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

1. **SITE PLAN ITEMS**

1. CY53-25

Request of APX Construction Group, with permission of the owner, for a preliminary plat review of Evenson Subdivision; for annexation; and for the rezoning of the subject parcel from T, Transition, to B-3, Highway Business. The subject property is generally described as being in the east ½ of the northwest ¼, Section 21, Township 108 N, Range 26 W lying south of Highway 83 and east of Highway 22 excluding Stanley Subdivision, Blue Earth County (Blue Earth County PID R430921177001).

2. CY54-25

Request of Ryan Evenson, with permission of the property owner, for a conditional use permit to allow an indoor playground and sport center in the B-3, Highway Business, zoning district, and for a certificate of design compliance for the construction of a new structure in the Highway Gateway Overlay District. The subject property is described as Lot 5, Block 2, Venstar Subdivision (1740 Premier Drive).

3. CY55-25

*****FOR INFORMATION ONLY. Request of the Planning Agency to review Chapter 10 of Mankato City Code related to variances.**

4. CY56-25

*****FOR INFORMATION ONLY. Request of the Planning Agency to review the proposed 2026-2030 Capital Infrastructure Plan.**

5. SITE PLAN REVIEW ONLY

*****Site Plan and Traffic Advisory Committee Review Only. Request of Hyvee for alterations of the pharmacy drive-thru, reversing the direction and adding a canopy. The subject property is located at 2010 Adams Street.**

6. SITE PLAN REVIEW ONLY

*****Site Plan and Traffic Advisory Committee Review Only. Request of APX Construction Group, with permission of the property owner, for a review of a new structure. The subject property is located at 100 Summit Drive.**

7. SITE PLAN REVIEW ONLY

*****Site Plan and Traffic Advisory Committee Review Only. Request of Stacey Williams Realty on behalf of the Amano Driving School to add a new use, a driving school, at the property located at 2601 Adams Street.**

8. SITE PLAN REVIEW ONLY

*****Site Plan and Traffic Advisory Committee Review Only. Request of Web Construction, on behalf of Rolls Royce Power Systems, to allow a connection to the trail on the adjacent city-owned property, at the property located at 100 Power Drive.**

2. **TRAFFIC ITEMS**

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

Meeting Date: 10/14/2025

Title

CY53-25

Request of APX Construction Group, with permission of the owner, for a preliminary plat review of Evenson Subdivision; for annexation; and for the rezoning of the subject parcel from T, Transition, to B-3, Highway Business. The subject property is generally described as being in the east ½ of the northwest ¼, Section 21, Township 108 N, Range 26 W lying south of Highway 83 and east of Highway 22 excluding Stanley Subdivision, Blue Earth County (Blue Earth County PID R430921177001).

Applicant

The applicant is APX Construction Group, who has obtained permission from the property owner.

Request

The applicant is seeking a preliminary plat review of Evenson Subdivision and the rezoning of the subject parcel from T, Transition, to B-3, Highway Commercial.

Location

The subject property is located at 901 S. Victory Drive and is described as as being in the east ½ of the northwest ¼, Section 21, Township 108 N, Range 26 W lying south of Highway 83 and east of Highway 22 excluding Stanley Subdivision, Blue Earth County. The Blue Earth County parcel identification number is R430921177001.

Existing Land Use

The property is currently vacant.

Zoning

The subject property is located in Mankato Township, where it is currently zoned Highway Business District. Upon annexation to the City, the property will be given a temporary T, Transition, zoning classification. This request seeks to change the zoning from T, Transition, to the City's B-3, Highway Business zoning designation.

Environmentally Sensitive Areas

There are areas on the site that have delineated wetlands.

Public Utilities

Upon annexation, the subject site will connect to public utilities.

Review

APX Construction Group, with permission of the owner, is requesting review of a preliminary plat review of Evenson Subdivision; for annexation; and for the rezoning of the subject parcel from T, Transition, to B-3, Highway Business.

The subject parcels are located at 901 S. Victory Drive and are generally described as being located in the east ½ of the northwest ¼, Section 21, Township 108 N, Range 26 W lying south of Highway 83 and east of Highway 22 excluding Stanley Subdivision, Blue Earth County. The Blue Earth County parcel identification number is R430921177001.

Preliminary Plat

The preliminary plat of Evenson Subdivision depicts a new one-lot, one-block subdivision that encompasses 3.89 acres.

No new public dedication is shown on the plat for streets or other public infrastructure. Access to the site is proposed to be off of Victory Drive at the existing access location, and will provide access to the development as well as the southerly property via a shared driveway area. The existing approach on Stadium Road will be required to be removed as part of the project and no access will be permitted to the subject parcel from Stadium Road.

Standard easements will be required at the exterior and interior lot lines.

Payment in lieu of parkland dedication will be required. Additionally, because of the design standards within the criteria for the development of a multifamily development on a commercial parcel, the applicant will be required to install recreational amenities on the subject site.

The concept plans for the site show a new grouped housing project that has two multifamily apartment buildings. The applicant will be required to submit a conditional use permit for the proposal at the subject location.

A traffic study has been submitted with the request. The findings of the study indicate that the number of new vehicle trips estimated to be generated by the Proposed Project is 30 trips during the morning peak hour (7 entering and 23 exiting), 37 trips during the evening peak hour (23 entering and 14 exiting), and 447 trips daily. This volume is low, resulting in roughly one new trip every two minutes during peak hours. The operational analyses show acceptable conditions in the study area for both existing and 2027 No-Build scenarios. The crash history review revealed no safety issues. Further, the study finds that the operation analyses for 2027 Build Conditions with the Proposed Project indicate acceptable study area operations. The Victory Dr and Access intersection functions acceptably with single-lane approaches.

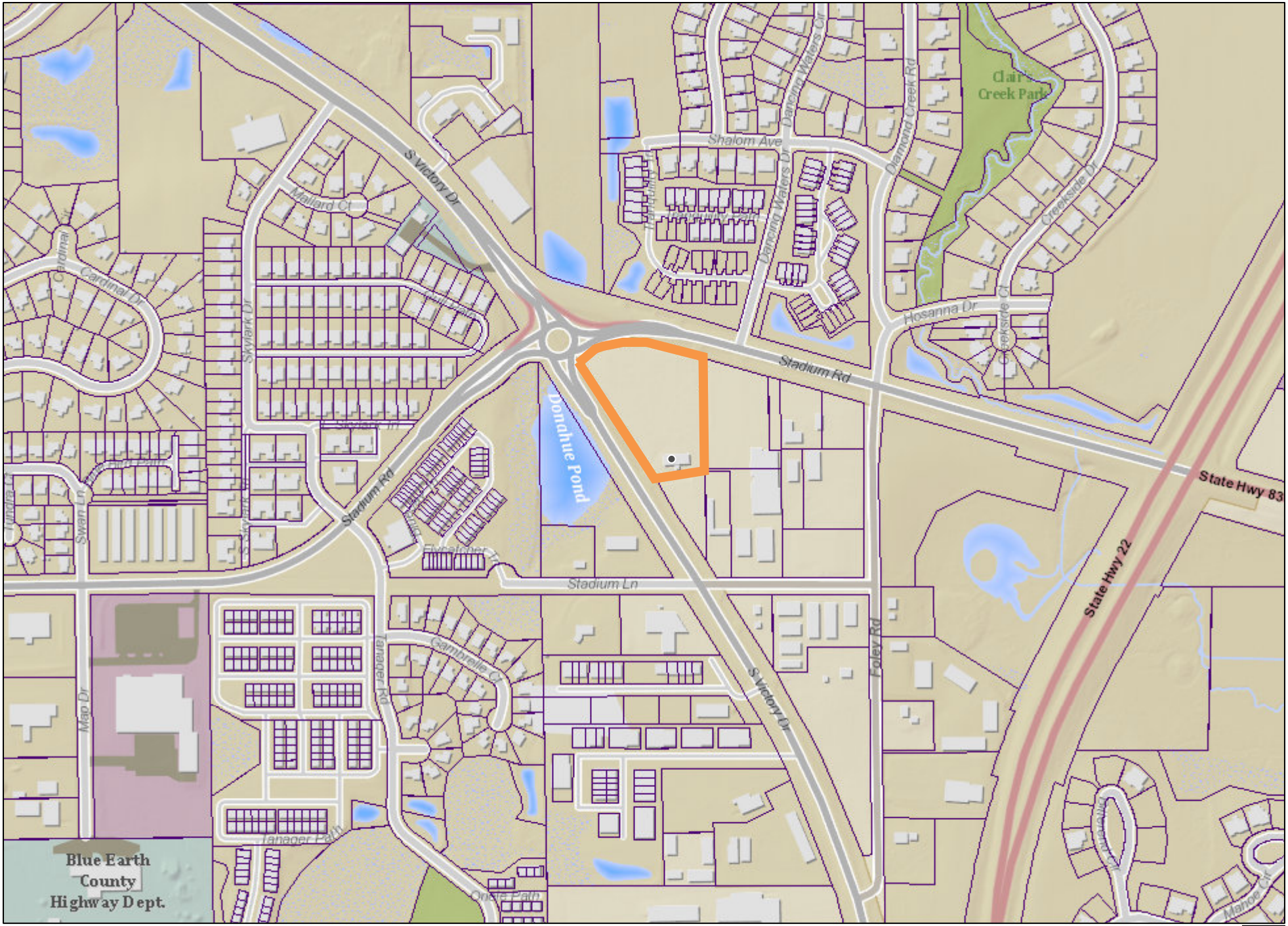
Rezoning

The subject site is currently located in Mankato Township, and the applicant has requested annexation of said parcel. Upon annexation, the parcel will be given a temporary zoning classification of T, Transition. With this request, the applicant is seeking the permanent zoning classification of the parcel as B-3, Highway Commercial. The underlying land use classification of the parcel is "commercial" and the requested rezoning to B-3, Highway Commercial, is consistent with the land use plan.

Attachments

General Location Map
Aerial Plan
Preliminary Plat
Civil Plans
Stormwater Report
Soil Report
Wetland Delineation
Traffic Study
Trip Generation Memo
Concept Plans

General Location Map



Date: September 2025

Author:

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

N

Aerial Map

Date: September 2025

Author:

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

N

PRELIMINARY_PLAT

EVENSON SUBDIVISION

IN EAST 1/2 NW1/4 SECTION 21-T108N-R26W LYING SOUTH OF HWY 83
& EAST OF HWY 22 EXCLUDINNG STANLEY SUBDIVISION
BLUE EARTH COUNTY, MINNESOTA

STADIUM DRIVE

VICTORY DRIVE

S74° 23' 17"E 229.24

N36° 49' 55"E 144.78

525.30'

160.00'

442.30'

201.51'

LOT 1

BLOCK 1

FFE=994.90

FFE=996.65

PROPOSED APARTMENT-SEE BUILDING PLANS BY OTHERS

16' WETLAND DELINEATION EASEMENT SETBACK LINE TYP.

WETLAND DELINEATION BOUNDARY TYP.

PROPOSED SILT FENCE TYP.

EXISTING TREELINE TYP.

PROPOSED APARTMENT-SEE BUILDING PLANS BY OTHERS

LEGEND

- = 5/8"Ø X 16" iron stake monument
- =Iron stake monument-Found
- W = Water Main
- S = Sanitary Sewer
- = Storm Sewer
- G = Gas Main
- UT = Underground Telephone
- OT = Overhead Telephone
- FO = Fiber-Optics
- UE = Underground Electric
- OE = Overhead Electric
- X = Chain Link Fence
- = Control Access
- = Gate Post
- = Bollards
- E = Electric Meter
- G = Gas Meter
- F = Fiber-Optics Box
- T = Telephone Pedestal
- = Light Tower
- = Silt Fence
- F&I = Furnish & Install
- 1272 = Existing Elevation Contour Line
- 1272 = Propsoed Elevation Contour Line
- = Sign
- = Sign-Handicap
- = Light Pole
- = Power Pole
- = Guy Anchor
- = Fire hydrant
- = Water Main Valve
- = Fire Sprinkler
- = Cleanout
- = Culvert
- = Gas Main Valve
- = Catch Basin
- W ST S = Manholes
- 1271.23 = Spot Elevation
- RM1270.89 = Rim Elevation
- FL1262.34 = Line Elevation
- =Concrete Surface
- =Bituminous Surface
- =Gravel Surface
- 27.00 =Pavement Elevation

SCALE 1"=30'

0' 30'

15' 60'

SCALE IN FEET

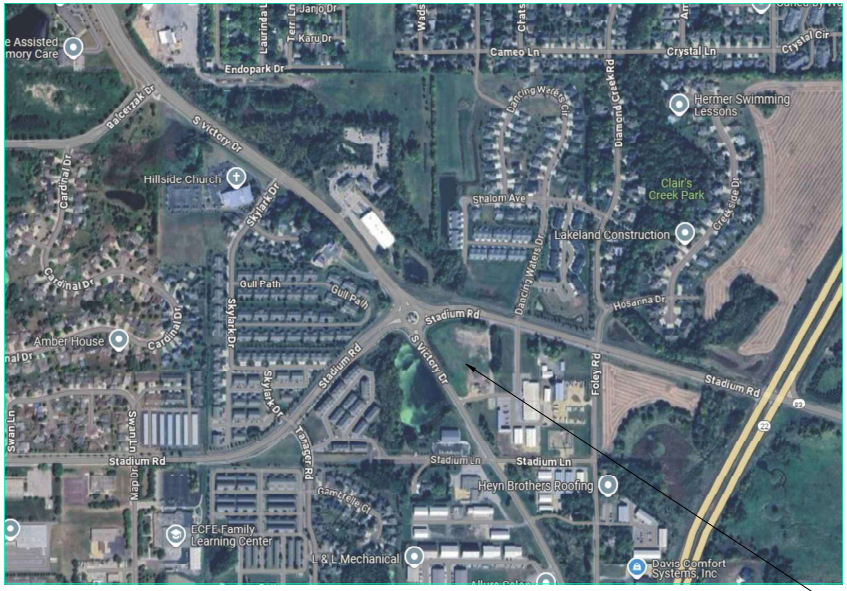
AREA
3.89 ACRES±

JONES, HAUGH & SMITH INC.
CONSULTING ENGINEERS & LAND SURVEYORS
515 SOUTH WASHINGTON AVENUE ALBERT LEA,
MINNESOTA 56007

SEPTEMBER_2025

25-188 PP.dwg

MANKATO APARTMENTS
MANKATO, MN



INDEX TO SHEETS

C1: TITLE SHEET
C2: EXISTING CONDITIONS
C3: HARDSCAPE/UTILITY PLAN
C4: GRADING PLAN
C5: DETAILS
C6: SWPPP NARRATIVE
C7-8: SPECIFICATIONS

THIS PLAN CONTAINS 8 SHEETS

LEGEND

- = 5/8"Ø X 16" iron stake monument
- = Iron stake monument-Found
- W = Water Main
- S = Sanitary Sewer
- ST = Storm Sewer
- G = Gas Main
- UT = Underground Telephone
- OT = Overhead Telephone
- FO = Fiber-Optics
- UE = Underground Electric
- OE = Overhead Electric
- X = Chain Link Fence
- = Control Access
- = Gate Post
- = Bollards
- = Electric Meter
- = Gas Meter
- = Fiber-Optics Box
- = Telephone Pedestal
- = Light Tower
- = Silt Fence
- F&I = Furnish & Install
- 1272 = Existing Elevation Contour Line
- 1272 = Propsoed Elevation Contour Line
- = Sign
- = Sign-Handicap
- = Light Pole
- = Power Pole
- = Guy Anchor
- = Fire hydrant
- = Water Main Valve
- = Fire Sprinkler
- = Cleanout
- = Culvert
- = Gas Main Valve
- = Catch Basin
- = Manholes
- 1271.23 = Spot Elevation
- RM1270.89 = Rim Elevation
- FL1262.34 = Line Elevation
- =Concrete Surface
- =Bituminous Surface
- =Gravel Surface
- 27.00 = Proposed Pavement Elevation
- 28.00 / 24.50 = Proposed Top/Bottom of Retaining Wall Elevation

APPLICABLE CONSTRUCTION PERMITS

ALL CONSTRUCTION WITHIN ROAD RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH THE APPLICABLE PERMIT AS ISSUED BY THE ROAD AUTHORITY.

GENERAL NOTES

DEVELOPER, CONTRACTOR AND ALL SUBCONTRACTORS SHALL COMPLY WITH ALL APPLICABLE CODES AND ORDINANCES GOVERNED BY STATE AND LOCAL JURISDICTION.
SITE IRRIGATING, LIGHTING, LANDSCAPING, SIGNING ARE NOT A PART OF THIS PLAN.
PROVIDE EROSION CONTROL PER NPDES PERMIT REQUIREMENTS AND AS SHOWN.
PROVIDE HANDICAP CURB RAMPS & SIGNAGE. COMPLY WITH ALL AMERICAN DISABILITY ACT REQUIREMENTS.
ALL CONCRETE OR ASHPALTIC PAVEMENT CONSTRUCTION SHALL COMPLY WITH THE PROVISIONS OF MN/DOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION.
A ROCK CONSTRUCTION ENTRANCE IS REQUIRED AT ALL ENTRANCES FROM BITUMINOUS PAVEMENT.
ACCESS FOR LOCAL RESIDENTS/BUSINESSES SHALL ALWAYS BE MAINTAINED.
PROVIDE PAVEMENT STRIPING AS SHOWN
CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR CONSTRUCTION.
SEE BOUNDARY SURVEY BY OTHERS FOR SITE BOUNDARIES.
ANY ALTERATIONS OR REVISIONS TO THE SITE DEVELOPMENT PLAN AS SHOWN SHALL NOT BE THE RESPONSIBILITY OF JONES, HAUGH & SMITH INC. AND SHALL RELEASE JONES, HAUGH & SMITH INC. OF ANY LIABILITY FOR ANY DAMAGES CAUSED THEREFROM UNLESS WRITTEN AUTHORIZATION OR PLAN REVISION HAS BE APPROVED BY JONES, HAUGH & SMITH INC. PRIOR.

BENCHMARK 1
Top head of spike in power pole at southeast corner of property.
Elevation = 1001.49

BASIS OF BEARING SYSTEM
All bearings are based upon the MnDot Blue Earth County Coordinate System Nad 83 (96) Harn Adjustment Grid

JONES HAUGH SMITH
Engineers - Surveyors
515 South Washington Ave. Albert Lea, MN 507-373-6876
Consultant

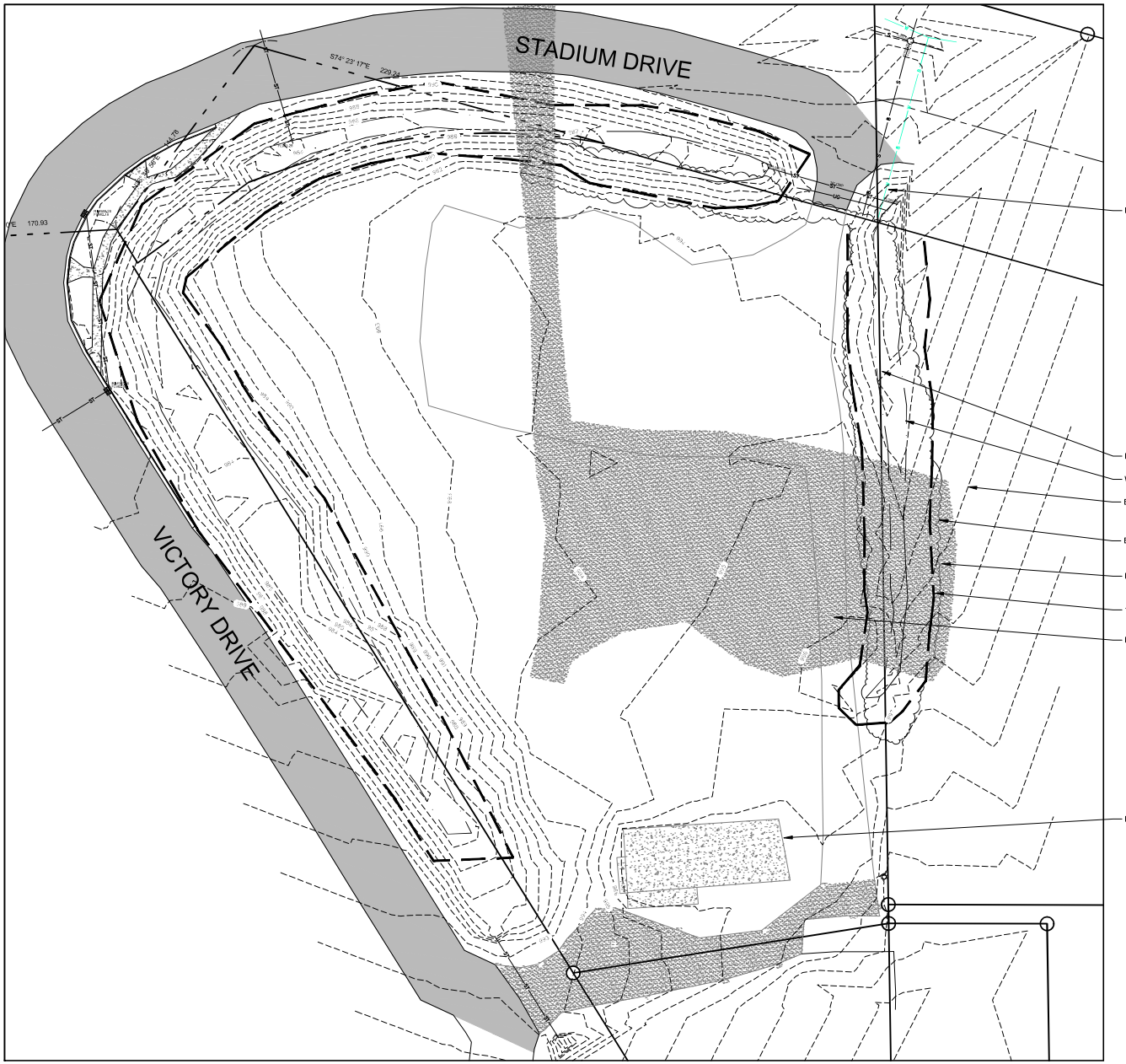
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Brian J. Johnson
Reg. No. 43744
Date: 9/29/25

Project: MANKATO APARTMENTS

Revision:

No. 25-188 | Date 02092025
Drawn bjj | Checked
Project Manager
Project Status CD
Sheet Title: TITLE SHEET

Sheet No. C1



Consultant

JONES HAUGH SMITH
Engineers + Surveyors
515 South Washington Ave. Albert Lea, MN 507-373-4876

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.

Brian K. Johnson
Reg. No. 43744
Date 6/30/25

Project

MANKATO APARTMENTS

Revision

No. 25-168	Date 6/20/2025
Drawn bjj	Checked

Project Manager

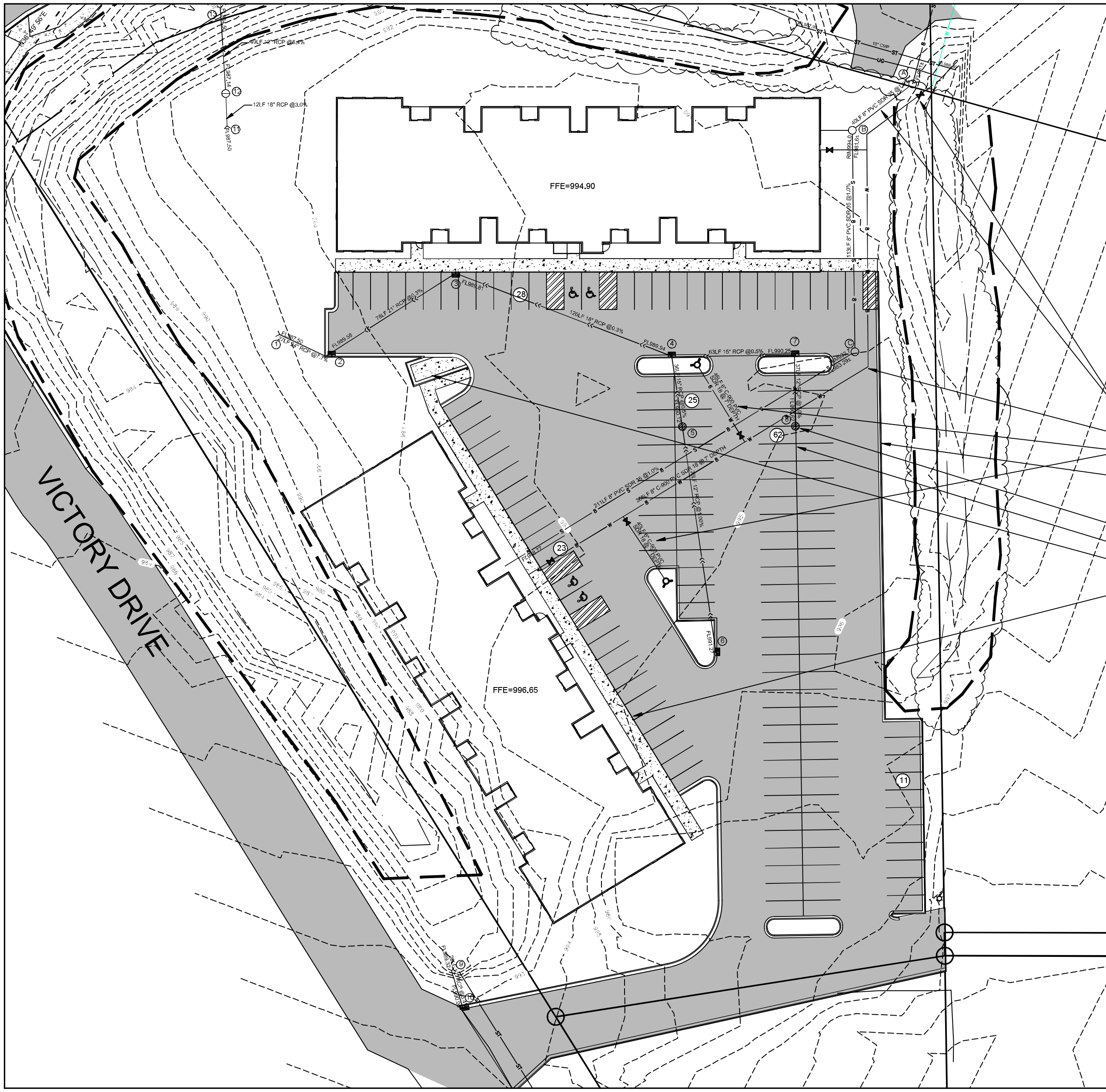
Project Status CD

Sheet Title

EXISTING CONDITIONS

Sheet No.

C2



STORM SEWER STRUCTURE SCHEDULE

NO.	RIM EL.	INVERT EL.	HEIGHT	CASTING	DESIGN	REMARKS
1	–	987.50	–	–	–	F&I 24" RC APRON & TRASH GUARD, 10 CY CL. III RIPRAP
2	993.00	998.58	5.58	R3067	48–4022	
3	993.80	989.81	3.99	R3067	48–4022	
4	993.00	989.94	3.06	R3067	48–4022	
5	993.75	990.12	3.63	R2532	G	
6	995.00	991.27	3.73	R3067	2X3	
7	993.00	990.25	2.75	R3067	2X3	
8	993.75	990.62	3.13	R2532	G	
9	–	989.32	–	–	–	F&I 12" RC APRON & TRASH GUARD, 5 CY CL. III RIPRAP
10	993.30	989.32	3.98	R3067	2X3	
11	–	987.50	–	–	–	F&I 18" RC APRON & TRASH GUARD
12	991.00	987.50	3.50	–	–	SEE OUTLET STRUCTURE DETAIL
13	–	984.50	–	–	–	F&I 12" RC APRON & TRASH GUARD, 10 CY CL. III RIPRAP

F&I CL. III RIPRAP AS NOTED WITHIN 24 HOURS OF OUTLET INSTALLATION

SANITARY SEWER STRUCTURE SCHEDULE

NO.	RIM EL.	INVERT EL.	HEIGHT	CASTING	DESIGN	REMARKS
A	992.50	981±	11.50	1772	4007C	FIELD VERIFY EXISTING PIPE INVERT
B	994.00	981.6	12.4	1772	4007C	
C	993.75	983.29	10.46	1772	4007C	

CONNECT TO EXISTING WATERMAIN-F&I 8X8 TEE, 45° BEND, (2) 8" GATE VALVES
CONNECT TO EXISTING SANITARY-F&I MANHOLES AS SHOWN-SEE STRUCTURE SCHEDULE

F&I 8" 45° BEND

F&I (2) 8X6 TEES, 6" GATE VALVES, HYDRANT LEGS AND 6" HYDRANTS
CONNECT TO EXISTING SANITARY-F&I MANHOLES AS SHOWN-SEE STRUCTURE SCHEDULE

NEW CONCRETE B618 CURB & GUTTER TYP.

F&I STORM SEWER PIPING AND STRUCTURE TYP.-SEE STRUCTURE SCHEDULE FOR MORE INFO.

F&I LATEX PAVEMENT STRIPING/MESSAGES TYP.

F&I CONCRETE PAVEMENT SECTION WITHIN TRASH ENCLOSURE TYP.

F&I THICKENED EDGE WALK ALONG BUILDING EXCEPT AT ADA STALLS TYP.
SEE THICKENED EDGE WALK DETAIL AND RAISED PAVEMENT DETAIL

WET BASIN SUMMARY

NET INCREASE IN IMPERVIOUSE SURFACE=1.25 ACRES
WQV VOLUME REQUIRED: 0.104 AC.-FT.
WQV VOLUME PROVIDED: 0.115 AC.-FT.
WQV ELEVATION=988.20
DISCHARGE RATE AT WQV: 1.17 CFS
BASIN HWL=990.76

DISCHARGE RATES (CFS):

	PRE-DEVELOPMENT	POST-DEVELOPMENT
2 YEAR	5.34	1.17
10 YEAR	10.06	2.74
100 YEAR	20.58	4.52

1"=25'
25 0 25
HORIZ. SCALE FEET

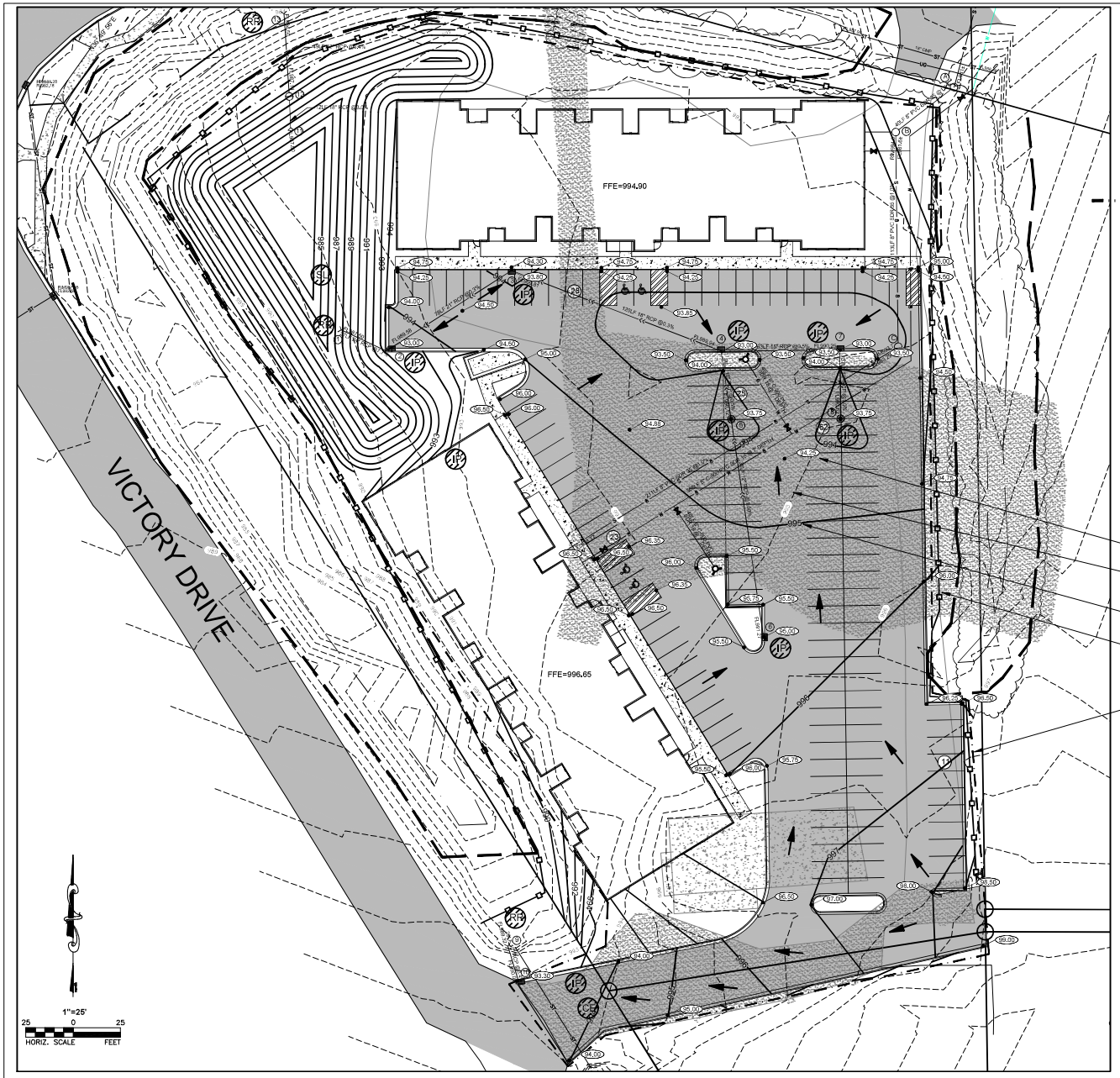
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.
Brian J. Johnson
Reg. No. 42744
Date: 6/20/25

Consultant:
JONES HAUGH SMITH
Engineers + Surveyors
515 South Washington Ave. Albert Lea, MN 507-373-4876

Project:
MANKATO APARTMENTS

Revision:

No.: Date: 6/20/2025
Drawn: bjj Checked:
Project Manager:
Project Status: CD
Sheet Title: **HARDSCAPE & UTILITY PLAN**
Sheet No.: **C3**



SWPPP LEGEND

	QUANTITY
RCE = ROCK CONSTRUCTION ENTRANCE	1 EA
JIP = INLET PROTECTION-TYP. AT ALL DOWNGRADIENT INLETS	9 EA
= SILT FENCE-FOR PERIMETER CONTROL	1400 LF
= WOOD CHIP BIO-ROLL/SILT SOCK	
= HYDRO-SEED TYPE LAWN OVER 6" MIN. BLACK DIRT TOPSOIL (TYP. TO ALL NON-PAVED DISTURBED AREAS WITHIN SITE)	1 ACRE
CW = DESIGNATED CONCRETE WASHOUT AREA	1 EA
RIP = CL. III RIPRAP ENERGY DISSIPATION-PLACE WITHIN 24 HOURS	25 CY
= RUNOFF FLOW DIRECTION	
= DRAINAGE AREA BOUNDARY	
PG = DESIGNATED POLLUTANT GENERATING AREA	1 EA
SL = DESIGNATED STEEP SLOPE AREA (4:1 OR GREATER) F&I CATEGORY 3 BLANKET ON ALL 4:1 OR STEEPER SLOPES	1300 SY

ONSITE SOILS=SILTY CLAY, KLOSSNER MUCK PER NRCS SOIL SURVEY

PROPOSED PAVEMENT/GUTTER ELEVATION (NGVD LESS 900) TYP.

EXISTING ELEVATION CONTOUR TYP.

PROPOSED ELEVATION CONTOUR TYP.

PROPOSED SILT FENCE TYP.

EXISTING/PROPOSED WATERSHED BOUNDARY TYP.

JONES HAUGH SMITH
515 South Washington Ave. Albert Lea, MN 507.373.4876

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.

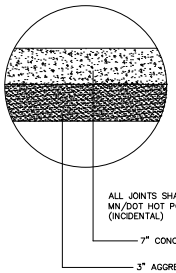
Brian J. Johnson
Reg. No. 42744
Dated: 4/8/25

Project: **MANKATO APARTMENTS**

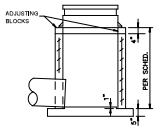
Revisions:

No. | Date: 4/24/2025
Drawn: bjj | Checked:
Project Manager:
Project Status: CD
Sheet Title: **GRADING PLAN**

Sheet No.: **C4**



CONCRETE PAVEMENT SECTION

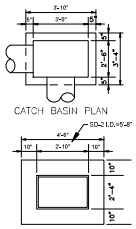


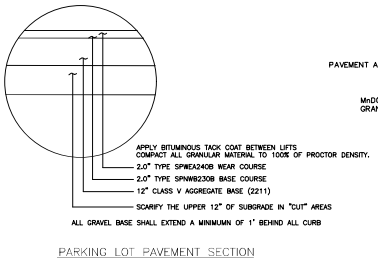
SECTIONAL VIEW
CATCH BASIN & BASE SLAB

NOTES:
1. TO BE USED WITH NEENAH R3067 FRAMED COVER WITH 3" RAD. CURB BOX OR APPROVED EQUAL.
2. PIPE CUT-OUTS TO BE LOCATED WHERE REQUIRED.
3. ALTERNATE CAST-IN-PLACE BASE CAN BE USED.
4. MINIMUM REINFORCING SHALL BE WIRE FABRIC HAVING AN AREA OF NOT LESS THAN 0.12 SQ. IN. PER FOOT IN BOTH DIRECTIONS.

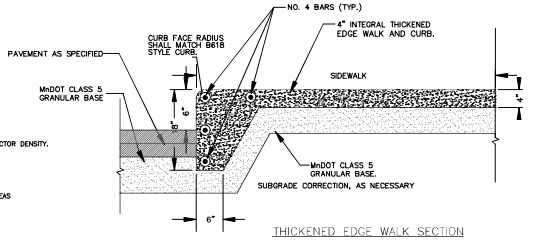
FOR USE WITH R3067 CASTING

CATCH BASIN 2X3

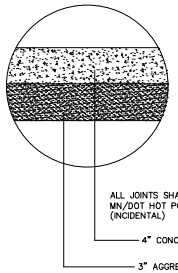




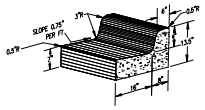
PARKING LOT PAVEMENT SECTION



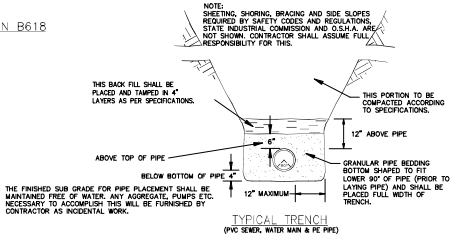
THICKENED EDGE WALK SECTION



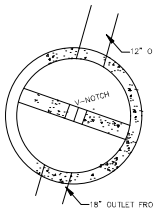
CONCRETE SIDEWALK SECTION



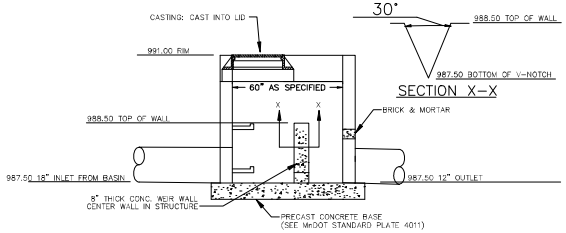
CONCRETE CURB & GUTTER DESIGN B618



TYPICAL TRENCH
(PVC SEWER, WATER MAIN & PE PIPE)

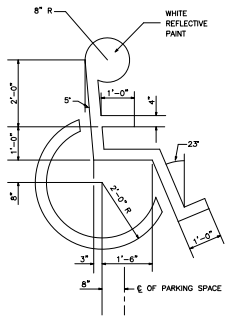


V-NOTCH WEIR OUTLET STRUCTURE PLAN



SECTION X–X

V-NOTCH WEIR OUTLET STRUCTURE 12 SECTION



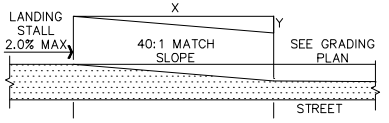
INTERNATIONAL HANDICAP SYMBOL

STEEL POST MOUNTED
(PERMANENT)
INSTALL AT ALL HANDICAP STALLS 60"–66" ABOVE FINISH GRADE CENTERED AT THE HEAD OF THE STALL

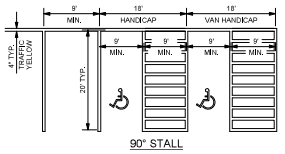
SIGN PANEL DETAIL

STEEL POST MOUNTED
(PERMANENT)
INSTALL AT ALL HANDICAP ACCESS AILSES–60"–66" ABOVE FINISH GRADE CENTERED AT THE HEAD OF THE STALL

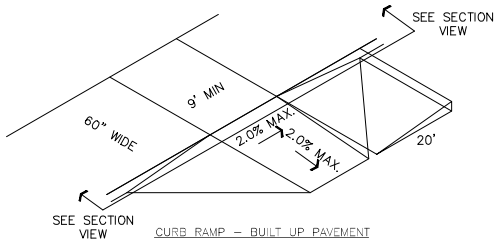
SIGN PANEL DETAIL



CROSS SECTION



90° STALL



CURB RAMP – BUILT UP PAVEMENT

JONES HAUGH SMITH
Engineers | Surveyors
515 South Washington Ave. Albert Lea, MN 507-373-4875

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.
Brian J. Johnson
Reg. No. 40744
Date: 4/30/25

Consultant

Project
MANKATO APARTMENTS

Revision

No. | Date: 4/24/2025
Drawn: bjj | Checked:
Project Manager:
Project Status: CD
Sheet Title:
DETAILS

Sheet No.
C5

EXISTING YARD SECTION

SWPPP NARRATIVE

CONSTRUCTION ACTIVITY INFORMATION

PROJECT NAME: MANKATO APARTMENTS
FACILITY IMPROVEMENT PROJECT

PROJECT LOCATION: MANKATO, MN

PROJECT SIZE: PARCEL SIZE: 2.0 DISTURBED ACRES

PROJECT TYPE: RESIDENTIAL BUILDING CONSTRUCTION

MAJOR SOIL TYPE: SILTY LOAM, KLOSSNER MUCK

CUMULATIVE IMPERVIOUS SURFACE:
EXISTING - 1.26 ACRES
POST CONSTRUCTION - 2.5 ACRES

DIRECT DISCHARGE FROM IMPERVIOUS SURFACE: 0.3 ACRES

RECEIVING WATERS:
CITY STORM SEWER

DATES OF CONSTRUCTION: 2025

OWNER: GROWTH HOLDINGS LLC

UNDERGROUND UTILITY/GRADING CONTRACTOR:

TO BE DETERMINED

PARTY RESPONSIBLE FOR LONG TERM O&M:
OWNER: GROWTH HOLDINGS LLC

GENERAL SITE INFORMATION

IMMEDIATELY FOLLOWING GRADING OF SLOPES OF 3:1 OR GREATER, SLOPES MUST BE STABILIZED WITH WOOD FIBER BLANKET (OR OTHER METHOD APPROVED BY THE ENGINEER) OVER APPROVED SEED MIXTURE AND A MINIMUM OF 4" OF TOPSOIL.

ALL EROSION CONTROL MEASURES SHALL REMAIN IN PLACE AND BE MAINTAINED IN GOOD CONDITION UNTIL THE SITE HAS BEEN RE-VEGETATED, AT WHICH TIME THE CONTRACTOR MAY REMOVE NECESSARY SILT FENCING TO CONSTRUCT ROADWAYS WHILE MAINTAINING ADEQUATE EROSION CONTROL IN ADJACENT AREAS, SUFFICIENT TOPSOIL SHALL BE STOCKPILED OR IMPORTED TO ALLOW FOR THE REPLACEMENT OF A MINIMUM OF 4" OF TOPSOIL FOR DISTURBED AREAS TO BE RE-VEGETATED.

CONTRACTOR SHALL SCHEDULE SITE GRADING, UTILITY INSTALLATION, AND ROADWAY CONSTRUCTION SO THAT THE GENERAL SITE CAN BE MULCHED AND RE-SEEDED SOON AFTER DISTURBANCE. DISTURBED AREAS SHALL BE SEEDED AND MULCHED OR SODDED WITHIN 7 DAYS

INSPECT SILT FENCES AND BALE CHECKS AFTER EACH RAIN EVENT AND DAILY DURING A PROLONGED RAINFALL. IMMEDIATELY REPAIR FAILED OR FAILING MEASURES.

REMOVE SEDIMENT DEPOSITS FROM SILT FENCE AND BALE CHECKS WHEN SEDIMENT REACHES APPROXIMATELY 1/3 THE HEIGHT OF THE BARRIER.

BARRIERS WILL BE REPLACED WHEN THEY DECOMPOSE OR BECOME INEFFECTIVE BEFORE THE BARRIERS ARE NO LONGER NECESSARY, ANY SEDIMENT REMAINING IN-PLACE AFTER THE BARRIERS ARE NO LONGER NECESSARY WILL BE DRESSED TO CONFORM TO EXISTING GRADE, AND PREPARED AND SEEDED WITH THE APPROPRIATE SEED MIX, AS DIRECTED BY THE ENGINEER.

IN THOSE AREAS WHERE WOOD FIBER BLANKET OR OTHER SLOPE STABILIZATION METHODS HAVE FAILED, THE SLOPE SHALL BE RE-ESTABLISHED, SEED AND TOPSOIL REPLACED, AND ADDITIONAL SLOPE TREATMENT INSTALLED.

BARRIERS WILL BE REMOVED WHEN FINAL STABILIZATION OF THE SLOPES HAS BEEN COMPLETED AS DETERMINED BY THE ENGINEER.

NO STORMWATER MITIGATION MEASURES WERE REQUIRED AS A PART OF ENVIRONMENTAL, ARCHAEOLOGICAL OR OTHER REQUIRED LOCAL, STATE, OR FEDERAL REVIEW OF THIS PROJECT.

THIS PROJECT IS NOT LOCATED IN A KARST AREA NECESSITATING MEASURES TO PROTECT DRINKING WATER SUPPLY.

THIS PROJECT DOES DISCHARGE WATER TO AN IMPAIRED WATER.

PROVIDE SILT FENCE AROUND ALL SOIL STOCKPILES

SWPPP IMPLEMENTATION CHAIN OF RESPONSIBILITY

EACH CONTRACTOR ON-SITE WILL DESIGNATE AN EMPLOYEE AS ITS PROJECT SWPPP OFFICER. A LIST OF THESE OFFICERS WITH CONTACT INFORMATION WILL BE AVAILABLE ON-SITE. IT WILL BE SOLELY THE SWPPP OFFICERS' RESPONSIBILITY TO ENSURE THAT ALL ON-SITE ACTIVITIES PERFORMED BY ITS COMPANY COMPLY WITH THE SWPPP. THE GENERAL CONTRACTOR'S SWPPP OFFICER WILL HAVE AUTHORITY OVER ALL SUB-CONTRACTOR'S SWPPP OFFICERS FOR WORK PERTAINING TO COMPLIANCE.

SHOULD A SWPPP OFFICER FAIL TO ENSURE COMPLIANCE, THAT OFFICER'S FOREMAN OR DIRECT SUPERVISOR WILL ASSUME ALL RESPONSIBILITY.

SHOULD A SUB-CONTRACTOR FAIL TO COMPLY WITH THE SWPPP, THE GENERAL CONTRACTOR WILL ASSUME ALL RESPONSIBILITY FOR COMPLIANCE.

SHOULD THE GENERAL CONTRACTOR FAIL TO COMPLY WITH THE SWPPP, THE OWNER WILL ASSUME ALL RESPONSIBILITY FOR COMPLIANCE.

EROSION PREVENTION PRACTICES

CONTRACTOR SHALL PHASE CONSTRUCTION, MAINTAIN VEGETATIVE BUFFER STRIPS, AND PROVIDE HORIZONTAL SLOPE STAKING IN ORDER TO MINIMIZE EROSION.

SILT FENCE SHALL BE INSTALLED BEFORE WORK BEGINS. SILT FENCE LIMITS SHALL COINCIDE WITH DOWNGRADE GRADING LIMITS UNLESS OTHERWISE NOTED.

THIS PROJECT DOES NOT HAVE EXPOSED POSITIVE SLOPES WITHIN 200' OF SURFACE WATER.

THE WETTED PERIMETER OF DRAINAGE SWALES WILL BE STABILIZED WITH WOOD FIBER BLANKETS AND/OR DITCH CHECKS WITHIN 200' OF THE SITE BOUNDARY LINE OR WETTED PERIMETER OF DITCHES WITHIN 24 HOURS..

TEMPORARY OR PERMANENT DITCHES THAT ARE BEING USED AS A SEDIMENT CONTAINMENT SYSTEM DURING CONSTRUCTION MUST BE STABILIZED WITHIN 24 HOURS AFTER NO-NAUSE

PIPE OUTLETS MUST HAVE ENERGY DISSIPATION IN PLACE WITHIN 24 HOURS OF INSTALLATION

MULCH, HYDROMULCH, TACKIFIER, POLYACRYLAMIDE EROSION PREVENT PRACTICES CANNOT BE BE USED WITHIN THE NORMAL WETTED PERIMETER OF OF DRAINAGE DITCHES OR SWALE SECTIONS WITH A CONTINUOUS SLOPE GREATER THAN 2%

SEDIMENT CONTROL PRACTICES

CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN:
SEDIMENT CONTROLS FOR TEMPORARY AND PERMANENT DRAINAGE BASINS AND DRAINAGE DITCHES THAT ARE A PART OF THIS DESIGN

CHECK DAMS AND/OR WOOD FIBER BLANKETS TO ENSURE SHEET FLOW AND PREVENT RILLS FOR SLOPE LENGTHS GREATER THAN 75' WITH A SLOPE OF 3:1 OR GREATER

SILT FENCE AT ALL DOWN GRADIENT PERIMETERS INSTALLED PRIOR TO ALL LAND DISTURBING ACTIVITIES

INLET PROTECTION AT ALL DRAIN INLETS

SILT FENCING AROUND TEMPORARY SOIL STOCKPILES

ROCK CONSTRUCTION SITE ENTRANCES

STREET SWEEPING OF TRACKED SEDIMENT ONTO PAVED SURFACES

SEDIMENT CONTROL PRACTICES MUST BE IN PLACE AT ALL DOWN GRADIENT PERIMETERS AND UPGRADIENT OF ANY BUFFER ZONES

SEDIMENT CONTROL PRACTICES ARE ESTABLISHED AT THE BASE OF STOCKPILES ON DOWN GRADIENT PERIMETER

STOCKPILES ARE LOCATED OUTSIDE OF NATURAL BUFFERS OR SURFACE WATER, INCLUDING STORM WATER CONVEYANCES UNLESS THERE IS A BYPASS

THIS PROJECT DOES NOT INCLUDE DEWATERING OR BASIN DRAINING
PERMANENT SEDIMENT BASINS WILL BE USED AS TEMPORARY BASINS DURING CONSTRUCTION

ADDITIONAL BMP'S FOR SPECIAL WATERS

THIS PROJECT DOES NOT DISCHARGE TO SPECIAL WATERS OR HAVE SIGNIFICANT IMPACTS TO WETLANDS

INSPECTIONS AND MAINTAINANCE

CONTRACTOR SHALL INSPECT AND MAINTAIN MEASURES AT MINIMUM ONCE EVERY (7) DAYS DURING ACTIVE CONSTRUCTION, AND WITHIN 24 HOURS AFTER A RAINFALL EVENT OF 0.5" IN 24 HOURS.

INSPECTIONS WILL INCLUDE STABILIZED AREAS, EROSION PREVENTION AND SEDIMENT CONTROLS, AND INFILTRATION AREAS.

REFER TO MPCA'S COMPLIANCE GUIDE FOR EROSION AND SEDIMENT CONTROL FOR INSPECTION LOG REQUIREMENTS.

MAINTENANCE RECORDS SHOULD INCLUDE: DATES & TIMES IF INSPECTION, NAME OF PERSON CONDUCTING THE INSPECTION, FINDINGS & LOCATIONS OF CORRECTIVE ACTIONS, PARTY COMPLETING MAINTENANCE ACTIVITIES, DATES & AMOUNTS OF RAINFALL EVENTS GREATER THAN 0.5". RAINFALL AMOUNTS ARE TO BE RECORDED WITH RAIN GAUGE ON SITE OR WEATHER STATION WITHIN 1 MILE OF SITE, ANY DISCHARGES OBSERVED SHOULD BE DESCRIBED & PHOTOGRAPHED.

RECORDS RETENTION

CONTRACTOR SHALL MAINTAIN RECORDS OF THE SEDIMENT RETENTION PROCEDURES ON-SITE. RECORDS WILL INCLUDE:
COPY OF THE SWPPP AND ALL REVISIONS
INSPECTION AND MAINTENANCE RECORDS
PERMANENT OPERATION AND MAINTAINANCE AGREEMENTS
CALCULATIONS FOR THE DESIGN OF TEMPORARY AND PERMANENT STORMWATER MANAGEMENT SYSTEMS
COPIES OF THE SWPPP MUST BE RETAINED ON SITE BY THE PERMITTEE

POLLUTION PREVENTION MEASURES

SOLID WASTE:
COLLECTED SEDIMENT, ASPHALT AND CONCRETE MILLINGS, FLOATING DEBRIS, PAPER, PLASTIC, FABRIC, CONSTRUCTION AND DEMOLITION DEBRIS AND OTHER WASTES MUST BE DISPOSED OF PROPERLY AND MUST COMPLY WITH MPCA DISPOSAL REQUIREMENTS.

CONCRETE AND OTHER WASHOUTS:
PERFORM ALL CONCRETE TRUCK WASHOUTS IN PROPER CONTAINMENT FACILITIES.
SOILID AND LIQUID WASHOUT WASTE FROM OTHER MATERIALS (STUCCO, PAINT, FORM RELEASE OILS CURING COMPOUNDS ETC.) WILL BE DISPOSED OF IN A PROPERLY DESIGNATED LANDFILL.

PERFORM ALL WASHOUTS INCLUDING HANDTOOLS IN A LEAKPROOF CONTAINMENT FACILITY OR IMPERMEABLE LINER THAT PREVENTS RUNOFF ONTO ADJACENT SOILS. DEBRIS/SEDIMENT WILL NOT CONTACT THE GROUND SURFACE.

A SIGNE REQUIRING USE OF PROPER WASHOUT FACILITIES WILL BE INSTALLED ADJACENT TO SAID FACILITIES.

HAZARDOUS MATERIALS:
OIL, GASOLINE, PAINT AND ANY HAZARDOUS SUBSTANCES MUST BE PROPERLY STORED, INCLUDING SECONDARY CONTAINMENT TO PREVENT SPILLS, LEAKS, OR OTHER DISCHARGE. RESTRICTED ACCESS TO STORAGE AREAS MUST BE PROVIDED TO PREVENT VANDALISM. STORAGE AND DISPOSAL OF HAZARDOUS WASTE MUST BE IN COMPLIANCE THE MPCA REGULATIONS.

EXTERNAL WASHING OF TRUCKS AND OTHER CONSTRUCTION VEHICLES MUST BE LIMITED TO A DEFINED AREA OF THE SITE. RUNOFF MUST BE CONTAINED OF AND WASTE PROPERLY DISPOSED OF. NO ENGINE DEGREASING IS ALLOWED ON SITE.

SWPPP AMENDMENTS

AMENDMENTS MADE IN THE FIELD TO THE SWPPP SHOULD BE UPDATED ON THE SWPPP. REFER TO PROCEDURES OUTLINED IN SECTION 6.0 OF THE PERMIT.

SWPPP IMPLEMENTATION CHAIN OF RESPOSIBILITY

THE GENERAL CONTRACTOR SHALL PROVIDE A TRAINED, CERTIFIED, KNOWLEDGEABLE PERSON WHO SHALL SERVE AS THE SITE'S EROSION CONTROL INSPECTOR. THIS PERSON SHALL BE RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL BMP'S, AND SHALL MAINTAIN THE INSPECTION LOG AT THE PROJECT SITE.

EACH SUBCONTRACTOR ON-SITE WILL DESIGNATE AN EMPLOYEE AS ITS PROJECT SWPPP OFFICER. A LIST OF THESE OFFICERS WITH CONTACT INFORMATION WILL BE AVAILABLE ON-SITE. IT WILL BE SOLELY THE SWPPP OFFICERS' RESPONSIBILITY TO ENSURE THAT ALL ON-SITE ACTIVITIES PERFORMED BY ITS COMPANY COMPLY WITH THE SWPPP. THE GENERAL CONTRACTOR'S SWPPP INSPECTOR WILL HAVE AUTHORITY OVER ALL SUBCONTRACTOR'S SWPPP OFFICERS FOR WORK PERTAINING TO COMPLIANCE.

SHOULD A SWPPP OFFICER FAIL TO ENSURE COMPLIANCE, THAT OFFICER'S FOREMAN OR DIRECT SUPERVISOR WILL ASSUME ALL RESPONSIBILITY.

SHOULD A SUBCONTRACTOR FAIL TO COMPLY WITH THE SWPPP, THE GENERAL CONTRACTOR WILL ASSUME ALL RESPONSIBILITY FOR COMPLIANCE.

SHOULD THE GENERAL CONTRACTOR FAIL TO COMPLY WITH THE SWPPP, THE OWNER WILL ASSUME ALL RESPONSIBILITY FOR COMPLIANCE.

CHANGES IN PERMIT AND NOTICE OF TERMINATION

THE CONTRACTOR WILL BE A CO-PERMITEE DURING THE CONSTRUCTION OF THE PROJECT. AFTER GRAVEL SURFACING OF THE PROJECT HAS BEEN COMPLETED, AND 70% PERMANENT VEGETATIVE COVER HAS BEEN ESTABLISHED OVER THE PERVIOUS AREAS OF THE SITE, AND THE WARRANTY PERIOD HAS ELAPSED, THE CONTRACTOR MAY SUBMIT A MPCA (NOT)F ORM TO THE OWNER FOR SIGNATURE AND SUBMITTAL TO THE MPCA.

THE OWNER WILL SUBMIT THE NOTICE OF TERMINATION (NOT) AFTER ONE FINAL ESTABLISHMENT OF ALL PERVIOUS SURFACES ACCORDING TO THE MPCA GENERAL PERMIT REQUIREMENTS

NOTIFICATION OF THE MPCA IN CASE OF POLLUTION

IT IS THE DUTY OF THE CONTRACTOR TO NOTIFY THE MPCA IMMEDIATELY OF ANY DISCHARGE, ACCIDENTAL OR OTHERWISE, OF ANY SUBSTANCE OR MATERIAL UNDER HIS CONTROL WHICH, IF NOT RECOVERED, MAY CAUSE POLLUTION OF WATERS OF THE STATE, AND THE CONTRACTOR SHALL RECOVER AS RAPIDLY AND THOROUGHLY AS POSSIBLE SUCH SUBSTANCE OR MATERIAL AND TAKE IMMEDIATELY SUCH OTHER ACTION AS MAY BE REASONABLY POSSIBLE TO MINIMIZE OR ABATE POLLUTION OF WATERS OF THE STATE CAUSED THEREBY.

SEDIMENT LEAVING THE CONSTRUCTION SITE AND ENTERING A PUBLIC WATER IS CAUSE FOR NOTIFICATION.

MPCA DUTY OFFICER: 800-422-0798

QUALIFIED SWPPP PERSONNEL INFORMATION

SWPPP DESIGNER: BRIAN J. JOHNSON, PE
JONES HAUGH & SMITH, INC.
515 SOUTH WASHINGTON AVE
ALBERT LEA, MN 56007
(507) 373-4876

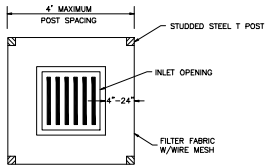
SWPPP INSTALLER:
NAME: _____
FIRM: _____
ADDRESS: _____
_____
PHONE: _____

SWPPP INSPECTOR:
NAME: _____
FIRM: _____
ADDRESS: _____
_____
PHONE: _____

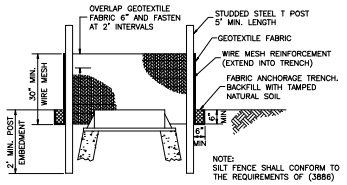
GRADING CONTRACTOR:
NAME: _____
FIRM: BCM CONTRACTING_____
ADDRESS: _____
_____
PHONE: _____

OTHER LAND DISTURBING CONTRACTOR:
NAME: _____
FIRM: _____
ADDRESS: _____
_____
PHONE: _____

OTHER LAND DISTURBING CONTRACTOR:
NAME: _____
FIRM: _____
ADDRESS: _____
_____
PHONE: _____

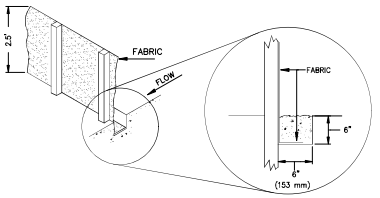


PLAN VIEW



SECTIONAL VIEW

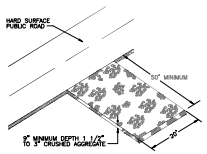
INLET PROTECTION – HEAVY DUTY



NOTES:
- PLACE BOTTOM EDGE OF FENCE INTO 6" (153 mm) DEEP
- POSTS SHALL BE:
  - 4' (1.22 m) ON CENTER
  - 2" (50.8 mm) X 2" (50.8 mm) HARDWOOD, PINE OR STANDARD STEEL FENCE POSTS
  - DRIVEN 2' (0.61 m) INTO THE GROUND.

EROSION CONTROL FENCE

(MACHINE SLICED)



EROSION CONTROL PROTECTION AT CONSTRUCTION ACCESS

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.
Brian J. Johnson
Date: 4/25/25
Reg. No. 42748

JONES HAUGH SMITH
515 South Washington Ave, Albert Lea, MN 507-373-4876

Civil

Project
MANKATO APARTMENTS

Revision

No.	Date 6/26/2025
Drawn bjj	Checked
Project Manager	
Project Status CD	

Sheet Title
SWPPP NARRATIVE & DETAILS

Sheet No.
C6

GOVERNING SPECIFICATIONS
The Minnesota Department of Transportation's "Standard Specifications for Construction" 2018 Edition, including the Mn/DOT Special Provisions modified for this project, Minnesota Plumbing Code and the City Engineers Association of Minnesota Standard Specification, 2018 Edition, will govern except as modified or altered in the Special Provisions. All references to "State of Minnesota" or "Commissioner of Transportation" or "Department" are hereby revised to mean "Owner."

WORK WITHIN PROPERTY
The Contractor will work only in areas secured by the Owner, and will comply with all requirements of access agreements.

MATERIALS TESTING

Materials Testing will be by the Contractor. The Contractor will hire an independent testing consultant, approved by the Engineer, prior to the start of work to be tested.

1. The following materials tests will be provided by the Testing Company:

Work to be Tested	Method	Reference Spec.	Testing Rate
Sewer & Water Service Trenches	Specified Density	MnDOT 2105, 2451, 2501	1 test per 500 lf
Storm Sewer Trench Compaction	Specified Density	MnDOT 2105, 2451, 2501	1 test per 500 lf
Subgrade/Embankment Compaction	Specified Density	MnDOT 2105	1 test per 2500 cy placed (Clay, Sand, etc.)
Test Rolling	Fully Loaded Dump Truck		1 test per road
Select Granular Borrow	Specified Density	MnDOT 3149	1 per 5000 ton
	Gradation	MnDOT 3149	1 per Source
Aggregate Base (CL 3, CL 5)	Modified DCP	MnDOT 2211	2 tests per 1000 ton
	Gradation	MnDOT 2211	1 per 5000 ton
Bituminous Paving	Ordinary Comp.-Control Strip	MnDOT 2360	1 control strip per mobilization and/or per workday
Concrete Curb & Gutter	Air, Slump, Temp, Strength	MnDOT 2461	If non-integrant
Air, Temp. - 1 per day			
Slump, Strength - 1 per day; and each time water is added at the site			
Concrete Driveway or Sidewalk	Air, Slump, Temp, Strength	MnDOT 2461	
Air, Temp. - 1 per day			
Slump, Strength - 1 per day; and each time water is added at the site			
Concrete Paving		MnDOT 2301	
All Concrete Field testing or Concrete Pavement per 2012 MnDOT Schedule of Materials Control (page 32), except Pavement Texture and Smoothness.			

Table Notes:

- Specified Density also requires Moisture-Density and Relative Density
- The Engineer may omit duplicative trench compaction tests at his discretion

MAINTENANCE OF TRAFFIC (1404)
The Contractor will be responsible for traffic control on the Project, and will furnish, erect, and maintain all necessary traffic control devices required to provide safe movement of vehicular traffic through the Project. Any traffic control device installed will meet the requirements of the Minnesota Manual on Uniform Traffic Control Devices, Field Manual, latest edition, and the latest MnDOT specifications approved at the time of bid.

The Contractor will prepare and submit to the City Engineer and County Engineer for Approval a Traffic Control Plan for any work in or utilization of traveled Right-of-Way. The plan will be submitted a minimum of 48 hours prior to the commencement of work. No work in the Right-of-Way will commence without an Approved Traffic Control Plan.

Traffic control will be in accordance with the Traffic Control Layout Plan and the following:
Traffic control devices include, but are not limited to, barricades, warning signs, lane markings, trailers, flashers, cones, and drums, as required, and sufficient barricade weights to maintain barricade stability.
No material will be deposited on a traveled roadway.
Materials will not be placed on road right of way more than one week in advance of their use.
Contractor will notify the affected parties at least one week prior to commencement of disturbance of the private or business drives.
Coordination will be maintained with the Fire and Police Departments to ensure that passage is maintained for emergency vehicles at all times.
The Contractor will make one person responsible for the maintenance of all signs. The Contractor will check each intersection at the end of each day whether it is a working day or not. The name and telephone number of this person will be left with the Police, the City Engineer, and the Fire Departments.

UTILITY PROPERTY AND SERVICE (1507)
Construction operations in the proximity of utility properties will be performed in accordance with the Provisions of 1507, except as modified below:

The first paragraph of 1507 is deleted and the following substituted therefore:

It will be the Contractor's responsibility to contact all local utility companies and ascertain the location of all existing underground utilities, if any, prior to performing any excavation operations. The Contractor will conduct his/her operations in the vicinity of any such facilities, which may exist, in a manner that will prevent damage thereto.

It will be the Contractor's responsibility to utilize the One-Call Excavation Notice System at 'Gopher State One Call' (1-800-252-1166) required under Minnesota Statute Chapter 216D, 48 hours prior to performing any excavation adjacent to any underground facility, which may exist, in a manner that will prevent damage thereto.

CONSTRUCTION STAKES, LINES AND GRADES (1508)

All construction staking will be provided by the Contractor and performed by or under the direct supervision of a Land Surveyor licensed in the State of Minnesota.

Field Fit Adjustments to Grade Stakes
The Engineer may make minor adjustments (< 0.5') to the grade stakes after they have been placed, in order to adjust to actual conditions in the field or to ensure proper or better drainage. Any adjustments to proposed or in-place materials required due to minor adjustments made by the Engineer are incidental to the work.

CONTROL OF HAUL ROADS (1515), LAWS TO BE OBSERVED (1701)

In addition to the requirements of 1515 and 1701, the Contractor will abide by all weight restrictions implemented by the governing road authorities in the performance of the work and in delivering materials and equipment to the project site.

AIR LAND AND WATER POLLUTION (1717)

The provisions of Mn/DOT 1717 are hereby modified and supplemented as follows:

DEWATERING
Any dewatering necessary to construct the work will be done by the Contractor. The Contractor is responsible to determine the type and method of dewatering and to provide and implement all equipment and materials necessary to accomplish the work on this project. Discharged water from dewatering will be routed through a temporary sediment basin. Sediment trapped in the temporary basins will be removed and disposed of on-site.

PROTECTION OF SURFACE STRUCTURES
The Contractor will not trespass on any private property without the express written consent of the Owner thereof. Trees, shrubs, fences, poles and all other private property will be protected unless their removal is authorized. Any property damaged will be satisfactorily restored at the expense of the Contractor. Any land survey or property monuments destroyed, covered, moved, bent or disturbed will be replaced by a Licensed Land Surveyor at the expense of the Contractor.

Wherever construction is planned to cross private property, an easement for the construction has been acquired from the property owner. The Contractor will familiarize himself with the terms of such easements, which the Owner will have on file.

Ground surface, trees, shrubbery, fences and other private property will be restored to the same condition as existed prior to the beginning of construction. This will include consolidating backfill, graveling driveways and any other leveling and landscaping required to restore the premises to original condition. The topsoil will be piled separately from subsoil material and will be replaced in the trench above the subsoil material.

Except where sodding is required, all grassed areas disturbed during the construction will be seeded following landscaping.

The Contractor will restore at his own expense streets, roads, alleys, private or public structures such as water mains, water connections and appurtenances, culverts, drain tiles, sewers, manholes, catch basins, sewer connections, curb, gutter, sidewalk, street signs, or other structures designated to remain in place which are damaged or injured in any way by his acts, and will be responsible for all damages to other utilities he may encounter.

The Contractor will not claim, or be entitled to receive, compensation for any damages sustained by reason of the inaccuracy or omission of any of the information given on the drawings relative to surface, overhead, or underground structures, or by reason of his failure to properly protect such structures.

PROTECTION OF SIDE STREETS AND HAUL ROUTES

The Contractor will be responsible for any damage of the side streets in the area and any other streets that are used as haul routes. The Contractor will discuss all haul route possibilities with the City Engineer and County Engineer prior to their use. The City Engineer, County Engineer, and the Contractor together will inspect the condition of the proposed routes before, during and after their use. The Contractor will correct any damage that is caused by the hauling activities at no cost to the Owner.

DEWATERING

Any dewatering necessary to construct the work will be done by the Contractor. The Contractor is responsible to determine the type and method of dewatering and to provide and implement all equipment and materials necessary to accomplish the work on this project. Discharged water from dewatering will be routed through a temporary sediment basin. Sediment trapped in the temporary basins will be removed and disposed of on-site.

PROTECTION OF SURFACE STRUCTURES

The Contractor will not trespass on any private property without the express written consent of the Owner thereof. Trees, shrubs, fences, poles and all other private property will be protected unless their removal is authorized. Any property damaged will be satisfactorily restored at the expense of the Contractor. Any land survey or property monuments destroyed, covered, moved, bent or disturbed will be replaced by a Licensed Land Surveyor at the expense of the Contractor.

Wherever construction is planned to cross private property, an easement for the construction has been acquired from the property owner. The Contractor will familiarize himself with the terms of such easements, which the Owner will have on file.

Ground surface, trees, shrubbery, fences and other private property will be restored to the same condition as existed prior to the beginning of construction. This will include consolidating backfill, graveling driveways and any other leveling and landscaping required to restore the premises to original condition. The topsoil will be piled separately from subsoil material and will be replaced in the trench above the subsoil material.

Except where sodding is required, all grassed areas disturbed during the construction will be seeded following landscaping.

The Contractor will restore at his own expense streets, roads, alleys, private or public structures such as water mains, water connections and appurtenances, culverts, drain tiles, sewers, manholes, catch basins, sewer connections, curb, gutter, sidewalk, street signs, or other structures designated to remain in place which are damaged or injured in any way by his acts, and will be responsible for all damages to other utilities he may encounter.

The Contractor will not claim, or be entitled to receive, compensation for any damages sustained by reason of the inaccuracy or omission of any of the information given on the drawings relative to surface, overhead, or underground structures, or by reason of his failure to properly protect such structures.

PROTECTION OF SIDE STREETS AND HAUL ROUTES

The Contractor will be responsible for any damage of the side streets in the area and any other streets that are used as haul routes. The Contractor will discuss all haul route possibilities with the City Engineer and County Engineer prior to their use. The City Engineer, County Engineer, and the Contractor together will inspect the condition of the proposed routes before, during and after their use. The Contractor will correct any damage that is caused by the hauling activities at no cost to the Owner.

INTERFERENCE OF UNDERGROUND STRUCTURES

Existing utilities crossed by the new construction will be protected against damage, and/or replaced to original grade. Protection, temporary support and maintenance of existing utilities will be furnished by the Contractor at his own expense. The final installation will provide permanent support to prevent any settlement or movement, which may result in damage to these utilities.

Whenever existing pipe is replaced, the material of replacement will be DIP or PVC pipe of the same diameter as the original, long enough to extend at least one foot into the solid bank on either side of the excavation. The backfill under and around such pipe will be thoroughly compacted by mechanical means to preclude settlement. All connections between different types or sizes of pipe or improperly matched joint types will be encased in concrete with a minimum thickness of 6 inches.

Should it become necessary during the progress of the work to remove or relocate existing utilities or structures, the Owner will cause the same to be done at no expense to the Contractor, except as otherwise provided herein. The Contractor will notify those who maintain utilities sufficiently in advance of construction so they may make the necessary location, disclosure, relocation or other preparation. Where necessary to locate existing underground utilities, the Contractor, upon order of the Engineer, will make any required subsurface explorations and excavation, and will be allowed compensation therefore. Where relocation or reconstruction of existing utilities is impracticable, a change in line and/or grade of the new construction will be ordered, and the change will be made as directed. No deviation from the line or grade set by the Engineer will be made without his approval.

CONNECT TO EXISTING SANITARY SEWER

The Contractor will connect to the existing sanitary sewer at the locations shown on the plan. Exploratory excavation for determining the location of existing utilities and the connection to the existing sanitary sewer are incidental to the work. The Contractor will verify the connection elevation at the main is reasonably close to the elevation shown on the plan prior to beginning work. If the elevation is substantially different, the Contractor will notify the Owner and Engineer.

Where new connections are made to existing sanitary sewer manholes, the contractor will core drill the manhole wall and invert to the existing flow line, construct and shape a new invert for the new pipe, and provide a waterproof boot through the wall of the manhole for the new pipe.

SANITARY SEWER CONSTRUCTION REQUIREMENTS

1. Noise – The Contractor will insure all equipment is properly fitted with mufflers to reduce noise to the minimum attainable to avoid creating a nuisance in the residential and business area.
2. Trench Compaction – All trenches will be tamped using the existing material that has been excavated. Tamping will not be paid as a bid item, therefore the cost of this work will be included in the price bid for furnishing and installing the pipe.
3. Piling Excavated Materials -- Excavated material will not be piled on private property without the express permission of the owner thereof, except where easements for the sewer construction or for related work have been obtained; nor will it be piled in any location that will require backfilling machinery to operate on private property. Where excavated material is piled on private property it will be placed to cause the least possible inconvenience to the property owner. Any damage caused thereby, including damage to buildings, walls, sidewalks, driveways, trees, shrubs, lawns, or any other property, will be repaired at the expense of the Contractor. Backcasting in order to minimize disturbance is incidental to the work.
4. It will be the Contractor's responsibility to protect adjacent pipes in and around manholes to be reconstructed, and will replace any pipes damaged, cracked, or broken by the Contractor at their expense.
5. All excavations, trenching and/or jacking and boring pits will be sheeted and/or shored as per OSHA requirements. No unsheeted trench will be left open overnight.
6. Backfilling of all trenches within the limits of street excavation will comply with the provisions of MN/DOT Specification 2112 including achieving 100% compacted density in the upper three feet of subgrade (below aggregate base) and 95% below the upper three feet. Density testing will be performed as directed by the Owner to verify compaction. Trench areas that are determined by the Owner to have yielded due to improper compaction will be deemed as Unacceptable Work and will be corrected by the contractor at no additional cost.
7. Removal of former service lines. -- Service lines no longer being utilized will be removed to the main, as directed by the City. Removal and restoration of street surfacing required for the service removal is incidental.
8. RECORDS OF LATERALS: The Contractor will maintain a complete and accurate record of the location and depth of each lateral. The Contractor will make measurements from the end of each service to prominent permanent features to facilitate its location in the future. The end of each lateral will be located in plan and elevation, and a sketch made to show the plan location. These records will be turned over to the Owner.
9. Contractor shall televise all sewer main to be owned by the City.

MATERIALS FOR SANITARY SEWER CONSTRUCTION:

The project calls for the use of Poly-Vinyl Chloride (PVC). Pipe and fittings should be properly bedded and encased in accordance with the Standard Detail Sheets and Standard Specifications for Sanitary Sewer Installation. All 8" and larger sanitary sewer shall be SDR 35, pipe smaller than 8" shall be SDR 26 Bedding and encasement beneath, along the sides, and above the pipe will be Select Granular material, tamped in place. The only deviation will be in poor soil conditions, as approved by the Engineer, where foundation rock will be substituted. Pipe bedding is incidental to pipe installation. Foundation rock is incidental to pipe installation.
Joints for PVC-SDR 35, and PVC-SDR 26 gravity sewer pipe will be made using Elastomeric gaskets conforming to the requirements of ASTM D3212.
Joints in precast concrete manholes will be made using a joint compound equal to Ram-Nek or rubber gasketed conforming to ASTM C443.
All manhole castings will be equipped with solid lid covers, self-sealing, with concealed pick holes. Manhole casting will be Neenah R1772, or equal and will be labeled 'SANITARY' on casting.

CONNECT TO EXISTING WATERMAIN

The Contractor will connect to existing watermain at the locations shown on the plan. All connections to existing water main are incidental to the work. All exploratory excavation in determining the location of existing water main is incidental to the work. The Contractor will coordinate with the utility owner and be responsible for any fees due for connections.

WATERMAIN CONSTRUCTION REQUIREMENTS

1. Noise – The Contractor will insure all equipment is properly fitted with mufflers to reduce noise to the minimum attainable to avoid creating a nuisance in the residential and business area.
2. Bedding and encasement beneath, along the sides, and above the pipe will be Select Granular material, tamped in place. The only deviation will be in poor soil conditions, as approved by the Engineer, where foundation rock will be substituted. Pipe bedding is incidental to pipe installation. Foundation rock will be paid at the unit price per ton. No payment will be made for bedding materials which, in the opinion of the Engineer, was unnecessary for proper pipe installation.
3. Trench Compaction -- All trenches will be tamped using the existing material that has been excavated. Tamping will not be paid as a bid item, therefore the cost of this work will be included in the price bid for furnishing and installing the pipe.
4. Piling Excavated Materials – Excavated material will not be piled on private property without the express permission of the owner thereof, except where easements for the sewer construction or for related work have been obtained; nor will it be piled in any location that will require backfilling machinery to operate on private property. Where excavated material is piled on private property it will be placed to cause the least possible inconvenience to the property owner. Any damage caused thereby, including damage to buildings, walls, sidewalks, driveways, trees, shrubs, lawns, or any other property, will be repaired at the expense of the Contractor.
5. It will be the Contractor's responsibility to protect adjacent pipes in and around manholes to be reconstructed, and will replace any pipes damaged, cracked, or broken by the Contractor at their expense.
6. All excavations, trenching and/or jacking and boring pits will be sheeted and/or shored as per OSHA requirements. No unsheeted trench will be left open overnight.
7. Backfilling of all trenches within the limits of street excavation will comply with the provisions of MN/DOT Specification 2112 including achieving 100% compacted density in the upper three feet of subgrade (below aggregate base) and 95% below the upper three feet. Density testing will be performed as directed by the Engineer to verify compaction. Trench areas that are determined by the Engineer to have yielded due to improper compaction will be deemed as Unacceptable Work and will be corrected by the contractor at no additional cost.
8. The Contractor will coordinate the construction of all private and municipal utilities.
9. The Contractor will be responsible for all tapping or other fees paid to public or private utilities as work incidental to the contract.
10. RECORDS OF LATERALS: The Contractor will maintain a complete and accurate record of the location and depth of each water lateral. The Contractor will make measurements from the end of each service to prominent features to facilitate its location in the future. The end of each lateral will be located in plan and elevation, and a sketch made to show the plan location. These records will be turned over to the Owner.

MATERIALS FOR WATERMAIN CONSTRUCTION- City standards shall govern over all material specs listed below if discrepancies exist.

1. Watermain shall be DIP meeting the requirements of AWWA C-900. Pipe and fittings should be properly bedded and encased in accordance with manufacturer's requirements. Foundation rock will be used in poor soil conditions.
2. Bedding and encasement for pipe, beneath, along the sides, and above the pipe will be Select Granular material, tamped in place. The only deviation will be in poor soil conditions, as approved by the Engineer, where foundation rock will be substituted. Pipe bedding is incidental to pipe installation. All joints between pipe, fittings, valves, and hydrants will be equipped to provide electrical conductivity.
3. Gaskets will be mechanical joint rubber gaskets, unless otherwise specified.
4. Hyrdants shall be Waterous Pacer WB-67-250 with 6" mechanical joint inlet and valve boxes as manufactured by American Flow Control Series 2500 or US Metro Pipe Seal with the Top marked WATER.
5. The furnishing and installing of disinfection materials to disinfect the watermains will be the responsibility of the Contractor. The City Utilities Department will assist the Contractor in flushing and testing the watermains.
6. The Contractor will use restrained joint mechanical joint flanges with mega lug retainer glands or equal on all hydrants, watermain offsets, bends, or other mechanical fittings. STAINLESS STEEL BOLTS will be required on all mechanical joints and sleeves.
7. All exposed parts of the bolts and nuts will be completely coated with an approved asphaltic type rust preventive material. Any parts of the fittings that have been scraped will also be coated with an approved asphaltic type rust preventive material. Watermain fittings will conform to ANSI Standard A21.10. All watermain fittings, hydrants and retaining rods will be protected by using sacrificial zinc anode caps such as 175P190 Protecto Caps as manufactured by Ebba Iron or an approved equal. Two caps per mechanical joint will be used.

TESTING OF WATER MAIN

Hydrostatic pressure testing of water main and services will be conducted as follows:
After the pipe has been laid, including fittings and valves and blocking, all newly laid pipe or any valved section thereof, unless directed otherwise by the Engineer, will be subject to hydrostatic pressure of 150 pounds per square inch. The duration of each such test will be at least two hours.

Each section of pipe to be tested will be filled with water and all air expelled at the highest point. The required taps to expel air or to fill the water main will be supplied and installed by the Contractor and will be 3/4 inch and will include an approved service saddle when required.

The test apparatus will be applied at the lowest elevation on the section to be tested. The apparatus will be connected to the main at a service tap or special tap location.
The pressure gauge will be a standard pressure gauge. The dial will register from 0 - 200 psi and have a dial size of 4 1/2 inches with 1-psi increments.

The hydrostatic test, pressure requirement for an acceptable test will be a maximum pressure drop of 2 psi during the last hour of the two-hour pressure test.
If this test requirement cannot be met, the Contractor will investigate the cause, make corrections, and retest until the pressure drop requirement can be met.

Only if several consecutive tests indicate a consistent pressure drop and only after the Contractor has made numerous attempts to resolve the problem, acceptable to the Engineer, may the Contractor request in writing and the Engineer consider the use of the leakage test. The leakage test may be performed by the Contractor to determine the magnitude of the leak, however, meeting the leakage allowance will not automatically be considered acceptance, in lieu of the pressure test, for the section being tested. Final acceptance will be at the discretion of the Engineer.

When allowed, the leakage test will be performed in accordance with AWWA C-600, Section 4.1.5, 4.1.6 and the line will be accepted as per Section 4.1.7.

Operational Testing will be conducted as follows:
At the completion of the project and in the presence of the Engineer and the Contractor, representatives of the Owner will operate all valves, hydrants, and water services to ascertain that the entire facility is in good working order; that all valve boxes are centered and valves are opened; that all hydrants operate and drain properly; that all curb boxes are plumb and centered; and that water is available at all curb stops.

Disinfection Testing:
Before being placed in service, the completed water main will be disinfected. Disinfection materials and procedures, and the collection and testing of water samples, will be in accordance with the provisions of AWWA C-651. After the final flushing the water will be tested for bacteriologic quality and found to meet the standards prescribed by the Minnesota Department of Health.
Samples will be taken and tested after 24 and 48 hours of disinfection. Both tests must be returned with passing results prior to approval for service.

Where an existing water main is cut for the installation of any fitting, the pipe and fittings proposed to be installed will be disinfected prior to installation as follows:

The interior of the pipe and fittings will be cleaned of all dirt and foreign material.

The interior of the pipe and fittings will be thoroughly swabbed or sprayed with a 1 percent minimum hypochlorite solution.

Unless otherwise indicated in the Plans, Specifications, and Special Provisions, the Contractor will furnish all materials and perform the disinfecting, flushing, and testing as necessary for meeting the water quality requirements.

The flushing operations and the form of chlorine and method of application to be used will be subject to approval by the Engineer.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.
Brian J. Johnson
Reg. No. 42744 Date: 6/20/25

Consultant:

JONES HAUGH SMITH
Engineers + Surveyors
515 South Washington Ave. Albert Lea, MN 507-373-4876

Project:
MANKATO APARTMENTS

Revision:

No.:	Date: 6/20/2025
Drawn: bjj	Checked:
Project Manager:	
Project Status: CD	

Sheet Title:
SPECIFICATIONS

Sheet No.:
C7

MATERIALS FOR STORM SEWER CONSTRUCTION

1. All drainage structures with a depth of greater than 5' from top of casting elevation to bottom of structure elevation will be provided with steps.
2. Reinforced Concrete Pipe will be bedded and encased in accordance with plans and with material meeting the requirements of 2503. All RCP storm sewer pipe 15" in diameter or less will be Class 5, all other RCP storm sewer pipe will be Class 3 unless otherwise noted.
3. All PVC storm sewer will be Schedule 40 PVC, unless otherwise noted.

STORM SEWER CONSTRUCTION REQUIREMENTS

1. Unless otherwise noted, all existing drain tile encountered during the course of the work will be repaired if damaged by the work, or if the existing outlet is known to be removed or made dysfunctional, hooked up to the new storm sewer improvements. This work is incidental to the contract.
2. Where existing tile lines, sump pump lines, or other existing drainage lines are tied into RCP storm sewer lines, a hole will be created in the upper 1/3 of the side of the new storm sewer, the existing line will be inserted into the side of the new RCP to a depth of not greater than 2", geotextile fabric will be blanketed around or stuffed into the opening around the new pipe, and cement grout will be formed around the connection, so as to ensure water tightness. A maximum of 3 rings shall be used per standard plate 5043.
3. Where existing tile lines, sump pump lines, or other existing drainage lines are tied into HPDE storm sewer, fittings specifically manufactured for the connection of these lines will be used.
4. All existing drainage structures receiving new pipe will be cemented water tight around all pipes entering or exiting the structure. In addition, the inverts of all structures will be cemented so that all water entering the structure has a direct line out of the structure.
5. All new drainage structures will have integrally cast rubber boots to accept pipes and to ensure water-tightness. Worm screw stainless steel bands will be affixed to the boots to secure the pipe to the structure.
6. HDPE pipe will be installed accordance with ASTM F230

CASTING ASSEMBLIES (2506)

Casting assemblies will be of size and design noted on the plans. The work will include the cost of installing to final street surface grade on the manhole or inlet, including pavement removal and replacement if installed after paving.

Contractor will use at least two and not more than six standard adjusting rings immediately below the casting assemble which will be set in a mortar bed. Each adjusting ring will also be set in mortar. All adjusting rings will be plastered with a minimum of ½" of mortar on the interior and exterior, such that the casting is water tight from both the interior and exterior.

When bituminous paving lifts are scheduled for sequential construction seasons, castings will be set to the elevation of the non-wear course for the winter season, and then adjusted to final grade the following year. This work is incidental to construction.

Chimney Seal

Chimney seal will be furnished and installed on all sanitary manhole and ring casting assemblies. Seals will consist of rubberized sleeves or collars specially designed for covering manhole frames, rings and castings. Seals will be exterior seals with mechanical restraint as manufactured by Cretex Products or equal.

Furnish and installation of Chimney Seal is incidental to manhole castings and no additional payment will be made therefore.

Chimney Seal will not be required until final adjustment of castings at the time the final lift of bituminous paving is constructed.

ADJUST WATER VALVE BOX

This work will consist of the adjustment of all water valve boxes to conform to each grade of the bituminous pavement. This work includes multiple adjustments and is incidental to construction. If any structures are damaged by the Contractor's operations, the cost of repairs and replacement will be at the Contractor's expense. Final valve box adjustment at the final lift of paving will be by the paving contractor.

REMOVALS (2104)

Saw-cut Bituminous and/or Saw-cut Concrete

The edges of paving at the locations shown on the plan or directed as directed by the Engineer in the field will be full-depth saw-cut, typically at right angles to the faces to remain, in order to produce a clean edge of which to match the replacement paving or other surface to. Saw-cutting is incidental to the removals.

Remove Bituminous and/or Concrete Surface

After removal of bituminous or concrete surfacing in the traveled way, an aggregate surface will be provided in the removal area to the elevation of the removed materials. A minimum thickness of 6" of aggregate at the surface will be provided. This work is incidental to removals.

Disposal of Removed Materials

The removed materials will become property of the Contractor and be removed from the project site at the Contractor's expense.

Remove Storm Sewer

When existing storm sewer is designated to be removed, the existing pipe will be removed in its entirety, or crushed in its entirety and backfilled over, if directed by the Engineer.

EXCAVATION AND EMBANKMENT (2105)

1. The area designated for excavation will be excavated to sufficient depth to allow construction of the typical section shown on the plans except as otherwise directed by the Owner. The Contractor will verify to the Owner that the subgrade has been constructed to the proper elevation before base construction proceeds. The subgrade must be within 0.10' plus or minus of plan elevation before the construction is allowed to proceed. A subgrade elevation consistently above or below plan elevation will not be considered acceptable work. On average, the subgrade will be at about plan elevation.
2. Excess excavated material will be disposed of by the Contractor. Excess topsoil material will be stockpiled separately or leveled, as directed by the Owner. Stockpiling and leveling will be considered incidental to the excavation, and will not be paid for directly.
3. The contractor will salvage and stockpile suitable topsoil and surface material to the satisfaction of the Owner as necessary to provide for final seed and turf establishment and restoration. Topsoil salvage will be considered incidental to excavation and no direct compensation will be made therefore.
4. Removal of rocks, boulders, masonry or concrete within the excavated area will be considered common excavation. All roots, stumps, rubbish, rocks and other waste materials will be hauled to the nearest landfill. This work will be considered incidental to the construction and will not be paid for directly.
5. Paving sections will be required to allow construction of the typical cross-section. Embankment will be constructed in accordance with the provisions of 2105. Suitable excess excavated materials will be utilized for embankment to the fullest extent practicable. The remaining embankment material will be granular borrow conforming to the provisions of 3149.2A.
6. Site grading will be performed as required to establish plan grade. All excess becomes property of the Contractor to be disposed of off-site.
7. The Contractor will be responsible for ensuring that all areas within the limits of lot grading have a minimum of 6" of salvaged topsoil material on the final grade. It will be the Contractor's responsibility to coordinate and designate topsoil salvaging operations and stockpiling to ensure adequate topsoil is available for a 12" cover. All existing topsoil will be removed in all areas which will be filled with any material other than topsoil except that topsoil depths will not exceed two feet.
8. All borrow or salvaged excavated material to be used as embankment within the limits of paving construction will be approved by the Owner prior to placement. Embankment will comply with the provisions of Minnesota Department of Transportation Spec. 2112 including achieving 100% compacted density in the upper 3 feet of subgrade and 95% below the upper 3 feet of subgrade.
9. All natural topsoils will be removed from below all paving construction areas.
10. Suitable excavated material will be used as backfill. Embankments and boulevards not being seeded or sodded will be dragged or raked smooth prior to completion of each project.
11. Excess excavated material, excluding rocks, boulders, debris and organic material, will be the property of the Owner and will be stockpiled on site as directed by the Owner. All other excess material will be disposed of by the Contractor offsite.
12. When embankment materials are placed on existing ground with an existing slope of greater than 4:1, the embankment will be placed in accordance with 2105.3.B.
13. Where excavation is performed to the subgrade without the placing of embankment materials, the contractor will work the upper 1' of the subgrade to within 2% of optimum moisture prior to the test-rolling stated below. When the existing moisture content is greater or less than 2% of optimum, the contractor will "farm" the material to dry it, or add water and mix the materials until the subgrade reaches the desired moisture content. This work will be incidental to construction.
14. Backfill construction of concrete curb and gutter in accordance with 2531.J is incidental. The contractor will note that when this work is complete, continuous positive drainage is provided to the curb & gutter, which is defined by the MPCA as a stormwater conveyance.

TOPSOIL SALVAGE

All areas to be seeded will be finished with no less than 6 inches of topsoil salvage. This topsoil will be raked to a smooth surface free of roots, rocks and soil clumps. Topsoil salvage will be incidental to the project. All areas to receive fill material are subject to topsoil salvage. Topsoil may be placed over existing topsoil.

SUBGRADE PREPARATION (2112)

1. The provisions of 2112 will be follows and as outlined in 2112.
2. The final shaping and compacting of the subgrade will be done just prior to placing any base or surface course.
3. At the time the subgrade preparation operations have been completed, the prepared surface will be in reasonably close conformity with the cross sections shown in the Plans and the lines and grades shown on the plan.
4. Where excavation is performed to the subgrade with or without the placing of embankment materials, the contractor will work the subgrade to within 2% of optimum moisture. When the existing moisture content is greater or less than 2% of optimum, the contractor will "farm" the material to a minimum depth of 12" to dry it, or add water and mix the materials until the subgrade reaches the desired moisture content. This work will be incidental to construction.
5. The required stability will be such that when any material for base or surface courses is deposited on the subgrade, no rutting or displacement will occur.
6. The subgrade preparation prior to construction of underground utilities will not be subject to elevation tolerances.
7. Subgrade preparation is incidental to the contract

S-7 SUBGRADE COMPACTION

The subgrade when exposed will be compacted with a tamping roller, compactor or other means to not less than 100% Maximum Density and 2% Optimum Moisture. The Contractor will work the upper 1' of the subgrade to within 2% of optimum moisture during compaction. When the existing moisture content is greater or less than 2% of optimum, the contractor will "farm" the material to dry it, or add water and mix the materials until the subgrade reaches the desired moisture content. This work will be incidental to construction. Prior to placement of any stabilized base, a fully loaded dual axel dump truck will be driven over the completed sub-grade in the presence of the Contractor and Engineer present. The subgrade will be found suitable for placement when no rutting or displacment occurs. The test-rolling will be incidental to stabilized base and no specific payment will be made therefore.

S-8 SUBGRADE CORRECTION

If after substantial efforts by the contractor to correct the moisture content of the subgrade and re-compact the materials, the subgrade displays evidence of rutting or yielding prior to, during, or after this compactive effort, additional material will be excavated as directed by the Owner to the depth required to provide a stable foundation for the base material. Suitable material removed during excavation will be utilized for subgrade correction. This work will not be paid as Extra Work if it was or would have been, or could have been performed as part of any other grading activity.

STABILIZED BASE CONSTRUCTION (2211)

This work will consist of the excavation and embankment of existing subgrade and surface materials, and the construction of aggregate base.

1. Aggregate base will be either MnDOT Class 2 or Class 5, at the Contractor's option. Class 7 recycled base is acceptable where alllowed in the MnDOT standard specifictations.
2. Any damage by the Contractor's operations to any existing improvements which have not been designated for removal or disturbance will be repaired at the expense of the Contractor.
3. AGGREGATE: Aggregate for the purposes required by this contract will be furnished by the Contractor from sources selected by him.
4. AGGREGATE BASE: Aggregate base, will be constructed in accordance with the provisions of 2211. Aggregate will conform to the requirements of 3138.
5. Compaction will be obtained by the Modified Penetration Index Method modified as follows: The Owner will hire an independent testing laboratory to perform density and moisture testing. Moisture tests will be performed with each density test. Tests will be performed in accordance with the Materials Testing Section above. Penetration and moisture content testing will be performed along with to the density tests. No payment will be made for work tested that fail to meet the specified density. The Contractor will be responsible for any additional tests due to the failure of work. Water will be applied to the base material during mixing, spreading and compaction operations for proper compaction and will be considered incidental work.
6. Test rolling will be performed on the aggregate base in the presence of the Owner's testing subconsultant. Test rolling will be as specified in Mn/DOT specification 2111 except that the test will be performed with a fully loaded tandem axel dump truck in lieu of the test roller. The Owner may delete the requirement for test-rolling on all or portions of the stabilized base, at his discretion, after consultation with the Contractor.
7. Furnish and install Aggregate Base, Class 5 meeting MN/DOT Specification No. 3138 under all concrete or bituminous pavements and a minimum of 2 inches of Aggregate Base, Class 5 under all curb and curb and gutter.

MAINTENANCE OF COMPLETED BASE

After completion of any part of the base, such base will be maintained in a dust free condition. It will be the Contractor's responsibility to repair at his expense all prepared and shaped surfaces until project is complete. Any water applied to keep the base dampened or reshaped will be at the Contractor's expense. The Contractor will maintain the completed aggregate base after rain events, and replace and recompact any eroded aggregate as work incidental to the contract. Maintenance of completed base is incidental to construction.

APPLICATION OF WATER (2130)

Application of water will be in accordance with the provisions of 2130 except as herein modified. No direct compensation will be made for water used in conjunction with the mixing, placing and compacting operations for base construction. The contractor is responsible for application of water for dust control in accordance with Mn/DOT 1717 and with the NPDES permit. Application of water for dust control is incidental to the work and no additional payment will be made therefore.

CONCRETE PAVEMENT (2301)

Jointed Type 3 Grade A Plain Concrete Pavement will be placed in accordance with the Mn/DOT standard specifications except as modified herein. Loading dock pavement will be reinforced.

The mix designs for concrete paving for this project are:

- Standard Paving - 3A41
- High Early Strength (if directed by Owner) - 3A41HE
- Flexural strength at 28 days will be 750 psi.
- Compressive strength at 28 days will be per the mix designations above.

High Early concrete areas will remain closed to traffic for 3 days or until they have achieved a flexural strength of 450 psi, whichever is shorter.

Concrete will be supplied from a Mn/DOT certified producer. The Contractor will be responsible for supplying the mix designs. The Contractor will provide the Engineer with the mix designs a minimum of 24 hours prior to the first pour.

Concrete will be cured by the use of membrane curing compound meeting the requirements of MnDOT 3754 AMS.

All joint sealant will conform to 3723, Concrete Joint and Crack Sealer (Hot-Poured Elastic Type) sealant.

Transverse metal-tine finishing will not be required.

The location of transverse joints may be adjusted in the field by the Engineer. An increase in the number of transverse joints of up to five percent (5%) compared to the number shown on the plans will be incidental.

All coarse aggregate for concrete pavement will meet the gradation requirements of MnDOT 3137 CA-50.

BITUMINOUS TACK COAT (2357)

Treating existing bituminous or concrete surfaces preparatory to placing a bituminous course thereon will be performed in accordance with the provisions of MN/DOT 2357 and the following:

A bituminous tack coat consisting of emulsified asphalt will be applied between all bituminous surfaces. A tack coat will be placed on the existing pavement prior to placing the next layer of bituminous and the edges of concrete pavement and curb and gutter that will come into contact with the new bituminous will be tacked. All surfaces will be cleaned of all dirt, debris and loose material prior to the application of the bituminous tack coat.

PLANT MIXED ASPHALT PAVEMENT (2350/2360)

Plant mixed asphalt pavement density will be constructed in accordance with Mn/DOT specification 2360, as published by Mn/DOT at the time of bid.After placement of the base course of bituminous paving at the bus parking area and car parking area, the Contractor will flood the work area with water to identify possible "bird bath" locations where the pavement has not been placed at enough grade to ensure proper drainage. Prior to or during placment of the wear course, the Contractor will ensure that these areas are graded to properly drain.

CONCRETE MIX FOR CURB & GUTTER, WALKS, & DRIVEWAYS (2461)

Concrete for this Contract will be as follows and as outlined in 2461:
The concrete mix number to be used for slip form curb and gutter will be 3A22. The concrete mix number for hand formed curb and gutter, sidewalks, and driveways will be 3A32.

	Minnesota Highway Designation	Minnesota Highway Designation
Mix Number	3A32B	3A22B
Type of Concrete	Type 3 (Air Entrained)	Type 3 (Air Entrained)
Grade	Grade A	Grade A
28 Day Strength	27 Mpa (3900 psi)	27 Mpa (3900 psi)
Slump	50 mm to 75 mm (2" to 3")	25 mm to 50 mm (1" to 2")
Coarse Aggregate Composition	100% Class "B"	100% Class "B"
Gradation of Coarse Aggregate	CA25 or CA50 For Structural Concrete	CA25 or CA50 For Structural Concrete

Concrete will be supplied from a Mn/DOT certified producer. The Contractor will supply the mix designs. The Contractor will provide the Engineer with the mix design a minimum of 24 hours prior to the first pour.

WALKS (2521)

Concrete sidewalks will be constructed in accordance with 2521 and Standard Plate 7035M. Preformed joint filler material will be placed in accordance with Standard Plate 7035M. Concrete sidewalks will be mix design 3A32 with a maximum slump of 3". No water will be added to the mix to reduce the slump beyond 3" for temporary workability, as stated in 2461.B3. Colored concrete shall be as manufactured by Scofield with coloring as determined by the Landscape Plan.

CONCRETE CURING AND PROTECTION (2521, 2531)

All sidewalk, driveway, curb and gutter will be cured using a membrane curing compound conforming to the requirement of Minnesota Highway Department #3754. For concrete curb and gutter poured after October 1st, blanket or extreme service membrane methods of curing will be substituted for membrane curing, in accordance with 2531.

EXTREME TEMPERATURE CONCRETE

The following additional measures will be required for extreme temperature concrete construction, as work incidental to the contract:

Hot Weather Concrete Construction

1. Do not place concrete with a placing temperature that will cause difficulty from loss of slump, flash set, or cold joints.
2. Maintain a concrete temperature during placement of less than 90 degrees F.
3. Use all means necessary to avoid drying the concrete prior to the completion of finishing operations.
4. Provide and use windbreaks, sunshades, fog sprays, and other devices to protect the concrete.

Cold Weather Concrete Construction

1. Provide adequate protection when temperatures are 40 degrees F or lower occur durin ghte placing and early curing periods.
2. Comply with all pertinent recommendations of ACI 306 (Recommended Practice for Cold Weather Concreting).
3. Type IIIA cement may be used.
4. The use of Calcium Chloride or other accelerators will not be permitted.
5. Maintain a concrete temperature during placement of more than 60 degrees F.
6. Use all means necessary to avoid exposure of concrete to freezing temperatures during placement, finishing, and curing.
7. Concrete will not be placed on a frozen subgrade.
8. Provide and maintain heated enclosures, insulating blankets, tarpaulins, heaters, fuel, and all other protective equipment required.
9. Maintain favorable curing temperature at all times until the concrete gains sufficient strength to withstand exposure to low temperature and applied loads.

CONCRETE CURBING & GUTTER (2531)

Concrete curb and gutter will be constructed in accordance with the provisions of 2531 and the following: Curing will be by the Membrane Curing Method as specified in 2531.3G (2). The sealing of joints in concrete curb and gutter will not be required.

Construction joints in curb and gutter will be installed at 10-foot intervals. Preformed joint filler material (1/2-inch) will be place at the ends of all street returns, at the ends of concrete driveway approaches, and in accordance with MN/Dot Standard Plate 7035N.

Concrete curb and gutter will be the style shown on the plans.

PEDESTRIAN CURB RAMPS (2531)

Unless otherwise dome sections will be red.

STORM WATER MANAGEMENT (2573)

The Stormwater Pollution Prevention Plan (SWPPP) required by the NPDES permit has been provided by the Owner and is incorporated into the plans and specifications.

The Minnesota Department of Transportation's Specification 2573 - Stormwater Management is hereby modified as follows:

1. The Contractor will apply for and comply with the provisions of the NPDES permit and the SWPPP (Stormwater Pollution Prevention Plan).
2. The Stormwater Pollution Prevention Plan provided by the Owner is meant and provided as a guide in the provision of Erosion and Sediment Control (ESC) Best Management Practices (BMP's) as required by the NPDES permit. The SWPPP is based on finish grade contours. Additional ESC measures, although not shown by the plan, may be required to comply with the provisions of the NPDES permit. Provision and maintenance of the ESC BMP's in accordance with the NPDES permit is the responsibility of the contractor, regardless of what is shown on the SWPPP. Interim ESC BMP's and updating of the SWPPP are the responsibility of the contractor. Maintenance of the ESC BMP's is incidental to the work and will be performed in accordance with 2573.M.
3. When updates to the SWPPP are required, the Contractor will provide the Engineer with sketches of the updated areas, so that the Engineer can update the SWPPP.
4. No additional payment will be made for additional ESC BMP's required by the NPDES permit but not shown on the SWPPP.
5. The contractor will obtain the NPDES permit from the MPCA and pay any applicable fees as work incidental to the contract. The contractor will remain named on the NPDES permit until the warranty period expires, at which time he/she may submit an NPDES Permit Modification/Transfer Form to the Owner for completion and submission to the MPCA.
6. The contractor will maintain the NPDES site inspection log.
7. The contractor will be responsible for all fines imposed by regulating agencies for failure to comply with the provisions of the NPDES permit.
8. If the Engineer determines that ESC BMP's have failed or require maintenance, the Contractor will correct the cause of failure, maintain the BMP's, and alleviate all sediment deposition outside the construction limits, to the fullest extent possible. If the Contractor fails to install or maintain erosion or sediment control measures required by the NPDES permit, fails to conduct required inspections, or fails to take action ordered by the Engineer to correct ESC problems, the Engineer will issue a written order to the Contractor. The Contractor will respond within 24 hours with sufficient personnel, equipment, and/or materials and conduct the required work or be subject to a $500 per calendar day penalty for noncompliance. In addition, the Engineer may recommend that the Owner withhold payment from all work until the ESC BMP's are constructed or maintained.
9. The Engineer may require the Contractor to submit a site plan for certain portions of the work detailing proposed ESC BMP's, and a schedule indicating start and completion dates. The Contractor will not start work within these areas until the Engineer has accepted the site plan and schedule. No additional payment will be made for preparation of site plans required by the Engineer, or reasonable delays or production losses caused by this requirement.
10. Sediment removal required due to the failures to implement or maintain ESC BMP's will not be considered Extra Work. The Contractor will remove all sediment from areas accrued due to actions or inactions by the Contractor, at no cost to the Owner
11. The Contractor will designate a concrete washout area on-site and inform the Engineer of the chosen location at the pre-construction meeting. This area must be constructed so that it drains towards itself. Concrete debris will be removed from the concrete washout and removed from the site prior to final acceptance.

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

Brian J. Johnson
Reg. No. 42744 Date: 6/20/25

Consultant:

JONES HAUGH SMITH
Engineers + Surveyors
515 South Washington Ave. Albert Lea, MN 507-373-4876

Project: MANKATO APARTMENTS

Revision:

No.: Date: 6/20/2025
Drawn: bjj Checked:
Project Manager:
Project Status: CD
Sheet Title: SPECIFICATIONS
Sheet No.: C8

Project Information

Calculator Version:	Version 4: July 2020
Project Name:	Mankato Apartments Existing
User Name / Company Name:	Jones, Haugh & Smith Inc
Date:	6/25/2025
Project Description:	Mankato Apartments
Construction Permit?:	Yes

Site Information

Retention Requirement (inches):	1.1
Site's Zip Code:	56001
Annual Rainfall (inches):	30.7
Phosphorus EMC (mg/l):	0.3
TSS EMC (mg/l):	54.5

Total Site Area

Land Cover	A Soils (acres)	B Soils (acres)	C Soils (acres)	D Soils (acres)	Total (acres)
Forest/Open Space - Undisturbed, protected forest/open space or reforested land				0	0
Managed Turf - disturbed, graded for yards or other turf to be mowed/managed				2.74	2.74
			Impervious Area (acres)		1.26
				Total Area (acres)	4

Site Areas Routed to BMPs

Land Cover	A Soils (acres)	B Soils (acres)	C Soils (acres)	D Soils (acres)	Total (acres)
Forest/Open Space - Undisturbed, protected forest/open space or reforested land					0
Managed Turf - disturbed, graded for yards or other turf to be mowed/managed					0
			Impervious Area (acres)		
				Total Area (acres)	0

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary Information

Performance Goal Requirement

Performance goal volume retention requirement:	5031	ft3
Volume removed by BMPs towards performance goal:		ft^3
Percent volume removed towards performance goal		**%**

Annual Volume and Pollutant Load Reductions

Post development annual runoff volume	4.3333	acre-ft
Annual runoff volume removed by BMPs:		acre-ft
Percent annual runoff volume removed:		**%**
Post development annual particulate P load:	1.9448	lbs
Annual particulate P removed by BMPs:		lbs
Post development annual dissolved P load:	1.591	lbs
Annual dissolved P removed by BMPs:	0	lbs
Total P removed by BMPs	0	lbs
Percent annual total phosphorus removed:		**%**
Post development annual TSS load:	642.4	lbs
Annual TSS removed by BMPs:		lbs
Percent annual TSS removed:		**%**

BMP Summary

Performance Goal Summary

BMP Name	BMP Volume Capacity (ft3)	Volume Recieved (ft3)	Volume Retained (ft3)	Volume Outflow (ft3)	Percent Retained

Annual Volume Summary

BMP Name	Volume From Direct Watershed (acre-ft)	Volume From Upstream BMPs (acre-ft)	Volume Retained (acre-ft)	Volume outflow (acre-ft)	Percent Retained (%)

Particulate Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained

Dissolved Phosphorus Summary

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained

Total Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained

TSS Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained

BMP Schematic

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Project Information

Calculator Version:	Version 4: July 2020
Project Name:	Mankato Apartments Proposed Conditions
User Name / Company Name:	Jones, Haugh & Smith Inc
Date:	6/25/2025
Project Description:	Mankato Apartments
Construction Permit?:	Yes

Site Information

Retention Requirement (inches):	1.1
Site's Zip Code:	56001
Annual Rainfall (inches):	30.7
Phosphorus EMC (mg/l):	0.3
TSS EMC (mg/l):	54.5

Total Site Area

Land Cover	A Soils (acres)	B Soils (acres)	C Soils (acres)	D Soils (acres)	Total (acres)
Forest/Open Space - Undisturbed, protected forest/open space or reforested land				0	0
Managed Turf - disturbed, graded for yards or other turf to be mowed/managed				1.5	1.5
			Impervious Area (acres)		2.5
				Total Area (acres)	4

Site Areas Routed to BMPs

Land Cover	A Soils (acres)	B Soils (acres)	C Soils (acres)	D Soils (acres)	Total (acres)
Forest/Open Space - Undisturbed, protected forest/open space or reforested land					0
Managed Turf - disturbed, graded for yards or other turf to be mowed/managed				1.5	1.5
			Impervious Area (acres)		2.5
				Total Area (acres)	4

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary Information

Performance Goal Requirement

Performance goal volume retention requirement:	9982	ft3
Volume removed by BMPs towards performance goal:		ft^3
Percent volume removed towards performance goal		**%**

Annual Volume and Pollutant Load Reductions

Post development annual runoff volume	6.3319	acre-ft
Annual runoff volume removed by BMPs:	0	acre-ft
Percent annual runoff volume removed:	**0**	**%**
Post development annual particulate P load:	2.8417	lbs
Annual particulate P removed by BMPs:	1.705	lbs
Post development annual dissolved P load:	2.325	lbs
Annual dissolved P removed by BMPs:	0	lbs
Total P removed by BMPs	1.705	lbs
Percent annual total phosphorus removed:	**33**	**%**
Post development annual TSS load:	938.6	lbs
Annual TSS removed by BMPs:	563.2	lbs
Percent annual TSS removed:	**60**	**%**

BMP Summary

Performance Goal Summary

BMP Name	BMP Volume Capacity (ft3)	Volume Recieved (ft3)	Volume Retained (ft3)	Volume Outflow (ft3)	Percent Retained
1 - Constructed stormwater pond	0	9982	0	9982	0

Annual Volume Summary

BMP Name	Volume From Direct Watershed (acre-ft)	Volume From Upstream BMPs (acre-ft)	Volume Retained (acre-ft)	Volume outflow (acre-ft)	Percent Retained (%)
1 - Constructed stormwater pond	6.3319	0	0	6.3319	0

Particulate Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained
1 - Constructed stormwater pond	2.8417	0	1.705	1.1367	60

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Dissolved Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained
1 - Constructed stormwater pond	2.3251	0	0	2.3251	0

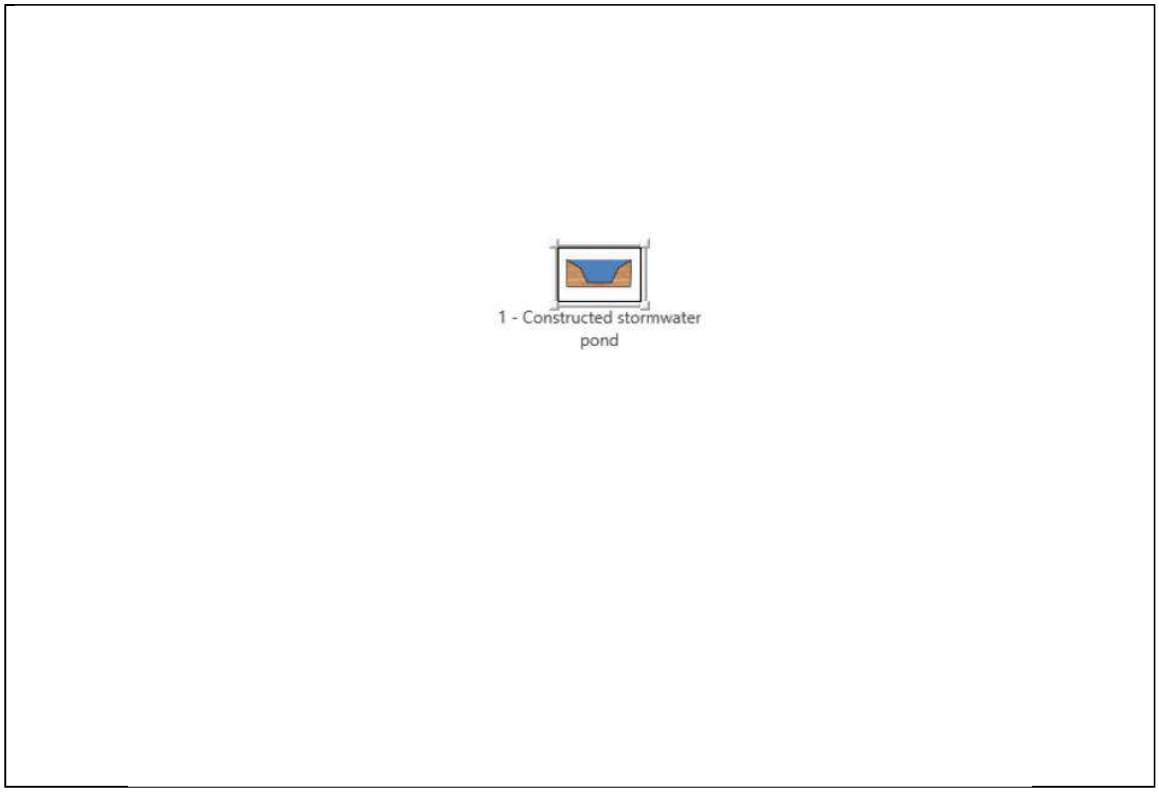
Total Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained
1 - Constructed stormwater pond	5.1668	0	1.705	3.4618	30

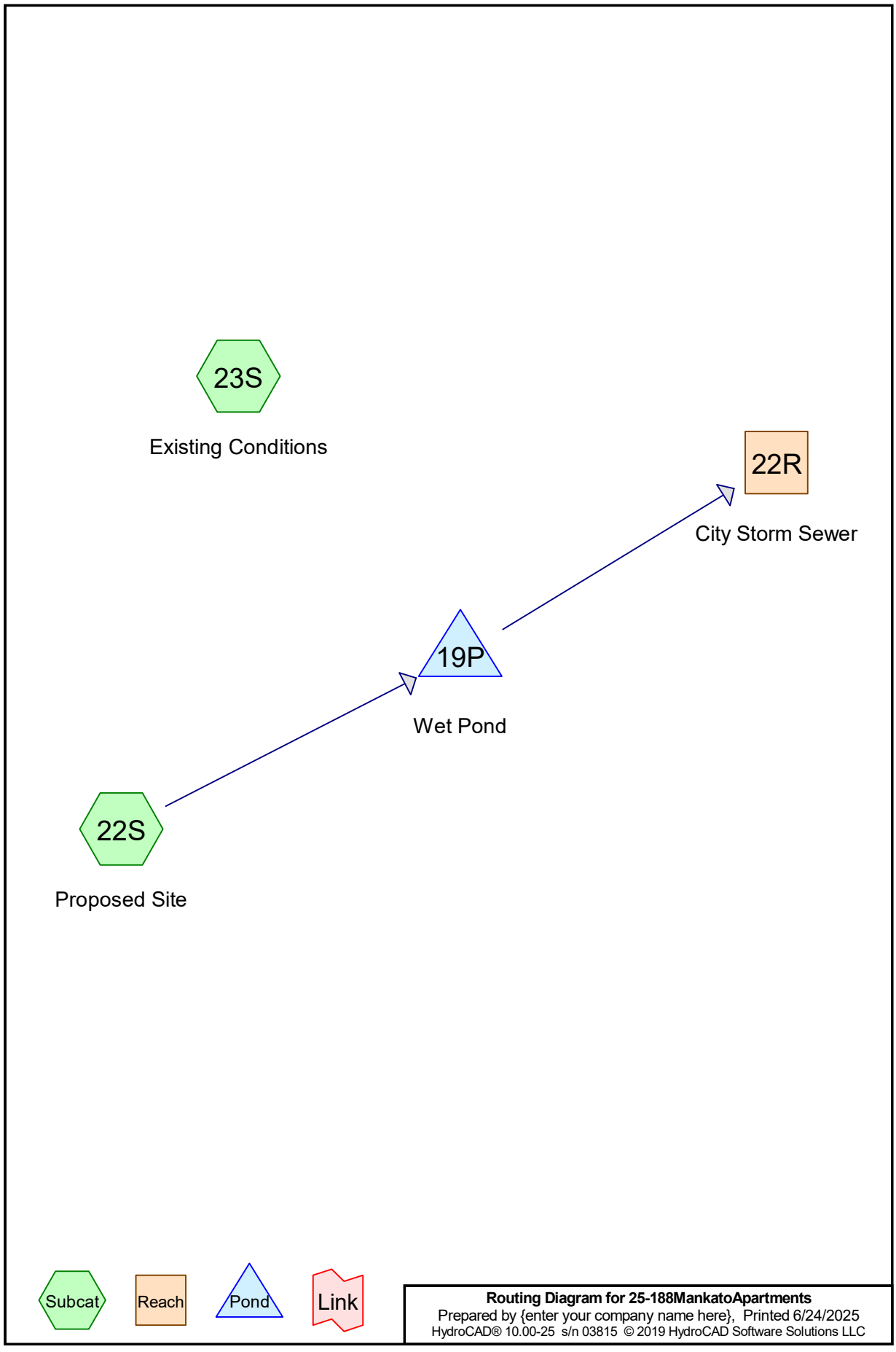
TSS Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained
1 - Constructed stormwater pond	938.64	0	563.18	375.46	60

BMP Schematic



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.500	39	>75% Grass cover, Good, HSG A (22S)
2.740	80	>75% Grass cover, Good, HSG D (23S)
1.260	96	Gravel surface, HSG D (23S)
1.500	98	Paved parking, HSG D (22S)
1.000	98	Roofs, HSG D (22S)
8.000	**80**	**TOTAL AREA**

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
1.500	HSG A	22S
0.000	HSG B	
0.000	HSG C	
6.500	HSG D	22S, 23S
0.000	Other	
8.000		**TOTAL AREA**

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
1.500	0.000	0.000	2.740	0.000	4.240	>75% Grass cover, Good	22S, 23S
0.000	0.000	0.000	1.260	0.000	1.260	Gravel surface	23S
0.000	0.000	0.000	1.500	0.000	1.500	Paved parking	22S
0.000	0.000	0.000	1.000	0.000	1.000	Roofs	22S
1.500	**0.000**	**0.000**	**6.500**	**0.000**	**8.000**	**TOTAL AREA**	

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	19P	987.50	984.00	50.0	0.0700	0.012	12.0	0.0	0.0
2	19P	987.50	987.50	20.0	0.0000	0.013	18.0	0.0	0.0

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 22S: Proposed Site Runoff Area=4.000 ac 62.50% Impervious Runoff Depth=0.98"
Tc=20.0 min CN=76 Runoff=4.14 cfs 0.327 af

Subcatchment 23S: Existing Conditions Runoff Area=4.000 ac 0.00% Impervious Runoff Depth=1.55"
Tc=30.0 min CN=85 Runoff=5.34 cfs 0.515 af

Reach 22R: City Storm Sewer Inflow=1.17 cfs 0.321 af
Outflow=1.17 cfs 0.321 af

Pond 19P: Wet Pond Peak Elev=988.20' Storage=0.113 af Inflow=4.14 cfs 0.327 af
Outflow=1.17 cfs 0.321 af

Total Runoff Area = 8.000 ac Runoff Volume = 0.843 af Average Runoff Depth = 1.26"
68.75% Pervious = 5.500 ac 31.25% Impervious = 2.500 ac

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 22S: Proposed Site

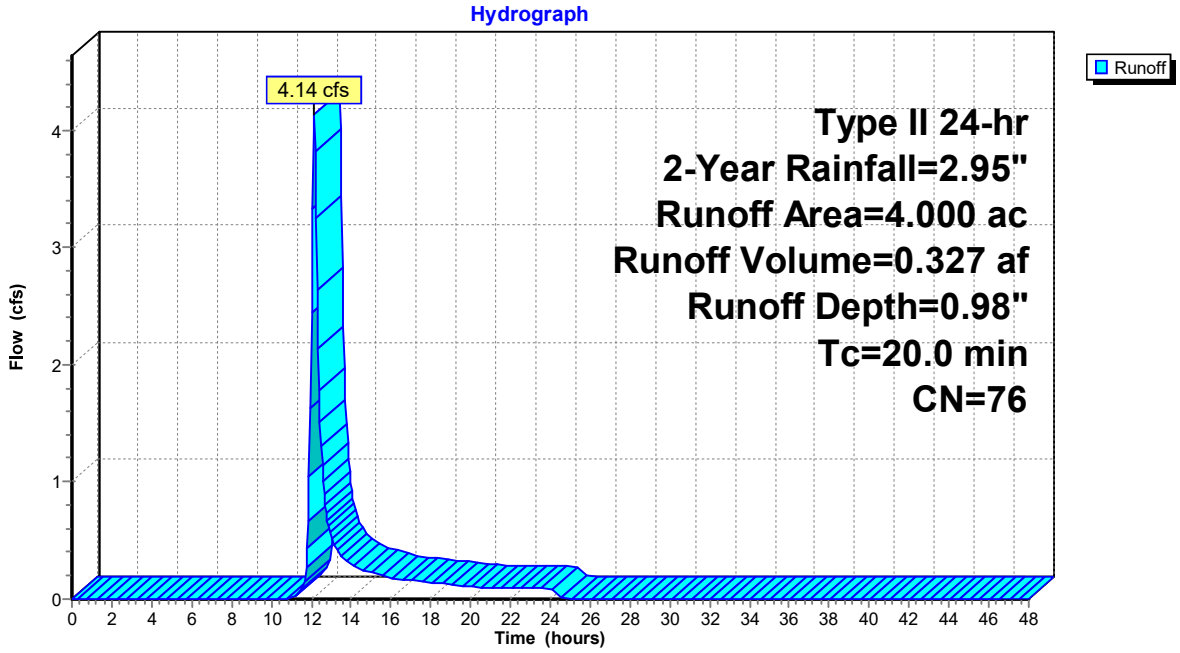
Runoff = 4.14 cfs @ 12.14 hrs, Volume= 0.327 af, Depth= 0.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=2.95"

Area (ac)	CN	Description
1.000	98	Roofs, HSG D
1.500	98	Paved parking, HSG D
1.500	39	>75% Grass cover, Good, HSG A
4.000	76	Weighted Average
1.500		37.50% Pervious Area
2.500		62.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.0					**Direct Entry,**

Subcatchment 22S: Proposed Site



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 23S: Existing Conditions

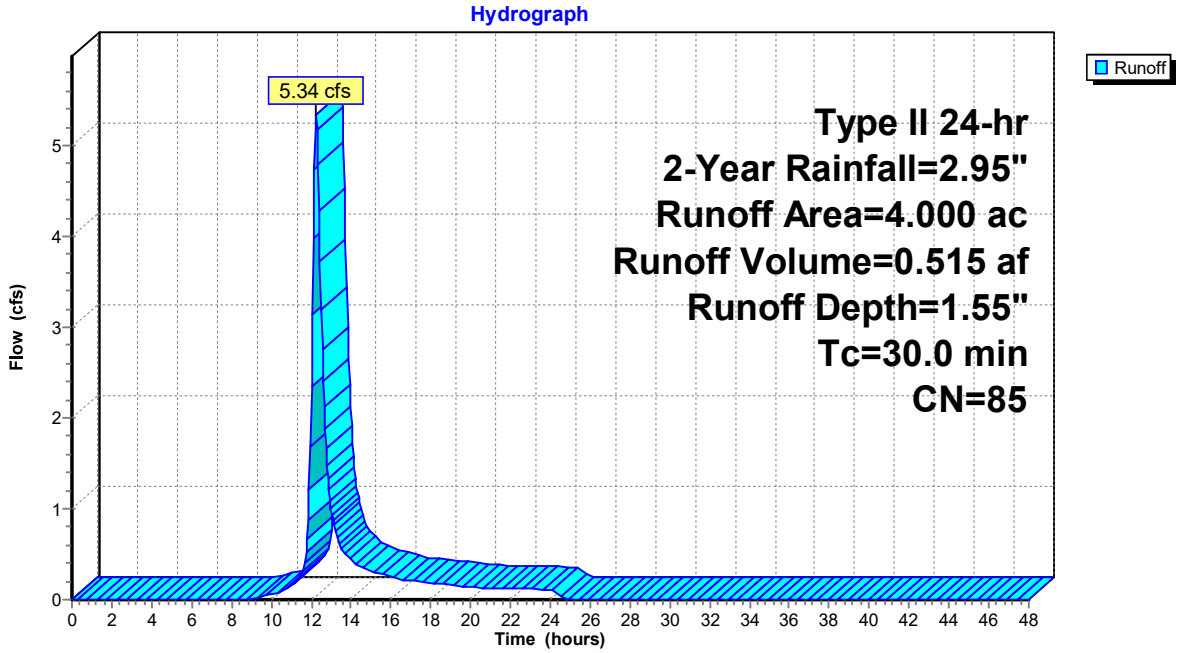
Runoff = 5.34 cfs @ 12.25 hrs, Volume= 0.515 af, Depth= 1.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=2.95"

Area (ac)	CN	Description
2.740	80	>75% Grass cover, Good, HSG D
1.260	96	Gravel surface, HSG D
4.000	85	Weighted Average
4.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Subcatchment 23S: Existing Conditions



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

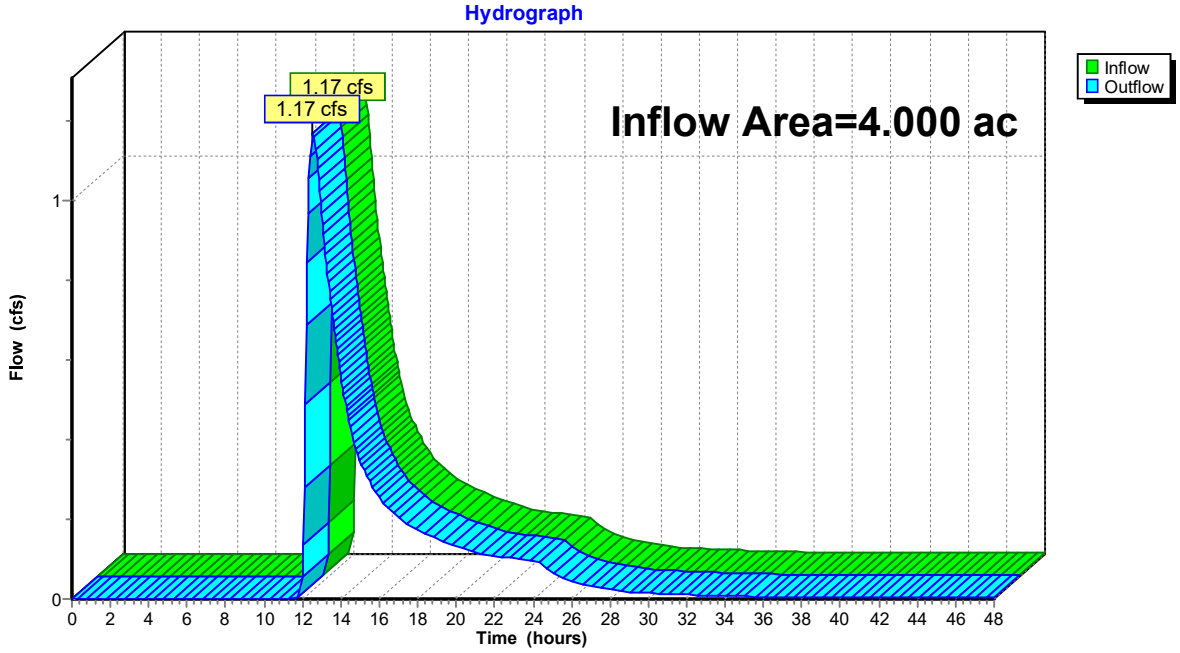
Summary for Reach 22R: City Storm Sewer

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.000 ac, 62.50% Impervious, Inflow Depth > 0.96" for 2-Year event
Inflow = 1.17 cfs @ 12.54 hrs, Volume= 0.321 af
Outflow = 1.17 cfs @ 12.54 hrs, Volume= 0.321 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach 22R: City Storm Sewer



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Pond 19P: Wet Pond

Inflow Area = 4.000 ac, 62.50% Impervious, Inflow Depth = 0.98" for 2-Year event
Inflow = 4.14 cfs @ 12.14 hrs, Volume= 0.327 af
Outflow = 1.17 cfs @ 12.54 hrs, Volume= 0.321 af, Atten= 72%, Lag= 24.1 min
Primary = 1.17 cfs @ 12.54 hrs, Volume= 0.321 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 988.20' @ 12.54 hrs Surf.Area= 0.182 ac Storage= 0.113 af

Plug-Flow detention time= 135.4 min calculated for 0.321 af (98% of inflow)
Center-of-Mass det. time= 126.2 min (996.3 - 870.1)

Volume	Invert	Avail.Storage	Storage Description
#1	987.50'	0.832 af	**Custom Stage Data (Prismatic)** Listed below

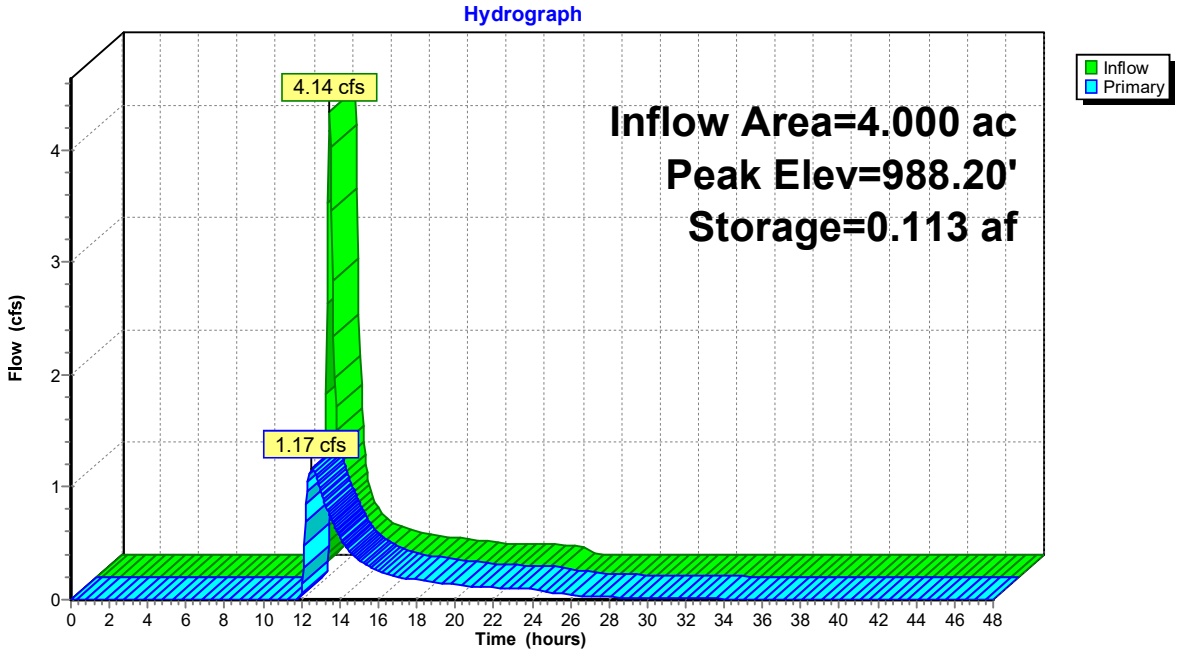
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
987.50	0.120	0.000	0.000
988.00	0.170	0.072	0.072
989.00	0.230	0.200	0.272
990.00	0.280	0.255	0.528
991.00	0.330	0.305	0.832

Device	Routing	Invert	Outlet Devices
#1	Device 2	987.50'	**30.0 deg x 0.7' long x 1.00' rise Sharp-Crested Vee/Trap Weir** Cv= 2.61 (C= 3.26)
#2	Primary	987.50'	**12.0" Round Culvert** L= 50.0' Ke= 1.000 Inlet / Outlet Invert= 987.50' / 984.00' S= 0.0700 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf
#3	Device 2	988.50'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Device 1	987.50'	**18.0" Round Culvert** L= 20.0' Ke= 1.000 Inlet / Outlet Invert= 987.50' / 987.50' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.17 cfs @ 12.54 hrs HW=988.20' (Free Discharge)
- **2=Culvert** (Passes 1.17 cfs of 1.26 cfs potential flow)
  - **1=Sharp-Crested Vee/Trap Weir** (Passes 1.17 cfs of 1.63 cfs potential flow)
    - **4=Culvert** (Barrel Controls 1.17 cfs @ 2.12 fps)
  - **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Pond 19P: Wet Pond



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 22S: Proposed Site Runoff Area=4.000 ac 62.50% Impervious Runoff Depth=2.13"
Tc=20.0 min CN=76 Runoff=9.37 cfs 0.710 af

Subcatchment 23S: Existing Conditions Runoff Area=4.000 ac 0.00% Impervious Runoff Depth=2.91"
Tc=30.0 min CN=85 Runoff=10.06 cfs 0.970 af

Reach 22R: City Storm Sewer Inflow=2.74 cfs 0.704 af
Outflow=2.74 cfs 0.704 af

Pond 19P: Wet Pond Peak Elev=988.93' Storage=0.259 af Inflow=9.37 cfs 0.710 af
Outflow=2.74 cfs 0.704 af

Total Runoff Area = 8.000 ac Runoff Volume = 1.680 af Average Runoff Depth = 2.52"
68.75% Pervious = 5.500 ac 31.25% Impervious = 2.500 ac

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 22S: Proposed Site

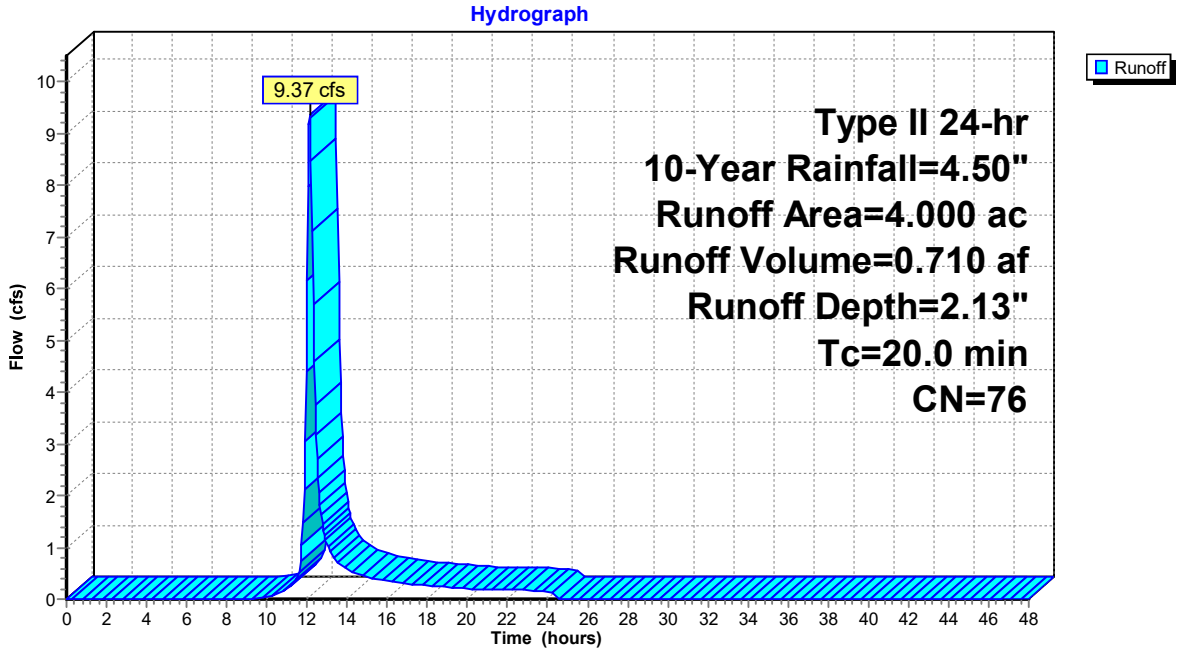
Runoff = 9.37 cfs @ 12.13 hrs, Volume= 0.710 af, Depth= 2.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=4.50"

Area (ac)	CN	Description
1.000	98	Roofs, HSG D
1.500	98	Paved parking, HSG D
1.500	39	>75% Grass cover, Good, HSG A
4.000	76	Weighted Average
1.500		37.50% Pervious Area
2.500		62.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.0					**Direct Entry,**

Subcatchment 22S: Proposed Site



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 23S: Existing Conditions

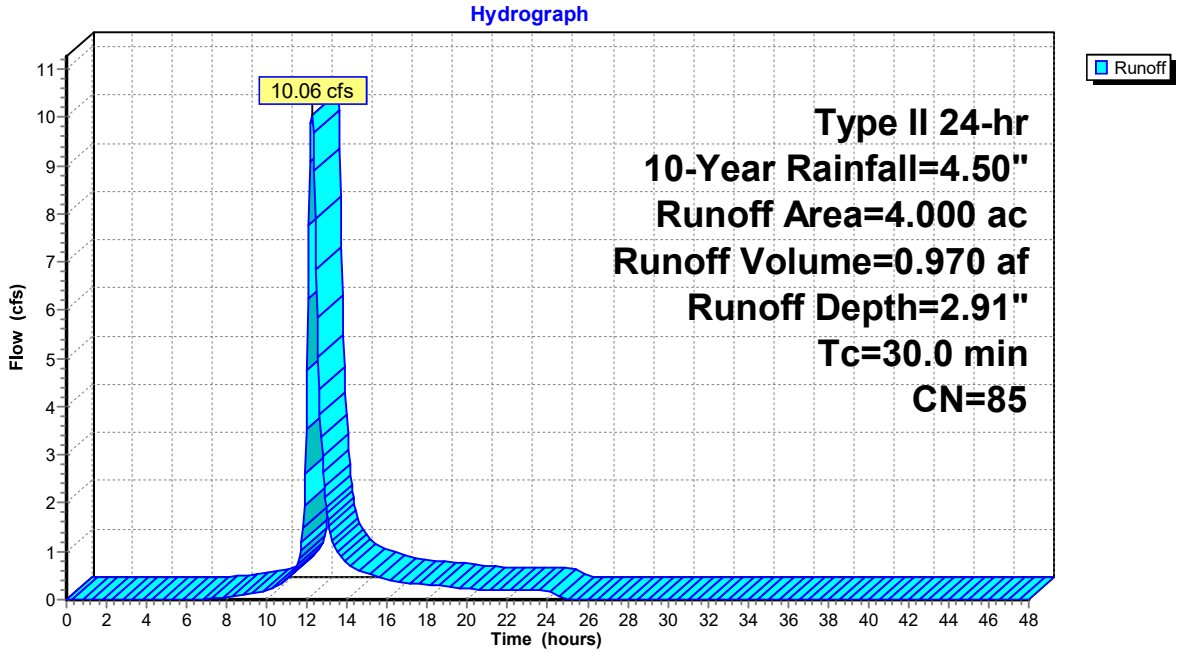
Runoff = 10.06 cfs @ 12.24 hrs, Volume= 0.970 af, Depth= 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=4.50"

Area (ac)	CN	Description
2.740	80	>75% Grass cover, Good, HSG D
1.260	96	Gravel surface, HSG D
4.000	85	Weighted Average
4.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Subcatchment 23S: Existing Conditions



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

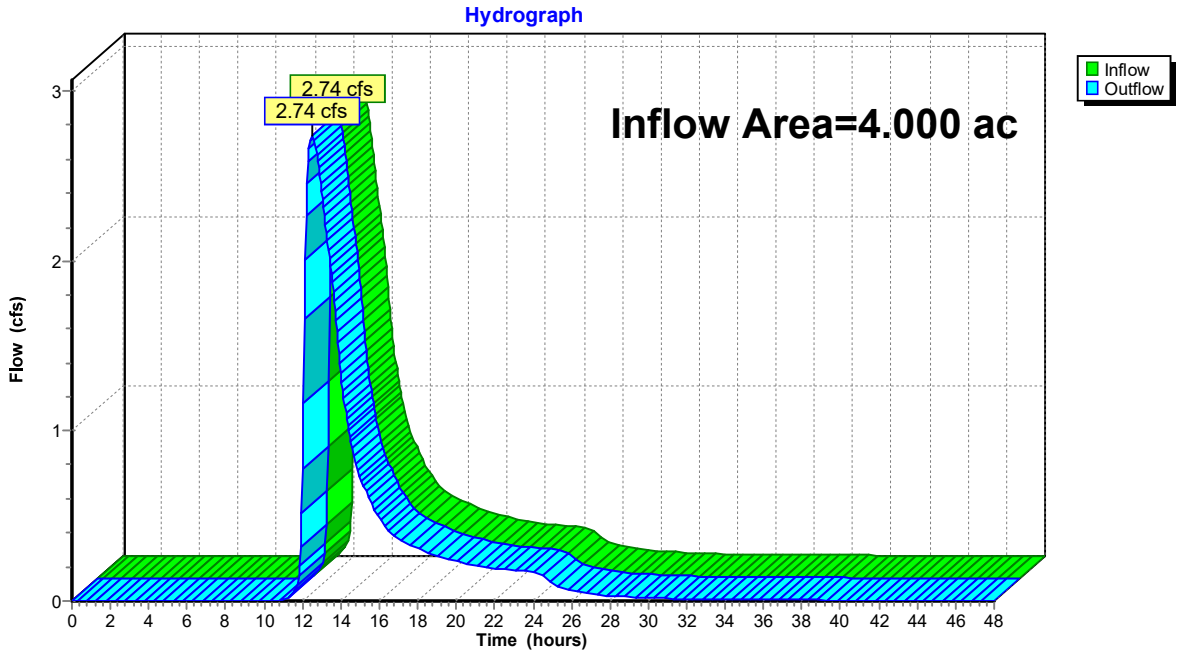
Summary for Reach 22R: City Storm Sewer

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.000 ac, 62.50% Impervious, Inflow Depth > 2.11" for 10-Year event
Inflow = 2.74 cfs @ 12.50 hrs, Volume= 0.704 af
Outflow = 2.74 cfs @ 12.50 hrs, Volume= 0.704 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach 22R: City Storm Sewer



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Pond 19P: Wet Pond

Inflow Area = 4.000 ac, 62.50% Impervious, Inflow Depth = 2.13" for 10-Year event
Inflow = 9.37 cfs @ 12.13 hrs, Volume= 0.710 af
Outflow = 2.74 cfs @ 12.50 hrs, Volume= 0.704 af, Atten= 71%, Lag= 22.0 min
Primary = 2.74 cfs @ 12.50 hrs, Volume= 0.704 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 988.93' @ 12.50 hrs Surf.Area= 0.226 ac Storage= 0.259 af

Plug-Flow detention time= 96.2 min calculated for 0.703 af (99% of inflow)
Center-of-Mass det. time= 92.3 min (939.4 - 847.1)

Volume	Invert	Avail.Storage	Storage Description
#1	987.50'	0.832 af	**Custom Stage Data (Prismatic)** Listed below

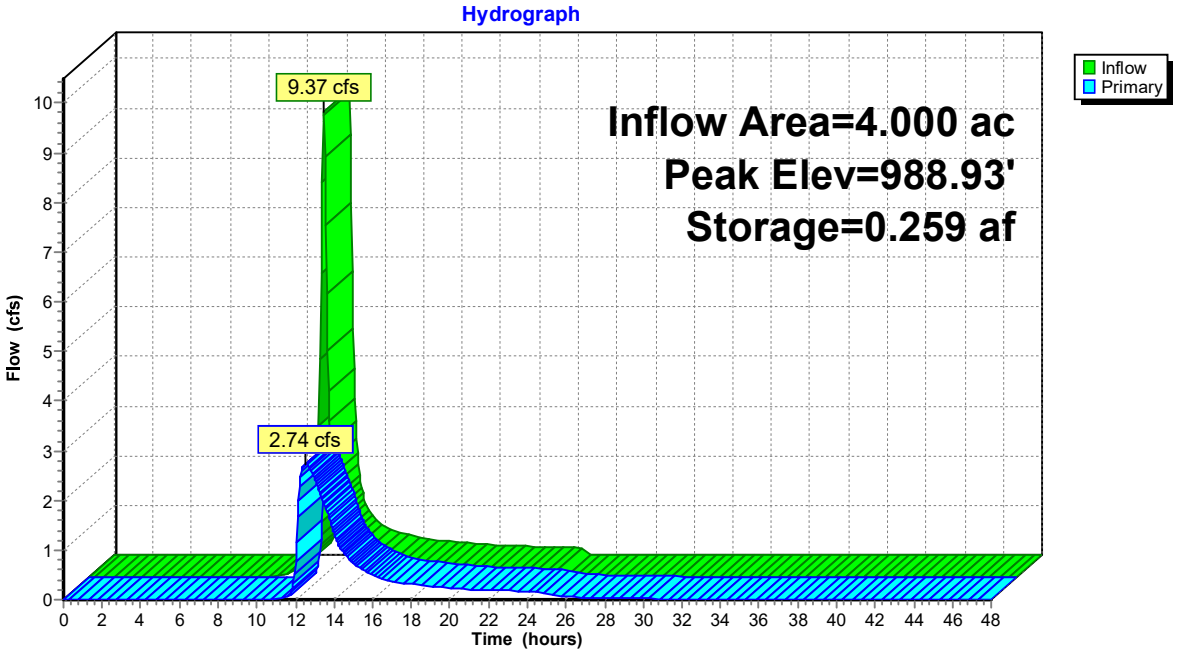
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
987.50	0.120	0.000	0.000
988.00	0.170	0.072	0.072
989.00	0.230	0.200	0.272
990.00	0.280	0.255	0.528
991.00	0.330	0.305	0.832

Device	Routing	Invert	Outlet Devices
#1	Device 2	987.50'	**30.0 deg x 0.7' long x 1.00' rise Sharp-Crested Vee/Trap Weir** Cv= 2.61 (C= 3.26)
#2	Primary	987.50'	**12.0" Round Culvert** L= 50.0' Ke= 1.000 Inlet / Outlet Invert= 987.50' / 984.00' S= 0.0700 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf
#3	Device 2	988.50'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Device 1	987.50'	**18.0" Round Culvert** L= 20.0' Ke= 1.000 Inlet / Outlet Invert= 987.50' / 987.50' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.74 cfs @ 12.50 hrs HW=988.93' (Free Discharge)
- **2=Culvert** (Inlet Controls 2.74 cfs @ 3.49 fps)
  - **1=Sharp-Crested Vee/Trap Weir** (Passes < 4.40 cfs potential flow)
    - **4=Culvert** (Passes < 4.29 cfs potential flow)
  - **3=Broad-Crested Rectangular Weir** (Passes < 4.17 cfs potential flow)

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Pond 19P: Wet Pond



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 22S: Proposed Site Runoff Area=4.000 ac 62.50% Impervious Runoff Depth=5.03"
Tc=20.0 min CN=76 Runoff=22.18 cfs 1.677 af

Subcatchment 23S: Existing Conditions Runoff Area=4.000 ac 0.00% Impervious Runoff Depth=6.08"
Tc=30.0 min CN=85 Runoff=20.58 cfs 2.026 af

Reach 22R: City Storm Sewer Inflow=4.52 cfs 1.671 af
Outflow=4.52 cfs 1.671 af

Pond 19P: Wet Pond Peak Elev=990.54' Storage=0.693 af Inflow=22.18 cfs 1.677 af
Outflow=4.52 cfs 1.671 af

Total Runoff Area = 8.000 ac Runoff Volume = 3.703 af Average Runoff Depth = 5.55"
68.75% Pervious = 5.500 ac 31.25% Impervious = 2.500 ac

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 22S: Proposed Site

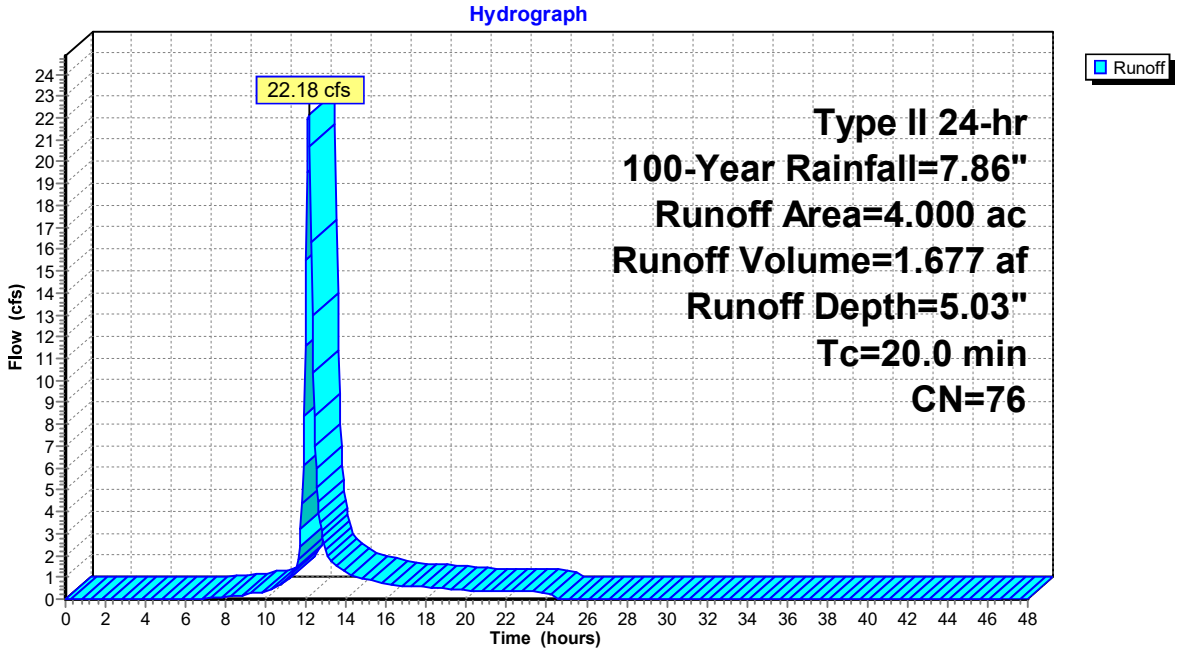
Runoff = 22.18 cfs @ 12.12 hrs, Volume= 1.677 af, Depth= 5.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=7.86"

Area (ac)	CN	Description
1.000	98	Roofs, HSG D
1.500	98	Paved parking, HSG D
1.500	39	>75% Grass cover, Good, HSG A
4.000	76	Weighted Average
1.500		37.50% Pervious Area
2.500		62.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.0					**Direct Entry,**

Subcatchment 22S: Proposed Site



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Subcatchment 23S: Existing Conditions

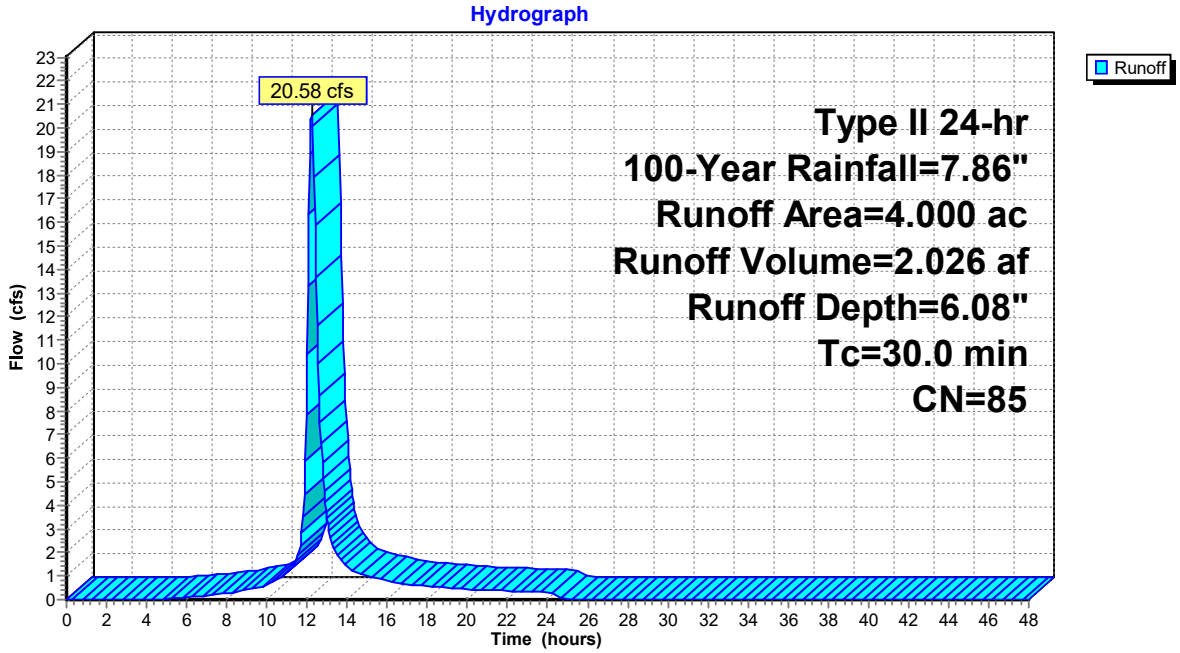
Runoff = 20.58 cfs @ 12.23 hrs, Volume= 2.026 af, Depth= 6.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=7.86"

Area (ac)	CN	Description
2.740	80	>75% Grass cover, Good, HSG D
1.260	96	Gravel surface, HSG D
4.000	85	Weighted Average
4.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Subcatchment 23S: Existing Conditions



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

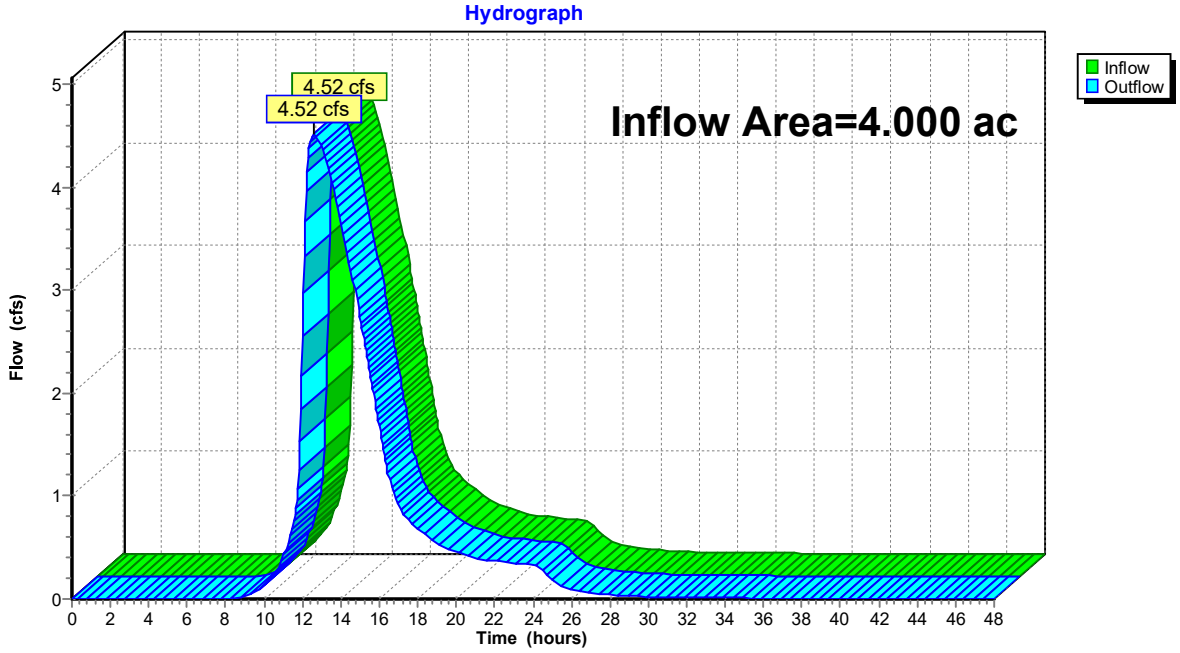
Summary for Reach 22R: City Storm Sewer

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.000 ac, 62.50% Impervious, Inflow Depth > 5.01" for 100-Year event
Inflow = 4.52 cfs @ 12.60 hrs, Volume= 1.671 af
Outflow = 4.52 cfs @ 12.60 hrs, Volume= 1.671 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach 22R: City Storm Sewer



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Summary for Pond 19P: Wet Pond

Inflow Area = 4.000 ac, 62.50% Impervious, Inflow Depth = 5.03" for 100-Year event
Inflow = 22.18 cfs @ 12.12 hrs, Volume= 1.677 af
Outflow = 4.52 cfs @ 12.60 hrs, Volume= 1.671 af, Atten= 80%, Lag= 28.4 min
Primary = 4.52 cfs @ 12.60 hrs, Volume= 1.671 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 990.54' @ 12.60 hrs Surf.Area= 0.307 ac Storage= 0.693 af

Plug-Flow detention time= 95.0 min calculated for 1.671 af (100% of inflow)
Center-of-Mass det. time= 92.6 min (915.2 - 822.6)

Volume	Invert	Avail.Storage	Storage Description
#1	987.50'	0.832 af	**Custom Stage Data (Prismatic)** Listed below

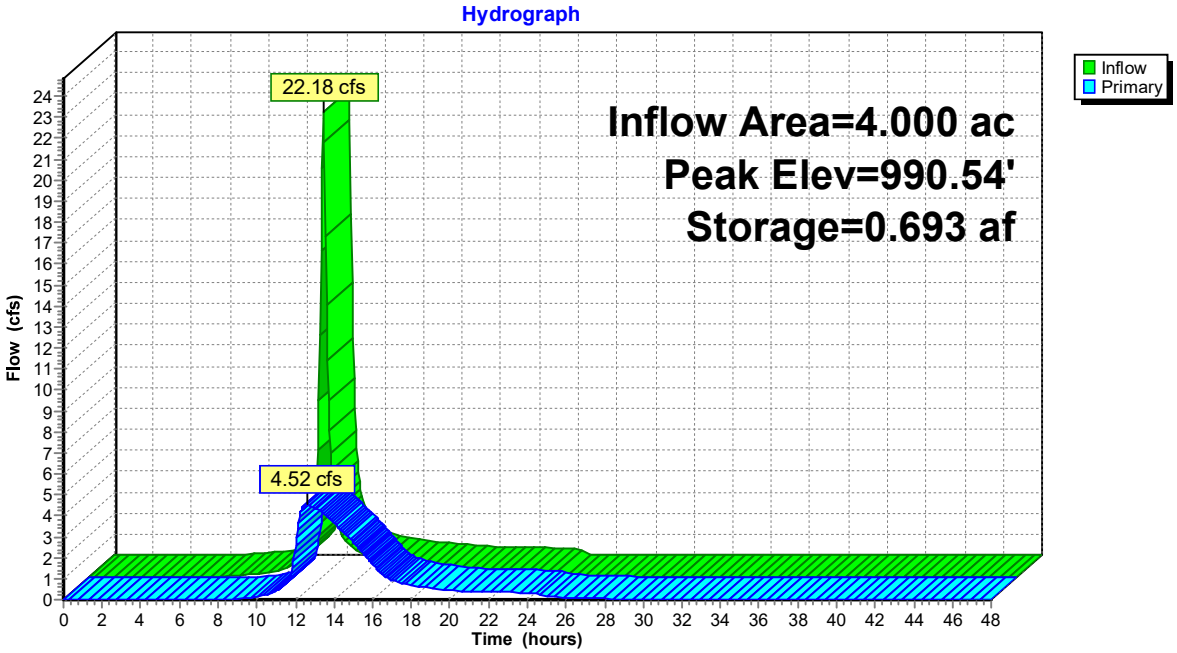
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
987.50	0.120	0.000	0.000
988.00	0.170	0.072	0.072
989.00	0.230	0.200	0.272
990.00	0.280	0.255	0.528
991.00	0.330	0.305	0.832

Device	Routing	Invert	Outlet Devices
#1	Device 2	987.50'	**30.0 deg x 0.7' long x 1.00' rise Sharp-Crested Vee/Trap Weir** Cv= 2.61 (C= 3.26)
#2	Primary	987.50'	**12.0" Round Culvert** L= 50.0' Ke= 1.000 Inlet / Outlet Invert= 987.50' / 984.00' S= 0.0700 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf
#3	Device 2	988.50'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Device 1	987.50'	**18.0" Round Culvert** L= 20.0' Ke= 1.000 Inlet / Outlet Invert= 987.50' / 987.50' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.52 cfs @ 12.60 hrs HW=990.54' (Free Discharge)
- **2=Culvert** (Inlet Controls 4.52 cfs @ 5.76 fps)
  - **1=Sharp-Crested Vee/Trap Weir** (Passes < 7.47 cfs potential flow)
    - **4=Culvert** (Passes < 9.66 cfs potential flow)
  - **3=Broad-Crested Rectangular Weir** (Passes < 48.44 cfs potential flow)

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Pond 19P: Wet Pond



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

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

Custom Soil Resource Report for Blue Earth County, Minnesota

June 20, 2025

Preface

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

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

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

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

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

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

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface.....2
How Soil Surveys Are Made.....5
Soil Map.....8
Soil Map.....9
Legend.....10
Map Unit Legend.....11
Map Unit Descriptions.....11
Blue Earth County, Minnesota.....13
106C—Lester loam, 6 to 10 percent slopes.....13
110—Marna silty clay loam, 0 to 2 percent slopes.....14
286—Shorewood silty clay loam, 1 to 6 percent slopes.....16
539—Klossner muck, lake plain, depressional, 0 to 1 percent slopes.....17
L113B—Reedslake-Le Sueur complex, 1 to 6 percent slopes.....19
References.....22

How Soil Surveys Are Made

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

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

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

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

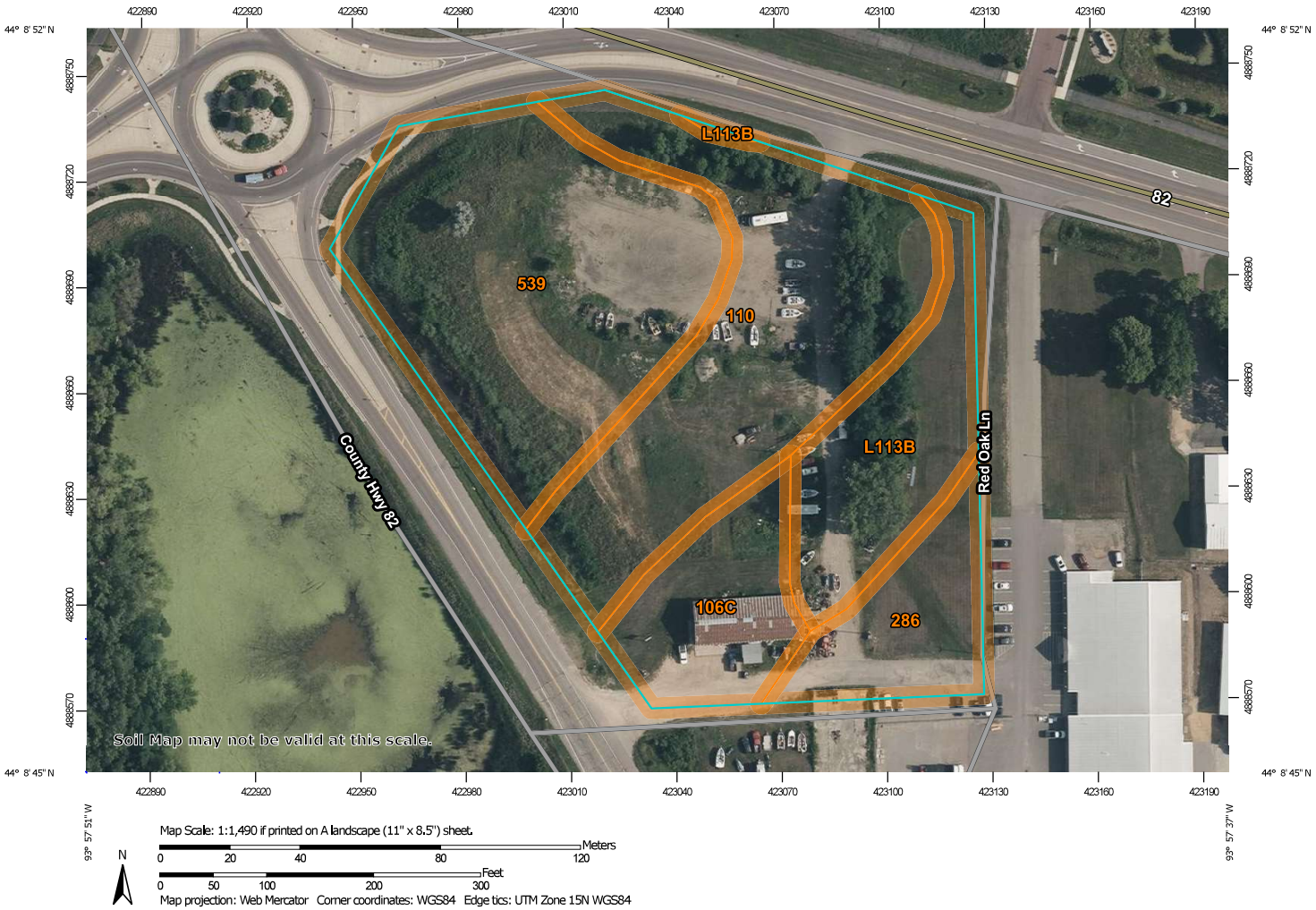
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:1,490 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

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 Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Blue Earth County, Minnesota
Survey Area Data: Version 22, Sep 7, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 2, 2023—Aug 8, 2023

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
106C	Lester loam, 6 to 10 percent slopes	0.6	10.7%
110	Marna silty clay loam, 0 to 2 percent slopes	1.9	32.1%
286	Shorewood silty clay loam, 1 to 6 percent slopes	0.5	9.2%
539	Klossner muck, lake plain, depressional, 0 to 1 percent slopes	2.0	34.4%
L113B	Reedslake-Le Sueur complex, 1 to 6 percent slopes	0.8	13.6%
Totals for Area of Interest		**5.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it

was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Blue Earth County, Minnesota

106C—Lester loam, 6 to 10 percent slopes

Map Unit Setting

National map unit symbol: 2ttc7
Elevation: 690 to 1,840 feet
Mean annual precipitation: 24 to 37 inches
Mean annual air temperature: 43 to 52 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Lester and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lester

Setting

Landform: Hillslopes, ground moraines
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Interfluve, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Parent material: Fine-loamy till

Typical profile

Ap - 0 to 9 inches: loam
Bt - 9 to 30 inches: clay loam
C - 30 to 79 inches: loam

Properties and qualities

Slope: 6 to 10 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 47 to 63 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R103XY020MN - Loamy Upland Savannas
Forage suitability group: Sloping Upland, Acid (G103XS006MN)
Other vegetative classification: Sloping Upland, Acid (G103XS006MN)
Hydric soil rating: No

Minor Components

Le sueur

Percent of map unit: 10 percent
Landform: Ground moraines, hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Convex, linear
Across-slope shape: Linear
Ecological site: R103XY020MN - Loamy Upland Savannas
Other vegetative classification: Sloping Upland, Acid (G103XS006MN)
Hydric soil rating: No

Webster

Percent of map unit: 5 percent
Landform: Ground moraines
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R103XY001MN - Loamy Wet Prairies
Other vegetative classification: Level Swale, Neutral (G103XS001MN)
Hydric soil rating: Yes

Storden, moderately eroded

Percent of map unit: 3 percent
Landform: Ground moraines
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Rise
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Ecological site: R103XY020MN - Loamy Upland Savannas
Other vegetative classification: Sloping Upland, Calcareous (G103XS010MN)
Hydric soil rating: No

Lester

Percent of map unit: 2 percent
Landform: Ground moraines, hillslopes
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Interfluve, rise
Down-slope shape: Convex
Across-slope shape: Linear, convex
Ecological site: R103XY020MN - Loamy Upland Savannas
Other vegetative classification: Sloping Upland, Acid (G103XS006MN)
Hydric soil rating: No

110—Marna silty clay loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2vwk0
Elevation: 690 to 1,840 feet
Mean annual precipitation: 24 to 37 inches

Mean annual air temperature: 43 to 52 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Marna and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marna

Setting

Landform: Lake plains, ground moraines, flats
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Glaciolacustrine deposits over till

Typical profile

Ap - 0 to 7 inches: silty clay loam
A - 7 to 18 inches: silty clay loam
Bg - 18 to 36 inches: silty clay
2Bkg - 36 to 45 inches: clay loam
2Cg - 45 to 79 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 2.00 in/hr)
Depth to water table: About 0 to 8 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: R103XY008MN - Clayey Wet Prairies
Forage suitability group: Level Swale, Neutral (G103XS001MN)
Other vegetative classification: Level Swale, Neutral (G103XS001MN)
Hydric soil rating: Yes

Minor Components

Okoboji

Percent of map unit: 7 percent
Landform: Depressions, depressions
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R103XY015MN - Depressional Marsh
Other vegetative classification: Ponded If Not Drained (G103XS013MN)
Hydric soil rating: Yes

Guckeen

Percent of map unit: 5 percent
Landform: Ground moraines, flats, lake plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R103XY005MN - Clayey Upland Prairies
Other vegetative classification: Level Swale, Neutral (G103XS001MN)
Hydric soil rating: No

Brownton

Percent of map unit: 3 percent
Landform: Lake plains, flats, ground moraines
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R103XY008MN - Clayey Wet Prairies
Other vegetative classification: Level Swale, Calcareous (G103XS009MN)
Hydric soil rating: Yes

286—Shorewood silty clay loam, 1 to 6 percent slopes

Map Unit Setting

National map unit symbol: f97m
Elevation: 700 to 1,570 feet
Mean annual precipitation: 23 to 35 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 155 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Shorewood and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Shorewood

Setting

Landform: Rises on lake plains
Landform position (two-dimensional): Summit
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Clayey lacustrine deposits over fine-loamy till

Typical profile

Ap,A - 0 to 17 inches: silty clay loam
Bt - 17 to 39 inches: silty clay
C - 39 to 60 inches: loam

Properties and qualities

Slope: 1 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.57 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: High (about 9.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C/D
Ecological site: R103XY021MN - Clayey Upland Savannas
Forage suitability group: Sloping Upland, Neutral (G103XS002MN)
Other vegetative classification: Sloping Upland, Neutral (G103XS002MN)
Hydric soil rating: No

Minor Components

Minnetonka

Percent of map unit: 5 percent
Landform: Flats
Hydric soil rating: Yes

Guckeen

Percent of map unit: 5 percent
Landform: Lake plains
Hydric soil rating: No

539—Klossner muck, lake plain, depressional, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2s8x1
Elevation: 690 to 1,840 feet
Mean annual precipitation: 24 to 37 inches
Mean annual air temperature: 43 to 52 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Klossner, drained, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Klossner, Drained

Setting

Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Organic material over glaciolacustrine deposits

Typical profile

Oap - 0 to 9 inches: muck
Oa - 9 to 24 inches: muck
2A - 24 to 46 inches: silty clay loam
2Cg - 46 to 79 inches: silty clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 2.00 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Occasional
Calcium carbonate, maximum content: 20 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 17.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: R103XY016MN - Organic Marsh
Forage suitability group: Organic (G103XS014MN)
Other vegetative classification: Organic (G103XS014MN)
Hydric soil rating: Yes

Minor Components

Lura

Percent of map unit: 10 percent
Landform: Depressions, ground moraines, lake plains
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R103XY015MN - Depressional Marsh
Other vegetative classification: Ponded If Not Drained (G103XS013MN)
Hydric soil rating: Yes

Brownton

Percent of map unit: 5 percent
Landform: Lake plains, flats, ground moraines
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R103XY008MN - Clayey Wet Prairies
Other vegetative classification: Level Swale, Calcareous (G103XS009MN)

Hydric soil rating: Yes

L113B—Reedslake-Le Sueur complex, 1 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2y037
Elevation: 690 to 1,450 feet
Mean annual precipitation: 24 to 37 inches
Mean annual air temperature: 37 to 52 degrees F
Frost-free period: 140 to 168 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Reedslake and similar soils: 59 percent
Le sueur and similar soils: 30 percent
Minor components: 11 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Reedslake

Setting

Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Rise
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Fine-loamy till

Typical profile

Ap - 0 to 6 inches: loam
A - 6 to 15 inches: loam
Bt - 15 to 33 inches: loam
Bk - 33 to 54 inches: loam
C - 54 to 79 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 20 to 41 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C
Ecological site: R103XY020MN - Loamy Upland Savannas
Forage suitability group: Sloping Upland, Neutral (G103XS002MN)
Other vegetative classification: Sloping Upland, Neutral (G103XS002MN)
Hydric soil rating: No

Description of Le Sueur

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave, linear
Across-slope shape: Linear
Parent material: Fine-loamy till

Typical profile

Ap - 0 to 6 inches: clay loam
A - 6 to 11 inches: clay loam
Bt - 11 to 24 inches: clay loam
Bkg - 24 to 36 inches: loam
BC - 36 to 55 inches: loam
C - 55 to 79 inches: loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 2.00 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: C/D
Ecological site: R103XY020MN - Loamy Upland Savannas
Forage suitability group: Sloping Upland, Acid (G103XS006MN)
Other vegetative classification: Sloping Upland, Acid (G103XS006MN)
Hydric soil rating: No

Minor Components

Cordova

Percent of map unit: 7 percent
Landform: Depressions
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R103XY022MN - Loamy Wet Savannas
Other vegetative classification: Level Swale, Neutral (G103XS001MN)
Hydric soil rating: Yes

Swanlake

Percent of map unit: 4 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Rise
Down-slope shape: Convex, linear
Across-slope shape: Convex
Ecological site: R103XY020MN - Loamy Upland Savannas
Other vegetative classification: Sloping Upland, Calcareous (G103XS010MN)
Hydric soil rating: No

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

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. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Aquatic EcoSolutions, Inc.
Ecological Solutions to Environmental Challenges
Lakes • Streams • Riparian • Wetlands • Watersheds

P.O. Box 497
Nevis, MN 56467
Telephone: (877) 346-3474
robertmerila@arvig.net

Mankato Apartments Site

Mankato, Blue Earth County, Minnesota

for

Growth Holdings, LLC

Wetland Delineation Report

May 29, 2025
Number: 25024BJ

Mankato Apartments Site

Mankato, Blue Earth County, Minnesota
for
Growth Holdings, LLC

prepared by
Aquatic EcoSolutions, Inc.
Number: 25024BJ

The **Mankato Apartments Site** is located in the SE¼ of the NW¼ of Section 21, Township T 108 N., Range R 26 W., Mankato, Blue Earth County, Minnesota.

The property is located at the address of 901 S Victory Drive, immediately northeast of South Victory Drive and immediately south of 209th Street with an acute angle roundabout intersection at the northwest corner of the property. This site is located in the southeastern portion of Mankato.

The property examined appears to be PID R430921177001.

According to the BWSR "Land Resource Region Boundaries Fit to Closest Townships" map, Mankato is within the "Midwest" region.

The purpose of this project was to examine the site for wetlands, and delineate them if they are present.

The wetland delineation site visit occurred on May 27, 2025 by Robert J.F. Merila, *Wetland Delineator Certified* #1087.

Methodology

In Minnesota, wetlands are under two jurisdictions: State and Federal. The State jurisdiction guidelines were set by the Minnesota Wetland Conservation Act of 1991 (WCA). This State jurisdiction is administered by the Local Governmental Unit (LGU) with technical guidance provided by the Board of Water and Soil Resources (BWSR).

The Federal jurisdiction is administered by the U.S. Army Corps of Engineers (COE or Corps).

Starting in 1996, both jurisdictions agreed to use the ***Corps of Engineers Wetland Delineation Manual*** (Environmental Laboratory, 1987) along with supplemental guidance by the Corps. This manual is commonly referred to as the **1987 Manual**.

Copyright © 2025, Aquatic EcoSolutions, Inc.

The wetland delineation method used on this site was the Plant Community Assessment Procedure of the Routine Onsite Determination Method. The Routine Onsite Determination Forms (located in the back of the report) detail the three technical criteria (hydrophytic vegetation, hydric soils, and wetland hydrology) as described in the 1987 Manual.

The wetland edge(s) were delineated where one, two, or all three of these technical criteria drop out. If no wetland conditions are observed within the area examined, no wetland edge is delineated.

Where wetlands are observed, one sample point transect perpendicularly crosses the delineated edge. This transect consists of one sample point above the edge and one sample point below the edge.

Results

Two roadside ditches that have wetland characteristics were identified and delineated on the site.

According to the Department of Natural Resources (DNR) **Protected Water Inventory (PWI) of Blue Earth County (page 1 of 1)**, there were no Protected Waters on or adjacent to the property.

The **Simplified HGM layer of MN Wetland Finder** identified a Depression polygon that coincided with Basin 1, but it was shaped to fit the previous intersection prior to the conversion into a roundabout intersection. Basin 2 was not identified.

The **National Wetlands Inventory (NWI)** identified a PEM1C polygon that coincided with the western portion of Basin 1 in a shape that matched the previous configuration of the roadway intersection at the northwest corner of the site. There was no polygon at the location of Basin 2.

The **Minnesota NWI** (Landview Interactive Map) identified a PEMC polygon that coincided with the far northwestern corner of the site at the location of the new roundabout. No other polygons were mapped on the site.

Information from the **Soil Survey of Blue Earth County (online version)** is used on the Data Sheets. Soils mapped on the parcel include:

106C	Lester loam, 6 to 10 percent slopes
110	Marna silty clay loam, 0 to 2 percent slopes
286	Shorewood silty clay loam, 1 to 6 percent slopes
539	Klossner muck, lake plain, depressional, 0 to 1 percent slopes
L113B	Reedslake-Le Sueur complex, 1 to 6 percent slopes

Copyright © 2025, Aquatic EcoSolutions, Inc.

Hydrology

According to the Precipitation Worksheet Using Gridded Database for determining hydrology, the months leading up to the site examination was identified as being "normal."

Edge Description

Basin 1 was a Landscape Depression roadside ditch Fresh (Wet) Meadow with Shallow Marsh portion (Type 3, PEM1Cx) wetland dominated by reed canary grass and narrow cattail along with some stinging nettle and hummock sedge located along the west and north sides of the site. It looks like the intersection of the roadways in the northwest corner of the site was rebuilt after the NWI was prepared.

The adjacent upland included excavated and restored roadside ditch banks and some kind of previous business that no longer exists at the location. Plant species observed included smooth brome, Kentucky bluegrass, green foxtail, common dandelion, butter and eggs, bull thistle, Canada thistle, poison ivy, burdock, alfalfa, tall goldenrod, Canada goldenrod, common milkweed, common mullein, thicket creeper, wild geranium, ground ivy, and Cleaver's bedstraw ground cover; Tartarian honeysuckle, red elder, red cedar, box elder, and cottonwood saplings/shrubs; and red cedar, box elder, and cottonwood trees.

Basin 2 was a Landscape Depression roadside ditch Fresh (Wet) Meadow (Type 2, PEM1Ax) wetland dominated by reed canary grass and narrow cattail along with some stinging nettle located along the east side of the site in the northeast corner, east of an entrance road from the north.

The adjacent upland included excavated and restored roadside ditch banks and some kind of previous business that no longer exists at the location. Plant species observed included smooth brome, Kentucky bluegrass, green foxtail, common dandelion, butter and eggs, bull thistle, Canada thistle, poison ivy, burdock, alfalfa, tall goldenrod, Canada goldenrod, common milkweed, common mullein, thicket creeper, wild geranium, ground ivy, and Cleaver's bedstraw ground cover; Tartarian honeysuckle, red elder, red cedar, box elder, and cottonwood saplings/shrubs; and red cedar, box elder, and cottonwood trees.

Copyright © 2025, Aquatic EcoSolutions, Inc.

Conclusion

This wetland examination, determination, and report of the **Mankato Apartments Site** was performed in accordance with the generally accepted methodology of the 1987 Manual at the time of the services rendered. No warranty, express or implied, is made.

If unavoidable impacts to wetlands are planned on any project, permits or exemptions from **State** (WCA, DNR, Watershed District), **Federal** (Corps), and/or other applicable entities need to be granted before the impacts occur.

The wetland delineation was performed and report prepared by Robert J.F. Merila, *Wetland Delineator Certified* #1087.

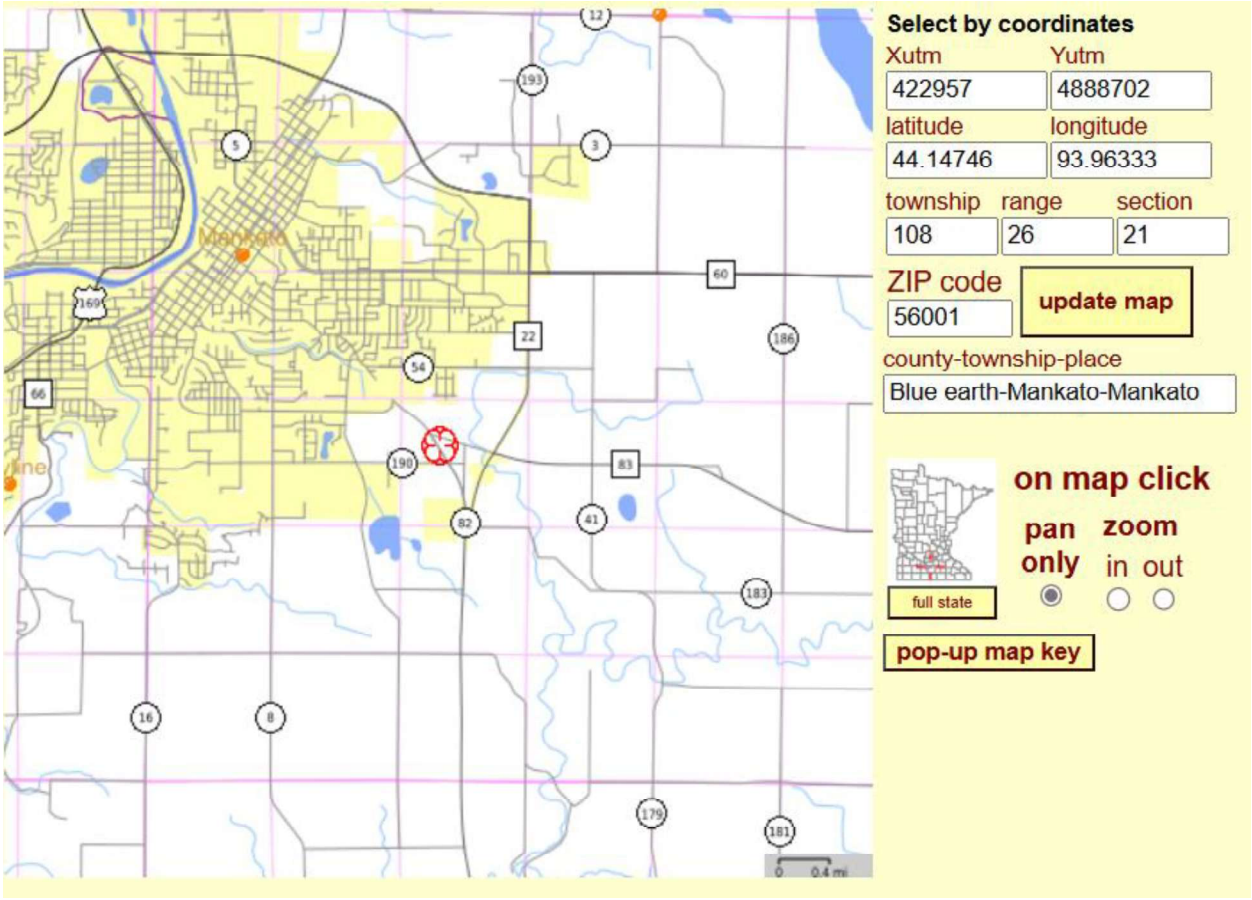
Robert J.F. Merila, President
Wetland Delineator, Certified #1087

May 29, 2025
Date

Copyright © 2025, Aquatic EcoSolutions, Inc.

Ecological Solutions to Environmental Challenges

Site Location



Precipitation Worksheet Using Gridded Database

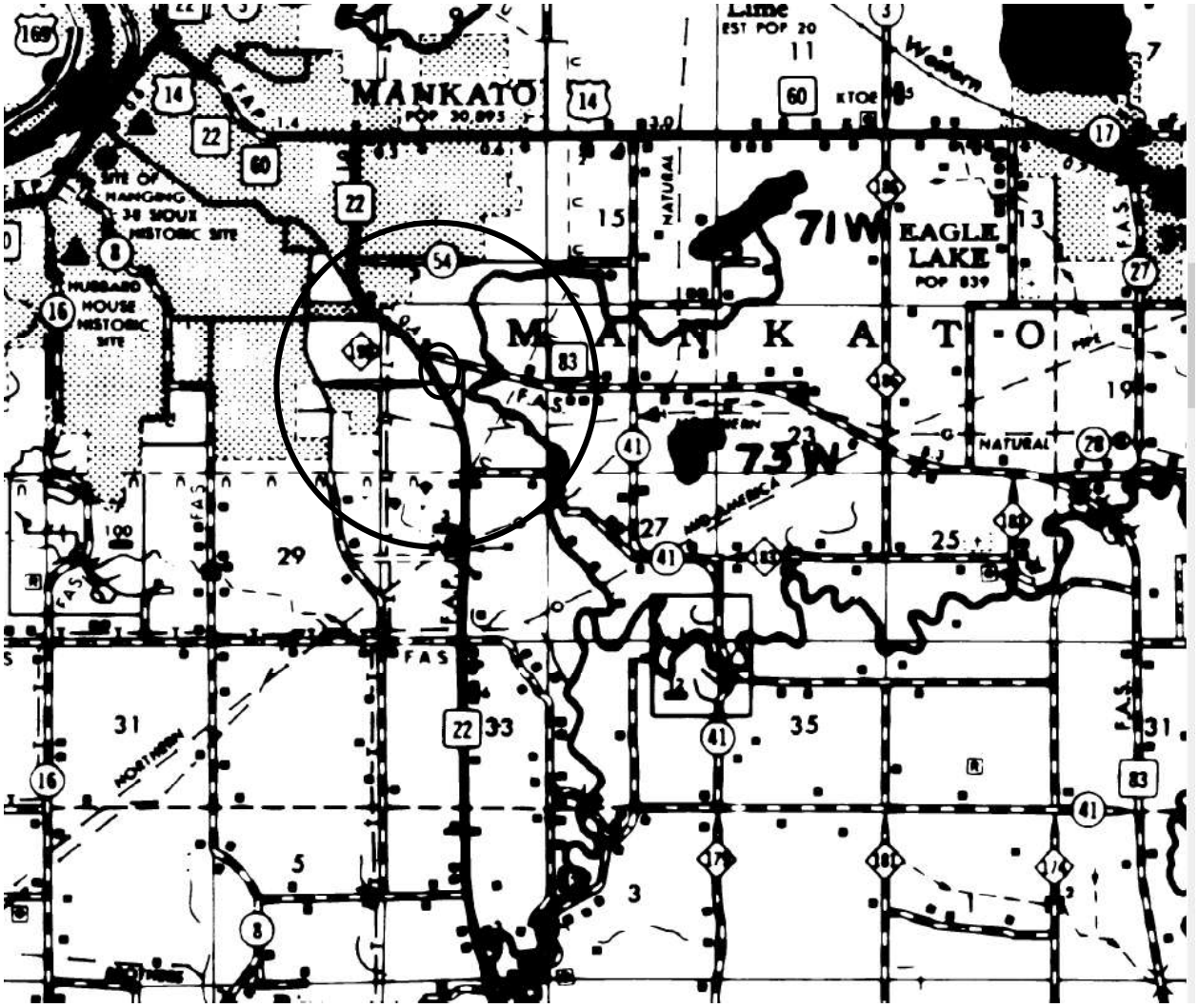
Precipitation data for target wetland location:
county: **Blue Earth** township number: **108N**
township name: **Mankato** range number: **26W**
nearest community: **Mankato** section number: **21**

Aerial photograph or site visit date:
Wednesday, May 28, 2025

Score using 1991-2020 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	first prior month: **April 2025**	second prior month: **March 2025**	third prior month: **February 2025**
estimated precipitation total for this location:	**3.66R**	**4.05R**	**0.23**
there is a 30% chance this location will have less than:	1.98	1.46	0.59
there is a 30% chance this location will have more than:	4.05	2.42	1.29
type of month: dry normal wet	**normal**	**wet**	**dry**
monthly score	**3 * 2 = 6**	**2 * 3 = 6**	**1 * 1 = 1**
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	**13 (Normal)**		

Period-of-Record Summary Statistics															
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	WARM	ANN	WAT
30%	0.44	0.47	1.07	1.73	2.63	3.53	2.55	2.69	1.94	1.11	0.66	0.51	16.63	26.63	26.42
70%	1.03	1.13	2.24	3.27	4.36	5.48	4.89	4.70	3.83	2.57	1.98	1.25	21.31	32.54	32.10
mean	0.84	0.87	1.74	2.60	3.73	4.77	3.80	3.92	3.23	2.10	1.44	1.02	19.46	30.04	30.10
1991-2020 Summary Statistics															
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	WARM	ANN	WAT
30%	0.77	0.59	1.46	1.98	3.58	4.40	3.65	3.59	1.89	1.53	0.98	0.71	18.35	30.19	30.86
70%	1.26	1.29	2.42	4.05	4.73	5.58	5.80	5.29	4.52	3.30	1.93	1.63	25.19	36.76	37.54
mean	1.00	1.04	1.90	3.15	4.18	5.48	4.59	4.38	3.64	2.59	1.63	1.28	22.26	34.86	34.79
Year-to-Year Data															
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	WARM	ANN	WAT
2025	0.03	0.23	4.05R	3.66R											
2024	0.31	0.45	1.88	4.62	6.92	13.47	4.59	4.14	0.46	1.01	2.42	0.94	29.58	41.21	42.68
2023	2.88	2.33	2.42	1.84	6.41	2.34	2.61	4.07	2.45	3.97	0.09	1.78	17.88	33.19	31.34
2022	1.29	0.69	2.25	4.10	3.02	1.54	2.71	3.89	0.60	0.31	2.04	1.64	11.76	24.08	25.71
2021	1.03	0.62	3.16	1.34	2.79	2.75	3.37	3.78	1.37	3.34	0.73	1.55	14.06	25.83	25.22
2020	1.34	1.41	2.92	1.42	4.26	4.65	8.22	6.78	1.88	3.19	1.15	0.67	25.79	37.89	41.92
2019	1.23	3.06	2.89	4.55	6.26	4.61	8.85	1.92	5.67	5.38	2.21	1.45	27.31	48.08	45.53
2018	1.48	1.22	1.80	2.97	4.50	9.94	5.07	3.51	8.68	2.83	1.56	2.10	31.70	45.66	44.95
2017	1.06	1.13	1.13	3.90	4.19	4.07	5.69	5.19	2.16	4.95	0.08	0.75	21.30	34.30	35.50
2016	0.32	0.88	2.41	3.01	3.70	5.48	6.60	10.29	13.11	3.55	1.49	1.94	39.18	52.78	54.93
2015	0.77	0.59	0.78	2.50	6.50	5.11	6.09	6.07	5.34	1.90	4.05	3.18	29.11	42.88	37.81
2014	1.21	1.83	1.44	5.70	3.70	11.72	0.70	3.63	1.89	2.05	1.01	1.00	21.64	35.88	37.42
2013	0.81	1.38	2.36	5.81	4.23	5.25	4.26	2.43	2.42	3.66	0.71	1.23	18.59	34.55	32.52
2012	0.77	2.28	1.87	3.23	7.56	1.25	1.24	1.49	0.77	1.31	0.58	1.68	12.31	24.03	23.21
2011	1.66	1.63	2.43	3.00	4.25	5.48	5.71	1.07	0.96	0.92	0.19	1.64	17.47	28.94	32.53
2010	1.15	1.25	1.77	1.69	2.80	9.83	4.95	4.51	10.48	0.88	2.03	3.43	32.57	44.77	49.38
2009	0.76	1.24	2.75	1.87	1.46	3.58	2.21	3.92	1.01	6.46	1.52	2.97	12.18	29.75	25.11
2008	0.36	0.42	1.88	4.41	4.05	3.91	5.07	1.94	1.68	2.49	2.02	1.80	16.65	30.03	29.54
2007	1.54	1.78	3.08	1.00	2.47	2.25	3.99	8.69	3.49	4.26	0.21	1.35	20.89	34.11	31.96
2006	1.01	0.45	1.60	4.01	1.17	5.65	2.14	3.87	3.07	0.48	1.47	1.72	15.90	26.64	28.63
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	WARM	ANN	WAT
2005	1.01	1.40	1.34	4.38	5.25	3.06	1.89	4.69	5.35	2.49	1.69	1.48	20.24	34.03	30.98
2004	0.51	1.25	2.55	1.56	6.20	6.89	5.40	5.90	5.72	1.24	1.16	0.21	30.11	38.59	38.13
2003	0.38	0.64	1.99	1.88	4.02	3.14	3.99	1.44	2.21	0.68	0.75	0.72	14.80	21.84	23.35
2002	0.24	0.49	1.64	2.76	2.41	5.61	2.00	5.54	2.24	3.19	0.25	0.22	17.80	26.59	28.33
2001	1.57	1.88	1.33	5.57	4.41	3.82	2.85	1.70	2.13	1.60	3.25	0.55	14.91	30.66	31.24
2000	0.82	1.13	1.20	0.80	5.63	7.42	4.23	2.23	0.82	1.11	3.24	1.63	20.33	30.26	27.54
1999	1.53	0.25	1.47	6.18	5.51	5.56	6.11	3.66	0.72	2.27	0.67	0.32	21.56	34.25	36.60



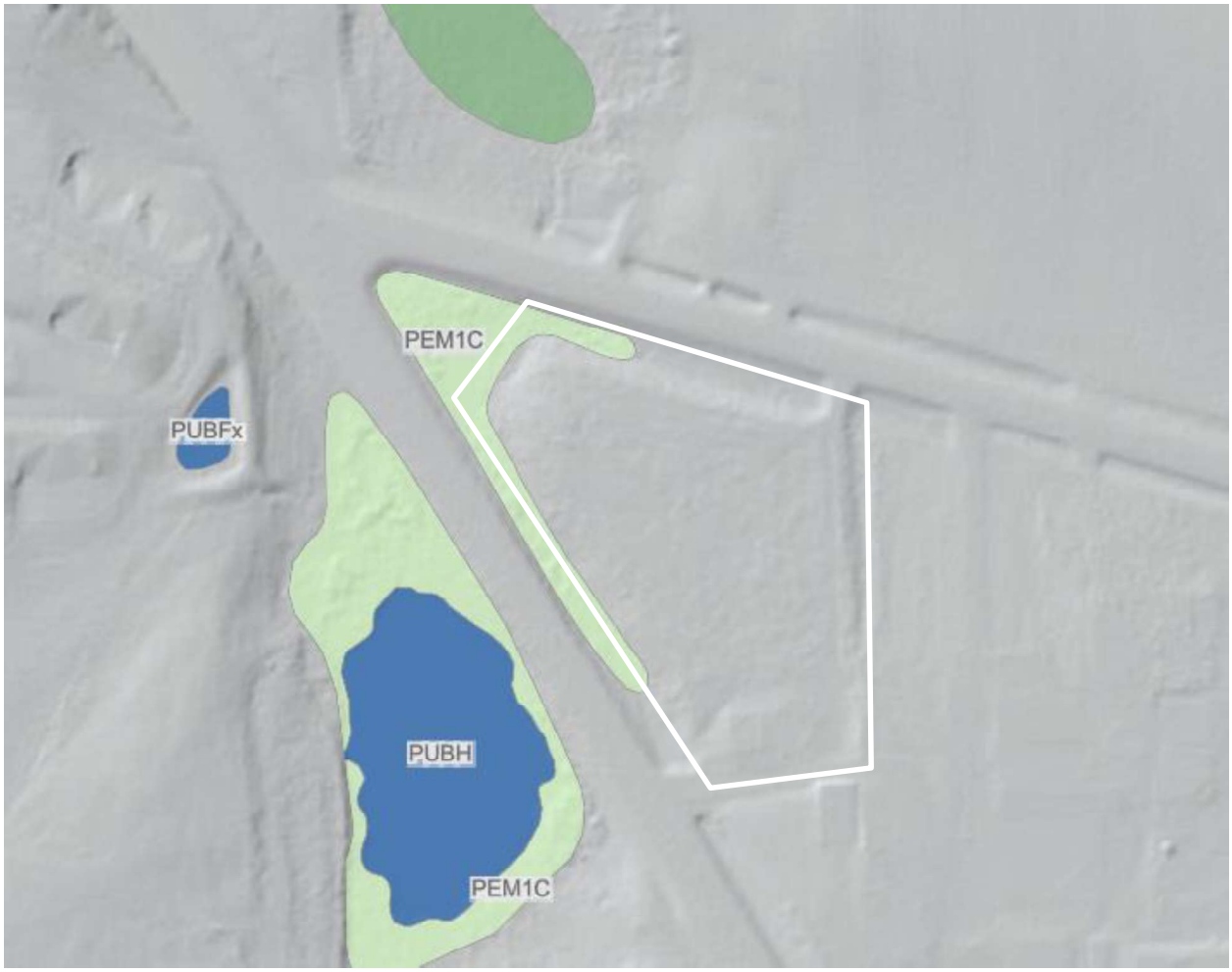
Public Waters Inventory of Blue Earth County

Minnesota Department of Natural Resources

(1"= 1 Mile Scale)

↑N

Mankato Apartments Site **Aquatic EcoSolutions, Inc.**



MN Wetland Finder Cowardin and PWI
MN DNR Interactive Map

↑N

Mankato Apartments Site **Aquatic EcoSolutions, Inc.**

National Wetland Delineation (NWI)
US Geological Survey/US Fish & Wildlife Service

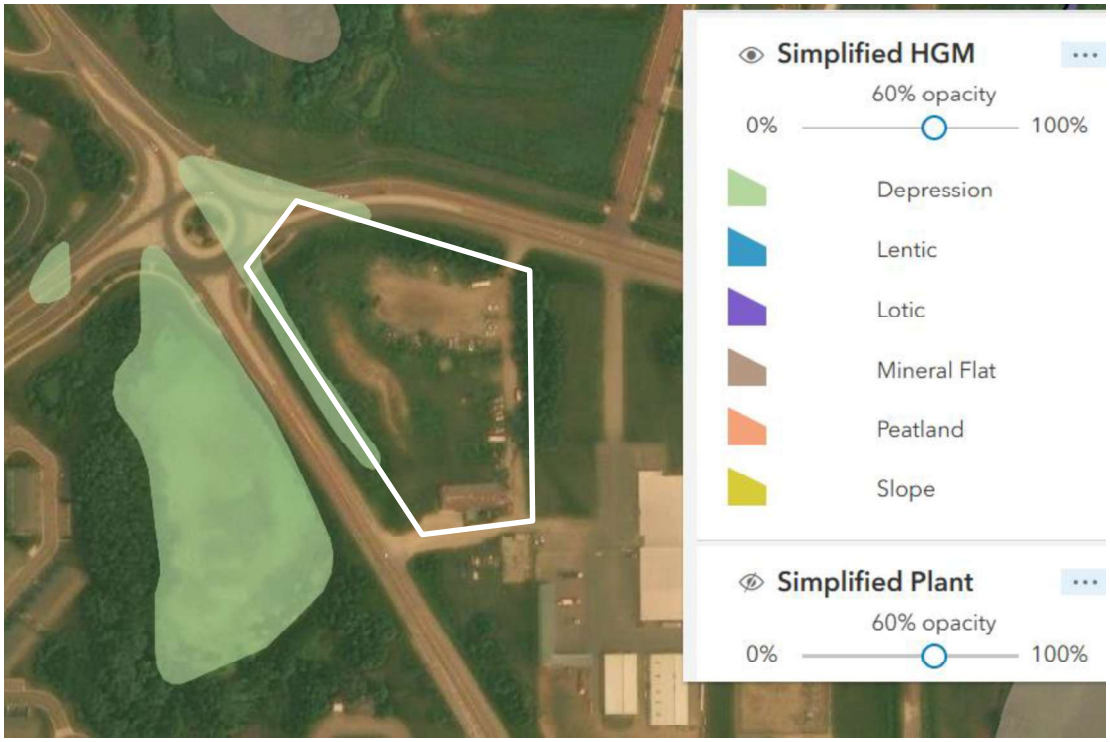
↑N

Mankato Apartments Site **Aquatic EcoSolutions, Inc.**

Mn NWI Map
Landview Interactive Map

↑N

Mankato Apartments Site **Aquatic EcoSolutions, Inc.**

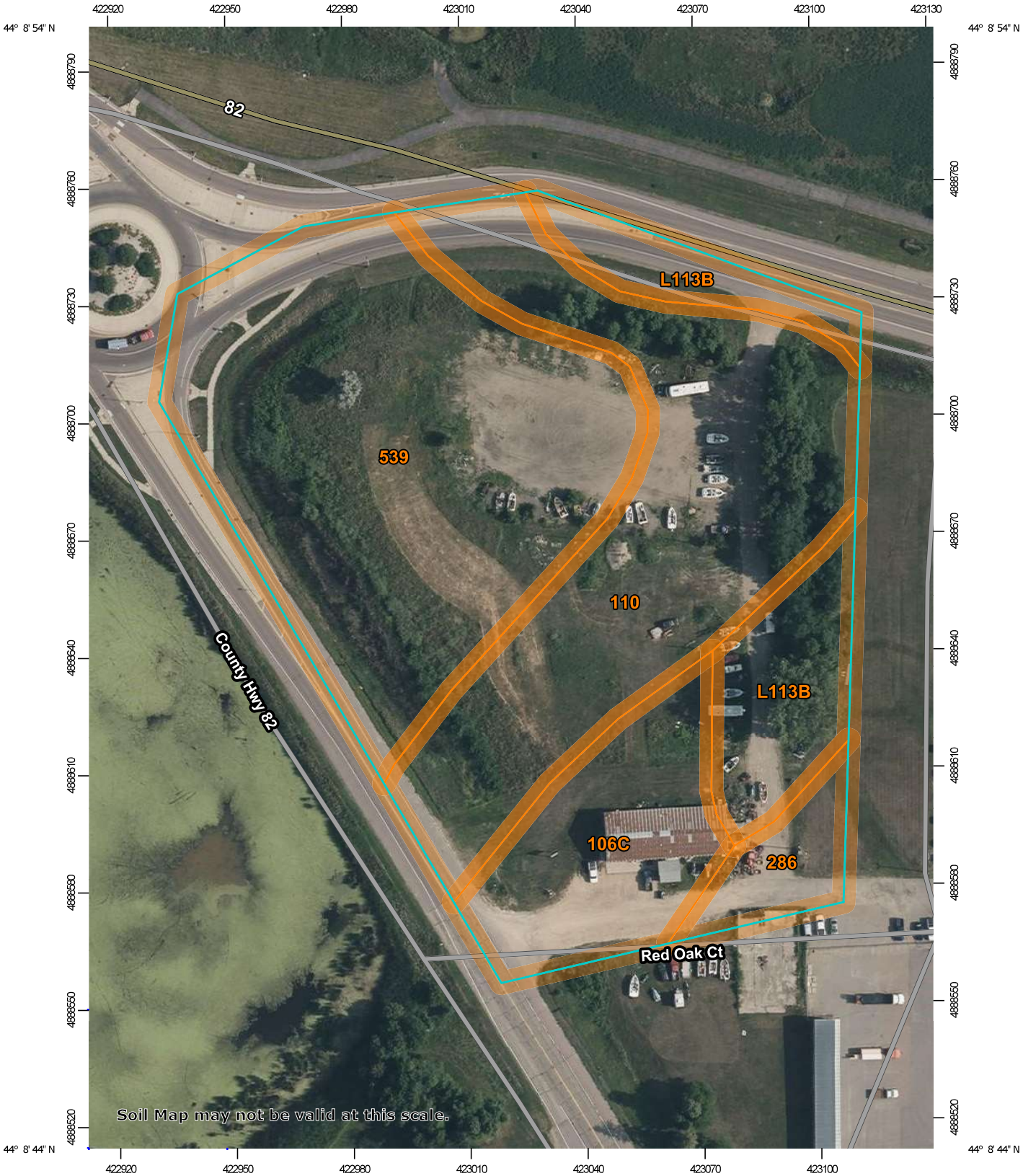


MN Wetland Finder Simplified HGM
MN DNR Interactive Map

↑N

Mankato Apartments Site **Aquatic EcoSolutions, Inc.**

Soil Map—Blue Earth County, Minnesota



Map Scale: 1:1,400 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

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 Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Blue Earth County, Minnesota
Survey Area Data: Version 22, Sep 7, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 2, 2023—Aug 8, 2023

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
106C	Lester loam, 6 to 10 percent slopes	0.8	12.4%
110	Marna silty clay loam, 0 to 2 percent slopes	2.1	32.7%
286	Shorewood silty clay loam, 1 to 6 percent slopes	0.3	3.9%
539	Klossner muck, lake plain, depressional, 0 to 1 percent slopes	2.6	39.4%
L113B	Reedslake-Le Sueur complex, 1 to 6 percent slopes	0.8	11.6%
Totals for Area of Interest		**6.5**	**100.0%**

LiDAR Topography
MnTOPO Interactive Map

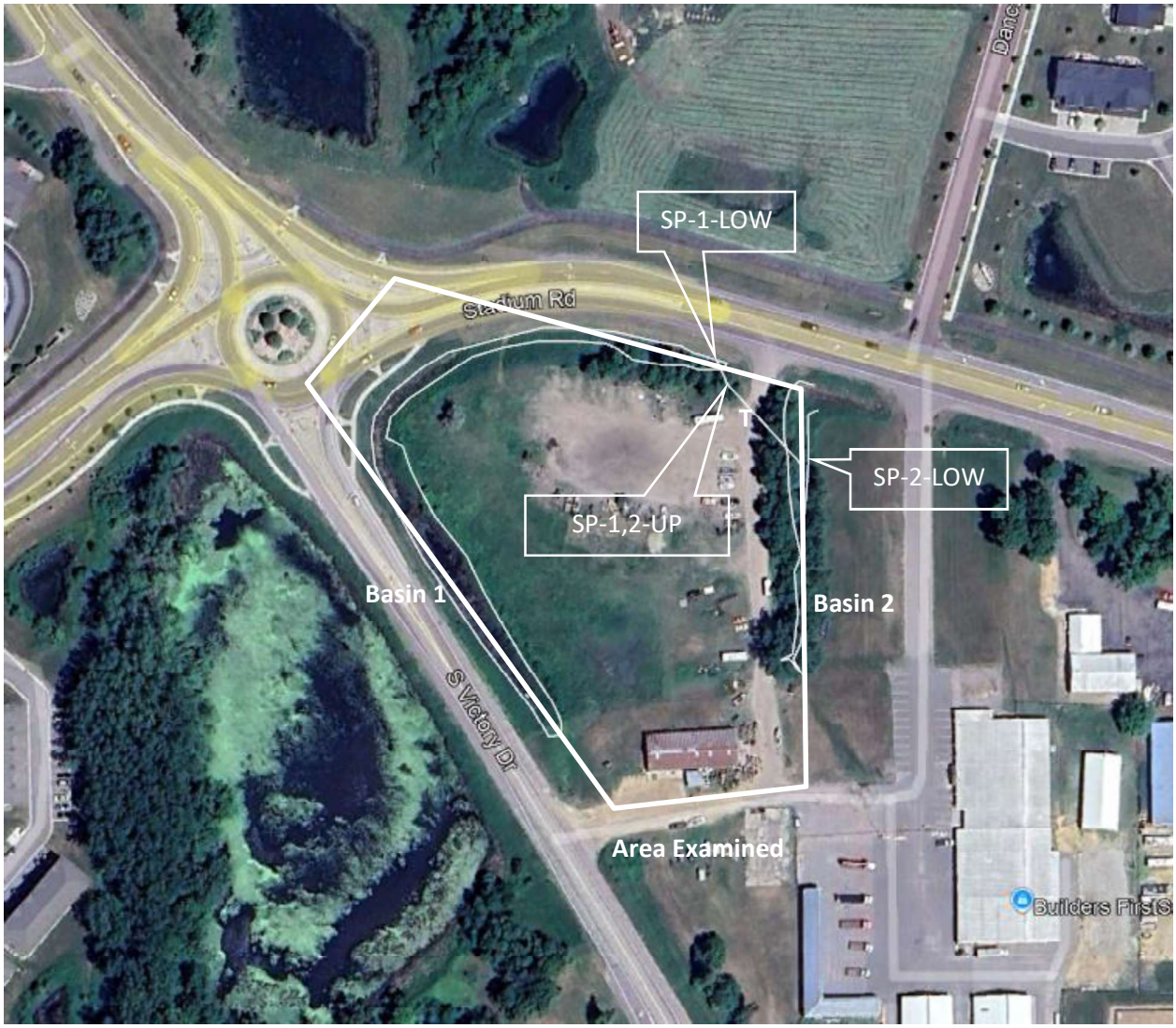
↑N

Mankato Apartments Site **Aquatic EcoSolutions, Inc.**

Approximate Parcel Location and County LiDAR
Blue Earth County Interactive Map

↑N

Mankato Apartments Site **Aquatic EcoSolutions, Inc.**



Approximate Edge Locations
6/10/2023 Aerial Photograph

↑N

Mankato Apartments Site **Aquatic EcoSolutions, Inc.**

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Mankato Apartments Site City/County: Mankato / Blue Earth County Sampling Date: 5 / 27 / 2025

Applicant/Owner: Growth Holdings, LLC State: MN Sampling Point: **1 UP**

Investigator(s): Robert Merila, Aquatic EcoSolutions, Inc. Section, Township, Range: Sec 21, T 108 N, R 26 W

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): none

Slope (%): 3 Lat: Long: Datum:

Soil Map Unit Name: 110 Marna silty clay loam, 0 to 2 percent slopes NWI classification: none / 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 x	**Is the Sampled Area within a Wetland?** Yes No x
Hydric Soil Present?	Yes No x	
Wetland Hydrology Present?	Yes No x	

Remarks: (Explain alternative procedures here or in a separate report)

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer negundo	20	Y	FAC
2. Junipera virginiana	20	Y	FACU
3.			
4.			
5.			
	40 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. Juniperus virginiana	10	Y	FACU
2. Acer negundo	10	Y	FAC
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Parthenocissus inserta	40	Y	FACU
2. Glechoma hederacea	30	Y	FACU
3. Bromus inermis	20	Y	FACU
4. Galium aparine	5	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	95 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 29 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species 90	x 3 =	90
FACU species 125	x 4 =	500
UPL species	x 5 =	
Column Totals: 155 (A)		590 (B)

Prevalence Index = B/A = 3.81

Hydrophytic Vegetation Indicators:

___ Rapid Test for Hydrophytic Vegetation

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ 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: 1 UP

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
0-14	7.5YR3/2	100					loam	
14-20	10YR4/3	100					silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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)
- ___ 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF 12)
- ___ 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:

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? (includes capillary fringe) Yes _____ No x Depth (inches): _____

Wetland Hydrology Present? Yes _____ No x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Mankato Apartments Site City/County: Mankato / Blue Earth County Sampling Date: 5 / 27 / 2025

Applicant/Owner: Growth Holdings, LLC State: MN Sampling Point: **1 LOW**

Investigator(s): Robert Merila, Aquatic EcoSolutions, Inc. Section, Township, Range: Sec 27, T 108 N, R 26 W

Landform (hillslope, terrace, etc.): excavated roadside ditch Local relief (concave, convex, none): none

Slope (%): 1 Lat: Long: Datum:

Soil Map Unit Name: L113B Reedslake-Le Sueur complex, 1 to 6 percent slopes NWI classification: none / 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: (Explain alternative procedures here or in a separate report)

Excavated roadside ditch

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	85	Y	FACW
2. Carex stricta	10	N	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
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 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 10	x 1 =	10
FACW species 85	x 2 =	170
FAC species _____	x 3 =	_____
FACU species _____	x 4 =	_____
UPL species _____	x 5 =	_____
Column Totals: 95 (A)		180 (B)

Prevalence Index = B/A = 1.90

Hydrophytic Vegetation Indicators:

___ Rapid Test for Hydrophytic Vegetation

x Dominance Test is >50%

x Prevalence Index is ≤3.0[1]

___ 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.)

SOIL

Sampling Point: 1 LOW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR2/1	100					loam	
10-17	10YR3/1	100					silt loam	
17-20	10YR4/1	100					silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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)
- _x_ 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)
- ___ 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)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF 12)
- ___ 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:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _x_ 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)
- _x_ Geomorphic Position (D2)
- _x_ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _x_ No ___ Depth (inches): 1

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:

Roadside ditch stormwater conveyance; water from recent rainfall.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Mankato Apartments Site City/County: Mankato / Blue Earth County Sampling Date: 5 / 27 / 2025

Applicant/Owner: Growth Holdings, LLC State: MN Sampling Point: **2 UP**

Investigator(s): Robert Merila, Aquatic EcoSolutions, Inc. Section, Township, Range: Sec 21, T 108 N, R 26 W

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): none

Slope (%): 3 Lat: Long: Datum:

Soil Map Unit Name: 110 Marna silty clay loam, 0 to 2 percent slopes NWI classification: none / 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 x	**Is the Sampled Area within a Wetland?** **Yes No x**
Hydric Soil Present?	Yes No x	
Wetland Hydrology Present?	Yes No x	

Remarks: (Explain alternative procedures here or in a separate report)

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer negundo	20	Y	FAC
2. Junipera virginiana	20	Y	FACU
3.			
4.			
5.			
	40 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. Juniperus virginiana	10	Y	FACU
2. Acer negundo	10	Y	FAC
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Parthenocissus inserta	40	Y	FACU
2. Glechoma hederacea	30	Y	FACU
3. Bromus inermis	20	Y	FACU
4. Galium aparine	5	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	95 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 29 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species 90	x 3 =	90
FACU species 125	x 4 =	500
UPL species	x 5 =	
Column Totals: 155 (A)		590 (B)

Prevalence Index = B/A = 3.81

Hydrophytic Vegetation Indicators:

- Rapid Test for Hydrophytic Vegetation
- Dominance Test is >50%
- Prevalence Index is ≤3.0[1]
- 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: 2 UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	7.5YR3/2	100					loam	
14-20	10YR4/3	100					silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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)
___ 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)
___ Dark Surface (S7)
___ Iron-Manganese Masses (F12)
___ Very Shallow Dark Surface (TF 12)
___ 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:

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? (includes capillary fringe) Yes _____ No x Depth (inches): _____

Wetland Hydrology Present? Yes _____ No x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Mankato Apartments Site City/County: Mankato / Blue Earth County Sampling Date: 5 / 27 / 2025

Applicant/Owner: Growth Holdings, LLC State: MN Sampling Point: **2 LOW**

Investigator(s): Robert Merila, Aquatic EcoSolutions, Inc. Section, Township, Range: Sec 27, T 108 N, R 26 W

Landform (hillslope, terrace, etc.): excavated roadside ditch Local relief (concave, convex, none): none

Slope (%): 1 Lat: Long: Datum:

Soil Map Unit Name: 110 Marna silty clay loam, 0 to 2 percent slopes NWI classification: none / 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: (Explain alternative procedures here or in a separate report)

Excavated roadside ditch

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	95	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	95 = Total Cover		
Woody Vine Stratum (Plot size:)			
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 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 95	x 2 =	190
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: 95 (A)		190 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

___ Rapid Test for Hydrophytic Vegetation

x Dominance Test is >50%

x Prevalence Index is ≤3.0[1]

___ 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.)

SOIL

Sampling Point: 2 LOW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR2/1	100					loam	
3-15	10YR3/1	100					silt loam	
15-20	10YR4/1	100					silty clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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)
_x_ 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)
___ 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)
___ Dark Surface (S7)
___ Iron-Manganese Masses (F12)
___ Very Shallow Dark Surface (TF 12)
___ 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:

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)
_x_ 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)
_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:

Roadside ditch stormwater conveyance.

SSTS LLC
8112 W 16th St, St Louis Park, MN
www.s2traffic.com

September 19th, 2025

To: **Shawn Meschke, PE – APX Construction Group**

From: **Katie Schmidt, PE - SSTS LLC (MN PE #47147)**

Re: **Traffic Study – Mankato Apartments (901 S Victory Dr) Traffic Study, Mankato, MN**

SSTS, LLC has performed a traffic analysis for the Mankato Apartment Development located at 901 S Victory Dr, referred to as the Proposed Project. This development encompasses approximately 4.5 acres situated on the south side of Stadium Rd (CSAH 60) and east of S Victory Dr. The current land uses consist of a small engine repair shop and vacant land that will be redeveloped.

The Proposed Project consists of 72 apartment units distributed between two three-story buildings, along with a 150-stall surface parking lot. Access to the project is proposed via the existing driveway on S Victory Dr. Traffic will not be permitted to cut through to the eastern property. **Figure 1** illustrates the location and layout of the Proposed Project.

This study aims to assess the traffic impacts generated by the Proposed Project on the operations and safety of the adjacent roadway network and the proposed access driveway. Two existing intersections were analyzed: the Stadium Rd/S Victory Dr roundabout and the side-street stop-controlled intersection at S Victory Dr/Stadium Ln. Additionally, the proposed intersection of S Victory Dr and the Access Driveway was evaluated under Build conditions. Study years include Year 2025 (existing conditions) and Year 2027 without and with the Proposed Project. The following items will be reviewed to provide informed recommendations for safely accommodating traffic:

- Existing Conditions – Geometry and traffic volumes.
- Safety – Review of crash history.
- Future Conditions – Details on background growth and site-generated traffic. Descriptions of 2027 No-Build and 2027 Build Scenarios.
- Traffic Operations Analysis – Summary of Year 2025 Existing Conditions, and Year 2027 No-Build and Build Conditions.

EXISTING CONDITIONS

The existing conditions of the study area roadways and intersections are noted in **Table 1** and on **Figure 2**. Average Daily Traffic (ADT) volumes noted on Figure 2 are from MnDOT's traffic mapping application (MnDOT ADT Map).

Table 1. Study Roadway Characteristics

Roadway	Ownership	Functional Class*	Typical Section	Posted Speed
Stadium Rd (CSAH 60)	Blue Earth County	Minor Arterial	2-Lanes w/Turn Lanes (W of Victory Rd) 3-Lanes W/CLTL (E of Victory Rd)	40 mph
S Victory Dr	City of Mankato (S of Stadium Rd) Blue Earth County (N of Stadium Rd)	Major Collector	2-Lanes	45 mph
Stadium Ln	City of Mankato	Local	2-Lanes	30 mph

* Based on Enterprise MnDOT Mapping Application (EMMA) - EMMA Link

AM and PM peak hour turning movement counts were conducted at the two existing study area intersections (Stadium Rd/S Victory Dr roundabout and S Victory Dr/Stadium Ln side-street stop-controlled intersection) on Wednesday, September 10th, 2025. The AM peak traffic hour was found to occur from 7:15 to 8:15 AM, and the PM peak traffic hour was found to occur from 4:30 to 5:30 PM.

Figure 3 shows the existing traffic volumes at the study area intersections. Traffic volumes were balanced through the intersections as needed. Detailed traffic counts are included in Appendix A.

CRASH HISTORY REVIEW

Historical crash data from MnDOT's Crash Mapping Analysis Tool (MnCMAT) for the existing study area intersections was reviewed for 5 years (2020-2024) to note any existing safety concerns and to determine if the addition of site-generated traffic could exacerbate existing safety issues. Intersection Crash Rate (CR), MnDOT's Average Crash Rate for similar intersections, and Intersection Critical Crash Rate were reviewed. The Intersection Crash Rate is defined by the number of crashes occurring per million entering vehicles (MEV). MnDOT's Average Crash Rate is from published system-wide average crash rates for similar intersections. The Intersection Critical Crash Rate is used to determine if an intersection has a crash rate higher than similar facilities by a statistically significant amount. The critical rate is calculated by adjusting the system-wide average crash rate based on the amount of exposure and a statistical constant indicating the level of confidence. If the actual crash rate at a specific location exceeds the critical crash rate, it suggests that deficiencies in the intersection design or other factors may be contributing to the crashes. In such cases, further engineering investigation is recommended.

Table 2 summarizes the intersection crash data for the studied intersections and compares the overall crash rates to the critical crash rates. Based on the crash history at these intersections, there are no existing safety concerns, as the crash rates are lower than the critical crash rates.

Table 2. Intersection Crash Summary

Study Intersection and Control	Years of Data	Total Crashes	Crash Types	F&A Crashes*	Entering ADT	Intersection CR (per MEV)		
						CR	MnDOT Ave. CR	Critical CR
Stadium Rd & S Victory Dr Roundabout	5	5	Single Vehicle - 4 Rear End - 1	0	15,737	0.17	0.97	1.46
S Victory Dr & Stadium Ln Side-Street Stop	5	1	Rear End - 1	0	1,557	0.35	0.15	0.90

* F & A crashes are fatalities and serious injury crashes.

2027 NO-BUILD SCENARIO

Year 2027 was studied to correspond to the year after build-out of the Proposed Project, and No-Build and Build Scenarios were determined. The No-Build Scenario considers the traffic and geometric conditions that would be present at the time of completion of the Proposed Project, without the inclusion of the Proposed Project. The Build Scenario includes the volumes and geometric conditions with the Proposed Project.

To account for general background traffic growth in the area, an annual traffic growth rate was calculated based on historical AADT trends in the area from MnDOT's Traffic Mapping Application. An annual traffic growth rate of 2.35% was calculated and applied to the existing 2025 traffic volumes to estimate the 2027 No-Build traffic volumes shown on **Figure 4.**

2027 BUILD SCENARIO

The 2027 Build Scenario includes traffic from the Proposed Project. The volume of vehicle trips generated by the Proposed Project has been estimated for the weekday AM and PM peak traffic hours and on a daily basis using the data and methodology described in the Institute of Transportation Engineers' (ITE) **Trip Generation Manual**[1], which is a standard industry reference used by public a

[1] **Trip Generation Manual**, Institute of Transportation Engineers (ITE), 12th Edition

gencies to estimate trips generated by specific land uses. **Table 3** summarizes the trip generation estimates. ITE's Low Rise Multifamily land use corresponds to the proposed three-level apartment buildings.

Table 3. Trip Generation

Land Use	ITE Land Use Code	Size	Trips Generated:				
			AM Peak		PM Peak		Weekday ADT
			Enter	Exit	Enter	Exit	
Multifamily Housing (Low-Rise)	220	72 units	7	23	23	14	447
Totals			**7**	**23**	**23**	**14**	**447**
			30		**37**		

The Proposed Project is estimated to generate the following:

- 30 new trips (7 entering and 23 exiting) during the morning traffic peak hour,
- 37 new trips (23 entering and 14 exiting) during the evening traffic peak hour, and
- 447 daily trips.

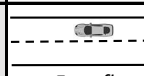
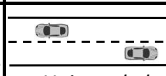
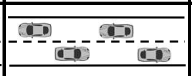
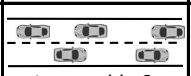
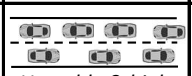
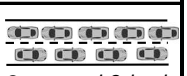
The primary travel pattern for residents of the Proposed Project is assumed to/from Minnesota State University via Stadium Rd, accounting for 70% of site-generated traffic. Additionally, it is estimated that 15% of the site-generated traffic is to/from the north on Victory Dr, 5% to/from the south on Victory Dr, and 10% to/from the east on Stadium Rd. **Figure 5** illustrates the distribution percentages of site-generated traffic and the resulting trip assignment at each intersection. The Build traffic volumes, shown on **Figure 6**, are formed when the No-Build traffic volumes are combined with the trip assignment traffic volumes.

Turning volumes at the S Victory Dr and the Access Driveway do not warrant turn lanes per industry references (NCHRP Reports) and the intersection was modeled with shared single lane approaches.

TRAFFIC OPERATIONS ANALYSIS

The operating conditions of intersections are assessed by comparing their capacity to the actual traffic volume. The industry standards for evaluating capacity are outlined in the **Highway Capacity Manual**[2]. These conditions are described in terms of driver delay, which is represented by a Level of Service (LOS) grade, where "A" indicates the best conditions and "F" signifies the worst. Generally, LOS "D" marks the threshold for acceptable operations. **Table 4** provides a summary of the LOS and delay criteria for unsignalized intersections and roundabouts.

Table 4. Level of Service Criteria – Unsignalized Intersections & Roundabouts

LOS	A	B	C	D	E	F
Delay	0-10 seconds	>10-15 seconds	>15-25 seconds	>25-35 seconds	>35-50 seconds	>50 seconds
Description	 *Free-flow operation*	 *Unimpeded operation*	 *Stable operation*	 *Less stable & more delay*	 *Unstable & high delay*	 *Congested & back-ups*

Another component of operational analyses is a study of queuing. An intersection can operate with an acceptable LOS, but if queues from the intersection extend back to block adjacent intersections, entrances to turn lanes, or access driveways, unsafe conditions could result. This study reports the industry design standard 95th Percentile Queue Length.

This study utilized the Synchro/SimTraffic software package (12th Edition) for the side-street stop control operational analyses and RODEL Roundabout Analysis Software for the roundabout operational

[2] **Highway Capacity Manual (HCM)**, Transportation Research Board, 7th Edition

analyses. LOS D was considered the threshold for acceptable operations. LOS, delay, and queues are reported for each intersection.

Intersection operational analysis results for Existing Conditions, 2027 No-Build Conditions, and 2027 Build Conditions are reported in **Table 5** and **Table 6** for the AM and PM peak hours, respectively.

Table 5. Operational Analysis Results – AM Peak Hour

Intersection	Lane	2025 Existing AM Peak Hour		2027 No-Build AM Peak Hour		2027 Build AM Peak Hour	
		Delay	*Queue (')*	*Delay*	*Queue (')*	*Delay*	*Queue (')*
Stadium Rd & Victory Dr (Roundabout)	*EB*	A 3.8	49	A 3.9	53	A 3.9	54
	WB	A 6.0	48	A 6.2	53	A 6.4	55
	NB	A 5.1	24	A 5.2	27	A 5.4	30
	SB	A 4.2	9	A 4.3	10	A 4.3	10
	Overall	A 4.5		A 4.6		A 4.7	
Victory Dr & Stadium Ln (Side-Street Stop)	*EB LTR*	B 10.5	3	B 10.7	3	B 10.7	3
	WB LTR	A 9.4	0	A 9.5	0	A 9.5	0
	NB LT	A 7.4	0	A 7.4	0	A 7.4	0
	NB R	A 0.0	0	A 0.0	0	A 0.0	0
	SB LT	A 7.7	0	A 7.7	0	A 7.7	0
	SB R	A 0.0	0	A 0.0	0	A 0.0	0
	Overall	A 0.7		A 0.7		A 0.7	
Victory Dr & Access (Side-Street Stop)	*WB LR*	NA		NA		A 9.8	3
	NB TR					A 0.0	0
	SB LT					A 7.8	0
	Overall					A 0.8	

Table 6. Operational Analysis Results – PM Peak Hour

Intersection	Lane	2025 Existing PM Peak Hour		2027 No-Build PM Peak Hour		2027 Build PM Peak Hour	
		Delay	*Queue (')*	*Delay*	*Queue (')*	*Delay*	*Queue (')*
Stadium Rd & Victory Dr (Roundabout)	*EB*	A 4.0	59	A 4.2	65	A 4.2	67
	WB	A 7.9	103	A 8.6	119	A 8.8	122
	NB	A 5.0	19	A 5.2	21	A 5.3	23
	SB	A 5.7	30	A 6.0	33	A 6.1	35
	Overall	A 5.5		A 5.8		A 5.9	
Victory Dr & Stadium Ln (Side-Street Stop)	*EB LTR*	B 11.1	3	B 11.3	3	B 11.3	3
	WB LTR	A 9.7	0	A 9.7	0	A 9.7	0
	NB LT	A 7.6	0	A 7.6	0	A 7.6	0
	NB R	A 0.0	0	A 0.0	0	A 0.0	0
	SB LT	A 7.5	0	A 7.6	0	A 7.6	0
	SB R	A 0.0	0	A 0.0	0	A 0.0	0
	Overall	A 0.7		A 1.0		A 1.0	
Victory Dr & Access (Side-Street Stop)	*WB LR*	NA		NA		A 9.5	3
	NB TR					A 0.0	0
	SB LT					A 7.7	3
	Overall					A 0.7	

The following summarizes the operational results for each study year:

- 2025 Existing Conditions - The two study area intersections function acceptably under existing conditions. LOS is B or better for all approach lanes. Queuing is safely managed by the current roadway geometry.
- 2027 No-Build Conditions - The two study area intersections also operate acceptably under 2027 No-Build conditions. The growth in background traffic slightly increases delays and queuing. LOS remains B or better for all approach lanes. Queuing continues to be safely managed by the current roadway geometry.
- 2027 Build Conditions - The intersections and proposed access within the study area function acceptably under 2027 Build conditions with the Proposed Project. The addition of site-generated traffic causes slight increases in delay and queuing. LOS remains B or better for all approach lanes. Queuing is safely accommodated by the existing roadway geometry. Mainline turn lanes at the access are not necessary on Victory Dr based on operations.

SUMMARY

- ★ The number of new vehicle trips estimated to be generated by the Proposed Project is 30 trips during the morning peak hour (7 entering and 23 exiting), 37 trips during the evening peak hour (23 entering and 14 exiting), and 447 trips daily. This volume is low, resulting in roughly one new trip every two minutes during peak hours.
- ★ The operational analyses show acceptable conditions in the study area for both existing and 2027 No-Build scenarios. The crash history review revealed no safety issues.
- ★ The operation analyses for 2027 Build conditions with the Proposed Project indicate acceptable study area operations. The Victory Dr and Access intersection functions acceptably with single-lane approaches.

Figure 1. Project Location and Site Layout

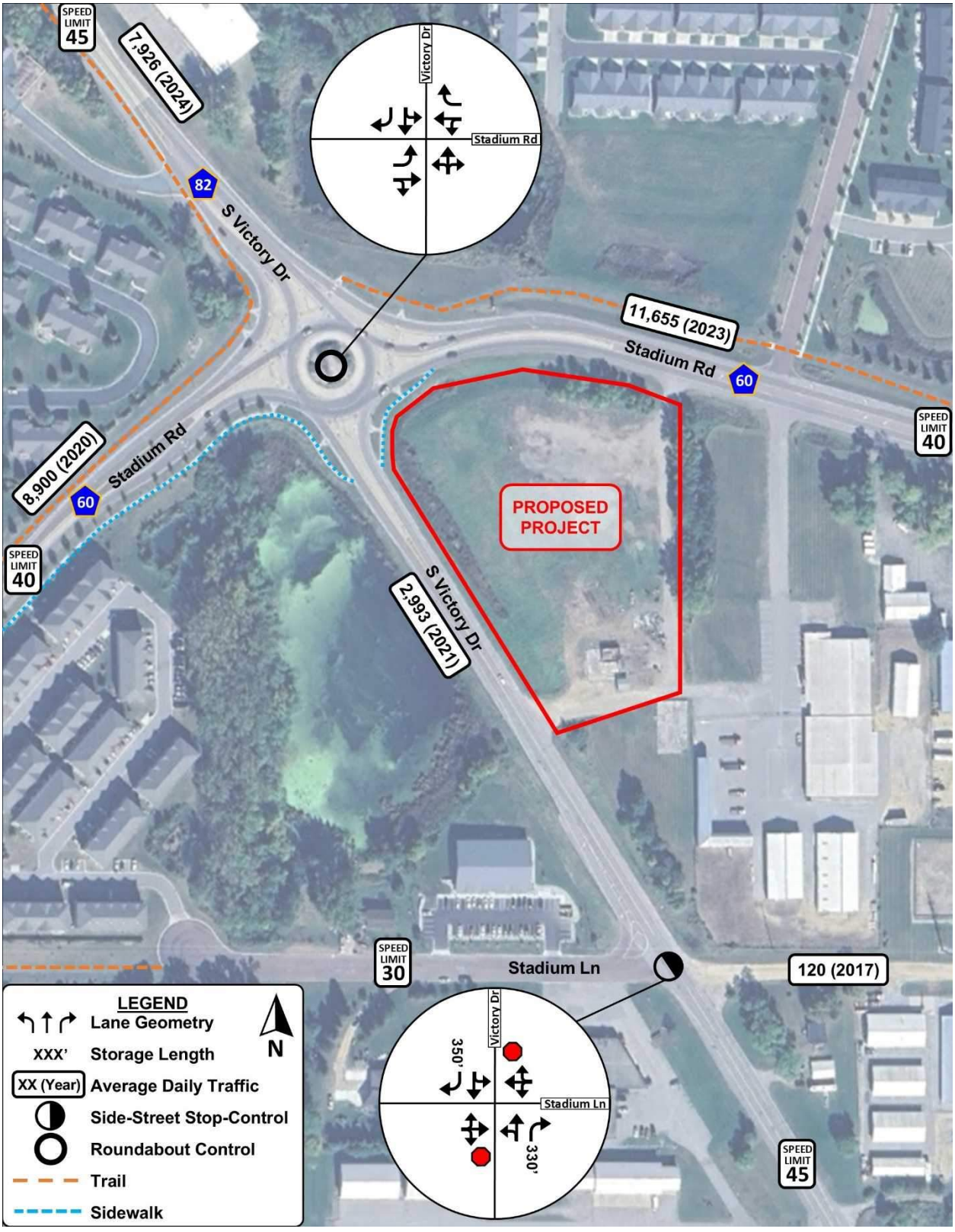


Figure 2. Existing Conditions

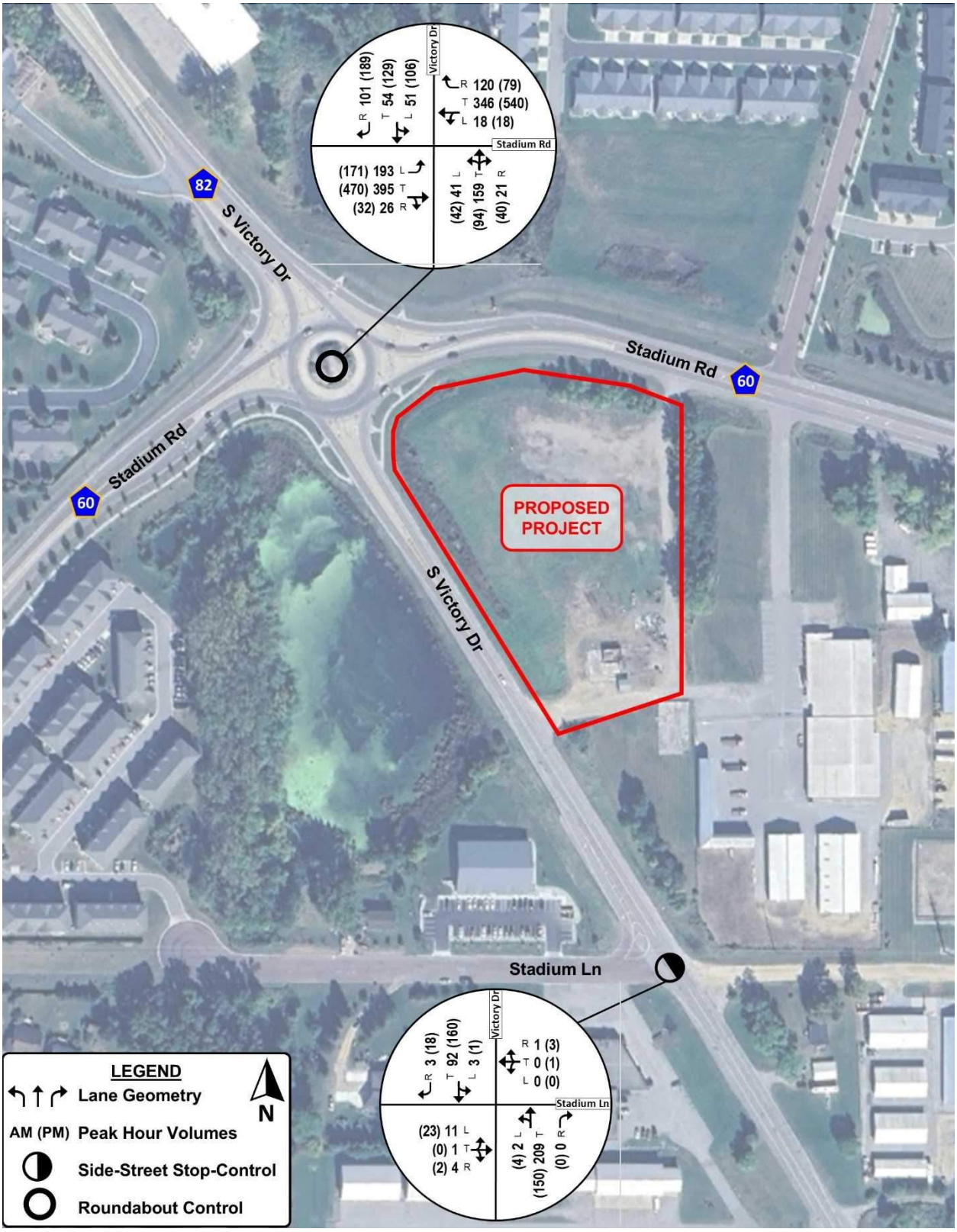


Figure 3. Existing 2025 Traffic Volumes

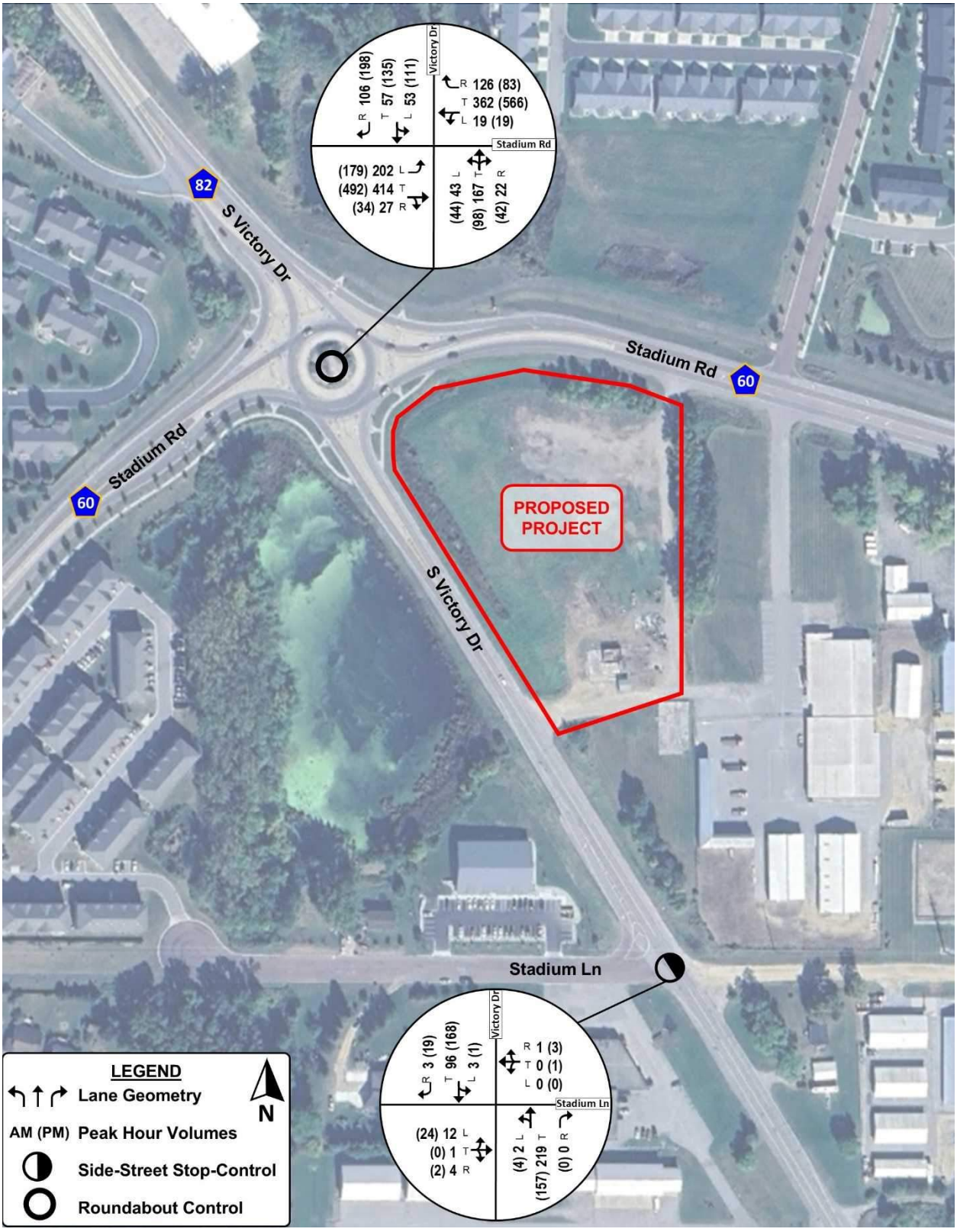


Figure 4. 2027 No-Build Traffic Volumes

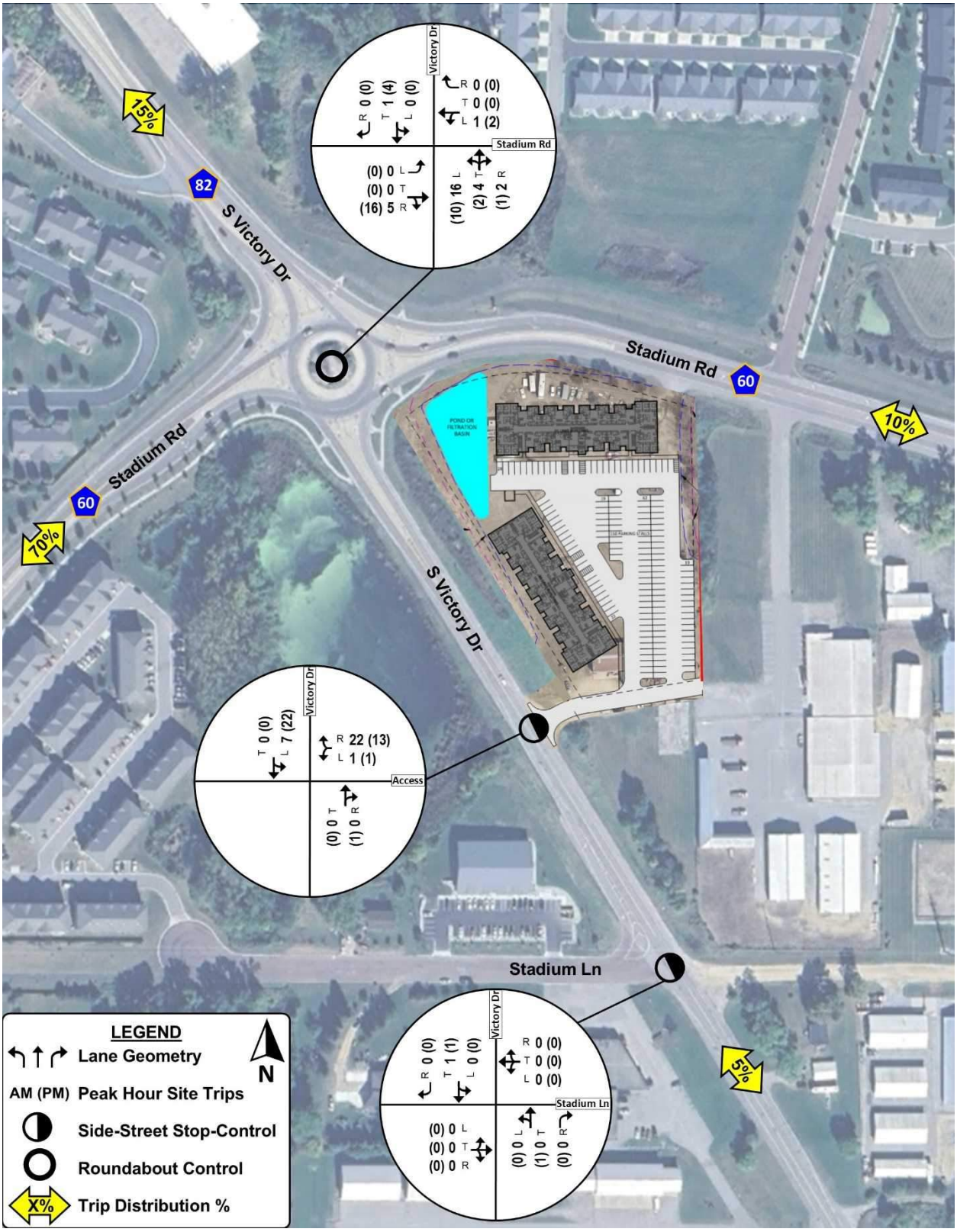


Figure 5. Trip Distribution and Assignment

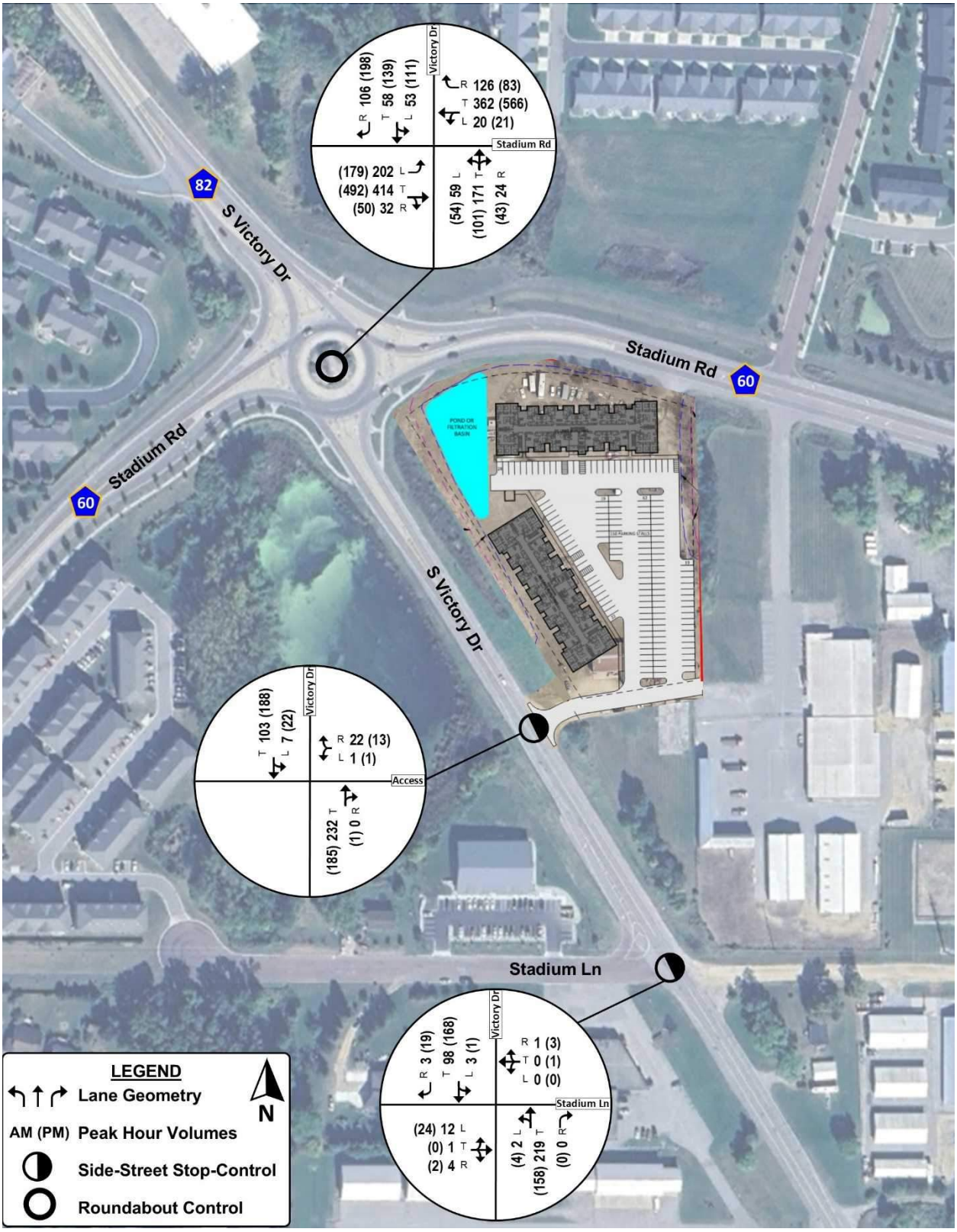


Figure 6. 2027 Build Traffic Volumes

Appendix A – Turning Movement Counts

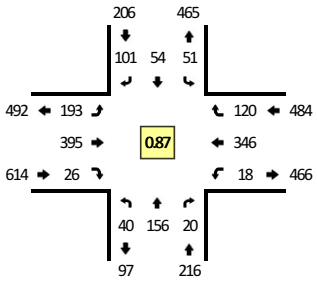
Type of peak hour being reported: Intersection Peak

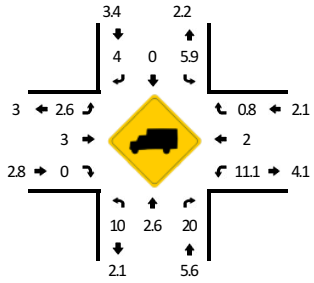
Method for determining peak hour: Total Entering Volume

LOCATION: S Victory Dr -- Stadium Rd
CITY/STATE: Mankato, MN

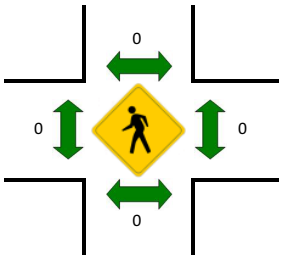
QC JOB #: 17227201
DATE: Wed, Sep 10 2025

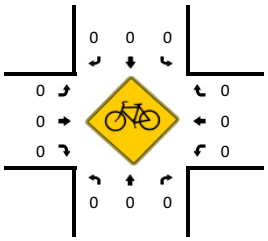
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

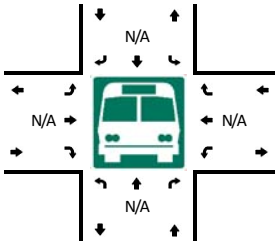


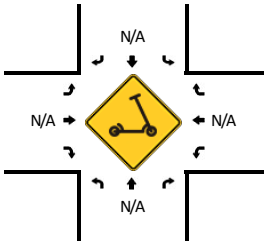


TRUE DATA TO IMPROVE MOBILITY









15-Min Count Period Beginning At	S Victory Dr (Northbound)				S Victory Dr (Southbound)				Stadium Rd (Eastbound)				Stadium Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	4	25	4	0	9	8	11	1	32	76	2	1	3	42	21	0	239	
7:15 AM	11	31	4	0	13	8	24	0	47	84	8	0	5	79	28	1	343	
7:30 AM	15	50	6	0	9	13	28	0	47	89	4	1	1	107	31	0	401	
7:45 AM	10	46	5	0	14	17	30	0	53	117	7	1	6	93	39	0	438	1421
8:00 AM	4	29	5	0	14	16	19	1	41	105	7	3	5	67	22	0	338	1520
8:15 AM	9	24	3	0	9	7	14	0	31	93	7	0	3	88	31	0	319	1496
8:30 AM	4	22	4	0	11	17	24	0	36	57	2	3	2	115	26	0	323	1418
8:45 AM	3	23	2	0	8	9	18	0	34	58	6	0	3	65	18	0	247	1227

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	40	184	20	0	56	68	120	0	212	468	28	4	24	372	156	0	1752
Heavy Trucks	0	0	4		0	0	4		0	8	0		4	16	4		40
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

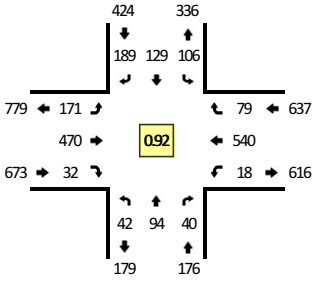
Report generated on 9/17/2025 8:29 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

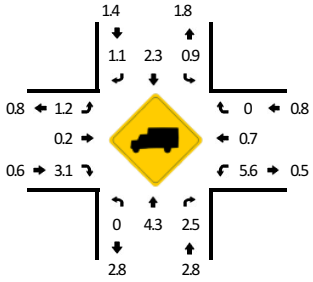
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

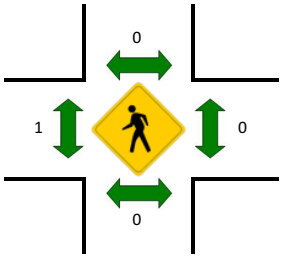
LOCATION: S Victory Dr -- Stadium Rd | **QC JOB #:** 17227202
CITY/STATE: Mankato, MN | **DATE:** Wed, Sep 10 2025

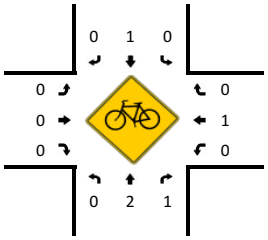
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

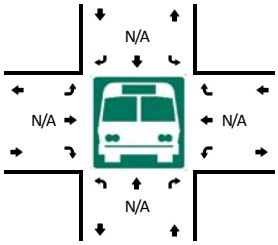


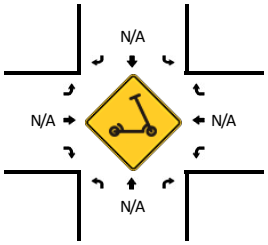
TRUE DATA TO IMPROVE MOBILITY











15-Min Count Period Beginning At	S Victory Dr (Northbound)				S Victory Dr (Southbound)				Stadium Rd (Eastbound)				Stadium Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	8	18	8	0	28	37	49	0	40	134	7	2	6	116	21	0	474	
4:15 PM	7	25	2	0	26	26	40	0	48	129	3	0	4	142	17	0	469	
4:30 PM	16	22	14	0	26	39	35	0	45	114	8	3	4	137	19	0	482	
4:45 PM	7	30	8	0	26	28	42	0	45	109	12	2	7	122	20	0	458	1883
5:00 PM	12	22	7	0	18	28	51	0	32	118	7	2	5	129	21	0	452	1861
5:15 PM	7	20	11	0	36	34	61	0	41	129	5	1	2	152	19	0	518	1910
5:30 PM	6	20	4	0	16	20	34	0	43	96	5	1	2	102	23	0	372	1800
5:45 PM	7	26	7	0	14	17	40	0	46	101	12	1	2	115	23	0	411	1753

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	28	80	44	0	144	136	244	0	164	516	20	4	8	608	76	0	2072
Heavy Trucks	0	0	0		0	8	4		4	0	0		4	4	0		24
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

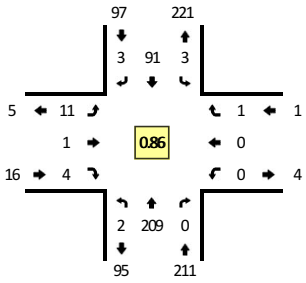
Comments:

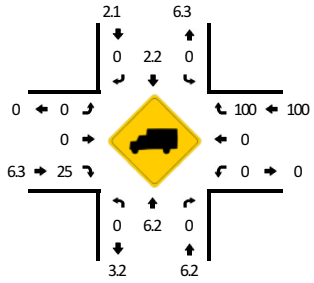
Report generated on 9/17/2025 8:29 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

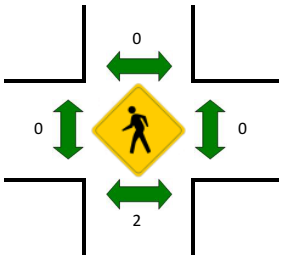
LOCATION: S Victory Dr -- Stadium Ln | **QC JOB #:** 17227203
CITY/STATE: Mankato, MN | **DATE:** Wed, Sep 10 2025

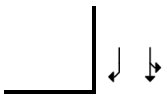
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

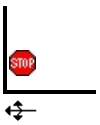


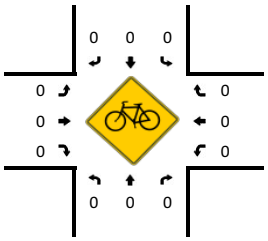


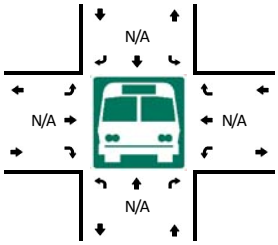
TRUE DATA TO IMPROVE MOBILITY

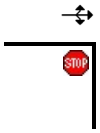


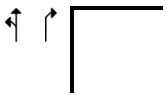


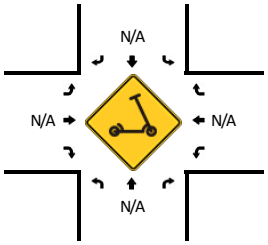












15-Min Count Period Beginning At	S Victory Dr (Northbound)				S Victory Dr (Southbound)				Stadium Ln (Eastbound)				Stadium Ln (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	28	0	0	0	13	0	0	4	0	1	0	0	0	0	0	46	
7:15 AM	1	46	0	0	2	19	0	0	3	0	3	0	0	0	0	0	74	
7:30 AM	0	71	0	0	0	16	2	0	5	0	1	0	0	0	0	0	95	
7:45 AM	1	57	0	0	0	30	0	0	2	1	0	0	0	0	0	0	91	306
8:00 AM	0	35	0	0	1	26	1	0	1	0	0	0	0	0	1	0	65	325
8:15 AM	0	29	0	0	0	14	0	1	2	0	0	0	0	0	2	0	48	299
8:30 AM	0	30	0	0	0	22	0	0	1	1	0	0	0	0	1	0	55	259
8:45 AM	0	27	0	0	2	13	2	0	2	0	0	0	1	0	0	0	47	215

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	284	0	0	0	64	8	0	20	0	4	0	0	0	0	0	380
Heavy Trucks	0	16	0		0	0	0		0	0	0		0	0	0		16
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

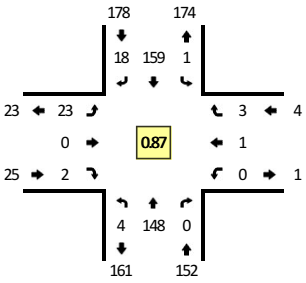
Comments:

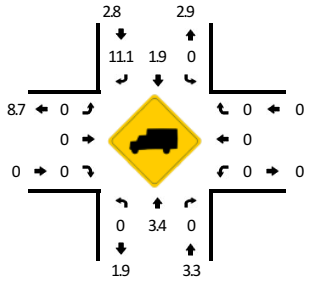
Report generated on 9/17/2025 8:29 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

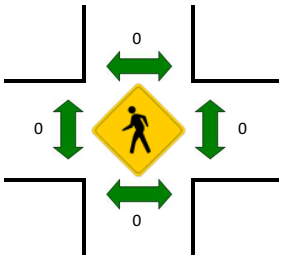
LOCATION: S Victory Dr -- Stadium Ln | **QC JOB #:** 17227204
CITY/STATE: Mankato, MN | **DATE:** Wed, Sep 10 2025

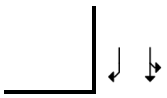
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

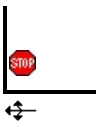


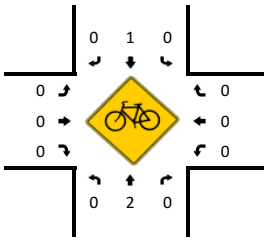


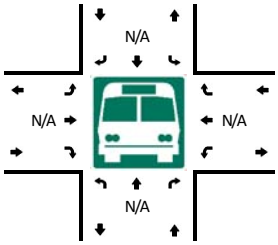
TRUE DATA TO IMPROVE MOBILITY

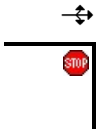


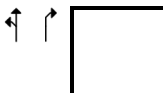


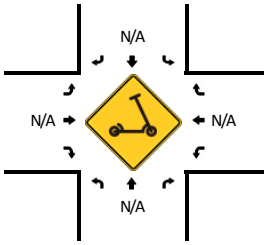












15-Min Count Period Beginning At	S Victory Dr (Northbound)				S Victory Dr (Southbound)				Stadium Ln (Eastbound)				Stadium Ln (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	31	0	0	1	48	3	0	3	0	1	0	0	0	0	0	87	
4:15 PM	0	29	0	0	1	29	3	0	5	0	2	0	0	0	1	0	70	
4:30 PM	1	44	0	0	0	46	6	0	4	0	0	0	0	0	2	0	103	
4:45 PM	0	40	0	0	1	38	6	0	5	0	2	0	0	0	0	0	92	352
5:00 PM	2	33	0	0	0	37	4	0	7	0	0	0	0	1	0	0	84	349
5:15 PM	1	31	0	0	0	38	2	0	7	0	0	0	0	0	1	0	80	359
5:30 PM	0	29	0	0	0	27	3	0	3	0	0	0	1	0	1	0	64	320
5:45 PM	1	35	0	0	0	31	0	0	2	0	1	0	0	0	1	0	71	299

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	176	0	0	0	184	24	0	16	0	0	0	0	0	8	0	412
Heavy Trucks	0	12	0		0	4	4		0	0	0		0	0	0		20
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 9/17/2025 8:29 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

SSTS LLC
8112 W 16th St, St Louis Park, MN
www.s2traffic.com

June 6th, 2025

To: **Brian Johnson, Jones, Haugh & Smith Inc.**

From: **Katie Schmidt, PE (MN PE License #47147)**

Re: **Trip Generation Memorandum – Mankato Apartments Development, Mankato, MN**

Per your request, SSTS LLC has conducted a trip generation estimate for the proposed Mankato Apartment Development in the City of Mankato, Blue Earth County, MN. The Proposed Project is located on the south side of Stadium Rd (CSAH 60) and east of S Victory Dr. The Proposed Project includes 72 apartment units split between two three-level buildings and a 150-stall surface parking lot. Access is proposed on S Victory Dr. The adjacent **Figure 1** depicts the site layout and access location. It is noted that traffic will not be able to cut-through to eastern property.

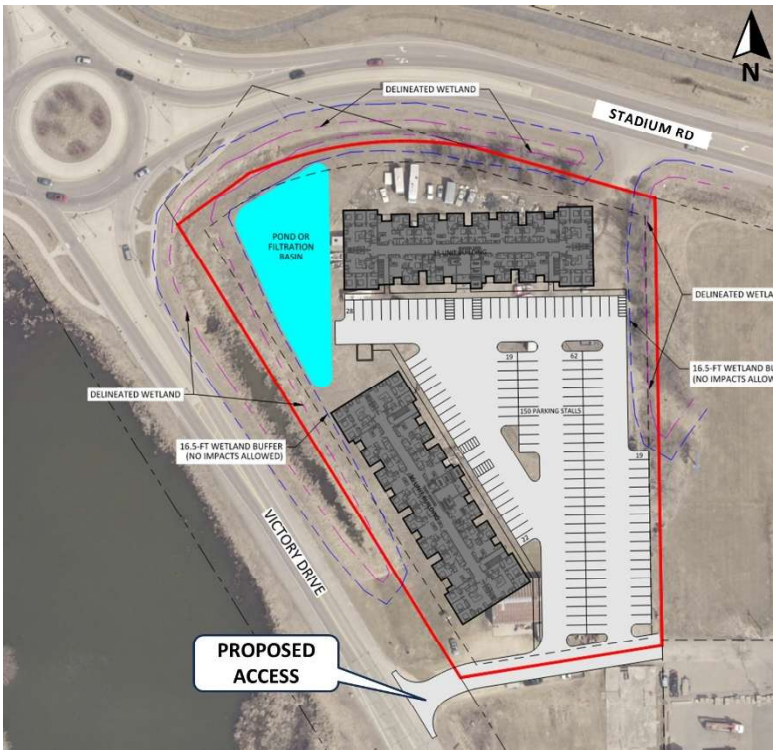


Figure 1. Proposed Project

Trip Generation

The volume of vehicle trips generated by the Proposed Project has been estimated for the weekday AM and PM peak traffic hours and on a daily basis using the data and methodology described in the Institute of Transportation Engineers' (ITE) ***Trip Generation Manual*** [1], which is a standard industry reference used by public agencies to estimate trips generated by specific land uses. **Table 1** summarizes the trip generation estimates. ITE's Low Rise Multifamily land use corresponds to the proposed three-level apartment buildings.

Table 1 - Trip Generation

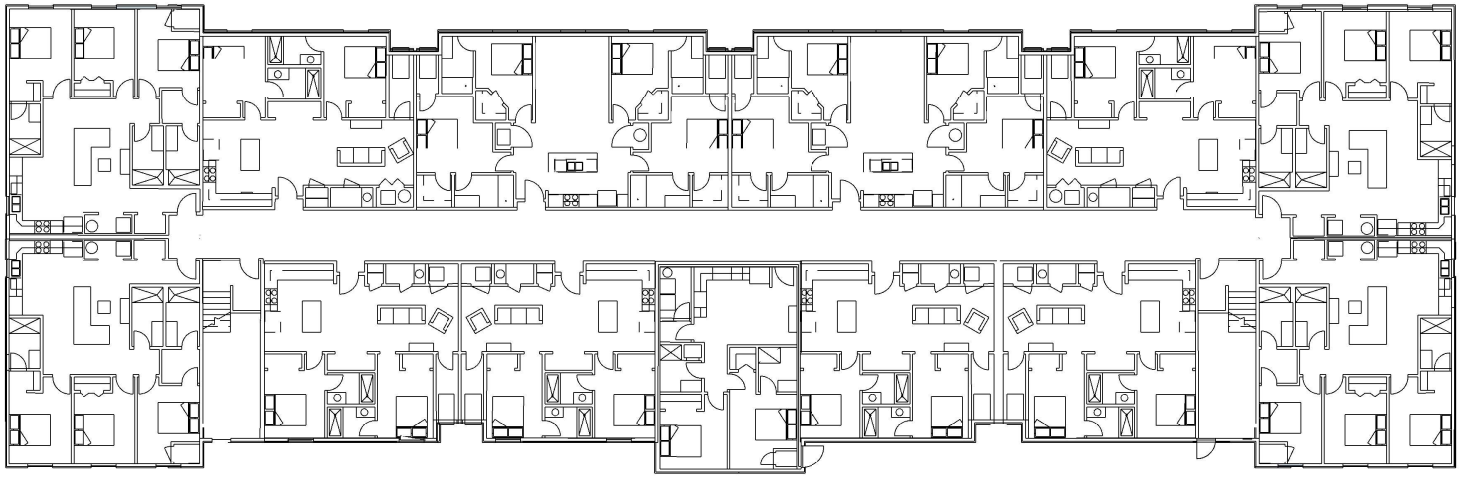
Land Use	ITE Land Use Code	Size	Trips Generated:				
			AM Peak		PM Peak		Weekday
			Enter	Exit	Enter	Exit	ADT
Multifamily Housing (Low-Rise)	220	72 units	7	22	23	14	485
Totals			**7**	**22**	**23**	**14**	**485**
			29		**37**		

The Proposed Project is estimated to generate the following:

- 29 new trips (7 entering and 22 exiting) during the morning traffic peak hour,
- 37 new trips (23 entering and 14 exiting) during the evening traffic peak hour, and
- 485 daily trips.

The anticipated travel patterns for residents of the Proposed Project are approximately 85% to/from the north and 15% to/from the South on S Victory Dr. The number of vehicle trips generated by the Proposed Project is low, approximately one new vehicle trip every two minutes during the peak hours, and impacts to existing traffic operations are anticipated to be minimal. Additionally, turning volumes at the access point do not warrant turn lanes per industry references (AASHTO and NCHRP Reports).

[1] ***Trip Generation Manual***, Institute of Transportation Engineers (ITE), 11th Edition

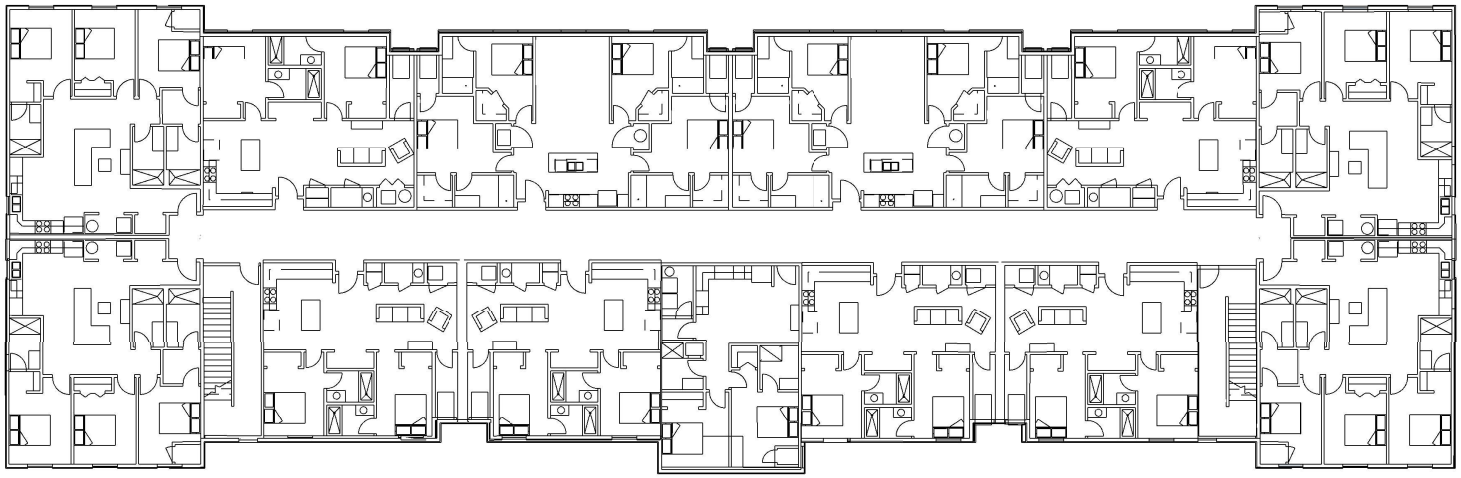


GROUND FLOOR PLAN

scale 1:20

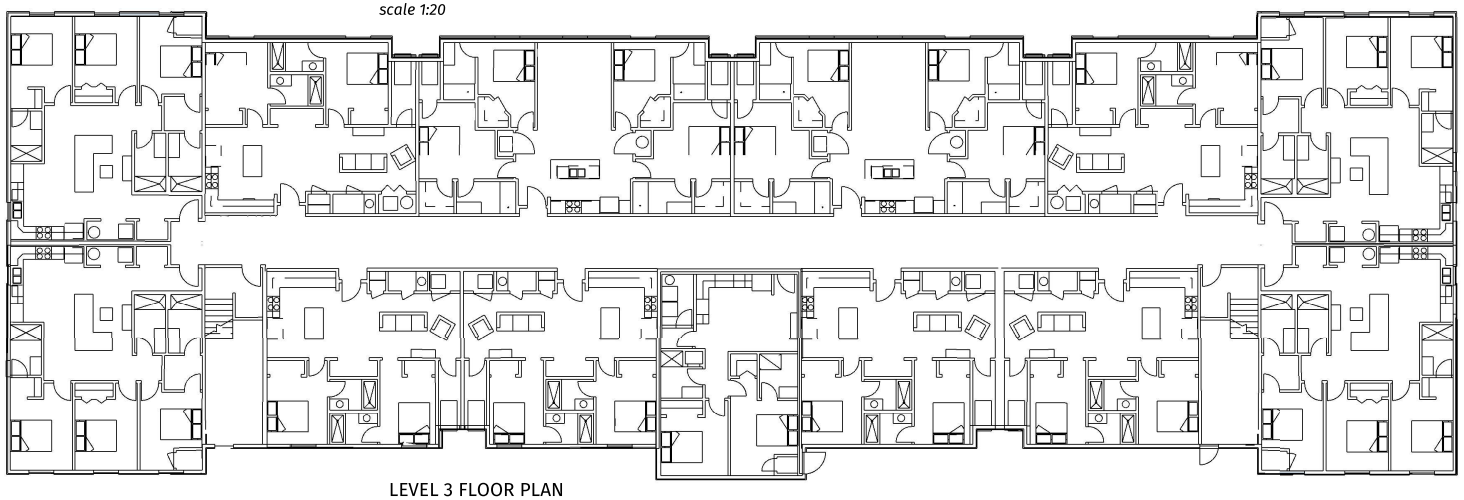
APX CONSTRUCTION GROUP

THIS DOCUMENT IS THE PROPERTY OF APX CONSTRUCTION GROUP AND MAY NOT BE USED, COPIED OR DUPLICATED IN ANY WAY WITHOUT WRITTEN CONSENT. DISCLAIMER: Project is Design-Build due to the lack of on-site consultation & supervision, and control over the actual construction process, and because of the various local building code requirements and weather conditions. The Drafter/Designer/Architect assumes no responsibility in the use of these plans for any damages. This includes structural failures due to any deficiencies, omissions, or errors in the design or blueprints. It is recommended :hat you consult with a local building official and/or inspector prior to the start of the construction. General Contractor shall verify all existing dimensions and field conditions prior to ordering or fabricating ary materials. Sizes and dimensions can differ from what is shown on documents. Cross reference plans with all other consultant's sets. All construction shall be installed in accordance with the manufacturer's current specifications and industry standards. All construction components shall meet adopted code requirements.



LEVEL 2 FLOOR PLAN

scale 1:20



LEVEL 3 FLOOR PLAN

scale 1:20

APX CONSTRUCTION GROUP

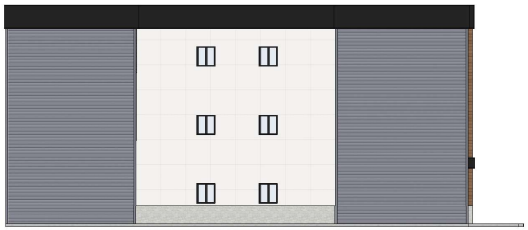
THIS DOCUMENT IS THE PROPERTY OF APX CONSTRUCTION GROUP AND MAY NOT BE USED, COPIED OR DUPLICATED IN ANY WAY WITHOUT WRITTEN CONSENT. DISCLAIMER: Project is Design-Build due to the lack of on-site consultation & supervision, and control over the actual construction process, and because of the various local building code requirements and weather conditions. The Drafter/Designer/Architect assumes no responsibility in the use of these plans for any damages. This includes structural failures due to any deficiencies, omissions, or errors in the design or blueprints. It is recommended :hat you consult with a local building official and/or inspector prior to the start of the construction. General Contractor shall verify all existing dimensions and field conditions prior to ordering or fabricating ary materials. Sizes and dimensions can differ from what is shown on documents. Cross reference plans with all other consultant's sets. All construction shall be installed in accordance with the manufacturer's current specifications and industry standards. All construction components shall meet adopted code requirements.

FRONT ELEVATION
scale 1:20

REAR ELEVATION
scale 1:20

APX CONSTRUCTION GROUP

THIS DOCUMENT IS THE PROPERTY OF APX CONSTRUCTION GROUP AND MAY NOT BE USED, COPIED OR DUPLICATED IN ANY WAY WITHOUT WRITTEN CONSENT. DISCLAIMER: Project is Design-Build due to the lack of on-site consultation & supervision, and control over the actual construction process, and because of the various local building code requirements and weather conditions. The Drafter/Designer/Architect assumes no responsibility in the use of these plans for any damages. This includes structural failures due to any deficiencies omissions, or errors in the design or blueprints. It is recommended :hat you consult with a local building official and/or inspector prior to the start of the construction. General Contractor shall verify all existing dimensions and field conditions prior to ordering or fabricating ary materials. Sizes and dimensions can differ from what is shown on documents. Cross reference plans with all other consultant's sets. All construction shall be installed in accordance with the manufacturer's current specifications and industry standards. All construction components shall meet adopted code requirements.



LEFT ELEVATION
scale 1:20

RIGHT ELEVATION
scale 1:20

APX CONSTRUCTION GROUP

THIS DOCUMENT IS THE PROPERTY OF APX CONSTRUCTION GROUP AND MAY NOT BE USED, COPIED OR DUPLICATED IN ANY WAY WITHOUT WRITTEN CONSENT. DISCLAIMER: Project is Design-Build due to the lack of on-site consultation & supervision, and control over the actual construction process, and because of the various local building code requirements and weather conditions. The Drafter/Designer/Architect assumes no responsibility in the use of these plans for any damages. This includes structural failures due to any deficiencies omissions, or errors in the design or blueprints. It is recommended :hat you consult with a local building official and/or inspector prior to the start of the construction. General Contractor shall verify all existing dimensions and field conditions prior to ordering or fabricating ary materials. Sizes and dimensions can differ from what is shown on documents. Cross reference plans with all other consultant's sets. All construction shall be installed in accordance with the manufacturer's current specifications and industry standards. All construction components shall meet adopted code requirements.

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

Meeting Date: 10/14/2025

Title

CY54-25

Request of Ryan Evenson, with permission of the property owner, for a conditional use permit to allow an indoor playground and sport center in the B-3, Highway Business, zoning district, and for a certificate of design compliance for the construction of a new structure in the Highway Gateway Overlay District. The subject property is described as Lot 5, Block 2, Venstar Subdivision (1740 Premier Drive).

Applicant

The applicant is Ryan Evenson with APX Construction, on behalf of the business owner with Endless Adventures.

Request

The applicant is seeking a conditional use permit to allow for the operation of an indoor playground and sports courts in the B-3, Highway Commercial, zoning district.

A Certificate of Design Compliance is also being requested since the property is located in the highway overlay district.

Location

The property is located at 1740 Premier Dr.

Existing Land Use

The current existing land use is commercial, in the B-3 Highway Gateway District.

Zoning

The property is currently zoned B-3.

Environmentally Sensitive Areas

There are no known environmentally sensitive areas.

Public Utilities

The property is currently served by public utilities.

City Code

The City Code pertaining to the B-3, Highway Business District may be viewed at the link below:

https://library.municode.com/mn/mankato/codes/code_of_ordinances?nodeId=PTIICOOR_CH10LAUSDE_ARTVCODI_DIV8HIBUDI

The City Code pertaining to the Highway Gateway Overlay District may be viewed at the link below:

https://library.municode.com/mn/mankato/codes/code_of_ordinances?nodeId=PTIICOOR_CH10LAUSDE_ARTVCODI_DIV9GTGAOVDI_SDIVHGHIGAOVDI

Review

The applicant, Ryan Evenson, with APX Construction, is seeking a conditional use permit to allow for the operation of an indoor playground and sports courts in the B-3, Highway Commercial, zoning district.

A Certificate of Design Compliance is also being requested since the property is located in the highway overlay district.

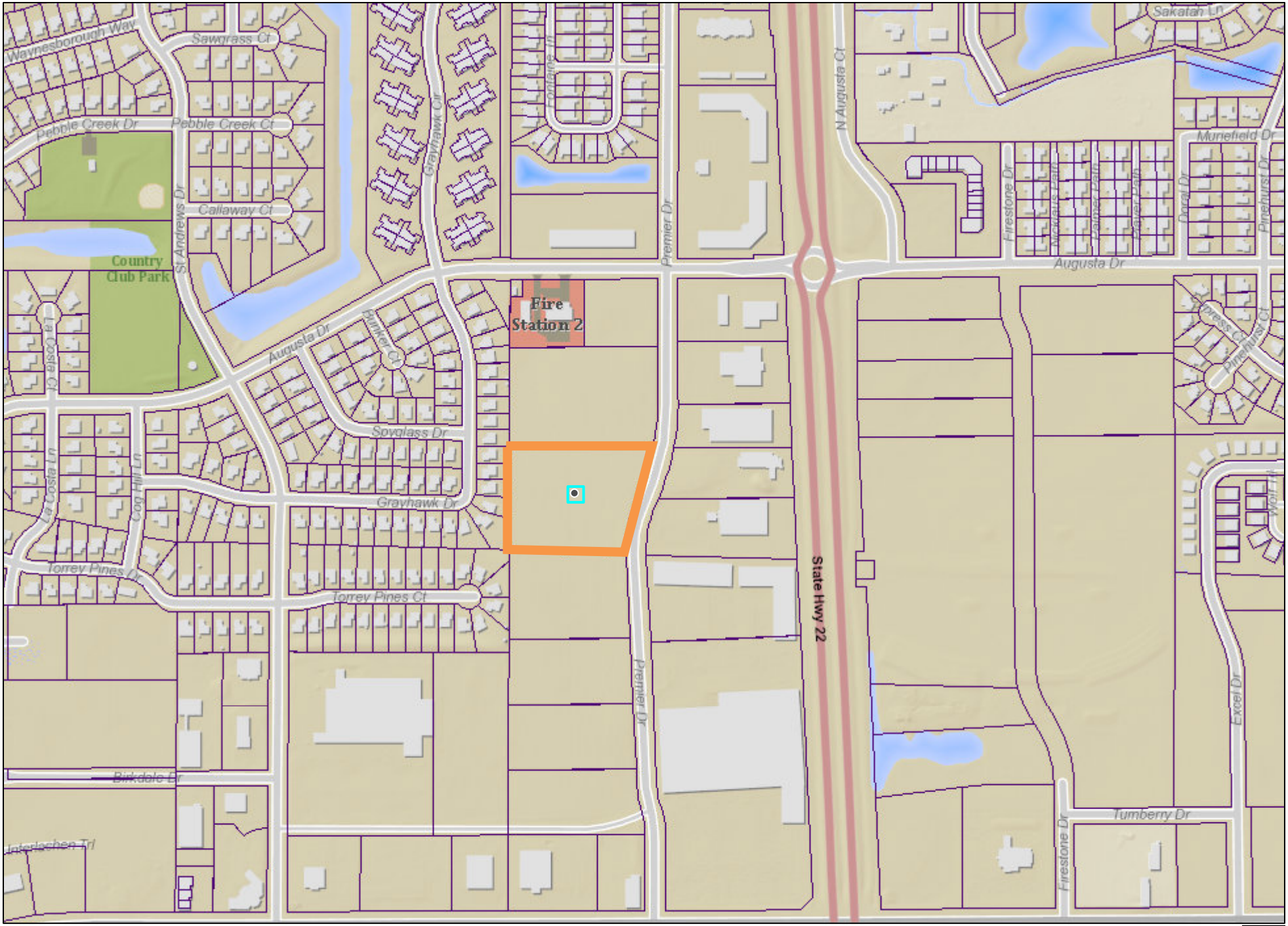
The property is located at 1740 Premier Drive, between Augusta Dr and North Victory Dr. The building is approximately 20,000 sf and exterior renderings show the intent is to use earth tones with an accent blue for exterior finishes.

The business, Endless Adventures, intends to operate an indoor playground, sports courts, party room, and relaxing areas for children ages 0–15. The proposed hours of operation are 9:00 a.m. to 8:00 p.m, 7 days per week. Memberships can be purchased or customers can pay hourly for the use of the space.

Attachments

General Location Map
Aerial Plan
Site Plan
Floor Plan
Rendering
Traffic Study
Building Plans Full Set

General Location Map



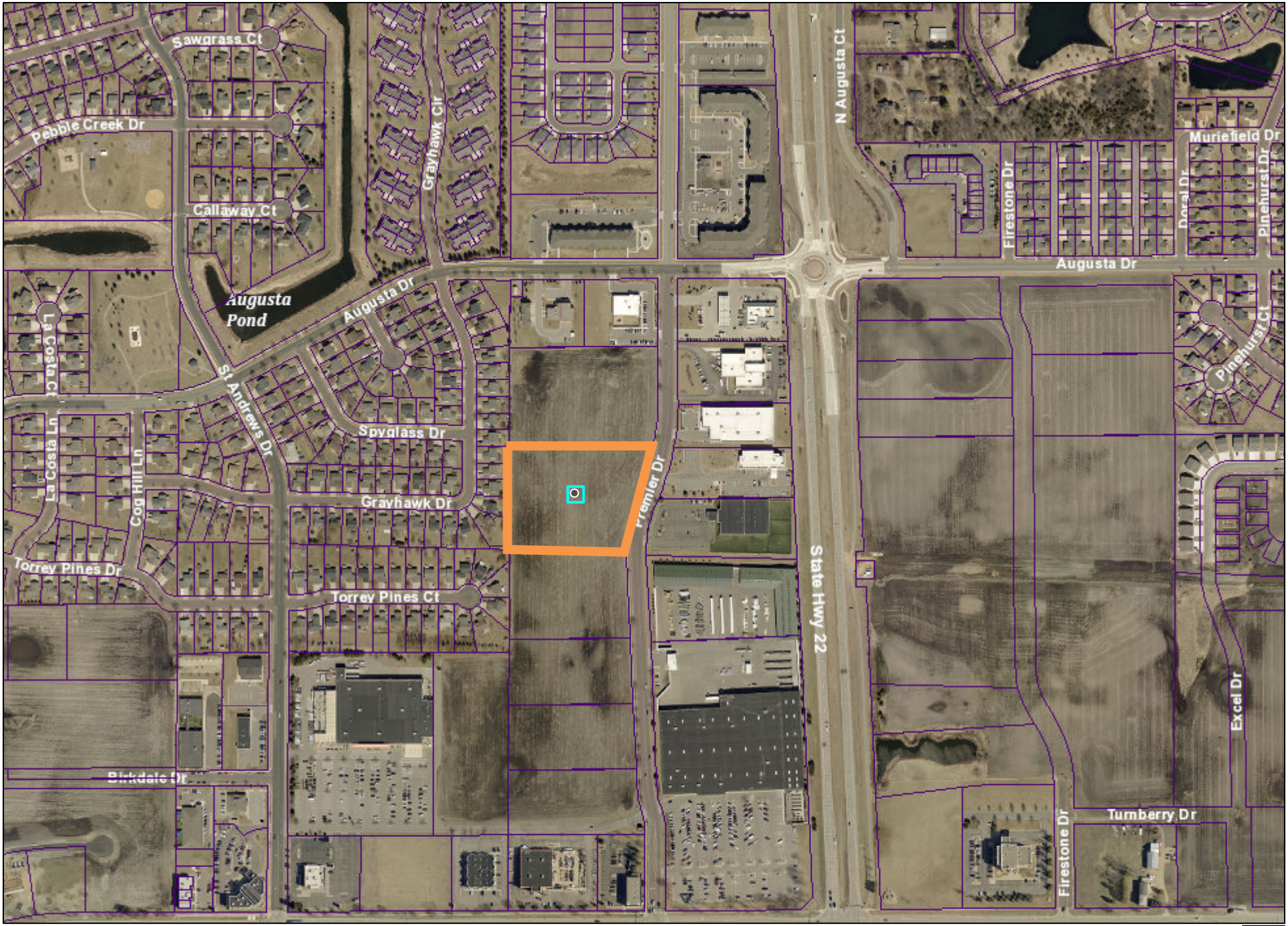
Date: September 2025

Author:

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

N

Aerial Map

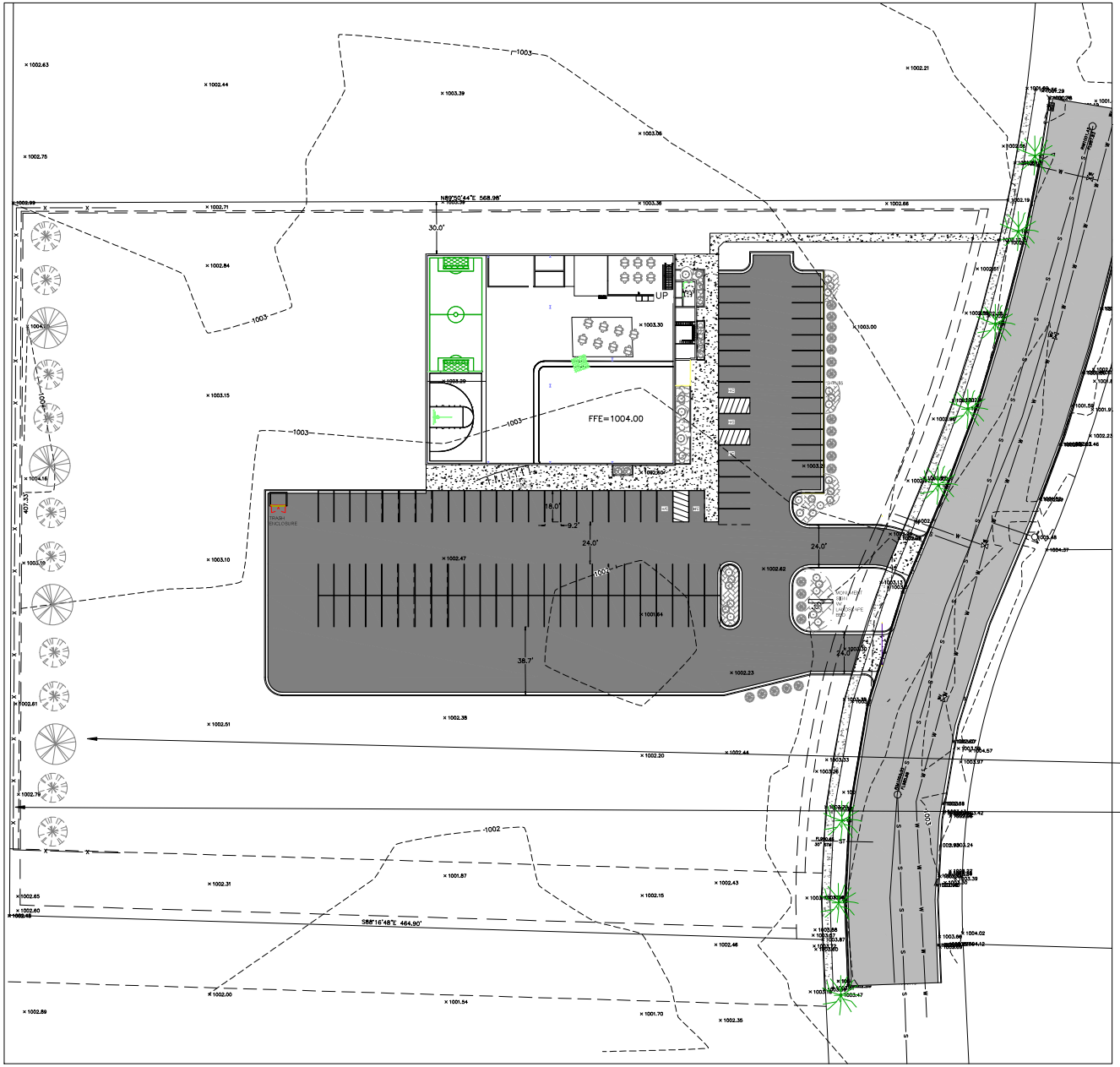


Date: September 2025

Author:

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

N



LANDSCAPING NOTES

B-3 COMMERCIAL DISTRICT
SUBD.3. HIGHWAY GATEWAY OVERLAY DISTRICT

Sec. 10-1740 PERIMETER OFF STREET PARKING LOT
(1) SHADE TREE/ 50 LF OF FRONTAGE
(1) EVERGREEN TREE/ 25 LF OF FRONTAGE
80% OPAQUE ALONG ALL PARKING FRONTING STREET

PLANTING BEDS SHALL BE MULCHED WITH BARK CHIPS, ROCK MULCH, FEATHER ROCKS OR SIMILAR MATERIAL.

PERIMETER LANDSCAPING & TRANSITIONAL YARDS 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.

LANDSCAPING LEGEND

=DENOTES SHADE TREE

=EVERGREEN TREE

=DENOTES SHRUB

=DENOTES ARBOVITAE HEDGE (4' MIN. – 8' MAX)
(80% OPAQUE ALONG ALL PARKING FRONTING PREMIER DR.)

=DENOTES EXISTING BOULEVARD TREE

=DENOTES PLANTING BED W/ MULCH

=DENOTES 6' HIGH VINYL FENCE

WEST 20' OF SITE TO BE TRANSITIONAL YARD LANDSCAPING (ABUTS RESIDENTIAL)

F&I 500LF 6' HIGH VINYL FENCING

1"=30'
30 0 30
HORIZ. SCALE FEET

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

Brian J. Johnson
Reg. No. 4744
Date: 9/4/25

JONES HAUGH SMITH
Engineers • Surveyors
515 South Washington Ave. Albert Lea, MN 507-373-4876

Consultant

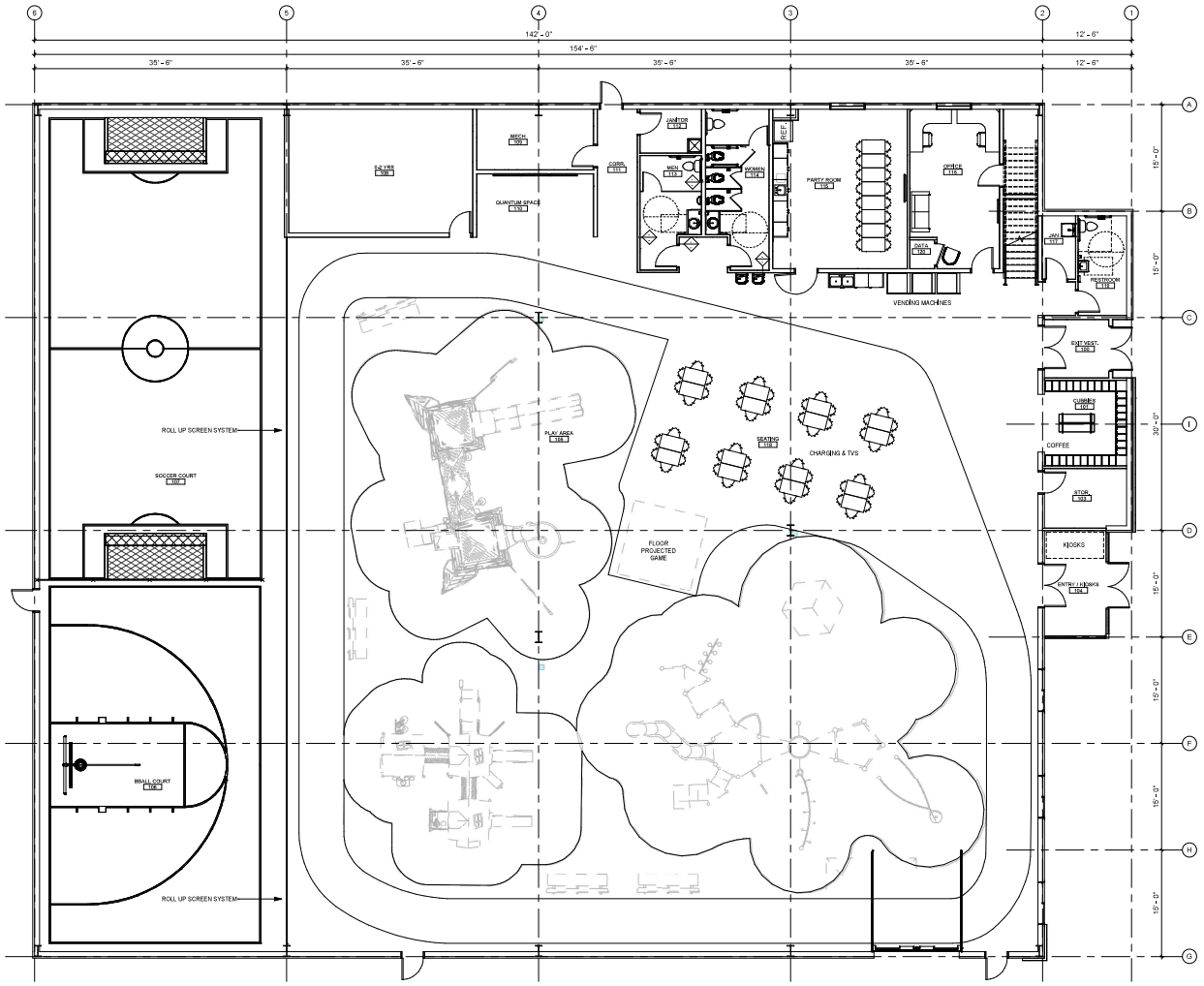
Project:
ENDLESS ADVENTURES

Revision:

No.	Date: 9/4/25
Drawn: bjj	Checked:
Project Manager:	
Project Status: CD	

Sheet Title:
LANDSCAPE PLAN

Sheet No.:
C4



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

CREATE
26560 N Shore Pl
Hartford, SD 57033
Wall Lake Township
phone: 605.205.1898
www.create-designdevelop.com

REVISION SCHEDULE

NO.	DESCRIPTION	DATE

MANKATO, MN
ENDLESS ADVENTURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Architect under the laws of the State of South Dakota.

PRELIMINARY NOT FOR CONSTRUCTION

PROJECT NO.:	2555
ISSUE DATE:	9/17/2025
DESIGNED BY:	SM
DRAWN BY:	SM
CHECKED BY:	AT

SHEET
A-100
FLOOR PLAN

50% DD

© Copyright 2025 - CREATE Design + Development, ARCHITECTS, LLC.

Full size = 24x36 - Half size = 12x18

9/16/2025 11:52:34 AM

CREATE

APX CONSTRUCTION GROUP

THIS DOCUMENT IS THE PROPERTY OF APX CONSTRUCTION GROUP AND MAY NOT BE USED, COPIED OR DUPLICATED IN ANY WAY WITHOUT WRITTEN CONSENT. DISCLAIMER: Project is Design-Build due to the lack of on-site consultation & supervision, and control over the actual construction process, and because of the various local building code requirements and weather conditions. The Drafter/Designer/Architect assumes no responsibility in the use of these plans for any damages. This includes structural failures due to any deficiencies, omissions, or errors in the design or blueprints. It is recommended that you consult with a local building official and/or inspector prior to the start of the construction. General Contractor shall verify all existing dimensions and field conditions prior to ordering or fabricating any materials. Sizes and dimensions can differ from what is shown on documents. Cross reference plans with all other consultant's sets. All construction shall be installed in accordance with the manufacturer's current specifications and industry standards. All construction components shall meet adopted code requirements.

COLOR OF FINISH MAY NOT BE REPRESENTED EXACTLY LIKE PHYSICAL SAMPLE

EXTERIOR WALL (MP-1)

Material Type: METAL PANEL MAIN
Mfr: METALLIC BLDG. SYSTEMS
Texture: FW-120 OR PBR
Color: CHARCOAL

EXTERIOR WALL (MP-2)

Material Type: METAL PANEL FEATURE
Mfr: METALLIC BLDG. SYSTEMS
Texture: PBD
Color: HAWAIIAN BLUE

RETURN ACCENTS (MP-3)

Material Type: METAL PANEL
Mfr: METALLIC BLDG. SYSTEMS
Texture: SMOOTH PDVF
Color: COPPER METALLIC

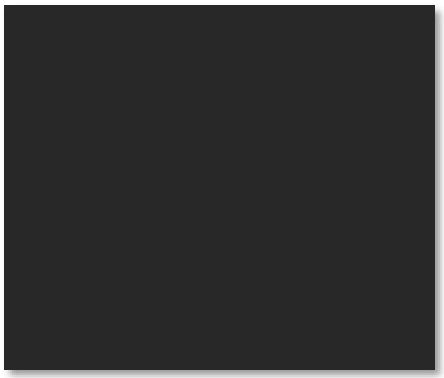
BRICK/STONE ACCENT

Material Type: THIN BRICK
Mfr: BELDEN
Texture: VELOUR
Color: ALASKA WHITE OR SIM.

FW-120

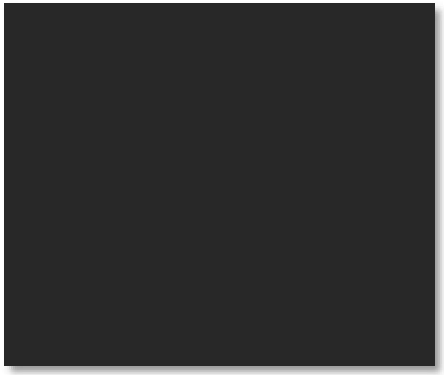
PBR

PBD



STOREFRONT / WINDOWS

Material Type: METAL
Mfr: KAWNEER OR SIM
Color: MATTE BLACK



BUILDING CAP / TRIM

Material Type: METAL
Mfr: TBD
Color: MATTE BLACK

APX CONSTRUCTION GROUP

THIS DOCUMENT IS THE PROPERTY OF APX CONSTRUCTION GROUP AND MAY NOT BE USED, COPIED OR DUPLICATED IN ANY WAY WITHOUT WRITTEN CONSENT. DISCLAIMER: Project is Design-Build due to the lack of on-site consultation & supervision, and control over the actual construction process, and because of the various local building code requirements and weather conditions. The Drafter/Designer/Architect assumes no responsibility in the use of these plans for any damages. This includes structural failures due to any deficiencies, omissions, or errors in the design or blueprints. It is recommended that you consult with a local building official and/or inspector prior to the start of the construction. General Contractor shall verify all existing dimensions and field conditions prior to ordering or fabricating any materials. Sizes and dimensions can differ from what is shown on documents. Cross reference plans with all other consultant's sets. All construction shall be installed in accordance with the manufacturer's current specifications and industry standards. All construction components shall meet adopted code requirements.

BOLTON & MENK
Real People. Real Solutions.

1960 Premier Drive
Mankato, MN 56001-5900

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

September 26, 2025

Molly Westman
City of Mankato
10 Civic Center Plaza
Mankato, MN 56001
(507) 720-2559
mwestman@mankatomn.gov

Reference: Endless Adventures
Mankato, Minnesota

Subject: Traffic Memorandum

Dear Ms. Westman:

The following is a Traffic Memorandum for the proposed Endless Adventures development to be located along Premier Drive, south of Augusta Drive in Mankato, Minnesota. This memorandum has been prepared to provide a turn lane warrant analysis at the proposed driveways and determine if the capacity along the surrounding roadways is sufficient to handle the additional traffic generated by the proposed development.

Turn Lane Warrant Analysis

Site access to the development is proposed via two (2) full movement driveways along Premier Drive. The potential need for a southbound right-turn lane and a northbound left-turn lane into the proposed development was evaluated based on guidance from federal research (NCHRP Report 457) and the MnDOT *Access Management Manual* assuming a 30 mile per hour (mph) speed limit on Premier Drive. Neither a southbound right-turn lane, nor a northbound left-turn lane are recommended due to low-volume driveways and traffic volumes below recommended NCHRP 457 thresholds for turn lane implementation. More detailed information related to the turn lane warrant calculations is provided in **Tables 1-3**.

Roadway Capacity Analysis

The capacity of the surrounding roadway network was analyzed to determine if roadway capacity is sufficient to accommodate the additional traffic generated by the proposed development. **Table 4** provides a comparison of 2024 MnDOT AADTs along Premier Drive, Augusta Drive, and Trunk Highway (TH) 22 to the future AADT with the addition of daily trips generated by the proposed development. Metro Council's *Imagine 2050* transportation policy plan and FHWA's *Highway Functional Classification Concepts, Criteria and Procedures 2023 Edition* were utilized to determine typical AADT ranges based on roadway classification. Based on these guidelines, Augusta Drive and TH 22 are expected to have sufficient capacity to accommodate the additional traffic generated by the proposed development.

It should be noted that based on MnDOT's 2024 AADTs, Premier Drive currently operates with an AADT that exceeds the typical ADT for urban local roads according to the Metro Council's *Imagine 2050* transportation policy plan and FHWA's *Highway Functional Classification Concepts, Criteria and*

Procedures 2023 Edition. The proposed development is anticipated to increase this AADT by only 3.5%, which is expected to account for minimal impact to the roadway. Premier Drive serves multiple commercial developments that may have varying peak hours that spread the projected AADT across multiple hours of the day.

Conclusion

Based on the analysis provided in this memorandum, it was determined that no exclusive turn lanes are warranted at the proposed site driveway locations due to low traffic volumes and a lower speed limit along Premier Drive. Additionally, based on the Metro Council's *Imagine 2050* transportation policy plan and FHWA's *Highway Functional Classification Concepts, Criteria and Procedures 2023 Edition*, it was concluded that the proposed development is expected to have minimal impact on the surrounding roadway network.

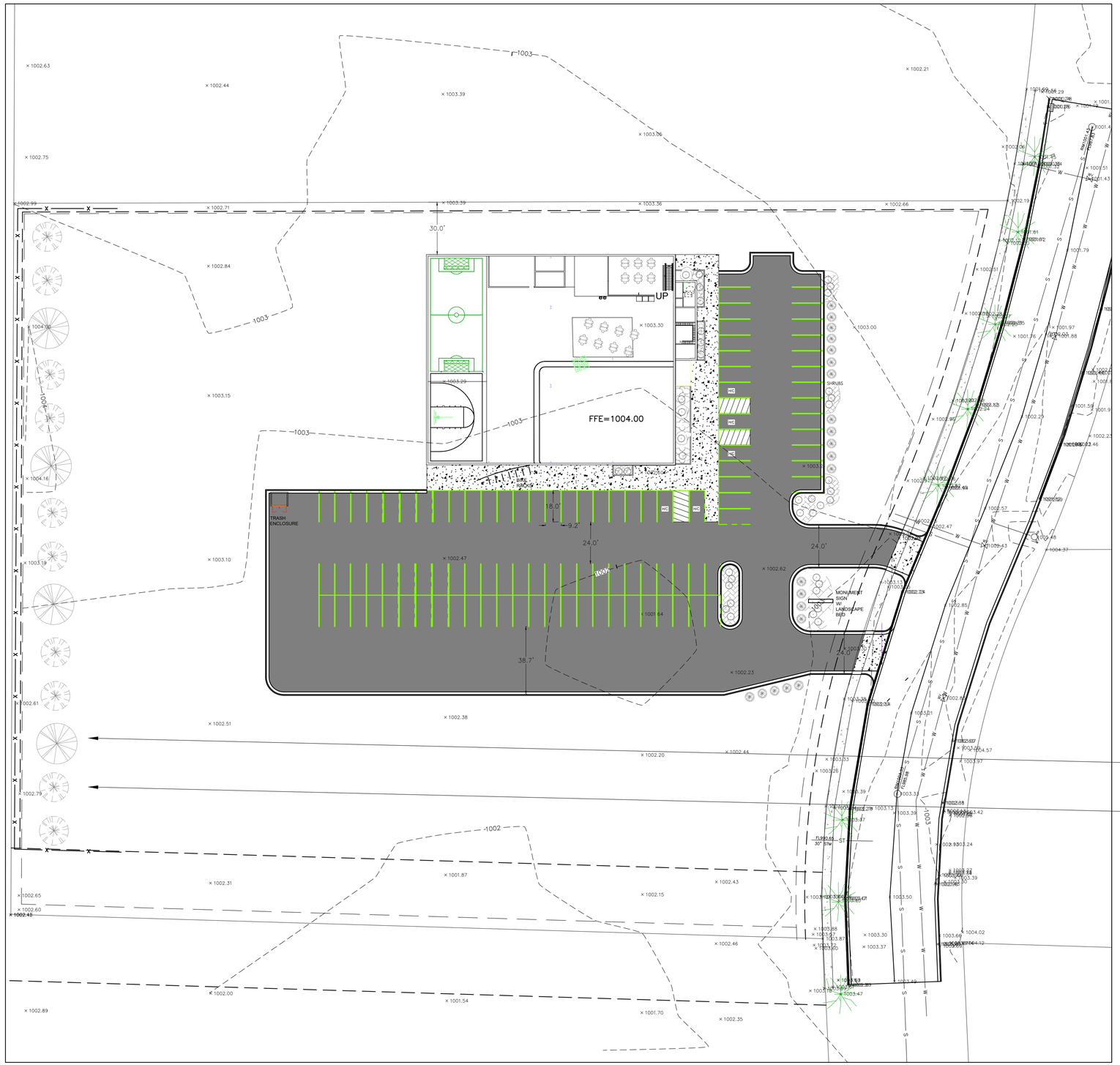
If you have any questions or concerns, please do not hesitate to contact me. I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Sincerely,
Bolton & Menk, Inc.

Danielle Troutman, PE
Transportation Project Engineer
License No. 63168

Attachments: Preliminary Site Plan
Calculation Tables

Bolton & Menk is an equal opportunity employer.



LANDSCAPING NOTES

B-3 COMMERCIAL DISTRICT
SUBD.3. HIGHWAY GATEWAY OVERLAY DISTRICT

Sec. 10-1740 PERIMETER OFF STREET PARKING LOT
(1) SHADE TREE/ 50 LF OF FRONTAGE
(1) EVERGREEN TREE/ 25 LF OF FRONTAGE
80% OPAQUE ALONG ALL PARKING FRONTING STREET

PLANTING BEDS SHALL BE MULCHED WITH BARK CHIPS, ROCK MULCH, FEATHER ROCKS OR SIMILAR MATERIAL.

PERIMETER LANDSCAPING & TRANSITIONAL YARDS 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.

LANDSCAPING LEGEND

=DENOTES SHADE TREE

=EVERGREEN TREE

=DENOTES SHRUB

=DENOTES ARBOVITAE HEDGE (4' MIN. – 8' MAX)
(80% OPAQUE ALONG ALL PARKING FRONTING PREMIER DR.)

=DENOTES EXISTING BOULEVARD TREE

=DENOTES PLANTING BED W/ MULCH

=DENOTES 6' HIGH VINYL FENCE

WEST 20' OF SITE TO BE TRANSITIONAL YARD LANDSCAPING (ABUTS RESIDENTIAL)

F&I 520LF 6' HIGH VINYL FENCING

north

1"=30'

30 0 30
HORIZ. SCALE FEET

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

Brian J. Johnson
Reg. No. 42744
Date: 9/4/25

Consultant:
JONES HAUGH SMITH
Engineers + Surveyors
515 South Washington Ave. Albert Lea, MN 507-373-6876

Project:
ENDLESS ADVENTURES

Revision:

No.:	Date: 9/4/25
Drawn: bjj	Checked:
Project Manager:	
Project Status: CD	

Sheet Title:
LANDSCAPE PLAN

Sheet No.:
C4

Table 1a - Projected Turning Movement Counts

Premier Drive - Turning Movement Counts								
	SBT	WBL	EBR	NBL	NBT	NBR	Hourly Total	MnDOT AADT
Collected 2022 TMCs	52	45	17	10	24	42	190	3042
% of Hourly Total	27%	24%	9%	5%	13%	22%		
Projected 2024 TMCs	39	33	13	7	18	31	141	2261

Table 1b - Anticipated Site Distribution & Assignment

Proposed Daily Traffic (Veh/d)*		80
	% from North	% from South
Anticipated Distribution	30%	70%
Calculated Assignment	24	56

**Daily traffic utilized for turn lane warrant analysis to provide conservative analysis*

Table 1c - NCHRP 457 Input Calculations

NB Left-Turn			SB Right-Turn	
V_A	V_O	LT % of V_A	Major Road Volume (One-Direction)	Right-Turn Volume
112	109	50%	112	24

Table 2 - Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

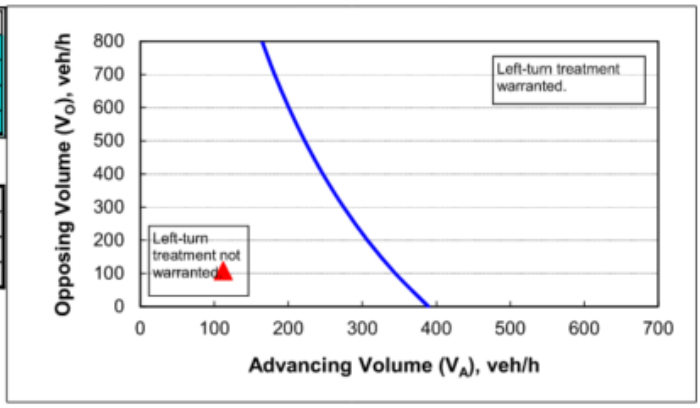
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	30
Percent of left-turns in advancing volume (V_A), %:	50%
Advancing volume (V_A), veh/h:	112
Opposing volume (V_O), veh/h:	109

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	341
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Table 3 - Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

INPUT

Roadway geometry:	2-lane roadway

Variable	Value
Major-road speed, mph:	30
Major-road volume (one direction), veh/h:	112
Right-turn volume, veh/h:	24

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	745993
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	

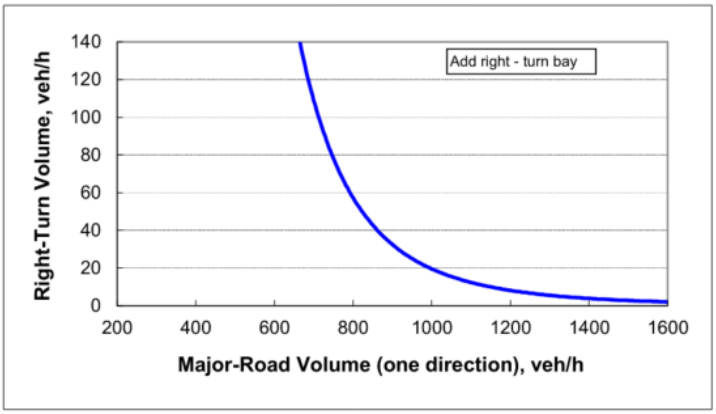


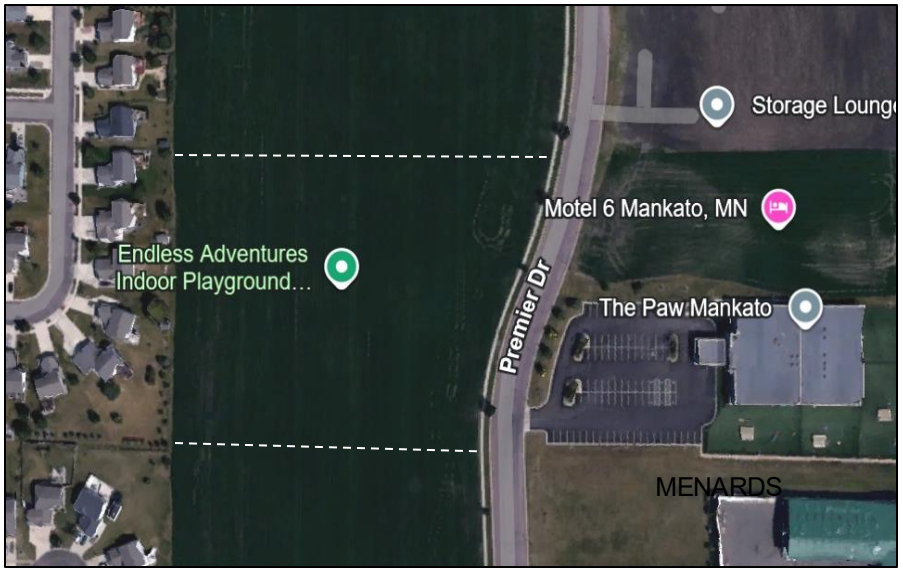
Table 4 - AADT Comparison (vehicles/day)

Roadway	Roadway Classification	2024 MnDOT AADT	Anticipated Distribution	Added Daily Traffic	2024 MnDOT AADT + Added Daily Traffic	Imagine 2050 Typical ADT	FHWA Typical ADT	Sufficient Capcity Avaiable?
Premier Drive	Urban Local	2261	100%	80	2341	<1,000	80-700	No
Augusta Drive	Urban Minor Collector	3589	30%	24	3613	50-10,000+	1,000-6,300	Yes
TH 22	Urban Principal Arterial	14105	45%	36	14141	5,000-60,000+	7,000-27,000	Yes

CREATE

ENDLESS ADVENTURES

INDOOR PLAYGROUND | 1740 PREMIER DRIVE, MANKATO, MN 56001



VARIANCE REQUEST & DESIGN COMPLIANCE SUBMITTAL

GENERAL CONTRACTOR / OWNER REP:
APX CONSTRUCTION GROUP
SHAWN MESCHKE | (612) 360-3710 | SHAWNM@APXCONSTRUCTIONGROUP.COM

ARCHITECT:
CREATE DESIGN
JUSTIN OLESON | (605) 695-1899 |

CIVIL ENGINEER:
JONES, HAUGH & SMITH
BRIAN JOHNSON | (507) 552-1704 |

STRUCTURAL ENGINEER:
KVS ENGINEERING
MICHAEL KONRAD | (605) 343-9606 |

MECHANICAL ENGINEER:
JPK ENGINEERING
JAMIE KRONBECK | (701) 532-1786 |

ELECTRICAL ENGINEER:
INTEGRAL ENGINEERING
LUKE WEYER | (515) 783-7875 |

PAGE INDEX

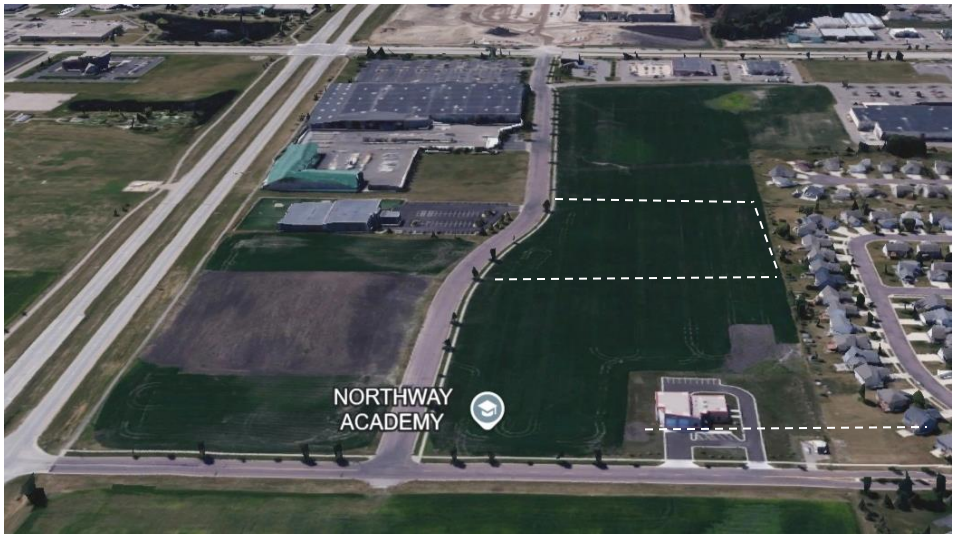
1 TITLE PAGE
2 SITE IMAGERY
3 FLOORPLAN
4 BUILD ELEVATIONS
5 BUILDING ELEVATIONS
6 FINISH CALCULATIONS
7 3D RENDERING
8 EXTERIOR FINISHES
9 PHOTOMETRIC PLAN
10 CIVIL TITLE PAGE
11 EXISTING CONDITIONS
12 HARDSCAPE PLAN
13 LANDSCAPE PLAN
14 UTILITY PLAN
15 GRADING / SWPP
16 SWPP NARRATIVE
17 SWPP NARRATIVE
18 SPECIFICATIONS
19 SPECIFICATIONS

APX CONSTRUCTION GROUP

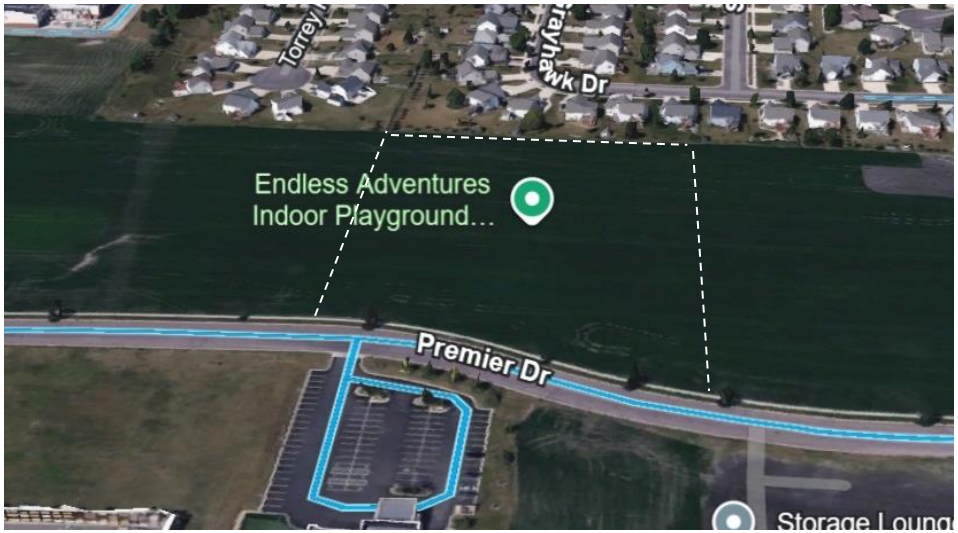
THIS DOCUMENT IS THE PROPERTY OF APX CONSTRUCTION GROUP AND MAY NOT BE USED, COPIED OR DUPLICATED IN ANY WAY WITHOUT WRITTEN CONSENT. DISCLAIMER: Project is Design-Build due to the lack of on-site consultation & supervision, and control over the actual construction process, and because of the various local building code requirements and weather conditions. The Drafter/Designer/Architect assumes no responsibility in the use of these plans for any damages. This includes structural failures due to any deficiencies, omissions, or errors in the design or blueprints. It is recommended that you consult with a local building official and/or inspector prior to the start of the construction. General Contractor shall verify all existing dimensions and field conditions prior to ordering or fabricating any materials. Sizes and dimensions can differ from what is shown on documents. Cross reference plans with all other consultant's sets. All construction shall be installed in accordance with the manufacturer's current specifications and industry standards. All construction components shall meet adopted code requirements.

LOOKING NORTH

LOOKING EAST



LOOKING SOUTH

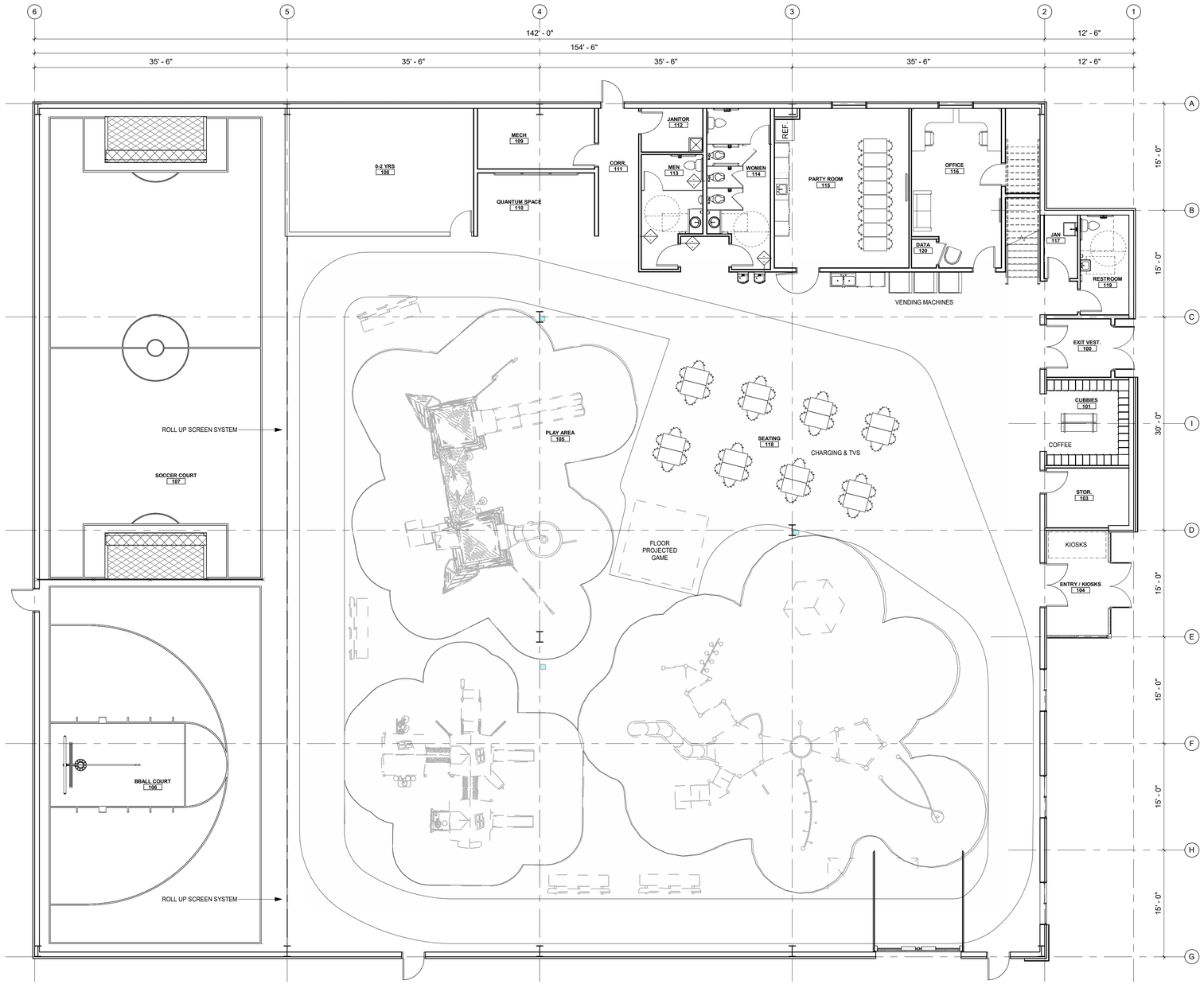


LOOKING WEST

APX CONSTRUCTION GROUP

THIS DOCUMENT IS THE PROPERTY OF APX CONSTRUCTION GROUP AND MAY NOT BE USED, COPIED OR DUPLICATED IN ANY WAY WITHOUT WRITTEN CONSENT. DISCLAIMER: Project is Design-Build due to the lack of on-site consultation & supervision, and control over the actual construction process, and because of the various local building code requirements and weather conditions. The Drafter/Designer/Architect assumes no responsibility in the use of these plans for any damages. This includes structural failures due to any deficiencies, omissions, or errors in the design or blueprints. It is recommended that you consult with a local building official and/or inspector prior to the start of the construction. General Contractor shall verify all existing dimensions and field conditions prior to ordering or fabricating any materials. Sizes and dimensions can differ from what is shown on documents. Cross reference plans with all other consultant's sets. All construction shall be installed in accordance with the manufacturer's current specifications and industry standards. All construction components shall meet adopted code requirements.

Full size = 24x36; Half size = 12x18



1 **FLOOR PLAN - A**
1/8" = 1'-0"

9/18/2025 11:52:34 AM

CREATE
26560 N Shore Pl
Hartford, SD 57033
Wall Lake Township
phone: 605.695.1899

www.create-designdevelop.com

REVISION SCHEDULE

NO.	DESCRIPTION	DATE

MANKATO, MN
ENDLESS ADVENTURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Architect under the laws of the State of South Dakota.

PRELIMINARY
NOT FOR CONSTRUCTION

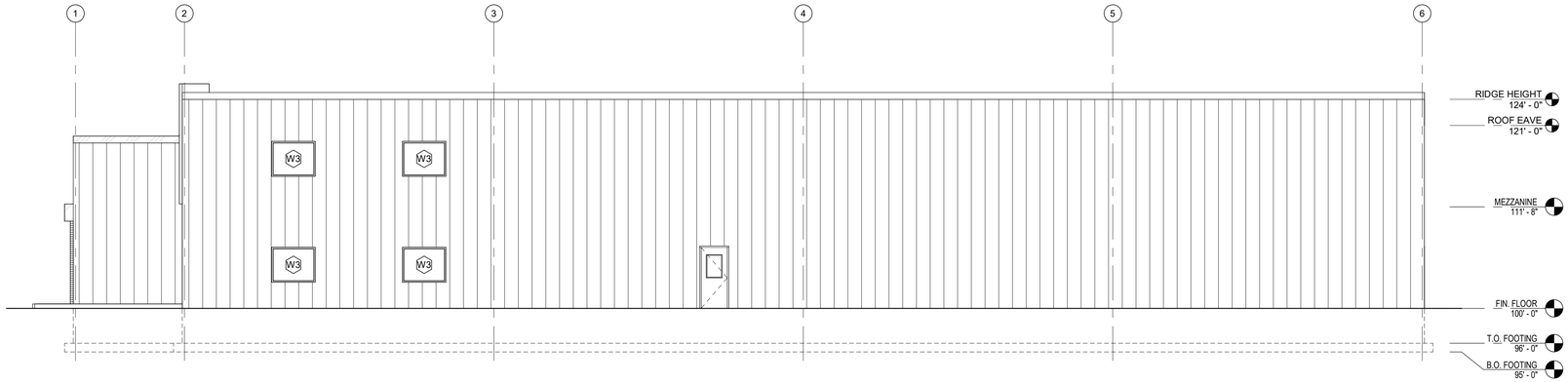
PROJECT NO.:	2555
ISSUE DATE:	9/17/2025
DESIGNED BY:	SM
DRAWN BY:	SM
CHECKED BY:	AT

SHEET
A-100
FLOOR PLAN

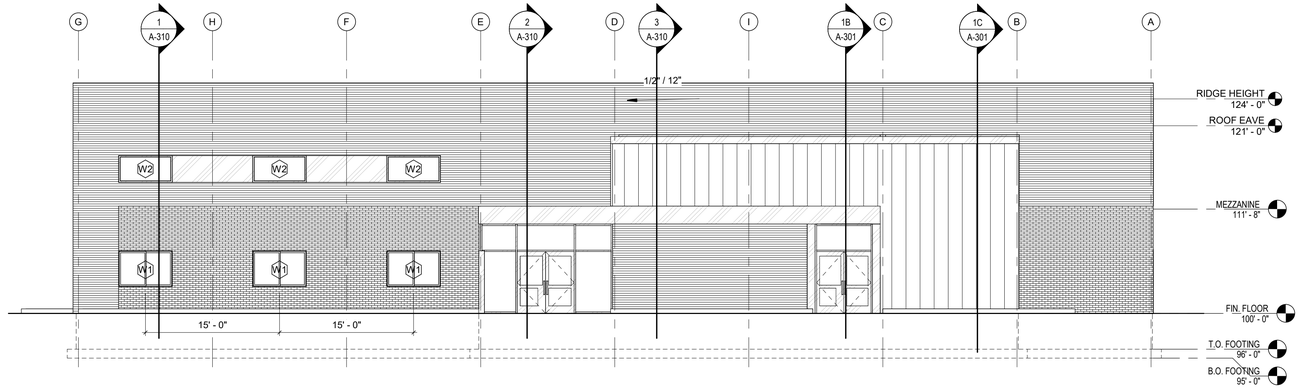
50% DD

© Copyright 2024 - CREATE design + develop ARCHITECTS, LLC

Full size = 24x36; Half size = 12x18



1 NORTH ELEVATION
1/8" = 1'-0"



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

CREATE
26560 N Shore Pl
Hartford, SD 57033
Wall Lake Township
phone: 605.695.1899

www.create-designdevelop.com

REVISION SCHEDULE

NO.	DESCRIPTION	DATE

MANKATO, MN
ENDLESS ADVENTURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Architect under the laws of the State of South Dakota.

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT NO.:	2555
ISSUE DATE:	9/17/2025
DESIGNED BY:	AT
DRAWN BY:	JO
CHECKED BY:	JO

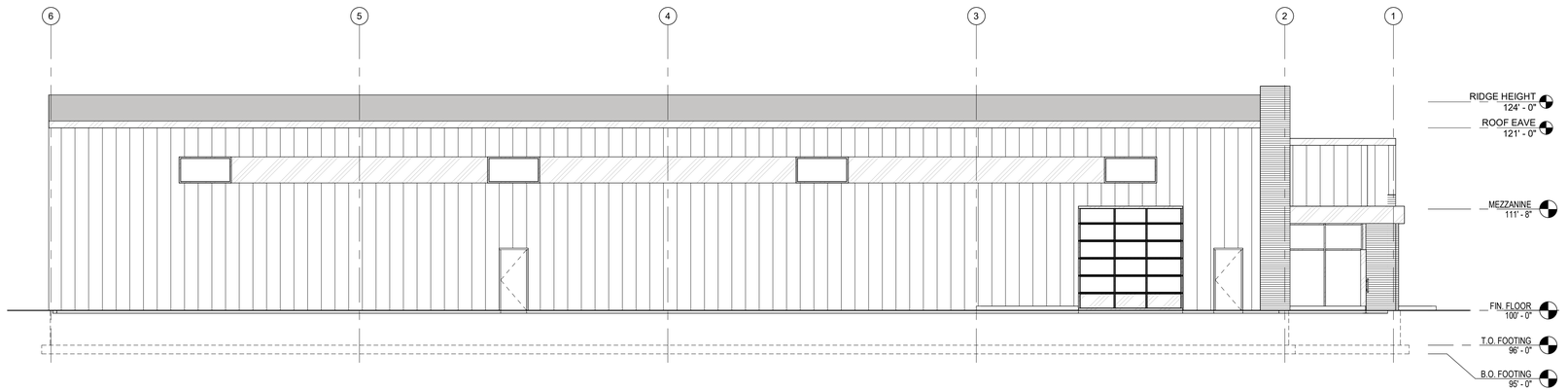
SHEET
A-201
BUILDING ELEVATIONS

50% DD

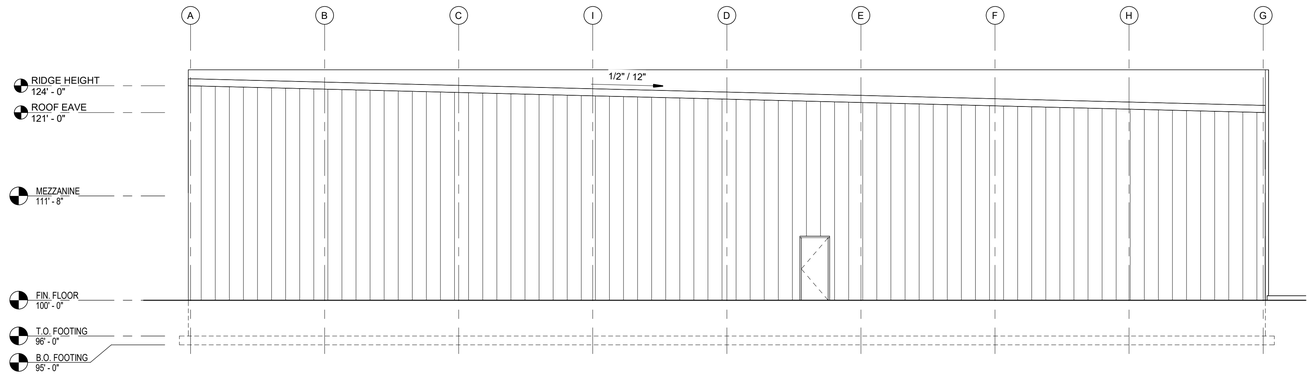
© Copyright 2024 - CREATE design + develop ARCHITECTS, LLC.

9/18/2025 11:52:34 AM

Full size = 24x36; Half size = 12x18



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



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

CREATE
26560 N Shore Pl
Hartford, SD 57033
Wall Lake Township
phone: 605.695.1899

www.create-designdevelop.com

REVISION SCHEDULE

NO.	DESCRIPTION	DATE

MANKATO, MN
ENDLESS ADVENTURES

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Architect under the laws of the State of South Dakota.

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT NO.:	2555
ISSUE DATE:	9/17/2025
DESIGNED BY:	AT
DRAWN BY:	JO
CHECKED BY:	JO

SHEET
A-202
BUILDING ELEVATIONS

50% DD

© Copyright 2024 - CREATE design + develop ARCHITECTS, LLC.

9/18/2025 11:52:34 AM

1 ELEVATION – EAST / PREMIER DR

FINISH KEY | SEE MATERIALS LIST FOR MORE DETAIL			
A	METAL PANEL 1	1,332 sf	42.73%
B	METAL PANEL 2	554 sf	17.77%
C	BRICK	646 sf	20.72
D	METAL TRIM		
E	STORE FRONT	211 sf	6.76%
F	WINDOWS	126 sf	4.04%

2 ELEVATION – SOUTH SIDE

FINISH KEY | SEE MATERIALS LIST FOR MORE DETAIL			
A	METAL PANEL 1	125 sf	3.84%
B	METAL PANEL 2	2,797 sf	86.06%
C	BRICK		
D	METAL TRIM		
E	STORE FRONT	88 sf	2.7%
F	WINDOWS / EXIT DOORS	240 sf	6.83%

3 ELEVATION - WEST SIDE

FINISH KEY | SEE MATERIALS LIST FOR MORE DETAIL			
A	METAL PANEL 1		
B	METAL PANEL 2	2,668 sf	99.22%
C	BRICK		
D	METAL TRIM		
E	STORE FRONT		
F	EXIT DOORS	21 sf	0.78%

4 ELEVATION - NORTH SIDE

FINISH KEY | SEE MATERIALS LIST FOR MORE DETAIL			
A	METAL PANEL 1		
B	METAL PANEL 2	3,531 sf	97.39%
C	BRICK		
D	METAL TRIM		
E	STORE FRONT		
F	WINDOWS / EXIT DOORS	101 sf	2.61%

THIS DOCUMENT IS THE PROPERTY OF APX CONSTRUCTION GROUP AND MAY NOT BE USED, COPIED OR DUPLICATED IN ANY WAY WITHOUT WRITTEN CONSENT. DISCLAIMER: Project is Design-Build due to the lack of on-site consultation & supervision, and control over the actual construction process, and because of the various local building code requirements and weather conditions. The Drafter/Designer/Architect assumes no responsibility in the use of these plans for any damages. This includes structural failures due to any deficiencies, omissions, or errors in the design or blueprints. It is recommended that you consult with a local building official and/or inspector prior to the start of the construction. General Contractor shall verify all existing dimensions and field conditions prior to ordering or fabricating any materials. Sizes and dimensions can differ from what is shown on documents. Cross reference plans with all other consultant's sets. All construction shall be installed in accordance with the manufacturer's current specifications and industry standards. All construction components shall meet adopted code requirements.

CREATE

APX CONSTRUCTION GROUP

THIS DOCUMENT IS THE PROPERTY OF APX CONSTRUCTION GROUP AND MAY NOT BE USED, COPIED OR DUPLICATED IN ANY WAY WITHOUT WRITTEN CONSENT. DISCLAIMER: Project is Design-Build due to the lack of on-site consultation & supervision, and control over the actual construction process, and because of the various local building code requirements and weather conditions. The Drafter/Designer/Architect assumes no responsibility in the use of these plans for any damages. This includes structural failures due to any deficiencies, omissions, or errors in the design or blueprints. It is recommended that you consult with a local building official and/or inspector prior to the start of the construction. General Contractor shall verify all existing dimensions and field conditions prior to ordering or fabricating any materials. Sizes and dimensions can differ from what is shown on documents. Cross reference plans with all other consultant's sets. All construction shall be installed in accordance with the manufacturer's current specifications and industry standards. All construction components shall meet adopted code requirements.

COLOR OF FINISH MAY NOT BE REPRESENTED EXACTLY LIKE PHYSICAL SAMPLE

EXTERIOR WALL (MP-1)

Material Type: METAL PANEL MAIN
Mfr: METALLIC BLDG. SYSTEMS
Texture: FW-120 OR PBR
Color: CHARCOAL

EXTERIOR WALL (MP-2)

Material Type: METAL PANEL FEATURE
Mfr: METALLIC BLDG. SYSTEMS
Texture: PBD
Color: HAWAIIAN BLUE

RETURN ACCENTS (MP-3)

Material Type: METAL PANEL
Mfr: METALLIC BLDG. SYSTEMS
Texture: SMOOTH PDVF
Color: COPPER METALLIC

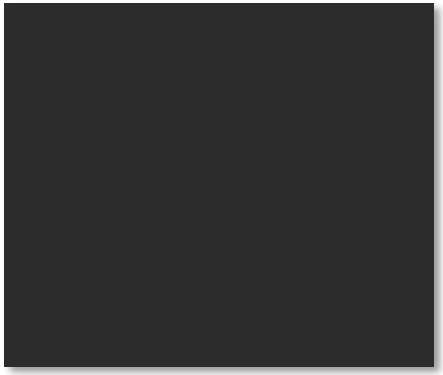
BRICK/STONE ACCENT

Material Type: THIN BRICK
Mfr: BELDEN
Texture: VELOUR
Color: ALASKA WHITE OR SIM.

FW-120

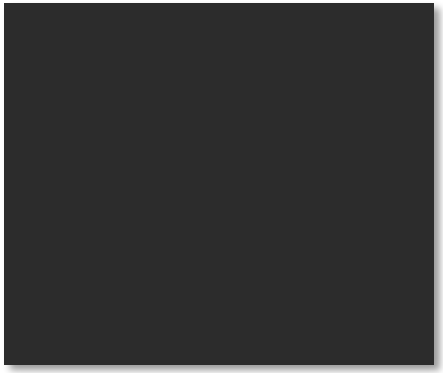
PBR

PBD



STOREFRONT / WINDOWS

Material Type: METAL
Mfr: KAWNEER OR SIM
Color: MATTE BLACK

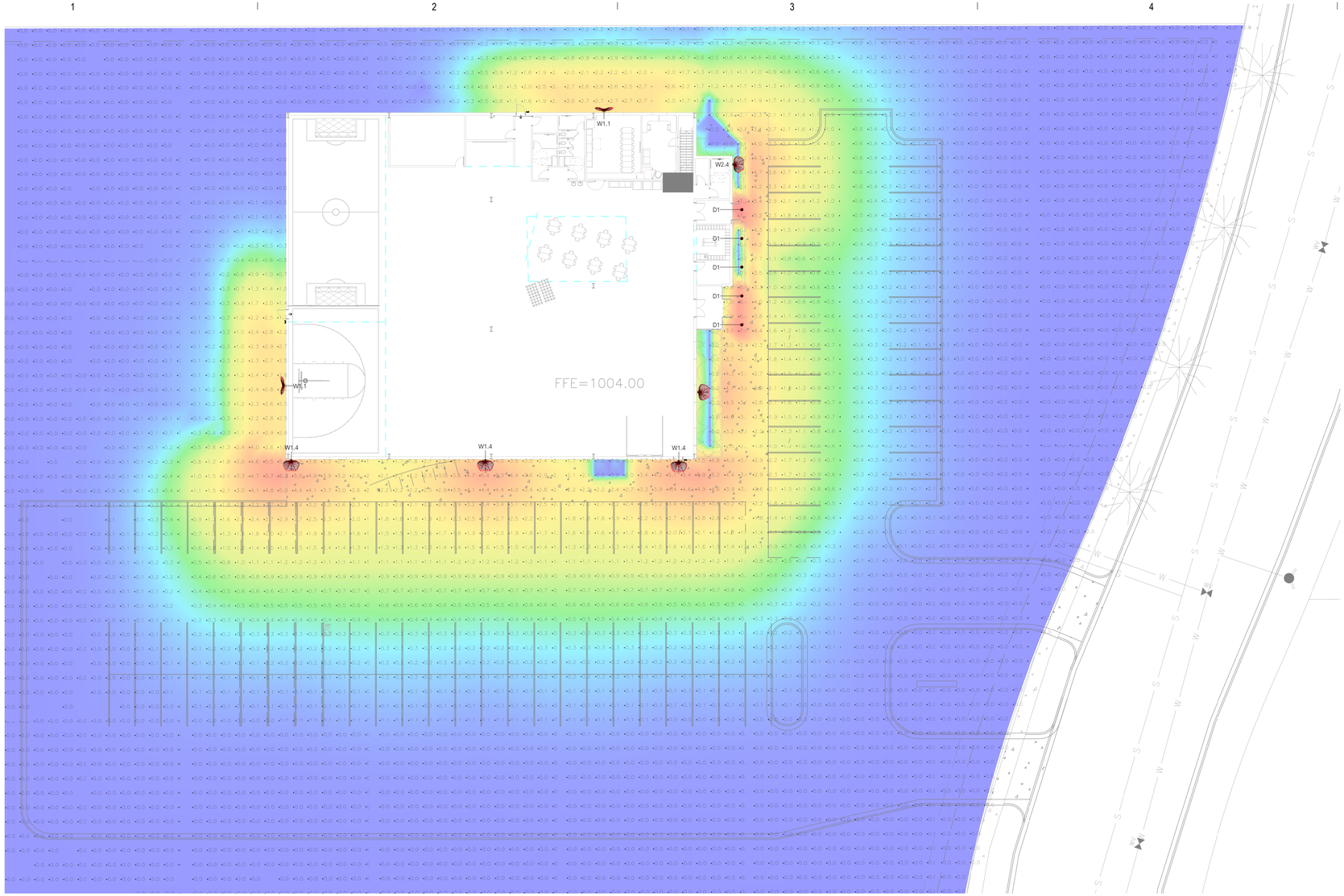


BUILDING CAP / TRIM

Material Type: METAL
Mfr: TBD
Color: MATTE BLACK

APX CONSTRUCTION GROUP

THIS DOCUMENT IS THE PROPERTY OF APX CONSTRUCTION GROUP AND MAY NOT BE USED, COPIED OR DUPLICATED IN ANY WAY WITHOUT WRITTEN CONSENT. DISCLAIMER: Project is Design-Build due to the lack of on-site consultation & supervision, and control over the actual construction process, and because of the various local building code requirements and weather conditions. The Drafter/Designer/Architect assumes no responsibility in the use of these plans for any damages. This includes structural failures due to any deficiencies, omissions, or errors in the design or blueprints. It is recommended that you consult with a local building official and/or inspector prior to the start of the construction. General Contractor shall verify all existing dimensions and field conditions prior to ordering or fabricating any materials. Sizes and dimensions can differ from what is shown on documents. Cross reference plans with all other consultant's sets. All construction shall be installed in accordance with the manufacturer's current specifications and industry standards. All construction components shall meet adopted code requirements.



Global Illuminance (fc)

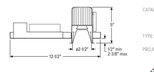
7.24
4.00
2.00
1.00
0.50
0.25
0.13
0.00

ElumTools Default Analysis

D1

2DR LED 2" Downlight – Round

Williams



CATALOG #: _____

TYPE: _____

PROJECT: _____

NEW CONSTRUCTION AND REMODEL

cULus | Low Lumen | SAB | TITLE 24 | WET LOCATION

ORDERING EXAMPLE: 2DR - L20835 - OPTIONS - CONTROL/DIM - VNV - CW - CR - TRIM OPTIONS - N - P1

HOUSING — MOUNT

HOUSING

SERIES	LUMENS [1]	CRI	CCT	OPTIONS	CONTROL	DRIVER	VOLTAGE
2DR	L5 500lm	8 80	27 2700K	*See page 3 for EMERGENCY BATTERY OPTIONS.*	– None	DIM Dimming driver, 0-10V	UNV 120-277V
	LT 900lm		30 3000K	AEM Airtight construction	AVI-LUTA Avi-on wireless fixture control [4]	DIM1 1% Dimming driver, 0-10V with 1% low end trim (dims down to 1% power, without external dimming wire) [4]	347 347V [5]
	L12 1,200lm		35 3500K	CR Clear	AWNE Lutron Athena wireless node integral fixture control, 48' cavity [4]		
	L15 1,500lm		40 4000K	CP Acicagp plenum (CCEA) [6]			
	L20 2,000lm		50 5000K	SDT Stepdown transformer [6]			
	L25 2,500lm						

TRIM [7]

TRIM TYPE	DISTRIBUTION	FLANGE TYPE	REFLECTOR FINISH	TRIM OPTIONS
See page 2 for BEAM ANGLE.				
O Open reflector	M Medium	OF 1/2" standard flange	Open trim types	MWT Smooth matte white trim flange [16]
F Specular reflector with frosted lay-diffuser [8]	N Narrow [9]	ZF Zero-flange mud-in [10]	SC Satin chrome specular anodize	AD Diffuser drop [17]
R Regressed lens	W Wall wash [11]		SG Satin gloss anodize	AG Gasket for wet locations only, [18]
A Angled lens [12]	S Narrow spec [13]		GD Gold anodize	WETCC Wet location, covered ceiling listed
			CG Champagne gold anodize	AR Anti-reflective [19]
			PW Powder anodize	
			SPC Specular powder coat	
			BG Black gold anodize	
			WW White textured powder coat	
			BL Black textured powder coat	
			Lens trim types	
			CS Clear semi-specular powder coat	
			WW White textured powder coat	
			BL Black textured powder coat	
			MB Black texture splay with white flange [20]	

MOUNTING

MOUNTING TYPE [14]
- N Open pan for new construction [14A]
- E IC-rated enclosure for new construction [14B]
- R Remodel kit [14C]

MOUNTING HARDWARE [21]
- P1 Integral 2-position fixed pan bracket, universal bar hanger included [21A]
- BA1 Adjustable butterfly pan bracket, bar hanger not included [21B]
- CA1 Adjustable caterpillar pan bracket, universal bar hanger included [21C]

NOTES

1 Lumen output based on 0 Trim Type, W Distribution, and CS Reflector Finish. See page 4 for lumen output based on other trim + CS, see page 2 for FIXTURE PERFORMANCE DATA.
2 1 Mounting Type required.
3 Driver and Voltage selection. May be required for 347V, see product builder at litecontrolbuilder.com/builder.
4 DA Driver only. See page 4 for AVI-ON BLUETOOTH WIRELESS CONTROL DETAILS.
5 DA Drivers only.
6 Aer-on and Lutron Athena Controls only. Not available with 8 CRI or Specular.
7 Not available with EM batteries, DA, or DIM drivers.
8 Trim steps separately.
9 WETCC standard unless ordered with EM/RTL.
10 Available with WW Distribution only.
11 When specified with L or R Trim Type: L20 lumen package max for 1 Mounting Type; L15 lumen package max for 2 Mounting Type.
12 L15 lumen package max for N and R Mounting. L12 lumen package max for Wall Wash Mounting. Not available with SDG CRI/CCT, A Trim Type only.
13 For use with mud-in plaster construction only, supplied with temporary plaster ring. Not available with 2" Zero Flange (ZF). DETAIL 5. Not available with D or A Trim Types or ATH Option.
14 R Trim Type only. Not available with ZF Flange Type or WWT.
15 Not available with L Trim Type. ZF Flange Type or WH Reflector finish.
16 W Distribution only. Not available with O or F Trim Types.
17 Round WW Distributions only. Not available with O or F Trim Types.
18 WH and BL Reflector Finishes only.
19 Not available with 8 CRI.
20 Not available with WW Distribution.
21 Mounting hardware required (N and I only), ordered separately. Mounting hardware is included in housing kits. See page 4 for MOUNTING TYPE DETAILS.
22 Additional mounting hardware options available. See page 4 for MOUNTING HARDWARE DETAILS.

W2.4

WDGE3 LED
Architectural Wall Sconce

Catalog Number
Notes
Type

Specifications

Depth (D1): 8"
Depth (D2): 1.5"
Height: 9"
Width: 18"
Weight: (without options) 19.5 lbs

Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with nLight® AIR wireless controls, the WDGE family provides additional energy savings and code compliance.

WDGE3 has been designed to deliver up to 12,000 lumens through a precision refractive lens with wide distribution, perfect for augmenting the lighting from pole mounted luminaires.

Items marked by a shaded background qualify for the Design Select program and ship in 15 days or less. To learn more about Design Select, visit www.acuitybrands.com/designselect. *See ordering tree for details.

WDGE LED Family Overview

Luminaire	Optics	Standard 4ft, 8°C	Cold 4ft, -20°C	Sensor	Approximate Lumens (4000K, 80CRI)						
					P5	P7	P1	P2	P3	P4	P6
WDGE1 LED	Visual Comfort	4W		–	750	1,200	2,000	–	–	–	–
WDGE2 LED	Visual Comfort	10W	18W	Standalone / nLight	–	1,200	2,000	3,000	4,500	6,000	–
WDGE2 LED	Precision Refractive	10W	18W	Standalone / nLight	700	1,200	2,000	3,200	4,200	–	–
WDGE3 LED	Precision Refractive	15W	18W	Standalone / nLight	6,000	7,500	8,500	10,000	12,000	–	–
WDGE4 LED	Precision Refractive			Standalone / nLight	–	12,000	16,000	18,000	20,000	22,000	25,000

Ordering Information

EXAMPLE: WDGE3 LED P3 40K 70CRI R3 MVOLT SRM DDBXD

Series	Package	Color Temperature	CRI	Distribution	Voltage	Mounting
WDGE3 LED	P6	30K 3000K	70CRI	R2 Type 2	MVOLT	Shipped included
	P5	40K 4000K	80CRI	R3 Type 3	347	SRM Surface mounting bracket
	P3	50K 5000K		R4 Type 4	480	ICW Indirect ceiling mounting Washer bracket (dry/damp locations only)*
	P2			BRT Forward Throw		
	P1					

Shipped separately
AWS 3/8 inch Architectural wall spacer*
PBBW Surface-mounted back box (top, left, right conduit entry). Use when there is no junction box available.*

Options		Finish	
ETSWH	Emergency battery backup, Certified in CA Title 20 MAEDBS (10W, 1°C min)	Standalone Sensors/Controls	DDBXD Dark bronze
E20WC	Emergency battery backup, Certified in CA Title 20 MAEDBS (10W, -20°C min)	PIR Bi-level (100/35%) motion sensor for 8-15' mounting heights. Intended for use on switched circuits with external dual-to-dawn switching.	DBLXD Black
PE	Photocell, Button Type*	PIRH Bi-level (100/35%) motion sensor for 15-30' mounting heights. Intended for use on switched circuits with external dual-to-dawn switching.	DNAXD Natural aluminum
DMG	0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately)*	PIR1FC3V Bi-level (100/35%) motion sensor for 8-15' mounting heights with photocell pre-programmed for dusk to dawn operation.	DWHXD White
BCE	Bottom conduit entry for back box (PBBW). Total of 4 entry points.	PIRH1FC3V Bi-level (100/35%) motion sensor for 15-30'mounting heights with photocell pre-programmed for dusk to dawn operation.	DSSXD Sandstone
SPD10KV	10kV surge pack*	Networked Sensors/Controls	DDBTXD Textured dark bronze
CCE	Coastal Construction*	NLTAIR2 PIR Embedded wireless controls by nLight with Passive Infrared (Pir) sensor and on/off photocell for 8-15' mounting heights.	DBLBXD Textured black
		NLTAIR2 PIRH Embedded wireless controls by nLight with Passive Infrared (Pir) sensor and on/off photocell for 15'-30' mounting heights.	DNATXD Textured natural aluminum
		NLTAIRE2 PIR Embedded wireless controls by nLight with UL924 listed emergency operation, Passive Infrared (Pir) sensor and on/off photocell for 8-15' mounting heights.	DWHGXD Textured white
		NLTAIRE2 PIRH Embedded wireless controls by nLight with UL924 listed emergency operation, Passive Infrared (Pir) sensor and on/off photocell for 15'-30' mounting heights.	DSSTXD Textured sandstone
		See page 4 for rest of nLite functionality.	

Accessories

Ordered and shipped separately.
WSGXWS DDBXD — WSG 1.5Inch Architectural Wall Spacer (specify finish)
WSGLPBBW DDBXD U — WSG2 surface-mounted back box (specify finish)

NOTES
1 347V and 480V not available with ETSWH and E20WC.
2 Not available with PE, DMG. Not available with emergency battery backup or sensors/controls.
3 For PBBW and AWS with CCE option, require an RPA.
4 Not available with 347V, 480V and with sensors/controls.
5 DMG option not available with sensors/controls.
6 Not available with E20WC option.
7 Not available with MVOLT only and only rated to 25C ambient.

© 2019-2025 Acuity Brands Lighting, Inc. All rights reserved.

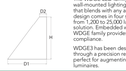
W1.4

WDGE3 LED
Architectural Wall Sconce

Catalog Number
Notes
Type

Specifications

Depth (D1): 8"
Depth (D2): 1.5"
Height: 9"
Width: 18"
Weight: (without options) 19.5 lbs



Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with nLight® AIR wireless controls, the WDGE family provides additional energy savings and code compliance.

WDGE3 has been designed to deliver up to 12,000 lumens through a precision refractive lens with wide distribution, perfect for augmenting the lighting from pole mounted luminaires.

Items marked by a shaded background qualify for the Design Select program and ship in 15 days or less. To learn more about Design Select, visit www.acuitybrands.com/designselect. *See ordering tree for details.

WDGE LED Family Overview

Luminaire	Optics	Standard 4ft, 8°C	Cold 4ft, -20°C	Sensor	Approximate Lumens (4000K, 80CRI)						
					P5	P7	P1	P2	P3	P4	P6
WDGE1 LED	Visual Comfort	4W		–	750	1,200	2,000	–	–	–	–
WDGE2 LED	Visual Comfort	10W	18W	Standalone / nLight	–	1,200	2,000	3,000	4,500	6,000	–
WDGE2 LED	Precision Refractive	10W	18W	Standalone / nLight	700	1,200	2,000	3,200	4,200	–	–
WDGE3 LED	Precision Refractive	15W	18W	Standalone / nLight	6,000	7,500	8,500	10,000	12,000	–	–
WDGE4 LED	Precision Refractive			Standalone / nLight	–	12,000	16,000	18,000	20,000	22,000	25,000

Ordering Information

EXAMPLE: WDGE3 LED P3 40K 70CRI R3 MVOLT SRM DDBXD

Series	Package	Color Temperature	CRI	Distribution	Voltage	Mounting
WDGE3 LED	P6	30K 3000K	70CRI	R2 Type 2	MVOLT	Shipped included
	P5	40K 4000K	80CRI	R3 Type 3	347	SRM Surface mounting bracket
	P3	50K 5000K		R4 Type 4	480	ICW Indirect ceiling mounting Washer bracket (dry/damp locations only)*
	P2			BRT Forward Throw		
	P1					

Shipped separately
AWS 3/8 inch Architectural wall spacer*
PBBW Surface-mounted back box (top, left, right conduit entry). Use when there is no junction box available.*

Options		Finish	
ETSWH	Emergency battery backup, Certified in CA Title 20 MAEDBS (10W, 1°C min)	Standalone Sensors/Controls	DDBXD Dark bronze
E20WC	Emergency battery backup, Certified in CA Title 20 MAEDBS (10W, -20°C min)	PIR Bi-level (100/35%) motion sensor for 8-15' mounting heights. Intended for use on switched circuits with external dual-to-dawn switching.	DBLXD Black
PE	Photocell, Button Type*	PIRH Bi-level (100/35%) motion sensor for 15-30'mounting heights. Intended for use on switched circuits with external dual-to-dawn switching.	DNAXD Natural aluminum
DMG	0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately)*	PIR1FC3V Bi-level (100/35%) motion sensor for 8-15' mounting heights with photocell pre-programmed for dusk to dawn operation.	DWHXD White
BCE	Bottom conduit entry for back box (PBBW). Total of 4 entry points.	PIRH1FC3V Bi-level (100/35%) motion sensor for 15-30'mounting heights with photocell pre-programmed for dusk to dawn operation.	DSSXD Sandstone
SPD10KV	10kV surge pack*	Networked Sensors/Controls	DDBTXD Textured dark bronze
CCE	Coastal Construction*	NLTAIR2 PIR Embedded wireless controls by nLight with Passive Infrared (Pir) sensor and on/off photocell for 8-15' mounting heights.	DBLBXD Textured black
		NLTAIR2 PIRH Embedded wireless controls by nLight with Passive Infrared (Pir) sensor and on/off photocell for 15'-30' mounting heights.	DNATXD Textured natural aluminum
		NLTAIRE2 PIR Embedded wireless controls by nLight with UL924 listed emergency operation, Passive Infrared (Pir) sensor and on/off photocell for 8-15' mounting heights.	DWHGXD Textured white
		NLTAIRE2 PIRH Embedded wireless controls by nLight with UL924 listed emergency operation, Passive Infrared (Pir) sensor and on/off photocell for 15'-30' mounting heights.	DSSTXD Textured sandstone
		See page 4 for rest of nLite functionality.	

Accessories

Ordered and shipped separately.
WSGXWS DDBXD — WSG 1.5Inch Architectural Wall Spacer (specify finish)
WSGLPBBW DDBXD U — WSG2 surface-mounted back box (specify finish)

NOTES
1 347V and 480V not available with ETSWH and E20WC.
2 Not available with PE, DMG. Not available with emergency battery backup or sensors/controls.
3 For PBBW and AWS with CCE option, require an RPA.
4 Not available with 347V, 480V and with sensors/controls.
5 DMG option not available with sensors/controls.
6 Not available with E20WC option.
7 Not available with MVOLT only and only rated to 25C ambient.

© 2019-2025 Acuity Brands Lighting, Inc. All rights reserved.

W1.2

WDGE2 LED
Architectural Wall Sconce
Precision Refractive Optic

Catalog Number
Notes
Type

Specifications

Depth (D1): 7"
Depth (D2): 1.5"
Height: 9"
Width: 11.5"
Weight: (without options) 13.5 lbs

Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with nLight® AIR wireless controls, the WDGE family provides additional energy savings and code compliance.

WDGE2 with industry leading precision refractive optics provides great uniform distribution and optical control. When combined with multiple integrated emergency battery backup options, including an 18W cold temperature option, the WDGE2 becomes the ideal wall-mounted lighting solution for pedestrian scale applications in any environment.

Items marked by a shaded background qualify for the Design Select program and ship in 15 days or less. To learn more about Design Select, visit www.acuitybrands.com/designselect. *See ordering tree for details.

WDGE LED Family Overview

Luminaire	Optics	Standard 4ft, 8°C	Cold 4ft, -20°C	Sensor	Approximate Lumens (4000K, 80CRI)						
					P5	P7	P1	P2	P3	P4	P6
WDGE1 LED	Visual Comfort	4W		–	750	1,200	2,000	–	–	–	–
WDGE2 LED	Visual Comfort	10W	18W	Standalone / nLight	–	1,200	2,000	3,000	4,500	6,000	–
WDGE2 LED	Precision Refractive	10W	18W	Standalone / nLight	700	1,200	2,000	3,200	4,200	–	–
WDGE3 LED	Precision Refractive	15W	18W	Standalone / nLight	6,000	7,500	8,500	10,000	12,000	–	–
WDGE4 LED	Precision Refractive			Standalone / nLight	–	12,000	16,000	18,000	20,000	22,000	25,000

Ordering Information

EXAMPLE: WDGE2 LED P3 40K 80CRI T3M MVOLT SRM DDBXD

Series	Package	Color Temperature	CRI	Distribution	Voltage	Mounting
WDGE2 LED	P6	27K 2700K	70CRI	T2L Type 1 Short	MVOLT	Shipped included
	P5	30K 3000K	80CRI	T2M Type 1 Medium	347	SRM Surface mounting bracket
	P3	40K 4000K		T3M Type 2 Medium	480	ICW Indirect ceiling mounting Washer bracket (dry/damp locations only)*
	P2	50K 5000K		T4M Type 3 Medium		
	P1			TFTM Forward Throw Medium		

Shipped separately
AWS 3/8inch Architectural wall spacer*
PBBW Surface-mounted back box (top, left, right conduit entry). Use when there is no junction box available*

Options		Finish	
ETSWH	Emergency battery backup, Certified in CA Title 20 MAEDBS (10W, 1°C min)	Standalone Sensors/Controls	DDBXD Dark bronze
E20WC	Emergency battery backup, Certified in CA Title 20 MAEDBS (10W, -20°C min)	PIR Bi-level (100/35%) motion sensor for 8-15' mounting heights. Intended for use on switched circuits with external dual-to-dawn switching.	DBLXD Black
PE	Photocell, Button Type*	PIRH Bi-level (100/35%) motion sensor for 15-30'mounting heights. Intended for use on switched circuits with external dual-to-dawn switching.	DNAXD Natural aluminum
DMG	0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately)*	PIR1FC3V Bi-level (100/35%) motion sensor for 8-15' mounting heights with photocell pre-programmed for dusk to dawn operation.	DWHXD White
BCE	Bottom conduit entry for back box (PBBW). Total of 4 entry points.	PIRH1FC3V Bi-level (100/35%) motion sensor for 15-30'mounting heights with photocell pre-programmed for dusk to dawn operation.	DSSXD Sandstone
CCE	Coastal Construction*	Networked Sensors/Controls	DDBTXD Textured dark bronze
		NLTAIR2 PIR Embedded wireless controls by nLight with Passive Infrared (Pir) sensor and on/off photocell for 8-15' mounting heights.	DBLBXD Textured black
		NLTAIR2 PIRH Embedded wireless controls by nLight with Passive Infrared (Pir) sensor and on/off photocell for 15'-30' mounting heights.	DNATXD Textured natural aluminum
		NLTAIRE2 PIR Embedded wireless controls by nLight with UL924 listed emergency operation, Passive Infrared (Pir) sensor and on/off photocell for 8-15' mounting heights.	DWHGXD Textured white
		NLTAIRE2 PIRH Embedded wireless controls by nLight with UL924 listed emergency operation, Passive Infrared (Pir) sensor and on/off photocell for 15'-30' mounting heights.	DSSTXD Textured sandstone
		See page 4 for rest of nLite functionality.	

NOTES
1 347V and 480V not available with E20WC option.
2 Not available with MVOLT only and only rated to 25C ambient.

© 2019-2025 Acuity Brands Lighting, Inc. All rights reserved.

CREATE
26560 N Shore Pl
Hartford, SD 57033
Wall Lake Township
phone: 605.695.1899

www.create-designdevelop.com

REVISION SCHEDULE

NO.	DESCRIPTION	DATE

Owner
ENDLESS ADVENTURES
MANKATO, MN

INTEGRAL ENGINEERING

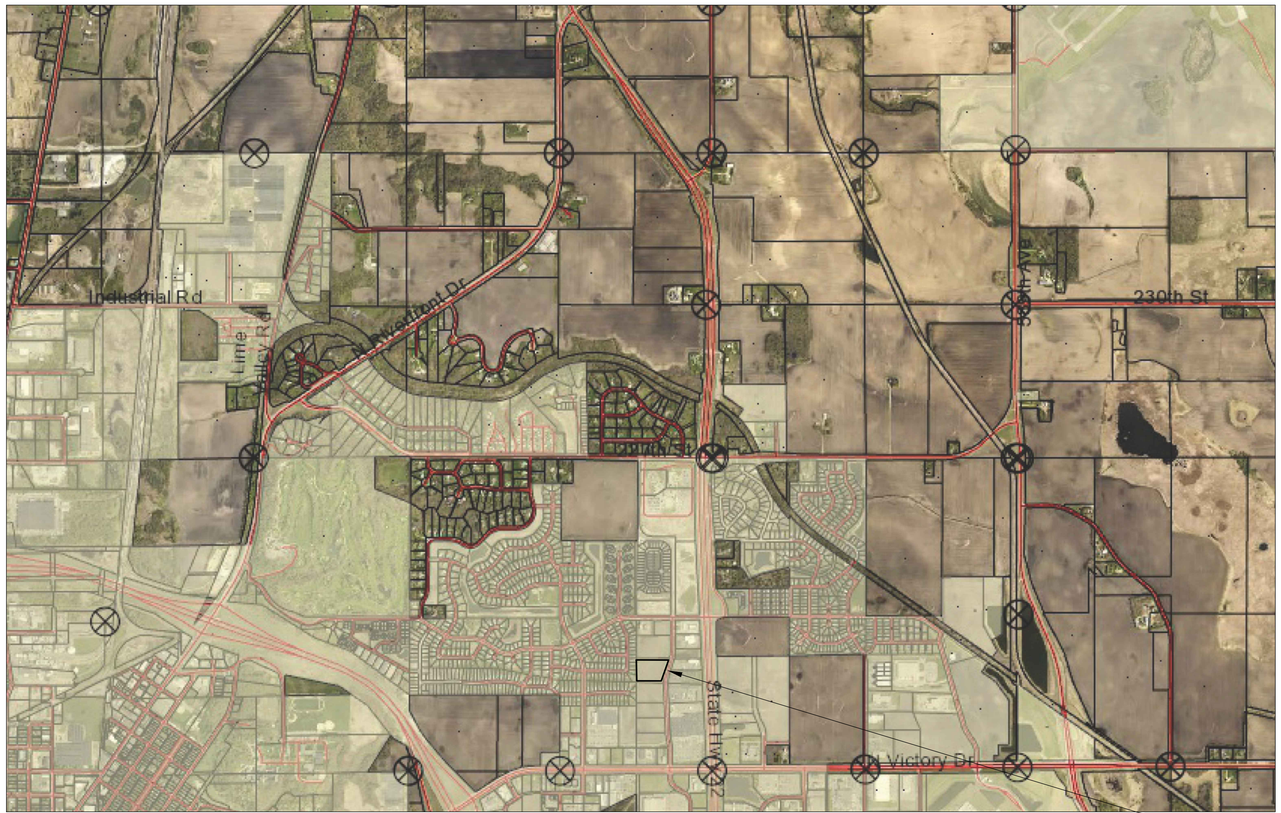
PROJECT NO.: 25055
ISSUE DATE: 2025.09.22
DESIGNED BY: L. Weyer
DRAWN BY: L. Weyer
CHECKED BY: L. Weyer

SHEET
E901
PHOTOMETRIC CALCULATIONS

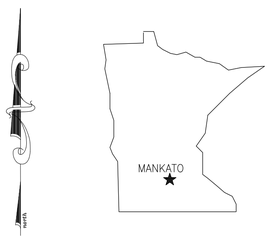
CITY REVIEW

© Copyright 2024 - CREATE design + develop ARCHITECTS, LLC

ENDLESS ADVENTURES
IN LOT 5, BLOCK 2, VENSTAR SUBDIVISION
MANKATO, MN



PROJECT LOCATION



INDEX TO SHEETS

C1: TITLE SHEET
C2: EXISTING CONDITIONS/REMOVAL PLAN
C3: HARDSCAPE PLAN
C4: LANDSCAPE PLAN
C5: UTILITY PLAN
C6: GRADING/SWPP PLAN
C7: DETAILS
C8: SWPPP NARRATIVE & DETAILS
C9: SPECIFICATIONS
C10: SPECIFICATIONS

THIS PLAN CONTAINS 10 SHEETS

LEGEND

- = 5/8"Ø X 16" iron stake monument
- =Iron stake monument-Found
- W = Water Main
- S = Sanitary Sewer
- ST = Storm Sewer
- G = Gas Main
- UT = Underground Telephone
- OT = Overhead Telephone
- FO = Fiber-Optics
- UE = Underground Electric
- OE = Overhead Electric
- X = Chain Link Fence
- = Control Access
- = Gate Post
- = Bollards
- E = Electric Meter
- G = Gas Meter
- F = Fiber-Optics Box
- T = Telephone Pedestal
- = Light Tower
- = Silt Fence
- F&I = Furnish & Install
- 1272 = Existing Elevation Contour Line
- 1272 = Propsoed Elevation Contour Line

- = Sign
- HC = Sign-Handicap
- = Light Pole
- = Power Pole
- = Guy Anchor
- = Fire hydrant
- GV = Water Main Valve
- FDC = Fire Sprinkler
- C = Cleanout
- = Culvert
- GV = Gas Main Valve
- = Catch Basin
- W ST S = Manholes
- 1271.23 = Spot Elevation
- RM1270.89 = Rim Elevation
- FL1262.34 = Line Elevation
- =Concrete Surface
- =Bituminous Surface
- =Gravel Surface
- 27.00 =Proposed Pavement Elevation
- 28.0 / 24.0 =Proposed Top/Bottom of Retaining Wall Elevation

APPLICABLE CONSTRUCTION PERMITS

ALL CONSTRUCTION WITHIN COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH THE APPLICABLE PERMIT AS ISSUED BY THE COUNTY HIGHWAY DEPT.

GENERAL NOTES

DEVELOPER, CONTRACTOR AND ALL SUBCONTRACTORS SHALL COMPLY WITH ALL APPLICABLE CODES AND ORDINANCES GOVERNED BY STATE AND LOCAL JURISDICTION.

SITE IRRIGATING, LIGHTING, LANDSCAPING, SIGNING ARE NOT A PART OF THIS PLAN.

PROVIDE EROSION CONTROL PER NPDES PERMIT REQUIREMENTS AND AS SHOWN.

PROVIDE HANDICAP CURB RAMPS & SIGNAGE. COMPLY WITH ALL AMERICAN DISABILITY ACT REQUIREMENTS.

ALL CONCRETE OR ASHPALTIC PAVEMENT CONSTRUCTION SHALL COMPLY WITH THE PROVISIONS OF MN/DOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION.

A ROCK CONSTRUCTION ENTRANCE IS REQUIRED AT ALL ENTRANCES FROM BITUMINOUS PAVEMENT.

ACCESS FOR LOCAL RESIDENTS/BUSINESSES SHALL ALWAYS BE MAINTAINED. PROVIDE PAVEMENT STRIPING AS SHOWN

CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR CONSTRUCTION.

SEE BOUNDARY SURVEY BY OTHERS FOR SITE BOUNDARIES.

ANY ALTERATIONS OR REVISIONS TO THE SITE DEVELOPMENT PLAN AS SHOWN SHALL NOT BE THE RESPONSIBILITY OF JONES, HAUGH & SMITH INC. AND SHALL RELEASE JONES, HAUGH & SMITH INC. OF ANY LIABILITY FOR ANY DAMAGES CAUSED THEREFROM UNLESS WRITTEN AUTHORIZATION OR PLAN REVISION HAS BE APPROVED BY JONES, HAUGH & SMITH INC. PRIOR.

BENCHMARK 1

TOP NUT OF FIRE HYDRANT ACROSS PREMIER DR. FROM SITE, ELEV.=1005.48

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

Brian J. Jamison
Reg. No. 42744
Date: 9/4/25

Consultant:
JONES HAUGH SMITH
Engineers + Surveyors
515 South Washington Ave. Albert Lea, MN 507-373-4876

Project: ENDLESS ADVENTURES

Revision:

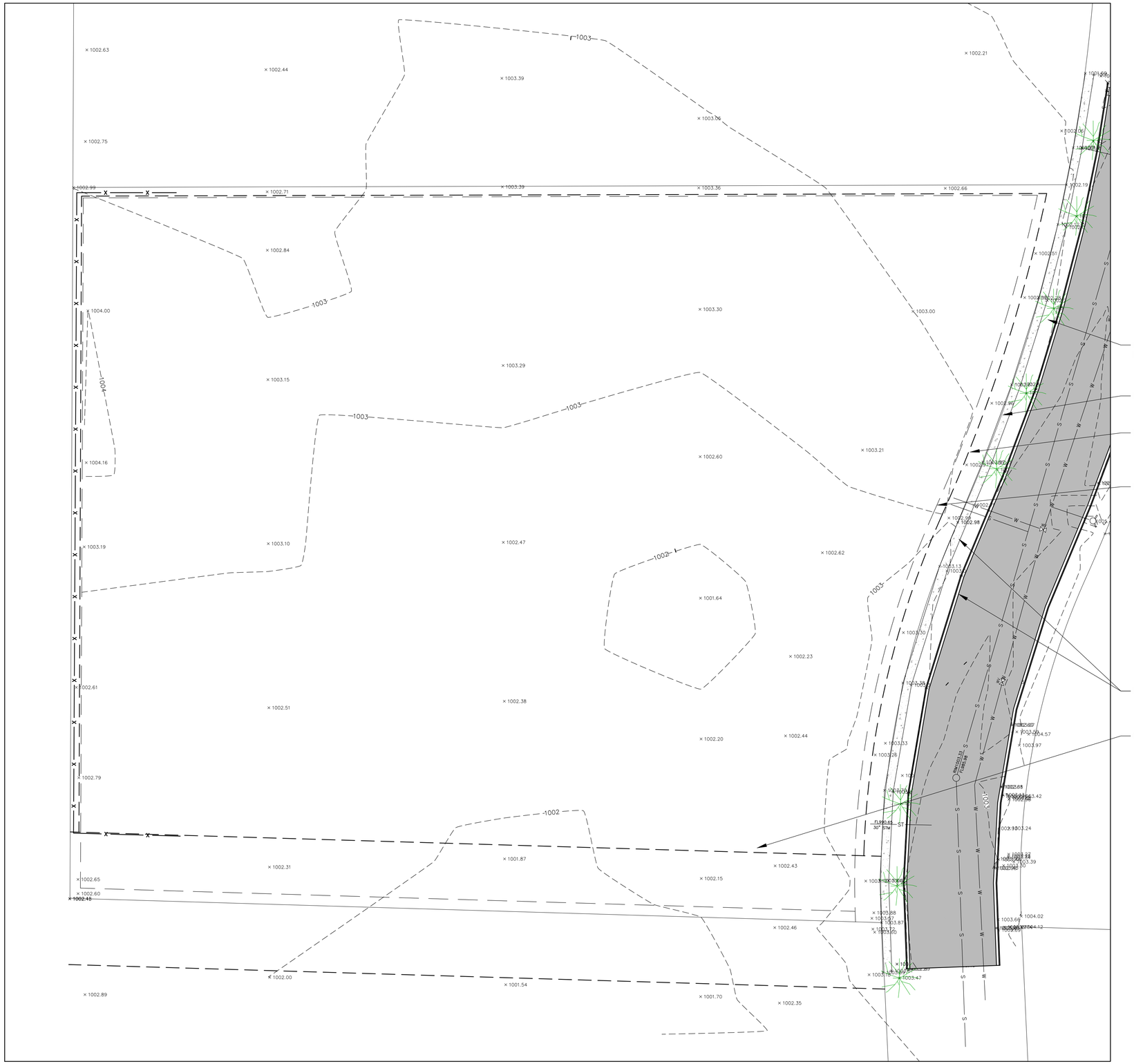
No.:	Date: 9/4/25
Drawn: bjj	Checked:

Project Manager:

Project Status: CD

Sheet Title: TITLE SHEET

Sheet No.: C1



1"=30'

30 0 30

HORIZ. SCALE FEET

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

Brian J. Johnson
Reg. No. 42164
Date: 9/4/25

Consultant:

JONES HAUGH SMITH

Engineers + Surveyors

515 South Washington Ave. Albert Lea, MN 507-373-4876

Project:

ENDLESS ADVENTURES

Revision:

No.:	Date: 9/4/25
Drawn: bjj	Checked:

Project Manager:

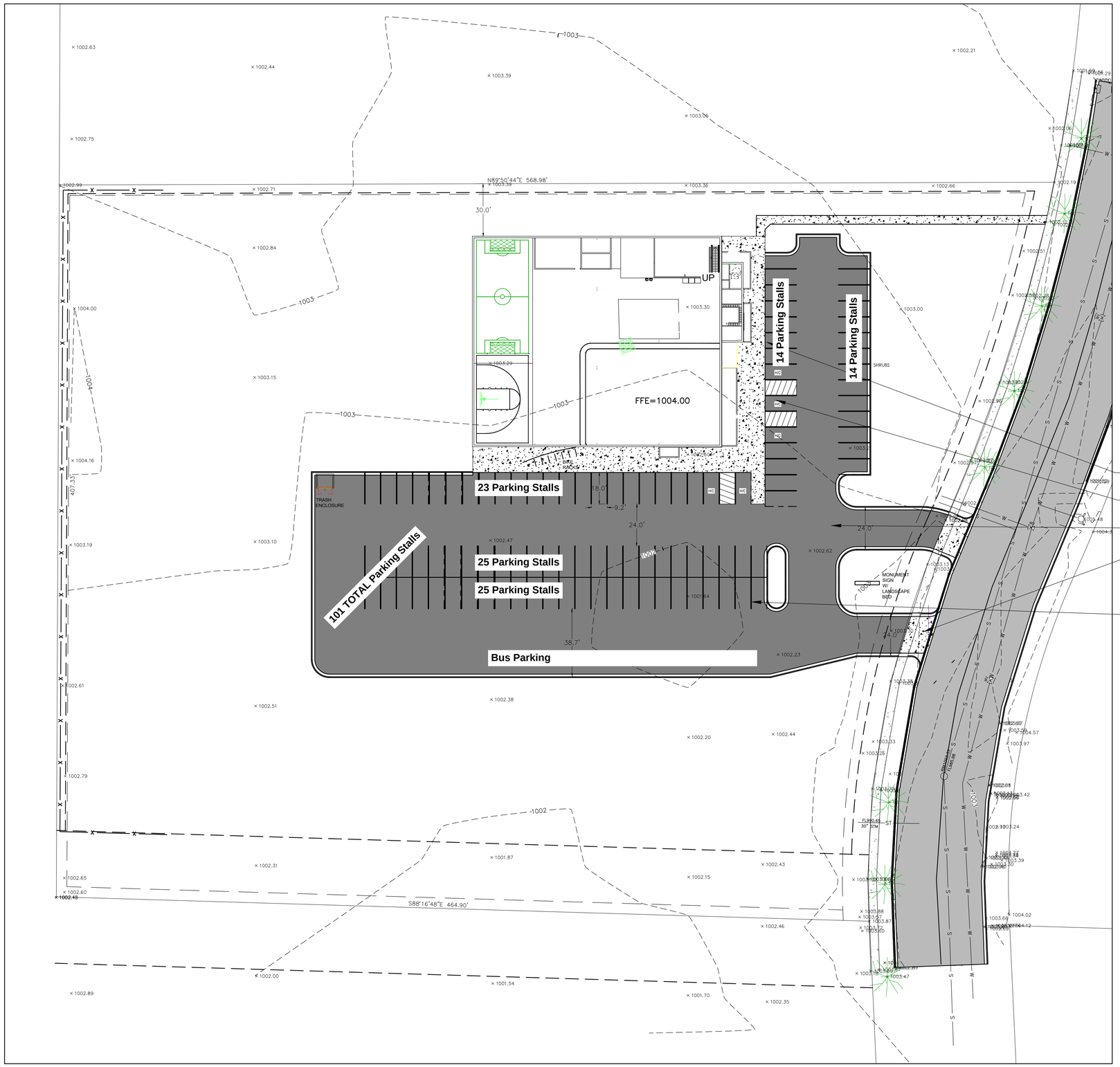
Project Status: CD

Sheet Title:

EXISITNG CONDITIONS

Sheet No.:

C2



ZONING NOTES

B-3 COMMERCIAL DISTRICT
SUBD.3. HIGHWAY GATEWAY OVERLAY DISTRICT

BUILDING SETBACKS: FRONT: 15', SIDE: 6', REAR: 6'

CHAPTER 10. SEC. 10.47 - B-3 HIGHWAY COMMERCIAL DISTRICT
SUBD. 2 PERMITTED USES
A. USES LISTED IN THE B-1 COMMUNITY BUSINESS DISTRICT
(CH. 10.SEC. 10.45.SUBD.2.T./WW.)

PART V. SEC. 10.48. SUBD.3.SUBPART 5. YARDS & SETBACKS

PARKING

A.1. ON CORNER LOTS THE BUILD-TO ZONE IS 15' MINIMUM AND 85' MAXIMUM FROM THE PROPERTY LINE @ BOTH FRONTAGES

D. THE SIDE AND REAR YARD SETBACK IS 3' TO IMPERVIOUS SURFACE

PART IX. SEC 10.88. SUBD. 8 REFUSE CONTAINERS
ALL CONTAINERS SHOULD BE FULLY ENCLOSED BY A GATED ENCLOSURE TALL ENOUGH TO COMPLETELY SHIELD FROM VIEW. THE WALL SHOULD HAVE A FINISH SIMILAR TO THE PRIMARY BUILDING

J.1. MONUMENT SIGNAGE
a. 8' OR TALLER SHALL BE CONSTRUCTED WITH THE ENTIRE BOTTOM OF THE SIGN IN CONTACT WITH THE GROUND. BOTTOM 2' OF SIGN SHOULD BE BUILT OF STONE, CONCRETE, BRICK, OR BLOCK. A SOLID BACKGROUND AREA SHOULD BE PROVIDED TO THE TOP OF THE SIGN.
d. THE SQUARE FOOTAGE OF MONUMENT SIGN NOT TO EXCEED THE LINEAL FRONTAGE OF THE LOT (290 FT @ AUGUSTA DRIVE/ 270 FT @
g. DESIGN ELEMENTS OF THE SIGN SHOULD BE CONSISTENT WITH THOSE
e. THE SIGN FACE TO OCCUPY AT LEAST 50% OF THE SIGN.
f. LANDSCAPE THE BASE OF THE SIGN WITH AN AREA AT LEAST 50%

THE AREA OF THE SIGN FACE. CHOOSE HARDY, SEASONALLY OF THE MAIN BUILDING.

h. MINIMUM OF 5' SETBACK FROM PROPERTY LINES (AND NOT WITHIN 25' TRIANGLE @ THE CORNER OF THE LOT)

F&I THICKENED EDGE WALK ALONG BUILDING EXCEPT AT ADA STALLS TAPER BLACKTOP TO MATCH TOP OF WALK AT ADA STALLS PER DETAIL

RAMP BITUMINOUS TO MATCH SIDEWALK AT ADA STALLS–SEE GRADING PLAN & RAMP DETAIL

F&I BITUMINOUS PAVEMENT TYP. – SEE TYPICAL PAVEMENT SECTION

CITY OF MANKATO STANDARD CONCRETE COMMERCIAL ENTRANCE TYP.

F&I PAVEMENT STRIPING & MESSAGES TYP.

1"=30'
30 0 30
HORIZ. SCALE FEET

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

Brian J. Johnson
Reg. No. 42144
Date: 9/4/25

Consultant:
JONES HAUGH SMITH
Engineers + Surveyors
515 South Washington Ave. Albert Lea, MN 507.373.4876

Project:
ENDLESS ADVENTURES

Revision:

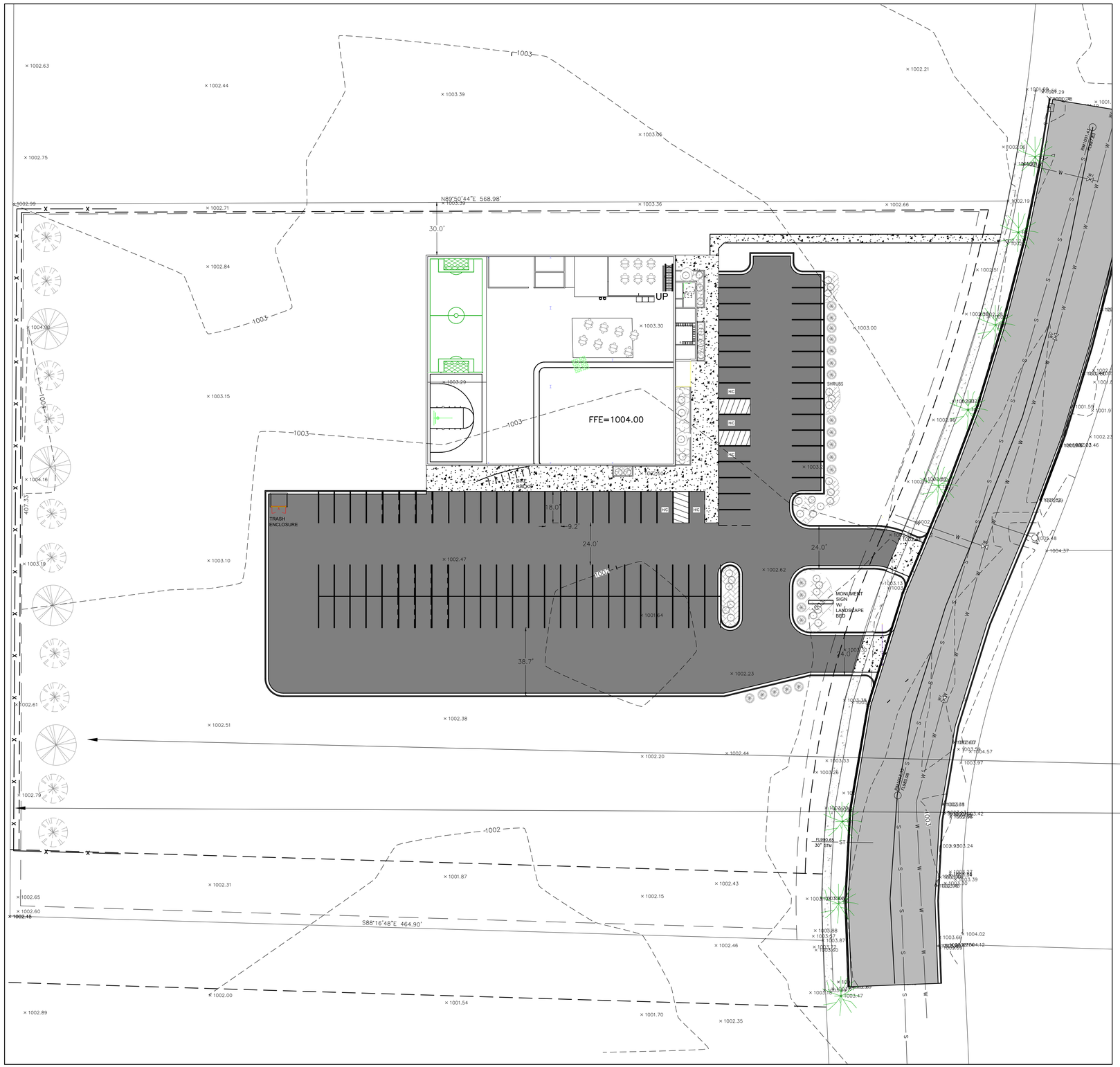
No.:	Date: 9/4/25
Drawn: bjj	Checked:

Project Manager:

Project Status: CD

Sheet Title:
HARDSCAPE PLAN

Sheet No.:
C3



LANDSCAPING NOTES

B-3 COMMERCIAL DISTRICT
SUBD.3. HIGHWAY GATEWAY OVERLAY DISTRICT

Sec. 10-1740 PERIMETER OFF STREET PARKING LOT
(1) SHADE TREE/ 50 LF OF FRONTAGE
(1) EVERGREEN TREE/ 25 LF OF FRONTAGE
80% OPAQUE ALONG ALL PARKING FRONTING STREET

PLANTING BEDS SHALL BE MULCHED WITH BARK CHIPS, ROCK MULCH, FEATHER ROCKS OR SIMILAR MATERIAL.

PERIMETER LANDSCAPING & TRANSITIONAL YARDS 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.

LANDSCAPING LEGEND

=DENOTES SHADE TREE

=EVERGREEN TREE

=DENOTES SHRUB

=DENOTES ARBOVITAE HEDGE (4' MIN. – 8' MAX)
(80% OPAQUE ALONG ALL PARKING FRONTING PREMIER DR.)

=DENOTES EXISTING BOULEVARD TREE

=DENOTES PLANTING BED W/ MULCH

=DENOTES 6' HIGH VINYL FENCE

NORTH

1"=30'

30 0 30
HORIZ. SCALE FEET

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed professional engineer under the laws of the State of Minnesota.

Brian J. Johnson
Reg. No. 42244
Date: 9/4/25

Consultant:
JONES HAUGH SMITH
Engineers + Surveyors
515 South Washington Ave. Albert Lea, MN 507.373.4876

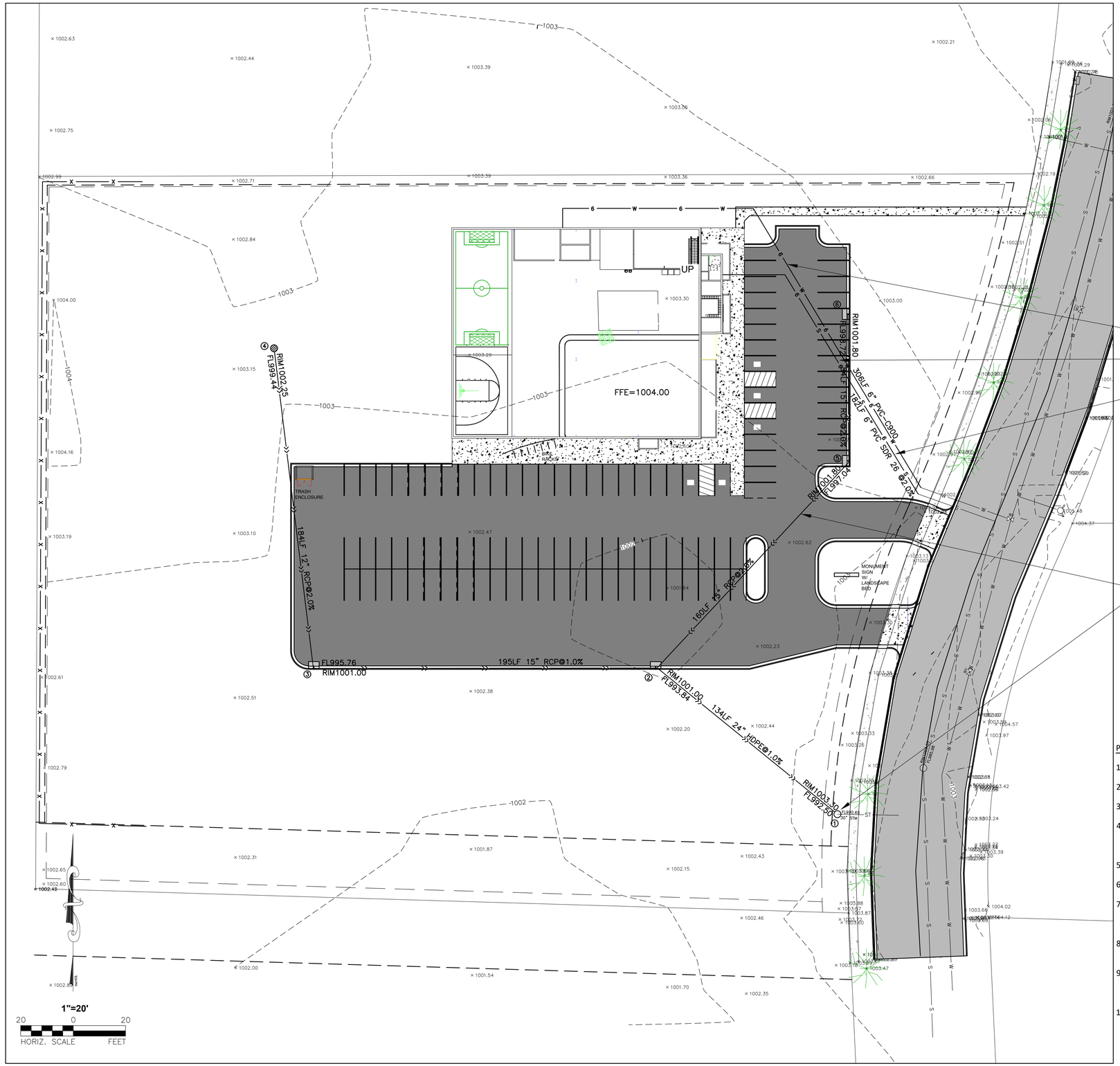
Project:
ENDLESS ADVENTURES

Revision:

No.: | Date: 9/4/25
Drawn: bjj | Checked:
Project Manager:
Project Status: CD

Sheet Title:
LANDSCAPE PLAN

Sheet No.:
C4



STORM SEWER STRUCTURE SCHEDULE

NO.	RIM EL.	INVERT EL.	HEIGHT	CASTING	DESIGN	REMARKS
1	1003.30	992.50	10.8	R2573	60-4020	
2	1001.00	993.84	7.16	R3067	48-4022	
3	1001.00	995.76	5.24	R3067	2X3	
4	1002.25	999.44	2.81	R2573	G	
5	1001.80	997.04	4.76	R3067	2X3	
6	1002.00	998.72	3.28	R3067	2X3	

ALL OUTLET APRONS TO HAVE CL. III RIPAP PER DETAIL INSTALLED WITHIN 24 HOURS OF CONNECTION

F&I NEW 6" SDR 18 PVC WATER SERVICE FROM EXISTING STUB OFF PREMIER DRIVE-SEE MECH. FOR EXACT BLDG. ENTRY

F&I NEW 6" SDR 26 PVC SEWER SERVICE FROM EXISTING STUB OFF PREMIER DRIVE-SEE MECH. FOR EXACT BLDG. ENTRY

F&I SEWER CLEANOUT EVERY 100' ALONG SEWER SERVICE EXTENSION-SEE DETAIL

F&I STORM SEWER PIPING AND STRUCTURES SHOWN SEE STRUCTURE SCHEDULE FOR MORE INFORMATION CONNECT TO EXISTING 30" STUB FROM PREMIER DR. W/ NEW MANHOLE

PLUMBING SPECIFICATIONS

1. All plumbing shall be installed in accordance with the Minnesota Plumbing Code (see Minnesota Rules, Chapter 4714).
2. The water distribution system shall be disinfected per Minnesota Rules.
3. A sanitary sewer cleanout will be provided near the connection between the building drain and the building sewer.
4. PVC sanitary sewers will meet one of the following ASTM Standards: D3034, F789, D2665, or F891. ASTM D2241 pipe may be used for sewers 6_inch and larger. The installation will comply with ASTM D2321, which requires installation by open trench on a continuous granular bed.
5. PVC solvent weld joints will include a primer of contrasting color to the pipe and cement.
6. RCP storm sewers must comply with ASTMC76.
7. All joints and connections in the storm sewer system shall be gastight or watertight. Approved resilient rubber joints must be used to make watertight connections to manholes, catchbasins, and other structures. Cement mortar joints are permitted only for repairs and connections of existing lines constructed with such joints.
8. Polyethylene (PE) water services must meet ASTM D2239 or D2737 installed perASTM D2774. Joints must use approved insert fittings with metal clamps. No more than two feet may be exposed within the building.
9. The bottom of the water service pipe located within ten feet of the sewer crossing must be at least 12 inches above the top of the sewer. When this is not feasible, the sewer pipe must be constructed of materials listed in the Minnesota Rules. The water service should not contain any joints or connections within 10 feet of the crossing.
10. All portions of the storm sewer system located within 10 feet of the building or water service line must be tested in accordance with Minnesota Rules.

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

Brian J. Johnson
Reg. No. 42144
Date: 9/4/25

Consultant:
JONES HAUGH SMITH
Engineers + Surveyors
515 South Washington Ave. Albert Lea, MN 507.373.4876

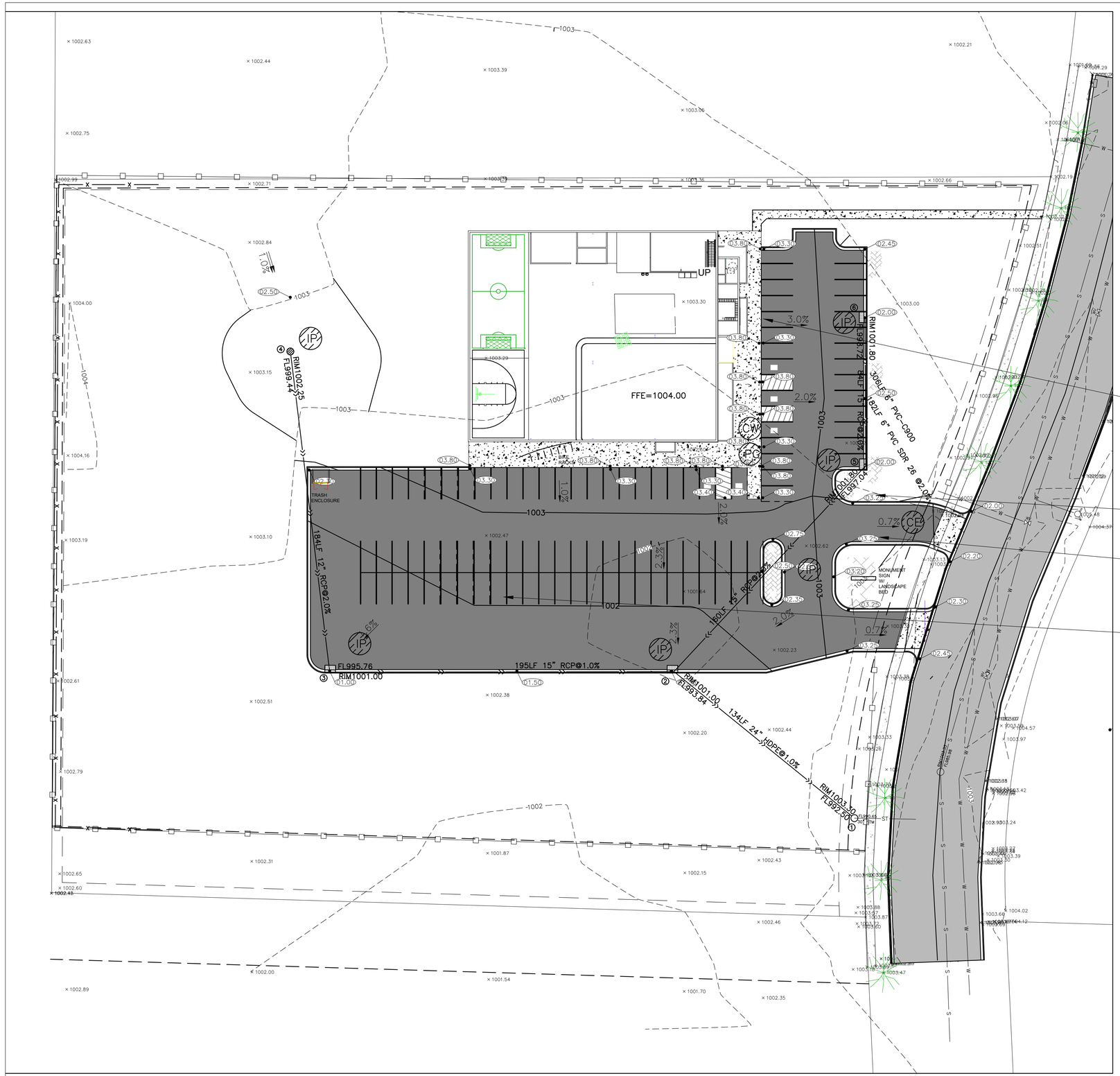
Project:
ENDLESS ADVENTURES

Revision:

No.:	Date: 9/4/25
Drawn: bjj	Checked:
Project Manager:	
Project Status: CD	

Sheet Title:
UTILITY PLAN

Sheet No.:
C5



SWPPP LEGEND

		QUANTITY
CE	= ROCK CONSTRUCTION ENTRANCE	1 EA
IP	= INLET PROTECTION–TYP. AT ALL DOWNGRADIENT INLETS	4 EA
	= SILT FENCE–FOR PERIMETER CONTROL	1000 LF
	= WOOD CHIP BIO–ROLL/SILT SOCK	
	= HYDRO–SEED TYPE LAWN OVER 6" MIN. BLACK DIRT TOPSOIL (TYP. TO ALL NON–PAVED DISTURBED AREAS WITHIN SITE)	1 ACRE
CW	= DESIGNATED CONCRETE WASHOUT AREA	1 EA
RR	= CL. III RIPRAP ENERGY DISSIPATION–PLACE WITHIN 24 HOURS	0 CY
	= RUNOFF FLOW DIRECTION	
PG	= DESIGNATED POLLUTANT GENERATING AREA	1 EA
SL	= DESIGNATED STEEP SLOPE AREA (4:1 OR GREATER) F&I CATEGORY 3 BLANKET ON ALL 4:1 OR STEEPER SLOPES	0 SY

ONSITE SOILS=CLAY LOAMS PER NRCS SOIL SURVEY

PROPOSED ELEVATION CONTOUR TYP.

SILT FENCE TYP.

PROPOSED PAVEMENT/GUTTER ELEVATION TYP.

EXISTING ELEVATION CONTOUR TYP.

NORTH

1"=30'

30 0 30

HORIZ. SCALE FEET

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

Brian J. Johnson
Reg. No. 42544
Date: 9/4/25

Consultant:

JONES HAUGH SMITH
Engineers + Surveyors
515 South Washington Ave. Albert Lea, MN 507.373.4876

Project:

ENDLESS ADVENTURES

Revision:

No.:	Date: 9/4/25
Drawn: bjj	Checked:

Project Manager:

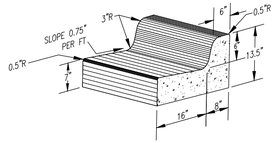
Project Status: CD

Sheet Title:

GRADING & SWPP PLAN

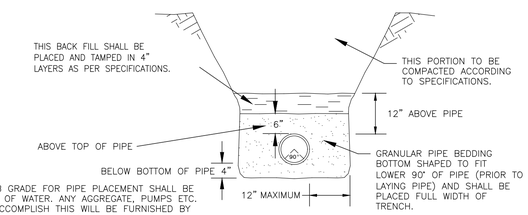
Sheet No.:

C6



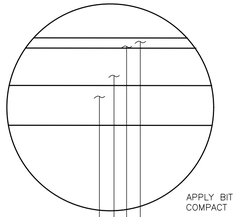
CONCRETE CURB & GUTTER DESIGN B618

NOTE:
SHEETING, SHORING, BRACING AND SIDE SLOPES REQUIRED BY SAFETY CODES AND REGULATIONS, STATE INDUSTRIAL COMMISSION AND O.S.H.A. ARE NOT SHOWN. CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR THIS.



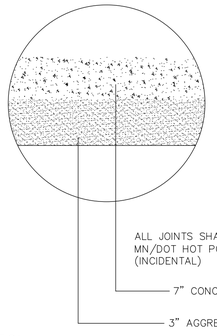
THE FINISHED SUB GRADE FOR PIPE PLACEMENT SHALL BE MAINTAINED FREE OF WATER. ANY AGGREGATE, PUMPS ETC. NECESSARY TO ACCOMPLISH THIS WILL BE FURNISHED BY CONTRACTOR AS INCIDENTAL WORK.

TYPICAL TRENCH
(PVC SEWER, WATER MAIN & PE PIPE)



APPLY BITUMINOUS TACK COAT BETWEEN LIFTS
COMPACT ALL GRANULAR MATERIAL TO 100% OF PROCTOR DENSITY.
2.0" TYPE SPWEA240B WEAR COURSE
2.0" TYPE SPNWB230B BASE COURSE
12" CLASS V AGGREGATE BASE (2211)
SCARIFY THE UPPER 12" OF SUBGRADE IN "CUT" AREAS
ALL GRAVEL BASE SHALL EXTEND A MINIMUMN OF 1' BEHIND ALL CURB

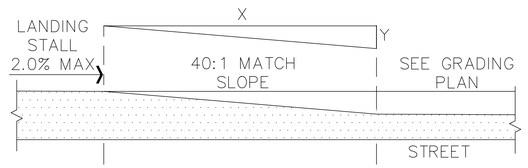
PARKING LOT PAVEMENT SECTION



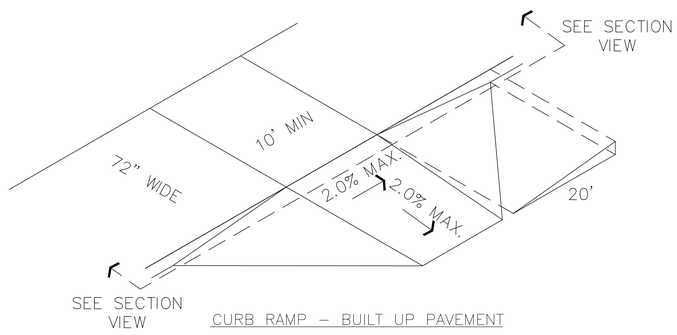
ALL JOINTS SHALL BE SEALED USING AN APPROVED MN/DOT HOT POUR ELASTIC SEALANT (3723) (INCIDENTAL)
7" CONCRETE PAVEMENT (MN/DOT 2301)
3" AGGREGATE BASE CLASS V (MN/DOT 2211)

ALL CONCRETE SHALL BE PORTLAND CEMENT CONCRETE PAVEMENT WITH A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS, A 4" MAXIMUM SLUMP AND 5% – 7% ENTRAINED AIR.

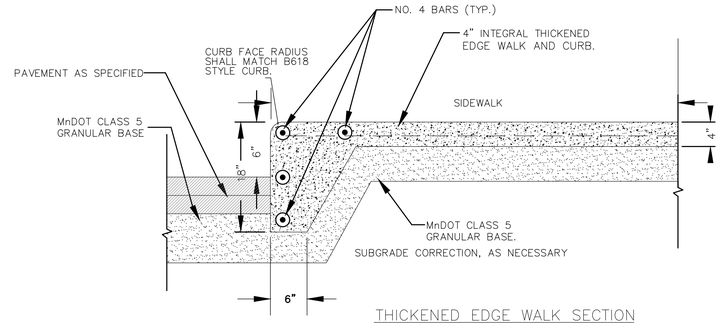
CONCRETE DRIVEWAY SIDEWALK SECTION



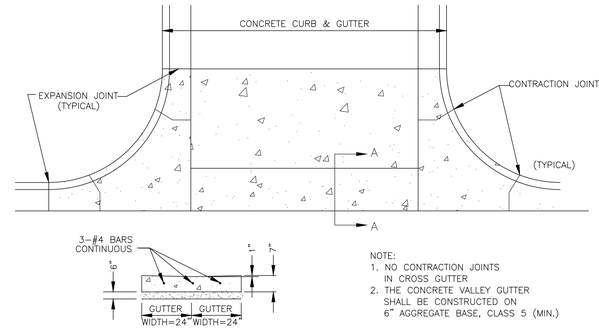
CROSS SECTION



CURB RAMP – BUILT UP PAVEMENT



THICKENED EDGE WALK SECTION

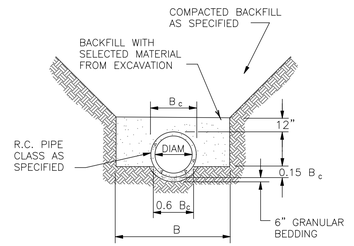


SECTION A

NOTE:
1. NO CONTRACTION JOINTS IN CROSS GUTTER
2. THE CONCRETE VALLEY GUTTER SHALL BE CONSTRUCTED ON 6" AGGREGATE BASE, CLASS 5 (MIN.)

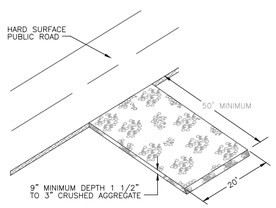
VALLEY GUTTERS TO BE INSTALLED AT LOCATIONS SHOWN ON PLANS

CONCRETE VALLEY GUTTER–MANKATO STANDARD COMMERCIAL DRIVEWAY DETAIL



PIPE DIAM.	B
36" OR LESS	B_c + 24"
42" TO 54"	1.5 x B_c
60" OR OVER	B + 36"

R.C. STORM SEWER TRENCH
CLASS "B" BEDDING CONDITION



EROSION CONTROL PROTECTION AT CONSTRUCTION ACCESS

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

Brian J. Johnson
Reg. No. 42144
Date: 9/4/25

Consultant:
JONES HAUGH SMITH
Engineers + Surveyors
515 South Washington Ave. Albert Lea, MN 507-373-4876

Project:
ENDLESS ADVENTURES

Revision:

No.: | Date: 9/4/25
Drawn: bjj | Checked:
Project Manager:
Project Status: CD

Sheet Title:
SWPPP NARRATIVE & DETAILS

Sheet No.:
C7

SWPPP NARRATIVE

CONSTRUCTION ACTIVITY INFORMATION

PROJECT NAME: ENDLESS ADVENTURES
FACILITY IMPROVEMENT PROJECT

PROJECT LOCATION: MANKATO, MN

PROJECT SIZE: PARCEL SIZE: 2.5 DISTURBED ACRES

PROJECT TYPE: COMMERCIAL BUILDING CONSTRUCTION

MAJOR SOIL TYPE: CLAY

CUMULATIVE IMPERVIOUS SUFACE:
EXISTING – 0 ACRES
POST CONSTRUCTION – 1.50 ACRES

DIRECT DISCHARGE FROM IMPERVIOUS SURFACE: 0 ACRES

RECEIVING WATERS:
CITY STORM SEWER TO REGIONAL POND

DATES OF CONSTRUCTION: 2025

OWNER: ENDLESS ADVENTURES

UNDERGROUND UTILITY/GRADING CONTRACTOR:

TO BE DETERMINED

PARTY RESPONSIBLE FOR LONG TERM O&M:
OWNER: ENDLESS ADVENTURES

GENERAL SITE INFORMATION

IMMEDIATELY FOLLOWING GRADING OF SLOPES OF 3:1 OR GREATER, SLOPES MUST BE STABILIZED WITH WOOD FIBER BLANKET (OR OTHER METHOD APPROVED BY THE ENGINEER) OVER APPROVED SEED MIXTURE AND A MINIMUM OF 4" OF TOPSOIL.

ALL EROSON CONTROL MEASURES SHALL REMAIN IN PLACE AND BE MAINTAINED IN GOOD CONDITION UNTIL THE SITE HAS BEEN RE-VEGETATED, AT WHICH TIME THE CONTRACTOR MAY REMOVE NECESSARY SILT FENCING TO CONSTRUCT ROADWAYS WHILE MAINTAINING ADEQUATE EROSION CONTROL IN ADJACENT AREAS. SUFFICIENT TOPSOIL SHALL BE STOCKPILED OR IMPORTED TO ALLOW FOR THE REPLACEMENT OF A MINIMUM OF 4" OF TOPSOIL FOR DISTURBED AREAS TO BE RE-VEGETATED.

CONTRACTOR SHALL SCHEDULE SITE GRADING, UTILITY INSTALLATION, AND ROADWAY CONSTRUCTION SO THAT THE GENERAL SITE CAN BE MULCHED AND RE-SEEDED SOON AFTER DISTURBANCE. DISTURBED AREAS SHALL BE SEEDED AND MULCHED OR SODDED WITHIN:
7 DAYS

INSPECT SILT FENCES AND BALE CHECKS AFTER EACH RAIN EVENT AND DAILY DURING A PROLONGED RAINFALL. IMMEDIATELY REPAIR FAILED OR FAILING MEASURES.

REMOVE SEDIMENT DEPOSITS FROM SILT FENCE AND BALE CHECKS WHEN SEDIMENT REACHES APPROXIMATELY 1/3 THE HEIGHT OF THE BARRIER.

BARRIERS WILL BE REPLACED WHEN THEY DECOMPOSE OR BECOME INEFFECTIVE BEFORE THE BARRIERS ARE NO LONGER NECESSARY. ANY SEDIMENT REMAINING IN-PLACE AFTER THE BARRIERS ARE NO LONGER NECESSARY WILL BE DRESSED TO CONFORM TO EXISTING GRADE, AND PREPARED AND SEEDED WITH THE APPROPRIATE SEED MIX, AS DIRECTED BY THE ENGINEER.

IN THOSE AREAS WHERE WOOD FIBER BLANKET OR OTHER SLOPE STABILIZATION METHODS HAVE FAILED, THE SLOPE SHALL BE RE-ESTABLISHED, SEED AND TOPSOIL REPLACED, AND ADDITIONAL SLOPE TREATMENT INSTALLED.

BARRIERS WILL BE REMOVED WHEN FINAL STABILIZATION OF THE SLOPES HAS BEEN COMPLETED AS DETERMINED BY THE ENGINEER.

NO STORMWATER MITIGATION MEASURES WERE REQUIRED AS A PART OF ENVIRONMENTAL, ARCHAELOGICAL OR OTHER REQUIRED LOCAL, STATE, OR FEDERAL REVIEW OF THIS PROJECT.

THIS PROJECT IS NOT LOCATED IN A KARST AREA NECESSITATING MEASURES TO PROTECT DRINKING WATER SUPPLY.

THIS PROJECT DOES NOT DISCHARGE WATER TO AN IMPAIRED WATER.

PROVIDE SILT FENCE AROUND ALL SOIL STOCKPILES

SWPPP IMPLEMENTATION CHAIN OF RESPONSIBILITY

EACH CONTRACTOR ON-SITE WILL DESIGNATE AN EMPLOYEE AS ITS PROJECT SWPPP OFFICER. A LIST OF THESE OFFICERS WITH CONTACT INFORMATION WILL BE AVAILABLE ON-SITE. IT WILL BE SOLEY THE SWPPP OFFICERS' RESPONSIBILITY TO ENSURE THAT ALL ON-SITE ACTIVITIES PERFORMED BY ITS COMPANY COMPLY WITH THE SWPPP. THE GENERAL CONTRACTOR'S SWPPP OFFICER WILL HAVE AUTHORITY OVER ALL SUB-CONTRACTOR'S SWPPP OFFICERS FOR WORK PERTAINING TO COMPLIANCE.

SHOULD A SWPPP OFFICER FAIL TO ENSURE COMPLIANCE, THAT OFFICER'S FOREMAN OR DIRECT SUPERVISOR WILL ASSUME ALL RESPONSIBILITY.

SHOULD A SUB-CONTRACTOR FAIL TO COMPLY WITH THE SWPPP, THE GENERAL CONTRACTOR WILL ASSUME ALL RESPONSIBILITY FOR COMPLIANCE.

SHOULD THE GENERAL CONTRACTOR FAIL TO COMPLY WITH THE SWPPP, THE OWNER WILL ASSUME ALL RESPONSIBILTY FOR COMPLIANCE.

EROSION PREVENTION PRACTICES

CONTRACTOR SHALL PHASE CONSTRUCTION, MAINTAIN VEGETATIVE BUFFER STRIPS, AND PROVIDE HORIZONTAL SLOPE STAKING IN ORDER TO MINIMIZE EROSION.

SILT FENCE SHALL BE INSTALLED BEFORE WORK BEGINS. SILT FENCE LIMITS SHALL COINCIDE WITH DOWNGRADE GRADING LIMITS UNLESS OTHERWISE NOTED.

THIS PROJECT DOES NOT HAVE EXPOSED POSITIVE SLOPES WITHIN 200' OF SURFACE WATER.

THE WETTED PERIMETER OF DRAINAGE SWALES WILL BE STABILIZED WITH WOOD FIBER BLANKETS AND/OR DITCH CHECKS WITHIN 200' OF THE SITE BOUNDARY LINE OR WETTED PERIMETER OF DITCHES WITHIN 24 HOURS..

TEMPORARY OR PERMANENT DITCHES THAT ARE BEING USED AS A SEDIMENT CONTAINMENT SYSTEM DURING CONSTRUCTION MUST BE STABILIZED WITHIN 24 HOURS AFTER NON-USE

PIPE OUTLETS MUST HAVE ENERGY DISSIPATION IN PLACE WITHIN 24 HOURS OF INSTALLATION MULCH, HYDROMULCH, TACKIFIER, POLYACRYLAMIDE EROSION PREVENT PRACTICES CANNOT BE BE USED WITHIN THE NORMAL WETTED PERIMETER OF OF DRAINAGE DITCHES OR SWALE SECTIONS WITH A CONTINUOUS SLOPE GREATER THAN 2%

SEDIMENT CONTROL PRACTICES

CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN:
SEDIMENT CONTROLS FOR TEMPORARY AND PERMANENT DRAINAGE BASINS AND DRAINAGE DITCHES THAT ARE A PART OF THIS DESIGN

CHECK DAMS AND/OR WOOD FIBER BLANKETS TO ENSURE SHEET FLOW AND PREVENT RILLS FOR SLOPE LENGTHS GREATER THAN 75' WITH A SLOPE OF 3:1 OR GREATER

SILT FENCE AT ALL DOWN GRADIENT PERIMETERS INSTALLED PRIOR TO ALL LAND DISTURBING ACTIVITIES

INLET PROTECTION AT ALL DRAIN INLETS

SILT FENCING AROUND TEMPORARY SOIL STOCKPILES

ROCK CONSTRUCTION SITE ENTRANCES

STREET SWEEPING OF TRACKED SEDIMENT ONTO PAVED SURFACES

SEDIMENT CONTROL PRACTICES MUST BE IN PLACE AT ALL DOWN GRADIENT PERIMETERS AND UPGRADIENT OF ANY BUFFER ZONES

SEDIMENT CONTROL PRACTICES ARE ESTABLISHED AT THE BASE OF STOCKPILES ON DOWN GRADIENT PERIMETER

STOCKPILES ARE LOCATED OUTSIDE OF NATURAL BUFFERS OR SURFACE WATER, INCLUDING STORM WATER CONVEYANCES UNLESS THERE IS A BYPASS

THIS PROJECT DOES NOT INCLUDE DEWATERING OR BASIN DRAINING PERMANENT SEDIMENT BASINS WILL BE USED AS TEMPORARY BASINS DURING CONSTRUCTION

ADDITIONAL BMP'S FOR SPECIAL WATERS

THIS PROJECT DOES NOT DISCHARGE TO SPECIAL WATERS OR HAVE SIGNIFICANT IMPACTS TO WETLANDS

INSPECTIONS AND MAINTAINANCE

CONTRACTOR SHALL INSPECT AND MAINTAIN MEASURES AT MINIMUM ONCE EVERY (7) DAYS DURING ACTIVE CONSTRUCTION, AND WITHIN 24 HOURS AFTER A RAINFALL EVENT OF 0.5" IN 24 HOURS.

INSPECTIONS WILL INCLUDE STABILIZED AREAS, EROSION PREVENTION AND SEDIMENT CONTROLS, AND INFILTRATION AREAS.

REFER TO MPCA'S COMPLIANCE GUIDE FOR EROSION AND SEDIMENT CONTROL FOR INSPECTION LOG REQUIREMENTS.

MAINTENANCE RECORDS SHOULD INCLUDE: DATES & TIMES IF INSPECTION, NAME OF PERSON CONDUCTING THE INSPECTION, FINDINGS & LOCATIONS OF CORRECTIVE ACTIONS, PARTY COMPLETING MAINTENANCE ACTIVITIES, DATES & AMOUNTS OF RAINFALL EVENTS GREATER THAN 0.5", RAINFALL AMOUNTS ARE TO BE RECORDED WITH RAIN GAUGE ON SITE OR WEATHER STATION WITHIN 1 MILE OF SITE. ANY DISCHARGES OBSERVED SHOULD BE DESCRIBED & PHOTOGRAPHED.

RECORDS RETENTION

CONTRACTOR SHALL MAINTAIN RECORDS OF THE SEDIMENT RETENTION PROCEDURES ON-SITE. RECORDS WILL INCLUDE:
COPY OF THE SWPPP AND ALL REVISIONS
INSPECTION AND MAINTAINANCE RECORDS
PERMANENT OPERATION AND MAINTAINANCE AGREEMENTS
CALCULATIONS FOR THE DESIGN OF TEMPORARY AND PERMANENT STORMWATER MANAGEMENT SYSTEMS
COPIES OF THE SWPPP MUST BE RETAINED ON SITE BY THE PERMITTEE

POLLUTION PREVENTION MEASURES

SOLID WASTE:
COLLECTED SEDIMENT, ASPHALT AND CONCRETE MILLINGS, FLOATING DEBRIS, PAPER, PLASTIC, FABRIC, CONSTRUCTION AND DEMOLITION DEBRIS AND OTHER WASTES MUST BE DISPOSED OF PROPERLY AND MUST COMPLY WITH MPCA DISPOSAL REQUIREMENTS.

CONCRETE AND OTHER WASHOUTS:
PERFORM ALL CONCRETE TRUCK WASHOUTS IN PROPER CONTAINMENT FACILITIES.
SOILID AND LIQUID WASHOUT WASTE FROM OTHER MATERIALS (STUCCO, PAINT, FORM RELEASE OILS CURING COMPOUNDS ETC.) WILL BE DISPOSED OF IN A PROPERLY DESIGNATED LANDFILL.

PERFORM ALL WASHOUTS INCLUDING HANDTOOLS IN A LEAKPROOF CONTAINMENT FACILITY OR IMPERMEABLE LINER THAT PREVENTS RUNOFF ONTO ADJACENT SOILS. DEBRIS/SEDIMENT WILL NOT CONTACT THE GROUND SURFACE.

A SIGNE REQUIRING USE OF PROPER WASHOUT FACILITIES WILL BE INSTALLED ADJACENT TO SAID FACILITIES.

HAZARDOUS MATERIALS:
OIL, GASOLINE, PAINT AND ANY HAZARDOUS SUBSTANCES MUST BE PROPERLY STORED, INCLUDING SECONDARY CONTAINMENT TO PREVENT SPILLS, LEAKS, OR OTHER DISCHARGE. RESTRICTED ACCESS TO STORAGE AREAS MUST BE PROVIDED TO PREVENT VANDALISM. STORAGE AND DISPOSAL OF HAZARDOUS WASTE MUST BE IN COMPLIANCE THE MPCA REGULATIONS.

EXTERNAL WASHING OF TRUCKS AND OTHER CONSTRUCTION VEHICLES MUST BE LIMITED TO A DEFINED AREA OF THE SITE. RUNOFF MUST BE CONTAINED OF AND WASTE PROPERLY DISPOSED OF. NO ENGINE DEGREASING IS ALLOWED ON SITE.

SWPPP IMPLEMENTATION CHAIN OF RESPOSIBILITY

THE GENERAL CONTRACTOR SHALL PROVIDE A TRAINED, CERTIFIED, KNOWLEDGEABLE PERSON WHO SHALL SERVE AS THE SITE'S EROSION CONTROL INSPECTOR. THIS PERSON SHALL BE RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL BMP'S, AND SHALL MAINTAIN THE INSPECTION LOG AT THE PROJECT SITE.

EACH SUBCONTRACTOR ON-SITE WILL DESIGNATE AN EMPLOYEE AS ITS PROJECT SWPPP OFFICER. A LIST OF THESE OFFICERS WITH CONTACT INFORMATION WILL BE AVAILABLE ON-SITE. IT WILL BE SOLELY THE SWPPP OFFICERS' RESPONSIBILITY TO ENSURE THAT ALL ON-SITE ACTIVITIES PERFORMED BY ITS COMPANY COMPLY WITH THE SWPPP. THE GENERAL CONTRACTOR'S SWPPP INSPECTOR WILL HAVE AUTHORITY OVER ALL SUBCONTRACTOR'S SWPPP OFFICERS FOR WORK PERTAINING TO COMPLIANCE.

SHOULD A SWPPP OFFICER FAIL TO ENSURE COMPLIANCE, THAT OFFICER'S FOREMAN OR DIRECT SUPERVISOR WILL ASSUME ALL RESPONSIBILITY.

SHOULD A SUBCONTRACTOR FAIL TO COMPLY WITH THE SWPPP, THE GENERAL CONTRACTOR WILL ASSUME ALL RESPONSIBILITY FOR COMPLIANCE.

SHOULD THE GENERAL CONTRACTOR FAIL TO COMPLY WITH THE SWPPP, THE OWNER WILL ASSUME ALL RESPONSIBILITY FOR COMPLIANCE.

CHANGES IN PERMIT AND NOTICE OF TERMINATION

THE CONTRACTOR WILL BE A CO-PERMITEE DURING THE CONSTRUCTION OF THE PROJECT. AFTER GRAVEL SURFACING OF THE PROJECT HAS BEEN COMPLETED, AND 70% PERMANENT VEGETATIVE COVER HAS BEEN ESTABLISHED OVER THE PERVIOUS AREAS OF THE SITE, AND THE WARRANTY PERIOD HAS ELAPSED, THE CONTRACTOR MAY SUBMIT A MPCA (NOT)F ORM TO THE OWNER FOR SIGNATURE AND SUBMITTAL TO THE MPCA.

THE OWNER WILL SUBMIT THE NOTICE OF TERMINATION (NOT) AFTER ONE FINAL ESTABLISHMENT OF ALL PERVIOUS SURFACES ACCORDING TO THE MPCA GENERAL PERMIT REQUIREMENTS

NOTIFICATION OF THE MPCA IN CASE OF POLLUTION

IT IS THE DUTY OF THE CONTRACTOR TO NOTIFY THE MPCA IMMEDIATELY OF ANY DISCHARGE, ACCIDENTAL OR OTHERWISE, OF ANY SUBSTANCE OR MATERIAL UNDER HIS CONTROL WHICH, IF NOT RECOVERED, MAY CAUSE POLLUTION OF WATERS OF THE STATE, AND THE CONTRACTOR SHALL RECOVER AS RAPIDLY AND THOROUGHLY AS POSSIBLE SUCH SUBSTANCE OR MATERIAL AND TAKE IMMEDIATELY SUCH OTHER ACTION AS MAY BE REASONABLY POSSIBLE TO MINIMIZE OR ABATE POLLUTION OF WATERS OF THE STATE CAUSED THEREBY.

SEDIMENT LEAVING THE CONSTRUCTION SITE AND ENTERING A PUBLIC WATER IS CAUSE FOR NOTIFICATION.

MPCA DUTY OFFICER: 800-422-0798

QUALIFIED SWPPP PERSONNEL INFORMATION

SWPPP DESIGNER: BRIAN J. JOHNSON, PE
JONES HAUGH & SMITH, INC.
515 SOUTH WASHINGTON AVE
ALBERT LEA, MN 56007
(507) 373-4876

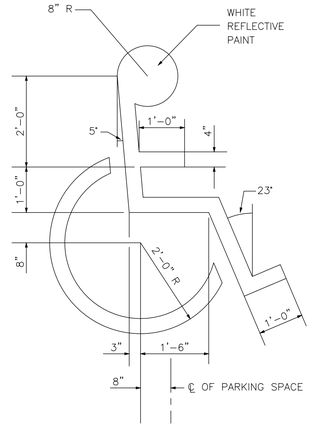
SWPPP INSTALLER:
NAME: _____
FIRM: _____
ADDRESS: _____
_____
PHONE: _____

SWPPP INSPECTOR:
NAME: _____
FIRM: _____
ADDRESS: _____
_____
PHONE: _____

GRADING CONTRACTOR:
NAME: _____
FIRM: BCM CONTRACTING_____
ADDRESS: _____
_____
PHONE: _____

OTHER LAND DISTURBING CONTRACTOR:
NAME: _____
FIRM: _____
ADDRESS: _____
_____
PHONE: _____

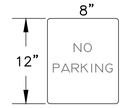
OTHER LAND DISTURBING CONTRACTOR:
NAME: _____
FIRM: _____
ADDRESS: _____
_____
PHONE: _____



INTERNATIONAL HANDICAP SYMBOL

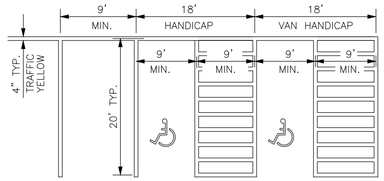
STEEL POST MOUNTED
(PERMANENT)
INSTALL AT ALL HANDICAP STALLS
60"-66" ABOVE FINISH GRADE
CENTERED AT THE HEAD OF THE STALL

SIGN PANEL DETAIL

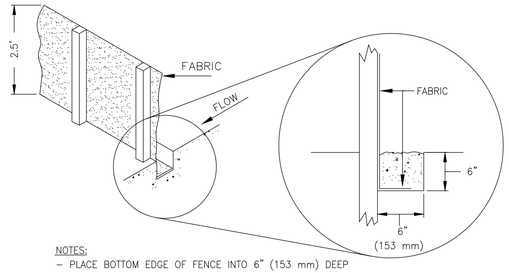


STEEL POST MOUNTED
(PERMANENT)
INSTALL AT ALL HANDICAP ACCESS
AILSES-60"-66" ABOVE FINISH GRADE
CENTERED AT THE HEAD OF THE STALL

SIGN PANEL DETAIL



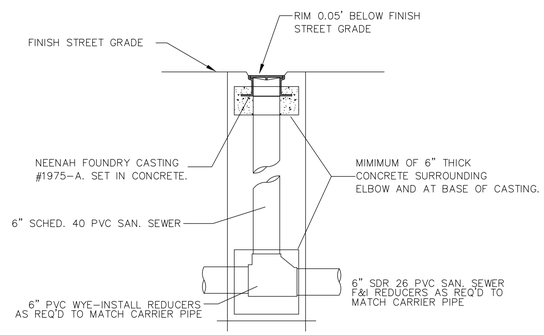
90° STALL



NOTES:
- PLACE BOTTOM EDGE OF FENCE INTO 6" (153 mm) DEEP
- POSTS SHALL BE:
  - 4' (1.22 m) ON CENTER
  - 2" (50.8 mm) X 2" (50.8 mm) HARDWOOD, PINE OR STANDARD STEEL FENCE POSTS
  - DRIVEN 2' (0.61 m) INTO THE GROUND.

EROSION CONTROL FENCE

(MACHINE SLICED)



CLEANOUT DETAIL

JONES HAUGH SMITH
Engineers • Surveyors
515 South Washington Ave. Albert Lea, MN 507.373.4876

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

Brian J. Johnson
Reg. No. 47244
Date: 9/4/25

Consultant:

Project: **ENDLESS ADVENTURES**

Revision:

No.:	Date: 9/4/25
Drawn: bjj	Checked:
Project Manager:	
Project Status: CD	

Sheet Title: **SWPPP NARRATIVE & DETAILS**

Sheet No.: **C8**

GOVERNING SPECIFICATIONS
The Minnesota Department of Transportation's "Standard Specifications for Construction" 2018 Edition, including the Mn/DOT Special Provisions modified for this project, Minnesota Plumbing Code and the City Engineers Association of Minnesota Standard Specification, 2018 Edition, will govern except as modified or altered in the Special Provisions. All references to "State of Minnesota" or "Commissioner of Transportation" or "Department" are hereby revised to mean "Owner."

WORK WITHIN PROPERTY
The Contractor will work only in areas secured by the Owner, and will comply with all requirements of access agreements.

MATERIALS TESTING

Materials Testing will be by the Contractor. The Contractor will hire an independent testing consultant, approved by the Engineer, prior to the start of work to be tested.

1. The following materials tests will be provided by the Testing Company:

Work to be Tested	Method	Reference Spec.	Testing Rate
Sewer & Water Service Trenches	Specified Density	MnDOT 2105, 2451, 2501	1 test per 500 lf
Storm Sewer Trench Compaction	Specified Density	MnDOT 2105, 2451, 2501	1 test per 500 lf
Subgrade/Embankment Compaction	Specified Density	MnDOT 2105	1 test per 2500 cy placed (Clay, Sand, etc.)
Test Rolling	Fully Loaded Dump Truck		1 test per road
Select Granular Borrow	Specified Density	MnDOT 3149	1 per 5000 ton
	Gradation	MnDOT 3149	1 per Source
Aggregate Base (CL 3, CL 5)	Modified DCP	MnDOT 2211	2 tests per 1000 ton
	Gradation	MnDOT 2211	1 per 5000 ton
Bituminous Paving	Ordinary Comp.-Control Strip	MnDOT 2360	1 control strip per mobilization and/or per workday
Concrete Curb & Gutter	Air, Slump, Temp, Strength	MnDOT 2461	If non-integrant
Air, Temp. - 1 per day			
Slump, Strength - 1 per day; and each time water is added at the site			
Concrete Driveway or Sidewalk	Air, Slump, Temp, Strength	MnDOT 2461	
Air, Temp. - 1 per day			
Slump, Strength - 1 per day; and each time water is added at the site			
Concrete Paving		MnDOT 2301	
All Concrete Field testing or Concrete Pavement per 2012 MnDOT Schedule of Materials Control (page 32), except Pavement Texture and Smoothness.			

Table Notes:

- Specified Density also requires Moisture-Density and Relative Density
- The Engineer may omit duplicative trench compaction tests at his discretion

MAINTENANCE OF TRAFFIC (1404)
The Contractor will be responsible for traffic control on the Project, and will furnish, erect, and maintain all necessary traffic control devices required to provide safe movement of vehicular traffic through the Project. Any traffic control device installed will meet the requirements of the Minnesota Manual on Uniform Traffic Control Devices, Field Manual, latest edition, and the latest MnDOT specifications approved at the time of bid.

The Contractor will prepare and submit to the City Engineer and County Engineer for Approval a Traffic Control Plan for any work in or utilization of traveled Right-of-Way. The plan will be submitted a minimum of 48 hours prior to the commencement of work. No work in the Right-of-Way will commence without an Approved Traffic Control Plan.

Traffic control will be in accordance with the Traffic Control Layout Plan and the following:
Traffic control devices include, but are not limited to, barricades, warning signs, lane markings, trailers, flashers, cones, and drums, as required, and sufficient barricade weights to maintain barricade stability.
No material will be deposited on a traveled roadway.
Materials will not be placed on road right of way more than one week in advance of their use.
Contractor will notify the affected parties at least one week prior to commencement of disturbance of the private or business drives.
Coordination will be maintained with the Fire and Police Departments to ensure that passage is maintained for emergency vehicles at all times.
The Contractor will make one person responsible for the maintenance of all signs. The Contractor will check each intersection at the end of each day whether it is a working day or not. The name and telephone number of this person will be left with the Police, the City Engineer, and the Fire Departments.

UTILITY PROPERTY AND SERVICE (1507)
Construction operations in the proximity of utility properties will be performed in accordance with the Provisions of 1507, except as modified below:

The first paragraph of 1507 is deleted and the following substituted therefore:

It will be the Contractor's responsibility to contact all local utility companies and ascertain the location of all existing underground utilities, if any, prior to performing any excavation operations. The Contractor will conduct his/her operations in the vicinity of any such facilities, which may exist, in a manner that will prevent damage thereto.

It will be the Contractor's responsibility to utilize the One-Call Excavation Notice System at 'Gopher State One Call' (1-800-252-1166) required under Minnesota Statute Chapter 216D, 48 hours prior to performing any excavation adjacent to any underground facility, which may exist, in a manner that will prevent damage thereto.

CONSTRUCTION STAKES, LINES AND GRADES (1508)

All construction staking will be provided by the Contractor and performed by or under the direct supervision of a Land Surveyor licensed in the State of Minnesota.

Field Fit Adjustments to Grade Stakes
The Engineer may make minor adjustments (< 0.5') to the grade stakes after they have been placed, in order to adjust to actual conditions in the field or to ensure proper or better drainage. Any adjustments to proposed or in-place materials required due to minor adjustments made by the Engineer are incidental to the work.

CONTROL OF HAUL ROADS (1515), LAWS TO BE OBSERVED (1701)

In addition to the requirements of 1515 and 1701, the Contractor will abide by all weight restrictions implemented by the governing road authorities in the performance of the work and in delivering materials and equipment to the project site.

AIR LAND AND WATER POLLUTION (1717)

The provisions of Mn/DOT 1717 are hereby modified and supplemented as follows:

DEWATERING
Any dewatering necessary to construct the work will be done by the Contractor. The Contractor is responsible to determine the type and method of dewatering and to provide and implement all equipment and materials necessary to accomplish the work on this project. Discharged water from dewatering will be routed through a temporary sediment basin. Sediment trapped in the temporary basins will be removed and disposed of on-site.

PROTECTION OF SURFACE STRUCTURES
The Contractor will not trespass on any private property without the express written consent of the Owner thereof. Trees, shrubs, fences, poles and all other private property will be protected unless their removal is authorized. Any property damaged will be satisfactorily restored at the expense of the Contractor. Any land survey or property monuments destroyed, covered, moved, bent or disturbed will be replaced by a Licensed Land Surveyor at the expense of the Contractor.

Wherever construction is planned to cross private property, an easement for the construction has been acquired from the property owner. The Contractor will familiarize himself with the terms of such easements, which the Owner will have on file.

Ground surface, trees, shrubbery, fences and other private property will be restored to the same condition as existed prior to the beginning of construction. This will include consolidating backfill, graveling driveways and any other leveling and landscaping required to restore the premises to original condition. The topsoil will be piled separately from subsoil material and will be replaced in the trench above the subsoil material.

Except where sodding is required, all grassed areas disturbed during the construction will be seeded following landscaping.

The Contractor will restore at his own expense streets, roads, alleys, private or public structures such as water mains, water connections and appurtenances, culverts, drain tiles, sewers, manholes, catch basins, sewer connections, curb, gutter, sidewalk, street signs, or other structures designated to remain in place which are damaged or injured in any way by his acts, and will be responsible for all damages to other utilities he may encounter.

The Contractor will not claim, or be entitled to receive, compensation for any damages sustained by reason of the inaccuracy or omission of any of the information given on the drawings relative to surface, overhead, or underground structures, or by reason of his failure to properly protect such structures.

PROTECTION OF SIDE STREETS AND HAUL ROUTES

The Contractor will be responsible for any damage of the side streets in the area and any other streets that are used as haul routes. The Contractor will discuss all haul route possibilities with the City Engineer and County Engineer prior to their use. The City Engineer, County Engineer, and the Contractor together will inspect the condition of the proposed routes before, during and after their use. The Contractor will correct any damage that is caused by the hauling activities at no cost to the Owner.

DEWATERING

Any dewatering necessary to construct the work will be done by the Contractor. The Contractor is responsible to determine the type and method of dewatering and to provide and implement all equipment and materials necessary to accomplish the work on this project. Discharged water from dewatering will be routed through a temporary sediment basin. Sediment trapped in the temporary basins will be removed and disposed of on-site.

PROTECTION OF SURFACE STRUCTURES

The Contractor will not trespass on any private property without the express written consent of the Owner thereof. Trees, shrubs, fences, poles and all other private property will be protected unless their removal is authorized. Any property damaged will be satisfactorily restored at the expense of the Contractor. Any land survey or property monuments destroyed, covered, moved, bent or disturbed will be replaced by a Licensed Land Surveyor at the expense of the Contractor.

Wherever construction is planned to cross private property, an easement for the construction has been acquired from the property owner. The Contractor will familiarize himself with the terms of such easements, which the Owner will have on file.

Ground surface, trees, shrubbery, fences and other private property will be restored to the same condition as existed prior to the beginning of construction. This will include consolidating backfill, graveling driveways and any other leveling and landscaping required to restore the premises to original condition. The topsoil will be piled separately from subsoil material and will be replaced in the trench above the subsoil material.

Except where sodding is required, all grassed areas disturbed during the construction will be seeded following landscaping.

The Contractor will restore at his own expense streets, roads, alleys, private or public structures such as water mains, water connections and appurtenances, culverts, drain tiles, sewers, manholes, catch basins, sewer connections, curb, gutter, sidewalk, street signs, or other structures designated to remain in place which are damaged or injured in any way by his acts, and will be responsible for all damages to other utilities he may encounter.

The Contractor will not claim, or be entitled to receive, compensation for any damages sustained by reason of the inaccuracy or omission of any of the information given on the drawings relative to surface, overhead, or underground structures, or by reason of his failure to properly protect such structures.

PROTECTION OF SIDE STREETS AND HAUL ROUTES

The Contractor will be responsible for any damage of the side streets in the area and any other streets that are used as haul routes. The Contractor will discuss all haul route possibilities with the City Engineer and County Engineer prior to their use. The City Engineer, County Engineer, and the Contractor together will inspect the condition of the proposed routes before, during and after their use. The Contractor will correct any damage that is caused by the hauling activities at no cost to the Owner.

INTERFERENCE OF UNDERGROUND STRUCTURES

Existing utilities crossed by the new construction will be protected against damage, and/or replaced to original grade. Protection, temporary support and maintenance of existing utilities will be furnished by the Contractor at his own expense. The final installation will provide permanent support to prevent any settlement or movement, which may result in damage to these utilities.

Whenever existing pipe is replaced, the material of replacement will be DIP or PVC pipe of the same diameter as the original, long enough to extend at least one foot into the solid bank on either side of the excavation. The backfill under and around such pipe will be thoroughly compacted by mechanical means to preclude settlement. All connections between different types or sizes of pipe or improperly matched joint types will be encased in concrete with a minimum thickness of 6 inches.

Should it become necessary during the progress of the work to remove or relocate existing utilities or structures, the Owner will cause the same to be done at no expense to the Contractor, except as otherwise provided herein. The Contractor will notify those who maintain utilities sufficiently in advance of construction so they may make the necessary location, disclosure, relocation or other preparation. Where necessary to locate existing underground utilities, the Contractor, upon order of the Engineer, will make any required subsurface explorations and excavation, and will be allowed compensation therefore. Where relocation or reconstruction of existing utilities is impracticable, a change in line and/or grade of the new construction will be ordered, and the change will be made as directed. No deviation from the line or grade set by the Engineer will be made without his approval.

CONNECT TO EXISTING SANITARY SEWER

The Contractor will connect to the existing sanitary sewer at the locations shown on the plan. Exploratory excavation for determining the location of existing utilities and the connection to the existing sanitary sewer are incidental to the work. The Contractor will verify the connection elevation at the main is reasonably close to the elevation shown on the plan prior to beginning work. If the elevation is substantially different, the Contractor will notify the Owner and Engineer.

Where new connections are made to existing sanitary sewer manholes, the contractor will core drill the manhole wall and invert to the existing flow line, construct and shape a new invert for the new pipe, and provide a waterproof boot through the wall of the manhole for the new pipe.

SANITARY SEWER CONSTRUCTION REQUIREMENTS

1. Noise -- The Contractor will insure all equipment is properly fitted with mufflers to reduce noise to the minimum attainable to avoid creating a nuisance in the residential and business area.
2. Trench Compaction -- All trenches will be tamped using the existing material that has been excavated. Tamping will not be paid as a bid item, therefore the cost of this work will be included in the price bid for furnishing and installing the pipe.
3. Piling Excavated Materials -- Excavated material will not be piled on private property without the express permission of the owner thereof, except where easements for the sewer construction or for related work have been obtained; nor will it be piled in any location that will require backfilling machinery to operate on private property. Where excavated material is piled on private property it will be placed to cause the least possible inconvenience to the property owner. Any damage caused thereby, including damage to buildings, walls, sidewalks, driveways, trees, shrubs, lawns, or any other property, will be repaired at the expense of the Contractor. Backcasting in order to minimize disturbance is incidental to the work.
4. It will be the Contractor's responsibility to protect adjacent pipes in and around manholes to be reconstructed, and will replace any pipes damaged, cracked, or broken by the Contractor at their expense.
5. All excavations, trenching and/or jacking and boring pits will be sheeted and/or shored as per OSHA requirements. No unsheeted trench will be left open overnight.
6. Backfilling of all trenches within the limits of street excavation will comply with the provisions of MN/DOT Specification 2112 including achieving 100% compacted density in the upper three feet of subgrade (below aggregate base) and 95% below the upper three feet. Density testing will be performed as directed by the Owner to verify compaction. Trench areas that are determined by the Owner to have yielded due to improper compaction will be deemed as Unacceptable Work and will be corrected by the contractor at no additional cost.
7. Removal of former service lines. -- Service lines no longer being utilized will be removed to the main, as directed by the City. Removal and restoration of street surfacing required for the service removal is incidental.
8. RECORDS OF LATERALS: The Contractor will maintain a complete and accurate record of the location and depth of each lateral. The Contractor will make measurements from the end of each service to prominent permanent features to facilitate its location in the future. The end of each lateral will be located in plan and elevation, and a sketch made to show the plan location. These records will be turned over to the Owner.

MATERIALS FOR SANITARY SEWER CONSTRUCTION:

The project calls for the use of Poly-Vinyl Chloride (PVC). Pipe and fittings should be properly bedded and encased in accordance with the Standard Detail Sheets and Standard Specifications for Sanitary Sewer Installation. All 8" and larger sanitary sewer shall be SDR 35, pipe smaller than 8" shall be SDR 26
Bedding and encasement beneath, along the sides, and above the pipe will be Select Granular material, tamped in place. The only deviation will be in poor soil conditions, as approved by the Engineer, where foundation rock will be substituted. Pipe bedding is incidental to pipe installation. Foundation rock is incidental to pipe installation.
Joints for PVC-SDR 35, and PVC-SDR 26 gravity sewer pipe will be made using Elastomeric gaskets conforming to the requirements of ASTM D3212.
Joints in precast concrete manholes will be made using a joint compound equal to Ram-Nek or rubber gasketed conforming to ASTM C443.
All manhole castings will be equipped with solid lid covers, self-sealing, with concealed pick holes. Manhole casting will be Neenah R1772, or equal and will be labeled 'SANITARY' on casting.

CONNECT TO EXISTING WATERMAIN

The Contractor will connect to existing watermain at the locations shown on the plan. All connections to existing water main are incidental to the work. All exploratory excavation in determining the location of existing water main is incidental to the work. The Contractor will coordinate with the utility owner and be responsible for any fees due for connections.

WATERMAIN CONSTRUCTION REQUIREMENTS

1. Noise -- The Contractor will insure all equipment is properly fitted with mufflers to reduce noise to the minimum attainable to avoid creating a nuisance in the residential and business area.
2. Bedding and encasement beneath, along the sides, and above the pipe will be Select Granular material, tamped in place. The only deviation will be in poor soil conditions, as approved by the Engineer, where foundation rock will be substituted. Pipe bedding is incidental to pipe installation. Foundation rock will be paid at the unit price per ton. No payment will be made for bedding materials which, in the opinion of the Engineer, was unnecessary for proper pipe installation.
3. Trench Compaction -- All trenches will be tamped using the existing material that has been excavated. Tamping will not be paid as a bid item, therefore the cost of this work will be included in the price bid for furnishing and installing the pipe.
4. Piling Excavated Materials -- Excavated material will not be piled on private property without the express permission of the owner thereof, except where easements for the sewer construction or for related work have been obtained; nor will it be piled in any location that will require backfilling machinery to operate on private property. Where excavated material is piled on private property it will be placed to cause the least possible inconvenience to the property owner. Any damage caused thereby, including damage to buildings, walls, sidewalks, driveways, trees, shrubs, lawns, or any other property, will be repaired at the expense of the Contractor.
5. It will be the Contractor's responsibility to protect adjacent pipes in and around manholes to be reconstructed, and will replace any pipes damaged, cracked, or broken by the Contractor at their expense.
6. All excavations, trenching and/or jacking and boring pits will be sheeted and/or shored as per OSHA requirements. No unsheeted trench will be left open overnight.
7. Backfilling of all trenches within the limits of street excavation will comply with the provisions of MN/DOT Specification 2112 including achieving 100% compacted density in the upper three feet of subgrade (below aggregate base) and 95% below the upper three feet. Density testing will be performed as directed by the Engineer to verify compaction. Trench areas that are determined by the Engineer to have yielded due to improper compaction will be deemed as Unacceptable Work and will be corrected by the contractor at no additional cost.
8. The Contractor will coordinate the construction of all private and municipal utilities.
9. The Contractor will be responsible for all tapping or other fees paid to public or private utilities as work incidental to the contract.
10. RECORDS OF LATERALS: The Contractor will maintain a complete and accurate record of the location and depth of each water lateral. The Contractor will make measurements from the end of each service to prominent features to facilitate its location in the future. The end of each lateral will be located in plan and elevation, and a sketch made to show the plan location. These records will be turned over to the Owner.

MATERIALS FOR WATERMAIN CONSTRUCTION- City of Faribault standards shall govern over all material specs listed below if discrepancies exist.

1. Watermain shall be PVC SDR 18 meeting the requirements of AWWA C-900. Pipe and fittings should be properly bedded and encased in accordance with manufacturer's requirements. Foundation rock will be used in poor soil conditions.
2. Bedding and encasement for pipe, beneath, along the sides, and above the pipe will be Select Granular material, tamped in place. The only deviation will be in poor soil conditions, as approved by the Engineer, where foundation rock will be substituted. Pipe bedding is incidental to pipe installation. All joints between pipe, fittings, valves, and hydrants will be equipped to provide electrical conductivity.
3. Gaskets will be mechanical joint rubber gaskets, unless otherwise specified.
4. Hydrants shall be Waterous Pacer WB-67-250 with 6" mechanical joint inlet and valve boxes as manufactured by American Flow Control Series 2500 or US Metro Pipe Seal with the Top marked WATER.
5. The furnishing and installing of disinfection materials to disinfect the watermains will be the responsibility of the Contractor. The City Utilities Department will assist the Contractor in flushing and testing the watermains.
6. The Contractor will use restrained joint mechanical joint flanges with mega lug retainer glands or equal on all hydrants, watermain offsets, bends, or other mechanical fittings. STAINLESS STEEL BOLTS will be required on all mechanical joints and sleeves.
7. All exposed parts of the bolts and nuts will be completely coated with an approved asphaltic type rust preventive material. Any parts of the fittings that have been scraped will also be coated with an approved asphaltic type rust preventive material. Watermain fittings will conform to ANSI Standard A21.10. All watermain fittings, hydrants and retaining rods will be protected by using sacrificial zinc anode caps such as 175P190 Protecto Caps as manufactured by Ebba Iron or an approved equal. Two caps per mechanical joint will be used.

TESTING OF WATER MAIN

Hydrostatic pressure testing of water main and services will be conducted as follows:
After the pipe has been laid, including fittings and valves and blocking, all newly laid pipe or any valved section thereof, unless directed otherwise by the Engineer, will be subject to hydrostatic pressure of 150 pounds per square inch. The duration of each such test will be at least two hours.

Each section of pipe to be tested will be filled with water and all air expelled at the highest point. The required taps to expel air or to fill the water main will be supplied and installed by the Contractor and will be 3/4 inch and will include an approved service saddle when required.

The test apparatus will be applied at the lowest elevation on the section to be tested. The apparatus will be connected to the main at a service tap or special tap location.
The pressure gauge will be a standard pressure gauge. The dial will register from 0 - 200 psi and have a dial size of 4 1/2 inches with 1-psi increments.

The hydrostatic test, pressure requirement for an acceptable test will be a maximum pressure drop of 2 psi during the last hour of the two-hour pressure test.
If this test requirement cannot be met, the Contractor will investigate the cause, make corrections, and retest until the pressure drop requirement can be met.

Only if several consecutive tests indicate a consistent pressure drop and only after the Contractor has made numerous attempts to resolve the problem, acceptable to the Engineer, may the Contractor request in writing and the Engineer consider the use of the leakage test. The leakage test may be performed by the Contractor to determine the magnitude of the leak, however, meeting the leakage allowance will not automatically be considered acceptance, in lieu of the pressure test, for the section being tested. Final acceptance will be at the discretion of the Engineer.

When allowed, the leakage test will be performed in accordance with AWWA C-600, Section 4.1.5, 4.1.6 and the line will be accepted as per Section 4.1.7.

Operational Testing will be conducted as follows:
At the completion of the project and in the presence of the Engineer and the Contractor, representatives of the Owner will operate all valves, hydrants, and water services to ascertain that the entire facility is in good working order; that all valve boxes are centered and valves are opened; that all hydrants operate and drain properly; that all curb boxes are plumb and centered; and that water is available at all curb stops.

Disinfection Testing:
Before being placed in service, the completed water main will be disinfected. Disinfection materials and procedures, and the collection and testing of water samples, will be in accordance with the provisions of AWWA C-651. After the final flushing the water will be tested for bacteriologic quality and found to meet the standards prescribed by the Minnesota Department of Health.
Samples will be taken and tested after 24 and 48 hours of disinfection. Both tests must be returned with passing results prior to approval for service.

Where an existing water main is cut for the installation of any fitting, the pipe and fittings proposed to be installed will be disinfected prior to installation as follows:

The interior of the pipe and fittings will be cleaned of all dirt and foreign material.

The interior of the pipe and fittings will be thoroughly swabbed or sprayed with a 1 percent minimum hypochlorite solution.

Unless otherwise indicated in the Plans, Specifications, and Special Provisions, the Contractor will furnish all materials and perform the disinfecting, flushing, and testing as necessary for meeting the water quality requirements.

The flushing operations and the form of chlorine and method of application to be used will be subject to approval by the Engineer.

Consultant:
JONES HAUGH SMITH
Engineers • Surveyors
515 South Washington Ave. Albert Lea, MN 507-373-4876

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

Brian J. Johnson
Reg. No. 42164
Date: 9/4/25

Project:
ENDLESS ADVENTURES

Revision:

No.:	Date: 9/4/25
Drawn: bjj	Checked:

Project Manager:

Project Status: CD

Sheet Title:
SPECIFICATIONS

Sheet No.:
C9

MATERIALS FOR STORM SEWER CONSTRUCTION

1. All drainage structures with a depth of greater than 5' from top of casting elevation to bottom of structure elevation will be provided with steps.

2. Reinforced Concrete Pipe will be bedded and encased in accordance with plans and with material meeting the requirements of 2503. All RCP storm sewer pipe 15" in diameter or less will be Class 5, all other RCP storm sewer pipe will be Class 3 unless otherwise noted.

3. All PVC storm sewer will be Schedule 40 PVC, unless otherwise noted.

STORM SEWER CONSTRUCTION REQUIREMENTS

1. Unless otherwise noted, all existing drain tile encountered during the course of the work will be repaired if damaged by the work, or if the existing outlet is known to be removed or made dysfunctional, hooked up to the new storm sewer improvements. This work is incidental to the contract.

2. Where existing tile lines, sump pump lines, or other existing drainage lines are tied into RCP storm sewer lines, a hole will be created in the upper 1/3 of the side of the new storm sewer, the existing line will be inserted into the side of the new RCP to a depth of not greater than 2", geotextile fabric will be blanketed around or stuffed into the opening around the new pipe, and cement grout will be formed around the connection, so as to ensure water tightness.

3. Where existing tile lines, sump pump lines, or other existing drainage lines are tied into HPDE storm sewer, fittings specifically manufactured for the connection of these lines will be used.

4. All existing drainage structures receiving new pipe will be cemented water tight around all pipes entering or exiting the structure. In addition, the inverts of all structures will be cemented so that all water entering the structure has a direct line out of the structure.

5. All new drainage structures will have integrally cast rubber boots to accept pipes and to ensure water-tightness. Worm screw stainless steel bands will be affixed to the boots to secure the pipe to the structure.

6. HDPE pipe will be installed accordance with ASTM F230

CASTING ASSEMBLIES (2506)

Casting assemblies will be of size and design noted on the plans. The work will include the cost of installing to final street surface grade on the manhole or inlet, including pavement removal and replacement if installed after paving.

Contractor will use at least two and not more than six standard adjusting rings immediately below the casting assemble which will be set in a mortar bed. Each adjusting ring will also be set in mortar. All adjusting rings will be plastered with a minimum of ½" of mortar on the interior and exterior, such that the casting is water tight from both the interior and exterior.

When bituminous paving lifts are scheduled for sequential construction seasons, castings will be set to the elevation of the non-wear course for the winter season, and then adjusted to final grade the following year. This work is incidental to construction.

Chimney Seal

Chimney seal will be furnished and installed on all sanitary manhole and ring casting assemblies. Seals will consist of rubberized sleeves or collars specially designed for covering manhole frames, rings and castings. Seals will be exterior seals with mechanical restraint as manufactured by Cretex Products or equal.

Furnish and installation of Chimney Seal is incidental to manhole castings and no additional payment will be made therefore.

Chimney Seal will not be required until final adjustment of castings at the time the final lift of bituminous paving is constructed.

ADJUST WATER VALVE BOX

This work will consist of the adjustment of all water valve boxes to conform to each grade of the bituminous pavement. This work includes multiple adjustments and is incidental to construction. If any structures are damaged by the Contractor's operations, the cost of repairs and replacement will be at the Contractor's expense. Final valve box adjustment at the final lift of paving will be by the paving contractor.

REMOVALS (2104)

Saw-cut Bituminous and/or Saw-cut Concrete

The edges of paving at the locations shown on the plan or directed as directed by the Engineer in the field will be full-depth saw-cut, typically at right angles to the faces to remain, in order to produce a clean edge of which to match the replacement paving or other surface to. Saw-cutting is incidental to the removals.

Remove Bituminous and/or Concrete Surface

After removal of bituminous or concrete surfacing in the traveled way, an aggregate surface will be provided in the removal area to the elevation of the removed materials. A minimum thickness of 6" of aggregate at the surface will be provided. This work is incidental to removals.

Disposal of Removed Materials

The removed materials will become property of the Contractor and be removed from the project site at the Contractor's expense.

Remove Storm Sewer

When existing storm sewer is designated to be removed, the existing pipe will be removed in its entirety, or crushed in its entirety and backfilled over, if directed by the Engineer.

EXCAVATION AND EMBANKMENT (2105)

1. The area designated for excavation will be excavated to sufficient depth to allow construction of the typical section shown on the plans except as otherwise directed by the Owner. The Contractor will verify to the Owner that the subgrade has been constructed to the proper elevation before base construction proceeds. The subgrade must be within 0.10' plus or minus of plan elevation before the construction is allowed to proceed. A subgrade elevation consistently above or below plan elevation will not be considered acceptable work. On average, the subgrade will be at about plan elevation.
2. Excess excavated material will be disposed of by the Contractor. Excess topsoil material will be stockpiled separately or leveled, as directed by the Owner. Stockpiling and leveling will be considered incidental to the excavation, and will not be paid for directly.
3. The contractor will salvage and stockpile suitable topsoil and surface material to the satisfaction of the Owner as necessary to provide for final seed and turf establishment and restoration. Topsoil salvage will be considered incidental to excavation and no direct compensation will be made therefore.
4. Removal of rocks, boulders, masonry or concrete within the excavated area will be considered common excavation. All roots, stumps, rubbish, rocks and other waste materials will be hauled to the nearest landfill. This work will be considered incidental to the construction and will not be paid for directly.
5. Paving sections will be required to allow construction of the typical cross-section. Embankment will be constructed in accordance with the provisions of 2105. Suitable excess excavated materials will be utilized for embankment to the fullest extent practicable. The remaining embankment material will be granular borrow conforming to the provisions of 3149.2A.
6. Site grading will be performed as required to establish plan grade. All excess becomes property of the Contractor to be disposed of off-site.
7. The Contractor will be responsible for ensuring that all areas within the limits of lot grading have a minimum of 6" of salvaged topsoil material on the final grade. It will be the Contractor's responsibility to coordinate and designate topsoil salvaging operations and stockpiling to ensure adequate topsoil is available for a 12" cover. All existing topsoil will be removed in all areas which will be filled with any material other than topsoil except that topsoil depths will not exceed two feet.
8. All borrow or salvaged excavated material to be used as embankment within the limits of paving construction will be approved by the Owner prior to placement. Embankment will comply with the provisions of Minnesota Department of Transportation Spec. 2112 including achieving 100% compacted density in the upper 3 feet of subgrade and 95% below the upper 3 feet of subgrade.
9. All natural topsoils will be removed from below all paving construction areas.
10. Suitable excavated material will be used as backfill. Embankments and boulevards not being seeded or sodded will be dragged or raked smooth prior to completion of each project.
11. Excess excavated material, excluding rocks, boulders, debris and organic material, will be the property of the Owner and will be stockpiled on site as directed by the Owner. All other excess material will be disposed of by the Contractor offsite.
12. When embankment materials are placed on existing ground with an existing slope of greater than 4:1, the embankment will be placed in accordance with 2105.3.B.
13. Where excavation is performed to the subgrade without the placing of embankment materials, the contractor will work the upper 1' of the subgrade to within 2% of optimum moisture prior to the test-rolling stated below. When the existing moisture content is greater or less than 2% of optimum, the contractor will "farm" the material to dry it, or add water and mix the materials until the subgrade reaches the desired moisture content. This work will be incidental to construction.
14. Backfill construction of concrete curb and gutter in accordance with 2531.J is incidental. The contractor will note that when this work is complete, continuous positive drainage is provided to the curb & gutter, which is defined by the MPCA as a stormwater conveyance.

TOPSOIL SALVAGE

All areas to be seeded will be finished with no less than 6 inches of topsoil salvage. This topsoil will be raked to a smooth surface free of roots, rocks and soil clumps. Topsoil salvage will be incidental to the project. All areas to receive fill material are subject to topsoil salvage. Topsoil may be placed over existing topsoil.

SUBGRADE PREPARATION (2112)

1. The provisions of 2112 will be follows and as outlined in 2112.

2. The final shaping and compacting of the subgrade will be done just prior to placing any base or surface course.

3. At the time the subgrade preparation operations have been completed, the prepared surface will be in reasonably close conformity with the cross sections shown in the Plans and the lines and grades shown on the plan.

4. Where excavation is performed to the subgrade with or without the placing of embankment materials, the contractor will work the subgrade to within 2% of optimum moisture. When the existing moisture content is greater or less than 2% of optimum, the contractor will "farm" the material to a minimum depth of 12" to dry it, or add water and mix the materials until the subgrade reaches the desired moisture content. This work will be incidental to construction.

5. The required stability will be such that when any material for base or surface courses is deposited on the subgrade, no rutting or displacement will occur.

6. The subgrade preparation prior to construction of underground utilities will not be subject to elevation tolerances.

7. Subgrade preparation is incidental to the contract

S-7 SUBGRADE COMPACTION

The subgrade when exposed will be compacted with a tamping roller, compactor or other means to not less than 100% Maximum Density and 2% Optimum Moisture. The Contractor will work the upper 1' of the subgrade to within 2% of optimum moisture during compaction. When the existing moisture content is greater or less than 2% of optimum, the contractor will "farm" the material to dry it, or add water and mix the materials until the subgrade reaches the desired moisture content. This work will be incidental to construction. Prior to placement of any stabilized base, a fully loaded dual axel dump truck will be driven over the completed sub-grade in the presence of the Contractor and Engineer present. The subgrade will be found suitable for placement when no rutting or displacment occurs. The test-rolling will be incidental to stabilized base and no specific payment will be made therefore.

S-8 SUBGRADE CORRECTION

If after substantial efforts by the contractor to correct the moisture content of the subgrade and re-compact the materials, the subgrade displays evidence of rutting or yielding prior to, during, or after this compactive effort, additional material will be excavated as directed by the Owner to the depth required to provide a stable foundation for the base material. Suitable material removed during excavation will be utilized for subgrade correction. This work will not be paid as Extra Work if it was or would have been, or could have been performed as part of any other grading activity.

STABILIZED BASE CONSTRUCTION (2211)

This work will consist of the excavation and embankment of existing subgrade and surface materials, and the construction of aggregate base.

1. Aggregate base will be either MnDOT Class 2 or Class 5, at the Contractor's option. Class 7 recycled base is acceptable where alllowed in the MnDOT standard specificitations.
2. Any damage by the Contractor's operations to any existing improvements which have not been designated for removal or disturbance will be repaired at the expense of the Contractor.
3. AGGREGATE: Aggregate for the purposes required by this contract will be furnished by the Contractor from sources selected by him.
4. AGGREGATE BASE: Aggregate base, will be constructed in accordance with the provisions of 2211. Aggregate will conform to the requirements of 3138.
5. Compaction will be obtained by the Modified Penetration Index Method modified as follows: The Owner will hire an independent testing laboratory to perform density and moisture testing. Moisture tests will be performed with each density test. Tests will be performed in accordance with the Materials Testing Section above. Penetration and moisture content testing will be performed along with to the density tests. No payment will be made for work tested that fail to meet the specified density. The Contractor will be responsible for any additional tests due to the failure of work. Water will be applied to the base material during mixing, spreading and compaction operations for proper compaction and will be considered incidental work.
6. Test rolling will be performed on the aggregate base in the presence of the Owner's testing subconsultant. Test rolling will be as specified in Mn/DOT specification 2111 except that the test will be performed with a fully loaded tandem axel dump truck in lieu of the test roller. The Owner may delete the requirement for test-rolling on all or portions of the stabilized base, at his discretion, after consultation with the Contractor.
7. Furnish and install Aggregate Base, Class 5 meeting MN/DOT Specification No. 3138 under all concrete or bituminous pavements and a minimum of 2 inches of Aggregate Base, Class 5 under all curb and curb and gutter.

MAINTENANCE OF COMPLETED BASE

After completion of any part of the base, such base will be maintained in a dust free condition. It will be the Contractor's responsibility to repair at his expense all prepared and shaped surfaces until project is complete. Any water applied to keep the base dampened or reshaped will be at the Contractor's expense. The Contractor will maintain the completed aggregate base after rain events, and replace and recompact any eroded aggregate as work incidental to the contract. Maintenance of completed base is incidental to construction.

APPLICATION OF WATER (2130)

Application of water will be in accordance with the provisions of 2130 except as herein modified. No direct compensation will be made for water used in conjunction with the mixing, placing and compacting operations for base construction. The contractor is responsible for application of water for dust control in accordance with Mn/DOT 1717 and with the NPDES permit. Application of water for dust control is incidental to the work and no additional payment will be made therefore.

CONCRETE PAVEMENT (2301)

Jointed Type 3 Grade A Plain Concrete Pavement will be placed in accordance with the Mn/DOT standard specifications except as modified herein. Loading dock pavement will be reinforced.

The mix designs for concrete paving for this project are:
- Standard Paving - 3A41
- High Early Strength (if directed by Owner) - 3A41HE
- Flexural strength at 28 days will be 750 psi.
- Compressive strength at 28 days will be per the mix designations above.

High Early concrete areas will remain closed to traffic for 3 days or until they have achieved a flexural strength of 450 psi, whichever is shorter.

Concrete will be supplied from a Mn/DOT certified producer. The Contractor will be responsible for supplying the mix designs. The Contractor will provide the Engineer with the mix designs a minimum of 24 hours prior to the first pour.

Concrete will be cured by the use of membrane curing compound meeting the requirements of MnDOT 3754 AMS.

All joint sealant will conform to 3723, Concrete Joint and Crack Sealer (Hot-Poured Elastic Type) sealant.

Transverse metal-tine finishing will not be required.

The location of transverse joints may be adjusted in the field by the Engineer. An increase in the number of transverse joints of up to five percent (5%) compared to the number shown on the plans will be incidental.

All coarse aggregate for concrete pavement will meet the gradation requirements of MnDOT 3137 CA-50.

BITUMINOUS TACK COAT (2357)

Treating existing bituminous or concrete surfaces preparatory to placing a bituminous course thereon will be performed in accordance with the provisions of MN/DOT 2357 and the following:

A bituminous tack coat consisting of emulsified asphalt will be applied between all bituminous surfaces. A tack coat will be placed on the existing pavement prior to placing the next layer of bituminous and the edges of concrete pavement and curb and gutter that will come into contact with the new bituminous will be tacked. All surfaces will be cleaned of all dirt, debris and loose material prior to the application of the bituminous tack coat.

PLANT MIXED ASPHALT PAVEMENT (2350/2360)

Plant mixed asphalt pavement density will be constructed in accordance with Mn/DOT specification 2360, as published by Mn/DOT at the time of bid.After placement of the base course of bituminous paving at the bus parking area and car parking area, the Contractor will flood the work area with water to identify possible "bird bath" locations where the pavement has not been placed at enough grade to ensure proper drainage. Prior to or during placment of the wear course, the Contractor will ensure that these areas are graded to properly drain.

CONCRETE MIX FOR CURB & GUTTER, WALKS, & DRIVEWAYS (2461)

Concrete for this Contract will be as follows and as outlined in 2461:

The concrete mix number to be used for slip form curb and gutter will be 3A22. The concrete mix number for hand formed curb and gutter, sidewalks, and driveways will be 3A32.

	Minnesota Highway Designation	Minnesota Highway Designation
Mix Number	3A32B	3A22B
Type of Concrete	Type 3 (Air Entrained)	Type 3 (Air Entrained)
Grade	Grade A	Grade A
28 Day Strength	27 Mpa (3900 psi)	27 Mpa (3900 psi)
Slump	50 mm to 75 mm (2" to 3")	25 mm to 50 mm (1" to 2")
Coarse Aggregate Composition	100% Class "B"	100% Class "B"
Gradation of Coarse Aggregate	CA25 or CA50 For Structural Concrete	CA25 or CA50 For Structural Concrete

Concrete will be supplied from a Mn/DOT certified producer. The Contractor will supply the mix designs. The Contractor will provide the Engineer with the mix design a minimum of 24 hours prior to the first pour.

WALKS (2521)

Concrete sidewalks will be constructed in accordance with 2521 and Standard Plate 7035M. Preformed joint filler material will be placed in accordance with Standard Plate 7035M. Concrete sidewalks will be mix design 3A32 with a maximum slump of 3". No water will be added to the mix to reduce the slump beyond 3" for temporary workability, as stated in 2461.B3. Colored concrete shall be as manufactured by Scofield with coloring as determined by the Landscape Plan.

CONCRETE CURING AND PROTECTION (2521, 2531)

All sidewalk, driveway, curb and gutter will be cured using a membrane curing compound conforming to the requirement of Minnesota Highway Department #3754. For concrete curb and gutter poured after October 1st, blanket or extreme service membrane methods of curing will be substituted for membrane curing, in accordance with 2531.

EXTREME TEMPERATURE CONCRETE

The following additional measures will be required for extreme temperature concrete construction, as work incidental to the contract:

Hot Weather Concrete Construction
1. Do not place concrete with a placing temperature that will cause difficulty from loss of slump, flash set, or cold joints.
2. Maintain a concrete temperature during placement of less than 90 degrees F.
3. Use all means necessary to avoid drying the concrete prior to the completion of finishing operations.
4. Provide and use windbreaks, sunshades, fog sprays, and other devices to protect the concrete.

Cold Weather Concrete Construction
1. Provide adequate protection when temperatures are 40 degrees F or lower occur durin ghte placing and early curing periods.
2. Comply with all pertinent recommendations of ACI 306 (Recommended Practice for Cold Weather Concreting).
3. Type IIIA cement may be used.
4. The use of Calcium Chloride or other accelerators will not be permitted.
5. Maintain a concrete temperature during placement of more than 60 degrees F.
6. Use all means necessary to avoid exposure of concrete to freezing temperatures during placement, finishing, and curing.
7. Concrete will not be placed on a frozen subgrade.
8. Provide and maintain heated enclosures, insulating blankets, tarpaulins, heaters, fuel, and all other protective equipment required.
9. Maintain favorable curing temperature at all times until the concrete gains sufficient strength to withstand exposure to low temperature and applied loads.

CONCRETE CURBING & GUTTER (2531)

Concrete curb and gutter will be constructed in accordance with the provisions of 2531 and the following: Curing will be by the Membrane Curing Method as specified in 2531.3G (2). The sealing of joints in concrete curb and gutter will not be required.

Construction joints in curb and gutter will be installed at 10-foot intervals. Preformed joint filler material (1/2-inch) will be place at the ends of all street returns, at the ends of concrete driveway approaches, and in accordance with MN/Dot Standard Plate 7035N.

Concrete curb and gutter will be the style shown on the plans.

PEDESTRIAN CURB RAMPS (2531)

Unless otherwise dome sections will be red.

STORM WATER MANAGEMENT (2573)

The Stormwater Pollution Prevention Plan (SWPPP) required by the NPDES permit has been provided by the Owner and is incorporated into the plans and specifications.

The Minnesota Department of Transportation's Specification 2573 - Stormwater Management is hereby modified as follows:

1. The Contractor will apply for and comply with the provisions of the NPDES permit and the SWPPP (Stormwater Pollution Prevention Plan).

2. The Stormwater Pollution Prevention Plan provided by the Owner is meant and provided as a guide in the provision of Erosion and Sediment Control (ESC) Best Management Practices (BMP's) as required by the NPDES permit. The SWPPP is based on finish grade contours. Additional ESC measures, although not shown by the plan, may be required to comply with the provisions of the NPDES permit. Provision and maintenance of the ESC BMP's in accordance with the NPDES permit is the responsibility of the contractor, regardless of what is shown on the SWPPP. Interim ESC BMP's and updating of the SWPPP are the responsibility of the contractor. Maintenance of the ESC BMP's is incidental to the work and will be performed in accordance with 2573.M.

3. When updates to the SWPPP are required, the Contractor will provide the Engineer with sketches of the updated areas, so that the Engineer can update the SWPPP.

4. No additional payment will be made for additional ESC BMP's required by the NPDES permit but not shown on the SWPPP.

5. The contractor will obtain the NPDES permit from the MPCA and pay any applicable fees as work incidental to the contract. The contractor will remain named on the NPDES permit until the warranty period expires, at which time he/she may submit an NPDES Permit Modification/Transfer Form to the Owner for completion and submission to the MPCA.

6. The contractor will maintain the NPDES site inspection log.

7. The contractor will be responsible for all fines imposed by regulating agencies for failure to comply with the provisions of the NPDES permit.

8. If the Engineer determines that ESC BMP's have failed or require maintenance, the Contractor will correct the cause of failure, maintain the BMP's, and alleviate all sediment deposition outside the construction limits, to the fullest extent possible. If the Contractor fails to install or maintain erosion or sediment control measures required by the NPDES permit, fails to conduct required inspections, or fails to take action ordered by the Engineer to correct ESC problems, the Engineer will issue a written order to the Contractor. The Contractor will respond within 24 hours with sufficient personnel, equipment, and/or materials and conduct the required work or be subject to a $500 per calendar day penalty for noncompliance. In addition, the Engineer may recommend that the Owner withhold payment from all work until the ESC BMP's are constructed or maintained.

9. The Engineer may require the Contractor to submit a site plan for certain portions of the work detailing proposed ESC BMP's, and a schedule indicating start and completion dates. The Contractor will not start work within these areas until the Engineer has accepted the site plan and schedule. No additional payment will be made for preparation of site plans required by the Engineer, or reasonable delays or production losses caused by this requirement.

10. Sediment removal required due to the failures to implement or maintain ESC BMP's will not be considered Extra Work. The Contractor will remove all sediment from areas accrued due to actions or inactions by the Contractor, at no cost to the Owner

11. The Contractor will designate a concrete washout area on-site and inform the Engineer of the chosen location at the pre-construction meeting. This area must be constructed so that it drains towards itself. Concrete debris will be removed from the concrete washout and removed from the site prior to final acceptance.

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

Brian J. Johnson
Reg. No. 42164
Date: 9/4/25

Consultant:
JONES HAUGH SMITH
Engineers • Surveyors
515 South Washington Ave. Albert Lea, MN 507.373.4876

Project:
ENDLESS ADVENTURES

Revision:

No.:	Date: 9/4/25
Drawn: bjj	Checked:

Project Manager:

Project Status: CD

Sheet Title:
SPECIFICATIONS

Sheet No.:
C10

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

Meeting Date: 10/14/2025

Title

CY55-25

*****FOR INFORMATION ONLY. Request of the Planning Agency to review Chapter 10 of Mankato City Code related to variances.**

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

Meeting Date: 10/14/2025

Title

CY56-25

*****FOR INFORMATION ONLY. Request of the Planning Agency to review the proposed 2026-2030 Capital Infrastructure Plan.**

Site Plan and Traffic Advisory Review Committee **1. 5.**

Meeting Date: 10/14/2025

Title

SITE PLAN REVIEW ONLY

*****Site Plan and Traffic Advisory Committee Review Only. Request of Hyvee for alterations of the pharmacy drive-thru, reversing the direction and adding a canopy. The subject property is located at 2010 Adams Street.**

Review

HyVee, located at 2010 Adams Street, has submitted a request for a Site Plan Review including a proposed work description that states they desire to remodel the pharmacy drive-up lane at the Mankato #2 Hy-Vee. Additionally, the request states that they intend on making alterations to the drive, reversing the direction & adding a canopy.

Site plans provided show a change in direction of the drive-thru and the addition of an additional drive-thru lane in the pharmacy area located on the southern side of the building. Plans depict a change in the direction of travel for the drive-thru, as well as the installation of a new 30' X 30' canopy with a pharmacy tube.

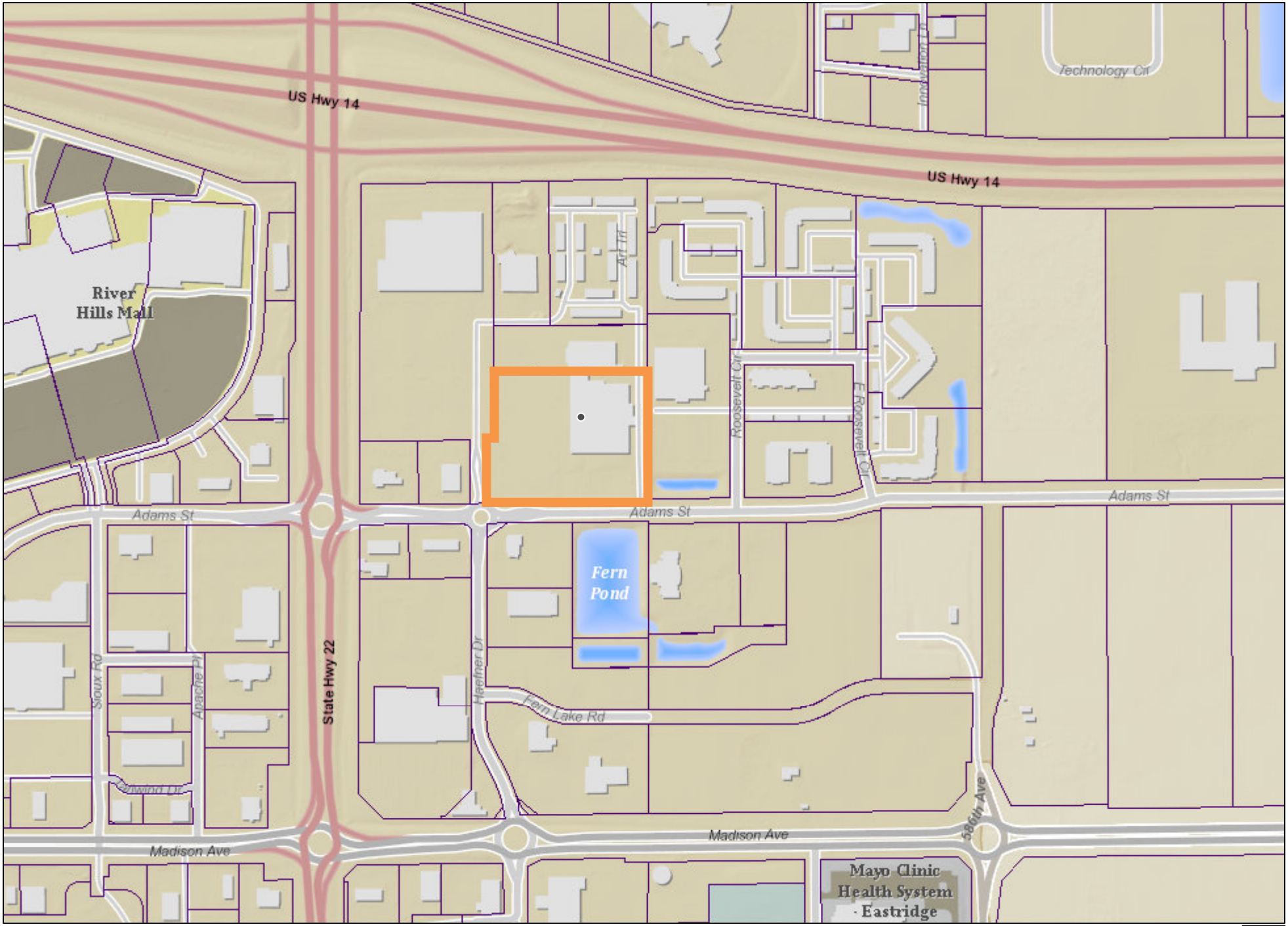
Attachments

General Location Map

Aerial Plan

Civil Plans

General Location Map



Date: October 2025

Author:

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

N

Aerial Plan

Date: October 2025

Author:

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

N

HY-VEE INC.

5820 Westown Parkway West Des Moines, Iowa 50266

HyVee® EMPLOYEE OWNED

PROJECT LOCATION:

MANKATO #2 Rx DRIVE LANE EXPANSION
MANKATO, MN

2010 ADAMS STREET, 56001

OWNER/DEVELOPER

HY-VEE, INC.
5820 WESTOWN PARKWAY
WEST DES MOINES, IOWA
515-267-2800

CIVIL ENGINEER

HY-VEE, INC.
5820 WESTOWN PARKWAY
WEST DES MOINES, IOWA
515-267-2800

CONTACT: JEFF STEIN

REGULATORY AGENCIES

DIRECTOR OF PLANNING &
DEVELOPMENTAL SERVICES
MARK KONZ
507-387-8611

PLANNING & ZONING
ADMINISTRATOR
MOLLY WESTMAN
507-387-8571

DIRECTOR OF PUBLIC WORKS
JEFF JOHNSON
507-387-8640

DIRECTOR OF PUBLIC SAFETY
JEREMY CLIFTON
507-387-8780

CITY MANAGER
SUSAN ARNTZ
507-387-8695

UTILITY CONTACTS

STATE ONE CALL
800-225-1166

GAS
CENTER POINT ENERGY
800-296-9815

ELECTRIC
XCEL ENERGY
800-481-4700

WATER
CITY OF MANKATO
507-387-8600

SHEET INDEX

C0.0 COVER SHEET

C1.0 OVERALL SITE & CONTEXT PLAN

C1.1 STRIPING & SIGNAGE PLAN

C2.0 DEMOLITION PLAN & SITE PLAN

C3.0 GRADING PLAN & PLANT PLAN

C4.0 CONSTRUCTION DETAILS

SHOP DRAWINGS REQUIRED PRIOR TO INSTALLATION

DIVISION 31 - EARTHWORK

(312323) FILL:
PRODUCT DATA
MATERIAL SOURCE

DIVISION 32 - EXTERIOR IMPROVEMENTS

(321313) CONCRETE PAVING:
LIGHT DUTY MIX DESIGN
PAVING PHASING PLAN LAYOUT
PAVING JOINT PLAN LAYOUT
CURE COMPOUND PRODUCT DATA

(321373) CONCRETE PAVING JOINT SEALANTS:
TAR JOINT SEALANT PRODUCT DATA

(321613) CURBS AND GUTTERS:
CURB AND GUTTER DESIGN MIX

(321623) SIDEWALKS:
SIDEWALK MIX DESIGN

(321723) PAVEMENT MARKINGS:
PAVEMENT MARKING PRODUCT DATA

(329000) PLANTINGS:
PLANT SUBSTITUTION SCHEDULE
MULCH PRODUCT DATA

(329113) SOIL PREPARATION:
AMEND SOIL MIX

(329223) SOD:
SOD PRODUCT DATA

(107316) CANOPIES
METAL CANOPY

SITE LOCATION MAP

NOT TO SCALE

PLANS ISSUED

REV	DATE	DESCRIPTION
	08.25.25	CITY SUBMITTAL

CALL BEFORE YOU DIG

IF YOU DIG IN ANY STATE
DIAL 811 FOR THE LOCAL
"ONE CALL CENTER"
IT'S THE LAW

THE UTILITIES SHOWN HEREIN ARE FOR THE CONTRACTORS CONVENIENCE ONLY. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THESE PLANS. THE ENGINEER/SURVEYOR ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS SHOWN AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL THE UTILITIES WITHIN THE LIMITS OF WORK. ALL DAMAGE MADE TO THE EXISTING UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR

AUGUST 25, 2025 - CITY SUBMITTAL

NEW HY-VEE STORE
2010 ADAMS STREET

EX. HY-VEE FOOD STORE

1,200 SF KIOSK
FFE=1012.50

10" WATERMAIN

CONCRETE WALK

CONCRETE WALK

ADAMS STREET

GRAPHIC SCALE
0 20' 40' 60'

REVISION	DATE BY

LOCATION:
MANKATO 2 Rx LANE
2010 ADAMS STREET

HY-VEE, INC.
5820 WESTOWN PARKWAY
WEST DES MOINES, IOWA 50266
TELEPHONE: (515) 267-2800
FAX: (515) 267-2935

Hy-Vee®
EMPLOYEE OWNED

OVERALL SITE
&
CONTEXT PLAN

DRAWN:	DATE:
JMD	08/22/2025
SCALE: 1"=20'	JOB NUMBER:

SHEET:
C1.0

NEW HY-VEE STORE
2010 ADAMS STREET

EX. HY-VEE FOOD STORE

1,200 SF KIOSK
FFE=1012.50

RESTRIPE TO MATCH EXISTING
PAINT CROSSWALK TO MATCH EXISTING
MOVEABLE SIGNAGE WITH SIGN 'A'

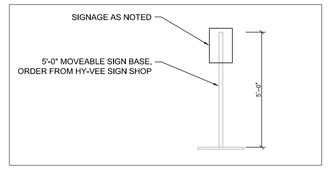
RESTRIPE CENTER LINE TO MATCH EXISTING
MOVEABLE SIGNAGE WITH SIGN 'B'

EXISTING AOL SIGNAGE ADD SIGN 'D'
MOVEABLE SIGNAGE WITH SIGN 'D'
MOVEABLE SIGNAGE WITH SIGN 'B'

EXISTING AOL SIGNAGE ADD SIGN 'C'
FIELD VERIFY THIS CURB ALIGNMENT PRIOR TO STRIPING

RESTRIPE CENTER LINE TO MATCH EXISTING

CONCRETE WALK
CONCRETE WALK
ADAMS STREET
10" WATERMAIN



MOVEABLE SIGN BASE

SCALE: 1"=10'

SIGN 'A'	S L O W ALL TRAFFIC MUST STOP AT EXISTING SIGNAL	12"x18" BLACK ON YELLOW BACKGROUND
SIGN 'B'	EXIT ONLY DO NOT ENTER	12"x18" BLACK ON WHITE BACKGROUND
SIGN 'C'	PHARMACY DRIVE-UP	18"x24"
SIGN 'D'	PHARMACY DRIVE-UP	18"x24"
SIGN 'E'	PHARMACY DRIVE-UP THIS LANE	18"x24"

SIGN LEGEND

GRAPHIC SCALE
0 20' 40' 60'

REVISION	DATE BY

LOCATION:
MANKATO 2 Rx LANE
2010 ADAMS STREET

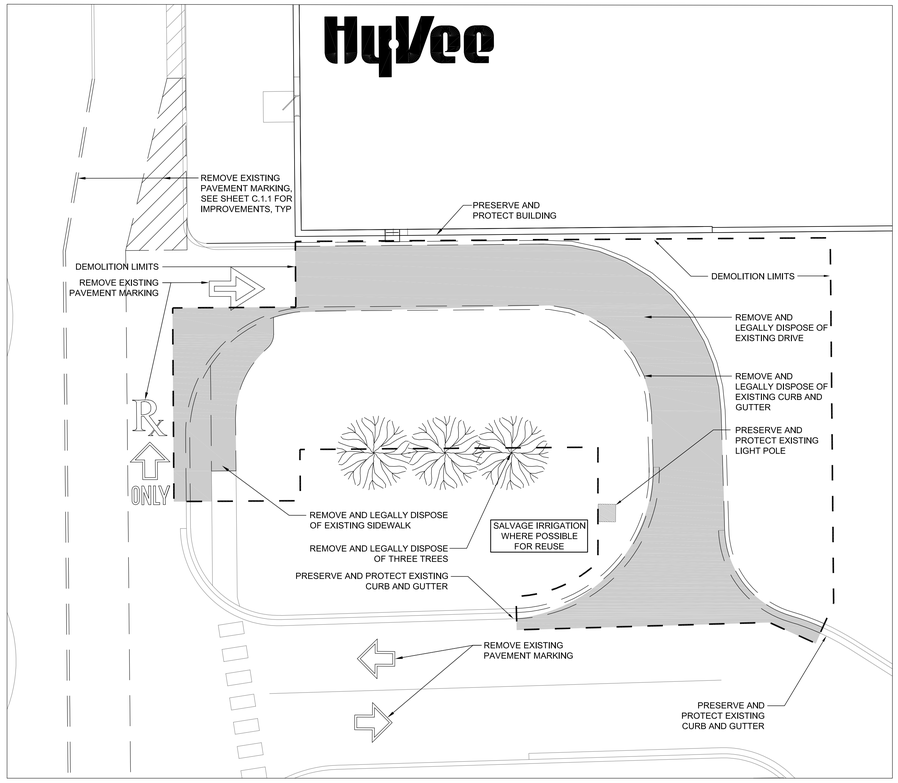
HY-VEE, INC.
5820 WESTOWN PARKWAY
WEST DES MOINES, IOWA 50266
TELEPHONE: (515) 267-2800
FAX: (515) 267-2935

Hy-Vee®
EMPLOYEE OWNED

STRIPING & SIGNAGE PLAN

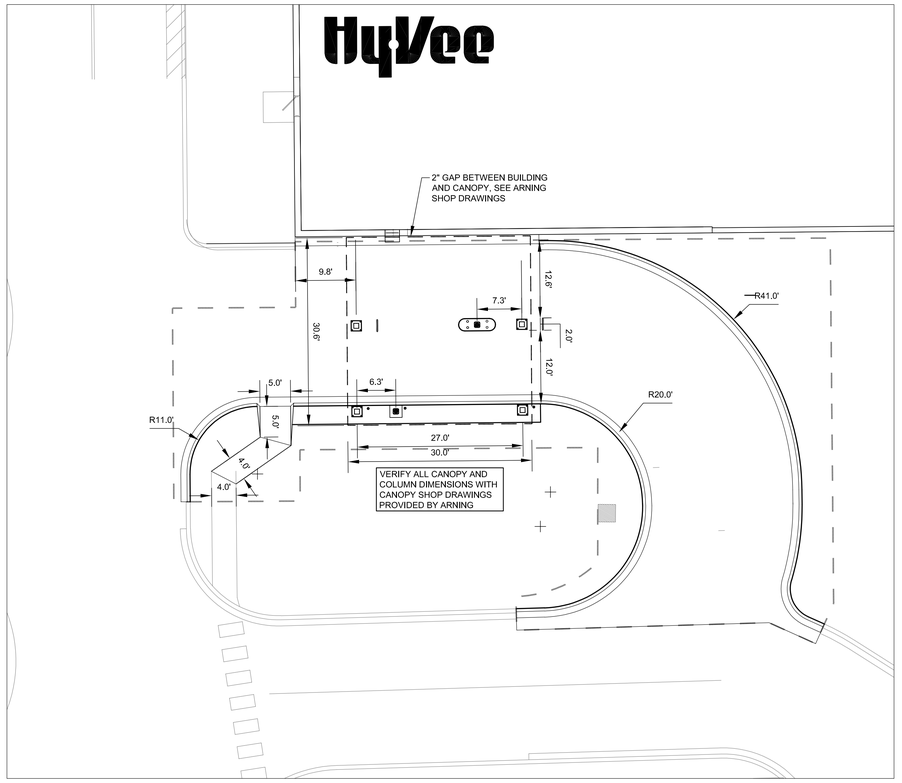
DRAWN:	DATE:
JMD	08/22/2025
SCALE: 1"=20'	JOB NUMBER:

SHEET: C1.1



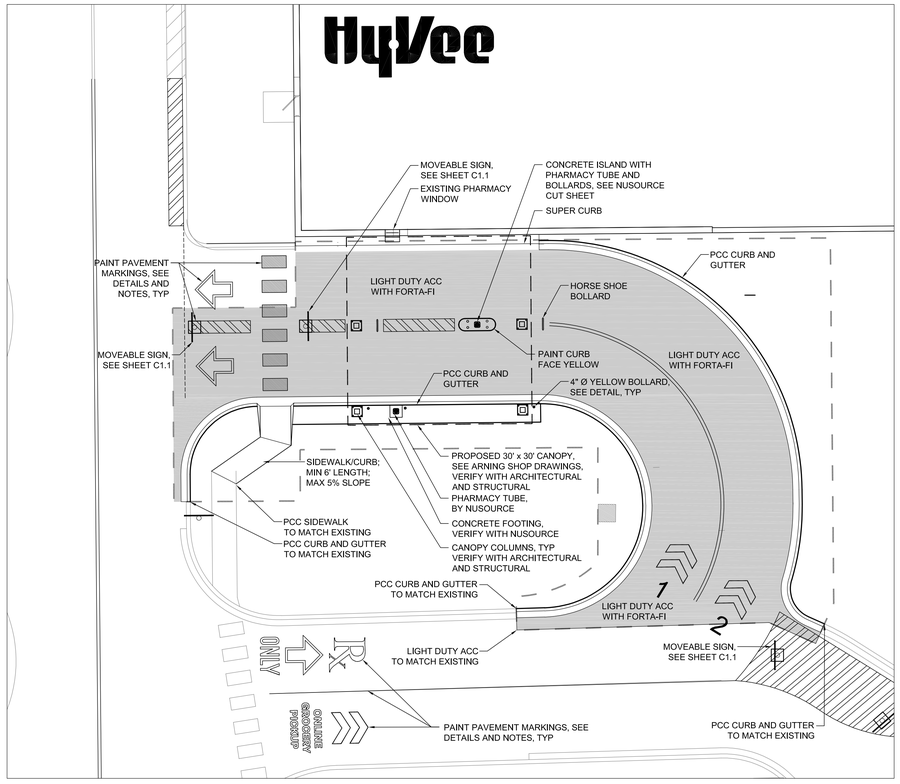
DEMOLITION PLAN

SCALE: 1"=10'



DIMENSION PLAN

SCALE: 1"=10'



SITE PLAN

SCALE: 1"=10'

GENERAL NOTES

1. PROTECT EXISTING STRUCTURES AND ADJACENT PROPERTY DURING CONSTRUCTION.

2. PROTECT EXISTING UTILITIES DURING CONSTRUCTION.

3. THE LOCATIONS OF ALL UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM EXISTING RECORDS. THE EXACT LOCATION AND ELEVATION OF ALL UTILITIES MUST BE DETERMINED BY THE CONTRACTOR. IT SHALL BE THE DUTY OF THE CONTRACTOR TO ASCERTAIN WHETHER ANY ADDITIONAL UTILITIES OTHER THAN THOSE SHOWN ON THE PLAN MAY BE PRESENT.

4. ALL DIMENSIONS TO BACK-OF-CURB UNLESS NOTED OTHERWISE. ALL DIMENSIONS TO BE FIELD VERIFIED.

5. ALL SLOPES IN PAVEMENT SHALL BE UNIFORM TO AVOID PONDING.

6. FINISH GRADES SHOWN ARE TO TOP OF PAVING, SIDEWALKS, OR FINISH GRADE.

7. STAGING LOCATION FOR CONSTRUCTION EQUIPMENT AND MATERIALS TO BE COORDINATED WITH AND APPROVED BY THE OWNER.

PAVEMENT SPECIFICATIONS

CONCRETE - REFER TO LOCAL OR DOT PAVEMENT SPECIFICATIONS

1. CONCRETE MIX BY UNIT VOLUME.
   - TYPE I BLENDED CEMENT: 10.6%
   - POTABLE WATER: 13.3%
   - AIR ENTRAINMENT: 06.0%
   - FINE AGGREGATE (<#4) 31.5%
   - COURSE AGGREGATE (#4 - 1.0") 38.6%
   - A. MAXIMUM SUBSTITUTION OF FLY ASH SHALL BE 15%. FLY ASH SHALL CONFORM TO ASTM C618 CLASS C.
   - B. MAXIMUM SLUMP USING SLIP-FORM PLACEMENT IS 1 ½". MAXIMUM SLUMP USING OTHER PLACEMENT METHODS IS 4".
   - C. AGGREGATE SHALL BE CLEAN SAND AND CLEAN CRUSHED STONE OR CLEAN GRAVEL FOR HIGH DURABILITY.

2. INSTALL ROADS, PARKING SURFACES, SIDEWALKS AND CURBS WHERE INDICATED ON PLAN. CONCRETE STRENGTH SHALL BE 4,000 PSI @ 28 DAYS.

3. FOR CONCRETE PAVEMENTS, PROVIDE CONTROL JOINTS AT 12'-0" OVER CENTER EACH WAY MAXIMUM UNLESS NOTED OTHERWISE ON PLAN.

4. PERFORM CONCRETE WORK IN ACCORDANCE WITH ACI 301 AND ACI 318. CONFORM TO ACI 305 DURING HOT WEATHER AND ACI 306.1 DURING COLD WEATHER.

5. CONCRETE FINISH: MEDIUM BROOM PERPENDICULAR TO THE PATH OF TRAVEL.

6. CONCRETE CURING AGENT: RESIN BASED, MEMBRANE FORMING COMPOUND COMPLYING WITH ASTM C309, TYPE 1.

7. CONCRETE SIDEWALK JOINT SEALENT: SELF-LEVELING POLYURETHANE GUN GRADE SEALANT, COLOR: GRAY.

8. CONCRETE ROADS, PARKING LOT, AND CURB JOINT SEALANT: HOT POURED JOINT SEALANT COMPOSED OF PETROPOLYMERS MEETING REQUIREMENTS OF ASTM D 3405. FILL JOINTS FULL. DO NOT USE BACKER ROD.

SIGNAGE AND STRIPING SPECIFICATIONS:

1. PAINT TRAFFIC DIRECTION ARROWS, PARKING STRIPES, AND HANDICAP SYMBOLS "TRAFFIC YELLOW".

2. PAINT SHALL BE LEAD FREE WATERBORNE TRAFFIC AND HIGHWAY MARKING PAINT UC-3586 YELLOW AS MANUFACTURED BY DIAMOND VOGEL PAINTS OR EQUIVALENT.

3. PROVIDE FOUNDRY GRADE SILICA SAND THAT MEETS A 50/60 GRADED SAND WHEN TESTED ACCORDING TO ASTM C-136 OR GLASS BEADS THAT MEET FEDERAL SPECIFICATION TT-B-1325, TYPE I, GRADATION A.

4. BEFORE APPLICATION OF PAINT, PAINTING SURFACE MUST BE DRY AND FREE FROM DIRT, GREASE, OIL, OR OTHER MATERIAL THAT WOULD REDUCE THE BOND BETWEEN THE PAVEMENT AND PAINT. CLEAN THE AREA TO BE PAINTED BY SWEEPING OR COMPRESSED AIR.

5. APPLY PAINT AT LOCATIONS, DIMENSIONS, AND SPACING SHOWN ON THE PLANS.

6. MIX PAINT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPLY AT THE RATE OF 115 SF/GALLON. THE ADDITION OF THINNER WILL NOT BE PERMITTED.

7. APPLY SILICA SAND AT 4LBS/GALLON OF PAINT IMMEDIATELY AFTER THE APPLICATION OF PAINT. SILICA SAND SHALL ADHERE TO THE CURED PAINT PRIOR TO FINAL ACCEPTANCE AND PAYMENT.

8. TREAT GLASS BEADS WITH ADHESION PROMOTING COATINGS AS SPECIFIED BY THE PAINT MANUFACTURER. APPLY GLASS BEADS AT 7LBS/GALLON OF PAINT IMMEDIATELY AFTER THE APPLICATION OF PAINT. GLASS BEADS SHALL ADHERE TO THE CURED PAINT PRIOR TO FINAL ACCEPTANCE OF PAYMENT.

9. PROTECT ALL MARKINGS FROM DAMAGE UNTIL PAINT IS DRY.

REVISION	DATE BY

CALL BEFORE YOU DIG

IF YOU DIG IN ANY STATE DIAL 811 FOR THE LOCAL "ONE CALL CENTER" IT'S THE LAW

THE UTILITIES SHOWN HEREIN ARE FOR THE CONTRACTORS CONVENIENCE ONLY. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THESE PLANS. THE ENGINEER/SURVEYOR ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS SHOWN AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL THE UTILITIES WITHIN THE LIMITS OF WORK. ALL DAMAGE MADE TO THE EXISTING UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR

GRAPHIC SCALE
0 10' 20' 30'

LOCATION:
MANKATO 2 Rx LANE
2010 ADAMS STREET

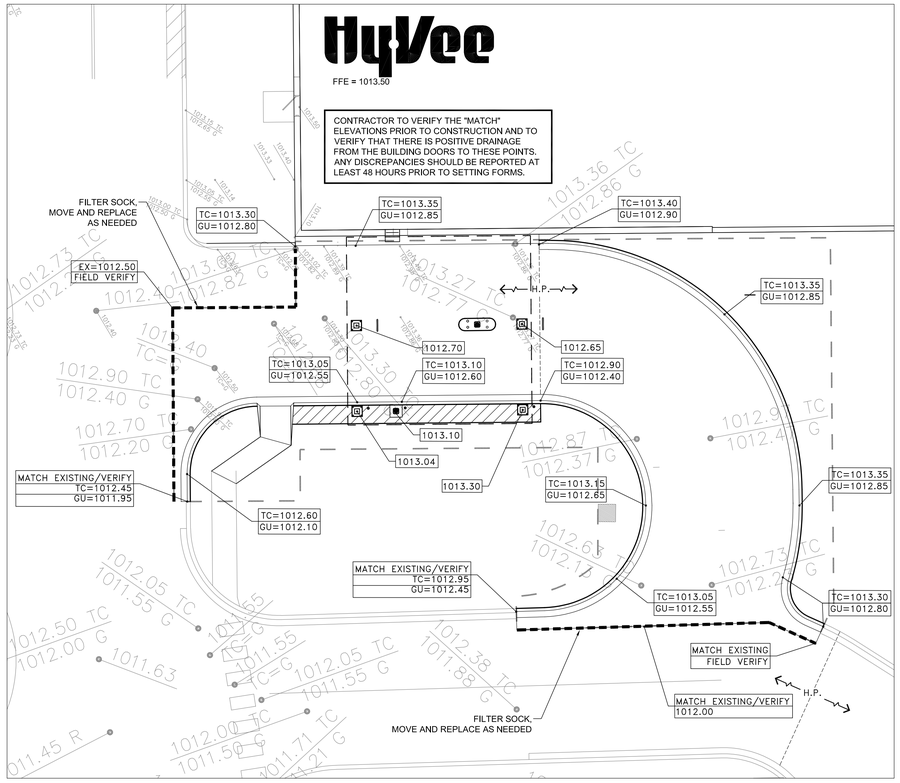
HY-VEE, INC.
5820 WESTOWN PARKWAY
WEST DES MOINES, IOWA 50266
TELEPHONE: (515) 267-2800
FAX: (515) 267-2935

EMPLOYEE OWNED

DEMOLITION PLAN & SITE PLAN

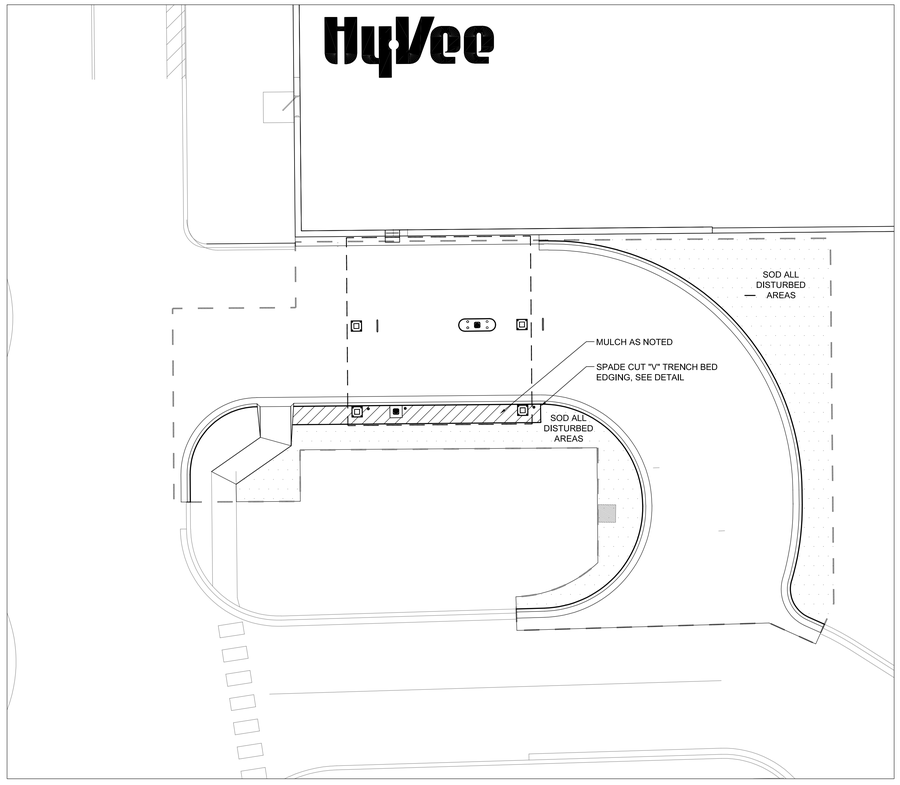
DRAWN:	DATE:
JMD	08/22/2025
SCALE: 1"=10'	JOB NUMBER:

SHEET: C2.0



GRADING PLAN

SCALE: 1"=10'



PLANTING PLAN

SCALE: 1"=10'

GENERAL NOTES

1. ALL PLANT MATERIAL INSTALLATION, INCLUDING SEED AND SOD, SHALL BE COMPLETED PRIOR TO GRAND OPENING.

2. ALL PLANT MATERIAL SHALL MEET MINIMUM REQUIREMENTS SHOWN IN THE "AMERICAN STANDARD FOR NURSERY STOCK" (ANSI Z60.1-LATEST ADDITION).

3. NO PLANT MATERIAL SHALL BE SUBSTITUTED WITHOUT THE APPROVAL OF HY-VEE, INC.

4. THE CONTRACTOR SHALL VERIFY LOCATION AND PROTECT ALL UTILITIES AND STRUCTURES. DAMAGE TO UTILITIES AND STRUCTURES SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE OWNER OF THE UTILITIES

5. PLANT MATERIAL QUANTITIES ARE FOR CONTRACTORS' CONVENIENCE. DRAWINGS SHALL GOVERN.

6. SEE THE GRADING, UTILITY, AND SITE PLANS FOR ADDITIONAL INFORMATION.

7. PROVIDE A ONE-YEAR WARRANTY ON ALL TREES, SHRUBS AND PERENNIALS.

SOIL PREPARATION:

1. TOPSOIL SHALL BE LOCAL FERTILE AGRICULTURAL SOIL FREE OF SUBSOILS, ROCKS, CLAYS, PLANTS, WEEDS, ROOTS AND OTHER IMPURITIES. PH VALUE SHALL BE BETWEEN 5.4 AND 7.0.

2. REMOVE DEBRIS AND WEEDS FROM SUBSOIL.

3. SCARIFY SUBSOIL TO DEPTH OF 2" PRIOR TO PLACING TOPSOIL.

4. SPREAD TOPSOIL TO A MINIMUM DEPTH OF 6". TOPSOIL PLACEMENT SHALL TAKE PLACE DURING DRY WEATHER. PREPARE TOPSOIL SO THAT IT IS FREE OF DEBRIS AND GRADED TO DRAIN AS INDICATED ON GRADING PLANS.

5. LIGHTLY COMPACT TOPSOIL AFTER PLACEMENT AND PROHIBIT CONSTRUCTION TRAFFIC FROM AREAS WITH TOPSOIL.

SOD:

1. SOD SHALL BE NURSERY GROWN GRADE; CULTIVATED GRASS SOD WITH STRONG FIBROUS ROOT SYSTEM FREE OF STONES, BURNED OR BARE SPOTS CONTAINING NO MORE THAN 5 WEEDS PER 1000 SF.

2. SOD MIXTURE SHALL BE 40% KENTUCKY BLUEGRASS, 30% PERENNIAL RYEGRASS, 30% FINE FESCUES

3. FERTILIZER FOR SODDED AREAS SHALL BE NITROGEN 10%, PHOSPHORIC ACID 10%, SOLUBLE POTASH 10%.

4. APPLY FERTILIZER AT APPLICATION RATE OF 1LB/1000 SF TO TOPSOIL PRIOR TO PLACING SOD.

5. MOISTEN PREPARED SOIL IMMEDIATELY PRIOR TO LAYING SOD. LAY SOD IMMEDIATELY UPON DELIVERY TO THE SITE, LEAVING NO OPEN JOINTS OR OVERLAPPING JOINTS. DO NOT STRETCH SOD. DO NOT LAY SOD IF TEMPERATURE IS BELOW FREEZING.

6. ROLL SOD WITH 1/3 FULL ROLLER AFTER SOD AND SOIL HAVE DRIED. ROLL BEFORE THE FIRST WATERING.

7. SOD WILL BE ACCEPTED WHEN IT IS WELL ESTABLISHED AND SHOWS VIGOROUS GROWTH WITH NO BARE SPOTS EXCEEDING 1 SF. CONTRACTOR IS RESPONSIBLE FOR WATERING AND REPLACING SOD AS NEEDED UNTIL ACCEPTED.

PLANTING:

1. PRESERVE AND PROTECT EXISTING TREES TO REMAIN. CONTRACTOR SHALL ERECT 4' CONSTRUCTION FENCE AROUND PERIMETER OF TREES AT THE DRIP LINE. CONTRACTOR SHALL NOT STORE MATERIALS OR ALLOW VEHICLES TO ACCESS OR PARK INSIDE DRIP LINES.

2. DO NOT INSTALL PLANTS WHEN AMBIENT TEMPERATURES DROP BELOW 35° F. OR RISE ABOVE 90° F. DO NOT INSTALL PLANTS WHEN WIND VELOCITIES EXCEED 30 MPH.

3. DAMAGED OR DEFICIENT PLANTS WILL BE REJECTED.

4. TREES WILL HAVE A REASONABLY STRAIGHT TRUNK AND SINGLE LEADER.

5. SOIL AMENDMENTS SHALL BE TOPSOIL OR COMPOST. COMPOST: DECOMPOSED, STABLE, WEED FREE ORGANIC MATTER DERIVED FROM AGRICULTURAL, FOOD, INDUSTRIAL RESIDUALS, BIOSOLIDS, OR YARD TRIMMINGS. COMPOST WILL BE FREE OF LARGE PARTICLES AND WILL POSSESS NO OBJECTIONABLE ODOR, NOR RESEMBLE THE MATERIAL FROM WHICH IT WAS DERIVED

6. MULCH: COMPOSTED, SHREDDED HARDWOOD BARK, DARK BROWN IN COLOR.

7. FILL PLANTING PITS WITH WATER TO DETERMINE DRAINAGE. IF WATER REMAINS IN HOLE AFTER 24 HOURS, INSTALL FRENCH DRAIN AS SHOWN IN DETAILS TO INSURE PROPER DRAINAGE.

8. INITIAL ACCEPTANCE: UPON COMPLETION OF PLANTING, OWNER'S REPRESENTATIVE WILL REVIEW WORK AND TAKE INITIAL ACCEPTANCE OF WORK UPON CORRECTION OF ANY NOTED DEFICIENCIES.

GRADING NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES PRIOR TO CONSTRUCTION, BOTH PUBLIC AND PRIVATE.

2. STRIP TOPSOIL FROM ENTIRE SITE AND STOCKPILE IN AREA DESIGNATED BY OWNER. TOPSOIL TO BE REUSED AS TOP DRESSING ON ALL UNSURFACED AREAS UPON COMPLETION OF THE ROUGH GRADING. TOP DRESSING SHALL BE A MINIMUM UNIFORM THICKNESS OF 4".

3. PROVIDE AND MAINTAIN EROSION CONTROL DEVICES WHERE SHOWN ON PLANS. DEVICES TO REMAIN IN PLACE UNTIL PAVEMENT AND INTAKES ARE CONSTRUCTED AND UNTIL A LAWN IS ESTABLISHED.

4. IN AREAS TO RECEIVE ADDITIONAL FILL OVER EXISTING FILL MATERIALS, REMOVE TOP 12" OF MATERIAL AND SCARIFY AND RECOMPACT THE NEXT 9" OF RESULTING SUBGRADE. COMPACT TO 95% STANDARD PROCTOR DENSITY. SUBSEQUENT FILL TO BE COMPACTED TO 95% STANDARD PROCTOR DENSITY TO WITHIN 1.0' OF FINAL SUBGRADE. THE FINAL 1.0' OF FILL TO BE COMPACTED TO 98% STANDARD PROCTOR.

5. SCARIFY AND RECOMPACT THE TOP 9" OF SUBGRADE IN ALL CUT AREAS AFTER ROUGH GRADING IS COMPLETED. COMPACT THE ENTIRE PAVING AND BUILDING SUBGRADE TO 95% STANDARD PROCTOR DENSITY TO WITHIN 1.0' OF FINAL SUBGRADE. THE FINAL 1.0' OF FILL TO BE COMPACTED TO 98% STANDARD PROCTOR.

6. PROVIDE MINIMUM OF 1.0' OF COMPACTED NON-EXPANSIVE COHESIVE SOIL BENEATH ALL PAVEMENTS.

7. ALL FILL AND BACKFILL MATERIALS SHALL BE APPROVED BY THE SOILS ENGINEER. PLACE ALL FILLS IN LIFTS OF NINE INCHES OR LESS LOOSE THICKNESS. ALL FILL SHALL BE PLACED BETWEEN 1% BELOW AND 4% ABOVE OPTIMUM MOISTURE CONTENT.

8. CONTOURS SHOWN ARE TO TOP OF FINISH GRADE. SEE BUILDING PLANS AND CONSTRUCTION DETAILS FOR SUBGRADE BELOW FINISHED FLOOR AND PAVEMENT SECTIONS.

9. SCARIFY SUBGRADE TO DEPTH OF 3" WHERE TOPSOIL IS SCHEDULED. SCARIFY IN AREAS WHERE EQUIPMENT USED FOR HAULING AND SPREADING TOPSOIL HAS CAUSED COMPACTED SUBSOIL.

10. SPOT ELEVATIONS ARE SHOWN AT TOP OF FINISH GRADE, ADD 6" TO ELEVATIONS IN PAVED AREAS TO FIND TOP OF CURB ELEVATIONS.

EROSION CONTROL NOTES

1. DISTURB THE LEAST AREA POSSIBLE TO COMPLETE THE SCOPE OF THE PROJECT.

2. ALL SEDIMENT AND EROSION CONTROL PRACTICES WILL BE INSPECTED AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND AFTER ANY STORM EVENT OF GREATER THAN 0.5 INCHES OF PRECIPITATION DURING ANY 24-HOUR PERIOD BY RESPONSIBLE PERSONNEL. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE BEST MANAGEMENT PRACTICES SHALL BE MADE IMMEDIATELY.

3. INSPECTIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR. INSERT COPIES OF THE INSPECTION FORMS INTO THE ONSITE SWPPP AND SEND A COPY TO HY-VEE.

4. FOLLOWING SOIL DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN (7) CALENDAR DAYS TO THE SURFACE OF ALL PERIMETER SEDIMENT CONTROLS, TOPSOIL STOCKPILES, AND ANY OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE WHICH ARE NOT BEING USED FOR MATERIAL STORAGE, OR ON WHICH ACTUAL EARTH MOVING ACTIVITIES ARE BEING PERFORMED.

5. SOIL STABILIZATION SCHEDULE TEMPORARY SEEDING WITH OATS - 2 TO 3 BUSHELS PER ACRE - AND MULCH ALL SLOPES 4:1 AND STEEPER WILL BE INITIATED ON ALL DISTURBED AREAS WHERE CONSTRUCTION ACTIVITY WILL NOT OCCUR FOR A PERIOD OF MORE THAN 21 CALENDAR DAYS BY THE 14TH DAY AFTER CONSTRUCTION ACTIVITY HAS PERMANENTLY OR TEMPORARILY CEASED. THIS SEQUENCE SHALL REPEAT AS GROUND COVER IS REMOVED BY SUBSEQUENT CONSTRUCTION ACTIVITY.

6. GENERAL CONTRACTOR SHALL IMPLEMENT ALL POLLUTION PLAN ACTIVITY WITH THE ASSISTANCE OF THE UTILITY SUBCONTRACTORS, BUILDING CONTRACTORS AND SUPPLIERS.

7. UPON COMPLETION AT CONSTRUCTION, SOD ALL DISTURBED AREAS PER PROJECT SPECIFICATIONS.

8. MAINTENANCE OF ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES IS THE RESPONSIBILITY OF THE CONTRACTOR AND/OR SUBCONTRACTORS. CLEANING OF CONTROL DEVICES SHALL BEGIN WHEN THEY HAVE LOST 50% OF THEIR CAPACITY.

9. LOCATION OF SOLID WASTE CONTAINER AND PORTABLE RESTROOM TO BE SPECIFIED BY CONTRACTOR AND UPDATED IN SWPPP.

10. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE, THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL SUBDIVISION LOTS AS WELL AS TO LARGER LAND DISTURBING ACTIVITIES.

11. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE IMPLEMENTING AGENCY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENT.

12. LIMIT DUST GENERATION BY CLEARING ONLY THOSE AREAS WHERE IMMEDIATE ACTIVITY WILL TAKE PLACE, LEAVING THE REMAINING AREA(S) IN THE ORIGINAL CONDITION, IF STABLE. MAINTAIN THE ORIGINAL GROUND COVER AS LONG AS PRACTICAL. VEGETATE OR MULCH AREAS WITH EXPOSED SOILS THAT WILL NOT RECEIVE VEHICLE TRAFFIC. IN AREAS WHERE PLANTING, MULCHING OR PAVING IS IMPRACTICAL, APPLY GRAVEL OR LANDSCAPING ROCK. ADD SURFACE GRAVEL TO REDUCE THE SOURCE OF DUST EMISSION. LIMIT THE AMOUNT OF FINE PARTICLES (THOSE SMALLER THAN 0.075MM) TO 10 TO 20 PERCENT. SPRINKLE THE SITE WITH WATER UNTIL SURFACE IS WET. REPEAT AS NEEDED TO PREVENT CARRYOUT OF MUD ONTO STREET. USE VACUUM STREET SWEEPERS TO SWEEP UP ANY TRACKED SEDIMENT. REMOVE MUD AND OTHER DIRT PROMPTLY SO IT DOES NOT DRY AND THEN TURN INTO DUST. LIMIT DUST CAUSING WORK ON WINDY DAYS.

AREA TO BE DISTURBED

0.11 AC+/-

REVISION	DATE BY

CALL BEFORE YOU DIG

IF YOU DIG IN ANY STATE DIAL 811 FOR THE LOCAL "ONE CALL CENTER" IT'S THE LAW

THE UTILITIES SHOWN HEREIN ARE FOR THE CONTRACTORS CONVENIENCE ONLY. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THESE PLANS. THE ENGINEER/SURVEYOR ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS SHOWN AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL THE UTILITIES WITHIN THE LIMITS OF WORK. ALL DAMAGE MADE TO THE EXISTING UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR

LOCATION:
MANKATO 2 Rx LANE
2010 ADAMS STREET

HY-VEE, INC.
5820 WESTOWN PARKWAY
WEST DES MOINES, IOWA 50266
TELEPHONE: (515) 267-2800
FAX: (515) 267-2935

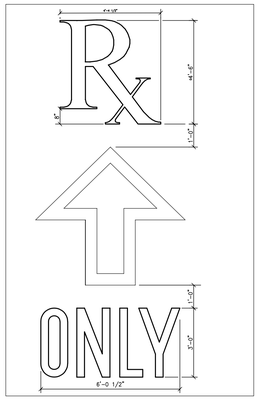
HyVee® EMPLOYEE OWNED

GRADING PLAN & PLANTING PLAN

GRAPHIC SCALE
0 10' 20' 30'

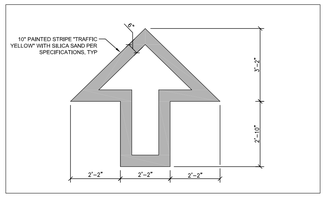
DRAWN:	DATE:
JMD	08/22/2025
SCALE: 1"=10'	JOB NUMBER:

SHEET:
C3.0



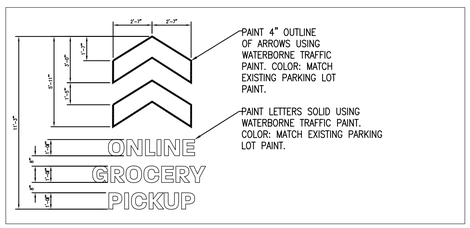
1 C4.0 PHARMACY PICKUP LANE PAVEMENT MARKING

SCALE: 3/8"=1'



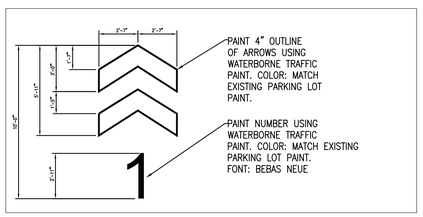
2 C4.0 TRAFFIC ARROW PAVEMENT MARKING

SCALE: 3/8"=1'



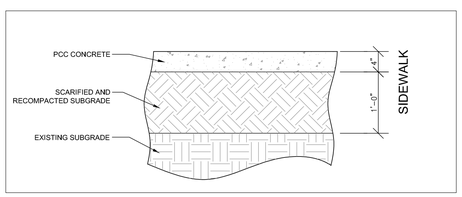
3 C4.0 AISLES ONLINE DIRECTION ARROW

SCALE: 1/4"=1'



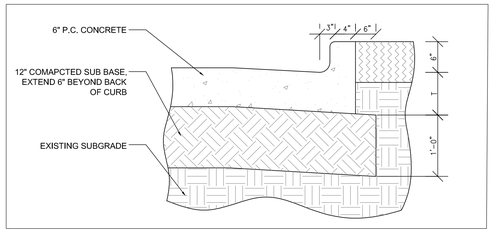
4 C4.0 AISLES ONLINE LANE NUMBER

SCALE: 1/4"=1'



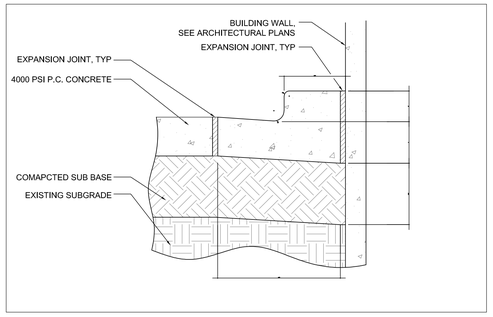
5 C5.0 LIGHT DUTY PAVING SECTION, TYP

SCALE: 1"=1'-0"



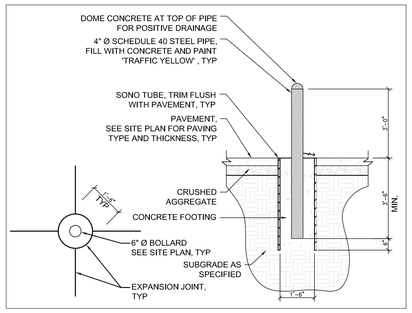
6 C5.0 INTEGRAL CURB & GUTTER, TYP

SCALE: 1"=1'-0"



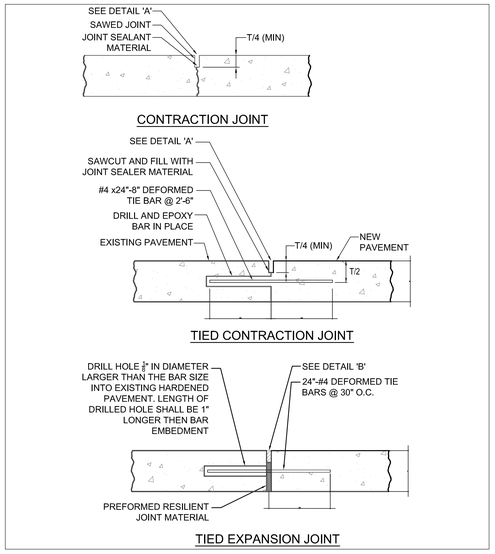
7 C5.0 SUPER CURB, TYP

SCALE: 1"=1'-0"



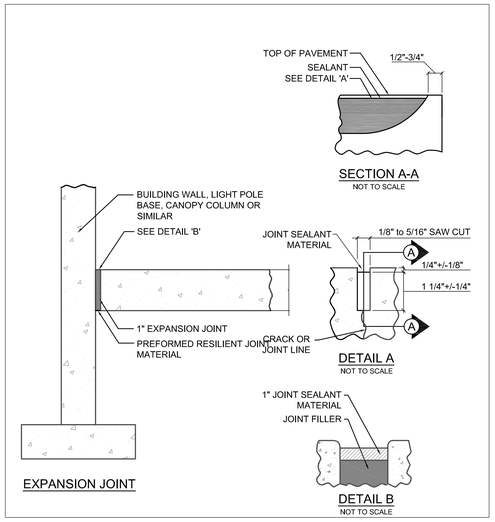
8 C6.0 4Y BOLLARD, TYP

SCALE: 3/8"=1'



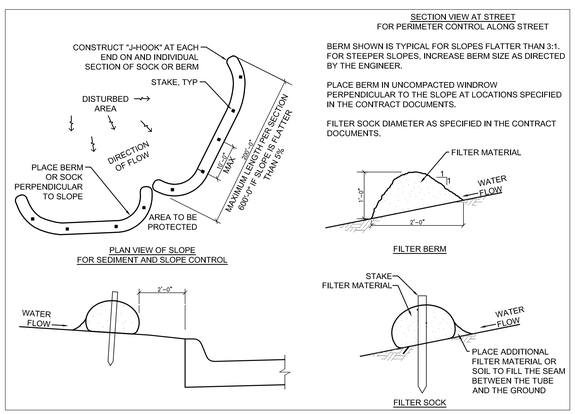
9 C5.0 PAVEMENT JOINT DETAILS (1 OF 2)

SCALE: 1"=1'-0"



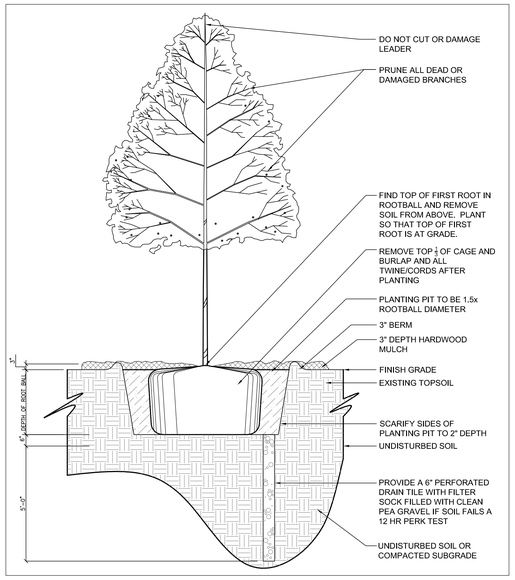
10 C5.0 PAVEMENT JOINT DETAILS (2 OF 2)

SCALE: 1"=1'-0"



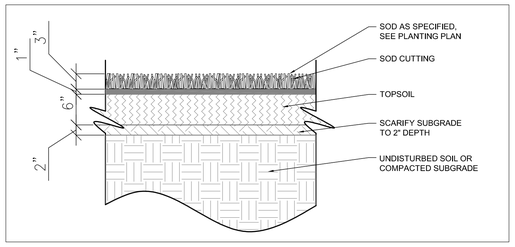
11 C5.0 FILTER BERM & FILTER SOCK DETAIL

SCALE: 3/8"=1'



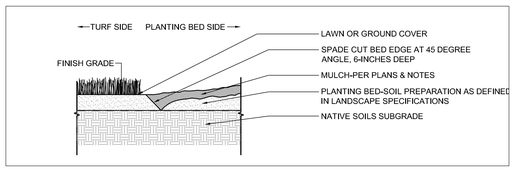
12 C5.0 TREE PLANTING DETAIL

SCALE: 3/8"=1'-0"



13 C5.0 TURF PROFILE DETAIL

SCALE: 1"=1'-0"



14 C5.0 SPADE CUT 'V' TRENCH BED EDGING

SCALE: 3/8"=1'-0"

REVISION	DATE BY
1 ASI# NOTE NOTE NOTE	??-??-?? JMD
1 ASI# NOTE NOTE NOTE	??-??-?? JMD
1 ASI# NOTE NOTE NOTE	??-??-?? JMD

LOCATION:
MANKATO 2 Rx LANE
2010 ADAMS STREET

HY-VEE, INC.
5820 WESTOWN PARKWAY
WEST DES MOINES, IOWA 50266
TELEPHONE: (515) 267-2800
FAX: (515) 267-2935

Hy-Vee® EMPLOYEE OWNED

CONSTRUCTION DETAILS

DRAWN:	DATE:
JMD	08/22/2025
SCALE: 1"=00'	JOB NUMBER:

SHEET:
C4.0

Site Plan and Traffic Advisory Review Committee **1. 6.**

Meeting Date: 10/14/2025

Title

SITE PLAN REVIEW ONLY

*****Site Plan and Traffic Advisory Committee Review Only. Request of APX Construction Group, with permission of the property owner, for a review of a new structure. The subject property is located at 100 Summit Drive.**

Review

APX Construction, on behalf of the property owner, Cemstone, has requested a Site Plan and Traffic Advisory Committee review for a new structure and a new batch plant to be located at 100 Summit Drive.

Site plans provided show one new access point from Summit Avenue for a total of two access points to the subject development. A new 60' x 40' building is shown centrally located on the western side of the parcels. A batch plant, along with ramps, is shown to traverse the property line between the two parcels. An existing stormwater treatment basin is shown on the easterly side of the subject parcels.

Attachments

General Location Map

Aerial Plan

Plans

General Location Map

Date: October 2025

Author:

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

N

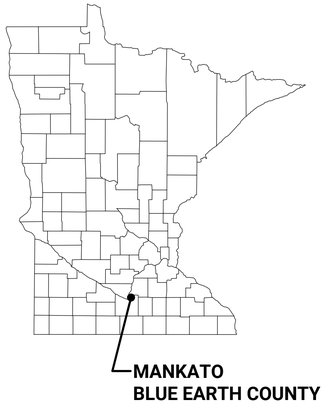
Aerial Plan

Date: October 2025

Author:

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

N



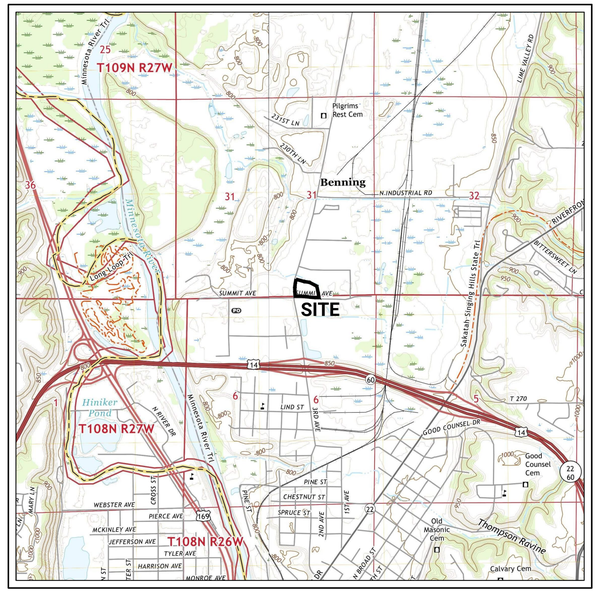
SITE CONSTRUCTION PLANS

FOR

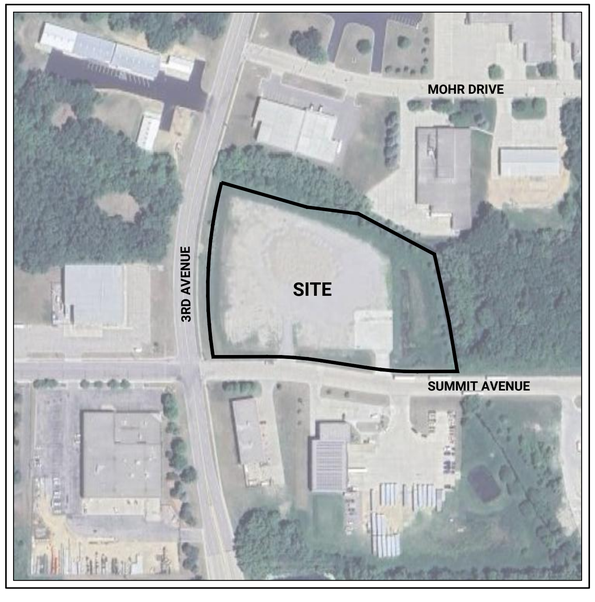
CEMSTONE MANKATO PLANT

MANKATO, MN

SITE LOCATION MAP



AERIAL MAP



SHEET INDEX

C0.0	TITLE SHEET
C1.1	EXISTING CONDITIONS & REMOVALS PLAN
C2.1	SITE PLAN
C3.1	UTILITY PLAN
C4.1	GRADING AND DRAINAGE PLAN
C5.1	EROSION CONTROL PLAN, PHASE I
C5.2	EROSION CONTROL PLAN, PHASE II
C5.3	SWPPP NARRATIVE
C6.1	DETAILS
C6.2	DETAILS

CONTOUR CIVIL DESIGN
8195 VERNON STREET, ROCKFORD, MN 55373
TEL: 612.730.2265 | WWW.CONTOURCD.COM

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

NAME: JOSEPH T RADACH PE

SIGNATURE:

DATE: 10/03/25 LIC #: 45889

REVISIONS	ISSUE DATE: 10/03/25	BY: JTR
1.		
2.		
3.		
4.		
5.		
6.		
7.		

OWNER

CEMSTONE COMPANIES
2025 Centre Pointe Blvd, Suite 300
Mendota Heights, MN 55120

TITLE SHEET

CEMSTONE MANKATO PLANT
100 Summit Avenue
Mankato, MN 56001

SHEET NUMBER
C0.0

09/17/25 c:\users\contour civil\dropbox\pc\desktop\contour_jobs\25013 - cemstone mankato\cad\25013_cover.dwg

THIRD AVENUE

SUMMIT AVENUE

PROTECT EXISTING UTILITIES DURING CONSTRUCTION (TYP)

REMOVE & DISPOSE OF BITUMINOUS

BITUMINOUS SURFACE

BENCH MARK
TOP OF HYDRANT
ELEV. = 829.42
(NAVD88 DATUM)

LEGEND

EXISTING	REMOVAL	
		PROPERTY LINE
		EASEMENT LINE
		CURB LINE
CONCRETE		CONCRETE PAVEMENT
		CL.5 AGGREGATE BASE
BITUMINOUS		BITUMINOUS PAVEMENT
CONCRETE WALK	AS NOTED	CONCRETE WALK
		SANITARY SEWER
		STORM SEWER
		WATER MAIN
ug		UNDERGROUND GAS
ue		UNDERGROUND ELECTRIC
ut		UNDERGROUND TELEPHONE
ohe		OVERHEAD ELECTRIC
		MANHOLE
		CATCH BASIN
		HYDRANT
WV		WATER VALVE
		UTILITY POLE
		ELECTRIC BOX
		TELEPHONE PEDESTAL
		GAS VALVE
		GUY WIRE
		TREE LINE
825		10' CONTOUR
824		2' CONTOUR

BENCHMARK

TOP NUT OF HYDRANT ON NORTH SIDE OF SUMMIT AVENUE, JUST EAST OF WEST ACCESS DRIVEWAY

ELEVATION: 829.42 (NAVD 88)

EXISTING CONDITIONS NOTES

1. EXISTING CONDITIONS BASED ON TOPOGRAPHIC SURVEY PREPARED BY SURVEY SERVICES INC. DATED 4/28/16 AND SITE CONSTRUCTION PLANS PREPARED BY CARLSON MCCAIN INC. DATED 10/26/16.

REMOVAL PLAN NOTES

1. ALL EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION, DEPTH AND TYPES OF EXISTING UTILITIES AND TO NOTIFY THE OWNER AND ENGINEER IMMEDIATELY OF ANY DISCREPANCIES OR VARIATIONS FROM THE PLANS. UTILITY QUALITY LEVEL D PER CI/ASCE 38-02.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL EXISTING UTILITIES, APPURTENANCES AND STRUCTURES NOT INDICATED FOR REMOVAL. DAMAGE CAUSED BY DEMOLITION OPERATIONS SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER.
3. CONTRACTOR TO REMOVE/RELOCATE EXISTING PRIVATE UTILITIES AS NECESSARY. THE CONTRACTOR SHALL COORDINATE THESE ACTIVITIES WITH THE UTILITY COMPANIES.
4. THE CONTRACTOR IS RESPONSIBLE FOR ALL THE REMOVALS SHOWN ON THE PLANS AND SHALL CONFORM/ADHERE TO ALL GOVERNING STATE AND LOCAL REGULATIONS. ALL PERMITS, APPLICATIONS AND FEES ARE THE RESPONSIBILITY OF THE CONTRACTOR.
5. ALL SAWCUTS SHALL BE FULL-DEPTH CUTS.
6. ALL WORK WITHIN THE ADJACENT STREET RIGHTS OF WAY MUST BE COORDINATED WITH AND APPROVED BY THE CITY PUBLIC WORKS DEPARTMENT.

N

0 15 30 60

< SCALE IN FEET >

CALL BEFORE YOU DIG

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

CONTOUR CIVIL DESIGN
8195 VERNON STREET, ROCKFORD, MN 55373
TEL: 612.730.2265 | WWW.CONTOURCD.COM

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

NAME: JOSEPH T RADACH PE

SIGNATURE:

DATE: 10/03/25 LIC #: 45889

REVISIONS	ISSUE DATE: 10/03/25	BY: JTR
1.		
2.		
3.		
4.		
5.		
6.		
7.		

OWNER

CEMSTONE COMPANIES
2025 Centre Pointe Blvd, Suite 300
Mendota Heights, MN 55120

EXISTING CONDITIONS & REMOVALS PLAN

CEMSTONE MANKATO PLANT
100 Summit Avenue
Mankato, MN 56001

SHEET NUMBER
C1.1

10/03/25 c:\users\contour civil\dropbox\projects\desktop\contour_jobs\25013 - cemstone mankato\cad\25013_annove.dwg

THIRD AVENUE

SUMMIT AVENUE

PROPOSED BUILDING

PROPOSED BATCH PLANT

RAMP

RAMP

RAMP

BLOCK WALL

BITUMINOUS SURFACE

EXISTING STORMWATER TREATMENT BASIN

BENCH MARK
TOP OF HYDRANT
ELEV. = 829.42
(NAVD88 DATUM)

39.8
34.1
37.9
128.9
161.7
80
40
48.7
60
85
29.7
53
127
25
15
35
35
30
30
30
8

ANCHOR
UNDERGROUND TELEPHONE SIGN
CONCRETE CURB AND GUTTER
12" WATERMAIN
TELE. PED.
TELE. VAULT
POWER POLE
GAS VALVE
WATER SERVICE
WV
CB RIM=824.9 I=820.5
CB RIM=824.8 I=820.3
CB RIM=824.8 I=819.6 (AS PER PLAN)
SANITARY MH RIM=826.3
WATER MH RIM=826.3
12" SANITARY SEWER
24" STORM SEWER
SAN. MH RIM=825.4 I=820.3
STORM MH RIM=825.0 I=817.9
15" STORM SEWER
I=821.4
I=820.8
I=820.9
I=816.7
STORM MH RIM=823.0 I=817.0
STORM MH RIM=823.7 I=816.9
CB RIM=823.2 I=818.5
CB RIM=823.3 I=818.2
I=816.5
EXIT DRIVE
CONCRETE WALK
BITUMINOUS PAVEMENT
CONCRETE CURB AND GUTTER
CONCRETE PAVEMENT
CL.5 AGGREGATE BASE

0 15 30 60
< SCALE IN FEET >

CALL BEFORE YOU DIG

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

LEGEND

EXISTING	PROPOSED	
		PROPERTY LINE
		EASEMENT LINE
		CURB LINE
CONCRETE		CONCRETE PAVEMENT
		CL.5 AGGREGATE BASE
BITUMINOUS		BITUMINOUS PAVEMENT
CONCRETE WALK		CONCRETE WALK
		SANITARY SEWER
		STORM SEWER
		WATER MAIN
ug		UNDERGROUND GAS
ue		UNDERGROUND ELECTRIC
ut		UNDERGROUND TELEPHONE
ohe		OVERHEAD ELECTRIC
		MANHOLE
		CATCH BASIN
		HYDRANT
WV		WATER VALVE
		UTILITY POLE
		ELECTRIC BOX
		TELEPHONE PEDESTAL
		GAS VALVE
		GUY WIRE
		TREE LINE

BENCHMARK

TOP NUT OF HYDRANT ON NORTH SIDE OF SUMMIT AVENUE, JUST EAST OF WEST ACCESS DRIVEWAY

ELEVATION: 829.42 (NAVD 88)

SITE PLAN NOTES

1. ALL DIMENSIONS ARE TO EDGE OF PAVEMENT AND OUTSIDE FACE OF BUILDING UNLESS OTHERWISE NOTED.
2. UNLESS OTHERWISE SHOWN IN THE PLANS, CONTRACTOR SHALL PROVIDE CONTROL JOINTS AND EXPANSION JOINTS IN SLAB ON GRADE, SIDEWALKS, AND DRIVES PER THE FOLLOWING REQUIREMENTS:

CONTROL JOINTS: WALKS @ 8' SPACING
OTHERS @ 10' SPACING

SAWCUT CONTROL JOINTS MINIMUM ¼ CONCRETE THICKNESS.

EXPANSION JOINTS: WALKS @ 24' SPACING
OTHERS @ 40' SPACING

PROVIDE EXPANSION JOINT AT ALL POINTS WHERE A CHANGE IN PAVEMENT THICKNESS OCCURS AND WHERE NEW PAVEMENT WILL MATCH EXISTING PAVEMENT.

DOWEL ALL EXPANSION JOINTS AT 24" SPACING MAX.

SITE DATA

PARCEL AREA:	230,865 SF	
IMPERVIOUS AREA:		
BUILDING:	2,400 SF	1%
PLANT SLABS:	3,416 SF	1%
PAVEMENT:	137,584 SF	60%
TOTAL:	143,400 SF	62%
PERVIOUS AREA:	87,465 SF	38%

CONTOUR CIVIL DESIGN
8195 VERNON STREET, ROCKFORD, MN 55373
TEL: 612.730.2265 | WWW.CONTOURCD.COM

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

NAME: JOSEPH T RADACH PE

SIGNATURE:

DATE: 10/03/25 LIC #: 45889

REVISIONS	ISSUE DATE: 10/03/25	BY: JTR
1.		
2.		
3.		
4.		
5.		
6.		
7.		

OWNER
CEMSTONE COMPANIES
2025 Centre Pointe Blvd, Suite 300
Mendota Heights, MN 55120

SITE PLAN

CEMSTONE MANKATO PLANT
100 Summit Avenue
Mankato, MN 56001

SHEET NUMBER
C2.1

10/03/25 c:\users\contour civil\dropbox\pc\desktop\contour_jobs\25013 - cemstone mankato\cad\25013_site.dwg

THIRD AVENUE

SUMMIT AVENUE

PROPOSED BUILDING FFE = 827.5

33' - 6" PVC SCH.40 @ 1.0% IE 821.39

45° BENDS

6" PVC C900

45° BEND

CLEANOUT 821.06

INSULATE SAN SWR SERVICE W/ 2" RIGID POLYSTYRENE INSULATION

22.5° BEND & 11.25° BEND

LOWER WATER BELOW SANITARY SEWER TO PROVIDE 24" SEPARATION

100' - 6" PVC SCH.40 @ 1.0%

6" PVC C900

11.25° BEND

CLEANOUT 820.06

56' - 6" PVC SCH.40 @ 1.0%

CONNECT TO EX. 8" PVC WATER W/ 8" X 6" REDUCER & 6" G.V. & BOX (FIELD VERIFY)

CONNECT TO EX. 6" PVC SAN SWR EX. IE 819.5 (FIELD VERIFY)

BITUMINOUS SURFACE

EXISTING STORMWATER TREATMENT BASIN

15" STORM SEWER

STORM MH RIM=823.0 I=817.0

BENCH MARK
TOP OF HYDRANT
ELEV. = 829.42
(NAVD88 DATUM)

LEGEND

EXISTING	PROPOSED	
		PROPERTY LINE
		EASEMENT LINE
		CURB LINE
CONCRETE		CONCRETE PAVEMENT
		CL.5 AGGREGATE BASE
BITUMINOUS		BITUMINOUS PAVEMENT
CONCRETE WALK		CONCRETE WALK
		SANITARY SEWER
		STORM SEWER
		WATER MAIN
ug		UNDERGROUND GAS
ue		UNDERGROUND ELECTRIC
ut		UNDERGROUND TELEPHONE
ohe		OVERHEAD ELECTRIC
		MANHOLE
		CATCH BASIN
		HYDRANT
WV		WATER VALVE
		UTILITY POLE
		ELECTRIC BOX
		TELEPHONE PEDESTAL
		GAS VALVE
		GUY WIRE
		TREE LINE

BENCHMARK

TOP NUT OF HYDRANT ON NORTH SIDE OF SUMMIT AVENUE, JUST EAST OF WEST ACCESS DRIVEWAY

ELEVATION: 829.42 (NAVD 88)

UTILITY PLAN NOTES

1. SANITARY SEWER, WATER MAIN, AND STORM SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE CITY'S STANDARD DETAIL SPECIFICATIONS AND THE MINNESOTA PLUMBING CODE.
2. A MINIMUM OF 7.5 FEET OF COVER SHALL BE REQUIRED FOR ALL WATER MAIN AND FORCEMAIN.
3. FIRE HYDRANTS AND GATE VALVES SHALL BE IN ACCORDANCE WITH THE CITY'S REQUIREMENTS.
4. A MINIMUM OF 2.0 FEET OF VERTICAL SEPARATION SHALL BE REQUIRED FOR ALL UTILITY CROSSINGS.
5. USE SOLID-CORE, SDR-35, ASTM D3034 POLYVINYL CHORIDE (PVC) PIPE FOR DESIGNATED PVC STORM SEWER AND SANITARY SEWER WITH APPROVED FITTINGS UNLESS OTHERWISE NOTED.
6. PVC PIPE DESIGNATED AS PVC SCHEDULE 40, SHALL MEET THE REQUIREMENTS OF ASTM D2665 FOR SCHEDULE 40.
7. ALL ROOF DRAIN DOWNSPOUT CONNECTIONS SHALL BE PVC SCHEDULE 40.
8. ALL WATER MAIN WORK AND TESTING SHALL BE COORDINATED WITH THE CITY'S PUBLIC WORKS DEPARTMENT.
9. ALL WATER MAIN MUST HAVE A CONDUCTIVITY TEST, HYDROSTATIC TEST, AND BACTERIA TEST BEFORE THE PROJECT IS COMPLETE AND TURNED ON.
10. FINAL BUILDING UTILITY SERVICES AND DOWNSPOUT LOCATIONS SHALL BE VERIFIED WITH ARCHITECTURAL AND PLUMBING PLANS.
11. LOCATING WIRES SHALL BE INSTALLED ON ALL NON-CONDUCTIVE STORM SEWER, SANITARY SEWER, AND WATER LINES IN ACCORDANCE WITH THE MINNESOTA RURAL WATER ASSOCIATION (MRWA) TRACE WIRE SPECIFICATION GUIDE AND DETAILS.
12. INSTALL METER BOX FRAME AND SOLID LID (NEENAH R-1914-A, OR APPROVED EQUAL) OVER ALL CLEANOUTS.

N

0 15 30 60

< SCALE IN FEET >

CALL BEFORE YOU DIG

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

CONTOUR CIVIL DESIGN
8195 VERNON STREET, ROCKFORD, MN 55373
TEL: 612.730.2265 | WWW.CONTOURCD.COM

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

NAME: JOSEPH T RADACH PE

SIGNATURE:

DATE: 10/03/25 LIC #: 45889

REVISIONS	ISSUE DATE: 10/03/25	BY: JTR
1.		
2.		
3.		
4.		
5.		
6.		
7.		

OWNER

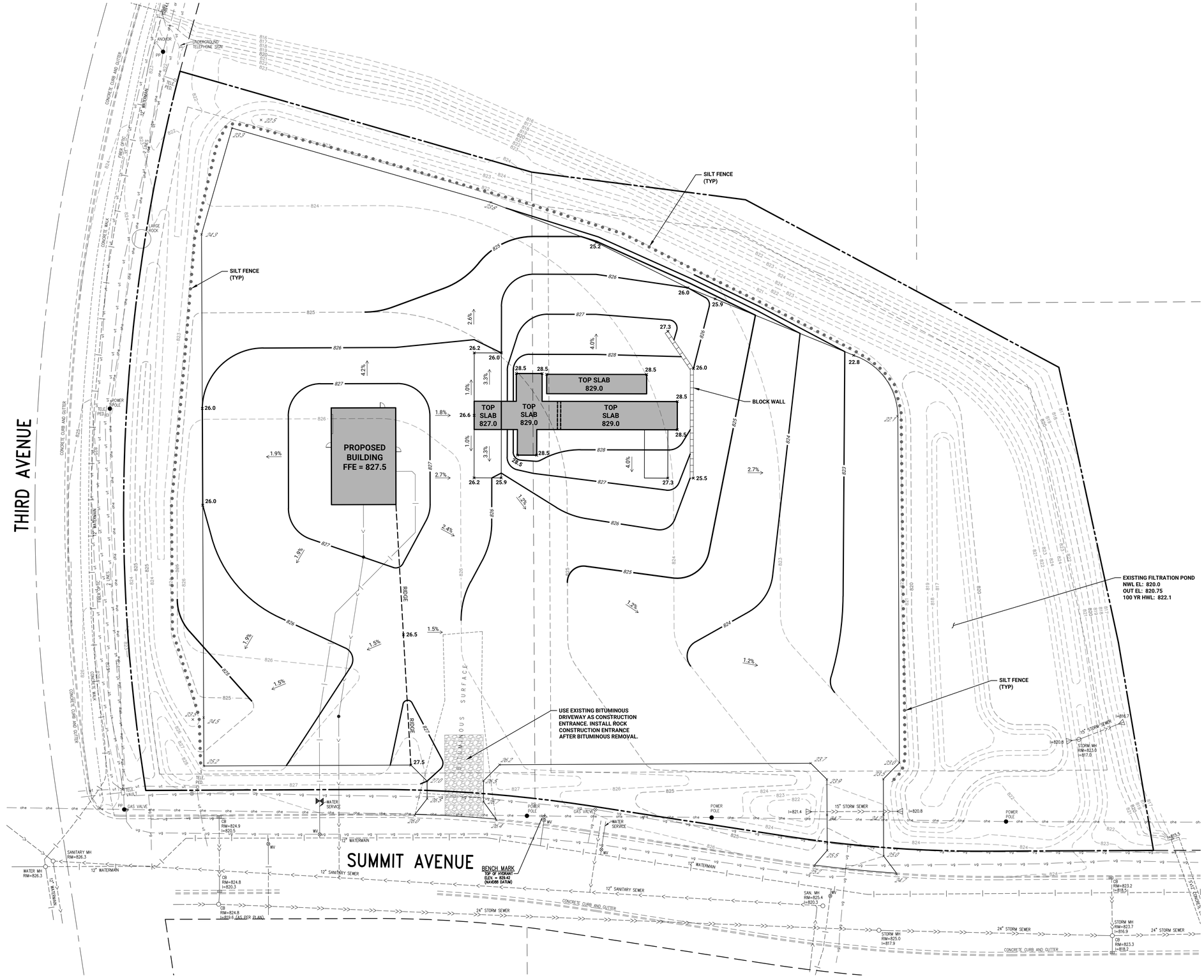
CEMSTONE COMPANIES
2025 Centre Pointe Blvd, Suite 300
Mendota Heights, MN 55120

UTILITY PLAN

CEMSTONE MANKATO PLANT
100 Summit Avenue
Mankato, MN 56001

SHEET NUMBER
C3.1

10/03/25 c:\users\contour civil\dropbox\pc\desktop\contour_qdhx125013 - cemstone mankato\cad\125013_utility.dwg



LEGEND

EXISTING	PROPOSED	
		PROPERTY LINE
		EASEMENT LINE
		CURB LINE
CONCRETE		CONCRETE PAVEMENT
		CL.5 AGGREGATE BASE
BITUMINOUS		BITUMINOUS PAVEMENT
CONCRETE WALK		CONCRETE WALK
		SANITARY SEWER
		STORM SEWER
		WATER MAIN
ug		UNDERGROUND GAS
ue		UNDERGROUND ELECTRIC
ut		UNDERGROUND TELEPHONE
ohe		OVERHEAD ELECTRIC
		MANHOLE
		CATCH BASIN
		HYDRANT
WV		WATER VALVE
		UTILITY POLE
		ELECTRIC BOX
		TELEPHONE PEDESTAL
		GAS VALVE
		GUY WIRE
		TREE LINE
825	825	10' CONTOUR
824	824	2' CONTOUR
57.1	57.1	SPOT ELEVATION (CURB ELEVATIONS ARE TO GUTTER LINE)
	T 44.3 G 43.8	TOP OF CURB ELEV. GUTTER LINE ELEV.
		SILT FENCE

BENCHMARK

TOP NUT OF HYDRANT ON NORTH SIDE OF SUMMIT AVENUE, JUST EAST OF WEST ACCESS DRIVEWAY

ELEVATION: 829.42 (NAVD 88)

GOVERNING SPECIFICATIONS

1. THE LATEST EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AND THE CITY OF MANKATO SPECIFICATIONS.
2. THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD).
3. THE LATEST EDITION OF THE CITY ENGINEERS ASSOCIATION OF MINNESOTA (CEAM) STANDARD SPECIFICATIONS.

GRADING NOTES

1. VEHICLE TRACKING REDUCTION DEVICE, SILT FENCE, AND EXISTING CATCH BASIN INLET PROTECTION SHALL BE INSTALLED PRIOR TO GRADING CONSTRUCTION, AND SHALL BE MAINTAINED UNTIL THE SITE HAS BEEN STABILIZED.
2. CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES PRIOR TO THE START OF GRADING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF DISCREPANCIES OR VARIATIONS FROM THE PLAN.
3. CONTRACTOR SHALL STRIP, STOCKPILE AND RESPREAD SUFFICIENT TOPSOIL TO PROVIDE A MINIMUM OF 6" OF TOPSOIL OVER ALL DISTURBED AREAS THAT WILL BE SODDED, SEEDED OR LANDSCAPED.
4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN 14 CALENDARS DAYS AFTER LAND-DISTURBING WORK HAS TEMPORARILY OR PERMANENTLY CEASED.
5. ALL SLOPES STEEPER THAN 3:1 SHALL HAVE MNDOT CAT.1 EROSION CONTROL BLANKET AND SEED, OR APPROVED EQUAL.
6. STOCKPILES SHALL BE STABILIZED WITHIN 14 DAYS OF ROUGH GRADING OR INACTIVITY.
7. ALL WORK WITHIN THE ADJACENT STREET RIGHTS OF WAY MUST BE COORDINATED WITH AND APPROVED BY THE CITY PUBLIC WORKS DEPARTMENT.

CALL BEFORE YOU DIG

811

Know what's below. Call before you dig.

CONTOUR CIVIL DESIGN
8195 VERNON STREET, ROCKFORD, MN 55373
TEL: 612.730.2265 | WWW.CONTOURCD.COM

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

NAME: JOSEPH T RADACH PE

SIGNATURE:

DATE: 10/03/25 LIC #: 45889

REVISIONS	BY: JTR
1.	ISSUE DATE: 10/03/25
2.	
3.	
4.	
5.	
6.	
7.	

OWNER
CEMSTONE COMPANIES
2025 Centre Pointe Blvd, Suite 300
Mendota Heights, MN 55120

GRADING AND DRAINAGE PLAN

CEMSTONE MANKATO PLANT
100 Summit Avenue
Mankato, MN 56001

SHEET NUMBER
C4.1

10/03/25 C:\users\contour civil\dropbox\pc\desktop\contour_jobs\125013 - cemstone mankato\cad\125013_grade.dwg

THIRD AVENUE

SUMMIT AVENUE

INSTALL SILT FENCE PERIMETER CONTROL

INSTALL SILT FENCE PERIMETER CONTROL

INSTALL VEHICLE TRACKING PAD AFTER BITUMINOUS REMOVAL

PROTECT EXISTING FILTRATION POND FROM SEDIMENTATION DURING CONSTRUCTION

INSTALL INLET PROTECTION, TYP

INSTALL INLET PROTECTION, TYP

BITUMINOUS SURFACE

BENCH MARK
TOP OF HYDRANT
(ELEV. = 829.42)
(NAVD88 DATUM)

LEGEND

EXISTING	PROPOSED	
		PROPERTY LINE
		EASEMENT LINE
		CURB LINE
CONCRETE		CONCRETE PAVEMENT
		CL.5 AGGREGATE BASE
BITUMINOUS		BITUMINOUS PAVEMENT
CONCRETE WALK		CONCRETE WALK
		SANITARY SEWER
		STORM SEWER
		WATER MAIN
ug		UNDERGROUND GAS
ue		UNDERGROUND ELECTRIC
ut		UNDERGROUND TELEPHONE
ohe		OVERHEAD ELECTRIC
		MANHOLE
		CATCH BASIN
		HYDRANT
WV		WATER VALVE
		UTILITY POLE
		ELECTRIC BOX
		TELEPHONE PEDESTAL
		GAS VALVE
		GUY WIRE
		TREE LINE
825	*825*	10' CONTOUR
824	*824*	2' CONTOUR
57.1	57.1	SPOT ELEVATION (CURB ELEVATIONS ARE TO GUTTER LINE)
	T 44.3 G 43.8	TOP OF CURB ELEV. GUTTER LINE ELEV.
		SILT FENCE

BENCHMARK

TOP NUT OF HYDRANT ON NORTH SIDE OF SUMMIT AVENUE, JUST EAST OF WEST ACCESS DRIVEWAY

ELEVATION: 829.42 (NAVD 88)

N

0 15 30 60

< SCALE IN FEET >

CALL BEFORE YOU DIG

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

CONTOUR CIVIL DESIGN
8195 VERNON STREET, ROCKFORD, MN 55373
TEL: 612.730.2265 | WWW.CONTOURCD.COM

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

NAME: JOSEPH T RADACH PE

SIGNATURE:

DATE: 10/03/25 LIC #: 45889

REVISIONS	ISSUE DATE: 10/03/25	BY: JTR
1.		
2.		
3.		
4.		
5.		
6.		
7.		

OWNER
CEMSTONE COMPANIES
2025 Centre Pointe Blvd, Suite 300
Mendota Heights, MN 55120

EROSION CONTROL PLAN PHASE I

CEMSTONE MANKATO PLANT
100 Summit Avenue
Mankato, MN 56001

SHEET NUMBER
C5.1

10/03/25 c:\users\contour civil\dropbox\pc\desktop\contour_cpbx\25013 - cemstone mankato\civil\c3d\25013_ieepp.dwg

THIRD AVENUE

SUMMIT AVENUE

PROPOSED BUILDING FFE = 827.5

TOP SLAB 827.0

TOP SLAB 829.0

TOP SLAB 829.0

TOP SLAB 829.0

BLOCK WALL

MAINTAIN SILT FENCE PERIMETER CONTROL, TYP

SILT FENCE (TYP)

MAINTAIN SILT FENCE PERIMETER CONTROL, TYP

SILT FENCE (TYP)

PROTECT EXISTING FILTRATION POND FROM SEDIMENTATION DURING CONSTRUCTION

EXISTING FILTRATION POND
NWL EL: 820.0
OUT EL: 820.75
100 YR HWL: 822.1

MAINTAIN SILT FENCE PERIMETER CONTROL, TYP

SILT FENCE (TYP)

MAINTAIN VEHICLE TRACKING PAD. SWEEP STREET AS NEEDED.

USE EXISTING BITUMINOUS DRIVEWAY AS CONSTRUCTION ENTRANCE. INSTALL ROCK CONSTRUCTION ENTRANCE AFTER BITUMINOUS REMOVAL.

MAINTAIN INLET PROTECTION ON EXISTING INLET

MAINTAIN INLET PROTECTION ON EXISTING INLET

BENCH MARK
TOP OF HYDRANT
ELEV. = 829.42
(NAVD88 DATUM)

N

0 15 30 60
< SCALE IN FEET >

CALL BEFORE YOU DIG

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

LEGEND

EXISTING	PROPOSED	
		PROPERTY LINE
		EASEMENT LINE
		CURB LINE
CONCRETE		CONCRETE PAVEMENT
		CL.5 AGGREGATE BASE
BITUMINOUS		BITUMINOUS PAVEMENT
CONCRETE WALK		CONCRETE WALK
		SANITARY SEWER
		STORM SEWER
		WATER MAIN
ug		UNDERGROUND GAS
ue		UNDERGROUND ELECTRIC
ut		UNDERGROUND TELEPHONE
ohe		OVERHEAD ELECTRIC
		MANHOLE
		CATCH BASIN
		HYDRANT
WV		WATER VALVE
UP		UTILITY POLE
		ELECTRIC BOX
		TELEPHONE PEDESTAL
		GAS VALVE
		GUY WIRE
		TREE LINE
825	825	10' CONTOUR
824	824	2' CONTOUR
57.1	57.1	SPOT ELEVATION (CURB ELEVATIONS ARE TO GUTTER LINE)
	T 44.3 G 43.8	TOP OF CURB ELEV. GUTTER LINE ELEV.
		SILT FENCE

BENCHMARK

TOP NUT OF HYDRANT ON NORTH SIDE OF SUMMIT AVENUE, JUST EAST OF WEST ACCESS DRIVEWAY

ELEVATION: 829.42 (NAVD 88)

CONTOUR CIVIL DESIGN
8195 VERNON STREET, ROCKFORD, MN 55373
TEL: 612.730.2265 | WWW.CONTOURCD.COM

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

NAME: JOSEPH T RADACH PE

SIGNATURE:

DATE: 10/03/25 LIC #: 45889

REVISIONS	ISSUE DATE: 10/03/25	BY: JTR
1.		
2.		
3.		
4.		
5.		
6.		
7.		

OWNER

CEMSTONE COMPANIES
2025 Centre Pointe Blvd, Suite 300
Mendota Heights, MN 55120

EROSION CONTROL PLAN PHASE II

CEMSTONE MANKATO PLANT
100 Summit Avenue
Mankato, MN 56001

SHEET NUMBER
C5.2

10/03/25 c:\users\contour civil\dropbox\pc\desktop\contour_cjobs\25013 - cemstone mankato\cad\25013_sheet.dwg

PROJECT INFORMATION

PROJECT NAME:	CEMSTONE MANKATO PLANT
STREET ADDRESS:	100 SUMMIT AVENUE
CITY:	MANKATO
COUNTY:	BLUE EARTH
STATE:	MINNESOTA
ZIP CODE:	56001
LAT/LONG:	44.1969, -93.9964
BOUNDARY AREA:	5.300 ACRES
EXISTING IMPERVIOUS:	3.490 ACRES
PROPOSED IMPERVIOUS:	0.000 ACRES
NET NEW IMPERVIOUS:	0.000 ACRES
DISTURBED AREA:	3.6 ACRES
OWNER:	CEMSTONE COMPANIES

RESPONSIBLE PARTIES

SWPPP DESIGN:	JOSEPH RADACH PE
TRAINING:	DESIGN OF CONSTRUCTION SWPPP, U OF MN (5/26 EXPIRATION)
SITE MANAGER:	________________________
TRAINING:	________________________
LONG TERM O&M:	CEMSTONE COMPANIES

SWPPP CONTENT

THE SWPPP CONTAINS ALL SHEETS WITHIN THE CONSTRUCTION PLAN SET AND INCLUDES THE STORMWATER MANAGEMENT PLAN, INCORPORATED HEREIN BY REFERENCE. IN DEVELOPING THIS SWPPP, THE TEMPORARY AND PERMANENT BMPS WERE DESIGNED BASED ON EXPECTED RAINFALLS OF 3 INCHES IN 24 HOURS DURING CONSTRUCTION, WITH EXTREME EVENTS RANGING FROM 5 TO 7 INCHES IN 24 HOURS.

EXISTING CONDITIONS

THE SITE IS LOCATED IN THE NORTHEAST QUADRANT OF THIRD AVENUE AND SUMMIT AVENUE IN MANKATO, BLUE EARTH COUNTY, MINNESOTA. THE SITE IS BOUNDED ON THE NORTH BY INDUSTRIAL PROPERTY, ON THE EAST BY UNDEVELOPED PROPERTY, ON THE SOUTH BY SUMMIT AVENUE AND ON THE WEST BY THIRD AVENUE.

THE SITE BOUNDARY CONSISTS OF 5.30 ACRES. THE SITE WAS GRADING AND GRAVELED IN 2016 UNDER SITE CONSTRUCTION PLANS PREPARED BY CARLSON MCCAIN, INC. THE SITE IS CURRENTLY PARTIALLY PAVED WITH BITUMINOUS, CONCRETE, AND GRAVEL. THE SITE CURRENTLY CONTAINS APPROXIMATELY 3.49 ACRES OF IMPERVIOUS SURFACE.

THE SITE WAS GRADED TO DRAIN TO FILTRATION POND THAT WAS CONSTRUCTED AS PART OF THE 2016 IMPROVEMENTS. THE FILTRATION POND IS LOCATED IN EAST PORTION OF THE SITE. ELEVATIONS ONSITE RANGE FROM 826 IN THE WEST CENTRAL PORTION OF THE SITE DOWN TO ABOUT 817 IN THE NORTHEAST. THERE IS AN EXISTING DITCH THAT TRAVERSES THE SITE ALONG THE NORTH AND EAST BOUNDARY. THE FILTRATION POND OUTLETS TO THE EXISTING DITCH WHICH DRAINS WEST UNDER THIRD AVENUE.

PROPOSED CONDITIONS

CEMSTONE COMPANIES PLANS ON DEVELOPING THE SITE INTO A CONCRETE PLANT WITH BUILDING, PLANT, AGGREGATE STORAGE, AND PAVED PARKING AND DRIVE AREAS. DURING CONSTRUCTION, APPROXIMATELY 3.6 ACRES WILL BE DISTURBED. THE PROPOSED CONSTRUCTION WILL NOT CREATE ANY ADDITIONAL IMPERVIOUS SURFACES. THE SITE WILL CONTINUE TO SURFACE DRAIN TO THE EXISTING FILTRATION POND. NO ADDITIONAL STORMWATER TREATMENT IS REQUIRED FOR THE SITE.

SOIL INFORMATION

AT THE TIME OF THIS REPORT, A SITE SPECIFIC GEOTECHNICAL REPORT WAS NOT AVAILABLE. ACCORDING TO THE NRCS WEB SOIL SURVEY, ONSITE SOILS GENERALLY CONSIST OF SILTY CLAY LOAM IN HYDROLOGIC SOIL GROUP "D".

SITE CONTAMINATION

A REVIEW OF THE MPCA'S "WHAT'S IN MY NEIGHBOR" SHOWED A PETROLEUM LEAK OCCURRED IN 2006 WHICH WAS CORRECTED AND THE LEAK SITE WAS CLOSED IN 2008. IT IS NOT ANTICIPATED THAT CONTAMINATION EXISTS AT THE SITE.

STORMWATER RECEIVING WATERS

ALL STORMWATER FROM THE SITE DRAINS TO THE EXISTING DITCH WHICH ULTIMATELY DRAINS TO THE MINNESOTA RIVER.

SPECIAL OR IMPAIRED WATERS

THE MINNESOTA RIVER IS LOCATED 3,500 WEST OF THE SITE AND IS LISTED AS AN IMPAIRED WATER WITH A CONSTRUCTION RELATED PARAMETER. ADDITIONAL BMPS ARE REQUIRED TO BE IMPLEMENTED AT THE SITE AND ARE AS FOLLOWS:

- PERMITTEES MUST IMMEDIATELY INITIATE STABILIZATION OF EXPOSED SOIL AREAS, INCLUDING SOIL STOCKPILES, AND COMPLETE THE STABILIZATION WITHIN SEVEN (7) CALENDAR DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE TEMPORARILY OR PERMANENTLY CEASES.
- PERMITTEES MUST PROVIDE A TEMPORARY SEDIMENT BASIN FOR COMMON DRAINAGE LOCATIONS THAT SERVE AN AREA WITH FIVE (5) OR MORE ACRES DISTURBED AT ONE TIME.
- PERMITTEES MUST INCLUDE AN UNDISTURBED BUFFER ZONE OF NOT LESS THAN 100 LINEAR FEET FROM A SPECIAL WATER (NOT INCLUDING TRIBUTARIES) AND MUST MAINTAIN THIS BUFFER ZONE AT ALL TIMES, BOTH DURING CONSTRUCTION AND AS A PERMANENT FEATURE POST CONSTRUCTION, EXCEPT WHERE A WATER CROSSING OR OTHER ENCROACHMENT IS NECESSARY TO COMPLETE THE PROJECT.

WETLAND CONSIDERATIONS

THERE ARE NO KNOWN WETLANDS ONSITE.

PERMANENT STORMWATER MANAGEMENT SYSTEM

ALL STORMWATER FROM THE SITE DRAINS TO THE RECENTLY CONSTRUCTED FILTRATION POND IN THE EAST PORTION OF THE SITE. THE FILTRATION POND WAS DESIGNED TO TREAT STORMWATER FROM THE FULLY DEVELOPED SITE.

THE MPCA CONSTRUCTION STORMWATER GENERAL PERMIT REQUIRES PERMITTEES TO DESIGN AND CONSTRUCT A PERMANENT STORMWATER TREATMENT SYSTEM TO TREAT THE WATER QUALITY VOLUME IF THE PROJECT'S ULTIMATE DEVELOPMENT REPLACES VEGETATION AND/OR OTHER PERVIOUS SURFACES CREATING A NET INCREASE OF ONE (1) OR MORE ACRES OF CUMULATIVE IMPERVIOUS SURFACE. PERMITTEES MUST CALCULATE THE WATER QUALITY VOLUME AS ONE (1) INCH TIMES THE NET INCREASE OF IMPERVIOUS SURFACES CREATED BY THE PROJECT. PERMITTEES MUST FIRST CONSIDER VOLUME REDUCTION PRACTICES ON-SITE (E.G. INFILTRATION OR OTHER) WHEN DESIGNING THE PERMANENT STORMWATER TREATMENT SYSTEM.

THE PROPOSED PLAN OF REDEVELOPMENT WILL NOT CREATE ADDITIONAL IMPERVIOUS SURFACE BEYOND WHAT WAS PLANNED UNDER THE 2016 SITE IMPROVEMENTS. NO ADDITIONAL STORMWATER TREATMENT PRACTICES ARE REQUIRED FOR THE PROPOSED PROJECT.

BMP IMPLEMENTATION SCHEDULE

PRIOR TO CONSTRUCTION, IMPLEMENT THE FOLLOWING BMPS:

- VEHICLE TRACKING PAD
- PERIMETER CONTROL
- STORM DRAIN INLET PROTECTION

DURING CONSTRUCTION, IMPLEMENT THE FOLLOWING BMPS:

- PHASED GRADING
- STREET SWEEPING
- STABILIZATION OF EXPOSED SOILS
- STABILIZATION OF DITCHES OR SWALES
- STOCKPILE PERIMETER CONTROL & STABILIZATION
- MINIMIZATION OF SOIL COMPACTION AND PRESERVATION OF TOPSOIL
- CONCRETE WASHOUT AREA
- STORM DRAIN INLET PROTECTION

EROSION AND SEDIMENT CONTROL ESTIMATED QUANTITIES

VEHICLE TRACKING PAD	1 EA
SILT FENCE	1,110 LF
BIOROLL	AS NEEDED
INLET PROTECTION	4 EA
TURF ESTABLISHMENT	0.5 AC

PERMIT REQUIREMENTS & SWPPP IMPLEMENTATION

THE FOLLOWING SECTIONS WERE TAKEN FROM THE MPCA CONSTRUCTION STORMWATER GENERAL PERMIT. IT IS THE RESPONSIBILITY OF THE PERMITTEE TO FOLLOW ALL REQUIREMENTS OF THE MPCA CONSTRUCTION STORMWATER GENERAL PERMIT.

3.1 APPLICATION AND COVERAGE EFFECTIVE DATE. [MINN. R. 7090]

3.2 THE OWNER AND OPERATOR MUST SUBMIT A COMPLETE AND ACCURATE ON-LINE APPLICATION WITH THE APPROPRIATE FEE TO THE MPCA FOR EACH PROJECT THAT DISTURBS ONE (1) OR MORE ACRES OF LAND OR FOR A COMMON PLAN OF DEVELOPMENT OR SALE THAT WILL ULTIMATELY DISTURB ONE (1) OR MORE ACRES. [MINN. R. 7090]

3.3 FOR PROJECTS OR COMMON PLANS OF DEVELOPMENT OR SALE THAT DISTURB LESS THAN 50 ACRES OR DO NOT DISCHARGE STORMWATER WITHIN 1 MILE (AERIAL RADIUS MEASUREMENT) OF A SPECIAL OR IMPAIRED WATER, PERMITTEES DO NOT NEED TO SUBMIT THE SWPPP WITH THE APPLICATION. PERMIT COVERAGE FOR THESE PROJECTS IS EFFECTIVE UPON APPLICATION AND COMPLETING THE PAYMENT PROCESS. [MINN. R. 7090]

3.4 FOR CERTAIN PROJECTS OR COMMON PLANS OF DEVELOPMENT OR SALE DISTURBING 50 ACRES OR MORE, THE COMPLETE SWPPP MUST BE INCLUDED WITH THE APPLICATION AND SUBMITTED AT LEAST 30 DAYS BEFORE THE START OF CONSTRUCTION ACTIVITY. THIS APPLIES IF THERE IS A DISCHARGE POINT ON THE PROJECT WITHIN ONE MILE (AERIAL RADIUS MEASUREMENT) OF, AND FLOWS TO, A SPECIAL WATER LISTED IN ITEM 23.3 THROUGH 23.6 OR AN IMPAIRED WATER AS DESCRIBED IN ITEM 23.7. PERMIT COVERAGE FOR THESE PROJECTS IS EFFECTIVE UPON SUBMITTING THE APPLICATION AND COMPLETE SWPPP, COMPLETING THE PAYMENT PROCESS AND RECEIVING A DETERMINATION FROM THE MPCA THAT THE REVIEW OF THE SWPPP IS COMPLETE. THE DETERMINATION MAY TAKE LONGER THAN 30 DAYS IF THE SWPPP IS INCOMPLETE. IF THE MPCA FAILS TO CONTACT THE PERMITTEES WITHIN 30 DAYS OF APPLICATION RECEIPT, COVERAGE IS EFFECTIVE 30 DAYS AFTER COMPLETING THE PAYMENT PROCESS. [MINN. R. 7090]

3.5 THE APPLICATION REQUIRES LISTING ALL PERSONS MEETING THE DEFINITION OF OWNER AND OPERATOR AS PERMITTEES. THE OWNER IS RESPONSIBLE FOR COMPLIANCE WITH ALL TERMS AND CONDITIONS OF THIS PERMIT. THE OPERATOR IS RESPONSIBLE FOR COMPLIANCE WITH SECTIONS 3, 4, 6-22, 24 AND APPLICABLE REQUIREMENTS FOR CONSTRUCTION ACTIVITY IN SECTION 23. [MINN. R. 7090]

3.6 PERMITTEES WILL RECEIVE COVERAGE NOTIFICATION IN A MANNER DETERMINED BY THE MPCA. [MINN. R. 7090]

3.7 FOR CONSTRUCTION PROJECTS WHERE THE OWNER OR OPERATOR CHANGES (E.G., AN ORIGINAL DEVELOPER SELLS PORTIONS OF THE PROPERTY TO VARIOUS HOMEBUILDERS OR SELLS THE ENTIRE SITE TO A NEW OWNER), THE CURRENT OWNER AND THE NEW OWNER OR OPERATOR MUST SUBMIT A COMPLETE PERMIT MODIFICATION FORM PROVIDED BY THE MPCA. THE CURRENT OWNER AND THE NEW OWNER OR OPERATOR MUST SUBMIT THE FORM PRIOR TO THE NEW OWNER OR OPERATOR COMMENCING CONSTRUCTION ACTIVITY OR NO LATER THAN 30 DAYS AFTER TAKING OWNERSHIP OF THE PROPERTY. [MINN. R. 7090]

3.8 FOR CONSTRUCTION PROJECTS WHERE THE OWNER OR OPERATOR CHANGES, THE CURRENT OWNER MUST PROVIDE A SWPPP TO THE NEW OWNER AND OPERATOR THAT SPECIFICALLY ADDRESSES THE REMAINING CONSTRUCTION ACTIVITY. THE NEW OWNER OR OPERATOR CAN IMPLEMENT THE ORIGINAL SWPPP, MODIFY THE SWPPP, OR DEVELOP A NEW SWPPP. PERMITTEES MUST ENSURE THEIR ACTIVITIES DO NOT RENDER ANOTHER PARTY'S EROSION PREVENTION AND SEDIMENT CONTROL BMPS INEFFECTIVE. [MINN. R. 7090]

4.1 TERMINATION OF COVERAGE. [MINN. R. 7090]

4.2 PERMITTEES MUST SUBMIT A NOT WITHIN 30 DAYS AFTER ALL TERMINATION CONDITIONS LISTED IN SECTION 13 ARE COMPLETE. [MINN. R. 7090]

4.3 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. [MINN. R. 7090]

4.4 PERMITTEES MAY TERMINATE PERMIT COVERAGE PRIOR TO COMPLETION OF ALL CONSTRUCTION ACTIVITY IF THEY MEET ALL OF THE FOLLOWING CONDITIONS:

a. CONSTRUCTION ACTIVITY HAS CEASED FOR AT LEAST 90 DAYS; AND

b. AT LEAST 90 PERCENT (BY AREA) OF ALL ORIGINALLY PROPOSED CONSTRUCTION ACTIVITY HAS BEEN COMPLETED AND PERMANENT COVER HAS BEEN ESTABLISHED ON THOSE AREAS; AND

c. ON AREAS WHERE CONSTRUCTION ACTIVITY IS NOT COMPLETE, PERMANENT COVER HAS BEEN ESTABLISHED; AND

d. THE SITE COMPLIES WITH ITEM 13.3 THROUGH 13.7.

AFTER PERMIT COVERAGE IS TERMINATED UNDER THIS ITEM, ANY SUBSEQUENT DEVELOPMENT ON THE REMAINING PORTIONS OF THE SITE WILL REQUIRE PERMIT COVERAGE IF THE SUBSEQUENT DEVELOPMENT ITSELF OR AS PART OF THE REMAINING COMMON PLAN OF DEVELOPMENT OR SALE WILL RESULT IN LAND DISTURBING ACTIVITIES OF ONE (1) OR MORE ACRES IN SIZE. [MINN. R. 7090]

4.5 PERMITTEES MAY TERMINATE COVERAGE UPON MPCA APPROVAL AFTER SUBMITTING INFORMATION DOCUMENTING THE OWNER CANCELLED THE PROJECT. [MINN. R. 7090]

6.1 SWPPP AMENDMENTS. [MINN. R. 7090]

6.2 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. [MINN. R. 7090]

6.3 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. [MINN. R. 7090]

6.4 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. [MINN. R. 7050.0210]

7.1 BMP SELECTION AND INSTALLATION. [MINN. R. 7090]

7.2 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. [MINN. R. 7090]

8.1 EROSION PREVENTION PRACTICES. [MINN. R. 7090]

8.2 BEFORE WORK BEGINS, PERMITTEES MUST DELINEATE THE LOCATION OF AREAS NOT TO BE DISTURBED. [MINN. R. 7090]

8.3 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). [MINN. R. 7090]

8.4 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. [MINN. R. 7090]

8.5 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. [MINN. R. 7090]

8.6 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. [MINN. R. 7090]

8.7 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. [MINN. R. 7090]

8.8 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. [MINN. R. 7090]

8.9 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. [MINN. R. 7090]

8.10 PERMITTEES MUST NOT DISTURB MORE LAND (I.E., PHASING) THAN CAN BE EFFECTIVELY INSPECTED AND MAINTAINED IN ACCORDANCE WITH SECTION 11. [MINN. R. 7090]

9.1 SEDIMENT CONTROL PRACTICES. [MINN. R. 7090]

9.2 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. [MINN. R. 7090]

9.3 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. [MINN. R. 7090]

9.4 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. [MINN. R. 7090]

9.5 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. [MINN. R. 7090]

9.6 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. [MINN. R. 7090]

9.7 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. [MINN. R. 7090]

9.8 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. [MINN. R. 7090]

9.9 PERMITTEES MUST PROVIDE SILT FENCE OR OTHER EFFECTIVE SEDIMENT CONTROLS AT THE BASE OF STOCKPILES ON THE DOWNGRADIENT PERIMETER. [MINN. R. 7090]

9.10 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. [MINN. R. 7090]

9.11 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. [MINN. R. 7090]

9.12 PERMITTEES MUST USE STREET SWEEPING IF VEHICLE TRACKING BMPS ARE NOT ADEQUATE TO PREVENT SEDIMENT TRACKING ONTO THE STREET. [MINN. R. 7090]

9.13 PERMITTEES MUST INSTALL TEMPORARY SEDIMENT BASINS AS REQUIRED IN SECTION 14. [MINN. R. 7090]

9.14 IN ANY AREAS OF THE SITE WHERE FINAL VEGETATIVE STABILIZATION WILL OCCUR, PERMITTEES MUST RESTRICT VEHICLE AND EQUIPMENT USE TO MINIMIZE SOIL COMPACTION. [MINN. R. 7090]

9.15 PERMITTEES MUST PRESERVE TOPSOIL ON THE SITE, UNLESS INFEASIBLE. [MINN. R. 7090]

9.16 PERMITTEES MUST DIRECT DISCHARGES FROM BMPS TO VEGETATED AREAS UNLESS INFEASIBLE. [MINN. R. 7090]

9.17 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. [MINN. R. 7090]

9.18 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. [MINN. R. 7090]

10.1 DEWATERING AND BASIN DRAINING. [MINN. R. 7090]

10.2 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. [MINN. R. 7050.0210]

10.3 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. [MINN. R. 7090]

10.4 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. [MINN. R. 7090]

10.5 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. [MINN. R. 7090]

11.1 INSPECTIONS AND MAINTENANCE. [MINN. R. 7090]

11.2 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. [MINN. R. 7090]

11.3 PERMITTEES MUST INSPECT AND MAINTAIN ALL PERMANENT STORMWATER TREATMENT BMPS. [MINN. R. 7090]

11.4 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. [MINN. R. 7090]

11.5 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. [MINN. R. 7090]

11.6 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. [MINN. R. 7090]

11.7 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. [MINN. R. 7090]

11.8 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. [MINN. R. 7090]

11.9 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. [MINN. R. 7090]

11.10 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. [MINN. R. 7090]

11.11 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. [MINN. R. 7090]

12.1 POLLUTION PREVENTION MANAGEMENT MEASURES. [MINN. R. 7090]

12.2 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. [MINN. R. 7090]

12.3 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. [MINN. R. 7090]

12.4 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. [MINN. R. 7090]

12.5 PERMITTEES MUST PROPERLY STORE, COLLECT AND DISPOSE SOLID WASTE IN COMPLIANCE WITH MINN. R. CH. 7035. [MINN. R. 7035]

12.6 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. [MINN. R. 7041]

12.7 PERMITTEES MUST TAKE REASONABLE STEPS TO PREVENT THE DISCHARGE OF SPILLED OR LEAKED CHEMICALS, INCLUDING FUEL, FROM ANY AREA WHERE CHEMICALS OR 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. [MINN. STAT. 115.061]

12.8 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. [MINN. R. 7090]

12.9 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. [MINN. R. 7035, MINN. R. 7090]

13.1 PERMIT TERMINATION CONDITIONS. [MINN. R. 7090]

13.2 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. [MINN. R. 7090]

13.3 PERMITTEES MUST CLEAN THE PERMANENT STORMWATER TREATMENT SYSTEM OF ANY ACCUMULATED SEDIMENT AND MUST ENSURE THE SYSTEM MEETS ALL APPLICABLE REQUIREMENTS IN SECTION 15 THROUGH 19 AND IS OPERATING AS DESIGNED. [MINN. R. 7090]

13.4 PERMITTEES MUST REMOVE ALL SEDIMENT FROM CONVEYANCE SYSTEMS PRIOR TO SUBMITTING THE NOT. [MINN. R. 7090]

13.5 PERMITTEES MUST REMOVE ALL TEMPORARY SYNTHETIC EROSION PREVENTION AND SEDIMENT CONTROL BMPS PRIOR TO SUBMITTING THE NOT. PERMITTEES MAY LEAVE BMPS DESIGNED TO DECOMPOSE ON-SITE IN PLACE. [MINN. R. 7090]

13.6 FOR RESIDENTIAL CONSTRUCTION ONLY, PERMIT COVERAGE TERMINATES ON INDIVIDUAL LOTS IF THE STRUCTURES ARE FINISHED AND TEMPORARY EROSION PREVENTION AND DOWNGRADIENT PERIMETER CONTROL IS COMPLETE, THE RESIDENCE SELLS TO THE HOMEOWNER, AND THE PERMITTEE DISTRIBUTES THE MPCA'S "HOMEOWNER FACT SHEET" TO THE HOMEOWNER. [MINN. R. 7090]

13.7 FOR CONSTRUCTION PROJECTS ON AGRICULTURAL LAND (E.G., PIPELINES ACROSS CROPLAND), PERMITTEES MUST RETURN THE DISTURBED LAND TO ITS PRECONSTRUCTION AGRICULTURAL USE PRIOR TO SUBMITTING THE NOT. [MINN. R. 7090]

14.1 TEMPORARY SEDIMENT BASINS. [MINN. R. 7090]

14.2 WHERE TEN (10) OR MORE ACRES OF DISTURBED SOIL DRAIN TO A COMMON LOCATION, PERMITTEES MUST PROVIDE A TEMPORARY SEDIMENT BASIN TO PROVIDE TREATMENT OF THE RUNOFF BEFORE IT LEAVES THE CONSTRUCTION SITE OR ENTERS SURFACE WATERS. PERMITTEES MAY CONVERT A TEMPORARY SEDIMENT BASIN TO A PERMANENT BASIN AFTER CONSTRUCTION IS COMPLETE. THE TEMPORARY BASIN IS NO LONGER REQUIRED WHEN PERMANENT COVER HAS REDUCED THE ACREAGE OF DISTURBED SOIL TO LESS THAN TEN (10) ACRES DRAINING TO A COMMON LOCATION. [MINN. R. 7090]

14.3 THE TEMPORARY BASIN MUST PROVIDE LIVE STORAGE FOR A CALCULATED VOLUME OF RUNOFF FROM A TWO (2)-YEAR, 24- HOUR STORM FROM EACH ACRE DRAINED TO THE BASIN OR 1,800 CUBIC FEET OF LIVE STORAGE PER ACRE DRAINED, WHICHEVER IS GREATER. [MINN. R. 7090]

14.4 WHERE PERMITTEES HAVE NOT CALCULATED THE TWO (2)-YEAR, 24-HOUR STORM RUNOFF AMOUNT, THE TEMPORARY BASIN MUST PROVIDE 3,600 CUBIC FEET OF LIVE STORAGE PER ACRE OF THE BASINS' DRAINAGE AREA. [MINN. R. 7090]

14.5 PERMITTEES MUST DESIGN BASIN OUTLETS TO PREVENT SHORT-CIRCUITING AND THE DISCHARGE OF FLOATING DEBRIS. [MINN. R. 7090]

14.6 PERMITTEES MUST DESIGN THE OUTLET STRUCTURE TO WITHDRAW WATER FROM THE SURFACE TO MINIMIZE THE DISCHARGE OF POLLUTANTS. PERMITTEES MAY TEMPORARILY SUSPEND THE USE OF A SURFACE WITHDRAWAL MECHANISM DURING FROZEN CONDITIONS. THE BASIN MUST INCLUDE A STABILIZED EMERGENCY OVERFLOW TO PREVENT FAILURE OF POND INTEGRITY. [MINN. R. 7090]

14.7 PERMITTEES MUST PROVIDE ENERGY DISSIPATION FOR THE BASIN OUTLET WITHIN 24 HOURS AFTER CONNECTION TO A SURFACE WATER. [MINN. R. 7090]

14.8 PERMITTEES MUST LOCATE TEMPORARY BASINS OUTSIDE OF SURFACE WATERS AND ANY BUFFER ZONE REQUIRED IN ITEM 23.11. [MINN. R. 7090]

14.9 PERMITTEES MUST CONSTRUCT THE TEMPORARY BASINS PRIOR TO DISTURBING 10 OR MORE ACRES OF SOIL DRAINING TO A COMMON LOCATION. [MINN. R. 7090]

14.10 WHERE A TEMPORARY SEDIMENT BASIN MEETING THE REQUIREMENTS OF ITEM 14.3 THROUGH 14.9 IS INFEASIBLE, PERMITTEES MUST INSTALL EFFECTIVE SEDIMENT CONTROLS SUCH AS SMALLER SEDIMENT BASINS AND/OR SEDIMENT TRAPS, SILT FENCES, VEGETATIVE BUFFER STRIPS OR ANY APPROPRIATE COMBINATION OF MEASURES AS DICTATED BY INDIVIDUAL SITE CONDITIONS. IN DETERMINING WHETHER INSTALLING A SEDIMENT BASIN IS INFEASIBLE, PERMITTEES MUST CONSIDER PUBLIC SAFETY AND MAY CONSIDER FACTORS SUCH AS SITE SOILS, SLOPE, AND AVAILABLE AREA ON-SITE. PERMITTEES MUST DOCUMENT THIS DETERMINATION OF INFEASIBILITY IN THE SWPPP. [MINN. R. 7090]

SITE LOCATION MAP

CONTOUR CIVIL DESIGN

8195 VERNON STREET, ROCKFORD, MN 55373
TEL: 612.730.2265 | WWW.CONTOURCD.COM

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

NAME: JOSEPH T RADACH PE

SIGNATURE: [signature]

DATE: 10/03/25 LIC #: 45889

REVISIONS	ISSUE DATE: 10/03/25	BY: JTR
1.		
2.		
3.		
4.		
5.		
6.		
7.		

OWNER

CEMSTONE COMPANIES
2025 Centre Pointe Blvd, Suite 300
Mendota Heights, MN 55120

SWPPP NARRATIVE

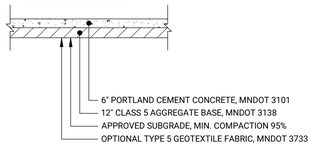
CEMSTONE MANKATO PLANT
100 Summit Avenue
Mankato, MN 56001

SHEET NUMBER

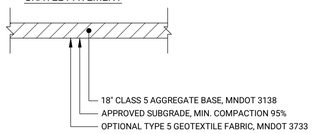
C5.3

10/03/25 c:\users\contour civil\dropbox\pc\desktop\contour_jobs\25013 - cemstone mankato\cad\25013_swppp.dwg

CONRETE PAVEMENT



GRAVEL PAVEMENT

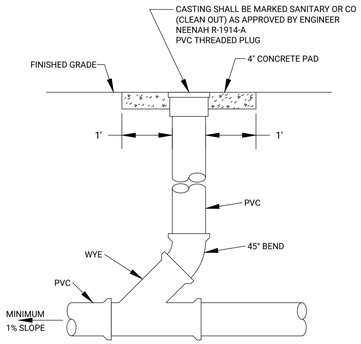


NOTES

1. FINAL PAVEMENT SECTIONS AND SUBGRADE COMPACTION REQUIREMENTS TO BE CONFIRMED BY GEOTECHNICAL ENGINEER OF RECORD

1 PAVEMENT SECTIONS

NO SCALE



NOTES:
- ALL JOINTS SHALL BE SOLVENT WELD EXCEPT AS NOTED.
- CLEAN OUTS ARE REQUIRED AT 100' SPACING AND AT CHANGE OF DIRECTION.
- ALL CLEAN OUTS SHALL BE EQUIPPED WITH A FROST SLEEVE.

2 CLEANOUT

NO SCALE

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 7 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.

TEMPORARY SEEDING SHALL BE IN ACCORDANCE WITH MNDOT 2575 AND SHALL BE AS FOLLOWS:

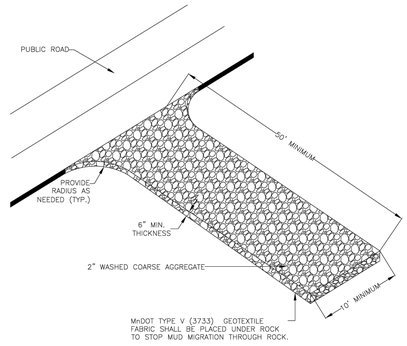
SEED: 21-111 AT 100 LBS PER ACRE OR 21-112 AT 100 LBS PER ACRE
MULCH: TYPE 1 AT 2 TONS PER ACRE
FERTILIZER: 10-20-20 AT 300 LBS PER ACRE

PERMANENT SEEDING SHALL BE IN ACCORDANCE WITH MNDOT 2575 AND SHALL BE AS FOLLOWS, UNLESS SHOWN OTHERWISE ON THE PLANS:

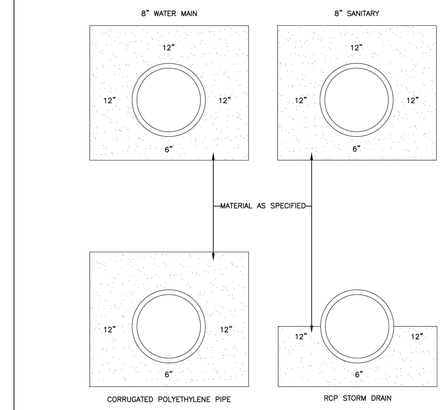
SEED: 25-131 AT 220 LBS PER ACRE OR 25-141 AT 59 LBS PER ACRE
MULCH: TYPE 1 AT 2 TONS PER ACRE
FERTILIZER: 10-10-10 AT 200 LBS PER ACRE

3 TURF ESTABLISHMENT

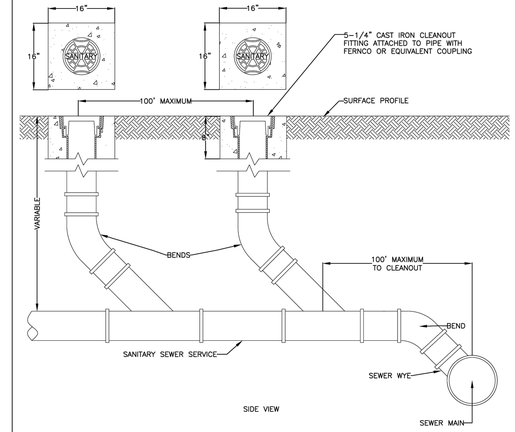
NO SCALE



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

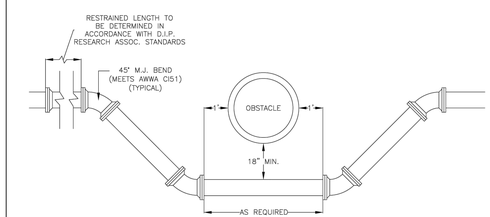


APPROVED	CITY OF MANKATO ENGINEERING	SPECIFICATION REFERENCE	STANDARD PLATE NO.
Michael J McCarty Digitally signed by Michael J McCarty Date: 2022.10.28 12:14:09-05'00' CITY ENGINEER	GRANULAR BEDDING & ENCASEMENT		2100A 1 OF 1



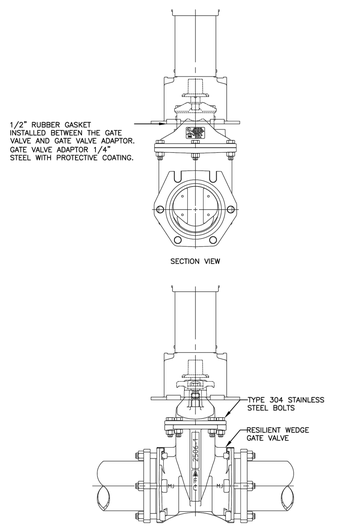
NOTE:
CLEANOUT IS TO BE WITHIN EASEMENT AREA BUT OUT OF DRIVING SURFACE, GRANULAR MATERIAL TO BE PLACED AROUND ALL PIPE.

APPROVED	CITY OF MANKATO ENGINEERING	SPECIFICATION REFERENCE	STANDARD PLATE NO.
Michael J McCarty Digitally signed by Michael J McCarty Date: 2022.10.28 12:14:38-05'00' CITY ENGINEER	SANITARY SERVICE CLEANOUT		2242A 1 OF 1

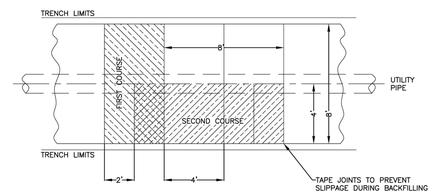


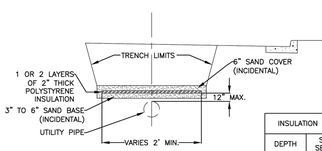
NOTES:
1. FITTINGS SHALL BE RESTRAINED WITH THE USE OF APPROVED MECHANICAL JOINT RESTRAINING GLANDS.
2. FITTINGS AND GLANDS SHALL BE EPOXY COATED, FLUORCARBON COATED BOLTS SHALL BE BLUE WITH TWO ZINC ANODES ATTACHED PER GLAND.

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





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

CONTOUR CIVIL DESIGN
8195 VERNON STREET, ROCKFORD, MN 55373
TEL: 612.730.2265 | WWW.CONTOURCD.COM

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

NAME: JOSEPH T RADACH PE
SIGNATURE:
DATE: 10/03/25 LIC #: 45889

REVISIONS
1.
2.
3.
4.
5.
6.
7.

ISSUE DATE: 10/03/25
BY: JTR

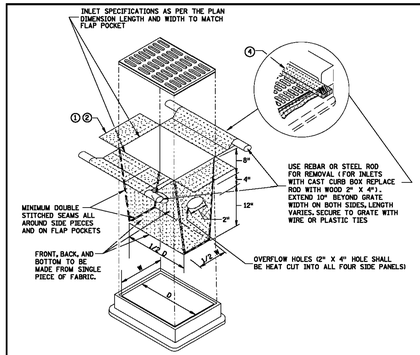
OWNER
CEMSTONE COMPANIES
2025 Centre Pointe Blvd, Suite 300
Mendota Heights, MN 55120

DETAILS

CEMSTONE MANKATO PLANT
100 Summit Avenue
Mankato, MN 56001

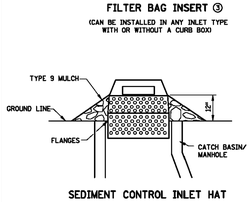
SHEET NUMBER
C6.1

10/03/25 c:\users\contour civil\dropbox\pc\desktop\contour_jobs\25013 - cemstone mankato\cad\25013_detail.dwg



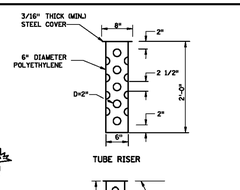
FILTER BAG INSERT ③

(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX)



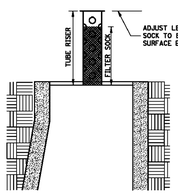
SEDIMENT CONTROL INLET HAT

NOTE:
THE SEDIMENT CONTROL BARRIER SHALL BE A METAL OR PLASTIC/POLYETHYLENE RISER SIZED TO FIT INSIDE THE CATCH BASIN/MANHOLE; HAVE PERFORATIONS TO ALLOW FOR WATER INFILTRATION; HAVE AN OVERFLOW OPENING, FLANGES AND A LID/COVER.

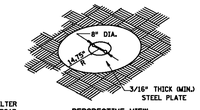


ROCK LOG/COMPOST LOG

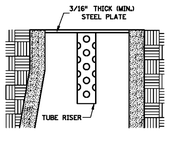
TUBE RISER



SECTION (UP POSITION)

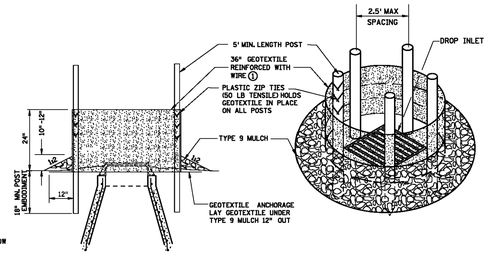


PERSPECTIVE VIEW



SECTION (DOWN POSITION)

POP-UP HEAD



SILT FENCE RING AND ROCK FILTER BERM

USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 or LESS

NOTES:
SEE SPECS. 2573, 3137, & 3886.

DEVICES MUST BE ADJUSTED ACCORDINGLY AS TO NOT CAUSE FLOODING ON ROADWAY THAT WOULD IMPEDE TRAFFIC FLOW.

① ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.

② FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

③ INSTALLATION NOTES:
DO NOT PLACE FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE PLACED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE OF 3 INCHES BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES. WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3 INCH SIDE CLEARANCE.

④ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2 INCH X 4 INCH OR USE A ROCK SOCK OR SAND BAGS IN PLACE OF THE FLAP POCKETS.

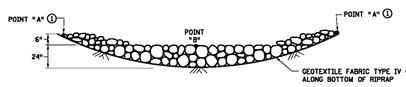
⑤ SOCK HEIGHT MUST NOT BE SO HIGH AS TO SLOW DOWN WATER FILTRATION TO CAUSE FLOODING OF THE ROADWAY.

⑥ GEOTEXTILE SOCK BETWEEN 4-10 FEET LONG AND 4-6 INCH DIAMETER, SEAM TO BE JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR PROVIDE A HEAT BONDED SEAM OR APPROVED EQUIVALENT). FILL ROCK LOG WITH OPEN GRADED AGGREGATE CONSISTING OF SOUND DURABLE PARTICLES OF COARSE AGGREGATE CONFORMING TO SPEC. 3137 TABLE 3137-1; CA-3 GRADATION.

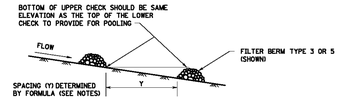
REVISIONS
APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

STANDARD PLAN 5-297.405	4 OF 8
APPROVED: 2-28-2017	REVISED:
STATE PROJ. NO.	(T.H.) SHEET NO. OF SHEETS

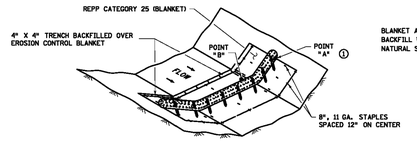
TEMPORARY SEDIMENT CONTROL
STORM DRAIN INLET PROTECTION

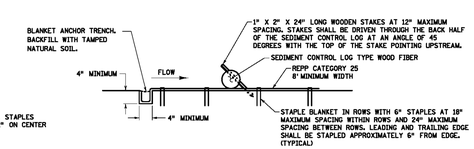


ROCK DITCH CHECKS
FILTER BERMS TYPE 3 (ROCK WEEPER) OR FILTER TYPE 5 (ROCK) ⑤
FOR USE ON ROUGH-GRADED AREAS
ONLY FOR USE OUTSIDE CLEAR ZONE ②

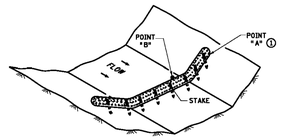


DITCH CHECK SPACING
FOR ALL FILTER BERM TYPES





SEDIMENT CONTROL LOG TYPE REPP (BLANKET) SYSTEM ④



SEDIMENT CONTROL LOG TYPE WOOD FIBER, OR TYPE COMPOST ⑤
FOR USE ON ROUGH GRADED AREAS

NOTES:
REPP = ROLLED EROSION PREVENTION PRODUCT.

SEE SPECS. 2573, 3601, 3733, 3885, 3886 & 3889.

FOR DITCH CHECKS, PLACE SEDIMENT CONTROL LOG PERPENDICULAR TO FLOW AND IN A CRESCENT SHAPE WITH THE ENDS FACING UPSTREAM.

APPROXIMATE SPACING BETWEEN EACH DITCH CHECK SHOULD BE DETERMINED FROM THE FOLLOWING SPACING FORMULA:

APPROXIMATE SPACING OF DITCH CHECKS (FT.) = Y = $\frac{\text{DITCH CHECK HEIGHT (FT.)}}{\text{\% CHANNEL SLOPE}} \times 100$

① POINT "A" MUST BE A MINIMUM OF 6" HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

② ROCK DITCH CHECKS PLACED WITHIN THE CLEAR ZONE ARE TO BE 18" OR LESS IN HEIGHT. A 1x6 APPROACH AND DEPARTURE SLOPE SHALL BE PROVIDED.

③ DITCH GRADE 3% - 5%, MAX. FLOW VELOCITY 12 FT./SEC.

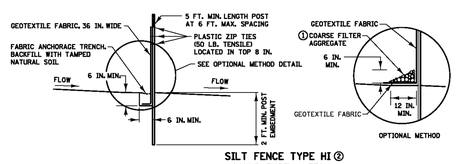
④ DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 4.5 FT./SEC.

⑤ DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 1.5 FT./SEC.

REVISIONS
APPROVED: JANUARY 8, 2020
CHIEF ENVIRONMENTAL OFFICER

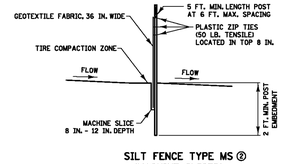
STANDARD PLAN 5-297.405	3 OF 8
APPROVED: 1-8-2020	REVISED:
STATE PROJ. NO.	(T.H.) SHEET NO. OF SHEETS

TEMPORARY SEDIMENT CONTROL
DITCH CHECK

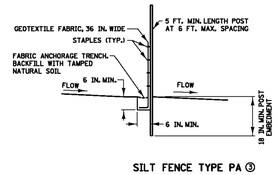


SILT FENCE TYPE HI ②
(HAND INSTALLED)

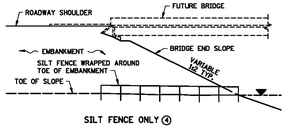
OPTIONAL METHOD



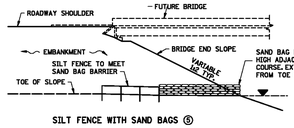
SILT FENCE TYPE MS ②
(MACHINE SLICED)



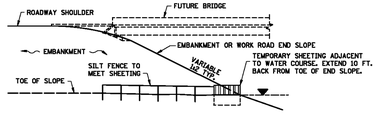
SILT FENCE TYPE PA ③
(PREASSEMBLED)



SILT FENCE ONLY ④

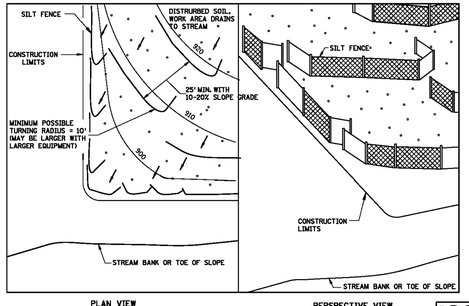


SILT FENCE WITH SAND BAGS ⑤



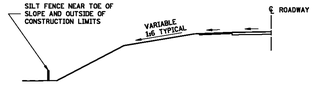
SILT FENCE WITH SHEETING ⑥

INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER



PLAN VIEW PERSPECTIVE VIEW

J-HOOK INSTALLATION



LOCATION AT TOE OF ROADWAY EMBANKMENT

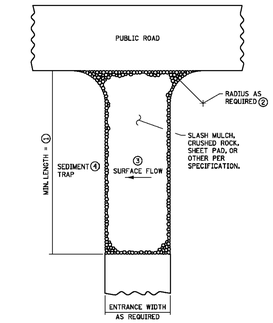
NOTES:
SEE SPECS. 2573, 3149 & 3886.

① COARSE FILTER AGGREGATE (SPEC. 3149) SHALL BE INCIDENTAL.
② TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 1 ACRE.
③ TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 0.25 ACRE.
④ WATER COURSE FLOW VELOCITY: STANDING. CONTRIBUTING SLOPE AREA: 1./2 ACRE.
⑤ WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC. CONTRIBUTING SLOPE AREA: 1 ACRE.
⑥ WATER COURSE FLOW VELOCITY: 8 TO 15 FT./SEC. CONTRIBUTING SLOPE AREA: 3 ACRES.

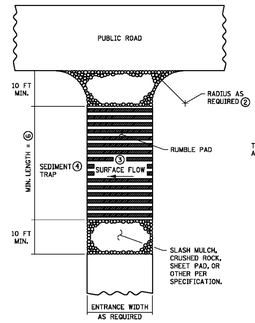
REVISIONS
APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

STANDARD PLAN 5-297.405	6 OF 8
APPROVED: 2-28-2017	REVISED:
STATE PROJ. NO.	(T.H.) SHEET NO. OF SHEETS

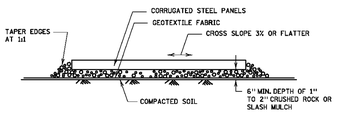
TEMPORARY SEDIMENT CONTROL
SILT FENCE



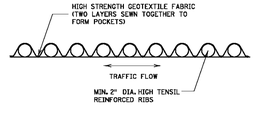
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT ⑤⑦



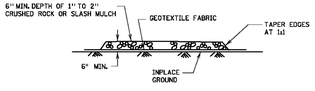
RUMBLE PAD CONSTRUCTION EXIT ⑤⑦



RUMBLE PAD



SHEET PAD



SLASH MULCH OR CRUSHED ROCK

NOTES:
SEE SPECS. 2573 & 3882.

① MINIMUM LENGTH SHALL BE THE GREATER OF 50 FEET OR A LENGTH SUFFICIENT TO ALLOW A MINIMUM OF 4 TIRE ROTATIONS ON THE PROVIDED PAD. MINIMUM LENGTH SHALL BE CALCULATED USING THE LARGEST TIRE WHICH WILL BE USED IN TYPICAL OPERATIONS.

② PROVIDE RADIUS OR WIDEN PAD SUFFICIENTLY TO PREVENT VEHICLE TIRES FROM TRACKING OFF OF PAD WHEN LEAVING SITE.

③ IF RUNOFF FROM DISTURBED AREAS FLOWS TOWARD CONSTRUCTION EXITS, PREVENT RUNOFF FROM DRAINING DIRECTLY TO PUBLIC ROAD OVER CONSTRUCTION EXIT BY CROWNING THE EXIT OR SLOPING TO ONE SIDE. IF SURFACE GRADING IS INSUFFICIENT, PROVIDE OTHER MEANS OF INTERCEPTING RUNOFF.

④ IF RUNOFF FROM CONSTRUCTION EXITS WILL DRAIN OFF OF PROJECT SITE, PROVIDE SEDIMENT TRAP WITH STABILIZED OVERFLOW.

⑤ IF A TIRE WASH OFF IS REQUIRED THE CONSTRUCTION EXITS SHALL BE GRADED TO DRAIN THE WASH WATER TO A SEDIMENT TRAP.

⑥ MINIMUM LENGTH OF RUMBLE PAD SHALL BE 20 FEET, OR AS REQUIRED TO REMOVE SEDIMENT FROM TIRES. IF SIGNIFICANT SEDIMENT IS TRACKED FROM THE SITE, THE RUMBLE PAD SHALL BE LENGTHENED OR THE DESIGN MODIFIED TO PROVIDE ADDITIONAL VIBRATION. WASH-OFF LENGTH SHALL BE AS REQUIRED TO EFFECTIVELY REMOVE CONSTRUCTION SEDIMENT FROM VEHICLE TIRES.

⑦ MAINTENANCE OF CONSTRUCTION EXITS SHALL OCCUR WHEN THE EFFECTIVENESS OF SEDIMENT REMOVAL HAS BEEN REDUCED. MAINTENANCE SHALL CONSIST OF REMOVING SEDIMENT AND CLEANING THE MATERIALS OR PLACING ADDITIONAL MATERIAL (SLASH MULCH OR CRUSHED ROCK) OVER SEDIMENT FILLED MATERIAL TO RESTORE EFFECTIVENESS.

REVISIONS
APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

STANDARD PLAN 5-297.405	5 OF 8
APPROVED: 2-28-2017	REVISED:
STATE PROJ. NO.	(T.H.) SHEET NO. OF SHEETS

TEMPORARY SEDIMENT CONTROL
STABILIZED CONSTRUCTION EXIT

CONTOUR CIVIL DESIGN
8195 VERNON STREET, ROCKFORD, MN 55373
TEL: 612.730.2265 | WWW.CONTOURCD.COM

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

NAME: JOSEPH T RADACH PE

SIGNATURE:

DATE: 10/03/25 LIC #: 45889

ISSUE DATE: 10/03/25 BY: JTR

REVISIONS	
1.	
2.	
3.	
4.	
5.	
6.	
7.	

OWNER
CEMSTONE COMPANIES
2025 Centre Pointe Blvd, Suite 300
Mendota Heights, MN 55120

DETAILS

CEMSTONE MANKATO PLANT
100 Summit Avenue
Mankato, MN 56001

SHEET NUMBER
C6.2

10/03/25 c:\users\contour civil\dropbox\projects\contour_jobs\25013 - cemstone mankato\cad\25013_detail.dwg

Site Plan and Traffic Advisory Review Committee **1. 7.**

Meeting Date: 10/14/2025

Title

SITE PLAN REVIEW ONLY

*****Site Plan and Traffic Advisory Committee Review Only. Request of Stacey Williams Realty on behalf of the Amano Driving School to add a new use, a driving school, at the property located at 2601 Adams Street.**

Review

The applicant is intending to utilize the northern portion of the subject parcel located at 2601 Adams Street for the operation of a driving school.

The applicant's narrative outlines that they intend, "to utilize the north 2 acres only of the property for a CDL Driving School. The owner of the property is in agreement. The Department of Public Safety only requires that the school have 2+ acres of gravel surface to conduct the driving school business. The lot will be used for a driving range, particularly the semi-truck, trailer and school bus. New students will learn and practice parking maneuvers before moving to public roads."

The narrative further states that, "The school will use one school track, and it will be parked or placed in a lot, students use the school track for parking maneuvers twice a week. Each session lasts for 4 hours during normal working hours of five business days, the number of students per session is between 3 to 5 students. Restrooms are not necessary, but if needed, we can rent portable restrooms from local vendors."

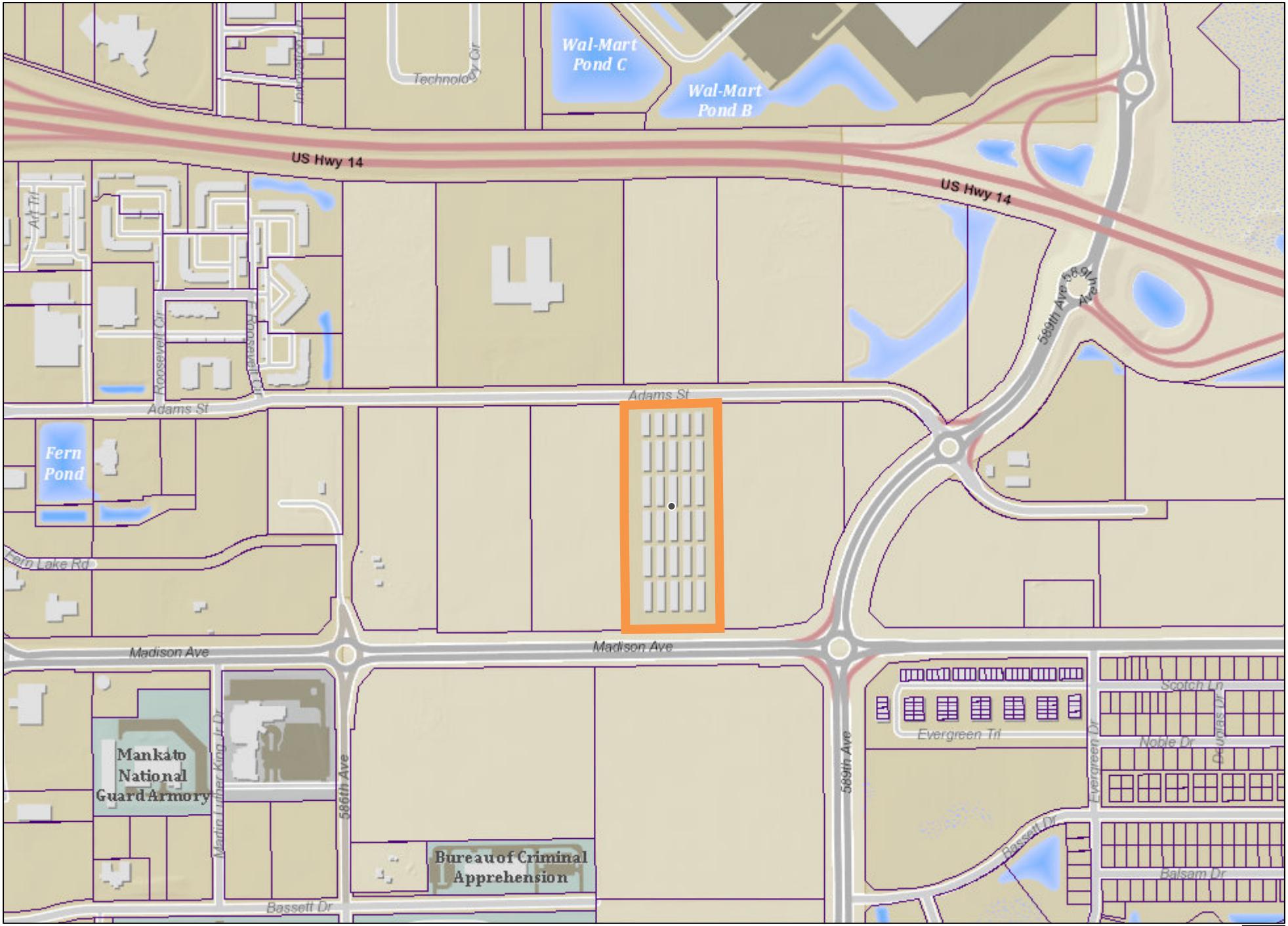
Attachments

General Location Map

Aerial Plan

Site Map

General Location Map



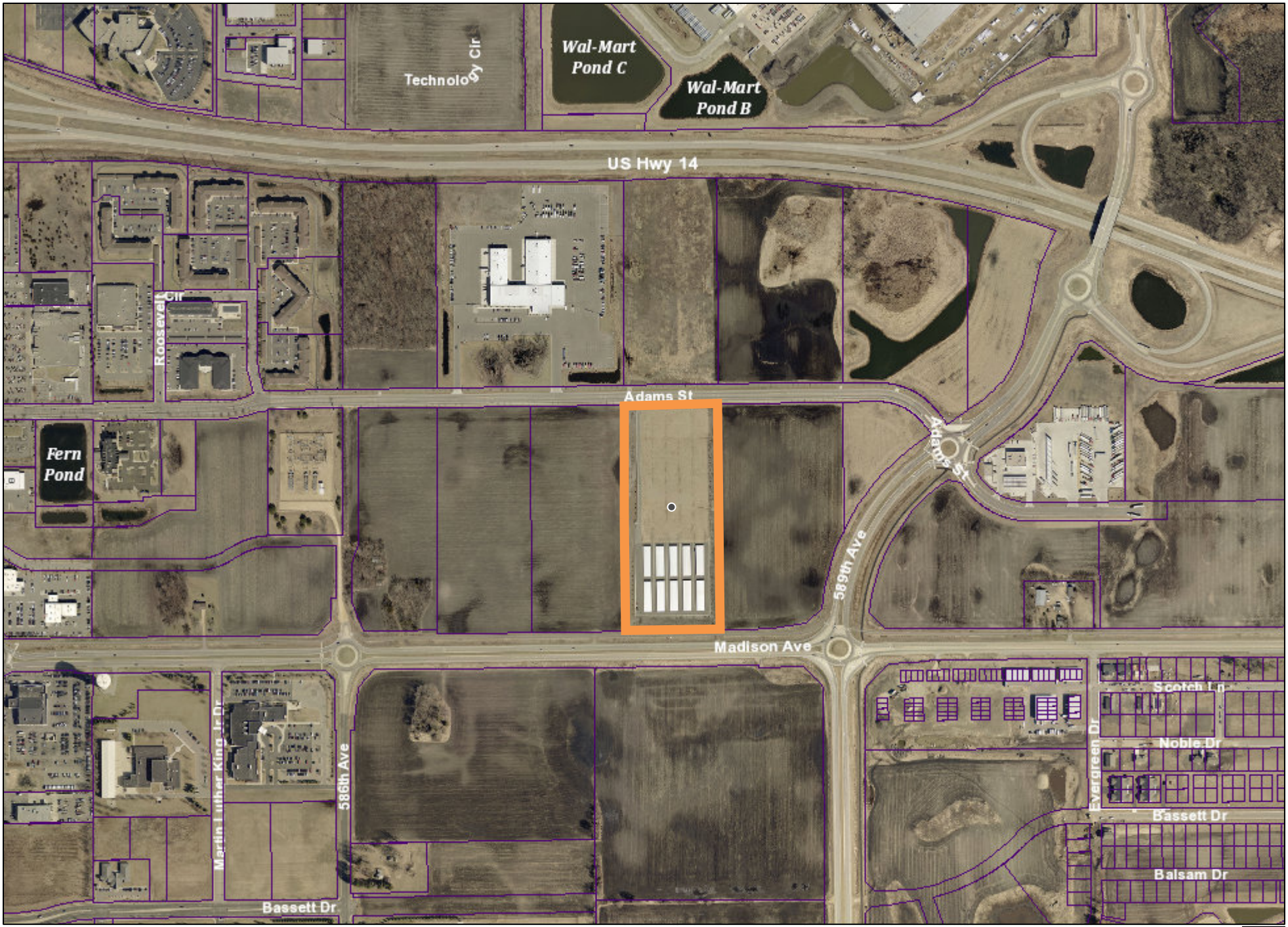
Date: October 2025

Author:

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

N

Aerial Map



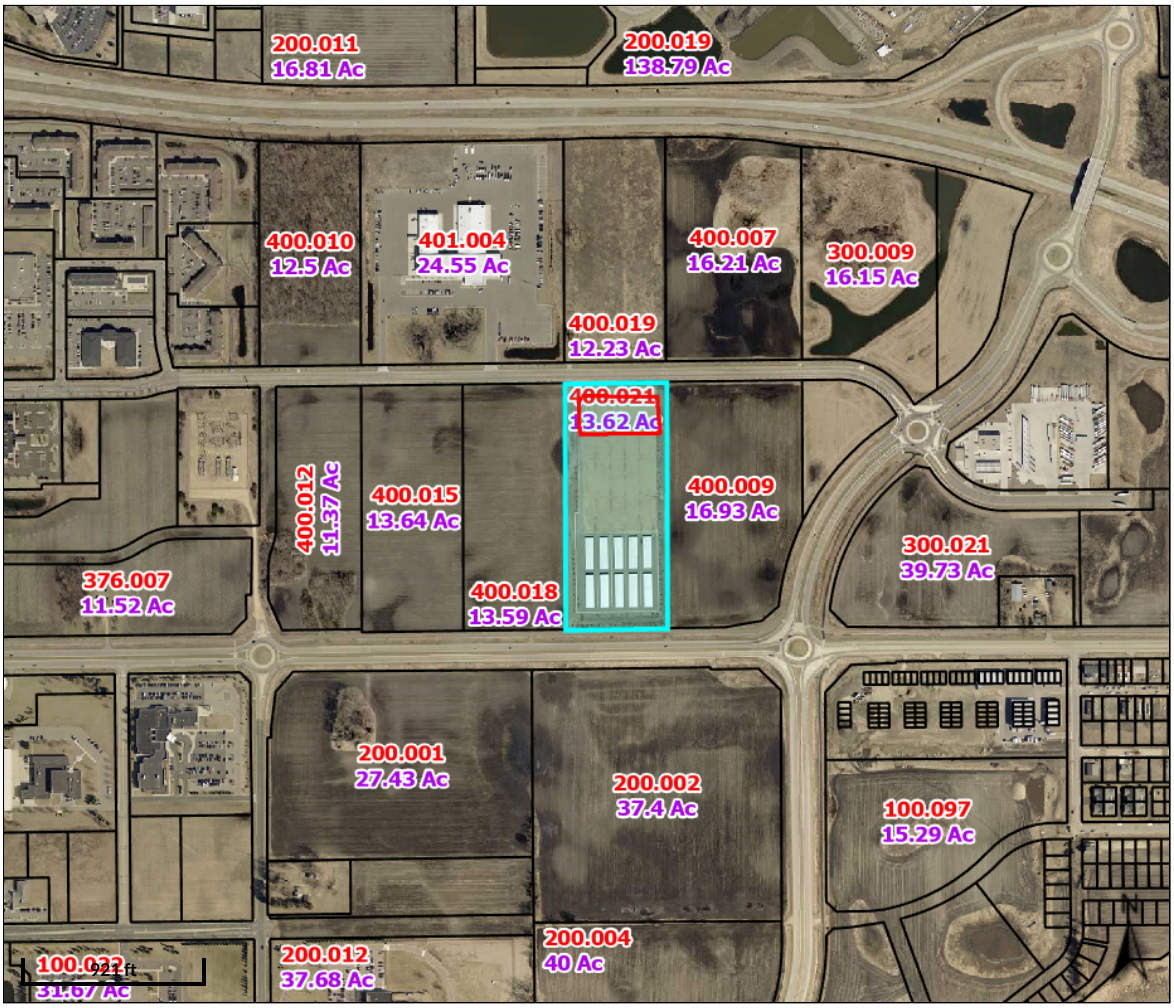
Date: October 2025

Author:

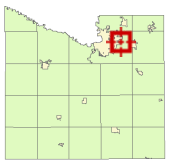
This information is to be used for reference purposes only. The City of Mankato does not guarantee accuracy of the material contained herein and is not responsible for misuse or misinterpretation.

N

BLUE EARTH COUNTY



Overview



Legend

- Tax Parcels
- Township Names
- MN-County

Parcel ID	R010910400021	**Class**	234- 3A INDUSTRIAL LAND AND BUILDING	**Owner Address**	MANKATO STORAGE LLC
Sec/Twp/Rng	10-108-26	**Acreage**	13.62		22 OMEGA CT
Property Address					NORTH MANKATO, MN 56003
District	01077				
Brief Tax Description	KATO MOVING & STORAGE ADDITION LOT 1 BLOCK 1 13.62 AC				
	(Note: Not to be used on legal documents)				

Date created: 10/5/2025
Last Data Uploaded: 10/4/2025 8:19:30 AM

Developed by SCHNEIDER GEOSPATIAL

Site Plan and Traffic Advisory Review Committee **1. 8.**

Meeting Date: 10/14/2025

Title

SITE PLAN REVIEW ONLY

*****Site Plan and Traffic Advisory Committee Review Only. Request of Web Construction, on behalf of Rolls Royce Power Systems, to allow a connection to the trail on the adjacent city-owned property, at the property located at 100 Power Drive.**

Review

Web Construction, on behalf of Rolls-Royce, is requesting a review by the Site Plan and Traffic Advisory Committee for a proposed connection to an existing trail located on City-owned property.

Site plans provided depict a proposed 4' wide, 4" thick concrete sidewalk connection from the existing Rolls-Royce parking lot to the existing city trail.

Attachments

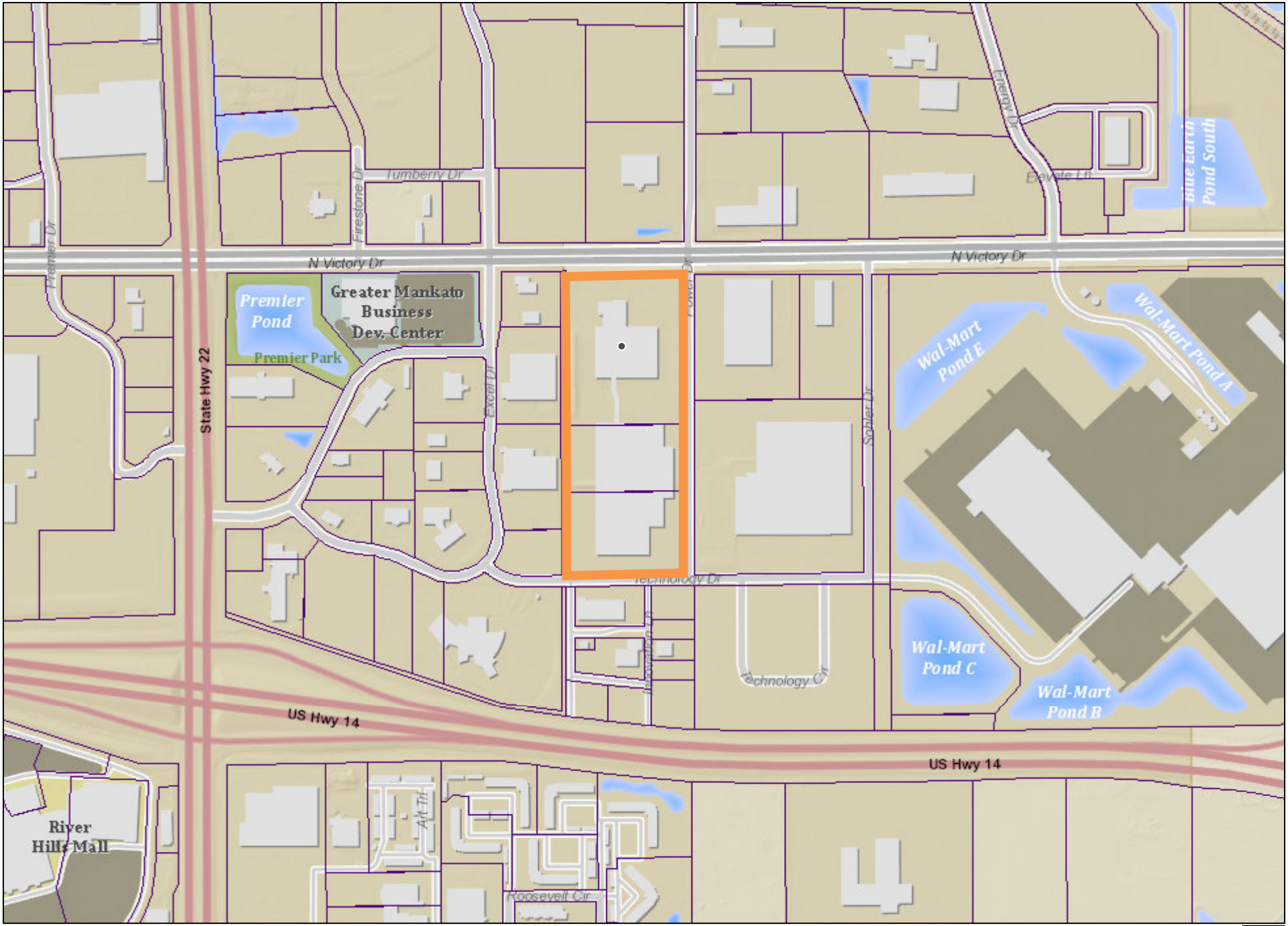
General Location Map

Aerial Plan

Site Plan

Connection detail

General Location Map



Date: October 2025

Author:

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

N

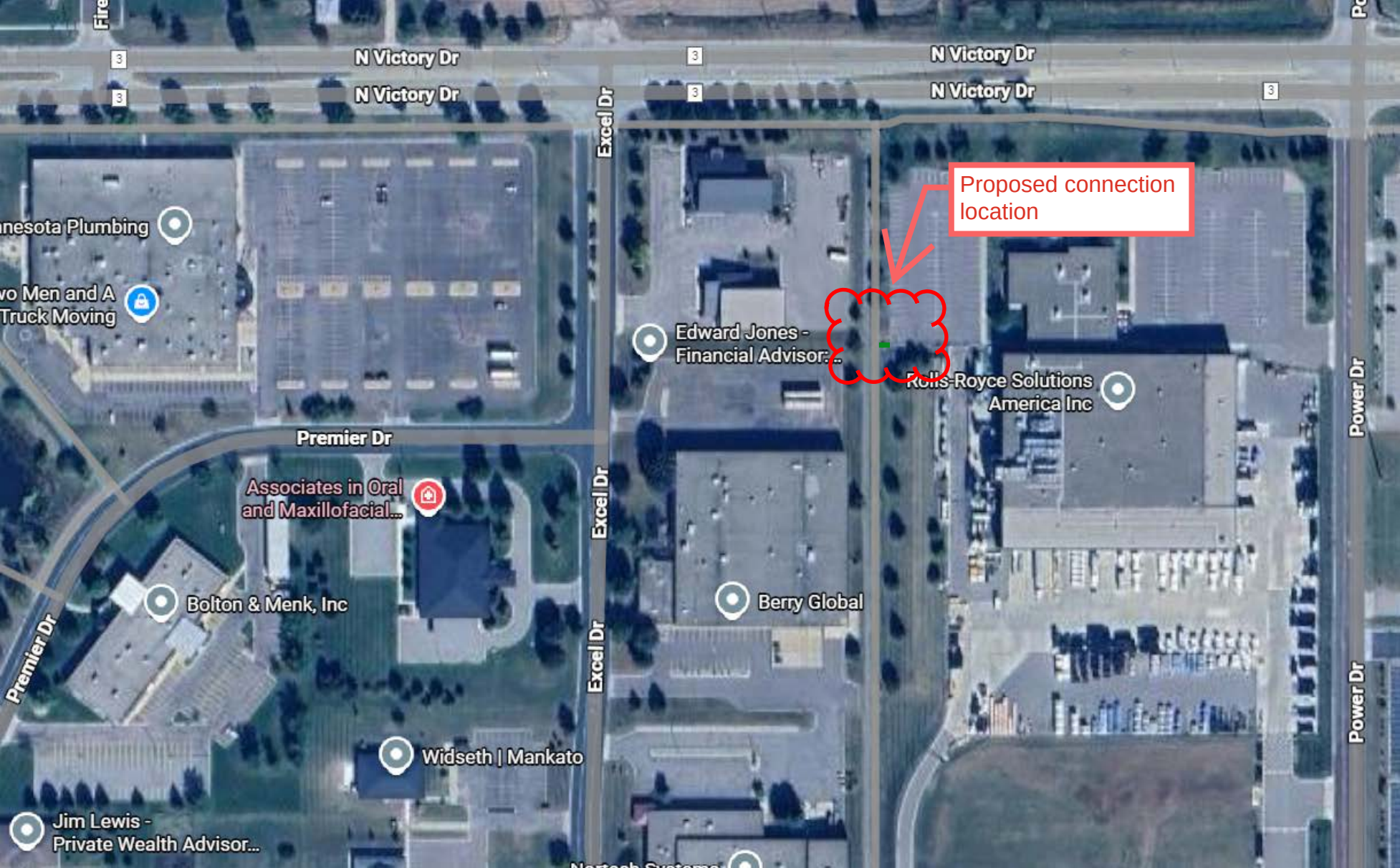
Aerial Map

Date: October 2025

Author:

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

N


N Victory Dr
N Victory Dr
N Victory Dr
N Victory Dr
Excel Dr
Excel Dr
Excel Dr
Power Dr
Power Dr
Premier Dr
Premier Dr
Proposed connection location
nesota Plumbing
vo Men and A Truck Moving
Edward Jones - Financial Advisor:...
Rolls-Royce Solutions America Inc
Associates in Oral and Maxillofacial...
Bolton & Menk, Inc
Berry Global
Widseth | Mankato
Jim Lewis - Private Wealth Advisor...

New(proposed) 30'x4'x4" concrete walkway to connect Rolls Royce Power System's parking lot to the existing city walking path.
Rolls-Royce Solutions America Inc