or permit application. Please note that measures to avoid or minimize disturbance to the above rare features may be included as restrictions or conditions in any required permits or licenses.

The Natural Heritage Information System (NHIS), a collection of databases that contains information about Minnesota's rare natural features, is maintained by the Division of Ecological and Water Resources, Department of Natural Resources. The NHIS is continually updated as new information becomes available and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. However, the NHIS is not an exhaustive inventory and thus does not represent all of the occurrences of rare features within the state. Therefore, ecologically significant features for which we have no records may exist within the project area. If additional information becomes available regarding rare features in the vicinity of the project, further review may be necessary.

For environmental review purposes, the results of this Natural Heritage Review are valid for one year; the results are only valid for the project location and project description provided with the request. If project details change or the project has not occurred within one year, please resubmit the project for review within one year of initiating project activities.

The Natural Heritage Review does not constitute project approval by the Department of Natural Resources. Instead, it identifies issues regarding known occurrences of rare features and potential impacts to these rare features. Visit the Natural Heritage Review website for additional information regarding this process, survey guidance, and other related information. For information on the environmental review process or other natural resource concerns, you may contact your DNR Regional Environmental Assessment Ecologist.

Thank you for consulting us on this matter and for your interest in preserving Minnesota's rare natural resources.

Sincerely,



James Drake
Natural Heritage Review Specialist
James.F.Drake@state.mn.us

Cc: Haley Byron

EXHIBIT D

July 23, 2024

New Energy Equity, LLC
2530 Riva Road, Suite 200
Annapolis, Maryland 21401

Subject: No MN SHPO Comment for MN CSG 2019-57, LLC's *Phase I Archaeological Reconnaissance Survey for the Bohrereast Community Solar Project - MN CSG 2019-57*, Blue Earth County, Minnesota

To Whom it May Concern,

Area M Consulting, LLC (Area M) has completed the *Phase I Archaeological Reconnaissance Survey for the Bohrereast Community Solar Project - MN CSG 2019-57 (*April 2024) on behalf of MN CSG 2019-57, LLC in Blue Earth County, Minnesota; this cultural resources study was conducted in accordance with appropriate Minnesota State Historic Preservation Office (SHPO) and Minnesota Office of the State Archaeologist (OSA) guidelines. Based on the results of this study, Area M recommends:

…***the Project may proceed as planned with no negative impact to cultural resources***

As currently defined, the Project is not considered a federal undertaking as defined by Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations (36 CRF 800); Community Solar projects are typically subject to municipal-level or county-level permitting only.

The Minnesota State Historic Preservation Office (MN SHPO), charged with assisting *federal and state agencies in meeting their responsibility to take historic properties into account in planning and carrying out their projects,* as set forth in Section 101b of the National Historic Preservation Act of 1966.

As such, MN SHPO is obligated to comment on all Projects with a Federal nexus or when MN State land, permits, or oversight are required. MN SHPO are not obligated to issue comment on projects which require only county-level or municipal-level oversight which occur on privately-owned, County-owned, or Municipal-owned land. This has been confirmed through multiple phone calls with various MN SHPO staff over the previous 12 month, email correspondence (see Exhibit A), and published review policy changes (https://content.govdelivery.com/accounts/MNADMIN/bulletins/395fc82).

Area M attests — based on knowledge at the time this is written — that the study, standards, and recommendations contained herein for the Bohrereast Community Solar Project - MN CSG 2019-57 LLC are valid, satisfy local permitting requirements for Project construction, and constitute comprehensive de-risking and due diligence efforts with respect to cultural resources. Accordingly, based on the foregoing, MN SHPO concurrence and/or comment is not and will not be required for the Bohrereast Community

Solar Project - MN CSG 2019-57 LLC; if official comment becomes available, Area M will seek and transmit any correspondence immediately.

If you have any questions, or need additional information, please contact me as needed.

Sincerely,



Garrett L. Knudsen
Executive Director & Principal Investigator
AREAM
651.802.8323
gknudsen@areaMconsulting.com

EXHIBIT A

SUPPORTING MN SHPO EMAIL CORRESPONDENCE

From: GraggJohnson, Kelly (ADM) <kelly.graggjohnson@state.mn.us>
Sent: Tuesday, April 30, 2024 2:21 PM
To: Joe Pnewski <jpnewski@areamconsulting.com>; Harrington, Lucy (She/Her/Hers) (ADM) <Lucy.Harrington@state.mn.us>
Subject: RE: Questions on Review of Private Solar Developments

Hi Joe – Given our current staffing constraints and given that these projects are on private land and are not receiving federal or state funding (or permitting), we will not be providing formal comments on these projects as they are not subject to review under state or federal preservation laws. We don't have the capacity right now to provide technical assistance. If the projects are subject to review under state or federal preservation laws, we will provide comments. Please let me know if you have any additional questions.

Thanks,

Kelly

DEPARTMENT OF ADMINISTRATION
STATE HISTORIC PRESERVATION OFFICE

Kelly Gragg-Johnson (she/her/hers) **I Environmental Review Program Specialist**
50 Sherburne Avenue, Suite 203
Saint Paul, MN 55155
(651) 201-3285 I kelly.graggjohnson@state.mn.us

Please reference this SHPO Environmental Review Program Update regarding current project review timelines and staffing changes for the Environmental Review Program.

EXHIBIT E

Please find Exhibit E Site Plan Set attached as a separate document file.

EXHIBIT F

INDICATIVE EQUIPMENT SPECIFICATION SHEET:

SOLAR MODULE

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Q.PEAK DUO XL-G11 SERIES

570 - 585 Wp | 156 Cells
21.4 % Maximum Module Efficiency

MODEL Q.PEAK DUO XL-G11.3 / BFG



Bifacial energy yield gain of up to 20 %

Bifacial Q.ANTUM solar cells make efficient use of light shining on the module rear-side for radically improved LCOE.

Low electricity generation costs

Q.ANTUM DUO Z combines cutting edge cell separation and innovative wiring with Q.ANTUM Technology for higher yield per surface area, lower BOS costs, higher power classes, and an efficiency rate of up to 21.4 %.

A reliable investment

Double glass module design enables extended lifetime with 12-year product warranty and improved 30-year performance warranty[1].

Enduring high performance

Long-term yield security with Anti LeTID and Anti PID Technology[2], Hot-Spot Protect.

Frame for versatile mounting options

High-tech aluminum alloy frame protects from damage, enables use of a wide range of mounting structures and is certified regarding IEC for high snow (5400 Pa) and wind loads (2400 Pa).

Innovative all-weather technology

Optimal yields, whatever the weather with excellent low-light and temperature behavior.

[1] See data sheet on rear for further information.
[2] APT test conditions according to IEC / TS 62804-1:2015 method B (–1500 V, 168 h) including post treatment according to IEC 61215-1-1 Ed. 2.0 (CD)

The ideal solution for:

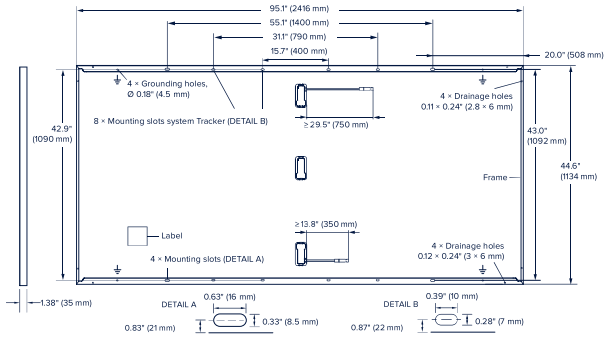
Ground mounted solar panels

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Q.PEAK DUO XL-G11 SERIES

Mechanical Specification

Format	95.1 in × 44.7 in × 1.38 in (including frame) (2416 mm × 1134 mm × 35 mm)
Weight	75.8 lbs (34.4 kg)
Front Cover	0.08 in (2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	0.08 in (2 mm) semi-tempered glass
Frame	Anodised aluminium
Cell	6 × 26 monocrystalline Q.ANTUM solar half cells
Junction box	2.09-3.98 × 1.26-2.36 × 0.59-0.71 in (53-101 mm × 32-60 mm × 15-18 mm), Protection class IP67, with bypass diodes
Cable	4 mm² Solar cable; (+) ≥ 29.5 in (750 mm), (−) ≥ 13.8 in (350 mm)
Connector	Stäubli MC4-Evo2, Hanwha Q CELLS HQC4; IP68



Electrical Characteristics

POWER CLASS			570		575		580		585	
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC[1] (POWER TOLERANCE +5 W / −0 W)				BSTC*		BSTC*		BSTC*		BSTC*
Minimum — Power at MPP[1]	P_{MPP}	[W]	570	623.5	575	629.0	580	634.4	585	639.9
Minimum — Short Circuit Current[1]	I_{SC}	[A]	13.50	14.77	13.52	14.80	13.55	14.83	13.57	14.86
Minimum — Open Circuit Voltage[1]	V_{OC}	[V]	53.50	53.69	53.53	53.72	53.56	53.75	53.59	53.78
Minimum — Current at MPP	I_{MPP}	[A]	12.83	14.03	12.87	14.09	12.92	14.14	12.97	14.19
Minimum — Voltage at MPP	V_{MPP}	[V]	44.44	44.43	44.66	44.65	44.88	44.87	45.10	45.09
Minimum — Efficiency[1]	η	[%]	≥ 20.8		≥ 21.0		≥ 21.2		≥ 21.4	

Bifaciality of P_{MPP} and I_{SC} 70 % ± 5 % • Bifaciality given for rear side irradiation on top of STC (front side) • According to IEC 60904-1-2

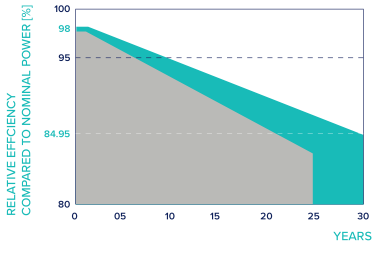
[1] Measurement tolerances P_{MPP} ± 3 %; I_{SC}, V_{OC} ± 5 % at STC: 1000 W/m²; *at BSTC: 1000 W/m² + φ × 135 W/m², φ = 70 % ± 5 %, 25 ± 2 °C, AM 1.5 according to IEC 60904-3

MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT[2]

Minimum — Power at MPP	P_{MPP}	[W]	429.1	432.9	436.6	440.4
Minimum — Short Circuit Current	I_{SC}	[A]	10.87	10.89	10.91	10.93
Minimum — Open Circuit Voltage	V_{OC}	[V]	50.60	50.63	50.66	50.68
Minimum — Current at MPP	I_{MPP}	[A]	10.09	10.14	10.18	10.22
Minimum — Voltage at MPP	V_{MPP}	[V]	42.51	42.71	42.89	43.08

[2] 800 W/m², NMOT, spectrum AM 1.5

Qcells PERFORMANCE WARRANTY

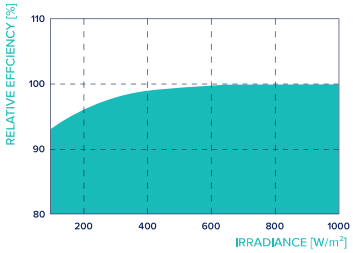


At least 98 % of nominal power during first year. Thereafter max. 0.45 % degradation per year. At least 93.95 % of nominal power up to 10 years. At least 84.95 % of nominal power up to 30 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Qcells sales organisation of your respective country.

*Standard terms of guarantee for the 5 PV companies with the highest production capacity in 2021 (February 2021)

PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m²).

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I_{SC}	α	[%/K]	+0.04	Temperature Coefficient of V_{OC}	β	[%/K]	−0.27
Temperature Coefficient of P_{MPP}	γ	[%/K]	−0.34	Nominal Module Operating Temperature	NMOT	[°F]	109 ± 5.4 (43 ± 3 °C)

Properties for System Design

Maximum System Voltage	V_{SYS}	[V]	1500
Maximum Series Fuse Rating		[A DC]	25
Max. Design Load, Push / Pull[3]		[lbs / ft²]	75 (3600 Pa) / 33 (1600 Pa)
Max. Test Load, Push / Pull[3]		[lbs / ft²]	113 (5400 Pa) / 50 (2400 Pa)

[3] See Installation Manual

PV module classification	Class II
Fire Rating based on ANSI / UL 61730	TYPE 29[4]
Permitted Module Temperature on Continuous Duty	−40 °F up to +185 °F (−40 °C up to +85 °C)

[4] New Type is similar to Type 3 but with metallic frame

Qualifications and Certificates

UL 61730, CE-compliant,
IEC 61215:2016,
IEC 61730:2016,
U.S. Patent No. 9,893,215
(solar cells)

C Certified US UL 61730 CE TÜVRheinland CERTIFIED www.tuv.com ID 1111220277

Specifications subject to technical changes © Qcells Q.PEAK_DUO_XL-G11-BFG_series_570-585_2022-07_Rev01_NA

Qcells pursues minimizing paper output in consideration of the global environment.

Note: Installation instructions must be followed. Contact our technical service for further information on approved installation of this product.

Hanwha Q CELLS America Inc. 400 Spectrum Center Drive, Suite 1400, Irvine, CA 92618, USA | TEL +1 949 748 59 96 | EMAIL hqc-inquiry@qcells.com | WEB www.qcells.com

qcells

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PRODUCT SAFETY DATA SHEET

Q CELLS SOLAR PV MODULES ARE ARTICLES AS DEFINED BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION HAZARD COMMUNICATION STANDARD (HCS), 29 C.F.R. § 1910.1200 AND ARE EXEMPT FROM THE LABELING AND SAFETY DATA SHEETS (SDS) REQUIREMENTS OF THE STANDARD.

Q CELLS provides this product safety data sheet only for convenience of interested parties in the United States of America who are used to the format of safety data sheets in order to assess the product safety. This product safety data sheet does not replace any other documents provided by Q CELLS such as Safety Information, Installation and Operation Manual, Packaging and Transport Information, Product Data Sheet as well as Warranty Terms of the respective product.

1. SECTION: IDENTIFICATION

Solar PV modules convert light into electricity. Light-sensitive cells are electrically interconnected in series and sealed between glass and plastic foils for this purpose. This product safety data sheet is applicable to the following solar PV modules of the Q CELLS brand made by Hanwha Q CELLS America Inc.:

- Q.PEAK DUO-G5, Q.PEAK DUO BLK-G5, Q.PEAK DUO L-G5, Q.PEAK DUO-G5.X, Q.PEAK DUO BLK-G5.X, Q.PEAK DUO L-G5.X,
- Q.PEAK DUO-G6, Q.PEAK DUO BLK-G6, Q.PEAK DUO L-G6, Q.PEAK DUO-G6.X, Q.PEAK DUO BLK-G6.X, Q.PEAK DUO L-G6.X,
- Q.PEAK DUO-G7, Q.PEAK DUO BLK-G7, Q.PEAK DUO L-G7, Q.PEAK DUO-G7.X, Q.PEAK DUO BLK-G7.X, Q.PEAK DUO L-G7.X,
- Q.PEAK DUO-G8, Q.PEAK DUO BLK-G8, Q.PEAK DUO L-G8, Q.PEAK DUO-G8.X, Q.PEAK DUO BLK-G8.X, Q.PEAK DUO L-G8.X,
- Q.PEAK DUO-G9, Q.PEAK DUO MS-G9, Q.PEAK DUO ML-G9, Q.PEAK DUO BLK ML-G9, Q.PEAK DUO XL-G9, Q.PEAK DUO ML-G9.X, Q.PEAK DUO BLK ML-G9.X, Q.PEAK DUO XL-G9.X,
- Q.PEAK DUO ML-G10, Q.PEAK DUO BLK ML-G10, Q.PEAK DUO XL-G10, Q.PEAK DUO ML-G10.X, Q.PEAK DUO BLK ML-G10.X, Q.PEAK DUO XL-G10.X
- Q.PEAK DUO XL-G11.X

Minor variations within the product families listed above can be identified by a versioning system which replaces character “X” with numerals and lower case letters of either “1”, “2”,“3” or “a”,“b”,“c”,“d” to form G8.1, G6.2, G7.3 or G10.a, G10.c, G10.d for example. All of these variants as well as the ones with additional suffixes “/TAA” and / or “+” are covered by this product safety data sheet. This is also true for B-grade modules which have minor optical imperfections. Product names of these replace “Q.” with “B.LINE”. B-grade modules of Q.PEAK DUO L-G6.2 are named B.LINE PEAK DUO L-G6.2 for example.

Responsible Party as Importer:
Name: Hanwha Q CELLS America Inc.
Address: 400 Spectrum Center Drive, Suite 1400, Irvine, CA 92618, USA
Phone: 1 949 748 59 96

2. SECTION: IDENTIFICATION OF SAFETY RISKS (HAZARDS IDENTIFICATION)

Q CELLS solar PV modules do not pose any risk of hazardous chemicals. Hazard symbols and precautionary hazard statements for hazardous chemicals are not applicable. No symptoms or effects – neither acute nor delayed – have to be expected when Q CELLS solar PV modules are handled as stipulated in the Installation and Operation Manual. Q CELLS provides a Safety Information sheet with all modules shipments. This document contains detailed risk statements and recommendations for installation and operation. Before installing the module, read the Installation and Operation Manual for Q CELLS modules carefully. You can obtain the complete Installation and Operation Manual from your retailer.
Attention: Only qualified and authorized specialists may install modules and put them into operation. Keep children and unauthorized persons away from the modules.
Risks:
- Risk of death from electrocution! Solar modules generate electricity and are energized as soon as they are exposed to light.
- In rare cases, solar PV modules – as any other electrical device – can cause fire due to worn electrical contacts which result in electrical arching.
- Solar PV modules can reach high temperatures which can cause skin burns.

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- Sharp edges, corners and broken glass can cause injuries.
- Solar PV modules can cause Injuries due to their weight.
  - Falling solar PV modules can cause injuries.
  - Lifting solar PV modules can cause injuries.

For precautionary statements, please refer to the Installation and Operations Manual of the respective product.

MISUSE OR INCORRECT USE OF SOLAR MODULES VOIDS THE LIMITED WARRANTY AND MAY CREATE A SAFETY HAZARD AND RISK PROPERTY DAMAGE. THIS INCLUDES IMPROPER INSTALLATION OR CONFIGURATION, IMPROPER MAINTENANCE, UNINTENDED USE, AND UNAUTHORIZED MODIFICATION.

3. SECTION: COMPOSITION / INFORMATION ON INGREDIENTS

Safety data sheets are only required for hazardous chemicals covered by the Hazard Communication Standard (HCS). Solar PV modules made by Q CELLS are not covered by HCS. The following table provides an overview of materials solar PV modules by Q CELLS are made of. The values given for the share of weight are targets and can vary for the products covered by this Product Safety Data Sheet.

Component	Material	Total Share	Remark
Frame	Aluminum	8 % – 16 %	not hazardous
	Silicone	< 2 %	not hazardous, see section 8
Laminate	Glass	60 % – 80 %	not hazardous
	Plastics (EVA, PET, PE, PPE, PC)	8 % – 16 %	no hazards known
	Silicon	2 % – 4 %	not hazardous
	Metals (Aluminum, Copper, Tin)	< 2 %	not hazardous
	Lead	< 0,1 %	hazardous
	Silver	< 0,05 %	not hazardous

4. SECTION: FIRST-AID MEASURES

In case of electrocution:

- Always protect yourself by taking all necessary safety precautions before rescuing persons injured.
- **Attention:** Stay away from sources of high voltage and leave the rescue to qualified personnel with appropriate personal protection equipment!
- Call emergency rescue services.
- Do not touch live parts. Qualified personnel should shut down the PV system as far as possible – e.g. disconnect the modules at the inverter before uncovering any live electrical parts. Be sure to observe the specified time intervals after switching off the inverter. High voltage components need time to discharge. Follow OSHA requirements for control of hazardous energy at 29 C.F.R. § 1910.147.
- In the event a person is electrocuted or affected by electrical energy of the solar PV module, CALL 911. Before attempting rescue, SHUT-DOWN THE POWER SOURCE.
- Remove the victim from the power source using only insulated tools ONLY IF CONTACT WITH LIVE ELECTRICAL COMPONENTS CAN BE PREVENTED.
- Carefully move the injured from the zone of danger.
- After moving to a safe location, check heartbeat, respiration and consciousness of the injured person.
- Apply appropriate life-saving measures (CPR) accordingly before taking care of minor injuries.
- Consult a medical professional even if there are no visible injuries.
  - Flush thermal skin burns caused by touching hot surfaces of solar PV modules with cool water. Consult a medical professional.
  - Injuries due to sharp edges, corners and broken glass need to be appropriately treated. Consult a medical professional.

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- Other types of injuries need to be treated appropriately as well. Consult a medical professional.

5. SECTION: FIRE-FIGHTING MEASURES

- Q CELLS solar PV modules are fire rated as Class C according to IEC and UL 1703 / UL 61730 as well as Type 1 and 2 according to UL 1703 / UL 61730.
- Q CELLS solar PV modules are extensively tested at the factory to ensure electrical safety of the product before shipment.
- In rare cases, solar PV modules – as any other electrical device – can cause fire due to worn electrical contacts which result in electrical arching.
- In case solar PV modules which are not part of an array are on fire, USE FIRE EXTINGUISHERS RATED FOR ELECTRICAL EQUIPMENT, Class C.
- IN CASE A SOLAR PV MODULE ARRAY IS PRESENT, ANY FIRE SHOULD ONLY BE FOUGHT BY PROFESSIONAL FIREFIGHTERS. FIREFIGHTERS NEED TO TAKE PRECAUTIONS FOR ELECTRICAL VOLTAGES UP TO 1,500 VOLTS (DC).
- Some components of the modules can burn. Potential combustion products include oxides of carbon, nitrogen and silicon.
- In case of prolonged fire, solar PV modules may lose their structural integrity.

General recommendations from the below-mentioned reports:
- Fire service personnel should follow their normal tactics and strategies at structure fires involving solar power systems, but do so with awareness and understanding of exposure to energized electrical equipment. Emergency response personnel should operate normally, and approach this subject area with awareness, caution, and understanding to assure that conditions are maintained as safely as possible.
- Care must be exercised during all operations, both interior and exterior.
- Responding personnel must stay back from the roofline in the event modules or sections of an array may slide off the roof.
- Contacting a local professional PV installation company should be considered to mitigate potential hazards.
- Turning off an array is not as simple as opening a disconnect switch. As long as the array is illuminated, parts of the system will remain energized.
- When illuminated by artificial light sources such as fire department light trucks or an exposure fire, PV systems are capable of producing electrical power sufficient to cause inability to let go from electricity as a result of stimulation of muscle tissue, also known as lock-on hazard.
- Firefighting foam should not be relied upon to block light.
- The electric shock hazard due to application of water is dependent on voltage, water conductivity, distance and spray pattern.
- It is recommendable to fight fire with water instead of foam if a PV system is present. Salt water should not be used.
- Firefighter's gloves and boots afford limited protection against electrical shock provided the insulating surface is intact and dry. They should not be considered equivalent to electrical personal protection equipment.

Readers interested in more details may refer to the following reports:
- National Fire Protection Association, Fire Protection Research Foundation report "Fire Fighter Safety and Emergency Response for Solar Power Systems" issued May 2010, revised October 2013
- Important recommendations from a report called "Firefighter Safety and Photovoltaic Installations Research Project" issued by Underwriters Laboratories on November 29, 2011

6. SECTION: ACCIDENTAL RELEASE MEASURES

This section is not applicable.

7. SECTION: HANDLING AND STORAGE

Before installing the module, read the Installation and Operation Manual for Q CELLS modules carefully. Noncompliance with the instructions may result in damage and physical injury or death. Only qualified and authorized specialists may install modules and put them into operation.

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PRODUCT SAFETY DATA SHEET

You can obtain the complete installation manual from your retailer. Details about transport and storage of palletized Q CELLS solar PV modules can be found in the Packaging and Transport Information of the respective module type.
Storage, transport and unpacking:

- Store the module dry, well-ventilated and properly secured. The original packaging is not weatherproof.
- Always transport the module in its original packaging.
- Do not stack the modules. This prevents damage of the junction box.
- The module is made of glass. Take great care when unpacking, storing and transporting it.
- Do not subject the module glass to any mechanical stress (e.g. through torsion or deflection). Do not step on the module or place any objects onto the module.
- Protect both sides of the module against scratching and other damage.
- Carry the module by holding the edges with both hands, or use a glass suction lifter.
- Never lift or carry the module using the module junction box or wiring. Avoid pulling on the wiring at all costs.

8. SECTION: EXPOSURE CONTROLS / PERSONAL PROTECTION

Before installing the module, read the Installation and Operation Manual carefully. Noncompliance with the instructions may result in damage and physical injury. Only qualified and authorized specialists may install modules and put them into operation. You can obtain the complete installation manual from your retailer.

- Please follow the valid national regulations and safety guidelines for the installation of electrical devices and systems.
- Please make sure to take all necessary safety precautions.
- Ensure that all personnel are aware of and adhere to accident-prevention and safety regulations.
- For handling of modules wear suitable protective gloves.
- Do not install damaged modules. Ensure that all electrical components are in a proper, dry, and safe condition.
- Do not modify the module (e.g. do not drill any additional holes). Never open the junction box.
- Ensure that modules and tools are not subject to moisture or rain at any time during installation. Only use dry, insulated tools for electrical work.
- Only connect cables with plugs. Ensure for a tight connection between the plugs. Plugs click together audibly.
- Cover the modules with an opaque material during installation. Cover the modules to be disconnected.

Silicones used in manufacturing release methanol during curing. Once cured, no additional methanol is released during use. Small amounts of these chemicals may be present in shipping cartons. Upon receipt, open container in a well-ventilated location and allow to stand for 5 minutes before removing units from cartons. Exposures above recommended limits for methanol of 200 ppm eight-hour time-weighted-average (TWA) will not occur.

9. SECTION: PHYSICAL AND CHEMICAL PROPERTIES

- Physical state: solid
- Voltage: refer to data sheet (below 50 volts for a single module)

Attention: Voltage of single modules add up when modules are electrically connected in series. Q CELLS solar PV modules are designed and certified for voltages up to 1,000 volts or even up to 1,500 volts. Connection of modules in series is only permitted up to the maximum system voltage as listed in the applicable data sheet.

- Weight: refer to data sheet

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PRODUCT SAFETY DATA SHEET

- Solubility in water: insoluble in water

10. SECTION: STABILITY AND REACTIVITY

Under normal operating conditions as specified in the Product Data Sheet, Q CELLS solar PV modules are chemically stable.
- Q CELLS solar PV modules are tested for salt spray and ammonia resistance according to IEC 61701 and IEC 62716, respectively.
- Q CELLS solar PV modules support ambient operating temperatures from –40 °C to +85 °C (–40 °F to +185 °F).
- Do not install modules above 13.120 ft (4000 m) altitude above sea level.
- Some components of the modules can burn. Potential combustion products include oxides of carbon, nitrogen and silicon.
- Do not scratch off dirt. Use a soft cellulose cloth or sponge to carefully wipe off stubborn dirt. Do not use micro fleece wool or cotton cloths.
- Rinse dirt off with lukewarm water (dust, leaves, etc.)
- Use an alcohol based glass cleaner. Do not use abrasive detergents or tensides.
- Isopropyl alcohol (IPA) can be used selectively to remove stubborn dirt and stains within one hour after it appeared.
- Follow the safety guidelines provided by the IPA manufacturer.
- Do not let IPA run down between the module and the frame or into the module edges.

11. SECTION: TOXICOLOGICAL INFORMATION

Small amounts of methanol may be present inside shipping cartons. Open cartons and allow to vent before removing units. No exposure to hazardous chemicals will occur when the units are in use.

12. SECTION: ECOLOGICAL INFORMATION

Q CELLS solar PV modules are designed to withstand outdoor operating conditions for 25 years. Biodegradation is not expected due to high chemical stability of the components.

13. SECTION: DISPOSAL CONSIDERATIONS

Q CELLS solar PV modules should be recycled rather than dumped in a landfill. Raw materials of the product can be recovered by recycling companies. Disposal must be in accordance with national and local laws and regulations for electric / electronic waste.

14. SECTION: TRANSPORT INFORMATION

Q CELLS solar PV modules can be shipped via standardized container freight. Regulations for hazardous goods do not apply. For further details, please refer to the Packaging and Transport Information which can be provided as a separate document by Q CELLS.

15. SECTION: REGULATORY INFORMATION

- Q CELLS solar PV modules are tested according to international standards IEC 61215, IEC 61730 as well as US standards UL 1703 / UL 61730.
- Please refer to the Installation and Operation Manual and Product Data Sheet of the respective Q CELLS solar PV module.

16. SECTION: OTHER INFORMATION

- Date of initial creation of this product safety data sheet: July 1, 2016
- Date of last revision: October 01, 2021

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PV MODULE REFLECTION – GLARE

PV MODULE REFLECTION – GLARE

When light falls on a surface it is split; some of the light traverses the surface (transmission), some light enters the surface and is lost (absorption) and some is redirected away from the surface (reflection). In order for a PV module to produce as much power as possible, the cover glass is optimized for high transmission. This is why Hanwha Q CELLS PV modules have cutting-edge anti-reflective coatings (ARC) in order to maximize transmission and limiting the possibility for reflections.

Each of these actions, transmission, absorption and reflection, can be measured as a proportion of the original light falling on the surface, eg. T + A + R = 100 %. For our purposes it is only necessary to look at the proportion of this original light, as the intensity of the light falling on the surface of the PV module glass will change with numerous factors including different system configurations, locations and times of both the day and year.

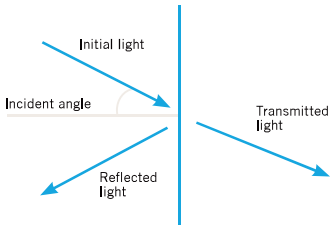


Figure 1: Light falling on a surface

The proportion of light reflected from any surface is dependent upon the angle at which the light hits the glass, called the incident angle where 0° is direct light and 90° is parallel to the surface. The proportion of reflected light can be calculated for different incident angles using the Fresnel equations. For a sheet of glass it would be necessary to calculate the reflection twice, once for the frontside of the glass and once for the backside. However as the rear of PV module glass is connected to an EVA and light absorbing PV cell it is only necessary to consider the frontside effect. To calculate the reflection the refractive index of the involved media is needed. As an example air has an index of 1, for normal "window" glass the value is around 1.5, for water it is 1.33 and for PV module glass it is around 1.25. From these figures alone it is possible to, correctly, presume that the glass used in PV modules creates less reflected light than normal "window" glass or a body of water. Figure 2 shows the curves of these different cases, along with measurements by TÜV Rheinland of Hanwha Q CELLS modules. It can be seen that the proportion of light reflected starts close to zero but rises as the incident angle gets closer to 90°.

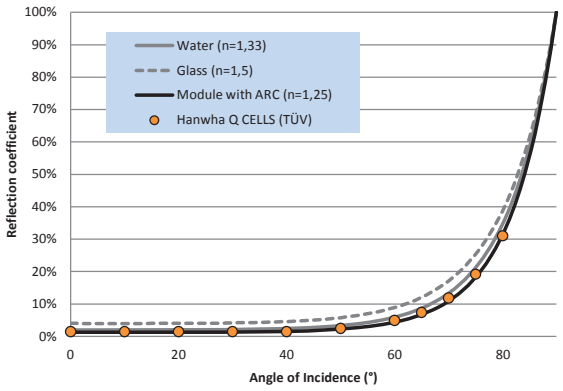


Figure 2: Reflection vs. incident angle

CONCLUSION

From both the theoretical and measured data it is clear that ARC glass used in all Hanwha Q CELLS currently produced PV modules reflects less light than both naturally occurring features, such as bodies of water, and common manmade structures. Moreover for incident angles below 55° less than 4 % of the initial light is reflected away from the PV module.

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Specifications subject to technical changes © **Hanwha Q CELLS** Module_reflection_2017-02_Rev01_EN

PRODUCT SAFETY DATA SHEET

HANWHA Q CELLS SOLAR PV MODULES ARE ARTICLES AS DEFINED BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION HAZARD COMMUNICATION STANDARD (HCS), 29 C.F.R. § 1910.1200 AND ARE EXEMPT FROM THE LABELING AND SAFETY DATA SHEETS (SDS) REQUIREMENTS OF THE STANDARD.

Hanwha Q CELLS provides this product safety data sheet only for convenience of interested parties in the United States of America who are used to the format of safety data sheets in order to assess the product safety. This product safety data sheet does not replace any other documents provided by Hanwha Q CELLS such as Safety Information, Installation and Operation Manual, Packaging and Transport Information, Product Data Sheet as well as Warranty Terms of the respective product.

SECTION 1: IDENTIFICATION

Solar PV modules convert light into electricity. Light-sensitive cells are electrically interconnected in series and sealed between glass and plastic foils for this purpose. This product safety data sheet is applicable to the following solar PV modules of the Q CELLS brand made by Hanwha Q CELLS:

- Q.PLUS-G4.X, Q.PLUS BFR-G4.X, Q.PLUS L-G4.X, Q.PEAK-G4.X, Q.PEAK BLK-G4.X, Q.PEAK L-G4.X,
- Q.PLUS DUO-G5, Q.PLUS DUO BLK-G5, Q.PLUS DUO L-G5, Q.PLUS DUO-G5.X, Q.PLUS DUO BLK-G5.X, Q.PLUS DUO L-G5.X,
- Q.PEAK DUO-G5, Q.PEAK DUO BLK-G5, Q.PEAK DUO L-G5, Q.PEAK DUO-G5.X, Q.PEAK DUO BLK-G5.X, Q.PEAK DUO L-G5.X,
- Q.PEAK DUO-G6, Q.PEAK DUO BLK-G6, Q.PEAK DUO L-G6, Q.PEAK DUO-G6.X, Q.PEAK DUO BLK-G6.X, Q.PEAK DUO L-G6.X

Minor variations within the product families listed above can be identified by a versioning system which replaces character “X” with numerals of either “1”, “2” or “3” to form G4.1, G4.2, G4.3, G5.1, G5.2, G5.3, G6.1, G6.2 and G6.3, respectively. All of these variants as well as the ones with additional suffix “/TAA” are covered by this product safety data sheet. This is also true for B-grade modules which have minor optical imperfections. Product names of these replace “Q.” with “B.LINE”. B-grade modules of Q.PEAK-G4.1 are named B.LINE PEAK-G4.1 for example.

Responsible Party as Importer:
Name: Hanwha Q CELLS America
Address: 300 Spectrum Center Drive, Suite 1250, Irvine, CA 92618
Phone: 1-949-748-5996

SECTION 2: IDENTIFICATION OF SAFETY RISKS (HAZARDS IDENTIFICATION)

Hanwha Q CELLS solar PV modules do not pose any risk of hazardous chemicals. Hazard symbols and precautionary hazard statements for hazardous chemicals are not applicable. No symptoms or effects – neither acute nor delayed – have to be expected when Hanwha Q CELLS solar PV modules are handled as stipulated in the Installation and Operation Manual. Hanwha Q CELLS provides a Safety Information sheet with all modules shipments. This document contains detailed risk statements and recommendations for installation and operation. Before installing the module, read the Installation and Operation Manual for Q CELLS modules carefully. You can obtain the complete Installation and Operation Manual from your retailer.

Attention: Only qualified and authorized specialists may install modules and put them into operation. Keep children and unauthorized persons away from the modules.

Risks:
- Risk of death from electrocution! Solar modules generate electricity and are energized as soon as they are exposed to light.
- In rare cases, solar PV modules – as any other electrical device – can cause fire due to worn electrical contacts which result in electrical arching.
- Solar PV modules can reach high temperatures which can cause skin burns.
- Sharp edges, corners and broken glass can cause injuries.
- Solar PV modules can cause Injuries due to their weight.
    - Falling solar PV modules can cause injuries.
    - Lifting solar PV modules can cause injuries.

For precautionary statements, please refer to the Installation and Operations Manual of the respective product.

MISUSE OR INCORRECT USE OF SOLAR MODULES VOIDS THE LIMITED WARRANTY AND MAY CREATE A SAFETY HAZARD AND RISK PROPERTY DAMAGE. THIS INCLUDES IMPROPER INSTALLATION OR CONFIGURATION, IMPROPER MAINTENANCE, UNINTENDED USE, AND UNAUTHORIZED MODIFICATION.

PRODUCT SAFETY DATA SHEET

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Safety data sheets are only required for hazardous chemicals covered by the Hazard Communication Standard (HCS). Solar PV modules made by Hanwha Q CELLS are not covered by HCS. The following table provides an overview of materials solar PV modules by Hanwha Q CELLS are made of. The values given for the share of weight are targets and can vary for the products covered by this Product Safety Data Sheet.

COMPONENT	MATERIAL	TOTAL SHARE	REMARK
FRAME	Aluminum	8 % – 16 %	not hazardous
	Silicone	<2 %	not hazardous, see section 8
LAMINATE	Glass	60 % – 80 %	not hazardous
	Plastics (EVA, PET, PE, PPE, PC)	8 % – 16 %	no hazards known
	Silicon	2 % – 4 %	not hazardous
	Metals (Aluminum, Copper, Tin)	1 % – 3 %	not hazardous
	Lead	<0,1 %	hazardous
	Silver	<0,05 %	not hazardous

SECTION 4: FIRST-AID MEASURES

In case of electrocution:

- Always protect yourself by taking all necessary safety precautions before rescuing persons injured.
- Attention: Stay away from sources of high voltage and leave the rescue to qualified personnel with appropriate personal protection equipment!
- Call emergency rescue services.
- Do not touch live parts. Qualified personnel should shut down the PV system as far as possible – e.g. disconnect the modules at the inverter before uncovering any live electrical parts. Be sure to observe the specified time intervals after switching off the inverter. Highvoltage components need time to discharge. Follow OSHA requirements for control of hazardous energy at 29 C.F.R. § 1910.147.
- In the event a person is electrocuted or affected by electrical energy of the solar PV module, CALL 911. Before attempting rescue, SHUTDOWN THE POWER SOURCE.
- Remove the victim from the power source using only insulated tools ONLY IF CONTACT WITH LIVE ELECTRICAL COMPONENTS CAN B PREVENTED.
- Carefully move the injured from the zone of danger.
- After moving to a safe location, check heartbeat, respiration and consciousness of the injured person.
- Apply appropriate life-saving measures (CPR) accordingly before taking care of minor injuries.
- Consult a medical professional even if there are no visible injuries.
    - Flush thermal skin burns caused by touching hot surfaces of solar PV modules with cool water. Consult a medical professional.
    - Injuries due to sharp edges, corners and broken glass need to be appropriately treated. Consult a medical professional.
    - Other types of injuries need to be treated appropriately as well. Consult a medical professional.

SECTION 5: FIRE-FIGHTING MEASURES

- Hanwha Q CELLS solar PV modules are fire rated as Class C according to IEC and UL 1703 as well as Type 1 according to UL 1703.
- Hanwha Q CELLS solar PV modules are extensively tested at the factory to ensure electrical safety of the product before shipment.
- In rare cases, solar PV modules – as any other electrical device – can cause fire due to worn electrical contacts which result in electrical arching.
- In case solar PV modules which are not part of an array are on fire, USE FIRE EXTINGUISHERS RATED FOR ELECTRICAL EQUIPMENT, Class C.
- IN CASE A SOLAR PV MODULE ARRAY IS PRESENT, ANY FIRE SHOULD ONLY BE FOUGHT BY PROFESSIONAL FIREFIGHTERS. FIREFIGHTERS NEED TO TAKE PRECAUTIONS FOR ELECTRICAL VOLTAGES UP TO 1,500 VOLTS (DC).
- Some components of the modules can burn. Potential combustion products include oxides of carbon, nitrogen and silicon.
- In case of prolonged fire, solar PV modules may lose their structural integrity.

General recommendations from the below-mentioned reports:

- Fire service personnel should follow their normal tactics and strategies at structure fires involving solar power systems, but do so with awareness and understanding of exposure to energized electrical equipment. Emergency response personnel should operate normally, and approach this subject area with awareness, caution, and understanding to assure that conditions are maintained as safely as possible.
- Care must be exercised during all operations, both interior and exterior.
- Responding personnel must stay back from the roofline in the event modules or sections of an array may slide off the roof.
- Contacting a local professional PV installation company should be considered to mitigate potential hazards.
- Turning off an array is not as simple as opening a disconnect switch. As long as the array is illuminated, parts of the system will remain energized.
- When illuminated by artificial light sources such as fire department light trucks or an exposure fire, PV systems are capable of producing electrical power sufficient to cause inability to let go from electricity as a result of stimulation of muscle tissue, also known as lock-on hazard.
- Firefighting foam should not be relied upon to block light.
- The electric shock hazard due to application of water is dependent on voltage, water conductivity, distance and spray pattern.
- It is recommendable to fight fire with water instead of foam if a PV system is present. Salt water should not be used.
- Firefighter's gloves and boots afford limited protection against electrical shock provided the insulating surface is intact and dry. They should not be considered equivalent to electrical personal protection equipment.

Readers interested in more details may refer to the following reports:

- National Fire Protection Association, Fire Protection Research Foundation report "Fire Fighter Safety and Emergency Response for Solar Power Systems" issued May 2010, revised October 2013
- Important recommendations from a report called "Firefighter Safety and Photovoltaic Installations Research Project" issued by Underwriters Laboratories on November 29, 2011

SECTION 6: FIRE-FIGHTING MEASURES

This section is not applicable.

SECTION 7: HANDLING AND STORAGE

Before installing the module, read the Installation and Operation Manual for Q CELLS modules carefully. Noncompliance with the instructions may result in damage and physical injury or death. Only qualified and authorized specialists may install modules and put them into operation. You can obtain the complete installation manual from your retailer.

Details about transport and storage of palletized Hanwha Q CELLS solar PV modules can be found in the Packaging and Transport Information of the respective module type.

Storage, transport and unpacking:

- Store the module dry, well-ventilated and properly secured. The original packaging is not weatherproof.
- Always transport the module in its original packaging.
- Do not stack the modules. This prevents damage of the junction box.
- The module is made of glass. Take great care when unpacking, storing and transporting it.
- Do not subject the module glass to any mechanical stress (e.g. through torsion or deflection). Do not step on the module or place any objects onto the module.
- Protect both sides of the module against scratching and other damage.
- Carry the module by holding the edges with both hands, or use a glass suction lifter.
- Never lift or carry the module using the module junction box or wiring. Avoid pulling on the wiring at all costs.

PRODUCT SAFETY DATA SHEET

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Before installing the module, read the Installation and Operation Manual carefully. Noncompliance with the instructions may result in damage and physical injury. Only qualified and authorized specialists may install modules and put them into operation. You can obtain the complete installation manual from your retailer.

- Please follow the valid national regulations and safety guidelines for the installation of electrical devices and systems.
- Please make sure to take all necessary safety precautions.
- Ensure that all personnel are aware of and adhere to accident-prevention and safety regulations.
- For handling of modules wear suitable protective gloves.
- Do not install damaged modules. Ensure that all electrical components are in a proper, dry, and safe condition.
- Do not modify the module (e.g. do not drill any additional holes). Never open the junction box.
- Ensure that modules and tools are not subject to moisture or rain at any time during installation. Only use dry, insulated tools for electrical work.
- Only connect cables with plugs. Ensure for a tight connection between the plugs. Plugs click together audibly.
- Cover the modules with an opaque material during installation. Cover the modules to be disconnected.

Silicones used in manufacturing release methanol during curing. Once cured, no additional methanol is released during use. Small amounts of these chemicals may be present in shipping cartons. Upon receipt, open container in a well ventilated location and allow to stand for 5 minutes before removing units from cartons. Exposures above recommended limits for methanol of 200 ppm eight-hour time-weighted-average (TWA) will not occur.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

- Physical state: solid
- Voltage: refer to data sheet (below 50 volts for a single module)

Attention: Voltage of single modules add up when modules are electrically connected in series. Hanwha Q CELLS solar PV modules are designed and certified for voltages up to 1,000 volts or even up to 1,500 volts. Connection of modules in series is only permitted up to the maximum system voltage as listed in the applicable data sheet.

- Weight: refer to data sheet
- Solubility in water: insoluble in water

SECTION 10: STABILITY AND REACTIVITY

Under normal operating conditions as specified in the Product Data Sheet, Hanwha Q CELLS solar PV modules are chemically stable.

- Hanwha Q CELLS solar PV modules are tested for salt spray and ammonia resistance according to IEC 61701 and IEC 62716, respectively.
- Hanwha Q CELLS solar PV modules support ambient operating temperatures from –40 °C to +85 °C (–40 °F to +185 °F).
- Do not install modules above 13.120 ft (4000 m) altitude above sea level.
- Some components of the modules can burn. Potential combustion products include oxides of carbon, nitrogen and silicon.
- Do not scratch off dirt. Use a soft cellulose cloth or sponge to carefully wipe off stubborn dirt. Do not use micro fleece wool or cotton cloths.
- Rinse dirt off with lukewarm water (dust, leaves, etc.)
- Use an alcohol based glass cleaner. Do not use abrasive detergents or tensides.
- Isopropyl alcohol (IPA) can be used selectively to remove stubborn dirt and stains within one hour after it appeared.
- Follow the safety guidelines provided by the IPA manufacturer.
- Do not let IPA run down between the module and the frame or into the module edges.

PRODUCT SAFETY DATA SHEET

SECTION 11: TOXICOLOGICAL INFORMATION

Small amounts of methanol may be present inside shipping cartons. Open cartons and allow to vent before removing units. No exposure to hazardous chemicals will occur when the units are in use.

SECTION 12: ECOLOGICAL INFORMATION

Hanwha Q CELLS solar PV modules are designed to withstand outdoor operating conditions for 25 years. Biodegradation is not expected due to high chemical stability of the components.

SECTION 13: DISPOSAL CONSIDERATIONS

Hanwha Q CELLS solar PV modules should be recycled rather than dumped in a landfill. Raw materials of the product can be recovered by recycling companies. Disposal must be in accordance with national and local laws and regulations for electric/electronic waste.

SECTION 14: TRANSPORT INFORMATION

Hanwha Q CELLS solar PV modules can be shipped via standardized container freight. Regulations for hazardous goods do not apply. For further details, please refer to the Packaging and Transport Information which can be provided as a separate document by Hanwha Q CELLS.

SECTION 15: REGULATORY INFORMATION

- Hanwha Q CELLS solar PV modules are tested according to international standards IEC 61215, IEC 61730 as well as US standards UL 1703.
- Please refer to the Installation and Operation Manual and Product Data Sheet of the respective Hanwha Q CELLS solar PV module.

SECTION 16: OTHER INFORMATION

- Date of initial creation of this product safety data sheet: July 1, 2016
- Date of last revision: August 14, 2018

Specifications subject to technical changes © Hanwha Q CELLS Product safety data sheet 2018-08_Rev04_NA

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INDICATIVE EQUIPMENT SPECIFICATION SHEET:

INVERTER

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Efficient

- High power density with 150 kW thanks to its compact structure
- Max. yield due to possible DC/AC ratio of up to 150%

Reliable

- Superior PV system availability with 150 kW units
- Innovative digital features aligned with the energy management platform ennexOS

Flexible

- For DC input voltages up to 1500 V
- Flexible DC solutions with customer-specific PV array junction boxes

Easy to install

- Ergonomic handling and simple connection for quick installation
- Centralized commissioning and control of the PV power plant via SMA Data Manager

SUNNY HIGHPOWER PEAK3

Customized for tomorrow today

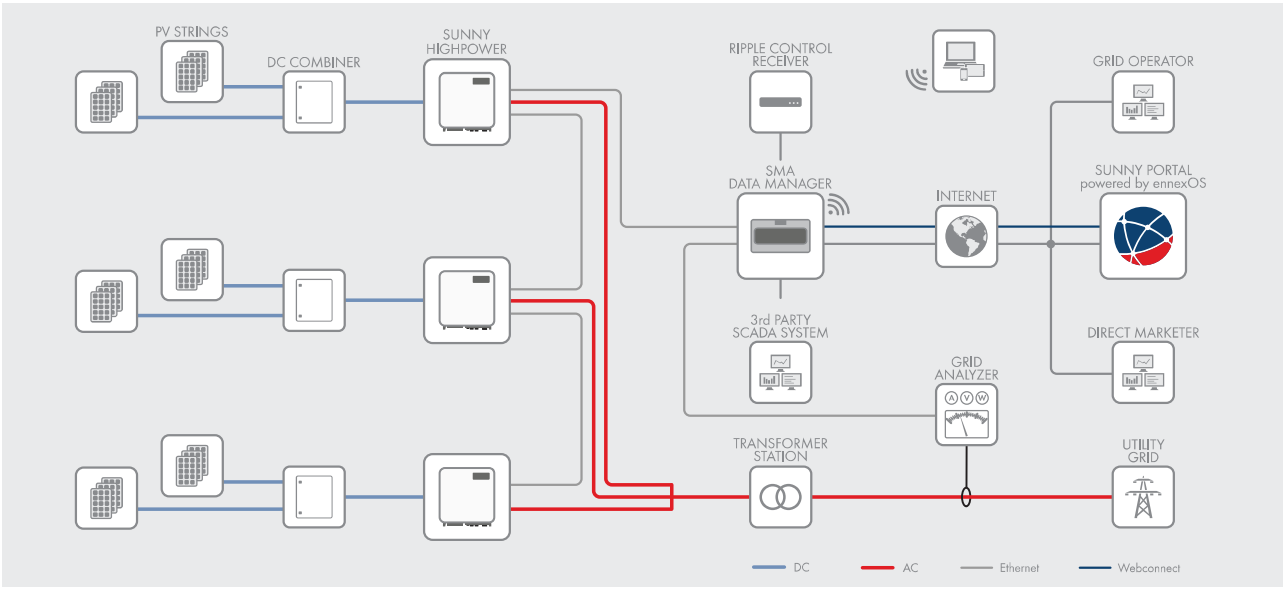
The Sunny Highpower PEAK3 is the central component of the SMA solution for PV power plants with a decentralized architecture and system voltages of 1500 V DC. This compact string inverter enables cost-optimized solutions for industrial PV applications thanks to its high power density. It also provides a simple way of transport and allows for quick installation and commissioning. This string inverter with 150 kW of power is equipped with the automatic SMA Smart Connected service for proactive servicing that facilitates operation and maintenance and reduces service costs throughout the entire project lifetime.

INDICATIVE - NOT FOR CONSTRUCTION

INDICATIVE EQUIPMENT SPECIFICATION SHEET:

RACKING

INDICATIVE - NOT FOR CONSTRUCTION



Technical Data	Sunny Highpower 100-20	Sunny Highpower 150-20
Input (DC)		
Max. PV array power	150000 Wp	225000 Wp
Max. input voltage	1000 V	1500 V
MPP voltage range / rated input voltage	590 V to 1000 V / 590 V	880 V to 1450 V / 880 V
Max. input current / max. short-circuit current	180 A / 325 A	180 A / 325 A
Number of independent MPP trackers	1	1
Number of inputs	1 or 2 (optional) for external PV array junction boxes	
Output (AC)		
Rated power at nominal voltage	100000 W	150000 W
Max. apparent power	100000 VA	150000 VA
Nominal AC voltage / AC voltage range	400 V / 304 V to 477 V	600 V / 480 V to 690 V
AC grid frequency / range	50 Hz / 44 Hz to 55 Hz 60 Hz / 54 Hz to 66 Hz	50 Hz / 44 Hz to 55 Hz 60 Hz / 54 Hz to 66 Hz
Rated grid frequency	50 Hz	50 Hz
Max. output current	151 A	151 A
Power factor at rated power / displacement power factor adjustable	1 / 0 overexcited to 0 underexcited	
Harmonic (THD)	< 3%	< 3%
Feed-in phases / AC connection	3 / 3-PE	3 / 3-PE
Efficiency		
Max. efficiency / European efficiency	98.8% / 98.6%	99.1% / 98.8%
Protective devices		
Ground fault monitoring / grid monitoring / DC reverse polarity protection	● / ● / ●	● / ● / ●
AC short-circuit current capability / galvanically isolated	● / –	● / –
All-pole-sensitive residual-current monitoring unit	●	●
Monitored surge arrester (type II) AC / DC	● / ●	● / ●
Protection class (according to IEC 62109-1) / overvoltage category (as per IEC 62109-1)	I / AC: III; DC: II	I / AC: III; DC: II
General Data		
Dimensions (W / H / D)	770 mm / 830 mm / 444 mm (30.3 in / 32.7 in / 17.5 in)	
Weight	98 kg (216 lbs)	
Operating temperature range	–25°C to +60°C (–13°F to +140°F)	
Noise emission (typical)	< 65 dB(A)	
Self-consumption (at night)	< 5 W	
Topology	transformerless	
Cooling method	OptiCool, active cooling, speed-controlled fan	
Degree of protection (according to IEC 60529)	IP65	
Max. permissible value for relative humidity (non-condensing)	100%	
Features / function / accessories		
DC connection / AC connection	Terminal lug (up to 300 mm²) / Screw terminal (up to 150 mm²)	
LED display (Status / Fault / Communication)	●	
Ethernet interface	● (2 ports)	
Data interface: SMA Modbus / SunSpec Modbus / Speedwire, Webconnect	● / ● / ●	
Mounting type	Rack mounting	
OptiTrac Global Peak / Integrated Plant Control / Q on Demand 24/7	● / ● / ●	
Off-grid capable / SMA Fuel Save Controller compatible	● / ●	
Warranty: 5 / 10 / 15 / 20 years	● / ○ / ○ / ○	
Certificates and approvals (planned)	IEC 62109-1/-2, AR N-4110, AR N-4120, CEI 0-16, C10/11:2012, EN 50549, PEA 2017, DEWA	
● Standard features ○ Optional features – Not available Data at nominal conditions Status: 12/ 2018		
Type designation	SHP 100-20	SHP 150-20

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ARRAY TECHNOLOGIES

DuraTrack® HZ v3



RELIABILITY IS POWER.

THE MOST RELIABLE TRACKER UNDER THE SUN

HIGHEST POWER DENSITY.

Higher density means more power and more profit. DuraTrack HZ v3 offers the unique ability to maximize the power density of each site, boasting 6% more density than our closest competitor.

LEADING TERRAIN ADAPTABILITY.

Uneven terrain? Hill yes! Our flexibly linked architecture, with articulating driveline joints and forgiving tolerances, create the most adaptable system in market for following natural land contours and creates the greatest power generation potential from every site.

FEWER COMPONENTS. GREATER RELIABILITY.

Less is more. Array was founded on a philosophy of engineered simplicity. Minimizing potential failure points (167 times fewer components than competitors), DuraTrack HZ v3 consistently delivers higher reliability and superior uptime.

FAILURE-FREE WIND DESIGN.

DuraTrack HZ v3 was designed and field tested to withstand some of the harshest conditions on the planet. It is the only tracker on the market that reliably handles wind events with a fully integrated, fully automatic wind-load mitigation system.

ZERO SCHEDULED MAINTENANCE.

Three decades of solar tracker system design, engineering and testing has resulted in uncompromising reliability. Maintenance-free motors and gears, fewer moving parts, and industrial-grade components means maintenance-free energy generation.

167×

fewer components than competitive trackers

25,000+

Megawatt Years of Operation

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DuraTrack® HZ v3

COST VERSUS VALUE

We believe value is more than the cost of a tracking system. It's about building with forgiving tolerances and fewer parts so construction crews can work efficiently. It means protecting your investment with a failure-free wind management system. It also includes increasing power density. But most of all, value is measured in operational uptime, or reliability.

THE GLOBAL LEADER IN RELIABILITY

Array has spent decades designing and perfecting the most reliable tracker on the planet. Fewer moving parts, stronger components and intelligent design that protects your investment in the harshest weather are but a few of the innovative differences that keep your system running flawlessly all day and you resting easy at night.

STRUCTURAL & MECHANICAL FEATURES/SPECIFICATIONS	
Tracking Type	Horizontal single axis
MW per Drive Motor	Up to 1.036800 MW DC using 360W crystalline
String Voltage	Up to 1,500V DC
Maximum Linked Rows	32
Maximum Row Size	100 modules crystalline, glass-on-glass, and bifacial; 240 modues First Solar 4; 72 modules First Solar 6
Drive Type	Rotating gear drive
Motor Type	2 HP, 3 PH, 480V AC
Motors per 1 MW DC	Less than 1
East-West / North-South Dimensions	Site / module specific
Array Height	54" standard, adjustable (48" min height above grade)
Ground Coverage Ratio (GCR)	Flexible, 28–45% typical, others supported on request
Terrain Flexibility	N-S tolerance: 0° - 8.5° standard, 15° optional Driveline: 40° in all directions
Modules Supported	Most commercially available, including frameless crystalline, thin film, and bifacial
Tracking Range of Motion	± 52° standard
Operating Temperature Range	-30°F to 140°F (-34°C to 55°C)
Module Configuration	Single-in-portrait standard, including bifacial. Two-or-three in landscape (frameless), four-in-landscape (thin film) also available.
Module Attachment	Single fastener, high-speed mounting clamps with integrated grounding. Traditional rails for crystalline in landscape, custom racking for thin film and frameless crystalline and bifacial per manufacturer specs.
Materials	HDG steel and aluminum structural members
Allowable Wind Load (IBC 2012)	135 mph, 3-second gust exposure C
Wind Protection	Passive mechanical system relieves wind and obstruction damage — no power required
ELECTRONIC CONTROLLER FEATURES/SPECIFICATIONS	
Solar Tracking Method	Algorithm with GPS input
Control Electronics	MCU plus Central Controller
Data Feed	MODBUS over Ethernet to SCADA system
Night-time Stow	Yes
Tracking Accuracy	± 2° standard, field adjustable
Backtracking	Yes
INSTALLATION, OPERATION & MAINTENANCE	
PE Stamped Structural Calculations & Drawings	Yes
On-site Training & System Commissioning	Yes
Connection Type	Fully bolted connections, no welding
In-field Fabrication Required	No
Dry Slide Bearings & Articulating Driveline Connections	No lubrication required
Scheduled Maintenance	None required
Module Cleaning Compatibility	Robotic, Tractor, Manual
GENERAL	
Annual Power Consumption (kWh per 1 MW)	400 kWh per MW per year, estimated
Land Area Required per 1 MW	Approx. 4 to 4.5 acres per MW @ 33% GCR (site and design specific)
Energy Gain vs. Fixed-Tilt	Up to 25%, site specific
Warranty	10 year structural, 5 year drive & control components
Patent Numbers	US patent 8,459,249 US patent 9,281,778 US patent 9,581,678 B2 and patents pending
Codes and Standards	UL Certified (3703 & 2703); IEC 62817

UL LISTED IEC 62817

Array Technologies Inc. reserves the right to make specification changes without notice.

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INDICATIVE EQUIPMENT SPECIFICATION SHEET:

TRANSFORMER

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Three-phase pad-mounted compartmental type transformer



General

At Eaton, we are constantly striving to introduce new innovations to the transformer industry, bringing you the highest quality, most reliable transformers. Eaton's Cooper Power series Transformer Products are ISO 9001 compliant, emphasizing process improvement in all phases of design, manufacture, and testing. In order to drive this innovation, we have invested both time and money in the Thomas A. Edison Technical Center, our premier research facility in Franksville, Wisconsin. Such revolutionary products as distribution-class UltraSIL™ Polymer-Housed Evolution™ surge arresters and Envirotemp™ FR3™ fluid have been developed at our Franksville lab.

With transformer sizes ranging from 45 kVA to 12 MVA and high voltages ranging from 2400 V to 46 kV, Eaton has you covered. From fabrication of the tanks and cabinets to winding of the cores and coils, to production of arresters, switches, tap changers, expulsion fuses, current limit fuses, bushings (live and dead) and molded rubber goods, Eaton does it all. Eaton's Cooper Power series transformers are available with electrical grade mineral oil or Envirotemp™ FR3™ fluid, a less-flammable and bio-degradable fluid. Electrical codes recognize the advantages of using Envirotemp™ FR3™ fluid both indoors and outdoors for fire sensitive applications. The bio-based fluid meets Occupational Safety and Health Administration (OSHA) and Section 450.23 NEC Requirements.

Powering Business Worldwide

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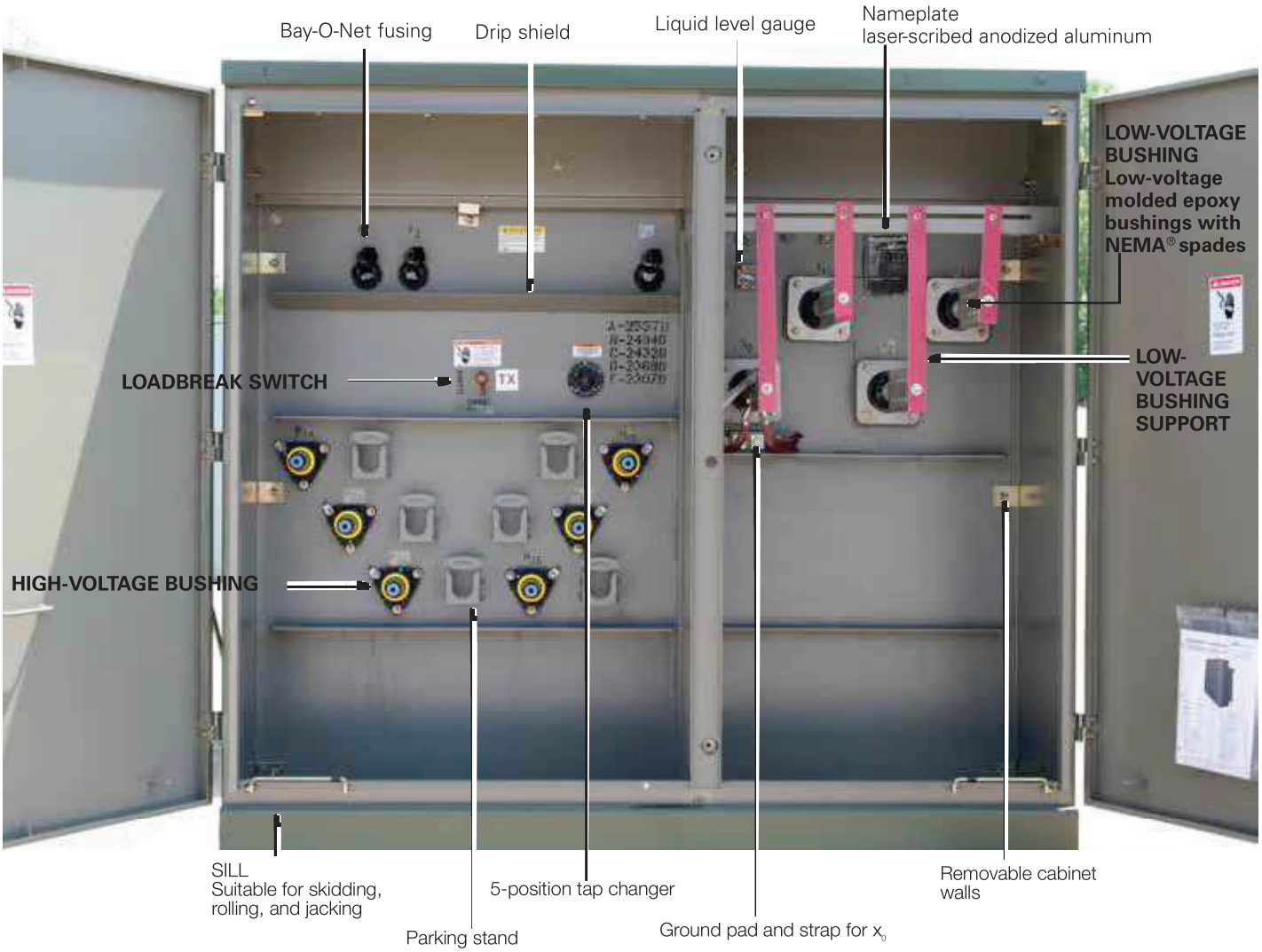


Figure 1. Three-phase pad-mounted compartmental type transformer.

Table 1. Product Scope

Type	Three Phase, 50 or 60 Hz, 65 °C Rise (55 °C, 55/65 °C), 65/75 °C, 75 °C
Fluid Type	Mineral oil or Envirotemp™ FR3™ fluid
Coil Configuration	2-winding or 4-winding or 3-winding (Low-High-Low), 3-winding (Low-Low-High)
Size	45 – 10,000 kVA
Primary Voltage	2,400 – 46,000 V
Secondary Voltage	208Y/120 V to 14,400 V
Specialty Designs	Inverter/Rectifier Bridge
	K-Factor (up to K-19)
	Vacuum Fault Interrupter (VFI)
	UL® Listed & Labeled and Classified
	Factory Mutual (FM) Approved®
	Solar/Wind Designs
	Differential Protection
	Seismic Applications (including OSHPD)
	Hardened Data Center

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Table 2. Three-Phase Ratings

Three-Phase 50 or 60 Hz
kVA Available[1]: 45, 75, 112.5, 150, 225, 300, 500, 750, 1000, 1500, 2000, 2500, 3000, 3750, 5000, 7500, 10000

[1]Transformers are available in the standard ratings and configurations shown or can be customized to meet specific needs.

Table 3. Impedance Voltage

	Low-voltage rating		
Rating (kVA)	**≤ 600 V**	**2400 Δ through 4800 Δ**	**6900 Δ through 13800GY/7970 or 13800 Δ**
45-75	2.70-5.75	2.70-5.75	2.70-5.75
112.5-300	3.10-5.75	3.10-5.75	3.10-5.75
500	4.35-5.75	4.35-5.75	4.35-5.75
750-2500	5.75	5.75	5.75
3750	5.75	5.75	6.00
5000		6.00	6.50

Note: The standard tolerance is ± 7.5%

Table 4. Audible Sound Levels

	NEMA® TR-1 Average
Self-Cooled, Two Winding kVA Rating	**Decibels (dB)**
45-500	56
501-700	57
701-1000	58
1001-1500	60
1501-2000	61
2001-2500	62
2501-3000	63
3001-4000	64
4001-5000	65
5001-6000	66
6001-7500	67
7501-10000	68

Table 5. Insulation Test Levels

KV Class	Induced Test 180 or 400 Hz 7200 Cycle	kV BIL Distribution	Applied Test 60 Hz (kV)
1.2	Twice Rated Voltage	30	10
2.5		45	15
5		60	19
8.7		75	26
15		95	34
25		125	40
34.5		150	50

Table 6. Temperature Rise Ratings 0-3300 Feet (0-1000 meters)

	Standard	Optional
Unit Rating (Temperature Rise Winding)	65 °C	55 °C, 55/65 °C, 75 °C
Ambient Temperature Max	40 °C	50 °C
Ambient Temperature 24 Hour Average	30 °C	40 °C
Temperature Rise Hotspot	80 °C	65 °C

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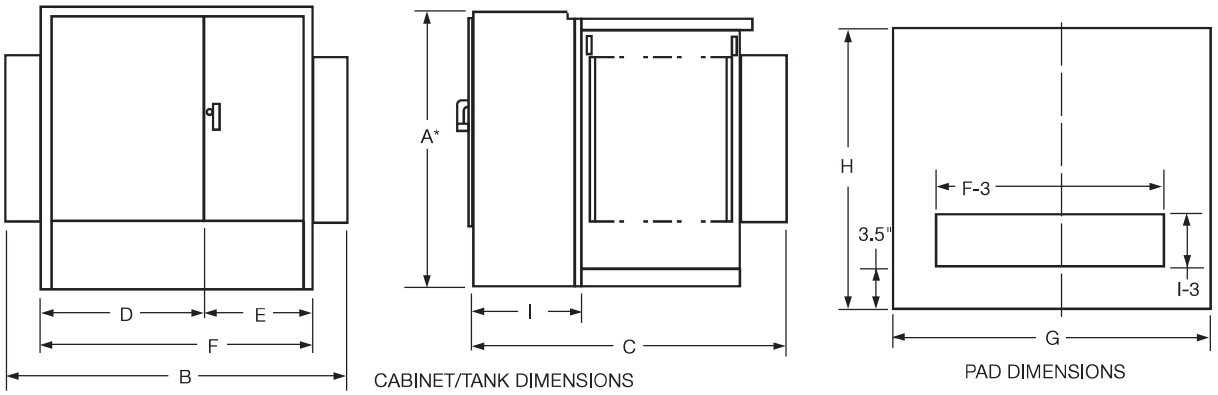


Figure 2. Transformer and pad dimensions.

* Add 9" for Bay-O-Net fusing.

Table 7. Fluid-filled—aluminum windings 55/65 °C Rise[1]

65° Rise	DEAD-FRONT—LOOP OR RADIAL FEED—BAY-O-NET FUSING OIL FILLED—ALUMINUM WINDINGS										
	OUTLINE DIMENSIONS (in.)									Gallons of	Approx. Total
kVA Rating	A*	B	C	D	E	F	G	H	I	Fluid	Weight (lbs.)
45	50	68	39	42	26	68	72	43	20	110	2,100
75	50	68	39	42	26	68	72	43	20	115	2,250
112.5	50	68	49	42	26	68	72	53	20	120	2,350
150	50	68	49	42	26	68	72	53	20	125	2,700
225	50	72	51	42	30	72	76	55	20	140	3,150
300	50	72	51	42	30	72	76	55	20	160	3,650
500	50	89	53	42	30	72	93	57	20	190	4,650
750	64	89	57	42	30	72	93	61	20	270	6,500
1000	64	89	59	42	30	72	93	63	20	350	8,200
1500	73	89	86	42	30	72	93	90	24	410	10,300
2000	73	72	87	42	30	72	76	91	24	490	12,500
2500	73	72	99	42	30	72	76	103	24	530	14,500
3000	73	84	99	46	37	84	88	103	24	620	16,700
3750	84	85	108	47	38	85	88	112	24	660	19,300
5000	84	96	108	48	48	96	100	112	24	930	25,000
7500	94	102	122	54	48	102	100	126	24	1,580	41,900

1 Weights, gallons of fluid, and dimensions are for reference only and not for construction. Please contact Eaton for exact dimensions.

* Add 9" for Bay-O-Net fusing.

Table 8. Fluid-Filled—Copper Windings 55/65 °C Rise[1]

65° Rise	DEAD-FRONT—LOOP OR RADIAL FEED—BAY-O-NET FUSING OIL FILLED—COPPER WINDINGS										
	OUTLINE DIMENSIONS (in.)									Gallons of	Approx. Total
kVA Rating	A*	B	C	D	E	F	G	H	I	Fluid	Weight (lbs.)
45	50	64	39	34	30	64	69	43	20	110	2,100
75	50	64	39	34	30	64	69	43	20	115	2,350
112.5	50	64	49	34	30	64	69	53	20	115	2,500
150	50	64	49	34	30	64	69	53	20	120	2,700
225	50	64	51	34	30	64	73	55	20	140	3,250
300	50	64	51	34	30	64	75	55	20	160	3,800
500	50	81	53	34	30	64	85	57	20	200	4,800
750	64	89	57	42	30	72	93	61	20	255	6,500
1000	64	89	59	42	30	72	93	63	20	300	7,800
1500	73	89	86	42	30	72	93	90	24	410	10,300
2000	73	72	87	42	30	72	76	91	24	420	11,600
2500	73	72	99	42	30	72	76	103	24	500	14,000
3000	73	84	99	46	37	84	88	103	24	720	18,700
3750	84	85	108	47	38	85	88	112	24	800	20,500
5000	84	96	108	48	48	96	100	112	24	850	25,000
7500	94	102	122	54	48	102	100	126	24	1,620	46,900

[1] Weights, gallons of fluid, and dimensions are for reference only and not for construction. Please contact Eaton for exact dimensions.

* Add 9" for Bay-O-Net fusing.

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Standard features

Connections and neutral configurations

- Delta - Wye: Low voltage neutral shall be a fully insulated X0 bushing with removable ground strap.
- Grounded Wye-Wye: High voltage neutral shall be internally tied to the low voltage neutral and brought out as the H0X0 bushing in the secondary compartment with a removable ground strap.
- Delta-Delta: Transformer shall be provided without a neutral bushing.
- Wye-Wye: High voltage neutral shall be brought out as the H0 bushing in the primary compartment and the low voltage neutral shall be brought as the X0- bushing in the secondary compartment.
- Wye-Delta: High voltage neutral shall be brought out as the H0 bushing in the primary compartment. No ground strap shall be provided (line to line rated fusing is required).

High and low voltage bushings

- 200 A bushing wells (15, 25, and 35 kV)
- 200 A, 35 kV Large Interface
- 600 A (15, 25, and 35 kV) Integral bushings (dead-front)
- Electrical-grade wet-process porcelain bushings (live-front)

Tank/cabinet features

- Bolted cover for tank access (45-2500 kVA)
- Welded cover with hand hole (>2500 kVA)
- Three-point latching door for security
- Removable sill for easy installation
- Lifting lugs (4)
- Stainless steel cabinet hinges and mounting studs
- Steel divider between HV and LV compartment
- 20" Deep cabinet (45-1000 kVA)
- 24" Deep cabinet (1500-7500 kVA)
- 30" Deep cabinet (34.5/19.92 kV)
- Pentahead captive bolt
- Stainless steel 1-hole ground pads (45-500 kVA)
- Stainless steel 2-hole ground pads (750-10,000 kVA)
- Parking Stands (dead-front)

Valves/plugs

- One-inch upper filling plug
- One-inch drain plug (45-500 kVA)
- One-inch combination drain valve with sampling device in low voltage compartment (750-10,000 kVA)
- Automatic pressure relief valve

Nameplate

- Laser-scribed anodized aluminum nameplate



Figure 3. Drain valve with sampler.



Figure 4. Automatic Pressure relief valve.

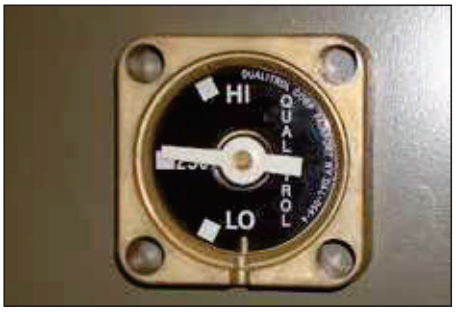


Figure 5. Liquid level gauge.



Figure 6. External Gauges.



Figure 7. External visible break with gauges.

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Optional features

High and low voltage bushings

- 200 A (15, 25 kV) bushing inserts
- 200 A (15, 25 kV) feed thru inserts
- 200 A (15, 25 kV) (HTN) bushing wells with removable studs
- High-voltage 600 A (15, 25, 35 kV) deadbreak one-piece bushings
- Low voltage 6-, 8-holes spade
- Low voltage 12-, 16-, 20-holes spade (750-2500 kVA)
- Low voltage bushing supports

Tank/cabinet features

- Stainless steel tank base and cabinet
- Stainless steel tank base, cabinet sides and sill
- 100% stainless steel unit
- Service entrance (2 inch) in sill or cabinet side
- Touch-up paint (domestic)
- Copper ground bus bar
- Kirk-Key provisions
- Nitrogen blanket
- Bus duct cutout

Special designs

- Factory Mutual (FM)
- UL® Classified
- Triplex
- High altitude
- K-Factors
- Step-up
- Critical application
- Modulation transformers
- Seismic applications (including OSHPD)

Switches

- One, two, or three On/Off loadbreak switches
- 4-position loadbreak V-blade switch or T-blade switch
- Delta-wye switch
- 3-position V-Blade selector switch
- 100 A, 150 A, 300 A tap changers
- Dual voltage switch
- Visible break with VFI interrupter interlock
- External visible break (15, 25, and 35 kV, up to 3 MVA)
- External visible break with gauges (15, 25, and 35 kV, up to 3 MVA)

Gauges and devices

- Liquid level gauge (optional contacts)
- Pressure vacuum gauge (optional contacts and bleeder)
- Dial-type thermometer (optional alarm contacts)
- Cover mounted pressure relief device (optional alarm contacts)
- Ground connectors
- Hexhead captive bolt
- Molded case circuit breaker mounting provisions
- External gauges in padlockable box

Overcurrent protection

- Bay-O-Net fusing (Current sensing, dual sensing, dual element, high amperage overload)
- Bay-O-Net expulsion fuse in series with a partial range under-oil ELSP current limiting fuse (below 23 kV)
- Cartridge fusing in series with a partial range under-oil ELSP current limiting fuse (above 23 kV)
- MagneX™ interrupter with ELSP current-limiting fuse
- Vacuum Fault Interrupter (VFI)
- Visible break window
- Fuse/switch interlock

Valves/plugs

- Drain/sampling valve in high-voltage compartment
- Globe type upper fill valve

Overvoltage protection

- Distribution-, intermediate-, or station-class surge arresters
- Elbow arresters (for dead-front connections)

Metering/fan/control

- Full metering package
- Current Transformers (CTs)
- Metering Socket
- NEMA® 4 control box (optional stainless steel)
- NEMA® 7 control box (explosion proof)
- Fan Packages

Testing

- Customer test witness
- Customer final inspection
- Zero Sequence Impedance Test
- Heat Run Test
- ANSI® Impulse Test
- Audible Sound Level Test
- RIV (Corona) Test
- Dissolved Gas Analysis (DGA) Test
- 8- or 24-Hour Leak Test

Coatings (paint)

- ANSI® Bell Green
- ANSI® #61 Light Gray
- ANSI® #70 Sky Gray
- Special paint available per request

Nameplate

- Stainless steel nameplate

Decals and labels

- High voltage warning signs
- Mr. Ouch
- Bi-lingual warning
- DOE compliant
- Customer stock code
- Customer stenciling
- Shock and arc flash warning decal
- Non-PCB decal

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Construction

Core

The three-legged, step-lap mitered core construction is manufactured using a high-quality cutting machine. For maximum efficiency, cores are precisely stacked, virtually eliminating gaps in the corner joints.

Five-legged wound core or shell-type triplex designs are used for wye-wye connected transformers, and other special transformer designs.

Cores are manufactured with precision cut, burr-free, grain-oriented silicon steel or amorphous metal, depending on customer preference or optimal material based upon performance requirements. Many grades of core steel are available for optimizing core loss efficiency.

Coils

Pad-mounted transformers feature a rectangular coil configuration with wire-wound, high-voltage primaries and sheet-wound secondaries. The design minimizes axial stress developed by short circuits and provides for magnetic balancing of tap connections.

Coils are wound using the highest quality winding machines providing exacting tension control and conductor placement for superior short-circuit strength and maximum efficiency.

Extra mechanical strength is provided by diamond pattern, epoxy-coated paper insulation, used throughout the coil, with additional epoxy at heavy stress points. The diamond pattern distribution of the epoxy and carefully arranged ducts, provide a network of passages through which cooling fluid can freely circulate.

Coil assemblies are heat-cured under calculated hydraulic pressure to ensure performance against short-circuit forces.

Core and coil assemblies

Pad-mounted transformer core and coil assemblies are braced with heavy steel ends to prevent the rectangular coil from distorting under short-circuit conditions. Plates are clamped in place using presses, and welded or bolted to form a solid core and coil assembly. Core and coil assemblies exceed ANSI® and IEEE® requirements for short-circuit performance. Due to the rigidity of the design, impedance shift after short-circuit is comparable to that of circular wound assemblies.

Tanks

Transformer tanks are designed for high strength and ease of handling, installation, and maintenance. Tanks are welded using precision-cut, hot rolled, pickled and oiled steel. They are sealed to protect the insulating fluid and other internal components.

Transformer tanks are pressure-tested to withstand 7 psig without permanent distortion and 15 psig without rupture.

Tank finish

An advanced multi-stage finishing process exceeds IEEE Std C57.12.28™-2014 standards. The eight-stage pre-treatment process assures coating adhesion and retards corrosion. It converts tank surfaces to a nonmetallic, water insoluble iron phosphate coating.

The paint method consists of two distinct layers of paint. The first is an epoxy primer (E-coat) layer which provides a barrier against moisture, salt and corrosives. The two-component urethane final coat seals and adds ultraviolet protection.

Vacuum processing

Transformers are dried and filled with filtered insulating fluid under vacuum, while secondary windings are energized. Coils are heated to drive out moisture, ensuring maximum penetration of fluid into the coil insulation system.

Insulating fluid

Eaton's Cooper Power series transformers are available with electrical-grade mineral insulating oil or Envirotemp™ FR3™ fluid. The highly refined fluids are tested and degassed to assure a chemically inert product with minimal acid ions. Special additives minimize oxygen absorption and inhibit oxidation. To ensure high dielectric strength, the fluid is re-tested for dryness and dielectric strength, refiltered, heated, dried, and stored under vacuum before being added to the completed transformer.

Eaton's Cooper Power series transformers filled with Envirotemp™ FR3™ fluid enjoy unique fire safety, environmental, electrical, and chemical advantages, including insulation life extending properties.

A bio-based, sustainable, natural ester dielectric coolant, Envirotemp™ FR3™ fluid quickly and thoroughly biodegrades in the environment and is non-toxic per acute aquatic and oral toxicity tests.

Building for Environmental and Economic Sustainability (BEES) total life cycle assessment software, utilized by the US Dept. of Commerce, reports its overall environmental performance impact score at 1/4th that reported for mineral oil. Envirotemp™ FR3™ fluid has also earned the EPA Environmental Technology Verification of transformer materials.

With a fire point of 360 °C, Envirotemp™ FR3™ fluid is FM Approved® and Underwriters Laboratories (UL®) Classified "Less-Flammable" per NEC® Article 450-23, fitting the definition of a Listed Product per NEC®.



Figure 8. VFI transformer with visible break.

Pad-mounted VFI transformer

Eaton's Cooper Power series VFI transformer combines a conventional distribution transformer with the proven Vacuum Fault Interrupter (VFI). This combination provides both voltage transformation and transformer over current protection in one space saving and money saving package. The pad-mounted VFI transformer protects the transformer and provides proper coordination with upstream protective devices. When a transformer fault or overload condition occurs, the VFI breaker trips and isolates the transformer.

The three-phase VFI breaker has independent single-phase initiation, but is three-phase mechanically gang-tripped. A trip signal on any phase will open all three phases. This feature eliminates single-phasing of three phase loads. It also enables the VFI breaker to be used as a three-phase load break switch.

Due to the resettable characteristics of the VFI breaker, restoring three-phase service is faster and easier.

The sealed visible break window and switch is an option that can be installed to provide visible break contact. This feature provides enhanced safety and allows an operator to see if the loadbreak switch contacts are in an open or closed position before performing

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maintenance.

Envirotran™ FM Approved special protection transformer

Eaton's Cooper Power series Envirotran™ transformer is FM Approved and suitable for indoor locations. Factory Mutual Research Corporation's (FMRC) approval of the Envirotran transformer line makes it easy to comply with and verify compliance with Section 450.23, 2008 NEC, Less-Flammable Liquid-Filled Transformer Requirements for both indoor and outdoor locations.

Envirotran FM Approved transformers offer the user the benefit of a transformer that can be easily specified to comply with NEC, and makes FM Safety Data Sheet compliance simpler, while also providing maximum safety and flexibility for both indoor and outdoor installations.

Because the "FM Approved" logo is readily visible on the transformer and its nameplate, NEC compliance is now easily verifiable by the inspector.

Envirotran FM Approved transformers are manufactured under strict compliance with FMRC Standard 3990 and are filled with



FM Approved Envirotemp™ FR3™ fluid, a fire-resistant dielectric coolant.

Special application transformers

Data Center transformer

With focus rapidly shifting from simply maximizing uptime and supporting demand to improving energy utilization, the data center industry is continually looking for methods to increase its energy efficiency and reliability. Utilizing cutting edge technology, Eaton's Cooper Power series Hardened Data Center (HDC) transformers are the solution. Designed with special attention given to surge protection, HDC liquid-filled transformers provide superior performance under the harshest electrical environments. Contrary to traditional dry-type units, HDC transformers provide unsurpassed reliability, overloadability, operational life, efficiency, thermal loading and installed footprint. These units have reliably served more than 100 MW of critical data center capacity for a total of more than 6,000,000 hours without any reported downtime caused by a thermal or short-circuit coil failure.

The top priority in data center operations is uninterrupted service. Envirotran HDC transformers from Eaton, having substantially higher levels of insulation, are less susceptible to voltage surges. Eaton has experienced zero failures due to switching transients. The ANSI® and IEEE® standard impulse withstand ratings are higher for liquid-filled transformers, making them less susceptible to insulation failure. The Envirotran HDC transformer provides ultimate protection by increasing the BIL rating one level higher than standard liquid-filled transformer ratings. The cooling system of liquid-filled transformers provides better protection from severe overloads—overloads that can lead to significant loss of life or failure.

Data center design typically includes multiple layers of redundancy, ensuring maximum uptime for the critical IT load. When best in class transformer manufacturing lead times are typically weeks, not days, an unexpected transformer failure will adversely affect the facility's reliability and profitability. Therefore, the ability to determine the electrical and mechanical health of a transformer can reduce the probability of costly, unplanned downtime. Routine diagnostic tests, including key fluid properties and dissolved gas analysis (DGA), can help determine the health of a liquid-filled transformer. Although sampling is not required for safe operation, it will provide the user with valuable information, leading to scheduled repair or replacement, and minimizing the duration and expense of an outage. With a dry-type transformer, there is no reliable way to measure the health or likelihood of an impending failure.

Solar transformer

As a result of the increasing number of states that are adopting aggressive Renewable & Alternative Energy Portfolio Standards, the solar energy market is growing—nearly doubling year over year. Eaton, a key innovator and supplier in this expanding market, is proud to offer its Cooper Power series Envirotran transformers specifically designed for Solar Photovoltaic medium-voltage applications. Eaton is working with top solar photovoltaic developers, integrators and inverter manufacturers to evolve the industry and change the way we distribute power.

In accordance with this progressive stance, every Envirotran Solar transformer is filled with non-toxic, biodegradable Envirotemp™ FR3™ dielectric fluid, made from renewable seed oils. On top of its biodegradability, Envirotemp™ FR3™ fluid substantially extends the life of the transformer insulation, saving valuable resources. What better way to distribute green power than to use a green transformer. In fact, delaying conversion to Envirotran transformers places the burden of today's environmental issues onto tomorrow's generations. Eaton can help you create a customized transformer, based on site specific characteristics including: temperature profile, site altitude, solar profile and required system life. Some of the benefits gained from this custom rating include:

- Reduction in core losses
- Improved payback on investment
- Reduction in footprint
- Improved fire safety
- Reduced environmental impact

For the solar photovoltaic industry, Eaton is offering standard step up transformers and dual secondary designs, including 4-winding, 3-winding (Low-High-Low) and 3-winding (Low-Low-High) designs.

Wind transformer

Eaton is offering custom designs for renewable energy power generation. Eaton manufactures its Cooper Power series Generator Step-Up (GSU) transformers for installation at the base of every wind turbine. Additionally, grounding transformers are available for wind power generation.

DOE efficiency

The United States Department of Energy (DOE) has mandated efficiency values for most liquid type, medium voltage transformers. As a result, all applicable Eaton's Cooper Power series transformers 2500 kVA and below conform to efficiency levels as specified in the DOE ruling "10 CFR Part 431 Energy Conservation Program".

Underwriters Laboratories® (UL®) Listed and Labeled/ Classified

The Envirotran transformer from Eaton can be specified as UL® Listed & Labeled, and/or UL® Classified. Underwriters Laboratories (UL®) listing is a verification of the design and construction of the transformer to the ANSI® and IEEE® standards. UL® listing generally is the most efficient, cost-effective solution for complying with relevant state and local electrical codes. UL® Combination Classification/Listing is another way in which to comply with Section 450.23, 2008 NEC® requirements. This combines the UL® listed transformer with a UL® Classified Less-Flammable Liquid and complies with the use restrictions found within the liquid Classification.



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K-Factor transformer

With a drastic increase in the use of ferromagnetic devices, arcing devices, and electric power converters, higher frequency loads have increased significantly. This harmonic loading has the potential to generate higher heat levels within a transformer's windings and leads by as much as 300%. Harmonic loading has the potential to induce premature failure in standard-design distribution transformers.

In addition to standard UL® "K-Factor" ratings, transformers can be designed to customer-provided specifications detailing precise loading scenarios. Onsite measurements of magnitude and frequency, alongside harmonic analysis of the connected load can be performed by Eaton engineers or a third party consultant. These field measurements are used to determine exact customer needs and outline the transformer specifications.

Eaton will design harmonic-resistant transformers that will be subjected to the unique harmonic loads. These units are designed to maintain normal temperature rise under harmonic, full-load conditions. Standard UL® "K-Factor" designs can result in unnecessary costs when the "next-highest" K-Factor must be selected for a calculated design factor. To save the customer these unnecessary costs, Eaton can design the transformer to the specific harmonic spectrum used in the application. Eaton's Cooper Power series K-factor transformers are filled with mineral oil or Envirotemp™ FR3™ fluid and enjoy the added benefits of dielectric cooling such as higher efficiencies than dry-type transformers.

Modulation transformer

Bundled with an Outboard Modulation Unit (OMU) and a Control and Receiving Unit (CRU), a Modulation Transformer Unit (MTU) is designed to remotely achieve two way communication.

The use of an MTU reduces travel time and expense versus traditional meter reading performed by high voltage electricians. Additionally, with MTU it is possible to manage and evaluate energy consumption data, providing reduced metering costs and fewer tenant complaints.

An MTU utilizes existing utility infrastructure, therefore eliminating the need to engineer and construct a dedicated communication network.



Figure 9. Modular transformer.

Inverter/rectifier bridge

Eaton complements its range of applications for transformers by offering dual winding designs. These designs are intended for connection to 12-pulse rectifier bridges.

Product attributes

To set us apart from other transformer manufactures, Eaton includes the following guarantees with every three-phase pad-mounted transformer.

Engineered to order (ETO)

Providing the customer with a well developed, cost-effective solution is the number one priority at Eaton. Using customer specifications, Eaton will work with the customer from the beginning to the end to develop a solution to fit their needs. Whether it is application specific, site specific, or a uniquely specified unit, Eaton will provide transformers with the best in class value and performance, saving the customer time and money.

Made in the U.S.A.

Eaton's three-phase pad-mounted transformers are produced right here in the United States of America. Our manufacturing facilities are positioned strategically for rapid shipment of products. Furthermore, should the need arise, Eaton has a broad network of authorized service repair shops throughout the United States.

Superior paint performance

Protecting transformers from nature's elements worldwide, Eaton's E-coat system provides unrivaled transformer paint life, and exceeds IEEE Std C57.12.28™-2014 and IEEE Std C57.12.29™-2005 standards. In addition to the outside of the unit, each transformer receives a gray E-coat covering in the interior of the tank and cabinet, providing superior rust resistance and greater visibility during service.

If the wide range of standard paint selections does not suit the customer's needs, Eaton will customize the paint color to meet their requirements.

Rectangular coil design

Eaton utilizes a rectangular coil design. This winding technique results in a smaller overall unit footprint as well as reducing the transformer weight. The smaller unit size does not hinder the transformer performance in the least. Units have proven short circuit withstand capabilities up to 10 MVA.

Testing

Eaton performs routing testing on each transformer manufactured including the following tests:

- Insulation Power Factor: This test verifies that vacuum processing has thoroughly dried the insulation system to required limits.
- Ratio, Polarity, and Phase Relation: Assures correct winding ratios and tap voltages; checks insulation of HV and LV circuits. Checks entire insulation system to verify all live-to-ground clearances.
- Resistance: This test verifies the integrity of internal high-voltage and low-voltage connections; provides data for loss upgrade calculations.
- Routine Impulse Tests: The most severe test, simulating a lightning surge. Applies one reduced wave and one full wave to verify the BIL rating.
- Applied Potential: Applied to both high-voltage and low-voltage windings, this test stresses the entire insulation system to verify all live-to-ground clearances.
- Induced Potential: 3.46 times normal plus 1000 volts for reduced neutral designs.
- Loss Test: These design verification tests are conducted to assure that guaranteed loss values are met and that test values are

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within design tolerances. Tests include no-load loss and excitation current along with impedance voltage and load loss.

- Leak Test: Pressurizing the tank to 7 psig assures a complete seal, with no weld or gasket leaks, to eliminate the possibility of moisture infiltration or fluid oxidation.

Design performance tests

The design performance tests include the following:

- Temperature Rise: Our automated heat run facility ensures that any design changes meet ANSI® and IEEE® temperature rise criteria.
- Audible Sound Level: Ensures compliance with NEMA® requirements.
- Lightning Impulse: To assure superior dielectric performance, this test consists of one reduced wave, two chopped waves and one full wave in sequence, precisely simulating the harshest conditions.

Thomas A Edison Research and Test Facility

We are constantly striving to introduce new innovations to the transformer industry, bringing you the highest quality transformer for the lowest cost. Eaton's Cooper Power series Transformer Products are ISO 9001 compliant, emphasizing process improvement in all phases of design, manufacture, and testing. We have invested millions of dollars in the Thomas A. Edison Technical Center, our premier research facility in Franksville, Wisconsin affirming our dedication to introducing new innovations and technologies to the transformer industry. This research facility is fully available for use by our customers to utilize our advanced electrical and chemical testing labs.

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MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION

Envirotemp® FR3® fluid

Envirotemp FR3 fluid is a dielectric fluid intended for use as an insulation and cooling medium in electrical apparatus such as electrical distribution and power transformers.

Cooper Power Systems
1900 East North Street
Waukesha, Wisconsin 53188-3899 USA

Telephone: +01 262 524 3300
Internet: www.cooperpower.com

Emergency telephone (Chemtrec)
Inside USA: 800 424 9300
Outside USA: +01 703 527 3887

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2. COMPOSITION/INFORMATION ON INGREDIENTS

Envirotemp FR3 fluid is a proprietary formulation using food-grade vegetable oils combined with performance-enhancing additives. All components are listed in the EINECS inventory.

Component	Proportion (wt%)
Vegetable oil	> 98.5
Antioxidant additive	< 1.0
Cold flow additive	< 1.0
Colorant	< 1.0

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3. HAZARDS IDENTIFICATION

Envirotemp FR3 fluid is a preparation not classified as dangerous according to Directive 1999/45/EC. Not expected to cause a severe emergency hazard.

Routes of entry

Eyes: Contact may occur as a result of splash or exposure to mist conditions. May cause irritation and redness.

Skin: Typically non-irritating. In some case, a sensitization to vegetable oils may cause localized redness

Ingestion: May cause gastric irritation.

Inhalation: Exposure may occur as a result of mist exposure. May cause respiratory irritation.

Signs and symptoms of exposure: none known

Medical conditions generally aggravated by exposure: There is a very small risk for an allergic reaction to soybean oil in persons allergic to soybeans themselves.

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4. FIRST AID MEASURES

Inhalation: If inhaled, remove affected person from exposure to mists.

Eye contact: For eye contact, flush the eyes immediately with large amounts of water with the eyelids held away from the eye to ensure thorough rinsing.

Skin contact: For skin contact, remove by washing with soap and water. Get medical attention if irritation persists.

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Ingestion: If swallowed, observe for signs of stomach discomfort or nausea. If symptoms persist, seek medical help. Do not induce vomiting.

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5. FIRE-FIGHTING MEASURES

Extinguishing media: CO_2 or dry chemical foam

Special fire fighting procedures: Use approved self-contained breathing apparatus with full facemask and full protective equipment in confined areas. Use water to keep fire-exposed containers cool. Water spray may be used to flush spills away from source of ignition. Application of water to flaming oil can cause spreading.

Unusual fire and explosion hazards: Slight when exposed to flame. Can react with oxidizing materials. Clay materials (Fuller's earth, oil dry products) saturated with Envirotemp FR3 fluid can, under certain conditions, undergo a slow oxidation that releases heat. If the heat so released cannot escape, it is possible that the temperature may increase and ignite combustible materials in close contact.

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6. ACCIDENTAL RELEASE MEASURES

Steps to take in case material is released or spilled: Contain and control the leaks or spills with non-combustible absorbent materials such as sand, earth, vermiculite, or diatomaceous earth in drums for waste disposal. Prevent any material from entering drains or waterways. If the product contaminates waterways, rivers or drains, alert the relevant authorities in accordance with statutory procedures.

In the USA, spills into navigable waters must be reported to the National Response Center, 800-424-8802

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7. HANDLING AND STORAGE

Precautions to take in handling and storage: Avoid extremes of temperature in storage. Store Envirotemp FR3 fluid in labeled, tightly closed containers in cool, dry, isolated and well-ventilated areas, away from sources of ignition or heat. To maintain fluid for intended use as an electrical insulating fluid, eliminate exposure to oxygen and moisture.

Intermediate bulk storage container (tote): Prolonged exposure to ultraviolet radiation (sunlight) may affect color.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit values:

	TWA (mg/m^3)	
	OSHA[1] PEL	ACGIH[2] TLV
Vegetable oil mists	–	10
Vegetable oil mists: total dust	15	–
Vegetable oil mists: respirable fraction	5	–

Hazardous Materials Identification System (HMIS):	**Health**	**Flammability**	**Physical Hazard**
	0	1	0

Respiratory protection: Vaporization is not expected at ambient temperature. Therefore, the need for respiratory protection is not anticipated under normal use conditions and with adequate ventilation. If elevated airborne concentrations above applicable workplace exposure levels are anticipated, a NIOSH-approved organic vapor respirator equipped with a dust/mist prefilter should be used. Protection factors vary depending upon the type of respirator used. Respirators should be used in accordance with OSHA requirements (29 CFR 1910.134). For extreme cases, use of approved supplied-air respiratory protection may be necessary.

Ventilation: General mechanical ventilation can be used to control or reduce airborne concentrations of oil.

Protective gloves: Use gloves constructed of chemical resistant materials such as neoprene or heavy nitrile rubber if frequent or prolonged contact is expected. Use heat-protective gloves when handling product at elevated temperatures.

Eye protection: Wear safety glasses or goggles to prevent eye contact. Eye baths should be readily available in the area of handling Envirotemp FR3 fluid.

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[1] U.S. Occupational Health and Safety Administration

[2] American Conference of Governmental Industrial Hygienists

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Other protective clothing or equipment: Wear regularly laundered coveralls or lab coat to minimize skin exposure.
Workplace hygienic practices: Wash with soap and water after contact. Avoid exposure to mists.
Environmental exposure controls: Have oil-absorbent materials easily available.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and odor: clear light-green liquid with slight vegetable oil odor **pH:** neutral
Closed cup flash point: 310 – 320°C **Autoignition temperature:** 401 – 404°C
Boiling point: >360°C **Relative density (H_2O = 1):** 0.92
Vapor pressure (mm Hg): < 0.01 @ 20°C **Pour point:** -18 to -24°C
Vapor density (air = 1): n/a **Evaporation rate (butyl acetate = 1):** nil
Solubility in water: negligible; < 0.1% **Volatile organic compounds:** < 0.001 g/L
Viscosity: 33 – 35 mm^2/s at 40°C **Miscibility:** mixes with other dielectric fluids except silicone

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10. STABILITY AND REACTIVITY

Stability: Envirotemp FR3 fluid is stable under normal conditions of use.
Incompatibility (materials to avoid): Avoid contact with strong oxidizing agents.
Hazardous decomposition products: none
Hazardous Polymerization: will not occur
Stabilizers: not required
Hazardous exothermic reaction: Slight when exposed to flame; can react with oxidizing materials. Class III B liquid. Clay materials (Fuller's earth, oil dry products) saturated with Envirotemp FR3 fluid can, under certain conditions, undergo a slow oxidation that releases heat. If the heat so released cannot escape, it is possible that the temperature may increase and ignite combustible materials in close contact.

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11. TOXICOLOGICAL INFORMATION

Carcinogenicity: none **NTP:** no **IARC monographs:** no **OSHA regulated:** no

Envirotemp FR3 fluid base oils are "generally recognized as safe" (GRAS) by the U.S. Food and Drug Administration and allowed for human consumption as a food and as a component that is allowed in contact with human food.

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12. ECOLOGICAL INFORMATION

Acute oral toxicity (OECD 420 - rats): LD_{50} >2000 mg/kg
Acute aquatic toxicity (OECD 203 - trout): LC_{50} >1000 mg/kg; NOAEC >1000 mg/kg
Aquatic biodegradation (OPPTS 835.3110): readily biodegradable, >99%
Biological oxidation demand (5-Day SM5210B): 250 ppm
Chemical oxygen demand (SM5220D): 560 ppm **BOD/COD ratio:** 45%
Petroleum hydrocarbon content: none
Environmental physical hazard: Envirotemp FR3 fluid shares physical hazards common to all oils such as coating feathers, fur, and gills.

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13. DISPOSAL CONSIDERATIONS

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Recycling: Consult with local used oil recyclers, restaurant grease recyclers, fat rendering companies, or biodiesel producers.

Hazardous Waste: Envirotemp FR3 fluid itself, when discarded or disposed of, is not a hazardous waste.

Disposal: Incinerate or landfill in accordance with local regulations. Do not pour into drains or waterways.

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14. TRANSPORT INFORMATION

Harmonized System Tariff Classification (Schedule B): 1507.90.4050

National Motor Freight Classification (NMFC): 155250

Euro Tariff: 15 07 90 00 00

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15. REGULATORY INFORMATION

Envirotemp FR3 fluid itself, when discarded or disposed of, is not listed as a hazardous waste per 40 CFR 261 and is not a used oil per 40 CFR 279. Envirotemp FR3 fluid is a preparation not classified as dangerous according to Directive 1999/45/EC.

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16. OTHER INFORMATION

Technical information available at the Cooper Power Systems website: www.cooperpower.com

This Material Safety Data Sheet has been prepared in order to help the users of Envirotemp FR3 fluid. The data contained herein is, to the best of our knowledge, accurate as of the date of preparation of this sheet.

Effective Date: September 22, 2011

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EXHIBIT L

NEW ENERGY EQUITY

AN ALLETE COMPANY

EMERGENCY RESPONSE PLAN

Prepared for:

Lime Township Board
3030 N Airport Rd, Mankato, MN 56001

Applicant:

MN CSG 2019-57 LLC
C/O New Energy Equity
2670 Patton Rd, Roseville, MN 55113

SECTION 1: INTRODUCTION

New Energy Equity (NEE) is committed to the safety and health of all of our workers and contract personnel, and visitors to our sites and work locations. Our continuing objective to provide safe work conditions and practices at all our work locations is our highest priority. We acknowledge the right all workers have to a safe and healthy work environment.

Since each emergency is unique, it is impossible to envision every potential event or combination of events that might contribute to, or result in, an emergency. This Emergency Response Plan (ERP) is based on an all-hazards approach that provides the flexibility to adapt to emergency regardless of the origin. This plan provides both a management and operational structure that identifies the functional relationship that must exist to ensure effective identification, response, and recovery from an emergency. Good judgment and common sense are critical in effective responses to emergency situations.

SECTION 2: OBJECTIVE

The objective of the ERP is to detail practices designed to address potential impacts from construction and operations of s NEE community solar garden project. (Project). This ERP plan provides guidance to construction, operations, contractors, and field personal on measures to minimize effects during construction and operations activities associated with the Project.

This ERP is to assist employees, sub-contractors, contractors, suppliers, and management in making quality decisions during times of crisis. This plan contains guidance in determining the appropriate actions to be undertaken to prevent injury and property loss from the occurrence of major incidents or accidents. This document acts as a guideline in the event of an emergency. The steps described may not occur in the same order, good judgment and common sense are critical for effective emergency response.

The ERP is intended to minimize hazards to human health and safety and to the environment from fire, explosion, or any unexpected sudden or non-sudden release of hazardous materials constituents to the air, soil, surface, or groundwater, and natural or human disasters. This plan will serve as the emergency action guide for employees, contractors, and visitors in the event of an emergency.

Section 2.1 Emergency Response Plan (ERP)

The following text includes standard language included in NEE contracts regarding emergency response. These measures may be modified in the final POD to include measures specifically designed for the project.

NOTICE: This attachment is intended to be an overview of NEE's or contractors' emergency response requirements and is not intended to be a comprehensive or exhaustive list.

This attachment is not intended to supersede or replace Contractor's obligations to comply with (and ensure Contractor Representatives comply with) all applicable laws, all reasonable directions and orders given by representatives of NEE RE, and all other guidelines, rules, and procedures of NEE that may be

given to Contractor from time to time, including without limitation, safety and health standards, policies, and procedures resulting from a pre-job risk assessment, amendments by NEE RE, or amendments resulting from changes in applicable laws.

SECTION 3: SETTING AND SITE ACCESS INCLUDING EMERGENCY ACCESS

Direct access to the site will be provided by Third Avenue. There would be no need for internal access roads within the project site. The access would be constructed to allow fire and maintenance vehicle access.

SECTION 4: EMERGENCY RESPONSE REQUIREMENTS

Section 4.1 Regulatory Compliance

NEE and contractors will comply with all applicable federal, state, and local emergency response laws, regulations, and standards. NEE and contractors using good judgment, common sense, experience, and knowledge will identify such additional emergency response preparation as may be required to be performed safely.

Section 4.2 Emergency Coordinator

Before on-site services begin, NEE will ensure contractor(s) assign a designated emergency response coordinator, qualified by experience and/or education, is assigned for all services taking place. This person will be dedicated to managing the implementation of the emergency response plan, emergency response and may have additional project functions provided they do not interfere with the effective implementation of the program.

Section 4.3 Competent and Qualified Persons

NEE will ensure contractor(s) employ a “competent person” and/or “qualified person” capable of carrying out an effective emergency response preparation plan. Such person(s) will have the authority to take prompt corrective actions. Contractor(s) will provide NEE with the name and contact information of the assigned person(s) and/or any changes in the assignment.

Section 4.4 Fire Safety Plan (FSP)

NEE will ensure contractor(s) develop a Fire Safety Plan (FSP) that describes how the contractor will safely provide contractor’s services. Content of the plan will address regulatory compliance and any additional health and safety measures as may be required for the contractor’s services to be performed safely. A copy of the contractor’s FSP will be provided to NEE prior to the start of on-site work.

Section 4.5 Emergency Response Plan (ERP)

Contractor(s) will develop a written final Emergency Response Plan (ERP) in accordance with applicable federal, state, and local emergency response regulations and standards. Contractor(s) will include the Emergency Response Plan in contractor’s Project Safety Plan. Contractor(s) will train all contractor representatives on the provisions of the Emergency Response Plan.

The final ERP would be specific to the final site layout and location of site components and implemented to provide an integrated procedure for response to oil and hazardous materials spills, plant evacuation, medical/fire/law enforcement, and severe weather emergencies. The final ERP would be

consistent with applicable laws and regulations governing such emergencies.

Section 4.6 Health and Safety Program

Health and Safety Training is an important part of the final ERP. To ensure the instructions contained within the final ERP are properly followed during site/facility emergencies, a training program is to be developed and training provided to all employees, upon hire and after any changes in site/facility operations or layout. All staff to intervene in emergency situations that could affect their health or safety must receive training before undertaking their duties. The training must include exercises appropriate to the work site that simulate the potential emergencies identified in the final ERP.

Section 4.6 Fire Prevention

Listed below are specific procedures that shall be addressed by the site to minimize the occurrence of and impact from a fire emergency. Fire prevention is the responsibility of all personnel. Employees should follow safe practices to minimize fire hazards, and supervisors must ensure safe practices are followed daily.

- Contractor(s) will include the Fire Safety Plan (FSP) in contractor's ERP. Contractor(s) will train all contractor representatives on the provisions of the FSP. The FSP would be consistent with applicable laws and regulations governing such emergencies.

- All fire protection equipment will be inspected monthly by the Emergency Coordinator. All areas at each site/facility will be inspected monthly to check for unsafe conditions, such as blocked or locked fire exits, poor housekeeping, smoking in non-designated areas, flammable/combustible materials not stored properly and obstructed access to electrical rooms and panels, etc.

- The Project operator and or EPC contractor shall present basic fire-prevention training to all personnel working at the project site, and shall maintain documentation of all training and implement the following:

- All employees, contractors, and employees of contractors to do everything reasonable within their power, expertise, and assessment of human safety both independently and upon request of the County and the local fire department to prevent and suppress fires resulting from Project construction or maintenance activities on the lands to be occupied under this permit. In case of fire suppressed by the operator, the operator will report its occurrence to the County and the local fire department. The operator is responsible for all suppression costs and resource damage rehabilitation costs resulting from the suppression of any fire resulting from its operations and practices.

- The operator is responsible to ensure that each employee, subcontractor, or any other individual or company working on the project site is aware of the provisions of this fire plan, is familiar with thelocation and proper use of firefighting equipment and conducts themselves in a fire-safe manner.

- No material will be disposed of by burning in open fires.

- Exhaust systems of vehicles will have an acceptable muffler and will be in proper workingcondition. All motorized equipment and machinery will be equipped with spark arresters.

    - Vehicles will be parked only in cleared areas.
    - All smoking will be done only inside of vehicles or in areas cleared of flammable material.
    - Fuels and flammable materials, if required, will be stored in accordance with the HazardousMaterials Plan and in accordance with all applicable state and federal laws.
    - The proposed solar plant site shall be equipped with fire extinguishers and other equipmentsufficient to extinguish small fires.
    - Welding operations are subject to the following additional provisions
    - There will be no welding when winds are over 15 miles per hour; and
    - Welding will occur only in areas cleared of all flammable vegetation and materials at a minimum radius of 30 feet from the welding operation.
    - Fire rules shall be posted on the project bulletin board at the contractor's field office and areas visible to employees. All construction workers, plant personnel, and maintenance workers visiting the plant and/or transmission lines to perform maintenance activities shall receive training on the procedures to be followed in the event of a fire. Training records shall be maintained and be available for review by the County and the local fire department.
    - Local fire agencies shall have access to the solar farm site. Access gates shall be a minimum of 12 feet to allow fire access.
    - Minimize fire risk by removing vegetation. Measures to minimize fire risk shall include removal ofdry vegetation, or equipment/vehicle that has the potential to spark a fire.

In the event of an emergency, immediate notification must be easily available for employees. In all circumstances regarding emergencies whether a specific incident such as an individual, to a serious or facility wide emergency incident, the preferred means of notification is through the immediate Supervisor who will then notify the operator so that he/she may make an announcement to the whole site. In situations where site- wide announcements are not available, notification will occur by phone or radio, or other site-specific method.

Section 4.7 Emergency Response

In the event of an emergency response, the following measures will be conducted by the individual discovering the emergency. First, personnel will assess the situation to determine potential safety concerns and hazards posed to personnel and the environment. Protective actions for life safety are the priority. All personnel will be moved or evacuated to a safe location. Access will be prohibited to the affected area to other employees or contractors. The final ERP will include a site-specific evacuation plan and a shelter in place plan.

The second priority is the stabilization of the incident. Anyone who witnesses an unusual situation that cannot be corrected routinely must notify their supervisor immediately and, while respecting the jurisdiction and ability, he/she must take the necessary measures to control the situation until the arrival of the Emergency Coordinator or supervisor.

Section 4.8 Emergency Reporting

The construction contractor will notify NEE construction supervisor and environmental monitor of any emergencies immediately. NEE will notify federal, state, and local authorities, as appropriate.

If an emergency threatens public or worker health:

- The contractor will make appropriate notification(s) to emergency personnel.
    - Emergency: 911

ATTACHMENT A:

SAMPLE EMERGENCY RESPONSE FORM

CERTIFICATIONS, ACKNOWLEDGMENTS, AND DESIGNATION OF EMERGENCY COORDINATOR

The Construction Contractor(s) responsible for managing the material yards shall complete and submit the following information:

GENERAL INFORMATION

Business Name

Facility Street Address

( )

City County Zip Code Phone

Mailing Address (if different)

( )

City County Zip Code Phone

EMERGENCY COORDINATOR

( ) ( ) ( )

Primary Emergency Coordinator Business Phone 24-hour Phone Pager/Cellular Phone

( ) ( ) ( )

1st Alternate Business Phone 24-hour Phone Pager/Cellular Phone

( ) ( ) ( )

2nd Alternate Business Phone 24-hour Phone Pager/Cellular Phone

EMERGENCY CHECKLIST

** DIAL 911 FOR EMERGENCY RESPONSE**

Emergency Coordinator:	( )	( )
	(day phone)	(night phone)
First Alternate:	( )	( )
	(day phone)	(night phone)
Second Alternate:	( )	( )
	(day phone)	(night phone)

Contractor

Telephone Number

Address

EMERGENCY NUMBERS

Emergency Response
(Ambulance, Fire, Police, Sheriff, Highway Patrol) call 911

Poison Control Center Phone: _____

Nearest Hospitals (2) _____ Phone: _____

_____ Phone: _____

Cleanup Contractor _____ Phone: _____

Other (specify) _____ Phone: _____

Other (specify) _____ Phone: _____

AGENCY NOTIFICATIONS (to be made by the Proponent's environmental manager or environmental field supervisor or emergency response coordinator)

Other (specify) _____ Phone #: _____
Other (specify) _____ Phone # _____

Note: The Construction Contractor(s) shall verify and update the emergency numbers on this pagebefore and during Project construction

I. EMERGENCY RESPONSE EQUIPMENT MONTHLY INSPECTION

A/U

_____ Shovels
_____ Absorbent material
_____ Personal protective equipment (Tyvek suit, gloves, goggles and booties, as appropriate)
_____ Fire-fighting equipment in good working condition
_____ First aid supplies (e.g., medical supplies, squeeze bottle eye wash)
_____ Communication equipment
_____ Bung wrench (non-sparking)

II. EMEGENCY RESPONSE ACTIONS TAKEN REPORT

(Required for all unacceptable conditions)

_____

_____

_____

_____

_____

_____

_____

Date:_____Company (print):_____

Inspected by (print):_____Signature:_____

EXHIBIT K

SITE RULES

NEE will use commercially reasonable efforts to follow and to cause its personnel to follow the following rules while on the Premises. Lessor may bar further access to the Premises by any individual who commits repeated, material violations of these rules after such individual has received at least three written warnings of a particular material violation from Lessor describing, and including reasonable evidence documenting, such material violation. In addition, any individual violating rules (d)(i), (iv), or (vi) at least three times after receipt of a third written warning with documented evidence of such violation, will be immediately expelled from the Premises and will be banned from the Premises thereafter. The rules are as follows:

a) When not in active use by NEE, all access gates, as well as all interior gates, will remain closed at all times.

b) Smoking is prohibited except in designated construction areas and in vehicles. NEE will employ reasonable precautions to prevent fires and will be responsible for all damage caused by NEE.

c) NEE will keep the Premises clean and free of debris created by NEE, its contractors, or others brought on to the Premises by NEE. NEE will not use the Premises for storage of items that are not related to, used or to be used in connection with, or for the benefit of all or a portion of the Project.

d) At no time will any of employees of NEE bring any of the following onto the Premises:

    i. weapons of any type, including but not limited to, guns, bows and arrows, or sling shots;

    ii. animal calling devices;

    iii. fishing equipment or nets;

    iv. dogs, cats or any other animals;

    v. alcoholic beverages;

    vi. illegal drugs or related paraphernalia.

e) NEE, its employees, contractors, agents and any individual allowed onto the Premises by NEE will use reasonable efforts to confine their activities on the Premises to the designated access routes and to the areas upon which operations are then being conducted.

f) No wood, plants, animals (dead or alive), antlers, artifacts or any other item that was not originally brought onto the Premises by NEE personnel will be removed from the Premises by such personnel, except that NEE can burn, remove and clear wood, plants and brush on the Premises.

g) A speed limit of 25 miles per hour (15 miles per hour at night) will be strictly observed while using roads on the Premises.

h) This Agreement does not cover or include any right or privilege of hunting or fishing on the Premises, all such rights being expressly reserved to Lessor.

EXHIBIT G

SWPPP/ Wetland Delineation / Watershed Letter to be provided with Building Permit Application

FORGESOLAR GLARE ANALYSIS

Project: **MN - Bohrereast**
Proposed 1MW installation at 23759 Third Ave, Mankato

Site configuration: **Bohrereast**

Created 15 Feb, 2024
Updated 16 Feb, 2024
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 112234.19350

Ocular transmission coefficient 0.5
Pupil diameter 0.002 m
Eye focal length 0.017 m
Sun subtended angle 9.3 mrad
PV analysis methodology V2



Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare	
	°	°	min	hr	min	hr
PV array 1	SA tracking	SA tracking	0	0.0	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
Lime Valley Road	0	0.0	0	0.0
Third Avenue	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
OP 4	0	0.0	0	0.0

Component Data

PV Arrays

Name: PV array 1
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 52.0°
Resting angle: 0.0°
Ground Coverage Ratio: 0.33
Rated power: 1712.0 kW
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.222539	-93.978499	821.14	5.00	826.14
2	44.222539	-93.976777	824.15	5.00	829.15
3	44.224373	-93.976782	824.99	5.00	829.99
4	44.224680	-93.977040	823.67	5.00	828.67
5	44.224673	-93.977919	821.00	5.00	826.00
6	44.224219	-93.978418	820.74	5.00	825.74

Route Receptors

Name: Lime Valley Road
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.225872	-93.971505	892.07	5.00	897.07
2	44.224503	-93.971344	885.33	5.00	890.33
3	44.222904	-93.971291	879.16	5.00	884.16
4	44.221218	-93.971303	892.26	5.00	897.26

Name: Third Avenue
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.222099	-93.989040	826.04	5.00	831.04
2	44.225735	-93.986937	811.48	5.00	816.48

Discrete Observation Point Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	44.223544	-93.971623	876.96	5.50
OP 2	2	44.220719	-93.972018	867.72	5.50
OP 3	3	44.225609	-93.971827	872.46	5.50
OP 4	4	44.226104	-93.972013	872.14	5.50

Obstruction Components

Name: Obstruction 1
Top height: 50.0 ft



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.223896	-93.975102	825.95
2	44.223028	-93.975102	825.82

Name: Obstruction 2
Top height: 65.0 ft



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.219967	-93.975811	830.46
2	44.221520	-93.975950	829.03
3	44.221550	-93.974974	828.66
4	44.222573	-93.975221	825.36

Name: Obstruction 3
Top height: 65.0 ft



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.221797	-93.985417	812.03
2	44.222497	-93.985514	810.46
3	44.222943	-93.985921	808.09
4	44.223619	-93.986404	808.63
5	44.224765	-93.986350	808.47
6	44.224795	-93.985439	804.26
7	44.226887	-93.984677	808.71

Name: Obstruction 4
Top height: 65.0 ft



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.220159	-93.979523	823.10
2	44.221574	-93.979609	820.07
3	44.221558	-93.977034	827.22
4	44.222458	-93.977163	825.66

Name: Obstruction 5
Top height: 65.0 ft



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.224215	-93.974275	828.41
2	44.225522	-93.974189	836.45

Name: Obstruction 6
Top height: 65.0 ft



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.225032	-93.972778	846.02
2	44.225593	-93.973132	844.12

Glare Analysis Results

Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare	
	°	°	min	hr	min	hr
PV array 1	SA tracking	SA tracking	0	0.0	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
Lime Valley Road	0	0.0	0	0.0
Third Avenue	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
OP 4	0	0.0	0	0.0

PV: PV array 1 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Lime Valley Road	0	0.0	0	0.0
Third Avenue	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
OP 4	0	0.0	0	0.0

PV array 1 and Route: Lime Valley Road

No glare found

PV array 1 and Route: Third Avenue

No glare found

PV array 1 and OP 1

No glare found

PV array 1 and OP 2

No glare found

PV array 1 and OP 3

No glare found

PV array 1 and OP 4

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.
Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare. This primarily affects V1 analyses of path receptors.
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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EXHIBIT H

described in and who executed the foregoing deed and in due form of law acknowledged to me that she executed the same freely and voluntarily, for the uses and purposes therein expressed.

In Testimony whereof I have hereunto set my hand and affixed my official seal, the day and year last above written. {Notarial Seal Blue Earth Co Minn}

A. R. Pfau.
Notary Public.

Warranty Deed.
Lelara E. Widell et al
To
Chicago Milwaukee & St Paul Ry Co
Rec'd Oct 11. 1901 @ 4 P. M.
B. Baugerter Jr. Register

The Grantors, Lelara E. Widell and husband said Thomas O'Mc Tighe and wife of the County of Blue Earth and State of Minnesota for and in consideration of Six hundred 00/100 Dollars in hand paid convey and warrant to the Chicago, Milwaukee & St Paul Railway company, its Successors and assigns, the following described real estate:

A strip of land 100 ft wide lying Westerly and Adjoining the 100 ft right of way (Right of Way) now owned and occupied by the Chicago St Paul Minneapolis and Omaha R. R. Co. over and across North east ¼ of North west ¼ Section 29, Twp 109 Range (26) containing 3 06/100 acres M/L.

This deed is given upon the express condition that Grantee shall have a farm crossing at Grade, Situate in the County of Blue Earth in the State of Minnesota

Dated this 20th day of September A. D. 1901.

Signed and delivered in Presence of.

J. L. Hewett, A. R. Pfau, A. R. Pfau Jr., A. O. Eberhart — as to Thomas Mc Tighe, Julia B. Mc Tighe, as to Lelara E. Widell and Gustaf Widell

Lelara E. Widell
Gustaf Widell
Thomas O'Mc Tighe
Julia B. Mc Tighe

State of Minnesota } Be it Remembered, that on this 20th
County of Blue Earth } ss day of September A. D. 1901 before the undersigned, personally appeared Lelara E. Widell and Gustaf Widell her husband to me well known to be the identical persons described in and who executed the foregoing deed and in due form of law acknowledged to me that they had executed the same freely and [illegible]

State of Minnesota } Be it remembered that on this
County of Blue Earth } ss — day of — A.D. 1904 before the
undersigned personally appeared Thomas O. Mc. Tighe
and Zuba B. Mc. Tighe his wife to me well known to
be the identical persons described in and who executed
the foregoing deed and in due form of law acknow-
ledged to me that they had executed the same freely
and voluntarily for the uses and purposes therein
expressed.

In testimony whereof I have hereunto set my hand
and affixed my official seal the day and year last
above written (notarial seal) A. R. Olson Notary Public
Blue Earth County
Minnesota

Warranty Deed.
Sarah L. Brooks etal
To
Chicago Milwaukee & St Paul Ry Co.
Recd. Oct 11. 1904 @ 4 P. M.
B. C. Barglebin Jr. Register

The Grantors Morgan Brooks
executor of the Estate of D. R.
Brooks, Sarah L Brooks
executrix of Estate of D. R.
Brooks, Sarah L Brooks widow
Charles Brooks and Etta Brooks

his wife of the County of Blue Earth and State of Minnesota
for and in consideration of one hundred fifty eight 75/100
Dollars in hand paid convey and warrant to the Chicago
Milwaukee & St Paul Railway Company its Successors and
assigns the following described real estate.

A strip of land 100 ft in width lying westerly and ad-
joining the 100 ft right of way now owned and occupied
by the Chicago St Paul Minneapolis and Omaha R. R. Co over
and across the north 551 feet of the South 1/2 of North-West 1/4
Section 29. Town (109) Range 26 containing 1 37/100 acres, m/l
situate in the County of Blue Earth in the State of
Minnesota.

Dated this 11 day of September A.D. 1904
Signed and delivered in Presence of
J. L. Hewitt
A. R. Olson

Sarah L Brooks
Executrix of the Estate of D. R. Brooks
Sarah L. Brooks
Morgan Brooks
Ex of the estate of D. R. Brooks
Charles Brooks
Etta Brooks

State of Minnesota
County of Blue Earth } ss Be it remembered that on this 11th
day of September A.D. 1904 before me the undersigned personally
appeared Morgan Brooks

STINSON

Robert L. Striker
OF COUNSEL
DIRECT: 612.335.1405
OFFICE: 612.335.1500
bob.striker@stinson.com

July 22, 2024

Attorney-Client Communication

New Energy Equity LLC
Attn: Dennis Schreibeis, Esq.
2530 Riva Road Suite 200
Annapolis, MD 21401

Re: Farm Crossing in Blue Earth County near Mankato, MN

Dear Dennis:

You have inquired about whether farm crossing reserved in a deed conveying a strip of land for railroad right-of-way purposes remains in effect. After reviewing the instrument that contains the reservation and a related title insurance commitment and survey, we believe that (absent other evidence to the contrary) the farm crossing should remain in effect.

On September 25, 1901, Clara Widel and Thomas McTighe conveyed to the Chicago, Milwaukee & St. Paul Railway a one-hundred-foot-wide strip of land across the Northeast Quarter of the Northwest Quarter of Section 29, Township 109, Range 26, "upon the express condition that the Grantor shall have a farm crossing at grade." The deed conveying the right of way subject to the reservation of the farm crossing (the "Deed") was recorded in the land records of Blue Earth County on October 10, 1901 in Book 71, Page 241.

We understand that New Energy Equity is currently investigating whether to develop property (the "Property") in the Northeast Quarter of the Northwest Quart of Section 29 that lies east of the strip of land conveyed by the Deed (the "Right of Way"). In connection with the development of the Property, you intend to use an existing gravel road to access the land west of the Right of Way from County Road 5 (a/k/a Third Avenue) and then intend to use the farm crossing reserved in the Deed (the "Crossing Easement") to cross the railroad lines (currently operated by Union Pacific) to access the Property.

In connection with answering your question about whether the Crossing Easement remains effective, we have reviewed a survey of the Property and the adjacent land under common ownership dated August 28, 2023 (the "Survey"). The Survey shows a gravel road and railway crossing that is denoted as "238th Lane" and "T-302" along the northerly boundary of the Property.

In addition, we have reviewed a commitment for title insurance, file number 24000370633-01 with a commitment date of February 22, 2024 (the "Commitment"). A copy of the Commitment

accompanies this letter. The Commitment includes the Deed as a "special exception" to title that affects the Property. Any title insurance issued in connection with the Commitment will be subject to the terms and conditions of this special exception, which indicates that the title company has determined that the terms and conditions of the Deed may affect the Property.

Analysis:

Farm crossings such as the one included in the Deed are recognized easements under Minnesota law. Minnesota has long held that railroads that leave parts of a farm on different sides of the railroad must construct proper farm crossings at some place convenient for the farm. This requirement is currently embodied within Minnesota Statutes Section 219.13.

Easements in Minnesota are subject to the Minnesota Marketable Title Act, Minnesota Statutes Section 541.03 (the "Act"). The Act governs when an interest in real property (such as an easement) that is at least 40 years old may be enforced. Generally, the interest in real property may only enforced if the party holding the interest files a statutorily prescribed notice of the claim in the land records within 40 years of the creation of the interest. If a party fails to file the notice, there is a presumption that the interest has been abandoned. However, if the party "possesses" the land subject to the interest, the interest is not presumed to be abandoned and the party may enforce the interest.

For the purposes of "possessing" an easement, the Act requires use of the easement "sufficient to put a prudent person on notice of the asserted interest in the land, with due regard given to the nature of the easement at issue." [1]

As initially discussed above, the Survey includes maps and a Google Earth image showing 238th Lane and T-302 crossing the Union Pacific railway lines. We believe that the presence of a gravel road and a physical crossing of the railway lines would constitute a use sufficient to put the railroad and others on notice of the interest in a crossing.

(In addition, there may be additional arguments that could be made regarding the right to cross the railroad line in addition to the rights granted by the Crossing Easement. The survey suggests that the location and width of 238th Lane indicate that the roadway could have been used as a town road. The surveyor also suggests that a right to cross the railroad at the historic road may constitute an easement by necessity in order to access the Property.)

In our review of the Commitment and Survey, it does not appear that any of the other documents listed as "Special Exceptions" directly affect the Crossing Easement. The only Special Exception that is in the vicinity of the Crossing Easement is a non-exclusive easement from 2011 in favor of Union Pacific Railway that permits Union Pacific to use the same area as 238th Lane/T-302 for

[1] Sampair v. Village of Birchwood, 78 N.W.2d 65 (Minn. 2010)

access from County Road 5.[2] None of the other Special Exceptions constitutes a waiver or relinquishment of the Crossing Easement or provides evidence of abandonment by a previous owner of the Crossing Easement.

Taken as a whole, it appears that the Crossing Easement remains in effect. There is no evidence of any waiver, relinquishment or abandonment of the Crossing Easement in the land records. In addition, there is ample evidence of historic use of northerly portion of the property for the purpose of crossing the railway right of way.

Please note that this letter does not constitute a title opinion or an assurance that the Crossing Easement remains in effect. We have not reviewed a complete abstract of title for the property or performed a search for evidence of past abandonment. We recommend that, in the course of your proposed use of the Property, you obtain a title insurance policy that insures adequate access to the Property.

In addition, we recommend that you coordinate your planned use of the Crossing Easement with Union Pacific.

Feel free to contact me with any questions or concerns.

Sincerely,

Stinson LLP



Robert L. Striker

[2] This is further evidence that the historic use of 238th Lane/T-302 for access across the railway line were sufficient to put Union Pacific on notice of the landowners' interest in the Crossing Easement.

[EXTERNAL MAIL] Private Road Crossing - Third Ave, DOT 185461V, MP 81.53, Mankato Sub, Mankato, MN - (Inquiry 9742)

Jacobs, Andrew <AJacobs@benesch.com>
Fri 7/19/2024 9:45 AM
To:Brian Keenan (NEE) <briank@newenergyequity.com>
Cc:Martin, Michelle <MaMartin@benesch.com>

You don't often get email from ajacobs@benesch.com. Learn why this is important

⚠ Use Caution

[EXTERNAL EMAIL] This message was sent from someone outside the company.
Do not click links, download attachments, or reply with personal information unless you recognize the sender and know the content is safe.

Good Morning, Brian -

This will confirm receipt of the inquiry you submitted through the Union Pacific Public Projects Contact Center on July 19, 2024.

Project Manager, Michelle Martin, will be coordinating the review of your request for a private crossing agreement at the above-referenced location. To start the review process, please complete the attached Road Crossing Application form with as much information as possible and return it to us via e-mail.

PDF--Road Crossing Application Form (up.com)

Please feel free to reach out to me with any questions or concerns.

Thank you.

Andrew Jacobs
Public Project Representative

ajacobs@benesch.com
direct: 916-245-2636 **office:** 916-245-1845
1430 Blue Oaks Boulevard, Suite 140, Roseville, CA 95747



benesch

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EXHIBIT M

Bohrereast Solar Array

Decommissioning Plan

Prepared for:

MN CSG 2019-57 LLC
23759 THIRD AVE, MANKATO, MN, 56001

Location: MANKATO, MN
July 18, 2024

NEW ENERGY EQUITY

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

Tim Pollnow
Date: 7/22/2024
Registration Number: 60448

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1.0 Introduction

The purpose of this report is to describe the decommissioning process for the Bohrereast solar photovoltaic generation facility ("the project") located at 23759 THIRD AVE, MANKATO, MN 56001. The project consists of 2592 solar modules mounted to a driven pile, Single Axis Tracker system. After final circuit consolidation at the equipment pad mounted switchboard, the system's voltage will be stepped-up to distribution level at a transformer and interconnected, onto an existing utility distribution circuit.

The project converts approximately 7.2 acres of agricultural land into a power generation facility. Construction includes solar modules mounted on driven steel piles, inverters, concrete transformer and equipment pads, and gravel access roads.

2.0 Summary Statement of Expected Decommissioning Cost

The decommissioning cost to remove the solar PV facility and reestablish the property back to a grassy field is not expected to exceed a net expenditure of $293916.93.

3.0 Basis of Plan Narrative

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

3.1 General

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

3.2 Civil Infrastructure

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

3.3 Structural Infrastructure

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

3.4 Electrical Infrastructure

- PV modules to be recycled. Assumption is that the module value will be based off the module wattage. i.e. a higher wattage module will be worth more than a lower one.

- Switchgear including transformers will be removed from their respective concrete pads and recycled or returned to the manufacturer.
- Copper wiring will be dug up (if required) and recycled.
- Aluminum wiring will be dug up (if required) and recycled.
- Customer owned site riser or interconnection poles shall be removed.
- A two-person crew can dismantle a string inverter and recycle the components.
- Transformers are pad mounted and weigh approximately 8,500 pounds. These are dry type transformers, so there is no need for any oil disposal.
- Underground power and communication cables can be removed by excavating with a power trencher or excavator.

3.5 Recycling PV Modules

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

4.0 Schedule of Removal and Restoration Costs

Removal and Restoration Costs						
CIVIL INFRASTRUCTURE						
		QUANTITY	UNITS	$/UNIT	COST	NOTES
1	Road Aggregate, Rip Rap, and Geotextile Removal	27000	ft^3	$ 1.00	$ 27,000.00	Remove full section of aggregate road, rip rap, and geotextile fabrics
2	Road Aggregate, Rip Rap, and Geotextile Haul and Offsite Disposal	27000	ft^3	$ 3.23	$ 87,200.00	Hauling offsite
3	Topsoil Backfill	7500	ft^3	$ 1.00	$ 7,500.00	Onsite relocation of topsoil to backfill road and equipment pad excavations
4	Chainlink Fence Removal	2,300	ft	$ 1.00	$ 2,300.00	Includes fence mesh, post framing, concrete foundations, gates, etc.
5	Chainlink Fence Haul and Offsite Disposal	11,500	lbs	$ 0.07	$ 800.00	
6	Concrete Equipment Pad Removal	1	EA	$ 5,000.00	$ 5,000.00	
7	Concrete Waste Haul and Offsite Disposal	1	EA	$ 2,500.00	$ 2,500.00	
8	Site Grading	0.72	Acres	$ 5,000.00	$ 3,600.00	Grading smooth all areas disturbed by removals, excavations, etc, assumed (0.1 x project area) + Road Area + Equipment Pad Area
9	Turf Establishment	7.2	Acres	$ 1,500.00	$ 10,800.00	Hydroseed all areas disturbed by removals, excavations, etc
10	Sediment Control	767	ft	$ 10.00	$ 7,666.67	Silt fence installation
Structural Infrastructure						
11	Foundation Removal	571	EA	$ 18.70	$ 10,678.29	~25% of Install cost
12	Foundation Haul and Offsite Disposal	571	EA	$ 5.96	$ 3,404.15	
13	Racking Removal	80352	lbs	$ 0.33	$ 26,464.29	~50% of Install cost
14	Racking Haul and Offsite Disposal	80352	lbs	$ 0.03	$ 2,454.15	
Electrical Infrastructure						
15	Removal of Solar Modules	2,592	EA	$ 5.00	$ 12,960.00	
16	Removal of String Inverters	9	EA	$ 1,000.00	$ 9,000.00	
17	Removal of Switchgear/Xfmr	1	EA	$ 5,000.00	$ 5,000.00	
18	Removal of Riser and Interconnection Poles	4	EA	$ 1,000.00	$ 4,000.00	
19	Removal of SCADA/Aux Panel/Weather Station	1	EA	$ 200.00	$ 200.00	
20	Removal of DC Copper Wire	1,503	lbs	$ 2.00	$ 3,006.00	
21	Removal of AC Aluminum Wires	1,800	lbs	$ 2.00	$ 3,600.00	
	Total Cost				**$ 235,133.54**	

5.0 Schedule of Summary

Summary		
Description	Cost	Units
Decommissioning Estimate (DE)	$ 235,133.54	$
Factor of Safety (FoS)	1.250	
DE with FoS	$ 293,916.93	$

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

Tim Pollnow
Date: 7/22/2024
Registration Number: 60448

EXHIBIT O

NEW ENERGY EQUITY
AN ALLETE COMPANY

Site Selection Criteria

Siting renewable energy projects is contingent on several factors, key considerations include:

- **Landowner support** – Privately held entities such as NEE Energy do not utilize eminent domain authority when it comes to site selection and securing land for community solar project development. Accordingly, solar projects only occur on properties that have complete landowner support. Property owners typically contact NEE following outreach activities such as direct mail, phone calls, or digital campaigns promoting NEE efforts to acquire development opportunities. Once educated about the considerations of hosting a community solar garden, landowners can choose to participate and become a project partner.

- **Solar resource** – Not all sites have sufficient solar access to justify building a community solar garden. Energy production and project viability are dependent on how much available sunlight reaches the site. Sites with compromised solar resource due to topography, vegetation, or adjacent structures cannot be economically developed.

- **Parcel characteristics** – Sites must have sufficient acreage, appropriate dimensions, and acceptable topography to host a community solar garden. At a minimum, seven acres of developable area is needed but a good site typically has twenty to forty acres dedicated to the solar project. The parcel shape must also allow for efficient layout of the solar array(s). Narrow, elongated, or twisting parcel boundaries make it challenging to efficiently layout and build a solar array. Additionally, a relatively flat area is required for site development. While some gradient is acceptable, grades above 5% can significantly add to project costs and complicate engineering and construction. In general, NEE does not develop sites that require significant tree clearing, grading, or similar land disturbance.

- **Interconnection feasibility** – A community solar garden requires a three-phase distribution feeder or sub-transmission line nearby (within approximately a quarter mile) and the site must be within 4 miles of a utility substation to avoid cost prohibitive interconnections costs. Many sites are not chosen for development simply because there is no practicable way for energy produced on site to access the power grid.

- **Environmental impacts** – NEE evaluates parcels for various environmental attributes when developing community solar garden. Sites that offer the opportunity to avoid, minimize, or mitigate environmental impacts are pursued for further development efforts. Evaluation efforts include screening for archaeological, cultural, and historical resources; wetlands studies; investigating presence of endangered or threatened species; and identifying nearby receptors for visual impacts.

EXHIBIT P

NEW ENERGY EQUITY

AN ALLETE COMPANY

BUILDING CLEANER ENERGY, LEAVING BEHIND A BETTER WORLD.

ABOUT NEW ENERGY EQUITY

New Energy Equity, an ALLETE company, is a national end-to-end solar development and finance company, having successfully completed more than 250 projects totaling more than 430 megawatts across the United States.

Our focus is on developing, financing, operating and managing solar power generation assets, providing clean electricity to commercial, industrial, municipal, and utility customers under long-term contracts. We have ranked on Solar Power World's "Top Solar Contractors" list every year since its inception and were voted one of the fastest-growing energy companies in D.C., Maryland, and Virginia by Inc. Magazine.

THE NEW ENERGY ADVANTAGE

A Personal Approach

When you partner with us, you'll receive a tailored approach and our commitment of integrity, ingenuity, dedication, and diligence, so that we thrive and succeed together.

Competitive Pricing

New Energy has access to a variety of financial resources and has streamlined the transaction process, allowing us to offer competitive pricing and pass along greater savings to our customers.

Flexible Credit Screening

Our diverse investor base allows for more flexibility on credit requirements for PPA customers.

Financial Transaction Expertise

We've closed over 250 solar transactions, meaning we know what it takes to get the deal done. Our expertise in finance, due diligence and transaction execution means a simplified experience for our clients and an exceptionally high close rate.

Technical Capability and Experience

Our team of engineers and project managers optimize system design for the greatest solar production, highest reliability and the best possible economics for our partners and host customers.

SERVICES

Commercial Development
CSG Development
Asset Management
Financing
O&M

2022 TOPSOLAR CONTRACTORS
PRESENTED BY SOLAR POWER WORLD

2023 - 2022 - 2021 - 2020
2019 - 2018 - 2017 - 2016
2015 - 2014 - 2013 - 2012

2021 Best Company WASHINGTON D.C.

Inc. 5000 AMERICA'S FASTEST-GROWING PRIVATE COMPANIES

STAR TRIBUNE READERS' CHOICE MINNESOTA'S Best

View our 250+ completed projects at:

www.newenergyequity.com/experience

2530 Riva Road, Suite 200
Annapolis, MD 21401

1855 57th Court S, Suite 220
Boulder, CO 80301

2670 Patton Road
Roseville, MN 55113

marketing@newenergyequity.com

443-267-5012

EXHIBIT J

Sample Specifications for the Establishment of Native Vegetation as Part of Habitat Friendly Solar Projects

5-9-19
Developed by the Minnesota Board of Water and Soil Resources and the Minnesota Department of Natural Resources

Note: these specifications are suggestions for projects and should be adapted to meet specific site conditions and project goals.

CONTRACTOR QUALIFICATIONS

1. Seeding contractors must have at least three years of experience installing native seed and installing or maintaining prairie restoration projects or other similar types of projects.

PROPOSED CHANGES TO PROJECT SPECIFICATIONS

1. Once project specifications are approved by the local government unit (LGU) that is reviewing it for compliance with the Habitat Friendly Solar Standards they are considered final. Any changes to the project specifications after this point, need approval by the LGU responsible for compliance with the Habitat Friendly Solar Standards

SEED SPECIFICATIONS

1. Substitution of species in the specified seed mixes/species lists must be approved by the local government organization staff that are reviewing the project for compliance with the Habit Friendly Solar Standards.

2. All seed that is supplied for projects must be labeled according to the requirements of the Minnesota Seed Law, section 21.82, including limits on noxious weed seed.
3. The origin of seed is required to be listed on the seed tag for all species in a mix to provide verification of original (generation 0) seed source. The smallest known geographic area (township, county, ecotype region, etc.) shall be listed.
    - Information pertaining to purity, germination, and hard (dormant) seed of individual components in a mix is required on seed tags.
    - When submitting seed bids, seed vendors must list any *Amaranth* seeds that were found in official seed tests. If *Amaranth* species are found in the test results, the Minnesota Department of Agriculture (MDA) requires that the vendor pay for genetic testing to determine if the *Amaranth* seeds present are *Palmer amaranth.*
4. Seed must be cleaned to an extent sufficient to allow its passage through appropriate seeding equipment.
5. Seed must originate from within 175 miles of the project site. Follow the Minnesota Board of Water and Soil Resourced (BWSR) seed zone map and source sequence on page 8 of BWSR's Native Vegetation Establishment and Enhancement Guidelines for obtaining seed.

6. All seed delivered to sites must have a complete label and include information about individual component seed lots. Installers must allow MDA staff to take seed samples when they arrive for a random inspection.

7. The following are recommended design guidelines for pollinator seed mixes to be used for solar projects to help meet Habitat Friendly Solar standards. Multiple seed mixes may be used such as a grass-only mix under the panel and a pollinator seed mix between panels and on the edges of the site, however seed mixes must be designed with a sufficient percentage of fobs to meet the Habitat Friendly Solar Standards. Note, if projects are designed to meet Habitat Friendly Solar standards the planned seed mixes to be used must be included in the project plans for review.
    - Minimum seeding rate of 40 seeds/sq. ft.
    - At least 40% of the total seeding rate as determined by seeds per sq. ft. should be composed of perennial forbs.
    - 7 or more native grass/sedge species with at least 2 species of bunchgrass.
    - 20 or more native forbs with at least 3 species in each bloom period: Early (April-May), Mid (June-August), and Late (August-October).
    - Include species from multiple guilds and families including: cool season grasses; warm-season grasses; sedges/rushes; legume; and non-legume forbs
    - More information about seeding can be found in the DNR's Prairie Establishment and Maintenance Technical Guidance for Solar Projects.

SITE PREPARATION SPECIFICATIONS

1. Seeding can only be conducted after all grading, construction activities and site preparation are completed.

2. Treat any weeds located within the area to be seeded with Glyphosate herbicide or a similar non-chemical smothering technique if so desired. Conduct a second herbicide treatment if weeds continue growing after ten days. An herbicide that kills legumes may also be used if needed, but should only be applied on a case by case basis as these chemicals can often inhibit germination.

3. Prior to seeding, for any compacted areas prepare the soil surface to provide a smooth, moist, and evenly textured foundation. Use cultivating equipment such as disks, harrows, field diggers, or tillers capable of loosening the soil to a depth of at least 4 inches on all compacted areas. Till the soil surface to remove track imprints from wheeled or tracked equipment. Operate cultivating equipment on slopes at right angles to the direction of surface drainage. Soil clods, lumps, and tillage ridges 3 in. high or less may remain in place for seeding operations. Multiple passes of the equipment may be needed to meet these requirements. Avoid tilling areas that are not compacted to preserve the soil biology and prevent re-planting weed seeds.

4. Seeding should be conducted within a week after tilling to minimize weed competition. If it's not possible to seed the final native seed mix within this timeframe a temporary cover crop such as oats or barley can be used to prevent erosion. Prairie seeds can be planted directly into the area planted with the temporary cover provided a reduced rate of cover crop (20lb per acre) is used and no additional cover crop will be included as part of the native seed mix.

SEEDING SPECIFICATIONS

5. Seeding of prairie vegetation can be initiated once soil temperatures reach 50 degrees Fahrenheit in the spring (generally around May 15th). Spring seeding can be conducted through June 30th. Fall dormant seeding can also be conducted from October 15th until frozen ground in the fall. Frost seeding can be conducted during November or March when there is less than four inches of snow on the ground and temperatures are above freezing. Project planning and design staff must provide written approval to conduct seeding outside of the recommended time periods.

6. The seeding contractor is responsible for distributing seed across the entire project area as specified in the project plan.

7. A native seed drill with boxes for different sized seed (such as a Truax or Trillion type seeder) or a broadcast seeder should be used for seed installation. If a broadcast seeder is used, the contractor must ensure an even distribution of seed across the entire site and follow the application by raking, rolling or other methods to ensure that there is sufficient seed to soil contact.

8. If hydroseeding will be conducted where broadcast seeding is required conduct seeding by applying seed with only water first before placing Hydraulic Erosion Control Products (hydro-mulching). The solar arrays must be protected using methods including appropriate shields, covers and avoidance measures. Accidental overspray must be cleaned up at the time of installation.

9. Apply certified weed free straw mulch (type 3) over the seeded areas and disc anchor where possible except where erosion control blanket or other erosion control devices are used as defined in the erosion control specifications.

10. Use temporary erosion control devices (sediment logs, silt fence) as needed to prevent erosion prior to and during seed establishment.

11. If a companion cover crop is not included with specified seed mixes for the project include a cover crop of oats at a rate of 20lb. per acre.

MANAGEMENT SPECIFICATIONS

1. Monitoring of the site's vegetation is required three times a year during the first three years (June, July, August) of the project as vegetation establishes and then twice a year (June and September) each year in following years to determine maintenance needs beyond those included in these specifications.

2. Year 1 Maintenance - During the first growing season vegetation in the seeded areas must be mowed at a raised height (>5") every two weeks or as vegetation reaches one foot tall until September 30th with a flail type mower or stalk chopper that will help prevent the smothering of native plant seedlings. Mowing to a height shorter than 5" can damage native vegetation. Hand held trimming equipment may be needed for areas under solar arrays. Herbicide should

be used minimally and only as a spot-treatment during the first year as native plant seedlings will be susceptible to overspray.

3. Year 2 Maintenance - Spot treat or hand pull any invasive species or noxious weeds that are starting to establish. In some cases it may be beneficial to spot mow weeds to prevent them from developing seed and then treating them with herbicide later in the season after they have a chance to re-grow.

4. Year 3+ Maintenance - Spot treat or hand pull any invasive species or noxious weeds that are starting to establish. In some cases it may be beneficial to spot mow weeds to prevent them from developing seed and then treating them with herbicide later in the season after they have a chance to re-grow. After two growing seasons flail mow (or mow by using hand held equipment as needed) native vegetation in May each season. Do not mow earlier as mowing may impact pollinators that overwinter in plant stems or at the base of vegetation.

5. Use spot-herbicide treatments only for treatment of invasive species and noxious weeds. Avoid overspray of herbicide, and only use herbicide for targeting noxious weeds or non-native plants that will inhibit the growth of native species.

6. Any areas over 100 square feet with sparse establishment (less than one native plant every 1.5 feet on average) after the first full growing season will require re-seeding using the original seed mixes specified for the project.

7. The seeding will be successfully established when the area has a 90% aerial coverage of native plant species.

8. If wildflower diversity decreases over time and the project is no longer meeting Habitat Friendly Solar standards use inter-seeding of wildflowers to reestablish forb diversity. Grazing with an approved management plan or prescribed burning with an approved burn plan and experienced contractors can also be used as a way to maintain flower diversity.

Site Plan and Traffic Advisory Review Committee **CYV01-24**

Meeting Date: 08/13/2024

Title

Request of Shawn Griffiths and Denise Schweim for a variance from Section 10.13, Subd.6.C of the Mankato City Code to reduce the rear yard setback from 25 feet to 15.2 feet. The variance is being requested in order to construct a 26' X 29.5' attached garage addition. The property is described as Lot 16, Block 3, Copperfield No. 2, City of Mankato, Minnesota (102 Uriah Court).

Applicant

The applicant is property owners, Shawn Griffiths and Denise Schweim.

Request

The applicant is requesting a variance in order to reduce the required rear yard setback from 25 feet to 15.2 feet. The variance is being requested in order to construct a 26'x29.5' attached garage addition.

Location

The property is described as Lot 16, Block 3, Copperfield No. 2, City of Mankato, Minnesota (102 Uriah Court).

Existing Land Use

The existing land use is residential.

Zoning

R-1, Single Family Dwelling District.

Review

The applicant is requesting a variance from Mankato City Code to allow for an addition to the dwelling.

The variance is to reduce the required rear yard setback from 25' to 15'2" in order for the construction of a 26'x29.5' garage in addition to the back of the dwelling. The floor plan shows garage space, and the elevation shows the addition will look similar to the existing dwelling.

Attachments

General Location Map

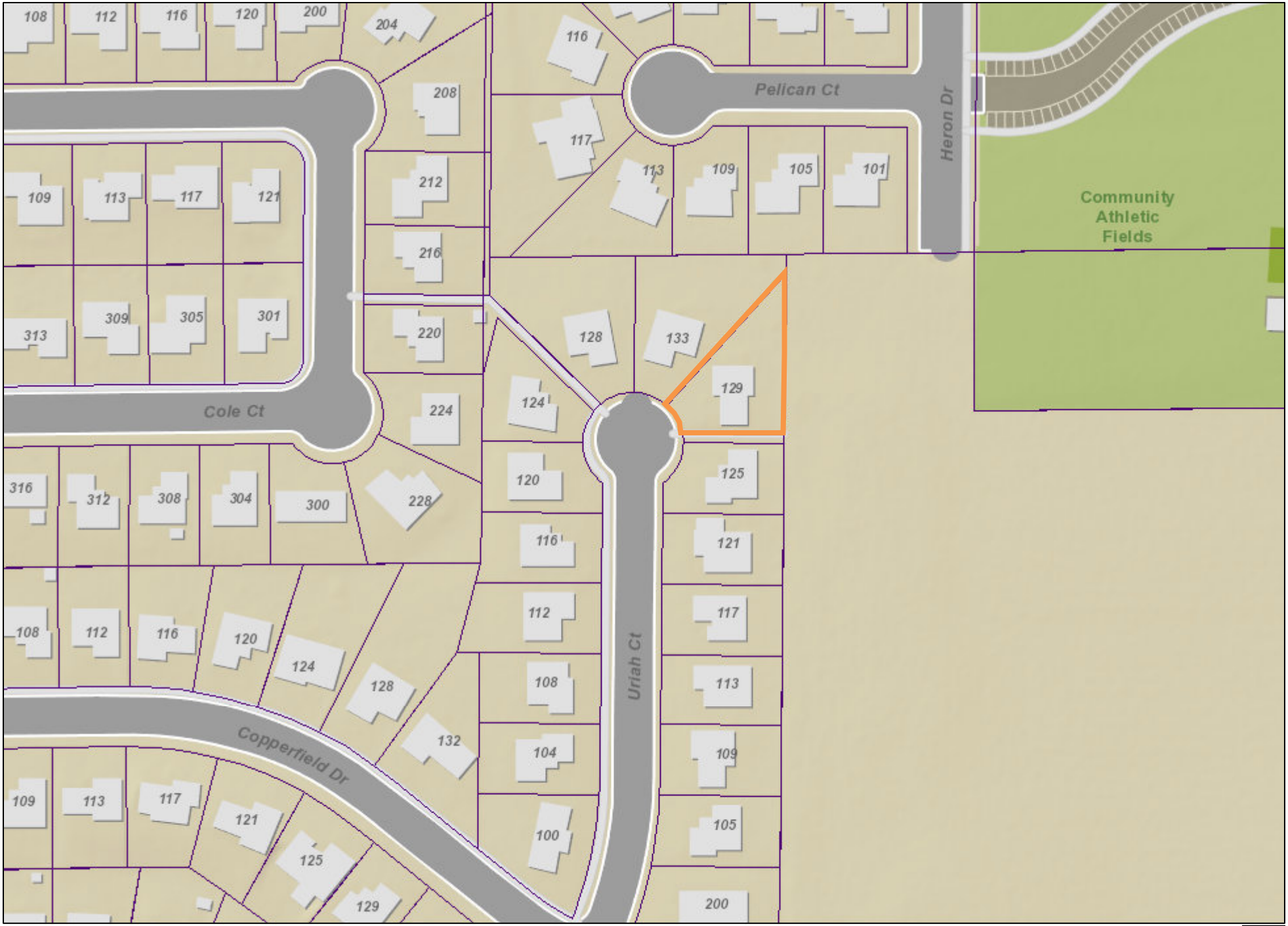
Aerial Location Map

Survey

Elevations and Floor Plan

Variance Questions

General Location Map



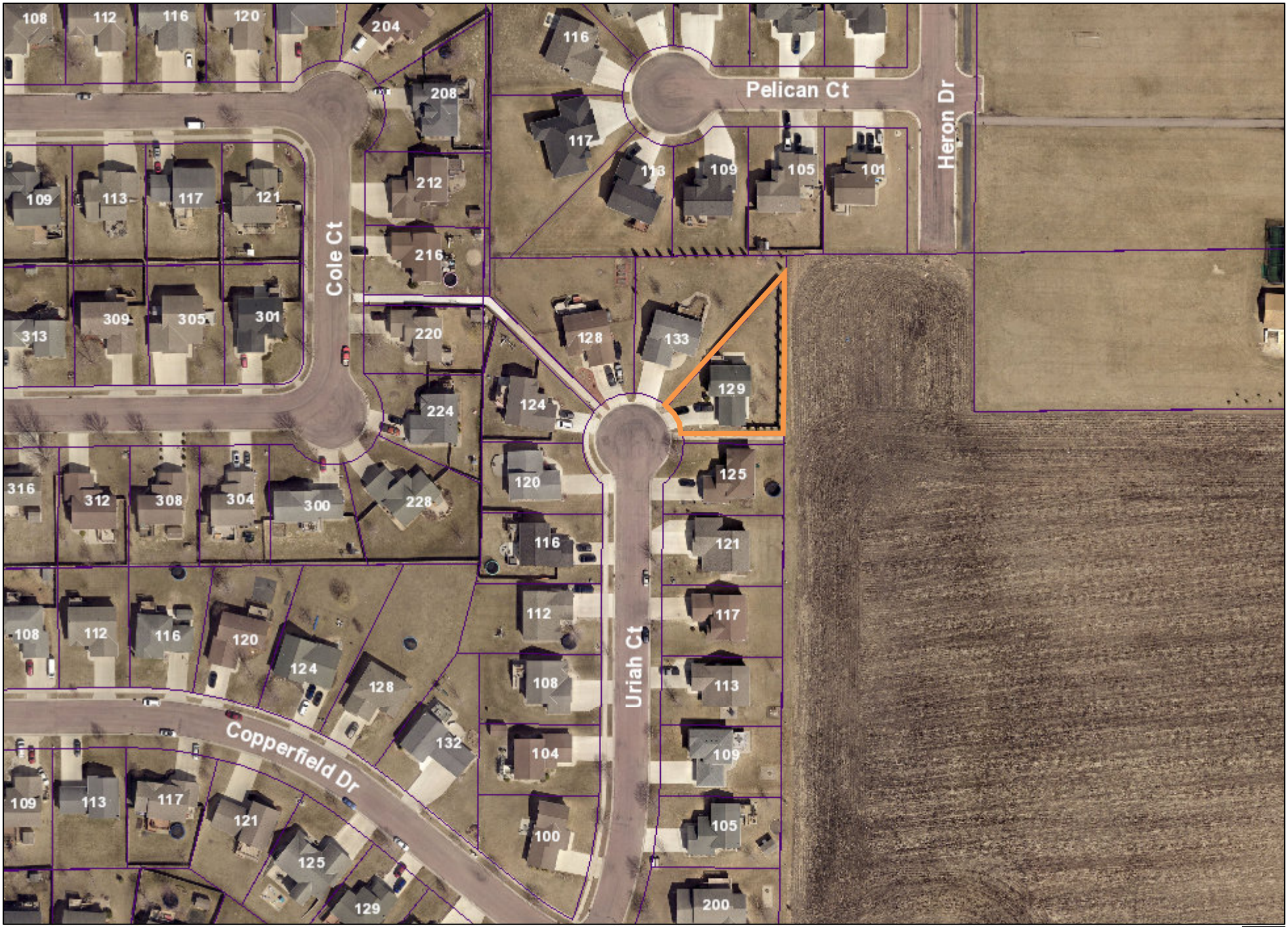
Date: July 2024

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

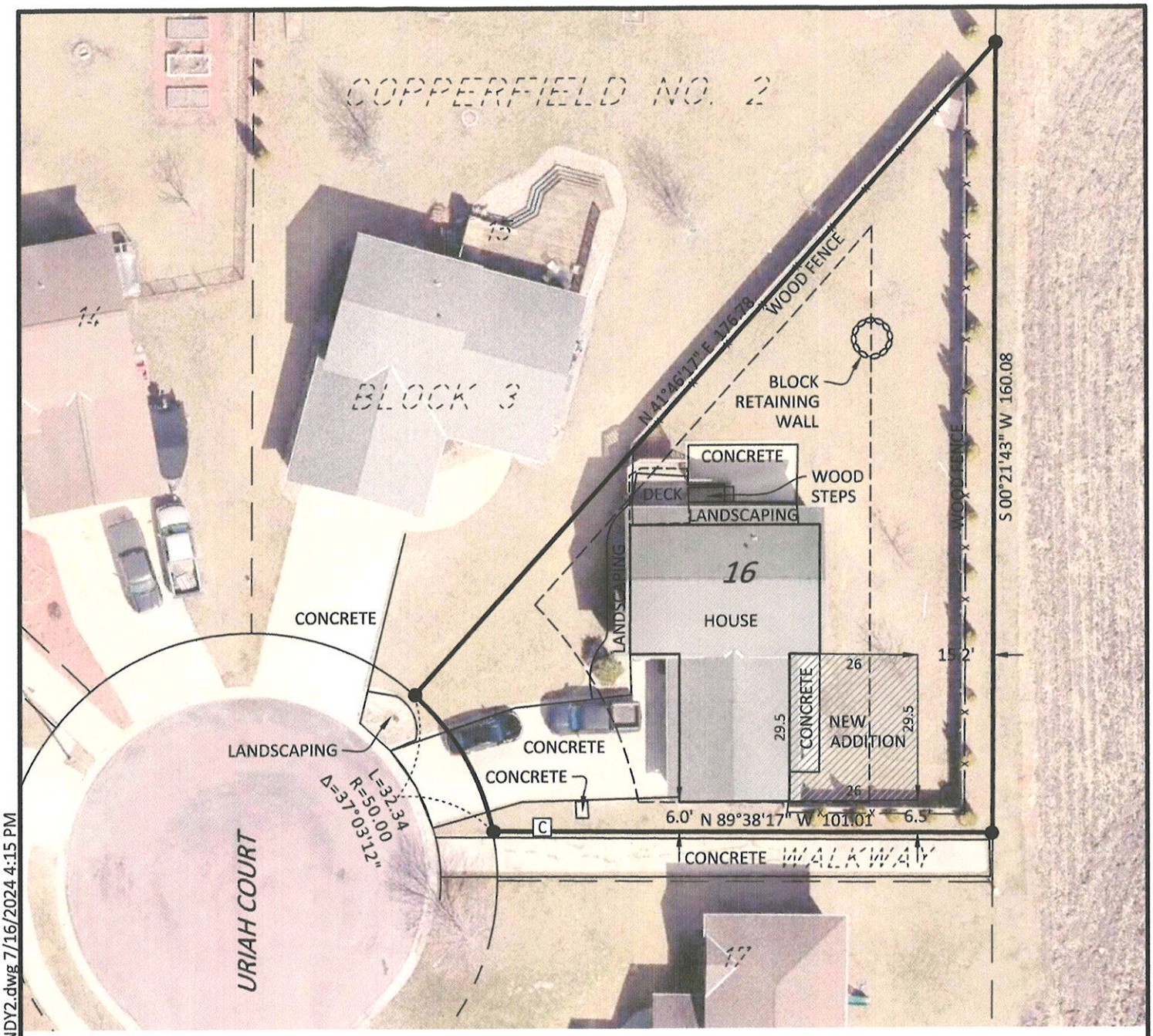


Date: July 2024

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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LEGEND

● MONUMENT FOUND

Horizontal Datum: Blue Earth County Coordinate System (1996 Adj.)

0 30

SCALE IN FEET

DESCRIPTION

Lot 16, Block 3, Copperfield No. 2, Blue Earth County, Minnesota.

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EXHIBIT

MANKATO, MINNESOTA

LOT 16, BLOCK 3, COPPERFIELD NO. 2,
BLUE EARTH COUNTY, MINNESOTA

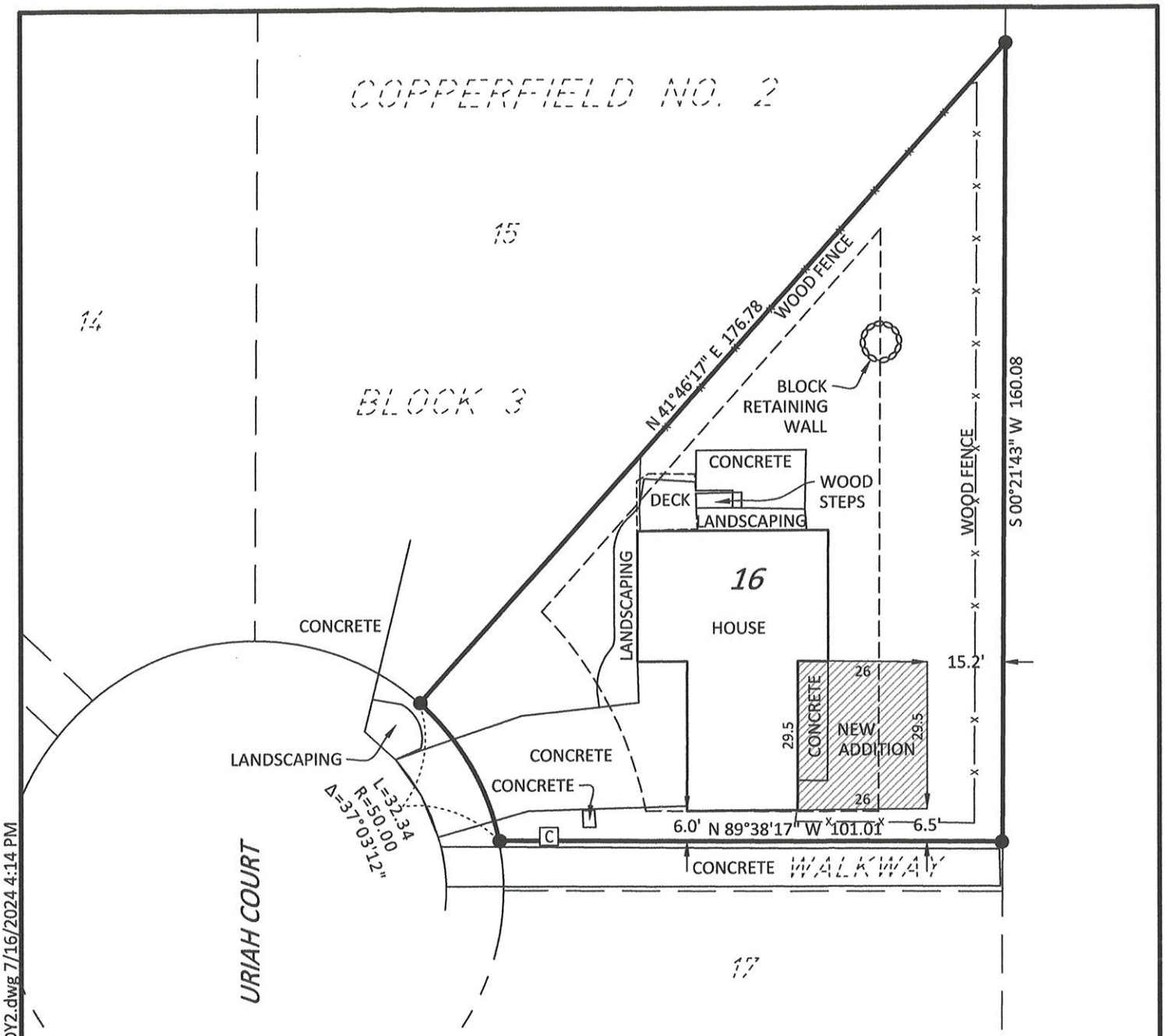
FOR: HOME SWEET HOME REMODELING

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

SDB135342H JOB NUMBER: 24X.135342.000 FIELD BOOK: DRAWN BY: CDT

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LEGEND

● MONUMENT FOUND

Horizontal Datum: Blue Earth County Coordinate System (1996 Adj.)

DESCRIPTION

Lot 16, Block 3, Copperfield No. 2, Blue Earth County, Minnesota.

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0 30

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

XX/XX/XXXX
Date

CERTIFICATE OF SURVEY
MANKATO, MINNESOTA

LOT 16, BLOCK 3, COPPERFIELD NO. 2,
BLUE EARTH COUNTY, MINNESOTA

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

FOR: HOME SWEET HOME REMODELING

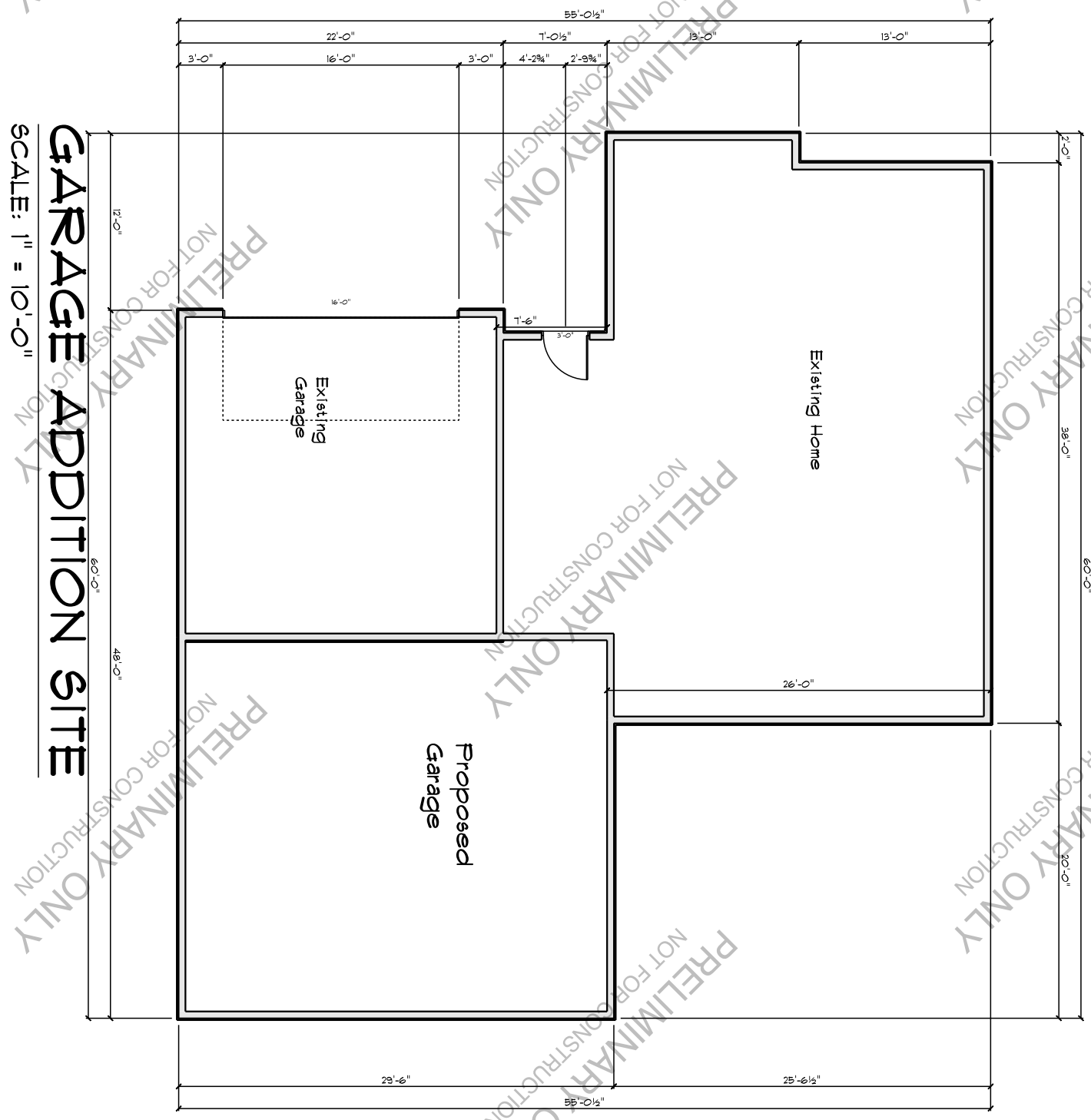
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1.0 S29-T108N-R26W-(23)

GARAGE ADDITION SITE

SCALE: 1" = 10'-0"



PHONE:
FAX:
MOBILE:

Shawn Griffiths
PHONE:
FAX:
MOBILE:

SECTION LETTER: A
PAGE NUMBERS: 1 1

SOFTPLAN ARCHITECTURAL DESIGN SOFTWARE

DRAWN BY:

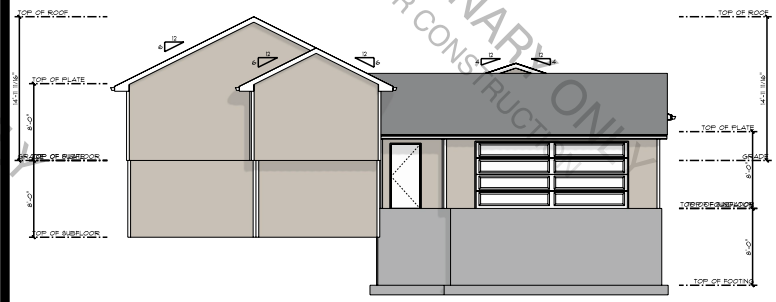
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DATE: Friday, August 2, 2024

PAGE: 1/2

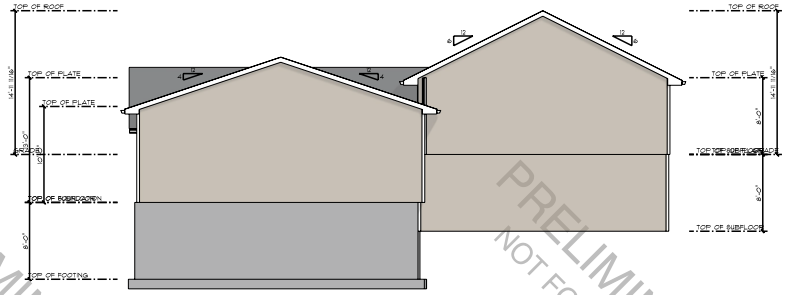
Site propsal 1&2

PRELIMINARY ONLY NOT FOR CONSTRUCTION



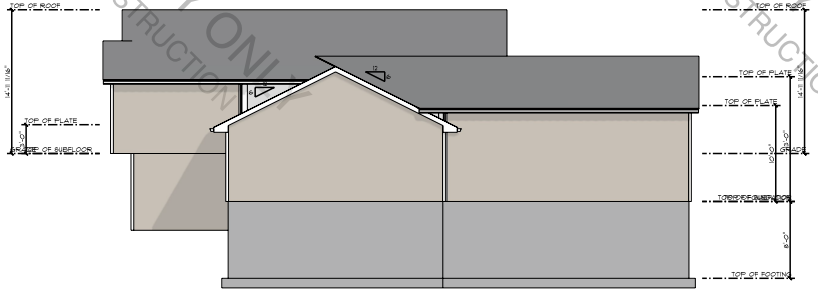
FRONT ELEVATION

SCALE: 1" = 20'-0"



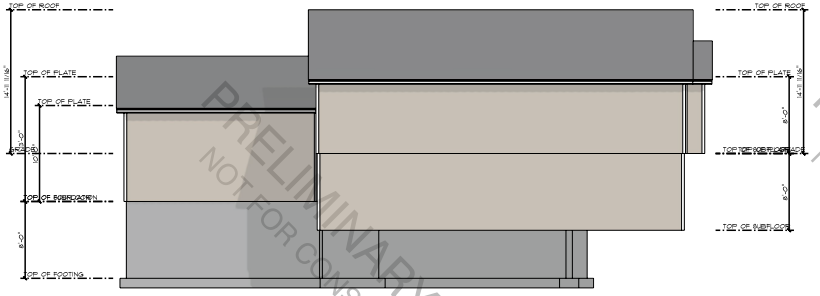
REAR ELEVATION

SCALE: 1" = 20'-0"



Right Elevation

SCALE: 1" = 20'-0"



LEFT ELEVATION

SCALE: 1" = 20'-0"

SECTION LETTER A 1 1 PAGE NUMBERS

PAGE: 2/2 Elevations

Shawn Griffiths

PHONE:
FAX:
MOBILE:

DRAWN BY:

SCALE: 1" = 20'-0"

DATE: Friday, August 2, 2024

PHONE:
FAX:
MOBILE:

SOFTPLAN ARCHITECTURAL DESIGN SOFTWARE

PRELIMINARY ONLY NOT FOR CONSTRUCTION

Applicant's Variance Responses

Variance questions/answers

1. In your opinion, is the variance in harmony with the purposes and intent of the ordinance?

   Yes, the attached garage is being requested so we can park, work on, and store additional vehicles in an enclosed garage instead of leaving them in the driveway or having the rent storage facilities to store them. It is for personal use. I would be allowed to have a structure of similar size or larger in a location even closer to the property lines than I am proposing if it wasn't attached to the house.

2. In your opinion, is the variance consistent with the comprehensive plan?

   Yes, according to the comprehensive plan, the property is low density residential, and the request is consistent with the characteristics of this classification. We are not going to be using this garage for any business purposes. There will be no living quarters added to the addition. There is no request for an ADU. We would not be requesting to build any closer to the public walkway adjacent to the property.

3. In your opinion, does the proposal put property to use in a reasonable manner?

   Yes, the attached garage we wish to build would use the property more reasonably than any alternative detached garage options we may have. An attached structure would have a smaller footprint and blend into the existing house and garage more. If a detached structure were to be built it would require substantially more materials and impervious surface to be used. The attached structure is a more responsible use of materials and resources including energy efficiency that would be lost by having overhead doors on the front and back of the house garage and on the front of the detached garage. These extra doors would be required to have access to a detached structure in the backyard.

4. In your opinion, are there circumstances unique to the property?

   Yes, the lot shape and existing structures make it impossible to put up a detached garage in a usable size for vehicles while still allowing access for motor vehicles. We would be unable to access a detached structure in the back yard with a car/truck without driving on adjacent properties. An attached addition would allow this to happen.

5. In your opinion, will the variance maintain the essential character of the locality?

   Yes, the addition planned would be built in a way that the style/color/materials will match or blend in with the existing home. There are no views that construction would block. The attached structure would be more visually appealing and would be more modest than an alternative detached structure would be.

Site Plan and Traffic Advisory Review Committee **1. 8.**

Meeting Date: 08/13/2024

Title

*****SITE PLAN COMMITTEE REVIEW ONLY - Exemption for bench/tree of life in Highland Park**

Review

A request has been received for an exception to the Mankato Memorial Bench policy. The proposal includes a granite bench, and the City's Memorial bench policy states that all requests for exemption from the policy shall be reviewed by the Site Plan Committee for final determination. The request is for a bench to be located at Highland Park, with the specific location to-be-determined.

Attachments

Memorial Bench Policy

Example bench photo 1

Example bench photo 2

MEMORIAL BENCHES

Park benches add comfort to the outdoors. They provide a place for visitors to relax and observe nature. They also make a relaxing spot away from the workplace and provide a resting point while participating in the many recreational opportunities Mankato's parks provide. Anyone interested in a memorial bench or donating a bench can start by filling out the form (Appendix C). All general public requests for memorial benches should be mailed or emailed to 311. Once an application is received, 311 will enter it into customer service and assign it to the appropriate city staff member. City staff will contact the applicant to work out additional details. All requests for exemption from the set policy shall be reviewed by the Site Plan Committee for final determination.

Location

Donors may choose a location from a list of preapproved bench locations (Appendix D). This list shall be maintained on the city website where new locations will be added and chosen locations deleted regularly. Benches must remain a minimum of 12 feet away from another bench or existing structure and 15 feet from an existing tree. The proposed location must be approved by city staff and conform to the management plan for each park. Once the location is approved, city staff shall place the order for the bench. Benches not ordered through the city of Mankato shall not be accepted. Anyone requesting exemption from the set policy must contact the Director of Public Works.

Style and Materials

***All Costs are approximations. Final Cost will be determined at the time the order is placed.**



Six foot composite park bench~$1,100 installed (includes plaque)

- Benches must be accessible to those with disabilities.
- Benches and locations shall be approved by city staff prior to ordering.
- Benches shall be ordered by city staff and shall be surface mount.
- Operations Division staff shall install a concrete pad, 8'x4.5', to mount the bench. Benches shall be installed by Operations Division staff once the concrete has cured.
- A cast bronze plaque may be engraved to commemorate a loved one.
    - 8" w x 2" h - 28 characters/spaces maximum per line
- Wording is limited to "Donated In Memory of" or Donated In Loving Memory of" and name of honoree
- No iconography shall be allowed
- Must commemorate a person


IN LOVING MEMORY OF SHIRLEY ROLLINGS
MARCH 13, 1922 – APRIL 26, 2008
FROM HER FAMILY


IN MEMORY OF PRISCILLA BROOKS: "HOW MEMORIES TRAPPED INSIDE MY MIND LEAVE

Site Plan and Traffic Advisory Review Committee **1. 9.**

Meeting Date: 08/13/2024

Title

*****SITE PLAN COMMITTEE REVIEW ONLY. Discussion regarding vacation of excess Right of Way in Germania Park Phase 1.**

Review

The City of Mankato Engineering Department recommends vacating 10 feet of right of way on both sides of the right of way. There is 80 feet of right of way throughout the corridor. This would propose 60 feet of right of way total. The current 80 feet of right of way is unnecessary in this part of town. Typical right of way throughout a residential neighborhood is 50 to 60 feet total, but it also depends on how it was plotted and developed.

Overall, these improvements would help reduce conflicts within the current right of way and benefit homeowners throughout Germania Park. All of Germania Park is proposed to have the right of way vacated if it currently has 80 feet. Phases will be completed after the reconstruction at the direction of the engineer.

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

Meeting Date: 08/13/2024

Title

License to Encroach - 129 S. 6th Street

Review

The property at 129 S 6th St is seeking a license to encroach for a staircase that would encroach approximately 4 feet on to city Right of Way on the South-West edge of the lot. A portion of this is existing concrete steps, and the rest would be newly constructed wooden steps.

Attachments

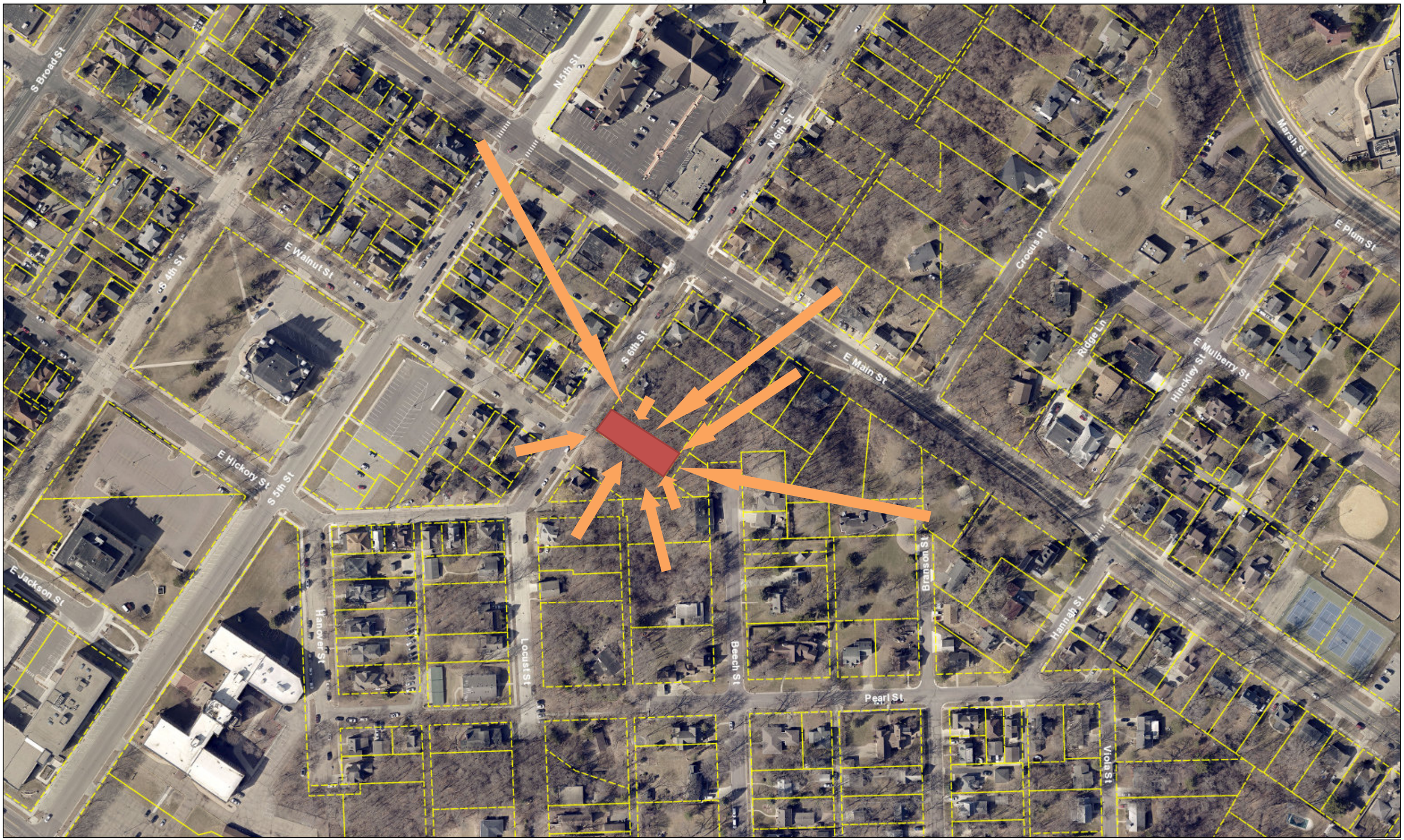
General Location Map

Application

Site Plan

Picture of property

ArcGIS Web Map



Date: August 2024

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

Application for license for building, structure, or physical encroachment in right-of-way

The undersigned applicant hereby makes application, pursuant to the provisions of Section 6.16 of the Mankato City Code, for a license required by the provisions of Section 6.16.

Applicant information

Name: Veronica Ocampo Mendez

Address: _____

Phone: 507-304-2837 Email: menandrea.oc@gmail.com

Real property upon which encroachment is proposed to be located:

Street address: 129 S. Sixth St. Mankato MN 56001

Tax description: _____

Description of right-of-way area upon which encroachment is proposed to be located: Stairs on the right side of house used to get to the front door.

Interest of applicant in the real property: Owner looking to get stairs done

Other record fee owners of property:

None

Other parties not listed having any interest in property and nature of such interest:

None

The size and character of the building, structure, or encroachment to be licensed: Sidewalk / stairs

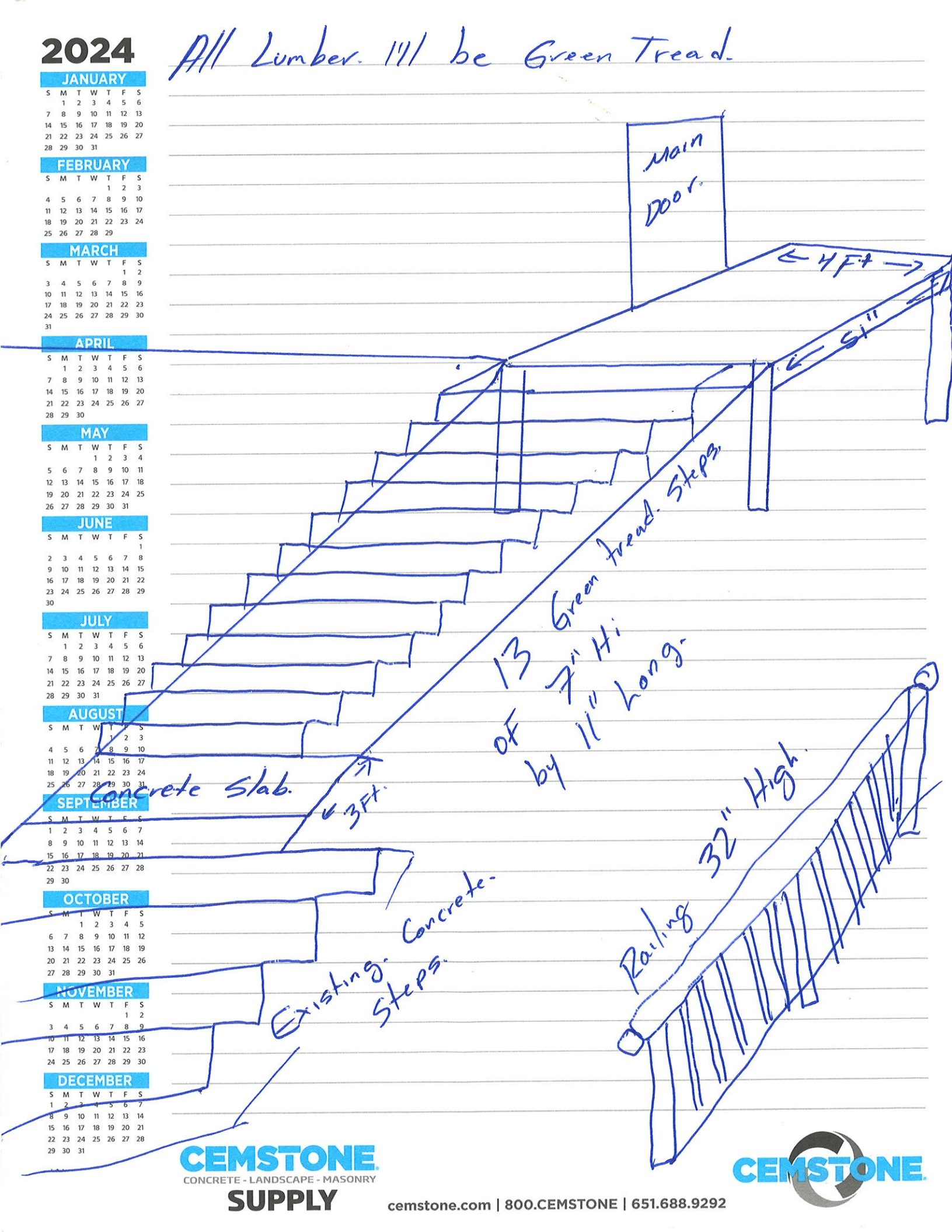
Applicant hereby agrees to indemnify the city of Mankato from all claims and demands which may arise as a result of the installation, placement, building, erection, maintenance, occupation, or use of building, structure, or encroachment upon right-of-way. Applicant understands and agrees that if the license for which this application is made is granted, the license issued shall be revocable, and that the applicant shall not acquire any vested rights thereunder.

Veronica O. — Applicant signature

3/27/24 — Date

Requirements: ☒ Certificate of insurance ☐ Scaled site plan drawing ☐ Application fee: $195

Submit registration form and attachments to 311 customer service staff at the Intergovernmental Center, 10 Civic Center Plaza, Mankato, MN, 56001, or email to 311@mankatomn.gov.


2024
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
All Lumber will be Green Tread.
Main Door.
4 Ft
5"
13 Green Tread Steps
of 7" Hi
by 11" Long.
Concrete Slab.
3Ft
Existing Concrete Steps.
Railing 32" High.
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