ADDENDUM No. 1

TO

9th Ave S, 10th Ave S, and 16th St S Area Street Improvements
Moorhead, Minnesota

City Eng. No. 25-A2-01

Date Issued: March 17, 2025

Bid Date: March 19, 2025 at 10:00am

To: All Plan holders of Record:

THE BIDDER SHALL ACKNOWLEDGE RECEIPT OF THIS ADDENDUM IN THE APPROPRIATE LOCATION ON THE FORM OF PROPOSAL. ANY BIDS RECEIVED BY THE CITY THAT DO NOT BEAR THE PROPER ACKNOWLEDGEMENT OF RECEIPT AS OUTLINED ABOVE WILL NOT BE CONSIDERED.

The above referenced project is revised as follows:

I. Specifications and Attachments

A. The Bid Form shall be replaced with the attached Bid Form, Addendum 1. The Bid Form quantities are modified to add bid item 5, Sawing Concrete Pavement (Full Depth). The quantities for the following bid items have been revised: Bid Item 7, Remove Concrete Driveway Pavement; Bid Item 10, Remove Concrete Sidewalk; Bid Item 19, 4" Concrete Walk; Bid Item 21, Pedestrian Curb Ramp – 5' Wide; Bid Item 34, Mud Jacking Curb & Gutter.

B. The attached Geotechnical Exploration Report shall be included as an attachment. The attached report includes cores and borings for 16th St S from 9th Ave S to 12th Ave S.

II. Plans

A. All plan sheets shall be replaced with the attached Plans dated March 7, 2025. Revisions include minor changes to call outs for Remove Concrete Sidewalk, Remove Concrete Driveway Pavement. All sheets are revised to be dated March 7, 2025.

James A. Schulz
Senior Supervising Engineer

END OF ADDENDUM No. 1

BID FORM FOR ENG. NO. 25-A2-01 (Addendum 1)
9th Ave S, 10th Ave S, and 16th St S Area Street Improvements

Bid Form

SECTION I - STREET IMPROVEMENTS

No.	Spec. No.	Item	Units	Qty	Unit Price	Total Price
1	2021.501	MOBILIZATION	LS	1		$ -
2	2104.502	REMOVE SIGN TYPE C	EA	112		$ -
3	2104.502	REMOVE SIGN TYPE D	EA	24		$ -
4	2104.503	REMOVE CURB AND GUTTER	LF	1,700		$ -
5	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LF	83		$ -
6	2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LF	261		$ -
7	2104.504	REMOVE CONCRETE DRIVEWAY PAVEMENT	SY	295		$ -
8	2104.504	REMOVE BITUMINOUS PAVEMENT	SY	10,598		$ -
9	2104.504	REMOVE CONCRETE PAVEMENT	SY	12		$ -
10	2104.518	REMOVE CONCRETE SIDEWALK	SF	5,135		$ -
11	2106.507	EXCAVATION - COMMON (EV) (P)	CY	2,171		$ -
12	2108.504	GEOTEXTILE FABRIC TYPE V - MODIFIED	SY	13,390		$ -
13	2112.604	SUBGRADE PREPARATION	SY	10,598		$ -
14	2123.610	MACHINE TIME	HR	15		$ -
15	2211.507	AGGREGATE BASE (CV) CRUSHED CONCRETE (P)	CY	1,766		$ -
16	2232.504	MILL BITUMINOUS SURFACE 3"	SY	60		$ -
17	2360.509	TYPE SP 12.5 WEARING COURSE MIX (3,B)	TON	1,656		$ -
18	2360.509	TYPE SP 12.5 NON WEAR COURSE MIX (3,B)	TON	2,318		$ -
19	2521.518	4" CONCRETE WALK	SF	3,729		$ -
20	2531.504	7" CONCRETE DRIVEWAY PAVEMENT	SY	294		$ -
21	2531.602	PEDESTRIAN CURB RAMP - 5' WIDE	EA	10		$ -
22	2531.602	PEDESTRIAN CURB RAMP - 6' WIDE (COLORED CONC.)	EA	8		$ -
23	2531.603	CONCRETE CURB AND GUTTER DESIGN B624	LF	1,700		$ -
24	2563.601	TRAFFIC CONTROL	LS	1		$ -
25	2564.602	FURNISH AND INSTALL SIGN TYPE C	SF	196		$ -
26	2564.602	FURNISH AND INSTALL SIGN TYPE D	SF	45		$ -
27	2573.501	STABILIZED CONSTRUCTION EXIT	LS	1		$ -
28	2573.502	STORM DRAIN INLET PROTECTION	EA	24		$ -
29	2573.503	SEDIMENT CONTROL LOG TYPE STRAW	LF	1,700		$ -
30	2574.507	SELECT TOPSOIL BORROW (LV)	CY	185		$ -
31	2575.505	TURF ESTABLISHMENT - GRASS SEEDING WITH TYPE 5 HYDROMULCH	SY	2,221		$ -
32	2575.523	WATER FOR TURF ESTABLISHMENT	M GAL	140		$ -
33	SPEC PROV	CRUSHED CONC. BASE FOR SUBGRADE REPAIR(CV)	CY	150		$ -
34	SPEC PROV	MUD JACKING CURB & GUTTER	LF	314		$ -
35	SPEC PROV	MUD JACKING FLATWORK	SF	634		$ -
				SECTION I - TOTAL	**$**	**-**

SECTION II - SANITARY SEWER

No.	Spec. No.	Item	Units	Qty	Unit Price	Total Price
36	SPEC PROV	FURNISH AND INSTALL NEW CASTING - TYPE A	EA	6		$ -
				SECTION II - TOTAL	**$**	**-**

SECTION III - WATERMAIN

No.	Spec. No.	Item	Units	Qty	Unit Price	Total Price
37	2504.602	ADJUST GATE VALVE AND BOX	EA	8		$ -
				SECTION III - TOTAL	**$**	**-**

SECTION IV - STORM SEWER

No.	Spec. No.	Item	Units	Qty	Unit Price	Total Price
38	2104.502	REMOVE CATCH BASIN	EA	1		$ -
39	2104.503	REMOVE SEWER PIPE (STORM) 12" RCP	LF	25		$ -
40	2502.503	4" PERF PVC PIPE DRAIN	LF	5,584		$ -
41	2503.503	12" RC PIPE SEWER DESIGN 3006 CL III	LF	22		$ -
42	2503.602	4" DRAINTILE CLEAN-OUT ASSEMBLY	EA	5		$ -
43	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN G OR H	EA	1		$ -
44	2506.602	CONNECT INTO EXISTING DRAINAGE STRUCTURE	EA	21		$ -
45	SPEC PROV	INSTALL SALVAGED CASTING	EA	3		$ -
46	SPEC PROV	FURNISH AND INSTALL NEW CASTING - TYPE A	EA	6		$ -
47	SPEC PROV	FURNISH AND INSTALL NEW CASTING - TYPE D	EA	15		$ -
48	SPEC PROV	RECONSTRUCT DRAINAGE STRUCTURE/BRICK MANHOLE	EA	1		$ -
49	SPEC PROV	CLEAN AND TELEVISE PIPE SEWER MAIN	LF	22		$ -
				SECTION IV - TOTAL	**$**	**-**
				BID TOTAL	**$**	**-**

Geotechnical Exploration Report

2020 CIP Project
Moorhead, Minnesota
October 30, 2019
Terracon Project No. M1195057

Prepared for:
Moorhead City Engineers
Moorhead, MN

Prepared by:
Terracon Consultants, Inc.
West Fargo, ND

October 30, 2019

Moorhead City Engineers
PO Box 779
Moorhead, MN 56560

Attn: Mr. Mark Osten, Construction Manager
P: (218) 299 5394
E: mark.osten@ci.moorhead.mn.us

Re: Geotechnical Exploration Report
2020 CIP Project
Area 20-5
Moorhead, Minnesota
Terracon Project No. M1195057

Dear Mr. Osten:

We have completed the Geotechnical Exploration services for the above referenced project. We have completed the Geotechnical Exploration services for the above referenced project. This exploration was performed in general accordance with Task Order No. 25 (dated October 1, 2019) under the Master Agreement for Professional Services between the City of Moorhead and Terracon which is dated February 26, 2018. This report presents the findings of the subsurface exploration.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.

Alex L. Sprunk, P.E.
Geotechnical Group Manager

Chad A. Cowley, P.E.
Senior Engineer

REPORT TOPICS

Note: This report was originally delivered in a web-based format. **Orange Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the ***GeoReport*** logo will bring you back to this page. For more interactive features, please view your project online at client.terracon.com.

ATTACHMENTS

Note: Refer to each individual Attachment for a listing of contents.

Geotechnical Exploration Report

2020 CIP Project

Area 20-5

Moorhead, Minnesota

Terracon Project No. M1195057

October 30, 2019

INTRODUCTION

This report presents the results of our subsurface exploration and geotechnical engineering services performed for the proposed street improvement project at the location encompassed by Area 20-5 in Moorhead, Minnesota. The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Existing pavement thickness

The geotechnical engineering Scope of Services for this project included the advancement of nine test borings to depths of approximately 3½ feet below existing site grades. In addition to the soil borings, twelve (12) pavement cores were obtained from the streets in the project area.

Logs of the borings along with photos of the core samples are included in the **Exploration Results** section of this report. Maps showing the site and boring and core locations are shown in the **Site Location** and **Exploration Plan** sections, respectively.

SITE CONDITIONS

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Item	Description
Locations	This project is comprised of the following areas in Moorhead, Minnesota. ■ 16th Street South between 9th Avenue South and 12th Avenue South ■ 17th Street South between 5th Avenue South and 9th Avenue South ■ 18th Street South between 9th Avenue South and 12th Avenue South ■ 18½ Street South between 9th Avenue South and 12th Avenue South See **Site Location and Exploration Plan**
Existing Improvements	Paved city streets in residential and college campus areas
Current Ground Cover	Bituminous pavement
Existing Topography	Relatively level

PROJECT DESCRIPTION

We understand the project consists of approximately one mile of mill and overlay of the pavements in the above described areas. Should

GEOTECHNICAL CHARACTERIZATION

Pavement thicknesses at the boring and core sample locations were measured to the nearest ¼ inch, recorded, and are provided in the table below. Pictures of the core samples can be found in the **Exploration Results** section of this report.

Boring/Core I.D.	Pavement Thickness (inches)	Location
C-1	4¼	16th Street South between 9th Avenue South and 12th Avenue South
B-1	4	
C-2	3	
B-2	2	
C-3	3	
C-4	4¼	18th Street South between 9th Avenue South and 12th Avenue South
B-3	4	
C-5	4¾	
B-4	5	
C-6	4¼	
C-7	4½	18 ½ Street South between 9th Avenue South and 12th Avenue South
B-5	5	
C-8	5	
B-6	6	
C-9	5	
C-10	14½	17th Street South between 9th Avenue South and 5th Avenue South
B-7	2	
C-11	5	
B-8	6½	
C-12	4¾	
B-9	4	

Beneath the pavements, the soil borings generally encountered undocumented granular fill which was underlain by native inorganic fat clays or what we classified as “fill”, which consists of a mixture of fat clays. Due to limited spoon recovery at some of the borehole locations, it was difficult to determine the true extent of the fat clays identified as “fill”.

Conditions encountered at the boring locations are indicated on the boring logs found in the **Exploration Results** section of this report. Stratification boundaries on the boring logs represent the approximate location of the changes in soil types; in situ, the transition between materials may be gradual.

The boreholes were observed while boring for the presence of groundwater. Groundwater was not observed during or immediately upon completion of our boreholes. Due to the low permeability of the natural clay soils throughout the area, a relatively long period of time may be necessary for a groundwater level to develop and stabilize in a borehole in these materials. Long-term observations in piezometers or observation wells sealed from the influence of surface water are often required to define groundwater levels in materials of this type. Based on our experience in the Moorhead area, it is likely that our borings terminated above the groundwater level.

Groundwater levels during construction or at other times in the life of the roadway may be higher or lower than at the time of our field work. The possibility of groundwater fluctuations should be considered when developing the design and construction plans for the project

GENERAL COMMENTS

The information presented in this exploration summary report is based upon the data obtained from the borings performed at the indicated locations and from other information discussed in this report. Terracon was not asked to provide geotechnical engineering recommendations for this project. Any interpretation or design performed by others based on this data is done at their risk. It should be understood that there may be possible variations between boring locations and changes due to modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction.

The scope of services for this project does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria, etc.) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

This exploration summary report has been prepared for the exclusive use of our client and has been prepared in accordance with generally accepted geotechnical engineering practices. No warranties, either express or implied, are intended or made. Analysis, design, and associated recommendations as well as site safety, excavation support, and dewatering requirements are the responsibility of others.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES

Field Exploration

Nine (9) soil borings were completed on October 24, 2019. In addition to the borings, we also obtained twelve (12) pavement core samples.

Boring Layout and Elevations: Terracon laid out the borehole and core locations in the field using a site map provided by the City of Moorhead Engineering Department. Coordinates were obtained with a handheld GPS unit (estimated horizontal accuracy of about ±20 feet). Elevations at the borehole and core locations were not obtained. The locations should be considered accurate only to the degree implied by the means and methods used to define them. If elevations and a more precise boring layout are desired, we recommend the borehole and core locations be surveyed following completion of fieldwork.

Subsurface Exploration Procedures: The test borings were completed with a Geoprobe track-mounted drill rig using 3¼-inch I.D. hollow stem auger to advance the boreholes. Soil samples were obtained using the split-barrel sampling procedure. In the split-barrel sampling procedure the number of blows required to advance a standard 2-inch O.D., 1-3/8-inch I.D. split-barrel sampler from 6 to 18 inches of penetration by means of a 140-pound hammer with a free fall of 30 inches is used to obtain the Standard Penetration Test (SPT) or N-value. The SPT is used to estimate the in-situ relative density of cohesionless soils and the consistency of cohesive soils.

The samples were tagged for identification, sealed to reduce moisture loss, and taken to our laboratory for further examination, testing, and classification. Information provided on the boring logs attached to this report includes soil descriptions, consistency evaluations, boring depths, sampling intervals, and groundwater conditions. The borehole and core locations were backfilled, then repaired with cold mix asphalt patch prior to the exploration team's departure from the site.

A field log of each boring was prepared by the exploration team. These logs included visual classifications of the materials encountered during drilling as well as the driller's interpretation of the subsurface conditions between samples. Final boring logs included with this report represent the engineer's interpretation of the field logs and include modifications based on laboratory observation and tests of the samples.

Laboratory Testing

Samples retrieved during the field exploration were returned to the laboratory for observation by the project geotechnical engineer and were classified in general accordance with the Unified Soil Classification System. All classification was by visual-manual procedures.

SITE LOCATION AND EXPLORATION PLANS

Contents:

Note: All attachments are one page unless noted above.

SITE LOCATION

2020 CIP Project ■ Moorhead, Minnesota
October 30, 2019 ■ Terracon Project No. M1195057

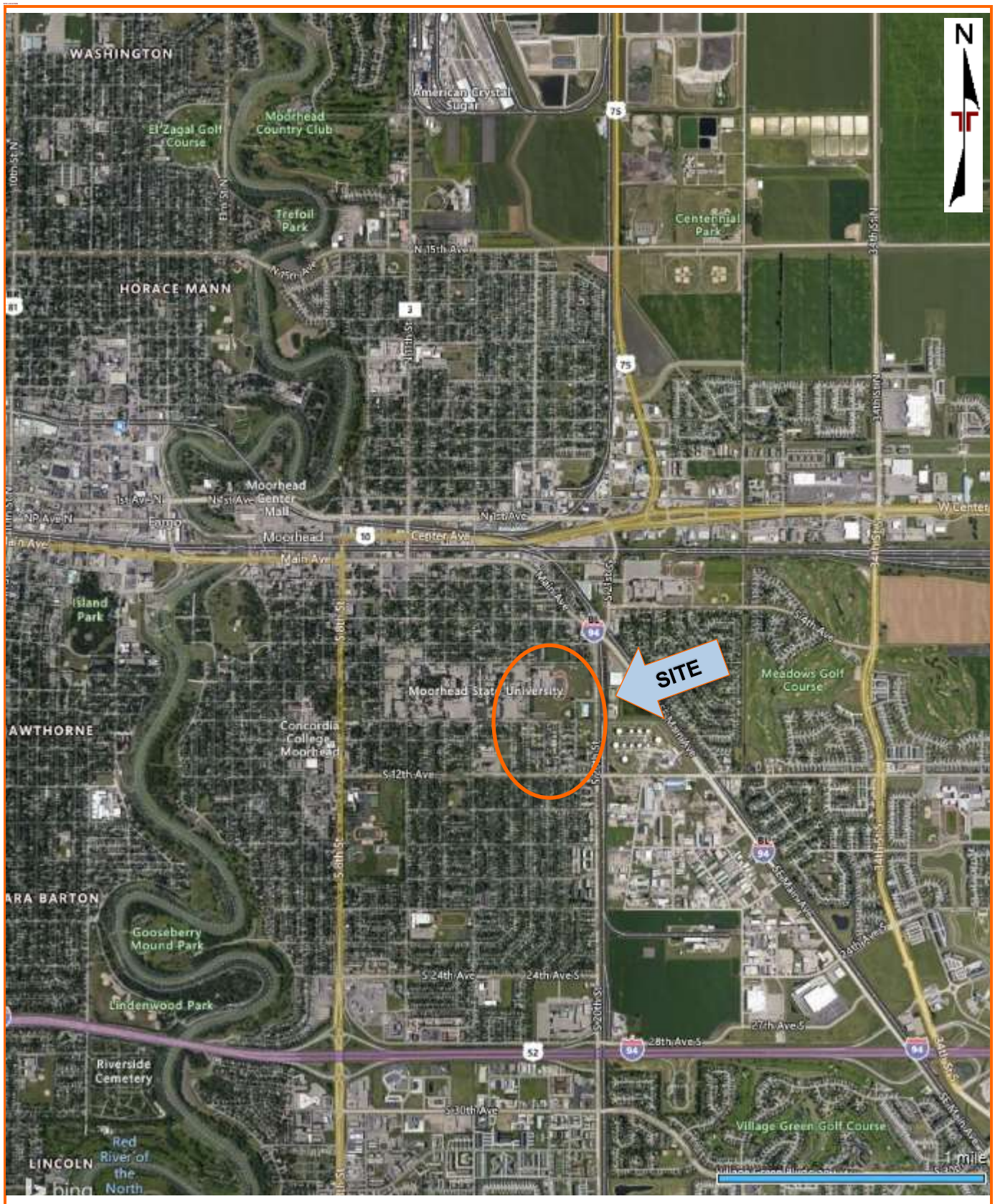


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

EXPLORATION PLAN

2020 CIP Project ■ Moorhead, Minnesota
October 30, 2019 ■ Terracon Project No. M1195057

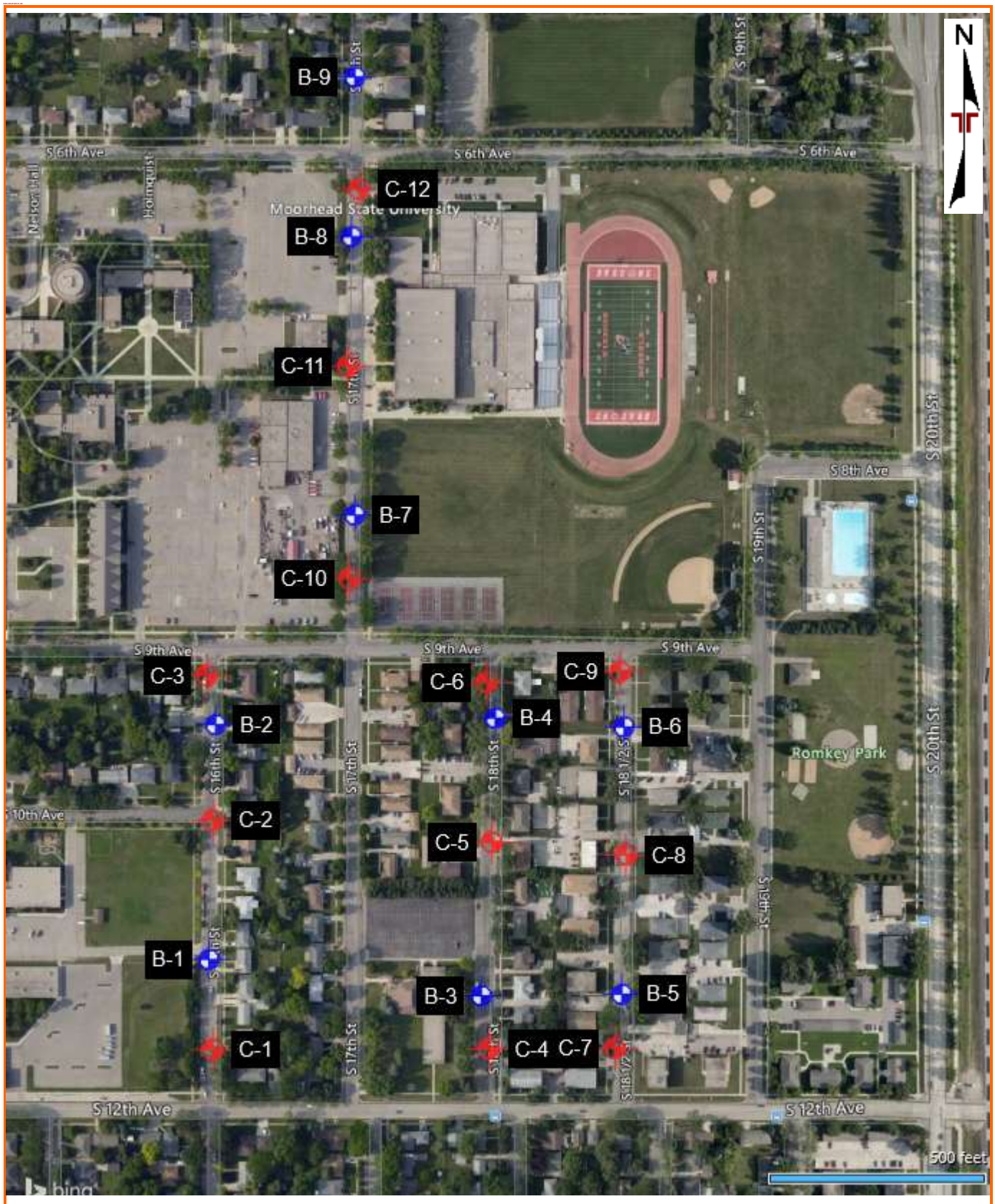


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

EXPLORATION RESULTS

Contents:

Boring Logs (B-1 through B-9)
Core Photos

Note: All attachments are one page unless noted above.

BORING LOG NO. B-1

PROJECT: 2020 CIP Project

CLIENT: Moorhead City Engineers
Moorhead, MN

SITE: Area 20-5
Moorhead, MN

LOCATION See Exploration Plan

Latitude: 46.8632° Longitude: -96.7545°

GRAPHIC LOG	DEPTH		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
	0.3	**4" ASPHALT PAVEMENT**				
	0.8	**FILL - 5.5" POORLY GRADED SAND WITH SILT AND GRAVEL**, brown				
	1.5	**FILL - FAT CLAY MIXTURE**, trace gravel, gray, brown, and black				2-2-2 N=4
	3.3	**FAT CLAY (CH)**, grayish brown, mottled, medium stiff, contains lenses and laminations of silt				2-3-5 N=8
		Boring Terminated at 3.3 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3¼" Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings and capped with asphalt patch

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Elevations not obtained

Notes:

WATER LEVEL OBSERVATIONS

Not measurable before auger removal.

Terracon
860 9th St. NE, Unit K
West Fargo, ND

Boring Started: 10-24-2019 | Boring Completed: 10-24-2019

Drill Rig: Geoprobe | Driller: MR

Project No.: M1195057

BORING LOG NO. B-2

PROJECT: 2020 CIP Project

CLIENT: Moorhead City Engineers
Moorhead, MN

SITE: Area 20-5
Moorhead, MN

LOCATION See Exploration Plan

Latitude: 46.8647° Longitude: -96.7546°

DEPTH	GRAPHIC LOG		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
0.2		**2" ASPHALT PAVEMENT**				
1.1		**FILL - 11" POORLY GRADED SAND WITH SILT AND GRAVEL** , brown				2-1-1 N=2
1.5		**FILL - FAT CLAY MIXTURE** , trace gravel, gray, brown, and black				
3.2		**FAT CLAY (CH)**, grayish brown, mottled, soft to stiff, contains lenses and laminations of silt				2-4-5 N=9
		Boring Terminated at 3.2 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3¼" Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings and capped with asphalt patch

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Elevations not obtained

Notes:

WATER LEVEL OBSERVATIONS

Not measurable before auger removal.

Terracon
860 9th St. NE, Unit K
West Fargo, ND

Boring Started: 10-24-2019 | Boring Completed: 10-24-2019

Drill Rig: Geoprobe | Driller: MR

Project No.: M1195057

BORING LOG NO. B-3

PROJECT: 2020 CIP Project

CLIENT: Moorhead City Engineers
Moorhead, MN

SITE: Area 20-5
Moorhead, MN

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 46.8629° Longitude: -96.752°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
	DEPTH				
	4" ASPHALT PAVEMENT				
	0.3				
	FILL - 4" POORLY GRADED SAND WITH SILT AND GRAVEL , brown				
	0.7				
	FAT CLAY (CH), grayish brown, mottled, medium stiff, contains lenses and laminations of silt				1-3-3 N=6
					4-3-5 N=8
	3.3				
	Boring Terminated at 3.3 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3¼" Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings and capped with asphalt patch

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Elevations not obtained

Notes:

WATER LEVEL OBSERVATIONS

Not measurable before auger removal.

Terracon
860 9th St. NE, Unit K
West Fargo, ND

Boring Started: 10-24-2019 | Boring Completed: 10-24-2019

Drill Rig: Geoprobe | Driller: MR

Project No.: M1195057

BORING LOG NO. B-4

PROJECT: 2020 CIP Project

CLIENT: Moorhead City Engineers
Moorhead, MN

SITE: Area 20-5
Moorhead, MN

LOCATION See Exploration Plan

Latitude: 46.8647° Longitude: -96.7519°

GRAPHIC LOG	DEPTH		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
	0.4	**5" ASPHALT PAVEMENT**				
	0.8	**FILL - 4" POORLY GRADED SAND WITH SILT AND GRAVEL** , brown				
	1.5	**FILL - FAT CLAY MIXTURE** , trace gravel, gray, brown, and black				1-2-2 N=4
	3.4	**FAT CLAY (CH)**, grayish brown, mottled, medium stiff to stiff, contains lenses and laminations of silt				3-4-5 N=9
		Boring Terminated at 3.4 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3¼" Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings and capped with asphalt patch

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Elevations not obtained

Notes:

WATER LEVEL OBSERVATIONS

Not measurable before auger removal.

Terracon
860 9th St. NE, Unit K
West Fargo, ND

Boring Started: 10-24-2019 | Boring Completed: 10-24-2019

Drill Rig: Geoprobe | Driller: MR

Project No.: M1195057

BORING LOG NO. B-5

PROJECT: 2020 CIP Project

CLIENT: Moorhead City Engineers
Moorhead, MN

SITE: Area 20-5
Moorhead, MN

LOCATION See Exploration Plan

Latitude: 46.8629° Longitude: -96.7507°

GRAPHIC LOG	DEPTH		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
	0.4	**5" ASPHALT PAVEMENT**				
	1.1	**FILL - 8" POORLY GRADED SAND WITH SILT AND GRAVEL**, brown				2-2-4 N=6
	3.4	**FILL - FAT CLAY MIXTURE**, trace gravel, gray, brown, and black				4-4-6 N=10
		Boring Terminated at 3.4 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3¼" Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings and capped with asphalt patch

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Elevations not obtained

Notes:

WATER LEVEL OBSERVATIONS

Not measurable before auger removal.

Terracon
860 9th St. NE, Unit K
West Fargo, ND

Boring Started: 10-24-2019 | Boring Completed: 10-24-2019

Drill Rig: Geoprobe | Driller: MR

Project No.: M1195057

BORING LOG NO. B-6

PROJECT: 2020 CIP Project

CLIENT: Moorhead City Engineers
Moorhead, MN

SITE: Area 20-5
Moorhead, MN

LOCATION See Exploration Plan

Latitude: 46.8646° Longitude: -96.7507°

DEPTH	GRAPHIC LOG		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
0.5		**6" ASPHALT PAVEMENT**				
1.0		**FILL - 6" POORLY GRADED SAND WITH SILT AND GRAVEL** , brown				
2.0		**FAT CLAY (CH)**, grayish brown, medium stiff				2-2-3 N=5
3.5		**FAT CLAY (CH)**, grayish brown, mottled, medium stiff, contains lenses and laminations of silt				2-4-4 N=8
		Boring Terminated at 3.5 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3¼" Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings and capped with asphalt patch

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Elevations not obtained

Notes:

WATER LEVEL OBSERVATIONS

Not measurable before auger removal.

Terracon
860 9th St. NE, Unit K
West Fargo, ND

Boring Started: 10-24-2019 | Boring Completed: 10-24-2019

Drill Rig: Geoprobe | Driller: MR

Project No.: M1195057

BORING LOG NO. B-7

PROJECT: 2020 CIP Project

CLIENT: Moorhead City Engineers
Moorhead, MN

SITE: Area 20-5
Moorhead, MN

LOCATION See Exploration Plan

Latitude: 46.866° Longitude: -96.7532°

GRAPHIC LOG	DEPTH		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
	0.2	**2" ASPHALT PAVEMENT**				
	1.3	**FILL - 13" POORLY GRADED SAND WITH SILT AND GRAVEL**, brown				1-2-3 N=5
	3.2	**FILL - FAT CLAY MIXTURE**, trace gravel, gray, brown, and black				3-4-5 N=9
		Boring Terminated at 3.2 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3¼" Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings and capped with asphalt patch

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Elevations not obtained

Notes:

WATER LEVEL OBSERVATIONS

Not measurable before auger removal.

Terracon
860 9th St. NE, Unit K
West Fargo, ND

Boring Started: 10-24-2019 | Boring Completed: 10-24-2019

Drill Rig: Geoprobe | Driller: MR

Project No.: M1195057

BORING LOG NO. B-8

PROJECT: 2020 CIP Project

CLIENT: Moorhead City Engineers
Moorhead, MN

SITE: Area 20-5
Moorhead, MN

LOCATION See Exploration Plan

Latitude: 46.8677° Longitude: -96.7532°

GRAPHIC LOG	DEPTH		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
	0.5	**6.5" ASPHALT PAVEMENT**				
	1.1	**FILL - 6.5" POORLY GRADED SAND WITH SILT AND GRAVEL**, brown				
	1.8	**FILL - FAT CLAY MIXTURE**, trace gravel, gray, brown, and black				3-3-4 N=7
	3.5	**FAT CLAY (CH)**, grayish brown, mottled, stiff, contains lenses and laminations of silt				3-3-6 N=9
		Boring Terminated at 3.5 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3¼" Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings and capped with asphalt patch

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Elevations not obtained

Notes:

WATER LEVEL OBSERVATIONS

Not measurable before auger removal.

Terracon
860 9th St. NE, Unit K
West Fargo, ND

Boring Started: 10-24-2019 | Boring Completed: 10-24-2019

Drill Rig: Geoprobe | Driller: MR

Project No.: M1195057

BORING LOG NO. B-9

PROJECT: 2020 CIP Project

CLIENT: Moorhead City Engineers
Moorhead, MN

SITE: Area 20-5
Moorhead, MN

LOCATION See Exploration Plan

Latitude: 46.8687° Longitude: -96.7532°

GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
	4" ASPHALT PAVEMENT				
	0.3				
	FILL - 10" POORLY GRADED SAND WITH SILT AND GRAVEL , brown				2-3-3 N=6
	1.2				
	FAT CLAY (CH), grayish brown, mottled, medium stiff, contains lenses and laminations of silt				3-3-4 N=7
	3.3				
	Boring Terminated at 3.3 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3¼" Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings and capped with asphalt patch

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Elevations not obtained

Notes:

WATER LEVEL OBSERVATIONS

Not measurable before auger removal.

Terracon
860 9th St. NE, Unit K
West Fargo, ND

Boring Started: 10-24-2019 | Boring Completed: 10-24-2019

Drill Rig: Geoprobe | Driller: MR

Project No.: M1195057

CORE PHOTOS

SUPPORTING INFORMATION

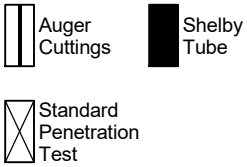
Contents:

Note: All attachments are one page unless noted above.

GENERAL NOTES
DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

Terracon GeoReport

SAMPLING



WATER LEVEL

Water Initially Encountered

Water Level After a Specified Period of Time

Water Level After a Specified Period of Time

Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.

FIELD TESTS

N	**Standard Penetration Test Resistance (Blows/Ft.)**
(HP)	**Hand Penetrometer**
(T)	**Torvane**
(DCP)	**Dynamic Cone Penetrometer**
UC	**Unconfined Compressive Strength**
(PID)	**Photo-Ionization Detector**
(OVA)	**Organic Vapor Analyzer**

DESCRIPTIVE SOIL CLASSIFICATION

Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

LOCATION AND ELEVATION NOTES

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

STRENGTH TERMS

RELATIVE DENSITY OF COARSE-GRAINED SOILS
(More than 50% retained on No. 200 sieve.)
Density determined by Standard Penetration Resistance

Descriptive Term (Density)	Standard Penetration or N-Value Blows/Ft.
Very Loose	0 - 3
Loose	4 - 9
Medium Dense	10 - 29
Dense	30 - 50
Very Dense	> 50

CONSISTENCY OF FINE-GRAINED SOILS
(50% or more passing the No. 200 sieve.)
Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance

Descriptive Term (Consistency)	Unconfined Compressive Strength Qu, (psf)	Standard Penetration or N-Value Blows/Ft.
Very Soft	less than 500	0 - 1
Soft	500 to 1,000	2 - 4
Medium Stiff	1,000 to 2,000	4 - 8
Stiff	2,000 to 4,000	8 - 15
Very Stiff	4,000 to 8,000	15 - 30
Hard	> 8,000	> 30

RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	<15
With	15-29
Modifier	>30

RELATIVE PROPORTIONS OF FINES

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	<5
With	5-12
Modifier	>12

GRAIN SIZE TERMINOLOGY

Major Component of Sample	Particle Size
Boulders	Over 12 in. (300 mm)
Cobbles	12 in. to 3 in. (300mm to 75mm)
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm
Silt or Clay	Passing #200 sieve (0.075mm)

PLASTICITY DESCRIPTION

Term	Plasticity Index
Non-plastic	0
Low	1 - 10
Medium	11 - 30
High	> 30

UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]					Soil Classification	
					Group Symbol	Group Name [B]
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	**Gravels:** More than 50% of coarse fraction retained on No. 4 sieve	**Clean Gravels:** Less than 5% fines [C]	$Cu \geq 4$ and $1 \leq Cc \leq 3$ [E]		GW	Well-graded gravel [F]
			$Cu < 4$ and/or [Cc<1 or Cc>3.0] [E]		GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH		GM	Silty gravel [F, G, H]
			Fines classify as CL or CH		GC	Clayey gravel [F, G, H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	**Clean Sands:** Less than 5% fines [D]	$Cu \geq 6$ and $1 \leq Cc \leq 3$ [E]		SW	Well-graded sand [I]
			$Cu < 6$ and/or [Cc<1 or Cc>3.0] [E]		SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH		SM	Silty sand [G, H, I]
			Fines classify as CL or CH		SC	Clayey sand [G, H, I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	**Silts and Clays:** Liquid limit less than 50	**Inorganic:**	PI > 7 and plots on or above "A"		CL	Lean clay [K, L, M]
			PI < 4 or plots below "A" line [J]		ML	Silt [K, L, M]
		Organic:	Liquid limit - oven dried	< 0.75	OL	Organic clay [K, L, M, N]
			Liquid limit - not dried			Organic silt [K, L, M, O]
	Silts and Clays: Liquid limit 50 or more	**Inorganic:**	PI plots on or above "A" line		CH	Fat clay [K, L, M]
			PI plots below "A" line		MH	Elastic Silt [K, L, M]
		Organic:	Liquid limit - oven dried	< 0.75	OH	Organic clay [K, L, M, P]
			Liquid limit - not dried			Organic silt [K, L, M, Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor				PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve.

[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.

[E] $Cu = D_{60}/D_{10}$ $\quad Cc = \dfrac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains ≥ 15% sand, add "with sand" to group name.

[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

[H] If fines are organic, add "with organic fines" to group name.

[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.

[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.

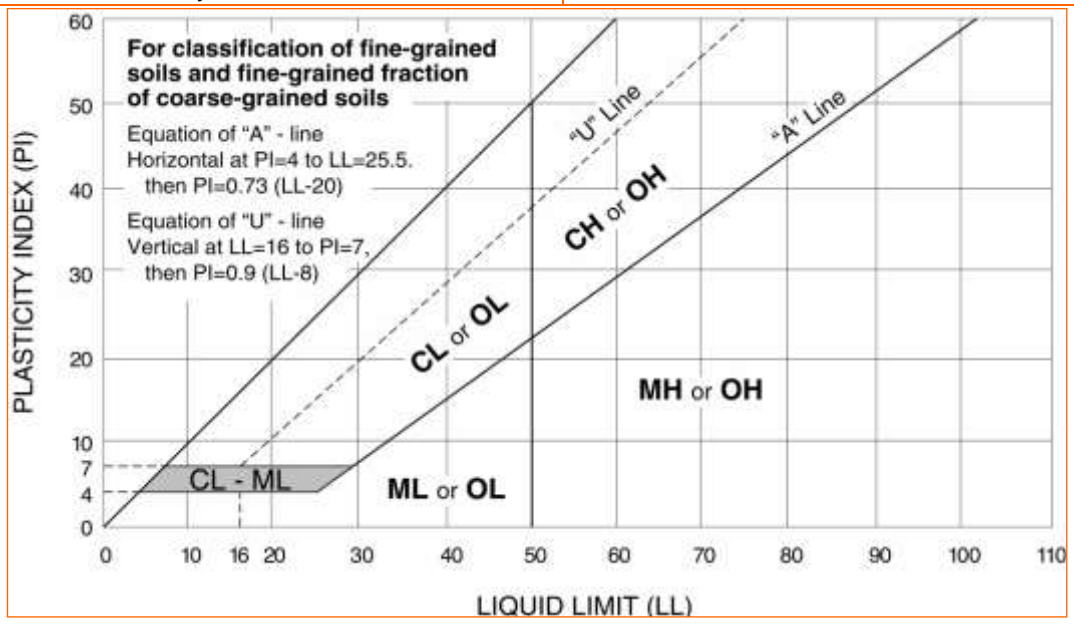
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

[N] PI ≥ 4 and plots on or above "A" line.

[O] PI < 4 or plots below "A" line.

[P] PI plots on or above "A" line.

[Q] PI plots below "A" line.



!! CAUTION !!

UTILITIES IN THE AREA, BEFORE CONSTRUCTION
UTILIZE 1 CALL **1-800-252-1166**

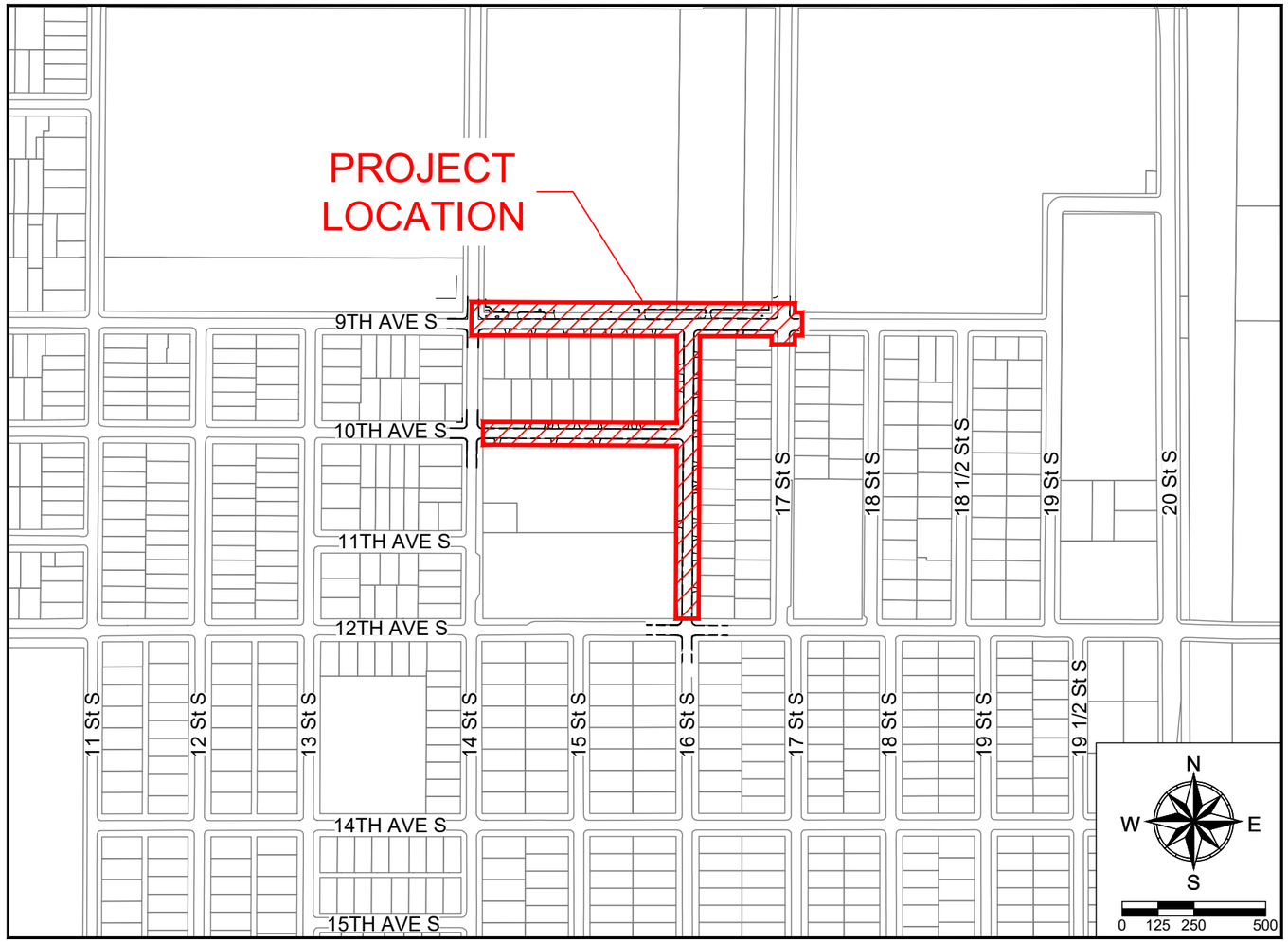
THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL " C ". THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

PLAN SYMBOLS

- RIGHT-OF-WAY LINE ROAD
- RIGHT-OF-WAY LINE DRAINAGE DITCH
- SECTION LINE
- QUARTER LINE
- PROPERTY LINE
- EASEMENT LINE
- RAILROAD
- FENCE
- SANITARY SEWER - EXISTING
- SANITARY SEWER - PROPOSED
- SANITARY SEWER SERVICE - EXISTING
- SANITARY SEWER SERVICE - PROPOSED
- SANITARY SEWER FORCE MAIN
- STORM SEWER - EXISTING
- STORM SEWER - PROPOSED
- WATER - EXISTING
- WATER - PROPOSED
- WATER SERVICE - EXISTING
- WATER SERVICE - PROPOSED
- TELEPHONE
- TELEVISION
- FIBER OPTIC
- OVERHEAD POWER
- UNDERGROUND POWER
- PETROLEUM PIPELINE
- GAS
- CURB & GUTTER - EXISTING
- CURB & GUTTER - PROPOSED
- SANITARY MANHOLE
- STORM MANHOLE
- EXISTING MANHOLE
- HYDRANT
- EXISTING HYDRANT
- GATE VALVE
- EXISTING GATE VALVE
- CLEAN OUT
- CURB STOP
- PROPOSED INLET
- EXISTING INLET
- SIGN - STREET NAME
- SIGN - REGULATORY / WARNING
- POWER POLE or
- STREET LIGHT or
- ELECTRICAL TRANSFORMER or
- UTILITY PEDESTAL or
- UTILITY HANDHOLD / VAULT or
- DECIDUOUS TREE or
- CONIFEROUS TREE or
- BUSH / HEDGE or

CITY OF MOORHEAD

9TH AVE S, 10TH AVE S , AND 16TH ST S
CURB & GUTTER, ASPHALT PAVING
ENG. NO. 25-A2-01



SHEET INDEX

SPECIFICATION REFERENCE

THE CURRENT EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN, AS MODIFIED BY THE CITY OF MOORHEAD SPECIFICATIONS AND SPECIAL PROVISIONS.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE CURRENT VERSION OF THE MMUTCD, AND TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS (FIELD MANUAL).

PROJECT LOCATION

PART OF SECTION	SW 1/4 OF THE SW 1/4
SECTION No.	9
TOWNSHIP	139
RANGE	48W

SURVEY CONTROL

HORIZONTAL: CLAY COUNTY COORDINATE SYSTEM NAD83(1996)
VERTICAL (18TH ST. S.): NAVD88 (1996 ADJ.)
VERTICAL (14TH AVE. S. & 13TH ST. S.): NAVD88 (1996 ADJ.)
CP 1 NORTHING: 185736.21, EASTING:485593.99, ELEV. 908.44
CP 2 NORTHING: 185789.66, EASTING:485938.35, ELEV. 907.33

--	A2-01-2025	25-A2-01
SAP No.	LEGAL No.	ENG. No.
EMH	MJA	JAS
DRAWN BY	CHECKED BY	APPROVED BY

MOORHEAD MINNESOTA Engineering

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.

03/07/2025
Date

26225
License No.

JAMES A. SCHULZ
Name - Project Engineer

Signature - Project Engineer

COVER SHEET

9TH AVE S, 10TH AVE S , AND 16TH ST S
CURB & GUTTER, ASPHALT PAVING

SHEET 1 OF 45

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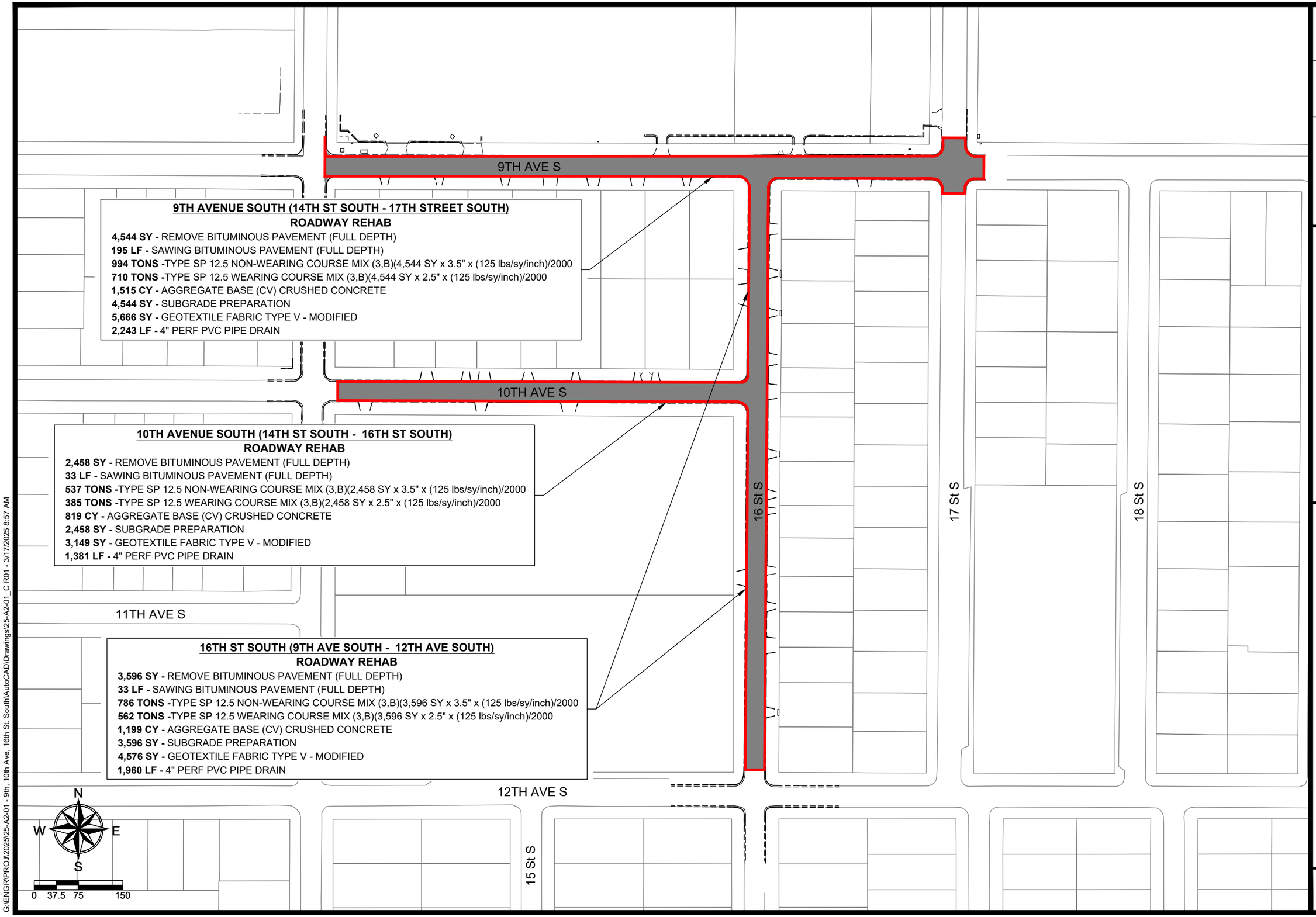

9TH AVENUE SOUTH (14TH ST SOUTH - 17TH STREET SOUTH)
ROADWAY REHAB

4,544 SY - REMOVE BITUMINOUS PAVEMENT (FULL DEPTH)
195 LF - SAWING BITUMINOUS PAVEMENT (FULL DEPTH)
994 TONS -TYPE SP 12.5 NON-WEARING COURSE MIX (3,B)(4,544 SY x 3.5" x (125 lbs/sy/inch)/2000
710 TONS -TYPE SP 12.5 WEARING COURSE MIX (3,B)(4,544 SY x 2.5" x (125 lbs/sy/inch)/2000
1,515 CY - AGGREGATE BASE (CV) CRUSHED CONCRETE
4,544 SY - SUBGRADE PREPARATION
5,666 SY - GEOTEXTILE FABRIC TYPE V - MODIFIED
2,243 LF - 4" PERF PVC PIPE DRAIN

10TH AVENUE SOUTH (14TH ST SOUTH - 16TH ST SOUTH)
ROADWAY REHAB

2,458 SY - REMOVE BITUMINOUS PAVEMENT (FULL DEPTH)
33 LF - SAWING BITUMINOUS PAVEMENT (FULL DEPTH)
537 TONS -TYPE SP 12.5 NON-WEARING COURSE MIX (3,B)(2,458 SY x 3.5" x (125 lbs/sy/inch)/2000
385 TONS -TYPE SP 12.5 WEARING COURSE MIX (3,B)(2,458 SY x 2.5" x (125 lbs/sy/inch)/2000
819 CY - AGGREGATE BASE (CV) CRUSHED CONCRETE
2,458 SY - SUBGRADE PREPARATION
3,149 SY - GEOTEXTILE FABRIC TYPE V - MODIFIED
1,381 LF - 4" PERF PVC PIPE DRAIN

16TH ST SOUTH (9TH AVE SOUTH - 12TH AVE SOUTH)
ROADWAY REHAB

3,596 SY - REMOVE BITUMINOUS PAVEMENT (FULL DEPTH)
33 LF - SAWING BITUMINOUS PAVEMENT (FULL DEPTH)
786 TONS -TYPE SP 12.5 NON-WEARING COURSE MIX (3,B)(3,596 SY x 3.5" x (125 lbs/sy/inch)/2000
562 TONS -TYPE SP 12.5 WEARING COURSE MIX (3,B)(3,596 SY x 2.5" x (125 lbs/sy/inch)/2000
1,199 CY - AGGREGATE BASE (CV) CRUSHED CONCRETE
3,596 SY - SUBGRADE PREPARATION
4,576 SY - GEOTEXTILE FABRIC TYPE V - MODIFIED
1,960 LF - 4" PERF PVC PIPE DRAIN

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MOORHEAD MINNESOTA Engineering

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Signature - Project Engineer

03/07/2025
Date

JAMES A. SCHULZ
Name - Project Engineer

26225
License No.

GENERAL LAYOUT

9TH AVE S, 10TH AVE S , AND 16TH ST S

CURB & GUTTER, ASPHALT PAVING

SHEET 2 OF 45

CITY APPROVED HAUL ROUTES:

16th St S to 12th Avenue S

12th Avenue South to 14th St S

14th St S to 20th Avenue S

20th Avenue South (20th Street South or 8th St S**)**

20th Street South (Interstate 94 to 15th Avenue North)

8th Street South (Interstate 94 to Center Avenue North)

COUNTY, STATE AND FEDERAL ROADS:

(It is the responsibility of the Contractor to obtain permission from the County and the State for the use of these roads)

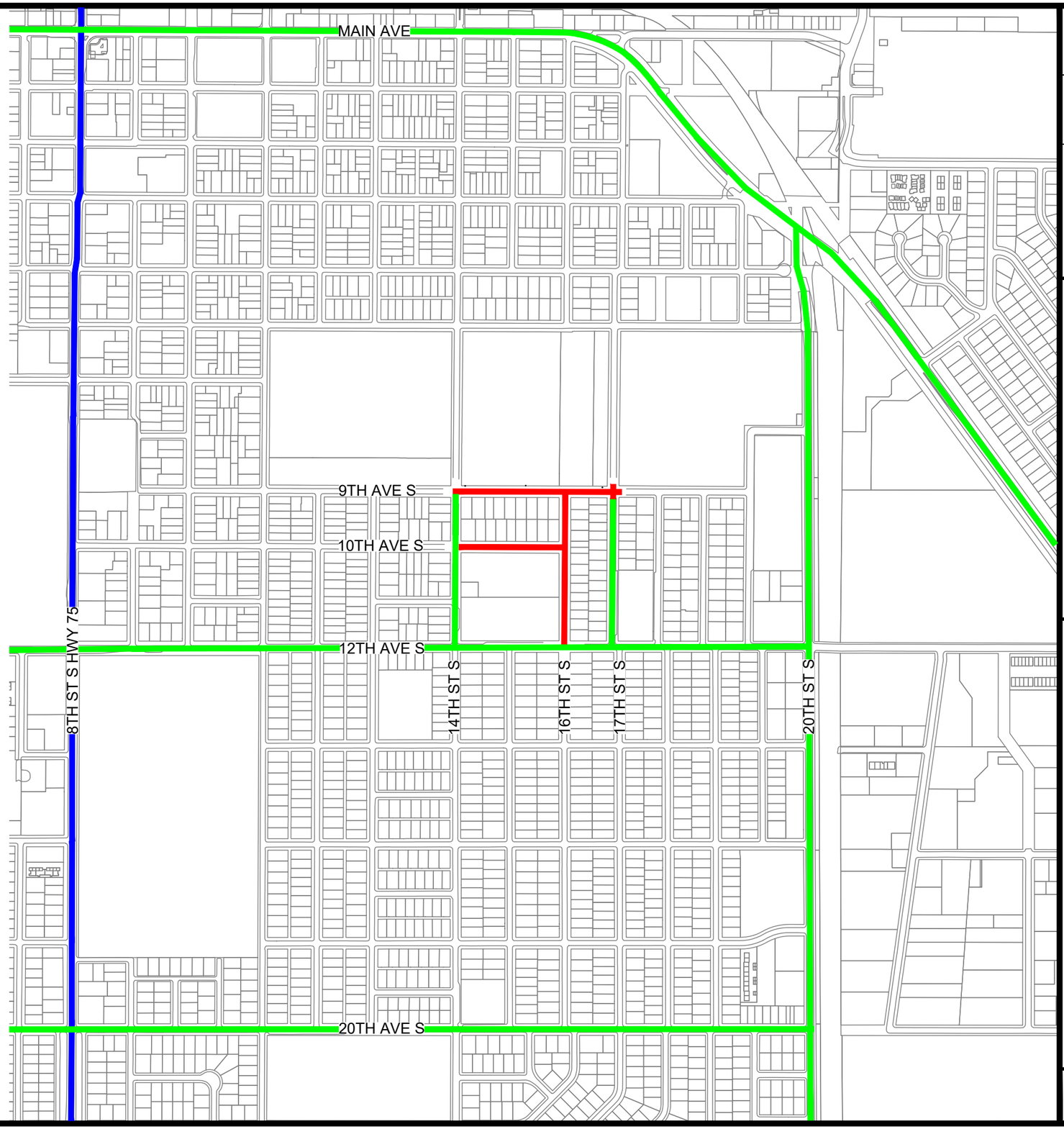
INTERSTATE 94
TH 75
TH 10

CONSTRUCTION AREA:

9th Avenue South (14th ST S to 17th ST S)

10th Avenue South (14th ST S to 16th ST S)

16th ST S (9th Ave S to 12th Ave S)



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HAUL ROUTE

9TH AVE S, 10TH AVE S , AND 16TH ST S

CURB & GUTTER, ASPHALT PAVING

SHEET 3 OF 45

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Traffic Control & Phasing

NOTES:

1. LOCATIONS OF SIGNS AND BARRICADES MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.

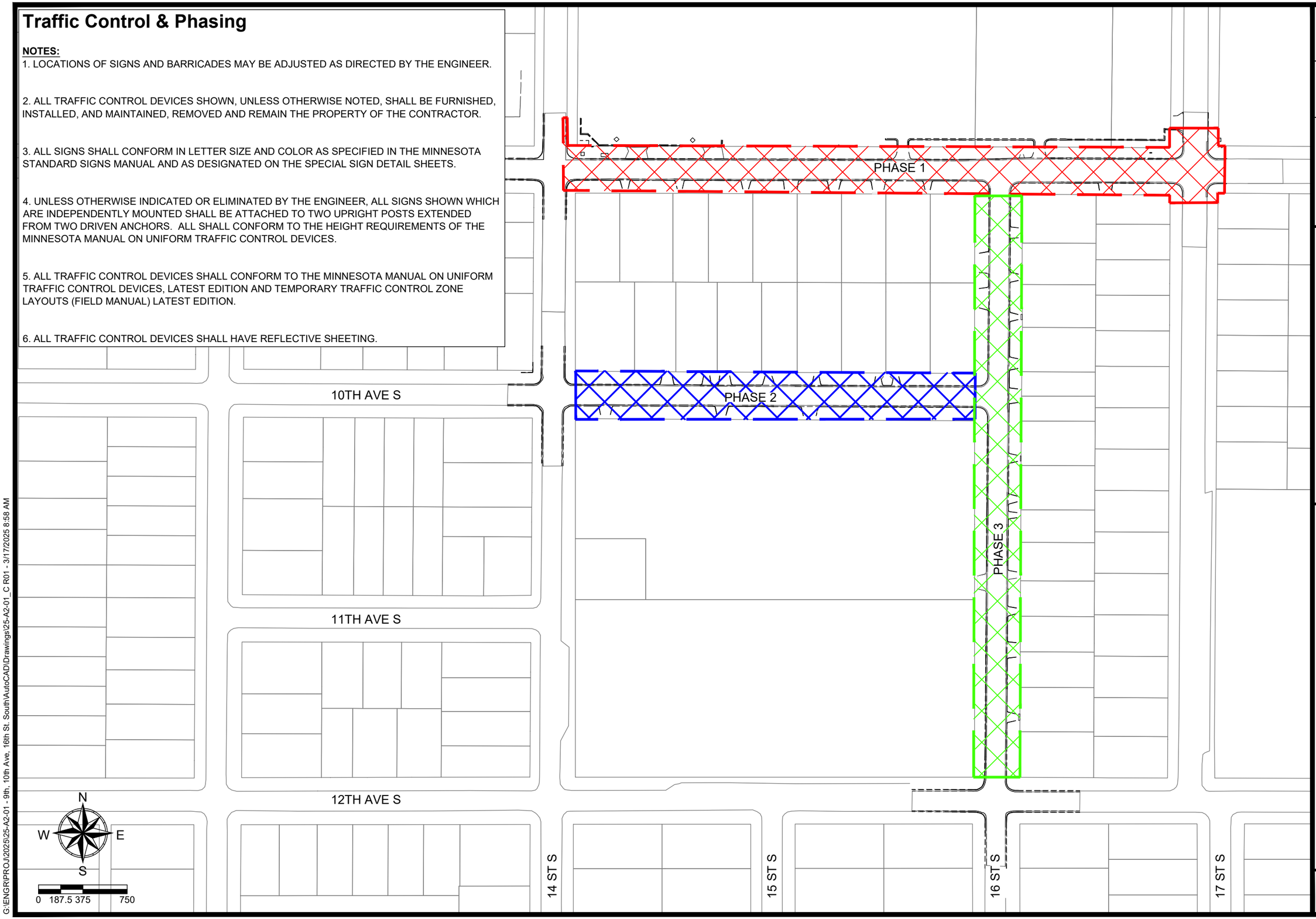
2. ALL TRAFFIC CONTROL DEVICES SHOWN, UNLESS OTHERWISE NOTED, SHALL BE FURNISHED, INSTALLED, AND MAINTAINED, REMOVED AND REMAIN THE PROPERTY OF THE CONTRACTOR.

3. ALL SIGNS SHALL CONFORM IN LETTER SIZE AND COLOR AS SPECIFIED IN THE MINNESOTA STANDARD SIGNS MANUAL AND AS DESIGNATED ON THE SPECIAL SIGN DETAIL SHEETS.

4. UNLESS OTHERWISE INDICATED OR ELIMINATED BY THE ENGINEER, ALL SIGNS SHOWN WHICH ARE INDEPENDENTLY MOUNTED SHALL BE ATTACHED TO TWO UPRIGHT POSTS EXTENDED FROM TWO DRIVEN ANCHORS. ALL SHALL CONFORM TO THE HEIGHT REQUIREMENTS OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

5. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION AND TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS (FIELD MANUAL) LATEST EDITION.

6. ALL TRAFFIC CONTROL DEVICES SHALL HAVE REFLECTIVE SHEETING.



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JAMES A. SCHULZ
Name - Project Engineer

Signature - Project Engineer

TRAFFIC CONTROL & PHASING

9TH AVE S, 10TH AVE S , AND 16TH ST S

CURB & GUTTER, ASPHALT PAVING

SHEET 4 OF 45

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PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF STREET REHABILITATION AND DRAINAGE IMPROVEMENTS OF VARIOUS CITY STREETS WITHIN THE PROJECT AREA. INCLUDING:

- 9TH AVE S FROM 14TH ST S TO 17TH ST S (REHABILITATION)
- 10TH AVE S FROM 14TH ST S TO 16TH ST S (REHABILITATION)
- 16TH ST S FROM 9TH AVE S TO 12TH AVE S (REHABILITATION)

REHABILITATION MEANS THAT THE EXISTING ROAD SURFACE MATERIAL WILL BE REMOVED IN IT'S ENTIRETY AND REPLACED WITH THE FOLLOWING:

- 9TH AVE S (14TH ST S TO 17TH ST S) - GEOTEXTILE FABRIC, 6 INCHES OF GRAVEL BASE AND 6 INCHES OF NEW BITUMINOUS PAVEMENT, CURB AND GUTTER IN SPECIFIED AREAS.
- 10TH AVE S (14TH ST S TO 16TH ST S) - GEOTEXTILE FABRIC, 6 INCHES OF GRAVEL BASE AND 6 INCHES OF NEW BITUMINOUS PAVEMENT, CURB AND GUTTER IN SPECIFIED AREAS.
- 16TH ST S (9TH AVE S TO 12TH AVE S) - GEOTEXTILE FABRIC, 6 INCHES OF GRAVEL BASE AND 6 INCHES OF NEW BITUMINOUS PAVEMENT, CURB AND GUTTER IN SPECIFIED AREAS.

THE EXISTING CURB AND GUTTER IN ALL AREAS WILL BE PRESERVED, EXCEPT FOR RELATIVELY MINOR SEGMENTS THAT WILL BE REMOVED AND REPLACED AT THE DISCRETION OF THE CITY.

SITE CONDITIONS: THE SITE CONSISTS OF MOSTLY DEVELOPED RESIDENTIAL PROPERTY.

TOTAL AREA DISTURBED = 3 ACRES

EXISTING IMPERVIOUS AREA = 2.5 ACRES

NEW IMPERVIOUS AREA = 0 ACRES

POST CONSTRUCTION IMPERVIOUS AREA = 2.5 ACRES

PROJECT CONTACTS

PROJECT ENGINEER	STORMWATER	MPCA	STATE DUTY OFFICER
CLAY LEXEN, P.E.	ANDREA CRABTREE NAYES	BRIAN GREEN	MPCA
CITY OF MOORHEAD	CITY OF MOORHEAD	MPCA DETROIT LAKES	(800) 422-0798
(715) 928-0347	(218)-299-5387	(507) 206-2610	

CONTRACTOR'S RESPONSIBILITIES

THE CONSTRUCTION SITE EROSION CONTROL (EC) SUPERVISOR FOR THE PROJECT WILL BE PROVIDED BY THE CONTRACTOR DURING CONSTRUCTION ACTIVITIES. THE EC SUPERVISOR WILL BE IDENTIFIED BY NAME AT THE PRECONSTRUCTION CONFERENCE AND A CONTACT CELL PHONE NUMBER WILL BE MADE AVAILABLE. ISSUES THAT ARISE DURING CONSTRUCTION THAT IMPACT THE "WATERS OF THE STATE" WILL BE ADDRESSED AND THE EC SUPERVISOR WILL NOTIFY THE PROPER REGULATORY OFFICIAL AS LISTED ABOVE.

IT WILL BE THE RESPONSIBILITY OF THE EC SUPERVISOR TO IMPLEMENT THE SWPPP PLAN DURING CONSTRUCTION AND MAINTAIN A QUALITY CONTROL PROGRAM. IN ADDITION, THE EC SUPERVISOR WILL 1) OVERSEE MAINTENANCE PRACTICES IDENTIFIED AS BMPS IN THE SWPPP; 2) IMPLEMENT AND OVERSEE SWPPP AND BMP TRAINING FOR ALL PARTIES THAT WILL BE CONSTRUCTING THE PROJECT; 3) CONDUCT AND PROVIDE INSPECTIONS AS NECESSARY; 4) IDENTIFY OTHER POTENTIAL POLLUTANT SOURCES AND MAKE SURE THEY ARE ADDED TO THE PLAN; 5) IDENTIFY ANY DEFICIENCIES IN THE SWPPP AND MAKE SURE THEY ARE CORRECT; 6) ENSURE THAT ANY CHANGES IN CONSTRUCTION PLANS ARE ADDRESSED IN THE SWPPP; AND 7) TO AID IN THE IMPLEMENTATION OF THE SWPPP PLAN.

THE EC SUPERVISOR WILL PROVIDE THE CITY OF MOORHEAD WITH THE FOLLOWING INFORMATION AS REQUIRED BY THE MPCA:

1. NAMES OF THE PERSONNEL ASSOCIATED WITH THIS PROJECT THAT ARE REQUIRED TO BE TRAINED.
2. DATES OF TRAINING AND NAME OF INSTRUCTOR(S) AND ENTITY PROVIDING TRAINING.
3. CONTENT OF TRAINING COURSE OR WORKSHOP (INCLUDING NUMBER OF HOURS TRAIN) OR A CERTIFICATION CARD FROM THE UNIVERSITY OF MINNESOTA EROSION AND STORMWATER MANAGEMENT CERTIFICATION PROGRAM

NAME OF RECEIVING WATER

STORMWATER RUNOFF FROM THE PROJECT AREA DRAINS TO THE RED RIVER OF THE NORTH WHICH IS GRATER THAN 1 MILE AWAY. THE RED RIVER IS LISTED AS IMPAIRED ON THE 303(D) LIST. NO TMDL STUDY PLAN HAS BEEN APPROVED BY THE EPA AT THIS TIME.

SOIL TYPE

ACCORDING TO THE USDA WEB SOIL SURVEY (WSS), THE PROJECT AREA CONSISTS OF 77.8% URBAN LAND - AQUERTS SOIL AND 22.2% URBAIN LAND SOILS. THESE TYPES OF SOILS BELONG TO HYDROLOGIC SOIL GROUPS C/D, DRAINS POORLY, HAS LOW STRENGTH, IS SUBJECT TO SHRINK AND SWELL, AND HAS AN AVERAGE DEPTH OF 0-18 INCHES TO THE WATER TABLE.

DEWATERING

DEWATERING OR BASIN DRAINAGE RELATED TO CONSTRUCTION SHALL BE DISCHARGED TO A TEMPORARY OR PERMANENT SEDIMENTATION BASIN. DISCHARGING DIRECTLY TO THE STORM SEWER SYSTEM IS NOT ALLOWED UNDER THE TERMS OF THE CONTRACT. ALL WATER FROM DEWATERING OR BASIN DRAINING ACTIVITIES MUST BE DISCHARGED IN A MANNER THAT DOES NOT CAUSE NUISANCE CONDITIONS, EROSION IN RECEIVING CHANNELS OR DOWN SLOPE PROPERTIES, OR INUNDATION OF THE RED RIVER CAUSING SIGNIFICANT ADVERSE IMPACT TO THE RIVER.

POLLUTION PREVENTION

1. WASTE RECEPTACLES WITH COVERS ARE REQUIRED ON SITE FOR ANY SOLID WASTE GENERATED DURING THE CONSTRUCTION PROCESS. THESE RECEPTACLES MUST BE EMPTIED PERIODICALLY AND THE TRASH MUST BE DISPOSED OF PROPERLY.
2. HAZARDOUS MATERIALS WILL BE LIMITED TO GASOLINE, DIESEL, FUEL, AND MOTOR OIL. THE CONTRACTOR MUST MAKE THE NECESSARY ARRANGEMENT TO STORE THESE HAZARDOUS MATERIALS IN A MANNER THAT IS COMPLIANT WITH THE MPCA REGULATIONS. SPILLS MUST BE REPORTED TO THE MPCA DUTY OFFICER AT (800) 422-0798
3. EXTERNAL WASHING OF TRUCKS AND OTHER CONSTRUCTION VEHICLES WILL NOT BE ALLOWED ON THE PROJECT SITE. CONCRETE TRUCKS SHALL BE WASHED ONLY IN A DESIGNATED AREA.
4. THE CONTRACTOR SHALL PROVIDE PORTABLE REST ROOM FACILITIES WHICH SHALL BE CLEANED PERIODICALLY. PORTABLE RESTROOM FACILITIES AND COSTS NECESSARY TO MAINTAIN ARE INCIDENTAL.

STORMWATER POLLUTION PREVENTION PLAN

SEE THE STORMWATER POLLUTION PREVENTION DOCUMENT FOR

1. EROSION AND SEDIMENT CONTROLS
2. INSPECTION AND MAINTENANCE
3. FINAL STABILIZATION

EMH	MJA	JAS
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MOORHEAD MINNESOTA Engineering

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

Signature - Project Engineer — Date: 03/07/2025

JAMES A. SCHULZ
Name - Project Engineer — License No. 26225

STORM WATER POLLUTION PREVENTION PLAN

9TH AVE S, 10TH AVE S , AND 16TH ST S

CURB & GUTTER, ASPHALT PAVING

SHEET 5 OF 45

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QUANTITIES:

INLET PROTECTION - 24 EA

CONSTRUCTION ENTRANCE - 6 EA

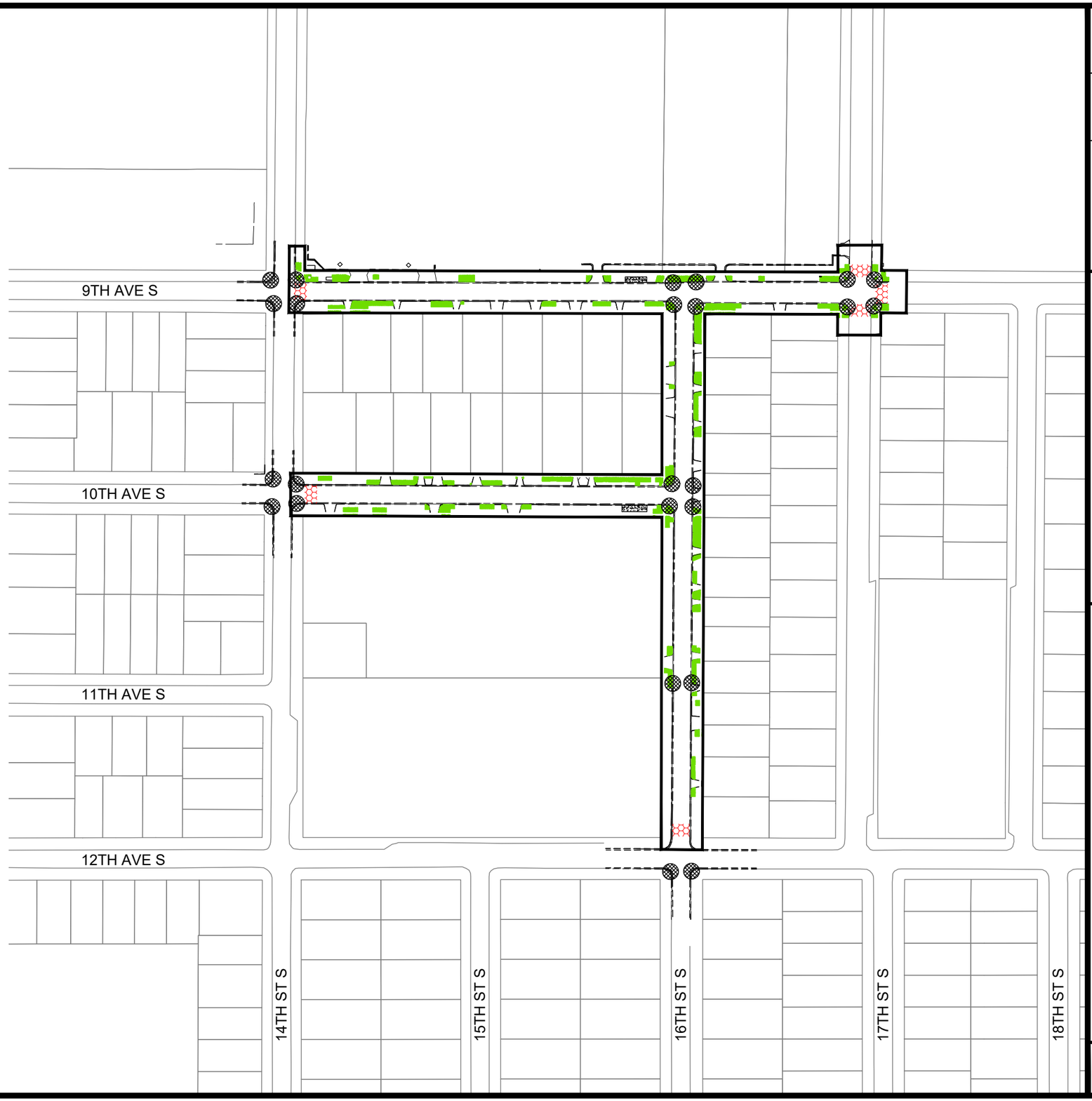
SEEDING WITH TYPE 5 HYDROMULCH - 2,221 SY

LEGEND

- INLET PROTECTION - TYPE A, B OR C
- CONSTRUCTION LIMITS
- TEMPORARY CONSTRUCTION ENTRANCE
- SEEDING WITH TYPE 5 HYDROMULCH
- CONCRETE WASHOUT STATION PROVIDED BY CONTRACTOR

NOTES:

1. ALL DISTURBED TOPSOIL SHALL HAVE PERMANENT SEEDING WHICH SHALL CONSIST OF 300 LBS./AC. OF AGASSIZ SEED & SUPPLIES PREMIUM SUNNY BRAND LAWN MIX OR APPROVED EQUAL WITH TYPE 5 MULCH UNLESS OTHERWISE INDICATED. DUE TO SCOPE OF WORK ADDITIONAL SEEDING MAY BE NECESSARY. DISTURBED AREAS SHALL NOT BE LEFT UNSTABILIZED FOR MORE THAN 14 DAYS.
2. THE CONCRETE TRUCK WASHOUT MUST BE CONTAINED IN A LEAK PROOF CONTAINER AND CANNOT CONTACT THE GROUND. ALL TRUCKS DELIVERING CONCRETE TO THE SITE SHALL WASH AT THE DESIGNATED LOCATION. ALTERNATE METHODS OF TREATING CONCRETE TRUCK WASH WATER TO BE CHOSEN BY CONTRACTOR AND APPROVED BY THE ENGINEER.
3. AT THE END OF EACH DAY OF CONSTRUCTION, THE CONTRACTOR SHALL USE A SKID-STEER OR OTHER APPROVED METHOD TO REMOVE CLAY AND DIRT DEPOSITS THAT HAVE BEEN TRACKED FROM THE CONSTRUCTION SITE ONTO ADJACENT PAVED ROADS. THIS WORK SHALL BE INCIDENTAL TO CONSTRUCTION.
4. AT LEAST ONCE PER WEEK, WHILE ACTIVELY GRADING THE PROJECT AREA AND/OR HAULING MATERIALS, THE CONTRACTOR SHALL SWEEP THE HAUL ROUTE AS NEEDED TO REMOVE CLAY AND DIRT THAT HAS BEEN TRACKED OFF SITE. AT A MINIMUM, THE SWEEPING SHALL INCLUDE ALL HAUL ROUTES WITHIN 500 FEET OF THE SITE. IF TRACKING EXTENDS MORE THAN 300 FEET FROM THE SITE, THE CONTRACTOR SHALL SWEEP THE HAUL ROUTE AT LEAST ONCE PER DAY.
5. MAINTAIN ALL EROSION CONTROL DEVICES, AND UPGRADE THEM AS NECESSARY DURING CONSTRUCTION
6. CONSTRUCTION ENTRANCES SHALL BE MAINTAINED AS NECESSARY TO MINIMIZE TRACKING OF CLAY AND DIRT MATERIALS OFF SITE. IF TRACKING IS OBSERVED TO EXTEND MORE THAN 300 FEET FROM THE SITE, THE CONTRACTOR SHALL EXTEND OR MODIFY THE CONSTRUCTION ENTRANCES AS NECESSARY TO PREVENT THE TRACKING BEYOND 300 FEET.
7. CONTRACTOR IS TO LEAVE GRADE A MINIMUM OF 1 INCH BELOW THE TOP OF CURB IN ALL AREAS THAT BIO-ROLL IS NOT PLACED.



N W E S

0 50 100 200

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Name - Project Engineer

Signature - Project Engineer

EROSION CONTROL & TURF ESTABLISHMENT

9TH AVE S, 10TH AVE S , AND 16TH ST S

CURB & GUTTER, ASPHALT PAVING

SHEET 6 OF 45

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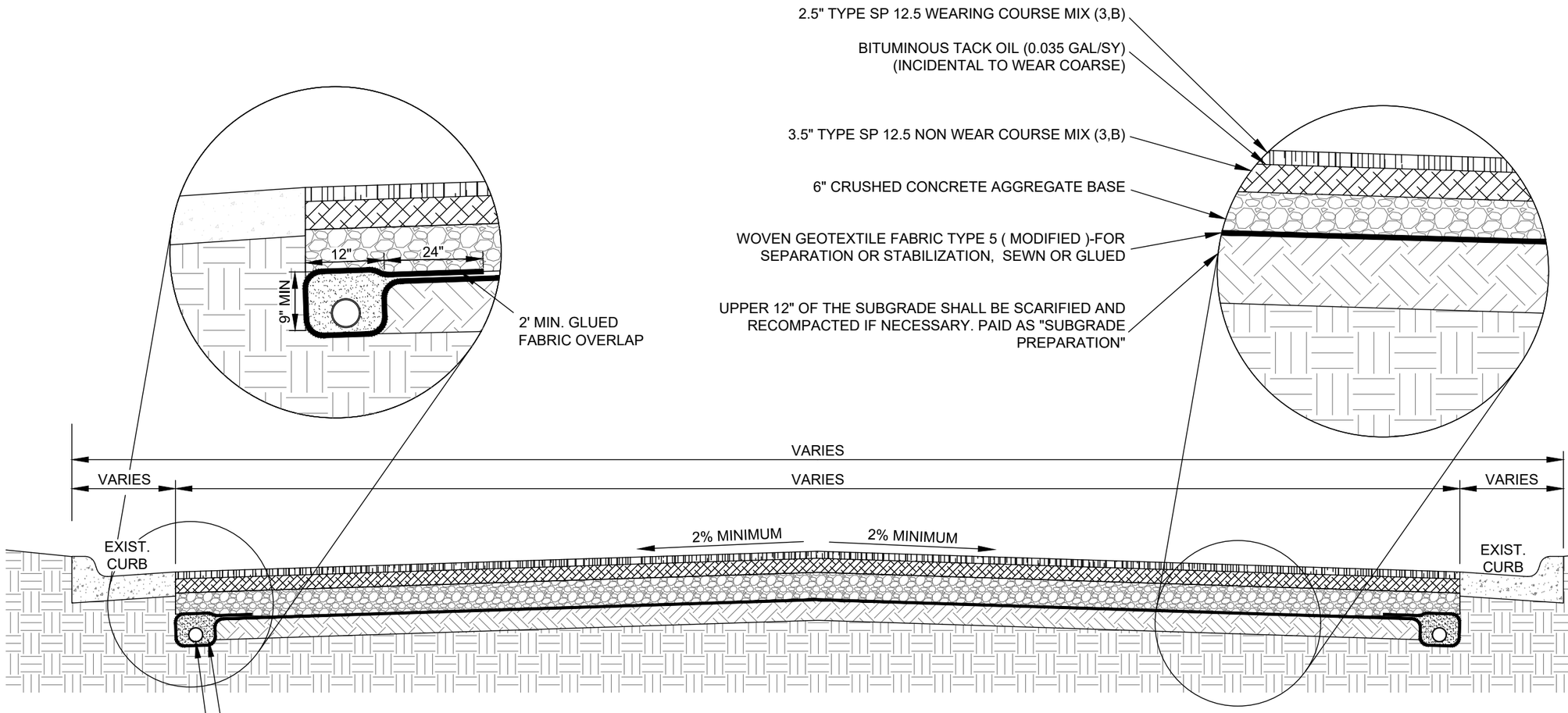

LOCAL REHABILITATION - TYPICAL STREET SECTION

B-624 CURB **BITUMINOUS PAVEMENT** **NOT TO SCALE**

NOTE:

1. RESTORE BOULEVARDS AS DIRECTED BY THE ENGINEER
2. FABRIC AROUND DRAIN TILE MUST BE OVERLAPPED 2' MIN. AND GLUED
3. REMOVE AND REPLACE CURB PER PLAN SHEETS

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JAMES A. SCHULZ
Name - Project Engineer

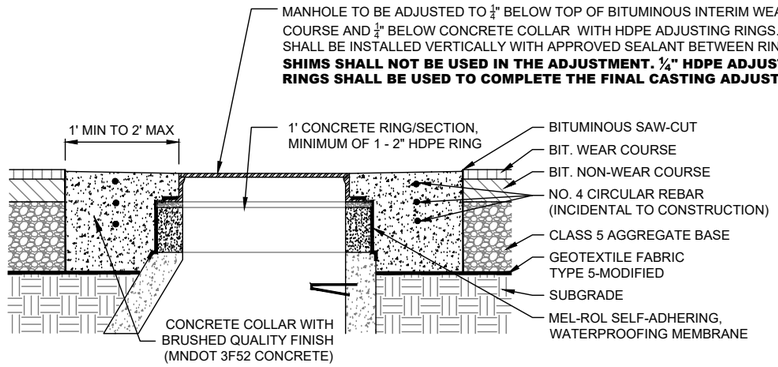
Signature - Project Engineer

TYPICAL SECTIONS

9TH AVE S, 10TH AVE S , AND 16TH ST S

CURB & GUTTER, ASPHALT PAVING

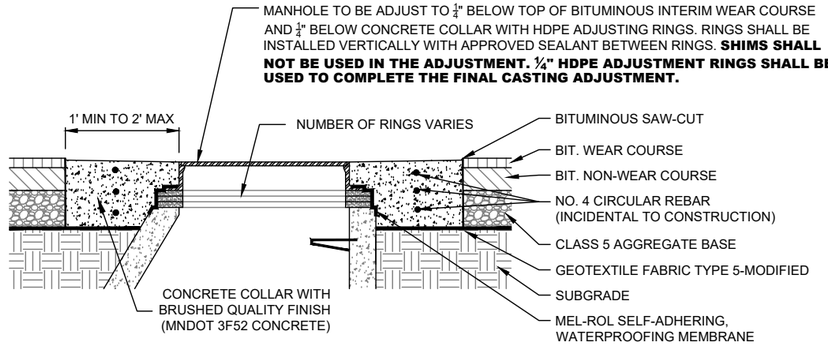
SHEET 7 OF 45



ADJUSTMENT - TYPE A

F&I NEW/SALVAGED CASTING GREATER THAN 12" ADJUSTING RINGS

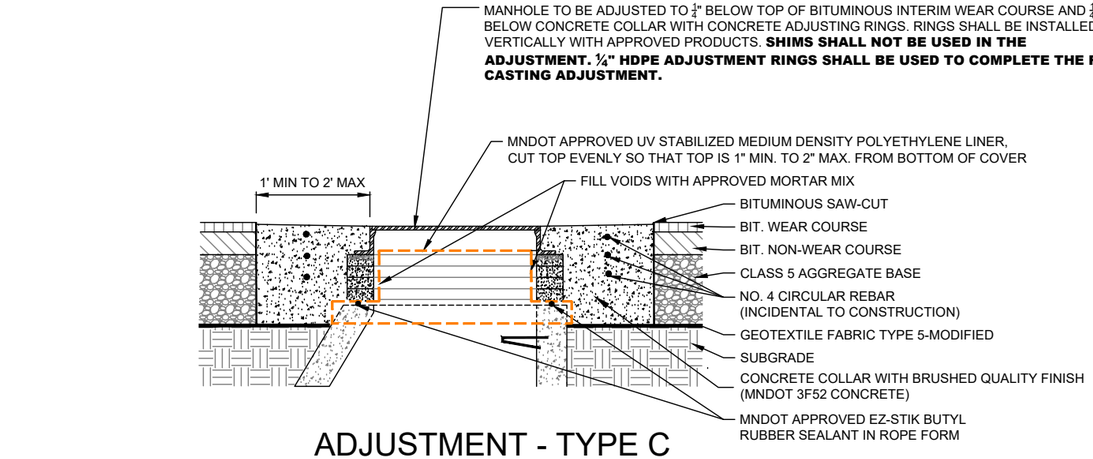
SALVAGED/NEW SANITARY AND STORM SEWER MANHOLE ADJUSTMENTS OVER 12",
COMPLETED AFTER WEAR COURSE PLACEMENT,
SURFACE EXCAVATION TO BE CIRCULAR WITH A UNIFORM RADIUS,
MAXIMUM ONE 12" CONCRETE SECTION WITH AT LEAST ONE 2" RING,
NOT TO SCALE



ADJUSTMENT - TYPE B

F&I NEW/SALVAGED CASTING, LESS THAN OR EQUAL TO 12" ADJUSTING RINGS

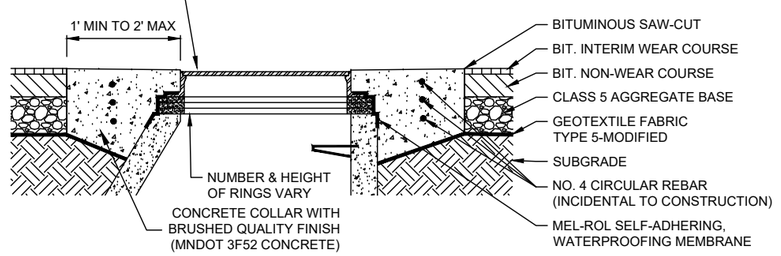
SALVAGED/NEW SANITARY AND STORM SEWER MANHOLE ADJUSTMENT,
COMPLETED AFTER FINAL WEAR COURSE PLACEMENT,
SURFACE EXCAVATION TO BE CIRCULAR WITH A UNIFORM RADIUS,
MAXIMUM 4 ADJUSTMENT RINGS WITH AT LEAST ONE 2" RING,
NOT TO SCALE



ADJUSTMENT - TYPE C

F&I NEW/SALVAGED CASTING, LESS THAN OR EQUAL TO 12" ADJUSTING RINGS - ALTERNATE

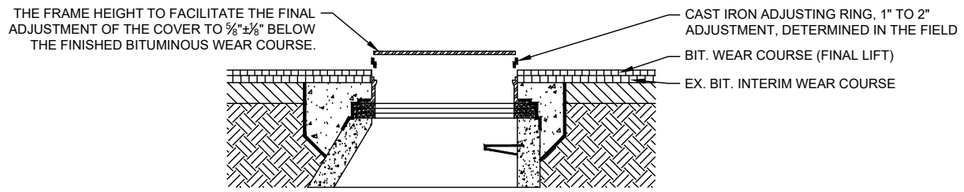
SALVAGED/NEW SANITARY AND STORM SEWER MANHOLE ADJUSTMENT,
COMPLETED AFTER WEAR COURSE PLACEMENT,
SURFACE EXCAVATION TO BE CIRCULAR WITH A UNIFORM RADIUS,
NOT TO SCALE



ADJUSTMENT - TYPE D

INTERIM - ADJUST FRAME, RING & CASTING

NEW SANITARY AND STORM SEWER MANHOLE ADJUSTMENT,
BITUMINOUS INTERIM WEAR COURSE INSTALLED AFTER ADJUSTMENT,
SURFACE EXCAVATION TO BE CIRCULAR WITH A UNIFORM RADIUS,
MAXIMUM 4 ADJUSTMENT RINGS WITH AT LEAST ONE 2" RING,
NOT TO SCALE



ADJUSTMENT - TYPE E

FINAL OVERLAY/MILL & OVERLAY- CAST IRON ADJUSTING RING/INSERT

SANITARY AND STORM SEWER MANHOLES
NOT TO SCALE

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			25-A2-01
			ENG. No.

MOORHEAD MINNESOTA Engineering

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JAMES A. SCHULZ
Name - Project Engineer

Signature - Project Engineer

03/07/2025
Date

26225
License No.

BIT X-SEC

9TH AVE S, 10TH AVE S , AND 16TH ST S

CURB & GUTTER, ASPHALT PAVING

SHEET 8 OF 45

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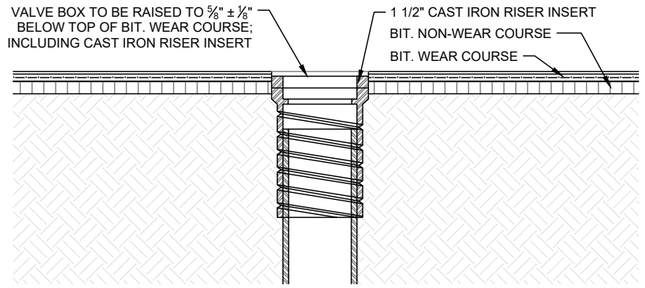
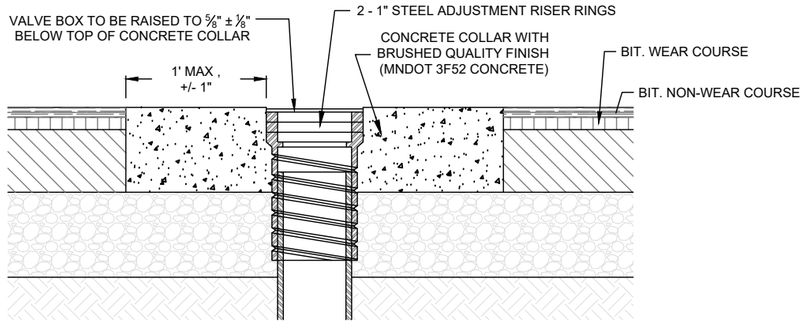


FINAL OVERLAY/MILL & OVERLAY - ADJUST GATE VALVE BOX TO GRADE

BITUMINOUS PAVEMENT WEAR COURSE INSTALLED AFTER ADJUSTMENT

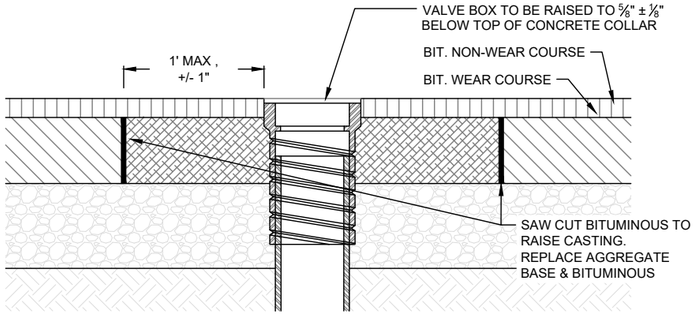
NOT TO SCALE



REHAB/RECONSTRUCT ADJUST GATE VALVE BOX TO GRADE

ADJUSTMENT MADE AFTER BITUMINOUS PAVEMENT WEAR COURSE INSTALLED

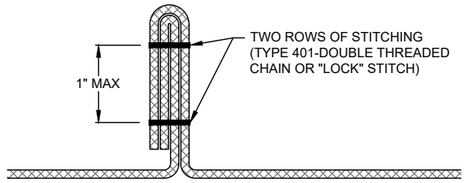
NOT TO SCALE



INTERIM - ADJUST GATE VALVE BOX TO GRADE

BITUMINOUS PAVEMENT WEAR COURSE INSTALLED AFTER ADJUSTMENT

NOT TO SCALE

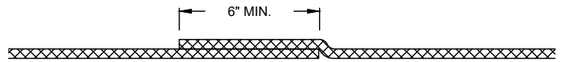


NOTE: ALL SEAMS SHALL BE PLACED POINTING UP

GEOTEXTILE SEAM SEWING

"J" SEAM - TYPE SSn-2

NOT TO SCALE

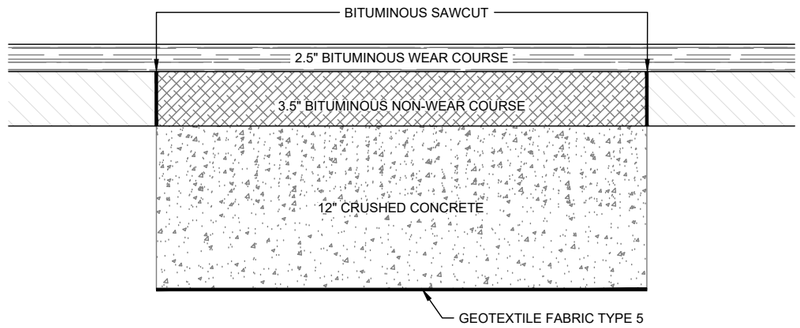


NOTE: INSTALLER MUST SPRAY BOTH SIDES OF FABRIC ON BONDING SURFACES

GEOTEXTILE FABRIC ADHESIVE SEAL

ADHESIVE BOND- 3M™ SCOTCH-WELD™ HOLDFAST 70 CYLINDER SPRAY ADHESIVE

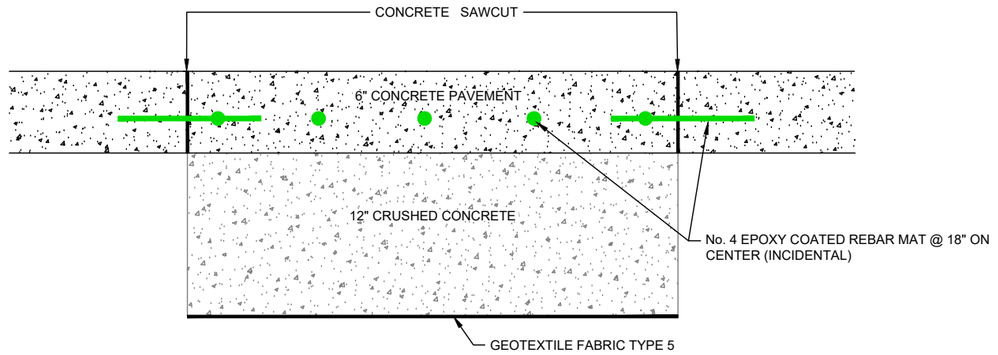
NOT TO SCALE



MILL & OVERLAY BITUMINOUS PATCH SPECIAL

BITUMINOUS PAVEMENT

NOT TO SCALE



CONCRETE PATCH SPECIAL

CONCRETE PAVEMENT

NOT TO SCALE

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Signature - Project Engineer

BIT X-SEC 2

9TH AVE S, 10TH AVE S , AND 16TH ST S
CURB & GUTTER, ASPHALT PAVING

SHEET 9 OF 45

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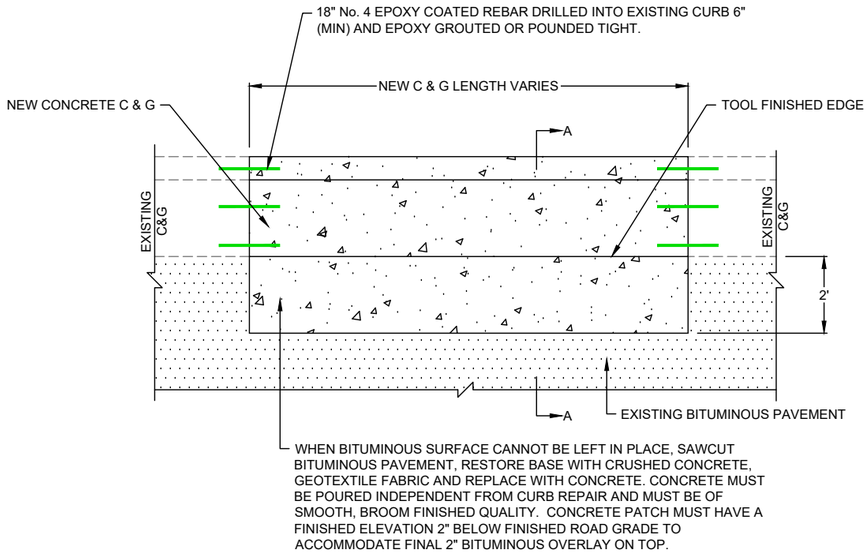
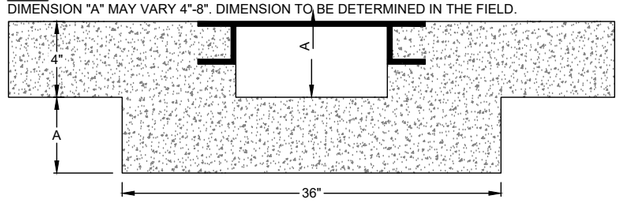
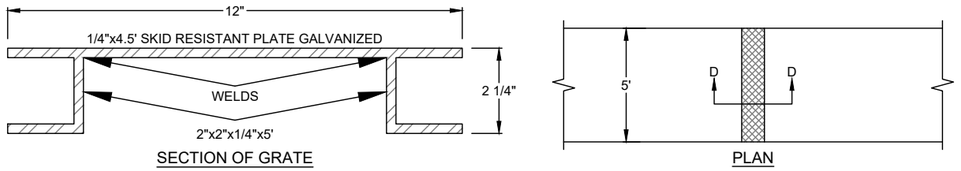


PLAN VIEW

NOTE:
DIMENSION "A" MAY VARY 4"-8". DIMENSION TO BE DETERMINED IN THE FIELD.



SECTION D-D

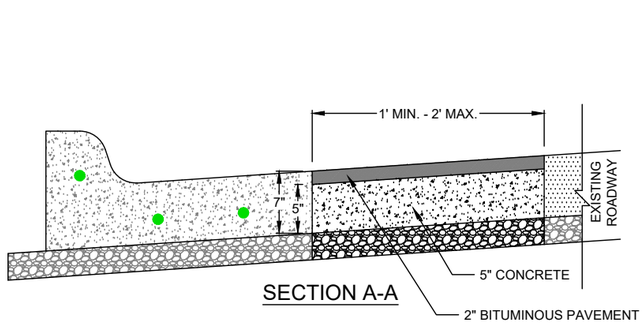


SECTION OF GRATE

PLAN

CAST-IN PLACE SIDEWALK GRATE

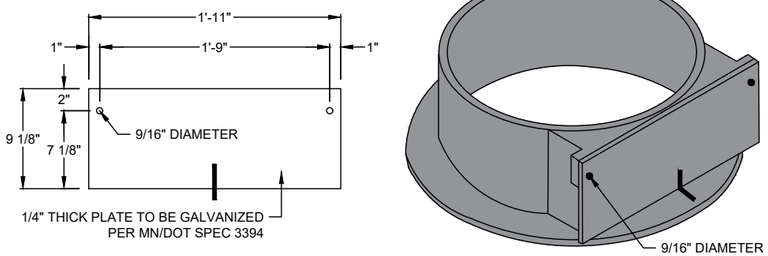
NOT TO SCALE



SECTION A-A

SPOT CURB AND GUTTER REPLACEMENT

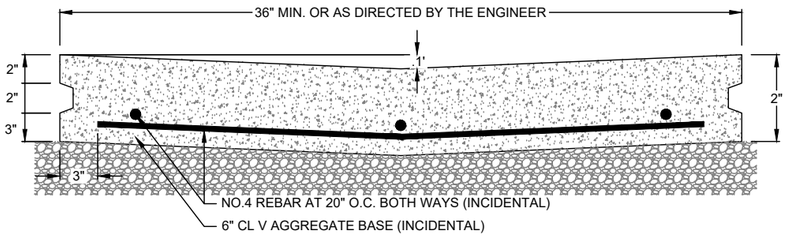
NOT TO SCALE



CURB BOX BACK PLATE DETAIL

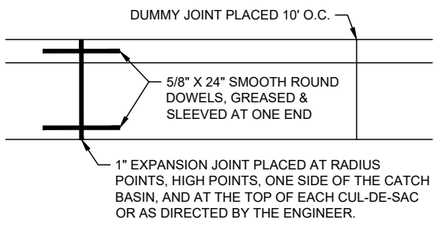
INSTALLED IN AREAS ADJACENT TO PEDESTRIAN CURB RAMPS

NOT TO SCALE



VALLEY GUTTER DETAIL

NOT TO SCALE



CURB AND GUTTER EXPANSION JOINT DETAIL

NOT TO SCALE

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CURB & GUTTER

9TH AVE S, 10TH AVE S , AND 16TH ST S
CURB & GUTTER, ASPHALT PAVING

SHEET 10 OF 45

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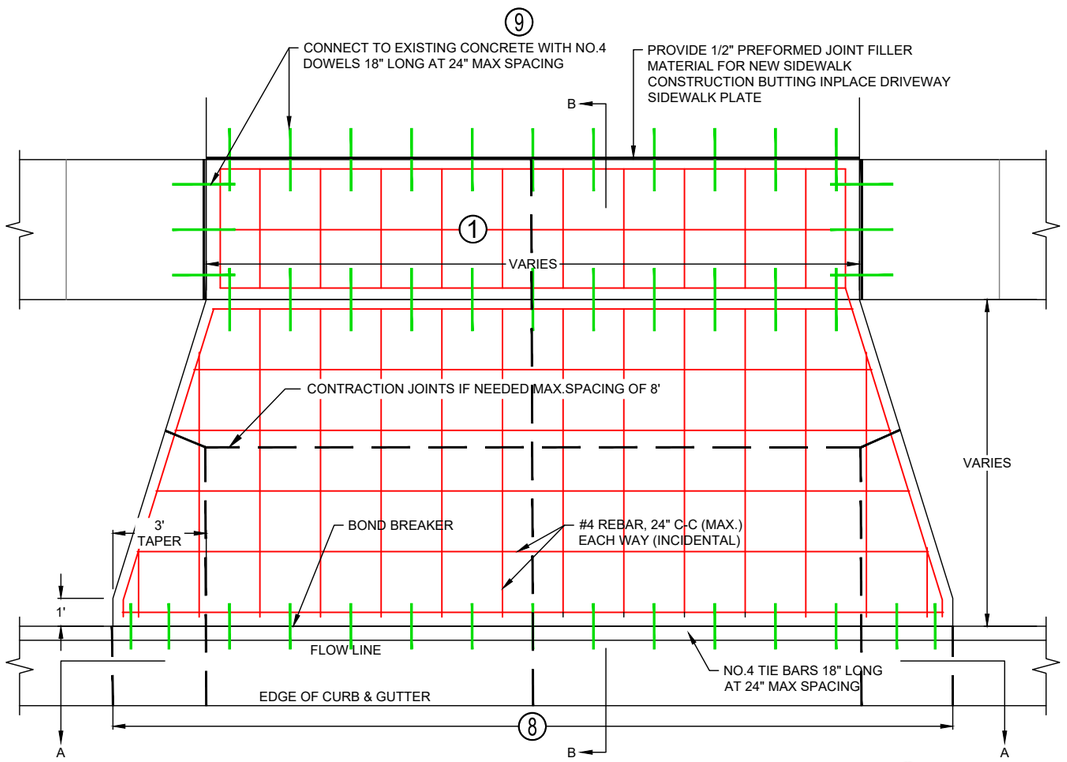
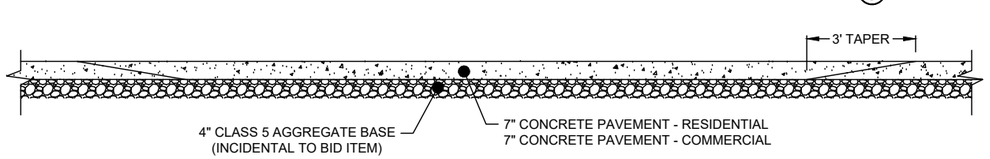
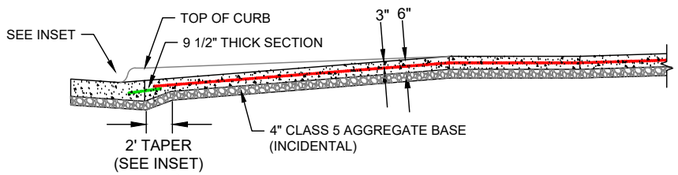
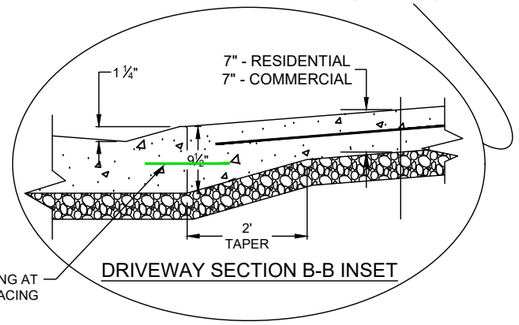




DRIVEWAY SECTION A-A



DRIVEWAY SECTION B-B
B-624 CURB

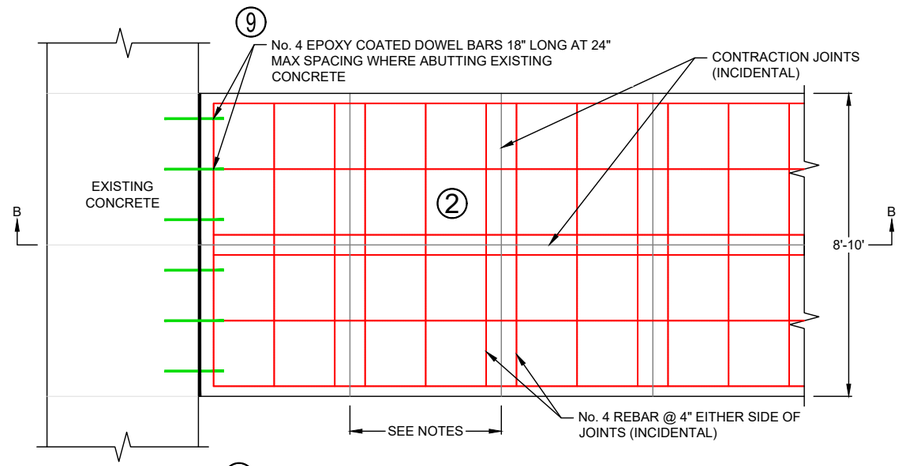


DRIVEWAY SECTION B-B INSET

NOTES:

1. DRIVEWAY CROSSING PLATE TO BE **POURED BEFORE AND INDEPENDENT** FROM THE APRON.
2. ALL CONCRETE SIDEWALK TO BE 4" THICK UNLESS OTHERWISE NOTED.
3. JOINT SPACING MUST NOT EXCEED 5' IN ANY DIRECTION SAWED OR TOOLED.
4. REINFORCEMENT SPACING SHALL NOT EXCEED 24" IN ANY DIRECTION AND BE SUPPORTED MID-DEPTH ON REBAR RISER CHAIRS EVERY 4' ON CENTER .
5. REINFORCING MUST BE PLACED 4" OF BOTH SIDES OF ALL JOINTS TOOLED OR SAWED.
6. ALL PATHS AT OR WIDER THAN 8' SHALL HAVE A LONGITUDINAL SAWED JOINT DOWN THE CENTER.
7. ALL REINFORCEMENT, AGGREGATE BASE, AND JOINTS SHALL BE INCIDENTAL TO CONSTRUCTION.
8. 18' MINIMUM OPENING INCLUDED 3' TAPERS. THE CURB AND CURB TRANSITION WILL BE PAID FOR AS LINEAR FEET OF CONCRETE CURB OR CONCRETE CURB AND GUTTER. SEE CURB & GUTTER DETAIL FOR ADDITIONAL REINFORCEMENT SPECS.
9. ALL TIE BARS AND DOWELS SHALL BE EPOXY COATED. ONE END OF ALL DOWEL BARS TO BE GREASED.
10. WHERE EPOXY COATED REBAR IS REQUIRED IT SHALL HAVE NO VISIBLE DINGS, SCRATCHES, OR OTHER EXPOSED METAL.
11. ALL REBAR, SUPPORTING CHAIRS, EXPANSION MATERIAL, AND FRAMEWORK SHALL BE INCIDENTAL TO CONSTRUCTION.
12. TOOLED JOINTS MUST NOT EXCEED 1/4" IN WIDTH, MUST HAVE A 1/4" RADIUS BEVEL AND BE 1/4 THE SLAB THICKNESS IN DEPTH.
13. SAWED JOINTS MUST NOT EXCEED 1/4" IN WIDTH, BE 1/4 THE SLAB THICKNESS IN DEPTH AND BE SAW CUT WITHIN 24 HOURS OF CONCRETE PLACEMENT.
14. 1/2" PRE-FORMED JOINT FILLER MATERIAL, AASHTO M-213 (CELLULAR FIBER BIT. FELT) PLACED AT EVERY PC AND PT OR EVERY 200 FT. UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
15. LIMITS OF SIDEWALK REMOVAL SHALL BE SHOWN IN THE PLANS OR AS DETERMINED IN THE FIELD BY THE ENGINEER. ALL EXCAVATED AND REMOVED MATERIAL SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION OF NEW SIDEWALK AND IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROPERLY DISPOSE OF ALL EXCAVATED MATERIALS, INCLUDING BITUMINOUS AND CONCRETE.
16. **CONCRETE PROWAG CERTIFICATION:** THE CONTRACTOR MUST DESIGNATE A RESPONSIBLE PERSON COMPETENT IN ALL ASPECTS OF PROWAG TO ASSESS PROPOSED SIDEWALK LAYOUTS AT EACH SITE BEFORE WORK BEGINS. THE DESIGNATED PERSON MUST HAVE ATTENDED THE MNDOT ADA CONSTRUCTION CERTIFICATION COURSE AND RECEIVED A PASSING SCORE, WITHIN THE PAST 3 YEARS. A MINIMUM OF ONE PERSON PER PROJECT MUST POSSESS A VALID ADA CONSTRUCTION CERTIFICATION CARD ANYTIME ADA WORK IS BEING PERFORMED ON THE PROJECT. ADA WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING: ASSESSMENT OF PROPOSED SIDEWALK LAYOUTS AT EACH SITE BEFORE WORK BEGINS, DETERMINING AND MARKING REMOVAL LIMITS FOR WORK PERTAINING TO PEDESTRIAN FACILITIES, ALL ADA RELATED REMOVALS AND GRADING, FORMING AND FINISHING OF CONCRETE AT ALL PEDESTRIAN FACILITIES, PAVING PEDESTRIAN CROSSINGS, PLACING BITUMINOUS PEDESTRIAN FACILITIES, FINAL GRADING, AND PAVEMENT MARKINGS. ANY ADA WORK NOT LISTED ABOVE CAN BE ADDED AT THE DISCRETION OF THE ENGINEER. AN ADA CERTIFIED PERSON IS NOT REQUIRED ON SITE IF THE ONLY WORK BEING PERFORMED CONCERNS TRAFFIC SIGNALS AND APS INSTALLATIONS.

THESE REQUIREMENTS SHALL BE EFFECTIVE AS OF MAY 1ST, 2019. ANY TIME WORK THE CONTRACTOR IS PERFORMING CONCERNS PEDESTRIAN FACILITIES, THE CONTRACTOR'S ADA CERTIFIED PERSON SHALL BE ON SITE.



SIDEWALK SECTION C-C

SAP. No.	LEGAL No.	ENG. No.
--	A2-01-2025	25-A2-01
DRAWN BY	CHECKED BY	APPROVED BY
EMH	MJA	JAS

MOORHEAD MINNESOTA Engineering

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

Signature - Project Engineer

JAMES A. SCHULZ
Name - Project Engineer

03/07/2025
Date

26225
License No.

SIDEWALK-APPROACH

9TH AVE S, 10TH AVE S , AND 16TH ST S
CURB & GUTTER, ASPHALT PAVING

SHEET 11 OF 45

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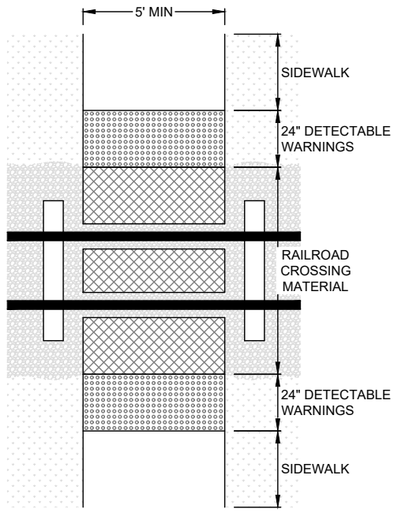
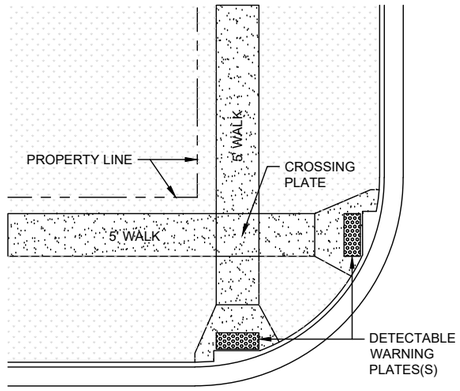
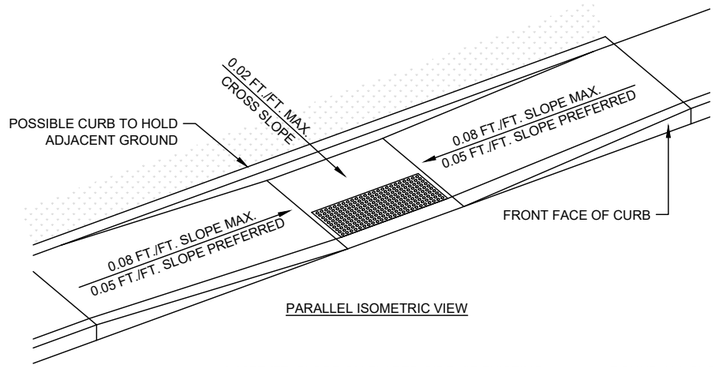


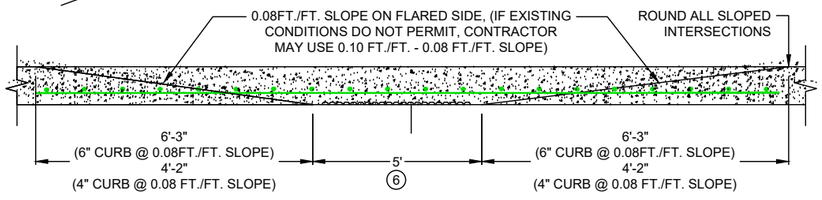
RAILROAD CROSSING
NOT TO SCALE



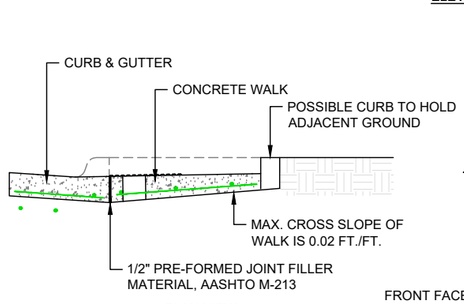
TYPICAL CORNER
(SEE PLAN SHEETS FOR NUMBER &LOCATION OF RAMPS)
NOT TO SCALE



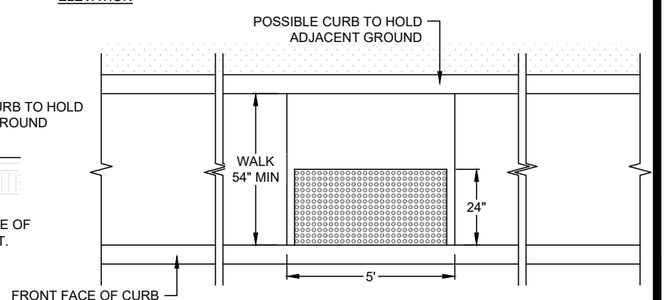
PARALLEL ISOMETRIC VIEW



ELEVATION

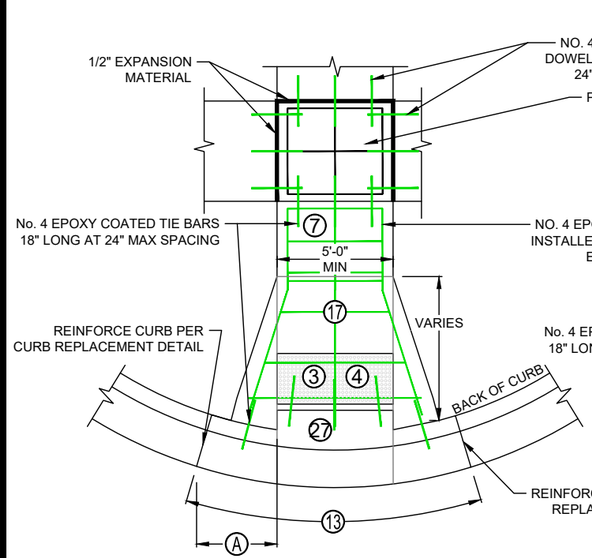


PLAN VIEW

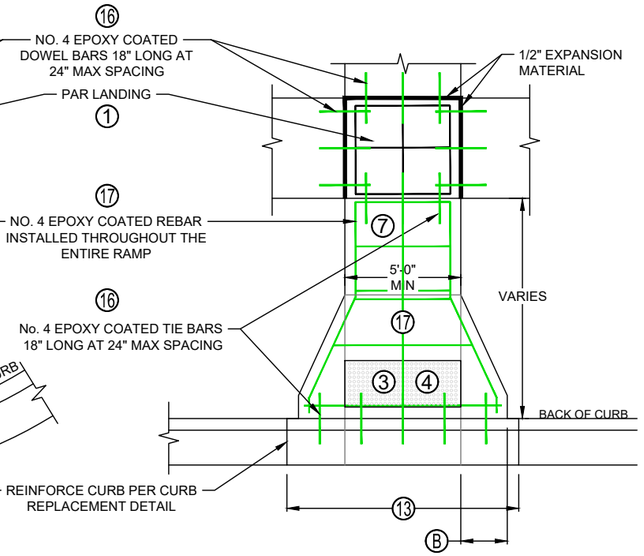


PARALLEL RAMP PLAN VIEW

PARALLEL RAMP
NOT TO SCALE



DIAGONAL / RADIAL RAMP
A: MOUNTABLE CURB - 2' MINIMUM FLAIR, HIGH-BACK CURB - 3' MINIMUM FLAIR; MEASURED PERPENDICULAR TO DIRECTION OF TRAVEL
NOT TO SCALE



PERPENDICULAR RAMP
B: MOUNTABLE CURB - 2' MINIMUM FLAIR, HIGH-BACK CURB - 3' MINIMUM FLAIR
NOT TO SCALE

NOTES:

1. PEDESTRIAN ACCESS ROUTE (PAR) LANDING TO BE **POURED BEFORE AND INDEPENDENT** TO THE PEDESTRIAN CURB RAMP.
2. WHEN ABUTTING EXISTING CONCRETE THAT EXCEEDS A 2% CROSS SLOPE THEN A TRANSITION OF NO MORE THAN 0.5% SLOPE CORRECTION PER FOOT TO BE USED.
3. ALL TRUNCATED DOMES MUST BE COATED CAST IRON AND BE A MNDOT APPROVED PRODUCT.
4. ALL TRUNCATED DOMES MUST HAVE FACTORY INSTALLED WEEP HOLES TO ENSURE PROPER BEDDING.
5. TRUNCATED DOMES MUST BE INSTALLED WITHIN 3" OF THE EDGE OF THE CONCRETE ON BOTH SIDES MEASURED PERPENDICULAR TO THE DIRECTION OF TRAVEL.
6. **THE CUTTING OF TRUNCATED DOME PANELS IS NOT ALLOWED.**
7. ALL CONCRETE SIDEWALK TO BE 6" THICK UNLESS OTHERWISE NOTED.
8. JOINT SPACING MUST NOT EXCEED 5' IN ANY DIRECTION SAWED OR TOOLED.
9. REINFORCEMENT SPACING SHALL NOT EXCEED 24" IN ANY DIRECTION AND BE SUPPORTED MID-DEPTH ON REBAR RISER CHAIRS EVERY 4' ON CENTER .
10. REINFORCING MUST BE PLACED 4" OF BOTH SIDES OF ALL JOINTS TOOLED OR SAWED.
11. ALL PATHS AT OR WIDER THAN 8' SHALL HAVE A LONGITUDINAL SAWED JOINT DOWN THE CENTER.
12. ALL REINFORCEMENT, AGGREGATE BASE, AND JOINTS SHALL BE INCIDENTAL TO CONSTRUCTION.
13. THE CURB AND CURB TRANSITION WILL BE PAID FOR AS LINEAR FEET OF CONCRETE CURB OR CONCRETE CURB AND GUTTER. SEE CURB & GUTTER DETAIL FOR ADDITIONAL REINFORCEMENT SPECS.
14. THE RAMP AREA WILL BE PAID AS ONE UNIT PEDESTRIAN RAMP 5' OR PEDESTRIAN RAMP 10'. THE TRUNCATED DOME AREA SHALL BE CONSIDERED INCIDENTAL.
15. THE PEDESTRIAN RAMP WILL INCLUDE AREA FROM BACK OF CURB THROUGH THE LANDING OR CROSSING PLATE AND IS NOT TO EXCEED 15', ANYTHING OVER 15' WILL BE PAID FOR AS CONCRETE WALK.
16. ALL TIE BARS AND DOWELS SHALL BE EPOXY COATED. ONE END OF ALL DOWEL BARS TO BE GREASED.
17. ALL REINFORCEMENT WITHIN THE PEDESTRIAN RAMP SHALL BE EPOXY COATED.
18. WHERE EPOXY COATED REBAR IS REQUIRED IT SHALL HAVE NO VISIBLE DINGS, SCRATCHES, OR OTHER EXPOSED METAL.
19. ALL REBAR, SUPPORTING CHAIRS, AND FRAMEWORK SHALL BE INCIDENTAL TO CONSTRUCTION.
20. TOOLED JOINTS MUST NOT EXCEED 1/4" IN WIDTH, MUST HAVE A 1/4" RADIUS BEVEL AND BE 1/4 THE SLAB THICKNESS IN DEPTH.
21. SAWED JOINTS MUST NOT EXCEED 1/4" IN WIDTH, BE 1/4 THE SLAB THICKNESS IN DEPTH AND BE SAW CUT WITHIN 24 HOURS OF CONCRETE PLACEMENT.
22. 1/2" PRE-FORMED JOINT FILLER MATERIAL, AASHTO M-213 (CELLULAR FIBER BIT. FELT)
23. LIMITS OF REMOVALS SHALL BE SHOWN IN THE PLANS OR AS DETERMINED IN THE FIELD BY THE ENGINEER. ALL EXCAVATED AND REMOVED MATERIAL SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION OF NEW SIDEWALK AND IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROPERLY DISPOSE OF ALL EXCAVATED MATERIALS, INCLUDING BITUMINOUS AND CONCRETE.
24. **CONCRETE PROWAG CERTIFICATION:** THE CONTRACTOR MUST DESIGNATE A RESPONSIBLE PERSON COMPETENT IN ALL ASPECTS OF PROWAG TO ASSESS PROPOSED SIDEWALK LAYOUTS AT EACH SITE BEFORE WORK BEGINS. THE DESIGNATED PERSON MUST HAVE ATTENDED THE MNDOT ADA CONSTRUCTION CERTIFICATION COURSE AND RECEIVED A PASSING SCORE, WITHIN THE PAST 3 YEARS. A MINIMUM OF ONE PERSON PER PROJECT MUST POSSESS A VALID ADA CONSTRUCTION CERTIFICATION CARD ANYTIME ADA WORK IS BEING PERFORMED ON THE PROJECT. ADA WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING: ASSESSMENT OF PROPOSED SIDEWALK LAYOUTS AT EACH SITE BEFORE WORK BEGINS, DETERMINING AND MARKING REMOVAL LIMITS FOR WORK PERTAINING TO PEDESTRIAN FACILITIES, ALL ADA RELATED REMOVALS AND GRADING, FORMING AND FINISHING OF CONCRETE AT ALL PEDESTRIAN FACILITIES, PAVING PEDESTRIAN CROSSINGS, PLACING BITUMINOUS PEDESTRIAN FACILITIES, FINAL GRADING, AND PAVEMENT MARKINGS. ANY ADA WORK NOT LISTED ABOVE CAN BE ADDED AT THE DISCRETION OF THE ENGINEER. AN ADA CERTIFIED PERSON IS NOT REQUIRED ON SITE IF THE ONLY WORK BEING PERFORMED CONCERNS TRAFFIC SIGNALS AND APS INSTALLATIONS.
25. MAX 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.

THESE REQUIREMENTS SHALL BE EFFECTIVE AS OF MAY 1ST, 2019. ANY TIME WORK THE CONTRACTOR IS PERFORMING CONCERNS PEDESTRIAN FACILITIES, THE CONTRACTOR'S ADA CERTIFIED PERSON SHALL BE ON SITE.

STANDARD PEDESTRIAN CURB RAMP
NOT TO SCALE

EMH	MJA	A2-01-2025	--
DRAWN BY	CHECKED BY	LEGAL No.	SAP. No.
	JAS		25-A2-01
	APPROVED BY		ENG. No.

MOORHEAD MINNESOTA Engineering

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.

JAMES A. SCHULZ
Name - Project Engineer

Signature - Project Engineer

03/07/2025
Date

26225
License No.

PED RAMP

9TH AVE S, 10TH AVE S , AND 16TH ST S
CURB & GUTTER, ASPHALT PAVING

SHEET 12 OF 45

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NOTES:
1. REINFORCEMENT NOT SHOWN
2. TYPE "A" CASTING ASSEMBLY TO BE USED FOR STORM AND SANITARY MANHOLES
3. TYPE "B" CASTING ASSEMBLY TO BE USED FOR REAR YARD, BOULEVARD, AND DITCH DRAINAGE
4. TYPE "C" CASTING ASSEMBLY TO BE USED IN TYPE "C" MOUNTABLE CURB AND GUTTER
5. TYPE "D" CASTING ASSEMBLY TO BE USED IN B-624 CURB AND GUTTER
6. TYPE "E" CASTING ASSEMBLY TO BE AT ADA PEDESTRIAN RAMP LOCATIONS AS DIRECTED BY THE ENGINEER.
7. TYPE "F" CASTING ASSEMBLY TO BE USED FOR STORM SEWER CATCH BASIN INSTALLATIONS WITH ELEVATION CONSTRAINTS.
8. TYPE "G" CASTING ASSEMBLY TO BE USED IN CONCRETE ROADWAY CONSTRUCTION.
9. INLET PIPE OPENINGS SHALL BE GROUTED ON THE INSIDE AND OUTSIDE OF EACH STRUCTURE WITH AN APPROVED CONCRETE MIX
10. HDPE RINGS SHALL BE INSTALLED VERTICALLY; STAGGERING OF ADJUSTMENT RINGS SHALL NOT BE ALLOWED, CONTRACTOR SHALL ADJUST STRUCTURE PLACEMENT OR CURB ALIGNMENT AS NECESSARY
11. PROVIDE MORTAR FILLETS / INVERTS TO DIRECT FLOW TO OUTLET

TYPE "A" CASTING ASSEMBLY

FRAME	Mn/DOT 700-7
FRAME	Mn/DOT 700-4 (LOW PROFILE)
SAN. GRATE	Mn/DOT 716 (MUST HAVE CONCEALED PICK HOLES)
STS. GRATE	Mn/DOT 715

TYPE "B" CASTING ASSEMBLY

FRAME	CONCRETE (STND PLATE 4143E)
GRATE	MNDOT CASTING #731 (NEENAH R-4342)

TYPE "C" CASTING ASSEMBLY

FRAME	NEENAH 3508-A2
GRATE	NEENAH TYPE C

TYPE "D" CASTING ASSEMBLY

FRAME	Mn/DOT 801
GRATE	Mn/DOT 810
CURB BOX	Mn/DOT 823A (STRAIGHT CURB)
CURB BOX	Mn/DOT 821B (RADIUS CURB)

TYPE "E" CASTING ASSEMBLY

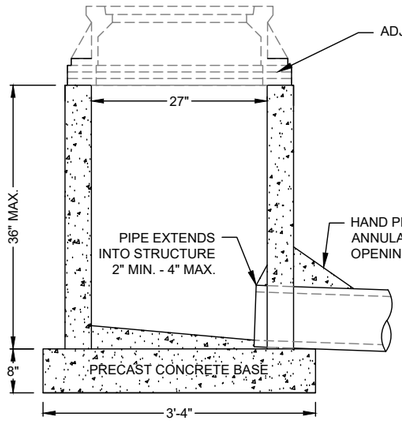
FRAME	Mn/DOT 805 (ADA RAMP USE)
GRATE	Mn/DOT 817 (ADA RAMP USE)

TYPE "F" CASTING ASSEMBLY

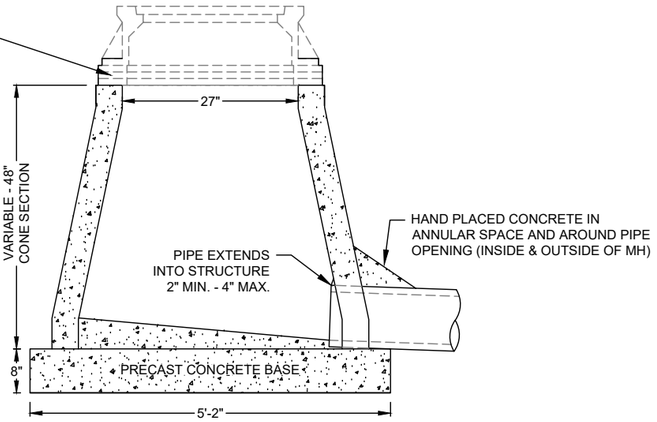
FRAME	Mn/DOT 700-4 (LOW PROFILE)
STS. GRATE	Mn/DOT 721

TYPE "G" CASTING ASSEMBLY

FRAME	NEENAH R-1955-1 (FLOATING CASTING)
GRATE	Mn/DOT 716 (MUST HAVE CONCEALED PICK HOLES)
GRATE	Mn/DOT 715



Mn/DOT DESIGN "H"
STANDARD PLATE NO. 4006L NOT TO SCALE



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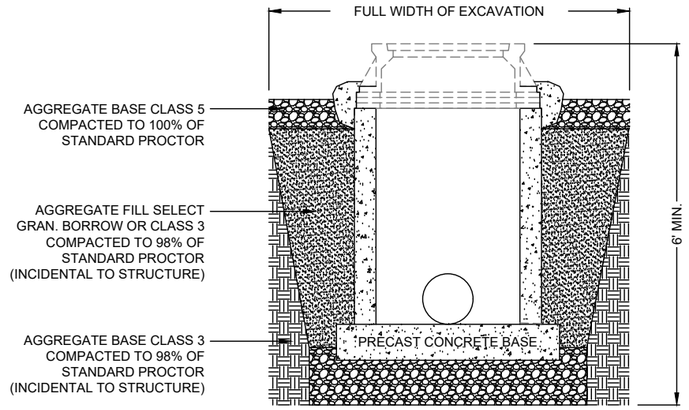

Mn/DOT DESIGN "H" CATCH BASIN INSTALLATION
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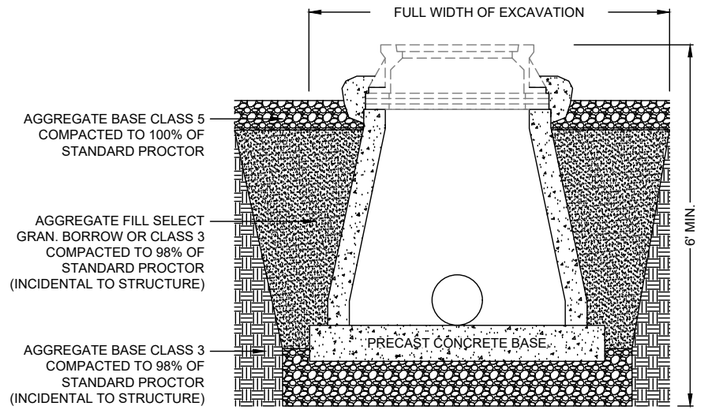

Mn/DOT DESIGN "G" CATCH BASIN INSTALLATION
STANDARD PLATE NO. 4006L NOT TO SCALE

SAP. No.	--
LEGAL No.	A2-01-2025
ENG. No.	25-A2-01
DRAWN BY	EMH
CHECKED BY	MJA
APPROVED BY	JAS

MOORHEAD MINNESOTA Engineering

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

Signature - Project Engineer — 03/07/2025 Date

JAMES A. SCHULZ Name - Project Engineer — 26225 License No.

STORM

9TH AVE S, 10TH AVE S , AND 16TH ST S
CURB & GUTTER, ASPHALT PAVING

SHEET 13 OF 45

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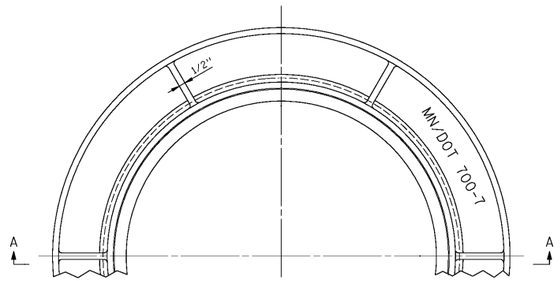
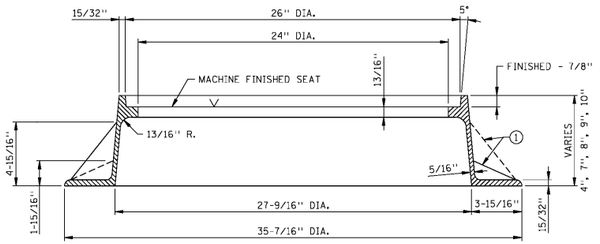


HALF TOP VIEW



SECTION A-A
(NO. 700-7 SHOWN)

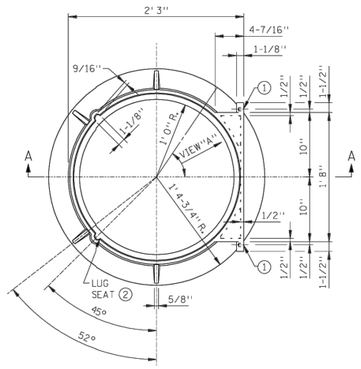
NOTES:

THIS RING CASTING TO BE USED IN CONJUNCTION WITH ANY OF THE FOLLOWING CASTINGS:
MANHOLE COVER NO. 715 OR NO. 716
MANHOLE OR CATCH BASIN GRATES NO. 720 OR NO. 721 .

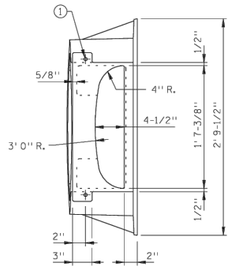
① ALTERNATING GUSSETS (3 EACH).

4" CASTING NO. 700-4 (98 LBS.)
7" CASTING NO. 700-7 (118 LBS.)
8" CASTING NO. 700-8
9" CASTING NO. 700-9
10" CASTING NO. 700-10

APPROVED OCTOBER 25, 1996 Gerald J. Rochard STATE DESIGN ENGINEER	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION RING CASTING FOR MANHOLE OR CATCH BASIN	SPECIFICATION REFERENCE 2506	STANDARD PLATE NO. 4101D



TOP VIEW



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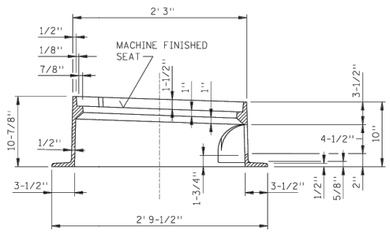
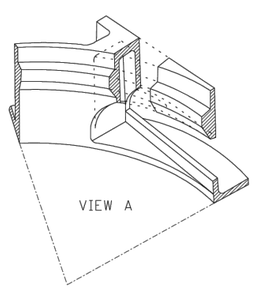


SECTION A-A



NOTES:

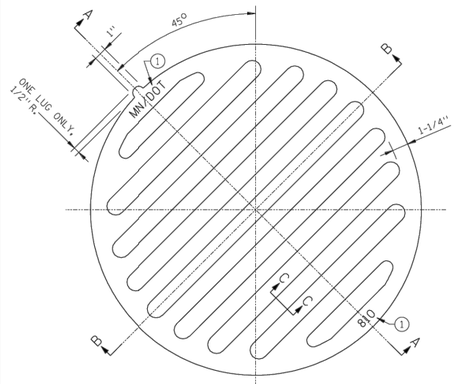
USE 1/4" FILLETS IN ALL CORNERS.
SEE STANDARD PLATE 7111, "INSTALLATION OF CATCH BASIN CASTINGS" FOR CONSTRUCTION REQUIREMENTS.

① LUG (2 THUS) DRILL BLIND HOLE FOR 1/2" CAP SCREW. TAP TO 3/4" DEPTH.
② APPLIES TO DESIGN B OR V CURB AND CURB & GUTTER.
③ USE WITH DESIGN S CURB.

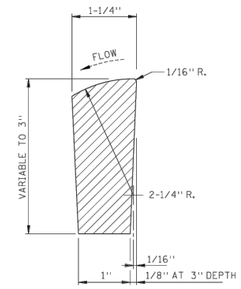
CASTINGS USED FOR ASSEMBLY	
GRATE FRAME	NO. 801
GRATE	NO. 810
CURB BOX ②	NO. 821B OR 831A
CURB BOX ③	NO. 822

GRATE FRAME CASTING NO. 801

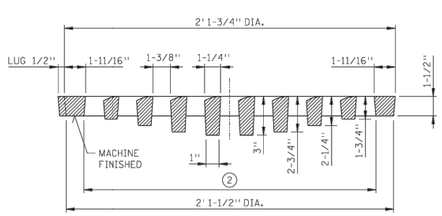
APPROVED April 5, 1989 R H Sullivan Director Materials, Research and Standards	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION CATCH BASIN FRAME CASTING	SPECIFICATION REFERENCE 2506	STANDARD PLATE NO. 4126F



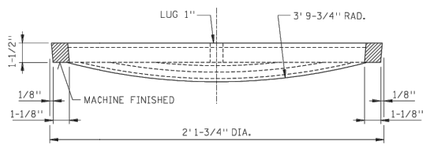
TOP VIEW



SECTION C-C



SECTION A-A



SECTION B-B

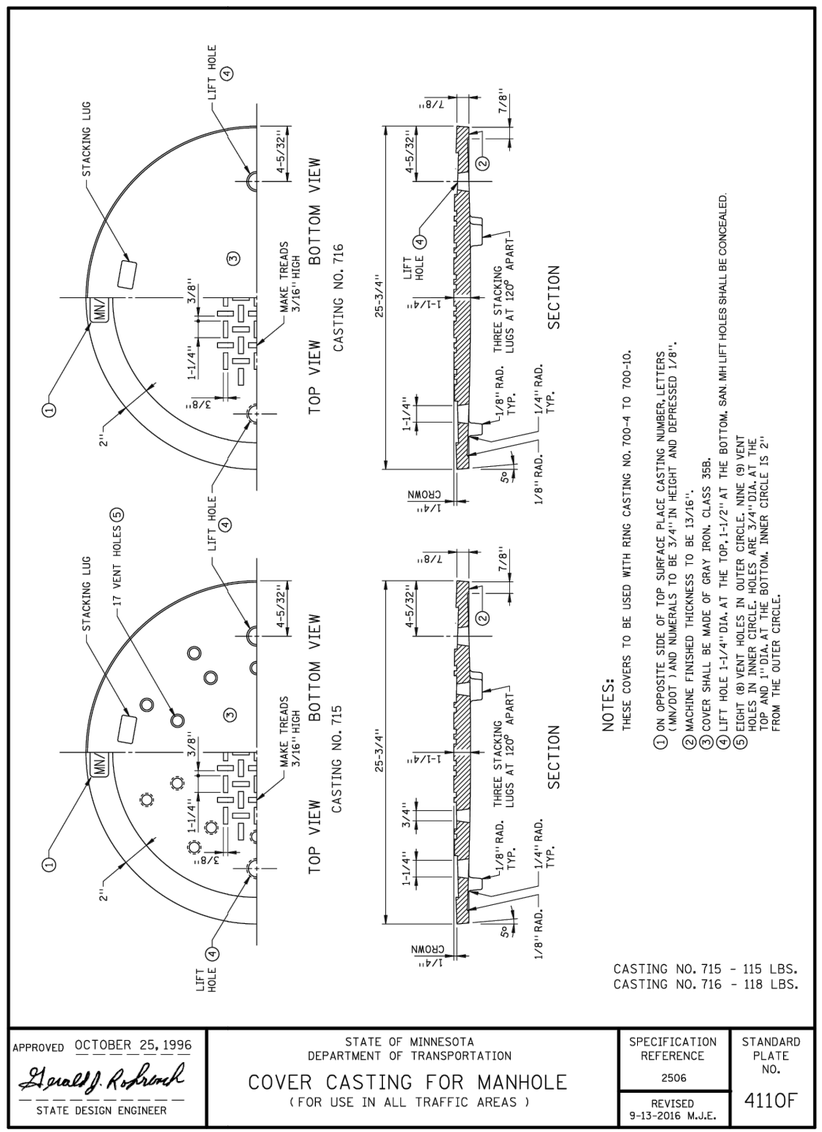
NOTES:

THIS GRATE TO BE USED WITH CATCH BASIN FRAME CASTING NO. 801.

① ON OPPOSITE SIDE OF TOP SURFACE PLACE CASTING NUMBER. LETTERS (MN/DOT) AND NUMERALS TO BE 3/4" IN HEIGHT AND DEPRESSED 1/8".
② 9 SPACES AT 1-3/8" AND 8 BARS AT 1-1/4".

GRATE CASTING NO. 810

APPROVED Oct. 1, 1966 W. A. Ebern ASSISTANT COMMISSIONER ENGINEERING STANDARDS	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION GRATE CASTING FOR CATCH BASIN	SPECIFICATION REFERENCE 2506 3321 REVISED 1-21-98	STANDARD PLATE NO. 4149C

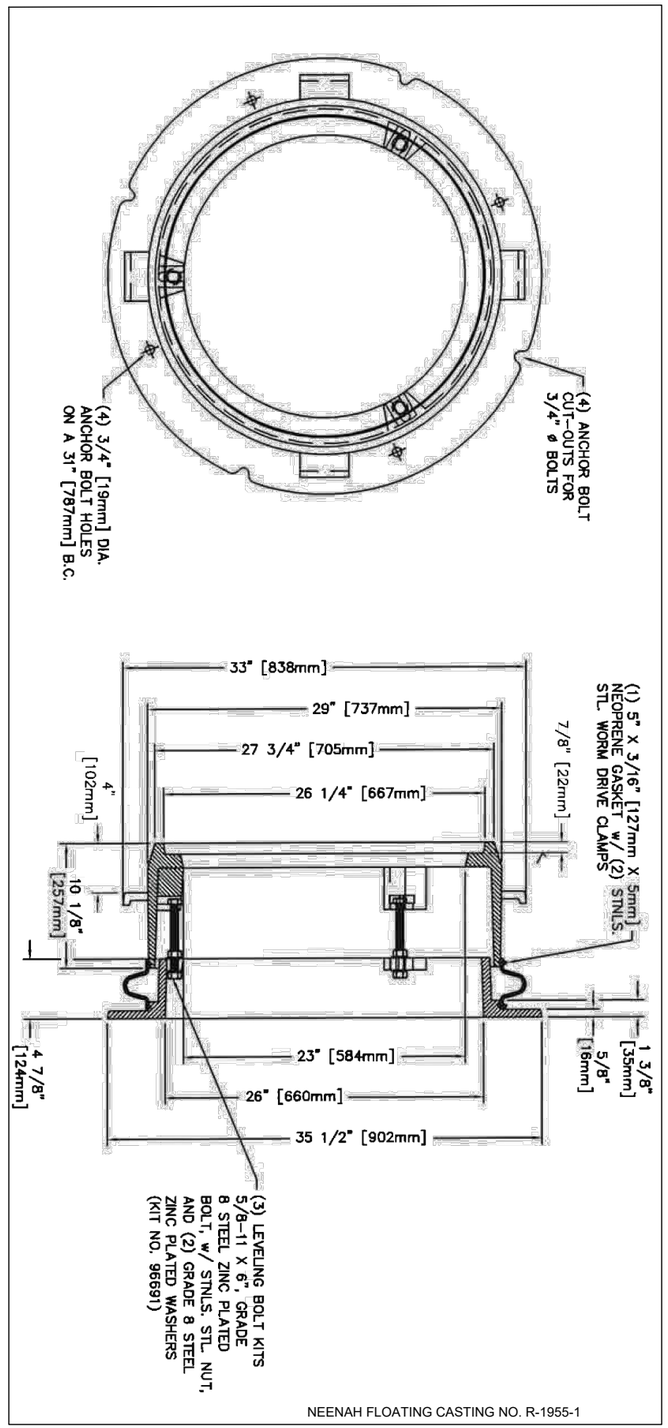


NOTES:
THESE COVERS TO BE USED WITH RING CASTING NO. 700-4 TO 700-10.

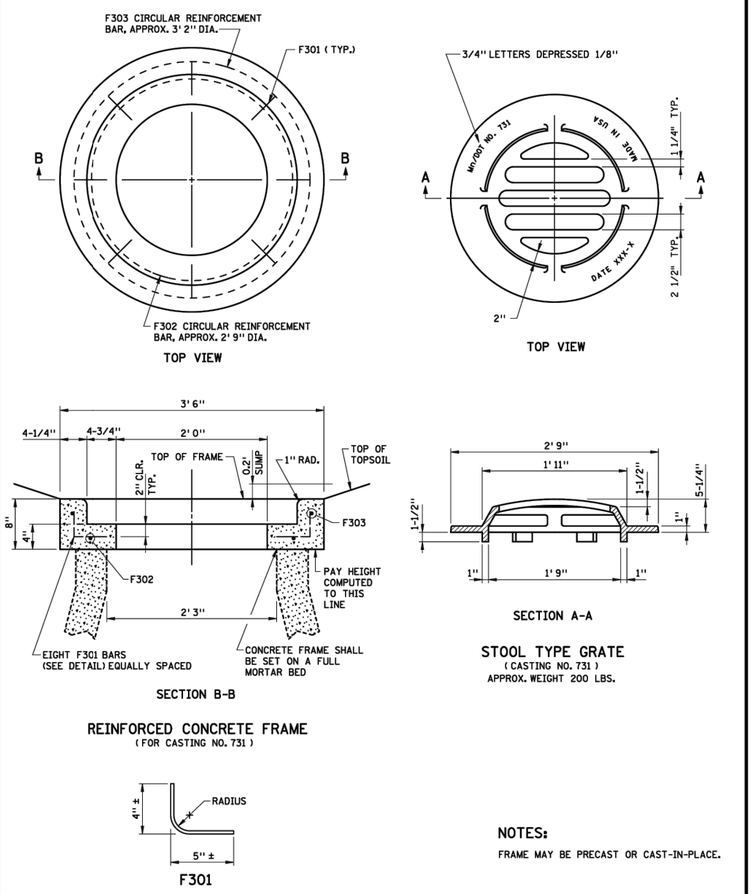
① ON OPPOSITE SIDE OF TOP SURFACE PLACE CASTING NUMBER, LETTERS (MN/DOT) AND NUMERALS TO BE 3/4" IN HEIGHT AND DEPRESSED 1/8".
② MACHINE FINISHED THICKNESS TO BE 13/16".
③ COVER SHALL BE MADE OF GRAY IRON, CLASS 35B.
④ LIFT HOLE 1-1/4" DIA. AT THE TOP, 1-1/2" AT THE BOTTOM. SAN. MH LIFT HOLES SHALL BE CONCEALED.
⑤ EIGHT (8) VENT HOLES IN OUTER CIRCLE, NINE (9) VENT HOLES IN INNER CIRCLE ARE 3/4" DIA. AT THE TOP AND 1" DIA. AT THE BOTTOM. INNER CIRCLE IS 2" FROM THE OUTER CIRCLE.

CASTING NO. 715 - 115 LBS.
CASTING NO. 716 - 118 LBS.

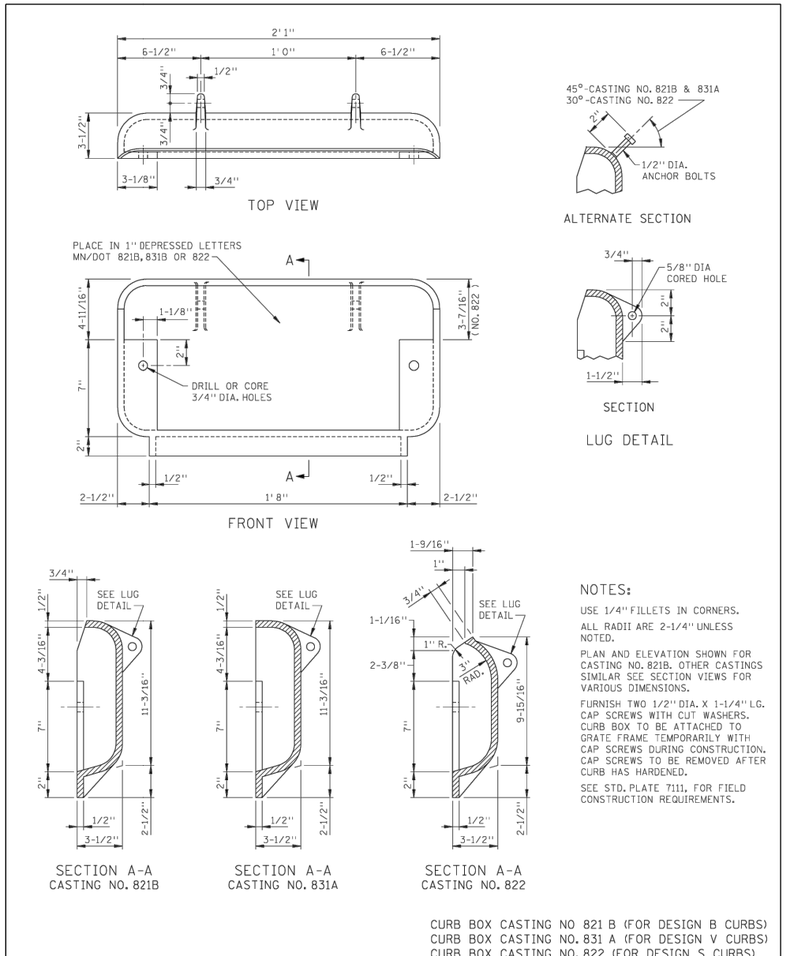
APPROVED OCTOBER 25, 1996 Donald J. Rodronk STATE DESIGN ENGINEER	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION COVER CASTING FOR MANHOLE (FOR USE IN ALL TRAFFIC AREAS)	SPECIFICATION REFERENCE 2506 REVISED 9-13-2016 M.J.E.	STANDARD PLATE NO. 4110F



NEENAH FLOATING CASTING NO. R-1955-1

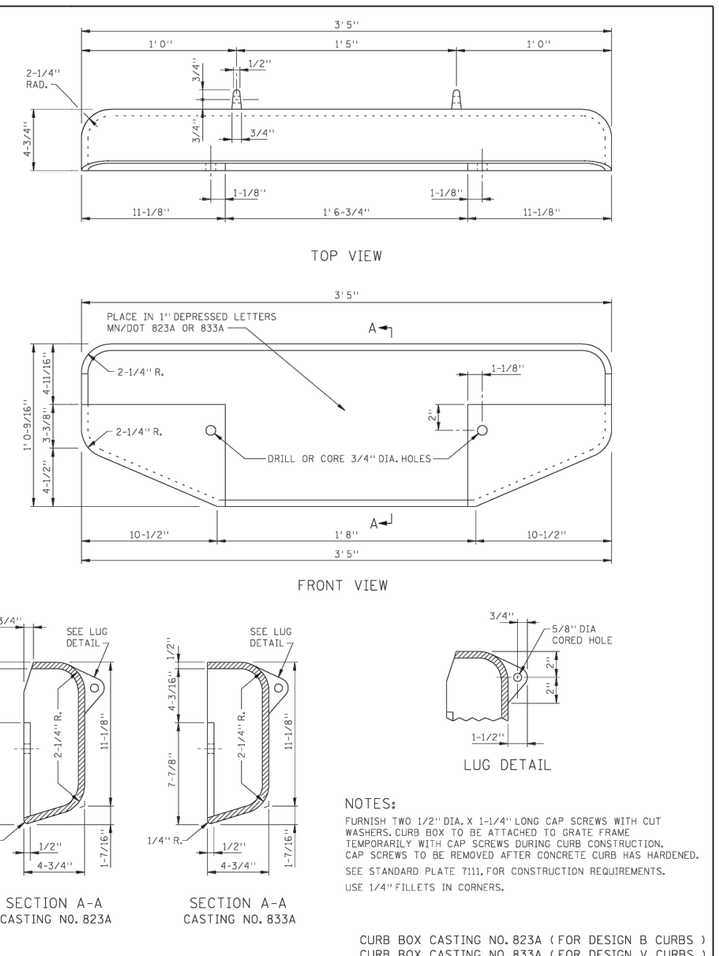


APPROVED MARCH 14, 1996 Donald J. Rohrbach STATE DESIGN ENGINEER	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION STOOL GRATE & CONCRETE FRAME (MEDIAN DRAINS)	SPECIFICATION REFERENCE 2506 REVISED 3-22-2013 M.J.E.	STANDARD PLATE NO. 4143E



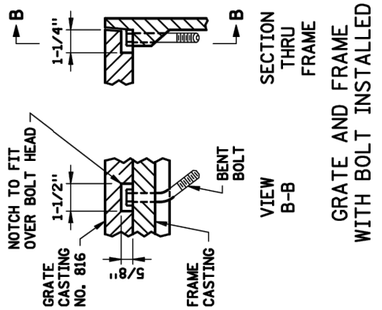
CURB BOX CASTING NO 821 B (FOR DESIGN B CURBS)
CURB BOX CASTING NO. 831 A (FOR DESIGN V CURBS)
CURB BOX CASTING NO. 822 (FOR DESIGN S CURBS)

APPROVED Dec. 10, 1982 R. H. Sullivan Assistant Division Director Technical Services	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION CURB BOX CASTING FOR CATCH BASIN	SPECIFICATION REFERENCE 2506	STANDARD PLATE NO. 4161F



CURB BOX CASTING NO. 823A (FOR DESIGN B CURBS)
CURB BOX CASTING NO. 833A (FOR DESIGN V CURBS)

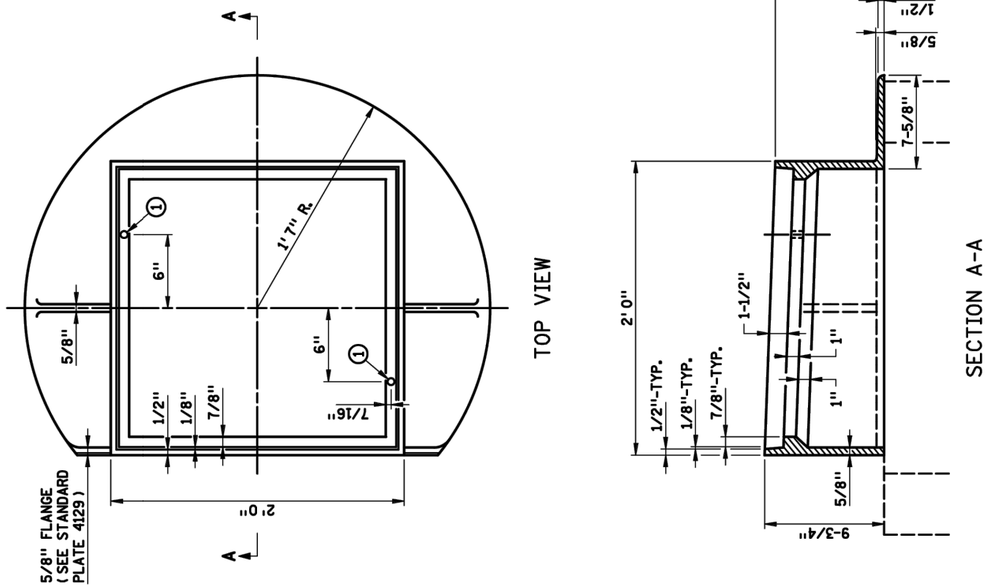
APPROVED Dec. 10, 1982 R. H. Sullivan Assistant Division Director Technical Services	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION CURB BOX CASTING FOR CATCH BASIN	SPECIFICATION REFERENCE 2506	STANDARD PLATE NO. 4160D



GRATE AND FRAME
WITH BOLT INSTALLED ①

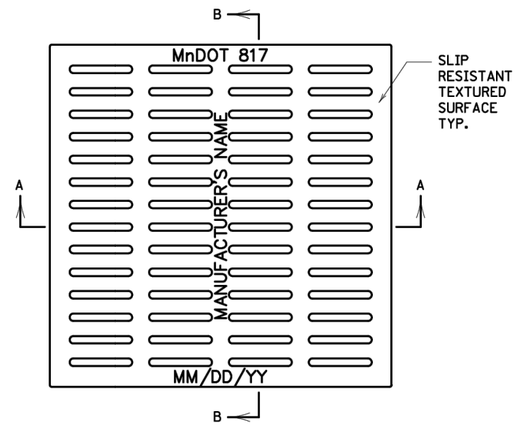
CASTINGS USED FOR ASSEMBLY	
GRATE FRAME	NO. 805 (4132)
GRATE	NO. 814A (4152), 815 (4153), 816 (4154), 817 (4155)

NOTES:
USE 1/4" FILLETS IN ALL CORNERS.
SEE STANDARD PLATE 7111 FOR INSTALLATION REQUIREMENTS.
① AT LOCATIONS INDICATED IN TOP VIEW, PROVIDE 9/16 INCH DIA. HOLES WHEN GRATE NO. 816 (4154) IS USED WITH THIS FRAME. FIELD PLACE 1/2 INCH DIA. X 4 INCHES LONG GALV. BOLT IN UP STREAM SIDE AND BEND UNDERSIDE TO PREVENT REMOVAL. THIS WILL PREVENT GRATE NO. 816 (4154) FROM BEING PLACED IN WRONG DIRECTION AND NOT BEING BICYCLE SAFE.

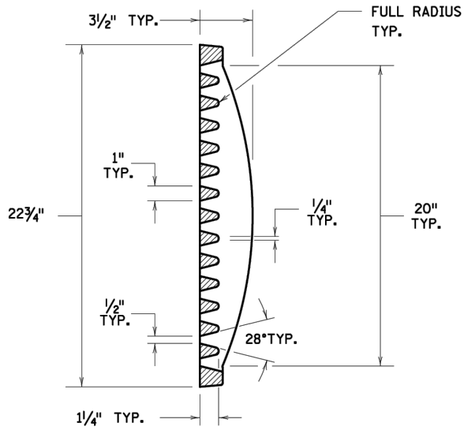


GRATE FRAME CASTING NO. 805

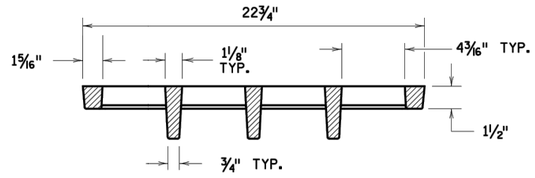
APPROVED SEPTEMBER 19, 2018 STATE DESIGN ENGINEER	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE	STANDARD PLATE NO.
	CATCH BASIN FRAME CASTING (FOR SQUARE GRATE)	2506	4132G



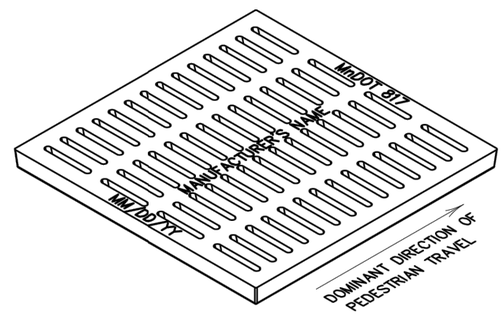
TOP VIEW



SECTION B-B



SECTION A-A



ISOMETRIC TOP VIEW

NOTES:
THIS GRATE MEETS ADA REQUIREMENTS.
THIS GRATE USED WITH FRAME CASTING NO. 805.
CAST GRAY IRON, AASHTO M105/ASTM A48, CLASS 35B.
PRODUCT MARKING PER AASHTO M 105. CASTING SHALL INCLUDE: MANUFACTURER, CASTING DATE, MnDOT DESIGNATION, AND CASTING NUMBER. MARKING TEXT SHALL BE 3/4" IN HEIGHT AND DEPRESSED 1/8".

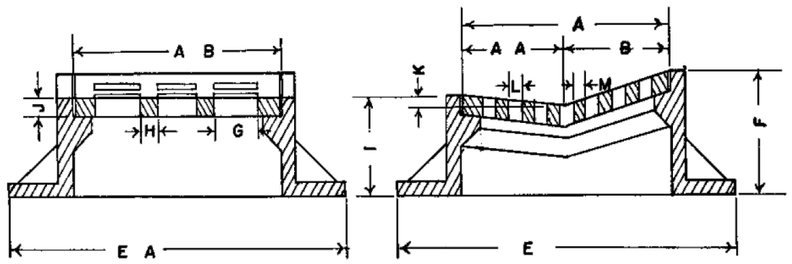
GRATE CASTING NO. 817

APPROVED SEPTEMBER 19, 2018 STATE DESIGN ENGINEER	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE	STANDARD PLATE NO.
	ADA GRATE INLET CASTING	2506	4155A

R-3506 to R-3517 Series
Inlet Frame and Grate for Driveway and Mountable Curb

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3506-A2	C	1.4	2.9
R-3506-B	C	1.2	2.9
R-3507-C	D	1.6	3.7
R-3507-D	D	1.6	3.7
R-3508-A2	C	1.7	3.8
R-3508-B	C	1.8	3.8
R-3508-B1	D	1.9	3.8
R-3508-B2	K	1.4	7.5
R-3508-C	C	1.4	3.8
R-3509	K	0.9	2.8
R-3510	C	2.9	4.1
R-3511	C	2.0	2.9
R-3513	A	1.4	4.7
R-3514-F	C	2.6	5.5
R-3514-F2	C	5.1	7.7
R-3517	C	1.8	3.7

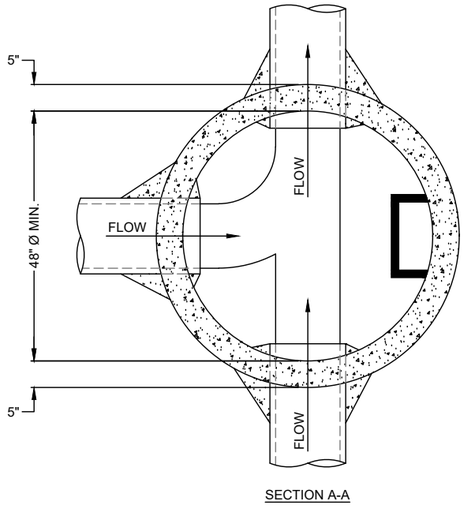


Illustrating R-3508-A2

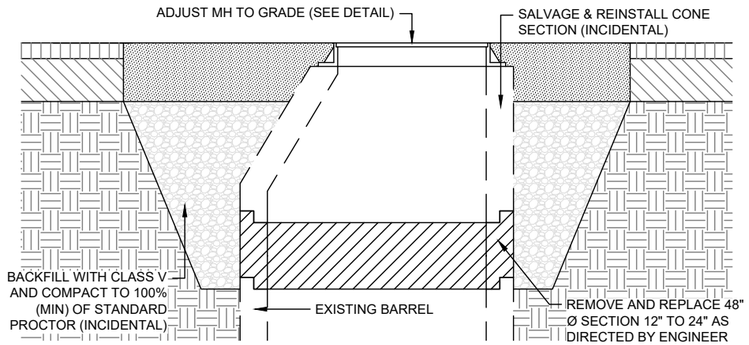
Dimensions in inches

Catalog No.	A	AB	AA	B	E	EA	F	G	H	I	J	K	L	M
R-3506-A2 *	19 1/4	19 1/4	8 1/8	11 1/8	28 1/4	30	12 1/2	6 1/4	3/4	10	1 1/2	1 1/4	1 1/2	7/8
R-3506-B *	19 1/4	19 1/4	8 1/8	11 1/8	28 1/4	30	11	4 3/4	1	10	1 1/2	1 1/2	1 7/8	1
R-3507-C	22	22	11	11	35	35	10	19 3/4	-	10	1 3/4	2	1 1/2	7/8
R-3507-D **	22	22	11	11	30	35	10	19 3/4	-	10	1 3/4	2	1 1/2	7/8
R-3508-A2	22 3/4	22 3/4	11 3/8	11 3/8	35	Dia.	12	6 1/4	3/4	10	1 3/4	2	1 1/2	7/8
R-3508-B	22 3/4	22 3/4	11 3/8	11 3/8	35	Dia.	10	6	1	10	1 3/4	1 3/4	2	1
R-3508-B1	22 3/4	22 3/4	11 3/8	11 3/8	35	Dia.	10	20 3/4	-	10	1 3/4	1 3/4	1 1/2	7/8
R-3508-B2 *	22 1/2	22 1/2	11 1/4	11 1/4	35	Dia.	10	6	1	10	1 3/4	1 3/4	1	7/8
R-3508-C *	22 3/4	22 3/4	11 3/8	11 3/8	38	Dia.	13 1/2	4 1/4	1 3/16	10	2 3/8	1/2	1 3/8	1
R-3509	17	22	8 1/2	8 1/2	25	29	5 1/4	1 1/4	1 1/4	5 1/4	1 3/4	1	6 3/4	1 1/4
R-3510	21 3/4	35 3/4	13 7/8	7 7/8	30	44	9 1/2	10 3/8	1 1/8	6	2	1	1 7/8	1 1/8
R-3511	19	30	8 1/8	10 7/8	27	38	8	8 1/2	1 1/8	7	2	1 3/8	1 7/8	1 1/8
R-3513	24	24	16 1/4	7 3/4	36	35 5/8	7	1 1/4	1	7	1 7/8	2 1/2	4	2 1/4
R-3514-F ***	29 3/8	28 1/8	19 1/8	10 1/4	38 1/4	36 1/4	11 1/2	7 1/2	1	8	2	1 1/2	1 1/2	1
R-3514-F2 +	29 3/8	28 1/8	19 1/8	10 1/4	38 1/4	69 1/2	11 1/2	7 1/2	1	8	2	1 1/2	1 1/2	1
R-3517	22 1/4	22 1/4	11 1/8	11 1/8	36	Dia.	6	6	1	6	2	1/2	2	1

* No base flange at rear.
** No base flange on front.
*** Also available with 44" diameter base flange.
\+ Two piece frame, two piece grate.



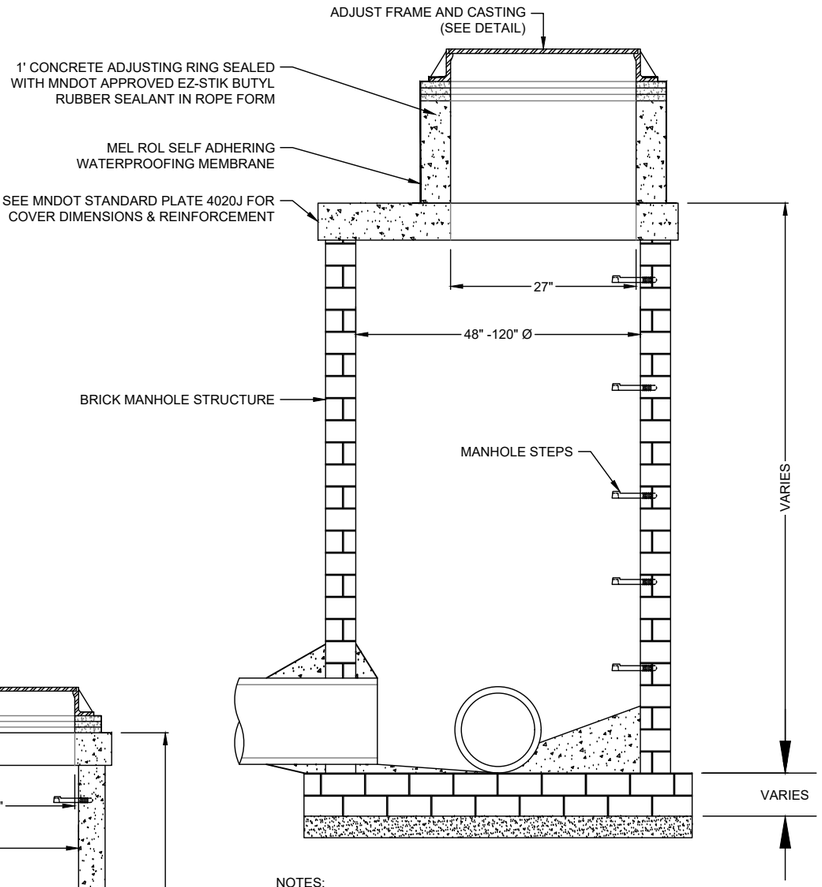
SECTION A-A



RECONSTRUCT DRAINAGE STRUCTURE

NOTE: CASTING SHALL BE SALVAGED & REINSTALLED UNLESS DIRECTED OTHERWISE BY THE ENGINEER

NOT TO SCALE



NOTES:
1. REMOVE TOP CONIC SECTION OF BRICK STRUCTURE UNTIL OPENING IS SUFFICIENT FOR PLACEMENT OF COVER
2. THE COVER SHALL BE DESIGNED FOR AASHTO HS 25 HIGHWAY LOADING

BRICK MANHOLE RECONSTRUCT DETAIL

NOT TO SCALE

NOTES:
1. REINFORCEMENT NOT SHOWN
2. 48" DIAMETER MANHOLE REQUIRES A 27"-48" ECCENTRIC CONE SECTION
3. THE COVER SHALL BE DESIGNED FOR AASHTO HS 20 HIGHWAY LOADING
4. CHANNEL TO BE FORMED AS REQUIRED BY GENERAL SEWER PLANS AND SPECIFICATIONS. CONCRETE SHALL BE MNDOT 3G52

STANDARD PRECAST 48-4005 STORM SEWER MANHOLE DETAIL

NOT TO SCALE

NOTES:
1. REINFORCEMENT NOT SHOWN
2. THE COVER SHALL BE DESIGNED FOR AASHTO HS 25 HIGHWAY LOADING
3. CHANNEL TO BE FORMED AS REQUIRED BY GENERAL SEWER PLANS AND SPECIFICATIONS. CONCRETE SHALL BE Mn/DOT 3G52

STANDARD PRECAST 4020 STORM SEWER MANHOLE DETAIL

NOT TO SCALE

--	EMH	A2-01-2025	25-A2-01
SAP. No.	DRAWN BY	LEGAL No.	ENG. No.
	MJA		JAS
	CHECKED BY		APPROVED BY

MOORHEAD MINNESOTA Engineering

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.

JAMES A. SCHULZ — Name - Project Engineer

03/07/2025 — Date

26225 — License No.

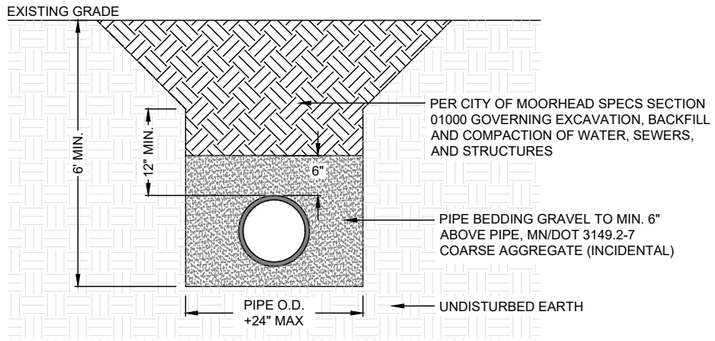
Signature - Project Engineer

STORM

9TH AVE S, 10TH AVE S , AND 16TH ST S

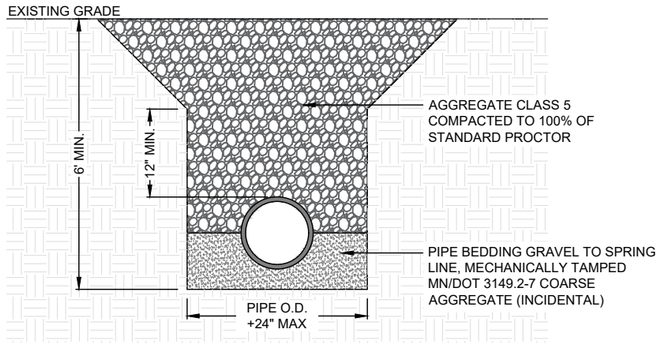
CURB & GUTTER, ASPHALT PAVING

SHEET 19 OF 45



PVC OR HDPE TRENCH BACKFILL DETAIL

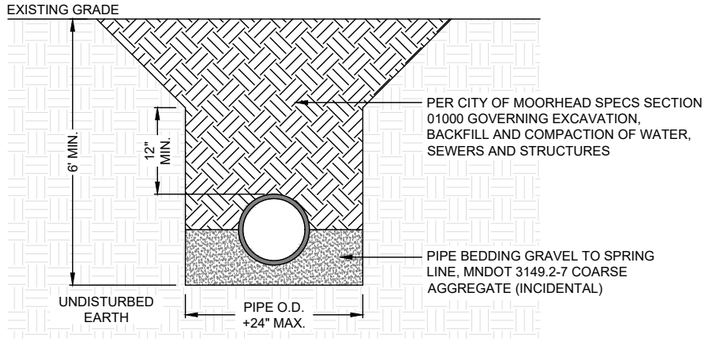
NOT TO SCALE



SHALLOW TRENCH BACKFILL DETAIL

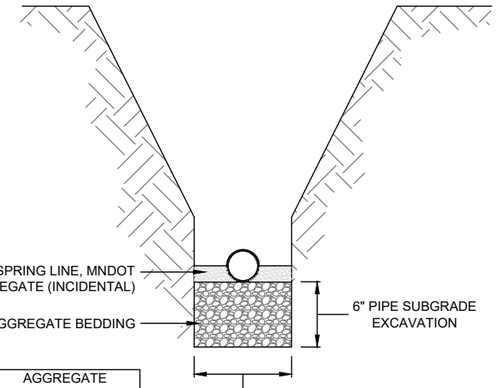
NOT TO SCALE

NOTE:
SHALLOW TRENCH BACKFILL DETAIL TO BE USED WHERE ANY PIPE EXCAVATION OCCURS WITHIN 6' OF THE ROAD CORRIDOR, MNDOT 2105.3E



RCP TRENCH BACKFILL DETAIL

NOT TO SCALE



PIPE	AGGREGATE BEDDING (CV)
6"-12" DIAM.	0.22 C.Y./L.F.
15"-18" DIAM.	0.26 C.Y./L.F.
21"-24" DIAM.	0.30 C.Y./L.F.
27"-30" DIAM.	0.33 C.Y./L.F.
33"-36" DIAM.	0.37 C.Y./L.F.

UNSUITABLE SOILS PIPE BEDDING DETAIL

NOT TO SCALE

EMH	MJA	JAS	--
DRAWN BY	CHECKED BY	APPROVED BY	SAP. No.
			A2-01-2025
			LEGAL No.
			25-A2-01
			ENG. No.

MOORHEAD MINNESOTA Engineering

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

Signature - Project Engineer 03/07/2025 *Date*

JAMES A. SCHULZ *Name - Project Engineer* 26225 *License No.*

STORM

9TH AVE S, 10TH AVE S , AND 16TH ST S
CURB & GUTTER, ASPHALT PAVING

SHEET 20 OF 45

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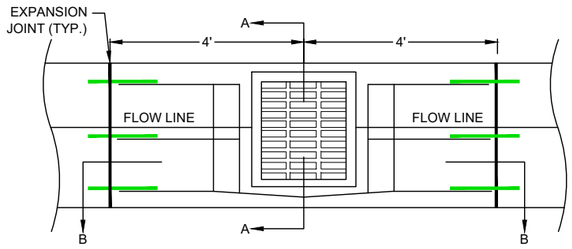
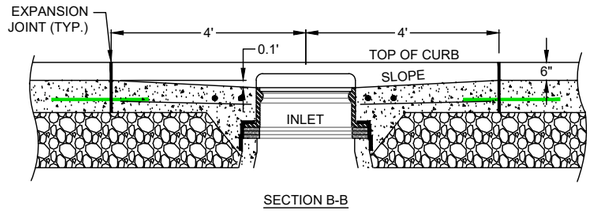
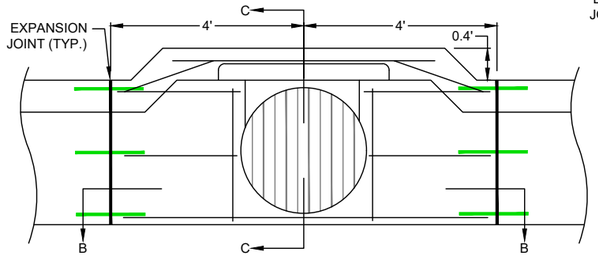
NOTES:
1. REINFORCEMENT SPACING SHALL NOT EXCEED 24" IN ANY DIRECTION AND BE SUPPORTED MID-DEPTH ON REBAR RISER CHAIRS EVERY 4' ON CENTER
2. REINFORCING MUST BE PLACED 4" OF BOTH SIDES OF ALL JOINTS TOOLED OR SAWED
3. ALL REINFORCEMENT, AGGREGATE BASE, AND JOINTS SHALL BE INCIDENTAL TO CONSTRUCTION
4. ALL TIE BARS AND DOWELS SHALL BE EPOXY COATED. ONE END OF ALL DOWEL BARS TO BE GREASED
5. ALL REINFORCEMENT AROUND CATCH BASINS SHALL BE EPOXY COATED
6. WHERE EPOXY COATED REBAR IS REQUIRED IT SHALL HAVE NO VISIBLE DINGS, SCRATCHES, OR OTHER EXPOSED METAL
7. ALL REBAR, SUPPORTING CHAIRS, AND FRAMEWORK SHALL BE INCIDENTAL TO CONSTRUCTION



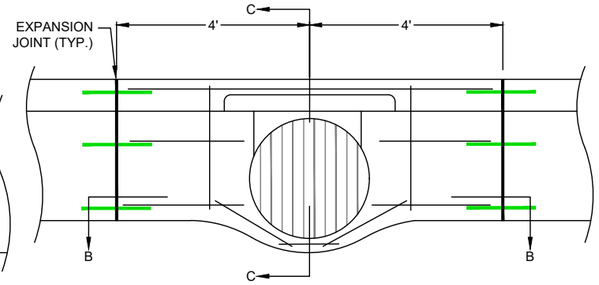
PLAN VIEW TYPE "C"



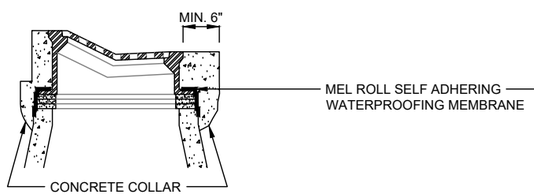
SECTION B-B



PLAN VIEW B-624

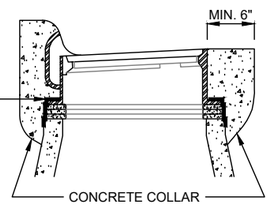


PLAN VIEW B-624



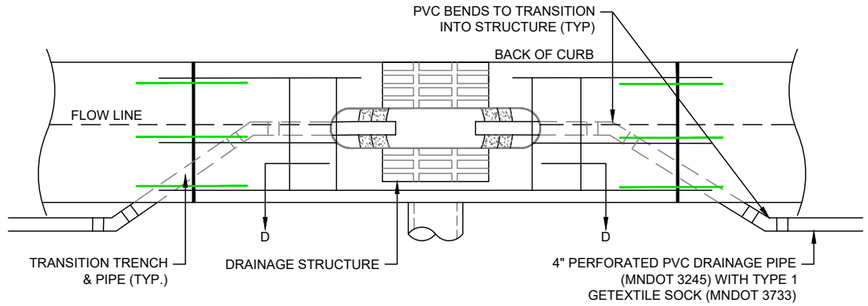
SECTION A-A

TYPE "C" MOUNTABLE CURB & GUTTER CONSTRUCTION AT CATCH BASIN
NOT TO SCALE

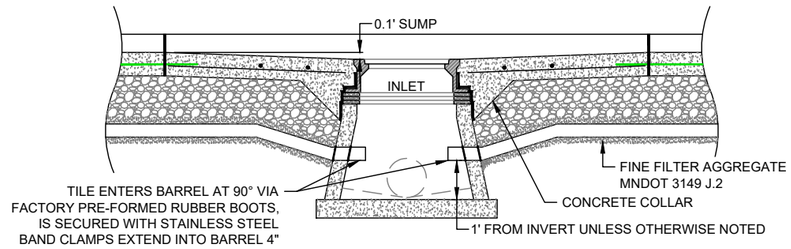


SECTION C-C

B-624 CURB & GUTTER CONSTRUCTION AT CATCH BASIN
NOT TO SCALE

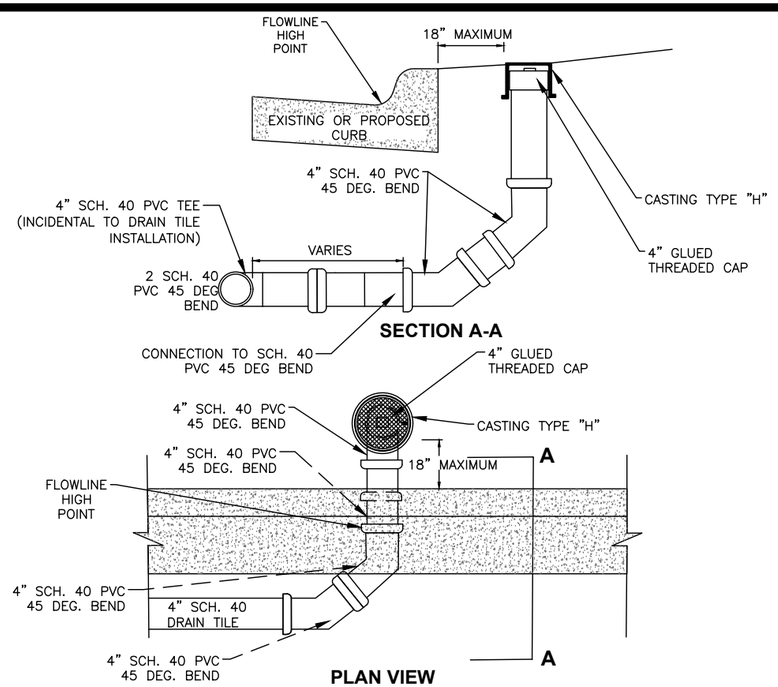


PLAN VIEW



SECTION D-D

REHAB CONSTRUCTION EDGE DRAIN CONNECTION TO INLETS
NOTE: DRAIN TILE CONNECTION AT INLET CAN BE SUBSTITUTED WITH ONE "T" CONNECTION AT THE FRONT OF THE STRUCTURE
NOT TO SCALE



DRAIN TILE CLEANOUT CONNECTION BEHIND CURB
NEW CONSTRUCTION AREAS
NOT TO SCALE

SAP. No.	LEGAL No.	ENG. No.
--	A2-01-2025	25-A2-01

DRAWN BY	CHECKED BY	APPROVED BY
EMH	MJA	JAS

MOORHEAD MINNESOTA Engineering

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.

03/07/2025 Date

26225 License No.

JAMES A. SCHULZ
Name - Project Engineer

STRUCT INLET

9TH AVE S, 10TH AVE S , AND 16TH ST S
CURB & GUTTER, ASPHALT PAVING

SHEET 21 OF 45

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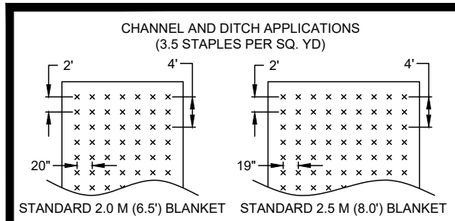
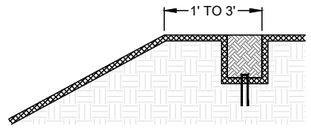


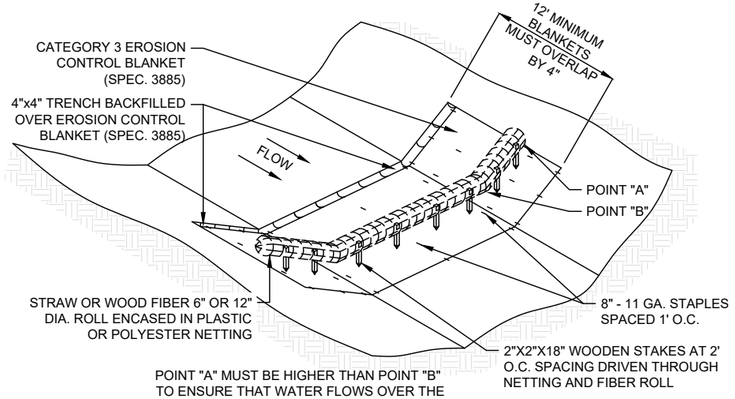
EROSION CONTROL BLANKET INSTALLATION STANDARDS

NOT TO SCALE



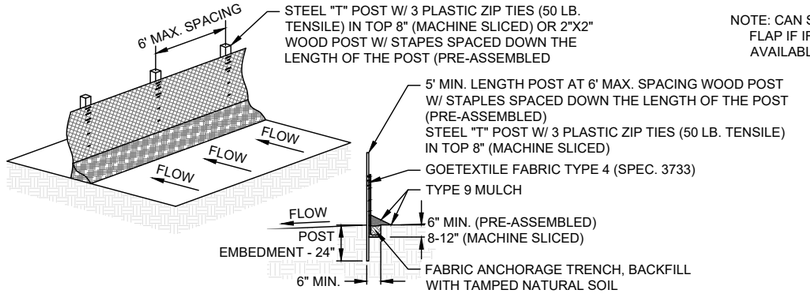
CHECK SLOT

1. DIG 6"x6" TRENCH
2. LAY BLANKET END INTO TRENCH
3. STAPLE BLANKET IN BOTTOM OF TRENCH EVERY 1.5'
4. BACKFILL TRENCH WITH SOIL AND COMPACT



BIOROLL BLANKET SYSTEM

TYPE 3 SPEC. 3889 NOT TO SCALE

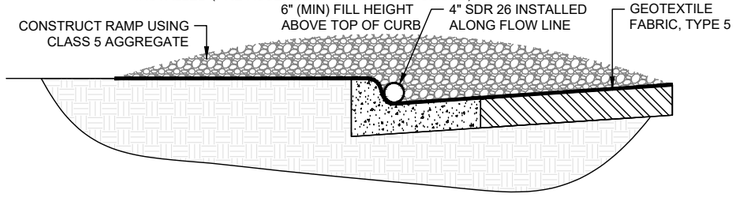


SILT FENCE

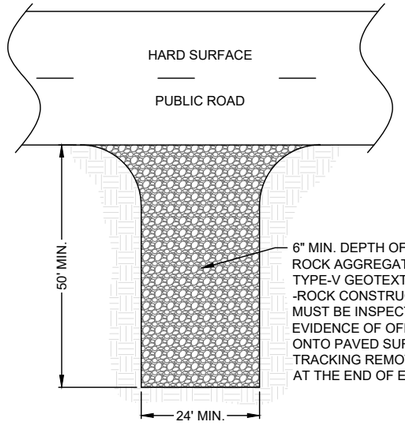
NOT TO SCALE

NOTES:

1. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY
4. INSTALLATION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH Mn/DOT 3886 FOR THE TYPE OF SILT FENCE INSTALLED (PRE-ASSEMBLED OR MACHINE SLICED)

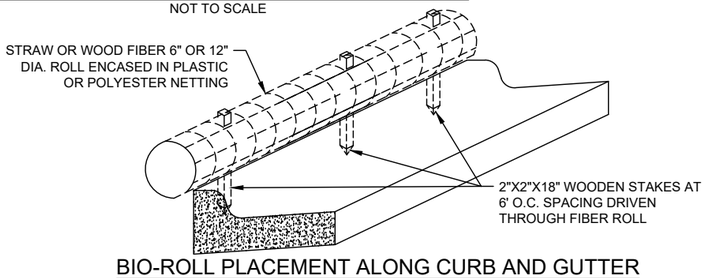


TEMPORARY CONSTRUCTION RAMP OVER CURB & GUTTER:



TEMPORARY ROCK CONSTRUCTION ENTRANCE

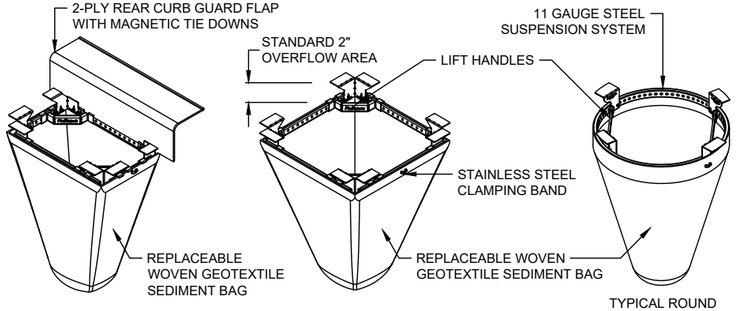
NOT TO SCALE



BIO-ROLL PLACEMENT ALONG CURB AND GUTTER

NOT TO SCALE

NOTE: CAN SLIDE 2 x 4 THROUGH FLAP IF IRON CURB BACK IS NOT AVAILABLE FOR MAGNETS.



TYPICAL CURB BOX INLET FILTER (TYPE C WITH CURB BOX)

TYPICAL FLAT/RECTANGULAR/ROLLED CURB INLET FILTER (TYPES A, B, C, & D)

MATERIALS:

1. FRAMING - 11 GAUGE STEEL; CORROSION RESISTANT
2. SEDIMENT BAG - WOVEN GEOTEXTILE (TYPE FF OR APPROVED EQUAL); 2 C.F. TYPICAL VOLUME; STAINLESS STEEL LOCKING BAND SECURING BAG TO FRAME

INSTALLATION

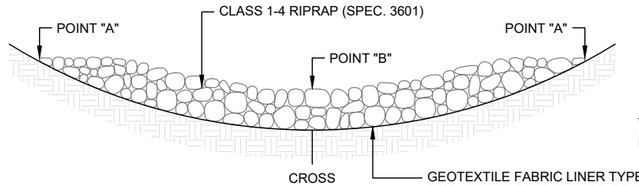
1. REMOVE GRATE FROM DRAINAGE STRUCTURE
2. CLEAN SOIL AND DEBRIS FROM LEDGE (LIP) OF DRAINAGE STRUCTURE
3. DROP FLEXSTORM INLET FILTER ONTO LOAD BEARING LIP OF CASTING OR CONCRETE STRUCTURE
4. REPLACE GRATE AND CONFIRM IT IS NOT ELEVATED MORE THAN ⅛", THE THICKNESS OF THE STEEL HANGARS

TYPE "C" INLET PROTECTION

(SILT FENCE TO PROTECT DROP INLETS)

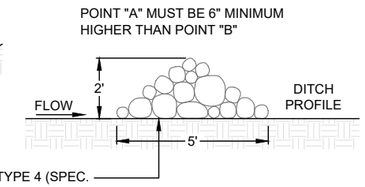
USE WHERE INLET DRAINS AN AREA WITH SLOPES AT 1:3 or LESS

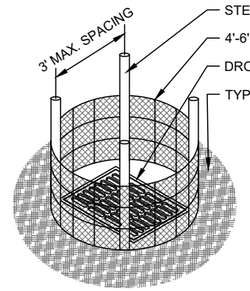
TYPE A SPEC. 3891 NOT TO SCALE

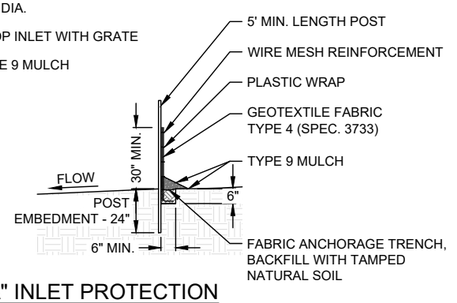


ROCK CHECK

TYPE 7 SPEC. 3889 NOT TO SCALE





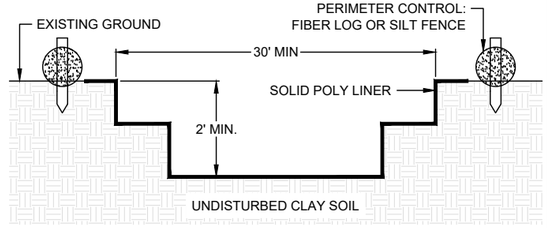


TYPE "A" INLET PROTECTION

(SILT FENCE TO PROTECT DROP INLETS)

USE WHERE INLET DRAINS AN AREA WITH SLOPES AT 1:3 or LESS

TYPE A SPEC. 3891 NOT TO SCALE

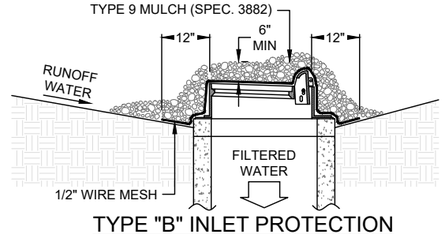


NOTES:

1. WASHOUT SHALL BE 15' BY 30'
2. PERIMETER CONTROL SHALL BE INSTALLED ON THREE SIDES NOT ABUTTING DUMP ENTRANCE
3. ALL LIQUID AND SOLID WASTES GENERATED BY CONCRETE WASHOUT OPERATIONS MUST BE CONTAINED IN A LEAK PROOF CONTAINMENT FACILITY OR CLAY SOIL PIT WITH POLY LINER (AS SHOWN). INSTALLATION, MAINTENANCE, AND REMOVAL OF CONCRETE WASHOUT SHALL BE INCIDENTAL TO CONSTRICTION

TYPICAL CONCRETE WASHOUT

NOT TO SCALE



TYPE "B" INLET PROTECTION

NOT TO SCALE

SAP No.	--
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ENG. No.	25-A2-01
DRAWN BY	EMH
CHECKED BY	MJA
APPROVED BY	JAS

MOORHEAD MINNESOTA Engineering

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.

JAMES A. SCHULZ
Name - Project Engineer

Signature - Project Engineer

03/07/2025
Date

26225
License No.

EROSION CONTROL

9TH AVE S, 10TH AVE S , AND 16TH ST S
CURB & GUTTER, ASPHALT PAVING

SHEET 22 OF 45

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PROJECT 25-A2-02 STORM STRUCTURES

PROJECT ID	CITY NAME	LOCATION	RIM ELEV.	INV-1	INV-2	INV-3	INV-4	INV-5	INV-6	INV-7	EX. STRUCTURE TYPE	EX. STRUCTURE SIZE	EX. CASTING SIZE	EX. CASTING TYPE	CASTINGS AND ADJUSTMENTS		HEIGHT OF ADJUSTMENT	EX. RING TYPE	STRUCTURE ACTION
															CASTING ACTION	ADJUSTMENT TYPE			
MHST-1	RCS32	12th Ave S & 16th ST S	906.83	N-898.23	S-898.23	E-901.53	W-901.63	NW-900.13			PRECAST	60"	24"	PRECAST	F & I CASTING - TYPE "A"	TYPE "A"	1.2	4-HDPE	NO ACTION
CB1		13th Ave S & 16th ST S	906.50	W-902.50							PRECAST	36"	24"	PRECAST	F & I CASTING - TYPE "D"	TYPE "A"	1	2-CONCRETE	NO ACTION
CB2		14th Ave S & 16th ST S	906.62	E-902.82	W-902.92						PRECAST	36"	24"	PRECAST	F & I CASTING - TYPE "D"	TYPE "B"	0.9	1-CONCRETE	NO ACTION
MHST-2	RCS33	10th Ave S & 16th ST S	906.05	N-899.35	S-899.15	NE-900.65	NW-900.45	SE-900.25	SW-900.85		PRECAST	48"	24"	PRECAST	F & I CASTING - TYPE "A"	TYPE "A"	1.4	4-HDPE	NO ACTION
CB3		11th Ave S & 16th ST S	905.62	SW-901.62							PRECAST	36"	24"	PRECAST	F & I CASTING - TYPE "D"	TYPE "A"	1.1	2-HDPE	NO ACTION
CB4		12th Ave S & 16th ST S	906.12	NE-902.72							PRECAST	36"	24"	PRECAST	F & I CASTING - TYPE "D"	TYPE "B"	0.9	0-CONCRETE	NO ACTION
CB5		13th Ave S & 16th ST S	905.85	SE-902.65							PRECAST	36"	24"	PRECAST	F & I CASTING - TYPE "D"	TYPE "B"	0.9	0-CONCRETE	NO ACTION
CB6		14th Ave S & 16th ST S	905.70	NW-901.9							BRICK	24"	24"	BRICK	F & I CASTING - TYPE "D"	TYPE "B"	0.9	0-CONCRETE	BRICK RECONSTRUCT
MHST-3	RAS114	9th Ave S & 14th ST S	907.59	S-903.09	W-903.39	NE-903.19	NW-903.39	SE-403.49			PRECAST	36"	24"	PRECAST	F & I CASTING - TYPE "A"	TYPE "A"	1.6	3-HDPE	NO ACTION
CB7		10th Ave S & 14th ST S	907.24	NW-902.74							PRECAST	36"	27"	PRECAST	SALVAGE & INSTALL - TYPE "D"	TYPE "A"	1.3	2-HDPE	NO ACTION
MHST-4	RCS34	9th Ave S & 16th ST S	905.31	S-900.11	NE-900.21	NW-900.31	SE-900.21	SW-900.11			PRECAST	48"	24"	PRECAST	F & I CASTING - TYPE "A"	TYPE "A"	1.8	6-CONCRETE	NO ACTION
CB8		10th Ave S & 16th ST S	904.37	SW-900.27							PRECAST	36"	24"	PRECAST	F & I CASTING - TYPE "D"	TYPE "A"	1.3	2-CONCRETE	VERIFY
CB9		11th Ave S & 16th ST S	904.50	NW-900.30							PRECAST	36"	24"	PRECAST	F & I CASTING - TYPE "D"	TYPE "B"	0.9	1-CONCRETE	NO ACTION
CB10		12th Ave S & 16th ST S	904.66	NE-900.56							PRECAST	36"	24"	PRECAST	F & I CASTING - TYPE "D"	TYPE "A"	1.2	2-CONCRETE	NO ACTION
CB11		13th Ave S & 16th ST S	905.03	SE-900.93							PRECAST	36"	24"	PRECAST	F & I CASTING - TYPE "D"	TYPE "A"	1.7	4-CONCRETE	NO ACTION
MHST-5	LS5.3	9th Ave S & 17th ST S	905.18	N-889.18	S-889.08	E-889.38	NE-889.18	NW-889.18	SE-889.18	SW-889.18	PRECAST	60+"	24"	PRECAST	F & I CASTING - TYPE "A"	TYPE "A"	1.3	2-CONCRETE	NO ACTION
CB12		10th Ave S & 17th ST S	904.25	SW-900.25							PRECAST	36"	24"	PRECAST	F & I CASTING - TYPE "D"	TYPE "A"	1.2	2-CONCRETE	F&I CB
CB13		11th Ave S & 17th ST S	904.76	NW-900.96							PRECAST	36"	24"	PRECAST	F & I CASTING - TYPE "D"	TYPE "A"	0.9	1-CONCRETE	NO ACTION
CB14		12th Ave S & 17th ST S	904.68	N-901.08							PRECAST		24"	PRECAST	F & I CASTING - TYPE "D"	TYPE "A"	1.2	2-CONCRETE	NO ACTION
CB15		13th Ave S & 17th ST S	904.40	S-900.40	SE-900.20						PRECAST	36"	24"	PRECAST	F & I CASTING - TYPE "D"	TYPE "A"	1.2	2-CONCRETE	NO ACTION
MHST-6	RAS127	10th Ave S & 14th ST S	907.62	N-901.92	W-901.92	NE-902.32	NW-902.12	SE-902.22	SW-902.22		PRECAST	48"	24"	PRECAST	F & I CASTING - TYPE "A"	TYPE "B"	0.8	1-HDPE	NO ACTION
CB16		11th Ave S & 14th ST S	907.34	SW-903.24							PRECAST	36"	27"	PRECAST	SALVAGE & INSTALL	TYPE "A"	1.2	2-HDPE	NO ACTION
CB17		12th Ave S & 14th ST S	903.81	N-899.71							PRECAST	36"	27"	PRECAST	SALVAGE & INSTALL	TYPE "A"	1	1-HDPE	NO ACTION

--	A2-01-2025	25-A2-01
SAP. No.	LEGAL No.	ENG. No.
EMH	MJA	JAS
DRAWN BY	CHECKED BY	APPROVED BY

MOORHEAD MINNESOTA Engineering

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.

03/07/2025
Date

26225
License No.

Signature - Project Engineer

JAMES A. SCHULZ
Name - Project Engineer

SANITARY SEWER STRUCTURE TABLE

9TH AVE S, 10TH AVE S , AND 16TH ST S

CURB & GUTTER, ASPHALT PAVING

SHEET 23 OF 45

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PROJECT 25-A2-02 SANITARY STRUCTURES

PROJECT ID	CITY NAME	LOCATION	RIM ELEV.	INV-1	INV-2	INV-3	INV-4	EX. STRUCTURE TYPE	EX. STRUCTURE SIZE	EX. CASTING SIZE	EX. CASTING TYPE	CASTINGS AND ADJUSTMENTS		HEIGHT OF ADJUSTMENT	EX. RING TYPE	STRUCTURE ACTION
												CASTING ACTION	ADJUSTMENT TYPE			
MHSS-1	5.20	12th Ave S & 16th ST S	907.81	N-900.41	E-900.61	S-900.51		PRECAST	48"	24"	SS MANHOLE	F & I CASTING - TYPE "A"	TYPE "A"	1.30	3-CONCRETE	NO ACTION
MHSS-2	5.19	12th Ave S & 16th ST S	906.81	N-899.11	E-899.31	S-899.31		PRECAST	48"	24"	SS MANHOLE	F & I CASTING - TYPE "A"	TYPE "A"	1.70	4-CONCRETE	NO ACTION
MHSS-3	5.18	10th Ave S & 16th ST S	906.35	N-897.85	S-898.05			PRECAST	48"	24"	SS MANHOLE	F & I CASTING - TYPE "A"	TYPE "A"	1.50	3-CONCRETE	NO ACTION
MHSS-4	5.14	9th Ave S & 14th ST S	906.65	N-891.45	E-890.85	W-890.65		PRECAST	60"	24"	SS MANHOLE	F & I CASTING - TYPE "A"	TYPE "A"	1.00	1-CONCRETE	NO ACTION
MHSS-5	5.16	9th Ave S & 16th ST S	905.41	E-891.71	S-891.81	W-891.81		PRECAST	60"	24"	SS MANHOLE	F & I CASTING - TYPE "A"	TYPE "A"	1.90	5-CONCRETE	NO ACTION
MHSS-6	5.23	9th Ave S & 17th ST S	905.66	N-893.66	E-892.76	S-893.66	W-892.46	PRECAST	48"	24"	SS MANHOLE	F & I CASTING - TYPE "A"	TYPE "A"	1.60	3-CONCRETE/1-HDPE	NO ACTION

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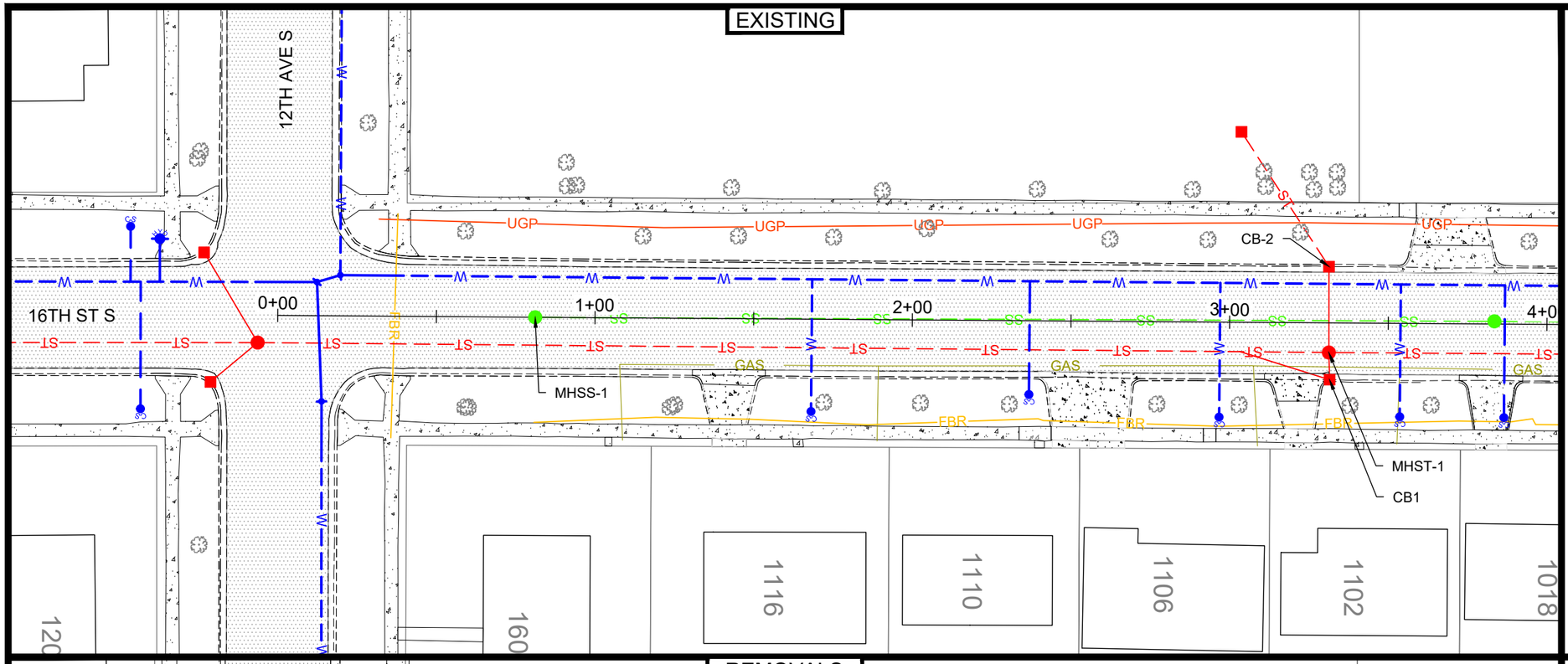
JAMES A. SCHULZ
Name - Project Engineer

STORM SEWER STRUCTURE TABLES

9TH AVE S, 10TH AVE S , AND 16TH ST S

CURB & GUTTER, ASPHALT PAVING

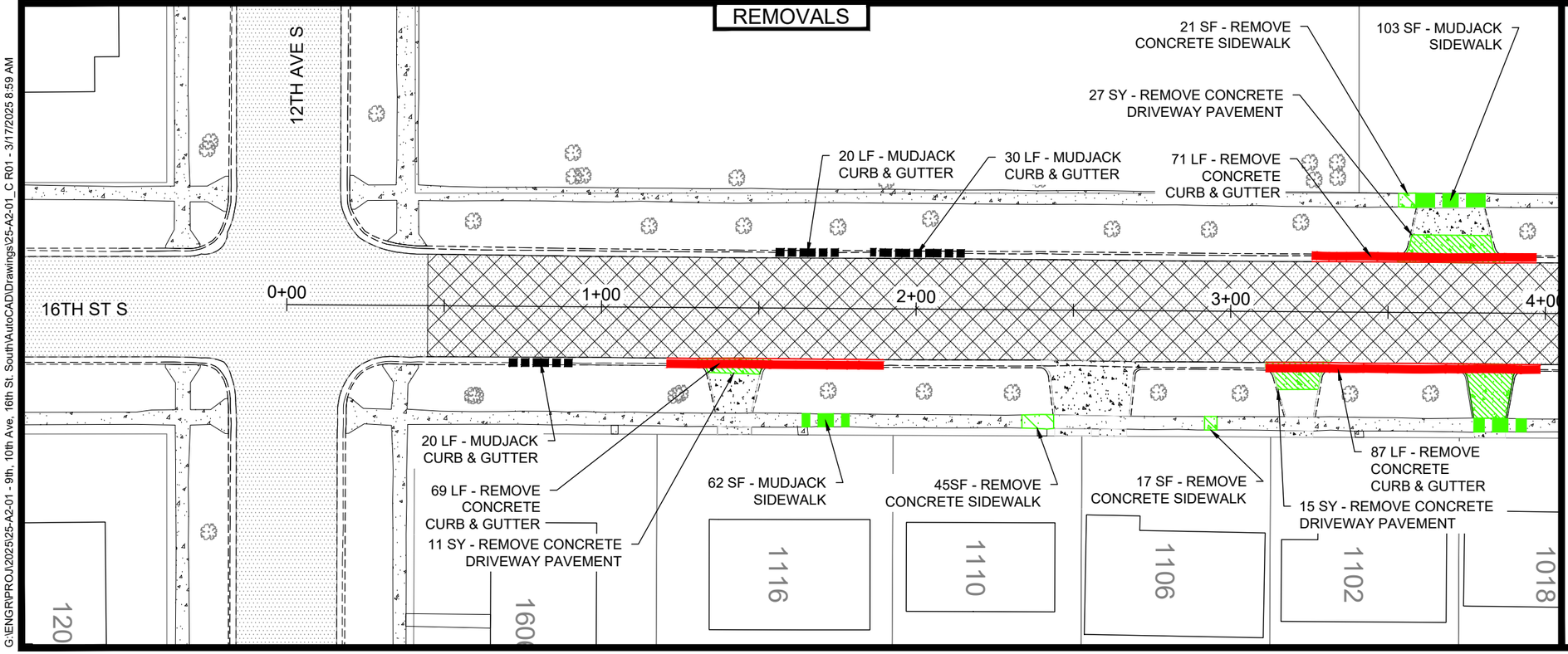
EXISTING



EXISTING BITUMINOUS PAVEMENT

EXT. CONC. SIDEWALK

REMOVALS



REMOVE BITUMINOUS PAVEMENT

REMOVE CONC. SIDEWALK

REMOVE CURB & GUTTER

MUDJACK CURB & GUTTER

MUDJACK SIDEWALK

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--	A2-01-2025	25-A2-01	
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DRAWN BY	CHECKED BY	APPROVED BY	

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Signature - Project Engineer

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Name - Project Engineer

03/07/2025
Date

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EXISTING CONDITIONS & REMOVALS - 16TH STREET SOUTH

9TH AVE S, 10TH AVE S , AND 16TH ST S

CURB & GUTTER, ASPHALT PAVING

SHEET 25 OF 45

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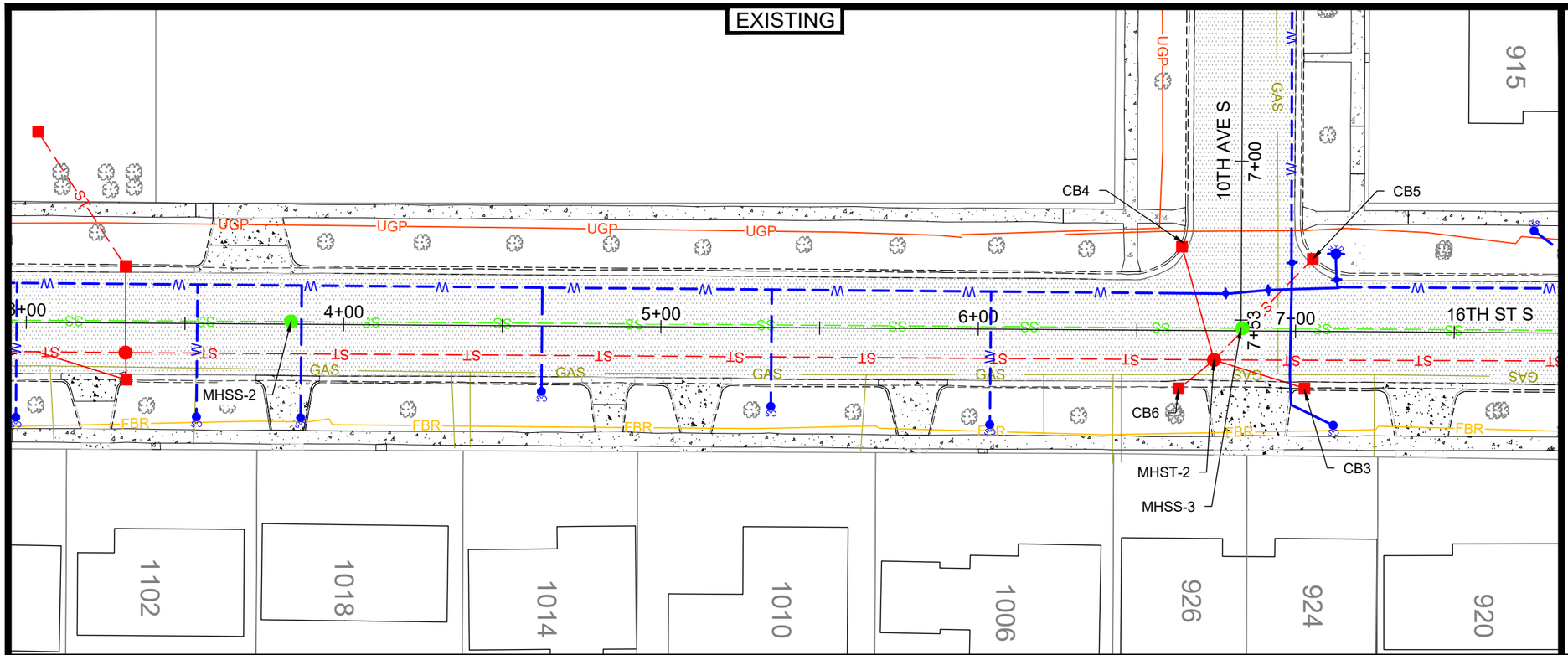
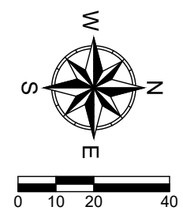
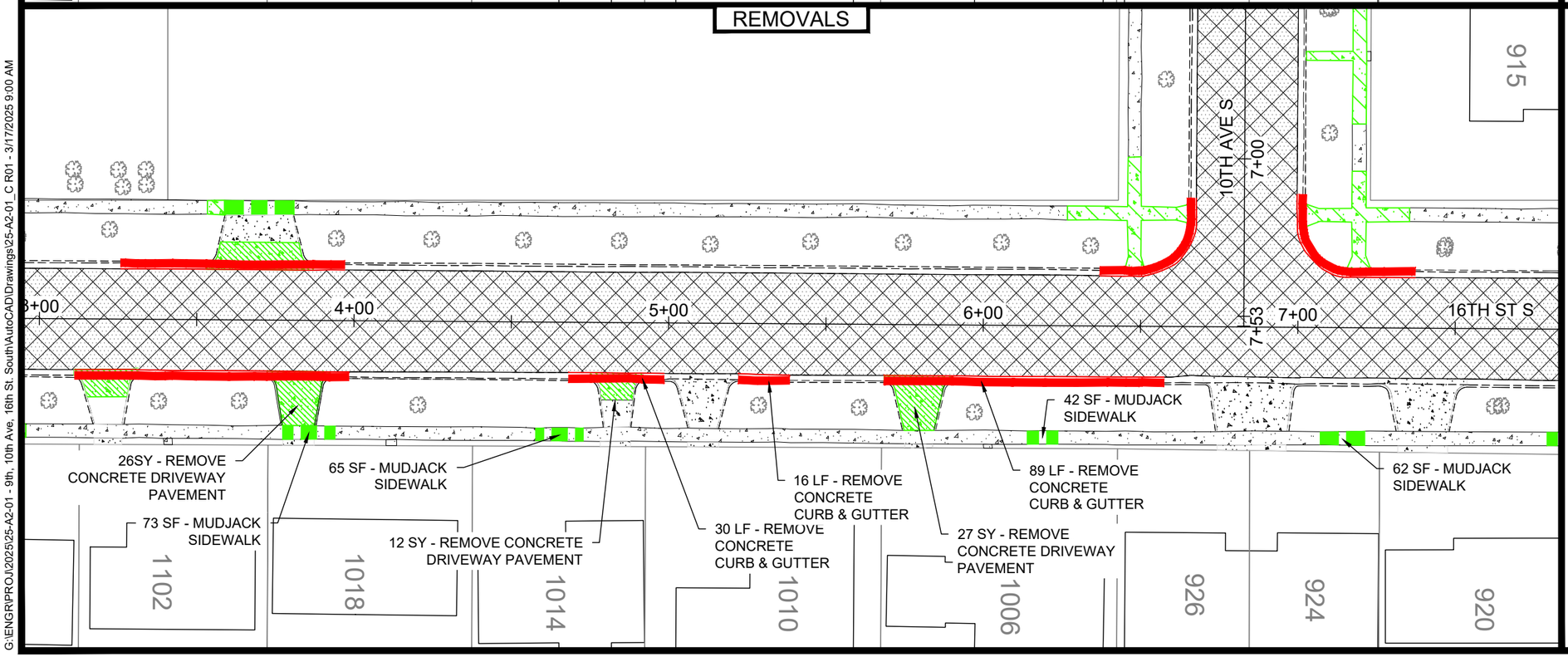


EXISTING BITUMINOUS PAVEMENT

EXT. CONC. SIDEWALK



REMOVALS



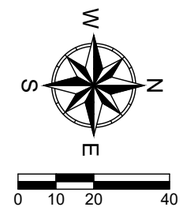
REMOVE BITUMINOUS PAVEMENT

REMOVE CONC. SIDEWALK

REMOVE CURB & GUTTER

MUDJACK CURB & GUTTER

MUDJACK SIDEWALK



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DRAWN BY	CHECKED BY	APPROVED BY	

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EXISTING CONDITIONS & REMOVALS - 16TH STREET SOUTH

9TH AVE S, 10TH AVE S, AND 16TH ST S

CURB & GUTTER, ASPHALT PAVING

SHEET 26 OF 45

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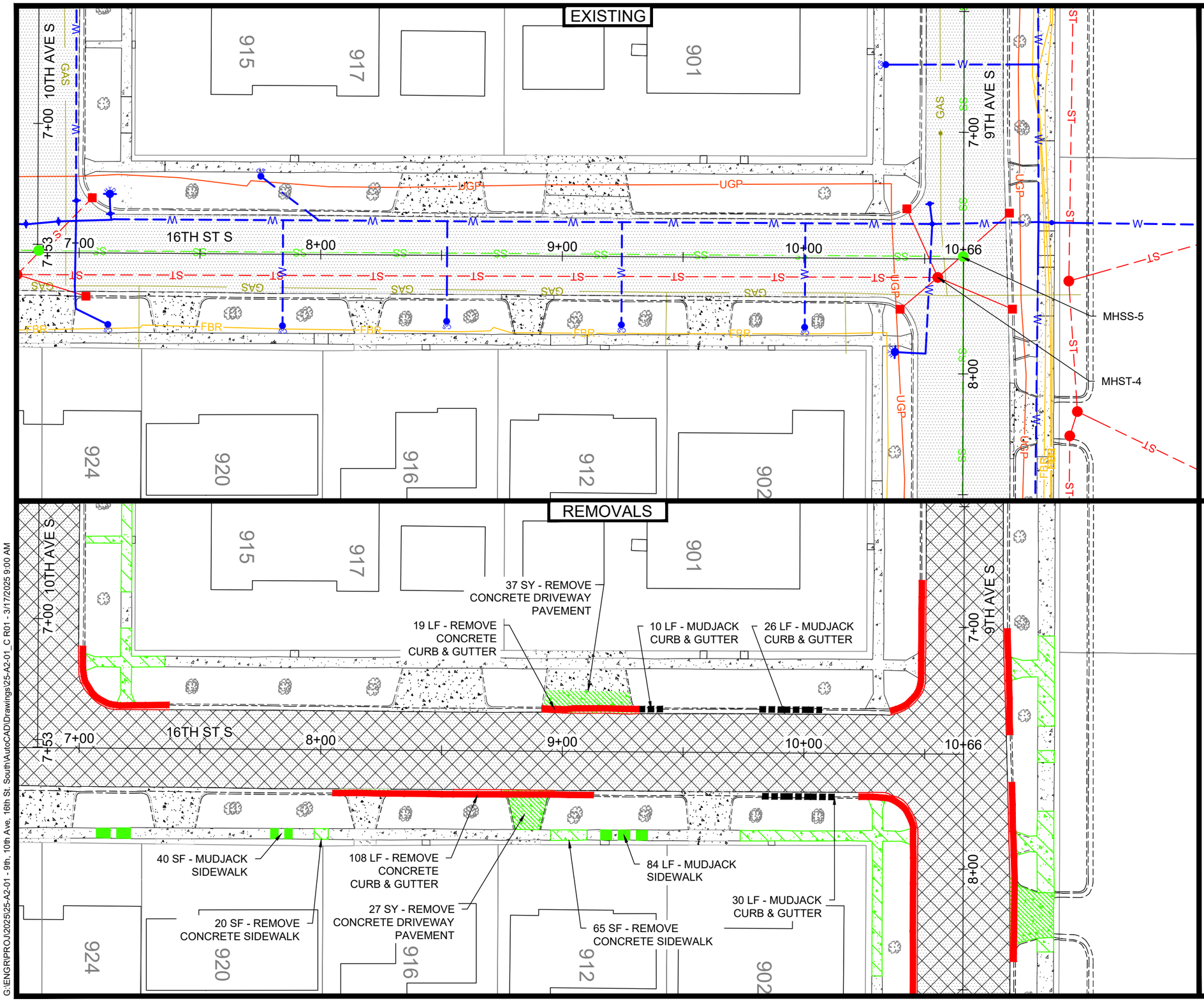

EXISTING BITUMINOUS PAVEMENT

EXT. CONC. SIDEWALK

REMOVE BITUMINOUS PAVEMENT

REMOVE CONC. SIDEWALK

REMOVE CURB & GUTTER

MUDJACK CURB & GUTTER

MUDJACK SIDEWALK

0 10 20 40

--	EMH	MJA	JAS
SAP. No.	DRAWN BY	CHECKED BY	APPROVED BY
A2-01-2025			
LEGAL No.			
25-A2-01			
ENG. No.			

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Name - Project Engineer

03/07/2025

Date

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License No.

EXISTING CONDITIONS & REMOVALS - 16TH STREET SOUTH

9TH AVE S, 10TH AVE S , AND 16TH ST S

CURB & GUTTER, ASPHALT PAVING

SHEET 27 OF 45

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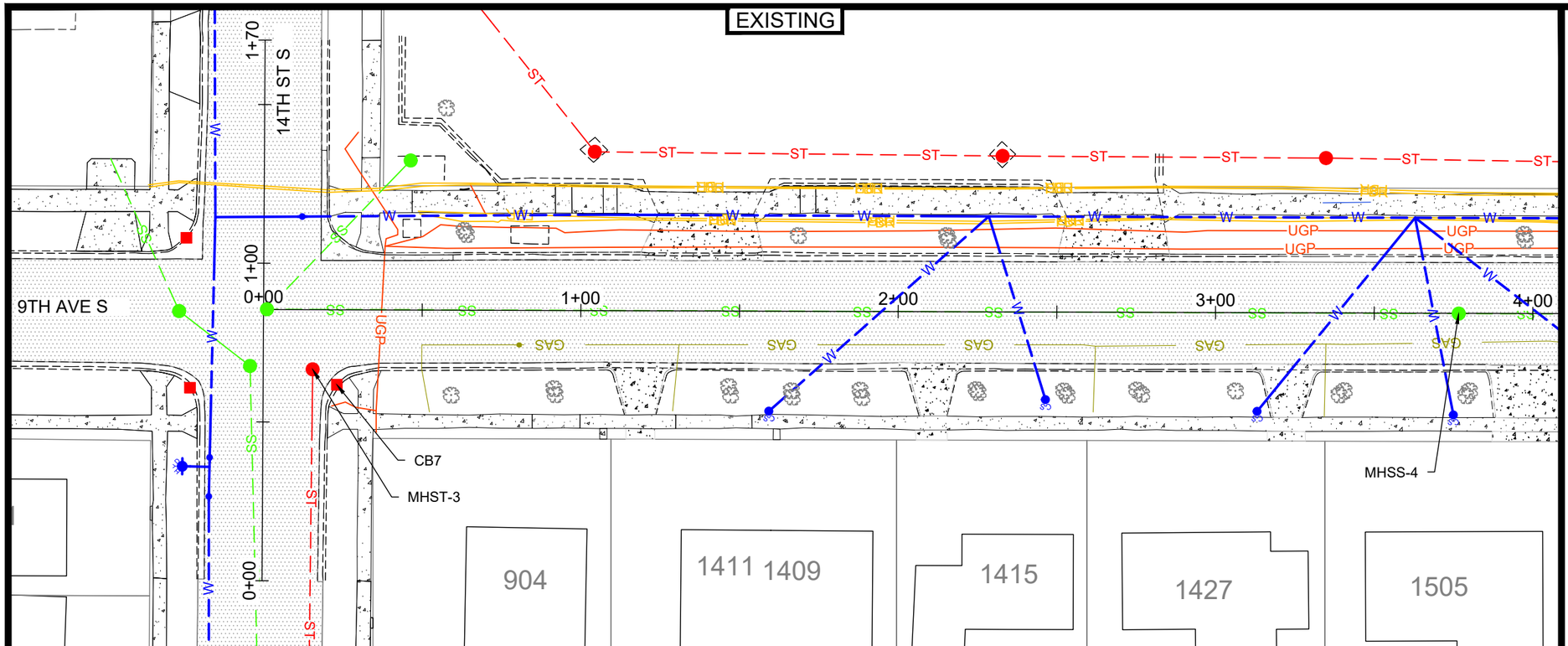
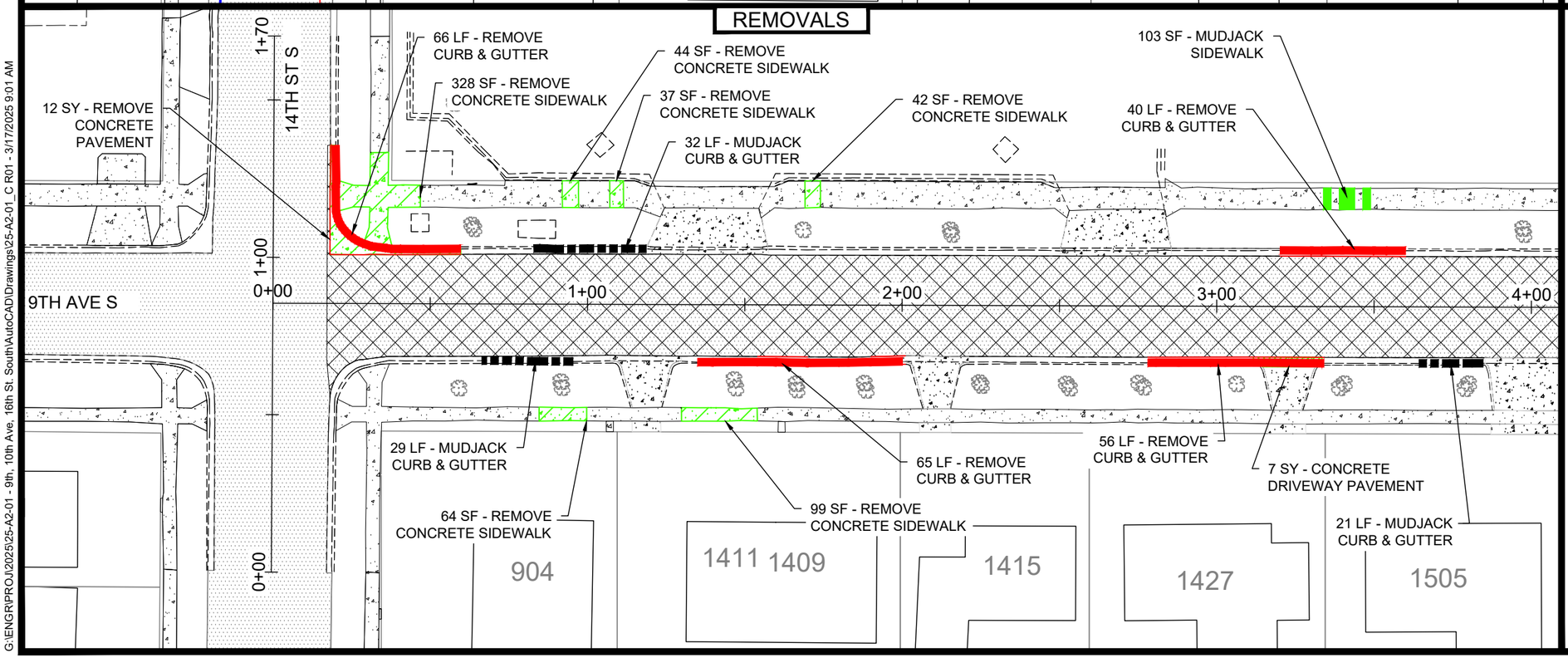
EXISTING



EXISTING BITUMINOUS PAVEMENT

EXT. CONC. SIDEWALK

REMOVALS



REMOVE BITUMINOUS PAVEMENT

REMOVE CONC. SIDEWALK

REMOVE CURB & GUTTER

MUDJACK CURB & GUTTER

MUDJACK SIDEWALK

--	A2-01-2025	25-A2-01	
SAP. No.	LEGAL No.	ENG. No.	
EMH	MJA	JAS	
DRAWN BY	CHECKED BY	APPROVED BY	

MOORHEAD MINNESOTA Engineering

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.

03/07/2025
Date

26225
License No.

JAMES A. SCHULZ
Name - Project Engineer

EXISTING CONDITIONS & REMOVALS - 9TH AVENUE SOUTH

9TH AVE S, 10TH AVE S , AND 16TH ST S

CURB & GUTTER, ASPHALT PAVING

SHEET 28 OF 45

G:\ENGR\PROJ\2025\25-A2-01 - 9th, 10th Ave, 16th St. South\AutoCAD\Drawings\25-A2-01_C R01 - 3/17/2025 9:01 AM

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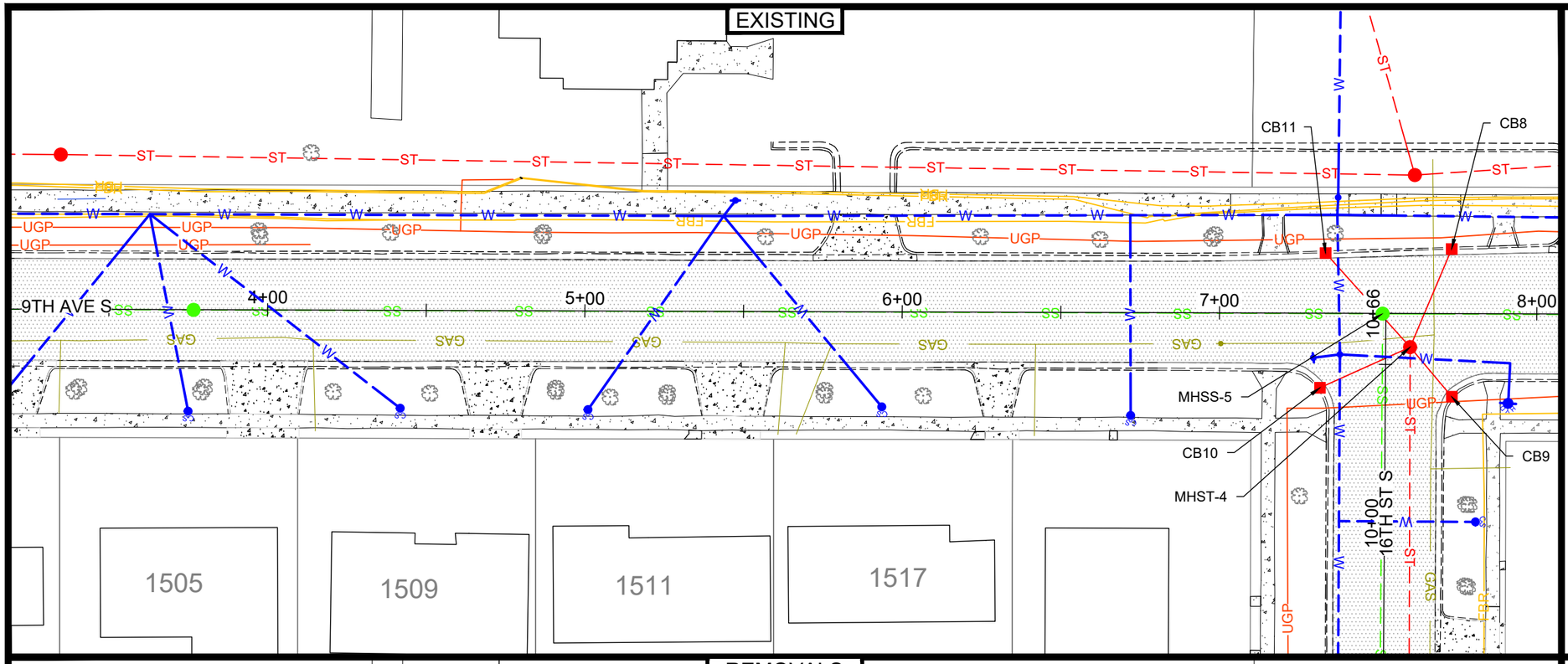
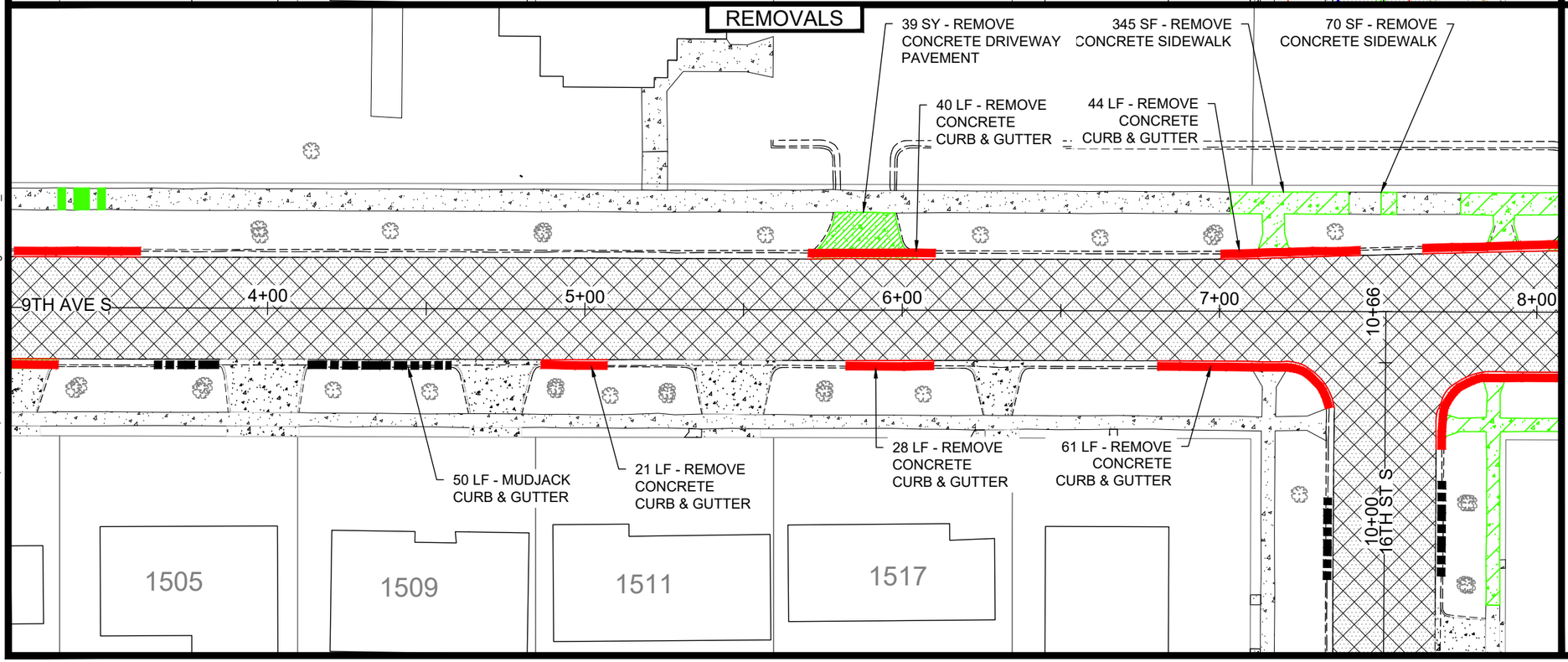


EXISTING BITUMINOUS PAVEMENT

EXT. CONC. SIDEWALK

N
W E
S
0 10 20 40

REMOVALS



REMOVE BITUMINOUS PAVEMENT

REMOVE CONC. SIDEWALK

REMOVE CURB & GUTTER

MUDJACK CURB & GUTTER

MUDJACK SIDEWALK

N
W E
S
0 10 20 40

--	A2-01-2025	25-A2-01	
SAP. No.	LEGAL No.	ENG. No.	
EMH	MJA	JAS	
DRAWN BY	CHECKED BY	APPROVED BY	

MOORHEAD MINNESOTA Engineering

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JAMES A. SCHULZ
Name - Project Engineer

Signature - Project Engineer

03/07/2025
Date

26225
License No.

EXISTING CONDITIONS & REMOVALS - 9TH AVENUE SOUTH

9TH AVE S, 10TH AVE S , AND 16TH ST S

CURB & GUTTER, ASPHALT PAVING

SHEET 29 OF 45

G:\ENGR\PROJ\2025\25-A2-01 - 9th, 10th Ave, 16th St. South\AutoCAD\Drawings\25-A2-01_C R01 - 3/17/2025 9:01 AM

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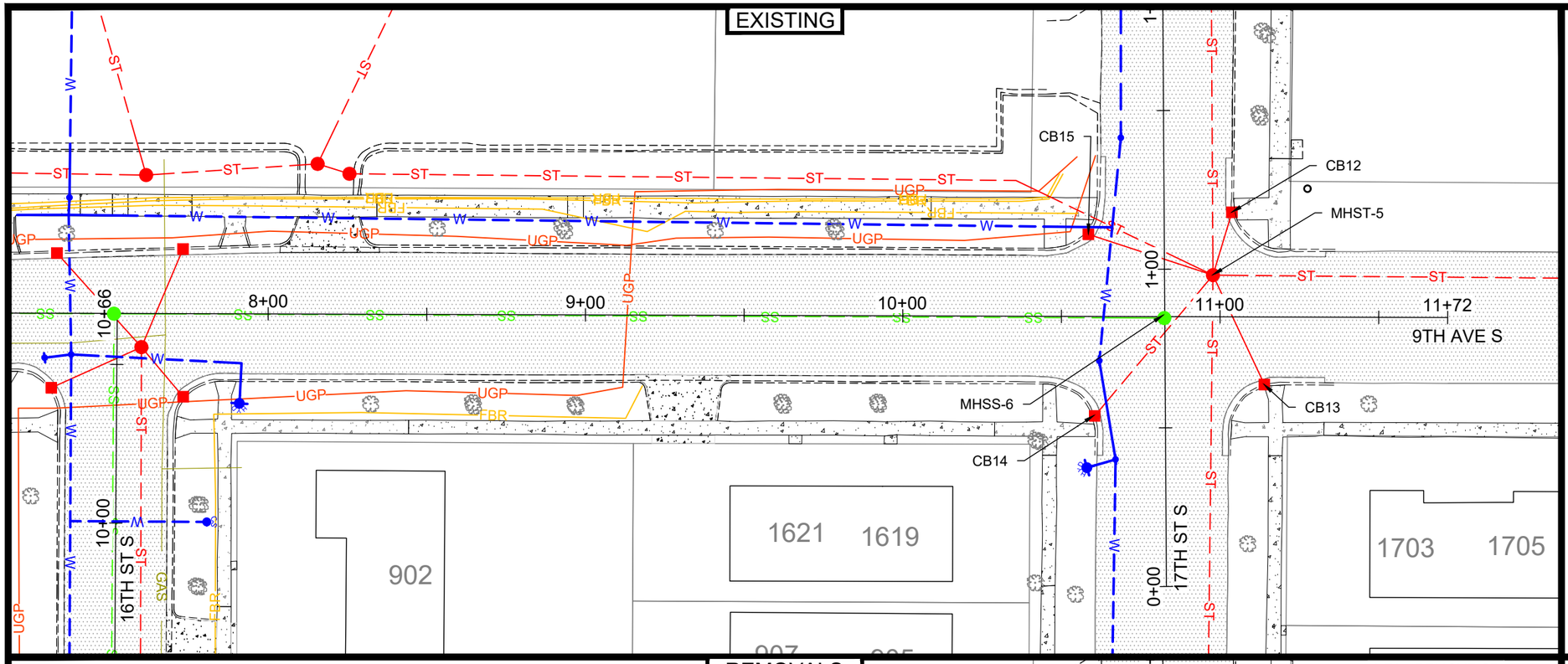


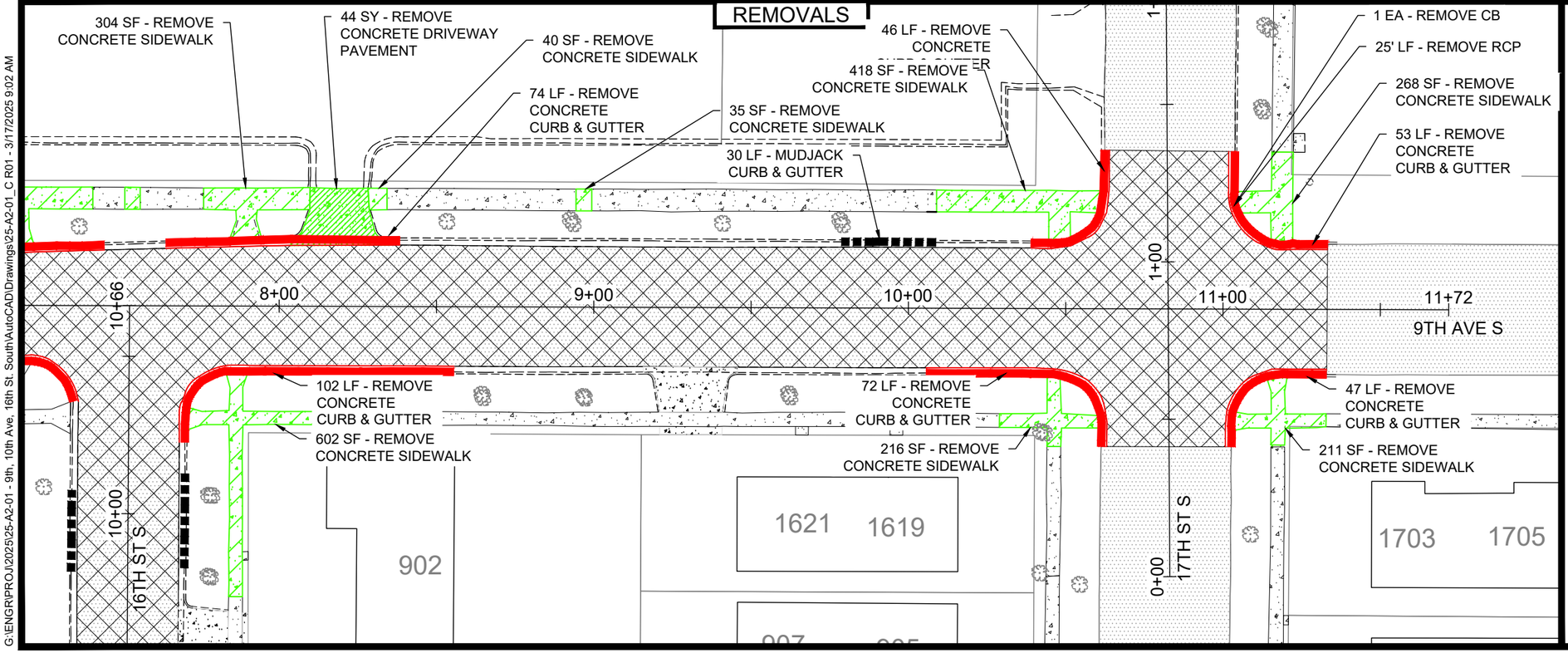
EXISTING BITUMINOUS PAVEMENT

EXT. CONC. SIDEWALK

N W E S

0 10 20 40

REMOVALS



REMOVE BITUMINOUS PAVEMENT

REMOVE CONC. SIDEWALK

REMOVE CURB & GUTTER

MUDJACK CURB & GUTTER

MUDJACK SIDEWALK

N W E S

0 10 20 40

--	A2-01-2025	25-A2-01	
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EMH	MJA	JAS	
DRAWN BY	CHECKED BY	APPROVED BY	

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03/07/2025
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License No.

JAMES A. SCHULZ
Name - Project Engineer

EXISTING CONDITIONS & REMOVALS - 9TH AVENUE SOUTH

9TH AVE S, 10TH AVE S , AND 16TH ST S

CURB & GUTTER, ASPHALT PAVING

SHEET 30 OF 45

G:\ENGR\PROJ\2025\25-A2-01 - 9th, 10th Ave, 16th St. South\AutoCAD\Drawings\25-A2-01_C R01 - 3/17/2025 9:02 AM

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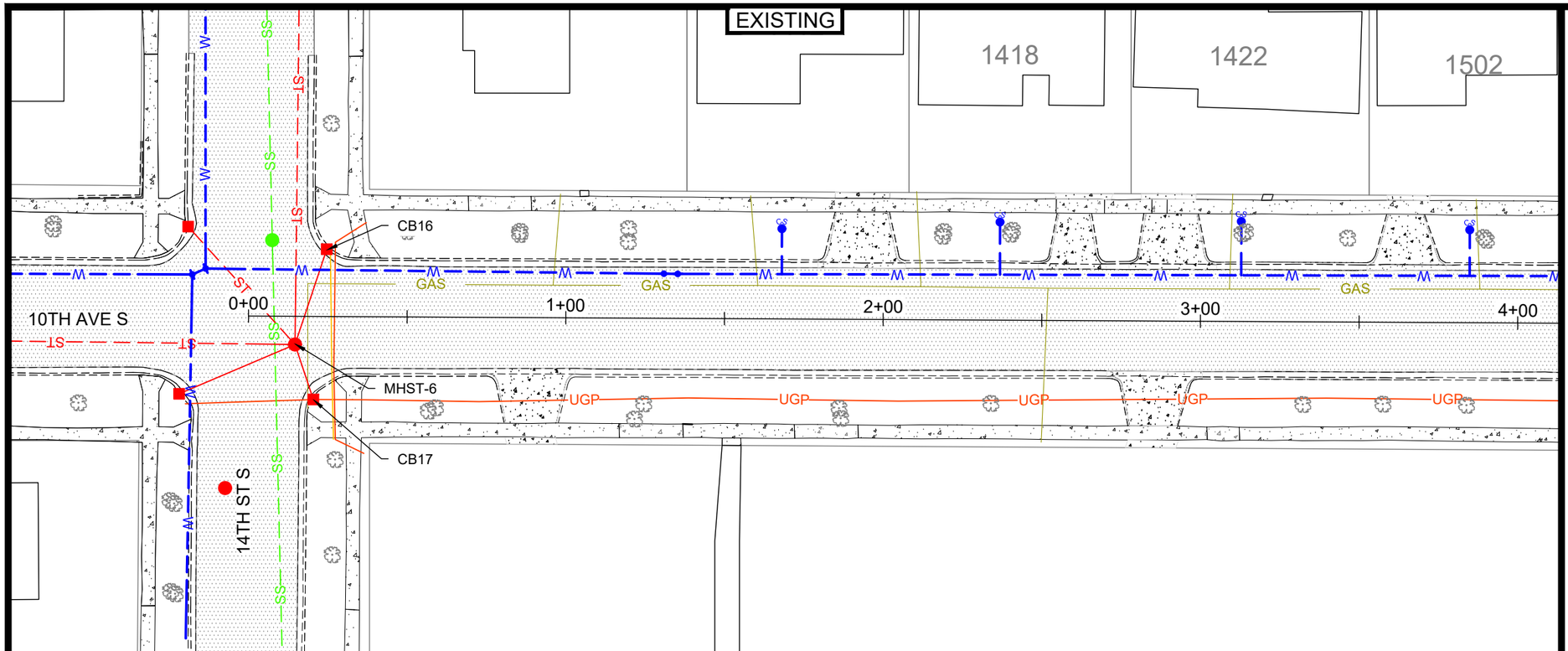


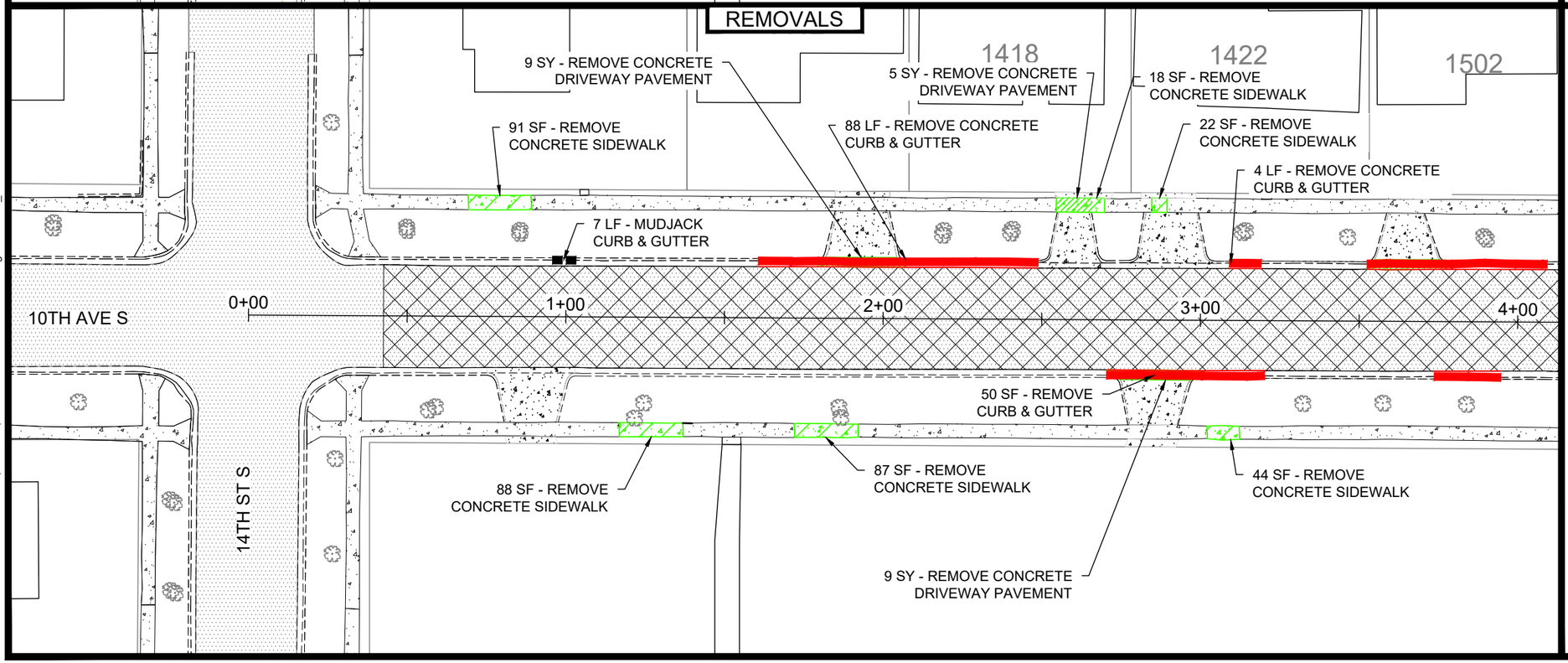
EXISTING BITUMINOUS PAVEMENT

EXT. CONC. SIDEWALK

N W E S

0 10 20 40

REMOVALS



REMOVE BITUMINOUS PAVEMENT

REMOVE CONC. SIDEWALK

REMOVE CURB & GUTTER

MUDJACK CURB & GUTTER

MUDJACK SIDEWALK

N W E S

0 10 20 40

--	A2-01-2025	25-A2-01	
SAP. No.	LEGAL No.	ENG. No.	
EMH	MJA	JAS	
DRAWN BY	CHECKED BY	APPROVED BY	

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Signature - Project Engineer

JAMES A. SCHULZ
Name - Project Engineer

03/07/2025
Date

26225
License No.

EXISTING CONDITIONS & REMOVALS - 10TH AVENUE SOUTH

9TH AVE S, 10TH AVE S , AND 16TH ST S

CURB & GUTTER, ASPHALT PAVING

SHEET 31 OF 45

G:\ENGR\PROJ\2025\25-A2-01 - 9th, 10th Ave, 16th St. South\AutoCAD\Drawings\25-A2-01_C R01 - 3/17/2025 9:02 AM

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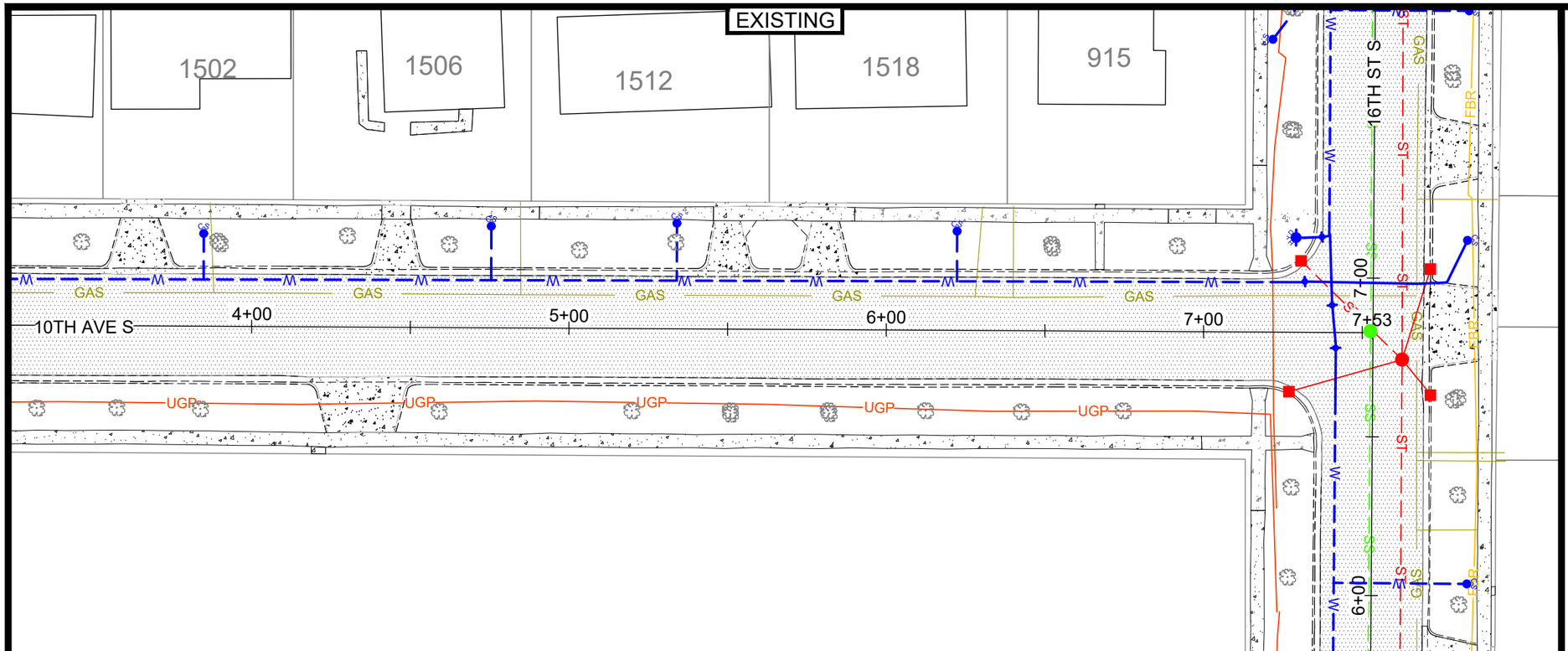


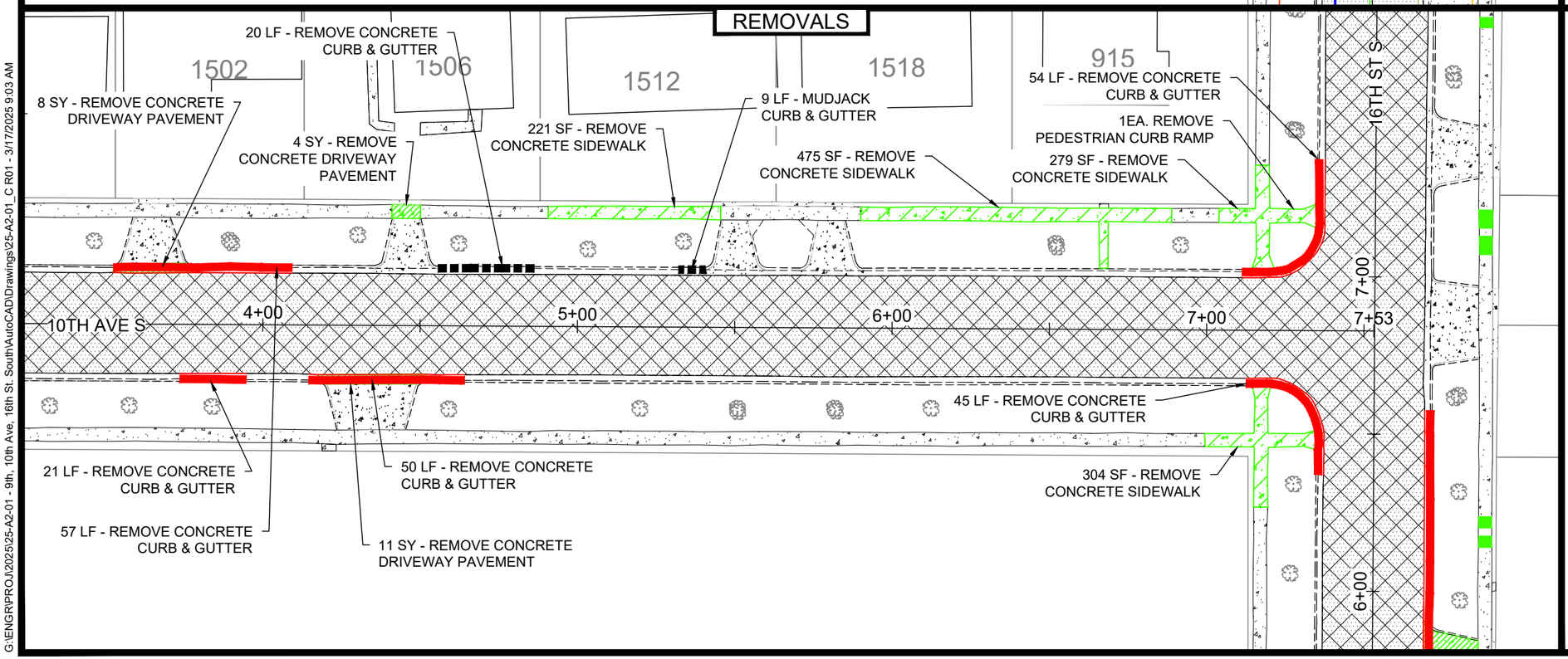
EXISTING BITUMINOUS PAVEMENT

EXT. CONC. SIDEWALK

N W E S

0 10 20 40

REMOVALS



REMOVE BITUMINOUS PAVEMENT

REMOVE CONC. SIDEWALK

REMOVE CURB & GUTTER

MUDJACK CURB & GUTTER

MUDJACK SIDEWALK

N W E S

0 10 20 40

--	A2-01-2025	25-A2-01	
SAP No.	LEGAL No.	ENG. No.	
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DRAWN BY	CHECKED BY	APPROVED BY	

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Signature - Project Engineer

JAMES A. SCHULZ
Name - Project Engineer

03/07/2025
Date

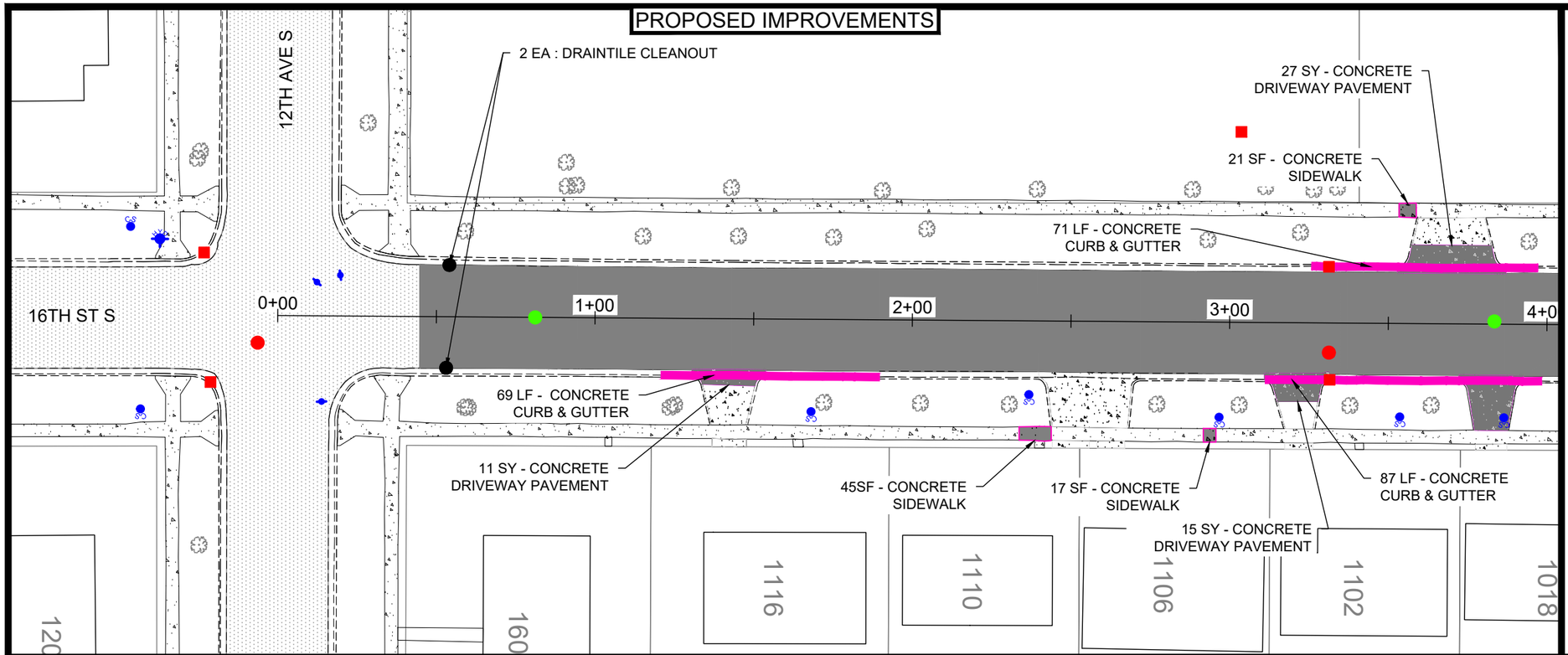
26225
License No.

EXISTING CONDITIONS & REMOVALS - 10TH AVENUE SOUTH
9TH AVE S, 10TH AVE S , AND 16TH ST S
CURB & GUTTER, ASPHALT PAVING

SHEET 32 OF 45

G:\ENGR\PROJ\2025\25-A2-01 - 9th, 10th Ave, 16th St. South\AutoCAD\Drawings\25-A2-01_C R01 - 3/17/2025 9:03 AM

PROPOSED IMPROVEMENTS



4" CONC. SIDEWALK

PEDESTRIAN RAMP

NEW BITUMINOUS PAVEMENT

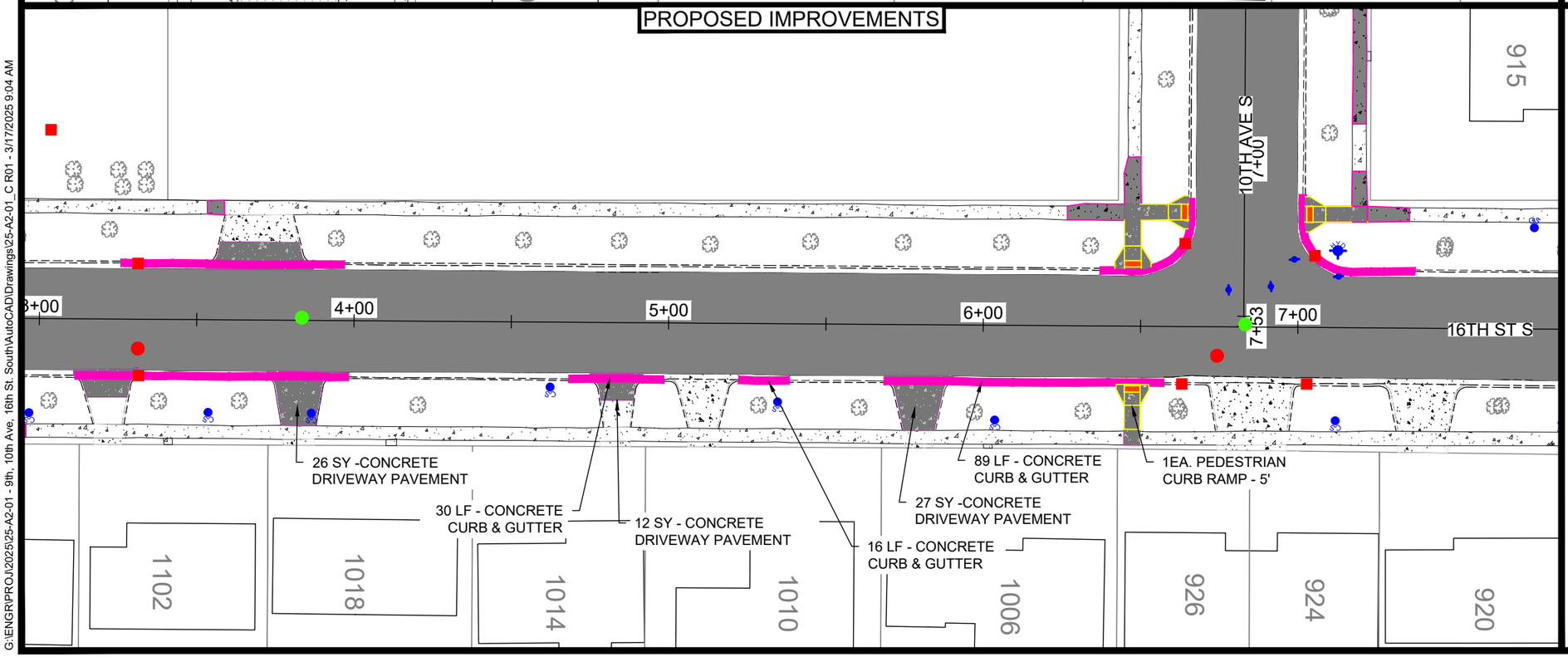
NEW CONC. DRIVE

NEW CURB & GUTTER

W S N E

0 10 20 40

PROPOSED IMPROVEMENTS



4" CONC. SIDEWALK

PEDESTRIAN RAMP

NEW BITUMINOUS PAVEMENT

NEW CONC. DRIVE

NEW CURB & GUTTER

W S N E

0 10 20 40

--	A2-01-2025	25-A2-01	
SAP. No.	LEGAL No.	ENG. No.	
EMH	MJA	JAS	
DRAWN BY	CHECKED BY	APPROVED BY	

MOORHEAD MINNESOTA Engineering

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03/07/2025
Date

26225
License No.

JAMES A. SCHULZ
Name - Project Engineer

PROPOSED IMPROVEMENTS - 16TH ATREET SOUTH

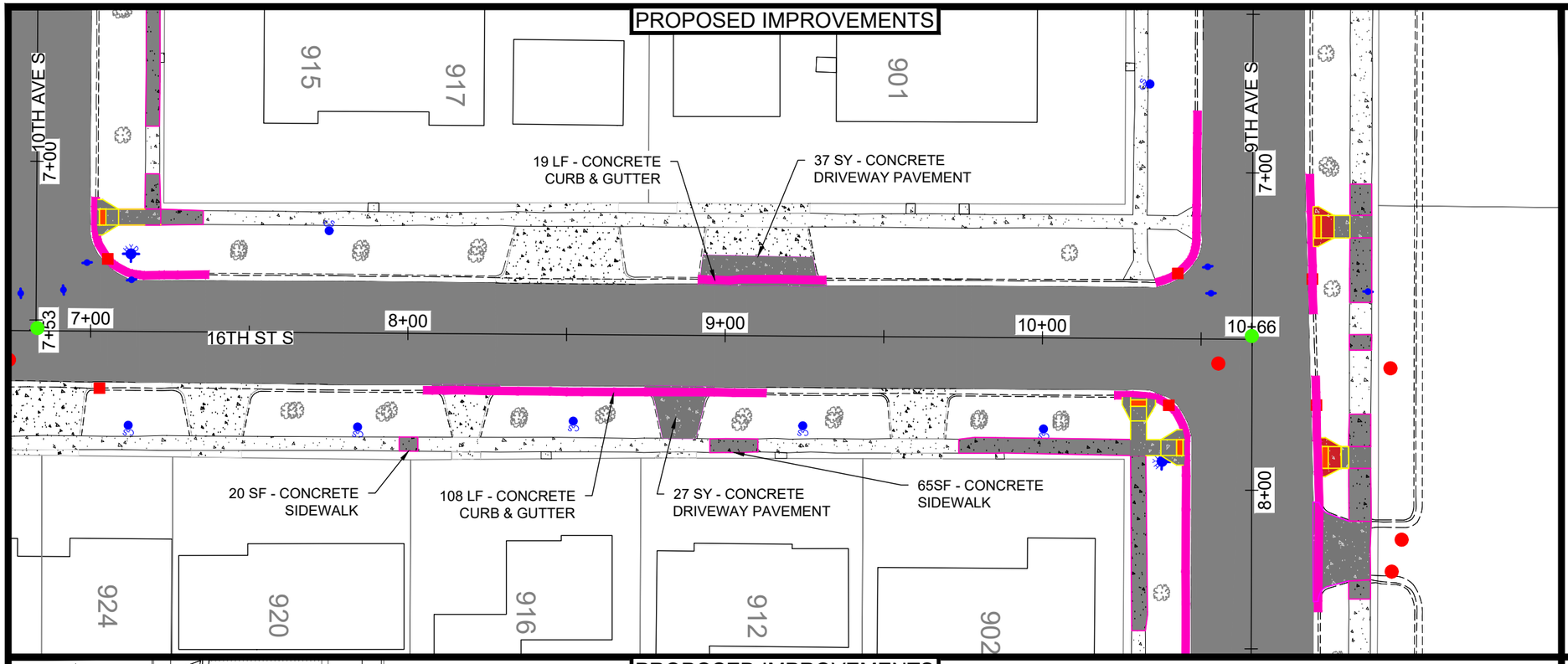
9TH AVE S, 10TH AVE S , AND 16TH ST S

CURB & GUTTER, ASPHALT PAVING

SHEET 33 OF 45

G:\ENGR\PROJ\2025\25-A2-01 - 9th, 10th Ave, 16th St. South\AutoCAD\Drawings\25-A2-01_C R01 - 3/17/2025 9:04 AM

PROPOSED IMPROVEMENTS



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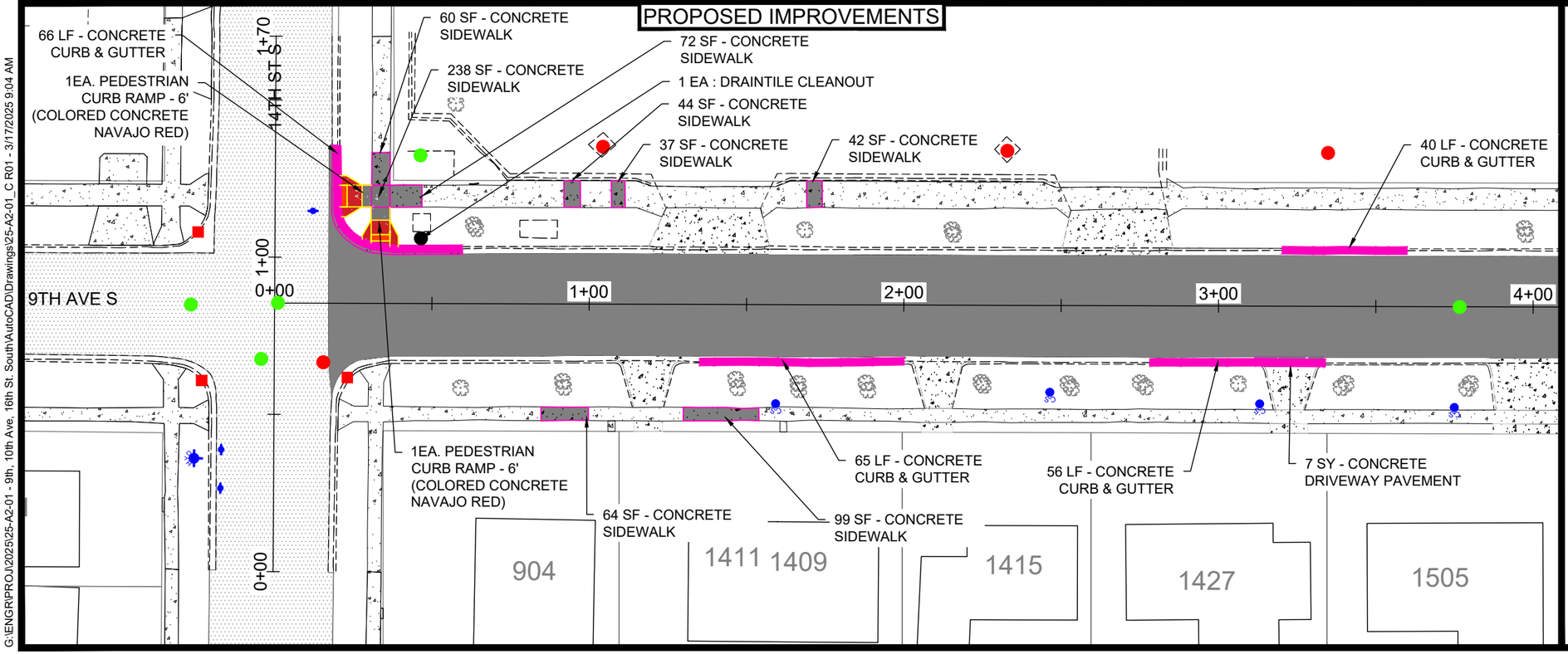


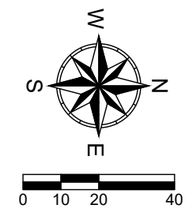
4" CONC. SIDEWALK

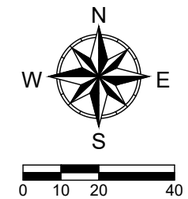
PEDESTRIAN RAMP

NEW BITUMINOUS PAVEMENT

NEW CONC. DRIVE

NEW CURB & GUTTER





--	A2-01-2025	25-A2-01	
SAP. No.	LEGAL No.	ENG. No.	
EMH	MJA	JAS	
DRAWN BY	CHECKED BY	APPROVED BY	

MOORHEAD MINNESOTA Engineering

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Signature - Project Engineer

JAMES A. SCHULZ
Name - Project Engineer

03/07/2025
Date

26225
License No.

PROPOSED IMPROVEMENTS - 9TH AVE & 16TH STREET SOUTH

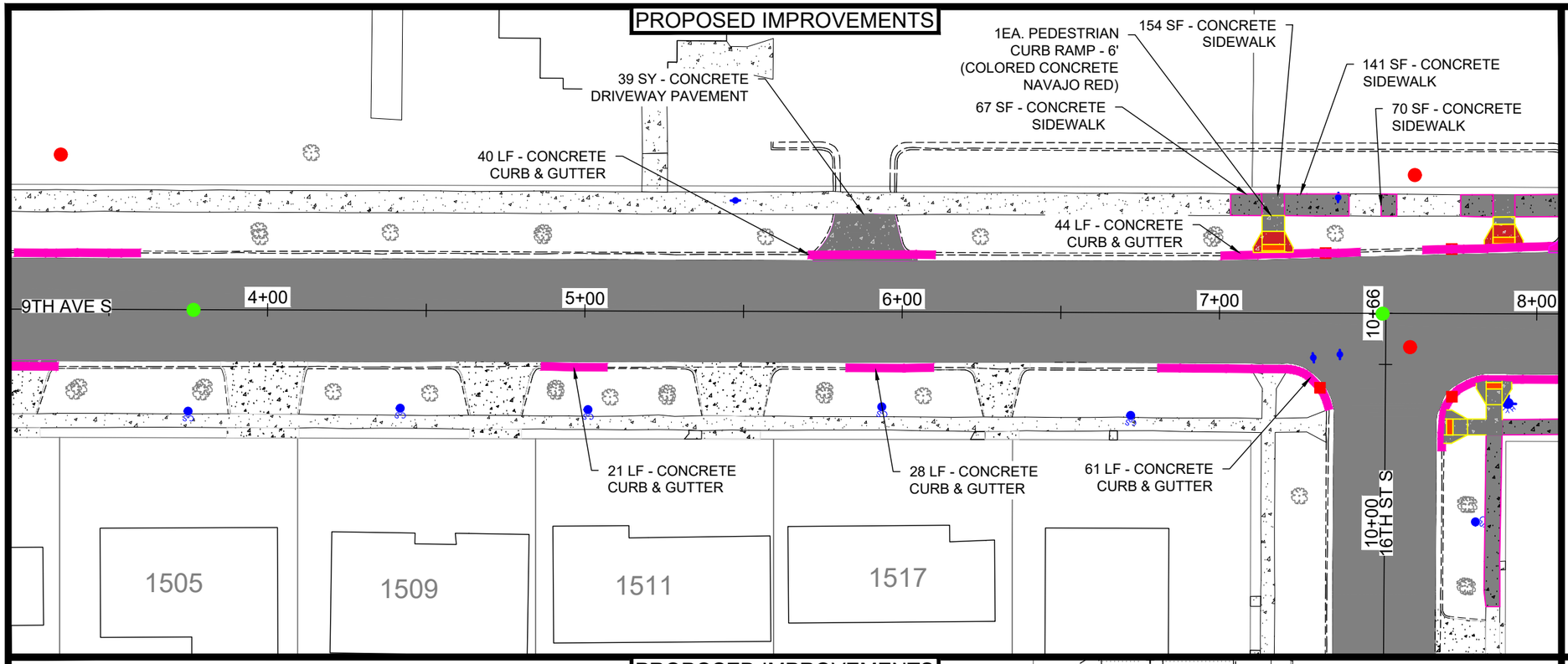
9TH AVE S, 10TH AVE S , AND 16TH ST S

CURB & GUTTER, ASPHALT PAVING

SHEET 34 OF 45

G:\ENGR\PROJ\2025\25-A2-01 - 9th, 10th Ave, 16th St. South\AutoCAD\Drawings\25-A2-01_C R01 - 3/17/2025 9:04 AM

PROPOSED IMPROVEMENTS



4" CONC. SIDEWALK

PEDESTRIAN RAMP

NEW BITUMINOUS PAVEMENT

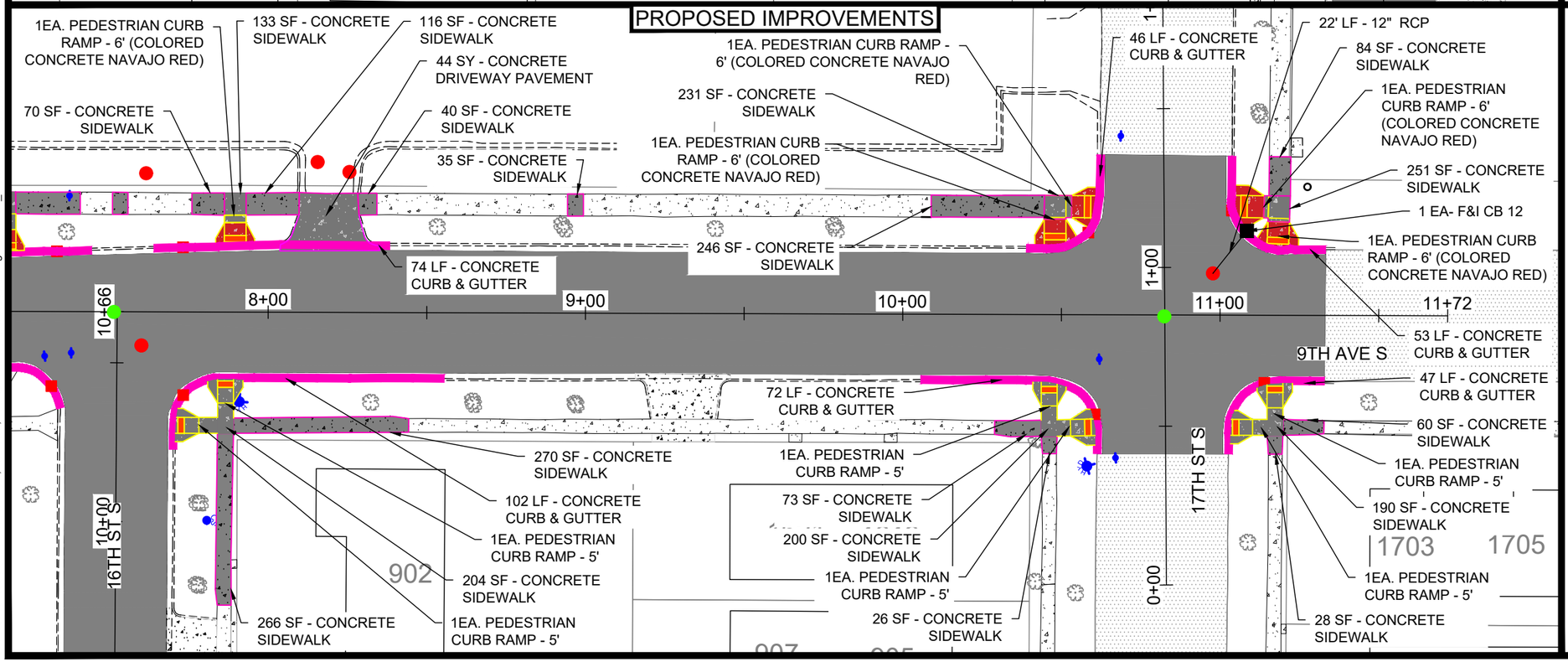
NEW CONC. DRIVE

NEW CURB & GUTTER

N W E S

0 10 20 40

PROPOSED IMPROVEMENTS



4" CONC. SIDEWALK

PEDESTRIAN RAMP

NEW BITUMINOUS PAVEMENT

NEW CONC. DRIVE

NEW CURB & GUTTER

N W E S

0 10 20 40

G:\ENGR\PROJ\2025\25-A2-01 - 9th, 10th Ave, 16th St. South\AutoCAD\Drawings\25-A2-01_C R01 - 3/17/2025 9:05 AM

--	A2-01-2025	25-A2-01	
SAP. No.	LEGAL No.	ENG. No.	
EMH	MJA	JAS	
DRAWN BY	CHECKED BY	APPROVED BY	

MOORHEAD MINNESOTA Engineering

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JAMES A. SCHULZ
Name - Project Engineer

03/07/2025
Date

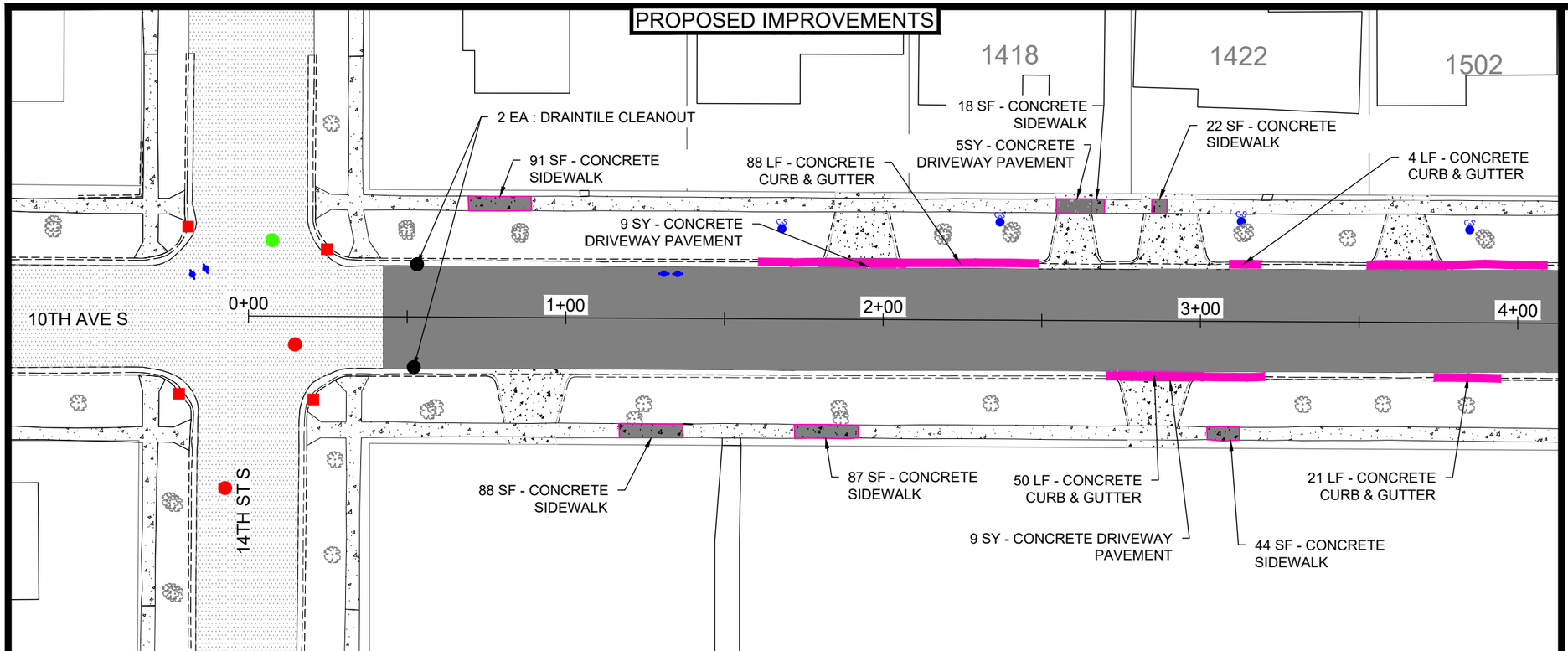
26225
License No.

Signature - Project Engineer

PROPOSED IMPROVEMENTS -9TH AVENUE SOUTH
9TH AVE S, 10TH AVE S , AND 16TH ST S
CURB & GUTTER, ASPHALT PAVING

SHEET 35 OF 45

PROPOSED IMPROVEMENTS



4" CONC. SIDEWALK

PEDESTRIAN RAMP

NEW BITUMINOUS PAVEMENT

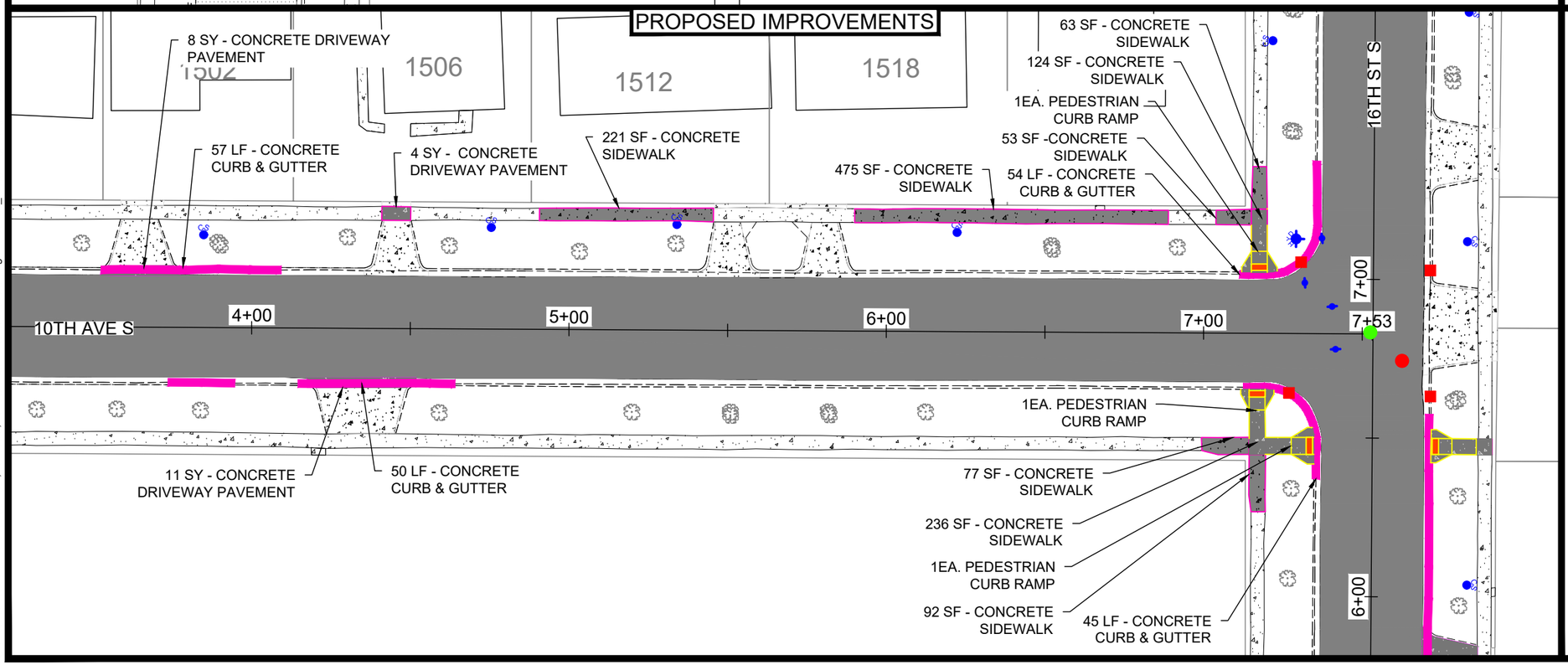
NEW CONC. DRIVE

NEW CURB & GUTTER

N W E S

0 10 20 40

PROPOSED IMPROVEMENTS



4" CONC. SIDEWALK

PEDESTRIAN RAMP

NEW BITUMINOUS PAVEMENT

NEW CONC. DRIVE

NEW CURB & GUTTER

N W E S

0 10 20 40

--	A2-01-2025	25-A2-01	
SAP. No.	LEGAL No.	ENG. No.	
EMH	MJA	JAS	
DRAWN BY	CHECKED BY	APPROVED BY	

MOORHEAD MINNESOTA Engineering

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Signature - Project Engineer

JAMES A. SCHULZ
Name - Project Engineer

03/07/2025
Date

26225
License No.

PROPOSED IMPROVEMENTS - 10TH AVENUE SOUTH
9TH AVE S, 10TH AVE S , AND 16TH ST S
CURB & GUTTER, ASPHALT PAVING

SHEET 36 OF 45

G:\ENGR\PROJ\2025\25-A2-01 - 9th, 10th Ave, 16th St. South\AutoCAD\Drawings\25-A2-01_C R01 - 3/17/2025 9:05 AM

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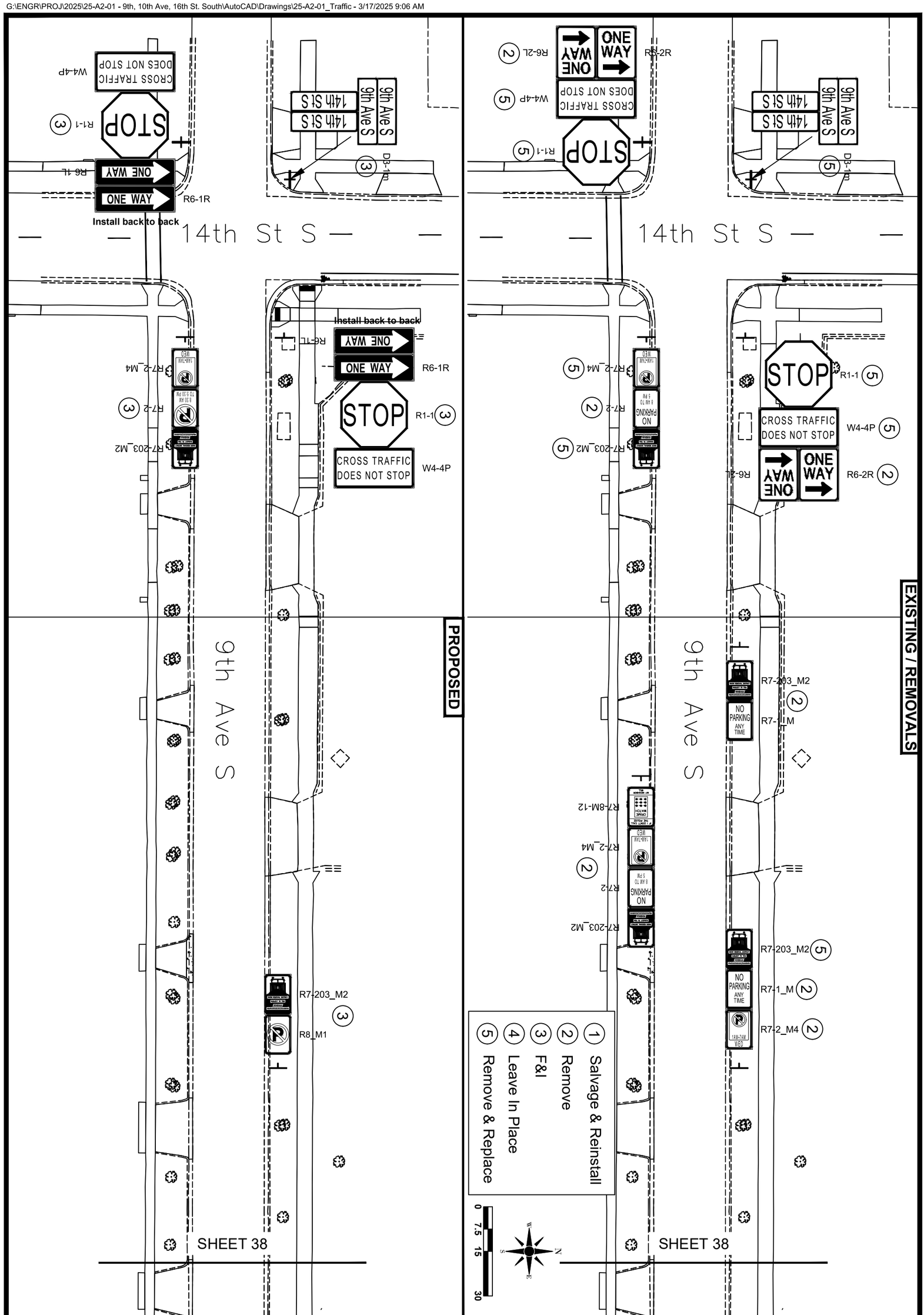


SHEET 37 OF 45

Signing And Striping

9TH AVE S, 10TH AVE S , AND 16TH ST S

Curb & Gutter, Asphalt Paving

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

Signature - Project Engineer

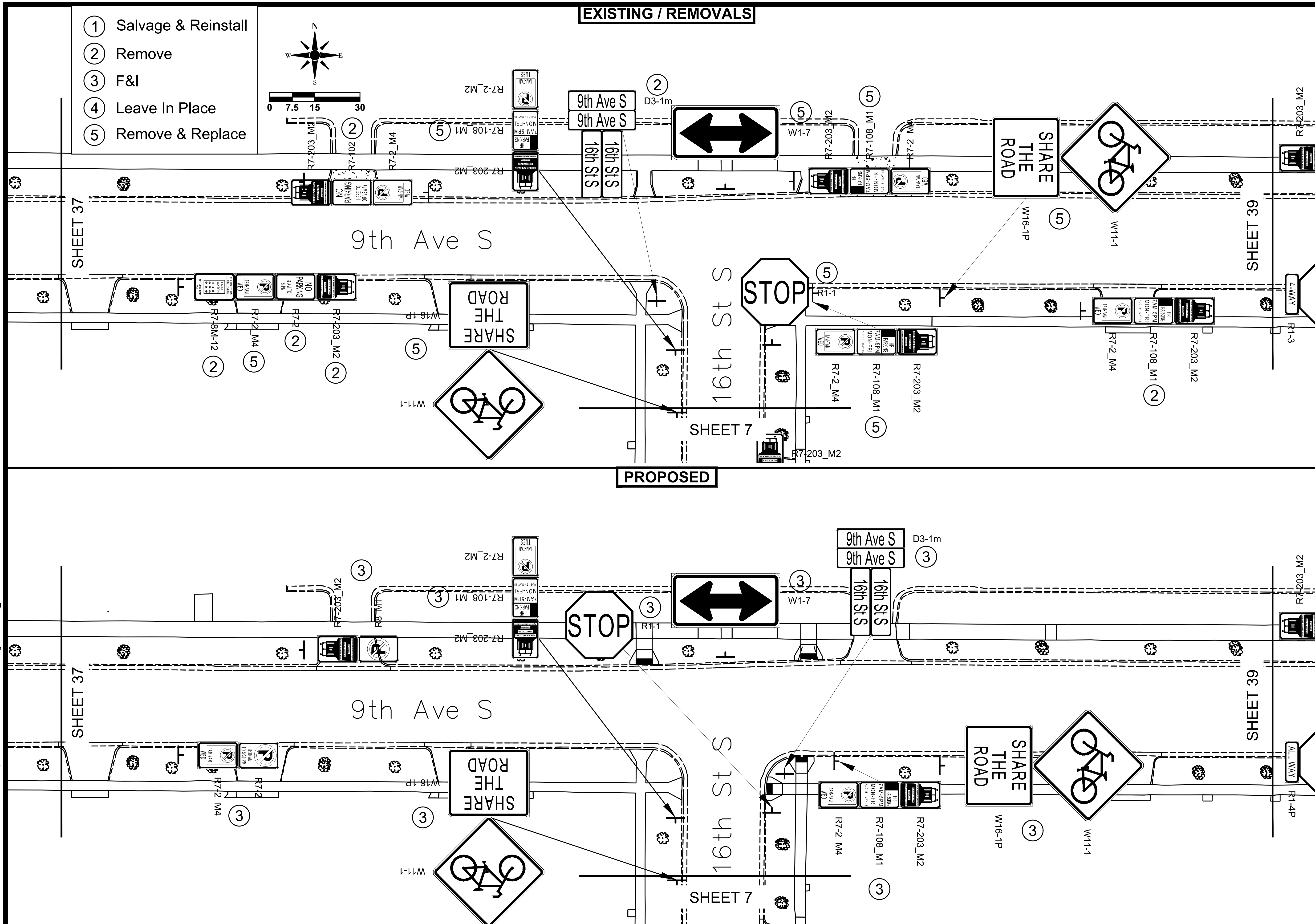
--/--/----
Date

Jonathan Atkins
Name - Project Engineer

51897
License No.

MOORHEAD MINNESOTA Engineering

TSL DRAWN BY	-- S.P. No.
JAA CHECKED BY	**25-A2-01** ENG. No.
JAA APPROVED BY	**A2-01-2025** LEGAL. No.



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Signature - Project Engineer

--/--/---- Date

Jonathan Atkins
Name - Project Engineer

51897
License No.

MOORHEAD MINNESOTA Engineering

S.P. No.	
ENG. No.	25-A2-01
LEGAL. No.	A2-01-2025
DRAWN BY	JAA
CHECKED BY	JAA
APPROVED BY	

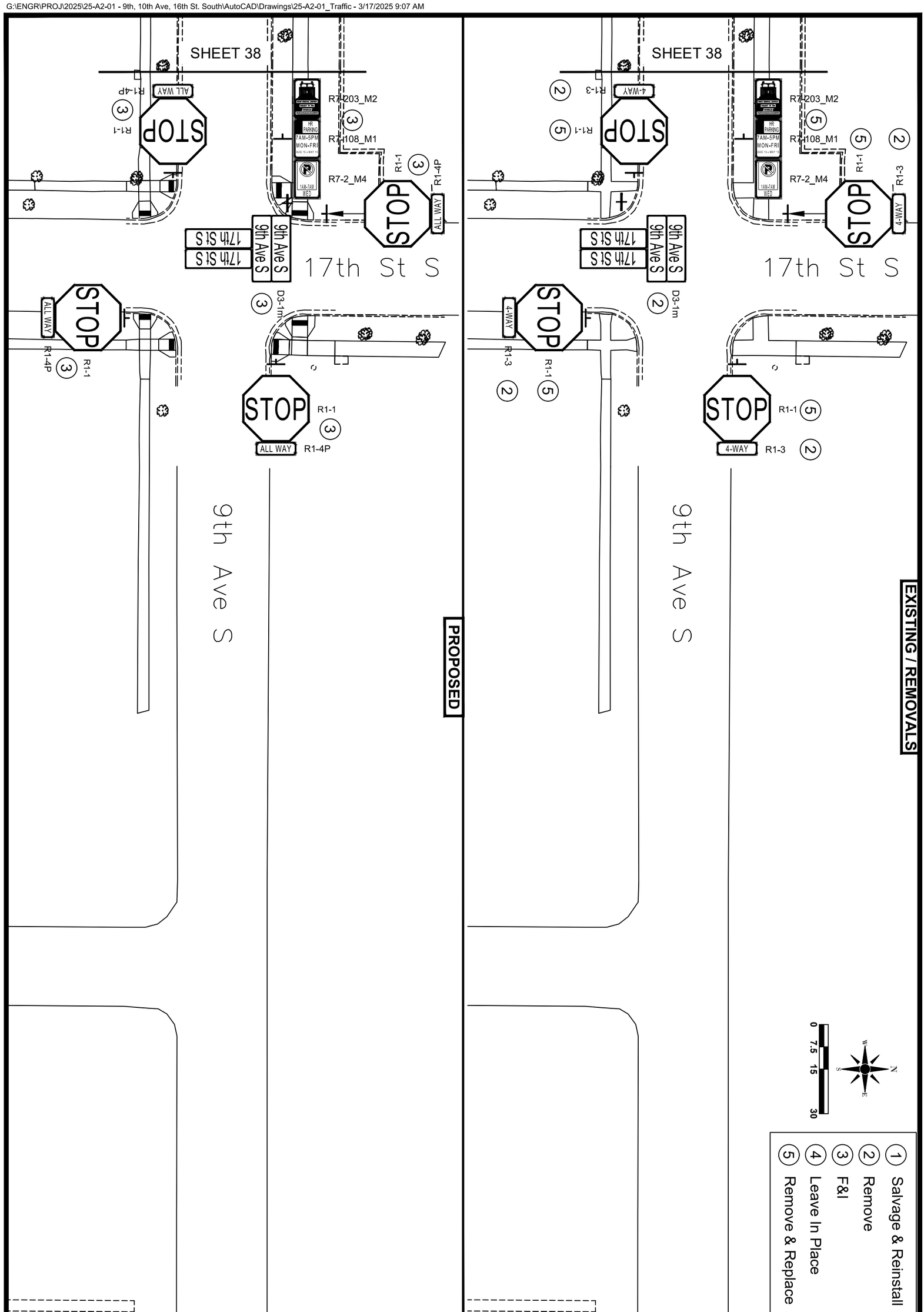
Signing And Striping

9TH AVE S, 10TH AVE S , AND 16TH ST S

Curb & Gutter, Asphalt Paving

SHEET 38 OF 45

G:\ENGR\PROJ\2025\25-A2-01 - 9th, 10th Ave, 16th St. South\AutoCAD\Drawings\25-A2-01_Traffic - 3/17/2025 9:07 AM



Signing And Striping

9TH AVE S, 10TH AVE S , AND 16TH ST S

Curb & Gutter, Asphalt Paving

SHEET 39 OF 45

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

Signature - Project Engineer

--/--/----
Date

Jonathan Atkins
Name - Project Engineer

51897
License No.

MOORHEAD MINNESOTA Engineering

TSL DRAWN BY	-- S.P. No.
JAA CHECKED BY	25-A2-01 ENG. No.
JAA APPROVED BY	A2-01-2025 LEGAL. No.

1. Salvage & Reinstall
2. Remove
3. F&I
4. Leave In Place
5. Remove & Replace

0 7.5 15 30

PROPOSED

STOP R1-1
ONE WAY R6-1L
ONE WAY R6-1R
Install back to back
14th St S
10th Ave S
D3-1m

EXISTING / REMOVALS

ONE WAY ONE WAY R6-2L R6-2R
STOP R1-1
14th St S
10th Ave S
D3-1m

10th Ave S
SHEET 41
R7-2_M4
R7-108_M1
R7-203_M2
Install back to back
R6-1L
R6-1R
STOP R1-1

10th Ave S
SHEET 41
R7-2_M4
R7-108_M1
R7-203_M2
STOP R1-1
R6-2L
R6-2R
R7-8M-12
R7-203_M2

SHEET 40 OF 45

Signing And Striping

9TH AVE S, 10TH AVE S , AND 16TH ST S

Curb & Gutter, Asphalt Paving

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Signature - Project Engineer

--/--/----
Date

Jonathan Atkins
Name - Project Engineer

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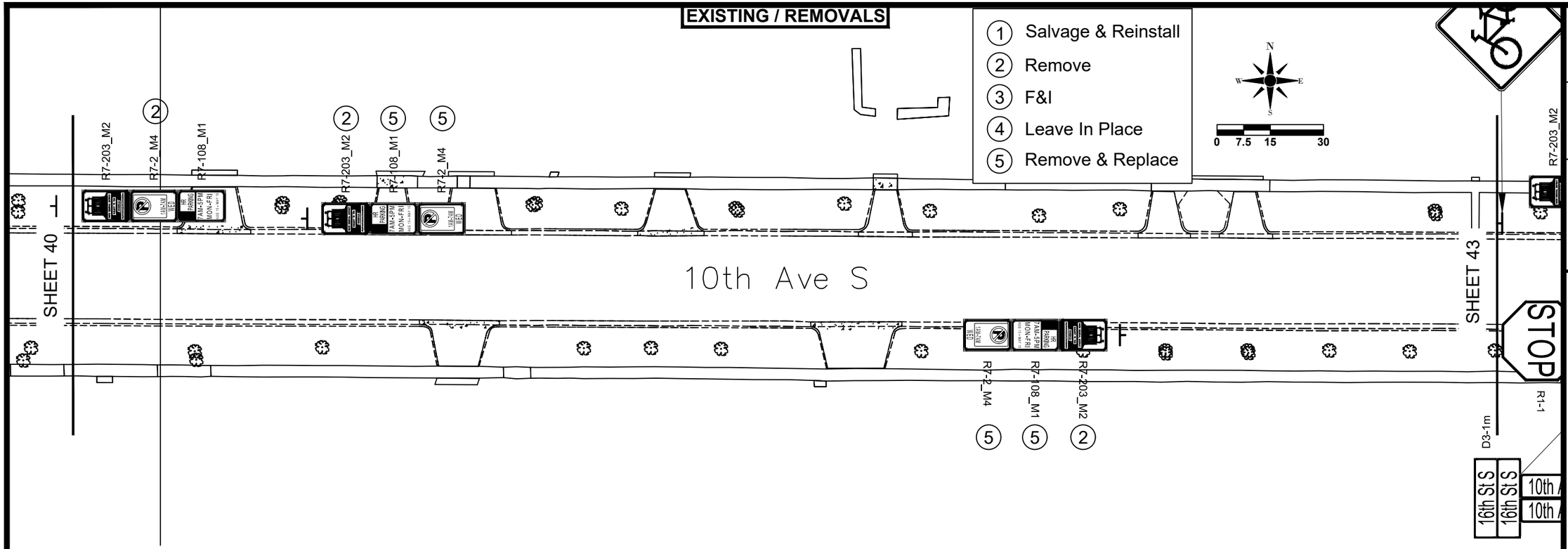
License No.

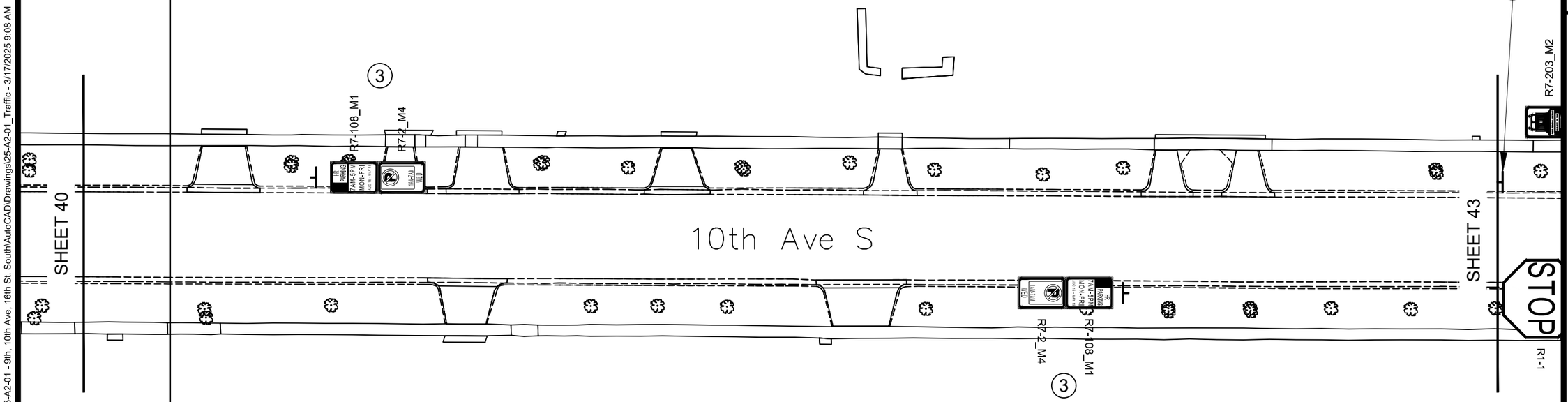
MOORHEAD MINNESOTA Engineering

TSL DRAWN BY	-- S.P. No.
JAA CHECKED BY	25-A2-01 ENG. No.
JAA APPROVED BY	A2-01-2025 LEGAL. No.

EXISTING / REMOVALS



PROPOSED



--	25-A2-01	A2-01-2025
S.P. No.	ENG. No.	LEGAL. No.
TSL	JAA	JAA
DRAWN BY	CHECKED BY	APPROVED BY

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Date

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License No.

Jonathan Atkins
Name - Project Engineer

Signature - Project Engineer

Signing And Striping

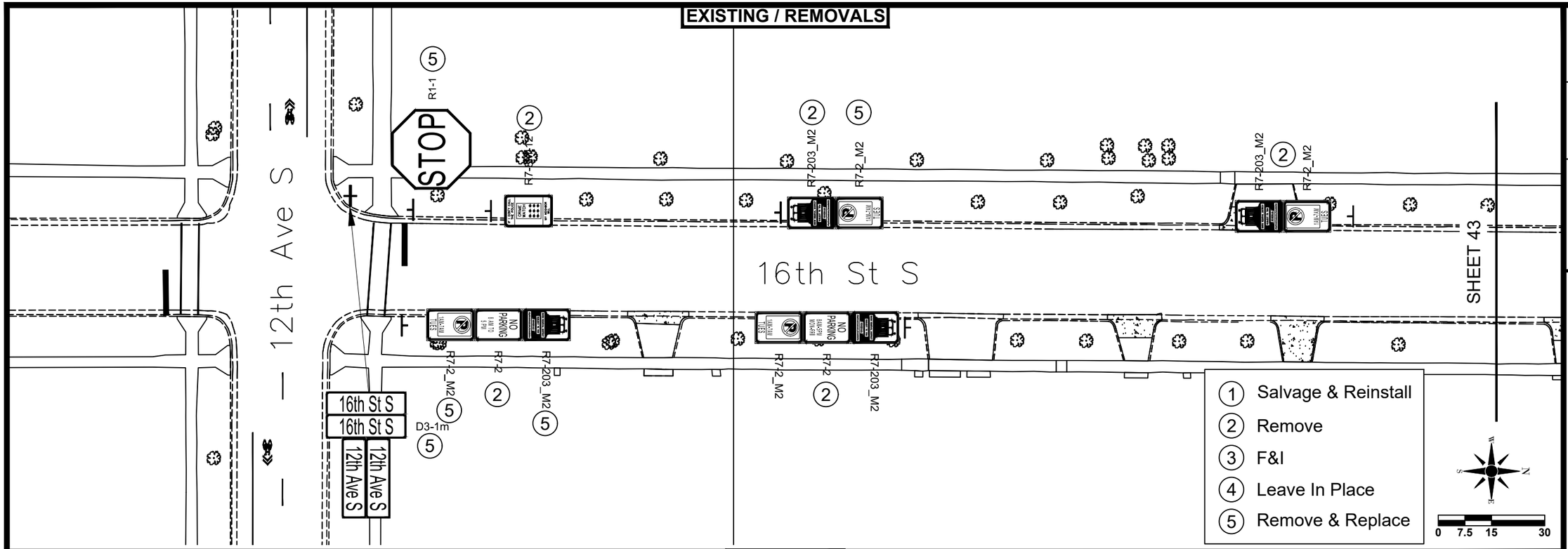
9TH AVE S, 10TH AVE S , AND 16TH ST S

Curb & Gutter, Asphalt Paving

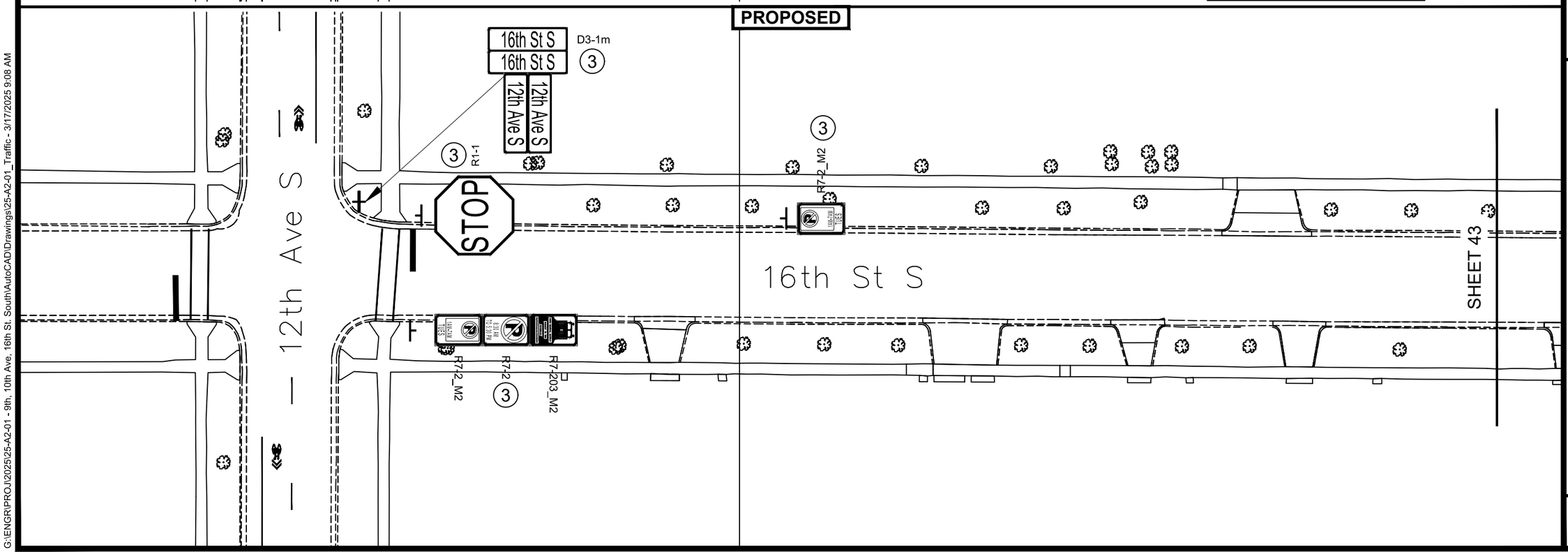
SHEET 41 OF 45

G:\ENGR\PROJ\2025\25-A2-01 - 9th, 10th Ave, 16th St. South\AutoCAD\Drawings\25-A2-01_Traffic - 3/17/2025 9:08 AM

EXISTING / REMOVALS



PROPOSED



TSL	JAA	JAA
DRAWN BY	CHECKED BY	APPROVED BY

--	25-A2-01	A2-01-2025
S.P. No.	ENG. No.	LEGAL. No.

MOORHEAD MINNESOTA Engineering

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

--/--/----
Date

51897
License No.

Signature - Project Engineer

Jonathan Atkins
Name - Project Engineer

Signing And Striping

9TH AVE S, 10TH AVE S , AND 16TH ST S

Curb & Gutter, Asphalt Paving

SHEET 42 OF 45

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1 Salvage & Reinstall
2 Remove
3 F&I
4 Leave In Place
5 Remove & Replace

0 7.5 15 30

EXISTING / REMOVALS

SHEET 41
SHEET 42
SHEET 38
16th St S
10th Ave S
16th St S
10th Ave S
STOP
R1-1
D3-1m
W11-1
W16-1P
SHARE THE ROAD
R7-203_M2
R7-108_M1
R7-2_M4
R7-8M-12
R7-2_M2
R7-2
R7-203_M2

PROPOSED

SHEET 41
SHEET 42
SHEET 38
16th St S
10th Ave S
STOP
R1-1
D3-1m
W11-1
W16-1P
SHARE THE ROAD
R7-203_M2
R7-108_M1
R7-2_M4
R7-2_M2
R7-2
R7-203_M2
Power pole

TSL DRAWN BY	JAA CHECKED BY	JAA APPROVED BY
-- S.P. No.	25-A2-01 ENG. No.	A2-01-2025 LEGAL. No.

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Curb & Gutter, Asphalt Paving

SHEET 43 OF 45

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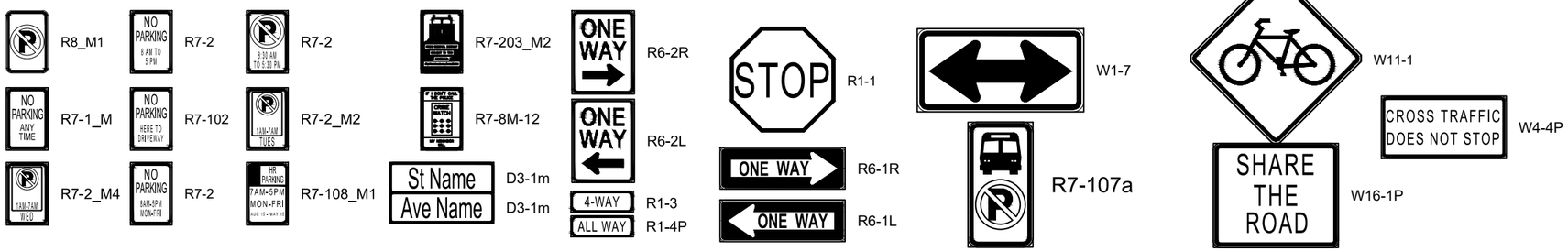
REMOVE SIGN TYPE C

SIGN QUANTITY	PANEL CODE NUMBER	LEGEND	REMARKS
11	R1-1	STOP	DISPOSE OF SIGNS
1	W1-7	DOUBLE ARROW	DISPOSE OF SIGNS
4	W11-1	BICYCLE	DISPOSE OF SIGNS
4	W16-1P	SHARE THE ROAD	DISPOSE OF SIGNS
4	R6-2R	ONE WAY RIGHT	DISPOSE OF SIGNS
4	R6-2L	ONE WAY LEFT	DISPOSE OF SIGNS
4	R1-3	4-WAY	DISPOSE OF SIGNS
25	R7-203_M2	SNOWPLOW	DISPOSE OF SIGNS
7	R7-8M-12	CRIME WATCH	DISPOSE OF SIGNS
11	R7-108_M1	3 HR PARKING	DISPOSE OF SIGNS
7	R7-2	NO PARKING 8 AM TO 5 PM	DISPOSE OF SIGNS
1	R7-2	NO PARKING 8 AM - 5 PM MON-FRI	DISPOSE OF SIGNS
1	R7-102	NO PARKING HERE TO DRIVEWAY	DISPOSE OF SIGNS
10	R7-2_M2	NO PARKING 1AM-7AM TUES	DISPOSE OF SIGNS
2	R7-1_M	NO PARKING ANYTIME	DISPOSE OF SIGNS
14	R7-2_M4	NO PARKING 1AM-7AM WED	DISPOSE OF SIGNS
2	W4-4P	CROSS TRAFFIC DOES NOT STOP	DISPOSE OF SIGNS

INSTALL SIGN TYPE C

SIGN QUANTITY	PANELS SIZE INCH	PANELS SIZE INCH	PANELS SQ FT	PANELS CUMULATIVE SQ FT	PANEL CODE NUMBER	LEGEND
11	30	30	6.25	68.5	R1-1	STOP
1	48	24	8	8	W1-7	DOUBLE ARROW
4	30	30	6.25	25	W11-1	BICYCLE
4	24	30	5	20	W16-1P	SHARE THE ROAD
4	24	8	1.3	5.2	R6-1R	ONE WAY RIGHT
4	24	8	1.3	5.2	R6-1L	ONE WAY LEFT
4	12	6	.5	2	R1-4P	ALL WAY
11	12	18	1.5	16.5	R7-203_M2	SNOWPLOW
8	12	18	1.5	12	R7-2_M4	NO PARKING 1AM-7AM WED
7	12	18	1.5	10.5	R7-108_M1	3 HR PARKING
2	12	18	1.5	3	R8_M1	NO PARKING
5	12	18	1.5	7.5	R7-2	NO PARKING 830AM-530PM
6	12	18	1.5	9	R7-2_M2	NO PARKING 1AM-7AM TUES
2	24	12	2	4	W4-4P	CROSS TRAFFIC DOES NOT STOP
	TOTAL			196.4 SQ.FT		



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S.P. No.	ENG. No.	LEGAL. No.
EMH	MJA	JAS
DRAWN BY	CHECKED BY	APPROVED BY

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Signature - Project Engineer

Jonathan Atkins
Name - Project Engineer

2/28/2024
Date

51897
License No.

SIGNING AND STRIPING

4TH AVE S, 5TH AVE S AND 6TH ST S
CURB & GUTTER, ASPHALT PAVING

SHEET 44 OF 45

INSTALL SIGN TYPE D

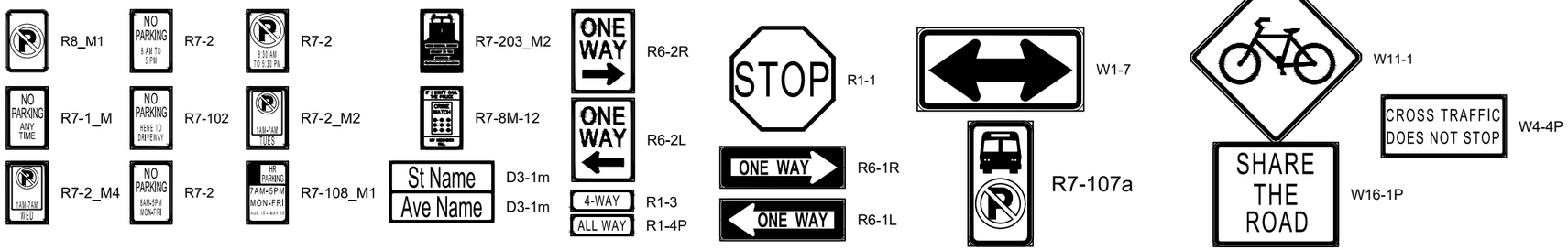
SIGN QUANTITY	PANELS SIZE INCH	PANELS SIZE INCH	SQ FT	CULMATIVE SQ FT	PANEL CODE NUMBER	LEGEND	REMARKS
4	30	9	1.875	7.5	D3-1	14TH ST S	INSTALL BACK TO BACK
6	30	9	1.875	11.25	D3-1	16TH ST S	INSTALL BACK TO BACK
2	30	9	1.875	3.75	D3-1	17TH ST S	INSTALL BACK TO BACK
6	30	9	1.875	11.25	D3-1	9TH AVE S	INSTALL BACK TO BACK
4	30	9	1.875	7.5	D3-1	10TH AVE S	INSTALL BACK TO BACK
2	30	9	1.875	3.75	D3-1	12TH AVE S	INSTALL BACK TO BACK
			TOTAL	45 SQ.FT			

REMOVE SIGN TYPE D

SIGN NUMBER	SIGN QUANTITY	LEGEND
D3-1m	24	STREET/AVE NAME

SIGN SUMMARY

ITEM	UNIT	QTY
REMOVE SIGN TYPE C	EACH	112
INSTALL SIGN TYPE C	SQ FT	196.4
REMOVE SIGN TYPE D	EACH	24
INSTALL SIGN TYPE D	SQ FT	45



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4TH AVE S, 5TH AVE S AND 6TH ST S
CURB & GUTTER, ASPHALT PAVING

SHEET 45 OF 45