

# MINNESOTA DEPARTMENT OF TRANSPORTATION

## ANOKA COUNTY, MINNESOTA

### CITY OF FRIDLEY

CONSTRUCTION PLAN FOR ROUNDABOUT, GRADING, BITUMINOUS SURFACING, DRAINAGE, LIGHTING, RETAINING WALLS AND ADA IMPROVEMENTS

SP 002-606-014, SP 127-020-036 LOCATED ON CSAH 6 FROM 440 FEET WEST OF 5TH STREET TO 510 FEET EAST OF 7TH STREET

**(CSAH 6) STATE PROJ. NO. 002-606-014**  
**STATE PROJ. NO. 127-020-036**

GROSS LENGTH 1,591.18 FEET 0.301 MILES  
 BRIDGES-LENGTH N/A FEET N/A MILES  
 EXCEPTIONS-LENGTH N/A FEET N/A MILES  
 NET LENGTH 1,591.18 FEET 0.301 MILES  
 REF. POINT N/A TO REF. POINT N/A  
 LENGTH AND DESCRIPTION BASED UPON (☉ EB CSAH 6)

MINN. PROJ. NO. HSIP 0225(282)

#### GOVERNING SPECIFICATIONS

THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

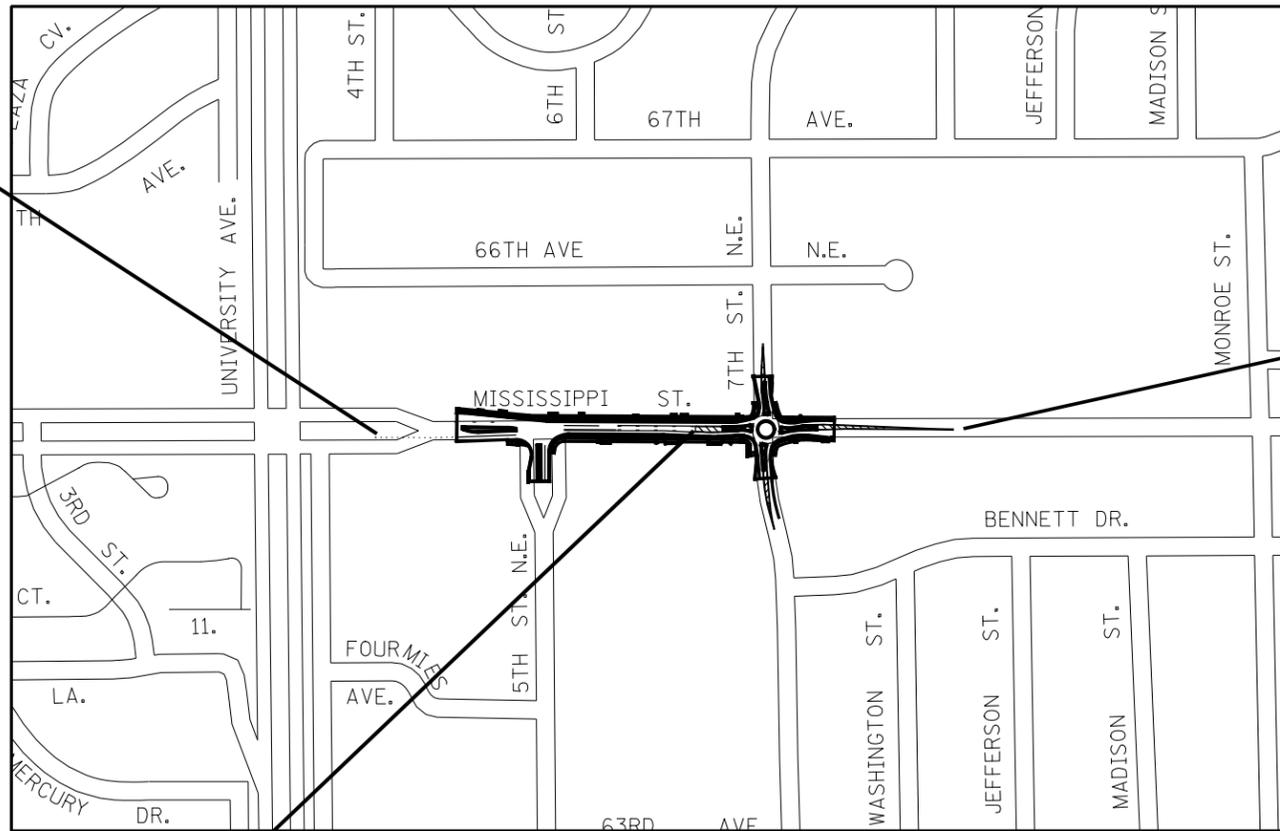
ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD) AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

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X1-X12	CROSS SECTIONS

BEGIN SAP 002-606-014  
 SAP 127-020-036  
 ☉ EB CSAH 6 STA 199+29.16

END SP 002-606-014  
 SP 127-020-036  
 ☉ EB CSAH 6  
 STA 215+20.34



THIS PLAN CONTAINS 130 SHEETS



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Zach Heimer  
Digitally signed by Zach Heimer  
 Date: 2025.05.14 15:28:38-05'00'

SIGNATURE \_\_\_\_\_  
 DATE 05/14/2025 LIC. NO. 58755 PRINT NAME ZACHARIAH F. HEIMER

SCALES

INDEX MAP	500'
PLAN	60'
PROFILE HORIZ.	100'
VERT.	10'
CROSS SECTION	20'

END SAP 002-606-014  
 SAP 127-020-036  
 BEGIN SP 002-606-014  
 SP 127-020-036  
 ☉ EB CSAH 6 STA 208+00.00

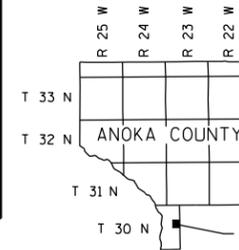
#### DESIGN DESIGNATION FOR:

R-VALUE  
 ADT (Current Year) 2025 =  
 ADT (Future Year) 2045 =  
 PAVEMENT DESIGN  
 FUNCTIONAL CLASSIFICATION  
 NO. OF TRAFFIC LANES  
 NO. OF PARKING LANES  
 ESALS (20)  
 Design Speed  
 Based on Sight Distance  
 Height of eye / Height of Object  
 Design Speed not achieved at:

**CSAH 6**  
**SP 002-606-014**  
**SP 127-020-036**

#### TRAIL

X  
 X  
 X  
 X  
 X  
 X  
 X  
 X  
 X  
 X



PROJECT LOCATION  
 TOWNSHIP: 30 N  
 RANGE: 24 W  
 SECTION(S): 14



PROJECT LOCATION  
 COUNTY : ANOKA  
 DISTRICT : METRO

FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL  
 STATE PROJ. NO. CHARGE IDENTIFIER

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY

APPROVED **Joseph MacPherson**  
Digitally signed by Joseph MacPherson  
 Date: 2025.05.19 12:44:55 -05'00'  
 ANOKA COUNTY ENGINEER 20

APPROVED *[Signature]*  
 CITY ENGINEER, CITY OF FRIDLEY 5/27/2025

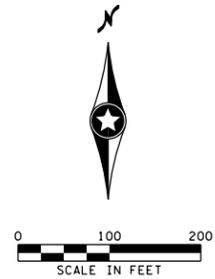
APPROVED **Dan Erickson**  
Digitally signed by Dan Erickson  
 Date: 2025.05.28 15:00:38 -05'00'  
 DISTRICT STATE AID ENGINEER  
 REVIEWED FOR COMPLIANCE WITH STATE AID AND FEDERAL AID RULES/POLICY 20

APPROVED **Dan Erickson**  
Digitally signed by Dan Erickson  
 Date: 2025.05.28 15:00:58 -05'00'  
 STATE AID ENGINEER  
 for APPROVED FOR STATE AID AND FEDERAL AID FUNDING 20

THIS PLAN AND/OR SPECIFICATION WAS PREPARED SPECIFICALLY FOR THIS PROJECT, AND ANY RE-USE OF DETAILS OR SPECIFICATIONS ON OTHER PROJECTS IS NOT INTENDED OR AUTHORIZED BY THE DESIGNER. LIABILITY FOR ANY RE-USE ON OTHER PROJECTS IS THE RESPONSIBILITY OF THE PERSON, AGENCY, OR CORPORATION USING PLAN OR SPECIFICATION DATA FROM THIS PROJECT.

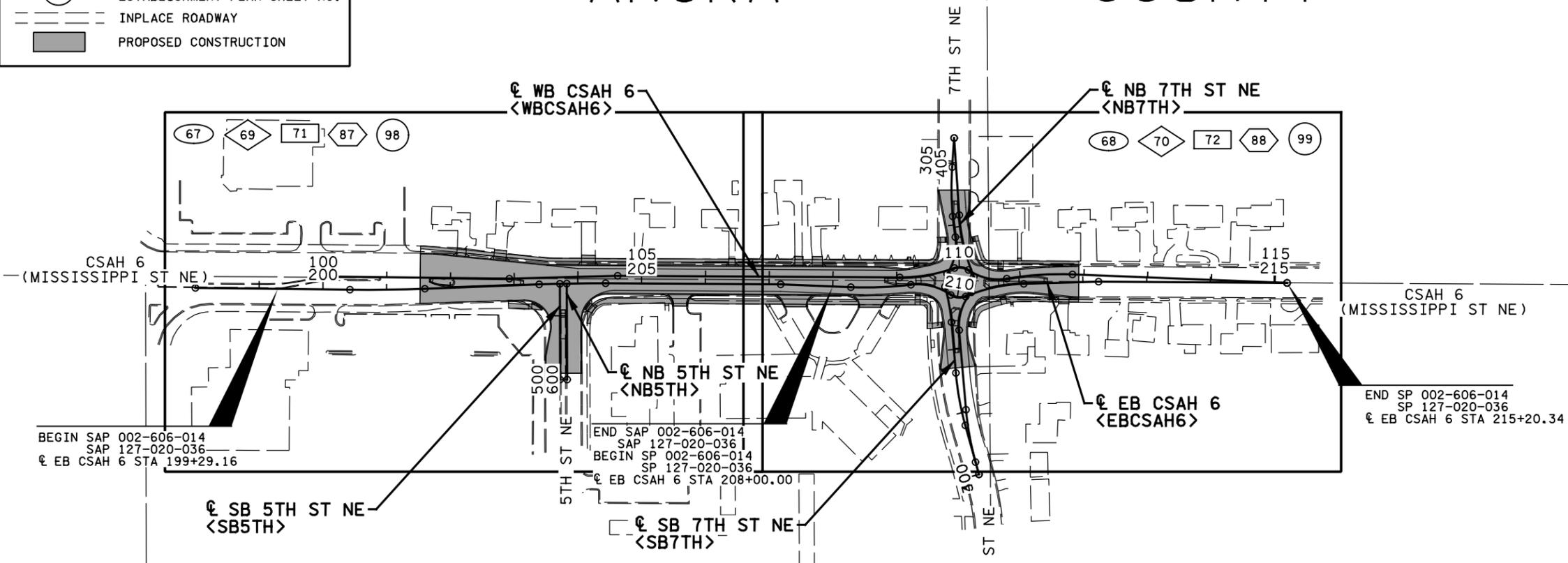
THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO GUIDELINES OF CI/ASCE 38-22, ENTITLED "STANDARD GUIDELINES FOR INVESTIGATING AND DOCUMENTING EXISTING UTILITIES".

LEGEND	
(XXX)	TOPOGRAPHY AND UTILITY PLAN SHEET NO.
<XXX>	REMOVAL PLAN SHEET NO.
[XXX]	CONSTRUCTION PLAN SHEET NO.
XXX	DRAINAGE PLAN SHEET NO.
(XXX)	EROSION CONTROL AND TURF ESTABLISHMENT PLAN SHEET NO.
---	INPLACE ROADWAY
█	PROPOSED CONSTRUCTION



ANOKA

COUNTY



CITY OF FRIDLEY

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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: ZACHARIAH F. HEIMER  
*Zach Heimer*  
 Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036  
 DRAWN BY M. WENDLER  
 DESIGNED BY M. WENDLER  
 CHECKED BY Z. HEIMER  
 COMM. NO. 2417338



ANOKA COUNTY, MINNESOTA  
 GENERAL LAYOUT  
 SP 002-606-014, SP 127-020-036

SHEET 2 OF 118

NOTES	TAB	SHEET NO.	ITEM NO.	ITEM DESCRIPTION	UNIT	PROJECT TOTAL ESTIMATED QUANTITY	PARTICIPATING - FEDERAL			NON-PARTICIPATING		
							ROADWAY			ROADWAY		
							ANOKA COUNTY SP 002-606-014 (A) ESTIMATED QUANTITY	CITY OF FRIDLEY SP 127-020-036 (B) ESTIMATED QUANTITY	DRAINAGE SP 002-606-014 SP 127-020-036 (C) ESTIMATED QUANTITY	ANOKA COUNTY SAP 002-606-014 (D) ESTIMATED QUANTITY	CITY OF FRIDLEY SAP 127-020-036 (E) ESTIMATED QUANTITY	DRAINAGE SAP 002-606-014 SAP 127-020-036 (F) ESTIMATED QUANTITY
			2021.501	MOBILIZATION	LUMP SUM	1						
	V	10	2101.502	GRUBBING	EACH	6						
(1)	M	114	2102.503	PAVEMENT MARKING REMOVAL	LIN FT	180	130			50		
	C	9	2104.502	REMOVE LIGHTING UNIT	EACH	4					4	
	P	11	2104.502	REMOVE DRAINAGE STRUCTURE	EACH	11	6			5		
	C	9	2104.502	REMOVE WOOD POLE	EACH	1	1					
	K	106	2104.502	REMOVE DELINEATOR / MARKER	EACH	1				1		
	K	106	2104.502	REMOVE SIGN	EACH	29	16			13		
	C	9	2104.502	REMOVE LIGHT FOUNDATION	EACH	4					4	
	C	9	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	70				70		
	C	9	2104.503	SAWING BIT PAVEMENT (FULL DEPTH)	LIN FT	410	200			210		
	P	11	2104.503	REMOVE SEWER PIPE (STORM)	LIN FT	799	253			546		
	C	9	2104.503	REMOVE CURB & GUTTER	LIN FT	2760	1140			1620		
	C	9	2104.503	REMOVE RETAINING WALL	LIN FT	270	160			110		
	C	9	2104.504	REMOVE CONCRETE MEDIAN	SQ YD	40				40		
	C	9	2104.504	REMOVE CONCRETE DRIVEWAY PAVEMENT	SQ YD	260	80			180		
	C, R	9, 50R	2104.504	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	SQ YD	400	30			370		
	C	9	2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	8010	3350			4660		
	C	9	2104.518	REMOVE CONCRETE WALK	SQ FT	8270	2730			5540		
	C	9	2104.518	REMOVE BRICK MEDIAN	SQ FT	220				220		
	L	106	2104.602	REMOVE SIGN SPECIAL	EACH	1	1					
	L	106	2104.602	SALVAGE SIGN SPECIAL	EACH	2	1			1		
	A	7	2106.507	EXCAVATION - COMMON	(P) CU YD	1127	373			754		
	A	7	2106.507	EXCAVATION - SUBGRADE	(P) CU YD	4024	1587			2437		
	A	7	2106.507	SELECT GRANULAR EMBANKMENT (CV)	(P) CU YD	4077	1658			2419		
	A	7	2106.507	COMMON EMBANKMENT (CV)	(P) CU YD	690	393			297		
	D	9	2108.504	GEOTEXTILE FABRIC TYPE 5	SQ YD	9070	2690			6380		
(3)			2123.610	STREET SWEEPER (WITH PICKUP BROOM)	HOUR	100	100					
(2)			2123.610	1.5 CU YD BACKHOE	HOUR	100	100					
(4)			2130.523	WATER	M GALLON	100	100					
(7)	D	9	2211.507	AGGREGATE BASE (CV) CLASS 5	(P) CU YD	1690	720			970		
(8)	F, R	10, 50R	2211.507	AGGREGATE BASE (CV) CLASS 5 (DRIVEWAYS)	CU YD	106	13			93		
(2)			2231.509	BITUMINOUS PATCHING MIXTURE	TON	20	20					
(5)			2301.502	DOWEL BAR	EACH	111	111					
(6)	E	9	2301.604	CONCRETE PAVEMENT 10.0" (SPECIAL)	SQ YD	170	170					
	D	9	2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	650	240			410		
(9)	D, F, R	9, 10, 50R	2360.509	TYPE SP 9.5 WEARING COURSE MIX (2,B)	TON	176	56			120		
	D	9	2360.509	TYPE SP 12.5 NON WEAR COURSE MIX (3,B)	TON	1190	440			750		
	D	9	2360.509	TYPE SP 12.5 WEARING COURSE MIX (3,C)	TON	1530	550			980		
			2411.618	MODULAR BLOCK RETAINING WALL	SQ FT	510	510					
	A	7	2451.507	STRUCTURE EXCAVATION CLASS U	(P) CU YD	160	102			58		
	A	7	2451.507	GRANULAR BACKFILL (MOD) CV	(P) CU YD	88	57			31		
(12)	S	10	2502.503	4" PERF TP PIPE DRAIN	LIN FT	730				730		
	H	90	2503.503	15" RC PIPE SEWER DES 3006 CL V	LIN FT	450		264			186	
	H	90	2503.503	24" RC PIPE SEWER DES 3006 CL V	LIN FT	25					25	



FUNDING NOTES  
 (A) 100% COUNTY (SP 002-606-014)  
 (B) 100% CITY (SP 127-020-036)  
 (C) DRAINAGE:  
 31% COUNTY (SP 002-606-014),  
 69% CITY (SP 127-020-036)  
 (D) 100% COUNTY (SAP 002-606-014)  
 (E) 100% CITY (SAP 127-020-036)  
 (F) DRAINAGE:  
 31% COUNTY (SAP 002-606-014),  
 69% CITY (SAP 127-020-036)

NOTES

- (1) TO BE USED IN LANE TRANSITION AREAS TO OBLITERATE CONFLICTING PAVEMENT MARKINGS.
- (2) TO BE USED AS DIRECTED BY THE ENGINEER.
- (3) TO BE USED AS SURFACE CLEANING AND/OR AS DIRECTED BY THE ENGINEER.
- (4) TO BE USED FOR DUST CONTROL AND/OR AS DIRECTED BY THE ENGINEER.
- (5) SEE MISCELLANEOUS DETAILS FOR JOINTING DETAILS.
- (6) COLORED CONCRETE. INTEGRAL RED (FS 31136).
- (7) INCLUDES AGGREGATE UNDER BITUMINOUS PAVEMENT, TRAIL, CURB & GUTTER, CONCRETE WALK, AND CONCRETE PAVEMENT.

- (8) TO BE USED UNDER DRIVEWAYS AND TEMPORARY BYPASS.
- (9) TO BE USED FOR BITUMINOUS TRAILS AND BITUMINOUS DRIVEWAYS.
- (10) SEE TABULATION FOR COLOR.
- (11) TO BE USED IN PEDESTRIAN RAMP LANDINGS PER MNDOT STANDARD PLAN 5-297.250.
- (12) SEE TYPICAL SECTIONS "DETAIL C" FOR INSTALLATION REQUIREMENTS.
- (P) PLAN QUANTITY

BASIS FOR QUANTITIES

UNIT WEIGHT FOR BITUMINOUS 2360 MIX:	113 LBS PER SQ YD PER INCH
BITUMINOUS TACK COAT - NEW SURFACES:	0.05 GALLONS PER SQ YD
SEED RESIDENTIAL TURFGRASS APPLICATION RATE:	200 LBS PER ACRE
SEED SOUTHERN BOULEVARD APPLICATION RATE:	160 LBS PER ACRE
FERTILIZER TYPE 1 APPLICATION RATE:	350 LBS PER ACRE
HYDRAULIC MULCH MATRIX APPLICATION RATE:	2,500 LBS PER ACRE
RAPID STABILIZATION METHOD 3:	6 M GAL PER ACRE
WEED SPRAYING RATE:	0.5 ACRE PER ACRE
WEED SPRAY MIXTURE APPLICATION RATE:	0.125 GAL PER ACRE

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06/19/25 MSW KFH KFH ADDENDUM #1: STAGING REVISIONS

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

Print Name: KEVIN M. JULLIE  
 Date: 06/19/2025 License #: 26755

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036

DRAWN BY M. WENDLER  
 DESIGNED BY M. WENDLER  
 CHECKED BY K. HARRISON  
 COMM. NO. 2417338



ANOKA COUNTY, MINNESOTA  
 STATEMENT OF ESTIMATED QUANTITIES  
 SP 002-606-014, SP 127-020-036

SHEET 3R OF 118

NOTES	TAB	SHEET NO.	ITEM NO.	ITEM DESCRIPTION	UNIT	PROJECT TOTAL ESTIMATED QUANTITY	PARTICIPATING - FEDERAL			NON-PARTICIPATING		
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	H	90	2503.503	27" RC PIPE SEWER DES 3006 CL V	LIN FT	127						127
	H	90	2503.503	30" RC PIPE SEWER DES 3006 CL V	LIN FT	225						225
	H	90	2503.503	36" RC PIPE SEWER DES 3006 CL III	LIN FT	324						268
			2503.602	CONNECT TO EXISTING STORM SEWER	EACH	1			56			1
	T	11	2504.602	ADJUST GATE VALVE & BOX	EACH	3		3				
	T	11	2504.602	ADJUST CURB STOP	EACH	2		1			1	
	J	91	2506.502	CASTING ASSEMBLY	EACH	23			9			14
	P,Q	11	2506.502	ADJUST FRAME & RING CASTING	EACH	6	2	2			2	
	H	90	2506.503	CONST DRAINAGE STRUCTURE DESIGN SD-48	LIN FT	14.8			6.6			8.2
	H	90	2506.503	CONST DRAINAGE STRUCTURE DESIGN SD-60	LIN FT	10.7						10.7
			2506.503	CONST DRAINAGE STRUCTURE DESIGN SD-72	LIN FT	10.4						10.4
	H	90, 93	2506.503	CONST DRAINAGE STRUCTURE DESIGN SPEC 1	LIN FT	21						21
	H	90	2506.503	CONST DRAINAGE STRUCTURE DES 48-4020	LIN FT	14.9			14.9			
	H	90	2506.503	CONST DRAINAGE STRUCTURE DES 60-4020	LIN FT	7						7
	H	90	2506.503	CONST DRAINAGE STRUCTURE DES 72-4020	LIN FT	38			29.5			8.5
	P	11	2506.503	RECONSTRUCT DRAINAGE STRUCTURE	LIN FT	6.5	6.5					
	H	90, 92-93	2506.602	CONST DRAINAGE STRUCTURE DESIGN SPEC 2	EACH	1			1			
	E	9	2521.518	4" CONCRETE WALK	SQ FT	7160	1990			5170		
	E	9	2521.518	6" CONCRETE WALK	SQ FT	1760	1290			470		
(11)	E	9	2521.602	DRILL & GROUT REINF BAR (EPOXY COATED)	EACH	159	118			41		
(6)	E	9	2521.618	6" CONCRETE WALK SPECIAL	SQ FT	2220	2220					
	E	9	2531.503	CONCRETE CURB & GUTTER DESIGN B418	LIN FT	260			130	130		
	E	9	2531.503	CONCRETE CURB & GUTTER DESIGN B618	LIN FT	1850	95	95	1090	570		
	E	9	2531.503	CONCRETE CURB & GUTTER DESIGN B624	LIN FT	980	490	490				
	E	9	2531.503	CONCRETE CURB & GUTTER DESIGN R424 (MOD)	LIN FT	900	900					
	F	10	2531.504	8" CONCRETE DRIVEWAY PAVEMENT	SQ YD	357	82		275			
	E	9	2531.618	TRUNCATED DOMES	SQ FT	188	126		62			
	U	100	2545.502	LIGHTING UNIT TYPE 9-30	EACH	5	2	3				
	U	100	2545.502	LIGHT FOUNDATION DESIGN E	EACH	9	1	3		5		
	U	100	2545.502	SERVICE CABINET -TYPE L1	EACH	1	1					
			2545.502	SERVICE EQUIPMENT	EACH	1	1					
	U	100	2545.502	EQUIPMENT PAD B	EACH	1	1					
	U	100	2545.503	2" RIGID STEEL CONDUIT	LIN FT	46	12	34				
	U	100	2545.503	1.5" NON-METALLIC CONDUIT	LIN FT	1131	162	495		474		
	U	100	2545.503	UNDERGROUND WIRE 1/C 2 AWG	LIN FT	175	32	143				
	U	100	2545.503	UNDERGROUND WIRE 1/C 8 AWG	LIN FT	5110	162	2797		2151		
	U	100	2545.503	UNDERGROUND WIRE 1 COND 12 AWG	LIN FT	538				538		
	R	50	2563.601	TRAFFIC CONTROL	LUMP SUM	1	0.38	0.03	0.09	0.36	0.02	0.12
			2563.601	ALTERNATE PEDESTRIAN ROUTE	LUMP SUM	1	1					
	R	50	2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	UNIT DAY	40	40					
	L	106	2564.602	INSTALL SIGN SPECIAL	EACH	2	1		1			
	K	106	2564.602	DELINEATOR / MARKER	EACH	1			1			
	K	106	2564.602	DELINEATOR / MARKER PANEL	EACH	8	4		4			
	K	106	2564.618	SIGN	SQ FT	399	279		120			
			2573.501	STABILIZED CONSTRUCTION EXIT	LUMP SUM	1	1		0			

FUNDING NOTES  
(A) 100% COUNTY (SP 002-606-014)  
(B) 100% CITY (SP 127-020-036)  
(C) DRAINAGE:  
31% COUNTY (SP 002-606-014),  
69% CITY (SP 127-020-036)  
(D) 100% COUNTY (SAP 002-606-014)  
(E) 100% CITY (SAP 127-020-036)  
(F) DRAINAGE:  
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69% CITY (SAP 127-020-036)

NOTES

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- (2) TO BE USED AS DIRECTED BY THE ENGINEER.
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- (4) TO BE USED FOR DUST CONTROL AND/OR AS DIRECTED BY THE ENGINEER.
- (5) SEE MISCELLANEOUS DETAILS FOR JOINTING DETAILS.
- (6) COLORED CONCRETE. INTEGRAL RED (FS 31136).
- (7) INCLUDES AGGREGATE UNDER BITUMINOUS PAVEMENT, TRAIL, CURB & GUTTER, CONCRETE WALK, AND CONCRETE PAVEMENT.

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- (11) TO BE USED IN PEDESTRIAN RAMP LANDINGS PER MNDOT STANDARD PLAN 5-297.250.
- (12) SEE TYPICAL SECTIONS "DETAIL C" FOR INSTALLATION REQUIREMENTS.
- (P) PLAN QUANTITY

BASIS FOR QUANTITIES

UNIT WEIGHT FOR BITUMINOUS 2360 MIX:	113 LBS PER SQ YD PER INCH
BITUMINOUS TACK COAT - NEW SURFACES:	0.05 GALLONS PER SQ YD
SEED RESIDENTIAL TURFGRASS APPLICATION RATE:	200 LBS PER ACRE
SEED SOUTHERN BOULEVARD APPLICATION RATE:	160 LBS PER ACRE
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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
Print Name: KEVIN M. JULLIE  
  
Date: 06/04/2025 License #: 26755

STATE PROJECT NO. 002-606-014  
STATE PROJECT NO. 127-020-036  
STATE AID PROJECT NO. 002-606-014  
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DRAWN BY M. WENDLER  
DESIGNED BY M. WENDLER  
CHECKED BY Z. HEIMER  
COMM. NO. 2417338



ANOKA COUNTY, MINNESOTA  
STATEMENT OF ESTIMATED QUANTITIES  
SP 002-606-014, SP 127-020-036

SHEET 4 OF 118

NOTES	TAB	SHEET NO.	ITEM NO.	ITEM DESCRIPTION	UNIT	PROJECT TOTAL ESTIMATED QUANTITY	PARTICIPATING - FEDERAL			NON-PARTICIPATING		
							ROADWAY			ROADWAY		
							ANOKA COUNTY SP 002-606-014 (A) ESTIMATED QUANTITY	CITY OF FRIDLEY SP 127-020-036 (B) ESTIMATED QUANTITY	DRAINAGE SP 002-606-014 SP 127-020-036 (C) ESTIMATED QUANTITY	ANOKA COUNTY SAP 002-606-014 (D) ESTIMATED QUANTITY	CITY OF FRIDLEY SAP 127-020-036 (E) ESTIMATED QUANTITY	DRAINAGE SAP 002-606-014 SAP 127-020-036 (F) ESTIMATED QUANTITY
	G	10	2573.502	STORM DRAIN INLET PROTECTION	EACH	26						
	G	10	2573.503	SEDIMENT CONTROL LOG TYPE WOOD FIBER	LIN FT	1335	635				700	
	G	10	2574.505	SOIL BED PREPARATION	ACRE	1.5	1				0.5	
	G	10	2574.508	FERTILIZER TYPE 1	POUND	525	350				175	
	G	10	2575.505	SEEDING	ACRE	1.5	1				0.5	
	G	10	2575.505	WEED SPRAYING	ACRE	0.8	0.5				0.3	
	G	10	2575.506	WEED SPRAY MIXTURE	GALLON	0.2	0.1				0.1	
	G	10	2575.508	HYDRAULIC MULCH MATRIX	POUND	3750	2500				1250	
	G	10	2575.523	RAPID STABILIZATION METHOD 3	M GALLON	9	6				3	
	G	10	2575.608	SEED SOUTHERN BOULEVARD	POUND	128	80				48	
	G	10	2575.608	SEED TURFGRASS	POUND	140	100				40	
(10)	R	50R	2581.503	4" REMOVABLE PREFORM PAVEMENT MARKING TAPE WR	LIN FT	385					385	
(10)	R	50R	2581.503	6" REMOVABLE PREFORM PAVEMENT MARKING TAPE WR	LIN FT	5185	405				4780	
(10)	R	50R	2581.503	8" REMOVABLE PREFORM PAVEMENT MARKING TAPE WR	LIN FT	70					70	
	R	50R	2581.518	REMOVABLE PREFORMED PAVEMENT MESSAGE TAPE	SQ FT	15					15	
(10)	M	114	2582.503	4" SOLID LINE PREF TAPE GR IN	LIN FT	4346	2134				2212	
(10)	M	114	2582.503	24" SOLID LINE PREF TAPE GR IN	LIN FT	416	391				25	
(10)	M	114	2582.503	4" BROKEN LINE PREF TAPE GR IN	LIN FT	150	20				130	
(10)	M	114	2582.503	8" DOTTED LINE PREF TAPE GR IN	LIN FT	45					45	
(10)	M	114	2582.503	12" DOTTED LINE PREF TAPE GR IN	LIN FT	46	46					
(10)	M	114	2582.503	4" DBLE SOLID LINE PREF TAPE GR IN	LIN FT	1688	1544				144	
	M	114	2582.518	PAVT MSSG PREF THERMO	SQ FT	93					93	
	M	114	2582.518	CROSSWALK PREF THERMO GR IN	SQ FT	528	288				240	



FUNDING NOTES  
 (A) 100% COUNTY (SP 002-606-014)  
 (B) 100% CITY (SP 127-020-036)  
 (C) DRAINAGE:  
 31% COUNTY (SP 002-606-014),  
 69% CITY (SP 127-020-036)  
 (D) 100% COUNTY (SAP 002-606-014)  
 (E) 100% CITY (SAP 127-020-036)  
 (F) DRAINAGE:  
 31% COUNTY (SAP 002-606-014),  
 69% CITY (SAP 127-020-036)

**BASIS FOR QUANTITIES**

UNIT WEIGHT FOR BITUMINOUS 2360 MIX: 113 LBS PER SQ YD PER INCH  
 BITUMINOUS TACK COAT - NEW SURFACES: 0.05 GALLONS PER SQ YD  
 SEED RESIDENTIAL TURFGRASS APPLICATION RATE: 200 LBS PER ACRE  
 SEED SOUTHERN BOULEVARD APPLICATION RATE: 160 LBS PER ACRE  
 FERTILIZER TYPE 1 APPLICATION RATE: 350 LBS PER ACRE  
 HYDRAULIC MULCH MATRIX APPLICATION RATE: 2,500 LBS PER ACRE  
 RAPID STABILIZATION METHOD 3: 6 M GAL PER ACRE  
 WEED SPRAYING RATE: 0.5 ACRE PER ACRE  
 WEED SPRAY MIXTURE APPLICATION RATE: 0.125 GAL PER ACRE

NOTES  
 (1) TO BE USED IN LANE TRANSITION AREAS TO OBLITERATE CONFLICTING PAVEMENT MARKINGS.  
 (2) TO BE USED AS DIRECTED BY THE ENGINEER.  
 (3) TO BE USED AS SURFACE CLEANING AND/OR AS DIRECTED BY THE ENGINEER.  
 (4) TO BE USED FOR DUST CONTROL AND/OR AS DIRECTED BY THE ENGINEER.  
 (5) SEE MISCELLANEOUS DETAILS FOR JOINTING DETAILS.  
 (6) COLORED CONCRETE. INTEGRAL RED (FS 31136).  
 (7) INCLUDES AGGREGATE UNDER BITUMINOUS PAVEMENT, TRAIL, CURB & GUTTER, CONCRETE WALK, AND CONCRETE PAVEMENT.

(8) TO BE USED UNDER DRIVEWAYS AND TEMPORARY BYPASS.  
 (9) TO BE USED FOR BITUMINOUS TRAILS AND BITUMINOUS DRIVEWAYS.  
 (10) SEE TABULATION FOR COLOR.  
 (11) TO BE USED IN PEDESTRIAN RAMP LANDINGS PER MNDOT STANDARD PLAN 5-297.250.  
 (12) SEE TYPICAL SECTIONS "DETAIL C" FOR INSTALLATION REQUIREMENTS.  
 (P) PLAN QUANTITY

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06/19/25 MSW KFH KFH ADDENDUM #1: STAGING REVISIONS

NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: KEVIN M. JULLIE  
 Date: 06/19/2025 License #: 26755

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036

DRAWN BY M. WENDLER  
 DESIGNED BY M. WENDLER  
 CHECKED BY K. HARRISON  
 COMM. NO. 2417338



**ANOKA COUNTY, MINNESOTA**  
 STATEMENT OF ESTIMATED QUANTITIES  
 SP 002-606-014, SP 127-020-036

**SHEET 5R OF 118**

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT.

STANDARD PLATES	
PLATE NO.	DESCRIPTION
1070N	SUPPLEMENTAL PAVEMENT REINFORCEMENT
1103M	TYPICAL DOWEL BAR ASSEMBLY (2 SHEETS)
3000M	REINFORCED CONCRETE PIPE (6 SHEETS)
3006H	GASKET JOINT FOR R.C. PIPE (2 SHEETS)
3007F	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
4010I	CONCRETE ADJUSTING RINGS
4011E	PRECAST CONCRETE BASE
4020J	MANHOLE OR CATCH BASIN (FOR USE WITH OR WITHOUT TRAFFIC LOADS) (2 SHEETS)
4022A	MANHOLE OR CATCH BASIN COVER (3 FT. X 2 FT. OPENING)
4024A	48" DIA. PRECAST SHALLOW DEPTH CATCH BASIN - DESIGN SD
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4108F	ADJUSTING RINGS FOR CATCH BASINS AND MANHOLES
4110F	COVER CASTING FOR MANHOLE (FOR USE IN ALL TRAFFIC AREAS) - CASTING NO. 715 AND 716
4125D	CATCH BASIN FRAME CASTING (FOR SQUARE GRATE) - CASTING NO. 806
4132G	CATCH BASIN FRAME CASTING (FOR SQUARE GRATE) - CASTING NO. 805
4134A	CURB BOX CASTING FOR CATCH BASIN (FOR DESIGN B CURBS)- CASTING NO. 825
4154B	CATCH BASIN GRATE CASTING - CASTING NO. 816
4180J	MANHOLE OR CATCH BASIN STEP
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7100H	CONCRETE CURB AND GUTTER (DESIGN B AND DESIGN V)
7102K	CONCRETE CURB AND GUTTER (DESIGN D, DESIGN S, AND DESIGN R)
7111J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
7113A	CONCRETE APPROACH NOSE DETAIL
8000K	TEMPORARY CHANNELIZERS (3 SHEETS)
8106D	EQUIPMENT PAD B
8127E	LIGHT FOUNDATION - DESIGN E PRECAST/CAST-IN-PLACE (40 FT. POLE OR LESS) (2 SHEETS)
8129A	SHIM AND WASHER (TRAFFIC CONTROL SIGNALS AND ROADWAY LIGHTING)
8337D	TEMPORARY PORTABLE PRECAST CONCRETE BARRIER - TYPE F (3 SHEETS)
9350C	MAILBOX SUPPORT - SWING-AWAY TYPE (3 SHEETS)

THE FOLLOWING STANDARD PLATES SHALL APPLY ON THIS PROJECT.

CITY OF FRIDLEY STANDARD PLATES	
PLATE NO.	DESCRIPTION
BED-2	BEDDING METHODS FOR DIP
STO-18	CATCH BASIN AND MANHOLE ADJUSTMENT
WAT-1	GATE VALVE AND BOX
STR-1	CURB AND GUTTER

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NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: **KEVIN M. JULLIE**

*Kevin Jullie*

Date: 06/04/2025 License # 26755

STATE PROJECT NO. 002-606-014	DRAWN BY M. WENDLER
STATE PROJECT NO. 127-020-036	DESIGNED BY M. WENDLER
STATE AID PROJECT NO. 002-606-014	CHECKED BY Z. HEIMER
STATE AID PROJECT NO. 127-020-036	COMM. NO. 2417338



**ANOKA COUNTY, MINNESOTA**

STANDARD PLATES

SP 002-606-014, SP 127-020-036

**SHEET**  
6  
OF  
118



**CONSTRUCTION AND SOILS NOTES**

**GRADING, BASE AND SURFACE**

1. TOP OF THE GRADING GRADE IS DEFINED AS THE BOTTOM OF THE PROPOSED CLASS 5 AGGREGATE BASE.
2. TEST ROLLING OF THE SUBGRADE WILL BE REQUIRED AS SPECIFIED BY SPEC. 2111.2 (INCIDENTAL).
3. STRIP SOD AND TOPSOIL FROM AREAS TO BE DISTURBED BY CONSTRUCTION AND REUSE TOPSOIL. FOR ESTIMATING PURPOSES, THE DEPTH OF TOPSOIL AVAILABLE IS CONSIDERED TO BE 6".
4. COMPACTION OF THE GRADING AND AGGREGATE ITEMS ON BYPASSES AND OTHER TEMPORARY WORK SHALL BE BY THE "SPECIFIED DENSITY" METHOD REQUIREMENTS AS INDICATED IN SPEC. 2211.
5. WHERE CONNECTING TO THE INPLACE ROADWAYS AT THE TERMINI OF PROPOSED CONSTRUCTION, CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE BOTTOM OF THE NEW SURFACING, WHICHEVER IS DEEPER, THEN 1V:20H TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION, UNLESS OTHERWISE NOTED.
6. TOE OF FILL, CUT RUNOUTS AND THE TOP EDGE OF THE BACKSLOPES SHALL BE ROUNDED REGARDLESS OF THE SECTION USED ON THE CROSS SECTION SHEETS.
7. ANY DEBRIS WHICH MAY BE ENCOUNTERED DURING GRADING SHALL BE DISPOSED OF BY THE CONTRACOR OFF THE PROJECT RIGHT OF WAY IN A SUITABLE DISPOSAL AREA AS APPROVED BY THE ENGINEER (INCIDENTAL).
8. NO EXTRA PAYMENT WILL BE MADE FOR MOVING, PLACING, OR TEMPORARY STOCKPILING OF EXCAVATION AND/OR EMBANKMENT MATERIAL.
9. PROVIDE A UNIFORM TACK COAT AS DOCUMENTED IN THE MOST CURRENT SPEC. 2357 - BITUMINOUS TACK COAT REQUIREMENTS
10. PIPE SEWERS CONNECTING MANHOLES AND CATCH BASINS SHALL BE IN ACCORDANCE WITH SPEC. 2503. BEDDING AND BACKFILL SHALL CONSIST OF UNIFORM COMMON EMBANKMENT MATCHING ADJACENT SOILS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
11. EXCESS GRANULAR MATERIAL MUST BE DEEMED EXCESS BY THE ENGINEER BEFORE BEING REMOVED FROM THE PROJECT.
12. NO OVER-EXCAVATION WILL BE ALLOWED ON THIS PROJECT.
13. OBTAIN COMPACTION ON ALL BITUMINOUS PORTIONS OF CONSTRUCTION IN ACCORDANCE WITH THE "MAXIMUM DENSITY METHOD" REQUIREMENTS.
14. BITUMINOUS MATERIAL MUST BE REMOVED FROM THE PROJECT AND CANNOT BE USED AS EMBANKENMENT.

**REMOVALS**

15. THE EXISTING PAVEMENT THICKNESSES ARE ASSUMED TO BE AS FOLLOWS:  
  
CSAH 6 6" BITUMNIOUS PAVEMENT  
  
THE CONTRACTOR SHALL INVESTIGATE AND MAKE THEIR OWN DETERMINATION.  
  
(INFORMATION TAKEN FROM THE PROJECT SOIL BORINGS AND/OR RECORD DRAWINGS).
16. UNLESS OTHERWISE SPECIFICALLY ALLOWED OR REQUIRED BY THE CONTRACT, BITUMINOUS AND CONCRETE ITEMS DISTURBED BY CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND MAY BE RECYCLED OR DISPOSED OF OFF THE RIGHT OF WAY.

**CONSTRUCTION AND SOILS NOTES**

**EROSION CONTROL AND TURF ESTABLISHMENT**

17. TEMPORARY EROSION CONTROL DEVICES AND THEIR SUGGESTED LOCATIONS HAVE BEEN SHOWN IN THE PLANS ALONG WITH PAY ITEMS FOR THEIR USE. THIS DOES NOT HOWEVER RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO CONDUCT CONSTRUCTION IN A MANNER THAT WILL CONTROL EROSION. WILL CONTROL EROSION. RESPONSIBILITY FOR CONTROLLING EROSION AND MAINTENANCE OF EROSION CONTROL AS SET IN MNDOT SPECIFICATIONS 1717 1803, 2101, 2106, 2573, 2575, AND IS AMENDED BY THE SPECIAL PROVISIONS.
18. PLACE A MINIMUM OF 6 INCHES OF TOPSOIL ON ALL AREAS SCHEDULED FOR PERMANENT TURF ESTABLISHMENT.
19. INLET PROTECTION WILL BE INSTALLED AT ALL CATCH INLETS WITHIN THE PROJECT AREA PER STANDARD DETAILS.
20. IN THE EVENT THAT PERMANENT STABILIZATION CANNOT BE IMPLEMENTED WITHIN 7 DAYS AFTER CONSTRUCTION ACTIVITY IN THE DISTURBED AREA HAS CEASED, TEMPORARY STABILIZATION BMPS MUST BE SCHEDULED TO OCCUR WITHIN THAT 7 DAY TIME FRAME.
21. ALL STOCKPILES MUST HAVE DOWN GRADIENT PERIMETER SEDIMENT CONTROL IMPLEMENTED AND MAINTAINED AT ALL TIMES. STOCKPILES TO RECEIVE TEMPORARY STABILIZATION IF UNWORKED FOR 7 DAYS.
22. STOCKPILES MAY NOT BE PLACED WITHIN ANY DRAINAGE OR CURB LINE UNLESS PROPER BYPASS IS INSTALLED PRIOR TO STOCKPILE PLACEMENT.
23. CONTRACTOR TO INSTALL SEDIMENT CONTROL LOGS DOWN GRADIENT FROM ANY EXPOSED AREAS.
24. STABILIZATION OF DISTURBED AREAS SHALL BE DONE BY PERMANENT TURF ESTABLISHMENT WHENEVER POSSIBLE.
25. A ROCK CONSTRUCTION ENTRANCE WILL BE PLACED AT ALL ENTRANCES THAT LEAD TO THE PROJECT SITE IN ACCORDANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN AND THE APPROVED STANDARD DETAILS.
26. ALL STREETS IN AND ADJACENT TO THE PROJECT SHALL REMAIN CLEAN AND PASSABLE AT ALL TIMES. ADJACENT STREET AND CURB LINE TO BE SWEEPED FREE OF DEBRIS AT THE END OF EACH WORK DAY, OR AS OFTEN AS NEEDED TO ENSURE PUBLIC SAFETY.
27. SLURRY FROM CONCRETE OPERATIONS MUST BE VACUUMED UP IMMEDIATELY. NO CONCRETE WASHOUT SHALL COME IN CONTACT WITH THE GROUND AND MUST BE PROPERLY DISPOSED OF. ALL HAZARDOUS MATERIALS MUST BE KEPT UNDER COVER AND WITHIN PROPER CONTAINMENT WHEN NOT IN USE.
28. ADDITIONAL EROSION AND SEDIMENT CONTROL MAY BE ADDED DURING ANY PHASE OF CONSTRUCTION AS DIRECTED BY THE ENGINEER.
29. SEEDING REQUIREMENTS ON THIS PROJECT ARE AS FOLLOWS:  
  
A. ON PERMANENT SLOPES FLATTER THAN 1:3 USE:  
SEED SOUTHERN BOULEVARD @ 160 POUNDS PER ACRE  
FERTILIZER TYPE 1 @ 350 POUNDS PER ACRE  
HYDRAULIC MULCH MATRIX @ 2500 POUNDS PER ACRE  
SEE EROSION CONTROL AND TURF ESTABLISHMENT PLANS FOR LOCATIONS.

**MISCELLANEOUS**

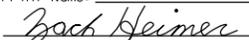
30. WHERE SEDIMENT DEPOSITS IN WATERS OF THE STATE THE MATERIAL MUST BE REMOVED IN 7 DAYS.
31. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.
32. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACCOMODATING AND MAINTAINING PEDESTRIAN MOVEMENTS THROUGHOUT CONSTRUCTION (INCIDENTAL).

**UTILITIES**

33. THE CONTRACTOR IS HERBY REMINDED OF THEIR RESPONSIBILITY UNDER STATE LAW TO CONTACT ALL UTILITIES WHICH MAY HAVE FACILITIES IN THE AREA CONTACT MUST BE MADE THROUGH GOPHER STATE ONE CALL IN ACCORDANCE WITH MN STATUTE.
34. UTILITY COMPANIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE CONTRACTOR OF THE CONSTRUCTION STARTING DATE, AND TWO WEEKS PRIOR TO EACH STAGE OF CONSTRUCTION.
35. ALL PRIVATELY OWNED UTILITY MANHOLES TO BE RESET BY OTHERS.
36. CONTRACTOR SHALL VERIFY INVERT ELEVATIONS FOR EXISTING MANHOLES PRIOR TO ANY STORM SEWER CONSTRUCTION.

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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: ZACHARIAH F. HEIMER  
  
 Date: 05/14/2025 License # 58755

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036

DRAWN BY M. WENDLER  
 DESIGNED BY M. WENDLER  
 CHECKED BY Z. HEIMER  
 COMM. NO. 2417338



**ANOKA COUNTY, MINNESOTA**  
 CONSTRUCTION AND SOILS NOTES  
 SP 002-606-014, SP 127-020-036

**SHEET 8 OF 118**

REMOVALS AND SAWING

C

ALIGNMENT	STATION TO STATION	REMOVE										SAWING		
		LIGHTING UNIT	WOOD POLE	LIGHT FOUNDATION	CURB & GUTTER	RETAINING WALL	CONCRETE MEDIAN	CONCRETE DRIVEWAY PAVEMENT	BITUMINOUS DRIVEWAY PAVEMENT	BITUMINOUS PAVEMENT	CONCRETE WALK	BRICK MEDIAN	CONCRETE PAVEMENT (FULL DEPTH)	BIT PAVEMENT (FULL DEPTH)
		EACH	EACH	EACH	LIN FT	LIN FT	SQ YD	SQ YD	SQ YD	SQ YD	SQ FT	SQ FT	LIN FT	LIN FT
<b>SP 002-606-014 &amp; SP 127-020-036</b>		(B)	(A)	(B)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
EB CSAH 6	208+00.00 TO 209+38.63				310	140		70	20		730	1050		40
ROUNDABOUT	50+00.00 TO 51+50.80		1		230	20					1040	630		
EB CSAH 6	210+66.02 TO 211+94.50				270			10	10		670	960		60
NB 7TH ST	401+69.95 TO 402+43.41				150						450	90		50
NB 7TH ST	403+71.91 TO 404+66.14				180						460			50
<b>SP 002-606-014 &amp; SP 127-020-036 TOTAL</b>			<b>1</b>		<b>1140</b>	<b>160</b>		<b>80</b>	<b>30</b>		<b>3350</b>	<b>2730</b>		<b>200</b>
<b>SAP 002-606-014 &amp; SAP 127-020-036</b>		(E)	(D)	(E)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
EB CSAH 6	201+51.50 TO 208+00.00	4		4	1220	110	30	180	90	4150	5440	70	170	
NB 5TH ST	600+10.00 TO 601+08.85				400		10			510	100		220	40
<b>SAP 002-606-014 &amp; SAP 127-020-036 TOTAL</b>		<b>4</b>		<b>4</b>	<b>1620</b>	<b>110</b>	<b>40</b>	<b>180</b>	<b>90</b>	<b>4660</b>	<b>5540</b>	<b>220</b>	<b>70</b>	<b>210</b>
<b>TOTALS</b>		<b>4</b>	<b>1</b>	<b>4</b>	<b>2760</b>	<b>270</b>	<b>40</b>	<b>260</b>	<b>120</b>	<b>8010</b>	<b>8270</b>	<b>220</b>	<b>70</b>	<b>410</b>

NOTES:  
- SAWING OF CONCRETE CURB & GUTTER IS INCIDENTAL.

AGGREGATE AND BITUMINOUS SUMMARY

D

ALIGNMENT	STATION TO STATION	AGGREGATE BASE (CV) CLASS 5 (D-1)	BITUMINOUS MATERIAL FOR TACK COAT	TYPE SP 9.5 WEARING COURSE MIX (2,B)	TYPE SP 12.5 NON WEAR COURSE MIX (3,B)	TYPE SP 12.5 WEARING COURSE MIX (3,C)	GEOTEXTILE FABRIC TYPE 5
				SPWEA230B	SPNWB330B	SPWEB340C	
				CU YD	GALLON	TON	
<b>SP 002-606-014 &amp; SP 127-020-036</b>		(A)	(A)	(A)	(A)	(A)	(A)
EB CSAH 6	208+00.00 TO 209+38.63	170	60	20	110	140	730
ROUNDABOUT	50+00.00 TO 51+50.80	230	70	20	130	160	440
EB CSAH 6	210+66.02 TO 211+94.50	160	50	10	90	120	690
NB 7TH ST	401+69.95 TO 402+43.41	80	30	2	50	60	400
NB 7TH ST	403+71.91 TO 404+66.14	80	30		60	70	430
<b>SP 002-606-014 &amp; SP 127-020-036 TOTAL</b>		<b>720</b>	<b>240</b>	<b>52</b>	<b>440</b>	<b>550</b>	<b>2690</b>
<b>SAP 002-606-014 &amp; SAP 127-020-036</b>		(D)	(D)	(D)	(D)	(D)	(D)
EB CSAH 6	201+51.50 TO 208+00.00	850	370	60	670	870	3050
NB 5TH ST	600+10.00 TO 601+08.85	120	40		80	110	640
<b>SAP 002-606-014 &amp; SAP 127-020-036 TOTAL</b>		<b>970</b>	<b>410</b>	<b>60</b>	<b>750</b>	<b>980</b>	<b>3690</b>
<b>TOTALS</b>		<b>1690</b>	<b>650</b>	<b>112</b>	<b>1190</b>	<b>1530</b>	<b>6380</b>

FUNDING NOTES  
(A) 100% COUNTY (SP 002-606-014)  
(B) 100% CITY (SP 127-020-036)  
(D) 100% COUNTY (SAP 002-606-014)  
(E) 100% CITY (SAP 127-020-036)

NOTES:  
(D-1) INCLUDES AGGREGATE UNDER BITUMINOUS PAVEMENT, TRAIL, CURB & GUTTER, CONCRETE WALK, AND CONCRETE PAVEMENT.

BASIS OF QUANTITIES  
- BITUMINOUS DENSITY: 113 LBS/SY/IN  
- TACK COAT BETWEEN LIFTS: 0.05 GAL/SY

CONCRETE SUMMARY

E

ALIGNMENT	STATION TO STATION	CONCRETE PAVEMENT 10.0" (SPECIAL) (E-1)	4" CONCRETE WALK	6" CONCRETE WALK	DRILL & GROUT REINF BAR (EPOXY COATED)	6" CONCRETE WALK SPECIAL (E-1)	CONCRETE CURB & GUTTER DESIGN						TRUNCATED DOMES	
							B418		B618		B624			R424 (MOD)
							LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT		SQ FT
<b>SP 002-606-014 &amp; SP 127-020-036</b>		(A)	(A)	(A)	(A)	(A)	(A)	(B)	(A)	(B)	(A)	(B)	(A)	(A)
EB CSAH 6	208+00.00 TO 209+38.63		700	320	29	340			95	95	70	70	120	30
ROUNDABOUT	50+00.00 TO 51+50.80	170	420	10		810					120	120	370	
EB CSAH 6	210+66.02 TO 211+94.50		810	290	33	470					130	130	160	32
NB 7TH ST	401+69.95 TO 402+43.41			390	26	250					80	80	110	32
NB 7TH ST	403+71.91 TO 404+66.14		60	280	30	350					90	90	140	32
<b>SP 002-606-014 &amp; SP 127-020-036 TOTAL</b>		<b>170</b>	<b>1990</b>	<b>1290</b>	<b>118</b>	<b>2220</b>			<b>95</b>	<b>95</b>	<b>490</b>	<b>490</b>	<b>900</b>	<b>126</b>
<b>SAP 002-606-014 &amp; SAP 127-020-036</b>		(D)	(D)	(D)	(D)	(D)	(D)	(E)	(D)	(E)	(D)	(E)	(D)	(D)
EB CSAH 6	201+51.50 TO 208+00.00		4310	380	34	130	130	780	470					62
NB 5TH ST	600+10.00 TO 601+08.85		860	90	7			310	100					
<b>SAP 002-606-014 &amp; SAP 127-020-036 TOTAL</b>			<b>5170</b>	<b>470</b>	<b>41</b>		<b>130</b>	<b>130</b>	<b>1090</b>	<b>570</b>				<b>62</b>
<b>TOTALS</b>		<b>170</b>	<b>7160</b>	<b>1760</b>	<b>159</b>	<b>2220</b>	<b>130</b>	<b>130</b>	<b>1185</b>	<b>665</b>	<b>490</b>	<b>490</b>	<b>900</b>	<b>188</b>

NOTES:  
(E-1) COLOR SHALL BE INTEGRAL RED (FS COLOR 31136)

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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
Print Name: ZACHARIAH F. HEIMER  
*Zach Heimer*  
Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
STATE PROJECT NO. 127-020-036  
STATE AID PROJECT NO. 002-606-014  
STATE AID PROJECT NO. 127-020-036  
DRAWN BY M. WENDLER  
DESIGNED BY M. WENDLER  
CHECKED BY Z. HEIMER  
COMM. NO. 2417338



ANOKA COUNTY, MINNESOTA  
TABULATIONS  
SP 002-606-014, SP 127-020-036

SHEET 9 OF 118

DRIVEWAY TABULATION							F
ALIGNMENT	STATION	LT/RT/ MEDIAN	HOUSE NUMBER	TYPE SP 9.5 WEARING COURSE MIX (2,B)	8" CONCRETE DRIVEWAY PAVEMENT	AGGREGATE BASE (CV) CLASS 5 (DRIVEWAYS)	
				SPWEA230B			
				TON	SQ YD	CU YD	
<b>SP 002-606-014 &amp; SP 127-020-036</b>				<b>(A)</b>	<b>(A)</b>	<b>(A)</b>	
EB CSAH 6	208+58.0	RT	460	3	69	11	
EB CSAH 6	211+69.0	RT	506	1	13	2	
<b>SP 002-606-014 &amp; SP 127-020-036 TOTAL</b>				<b>4</b>	<b>82</b>	<b>13</b>	
<b>SAP 002-606-014 &amp; SAP 127-020-036</b>				<b>(D)</b>	<b>(D)</b>	<b>(D)</b>	
EB CSAH 6	205+60.7	RT	410	2	42	7	
EB CSAH 6	207+43.4	RT	460	3	67	11	
WB CSAH 6	102+17.2	LT	365		22	3	
WB CSAH 6	102+78.1	LT	373		35	4	
WB CSAH 6	104+17.3	LT	401		40	5	
WB CSAH 6	104+94.1	LT	411	1	16	3	
WB CSAH 6	106+41.4	LT	421		14	2	
WB CSAH 6	107+46.5	LT	431	1	18	4	
WB CSAH 6	107+75.3	LT	465	2	21	4	
<b>SAP 002-606-014 &amp; SAP 127-020-036 TOTAL</b>				<b>9</b>	<b>275</b>	<b>43</b>	
<b>TOTALS</b>				<b>13</b>	<b>357</b>	<b>56</b>	

TURF ESTABLISHMENT & EROSION CONTROL													G	
ALIGNMENT	STATION	TO	STATION	STORM DRAIN INLET PROTECTION (G-1)	SEDIMENT CONTROL LOG TYPE WOOD FIBER	RAPID STABILIZATION METHOD 3	SOIL BED PREPARATION	FERTILIZER TYPE 1	SEEDING	WEED SPRAYING	WEED SPRAY MIXTURE	HYDRAULIC MULCH MATRIX	SEED SOUTHERN BOULEVARD	SEED TURFGRASS
				EACH	LIN FT	M GALLON	ACRE	POUND	ACRE	ACRE	GALLON	POUND	POUND	POUND
<b>SP 002-606-014 &amp; SP 127-020-036</b>				<b>(A)</b>	<b>(A)</b>	<b>(A)</b>	<b>(A)</b>	<b>(A)</b>	<b>(A)</b>	<b>(A)</b>	<b>(A)</b>	<b>(A)</b>	<b>(A)</b>	<b>(A)</b>
EB CSAH 6	208+00.00	TO	209+38.63	2	99	1.2	0.2	70	0.2	0.1	0.01	500	16	20
ROUNDAABOUT	50+00.00	TO	51+50.80	3	59	1.2	0.2	70	0.2	0.1	0.01	500	16	20
EB CSAH 6	210+66.02	TO	211+94.50	2	213	1.2	0.2	70	0.2	0.1	0.01	500	16	20
NB 7TH ST	401+69.95	TO	402+43.41		166	1.2	0.2	70	0.2	0.1	0.01	500	16	20
NB 7TH ST	403+71.91	TO	404+66.14		98	1.2	0.2	70	0.2	0.1	0.01	500	16	20
<b>SP 002-606-014 &amp; SP 127-020-036 TOTAL</b>				<b>7</b>	<b>635</b>	<b>6</b>	<b>1</b>	<b>350</b>	<b>1</b>	<b>0.5</b>	<b>0.05</b>	<b>2500</b>	<b>80</b>	<b>100</b>
<b>SAP 002-606-014 &amp; SAP 127-020-036</b>				<b>(D)</b>	<b>(D)</b>	<b>(D)</b>	<b>(D)</b>	<b>(D)</b>	<b>(D)</b>	<b>(D)</b>	<b>(D)</b>	<b>(D)</b>	<b>(D)</b>	<b>(D)</b>
EB CSAH 6	201+51.50	TO	208+00.00	15	590	1.8	0.3	105	0.3	0.2	0.02	750	32	20
NB 5TH ST	600+10.00	TO	601+08.85	4	110	1.2	0.2	70	0.2	0.1	0.01	500	16	20
<b>SAP 002-606-014 &amp; SAP 127-020-036 TOTAL</b>				<b>19</b>	<b>700</b>	<b>3</b>	<b>0.5</b>	<b>175</b>	<b>0.5</b>	<b>0.3</b>	<b>0.03</b>	<b>1250</b>	<b>48</b>	<b>40</b>
<b>TOTALS</b>				<b>26</b>	<b>1335</b>	<b>9</b>	<b>1.5</b>	<b>525</b>	<b>1.5</b>	<b>0.8</b>	<b>0.08</b>	<b>3750</b>	<b>128</b>	<b>140</b>

NOTES:  
(G-1) QUANTITY INCLUDES 4 ADDITIONAL STORM DRAIN INLET PROTECTION NOT SHOWN ON THE PLANS TO BE USED AS DIRECTED BY THE ENGINEER.

SUBDRAIN				S
ALIGNMENT	STATION	TO	STATION	4" PERF TP PIPE DRAIN (S-1)
				LIN FT
<b>SP 002-606-014 &amp; SP 127-020-036</b>				<b>(A)</b>
EB CSAH 6	208+00.00	TO	209+38.63	
ROUNDAABOUT	50+00.00	TO	51+50.80	
EB CSAH 6	210+66.02	TO	211+94.50	
NB 7TH ST	401+69.95	TO	402+43.41	
NB 7TH ST	403+71.91	TO	404+66.14	
<b>SP 002-606-014 &amp; SP 127-020-036 TOTAL</b>				
<b>SAP 002-606-014 &amp; SAP 127-020-036</b>				<b>(D)</b>
EB CSAH 6	201+51.50	TO	208+00.00	650
NB 5TH ST	600+10.00	TO	601+08.85	80
<b>SAP 002-606-014 &amp; SAP 127-020-036 TOTAL</b>				<b>730</b>
<b>TOTALS</b>				<b>730</b>

NOTES:  
(S-1) WITH GEOTEXTILE WRAP TYPE 1, MNDOT SPEC. 3733 (INCIDENTAL).

GRUBBING				V
ALIGNMENT	STATION	TO	STATION	GRUBBING
				EACH
<b>SP 002-606-014 &amp; SP 127-020-036</b>				<b>(A)</b>
EB CSAH 6	208+00.00	TO	209+38.63	1
ROUNDAABOUT	50+00.00	TO	51+50.80	
EB CSAH 6	210+66.02	TO	211+94.50	
NB 7TH ST	401+69.95	TO	402+43.41	
NB 7TH ST	403+71.91	TO	404+66.14	
<b>SP 002-606-014 &amp; SP 127-020-036 TOTAL</b>				<b>1</b>
<b>SAP 002-606-014 &amp; SAP 127-020-036</b>				<b>(D)</b>
EB CSAH 6	201+51.50	TO	208+00.00	5
NB 5TH ST	600+10.00	TO	601+08.85	
<b>SAP 002-606-014 &amp; SAP 127-020-036 TOTAL</b>				<b>5</b>
<b>TOTALS</b>				<b>6</b>

FUNDING NOTES  
(A) 100% COUNTY (SP 002-606-014)  
(B) 100% CITY (SP 127-020-036)  
(D) 100% COUNTY (SAP 002-606-014)  
(E) 100% CITY (SAP 127-020-036)

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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
Print Name: ZACHARIAH F. HEIMER  
*Zach Heimer*  
Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
STATE PROJECT NO. 127-020-036  
STATE AID PROJECT NO. 002-606-014  
STATE AID PROJECT NO. 127-020-036  
DRAWN BY M. WENDLER  
DESIGNED BY M. WENDLER  
CHECKED BY Z. HEIMER  
COMM. NO. 2417338



ANOKA COUNTY, MINNESOTA  
TABULATIONS  
SP 002-606-014, SP 127-020-036

SHEET  
10  
OF  
118

GENERAL NOTES:

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO GUIDELINES OF CI/ASCE 38-22, ENTITLED "STANDARD GUIDELINES FOR INVESTIGATING AND DOCUMENTING EXISTING UTILITIES".

THE "LEAVE AS IS" AND "RELOCATE" NOTES ARE BASED UPON THE BEST INFORMATION AVAILABLE AND MAY NOT REFLECT THE ACTUAL EFFECTS ON THE UTILITIES BY CONSTRUCTION. ACTUAL DETERMINATION WILL BE MADE IN THE FIELD DURING CONSTRUCTION.

UTILITY WORK APPLIES TO THE CONSTRUCTION/EXCAVATION AREA LIMITS ONLY.

THE CONTRACTOR IS HEREBY REMINDED OF HIS RESPONSIBILITY TO CONTACT ALL UTILITIES THAT MAY HAVE FACILITIES IN THE PROJECT AREA.

SEE THE TOPOGRAPHY AND UTILITY PLANS FOR PRIVATE UTILITY RELOCATIONS.

EXISTING SANITARY SEWER

Q

ALIGNMENT	LOCATION		EXISTING ITEM	LEAVE AS IS	ADJUST	ELEVATION		NOTES
	STATION	OFFSET			FRAME & RING CASTING	EXISTING RIM	PROPOSED RIM	
					EACH			
EB CSAH 6	201+16 TO 213+43	19' LT TO 0' RT	8" VCP SAN	X				
EB CSAH 6	203+80	8' LT	SAN MH		1	855.72	855.76	
EB CSAH 6	207+08	6' LT	SAN MH		1	857.20	857.23	
<b>SAP 002-606-014 &amp; SAP 127-020-036 TOTAL</b>					<b>2</b>			
EB CSAH 6	209+69 TO 209+81	51' LT TO 19' LT	UNKNOWN VCP SAN	X				
EB CSAH 6	209+81	19' LT	SAN MH		1	857.69	858.58	
EB CSAH 6	209+81 TO 210+14	19' LT TO 11' RT	UNKNOWN VCP SAN	X				
EB CSAH 6	210+12 TO 210+14	16' RT TO 11' RT	UNKNOWN VCP SAN	X				
EB CSAH 6	210+14	11' RT	SAN MH		1	857.28	858.00	
NB 7TH ST	401+62 TO 402+71	12' RT TO 8' RT	UNKNOWN VCP SAN	X				
NB 7TH ST	403+55 TO 404+20	22' LT TO 11' LT	UNKNOWN VCP SAN	X				
<b>SP 002-606-014 &amp; SP 127-020-036 TOTAL</b>					<b>2</b>			
<b>TOTALS</b>					<b>4</b>			

EXISTING WATER MAIN

T

ALIGNMENT	LOCATION		EXISTING ITEM	LEAVE AS IS	ADJUST CURB STOP	ADJUST GATE VALVE & BOX
	STATION	OFFSET			EACH	EACH
					EB CSAH 6	201+15 TO 213+44
EB CSAH 6	203+39 TO 203+40	40' RT TO 3' RT	6" CIP WM	X		
EB CSAH 6	207+02	40' LT	CURB STOP		1	
EB CSAH 6	207+02 TO 207+03	40' LT TO 8' RT	1" UNKNOWN WM	X		
NB 5TH ST	600+92	43' LT	HYDRANT	X		
<b>SAP 002-606-014 &amp; SAP 127-020-036 TOTAL</b>					<b>1</b>	
EB CSAH 6	208+26	43' LT	CURB STOP		1	
EB CSAH 6	208+26 TO 208+28	43' LT TO 3' RT	1" UNKNOWN WM	X		
EB CSAH 6	209+48	42' LT	HYDRANT	X		
EB CSAH 6	209+49 TO 209+52	42' LT	6" CIP WM	X		
EB CSAH 6	209+49	42' LT	WM VALVE		1	
EB CSAH 6	209+61 TO 209+64	41' LT	6" CIP WM	X		
EB CSAH 6	209+64 TO 209+78	41' LT TO 3' LT	6" CIP WM	X		
EB CSAH 6	209+64 TO 209+66	41' LT TO 47' LT	6" CIP WM	X		
EB CSAH 6	209+64	41' LT	WM VALVE		1	
EB CSAH 6	210+34 TO 210+39	13' RT TO 2' LT	6" CIP WM	X		
EB CSAH 6	210+39	2' LT	WM VALVE		1	
NB 5TH ST	600+94 TO 601+09	43' LT	6" CIP WM	X		
NB 7TH ST	403+54 TO 403+60	39' LT TO 49' LT	6" CIP WM	X		
NB 7TH ST	403+55 TO 403+75	29' LT TO 7' RT	6" CIP WM	X		
NB 7TH ST	403+75 TO 404+93	6' RT TO 18' RT	6" CIP WM	X		
<b>SP 002-606-014 &amp; SP 127-020-036 TOTAL</b>					<b>1</b>	<b>3</b>
<b>TOTALS</b>					<b>1</b>	<b>3</b>

EXISTING DRAINAGE ITEMS

P

ALIGNMENT	LOCATION		EXISTING ITEM	LEAVE AS IS	REMOVE		RECONSTRUCT DRAINAGE STRUCTURE	ADJUST FRAME AND RING CASTING	EXISTING TOP OF CASTING	PROPOSED TOP OF CASTING	NOTES
	STATION	OFFSET			SEWER PIPE (STORM)	DRAINAGE STRUCTURE					
					LIN FT	EACH					
EB CSAH 6	203+25	49' RT	DROP INLET			1					
EB CSAH 6	203+25 TO 203+27	49' RT TO 46' RT	15" RCP		3						
EB CSAH 6	203+33 TO 204+59	40' RT TO 22' RT	15" RCP		126						
EB CSAH 6	204+43	32' LT	CATCH BASIN			1					
EB CSAH 6	204+43 TO 204+58	32' LT TO 28' LT	15" RCP		16						
EB CSAH 6	204+58	28' LT	CATCH BASIN			1					
EB CSAH 6	204+58 TO 204+59	28' LT TO 22' RT	15" RCP		50						
EB CSAH 6	204+58 TO 208+00	28' LT	21" RCP		342						
EB CSAH 6	204+59	22' RT	CATCH BASIN			1					
NB 5TH ST	601+03 TO 601+09	55' LT TO 50' LT	15" RCP		7						
NB 5TH ST	601+09	50' LT	CATCH BASIN			1					
NB 5TH ST	601+09 TO 601+09	50' LT TO 48' LT	15" RCP		2						
<b>SAP 002-606-014 &amp; 127-020-036 TOTAL</b>					<b>546</b>	<b>5</b>					
EB CSAH 6	208+00 TO 209+52	28' LT	21" RCP		157						
EB CSAH 6	209+42	31' LT	CATCH BASIN			1					
EB CSAH 6	209+42 TO 209+52	31' LT TO 28' LT	12" RCP		14						
EB CSAH 6	209+45	19' RT	CATCH BASIN			1					
EB CSAH 6	209+45 TO 209+52	19' RT TO 28' LT	12" RCP		47						
EB CSAH 6	209+52	28' LT	MANHOLE			1					
EB CSAH 6	209+52 TO 209+58	28' LT TO 39' LT	21" RCP		14						
EB CSAH 6	209+62 TO 210+27	43' LT TO 3' RT	36" RCP	X							
EB CSAH 6	209+70 TO 210+44	41' LT TO 40' LT	36" RCP	X							
EB CSAH 6	210+22 TO 210+27	16' RT TO 3' RT	36" RCP	X							
EB CSAH 6	210+27	3' RT	MANHOLE					1	857.23	858.11	
EB CSAH 6	210+27 TO 210+34	3' RT TO 8' RT	12" RCP		9						
EB CSAH 6	210+34	8' RT	MANHOLE			1					
EB CSAH 6	210+34 TO 210+40	8' RT TO 11' RT	12" RCP		6						
EB CSAH 6	210+40	11' RT	CATCH BASIN			1					
EB CSAH 6	210+44	40' LT	MANHOLE					1	856.84	858.09	
EB CSAH 6	210+44 TO 210+48	40' LT TO 39' LT	36" RCP	X							
EB CSAH 6	210+48	39' LT	CATCH BASIN				6.5		856.64	858.13	
EB CSAH 6	210+48 TO 213+20	39' LT TO 25' LT	33" RCP	X							
EB CSAH 6	213+20	25' LT	CATCH BASIN	X							
NB 7TH ST	401+49 TO 402+80	15' RT TO 14' RT	36" RCP	X							
NB 7TH ST	403+54 TO 403+58	36' LT TO 38' LT	36" RCP	X							
NB 7TH ST	403+55 TO 403+58	43' LT TO 38' LT	21" RCP		6						
NB 7TH ST	403+58	38' LT	MANHOLE			1					
NB 7TH ST	403+58 TO 404+01	38' LT TO 28' LT	36" RCP	X							
<b>SP 002-606-014 &amp; 127-020-036 TOTAL</b>					<b>253</b>	<b>6</b>	<b>6.5</b>	<b>2</b>			
<b>TOTALS</b>					<b>799</b>	<b>11</b>	<b>6.5</b>	<b>2</b>			

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: ZACHARIAH F. HEIMER  
*Zach Heimer*  
 Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
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DRAWN BY M. WENDLER  
 DESIGNED BY M. WENDLER  
 CHECKED BY Z. HEIMER  
 COMM. NO. 2417338

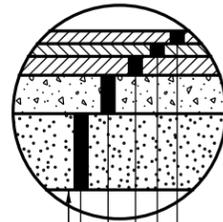


ANOKA COUNTY, MINNESOTA  
 EXISTING UTILITY TABULATIONS  
 SP 002-606-014, SP 127-020-036

SHEET 11 OF 118

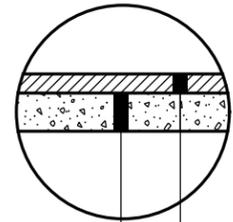
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NO	DATE	BY	CKD	APPR	REVISION



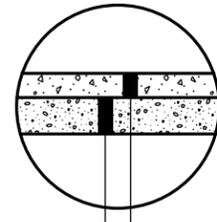
2.0" TYPE SP 12.5 WEARING COURSE MIXTURE (3,C) (SPWEB340C)  
 2.0" TYPE SP 12.5 WEARING COURSE MIXTURE (3,C) (SPWEB340C)  
 3.0" TYPE SP 12.5 NON-WEARING COURSE MIXTURE (3,B) (SPNWB330B)  
 6.0" AGGREGATE BASE (CV) CLASS 5  
 18" SELECT GRANULAR EMBANKMENT (CV)  
 GEOTEXTILE FABRIC TYPE 5 (SEE TYPICAL SECTIONS FOR LOCATIONS)

**INSET A**  
 CSAH 6 (MISSISSIPPI ST NE)  
 7TH AVE NE  
 5TH ST NE



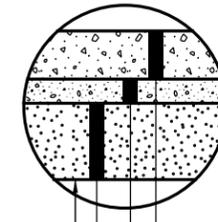
3.0" TYPE SP 9.5 WEARING COURSE MIXTURE (2,B) (SPWEA230B)  
 6.0" AGGREGATE BASE (CV) CLASS 5

**INSET B**  
 BITUMINOUS TRAIL



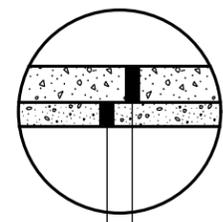
4" CONCRETE WALK  
 6" AGGREGATE BASE (CV) CLASS 5

**INSET C**  
 4" CONCRETE WALK



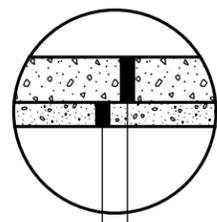
10.0" CONCRETE PAVEMENT (SPECIAL)  
 5" AGGREGATE BASE (CV) CLASS 5  
 18" SELECT GRANULAR EMBANKMENT (CV)  
 GEOTEXTILE FABRIC TYPE 5 (SEE TYPICAL SECTIONS FOR LOCATIONS)

**INSET D**  
 CENTER ISLAND CONCRETE  
 CONCRETE COLOR SHALL BE INTEGRAL RED (FS COLOR 31136)



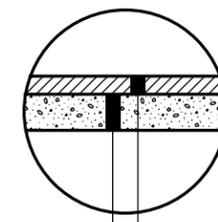
6" CONCRETE WALK  
 4" AGGREGATE BASE (CV) CLASS 5

**INSET E**  
 6" CONCRETE WALK (PED RAMPS & LANDINGS)



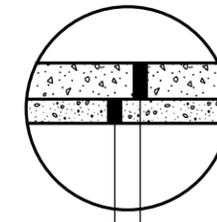
8" CONCRETE DRIVEWAY PAVEMENT  
 4" AGGREGATE BASE (CV) CLASS 5 (DRIVEWAYS)

**INSET F**  
 CONCRETE DRIVEWAY APRONS



3" TYPE SP 9.5 WEARING COURSE MIXTURE (2,B) (SPWEA230B)  
 6" AGGREGATE BASE (CV) CLASS 5 (DRIVEWAYS)

**INSET G**  
 BITUMINOUS DRIVEWAYS



6" CONCRETE WALK - SPECIAL  
 4" AGGREGATE BASE (CV) CLASS 5

**INSET H**  
 6" CONCRETE WALK SPECIAL (SPLITTER ISLANDS)  
 CONCRETE COLOR SHALL BE INTEGRAL RED (FS COLOR 31136)

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 Print Name: ZACHARIAH F. HEIMER  
*Zach Heimer*  
 Date: 05/14/2025 License #: 58755

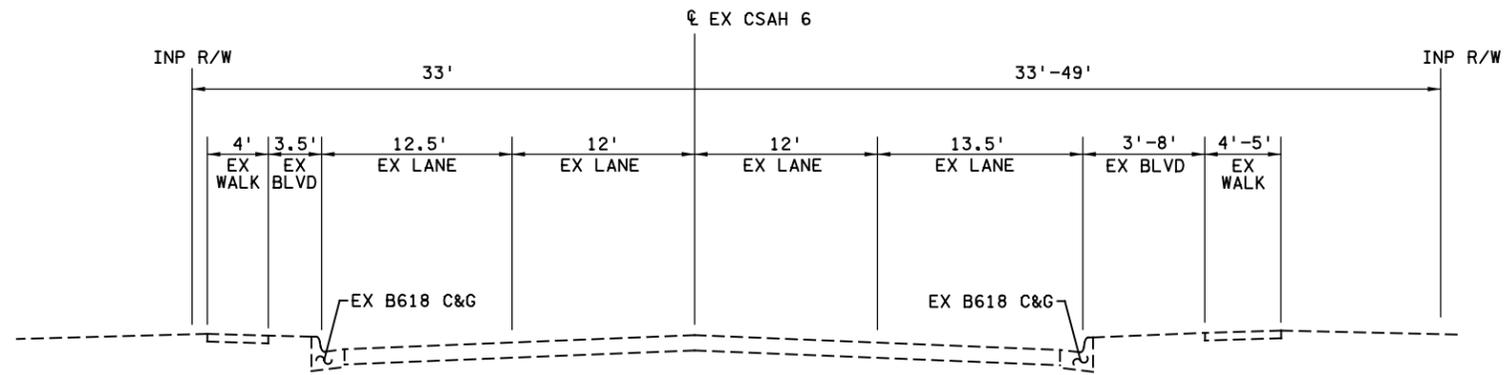
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 STATE PROJECT NO. 127-020-036  
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 STATE AID PROJECT NO. 127-020-036

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 DESIGNED BY M. WENDLER  
 CHECKED BY Z. HEIMER  
 COMM. NO. 2417338

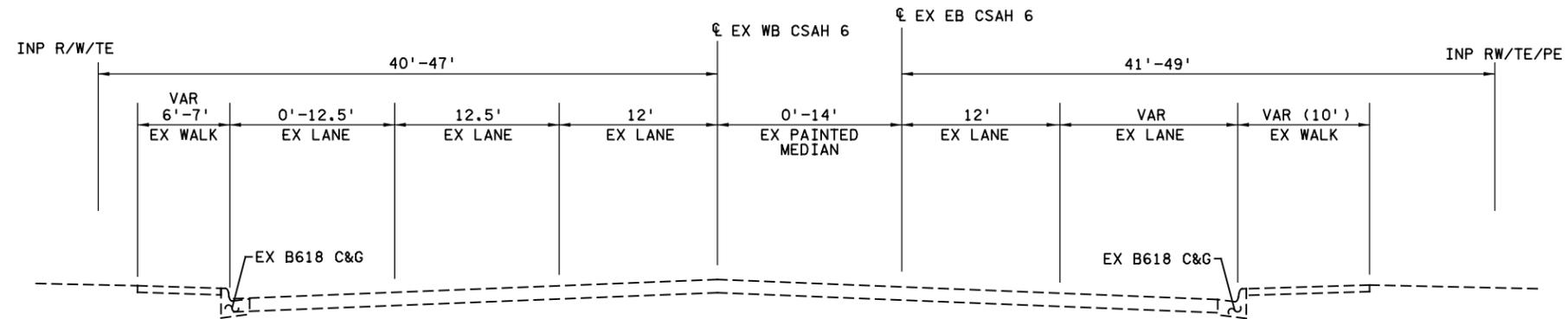


ANOKA COUNTY, MINNESOTA  
 TYPICAL SECTIONS  
 SP 002-606-014, SP 127-020-036

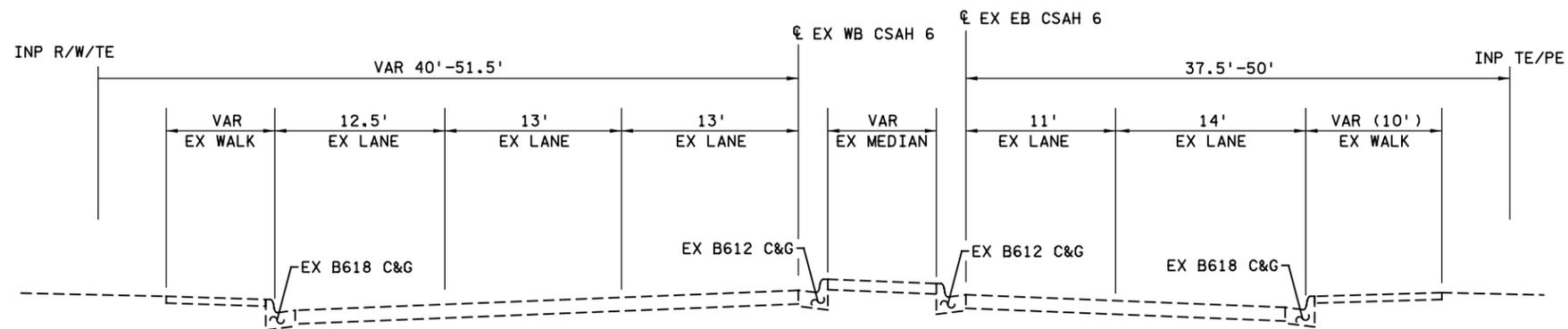
SHEET 12 OF 118



**EXISTING TYPICAL SECTION 3 - CSAH 6 (MISSISSIPPI ST NE)**  
EB CSAH 6 STA 205+75.2 TO STA 211+93.4



**EXISTING TYPICAL SECTION 2 - CSAH 6 (MISSISSIPPI ST NE)**  
EB CSAH 6 STA 202+07.1 TO STA 205+75.2



**EXISTING TYPICAL SECTION 1 - CSAH 6 (MISSISSIPPI ST NE)**  
EB CSAH 6 STA 201+67.7 TO STA 202+07.1

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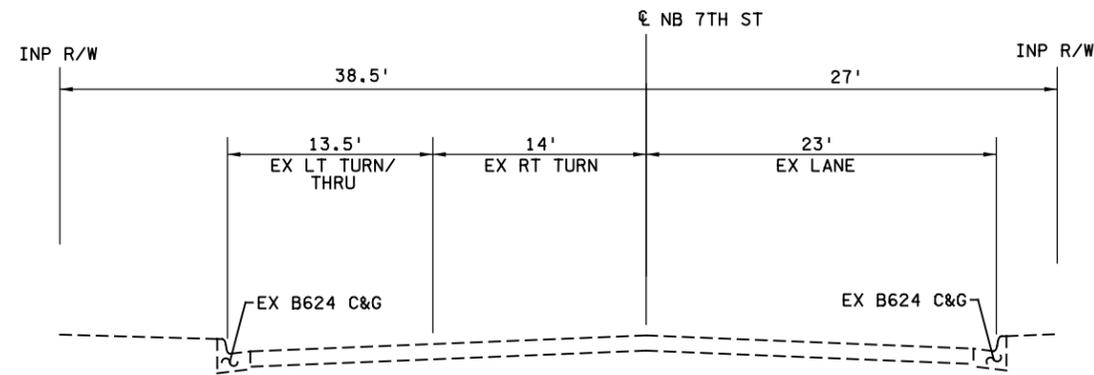
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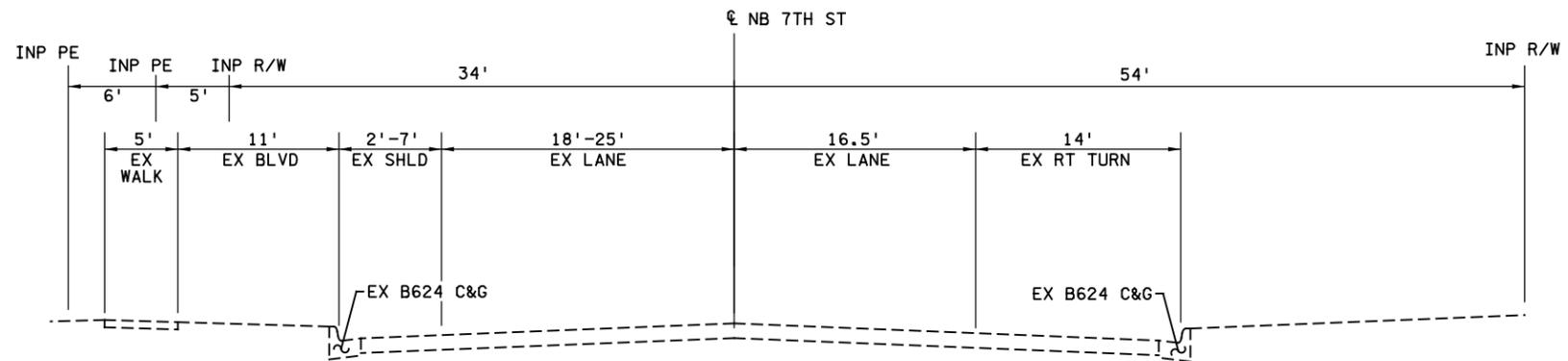


ANOKA COUNTY, MINNESOTA  
TYPICAL SECTIONS  
SP 002-606-014, SP 127-020-036

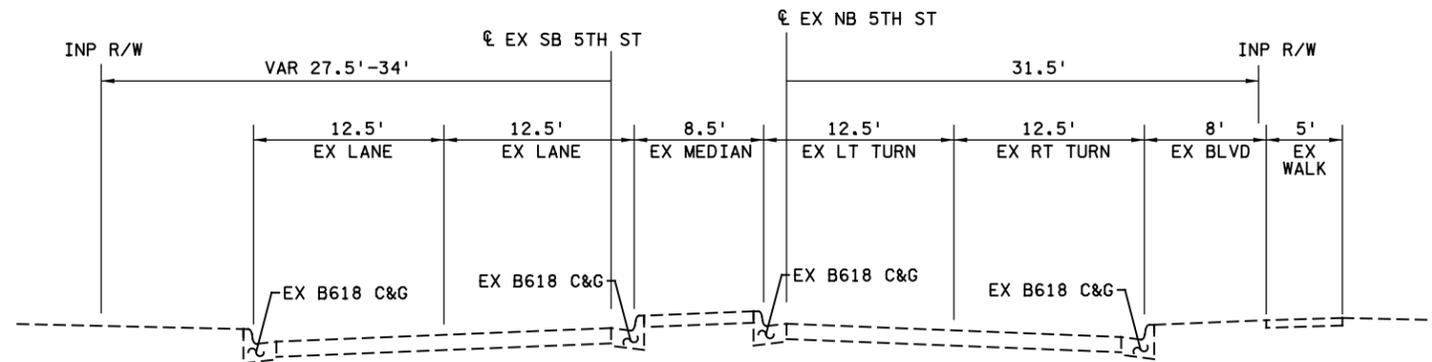
SHEET 13 OF 118



**EXISTING TYPICAL SECTION 6 - 7TH ST NE**  
NB 7TH ST STA 403+52.9 TO STA 404+53.4



**EXISTING TYPICAL SECTION 5 - 7TH ST NE**  
NB 7TH ST STA 401+70.0 TO STA 402+54.9



**EXISTING TYPICAL SECTION 4 - 5TH ST NE**  
NB 5TH ST STA 600+10.0 TO STA 600+78.2

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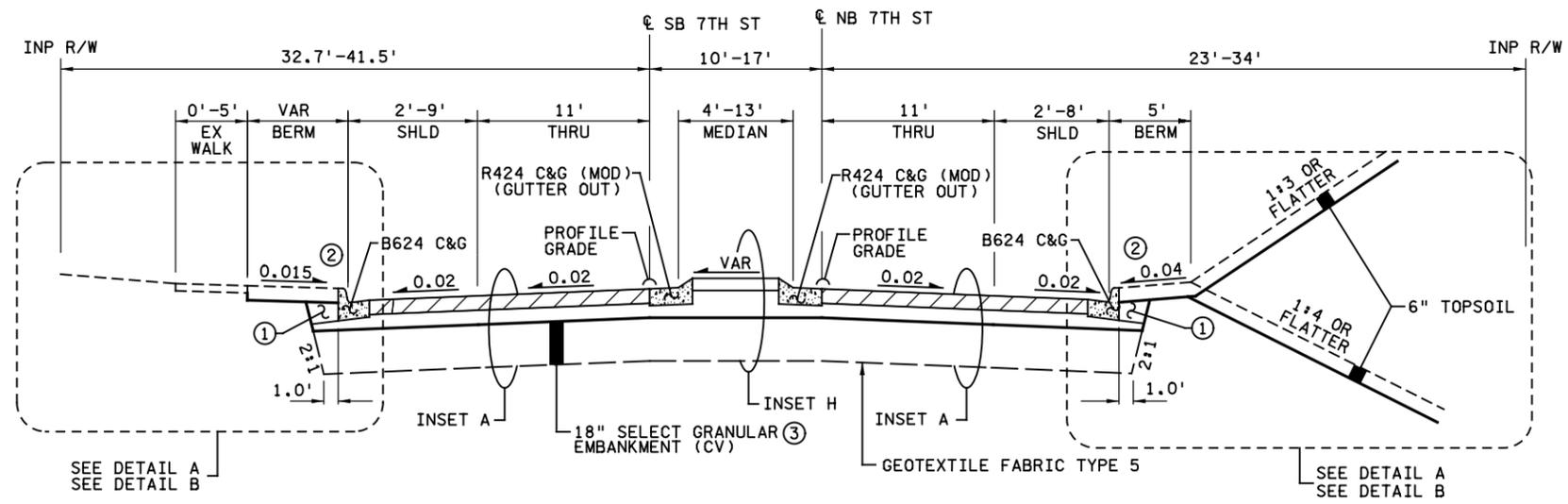
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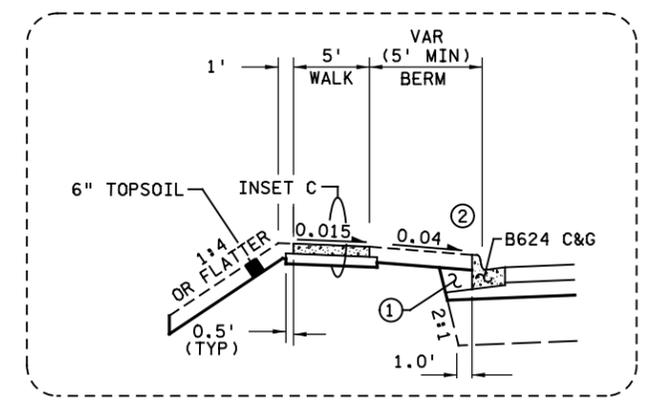


ANOKA COUNTY, MINNESOTA  
TYPICAL SECTIONS  
SP 002-606-014, SP 127-020-036

SHEET 14 OF 118

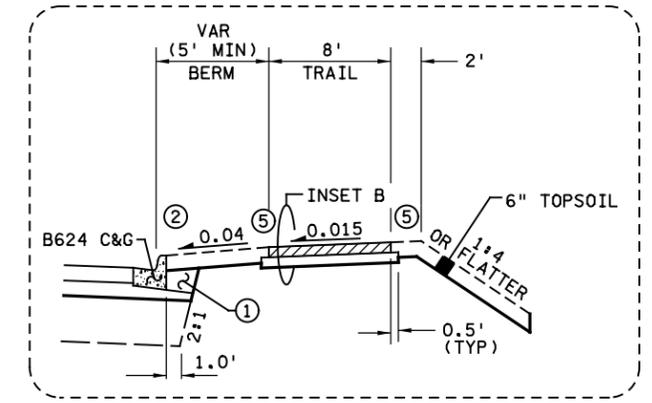


**TYPICAL SECTION 2 - 7TH ST NE**  
 NB 7TH ST STA 401+93.9 TO STA 402+58.4  
 NB 7TH ST STA 403+59.7 TO STA 404+40.1

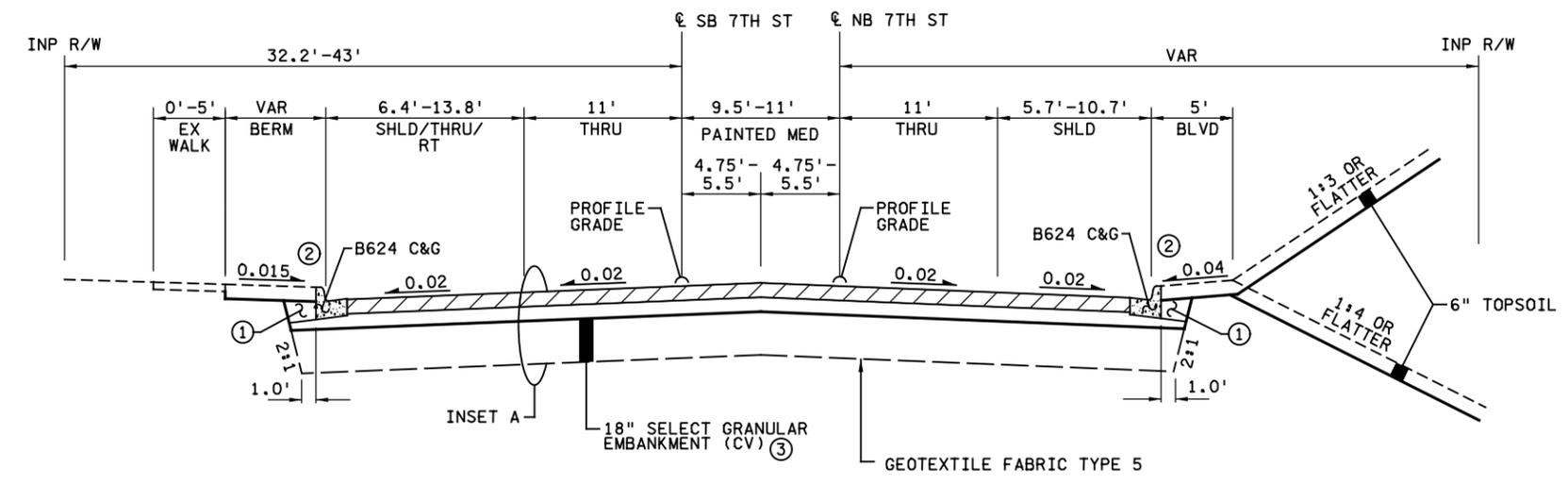


**DETAIL A**  
 NB 7TH ST STA 403+59.7 TO STA 403+80.5  
 NB 7TH ST STA 403+59.7 TO STA 403+88.6

- NOTES:
- ① BACKFILL WITH SELECT GRADING MATERIAL.
  - ② 1.5' OBSTACLE FREE CLEAR ZONE FROM FACE OF CURB (TYP.)
  - ③ EXCAVATION SUBGRADE (CUT SECTIONS ONLY).
  - ⑤ 2.0' OBSTACLE FREE CLEAR ZONE FROM TRAIL/WALK.



**DETAIL B**  
 NB 7TH ST STA 402+32.6 TO STA 402+58.4  
 NB 7TH ST STA 403+32.4 TO STA 403+58.4



**TYPICAL SECTION 1 - 7TH ST NE**  
 NB 7TH ST STA 401+70.0 TO STA 401+93.9  
 NB 7TH ST STA 404+40.1 TO STA 404+53.4

GENERAL NOTES:

CROSS SLOPES ARE FT./FT.

ALL SLOPES LISTED AS X:X ARE IN THE RISE TO RUN FORMAT.

SEE SHEET NO. 12 FOR PAVEMENT INSETS.

SEE SUPERELEVATION PLANS FOR SUPERELEVATION TRANSITIONS.

SEE CONSTRUCTION AND SOILS NOTES FOR ADDITIONAL INFORMATION.

DIMENSIONS TO CURB AND GUTTER ARE TO FACE OF CURB.

GRADE MEDIANS AS SHOWN IN THE CROSS SECTIONS AND AS INDICATED BY THE ENGINEER TO DRAIN.

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*Zach Heimer*

Date: 05/14/2025 License #: 58755

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 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036

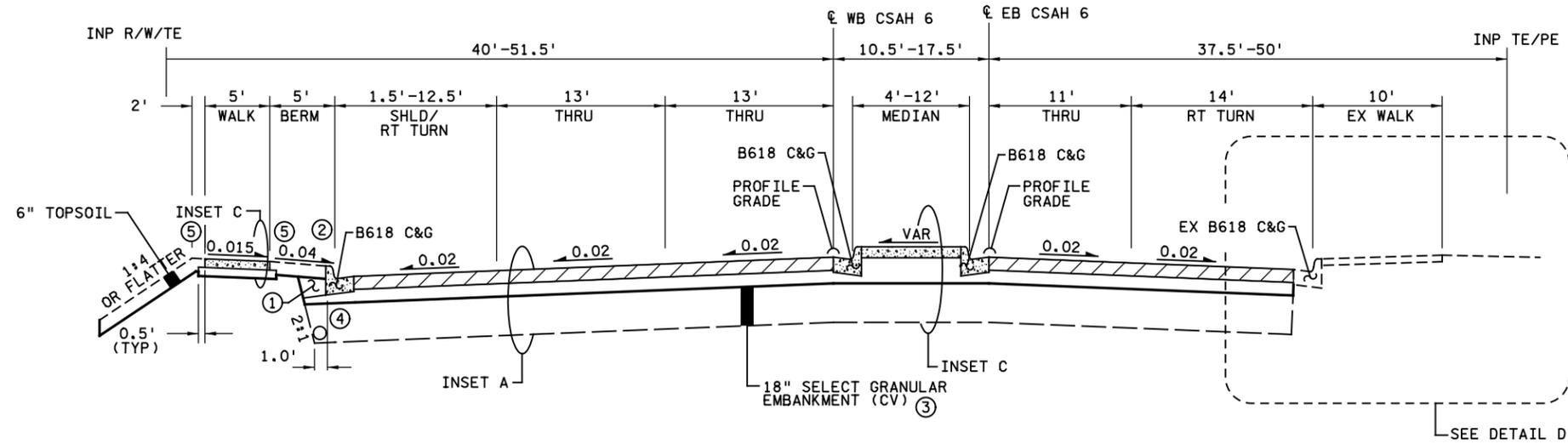
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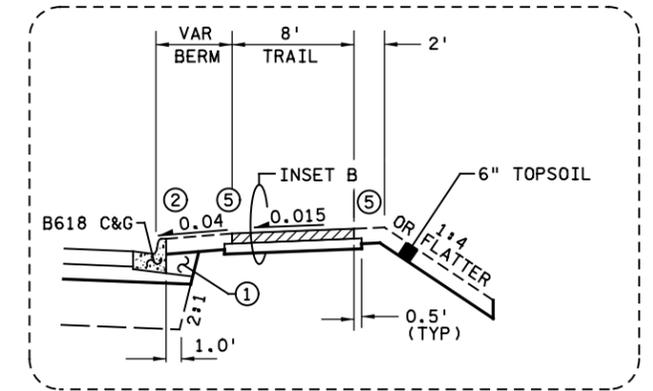
ANOKA COUNTY, MINNESOTA  
 TYPICAL SECTIONS  
 SP 002-606-014, SP 127-020-036

SHEET 15 OF 118





**TYPICAL SECTION 5 - CSAH 6 (MISSISSIPPI ST NE)**  
 EB CSAH 6 STA 201+67.7 TO STA 203+15.1



**DETAIL D**  
 EB CSAH 6 STA 202+90.1 TO STA 203+15.1

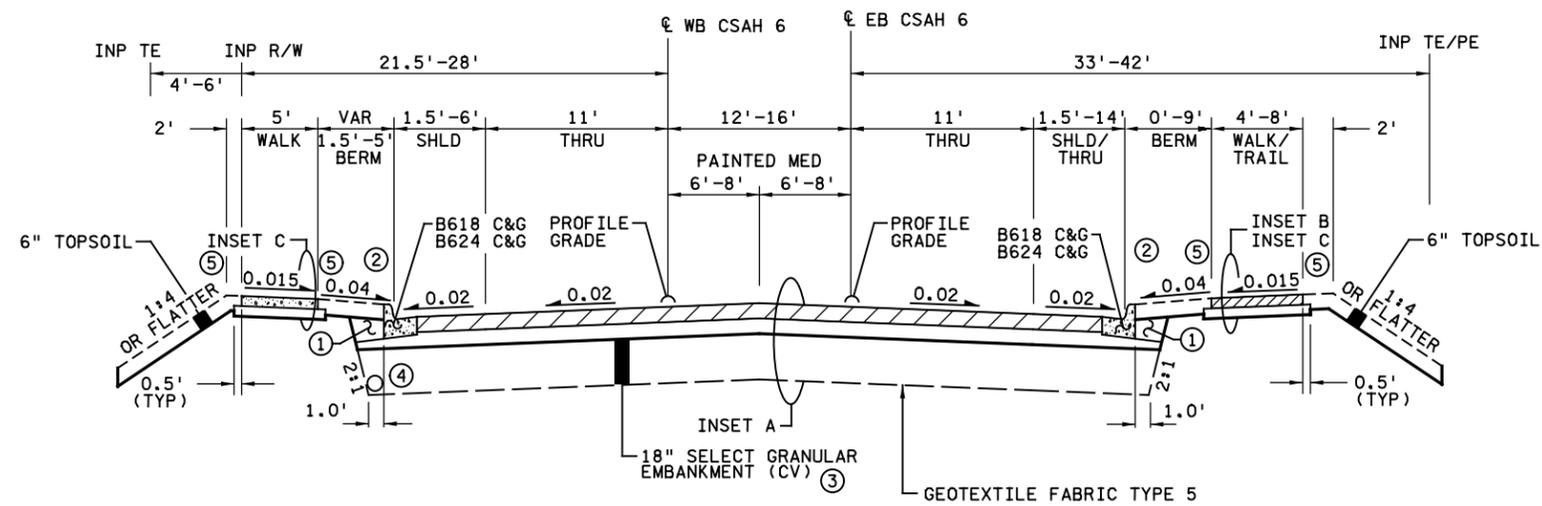
**NOTES:**

- ① BACKFILL WITH SELECT GRADING MATERIAL.
- ② 1.5' OBSTACLE FREE CLEAR ZONE FROM FACE OF CURB (TYP.)
- ③ EXCAVATION SUBGRADE (CUT SECTIONS ONLY).
- ④ 4" PERF TP PIPE DRAIN MNDOT SPEC 2502, WITH GEOTEXTILE WRAP TYPE 1 MNDOT SPEC 3733. (INCIDENTAL). SEE STANDARD PLANS FOR SUBSURFACE DRAINS. SEE DRAINAGE PLANS FOR LOCATIONS.
- ⑤ 2.0' OBSTACLE FREE CLEAR ZONE FROM NEW TRAIL OR WALK.

**GENERAL NOTES:**

CROSS SLOPES ARE FT./FT.  
 ALL SLOPES LISTED AS X:X ARE IN THE RISE TO RUN FORMAT.  
 SEE SHEET NO. 12 FOR PAVEMENT INSETS.  
 SEE SUPERELEVATION PLANS FOR SUPERELEVATION TRANSITIONS.  
 SEE CONSTRUCTION AND SOILS NOTES FOR ADDITIONAL INFORMATION.  
 DIMENSIONS TO CURB AND GUTTER ARE TO FACE OF CURB.

GRADE MEDIANS AS SHOWN IN THE CROSS SECTIONS AND AS INDICATED BY THE ENGINEER TO DRAIN.



**TYPICAL SECTION 4 - CSAH 6 (MISSISSIPPI ST NE)**  
 EB CSAH 6 STA 203+15.1 TO STA 208+81.9  
 EB CSAH 6 STA 211+44.4 TO STA 211+93.4

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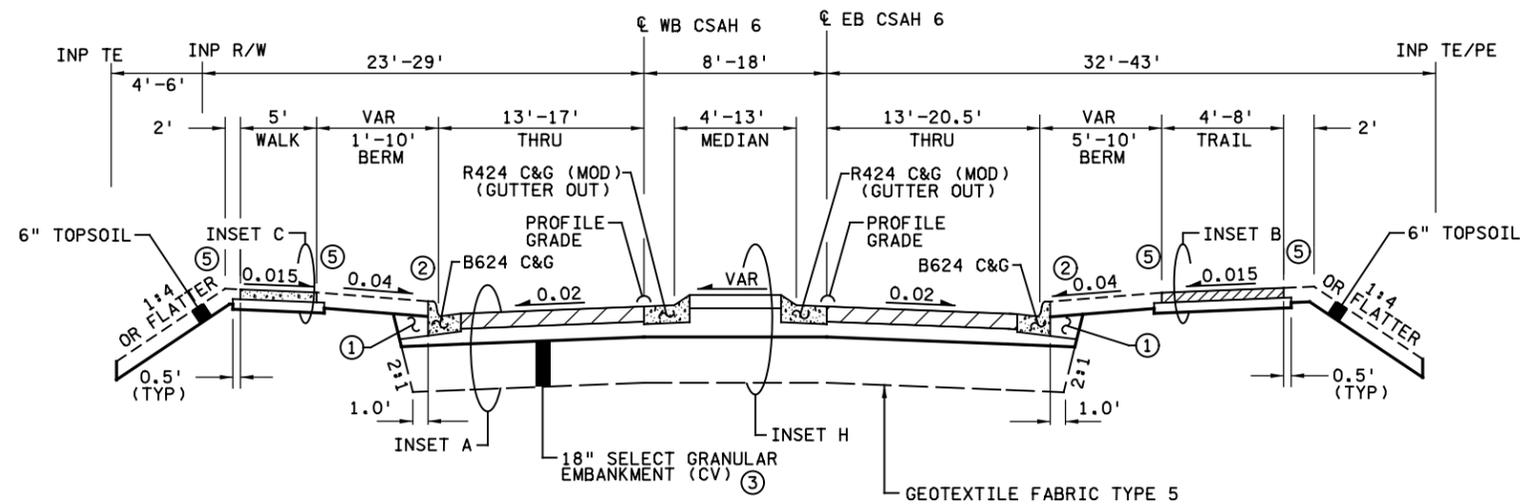
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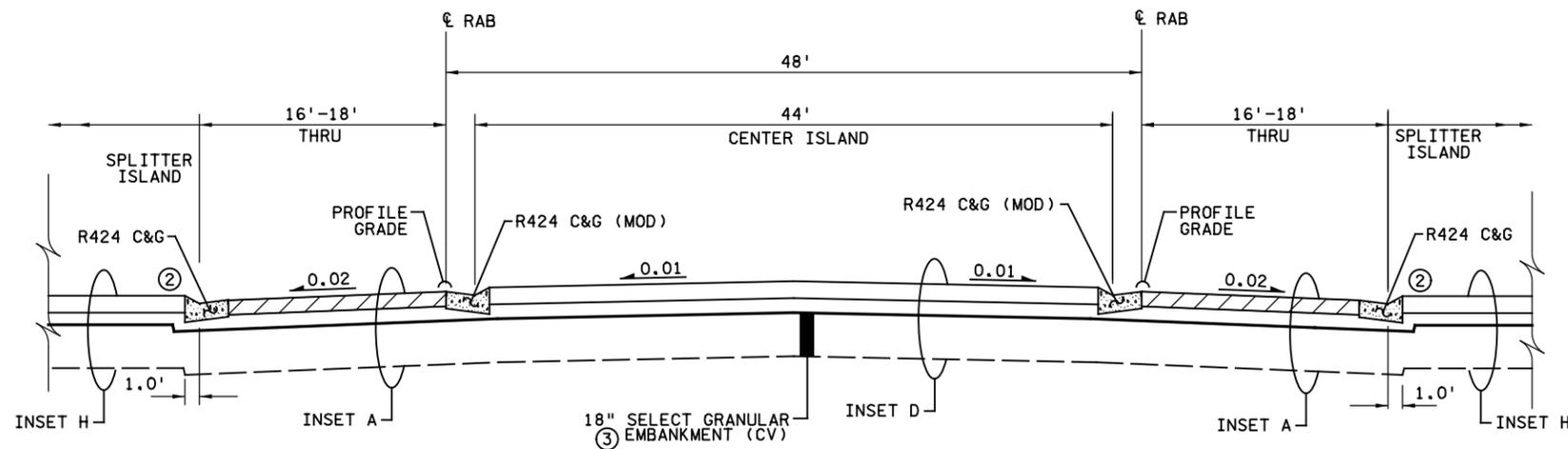
**ANOKA COUNTY, MINNESOTA**  
 TYPICAL SECTIONS  
 SP 002-606-014, SP 127-020-036

**SHEET**  
 17  
 OF  
 118



**TYPICAL SECTION 7 - CSAH 6 (MISSISSIPPI ST NE)**

EB CSAH 6 STA 208+81.9 TO STA 209+62.6  
 EB CSAH 6 STA 210+41.5 TO STA 211+44.4



**TYPICAL SECTION 6 - CSAH 6 & 7TH ST NE ROUNDABOUT**

NB 7TH ST STA 402+86.8 TO STA 403+25.9  
 EB CSAH 6 STA 209+62.6 TO STA 210+41.5

**NOTES:**

- ① BACKFILL WITH SELECT GRADING MATERIAL.
- ② 1.5' OBSTACLE FREE CLEAR ZONE FROM FACE OF CURB (TYP.)
- ③ EXCAVATION SUBGRADE (CUT SECTIONS ONLY).
- ④ 4" PERFORATED PIPE DRAIN MNDOT SPEC 2502, WITH GEOTEXTILE WRAP TYPE 1 MNDOT SPEC 3733. (INCIDENTAL). SEE STANDARD PLANS FOR SUBSURFACE DRAINS. SEE DRAINAGE PLANS FOR LOCATIONS.
- ⑤ 2.0' OBSTACLE FREE CLEAR ZONE FROM NEW TRAIL OR WALK.

**GENERAL NOTES:**

CROSS SLOPES ARE FT./FT.  
 ALL SLOPES LISTED AS X:X ARE IN THE RISE TO RUN FORMAT.  
 SEE SHEET NO. 12 FOR PAVEMENT INSETS.  
 SEE SUPERELEVATION PLANS FOR SUPERELEVATION TRANSITIONS.  
 SEE CONSTRUCTION AND SOILS NOTES FOR ADDITIONAL INFORMATION.  
 DIMENSIONS TO CURB AND GUTTER ARE TO FACE OF CURB.

GRADE MEDIANS AS SHOWN IN THE CROSS SECTIONS AND AS INDICATED BY THE ENGINEER TO DRAIN.

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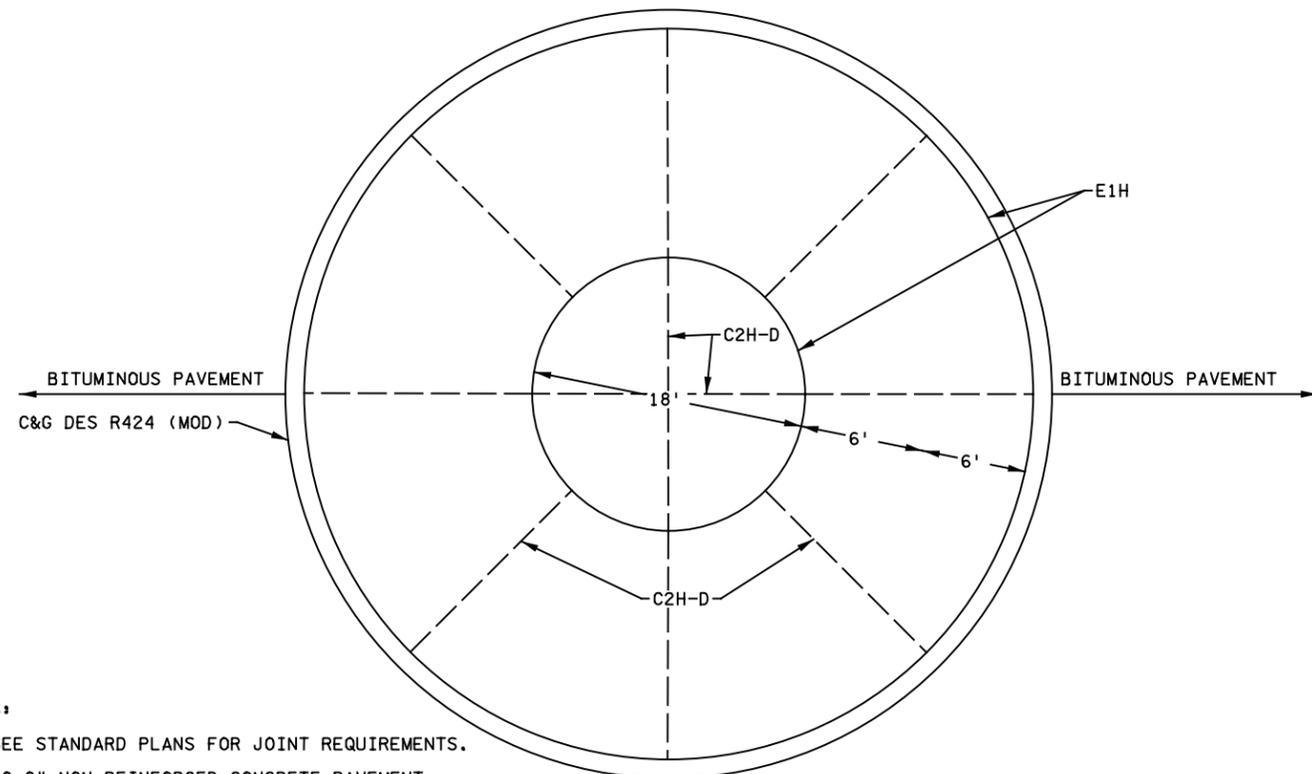


ANOKA COUNTY, MINNESOTA  
 TYPICAL SECTIONS  
 SP 002-606-014, SP 127-020-036

SHEET 18 OF 118

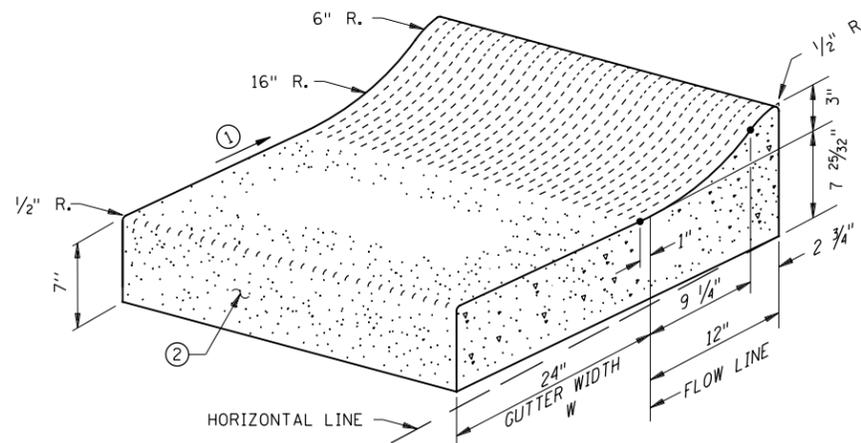
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- NOTES:
- SEE STANDARD PLANS FOR JOINT REQUIREMENTS.
  - 10.0" NON-REINFORCED CONCRETE PAVEMENT.
  - C2H-D JOINT SHOULD EXTEND THROUGH CURB AND GUTTER
  - JOINT SEALANT IS CONSIDERED INCIDENTAL.

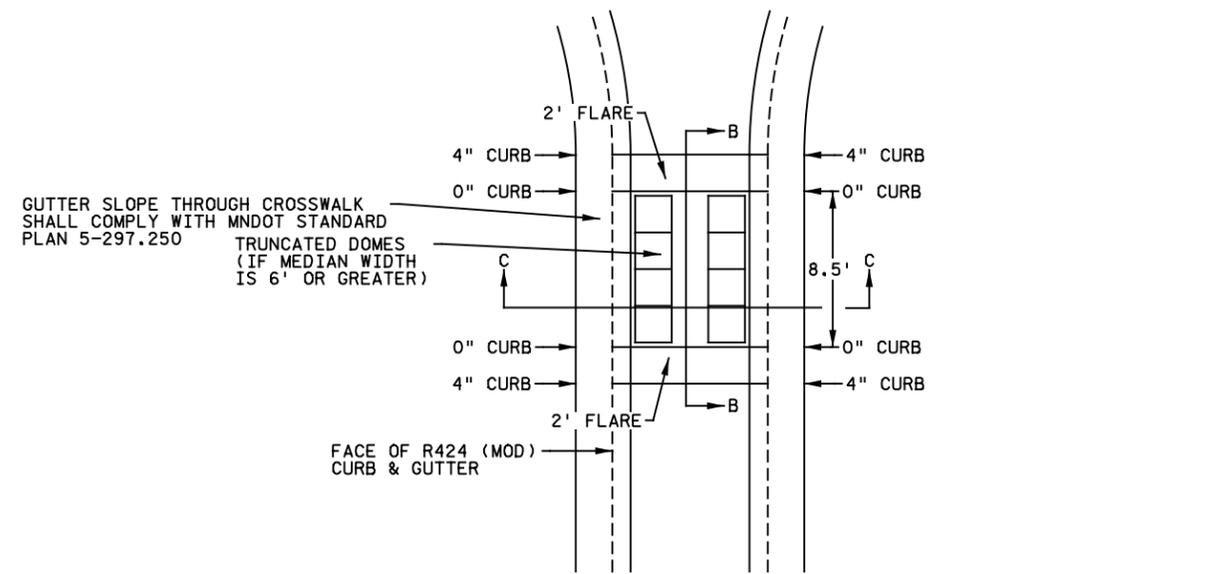
PAVEMENT REINFORCEMENT FOR CENTER OF ROUNDABOUTS



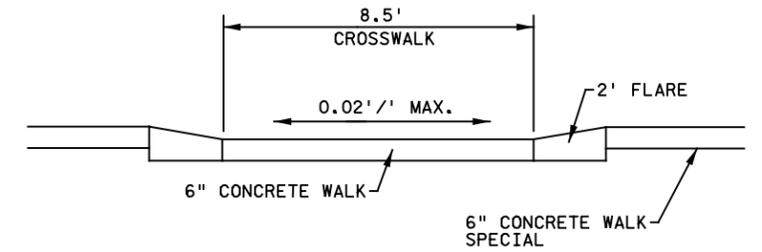
- NOTES:
- SLOPE  $\frac{3}{4}$ " PER FOOT NORMAL UNLESS OTHERWISE SPECIFIED. IF A DIFFERENT GUTTER SLOPE IS SPECIFIED, THE FORM MAY BE TILTED.
  - LONGITUDINAL JOINT WHEN ADJACENT TO RIGID PAVEMENT OR BASE. SEE STANDARD PLANS MANUAL FOR JOINT INFORMATION.

R DESIGN NO.	GUTTER WIDTH W	CONCRETE	
		CU. YDS. PER LIN. FT.	LIN. FT. PER CU. YD.
R424 (MOD)	24"	0.0663	15.1

CONCRETE CURB & GUTTER DESIGN R424 (MOD)  
MODIFIED TO 3" HIGH CURB

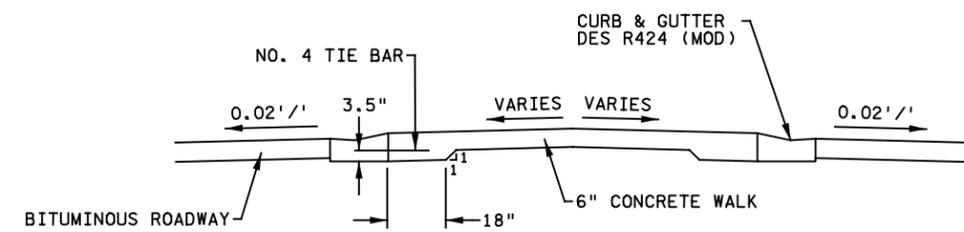


GUTTER SLOPE THROUGH CROSSWALK SHALL COMPLY WITH MNDOT STANDARD PLAN 5-297.250  
TRUNCATED DOMES (IF MEDIAN WIDTH IS 6' OR GREATER)



- NOTES:
- CROSSING TO BE PAID FOR AS 6" CONCRETE WALK.
  - FLARES TO BE PAID FOR AS 6" CONCRETE WALK.
  - TRUNCATED DOMES SHALL BE PLACED ONLY IF MEDIAN IS 6' WIDE OR GREATER, AND AT EACH SIDE OF THE CROSSWALK, PAID FOR AS SQ. FT. OF TRUNCATED DOMES.
  - TIE BARS: USE NO. 4 BARS, 2' LONG AT 3' SPACING.
  - ADDITIONAL CONCRETE PAVEMENT DEPTH, ADJACENT TO CONCRETE CURB DESIGN R424, IS INCIDENTAL.

SECTION B-B  
NOT TO SCALE



SECTION C-C  
NOT TO SCALE

DEPRESSED MEDIAN CURB AT CROSSWALK

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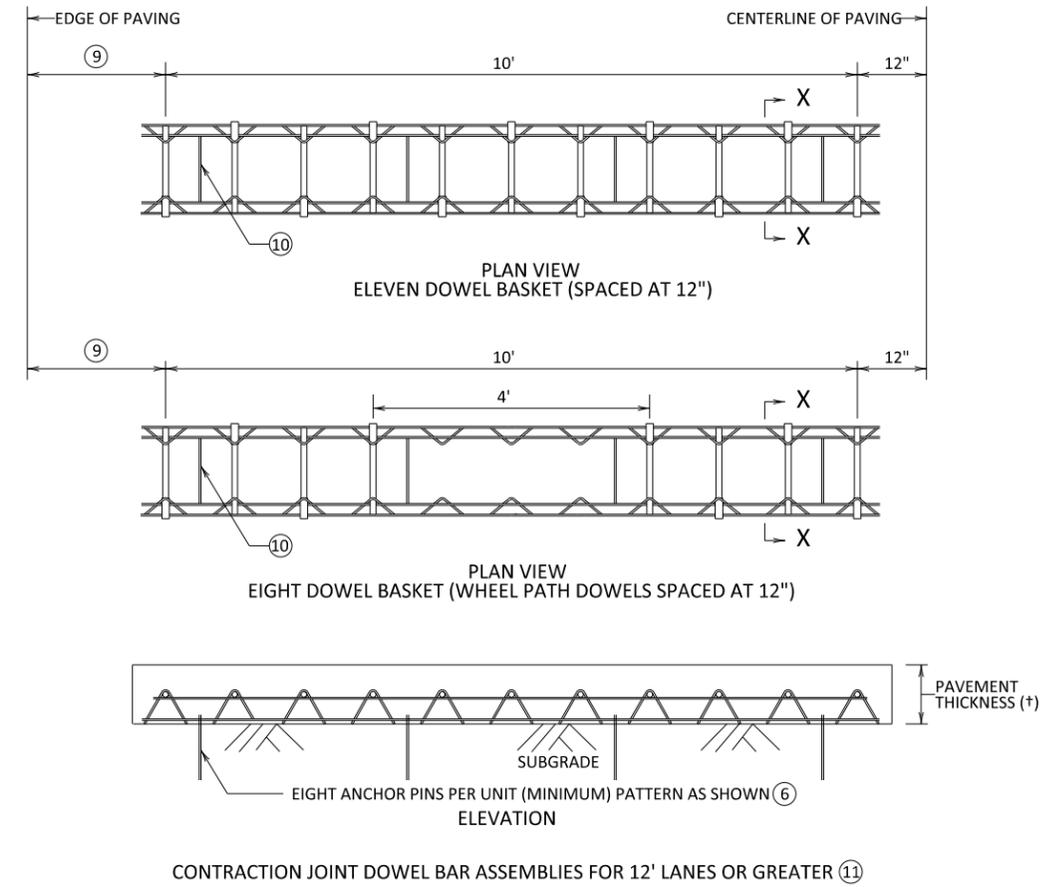
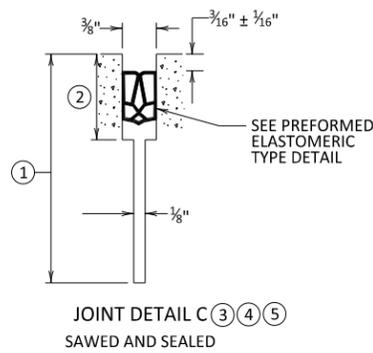
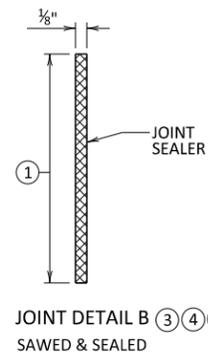
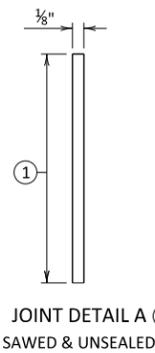
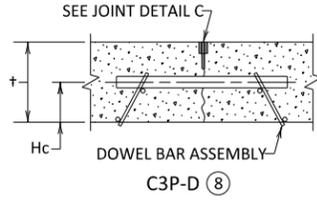
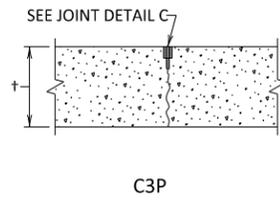
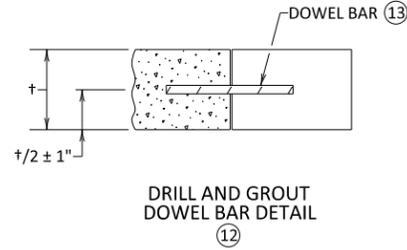
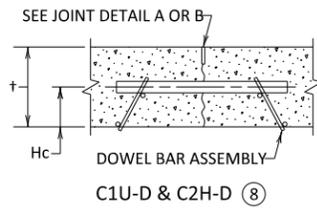
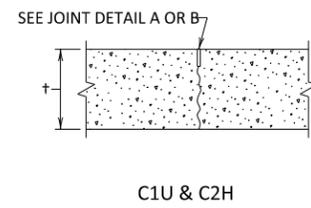
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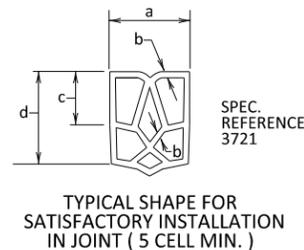


ANOKA COUNTY, MINNESOTA  
MISCELLANEOUS DETAILS  
SP 002-606-014, SP 127-020-036

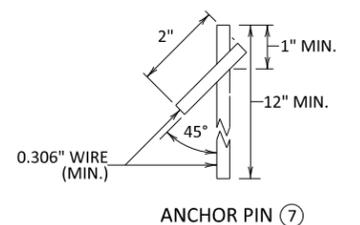
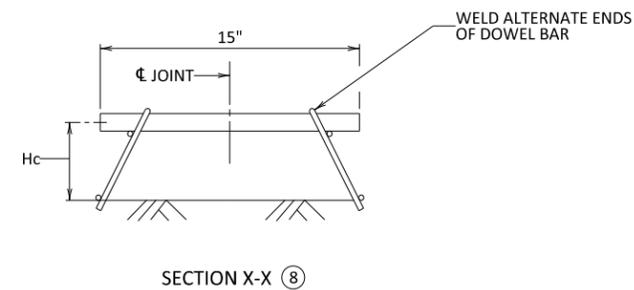
SHEET 19 OF 118



REQUIRED DIMENSIONS (2)	
JOINT TYPE	TRANSVERSE
NOMINAL SEALER SIZE	1 1/16" USE IN ALL 3/8" JOINTS
a	0.69" + 0.13" - 0.05"
b	0.08" ± 0.02"
c	0.25" MIN.
d	0.63" MIN.



DOWEL BAR TABLE		
† PAVEMENT THICKNESS (INCHES)	DOWEL BAR DIAMETER (INCHES)	Hc HEIGHT TO CENTER OF DOWEL BAR (INCHES)
7 - 7 1/2	1	3
8 - 10	1 1/4	4
≥ 10 1/2	1 1/2	5



PREFORMED ELASTOMERIC TYPE DETAIL (2)

CONTRACTION JOINT REFERENCE, DETAIL & SEALER SPEC. TABLE				
JOINT REFERENCE		JOINT DETAIL	JOINT SEALER SPEC.	JOINT WIDTH
WITHOUT DOWELS	WITH DOWELS			
C1U	C1U-D	A	UNSEALED	3/8"
C2H	C2H-D	B	3725	3/8"
C3P	C3P-D	C	3721	3/8"

LEGEND		EXAMPLE	
C = CONTRACTION JOINT	U = UNSEALED	C2H-D	
NO. = JOINT REFERENCE	H = HOT Poured		
	P = PREFORMED		
	-D = DOWEL BARS		

NOTES:

- SEE STANDARD PLATE 1103 FOR DOWEL BAR ASSEMBLY.
- FURNISH AND INSTALL ALL JOINT SEALER IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- SEE STANDARD PLANS 5-297.217 AND 5-297.219 FOR CONCRETE MAINLINE/RAMP PAVEMENT.
- SEE PAVING LAYOUTS IN THE PLANS FOR JOINT CLASS DESIGNATION TO USE AND SPECIAL REINFORCEMENT REQUIREMENTS.
- (1) JOINT DEPTH AND TOLERANCE:  $t/3 \pm 1/4"$ .
- (2) JOINT TO FIT THE JOINT DESIGN WIDTH. "a" DIMENSION APPLIES AT ANY POINT THROUGHOUT "c" DEPTH. SHARP CORNERS NOT PERMITTED. PROVIDE CORNERS WITH SUITABLE FILLET.
- (3) WHEN WET-CUT SAWING, CLEAN JOINT FACES WITH WATER DURING THE SAW CUTTING OPERATION OR BY WATER BLASTING AFTER SAWING. WHEN EARLY-ENTRY SAWING, USE AIR BLASTING TO REMOVE SAWING RESIDUE.

- (4) CLEAN AND DRY JOINT FACES BY SANDBLASTING AND AIR BLASTING. TOP OF JOINT SEALER 3725 FLUSH TO 1/8" BELOW TOP OF PAVEMENT SURFACE.
- (5) JOINT WIDTH TOLERANCE IS  $+1/16"$  TO  $-1/32"$ .
- (6) EVENLY SPACE A MINIMUM OF EIGHT ANCHOR PINS (FOUR PER SIDE) PER DOWEL ASSEMBLY. PROVIDE QUALITY CONTROL PLAN FOR ANCHORING THE DOWEL BAR ASSEMBLIES TO THE ENGINEER FOR ACCEPTANCE IN ACCORDANCE WITH SPEC. 2301.
- (7) ANCHOR PIN REQUIREMENTS FOR CONCRETE PAVEMENT ON GRADE CONSTRUCTION. FOR CONCRETE OVERLAYS, ANCHOR PIN REQUIREMENT AS APPROVED BY THE ENGINEER.
- (8) TOLERANCES:
  - PLACE DOWEL BARS PARALLEL TO THE SUBSTRATE SURFACE,  $1/8"$  IN 15".
  - PLACE DOWEL BARS PARALLEL TO THE CENTERLINE OF THE PAVEMENT,  $1/4"$  IN 15".
  - SAW CONTRACTION JOINTS PERPENDICULAR TO THE CENTERLINE OF THE PAVEMENT AND CENTERED ON THE DOWEL BAR,  $\pm 3"$ .
  - HEIGHT (Hc) TO CENTER OF DOWEL BAR:  $\pm 1/2"$ .

- (9) DISTANCE TO EDGE OF PAVEMENT FROM OUTSIDE DOWEL:
  - 3' 0" FOR 14' 0" LANE.
  - 2' 6" FOR 13' 6" LANE.
  - 2' 0" FOR 13' 0" LANE.
  - 1' 0" FOR 12' 0" LANE.
- (10) CONTRACTOR OPTION TO CUT AND BEND SPACER WIRES AFTER STAKING.
- (11) REMOVE ONE DOWEL BAR PER FOOT OF LANE WIDTH REDUCTION LESS THAN 12'.
- (12) DRILL THE HOLE 1/8" WIDER THAN THE NOMINAL OUTSIDE DIAMETER OF THE BAR TO A DEPTH OF 9". INJECT A MnDOT-APPROVED EPOXY OR NON-SHRINK GROUT IN THE BACK OF THE DRILL HOLE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- (13) PROVIDE DOWEL BAR, 18" LONG, SPACED AT 12" ON CENTER.

LEAD EXPERT OFFICE

CURT TURGEON  
DIRECTOR  
OFFICE OF MATERIALS & ROAD RESEARCH

PAVEMENT JOINTS  
CONTRACTION (DESIGN C)

APPROVED:  
01-30-2025

THOMAS STYRBICKI  
STATE DESIGN ENGINEER

STANDARD PLAN  
5-297.221

1 OF 5

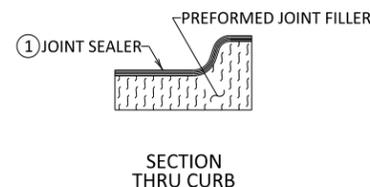
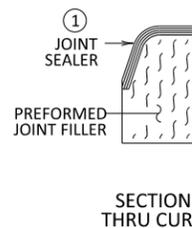
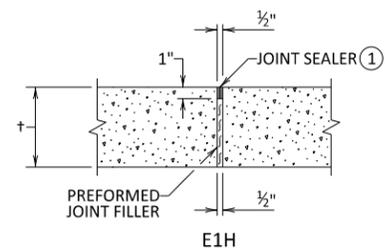
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STANDARD PLAN

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TRUNK HWY.

SHEET NO. 20  
TOTAL SHEETS 118



EXPANSION JOINT REFERENCE, DETAIL & SEALER SPEC. TABLE			
JOINT REFERENCE	PREFORMED JOINT FILLER SPEC.	JOINT SEALER SPEC.	JOINT WIDTH
WITHOUT DOWELS			
E1H	3702	3725	1/2"

LEGEND	EXAMPLE
E = EXPANSION JOINT	E1H-D
NO. = JOINT REFERENCE	
H = HOT POURED	
-D = DOWEL BARS	

- NOTES:**
- PROVIDE PREFORMED JOINT FILLER MATERIAL IN ACCORDANCE WITH SPEC. 3702.
  - FURNISH AND INSTALL ALL JOINT SEALER IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
  - ① JOINT SEALER SPEC. 3725. CLEAN AND DRY JOINT FACES BY SANDBLASTING AND AIR BLASTING. TOP OF SEALER FLUSH TO 1/8" BELOW TOP OF PAVEMENT SURFACE.

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**LEAD EXPERT OFFICE**

CURT TURGEON  
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OFFICE OF MATERIALS  
& ROAD RESEARCH

**PAVEMENT JOINTS**  
EXPANSION (DESIGN E)

APPROVED:  
01-30-2025

*Tom Styrbicki*  
THOMAS STYRBICKI  
STATE DESIGN ENGINEER

**STANDARD PLAN**  
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2 OF 5



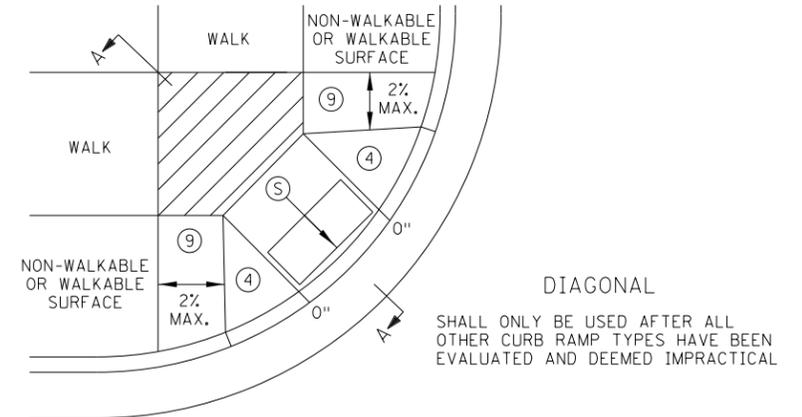
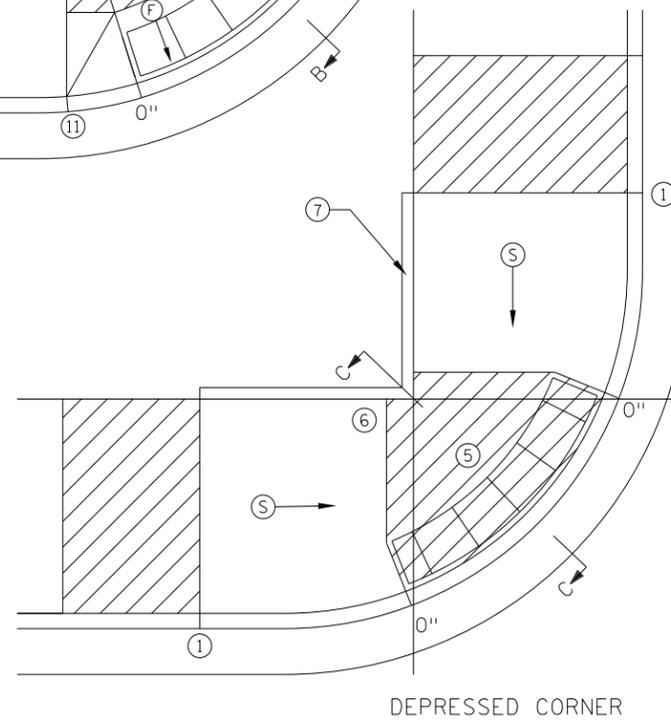
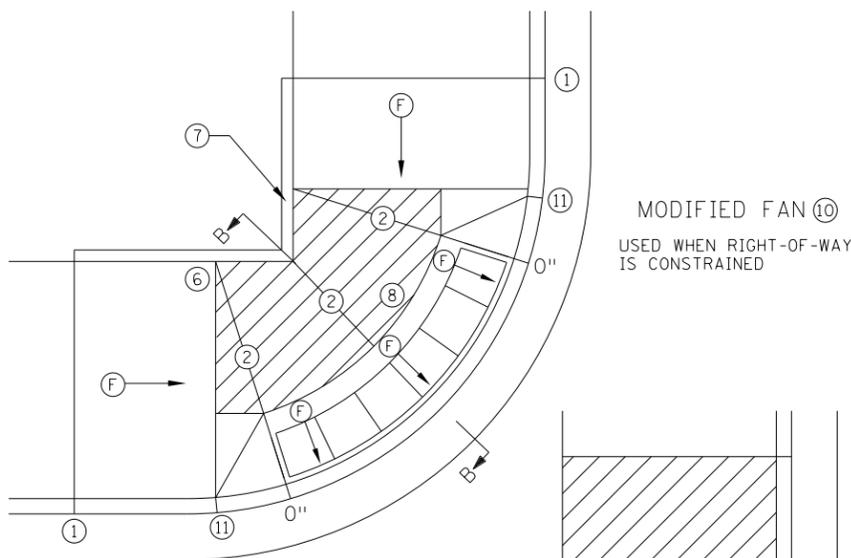
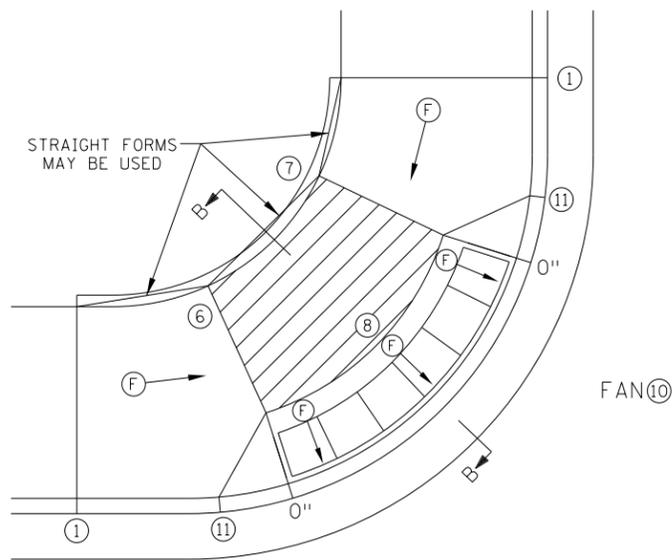
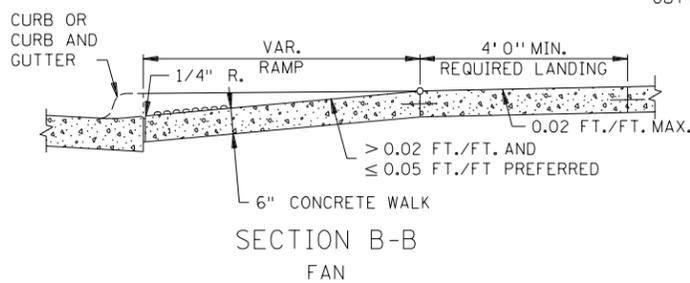
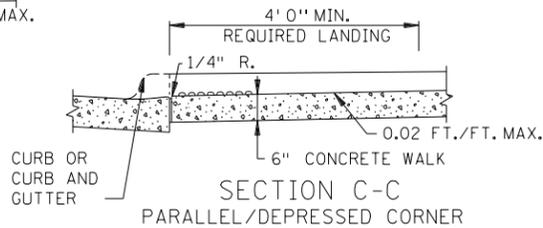
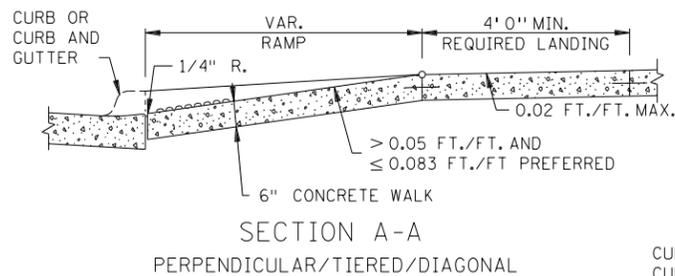
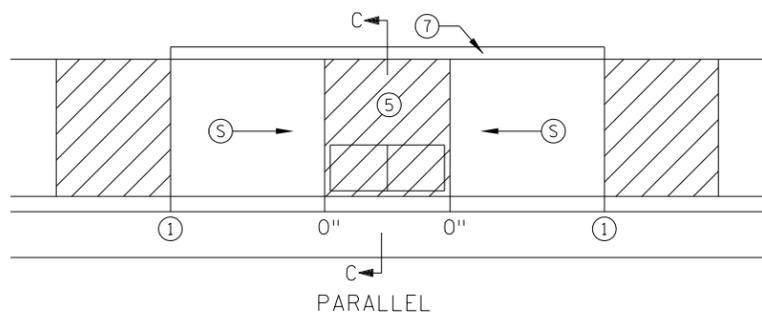
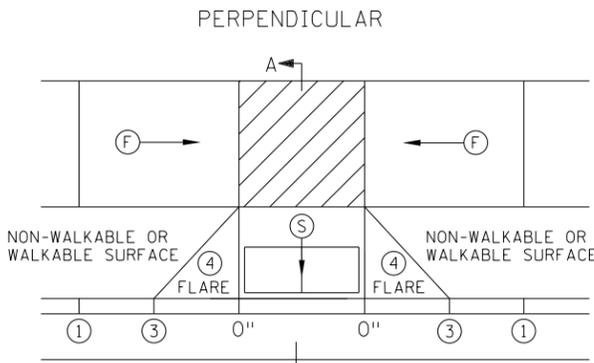
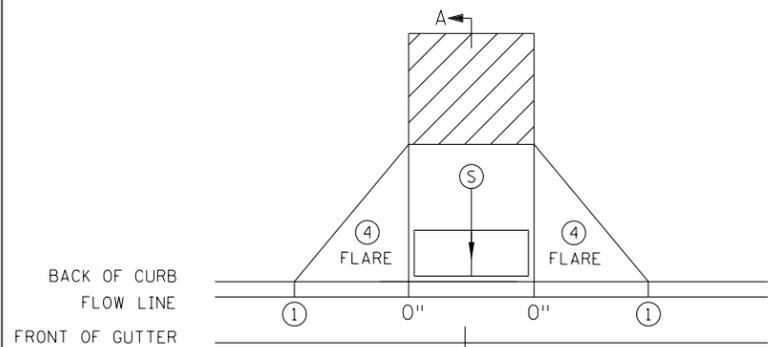
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TRUNK HWY.

SHEET NO. 21

TOTAL SHEETS 118



NOTES:

- LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE GREATER THAN 2%.
- INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.
- SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL RUNNING SLOPE IS GREATER THAN 5.0%.
- CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.
- ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL, THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH. (EXCEPT AS STATED IN 6 BELOW.)
- TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 OF 6 FOR ALL SEPARATELY POURED INITIAL LANDINGS.
- WHEN SIDEWALK IS AT BACK OF CURB, TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE. MAINTAIN POSITIVE BOULEVARD DRAINAGE TO TOP OF CURB.
- ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.
- 4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET IS ALLOWED.
- WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.
- RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.

- 1 MATCH FULL HEIGHT CURB.
- 2 4' MINIMUM DEPTH LANDING REQUIRED ACROSS TOP OF RAMP.
- 3 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.
- 4 SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
- 5 DETECTABLE WARNINGS MAY BE PART OF THE 4' X 4' MIN. LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.
- 6 THE GRADE BREAK SHALL BE PERPENDICULAR TO THE BACK OF WALK. THIS WILL ENSURE THAT THE GRADE BREAK IS PERPENDICULAR TO THE DIRECTION OF TRAVEL. (TYPICAL FOR ALL)
- 7 WHEN ADJACENT TO GRASS, GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS LESS THAN 5% RUNNING SLOPE SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
- 8 A 7' MIN TOP RADIUS GRADE BREAK IS REQUIRED TO BE CONSTRUCTIBLE.
- 9 PAVE FULL WALK WIDTH.
- 10 "S" SLOPES ON FANS SHALL ONLY BE USED WHEN ALL OTHER FEASIBLE OPTIONS HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.
- 11 INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3" CURB HEIGHT. REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

LEGEND	
THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.	
(S)	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
(F)	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
(Hatched Box)	LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.
X"	CURB HEIGHT

LEAD EXPERT OFFICE  
JEFFREY PERKINS  
OPERATIONS DIVISION

PEDESTRIAN CURB RAMP DETAILS

APPROVED: 11-04-2021  
REVISED:

THOMAS STYRBICKI  
STATE DESIGN ENGINEER

STANDARD PLAN  
5-297.250

1 OF 6

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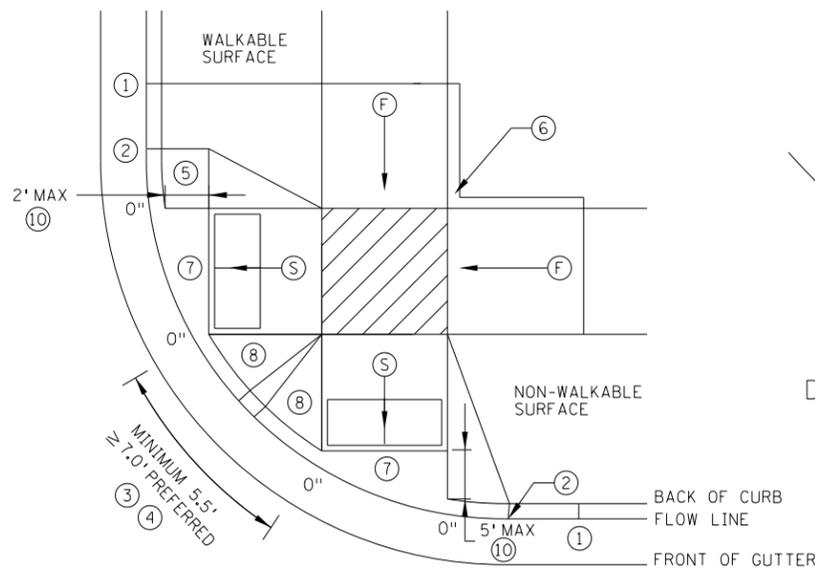
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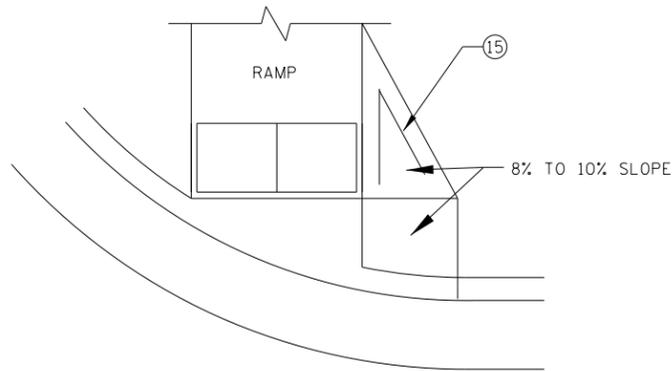
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TOTAL SHEETS 118

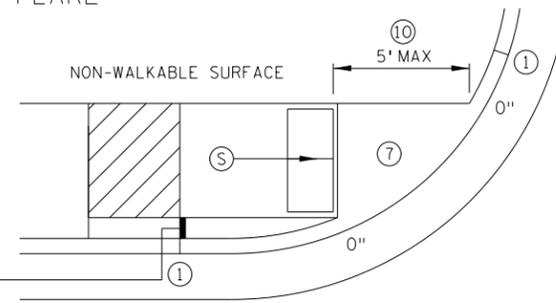


COMBINED DIRECTIONAL

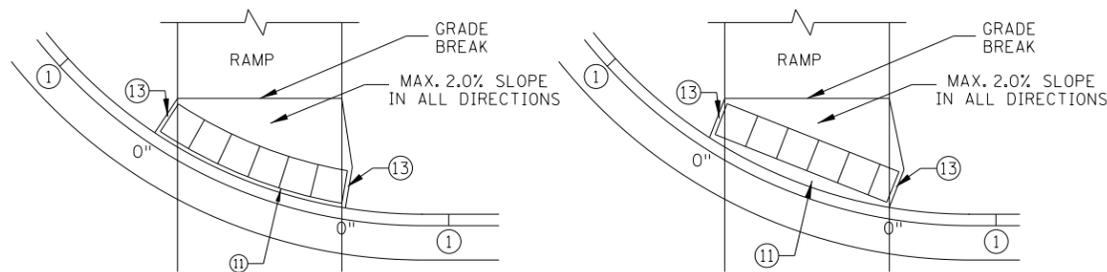


DIRECTIONAL RAMP WALKABLE FLARE

IF NON-CONCRETE BLVD. IS CONSTRUCTED AND IS LESS THAN 2' IN WIDTH AT TOP OF CURB TRANSITION, PAVE CONCRETE RAMP WIDTH TO ADJACENT BACK OF CURB.

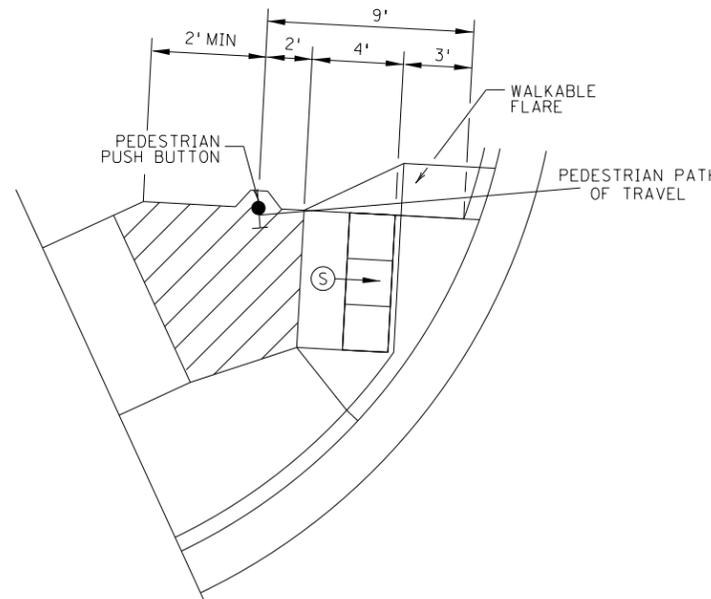


STANDARD ONE-WAY DIRECTIONAL ⑨



DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫

ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB



SEMI-DIRECTIONAL RAMP ③④⑨

3' DOME SETBACK, 4' LONG RAMP AND PUSH BUTTON 9' FROM THE BACK OF CURB  
 PRIMARILY USED FOR APS APPLICATIONS WHERE THE PAR DOES NOT CONTINUE PAST THE PUSH BUTTON (DEAD-END SIDEWALK)

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE.

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.

SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 5.0%.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOP GRADE BREAK OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL. THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH.

TO ENSURE INITIAL RAMPS AND INITIAL LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS SHALL BE CAST SEPARATELY, FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 AND THE ADA SPECIAL PROVISION (PROSECUTION OF WORK).

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

WHEN THE BOULEVARD IS 4' WIDE OR LESS, THE TOP OF CURB TAPER SHALL MATCH THE RAMP SLOPES TO REDUCE NEGATIVE BOULEVARD SLOPES FROM THE TOP BACK OF CURB TO THE PAR.

ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.

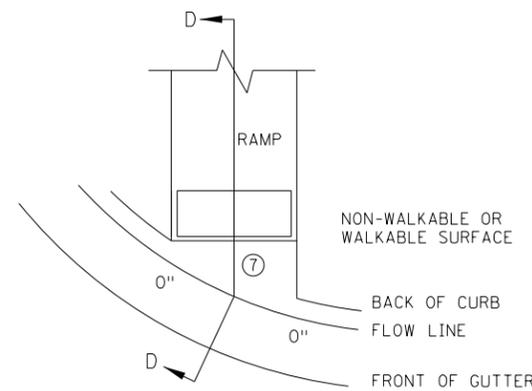
4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET IS ALLOWED.

WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.

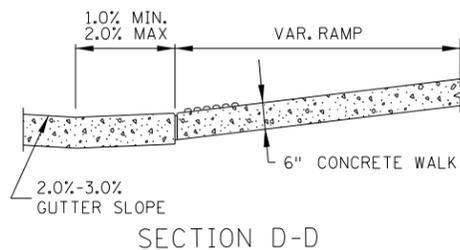
RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB. SEE NOTES ⑩ & ⑪ FOR INFORMATION REGARDING RECTANGULAR DETECTABLE WARNING PLACEMENT.

- ① MATCH FULL CURB HEIGHT.
- ② 3" HIGH CURB WHEN USING A 3' LONG RAMP  
4" HIGH CURB WHEN USING A 4' LONG RAMP.
- ③ 3" MINIMUM CURB HEIGHT (5.5' MIN. DISTANCE REQUIRED BETWEEN DOMES)  
4" PREFERRED (7' MIN. DISTANCE REQUIRED BETWEEN DOMES).
- ④ THE "BUMP" IN BETWEEN THE RAMPS SHOULD NOT BE IN THE PATH OF TRAVEL FOR COMBINED DIRECTIONAL RAMPS. IF THIS OCCURS MODIFY THE RAMP LOCATION OR SWITCH RAMP TO A FAN/DEPRESSED CORNER.
- ⑤ WHEN USING CONCRETE PAVED FLARES ON THE OUTSIDE OF DIRECTIONAL RAMPS, AND ADJACENT TO A WALKABLE SURFACE, DIRECTIONAL RAMP FLARES SHALL BE USED. SEE THE DETAIL ON THIS SHEET.
- ⑥ GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
- ⑦ 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.
- ⑧ 8% TO 10% WALKABLE FLARE.
- ⑨ PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.
- ⑩ FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.
- ⑪ RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK UP TO 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.
- ⑫ FOR DIRECTIONAL RAMPS WITH THE DETECTABLE WARNINGS PLACED AT THE BACK OF CURB, THE DETECTABLE WARNINGS SHALL COVER THE ENTIRE WIDTH OF THE WALK/PATH. THIS ENSURES A DETECTABLE EDGE AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.
- ⑬ THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
- ⑭ TO BE USED FOR ALL DIRECTIONAL RAMPS, EXCEPT WHERE DOMES ARE PLACED ALONG THE BACK OF CURB.
- ⑮ PLACE 2 NO. 4 BARS 4 INCHES FROM SIDE OF FORMS WITH A MINIMUM 2 INCHES OF CONCRETE COVER ALONG EACH SIDE OF FLARE (INCIDENTAL).

LEGEND	
THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.	
Ⓢ	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
ⓕ	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
	LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PAR.
X"	CURB HEIGHT



CURB FOR DIRECTIONAL RAMPS ⑭



SECTION D-D

LEAD EXPERT OFFICE  
 JEFFREY PERKINS  
 OPERATIONS DIVISION

PEDESTRIAN CURB RAMP DETAILS

APPROVED: 11-04-2021  
 REVISED:

THOMAS STYRBICKI  
 STATE DESIGN ENGINEER

STANDARD PLAN  
 5-297.250

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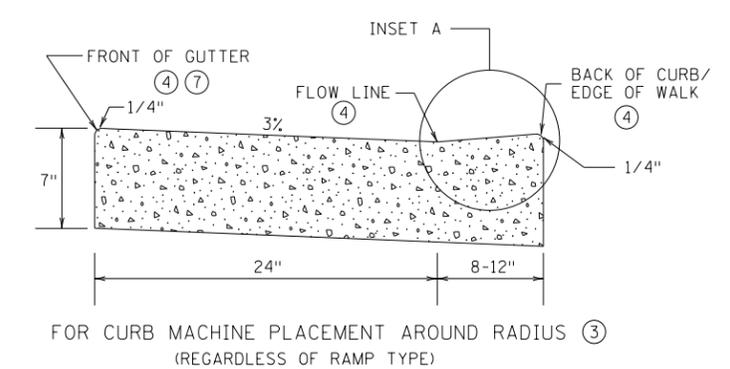
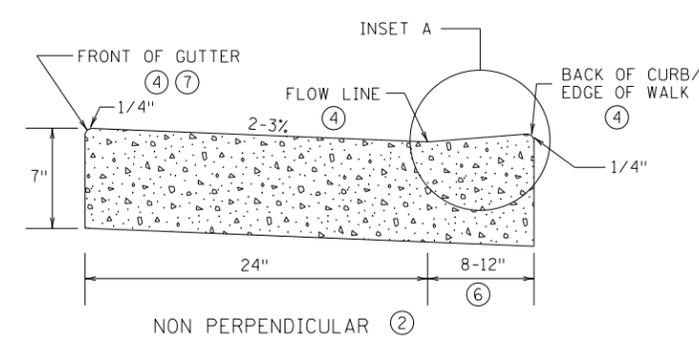
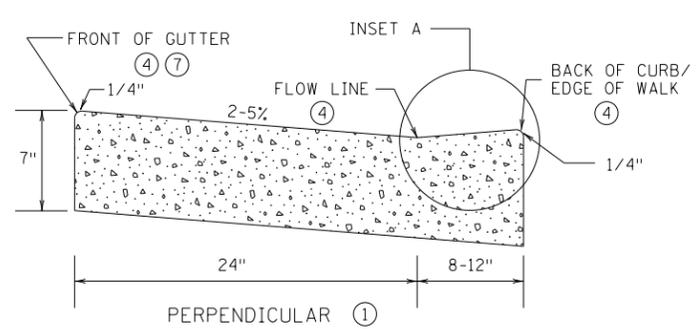
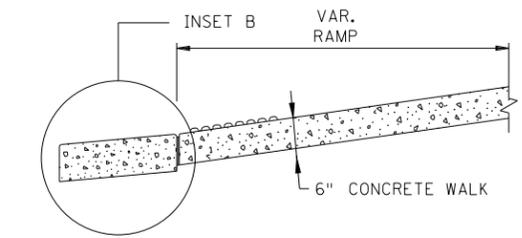
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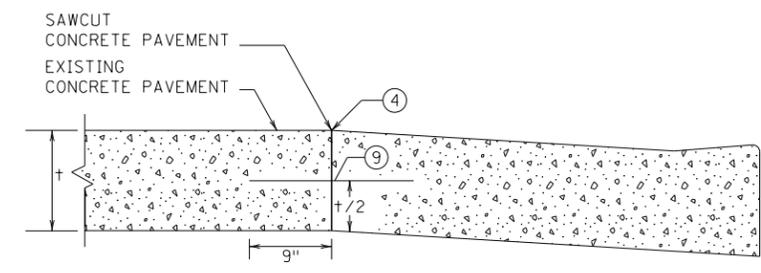
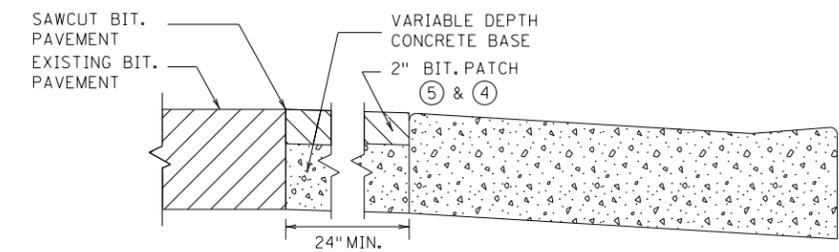
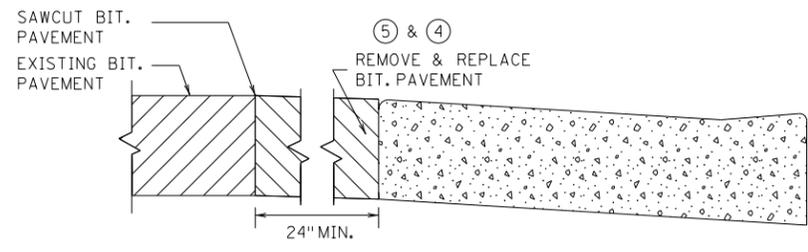
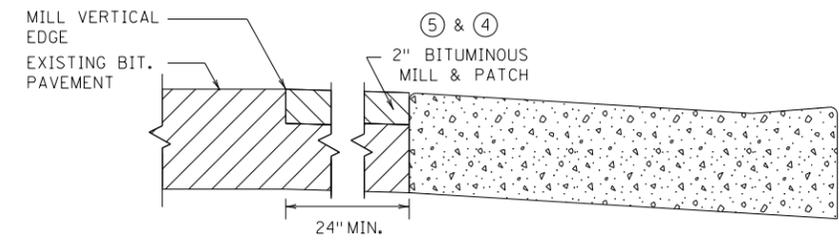
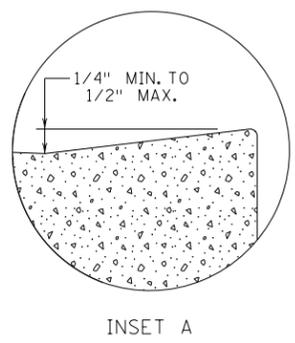
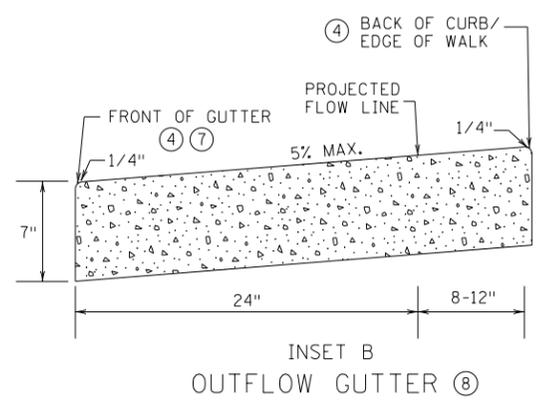
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SHEET NO. 23

TOTAL SHEETS 118



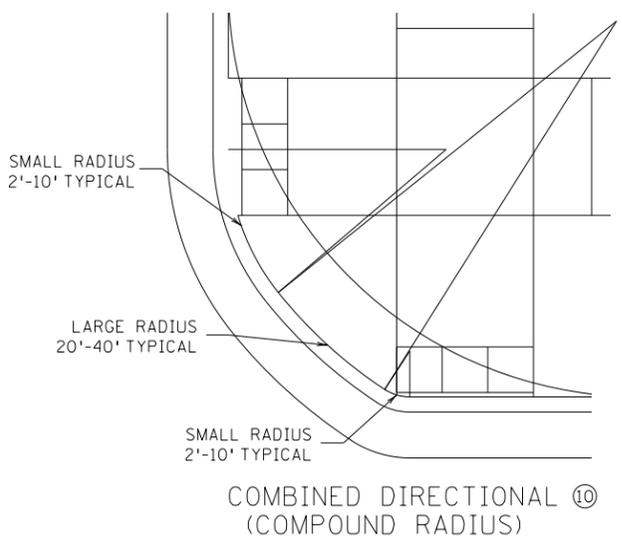
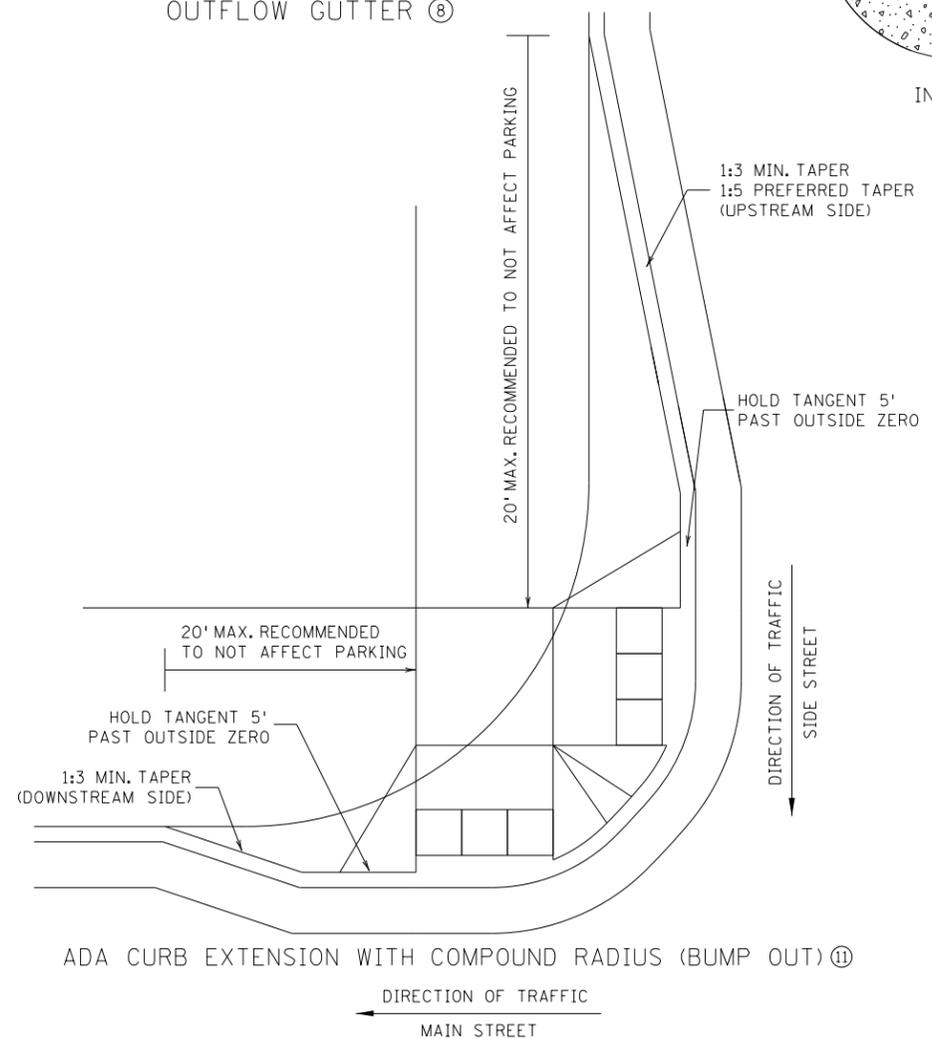
PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL



ONLY ALLOWED PER ENGINEER'S APPROVAL

PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER FOR USE ON CURB RAMP RETROFITS

- NOTES:
- POSITIVE FLOW LINE DRAINAGE SHALL BE MAINTAINED THROUGH THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM. NO PONDING SHALL BE PRESENT IN THE PAR.
  - ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE SHALL NOT BE GREATER THAN 1/4 INCH.
  - ① FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, TIERED PERPENDICULAR, PARALLEL, AND DIAGONAL RAMPS.
  - ② FOR USE AT CURB RAMPS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS & DEPRESSED CORNERS.
  - ③ BEGIN GUTTER SLOPE TRANSITION 10' OUTSIDE OF ALL CURB RAMPS.
  - ④ THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4\".
  - ⑤ ELEVATION CHANGE TAKES PLACE FROM THE EXISTING TO NEW FRONT OF GUTTER. PATCH IS USED TO MATCH THE NEW GUTTER FACE INTO THE EXISTING ROADWAY.
  - ⑥ VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS. SEE SHEET 2 FOR DIRECTIONAL CURB SLOPE REQUIREMENTS.
  - ⑦ TOP FRONT OF GUTTER SHALL BE CONSTRUCTED FLUSH WITH PROPOSED ADJACENT PAVEMENT ELEVATION. TOP 1.5\" OF THE GUTTER FACE MUST BE A FORMED EDGE. PAR GUTTER SHALL NOT BE OVERLAID.
  - ⑧ SHOULD BE USED AT VERTICALLY CONSTRAINED AREAS WHEN AT A DRAINAGE HIGH POINT OR SUPER ELEVATED ROADWAY SEGMENTS.
  - ⑨ DRILL AND GROUT NO. 4 EPOXY-COATED 18\" LONG TIE BARS AT 30\" CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT 1' MINIMUM FROM ALL JOINTS.
  - ⑩ HELPS PROVIDE TWO SEPARATE RAMPS, REDUCES THE DOME SETBACK LENGTH AND MINIMIZES DIRECTIONAL CURB. THIS RADIUS DESIGN CLOSELY FOLLOWS THE TURNING VEHICLE PATH WHILE OPTIMIZING CURB RAMP LENGTH.
  - ⑪ CURB EXTENSIONS SHOULD BE USED IN VERTICALLY CONSTRAINED AREAS, USUALLY IN DOWNTOWN ROADWAY SEGMENTS WHERE ON-STREET PARKING IS AVAILABLE. CURB EXTENSIONS SHOULD BE CONSIDERED FOR APS INTERSECTIONS WHERE SPACE IS LIMITED. PUSH BUTTONS MUST MEET APS CRITERIA AS DESCRIBED IN THE PUSH BUTTON LOCATION DETAIL SHEET.

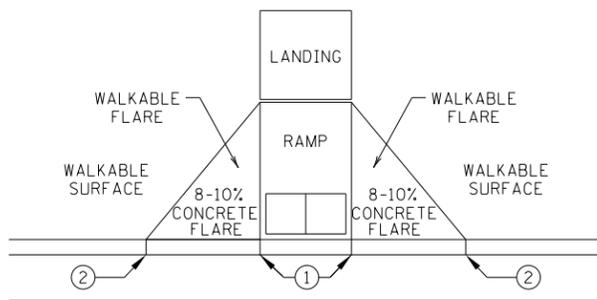


COMBINED DIRECTIONAL (COMPOUND RADIUS)

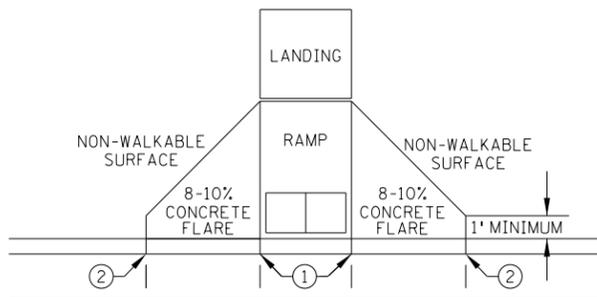
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LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION	PEDESTRIAN CURB RAMP DETAILS		APPROVED: 11-04-2021	 THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN	3 OF 6
		STANDARD PLAN		REVISED:		5-297.250	
		SP 002-606-014, SP 127-020-036 SAP 002-606-014, SAP 127-020-036				SHEET NO.	24
		TRUNK HWY.				TOTAL SHEETS	118

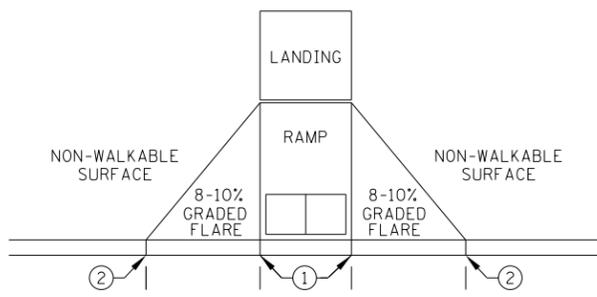




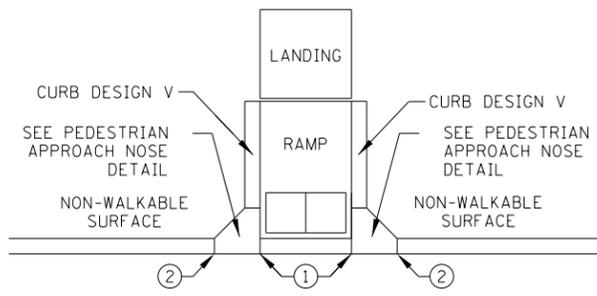
PAVED FLARES  
ADJACENT TO WALKABLE SURFACE



PAVED FLARES  
ADJACENT TO NON-WALKABLE SURFACE

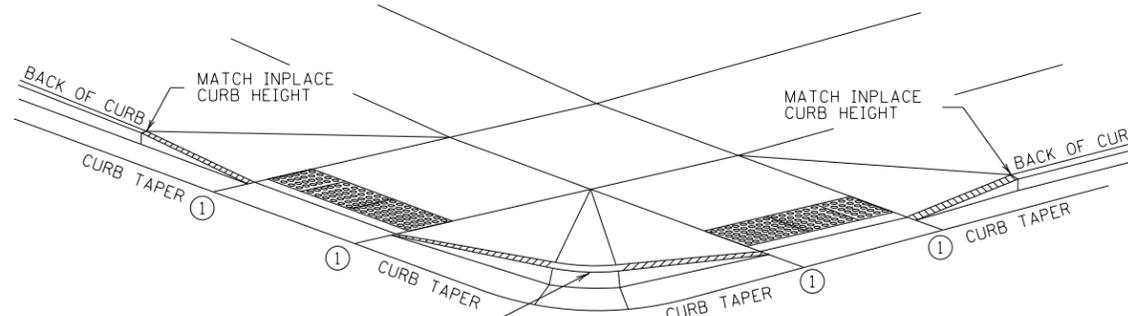


GRADED FLARES



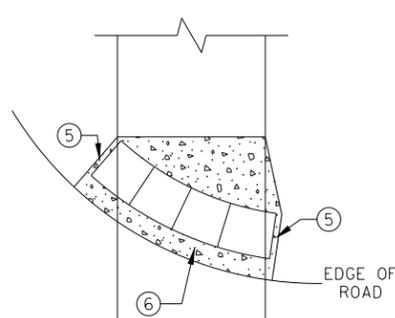
RETURNED CURB ④

TYPICAL SIDE TREATMENT OPTIONS ③ ⑩

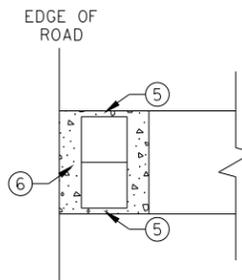


3" MINIMUM CURB HEIGHT, 4" PREFERRED  
(MEASURED AT FRONT FACE OF CURB)  
FOR A MIN. 6" LENGTH (MEASURED ALONG FLOW LINE)

DETECTABLE EDGE WITH  
CURB AND GUTTER ⑦

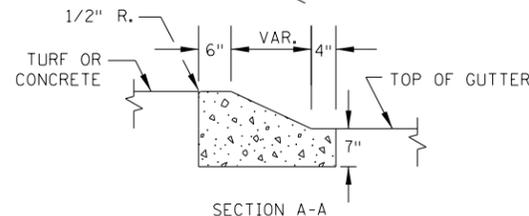
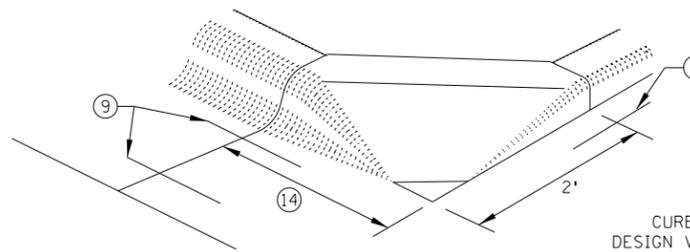


RADIAL DETECTABLE WARNING

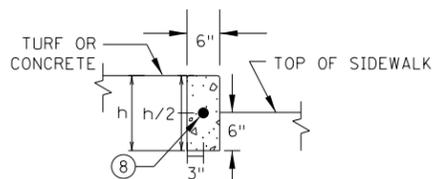


RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

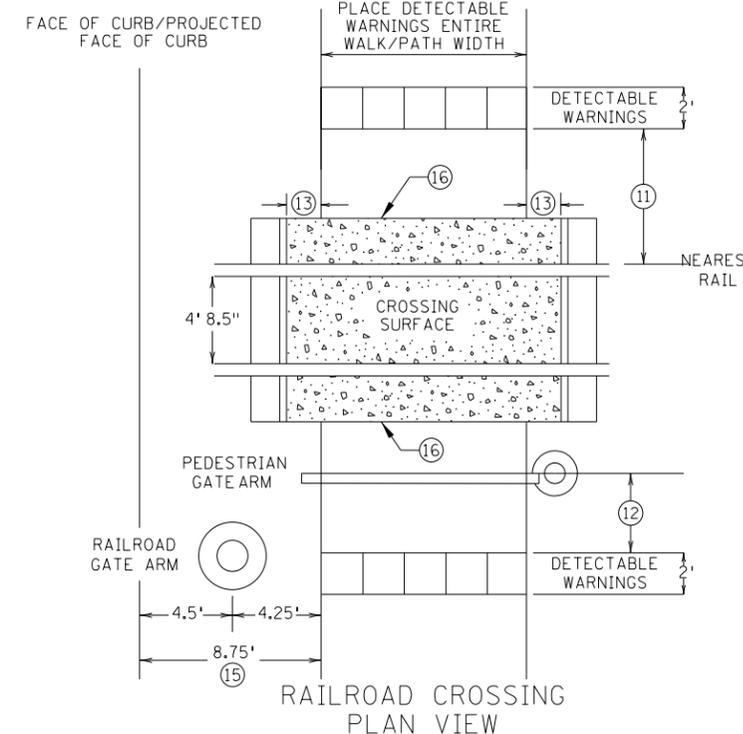


SECTION A-A



SECTION B-B

PEDESTRIAN APPROACH  
NOSE DETAIL  
(FOR RETURNED CURB  
SIDE TREATMENT)



RAILROAD CROSSING  
PLAN VIEW

NOTES:

- INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3 INCH CURB HEIGHT. INCREASE CURB TAPER LENGTH AT LESS THAN 8% OR REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.
- SEE STANDARD PLATE 7038 AND THIS SHEET FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.
- A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.
- CONCRETE FLARE LENGTHS ADJACENT TO NON-WALKABLE SURFACES SHOULD BE LESS THAN 8' LONG MEASURED ALONG THE RAMPS FROM THE BACK OF CURB.
- ① 0" CURB HEIGHT. SEE INSET A ON SHEET 3 OF 6.
- ② FULL CURB HEIGHT.
- ③ SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.
- ④ TYPICALLY USED FOR MEDIANS AND ISLANDS.
- ⑤ WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE EDGE OF ROADWAY. MAINTAIN 3" MAX. BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
- ⑥ IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNINGS SHALL BE PLACED 1' FROM THE EDGE OF BITUMINOUS ROADWAY AND/OR BITUMINOUS SHARED-USE PATH TO PROVIDE VISUAL CONTRAST.
- ⑦ ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHEREVER THERE IS ZERO-INCH HIGH CURB. CURB TAPERS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS WITHIN 3" OF THE EDGE OF THE DETECTABLE WARNINGS. AND UNIFORMLY RISES TO A 3-INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TAPER AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH ACCESSIBILITY STANDARDS.
- ⑧ DRILL AND GROUT 1 - NO. 4 12" LONG REINFORCEMENT BAR (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE V CURB.
- ⑨ DRILL AND GROUT 2 - NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE CURB AND GUTTER.
- ⑩ SIDE TREATMENT EXAMPLES SHOWN ARE WHEN THE INITIAL LANDING IS APPROXIMATELY LEVEL WITH THE FULL HEIGHT CURB (I.E. 6' LONG RAMP FOR 6" HIGH CURB). WHEN THE INITIAL LANDING IS MORE THAN 1" BELOW FULL HEIGHT CURB REFER TO SHEETS 1 & 2 TO MODIFY THE CURB HEIGHT TAPERS AND MAINTAIN POSITIVE BOULEVARD DRAINAGE. CONSTRUCT THESE TAPERS AT 0"-3" AT 8-10%, THEN LESS THAN 5% FROM 3" CURB TO FULL CURB HEIGHT.
- ⑪ NEAREST EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 12' MINIMUM TO 15' MAXIMUM FROM THE NEAREST RAIL. FOR SKEWED RAILWAYS IN NO INSTANCE SHALL THE DETECTABLE WARNING BE CLOSER THAN 12' MEASURED PERPENDICULAR TO THE NEAREST RAIL.
- ⑫ WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 2' FROM THE APPROACHING SIDE OF THE GATE ARM. THIS CRITERIA GOVERNS OVER NOTE ⑪.
- ⑬ CROSSING SURFACE SHALL EXTEND 2' MINIMUM PAST THE OUTSIDE EDGE OF WALK OR SHARED-USE PATH.
- ⑭ 3' FOR MEDIANS AND SPLITTER ISLANDS. NOSE CAN BE REDUCED TO 2' ON FREE RIGHT ISLANDS.
- ⑮ SIDEWALK TO BE PLACED 8.75' MIN. FROM THE FACE OF CURB/PROJECTED FACE OF CURB. THIS ENSURES MIN. CLEARANCE BETWEEN THE SIDEWALK AND GATE ARM COUNTERWEIGHT SUPPORTS.
- ⑯ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.

LEAD EXPERT OFFICE  
JEFFREY PERKINS  
OPERATIONS DIVISION

PEDESTRIAN CURB RAMP DETAILS

APPROVED: 11-04-2021  
REVISED:

THOMAS STYRBICKI  
STATE DESIGN ENGINEER

STANDARD PLAN  
5-297.250

4 OF 6

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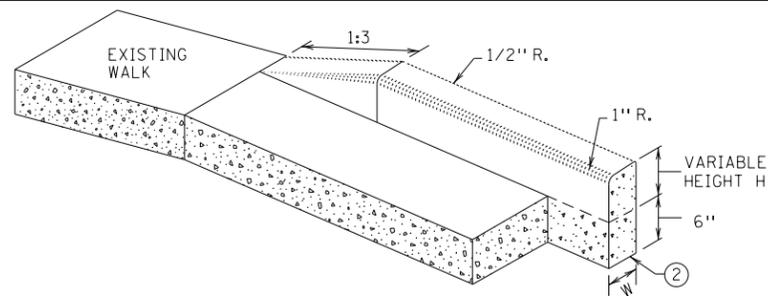
STANDARD PLAN

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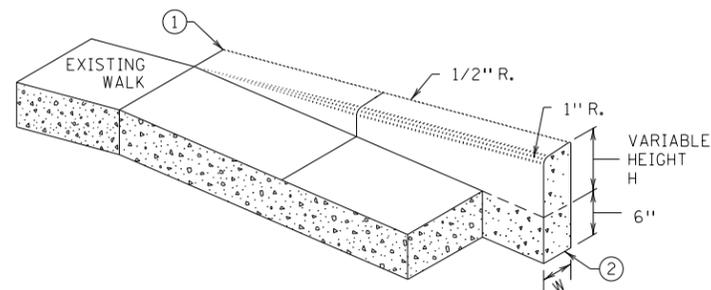
TRUNK HWY.

SHEET NO. 25

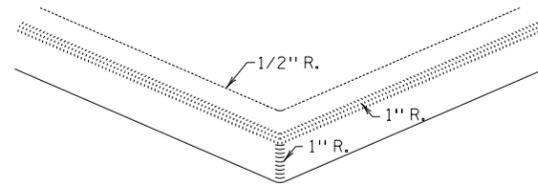
TOTAL SHEETS 118



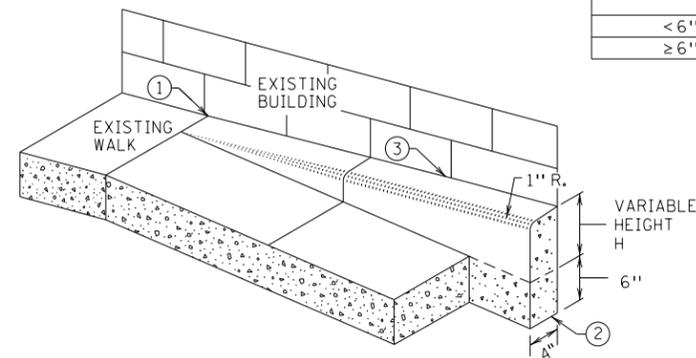
V CURB ADJACENT TO LANDSCAPE  
CURB WITHIN SIDEWALK LIMITS



V CURB ADJACENT TO LANDSCAPE  
CURB OUTSIDE SIDEWALK LIMITS

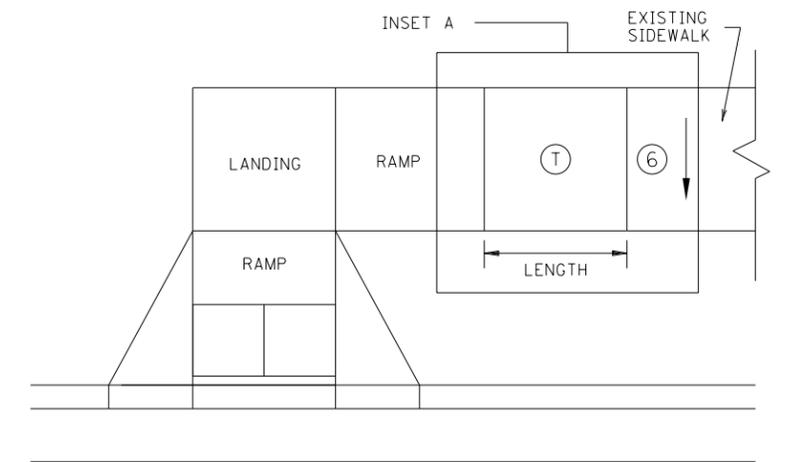


V CURB INTERSECTION

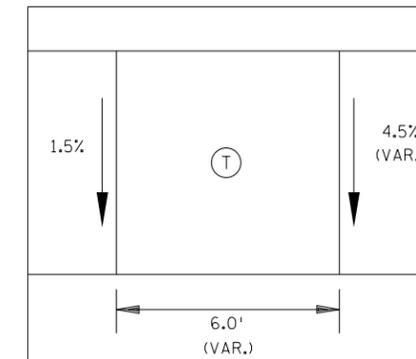


V CURB ADJACENT TO BUILDING  
OR BARRIER

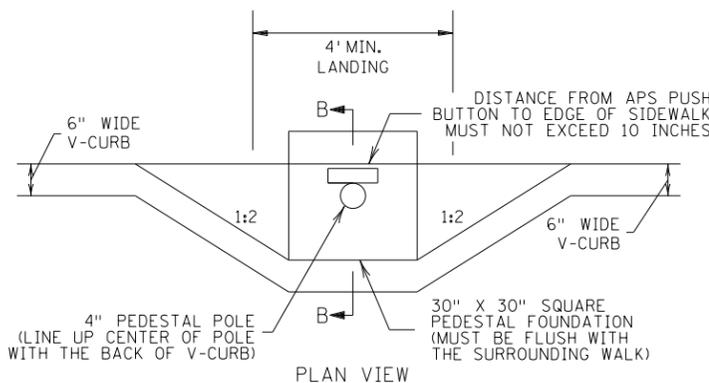
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"



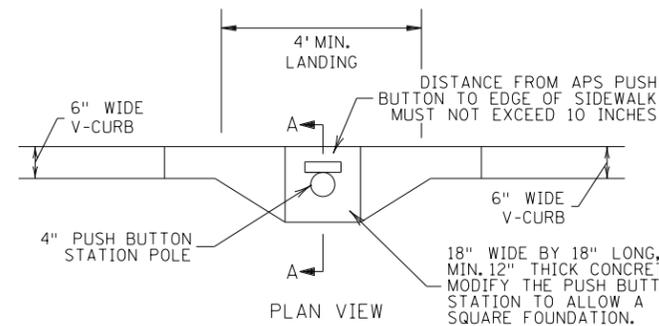
TRANSITION PANEL (4) (5)



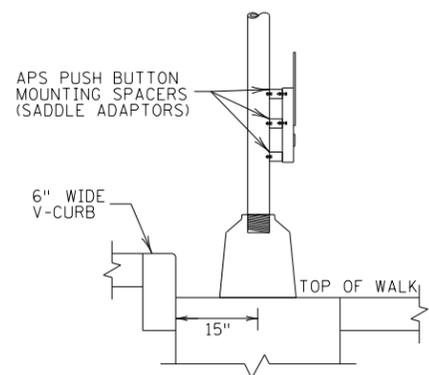
INSET A



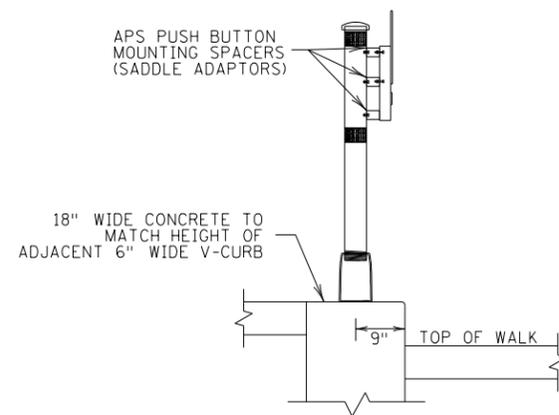
PLAN VIEW



PLAN VIEW



SECTION B-B  
SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)



SECTION A-A  
PUSH BUTTON STATION (V-CURB)

NOTES:

A WALKABLE FLARE IS AN 8-10% CONCRETE FLARE THAT IS REQUIRED WHEN THE FLARE IS ADJACENT TO A WALKABLE SURFACE, OR WHEN THE PEDESTRIAN PATH OF TRAVEL OF A PUSH BUTTON TRAVERSES THE FLARE.

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

WHERE RIGHT-OF-WAY ALLOWS, USE OF V CURB SHOULD BE MINIMIZED. GRADING ADJACENT TURF OR SLOPING ADJACENT PAVEMENT IS PREFERRED.

V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.

V CURB NEXT TO BUILDING SHALL BE A 4" WIDTH AND SHALL MATCH PREVIOUS TOP OF SIDEWALK ELEVATIONS.

(1) END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.

(2) ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.

(3) CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A-E EXPANSION. LEAVE A MINIMUM 1/2" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.

(4) THE MAX. RATE OF CROSS SLOPE TRANSITIONING IS 1' LINEAR FOOT OF SIDEWALK PER HALF PERCENT CROSS SLOPE. WHEN PAR WIDTH IS GREATER THAN 6' OR THE RUNNING SLOPE IS GREATER THAN 5%, DOUBLE THE CALCULATED TRANSITION LENGTH.

(5) TRANSITION PANEL(S) - TO BE USED AFTER THE RAMP, OR IF NEEDED, LANDING ARE AT THE FULL CURB HEIGHT (TYPICAL SECTION).

(6) EXISTING CROSS SLOPE GREATER THAN 2.0%.

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

(S) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.

(L) LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.

(T) TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1' LINEAR FOOT OF WALK. SEE THIS SHEET FOR ADDITIONAL INFORMATION.

LEAD EXPERT OFFICE  
JEFFREY PERKINS  
OPERATIONS DIVISION

PEDESTRIAN CURB RAMP DETAILS

APPROVED: 11-04-2021  
REVISED:

THOMAS STYRBICKI  
STATE DESIGN ENGINEER

STANDARD PLAN  
5-297.250

5 OF 6



STANDARD PLAN

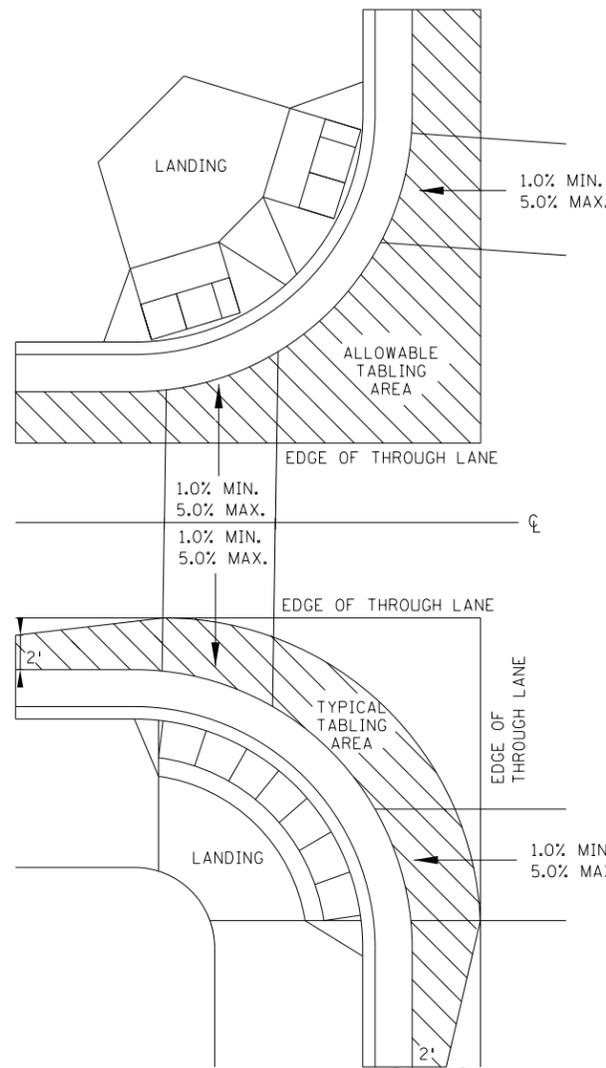
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TRUNK HWY.

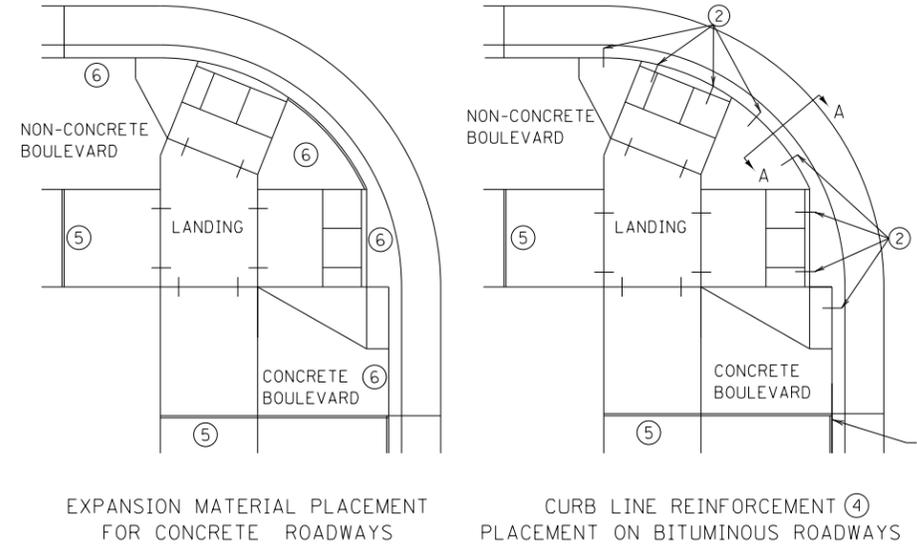
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TOTAL SHEETS 118

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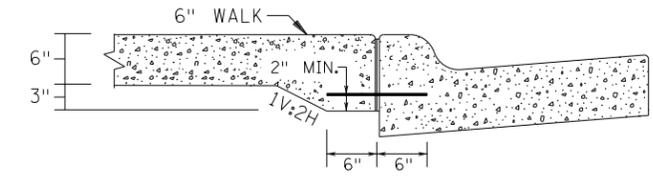


CURB LINE AND ROAD CROSSING ADJUSTMENTS

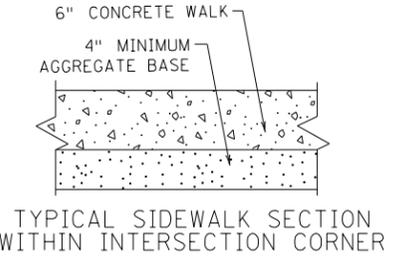


EXPANSION MATERIAL PLACEMENT FOR CONCRETE ROADWAYS

CURB LINE REINFORCEMENT <sup>④</sup> PLACEMENT ON BITUMINOUS ROADWAYS



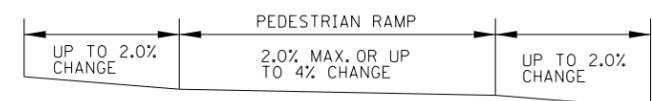
SECTION VIEW A-A THICKENED SECTION THROUGH CURB RAMP FLARES



TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER



FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



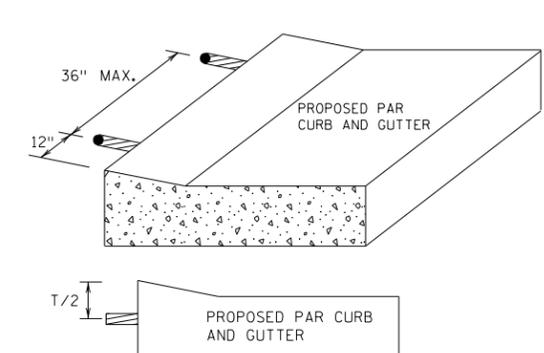
FLOW LINE PROFILE "TABLE" - FAN



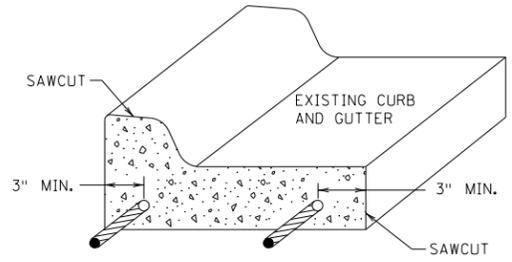
FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS



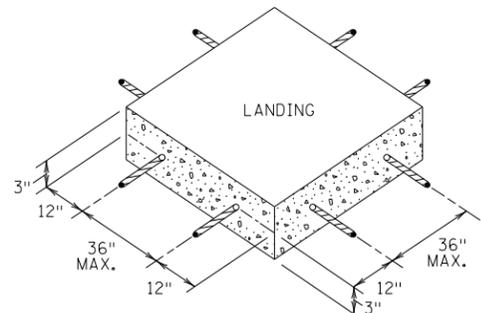
FLOW LINE PROFILE RAISE - FAN



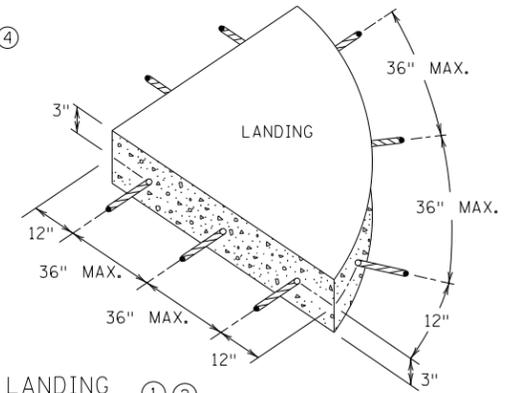
CURB RAMP REINFORCEMENT DETAILS <sup>②④</sup>



CURB AND GUTTER REINFORCEMENT <sup>③</sup>



SEPARATE LANDING POUR REINFORCEMENT <sup>①②</sup>



GENERAL NOTES:

"TABLING" OF CROSSWALKS MEANS MAINTAINING LESS THAN 2% CROSS SLOPE WITHIN A CROSSWALK, IS REQUIRED WHEN A ROADWAY IS IN A STOP OR YIELD CONDITION AND THE PROJECT SCOPE ALLOWS.

RECONSTRUCTION PROJECTS: ON FULL PAVEMENT REPLACEMENT PROJECTS "TABLING" OF ENTIRE CROSSWALK SHALL OCCUR WHEN FEASIBLE.

MILL & OVERLAY PROJECTS: "TABLING" OF FLOW LINES, IN FRONT OF THE PEDESTRIAN RAMP, IS REQUIRED WHEN THE EXISTING FLOW LINE IS GREATER THAN 2%. WARPING OF THE BITUMINOUS PAVEMENT CAN NOT EXTEND INTO THE THROUGH LANE. TABLE THE FLOW LINE TO 2% OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:

- 1) 1.0% MIN. CROSS-SLOPE OF THE ROAD
- 2) 5.0% MAX. CROSS-SLOPE OF THE ROAD
- 3) "TABLE" FLOW LINE UP TO 4% CHANGE FROM EXISTING SLOPE IN FRONT OF PEDESTRIAN RAMP
- 4) UP TO 2% CHANGE IN FLOW LINE FROM EXISTING SLOPE BEYOND THE PEDESTRIAN CURB RAMP

STAND-ALONE ADA RETROFITS: FOLLOW MILL & OVERLAY CRITERIA ABOVE HOWEVER ALL PAVEMENT WARPING IS DONE WITH BITUMINOUS PATCHING ON BITUMINOUS ROADWAYS AND FULL-DEPTH APRON REPLACEMENT ON CONCRETE ROADWAYS.

RAISING OF CURB LINES SHOULD OCCUR IN VERTICALLY CONSTRAINED AREAS. RAISE THE CURB LINES ENOUGH TO ALLOW COMPLIANT RAMPS OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:

- 1) 1.0% MIN. AND 5.0% MAXIMUM CROSS-SLOPE OF THE ROAD
- 2) 1.0% MIN. FLOW LINE (ON EITHER SIDE OF PEDESTRIAN RAMP) TO MAINTAIN POSITIVE DRAINAGE
- 3) 5.0% RECOMMENDED MAX. FLOW LINE
- 4) LONGITUDINAL THROUGH LANE ROADWAY TAPERS SHOULD BE 1" VERTICAL PER 15' HORIZONTAL

NOTES:

- ① TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET FOR ALL SEPARATELY POURED INITIAL LANDINGS.
- ② DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) AT 36" MAXIMUM CENTER TO CENTER MINIMUM 12" SPACING FROM CONSTRUCTION JOINTS. BARS TO BE ADJUSTED TO MATCH RAMP GRADE. BARS TO BE PAID BY EACH.
- ③ DRILL AND GROUT 2 - NO. 4 X 12" LONG (6" EMBEDDED) REINFORCEMENT BARS (EPOXY COATED). REINFORCEMENT REQUIRED FOR ALL CONSTRUCTION JOINTS. BARS TO BE PAID BY EACH.
- ④ THIS CURB LINE REINFORCEMENT DETAIL SHALL BE USED ON BITUMINOUS ROADWAYS. FOR CONCRETE ROADWAYS, SEE NOTE 6.
- ⑤ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.
- ⑥ USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.

LEAD EXPERT OFFICE  
JEFFREY PERKINS  
OPERATIONS DIVISION

PEDESTRIAN CURB RAMP DETAILS

APPROVED: 11-04-2021  
REVISED:

THOMAS STYRBICKI  
STATE DESIGN ENGINEER

STANDARD PLAN  
5-297.250

6 OF 6

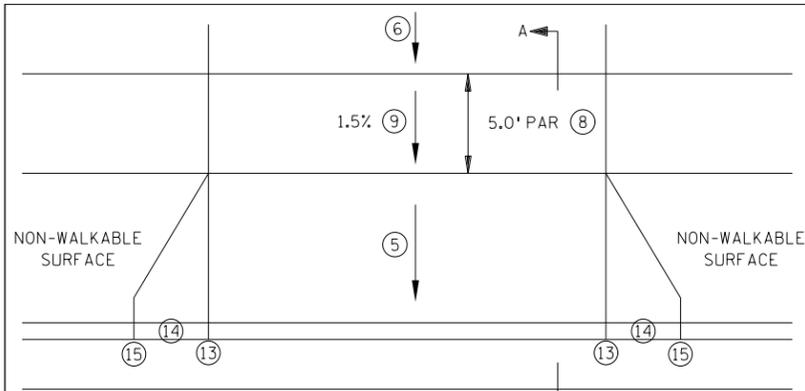


STANDARD PLAN

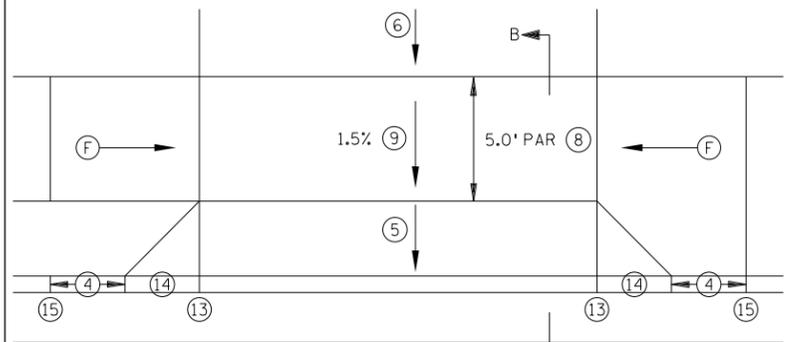
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SAP 002-606-014, SAP 127-020-036  
TRUNK HWY.

SHEET NO. 27  
TOTAL SHEETS 118

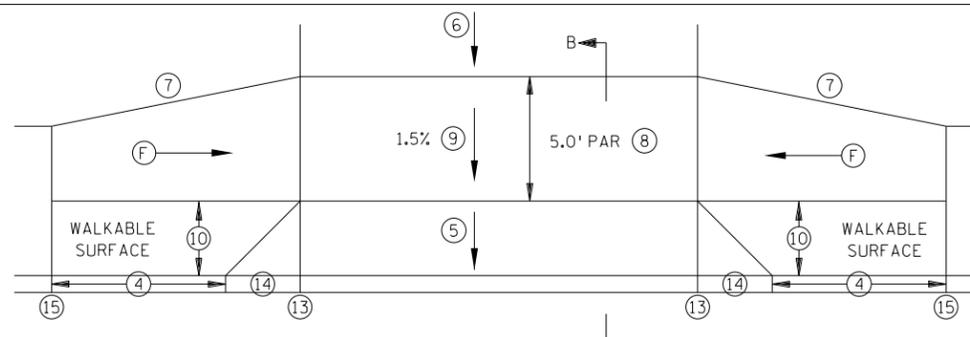
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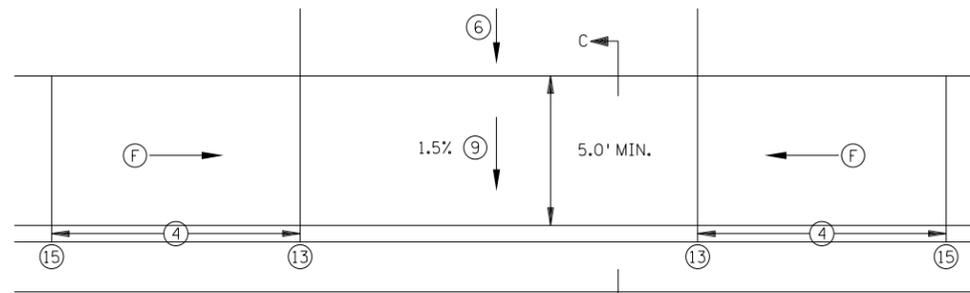
PERPENDICULAR DRIVEWAY ①



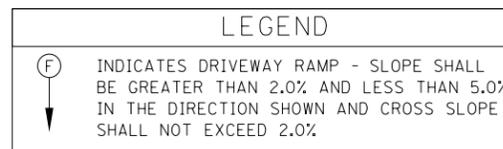
TIERED PERPENDICULAR DRIVEWAY ②



TIERED PERPENDICULAR OFFSET DRIVEWAY ②



PARALLEL DRIVEWAY ③



NOTES:

ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.

IN URBAN ROADWAY SECTIONS, 6" CURB HEIGHT SHOULD BE USED WHEN 6' OR GREATER BOULEVARD WIDTH IS PROPOSED. WHEN BOULEVARD IS LESS THAN 6' WIDE, 4" CURB HEIGHT SHOULD BE USED.

MAINTAIN EXISTING DRAINAGE PATTERNS FLOWING TO PUBLIC RIGHT OF WAY.

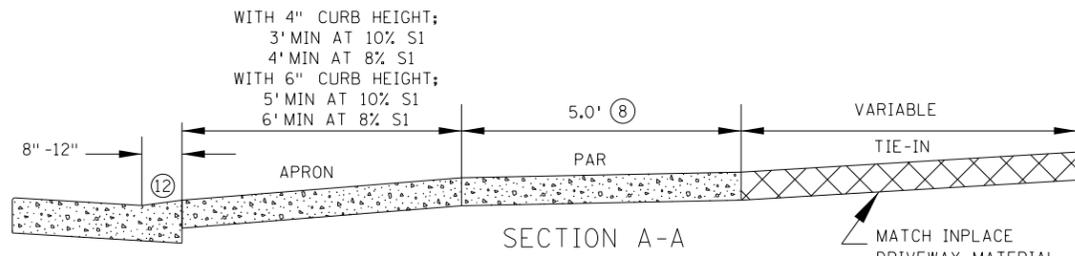
ACQUIRE ADEQUATE L3 TO ALLOW FOR A CONTINUOUS PAR PROFILE (UNIFORM TYPICAL SIDEWALK SECTION) THROUGH THE DRIVEWAY APRON.

IN NO CASE SHALL SIDEWALK PROFILES EXCEED 5.0%, EXCEPT SIDEWALK PROFILES CAN MATCH ROADWAY GRADE IF ROADWAY GRADE IS GREATER THAN 5.0%. RAMP FOR DRIVEWAYS ARE REQUIRED TO FOLLOW THE ABOVE SIDEWALK CRITERIA.

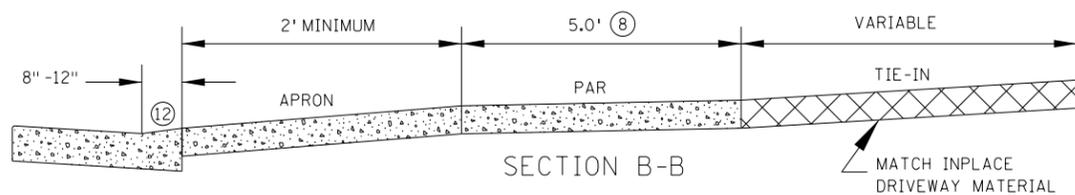
CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PEDESTRIAN ACCESS ROUTE (PAR). 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

DRIVEWAY TYPES FROM MOST PREFERRED TO LEAST PREFERRED ARE AS FOLLOWS: PERPENDICULAR, TIERED PERPENDICULAR, TIERED PERPENDICULAR OFFSET & PARALLEL.

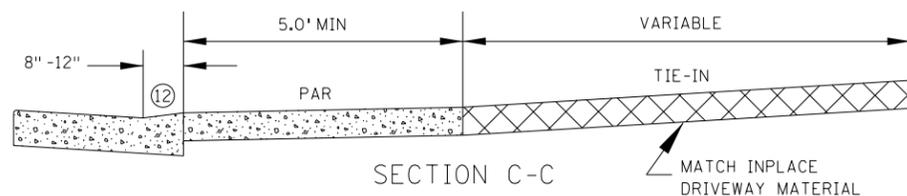
- ① PERPENDICULAR DRIVEWAYS ARE THE STANDARD AND STARTING POINT FOR ALL DRIVEWAY DESIGN AND CONSTRUCTION. SHOULD BE USED TO ACHIEVE CONTINUOUS PAR PROFILE THROUGH THE DRIVEWAY. OBTAINING A PERPENDICULAR DRIVEWAY DESIGN BECOMES MORE CRITICAL WITH STEEP ROADWAY PROFILES.
- ② TO BE USED WHEN PERPENDICULAR DRIVEWAY DESIGN CANNOT BE ACHIEVED, THE DRIVEWAY PAR IS BELOW ROADWAY CURB HEIGHT. THIS DRIVEWAY TYPE CAN BE USED FOR BOTH PAVED (AS SHOWN) AND GRASS BOULEVARDS.
- ③ TO BE USED WHEN PERPENDICULAR AND TIERED PERPENDICULAR DRIVEWAY DESIGN CANNOT BE ACHIEVED. CAN BE USED FOR STEEP NEGATIVE SLOPED DRIVEWAYS. DW CURB TYPE 2 SHOULD BE USED TO RAISE PAR ABOVE GUTTER AND REDUCE "ROLLER COASTER" EFFECT. 4" HIGH ROADWAY CURB SHOULD BE USED TO REDUCE "ROLLER COASTER" EFFECT ESPECIALLY WHEN MULTIPLE DRIVEWAYS ARE PRESENT.
- ④ TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.
- ⑤ 8% STANDARD, 10% MAX. FOR COMMERCIAL AND 12% MAX. FOR RESIDENTIAL. SEE GENERAL NOTES ON SHEET 2 FOR MORE INFORMATION.
- ⑥ S3 8% MAXIMUM, IF THE SLOPE IS EXCEEDED OR CONTINUED FOR MORE THAN 5'; ANALYZE VEHICLE TEMPLATES FOR VERTICAL CLEARANCE. IF EXISTING DRIVEWAY IS NEGATIVELY DRAINING, S3 CAN BECOME SLIGHTLY MORE NEGATIVE TO ACHIEVE PERPENDICULAR DRIVEWAY DESIGN IF THE VERTICAL CLEARANCE IS ACHIEVED IN VEHICLE TEMPLATES.
- ⑦ 1:3 MIN. 1:5 PREFERRED FOR DRIVEWAY RETROFIT PROJECTS. 1:10 PREFERRED FOR SIDEWALK REPLACEMENT PROJECTS.
- ⑧ 5.0' MIN. PAR WIDTH IS THE STANDARD THROUGH DRIVEWAYS. IF FEASIBLE WIDEN DRIVEWAY PAR WIDTH TO MATCH APPROACHING SIDEWALK PAR WIDTHS. IN VERTICALLY CONSTRAINED AREAS PAR WIDTHS CAN INCREMENTALLY BE REDUCED TO 4.5' OR 4' MIN AFTER ALL OTHER OPTIONS HAVE BEEN APPLIED.
- ⑨ THE PEDESTRIAN ACCESS ROUTE, MAY NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.
- ⑩ SIDEWALK OFFSET TO BE LESS THAN OR EQUAL TO HALF THE APPROACHING SIDEWALK WIDTH.
- ⑪ INTEGRAL DRIVEWAY APRON TO BE POURED MONOLITHICALLY/INTEGRAL WITH THE CURB AND GUTTER. SEE SHEET 2 FOR MORE INFORMATION.
- ⑫ SEE SHEET 2 FOR CURB TYPE INFORMATION.
- ⑬ 0" CURB IS AT FLOW LINE. SEE DRIVEWAY TABLE FOR BACK OF CURB HEIGHTS.
- ⑭ 3' LONG AT 8-10% PREFERRED FOR INITIAL CURB TAPER. REDUCE CURB TAPER SLOPE IF NECESSARY TO MATCH ADJACENT SIDEWALK GRADES.
- ⑮ MATCH FULL CURB HEIGHT.
- ⑯ 1:2 TAPER RATE ON INTEGRAL DRIVEWAY APRONS.
- ⑰ SEE SHEET 4 FOR WHEN 6" WALK IS REQUIRED.



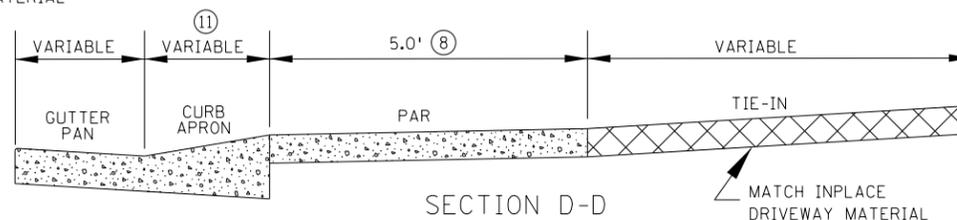
SECTION A-A



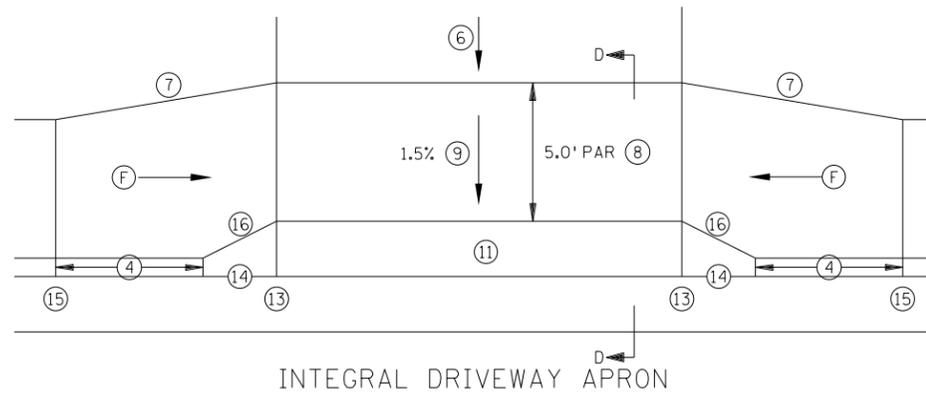
SECTION B-B



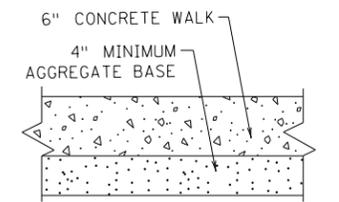
SECTION C-C



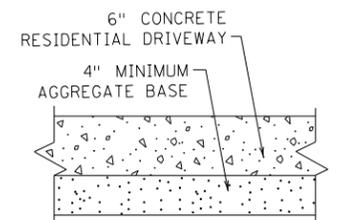
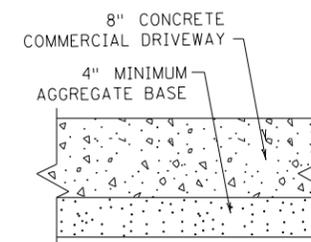
SECTION D-D



INTEGRAL DRIVEWAY APRON



TYPICAL SIDEWALK SECTION ⑰



TYPICAL DRIVEWAY SECTIONS

LEAD EXPERT OFFICE  
JEFFREY PERKINS  
OPERATIONS DIVISION

DRIVEWAY AND SIDEWALK DETAILS

APPROVED: 11-04-2021  
REVISED:

THOMAS STYRBICKI  
STATE DESIGN ENGINEER

STANDARD PLAN  
5-297.254

1 OF 4

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STANDARD PLAN

SP 002-606-014, SP 127-020-036  
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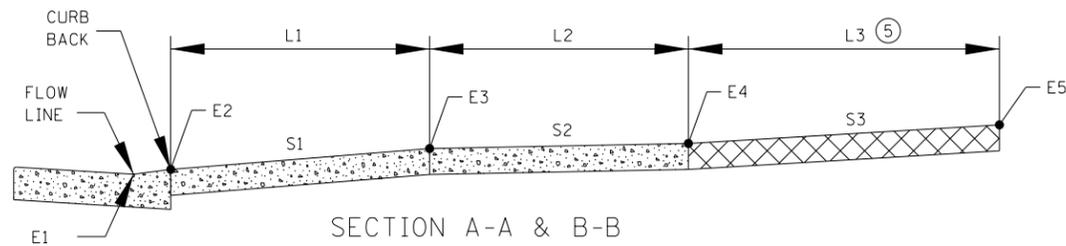
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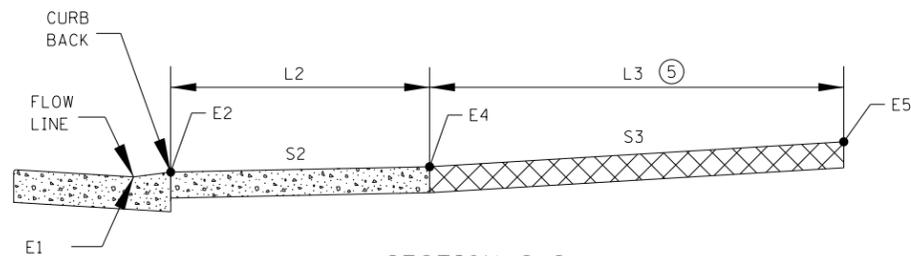
TOTAL SHEETS 118

DRIVEWAY TABULATION ①

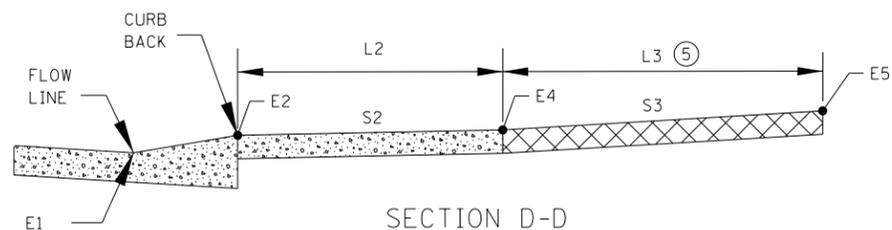
ALIGNMENT	STATION	SIDE	DRIVEWAY TYPE ②	CURB TYPE ③	E1	E2	L1	S1	E3	L2	S2 ④	E4	L3 ⑤	S3	EXISTING ⑥	E5	COMMENTS
							FT	%		FT	%		FT	%			
WBCSAH6	102+17.2	LT	PERPENDICULAR	DRIVEWAY (STR-1)	855.93	856.10	4.5	8.0	856.46	5.0	1.5	856.53	2.1	10.8	1.2	856.76	
WBCSAH6	102+78.1	LT	PERPENDICULAR	DRIVEWAY (STR-1)	855.68	855.85	4.5	4.0	856.03	5.0	1.5	856.10	5.0	-2.4	0.8	855.98	
WBCSAH6	104+17.3	LT	PERPENDICULAR	DRIVEWAY (STR-1)	855.09	855.26	4.5	8.0	855.62	5.0	1.5	855.69	5.0	-2.6	-1.2	855.56	
WBCSAH6	104+94.1	LT	PERPENDICULAR	DRIVEWAY (STR-1)	855.01	855.18	4.5	6.0	855.45	5.0	1.5	855.52	5.0	-8.4	-3.2	855.10	
WBCSAH6	106+41.4	LT	PERPENDICULAR	DRIVEWAY (STR-1)	856.07	856.24	4.5	2.0	856.33	5.0	1.0	856.38	1.0	-6.7	-3.8	856.31	
WBCSAH6	107+46.5	LT	PERPENDICULAR	DRIVEWAY (STR-1)	857.11	857.28	4.5	8.0	857.64	5.0	1.5	857.71	5.0	0.0	3.6	857.71	
WBCSAH6	107+75.3	LT	PERPENDICULAR	DRIVEWAY (STR-1)	857.40	857.57	4.5	8.0	857.93	5.0	1.5	858.00	5.0	4.2	7.0	858.21	
EBCSAH6	205+60.7	RT	PERPENDICULAR	DRIVEWAY (STR-1)	855.26	855.43	5.5	6.0	855.76	8.0	1.5	855.88	4.0	9.6	3.6	856.26	
EBCSAH6	207+43.4	RT	PERPENDICULAR	DRIVEWAY (STR-1)	857.06	857.23	5.5	6.0	857.56	8.0	1.5	857.68	4.0	2.3	1.6	857.77	
EBCSAH6	208+58.0	RT	PERPENDICULAR	DRIVEWAY (STR-1)	857.66	857.83	5.5	6.0	858.16	8.0	1.5	858.28	4.0	-2.7	0.8	858.17	
EBCSAH6	211.69.0	RT	PERPENDICULAR	DRIVEWAY (STR-1)	857.41	857.58	1.5	6.0	857.67	4.0	1.5	857.73	2.6	-1.4	5.0	857.69	



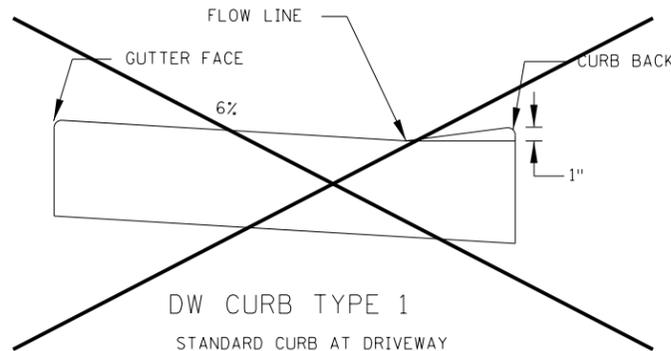
SECTION A-A & B-B  
(REFER TO PREVIOUS SHEET)



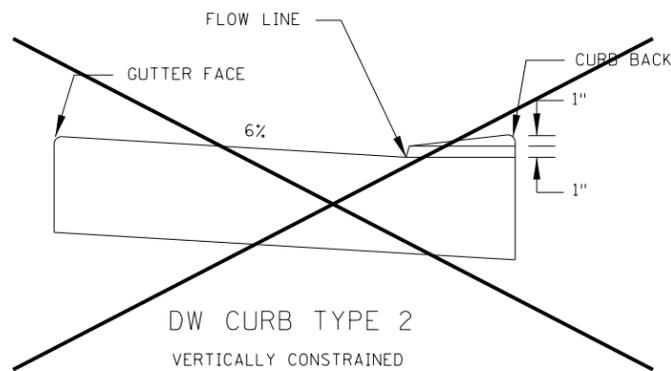
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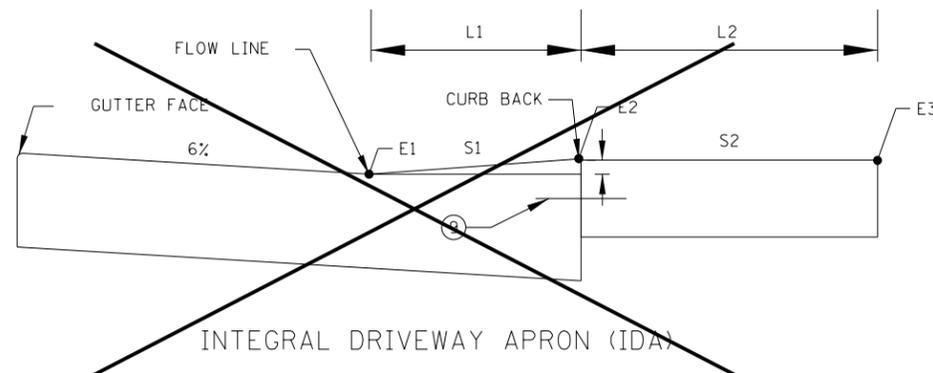
SECTION D-D  
(REFER TO PREVIOUS SHEET)



DW CURB TYPE 1  
STANDARD CURB AT DRIVEWAY



DW CURB TYPE 2  
VERTICALLY CONSTRAINED



INTEGRAL DRIVEWAY APRON (IDA)

NOTES:

- ① ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.
- ② DW CURB TYPE 1 SHALL BE USED WHEN THE DRIVEWAY ACTS AS A PEDESTRIAN RAMP. THE MAX. APRON SLOPE MUST ADHERE TO ADA CRITERIA AS WELL. DW CURB TYPE 1 SHOULD BE USED IF THERE IS ON STREET PARKING.
- ③ WHERE ROADWAY DRAINAGE IS A CONCERN (NEGATIVE SLOPED APRON) DW CURB TYPE 2 CAN BE USED TO HELP KEEP THE WATER ON PUBLIC RIGHT OF WAY.
- ④ S1 8% STANDARD, 10% MAX. COMMERCIAL AND 12% MAX. RESIDENTIAL. IF EXISTING GRADES ARE STEEPER DO NOT MAKE GRADES APPRECIABLY WORSE BY USING BEST PRACTICES SUCH AS DRIVEWAY CURB HEIGHTS, EXTENDING L3 AND/OR STEEPEN S3.
- ⑤ S3 8% MAXIMUM, IF THIS SLOPE IS EXCEEDED OR CONTINUED FOR MORE THAN 5', ANALYZE VEHICLE TEMPLATES FOR VERTICAL CLEARANCE. SEE FACILITY DESIGN GUIDE, CHAPTER 6, FOR GEOMETRIC DESIGNS OF DRIVEWAYS.
- ⑥ ① EXAMPLE SHOWN TO BE INCLUDED IN PLAN FOR EACH DRIVEWAY THAT HAS PAR THROUGH IT.
- ⑦ ② REFERS TO THE FOLLOWING TYPES; PERPENDICULAR DRIVEWAY, TIERED PERPENDICULAR OFFSET DRIVEWAY, TIERED PERPENDICULAR DRIVEWAY, PARALLEL DRIVEWAY, AND INTEGRAL DRIVEWAY APRON.
- ⑧ ③ SEE CITY OF FRIDLEY STANDARD PLATE STR-1 FOR DRIVEWAY CURB AND GUTTER.
- ⑨ ④ SHOULD BE DESIGNED AT 1.5%.
- ⑩ ⑤ ACQUIRE ADEQUATE L3 TO ALLOW FOR CONTINUOUS PAR PROFILE (UNIFORM SIDEWALK SECTION) THROUGH THE DRIVEWAY APRON.
- ⑪ ⑥ PROVIDE INPLACE TIE-IN SLOPE INFORMATION AT BACK OF PROPOSED WALK (S3 AREA).
- ⑫ ⑦ INFORMATION TO BE INCORPORATED INTO DRIVEWAY TABLE WHEN INTEGRAL DRIVEWAY APRON IS USED. OTHER CURB HEIGHTS & CURB APRON LENGTHS CAN BE USED.
- ⑬ ⑧ L1 & S1 FOR INTEGRAL DRIVEWAY APRON IS TO FLOWLINE. 12.5% IS MAXIMUM PREFERRED SLOPE.
- ⑭ ⑨ TIE ADJACENT SECTIONS. CONCRETE DRIVEWAY APRON AND CONCRETE DRIVEWAY SIDEWALK SHALL BE CONSTRUCTED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. DRILL AND GROUT OR CAST IN-PLACE THROUGH HOLES IN THE FORMS NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINT.

TYPICAL INTEGRAL DRIVEWAY APRON ⑦

CURB TYPE	L1	E2	S1 ⑧
	FT		%
IDA 216	1.33	+0.16	12.5
IDA 220	1.67	+0.16	10
IDA 324	2	+0.24	12.5
IDA 432	2.67	+0.33	12.5

MODIFIED

LEAD EXPERT OFFICE  
JEFFREY PERKINS  
OPERATIONS DIVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
Print Name: ZACHARIAH F. HEIMER  
*Zach Heimer*  
Date: 05/14/2025 License #: 58755

DRIVEWAY AND SIDEWALK DETAILS

APPROVED: 11-04-2021  
REVISED:

*Tom Styrbicki*  
THOMAS STYRBICKI  
STATE DESIGN ENGINEER

STANDARD PLAN  
5-297.254

2 OF 4



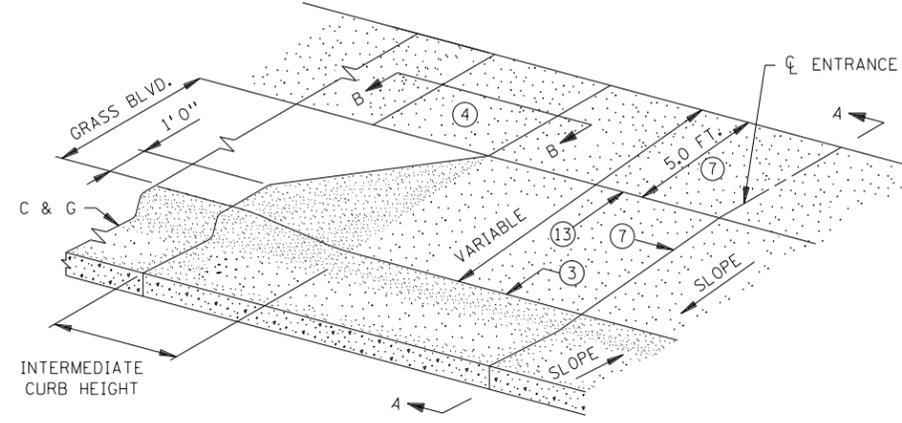
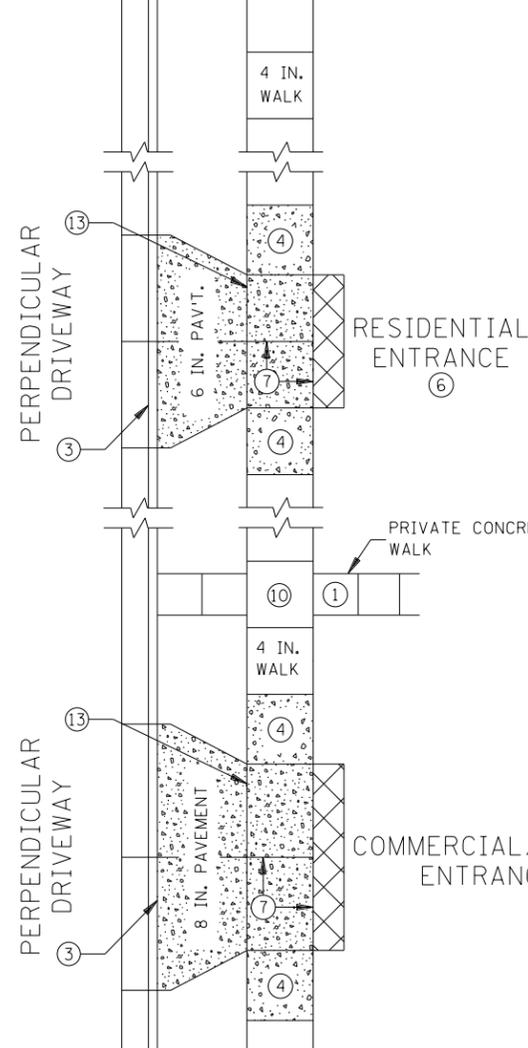
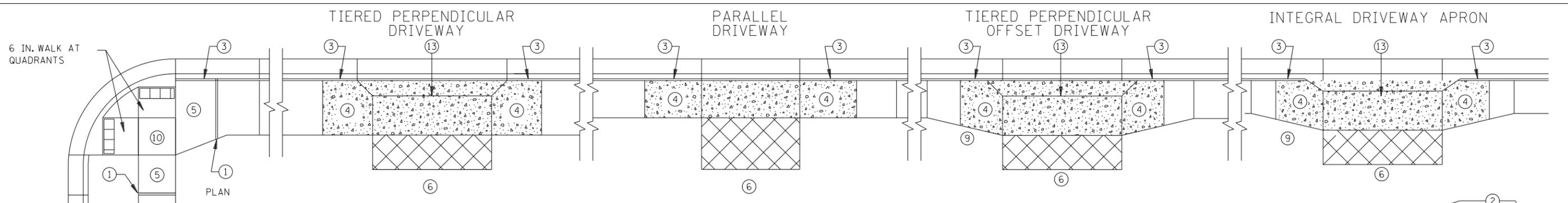
STANDARD PLAN

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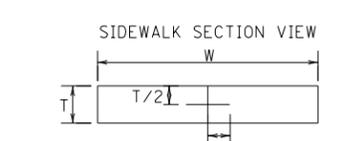
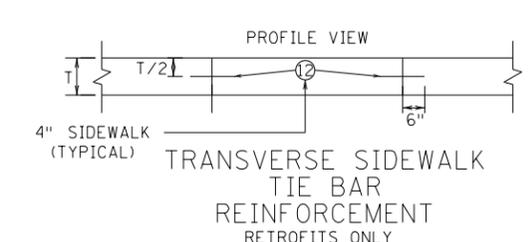
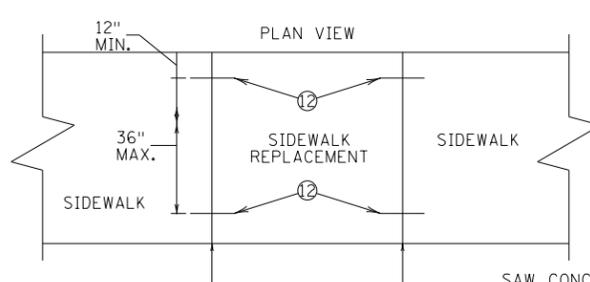
TRUNK HWY.

SHEET NO. 29

TOTAL SHEETS 118



HALF PLAN PERSPECTIVE  
PERPENDICULAR DRIVEWAYS WITH GRASS BOULEVARDS

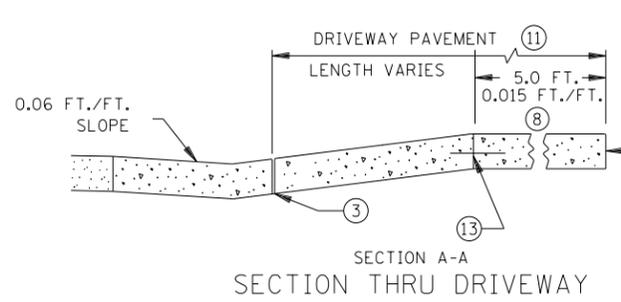


LONGITUDINAL  
REINFORCEMENT JOINTS

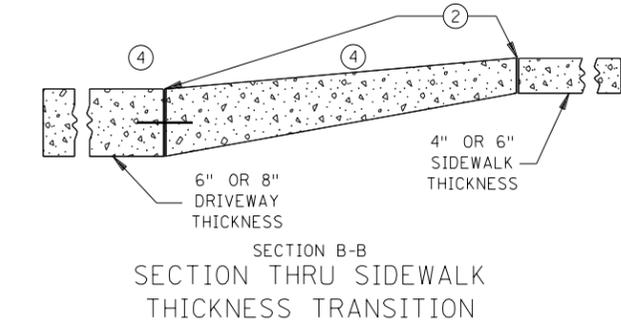
SIDEWALK LONGITUDINAL JOINT  
TIE BAR TABLE

SIDEWALK WIDTH, W	SIDEWALK THICKNESS, T	TIE BAR SIZE	LENGTH	SPACING
> 7'	4"	No. 4	12"	24"
>10'	6"	No. 4	12"	36"

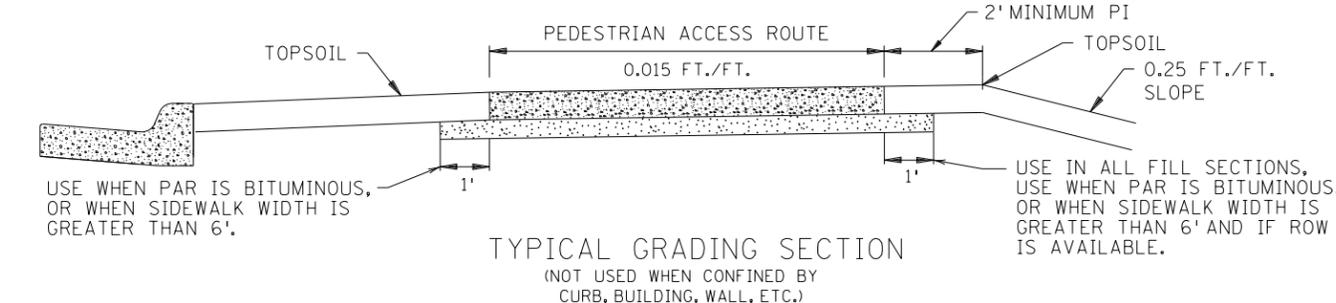
FOR 4" CONCRETE ONLY: CAST IN PLACE BARS MUST BE SUPPORTED WITH P-STAKES OR REINFORCEMENT BASKETS FOR FULL WIDTH CONCRETE PLACEMENTS.  
FOR 6" CONCRETE ONLY: DRILL AND GROUT OR CAST IN PLACE THROUGH HOLES IN THE FORMS REQUIRED FOR STAGED ADJACENT CONCRETE PLACEMENTS.



SECTION A-A  
SECTION THRU DRIVEWAY



SECTION B-B  
SECTION THRU SIDEWALK  
THICKNESS TRANSITION



TYPICAL GRADING SECTION  
(NOT USED WHEN CONFINED BY CURB, BUILDING, WALL, ETC.)

- NOTES:**
- ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.
  - TO MINIMIZE SIDEWALK "ROLLER COASTER" EFFECT IT IS DESIRABLE TO KEEP THE PAR ELEVATION CONTINUOUS OR AT LEAST IN THE UPPER HALF OF CURB HEIGHT. 4" HIGH CURB SHOULD BE USED INSTEAD OF 6" HIGH CURB TO HELP THIS PROBLEM WHEN APPLICABLE.
  - 4" HIGH ADJACENT CURB IS PREFERRED WHEN BOULEVARDS 4' OR LESS ARE PRESENT MEASURED FROM THE BACK OF CURB. WHEN THE DRIVEWAY IS SLOPING DOWN FROM THE ROADWAY (NEGATIVE) 4" HIGH ADJACENT CURB SHOULD ALSO BE USED.
  - SEE FACILITY DESIGN GUIDE, CHAPTER 6, FOR GEOMETRIC DESIGN OF DRIVEWAYS.
  - 1 CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE. DRIVEWAY EXPANSION SHALL BE PLACED AT TOP OR BOTTOM OF TRANSITION PANEL.
  - 2 CONSTRUCT WITH EXPANSION MATERIAL MNDOT PER SPEC. 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE. MAXIMUM ONE EXPANSION PER DRIVEWAY PLACED AT EITHER TOP OR BOTTOM OF CONCRETE THICKNESS TRANSITION. IF MULTIPLE DRIVEWAYS EXIST PLACE ONE EXPANSION BETWEEN EACH DRIVEWAY. IF NO DRIVEWAY EXIST PLACE A MAXIMUM OF ONE EXPANSION PER 150' OF SIDEWALK RUN.
  - 3 USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.
  - 4 TRANSITION DRIVEWAY THICKNESS TO WALK THICKNESS. IF THERE IS A CONSTRUCTION JOINT AND NO EXPANSION IS USED, INSTALL TIE BARS.
  - 5 TRANSITION CURB RAMP THICKNESS TO WALK THICKNESS.
  - 6 MATCH INPLACE DRIVEWAY WIDTH, MATERIAL TYPE AND THICKNESS.
  - 7 FORM CONTRACTION JOINT AS NEEDED TO PRODUCE APPROXIMATELY SQUARE PANELS. CONCRETE PANEL SIZE SHOULD NOT EXCEED 1 1/2 : 1 LENGTH X WIDTH. 81 SF FOR 6" CONCRETE DRIVEWAY WITH 9'X9' MAXIMUM PANEL SIZE. 144 SF FOR 8" CONCRETE DRIVEWAY WITH 12'X12' MAXIMUM PANEL SIZE. MATCH DRIVEWAY APRON AND SIDEWALK JOINTS.
  - 8 THE PEDESTRIAN ACCESS ROUTE CROSS-SLOPE, SHALL NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.
  - 9 1:10 MIN. SIDEWALK OFFSET TAPER REQUIRED FOR SIDEWALK REPLACEMENT PROJECTS. 1:3 MIN. AND 1:5 MIN. PREFERRED SIDEWALK OFFSET TAPER FOR DRIVEWAY REPLACEMENT.
  - 10 LANDING REQUIRED, SEE NEXT SHEET FOR MORE INFORMATION.
  - 11 CONCRETE DRIVEWAY APRON AND CONCRETE DRIVEWAY SIDEWALK SECTIONS SHALL BE CONSTRUCTED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. ENGINEER'S APPROVAL REQUIRED FOR MONOLITHIC PLACEMENTS.
  - 12 DRILL AND GROUT NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINTS. 1' MINIMUM FROM ADJACENT CONCRETE JOINTS. BARS TO BE ADJUSTED TO MATCH SIDEWALK GRADES. TO BE PAID BY EACH.
  - 13 DRILL AND GROUT OR CAST IN-PLACE THROUGH HOLES IN THE FORMS NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINTS. 1' MINIMUM FROM ADJACENT CONCRETE JOINTS.

LEAD EXPERT OFFICE  
JEFFREY PERKINS  
OPERATIONS DIVISION

DRIVEWAY AND SIDEWALK DETAILS

APPROVED: 11-04-2021  
REVISED: 12-23-2021

THOMAS STYRBICKI  
STATE DESIGN ENGINEER

STANDARD PLAN  
5-297.254

3 OF 4

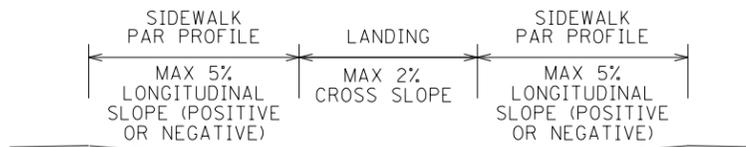


STANDARD PLAN

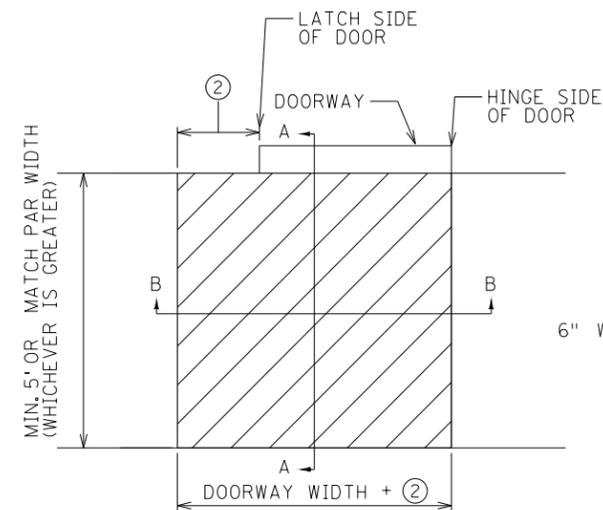
SP 002-606-014, SP 127-020-036  
SAP 002-606-014, SAP 127-020-036  
TRUNK HWY.

SHEET NO. 30  
TOTAL SHEETS 118

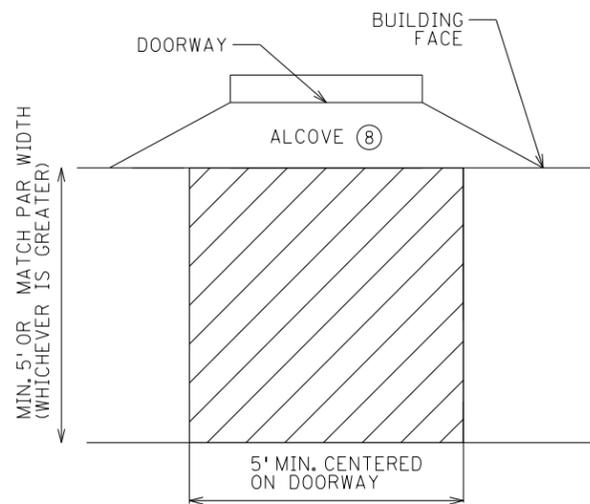
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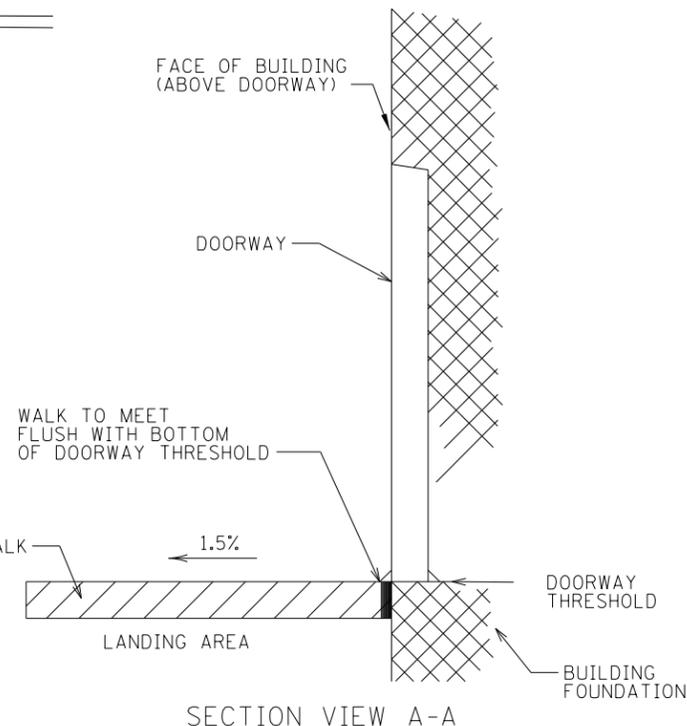
SECTION VIEW B-B



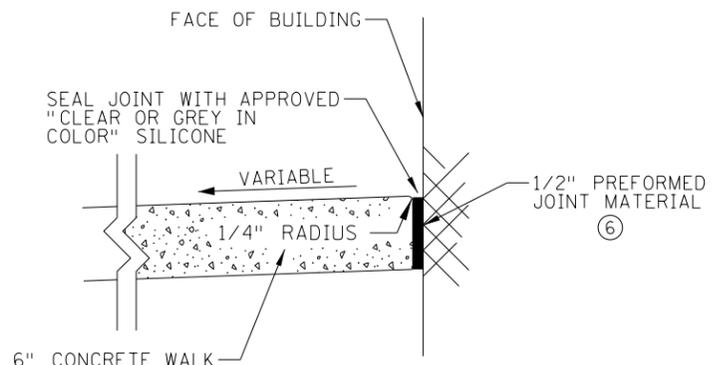
PLAN VIEW DOORWAY



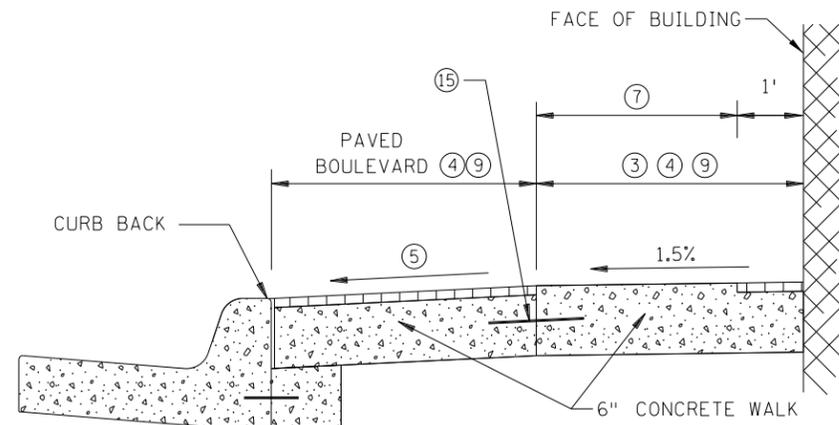
PLAN VIEW DOORWAY WITH ALCOVE  
SIDEWALK LANDING REQUIREMENTS ①



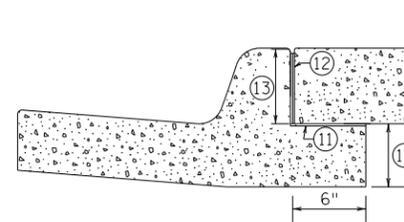
SECTION VIEW A-A



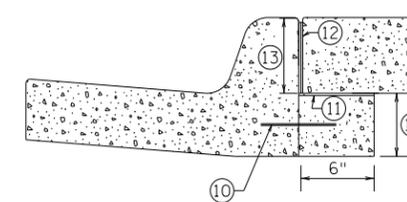
BUILDING JOINT SEAL (INCIDENTAL)



DOWNTOWN SIDEWALK TYPICAL SECTION



SLIP FORM SILL



FIXED FORM SILL

SILL CURB SHOULD BE USED AT ALL LOCATIONS WHEN CONCRETE WALK IS AT BACK OF CURB, INCLUDING PAVED BOULEVARD.  
SILL CURB SHALL NOT BE USED IN CURB RAMP AND DRIVEWAY AREAS, INCLUDING CONCRETE FLARES.  
SILL CURB WITH 4" WALK CAN USE FIXED OR SLIP FORM OPTIONS.

NOTES:

- ⑥ 6" WALK IS REQUIRED:
- ① IN ALL SIDEWALK LOCATIONS WHERE VARIABLE SLOPED CONCRETE BOULEVARDS ARE PAVED, SUCH AS COMMERCIAL (STORE FRONT, DOWNTOWN) AREAS.
- ② ANYTIME DRILL AND REINFORCEMENT IS USED TO TIE LONGITUDINAL JOINTS TOGETHER.
- ③ TO ELIMINATE LONGITUDINAL JOINT WHEN INCREASING PANEL SIZE OVER 36SF.
- ④ AT LOCATIONS WHERE MAINTENANCE EQUIPMENT WILL SUBJECT CONCRETE TO HEAVY LOADS.
- ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.
- FIELD ADJUST SIDEWALK PROFILES TO MEET ALL DOORWAY THRESHOLDS.
- SIDEWALK MUST MAINTAIN POSITIVE DRAINAGE AWAY FROM THE BUILDING TO THE ROADWAY.
- SEE SPECIAL PROVISIONS FOR SILICONE SPECIFICATIONS.
- ① LANDING CRITERIA IS REQUIRED FOR ALL DOORS, STEPS, AND PRIVATE WALKS. FEASIBILITY DECREASES WITH NARROWER BOULEVARDS AND STEEPER SIDEWALK PROFILES.
- ② 18" MIN. WHEN DOOR SWINGS OUTWARD FROM BUILDING. 12" MIN. WHEN DOOR SWINGS INWARD FROM BUILDING.
- ③ 6' MIN. PAR REQUIRED WHEN ADJACENT TO BUILDINGS.
- ④ 2/3 PAR TO 1/3 BOULEVARD SHOULD BE USED WHEN FEASIBLE. HOLD UNIFORM BOULEVARD WIDTH. 4' PREFERRED MINIMUM BOULEVARD.
- ⑤ 1%-5% FOR THE MAJORITY OF THE BLOCK, WITH EXCEPTIONS UP TO 8% IN CONSTRAINED AREAS.
- ⑥ CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A-E EXPANSION. LEAVE A MINIMUM 1/2" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.
- ⑦ TO MINIMIZE VIBRATION AND ROLLING RESISTANCE, AREA SHALL BE FREE OF PAVERS, STAMPED CONCRETE, AND/OR EXCESSIVE JOINTING.
- ⑧ 2% MAX. PER BUILDING CODE. IF GREATER THAN 2%, FLATTEN AS FEASIBLE.
- ⑨ FORM CONTRACTION JOINTS AS NEEDED TO PRODUCE APPROXIMATELY SQUARE PANEL SIZE. CONCRETE PANEL SIZE SHOULD NOT EXCEED 1 1/2 : 1 LENGTH X WIDTH.
- ⑩ DRILL AND GROUT NO. 4 X 8" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINTS. TIE BARS SHALL BE EMBEDDED 4" WITH 2" MINIMUM CONCRETE COVER AND ARE INCIDENTAL TO SILL PLACEMENT.
- ⑪ FURNISH AND INSTALL THE FULL WIDTH OF THE TOP OF SILL A MINIMUM 2ML THICK POLYTHENE SHEETING.
- ⑫ USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.
- ⑬ DIMENSION TO BE SAME AS SIDEWALK THICKNESS, 4" MIN.
- ⑭ 6" WALK: 5" MIN. FOR B424; 7" MIN. FOR B624  
4" WALK: 7" MIN. FOR B424; 9" MIN. FOR B624
- ⑮ DRILL AND GROUT NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONCRETE JOINTS.

LEAD EXPERT OFFICE  
JEFFREY PERKINS  
OPERATIONS DIVISION

DRIVEWAY AND SIDEWALK DETAILS

APPROVED: 11-04-2021  
REVISED:

THOMAS STYRBICKI  
STATE DESIGN ENGINEER

STANDARD PLAN  
5-297.254

4 OF 4

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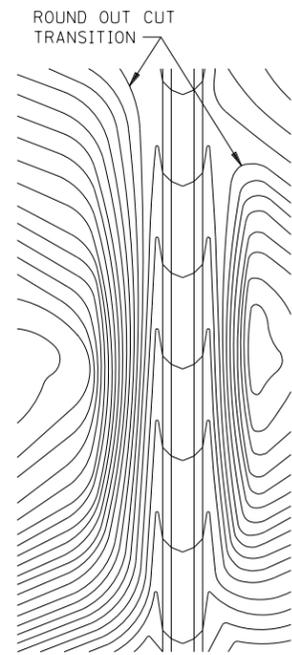
STANDARD PLAN

SP 002-606-014, SP 127-020-036  
SAP 002-606-014, SAP 127-020-036

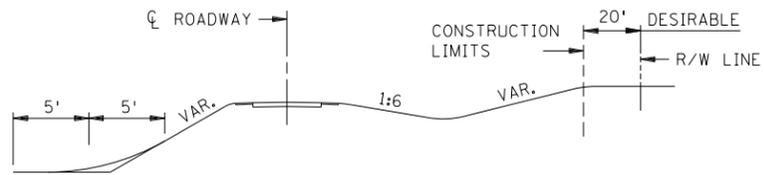
TRUNK HWY.

SHEET NO. 31

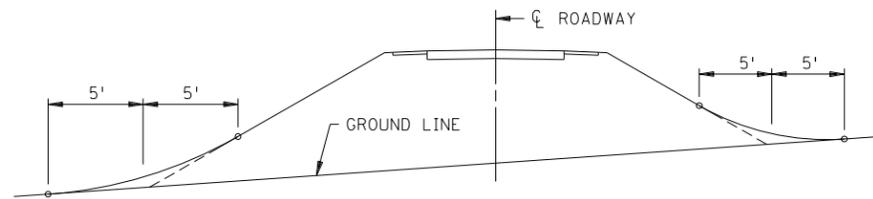
TOTAL SHEETS 118



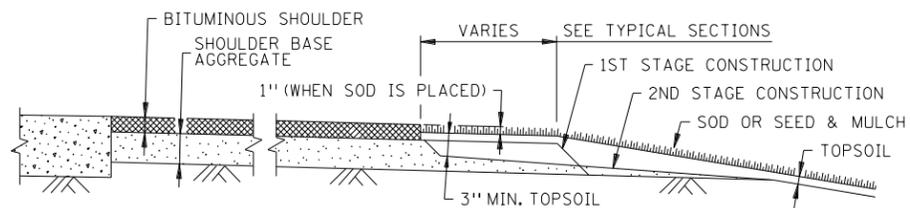
CONTOURING ROAD CUTS



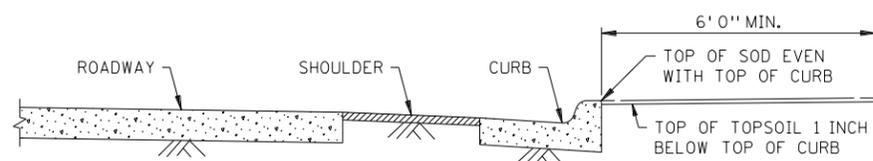
ROUNDING SHOULDERS AND BACKSLOPES



SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES

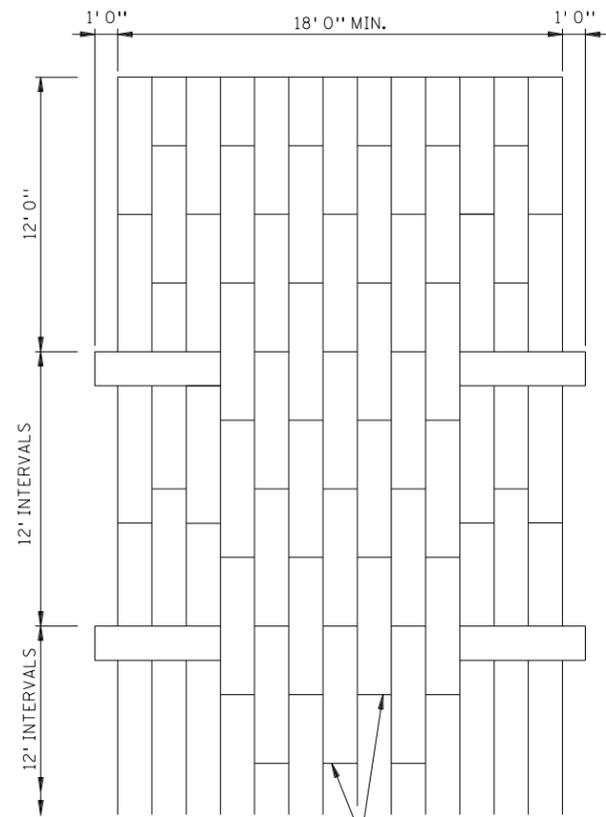


SHAPING AND TOPSOILING INSLOPES

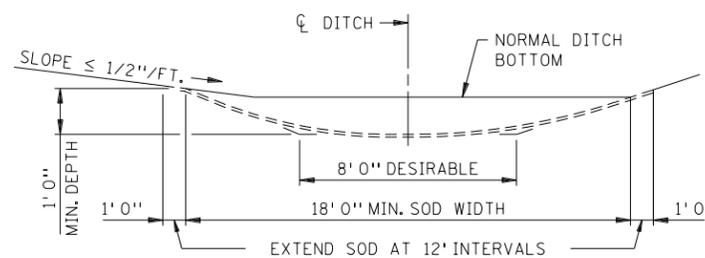


SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

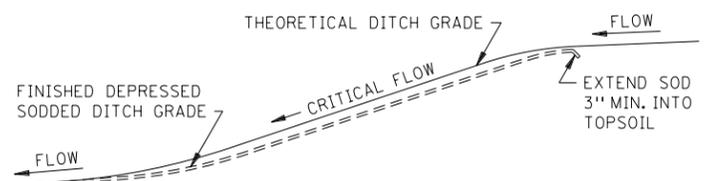
NOTES:  
 SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.  
 ① CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.



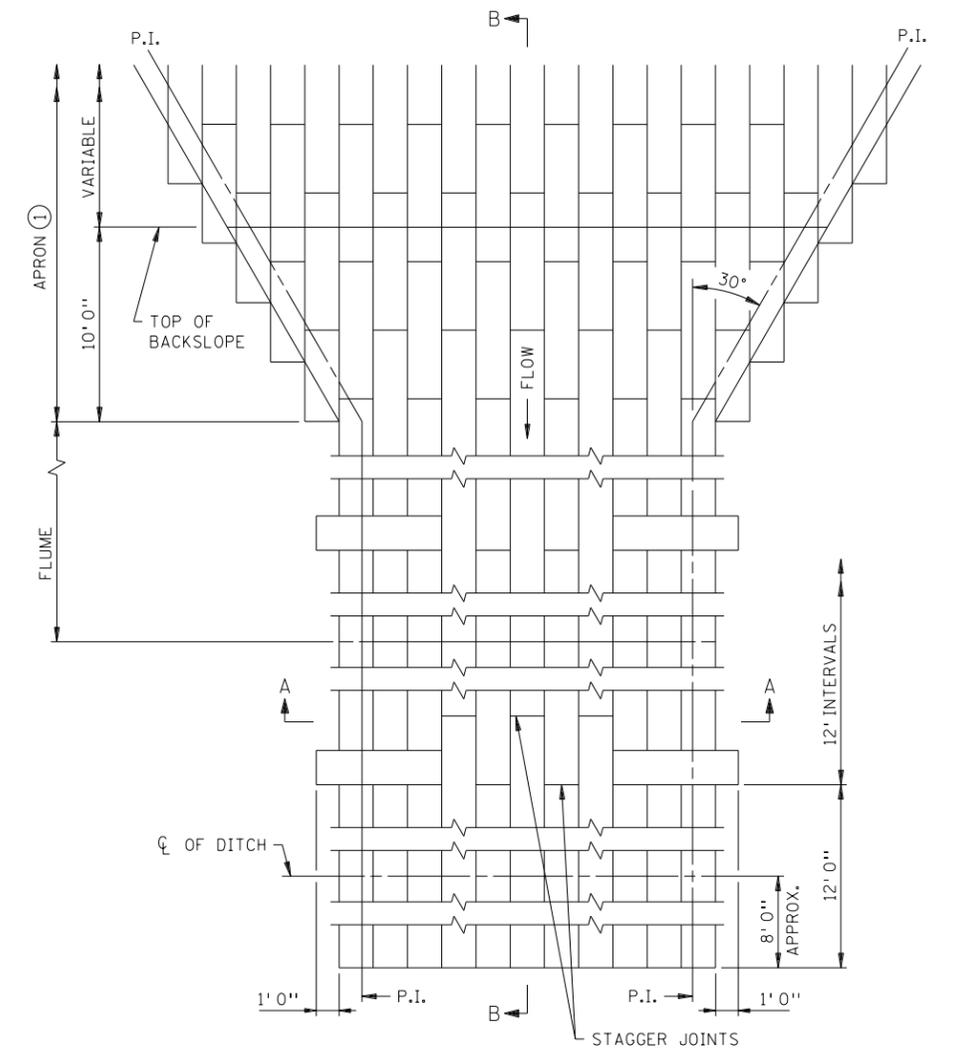
PLAN VIEW



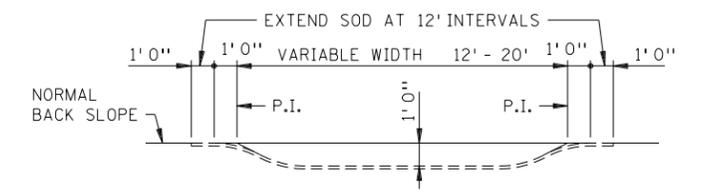
SODDED DITCH CROSS SECTION  
 WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT.),  
 FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.



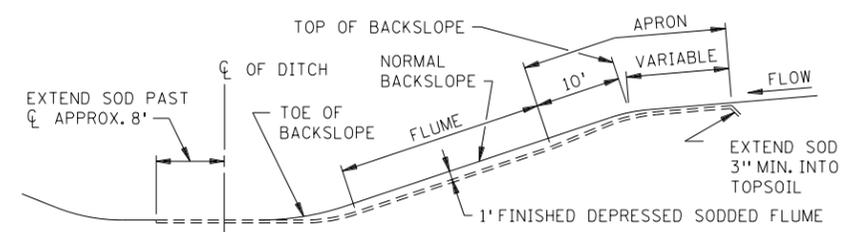
DITCH PROFILE  
 SODDED DITCH DETAILS



PLAN VIEW



SECTION A-A



SECTION B-B

SODDED FLUME DETAILS

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**LEAD EXPERT OFFICE**  
 LYNN CLARKOWSKI  
 CHIEF ENVIRONMENTAL OFFICER  
 OFFICE OF ENVIRONMENTAL STEWARDSHIP



**PERMANENT EROSION CONTROL**  
 ALONG ROADWAYS, DITCHES AND FLUMES

APPROVED: 02-28-2017  
 REVISED:

*Thomas Styrbicki*  
 THOMAS STYRBICKI  
 STATE DESIGN ENGINEER

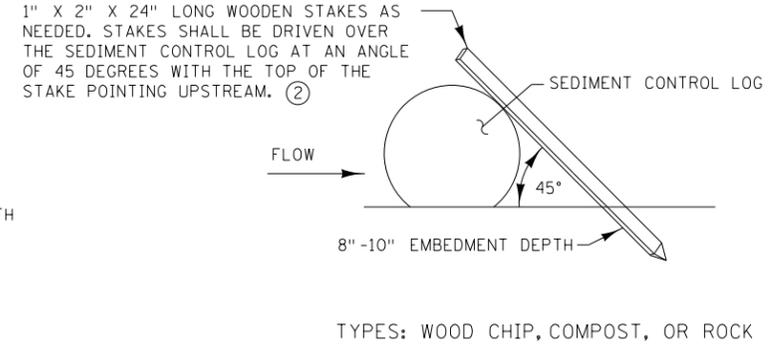
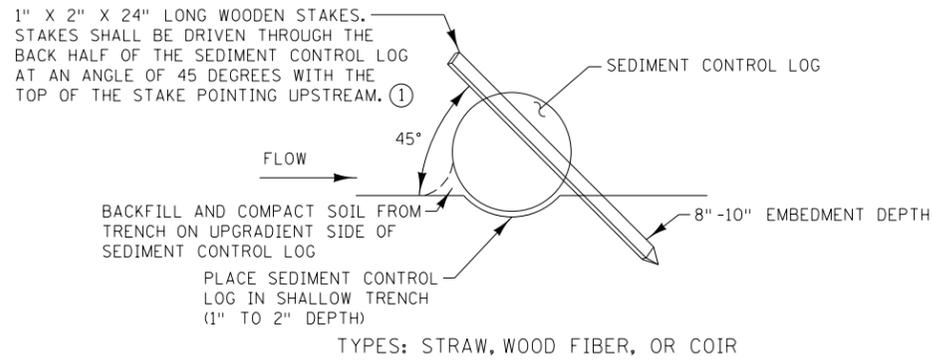
**STANDARD PLAN**  
 5-297.404

1 OF 3

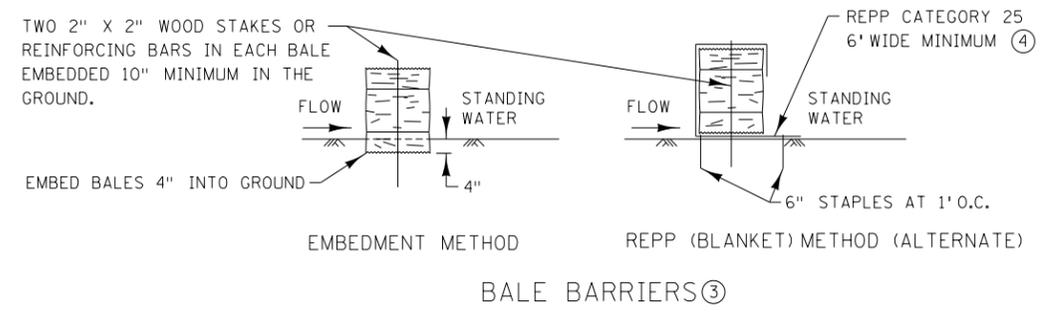
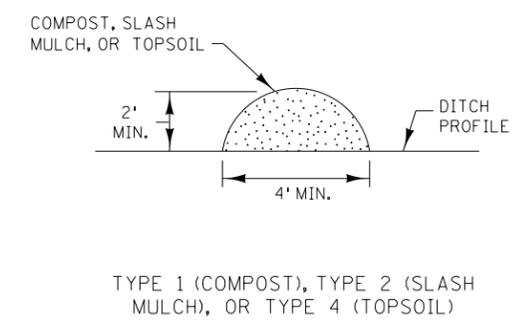
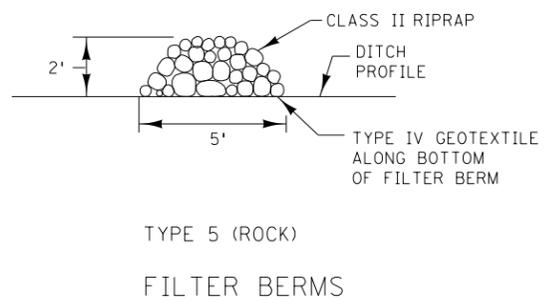
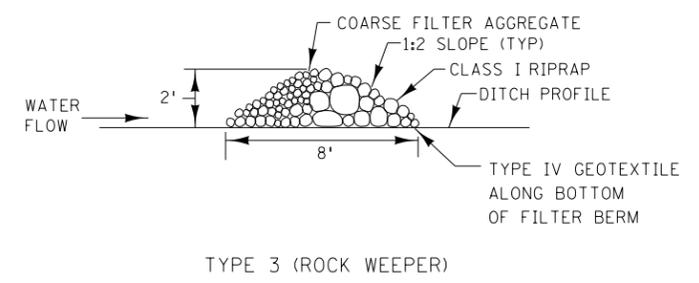
STANDARD PLAN

SP 002-606-014, SP 127-020-036  
 SAP 002-606-014, SAP 127-020-036  
 TRUNK HWY.

SHEET NO. 32  
 TOTAL SHEETS 118



SEDIMENT CONTROL LOGS



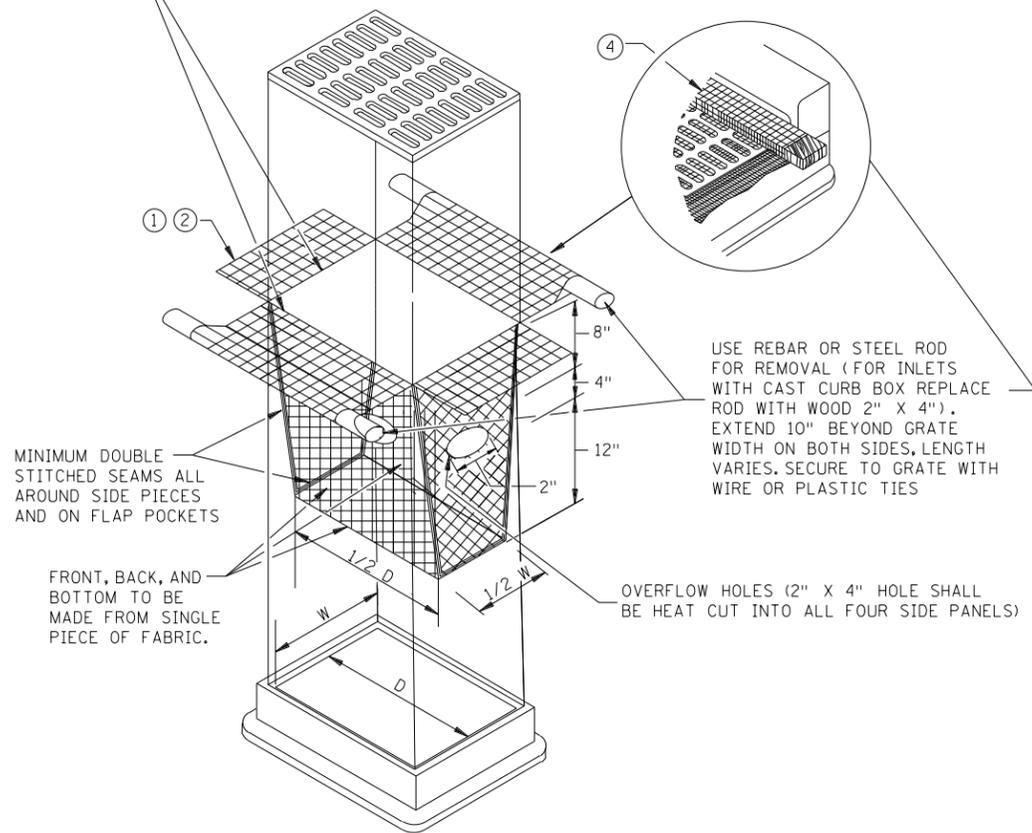
NOTES:

- REPP = ROLLED EROSION PREVENTION PRODUCT.
- SEE SPECS. 2573, 3149, 3874, 3882, 3885, 3886, AND 3897.
- ① SPACE BETWEEN STAKES SHALL BE A MAXIMUM OF 1' FOR DITCH CHECKS OR 2' FOR OTHER APPLICATIONS.
- ② PLACE STAKES AS NEEDED TO PREVENT MOVEMENT OF SEDIMENT CONTROL LOGS PLACED ON SLOPES OR AS NEEDED DUE TO OTHER FACTORS. STAKES SHALL BE INCIDENTAL.
- ③ TO BE USED FOR CRITICAL PERIMETER CONTROL AREAS WHERE STANDING WATER OCCURS (6" MAXIMUM DEPTH). BALES SHALL CONSIST OF TYPE 1 MULCH OF APPROXIMATELY 14" X 18" X 36" LONG. BALES SHALL BE PLACED ON EDGE AND BUTTED TIGHT TO ADJACENT BALES.
- ④ INSTEAD OF TRENCHING, PLACE BALE ON THE REPP (BLANKET) AND WRAP BLANKET AROUND THE BALE. PLACE STAKE THROUGH BALE AND BLANKET.

<b>LEAD EXPERT OFFICE</b> MARNI KARNOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRONMENTAL STEWARDSHIP		<b>TEMPORARY SEDIMENT CONTROL</b> FILTER BERMS, SEDIMENT CONTROL LOGS, AND BALE BARRIERS		APPROVED: 01-08-2020 REVISED:	 THOMAS STYRBICKI STATE DESIGN ENGINEER	<b>STANDARD PLAN</b> 5-297.405	2 OF 8
		<b>STANDARD PLAN</b>	SP 002-606-014, SP 127-020-036 SAP 002-606-014, SAP 127-020-036	SHEET NO. <b>33</b>			
		<b>STANDARD PLAN</b>		TRUNK HWY.	TOTAL SHEETS <b>118</b>		

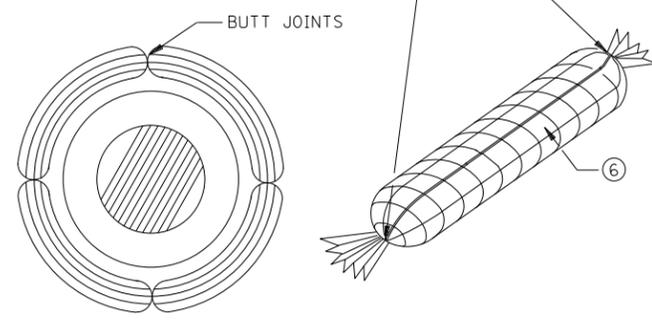
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INLET SPECIFICATIONS AS PER THE PLAN DIMENSION LENGTH AND WIDTH TO MATCH FLAP POCKET

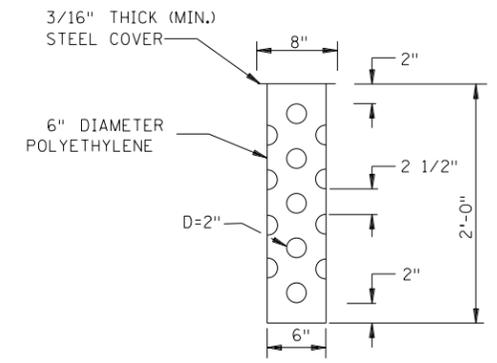


**FILTER BAG INSERT (3)**  
(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX)

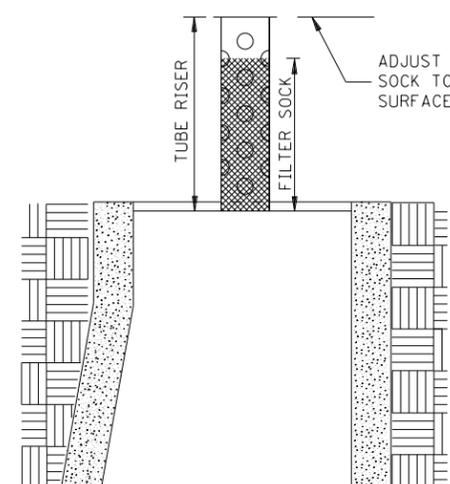
ENDS SECURELY CLOSED TO PREVENT LOSS OF OPEN GRADED AGGREGATE FILL. SECURED WITH 50 PSI. ZIP TIE.



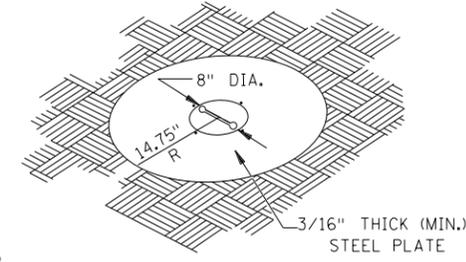
**ROCK LOG/COMPOST LOG**



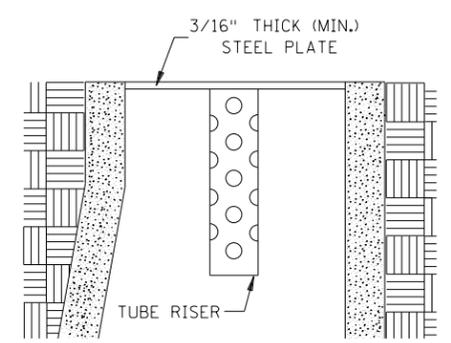
**TUBE RISER**



**SECTION (UP POSITION)**

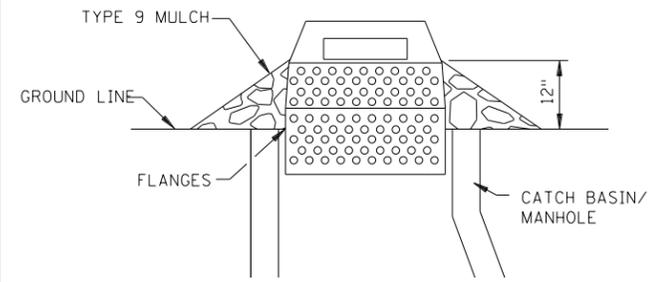


**PERSPECTIVE VIEW**



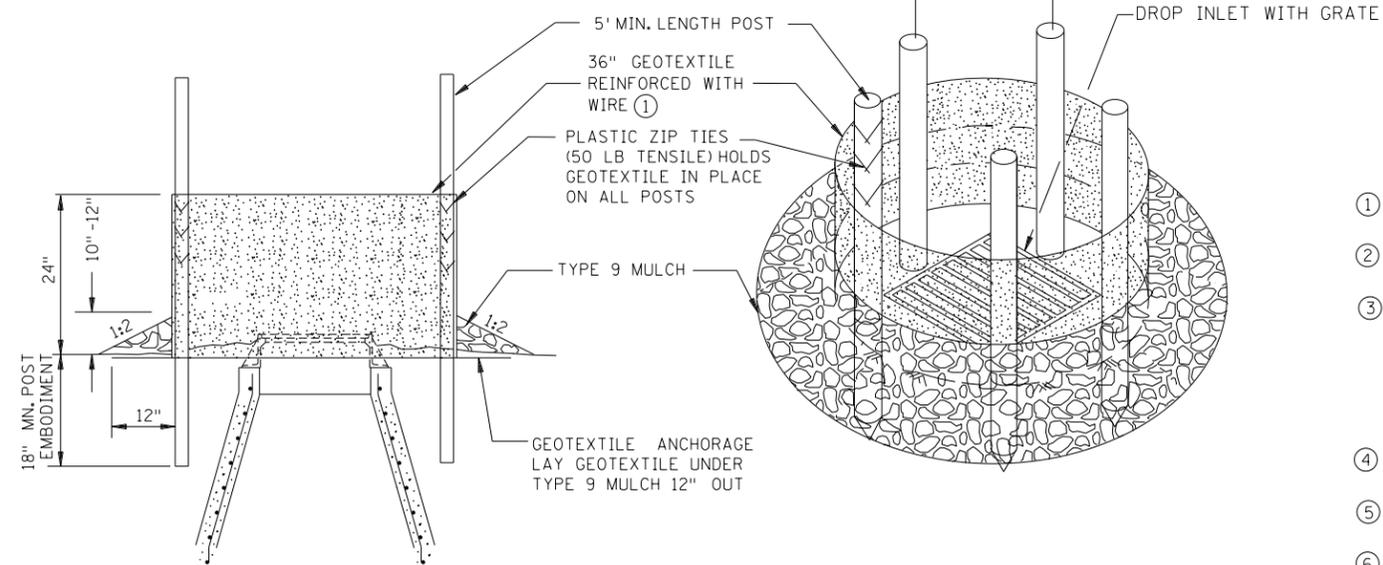
**SECTION (DOWN POSITION)**

**POP-UP HEAD**



**SEDIMENT CONTROL INLET HAT**

NOTE:  
THE SEDIMENT CONTROL BARRIER SHALL BE A METAL OR PLASTIC/POLYETHYLENE RISER SIZED TO FIT INSIDE THE CATCH BASIN/MANHOLE; HAVE PERFORATIONS TO ALLOW FOR WATER INFILTRATION; HAVE AN OVERFLOW OPENING, FLANGES AND A LID/COVER.



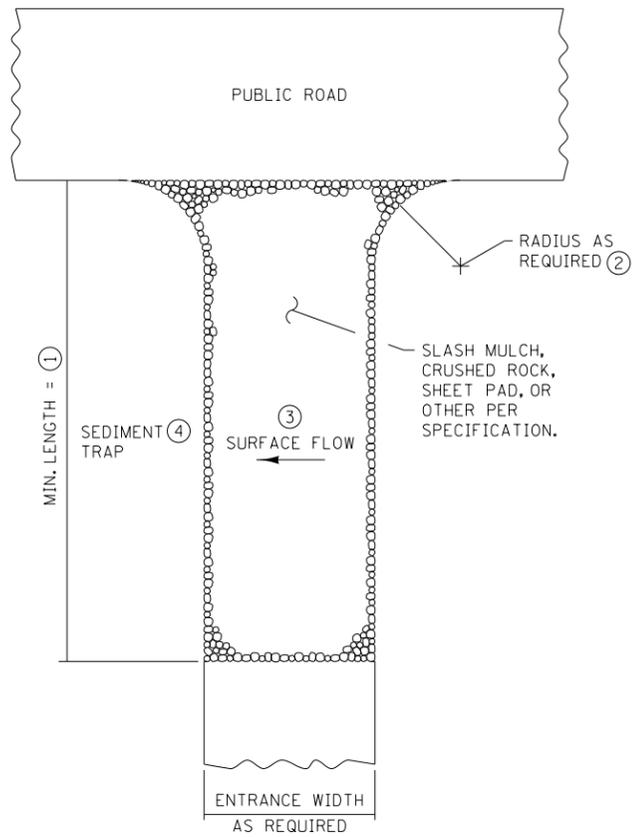
**SILT FENCE RING AND ROCK FILTER BERM**  
USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 OR LESS

**NOTES:**

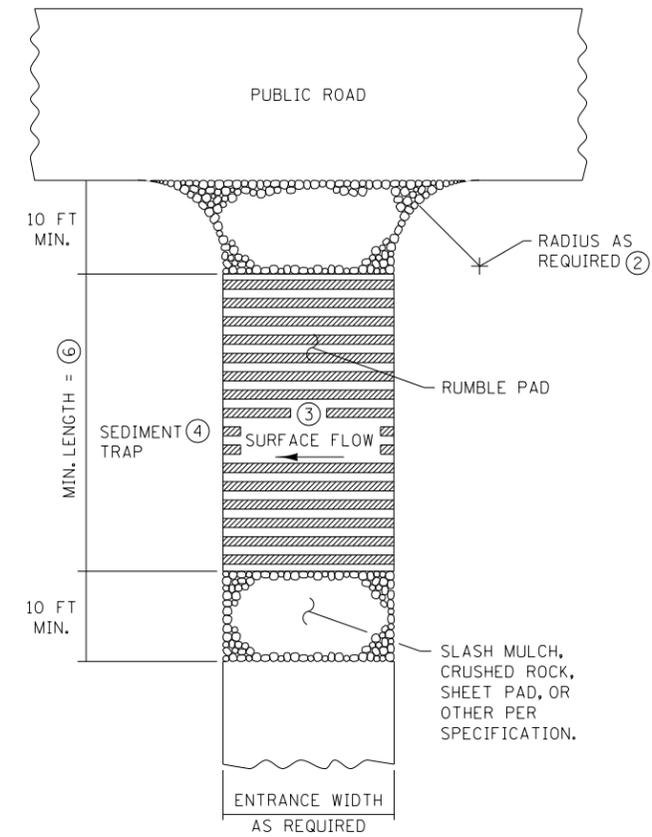
- SEE SPECS. 2573, 3137, & 3886.
- DEVICES MUST BE ADJUSTED ACCORDINGLY AS TO NOT CAUSE FLOODING ON ROADWAY THAT WOULD IMPEED TRAFFIC FLOW.
- (1) ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.
- (2) FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- (3) INSTALLATION NOTES:  
DO NOT PLACE FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE PLACED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE OF 3 INCHES BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES. WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3 INCH SIDE CLEARANCE.
- (4) FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2 INCH X 4 INCH OR USE A ROCK SOCK OR SAND BAGS IN PLACE OF THE FLAP POCKETS.
- (5) SOCK HEIGHT MUST NOT BE SO HIGH AS TO SLOW DOWN WATER FILTRATION TO CAUSE FLOODING OF THE ROADWAY.
- (6) GEOTEXTILE SOCK BETWEEN 4-10 FEET LONG AND 4-6 INCH DIAMETER. SEAM TO BE JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR PROVIDE A HEAT BONDED SEAM (OR APPROVED EQUIVALENT). FILL ROCK LOG WITH OPEN GRADED AGGREGATE CONSISTING OF SOUND DURABLE PARTICLES OF COARSE AGGREGATE CONFORMING TO SPEC. 3137 TABLE 3137-1; CA-3 GRADATION.

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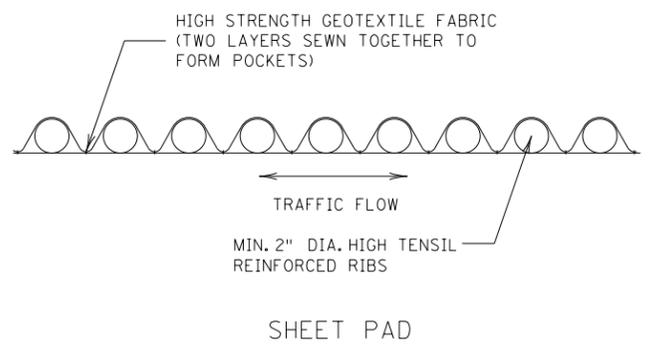
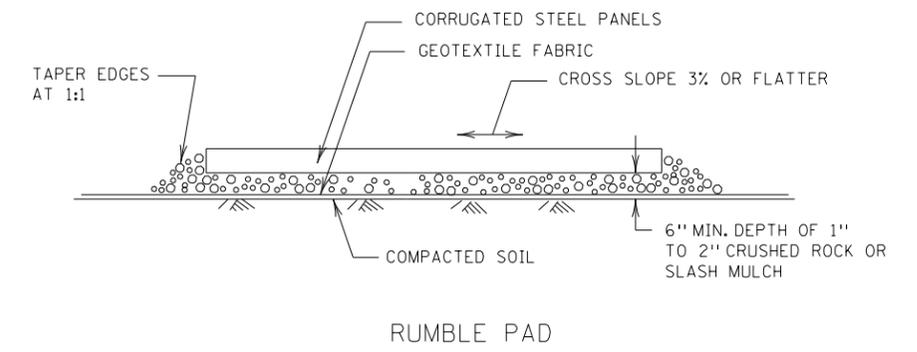
<b>LEAD EXPERT OFFICE</b> LYNN CLARKOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRONMENTAL STEWARDSHIP		<b>TEMPORARY SEDIMENT CONTROL</b> STORM DRAIN INLET PROTECTION		APPROVED: 02-28-2017 REVISED:	 THOMAS STYRBICKI STATE DESIGN ENGINEER	<b>STANDARD PLAN</b> 5-297.405	4 OF 8
		<b>STANDARD PLAN</b>		SP 002-606-014, SP 127-020-036 SAP 002-606-014, SAP 127-020-036 TRUNK HWY.		SHEET NO. <b>34</b> TOTAL SHEETS <b>118</b>	



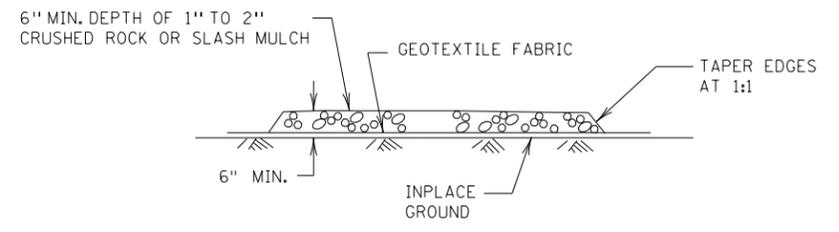
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT ⑤⑦



RUMBLE PAD CONSTRUCTION EXIT ⑤⑦



SHEET PAD



SLASH MULCH OR CRUSHED ROCK

- NOTES:  
SEE SPECS. 2573 & 3882.
- ① MINIMUM LENGTH SHALL BE THE GREATER OF 50 FEET OR A LENGTH SUFFICIENT TO ALLOW A MINIMUM OF 5 TIRE ROTATIONS ON THE PROVIDED PAD. MINIMUM LENGTH SHALL BE CALCULATED USING THE LARGEST TIRE WHICH WILL BE USED IN TYPICAL OPERATIONS.
  - ② PROVIDE RADIUS OR WIDEN PAD SUFFICIENTLY TO PREVENT VEHICLE TIRES FROM TRACKING OFF OF PAD WHEN LEAVING SITE.
  - ③ IF RUNOFF FROM DISTURBED AREAS FLOWS TOWARD CONSTRUCTION EXITS, PREVENT RUNOFF FROM DRAINING DIRECTLY TO PUBLIC ROAD OVER CONSTRUCTION EXIT BY CROWNING THE EXIT OR SLOPING TO ONE SIDE. IF SURFACE GRADING IS INSUFFICIENT, PROVIDE OTHER MEANS OF INTERCEPTING RUNOFF.
  - ④ IF RUNOFF FROM CONSTRUCTION EXITS WILL DRAIN OFF OF PROJECT SITE, PROVIDE SEDIMENT TRAP WITH STABILIZED OVERFLOW.
  - ⑤ IF A TIRE WASH OFF IS REQUIRED THE CONSTRUCTION EXITS SHALL BE GRADED TO DRAIN THE WASH WATER TO A SEDIMENT TRAP.
  - ⑥ MINIMUM LENGTH OF RUMBLE PAD SHALL BE 20 FEET, OR AS REQUIRED TO REMOVE SEDIMENT FROM TIRES. IF SIGNIFICANT SEDIMENT IS TRACKED FROM THE SITE, THE RUMBLE PAD SHALL BE LENGTHENED OR THE DESIGN MODIFIED TO PROVIDE ADDITIONAL VIBRATION. WASH-OFF LENGTH SHALL BE AS REQUIRED TO EFFECTIVELY REMOVE CONSTRUCTION SEDIMENT FROM VEHICLE TIRES.
  - ⑦ MAINTENANCE OF CONSTRUCTION EXITS SHALL OCCUR WHEN THE EFFECTIVENESS OF SEDIMENT REMOVAL HAS BEEN REDUCED. MAINTENANCE SHALL CONSIST OF REMOVING SEDIMENT AND CLEANING THE MATERIALS OR PLACING ADDITIONAL MATERIAL (SLASH MULCH OR CRUSHED ROCK) OVER SEDIMENT FILLED MATERIAL TO RESTORE EFFECTIVENESS.

**LEAD EXPERT OFFICE**  
LYNN CLARKOWSKI  
CHIEF ENVIRONMENTAL OFFICER  
OFFICE OF ENVIRONMENTAL STEWARDSHIP

**TEMPORARY SEDIMENT CONTROL**  
STABILIZED CONSTRUCTION EXIT

APPROVED: 02-28-2017  
REVISED:

*Thomas Styrbicki*  
THOMAS STYRBICKI  
STATE DESIGN ENGINEER

**STANDARD PLAN**  
5-297.405

5 OF 8



STANDARD PLAN

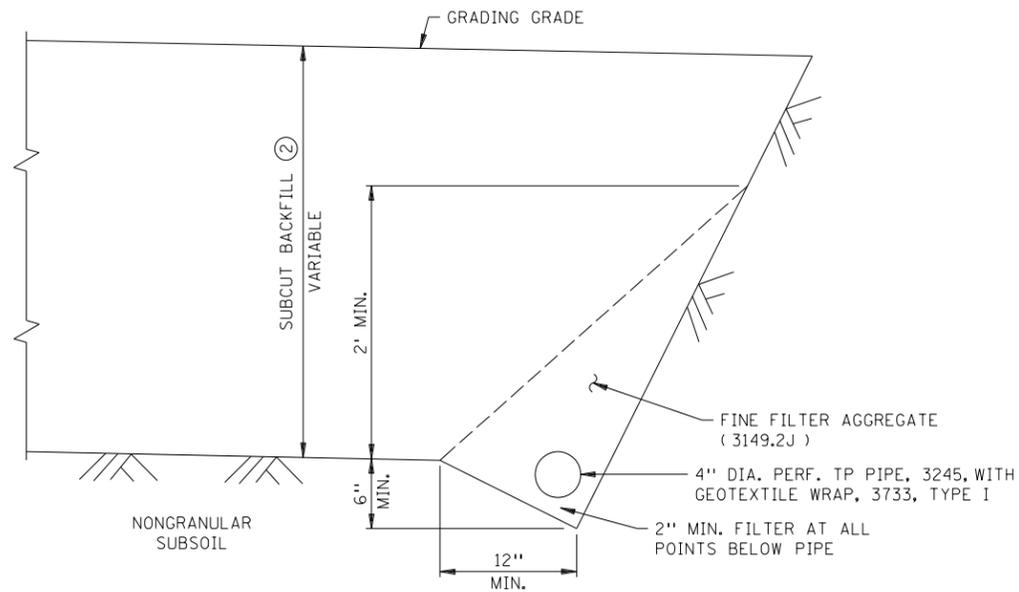
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SAP 002-606-014, SAP 127-020-036

TRUNK HWY.

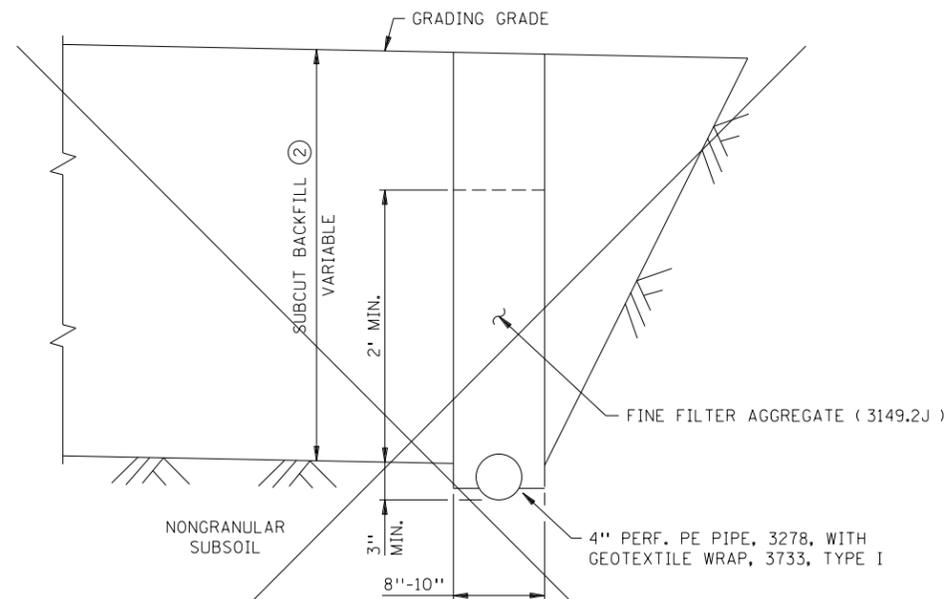
SHEET NO. 35

TOTAL SHEETS 118

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TYPICAL SECTION ( OPTION NO. 1 ) ①

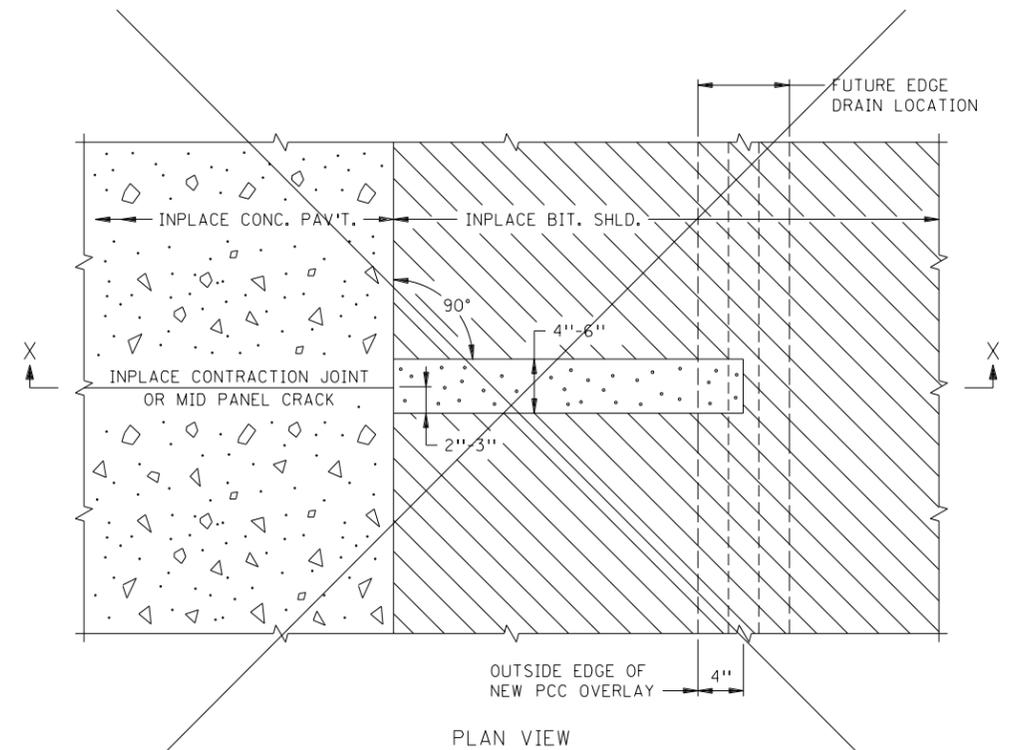


TYPICAL SECTION ( OPTION NO. 2 ) ①

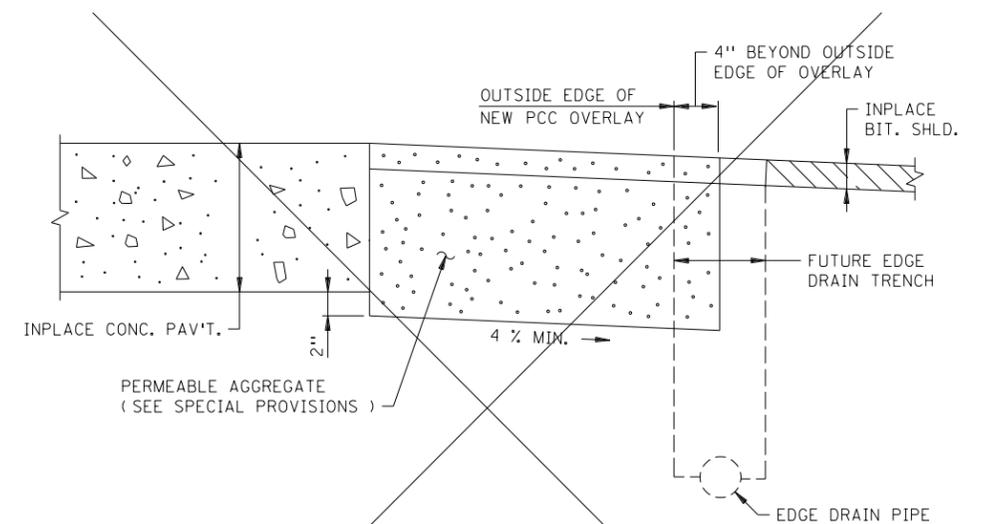
SUBSURFACE DRAIN, SUBCUT DRAIN TYPE

NOTES:

- ① MAY NEED TO BE MODIFIED FOR SPECIFIC PROJECTS. SEE SPECIAL PROVISIONS FOR MATERIAL AND CONSTRUCTION DETAILS. OPTION NO. 2 MAY ONLY BE USED WHEN PIPE IS TO BE PLACED BY MACHINE TRENCHER.
- ② GRANULAR, SELECT GRANULAR OR SELECT GRANULAR MODIFIED. ( AS SHOWN IN DESIGN RECOMMENDATION LETTER ).



PLAN VIEW



SECTION X-X  
INTERCEPTOR DRAIN DETAIL ①

NOTE:  
① SEE SPECIAL PROVISIONS FOR MATERIAL AND CONSTRUCTION DETAILS.

MODIFIED

LEAD EXPERT OFFICE

GLENN ENGSTROM  
DIRECTOR  
OFFICE OF MATERIALS  
& ROAD RESEARCH

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

Print Name: ZACHARIAH F. HEIMER

*Zach Heimer*  
Date: 05/14/2025 License #: 58755

SUBSURFACE DRAINS

APPROVED: 08-06-2014  
REVISED:

*Christopher Roy*  
CHRISTOPHER ROY

STANDARD PLAN  
5-297.430

1 OF 1

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STANDARD PLAN

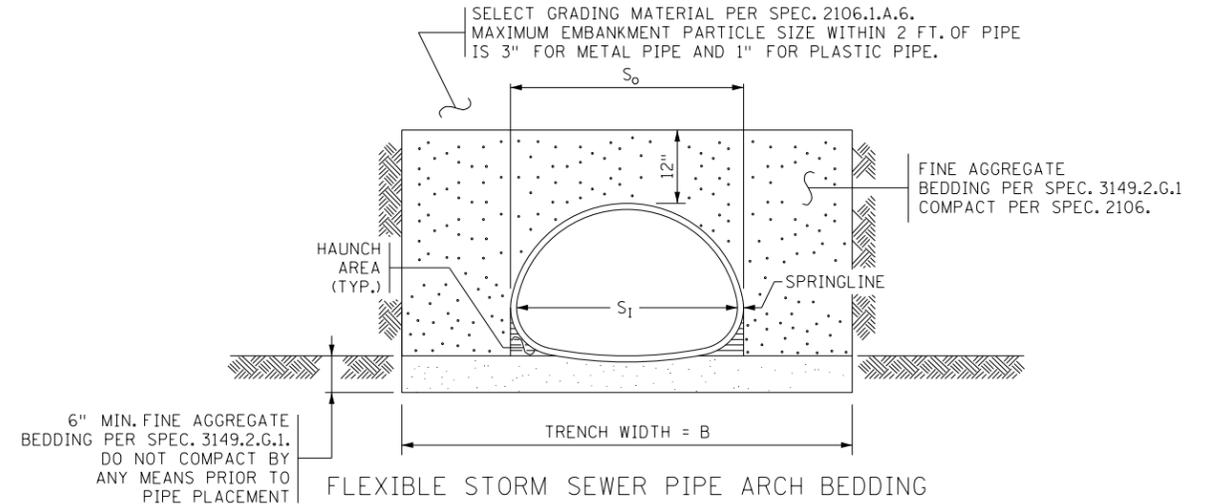
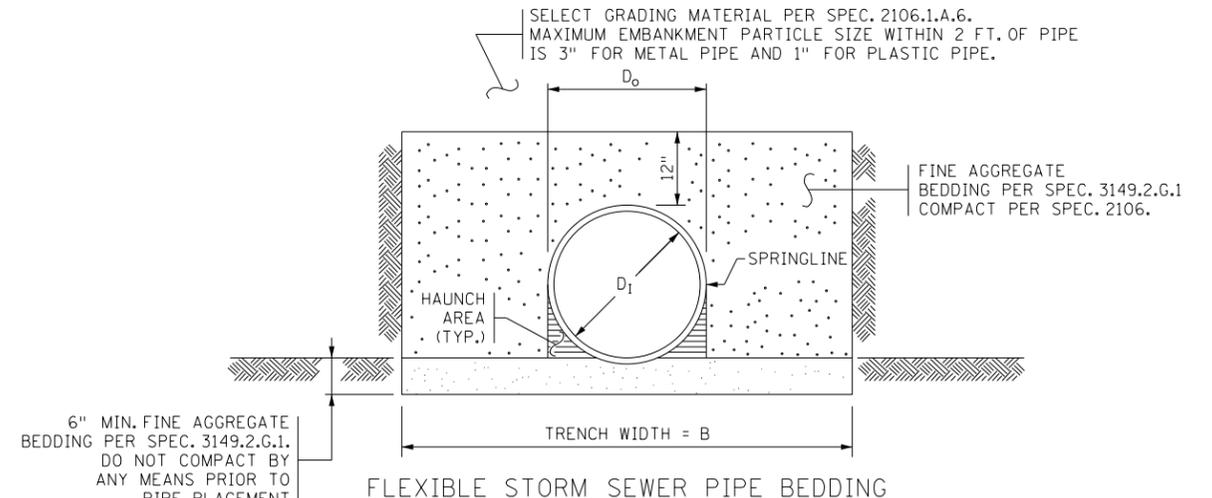
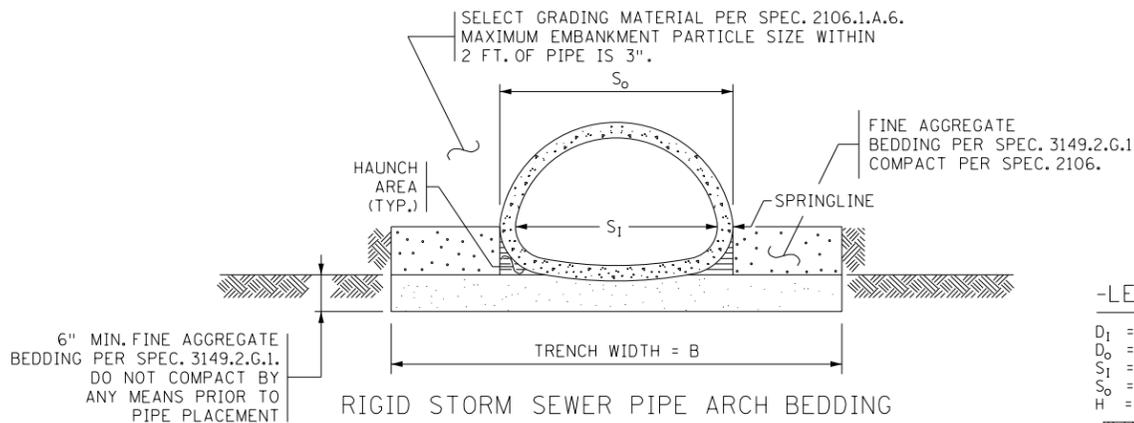
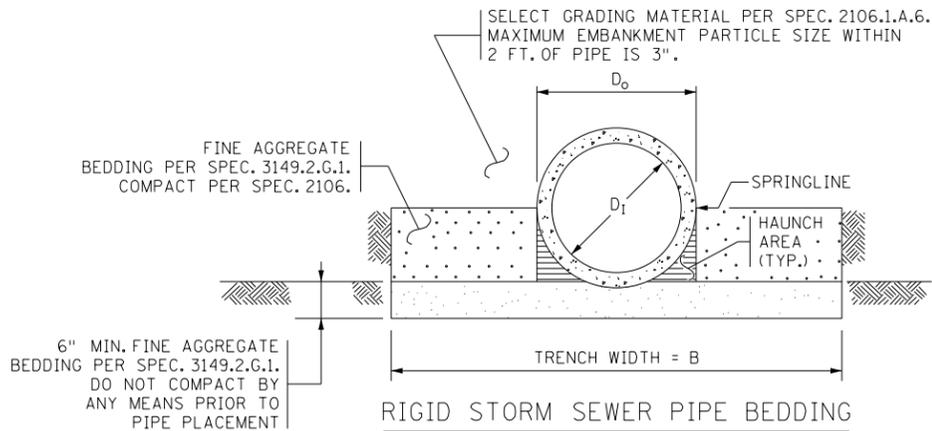
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TRUNK HWY.

SHEET NO. 36  
TOTAL SHEETS 118

TRENCH BASE WIDTH ①②	
PIPE DIA. $D_1$ OR $S_1$	TRENCH WIDTH B
< 42"	$D_0 + 24"$
42" TO 54"	$1.5 \times D_0$
> 54"	$D_0 + 36"$

PLASTIC PIPE WITH H > 10 FT. ①②	
PIPE DIA.	TRENCH WIDTH (FEET)
12"	5'-2"
15"	5'-6"
18"	5'-9"
24"	6'-6"
30"	8'-0"
36"	9'-6"
42"	11'-0"
48"	12'-6"

**-LEGEND-**  
 $D_1$  = INSIDE DIAMETER OF ROUND PIPE (INCHES).  
 $D_0$  = OUTSIDE DIAMETER OF ROUND PIPE (INCHES).  
 $S_1$  = INSIDE SPAN OF PIPE-ARCH (INCHES).  
 $S_0$  = OUTSIDE SPAN OF PIPE-ARCH (INCHES).  
H = FILL COVER HEIGHT OVER PIPE (FEET).  
 = UNDISTURBED SOIL  
 = COMPACTED BEDDING  
 = LOOSE BEDDING, COMPACTED AFTER PIPE PLACEMENT



**CONSTRUCTION SEQUENCE**

1. LOOSELY PLACE 6" OF FINE AGGREGATE BEDDING MATERIAL TO GRADE. DO NOT COMPACT PRIOR TO PIPE PLACEMENT.
2. FOR PIPES WITH BELL, REMOVE MATERIAL IN BELL AREA PRIOR TO PLACEMENT.
3. FURNISH AND INSTALL PIPE TO GRADE.
4. AFTER PLACEMENT OF THE PIPE, PLACE ADDITIONAL FINE AGGREGATE BEDDING AND COMPACT THE FULL LENGTH ON BOTH SIDES OF THE PIPE UNDERNEATH THE HAUNCH AREA BY FIRST SHOVEL SLICING (MANUALLY SHOVEL THE BLADE END OF SHOVEL AT AN ANGLE DOWN THE ENTIRE LENGTH OF HAUNCH UNDER THE PIPE). THEN COMPACT THE HAUNCH AT AN ANGLE USING A POWERED MECHANICAL OR PNEUMATIC DEVICE (I.E. POLE TAMPER, JUMPING JACK, OR SIMILAR).
5. COMPACT THE REMAINING MATERIAL OUTSIDE THE HAUNCH AREA TO THE REQUIREMENTS OF SPEC. 2106 ENSURING THAT THE ENTIRE LENGTH OF PIPE IS SUPPORTED UNIFORMLY BY BEDDING.
6. PLACE AND COMPACT BACKFILL EVENLY AND SIMULTANEOUSLY IN 6" LIFTS ON EACH SIDE OF THE PIPE UP TO THE SPRINGLINE FOR RIGID PIPE AND 12" ABOVE THE TOP OF THE PIPE FOR FLEXIBLE PIPE WHEN COMPACTED.
7. COMPLETE REMAINING BACKFILL.

**NOTES**

- EXCAVATE & CONSTRUCT ALL TRENCHES AND SLOPES PER OSHA REQUIREMENTS.
- PIPE SIZE IS BASED ON THE NOMINAL INSIDE DIAMETER OR SPAN.
- PROTECT ALL PIPE DURING CONSTRUCTION PER SPEC. 2503.
- WHEN RIPRAP IS REQUIRED AT THE APRON END, SEE STANDARD PLATE OR PLAN FOR RIPRAP INSTALLATION AND QUANTITIES. FOR APRONS WITHOUT RIPRAP PLACE 6" MIN. FINE AGGREGATE BEDDING UNDER APRONS. USE A TRENCH WIDTH EQUAL TO THE PIPE TRENCH WIDTH.
- FINE AGGREGATE BEDDING INCLUDING THE COST OF EXCAVATION, PLACEMENT AND COMPACTION IS INCLUDED IN THE CONTRACT UNIT PRICE OF THE RELEVANT STORM SEWER PAY ITEM.
- EXCAVATION AND BACKFILL WITH SELECT GRADING MATERIAL ARE NOT TABULATED SEPARATELY BUT ARE INCLUDED IN THE CONTRACT UNIT PRICE OF THE RELEVANT STORM SEWER PAY ITEM.
- RIGID PIPE INCLUDES CONCRETE. FLEXIBLE PIPE INCLUDES METAL, AND PLASTIC MATERIALS SUCH AS CORRUGATED POLYPROPYLENE (PP), CORRUGATED POLYETHYLENE (CP) AND POLYVINYL CHLORIDE (PVC).
- ① MODIFY TRENCH WIDTH & SLOPE AS NECESSARY TO COMPLY WITH OSHA REQUIREMENTS.
- ② USE PLASTIC PIPE TABLE FOR TRENCH WIDTHS WHEN FILL HEIGHT IS GREATER THAN 10 FT.

**LEAD EXPERT OFFICE**  
KEVIN WESTERN  
STATE BRIDGE ENGINEER

**STANDARD STORM SEWER BEDDING FOR RIGID AND FLEXIBLE PIPE**

APPROVED: 01-18-2019  
REVISED:

*Thomas Styrbicki*  
THOMAS STYRBICKI  
STATE DESIGN ENGINEER

**STANDARD PLAN 5-297.442**

1 OF 1

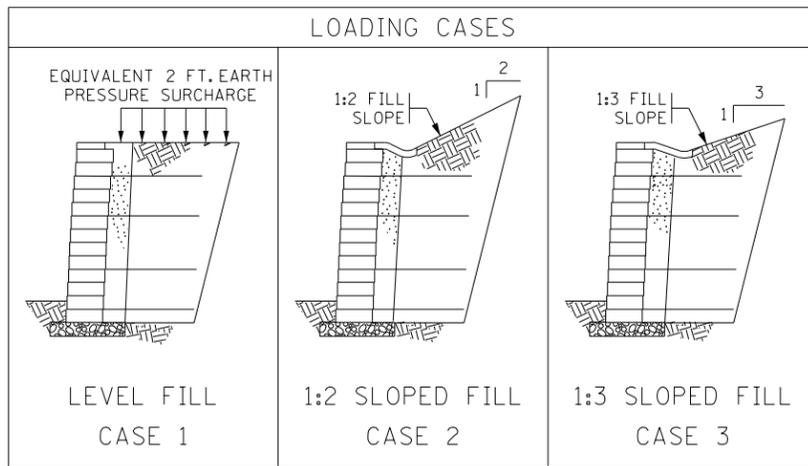


STANDARD PLAN

SP 002-606-014, SP 127-020-036  
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TRUNK HWY.

SHEET NO. 37  
TOTAL SHEETS 118

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**SAMPLE OF ESTIMATED QUANTITIES TABULATION FOR MODULAR BLOCK WALLS** ③

	UNIT	QUANTITY
STRUCTURE EXCAVATION CLASS ---	CU. YD.	
STRUCTURAL BACKFILL (CV)	CU. YD.	
④ STRUCTURAL CONCRETE (1P42)	CU. YD.	
④ COARSE FILTER AGGREGATE	CU. YD.	
① ② ④ MODULAR BLOCK RETAINING WALL	SQ. FT.	
TYPE 1 GEOTEXTILE	SQ. YD.	

- ① VERTICAL FACE AREA OF MODULAR BLOCK AS MEASURED FROM PLAN TOP OF WALL TO 2 FT. BELOW FINISHED GRADE AT BOTTOM OF WALL.
- ② PAY ITEM FOR MBW WALLS SHALL BE 2411.
- ③ REFER TO TABULATIONS / ESTIMATE SHEETS FOR QUANTITIES.
- ④ FOR USE AS LEVELING PAD.

**DEFINITION OF TERMS**

MBW	= MODULAR BLOCK WALL
C.I.P.	= CAST-IN-PLACE
H	= WALL HEIGHT FROM TOP OF CAP TO BOTTOM OF LOWERMOST BLOCK UNIT
S	= VERTICAL REINFORCEMENT SPACING
REINFORCEMENT COVERAGE RATIO	= WIDTH OF SOIL REINFORCEMENTS TO HORIZONTAL SPACING (100% COVERAGE RATIO REQUIRED)

**NOTES TO CONTRACTOR:**

APPROVED COMBINATIONS OF MODULAR BLOCK UNIT AND SOIL REINFORCEMENT AND APPROVED MODULAR BLOCK UNIT PRODUCTS ARE MAINTAINED BY THE FOUNDATION UNIT (GEOTECHNICAL ENGINEERING SECTION) AND ARE POSTED AT <https://www.dot.state.mn.us> ONLY APPROVED PRODUCT COMBINATIONS AND APPROVED BLOCK UNITS PRODUCED FROM APPROVED SOURCES SHALL BE USED.

PROVIDE DETAILED SHOP DRAWINGS FOR CONSTRUCTION CONTAINING:

- A COPY OF MnDOT STANDARD SHEETS FOR LOADING CASE(S) USED WITH BLOCK TYPE AND SPACING NOTED ON THE "MODULAR BLOCK WALL REINFORCEMENT LAYOUT" TABLE.
- ELEVATION VIEW WITH REINFORCEMENT PLACEMENT REQUIREMENTS, WALL FACING LAYOUT, AND GEOMETRIC INFORMATION. TOP OF WALL MAY EXTEND UP TO 4" ABOVE PLAN TOP OF WALL ELEVATION.
- PLAN VIEW WITH BOTTOM AND TOP OF WALL ALIGNMENT, AND PLAN LIMITS OF WALL ALIGNMENT.
- CROSS SECTIONS DETAILING BATTER, REINFORCEMENT, VERTICAL SPACING, REINFORCEMENT LENGTHS, SUBSURFACE DRAINAGE, SURFACE DRAINAGE, AND WATER RUNOFF COLLECTION ABOVE WALL.
- REINFORCEMENT LAYOUT: REINFORCEMENT SHALL BE PLACED AT 100% COVERAGE RATIO. REINFORCEMENT ELEVATIONS SHALL BE CONSISTENT ACROSS LENGTH OF WALL STRUCTURE.
- BLOCK, REINFORCEMENT AND FILL PLACEMENT METHODS AND REQUIREMENTS.
- DETAIL ALL WALL FILL PENETRATIONS AND WALL FACE PENETRATIONS. DETAIL REINFORCEMENT AND/OR WALL FACING UNIT PLACEMENT AROUND PENETRATIONS. VERTICAL PENETRATIONS GREATER THAN 1 FT. DIAMETER REQUIRE A STRUCTURAL GEOGRID DIVERSION SYSTEM AND/OR PREINSTALLED SLEEVES.
- DETAILS THAT ARE SPECIFIC TO VENDOR PRODUCTS AND THEIR INTERACTION WITH OTHER PROJECT COMPONENTS.
- LIST INFORMATION ON APPROVED COMBINATION OF MBW UNIT AND GEOSYNTHETIC REINFORCEMENT, INCLUDING MnDOT CLASSIFICATION CODE, NOMINAL BLOCK WIDTH, PROPERTIES FOR FIELD IDENTIFICATION, AND INSTALLATION INSTRUCTIONS.
- DETAILS OF CAP UNITS AND INSTALLATION/FASTENING INSTRUCTIONS FOR THE CAPS. CAP UNITS SHALL BE SET IN A BED OF ADHESIVE DESIGNED TO WITHSTAND MOISTURE AND TEMPERATURE EXTREMES, REMAIN FLEXIBLE, AND SHALL BE SPECIFICALLY FORMULATED FOR BONDING MASONRY TO MASONRY.
- CERTIFICATION BY PROFESSIONAL ENGINEER EXPERIENCED IN MBW DESIGN THAT THE CONSTRUCTION LAYOUT MEETS THE REQUIREMENTS OF PLANS AND MnDOT MBW STANDARDS. DEVIATION FROM STANDARD DESIGN TABLES ARE PERMITTED BY VALUE ENGINEERING SUBMITTAL ONLY ON PROJECTS WITH OVER 5000 SQ. FT. OF WALL.
- CONTRACTOR MUST PROVIDE AN MBW SUBMITTAL THAT DETAILS EROSION PREVENTION AND PERMANENT PLANT STABILIZATION. THE SUBMITTAL MUST ALSO MEET THE REQUIREMENTS OF SPEC. 1712.2.

**DESIGN CRITERIA**

DESIGN CRITERIA FOLLOWS THE "AASHTO LRFD BRIDGE DESIGN SPECIFICATION" (7TH EDITION, 2014) EXCEPT FOR THE DEVIATIONS NOTED BELOW. DESIGN CRITERIA ARE IN ACCORDANCE WITH MnDOT POLICY, AS RECORDED IN THE MnDOT ROAD DESIGN MANUAL, OR FACILITY DESIGN GUIDE.

- A. THE MINIMUM REINFORCEMENT LENGTH IS 7 FT. FROM THE FRONT OF THE BLOCK OR 0.8H FOR CASE 1 AND CASE 3 AND 1.2H FOR CASE 2, WHICHEVER IS GREATER.
- B. THE REINFORCEMENT FILL FRICTION ANGLE IS 34°.
- C. THE LATERAL EARTH PRESSURE COMPUTATION FOR EXTERNAL STABILITY CALCULATIONS USES AN INTERFACE FRICTION ANGLE SET EQUAL TO THE RETAINED BACKFILL ANGLE.
- D. THE LATERAL EARTH PRESSURE COMPUTATION FOR INTERNAL STABILITY CALCULATIONS USES THE EFFECTS OF WALL FACE BATTER.

**LOAD FACTORS - STRENGTH LIMIT STATE**

HORIZONTAL EARTH PRESSURE ( $\gamma_{EH}$ ) = 1.5 FOR EXTERNAL STABILITY  
 HORIZONTAL EARTH PRESSURE ( $\gamma_{EH}$ ) = 1.35 FOR INTERNAL STABILITY  
 VERTICAL PRESSURE FROM DEAD LOAD OF EARTH FILL ( $\gamma_{EV}$ ) = 1.35 FOR BEARING CAPACITY  
 VERTICAL PRESSURE FROM DEAD LOAD OF EARTH FILL ( $\gamma_{EV}$ ) = 1.0 FOR SLIDING AND PULL OUT  
 EQUIVALENT EARTH PRESSURE SURCHARGE ( $\gamma$ ) = 1.35

**RESISTANCE FACTORS - STRENGTH LIMIT STATE**

BEARING  $\phi_{BR}$  = 0.65  
 DIRECT SLIDING  $\phi_{DS}$  = 1.0  
 GEOGRID STRENGTH  $\phi$  = 0.9  
 GEOGRID BLOCK CONNECTION STRENGTH  $\phi$  = 0.9  
 GEOGRID PULLOUT  $\phi$  = 0.9

SEE FOUNDATION REPORT FOR NOMINAL SOIL BEARING RESISTANCE OF FOUNDATION SOIL.

CASE 1 AND 3 - NOMINAL SOIL BEARING RESISTANCE OF 2000 PSF IS REQUIRED FOR WALLS UP TO 12 FT IN HEIGHT. FOR WALLS GREATER THAN 12 FT IN HEIGHT, THE REQUIRED NOMINAL BEARING RESISTANCE IS EQUAL TO 2000 PSF + (H-10)(1500 PSF) WHERE H IS IN FEET.

CASE 2 - NOMINAL SOIL BEARING RESISTANCE OF 2500 PSF IS REQUIRED FOR WALLS UP TO 12 FT IN HEIGHT. FOR WALLS GREATER THAN 12 FT IN HEIGHT, THE REQUIRED NOMINAL BEARING RESISTANCE IS EQUAL TO 2500 PSF + (H-10)(2200 PSF) WHERE H IS IN FEET.

**REINFORCED WALL FILL CHARACTERISTICS:**

- A. USE STRUCTURAL BACKFILL (SPEC. 3149.2D2)
- B. INTERNAL ANGLE OF FRICTION ( $\phi_r$ ) = 34° MINIMUM
- C. COHESION (C) = 0
- D. MOIST UNIT WEIGHT ( $\gamma_r$ ) = 125 PCF

**COARSE FILTER AGGREGATE CHARACTERISTICS:**

- A. COARSE FILTER AGGREGATE TO MEET SPEC. 3149.2H.

**RETAINED BACKFILL CHARACTERISTICS:**

- A. INTERNAL ANGLE OF FRICTION ( $\phi_b$ ) = 30°
- B. COHESION (C) = 0
- C. MOIST UNIT WEIGHT ( $\gamma_b$ ) = 120 PCF

**FOUNDATION SOILS CHARACTERISTICS:**

- A. INTERNAL ANGLE OF FRICTION ( $\phi_f$ ) = 30°
- B. COHESION (C) = 0
- C. UNIT WEIGHT ( $\gamma_f$ ) = 120 PCF

**BASIS OF DESIGN:**

IN ADDITION TO THE STANDARD SHEETS, INCLUDE PLAN AND FRONT ELEVATION VIEWS OF THE MODULAR BLOCK RETAINING WALLS IN THE PLANS. THE PLAN VIEW MUST SHOW ALIGNMENT BASELINE, LIMITS OF BOTTOM OF WALL ALIGNMENT, AND LIMITS OF TOP OF WALL ALIGNMENT AS ALIGNMENTS VARY WITH BATTER OF WALL SYSTEM ACTUALLY SUPPLIED. THE FRONT ELEVATION MUST IDENTIFY BOTTOM AND TOP OF WALL ELEVATIONS, EXISTING GRADES, AND FINISHED GRADES.

IF THE WALL IS CURVED, THE RADIUS AT THE BOTTOM AND THE TOP OF EACH WALL SEGMENT AND THE P.C. AND P.T. STATION POINTS OFF OF BASELINE AND LIMITS OF BOTTOM AND TOP OF WALL ALIGNMENT MUST BE SHOWN.

REFERENCE STANDARD PLATES AND PROVIDE DETAILS FOR TRAFFIC BARRIERS, CURB AND GUTTER, HANDRAILS AND FENCING AS REQUIRED BY PROJECT CONDITIONS. SEE AASHTO MANUALS, MnDOT ROAD DESIGN MANUAL OR FACILITY DESIGN GUIDE, STANDARD PLATES AND DETAILS FOR REQUIREMENTS.

SHOW SURFACE DRAINAGE PATTERNS IN THE PLAN VIEW. PROVIDE DIMENSIONS FOR WIDTH AND DEPTH OF THE DRAINAGE SWALE AS WELL AS THE TYPE OF IMPERVIOUS LINER MATERIAL. COLLECT SURFACE WATER RUNOFF ABOVE AND DIVERT AROUND WALL FACE.

DETAIL LINES AND GRADES OF THE INTERNAL DRAINAGE COLLECTION PIPE. DETAIL OR NOTE THE DESTINATION OF INTERNAL WALL DRAINS AS WELL AS THE METHOD OF TERMINATION (DAYLIGHT END OF PIPE OR CONNECTION INTO HYDRAULIC STRUCTURE). SPACE DRAIN PIPE OUTLET NOT MORE THAN 150 FT.

SOFT SOILS AND/OR HIGH WATER CONDITIONS (DEFINED AS GROUNDWATER WITHIN A DEPTH EQUAL TO THE WALL HEIGHT (H) MAY NOT BE SUITABLE FOR APPLICATION OF STANDARD DESIGNS AND REQUIRE SPECIAL CONSIDERATION BY THE FOUNDATIONS UNIT.

**STANDARD DESIGN CHARTS ARE NOT APPLICABLE TO:**

- PROJECT/SITES WHERE FOUNDATION SOILS SHEAR STRENGTH AND/OR BEARING RESISTANCE DO NOT MEET OR EXCEED VALUES USED IN THE DEVELOPMENT OF STANDARD DESIGN CHARTS.
- PROJECTS WITH A LARGE QUANTITY OF FACE AREA WHERE PROJECT SPECIFIC DESIGNS ARE RECOMMENDED, AS DEFINED IN MnDOT ROAD DESIGN MANUAL OR FACILITY DESIGN GUIDE.
- WHERE SLOPES IN FRONT OF WALL ARE STEEPER THAN 1:3.
- WHERE MAXIMUM WALL HEIGHT EXCEEDS 12 FT.
- WHERE WALLS ARE TIERED.
- WALLS WITH NOISE WALLS.

IF USING CONCRETE RAILING, INCLUDE STANDARD BRIDGE DETAIL "CONCRETE RAILING (TYPE F)" IN PLAN SET.

PROVIDE PROJECT SPECIFIC AESTHETIC REQUIREMENTS INCLUDING COLOR AND FASCIA SURFACING IN THE SPECIAL PROVISIONS.

MnDOT ROAD DESIGN MANUAL OR FACILITY DESIGN GUIDE CONTAINS GUIDELINES, TRAFFIC SAFETY AND OTHER ASPECTS.

**GENERAL NOTES:**

**UTILITIES:**

EXISTING AND PROPOSED UTILITIES ARE SHOWN IN THE GRADING PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING FACILITIES AND SHALL EXERCISE CARE IN ADJACENT CONSTRUCTION.

**EXCAVATION AND EARTHWORK:**

ALL EXCAVATION AND EMBANKMENT WORK SHALL CONFORM TO SPEC. 2451.

**CAST-IN-PLACE CONCRETE:**

ALL CONCRETE SHALL CONFORM TO SPEC. 2461, EXCEPT AS NOTED.

**CONSTRUCTION:**

CONSTRUCTION SHALL BE IN ACCORDANCE WITH SPEC. 2411, EXCEPT AS NOTED.

**GEOMETRICS AND GRADES:**

DATA FOR BASELINE GEOMETRY IS TABULATED FOR WALL ALIGNMENT, SEE LAYOUT SHEETS. WALL ALIGNMENT REFERENCE IS ALONG FRONT FACE OF WALL.

THE FILL SLOPE CONVENTION OF 1 VERTICAL TO HORIZONTAL IS USED IN THIS PLAN.

**COMPACTION REQUIREMENTS:**

COMPACT REINFORCED WALL FILL IN ACCORDANCE WITH SPEC. 2106.3G UNLESS RECOMMENDED OTHERWISE BY THE ENGINEER.

**ENGINEER DEFINITIONS:**

MBW DESIGNER- MN PROF. ENGINEER RETAINED BY CONTRACTOR.  
 PROJECT DESIGNER- MnDOT OR CONSULTANT ENGINEER  
 FOUNDATIONS UNIT- MnDOT  
 ENGINEER- MnDOT

**LEAD EXPERT OFFICE**  
 AMBER BLANCHARD  
 ACTING DIRECTOR  
 OFFICE OF MATERIALS  
 & ROAD RESEARCH

**MODULAR BLOCK RETAINING WALL  
 GENERAL NOTES**

APPROVED: 03-29-2023  
 REVISED:

*Tom Styrbicki*  
 THOMAS STYRBICKI  
 STATE DESIGN ENGINEER

**STANDARD PLAN  
 5-297.640**

1 OF 2



STANDARD PLAN

SP 002-606-014, SP 127-020-036  
 SAP 002-606-014, SAP 127-020-036

TRUNK HWY.

SHEET NO. 38

TOTAL SHEETS 118



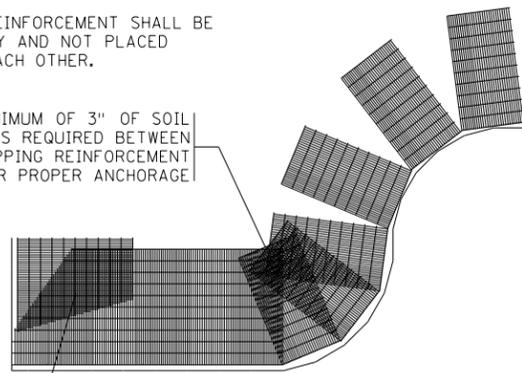
NOTES:

CORRECT ORIENTATION OF GEOSYNTHETIC TO OBTAIN PROPER STRENGTH SHALL BE DETAILED ON CONTRACTOR SHOP DRAWINGS.

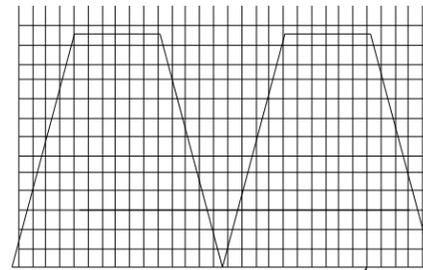
ADJACENT WIDTHS OF REINFORCEMENT SHALL BE EXTENDED AS NECESSARY AND NOT PLACED DIRECTLY ON TOP OF EACH OTHER.

MINIMUM OF 3" OF SOIL FILL IS REQUIRED BETWEEN OVERLAPPING REINFORCEMENT FOR PROPER ANCHORAGE

STAGGER REINFORCEMENT BY ONE BLOCK HEIGHT. REINFORCEMENTS SHALL NOT BE PLACED DIRECTLY ON TOP OF EACH OTHER.

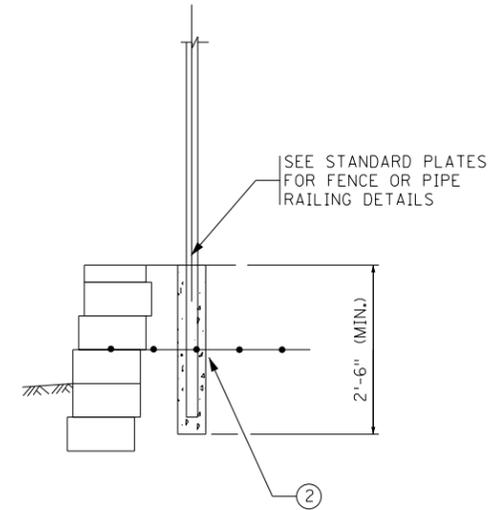


REINFORCEMENT PLACEMENT AROUND CURVES AND CORNERS

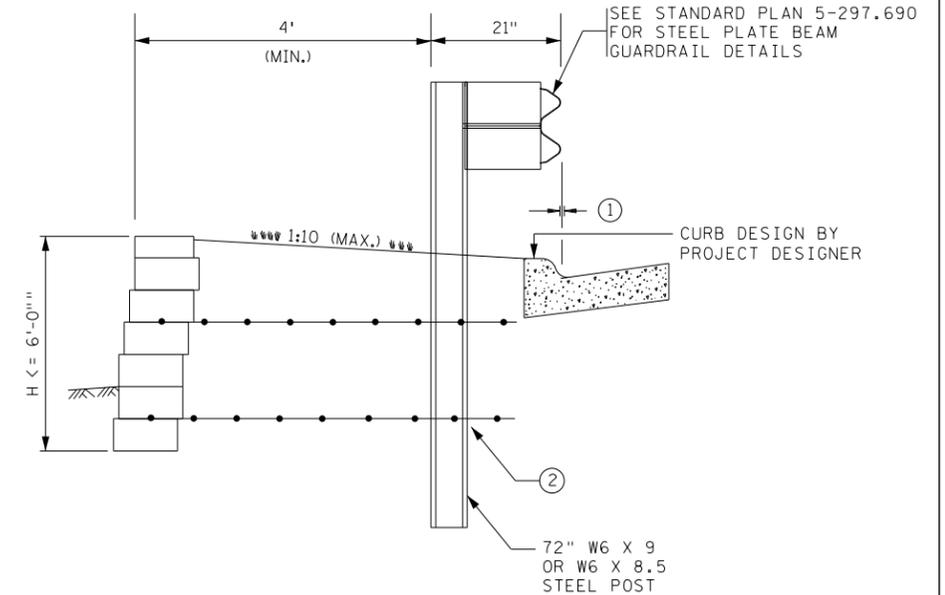


REINFORCEMENT IS TO BE PLACED ON LEVEL BACKFILL AND EXTENDED TO FRONT FACE OF OVERLYING BLOCKS. PLACE NEXT UNIT. PULL REINFORCEMENT TAUT AND BACKFILL AS REQUIRED.

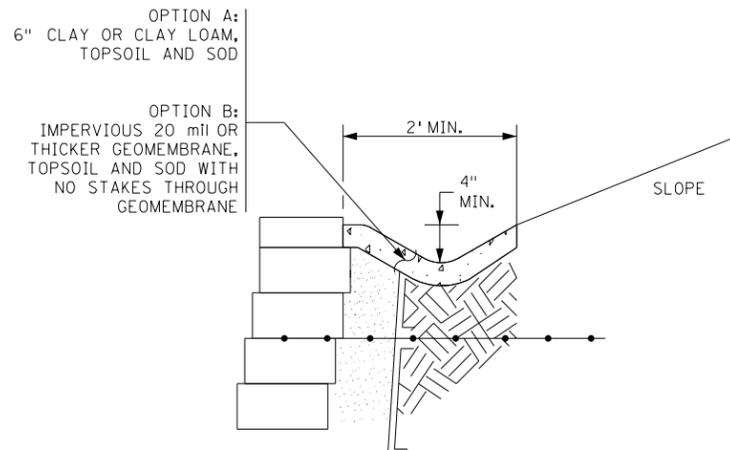
REINFORCEMENT PLACEMENT BETWEEN BLOCK UNITS



POST DETAIL  
TYPICAL HANDRAIL AND/OR FENCE POST

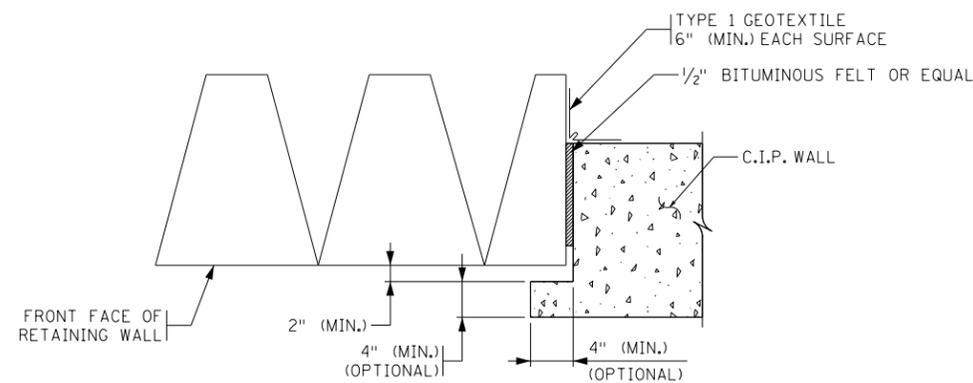


STEEL PLATE BEAM GUARDRAIL DETAIL 1

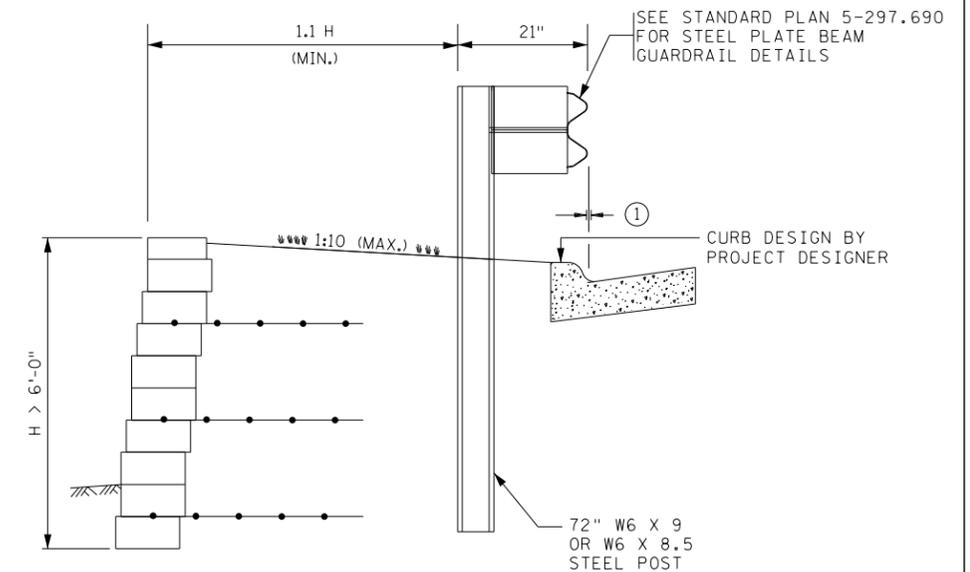


NOTE: MINIMUM SWALE DIMENSIONS ARE 2 FEET WIDE BY 4 INCHES DEEP.

TYPICAL SWALE DETAIL



CONNECTION DETAIL AT JUNCTURE OF MBW AND C.I.P. STRUCTURE



STEEL PLATE BEAM GUARDRAIL DETAIL 2

NOTES:

- ① USE CAUTION WHEN PLACING CURB WITH GUARDRAIL. CURBS ADVERSELY AFFECT THE PERFORMANCE OF THE GUARDRAIL.
- ② ALL POSTS MUST BE SLEEVED THROUGH THE GEOGRID.

LEAD EXPERT OFFICE  
AMBER BLANCHARD  
ACTING DIRECTOR  
OFFICE OF MATERIALS & ROAD RESEARCH

MODULAR BLOCK RETAINING WALL  
DETAILS

APPROVED: 03-29-2023  
REVISED:

THOMAS STYRBICKI  
STATE DESIGN ENGINEER

STANDARD PLAN  
5-297.645

1 OF 2

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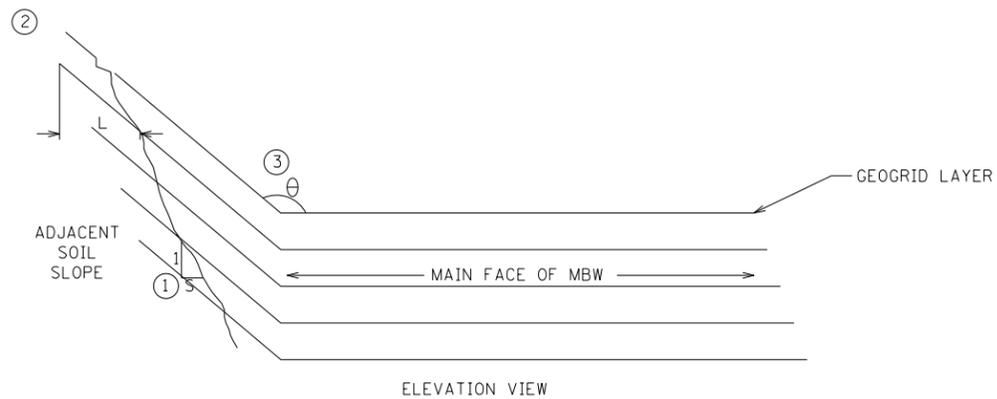
STANDARD PLAN

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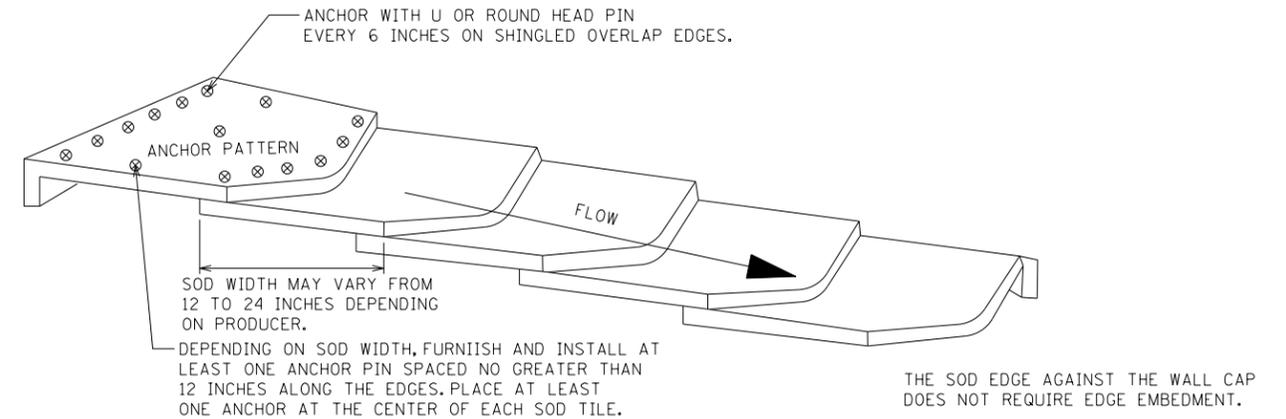
TRUNK HWY.

SHEET NO. 40

TOTAL SHEETS 118

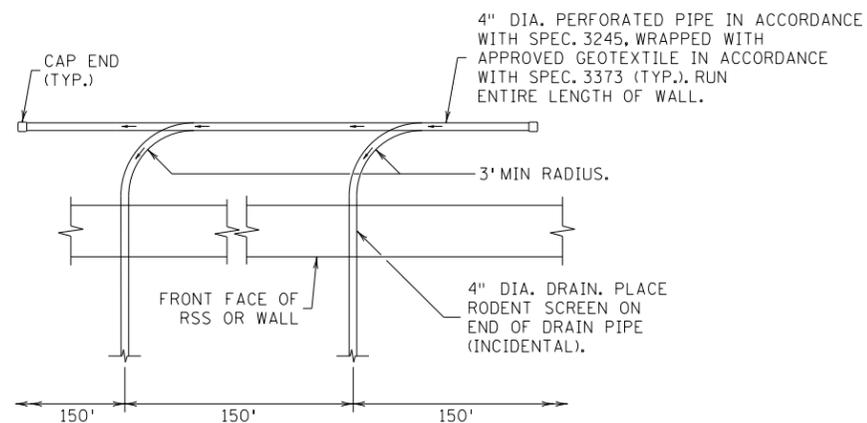


MBW TERMINATION DETAIL AT ADJACENT SOIL SLOPE



- FOLLOW SPEC. 2575.3A.2b SODDING INSTALLATION DATES.
- FOLLOW SPEC. 2575.3F.2 FOR ORIENTATION, LEAD AND EDGE EMBEDMENT, OVERLAPPING AND SHINGLING.
- PROVIDE TEMPORARY IRRIGATION UNTIL SOD ROOTED A MINIMUM OF 3 INCHES.

SOD FLUME INSTALLATION DETAIL



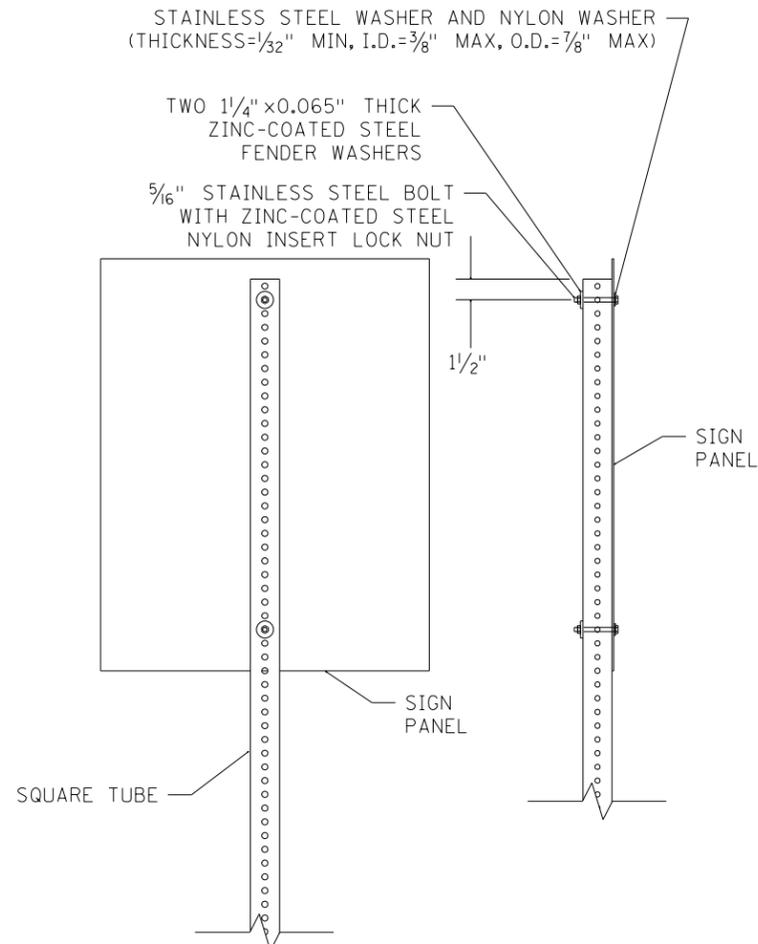
TOP VIEW  
DRAINAGE DETAIL

NOTES:

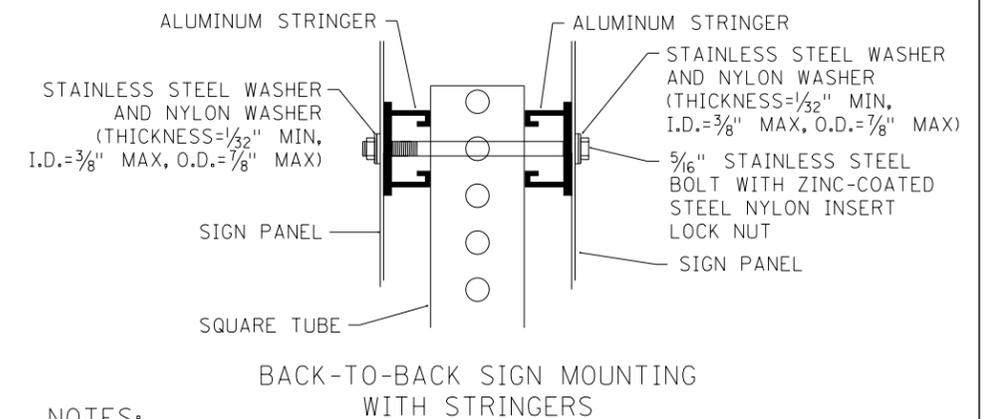
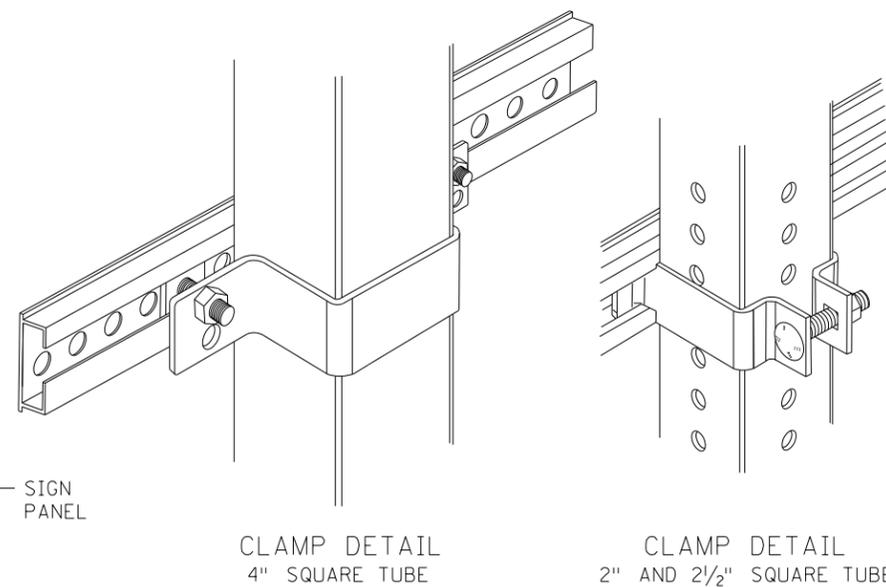
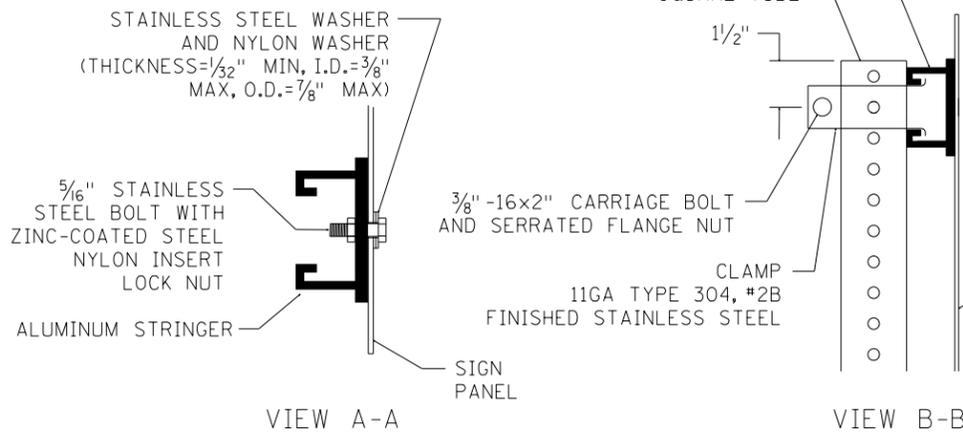
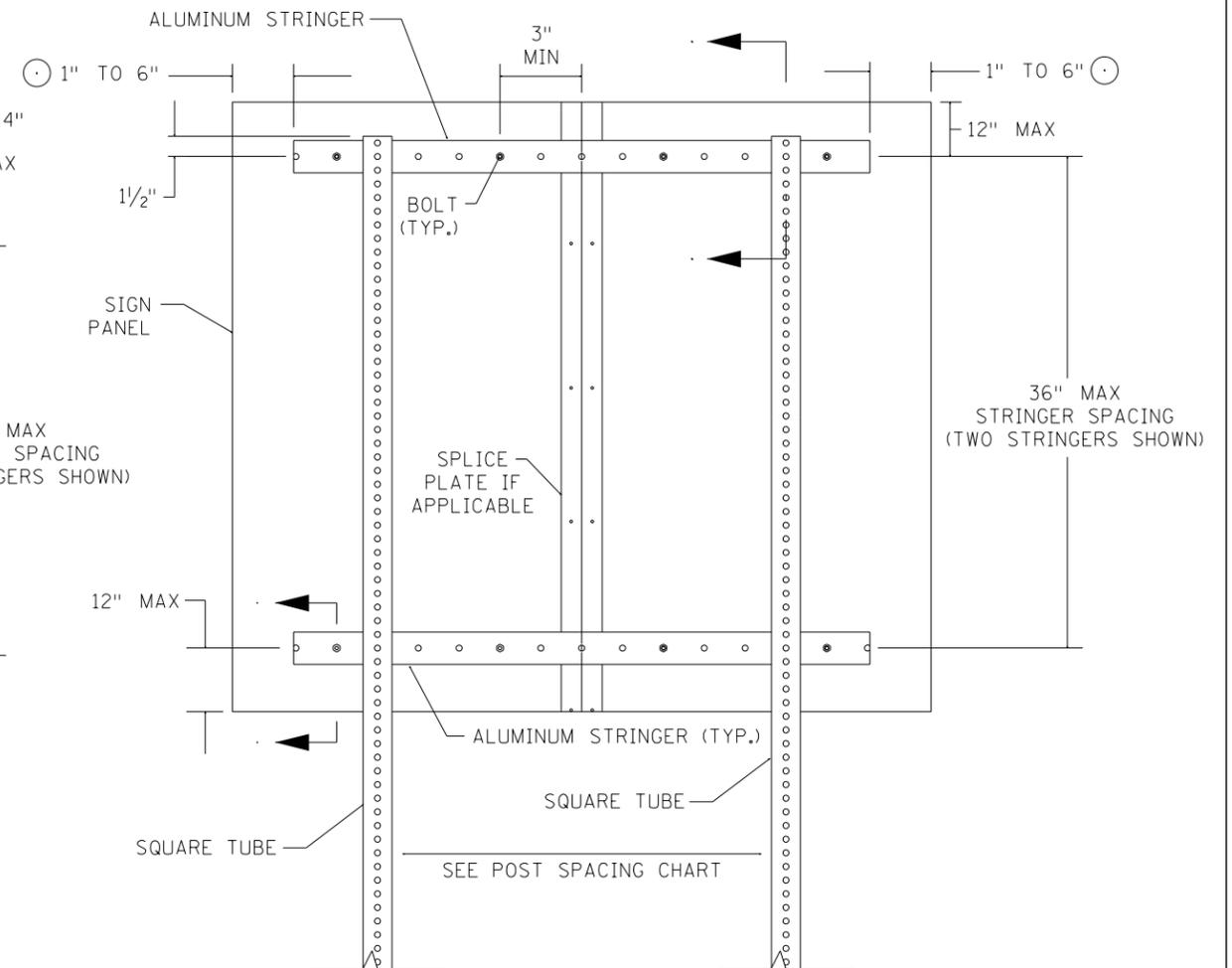
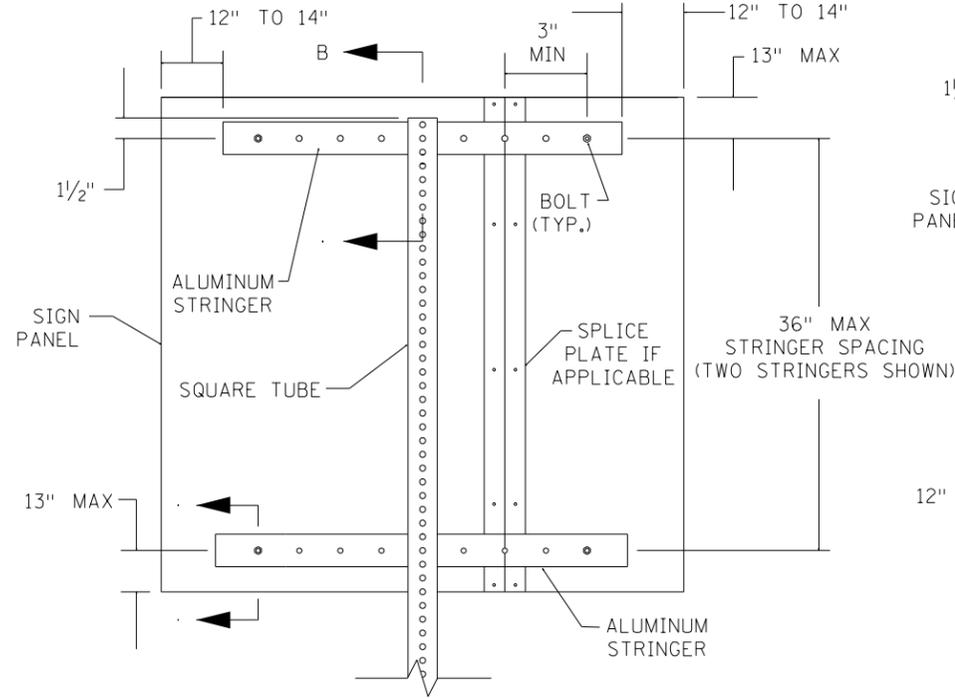
- THE SLOPE OF ADJACENT SOIL, 1:S, MUST BE NO STEEPER THAN 1V:2H.
- GEOGRID SHALL BE BURIED A DISTANCE, L, NO LESS THAN 2' INTO THE ADJACENT SOIL SLOPE.
- THE ANGLE,  $\theta$ , OF THE MBW WILL BE DETERMINED BY THE DESIGNER TO MEET RIGHT-OF-WAY CONSTRAINTS AND THE REQUIREMENT OF NOTES 1 AND 2.

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<b>LEAD EXPERT OFFICE</b> AMBER BLANCHARD ACTING DIRECTOR OFFICE OF MATERIALS & ROAD RESEARCH		<b>MODULAR BLOCK RETAINING WALL DETAILS</b>		APPROVED: 03-29-2023 REVISED:	 THOMAS STYRBICKI STATE DESIGN ENGINEER	<b>STANDARD PLAN 5-297.645</b>	2 OF 2
		<b>STANDARD PLAN</b>	SP 002-606-014, SP 127-020-036 SAP 002-606-014, SAP 127-020-036	SHEET NO. <b>41</b>		TOTAL SHEETS <b>118</b>	



FOR SIGN PANELS UP TO 30" WIDE



NOTES:

BOLT SIGN PANELS TO STRINGERS OR RISER POSTS AT NO GREATER THAN 24" SPACING OR ACCORDING TO THE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR MOUNTING HOLES (PUNCH CODES) INFORMATION.

CENTER STRINGERS ON SIGN PANEL.

⊙ IF POST SPACING REQUIRES PLACEMENT OF A POST WITHIN THIS AREA, EXTEND STRINGERS AS NEEDED TO ACCOMMODATE THE STRINGER TO POST CLAMP.

LEAD EXPERT OFFICE

BRIAN SORENSON  
STATE TRAFFIC ENGINEER  
OFFICE OF TRAFFIC ENGINEERING

SQUARE-TUBE SIGN MOUNTING DETAILS

APPROVED: 08-09-2023  
REVISED:

THOMAS STYRBICKI  
STATE DESIGN ENGINEER

STANDARD PLAN  
5-297.718

1 OF 3

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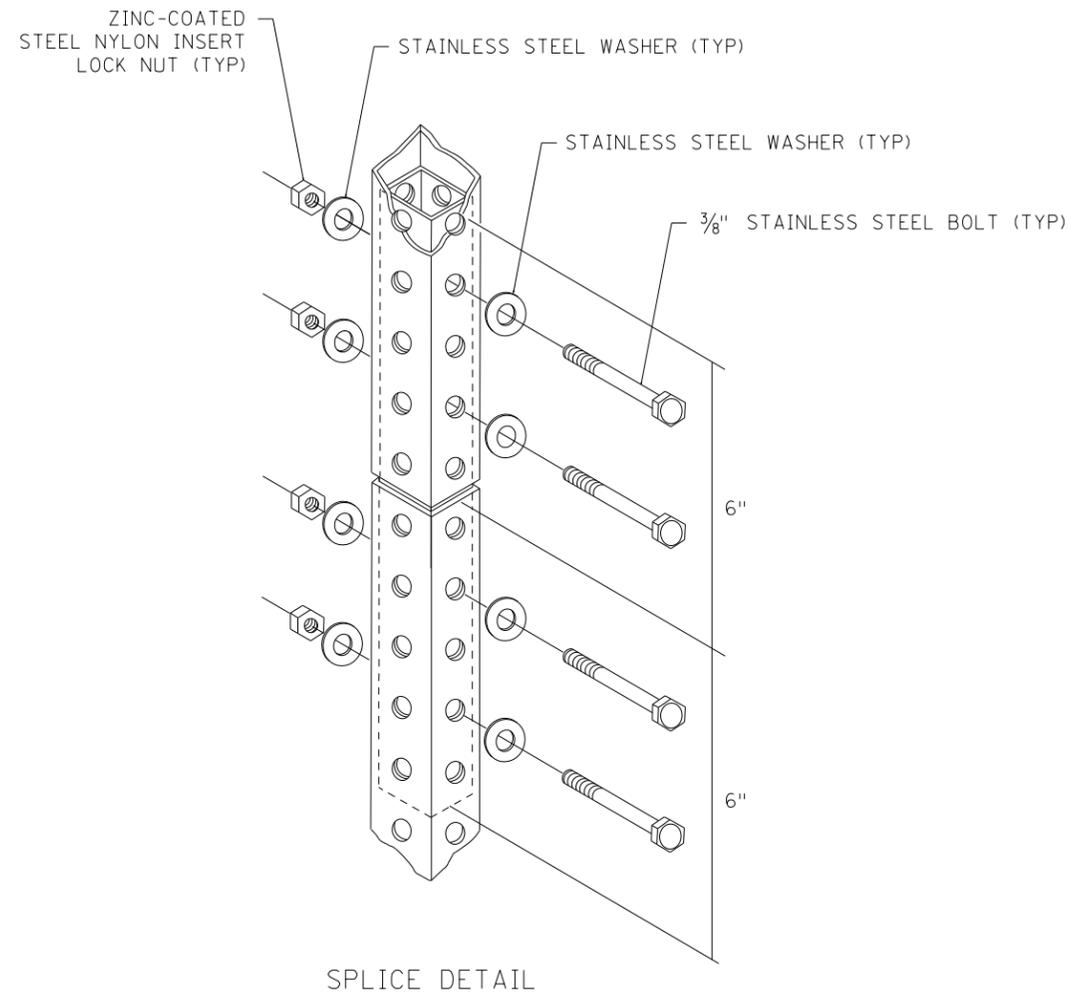
STANDARD PLAN

SP 002-606-014, SP 127-020-036  
SAP 002-606-014, SAP 127-020-036

TRUNK HWY.

SHEET NO. 42

TOTAL SHEETS 118



PANEL WIDTH (IN)	SQUARE TUBE POST SPACING							
	2 POSTS (IN)	3 POSTS (IN)	4 POSTS (IN)	5 POSTS (IN)	6 POSTS (IN)	7 POSTS (IN)	8 POSTS (IN)	
42	15							
48	21							
54	30							
60	36							
66	36							
72	42							
78	42							
84	48							
90	48	42						
96	48	42						
102	54	42						
108	54	42						
114	60	42						
120	60	48						
126	66	48						
132	66	48	42					
138	72	48	42					
144	72	48	42					
150	78	54	42					
156	78	54	42					
162	84	54	42					
168	84	60	48					
174	90	60	48	42				
180	90	60	48	42				
186	96	66	48	42				
192	96	66	48	42				
198	102	66	54	42				
204	102	72	54	42				
210	108	72	54	42				
216	108	72	54	48	42			
222	114	78	60	48	42			
228	114	78	60	48	42			
234	120	78	60	48	42			
240	120	84	60	48	42			
246		84	66	54	42			
252		84	66	54	42			
258		90	66	54	42	42		
264		90	66	54	48	42		
270		90	72	54	48	42		
276		96	72	60	48	42		
282		96	72	60	48	42		
288		96	72	60	48	42		
294		102	78	60	54	42		
300		102	78	60	54	42	42	
306		102	78	66	54	42	42	
312		108	78	66	54	48	42	
318		108	84	66	54	48	42	
324		108	84	66	54	48	42	
330		114	84	66	60	48	42	
336		114	84	72	60	48	42	

DISTANCES ARE CENTER-TO-CENTER OF POSTS

NOTES:

NO MORE THAN ONE SPLICE PER POST.

WHEN USED, THE SPLICE MUST BE PLACED AT LEAST 8' ABOVE GROUND. THE PREFERRED PLACEMENT LOCATION IS BEHIND THE SIGN PANEL.

INTERIOR POST STUD SHALL BE ONE SIZE SMALLER FOR TIGHT FIT. IF RISER POST IS 2 1/2", INTERIOR POST IS 2 3/16". IF RISER POST IS 2", INTERIOR POST IS 1 3/4".

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**LEAD EXPERT OFFICE**  
 BRIAN SORENSON  
 STATE TRAFFIC ENGINEER  
 OFFICE OF TRAFFIC ENGINEERING



SQUARE-TUBE SIGN MOUNTING DETAILS

APPROVED: 08-09-2023  
 REVISED:

*Thomas Styrbicki*  
 THOMAS STYRBICKI  
 STATE DESIGN ENGINEER

STANDARD PLAN  
 5-297.718

2 OF 3

STANDARD PLAN

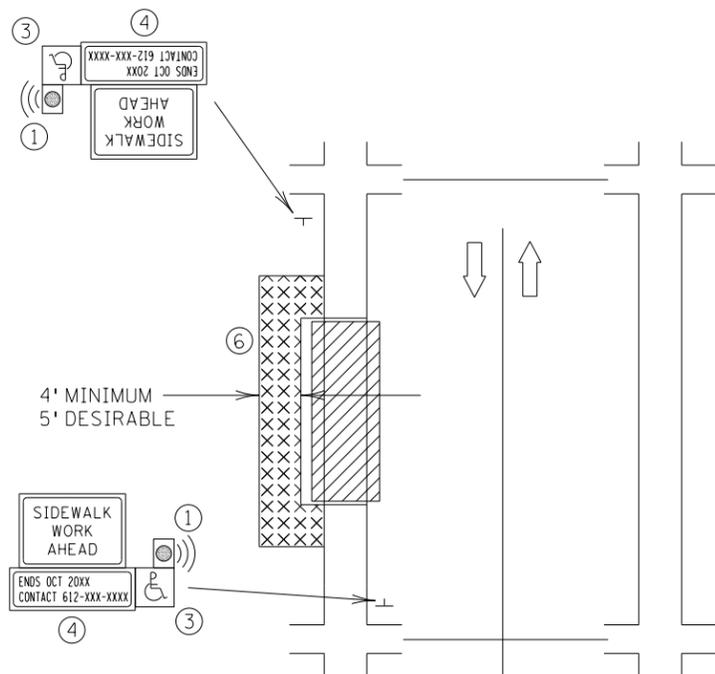
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TRUNK HWY.

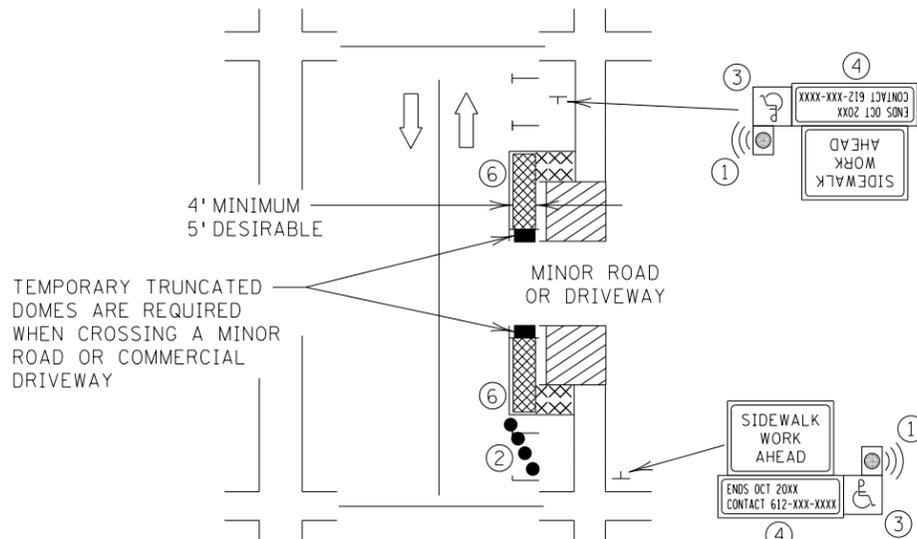
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TOTAL SHEETS 118

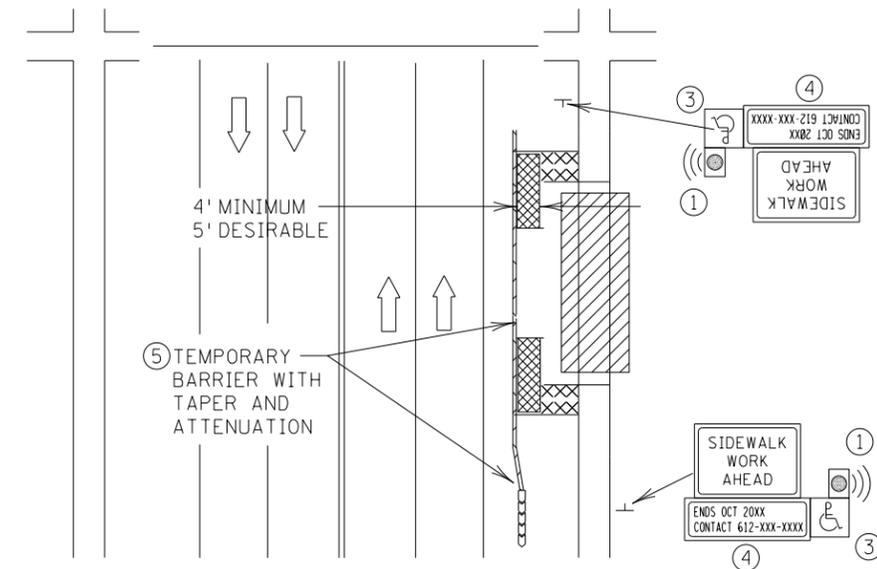




BYPASS TYPE A  
BYPASS ON ADJACENT AVAILABLE  
RIGHT OF WAY



BYPASS TYPE B  
SIDEWALK BYPASS USING PARKING OR  
SHOULDER ON LOW-SPEED ROADWAY



BYPASS TYPE C  
SIDEWALK BYPASS USING SHOULDER  
OR PARKING LANE ON A MULTI-LANE  
OR HIGH-SPEED ROADWAY

NOTES:

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECTABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES. THE ALTERNATE PEDESTRIAN ROUTE (APR) MUST REMAIN OPEN AT ALL TIMES.

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK AS NECESSARY TO PROVIDE AN APR AT ALL TIMES FOR ROADWAYS WITH NO AVAILABLE DETOURS. PROVIDE A SMOOTH, CONTINUOUS, HARD SURFACE THROUGH THE LENGTH OF THE APR.

PROVIDE A FIRM, STABLE, FREE-DRAINING, NON-SLIP, TEMPORARY WALKWAY SURFACE REGARDLESS OF WEATHER CONDITIONS. SUPPORT THE TEMPORARY WALKWAY SURFACE WITH A SOLID BASE TO COVER SHORT SEGMENTS OF ROUGH, SOFT, OR UNEVEN GROUND. THE TEMPORARY WALKWAY SURFACE WILL ALLOW NORMAL USAGE OF WHEELCHAIRS, WALKERS, STROLLERS, AND OTHER MOBILITY DEVICES. CONCRETE, BITUMINOUS, STEEL, RUBBER, WOOD (3/4" OR THICKER), AND PLASTIC ARE ACCEPTABLE SURFACE MATERIALS FOR THE TEMPORARY WALKWAY SURFACE. GRAVEL, MILLINGS, AND OTHER UNEVEN SURFACES ARE NOT ACCEPTABLE SURFACE MATERIALS. IF NEEDED, PROVIDE SOIL STABILIZATION TO PREVENT EROSION AROUND TEMPORARY SURFACES. IF NEEDED, PROVIDE SOIL STABILIZATION TO PREVENT EROSION AROUND TEMPORARY SURFACES.

IF A 60" PEDESTRIAN WALKWAY WIDTH ISN'T PROVIDED FOR THE ROUTE, THEN A 60" BY 60" PASSING SPACE IS REQUIRED EVERY 200'. THE MINIMUM WIDTH OF THE WALKWAY IS 48".

COVER OR DEACTIVATE ANY PEDESTRIAN TRAFFIC SIGNALS CONTROLLING CLOSED CROSSWALKS.

POST-MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7' MINIMUM CLEARANCE FROM THE BOTTOM OF THE LOWEST SIGN TO THE SIDEWALK SURFACE. SHARED-USE PATH SHALL HAVE 8' MINIMUM CLEARANCE FROM THE BOTTOM OF THE LOWEST SIGN TO THE SHARED USE PATH SURFACE.

APR SHOULD BE KEPT FREE OF TRASH, SEDIMENT, AND DEBRIS.

ANY PORTABLE SIGN OR BARRICADE PLACED OR STORED IN A PEDESTRIAN WALKWAY THAT COULD POSE A HAZARD TO A VISUALLY-IMPAIRED PEDESTRIAN SHALL HAVE A DETECTABLE EDGE TO GUIDE THE PEDESTRIAN AROUND THE HAZARD. FOR ADDITIONAL GUIDANCE, SEE THE "DETECTABLE EDGE FOR SIGN ON PORTABLE STAND" DETAIL ON STANDARD PLAN 5-297.813.

MINIMIZE DISRUPTION TO PEDESTRIANS TO THE MAXIMUM EXTENT FEASIBLE BY PROVIDING AN APR IN THE FOLLOWING ORDER OF PREFERENCE:

1. PROVIDE THE APR ON THE SAME SIDE OF THE ROADWAY AS THE DISRUPTED ROUTE UTILIZING BYPASSES.
2. WHERE NOT FEASIBLE TO PROVIDE A SAME-SIDE APR, PROVIDE AN APR DETOUR ON THE OTHER SIDE OF THE ROADWAY.
3. WHERE NOT FEASIBLE TO PROVIDE AN APR ON EITHER SIDE OF THE ROADWAY, PROVIDE AN APR DETOUR WITH TRAILBLAZING SIGNS.
  - ① CONSIDER PROVIDING AN APPROVED AUDIBLE MESSAGE DEVICE OR TACTILE MESSAGE FOR PEDESTRIANS WITH VISUAL DISABILITIES.
  - ② RECOMMENDED TAPER WHEN THE CLOSED AREA WAS PREVIOUSLY USED AS AN INTERMITTENT TRAFFIC LANE OR BYPASS LANE IS 25' LONG USING FIVE EQUALLY-SPACED CHANNELIZING DEVICES.
  - ③ FOR FULLY-ACCESSIBLE WALKWAYS THROUGH WORKZONES, CONSIDER DISPLAYING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY.
  - ④ INCLUDE INFORMATION SUCH AS THE DURATION OF THE WALKWAY RESTRICTIONS (BEGINNING AND/OR END DATES) AND A PROJECT CONTACT NUMBER FOR 24/7 QUESTIONS OR REPORTING HAZARDS ON SIGNS FOR TEMPORARY PEDESTRIAN DETOURS.
  - ⑤ SEE THE MOST CURRENT EDITION OF THE MNDOT TEMPORARY BARRIER GUIDANCE MANUAL FOR GUIDANCE ON PLACEMENT AND USAGE OF TEMPORARY BARRIER.

- ⑥ PROVIDE SOIL STABILIZATION AROUND TEMPORARY SURFACES TO PREVENT EROSION, IF NEEDED.

LEGEND

- ⊥ SIGN
- ▨ WORK AREA
- PEDESTRIAN CHANNELIZATION DEVICE
- TEMPORARY BARRIER
- ➔ DIRECTION OF TRAFFIC
- CHANNELIZER
- Ⓜ AUDIBLE MESSAGE DEVICE (AMD)
- ▩ TEMPORARY CURB RAMP WITH DETECTABLE EDGES
- ▩ TEMPORARY WALKWAY SURFACE

LEAD EXPERT OFFICE  
BRIAN SORENSON  
STATE TRAFFIC ENGINEER  
OFFICE OF TRAFFIC ENGINEERING

ALTERNATE PEDESTRIAN ROUTE (APR) LAYOUTS

APPROVED: 03-18-2021  
REVISED:

THOMAS STYRBICKI  
STATE DESIGN ENGINEER

STANDARD PLAN  
5-297.811

1 OF 2



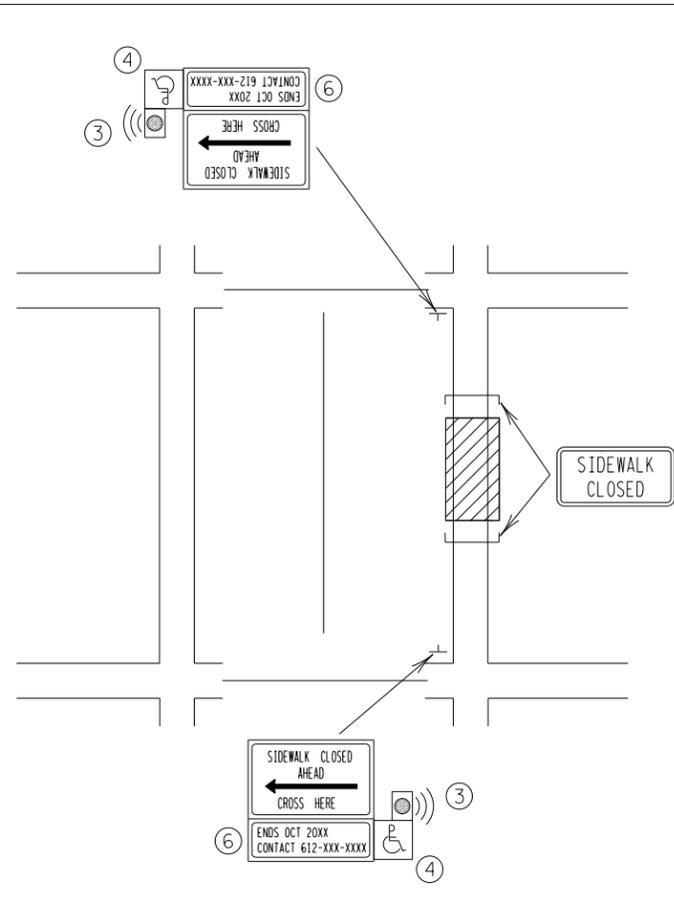
STANDARD PLAN

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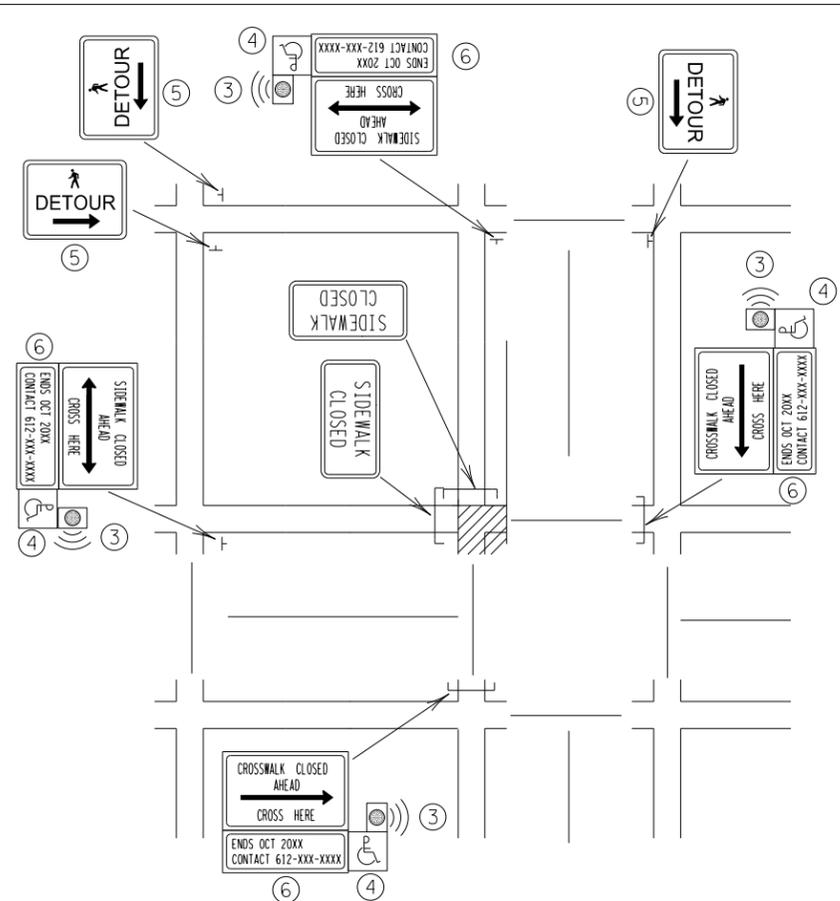
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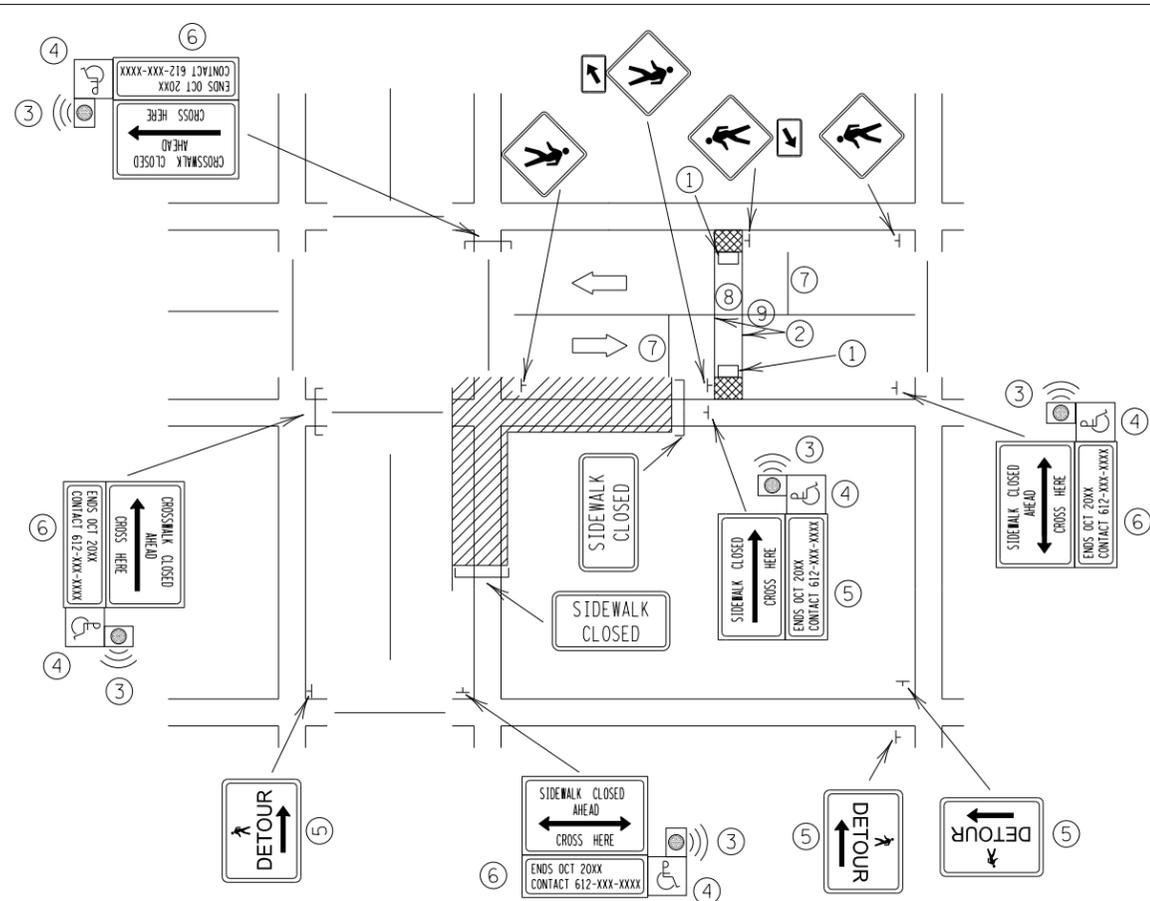
TOTAL SHEETS 118



OTHER SIDE OF ROADWAY DETOUR FOR MID-BLOCK CLOSURE



ONE QUADRANT CLOSED



OTHER SIDE OF STREET DETOUR OR DETOUR WITH TRAILBLAZING SIGNS FOR CORNER SIDEWALK CLOSURE WITH OPTIONAL TEMPORARY CROSSWALK

**NOTES:**  
 WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECTABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES. THE MINIMUM TEMPORARY WALKWAY WIDTH SHOULD BE THE WIDTH OF THE EXISTING FACILITY. IF THE EXISTING FACILITY HAS A WIDTH GREATER THAN 60", THE WIDTH OF THE TEMPORARY FACILITY MAY BE 60". IF THE WIDTH OF THE DETOUR IS LESS THAN 60", A 60"-WIDE PASSING SPACE IS REQUIRED EVERY 200'.  
 TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER TRAILBLAZING SIGNS OR DEVICES MAY BE NEEDED FOR ADEQUATE ROUTING. STAGE WORK AS NECESSARY TO PROVIDE AN ALTERNATE PEDESTRIAN ROUTE (APR) AT ALL TIMES.  
 PROVIDE A SMOOTH, CONTINUOUS, HARD SURFACE THROUGH THE LENGTH OF THE APR. PROVIDE A FIRM, STABLE, FREE-DRAINING, NON-SLIP, TEMPORARY WALKWAY SURFACE REGARDLESS OF WEATHER CONDITIONS. SUPPORT THE TEMPORARY WALKWAY SURFACE WITH A SOLID BASE TO COVER SHORT SEGMENTS OF ROUGH, SOFT, OR UNEVEN GROUND. THE TEMPORARY WALKWAY SURFACE WILL ALLOW NORMAL USAGE OF WHEELCHAIRS, WALKERS, STROLLERS, AND OTHER MOBILITY DEVICES. CONCRETE, BITUMINOUS, STEEL, RUBBER, WOOD (3/4" OR THICKER), AND PLASTIC ARE ACCEPTABLE SURFACE MATERIALS FOR THE TEMPORARY WALKWAY SURFACE. GRAVEL, MILLINGS, OR OTHER UNEVEN SURFACES ARE NOT ACCEPTABLE SURFACE MATERIALS. IF NEEDED, PROVIDE SOIL STABILIZATION TO PREVENT EROSION AROUND TEMPORARY SURFACES.  
 COVER OR DEACTIVATE ANY PEDESTRIAN TRAFFIC SIGNALS CONTROLLING CLOSED CROSSWALKS.  
 APR SHOULD BE KEPT FREE OF TRASH, SEDIMENT, AND DEBRIS.

POST-MOUNTED SIGNS ADJACENT TO SIDEWALKS SHALL HAVE 7' MINIMUM CLEARANCE FROM THE BOTTOM OF THE LOWEST SIGN TO THE SIDEWALK SURFACE. SHARED-USE PATHS SHALL HAVE 8' MINIMUM CLEARANCE FROM THE BOTTOM OF THE LOWEST SIGN TO THE SHARED-USE PATH SURFACE.  
 ANY PORTABLE SIGN OR BARRICADE PLACED OR STORED IN A PEDESTRIAN WALKWAY THAT COULD BE A HAZARD TO A VISUALLY-IMPAIRED PEDESTRIAN SHALL HAVE A DETECTABLE EDGE TO GUIDE THE PEDESTRIAN AROUND THE HAZARD. FOR ADDITIONAL GUIDANCE SEE THE "TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) DEVICES" STANDARD PLAN, "DETECTABLE EDGE FOR SIGN ON PORTABLE STAND" DETAIL.  
 MINIMIZE DISRUPTION TO PEDESTRIANS TO THE MAXIMUM EXTENT FEASIBLE BY PROVIDING AN APR IN THE FOLLOWING ORDER OF PREFERENCE:  
 1. PROVIDE THE APR ON THE SAME SIDE OF THE ROADWAY AS THE DISRUPTED ROUTE UTILIZING BYPASSES.  
 2. WHERE IT IS NOT FEASIBLE TO PROVIDE A SAME-SIDE APR, PROVIDE AN APR DETOUR ON THE OTHER SIDE OF THE ROADWAY.  
 3. WHERE IT IS NOT FEASIBLE TO PROVIDE AN APR ON EITHER SIDE OF THE ROADWAY, PROVIDE AN APR DETOUR WITH TRAILBLAZING SIGNS.  
 ① TEMPORARY CURB RAMPS WITH DETECTABLE WARNINGS.  
 ② TEMPORARY PAVEMENT MARKINGS FOR CROSSWALKS MAY USE CROSSWALK BLOCKS, TWO TRANSVERSE LINES OR TWO STRIPS OF 18" PREFORMED MARKING MATERIAL TO FORM 36" WIDE CROSSWALK BLOCKS.  
 ③ PROVIDE AN APPROVED AUDIBLE MESSAGE DEVICE OR TACTILE MESSAGE FOR PEDESTRIANS WITH VISUAL DISABILITIES.

- ④ FOR FULLY ACCESSIBLE WALKWAYS THROUGH WORKZONES, CONSIDER DISPLAYING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY.
- ⑤ USE PEDESTRIAN DETOUR TRAILBLAZING SIGNS IF THE PEDESTRIAN DETOUR IS NOT LOCATED ACROSS THE ROADWAY FROM THE SIDEWALK CLOSURE.
- ⑥ TYPICAL SIGN MESSAGE FOR AN ALTERNATE PEDESTRIAN ROUTE SHOULD INCLUDE INFORMATION SUCH AS THE DURATION OF THE WALKWAY RESTRICTIONS (BEGINNING AND/OR END DATES) AND A PROJECT CONTACT NUMBER FOR 24/7 QUESTIONS OR REPORTING HAZARDS. TYPICAL INFORMATION INCLUDED IN AN AUDIBLE MESSAGE CAN BE FOUND IN "TPAR - AUDIBLE MESSAGE CONTENT GUIDELINES" AVAILABLE ON THE MNDOT TRAFFIC ENGINEERING WEBSITE ON THE PEDESTRIAN ACCOMMODATIONS THROUGH WORK ZONES WEB PAGE. ADDITIONALLY, A SUMMARY OF THE MESSAGE CONTENT GUIDELINES CAN BE FOUND WITHIN THE PEDESTRIAN ACCOMMODATIONS THROUGH WORK ZONES DESIGN GUIDANCE DOCUMENT.
- ⑦ LOCATE STOP BAR 20' TO 50' BEFORE THE CROSSWALK. RESTRICT PARKING BETWEEN THE STOP BAR AND THE CROSSWALK. ON TWO-WAY ROADWAYS, RESTRICT PARKING BOTH BEFORE AND AFTER THE CROSSWALK FOR BOTH DIRECTIONS.
- ⑧ CONSIDER LIGHTING AT MID-BLOCK CROSSINGS IN ORDER TO ILLUMINATE PEDESTRIANS, IF NOT ALREADY LIT.
- ⑨ CONSIDER THE ADDITION OF R1-6a SIGNS AS MOTORISTS ARE NOT EXPECTING MID-BLOCK CROSSING.

**LEGEND**

- SIGN
- ▨ WORK AREA
- DIRECTION OF TRAFFIC
- Ⓜ AUDIBLE MESSAGE DEVICE (AMD)
- ▩ SIDEWALK BARRICADE
- ▧ TEMPORARY CURB RAMP WITH DETECTABLE EDGES

R1-6a

**LEAD EXPERT OFFICE**  
 BRIAN SORENSON  
 STATE TRAFFIC ENGINEER  
 OFFICE OF TRAFFIC ENGINEERING

**ALTERNATE PEDESTRIAN ROUTE (APR) LAYOUTS**

APPROVED: 03-18-2021  
 REVISED:

*Thomas Styrbicki*  
 THOMAS STYRBICKI  
 STATE DESIGN ENGINEER

**STANDARD PLAN**  
 5-297.811

2 OF 2

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**STANDARD PLAN**

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 TRUNK HWY.

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 TOTAL SHEETS 118

NOTES:

TPAR SHOULD BE KEPT FREE OF TRASH, SEDIMENT, AND DEBRIS.

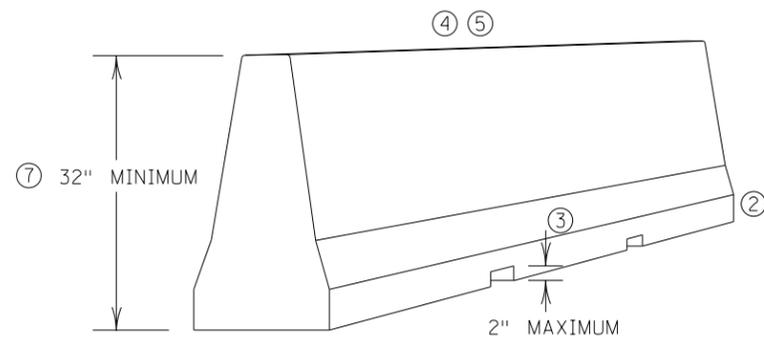
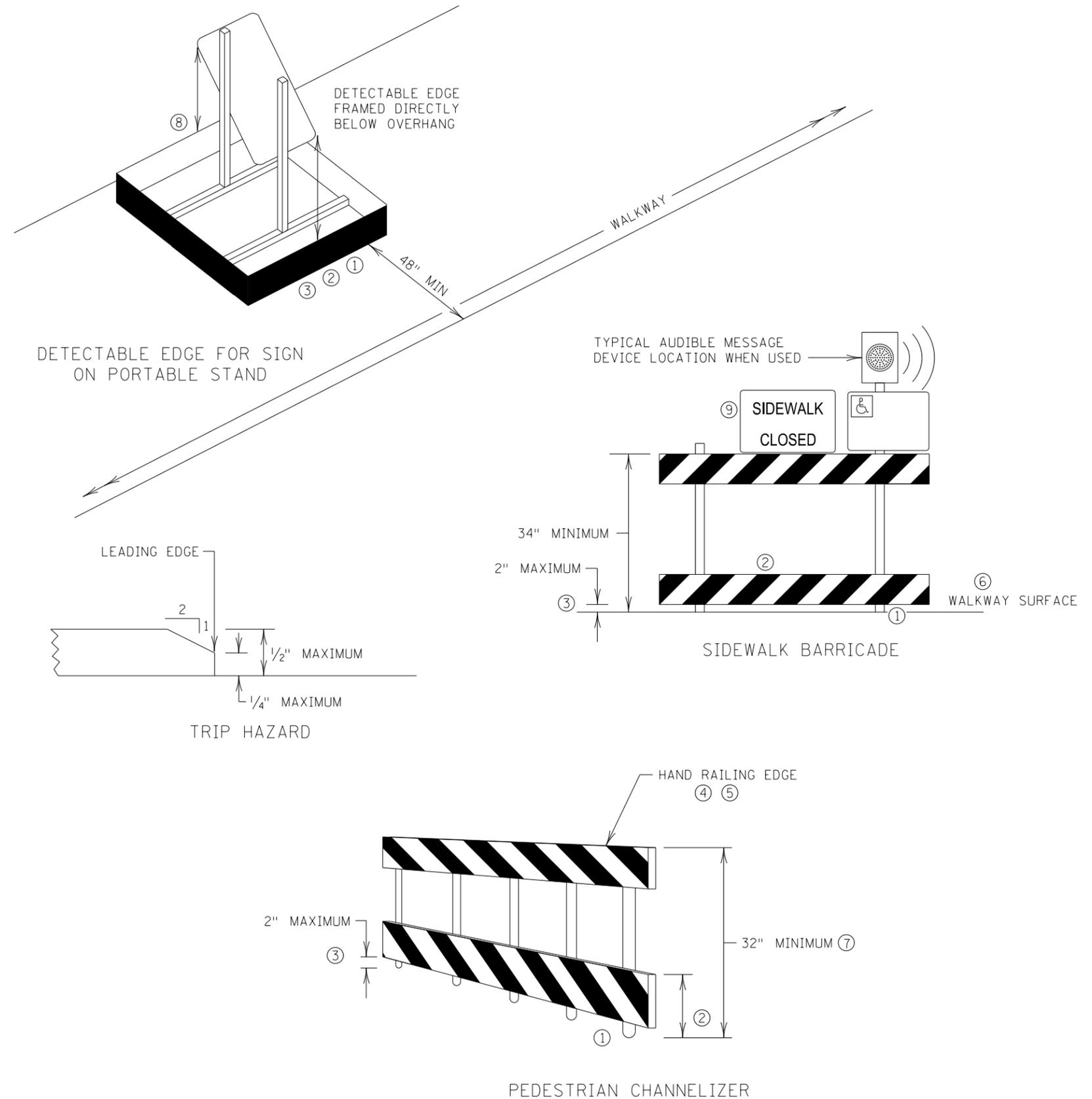
RAILINGS OR OTHER OBJECTS MAY PROTRUDE A MAXIMUM OF 4" INTO THE WALKWAY CLEAR SPACE WHEN LOCATED A MINIMUM OF 27" ABOVE THE WALKWAY SURFACE.

USE CRASHWORTHY TEMPORARY BARRIERS WHEN USED AS A PEDESTRIAN CHANNELIZERS.

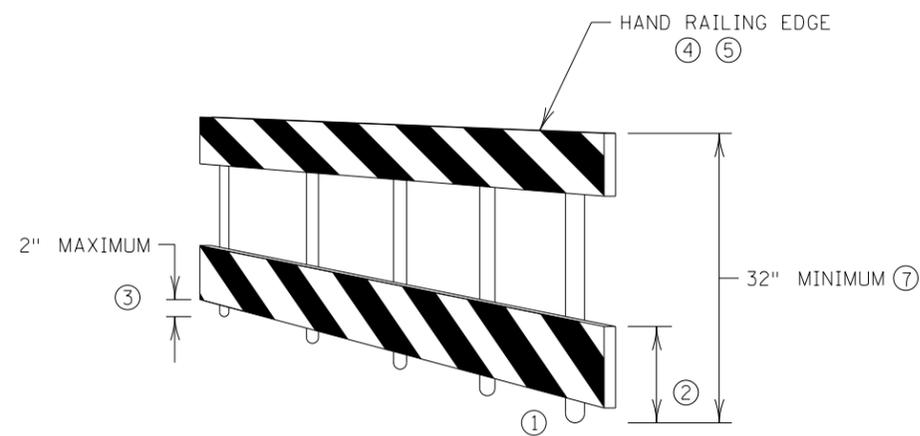
PLACE SIDEWALK BARRICADES ACROSS THE ENTIRE WIDTH OF THE WALKWAYSURFACE, WHEN USED.

USE INTERLOCKING DEVICES TO CHANNELIZE PEDESTRIAN FLOW TO PREVENT GAPS THAT COULD ALLOW PEDESTRIANS TO STRAY FROM THE CHANNELIZED PATH.

- ① PROVIDE DETECTABLE EDGE TO ANY TRIPPING HAZARD IN THE WALKWAY. LOCATE BALLAST BEHIND THE DETECTABLE EDGE OR INTEGRAL TO THE DEVICE. ANY SUPPORT ON THE FRONT OF THE DEVICE SHOULD NOT EXTEND INTO THE 48" MINIMUM WALKWAY CLEAR SPACE. ANY SUPPORT THAT EXTENDS INTO THE WALKWAY SHALL NOT EXCEED 1/2" HEIGHT ABOVE THE WALKWAY SURFACE; IF GREATER THAN 1/4", BEVEL AS SHOWN IN THE TRIP HAZARD DETAIL.
- ② PROVIDE CONTINUOUS DETECTABLE EDGES EXTENDING AT LEAST 6" ABOVE THE WALKWAY SURFACE. MARK DETECTABLE EDGES WITH A COLOR THAT CONTRASTS WITH THE WALKWAY SURFACE. PLACE THE DETECTABLE EDGE AROUND ANY PORTABLE SIGN STAND IN THE WALKWAY AREA WHERE THE SIGN POSES A HAZARD TO A VISUALLY-IMPAIRED PEDESTRIAN.
- ③ DEVICES AND DETECTABLE EDGES SHALL NOT BLOCK WATER DRAINAGE FROM THE WALKWAY. A GAP HEIGHT OR OPENING FROM THE WALKWAY SURFACE UP TO A MAXIMUM OF 2" IS ALLOWED FOR DRAINAGE PURPOSES.
- ④ USE HAND AND GUIDE RAILS WHEN REQUIRED. INSTALL TOP RAIL OR TOP SURFACE IN A VERTICAL PLANE PERPENDICULAR TO THE WALKWAY, ABOVE THE DETECTABLE EDGE. PROVIDE CONTINUOUS RAIL AT A HEIGHT OF 34" TO 38" ABOVE THE WALKWAY SURFACE. USE RAIL SUPPORTS THAT MINIMIZE CONTACT WITH PEDESTRIAN'S HANDS AND FINGERS. SEE "PUBLIC RIGHTS OF WAY ACCESSIBILITY GUIDELINES (PROWAG) 2005" FOR ADDITIONAL GUIDANCE ON USE OF HAND AND GUIDE RAILS.
- ⑤ USE DEVICES FREE OF SHARP OR ROUGH EDGES, AND USE ROUNDED FASTENERS (BOLTS) TO PREVENT HARM TO A PEDESTRIAN'S HANDS, ARMS, AND CLOTHING.
- ⑥ REGARDLESS OF WEATHER CONDITIONS PROVIDE FIRM, STABLE, FREE-DRAINING, AND NON-SLIP TEMPORARY WALKWAY SURFACES. TEMPORARY WALKWAY SURFACES SHALL ALLOW NORMAL USAGE OF WHEELCHAIRS, WALKERS, STROLLERS, OR OTHER MOBILITY DEVICES. CONCRETE, BITUMINOUS, STEEL, RUBBER, WOOD (3/4" OR THICKER), AND PLASTIC ARE ACCEPTABLE SURFACE MATERIALS FOR A TEMPORARY WALKWAY SURFACE. GRAVEL, MILLINGS, AND OTHER UNEVEN SURFACES ARE NOT ACCEPTABLE SURFACE MATERIALS.
- ⑦ PROVIDE 32" HIGH OR GREATER LONGITUDINAL CHANNELIZING DEVICES FOR PEDESTRIANS.
- ⑧ AN EDGE OF THE FRAMING MAY BE REMOVED IF IT IS NOT NEEDED FOR PEDESTRIAN GUIDANCE. STABILITY OF THE DETECTABLE EDGE SHOULD BE MAINTAINED.
- ⑨ TYPICAL. SEE SIGNING PLAN FOR DETAILS.



PEDESTRIAN CHANNELIZER DEVICE USING A PORTABLE CONCRETE BARRIER



PEDESTRIAN CHANNELIZER

<b>LEAD EXPERT OFFICE</b> BRIAN SORENSON STATE TRAFFIC ENGINEER OFFICE OF TRAFFIC ENGINEERING		<b>TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) DEVICES</b> CHANNELIZERS, SIDEWALK BARRICADES, AND PORTABLE STANDS		APPROVED: 03-18-2021 REVISED:	 THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.813	1 OF 2
		STANDARD PLAN	SP 002-606-014, SP 127-020-036 SAP 002-606-014, SAP 127-020-036	SHEET NO. 47		TOTAL SHEETS 118	

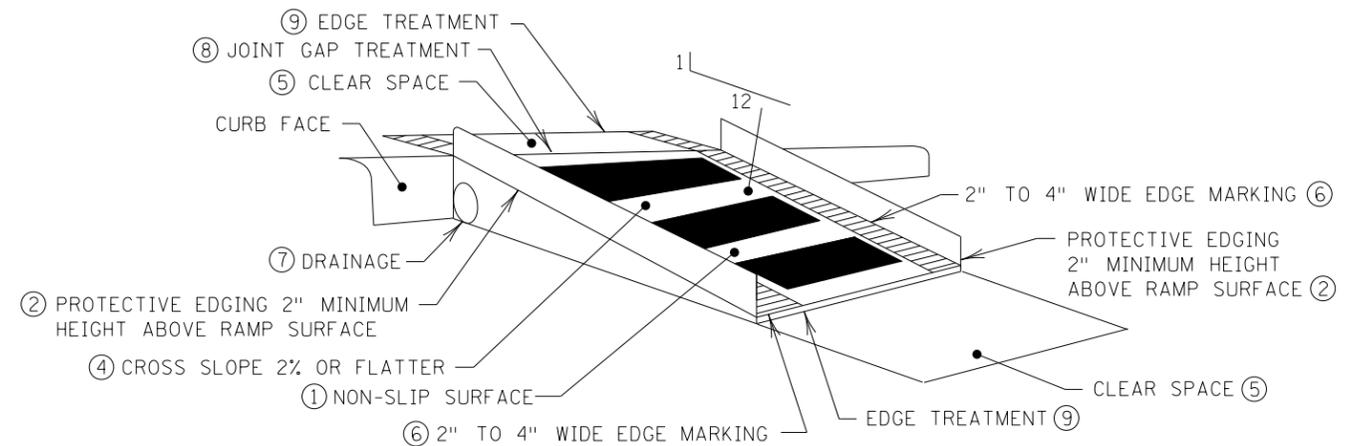
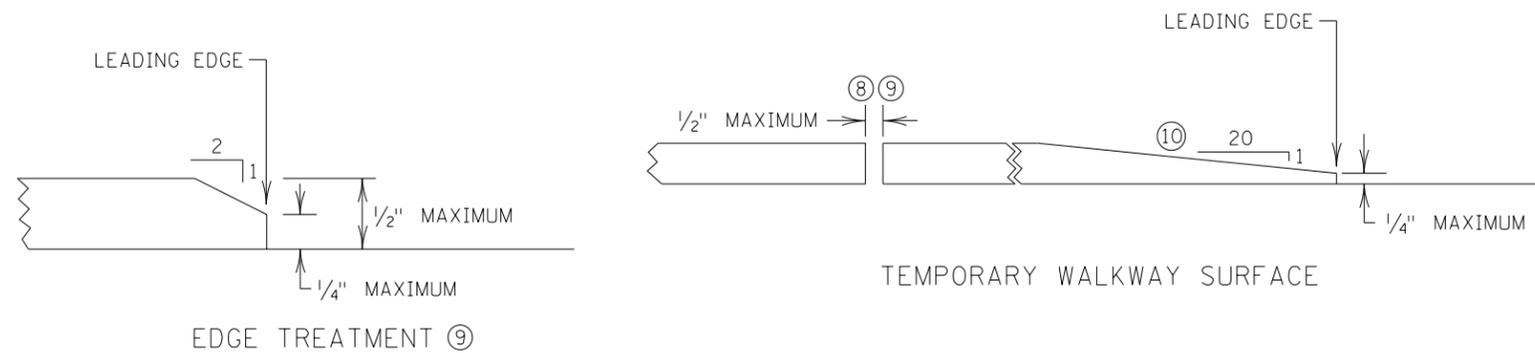
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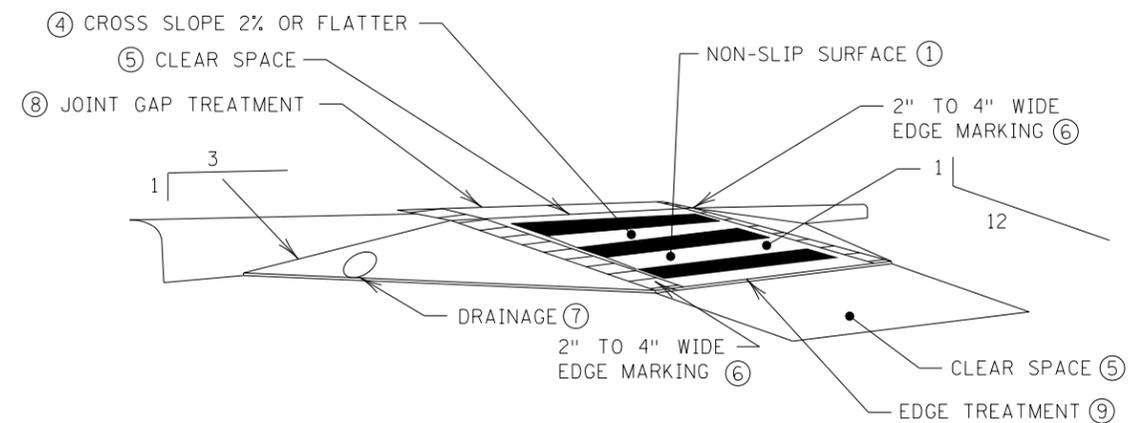
CONSTRUCT SLOPES AS INDICATED OR FLATTER, BUT NOT STEEPER.

TPAR SHOULD BE KEPT FREE OF TRASH, SEDIMENT, AND DEBRIS.

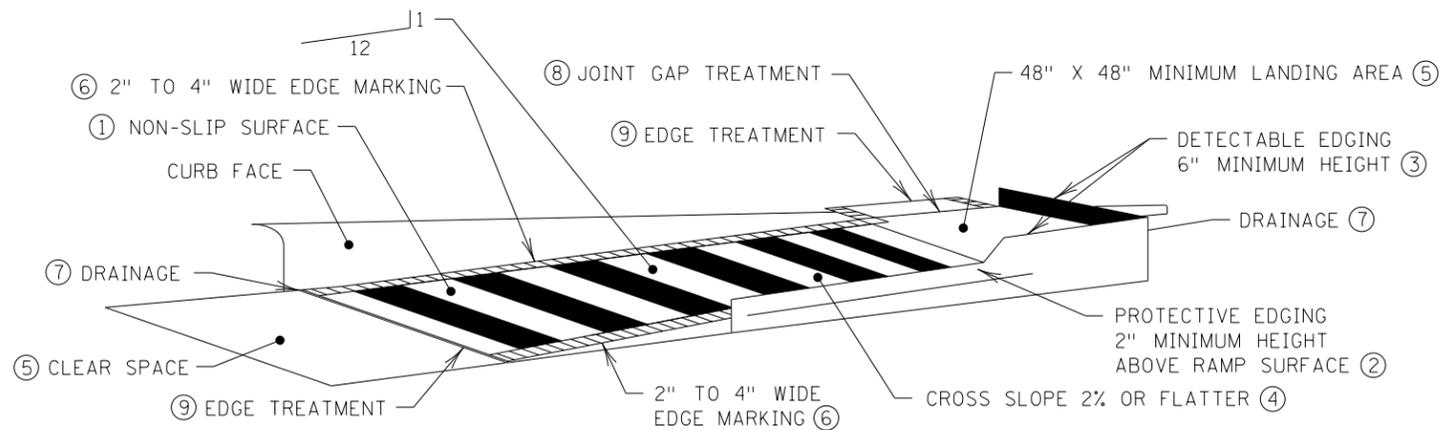
- ① CONSTRUCT CURB RAMPS AT LEAST 48" WIDE WITH A FIRM, STABLE, AND SLIP-RESISTANT SURFACE.
- ② PLACE PROTECTIVE EDGING WITH A 2" MINIMUM HEIGHT WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1V:3H. CONSIDER PROTECTIVE EDGING WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
- ③ PLACE DETECTABLE EDGING WITH 6" MINIMUM HEIGHT AND CONTRASTING COLOR ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION.
- ④ CONSTRUCT CURB RAMPS AND LANDINGS WITH A 2% OR FLATTER CROSS SLOPE.
- ⑤ PROVIDE A CLEAR SPACE OF AT LEAST 48" X 48" ABOVE AND BELOW THE CURB RAMP.
- ⑥ MARK THE CURB RAMP WALKWAY EDGE WITH A 2" TO 4" WIDE MARKING OF CONTRASTING COLOR. THE MARKING IS OPTIONAL WHERE COLOR-CONTRASTING EDGING IS USED.
- ⑦ DO NOT IMPEDE WATER FLOW IN THE GUTTER SYSTEM.
- ⑧ NO LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL EXCEED 1/2" WIDTH.
- ⑨ CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". USE VERTICAL LATERAL EDGES UP TO 1/4" HIGH, AND BEVELED AT 1V:2H FOR LATERAL EDGES BETWEEN 1/4" AND 1/2" HEIGHT.
- ⑩ BEVEL THE EDGE OF TEMPORARY WALKWAY SURFACES 1/2" OR THINNER AT 1V:2H. FOR THICKER WALKWAY SURFACE BEVEL EDGE 1V:20H OR FLATTER.



TEMPORARY CURB RAMP PERPENDICULAR TO CURB  
SHOWN WITH PROTECTIVE EDGE



TEMPORARY CURB RAMP PERPENDICULAR TO CURB  
SHOWN WITH SIDE APRON



TEMPORARY CURB RAMP  
PARALLEL TO CURB

LEAD EXPERT OFFICE  
BRIAN SORENSON  
STATE TRAFFIC ENGINEER  
OFFICE OF TRAFFIC ENGINEERING

TEMPORARY PEDESTRIAN ACCESS  
ROUTE (TPAR) DEVICES  
TEMPORARY CURB RAMPS AND WALKWAY SURFACES

APPROVED: 03-18-2021  
REVISED:

THOMAS STYRBICKI  
STATE DESIGN ENGINEER

STANDARD PLAN  
5-297.813

2 OF 2



STANDARD PLAN

SP 002-606-014, SP 127-020-036  
SAP 002-606-014, SAP 127-020-036

TRUNK HWY.

SHEET NO. 48

TOTAL SHEETS 118

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**NOTES & GUIDELINES**

**GENERAL INFORMATION:**

- ALL DISTANCES ARE APPROXIMATE.
- SIGNING:**
  - ALL TEMPORARY SIGNS ARE REQUIRED TO BE CRASHWORTHY PER THE AASHTO MANUAL FOR ASSESSING SAFETY HARDWARE 2016 (MASH-2016). TEMPORARY SIGN STRUCTURES THAT ARE CRASHWORTHY UNDER THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM REPORT 350 (NCHRP-350) MAY BE USED PROVIDED THE DEVICES WERE ACQUIRED BY THE CONTRACTOR PRIOR TO DECEMBER 31ST, 2019. THE MINNESOTA TYPE "C" AND "D" BRACED LEG U-CHANNEL (KNEE BRACE) SIGN SUPPORT IS NOT ALLOWED.
  - THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE FINAL SIGNS TO ASSURE THAT THE FINAL SIGNS ARE PLACED AS NEEDED, OR PROVIDE TEMPORARY SIGNING UNTIL THE FINAL SIGNING IS PLACED.
  - WHEN MULTIPLE GROUND MOUNTED SIGN STRUCTURES ARE PLACED ADJACENT TO EACH OTHER THERE SHOULD BE NO MORE THAN 2 POSTS WITHIN 84" OF EACH OTHER. WHEN THIS SPACING CAN NOT BE MAINTAINED, THEN SIGN STRUCTURES SHALL BE OFFSET, AND STAGGERED WITH A MINIMUM OF 4' BETWEEN SIGN STRUCTURES BOTH Laterally and Longitudinally.
  - WHEN A SIGN OR BARRICADE IS ORIENTED SUCH THAT VISIBILITY TO ROAD USERS INCLUDING BIKES AND PEDESTRIANS IS REDUCED ENOUGH TO CAUSE A HAZARD, DELINEATE THE SIGN/BARRICADE WITH APPROPRIATE DEVICES.
  - TEMPORARY SIGNS SHALL BE PLACED SUCH THAT OBSTACLES DO NOT BLOCK THEM FROM BEING VIEWED BY APPROACHING ROAD USERS. OBSTACLES MAY INCLUDE, BUT ARE NOT LIMITED TO, LIGHT POLES, TREES, SIGNS, AND BUILDINGS.
  - TEMPORARY SIGNS SHALL BE PLACED AND ORIENTED APPROXIMATELY AS SHOWN IN THE PLAN, AT RIGHT ANGLES TO DIRECTION OF AND FACING THE TRAFFIC THEY ARE INTENDED TO SERVE, UNLESS OTHERWISE SPECIFIED.
  - LONGITUDINAL DROPOFFS SHALL BE SIGNED AS SHOWN IN THE "MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL" PAGES (6K-qj) THRU (6K-ql) UNLESS OTHERWISE SPECIFIED IN THESE PLANS.
  - AFTER REMOVAL OF SIGN AND/OR SIGN BASE, BACK FILL, COMPACT, AND LEVEL SOIL TO MATCH SURROUNDING SOIL.

**PAVEMENT MARKING:**

- MASK OR REMOVE ANY CONFLICTING PAVEMENT MARKINGS AS SHOWN IN THE PLAN OR APPROVED BY THE ENGINEER.
- SEE 2582 IN THE SPECIAL PROVISIONS FOR PAVEMENT MARKING SPOTTING RESPONSIBILITIES.

**BARRIER & DELINEATION:**

- PLACE AND MAINTAIN PORTABLE BARRIER DELINEATORS ANY TIME TRAFFIC IS WITHIN 10' OF BARRIER. DELINEATORS WILL EACH HAVE A MINIMUM OF 24 SQ IN. OF RETROREFLECTIVE SURFACE ON BOTH SIDES PLACED AT 25' SPACING ON TOP OF THE BARRIER. SIDE MOUNTED PORTABLE BARRIER DELINEATORS WILL HAVE A MINIMUM OF 12 SQ. IN. OF RETROREFLECTIVE SURFACE AREA AND BE PLACED AT 12.5' SPACING. IF A SMALLER APPROVED BARRIER DELINEATOR IS USED IT SHALL BE A MINIMUM OF 6 SQ IN. OF RETROREFLECTIVE SURFACE AREA AND BE PLACED ON BOTH SIDES AT 6.25' SPACING. TEMPORARY BARRIER DELINEATOR COLOR SHALL MATCH APPLICABLE PAVEMENT MARKING.

**CONSTRUCTION INFORMATION SIGNING:**

- THE CONTRACTOR SHALL USE CONSTRUCTION INFORMATION SIGNING AS SHOWN IN THE PLAN WHICH ARE TO BE USED AS FOLLOWS:  
 PLACE THE G20-X1 ADVANCE CLOSURE NOTICE SIGN(S) 10 DAYS PRIOR TO THE PLANNED CLOSURE DATE.  
 PLACE G20-X2 ADVANCE NOTICE SIGNS 10 DAYS PRIOR TO THE WORK STARTING DATE. ONCE WORK BEGINS, COVER THE START DATE LEGEND WITH SUGGESTED PLAQUE CONTAINED IN THIS PLAN. IF NO ALTERNATE MESSAGE IS SHOWN IN THE PLAN OR APPROVED BY THE ENGINEER, DISPLAY THE CORRECT ESTIMATED FINISH DATE, MONTH, OR SEASON.  
 IF CONSTRUCTION INFORMATION SIGNING IS NO LONGER VISIBLE TO THE MOTORING PUBLIC ONCE WORK BEGINS, MOVE SAID SIGNING TO A SITE IN ADVANCE OF THE WORK ZONE OR CLOSURE AS SHOWN IN THE PLAN OR APPROVED BY THE ENGINEER.  
 PLACE PORTABLE CHANGEABLE MESSAGE SIGNS 10 DAYS PRIOR TO THE WORK STARTING ON EACH LEG OF THE INTERSECTION.

**PAVEMENT MARKING SYMBOLS AND MATERIALS LEGEND**

SOLID LINE PAVEMENT MARKING WITH TEMPORARY RAISED PAVEMENT MARKERS AT 10' SPACES

BROKEN LINE-50' CYCLE (10' LINE, 40' GAP)

DOTTED LINE-15' CYCLE (3' LINE, 12' GAP), UNLESS SHOWN OTHER WISE IN THE PLAN

CROSSWALK BLOCK

PAVEMENT MESSAGE (LEFT ARROW)

STRIPING KEY

CIRCLE-MULTI COMP      BOX-PREF TAPE

TRIANGLE-PAINT      OCTAGON-PREF THERMO

1ST DIGIT WIDTH: 4", 8", ETC.

2ND DIGIT PATTERN:  
 S - SOLID  
 B - BROKEN  
 T - DOTTED  
 D - DOUBLE SOLID  
 K - DOUBLE BROKEN  
 H - DOUBLE DOTTED

3RD DIGIT COLOR:  
 W - WHITE  
 Y - YELLOW  
 B - BLACK

G=GROUND IN W=WET REFLECTIVE  
 C=CONTRAST E=ENHANCED SKID RESISTANCE

EXAMPLE: = 4" SOLID LINE WHITE PREF THERMO GROUND IN, CONTRAST, WET REFLECTIVE

**INDEX**

TRAFFIC CONTROL SHEET NO.		DESCRIPTIONS
49R		TEMPORARY TRAFFIC CONTROL TITLE SHEET
50R		TRAFFIC CONTROL & SIGN TABULATION AND STAGING NARRATIVE
51		TEMPORARY SQUARE TUBE GROUND MOUNTED SIGN PLACEMENT
52		TEMPORARY SIGN COVERING
53R - 60R		STAGING PLANS
61R		DETOURS

**TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND**

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	AREA CLOSED TO TRAFFIC / WORK AREA		PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
	TRAFFIC CONTROL SIGN		AUDIBLE MESSAGE DEVICE (AMD)
	TYPE III BARRICADE =		
	DRUM-LIKE CHANNELIZER (TYPE B) =		
	TYPE II BARRICADE =		

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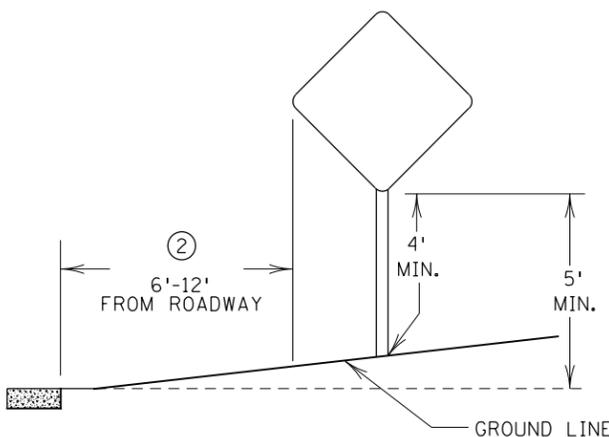
**GENERAL NOTES:**

1. GROUND MOUNTED SQUARE TUBE SIGN STRUCTURES PLACED WITHIN 50' OF THE RADIUS END OF AN INTERSECTION SHALL BE PLACED ON ONE 2" OR 2-1/2" POST.
2. FOR 2" SQUARE TUBE RISER POST IN SOIL, USE FIN BASE PLACED PER MANUFACTURER'S SPECIFICATIONS. USE A 2" X 2" PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE RISER POST. PLACE 3/8" STAINLESS STEEL BOLT THROUGH THE 5TH HOLE DOWN FROM THE TOP OF THE BASE. RISER POST SHALL REST ON THE BOLT.
3. FOR 2-1/2" SQUARE TUBE RISER POST IN SOIL, USE SLIP BASE PLACED PER MANUFACTURER'S SPECIFICATIONS USING A 10 GAUGE, 2-1/2" X 2-1/2" PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE RISER POST WITH A 10 GAUGE 2-3/16" X 2-3/16" PRE-PUNCHED, GALVANIZED STEEL, SQUARE TUBE INTERNAL INSERT.

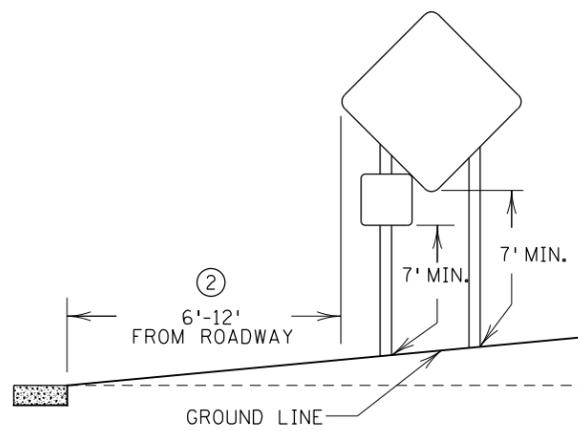
**SPECIFIC NOTES:**

- ① IF ANY PART OF A SIGN OR SIGN ASSEMBLY EXTENDS MORE THAN 4" INTO THE PEDESTRIAN FACILITY, THE MINIMUM HEIGHT TO BOTTOM OF THE SIGN OR SIGN ASSEMBLY SHALL BE 7'.
- ② 6' - 12' FROM EDGE OF ROADWAY, MUST BE A MINIMUM OF 6' FROM EDGE OF PAVED SHOULDER (WHEN PRESENT).
- ③ IF GROUND MOUNTED TEMPORARY SIGN OR SIGN ASSEMBLY IS PLACED ON 2-1/2" SQUARE TUBE RISER POST(S), THE MINIMUM CLEARANCE FROM THE GROUND LINE TO THE BOTTOM OF THE LOWEST SIGN ON THE ASSEMBLY SHALL BE 7', OR AS SHOWN IN DETAIL, WHICHEVER IS GREATER.
- ④ 5' MINIMUM IN RURAL. 7' MINIMUM IN BUSINESS, COMMERCIAL, OR RESIDENTIAL AREAS.
- ⑤ WHEN MULTIPLE GROUND MOUNTED SIGN STRUCTURES ARE PLACED ADJACENT TO EACH OTHER THERE SHOULD BE NO MORE THAN 2 POSTS WITHIN 84" OF EACH OTHER. WHEN THIS SPACING CAN NOT BE MAINTAINED, THEN SIGN STRUCTURES SHALL BE OFFSET, AND STAGGERED WITH A MINIMUM OF 4' BETWEEN SIGN STRUCTURES BOTH Laterally AND LONGITUDINALLY. EXAMPLE SHOWS DETOUR SIGNAGE, BUT THIS REQUIREMENT APPLIES TO ALL SIGNAGE.
- ⑥ INPLACE AND/OR OTHER CONSTRUCTION SIGNING.

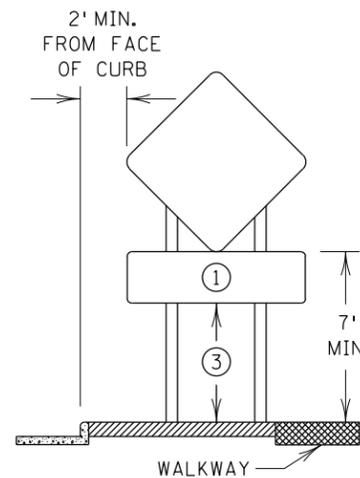
NOT TO SCALE



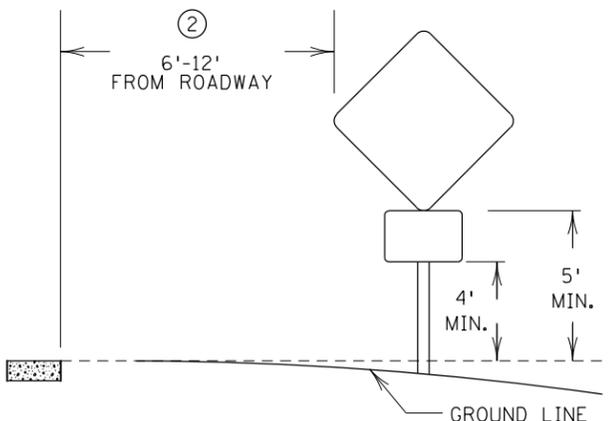
TYPICAL RURAL DESIGN AND 2" RISER POST



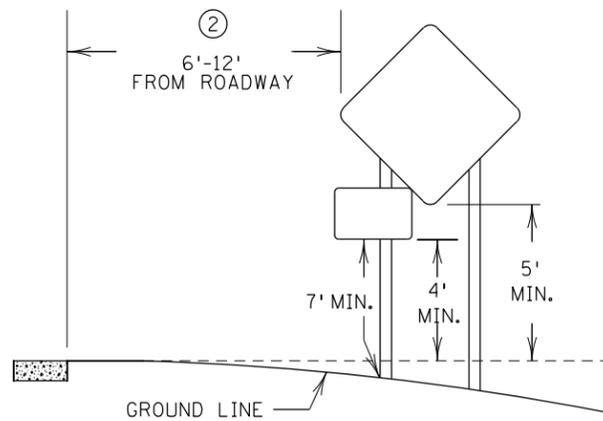
TYPICAL RURAL DESIGN WITH SUPPLEMENTAL PLAQUE AND 2-1/2" RISER POST



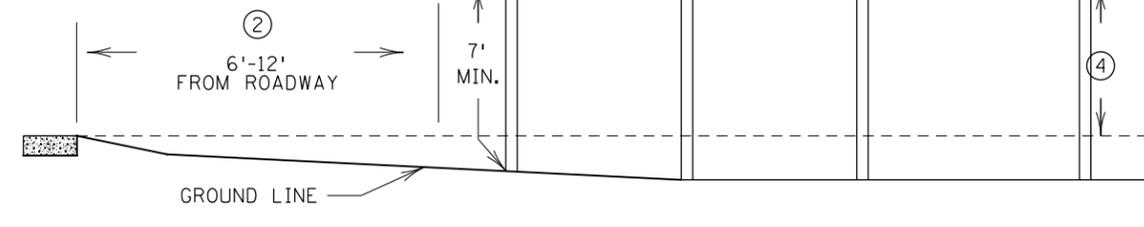
BUSINESS, COMMERCIAL, OR RESIDENTIAL AREA



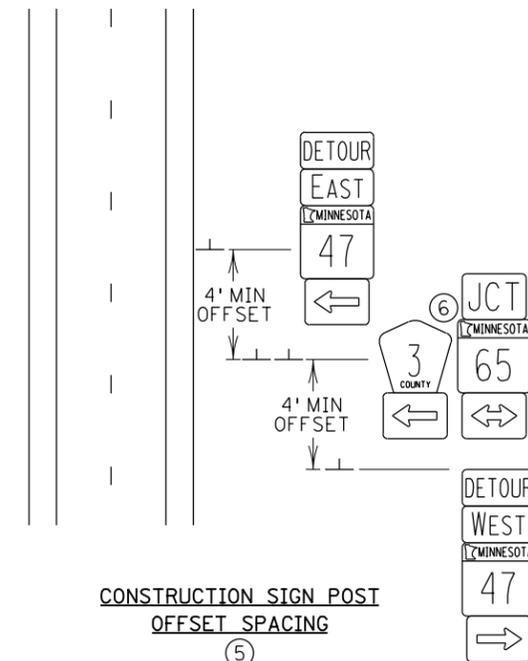
TYPICAL RURAL DESIGN WITH SUPPLEMENTAL PLAQUE AND 2" RISER POST



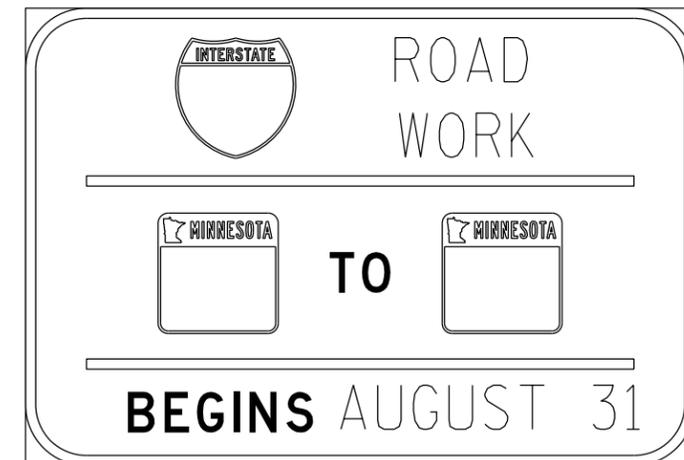
TYPICAL RURAL DESIGN 2-1/2" RISER POST



TYPICAL G20-X2 DESIGN



CONSTRUCTION SIGN POST OFFSET SPACING



**TEMPORARY SQUARE TUBE GROUND MOUNTED SIGN PLACEMENT**

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NO	DATE	BY	CHKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: ZACHARIAH F. HEIMER  
*Zach Heimer*  
 Date: 05/14/2025 License #: 58755

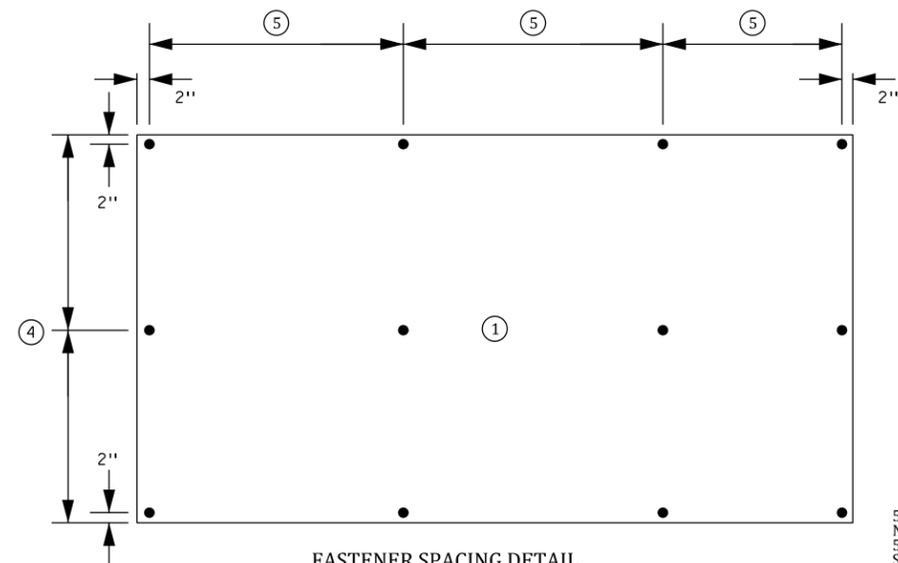
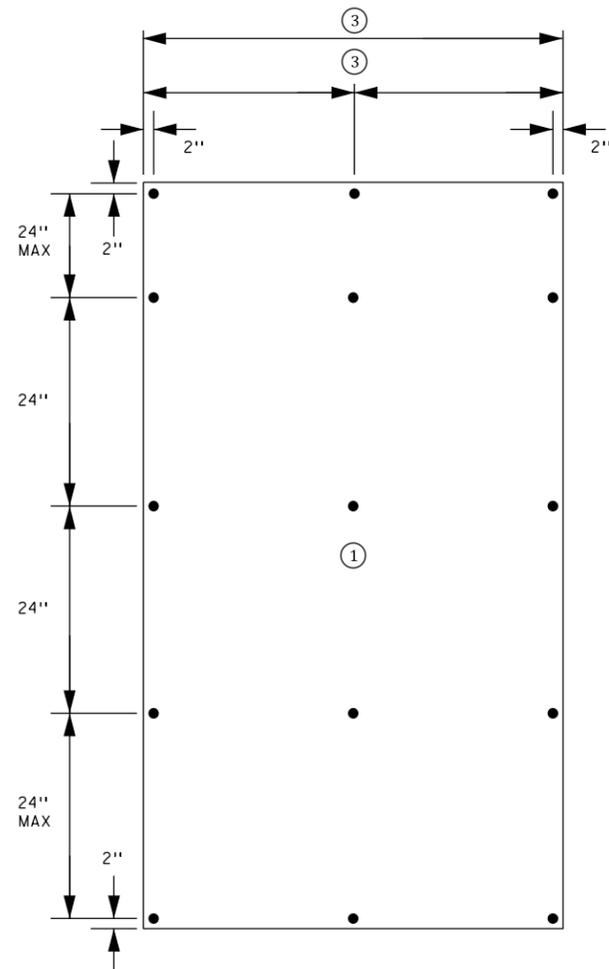
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 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036  
 DRAWN BY M. WENDLER  
 DESIGNED BY M. WENDLER  
 CHECKED BY Z. HEIMER  
 COMM. NO. 2417338



ANOKA COUNTY, MINNESOTA  
 TRAFFIC CONTROL AND STAGING PLANS  
 SP 002-606-014, SP 127-020-036  
 DETAILS

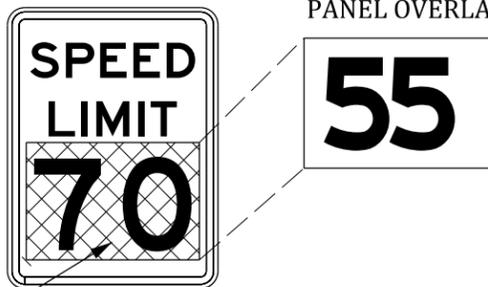
SHEET 51 OF 118

**FASTENER SPACING DETAIL  
HORIZONTAL PLACEMENT**

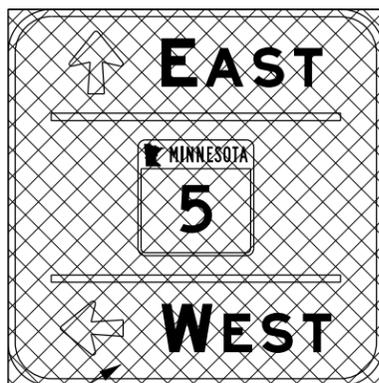


**FASTENER SPACING DETAIL  
VERTICAL PLACEMENT**

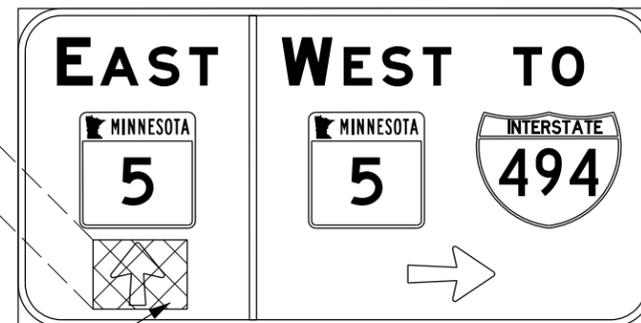
R2-1  
BLACK ON WHITE  
PANEL OVERLAY



BLANK  
NON-REFLECTIVE  
GREEN  
COVER



BLACK ON  
ORANGE  
PANEL  
OVERLAY

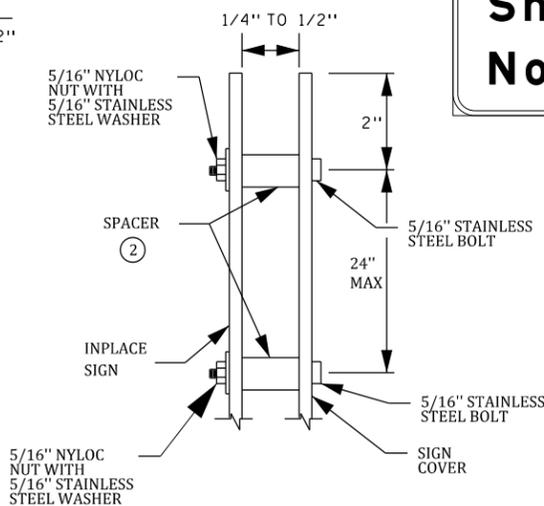


BLACK ON  
ORANGE  
PANEL  
OVERLAY



EXIT  
CLOSED

**SPACER DETAIL**



**GENERAL NOTES:**

- SIGN COVERS ARE USED TO COVER THE ENTIRE PANEL OF A INPLACE SIGN. THE COVER SHALL BE BLANK, GREEN IN COLOR, AND MADE OF A RIGID NON-REFLECTIVE MATERIAL (SHEET ALUMINUM, PLYWOOD, CORRUGATED PLASTIC). OTHER MATERIALS MAY BE USED AS APPROVED BY THE ENGINEER.
- SIGN PANEL OVERLAYS ARE USED TO MODIFY THE MESSAGE OF AN INPLACE SIGN PANEL. THE PANEL OVERLAY SHALL BE MADE OF SHEET ALUMINUM WITH THE APPROPRIATE SHEETING MATERIAL AS SPECIFIED ON THE MNDOT SHEETING FOR RIGID TEMPORARY WORK ZONE SIGNS APL. THE MESSAGE SHALL FOLLOW THE REQUIREMENTS OF THE "MNDOT STANDARD SIGNS AND MARKINGS MANUAL" OR THE "FHWA STANDARD HIGHWAY SIGNS MANUAL" (AND SUPPLEMENTS). THE SIGN PANEL OVERLAY SHALL BE RECTANGULAR IN SHAPE AND FULLY COVER THE MESSAGE ELEMENT(S) BEING MODIFIED.  
  
SIGN PANEL OVERLAY WITH A MESSAGE SHALL BE BLACK ON FLUORESCENT ORANGE ON ALL SIGNS, EXCEPT FOR REGULATORY SIGNS WHICH SHALL BE THE PROPER COLOR ON A WHITE BACKGROUND.  
  
BLANK SIGN PANEL OVERLAYS SHALL BE FLUORESCENT ORANGE ON ALL SIGNS.  
  
DO NOT COVER OR MODIFY THE "STOP" (R1-1), "YIELD" (R1-2), OR THE (W14-3) NO PASSING ZONE SIGNS, THESE SIGNS SHALL BE REMOVED IF THEY NO LONGER APPLY OR CONFLICT WITH WORK ZONE SIGNING.
- MINIMIZE DAMAGE TO THE INPLACE SIGN PANEL. DO NOT APPLY TAPE TO THE INPLACE SIGN SHEETING.
- SPACERS (SUCH AS PLASTIC OR RUBBER) SHALL BE A MATERIAL THAT WILL NOT HARM THE INPLACE SIGN SHEETING FACE.
- ATTACH SIGN COVER PANEL OR PANEL OVERLAY USING HARDWARE SHOWN IN THE SPACER DETAIL.
- IF SHEET METAL SCREWS ARE USED TO PLACE CORRUGATED PLASTIC AS A SIGN COVER PANEL, PLACE FENDER WASHERS BETWEEN THE SCREW HEADS AND THE CORRUGATED PLASTIC.
- REMOVE ALL COVERING MATERIAL, MOUNTING HARDWARE, AND FASTENERS WHEN SIGN COVER PANEL OR PANEL OVERLAY IS REMOVED.
- NO HANDLE OR OTHER LIFTING DEVICE SHALL BE LEFT ATTACHED TO ANY SIGN COVER PANEL AFTER PLACEMENT.

**SPECIFIC NOTES:**

- THE SIGN COVER OR PANEL OVERLAY SHALL FULLY COVER THE MESSAGE BEING COVERED OR MODIFIED.
- PLACE SIGN COVER AND PANEL OVERLAYS WITH SPACERS THAT PROVIDE A SPACING OF 1/4 IN TO 1/2 IN BETWEEN THE COVER MATERIAL AND THE INPLACE SIGN. THE SPACERS SHALL HAVE AN OUTSIDE DIAMETER BETWEEN 3/8 IN TO 7/8 IN. EACH FASTENER REQUIRES A SPACER.
- IF THE SIGN COVER OR PANEL OVERLAY IS GREATER THAN 48 IN WIDE, THE FASTENER SPACING SHALL BE NO GREATER THAN 24 IN. IF THE SIGN COVER OR PANEL OVERLAY IS LESS THAN 24 IN WIDE, DO NOT PLACE A CENTER FASTENER (UNLESS REQUIRED BY SPECIFIC NOTE 4).
- VERTICAL SPACING FOR FASTENERS IS 50% OF THE SIGN COVER OR PANEL OVERLAY. IF THE SIGN COVER OR PANEL OVERLAY IS LESS THAN 24 IN HIGH, DO NOT PLACE A CENTER FASTENER (UNLESS REQUIRED PER SPECIFIC NOTE 5).
- HORIZONTAL SPACING FOR FASTENERS SHALL NOT BE LESS THAN 15 IN OR MORE THAN 24 IN.

**ASSEMBLY NOTES:**

- DRILL 11/32 IN HOLES ON THE SIGN COVER OR PANEL OVERLAY IN ACCORDANCE WITH HELD FASTENER SPACING DETAILS.
- ATTACH PLASTIC SPACERS TO SIGN COVER OR PANEL OVERLAY WITH DOUBLE FACED TAPE, CENTERED BEHIND EACH DRILLED HOLE.
- POSITION THE COVER OR OVERLAY MATERIAL OVER THE SIGN OR MESSAGE TO BE MODIFIED.
- DRILL ALL THE OUTSIDE HOLES THROUGH THE INPLACE SIGN PANEL AND ATTACH THE COVER OR OVERLAY MATERIAL WITH APPROPRIATE FASTENERS.
- DRILL ALL THE INNER HOLES THROUGH THE INPLACE SIGN PANEL AND ATTACH WITH APPROPRIATE FASTENERS.

**TEMPORARY SIGN COVERING AND MODIFICATION DETAIL**

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
Print Name: ZACHARIAH F. HEIMER  
*Zach Heimer*  
Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
STATE PROJECT NO. 127-020-036  
STATE AID PROJECT NO. 002-606-014  
STATE AID PROJECT NO. 127-020-036

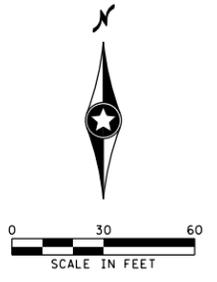
DRAWN BY M. WENDLER  
DESIGNED BY M. WENDLER  
CHECKED BY Z. HEIMER  
COMM. NO. 2417338



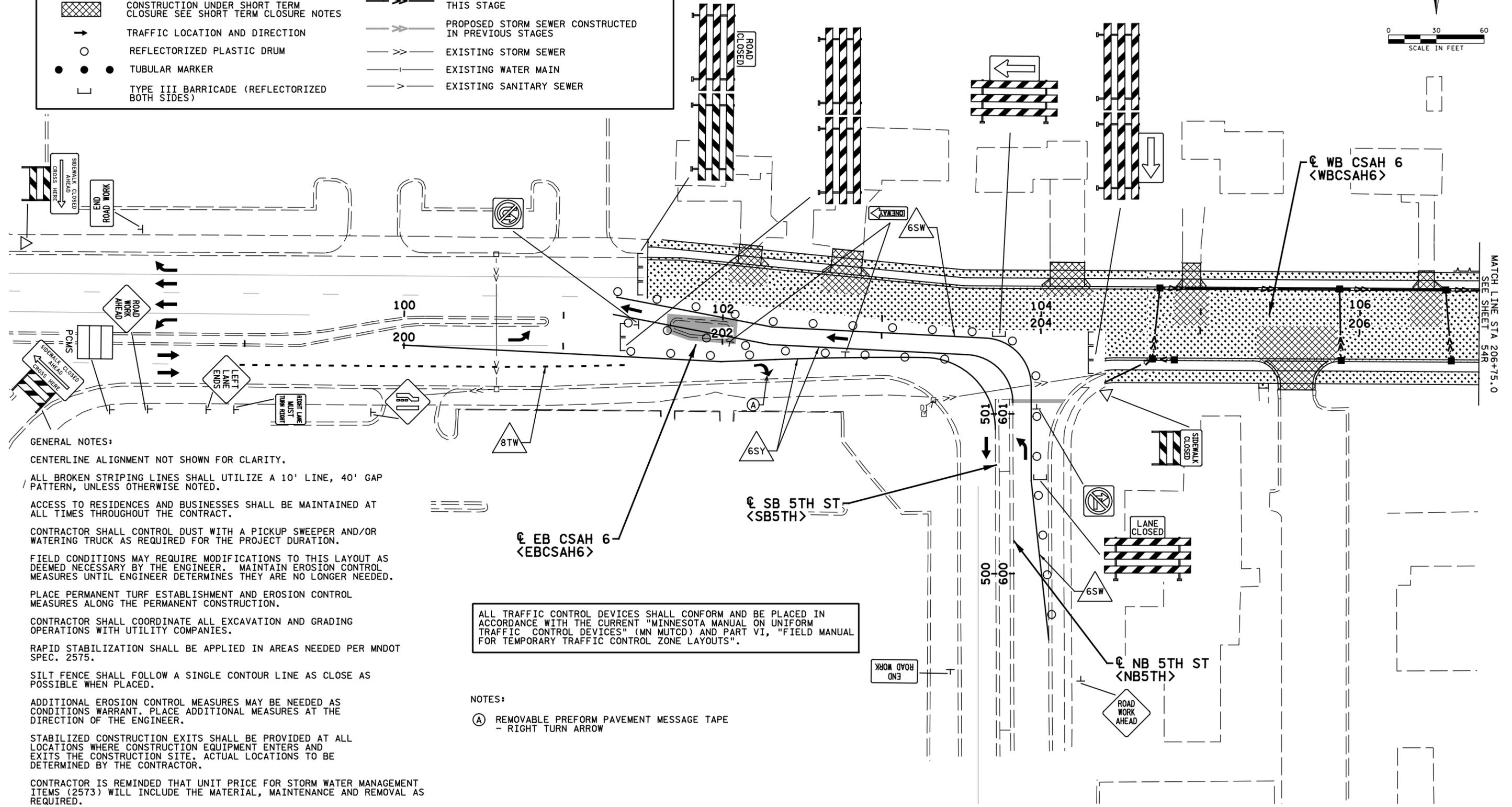
**ANOKA COUNTY, MINNESOTA**  
TRAFFIC CONTROL AND STAGING PLANS  
SP 002-606-014, SP 127-020-036  
DETAILS

**SHEET 52 OF 118**

3:15:20 PM 5/14/2025 ...F InaIP IanC\17338.tcd05.dgn



LEGEND	
	TEMPORARY PAVEMENT/TEMPORARY BYPASS CONSTRUCTION
	PERMANENT CONSTRUCTION
	CONSTRUCTION UNDER SHORT TERM CLOSURE SEE SHORT TERM CLOSURE NOTES
	TRAFFIC LOCATION AND DIRECTION
	REFLECTORIZED PLASTIC DRUM
	TUBULAR MARKER
	TYPE III BARRICADE (REFLECTORIZED BOTH SIDES)
	TYPE II BARRICADE (REFLECTORIZED)
	STANDARD SIGN (POST OR STAND MOUNTED)
	PROPOSED STORM SEWER CONSTRUCTED THIS STAGE
	PROPOSED STORM SEWER CONSTRUCTED IN PREVIOUS STAGES
	EXISTING STORM SEWER
	EXISTING WATER MAIN
	EXISTING SANITARY SEWER



**GENERAL NOTES:**

CENTERLINE ALIGNMENT NOT SHOWN FOR CLARITY.

ALL BROKEN STRIPING LINES SHALL UTILIZE A 10' LINE, 40' GAP PATTERN, UNLESS OTHERWISE NOTED.

ACCESS TO RESIDENCES AND BUSINESSES SHALL BE MAINTAINED AT ALL TIMES THROUGHOUT THE CONTRACT.

CONTRACTOR SHALL CONTROL DUST WITH A PICKUP SWEEPER AND/OR WATERING TRUCK AS REQUIRED FOR THE PROJECT DURATION.

FIELD CONDITIONS MAY REQUIRE MODIFICATIONS TO THIS LAYOUT AS DEEMED NECESSARY BY THE ENGINEER. MAINTAIN EROSION CONTROL MEASURES UNTIL ENGINEER DETERMINES THEY ARE NO LONGER NEEDED.

PLACE PERMANENT TURF ESTABLISHMENT AND EROSION CONTROL MEASURES ALONG THE PERMANENT CONSTRUCTION.

CONTRACTOR SHALL COORDINATE ALL EXCAVATION AND GRADING OPERATIONS WITH UTILITY COMPANIES.

RAPID STABILIZATION SHALL BE APPLIED IN AREAS NEEDED PER MNDOT SPEC. 2575.

SILT FENCE SHALL FOLLOW A SINGLE CONTOUR LINE AS CLOSE AS POSSIBLE WHEN PLACED.

ADDITIONAL EROSION CONTROL MEASURES MAY BE NEEDED AS CONDITIONS WARRANT. PLACE ADDITIONAL MEASURES AT THE DIRECTION OF THE ENGINEER.

STABILIZED CONSTRUCTION EXITS SHALL BE PROVIDED AT ALL LOCATIONS WHERE CONSTRUCTION EQUIPMENT ENTERS AND EXITS THE CONSTRUCTION SITE. ACTUAL LOCATIONS TO BE DETERMINED BY THE CONTRACTOR.

CONTRACTOR IS REMINDED THAT UNIT PRICE FOR STORM WATER MANAGEMENT ITEMS (2573) WILL INCLUDE THE MATERIAL, MAINTENANCE AND REMOVAL AS REQUIRED.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE WITH THE CURRENT "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD) AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

**NOTES:**

(A) REMOVABLE PREFORM PAVEMENT MESSAGE TAPE - RIGHT TURN ARROW

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NO	DATE	BY	CHKD	APPR	REVISION
	06/19/25	MSW	KFH	KFH	ADDENDUM #1: STAGING REVISIONS

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

Print Name: KEVIN M. JULLIE

*Kevin Jullie*

Date: 06/19/2025 License #: 26755

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036

DRAWN BY M. WENDLER  
 DESIGNED BY M. WENDLER  
 CHECKED BY K. HARRISON  
 COMM. NO. 2417338



ANOKA COUNTY, MINNESOTA

STAGING PLANS

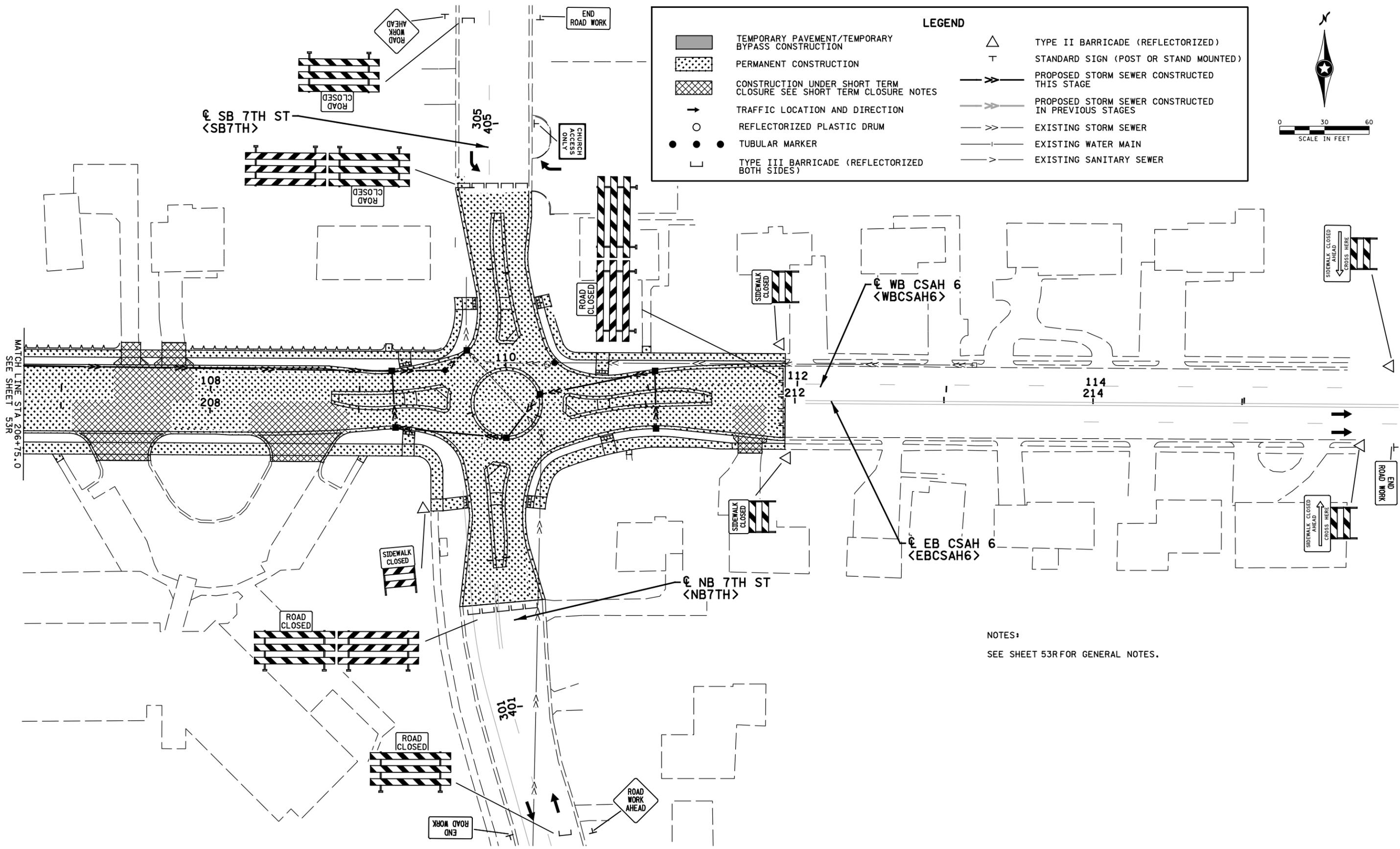
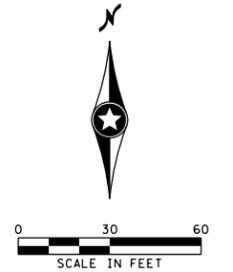
SP 002-606-014, SP 127-020-036

STAGE 1

SHEET 53R OF 118

**LEGEND**

	TEMPORARY PAVEMENT/TEMPORARY BYPASS CONSTRUCTION		TYPE II BARRICADE (REFLECTORIZED)
	PERMANENT CONSTRUCTION		STANDARD SIGN (POST OR STAND MOUNTED)
	CONSTRUCTION UNDER SHORT TERM CLOSURE SEE SHORT TERM CLOSURE NOTES		PROPOSED STORM SEWER CONSTRUCTED THIS STAGE
	TRAFFIC LOCATION AND DIRECTION		PROPOSED STORM SEWER CONSTRUCTED IN PREVIOUS STAGES
	REFLECTORIZED PLASTIC DRUM		EXISTING STORM SEWER
	TUBULAR MARKER		EXISTING WATER MAIN
	TYPE III BARRICADE (REFLECTORIZED BOTH SIDES)		EXISTING SANITARY SEWER



NOTES:  
SEE SHEET 53R FOR GENERAL NOTES.

12:25:57 PM 06/19/2025 ...F InaIPlanC\17338.stg1a02.dgn

06/19/25	MSW	KFH	KFH	ADDENDUM #1: STAGING REVISIONS
NO	DATE	BY	CKD	APPR

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

Print Name: KEVIN M. JULLIE  
*Kevin Jullie*  
Date: 06/19/2025 License #: 26755

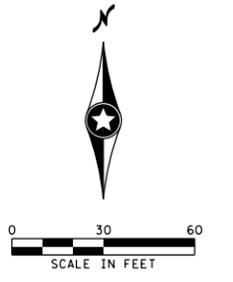
STATE PROJECT NO. 002-606-014  
STATE PROJECT NO. 127-020-036  
STATE AID PROJECT NO. 002-606-014  
STATE AID PROJECT NO. 127-020-036

DRAWN BY M. WENDLER  
DESIGNED BY M. WENDLER  
CHECKED BY K. HARRISON  
COMM. NO. 2417338

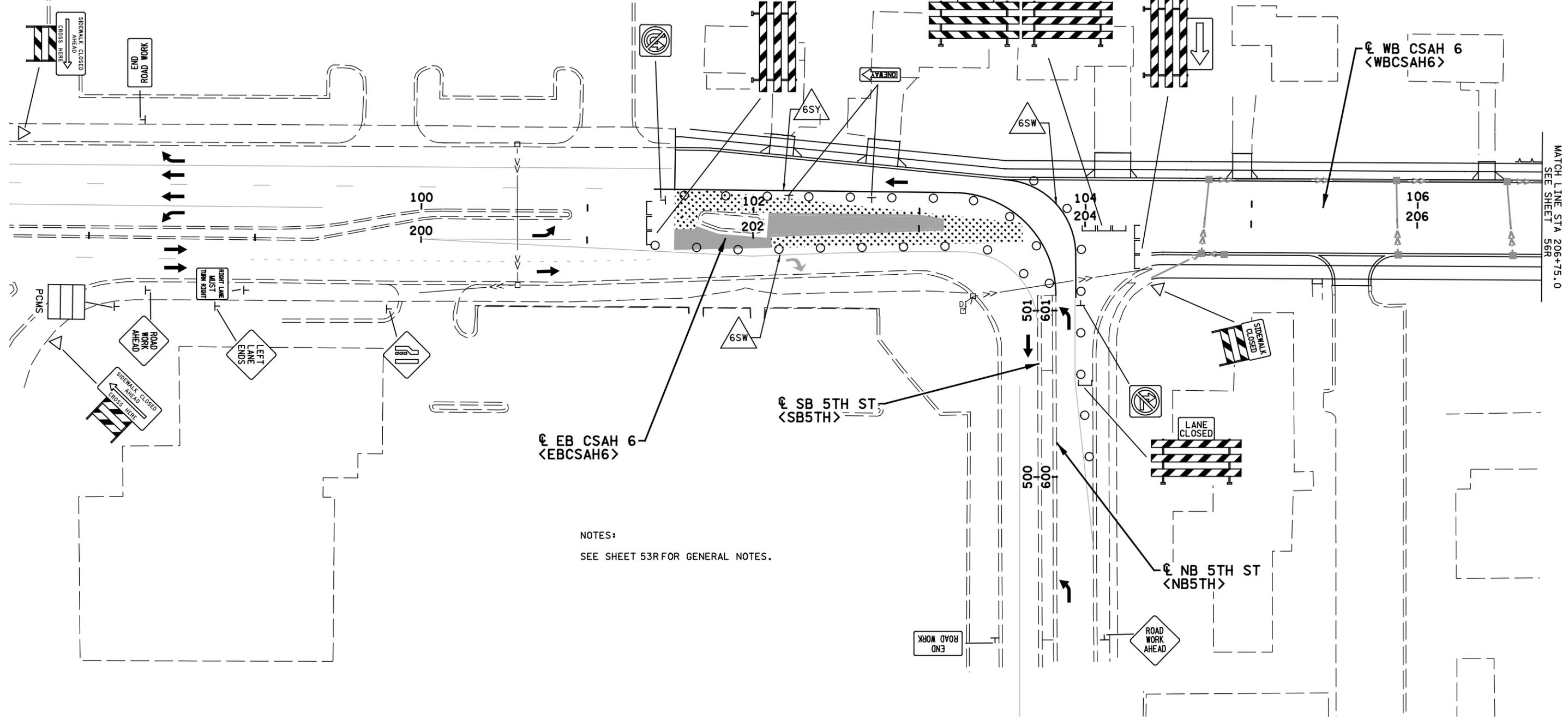


ANOKA COUNTY, MINNESOTA  
STAGING PLANS  
SP 002-606-014, SP 127-020-036  
STAGE 1

SHEET 54R OF 118



LEGEND			
	TEMPORARY PAVEMENT/TEMPORARY BYPASS CONSTRUCTION		TYPE II BARRICADE (REFLECTORIZED)
	PERMANENT CONSTRUCTION		STANDARD SIGN (POST OR STAND MOUNTED)
	CONSTRUCTION UNDER SHORT TERM CLOSURE SEE SHORT TERM CLOSURE NOTES		PROPOSED STORM SEWER CONSTRUCTED THIS STAGE
	TRAFFIC LOCATION AND DIRECTION		PROPOSED STORM SEWER CONSTRUCTED IN PREVIOUS STAGES
	REFLECTORIZED PLASTIC DRUM		EXISTING STORM SEWER
	TUBULAR MARKER		EXISTING WATER MAIN
	TYPE III BARRICADE (REFLECTORIZED BOTH SIDES)		EXISTING SANITARY SEWER



NOTES:  
SEE SHEET 53R FOR GENERAL NOTES.

12:25:58 PM 06/19/2025 ...F InaIP\anC\17338.stg2a01.dgn

NO	DATE	BY	CKD	APPR	REVISION
	06/19/25	MSW	KFH	KFH	ADDENDUM #1: STAGING REVISIONS

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: KEVIN M. JULLIE  
*Kevin Jullie*  
 Date: 06/19/2025 License #: 26755

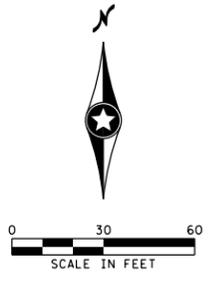
STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036  
 DRAWN BY M. WENDLER  
 DESIGNED BY M. WENDLER  
 CHECKED BY K. HARRISON  
 COMM. NO. 2417338



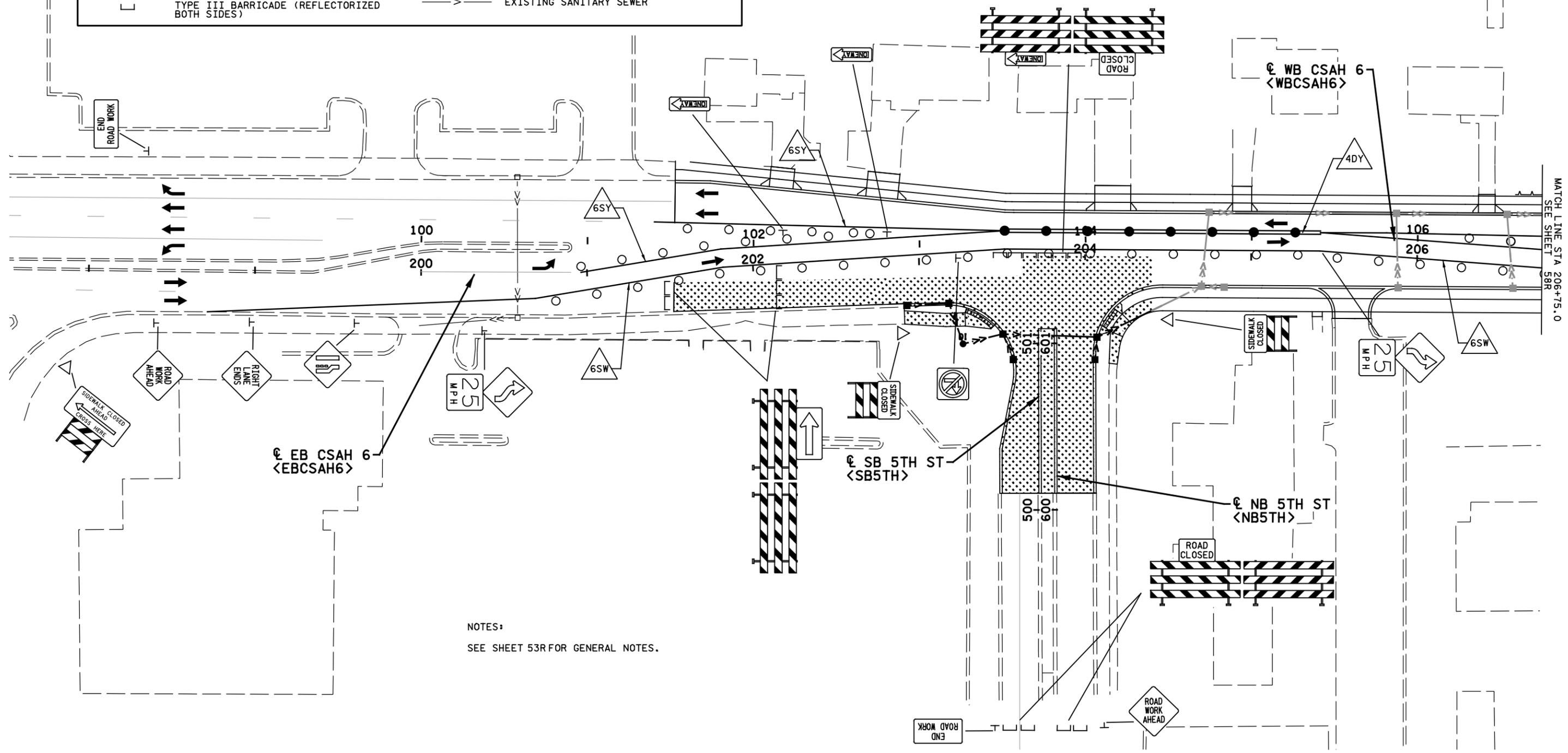
ANOKA COUNTY, MINNESOTA  
 STAGING PLANS  
 SP 002-606-014, SP 127-020-036  
 STAGE 2

SHEET 55R OF 118





LEGEND	
	TEMPORARY PAVEMENT/TEMPORARY BYPASS CONSTRUCTION
	PERMANENT CONSTRUCTION
	CONSTRUCTION UNDER SHORT TERM CLOSURE SEE SHORT TERM CLOSURE NOTES
	TRAFFIC LOCATION AND DIRECTION
	REFLECTORIZED PLASTIC DRUM
	TUBULAR MARKER
	TYPE III BARRICADE (REFLECTORIZED BOTH SIDES)
	TYPE II BARRICADE (REFLECTORIZED)
	STANDARD SIGN (POST OR STAND MOUNTED)
	PROPOSED STORM SEWER CONSTRUCTED THIS STAGE
	PROPOSED STORM SEWER CONSTRUCTED IN PREVIOUS STAGES
	EXISTING STORM SEWER
	EXISTING WATER MAIN
	EXISTING SANITARY SEWER



NOTES:  
SEE SHEET 53R FOR GENERAL NOTES.

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NO	DATE	BY	CKD	APPR	REVISION
	06/19/25	MSW	KFH	KFH	ADDENDUM #1: STAGING REVISIONS

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: KEVIN M. JULLIE  
*Kevin Jullie*  
 Date: 06/19/2025 License #: 26755

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036  
 DRAWN BY M. WENDLER  
 DESIGNED BY M. WENDLER  
 CHECKED BY K. HARRISON  
 COMM. NO. 2417338



ANOKA COUNTY, MINNESOTA  
 STAGING PLANS  
 SP 002-606-014, SP 127-020-036  
 STAGE 3

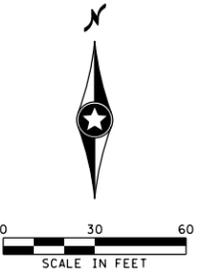
SHEET 57R OF 118

☐ SB 7TH ST  
<SB7TH>

END ROAD WORK

**LEGEND**

	TEMPORARY PAVEMENT/TEMPORARY BYPASS CONSTRUCTION		TYPE II BARRICADE (REFLECTORIZED)
	PERMANENT CONSTRUCTION		STANDARD SIGN (POST OR STAND MOUNTED)
	CONSTRUCTION UNDER SHORT TERM CLOSURE SEE SHORT TERM CLOSURE NOTES		PROPOSED STORM SEWER CONSTRUCTED THIS STAGE
	TRAFFIC LOCATION AND DIRECTION		PROPOSED STORM SEWER CONSTRUCTED IN PREVIOUS STAGES
	REFLECTORIZED PLASTIC DRUM		EXISTING STORM SEWER
	TUBULAR MARKER		EXISTING WATER MAIN
	TYPE III BARRICADE (REFLECTORIZED BOTH SIDES)		EXISTING SANITARY SEWER



MATCH LINE STA 206+75.0  
SEE SHEET 57R

END ROAD WORK

☐ WB CSAH 6  
<WB CSAH6>

☐ NB 7TH ST  
<NB7TH>

☐ EB CSAH 6  
<EB CSAH6>

NOTES:  
SEE SHEET 53R FOR GENERAL NOTES.

06/19/25	MSW	KFH	KFH	ADDENDUM #1: STAGING REVISIONS
NO	DATE	BY	CKD	APPR

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
Print Name: KEVIN M. JULLIE  
*Kevin Jullie*  
Date: 06/19/2025 License #: 26755

STATE PROJECT NO. 002-606-014  
STATE PROJECT NO. 127-020-036  
STATE AID PROJECT NO. 002-606-014  
STATE AID PROJECT NO. 127-020-036  
DRAWN BY M. WENDLER  
DESIGNED BY M. WENDLER  
CHECKED BY K. HARRISON  
COMM. NO. 2417338

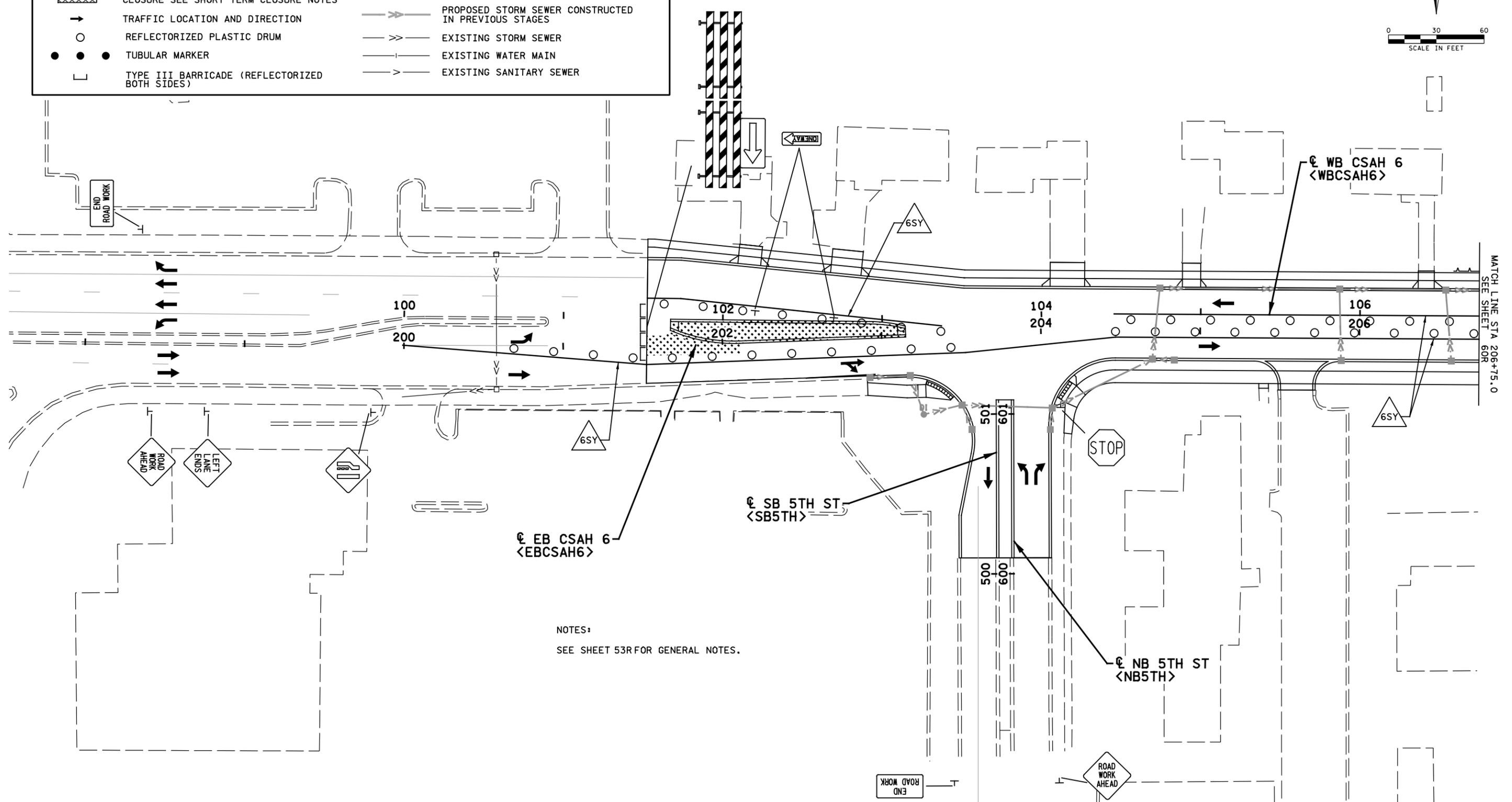
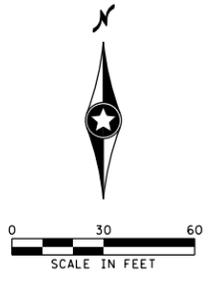


ANOKA COUNTY, MINNESOTA  
STAGING PLANS  
SP 002-606-014, SP 127-020-036  
STAGE 3

SHEET 58R OF 118

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LEGEND	
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	PERMANENT CONSTRUCTION
	CONSTRUCTION UNDER SHORT TERM CLOSURE SEE SHORT TERM CLOSURE NOTES
	TRAFFIC LOCATION AND DIRECTION
	REFLECTORIZED PLASTIC DRUM
	TUBULAR MARKER
	TYPE III BARRICADE (REFLECTORIZED BOTH SIDES)
	TYPE II BARRICADE (REFLECTORIZED)
	STANDARD SIGN (POST OR STAND MOUNTED)
	PROPOSED STORM SEWER CONSTRUCTED THIS STAGE
	PROPOSED STORM SEWER CONSTRUCTED IN PREVIOUS STAGES
	EXISTING STORM SEWER
	EXISTING WATER MAIN
	EXISTING SANITARY SEWER



NOTES:  
SEE SHEET 53R FOR GENERAL NOTES.

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06/19/25	MSW	KFH	KFH	ADDENDUM #1: STAGING REVISIONS
NO	DATE	BY	CKD	APPR
				REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
Print Name: KEVIN M. JULLIE  
*Kevin Jullie*  
Date: 06/19/2025 License #: 26755

STATE PROJECT NO. 002-606-014  
STATE PROJECT NO. 127-020-036  
STATE AID PROJECT NO. 002-606-014  
STATE AID PROJECT NO. 127-020-036  
DRAWN BY M. WENDLER  
DESIGNED BY M. WENDLER  
CHECKED BY K. HARRISON  
COMM. NO. 2417338

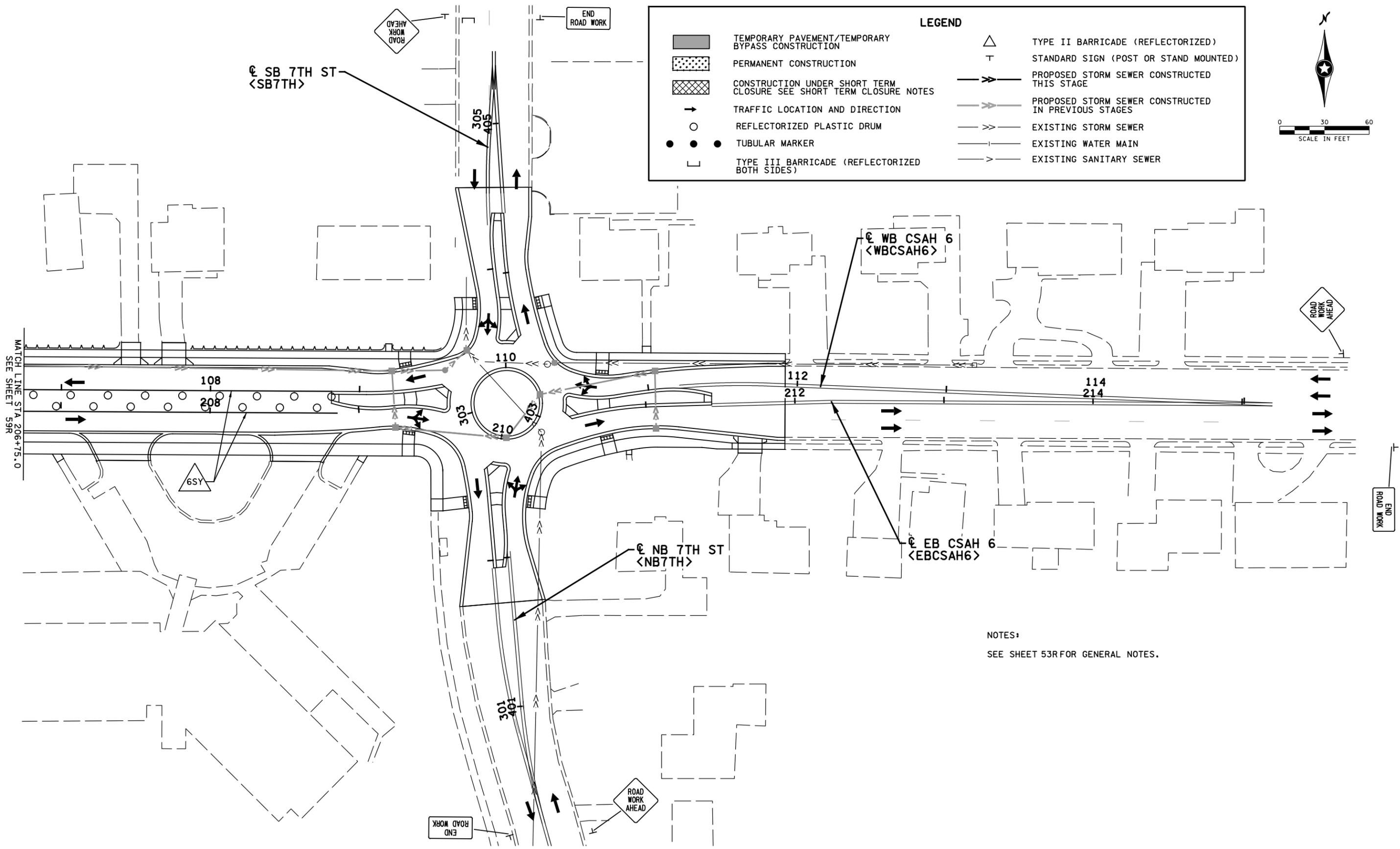
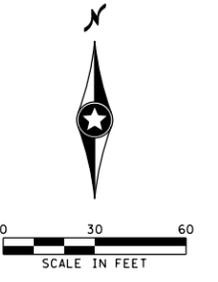


ANOKA COUNTY, MINNESOTA  
STAGING PLANS  
SP 002-606-014, SP 127-020-036  
STAGE 4

SHEET 59R OF 118

**LEGEND**

	TEMPORARY PAVEMENT/TEMPORARY BYPASS CONSTRUCTION		TYPE II BARRICADE (REFLECTORIZED)
	PERMANENT CONSTRUCTION		STANDARD SIGN (POST OR STAND MOUNTED)
	CONSTRUCTION UNDER SHORT TERM CLOSURE SEE SHORT TERM CLOSURE NOTES		PROPOSED STORM SEWER CONSTRUCTED THIS STAGE
	TRAFFIC LOCATION AND DIRECTION		PROPOSED STORM SEWER CONSTRUCTED IN PREVIOUS STAGES
	REFLECTORIZED PLASTIC DRUM		EXISTING STORM SEWER
	TUBULAR MARKER		EXISTING WATER MAIN
	TYPE III BARRICADE (REFLECTORIZED BOTH SIDES)		EXISTING SANITARY SEWER



NOTES:  
SEE SHEET 53R FOR GENERAL NOTES.

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06/19/25	MSW	KFH	KFH	ADDENDUM #1: STAGING REVISIONS
NO	DATE	BY	CKD	APPR

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

Print Name: KEVIN M. JULLIE

*Kevin Jullie*

Date: 06/19/2025 License #: 26755

STATE PROJECT NO. 002-606-014  
STATE PROJECT NO. 127-020-036

STATE AID PROJECT NO. 002-606-014  
STATE AID PROJECT NO. 127-020-036

DRAWN BY M. WENDLER  
DESIGNED BY M. WENDLER  
CHECKED BY K. HARRISON  
COMM. NO. 2417338



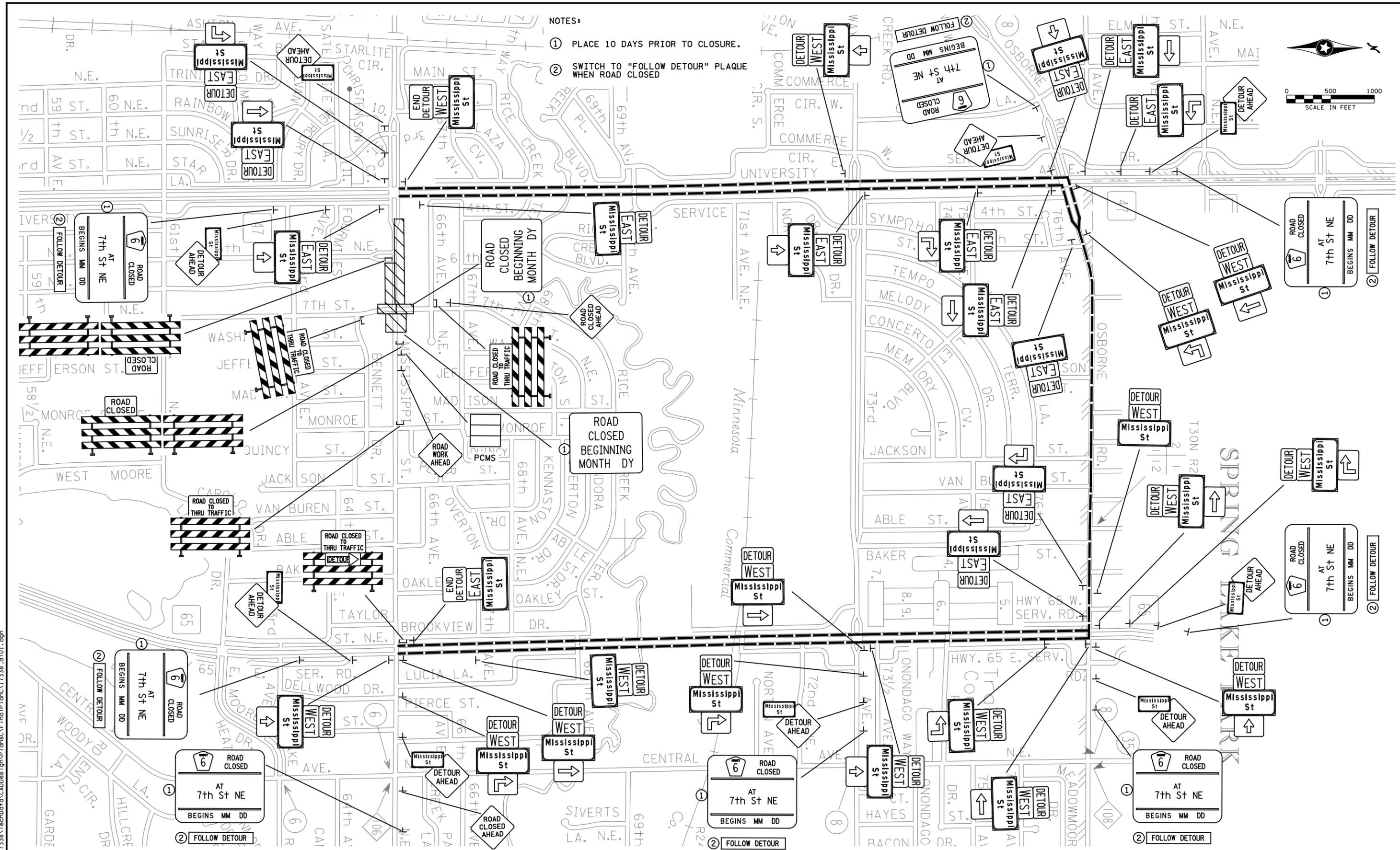
ANOKA COUNTY, MINNESOTA

STAGING PLANS

SP 002-606-014, SP 127-020-036

STAGE 4

SHEET 60R OF 118



- NOTES:
- ① PLACE 10 DAYS PRIOR TO CLOSURE.
  - ② SWITCH TO "FOLLOW DETOUR" PLAQUE WHEN ROAD CLOSED

NO	DATE	BY	CKD	APPR	REVISION
	06/19/25	MSW	KFH	KFH	ADDENDUM #1: STAGING REVISIONS

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

Print Name: KEVIN M. JULLIE  
*Kevin Jullie*  
 Date: 06/19/2025 License #: 26755

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036

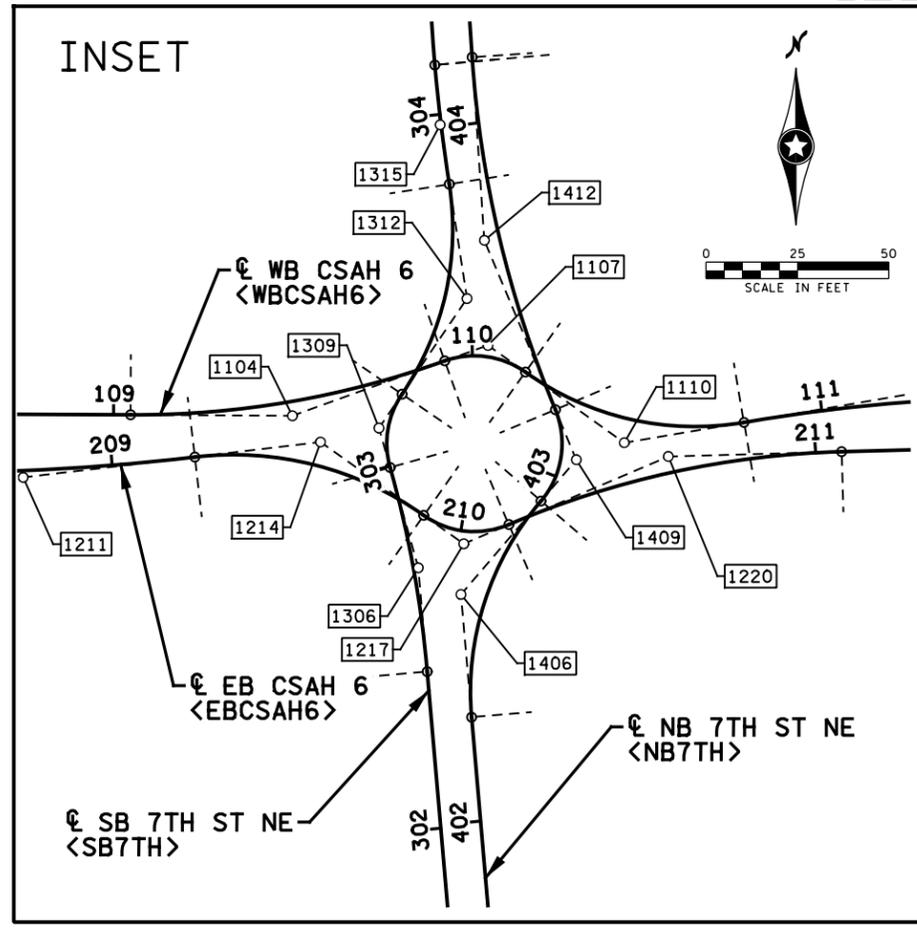
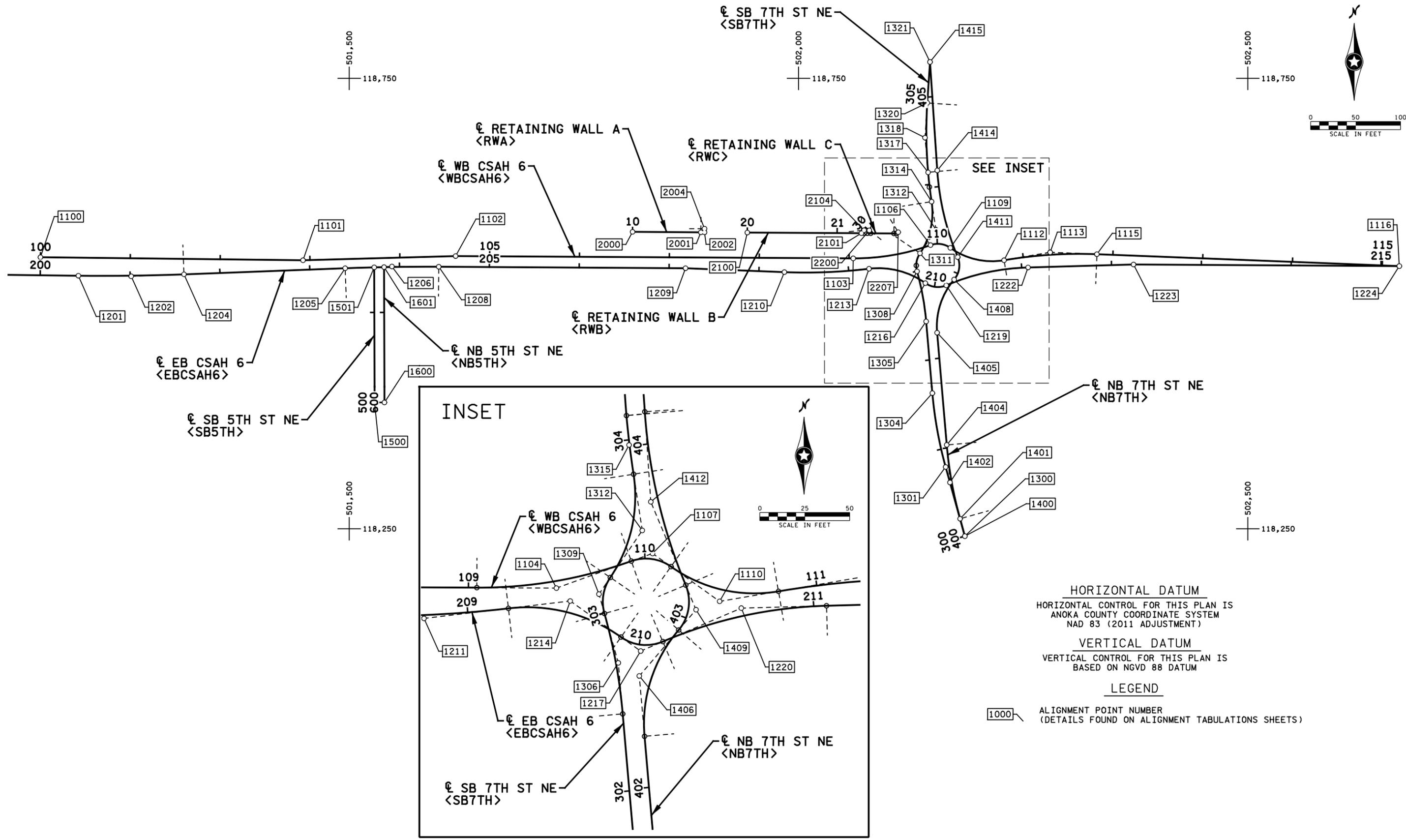
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 DESIGNED BY M. WENDLER  
 CHECKED BY K. HARRISON  
 COMM. NO. 2417338



ANOKA COUNTY, MINNESOTA  
 DETOUR PLANS  
 SP 002-606-014, SP 127-020-036

SHEET 61R OF 118

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HORIZONTAL DATUM  
HORIZONTAL CONTROL FOR THIS PLAN IS  
ANOKA COUNTY COORDINATE SYSTEM  
NAD 83 (2011 ADJUSTMENT)

VERTICAL DATUM  
VERTICAL CONTROL FOR THIS PLAN IS  
BASED ON NGVD 88 DATUM

LEGEND  
[1000] ALIGNMENT POINT NUMBER  
(DETAILS FOUND ON ALIGNMENT TABULATIONS SHEETS)

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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
Print Name: ZACHARIAH F. HEIMER  
*Zach Heimer*  
Date: 05/14/2025 License #: 58755

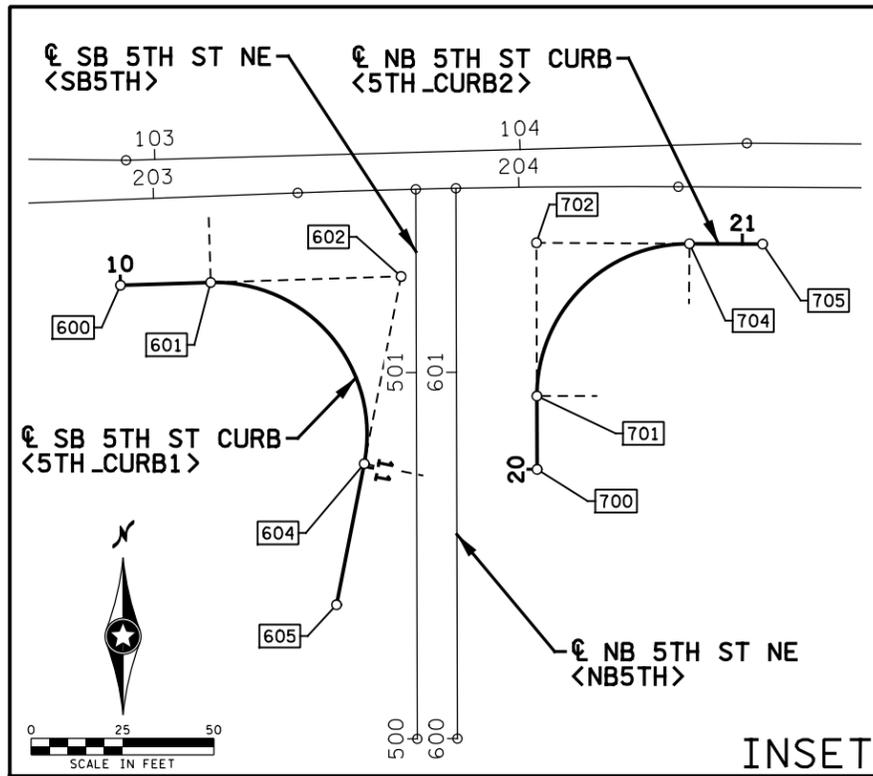
STATE PROJECT NO. 002-606-014  
STATE PROJECT NO. 127-020-036  
STATE AID PROJECT NO. 002-606-014  
STATE AID PROJECT NO. 127-020-036

DRAWN BY M. WENDLER  
DESIGNED BY M. WENDLER  
CHECKED BY Z. HEIMER  
COMM. NO. 2417338

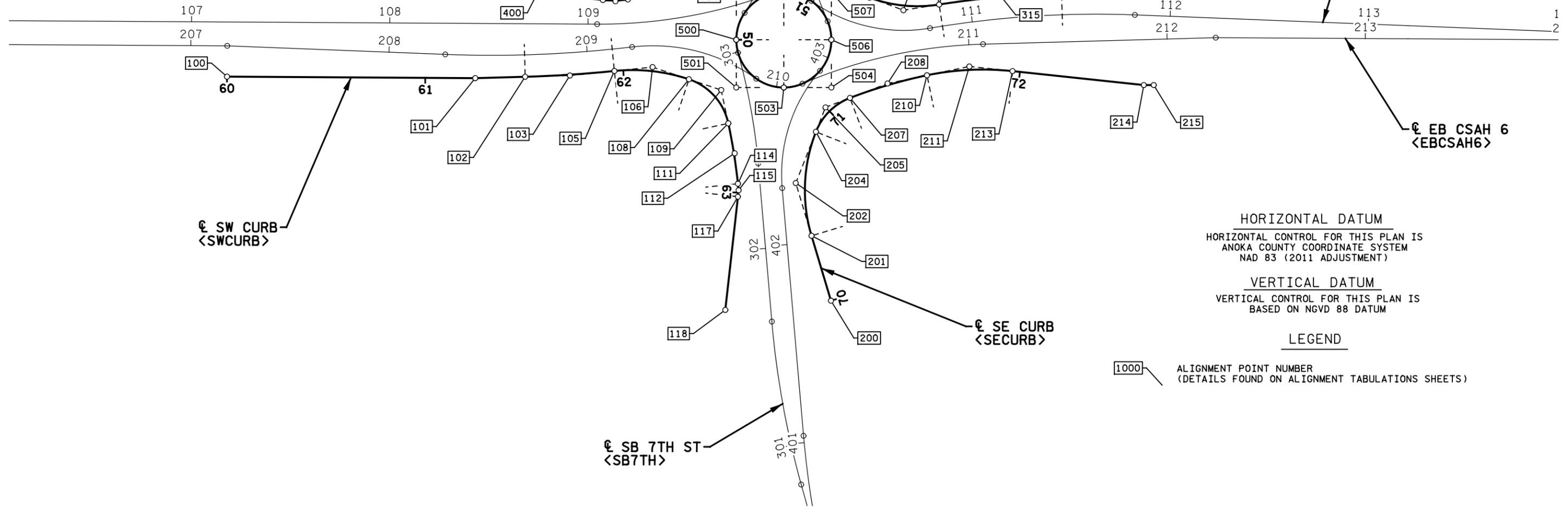
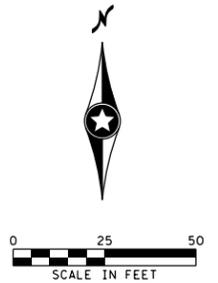


ANOKA COUNTY, MINNESOTA  
ALIGNMENT PLANS  
SP 002-606-014, SP 127-020-036

SHEET  
62  
OF  
118



INSET



**HORIZONTAL DATUM**  
 HORIZONTAL CONTROL FOR THIS PLAN IS  
 ANOKA COUNTY COORDINATE SYSTEM  
 NAD 83 (2011 ADJUSTMENT)

**VERTICAL DATUM**  
 VERTICAL CONTROL FOR THIS PLAN IS  
 BASED ON NGVD 88 DATUM

**LEGEND**

1000 ALIGNMENT POINT NUMBER  
 (DETAILS FOUND ON ALIGNMENT TABULATIONS SHEETS)

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NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: ZACHARIAH F. HEIMER

*Zach Heimer*

Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036

STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036

DRAWN BY M. WENDLER  
 DESIGNED BY M. WENDLER  
 CHECKED BY Z. HEIMER  
 COMM. NO. 2417338



**ANOKA COUNTY, MINNESOTA**

ALIGNMENT PLANS

SP 002-606-014, SP 127-020-036

**SHEET**  
**63**  
**OF**  
**118**

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
			SPIRAL CURVE DATA							
ANGLE (Θs)	DEGREE	ST	LT	LS						
<b>☉ EB CSAH 6 &lt;EBCSAH6&gt;</b>										
1200	POT	☉ EB CSAH 6 198+00.000						500,956.1409	118,533.6865	
1201	PC	200+42.450						501,198.5752	118,530.9171	90° 39' 16.18"
1202	PI	201+01.229	2° 48' 21.31" LT	2° 23' 14.37"	2,400.000'	58.779'	117.534'	501,257.3501	118,530.2457	PI
1203	CC	☉						501,225.9899	120,930.7605	
1204	PT	201+59.984						501,316.0874	118,532.4522	87° 50' 54.87"
1205	PC	203+39.478						501,495.4550	118,539.1906	87° 50' 54.87"
1206	PI	203+91.567	2° 29' 11.95" RT	2° 23' 14.37"	2,400.000'	52.089'	104.161'	501,547.5068	118,541.1460	PI
1207	CC	☉						501,585.5525	116,140.8823	
1208	PT	204+43.639						501,599.5944	118,540.8412	90° 20' 06.82"
1209	POT	207+18.311						501,874.2622	118,539.2342	
1210	PC	208+28.381						501,984.2472	118,534.9237	92° 14' 39.77"
1211	PI	208+75.675	9° 00' 50.24" LT	9° 32' 57.47"	600.000'	47.295'	94.394'	502,031.5054	118,533.0715	PI
1212	CC	☉						502,007.7443	119,134.4634	
1213	PRC	209+22.775						502,078.4702	118,538.6464	83° 13' 49.53"
1214	PI	209+57.412	42° 05' 55.58" RT	63° 39' 43.12"	90.000'	34.637'	66.129'	502,112.8656	118,542.7293	PI
1215	CC	☉						502,089.0791	118,449.2739	
1216	PRC	209+88.903						502,141.1238	118,522.6998	125° 19' 45.11"
1217	PI	210+02.315	58° 23' 45.56" LT	238° 43' 56.69"	24.000'	13.412'	24.461'	502,152.0659	118,514.9439	PI
1218	CC	☉						502,155.0023	118,542.2800	
1219	PRC	210+13.364						502,164.4056	118,520.1988	66° 55' 59.55"
1220	PI	210+60.812	21° 29' 34.32" RT	22° 55' 05.92"	250.000'	47.448'	93.780'	502,208.0600	118,538.7891	PI
1221	CC	☉						502,262.3566	118,290.1867	
1222	PT	211+07.144						502,255.4899	118,540.0923	88° 25' 33.87"
1223	POT	212+24.551						502,372.8521	118,543.3171	
1224	POT	☉ EB CSAH 6 215+20.341						502,668.6372	118,541.5865	

<b>☉ WB CSAH 6 &lt;WBCSAH6&gt;</b>										
A PT ON ☉ EB CSAH 6 POT 200+00.000=										
1100	POT	☉ WB CSAH 6 100+00.000						501,156.3563	118,551.4007	
1101	POT	102+92.175						501,448.5123	118,548.0632	
1102	POT	104+62.133						501,618.4057	118,552.7314	
1103	PC	109+04.618						502,060.8835	118,550.1425	90° 20' 06.82"
1104	PI	109+48.925	20° 06' 00.33" LT	22° 55' 05.92"	250.000'	44.307'	87.703'	502,105.1897	118,549.8833	PI
1105	CC	☉						502,062.3462	118,800.1382	
1106	PRC	109+92.321						502,146.8865	118,564.8661	70° 14' 06.49"
1107	PI	110+04.878	55° 14' 15.79" RT	238° 43' 56.69"	24.000'	12.557'	23.138'	502,158.7037	118,569.1124	PI
1108	CC	☉						502,155.0023	118,542.2800	
1109	PRC	110+15.459						502,168.9299	118,561.8254	125° 28' 22.28"
1110	PI	110+48.686	45° 06' 36.79" LT	71° 37' 11.01"	80.000'	33.227'	62.986'	502,195.9899	118,542.5430	PI
1111	CC	☉						502,215.3553	118,626.9766	
1112	PRC	110+78.445						502,228.7482	118,548.1057	80° 21' 45.49"
1113	PI	111+30.475	11° 52' 54.28" RT	11° 27' 32.96"	500.000'	52.030'	103.688'	502,280.0444	118,556.8162	PI
1114	CC	☉						502,312.4541	118,055.1621	
1115	PT	111+82.133						502,332.0350	118,554.7786	92° 14' 39.77"
1116	POT	☉ WB CSAH 6 115+18.993=						502,668.6372	118,541.5865	
A PT ON ☉ EB CSAH 6 POT 215+20.341										

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
			SPIRAL CURVE DATA							
ANGLE (Θs)	DEGREE	ST	LT	LS						
<b>☉ NB 7TH ST &lt;NB7TH&gt;</b>										
1400	POT	☉ NB 7TH ST 400+00.000						502,185.1534	118,241.7994	
1401	PC	400+20.031						502,179.7795	118,261.0960	344° 26' 16.41"
1402	PI	400+61.870	10° 37' 25.43" RT	12° 43' 56.62"	450.000'	41.839'	83.439'	502,168.5547	118,301.4014	PI
1403	CC	☉						502,613.2826	118,381.8232	
1404	PT	401+03.469						502,164.9530	118,343.0853	355° 03' 41.84"
1405	PC	402+28.477						502,154.1918	118,467.6292	355° 03' 41.84"
1406	PI	402+62.106	45° 35' 56.50" RT	71° 37' 11.01"	80.000'	33.628'	63.668'	502,151.2970	118,501.1325	PI
1407	CC	☉						502,233.8949	118,474.5159	
1408	PRC	402+92.146						502,173.2083	118,526.6421	40° 39' 38.34"
1409	PI	403+06.981	63° 26' 42.00" LT	238° 43' 56.69"	24.000'	14.836'	26.576'	502,182.8749	118,537.8963	PI
1410	CC	☉						502,155.0023	118,542.2800	
1411	PRC	403+18.721						502,177.1296	118,551.5743	337° 12' 56.34"
1412	PI	403+68.844	18° 58' 12.99" RT	19° 05' 54.94"	300.000'	50.123'	99.328'	502,157.7188	118,597.7860	PI
1413	CC	☉						502,453.7203	118,667.7535	
1414	PT	404+18.050						502,154.3847	118,647.7978	356° 11' 09.33"
1415	POT	☉ NB 7TH ST 405+38.721						502,146.3578	118,768.2020	
<b>☉ SB 7TH ST &lt;SB7TH&gt;</b>										
A PT ON ☉ NB 7TH ST POT 400+00.000=										
1300	POT	☉ SB 7TH ST 300+00.000						502,185.1534	118,241.7994	
1301	PC	300+79.697						502,163.7720	118,318.5750	344° 26' 16.41"
1302	PI	301+21.537	10° 37' 25.43" RT	12° 43' 56.62"	450.000'	41.839'	83.439'	502,152.5473	118,358.8804	PI
1303	CC	☉						502,597.2751	118,439.3023	
1304	PT	301+63.136						502,148.9456	118,400.5643	355° 03' 41.84"
1305	PC	302+42.950						502,142.0749	118,480.0817	355° 03' 41.84"
1306	PI	302+71.376	10° 49' 32.70" LT	19° 05' 54.94"	300.000'	28.426'	56.683'	502,139.6278	118,508.4025	PI
1307	CC	☉						501,843.1885	118,454.2564	
1308	PRC	302+99.633						502,131.9050	118,535.7597	344° 14' 09.14"
1309	PI	303+10.837	50° 03' 01.31" RT	238° 43' 56.69"	24.000'	11.204'	20.965'	502,128.8611	118,546.5426	PI
1310	CC	☉						502,155.0023	118,542.2800	
1311	PRC	303+20.598						502,135.1727	118,555.7999	34° 17' 14.41"
1312	PI	303+52.183	43° 05' 22.73" LT	71° 37' 11.01"	80.000'	31.585'	60.164'	502,152.9660	118,581.8962	PI
1313	CC	☉						502,069.0749	118,600.8673	
1314	PRC	303+80.763						502,148.1327	118,613.1094	351° 11' 51.69"
1315	PI	303+97.159	3° 45' 23.21" RT	11° 27' 32.96"	500.000'	16.396'	32.781'	502,145.6236	118,629.3127	PI
1316	CC	☉						502,642.2438	118,689.6222	
1317	PCC	304+13.544						502,144.1815	118,645.6457	354° 57' 14.89"
1318	PI	304+52.198	8° 50' 28.96" RT	11° 27' 32.96"	500.000'	38.655'	77.156'	502,140.7817	118,684.1504	PI
1319	CC	☉						502,642.2438	118,689.6222	
1320	PT	304+90.699						502,143.3404	118,722.7201	3° 47' 43.85"
1321	POT	☉ SB 7TH ST 305+36.281=						502,146.3578	118,768.2020	
A PT ON ☉ NB 7TH ST POT 405+38.721										

NOTES:

- ☉ ALIGNMENT POINT IS NOT SHOWN ON ALIGNMENT PLAN VIEW.
- <XXXX> INDICATES OPENROADS ALIGNMENT NAME.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: ZACHARIAH F. HEIMER  
*Zach Heimer*  
 Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036

DRAWN BY M. WENDLER  
 DESIGNED BY M. WENDLER  
 CHECKED BY Z. HEIMER  
 COMM. NO. 2417338



ANOKA COUNTY, MINNESOTA  
 ALIGNMENT TABULATIONS  
 SP 002-606-014, SP 127-020-036

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NO	DATE	BY	CKD	APPR	REVISION

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
			SPIRAL CURVE DATA							
ANGLE (Θs)	DEGREE	ST	LT	LS						
<b>☉ NB 5TH ST &lt;NB5TH&gt;</b>										
1600	POT	☉ NB 5TH ST	600+00.000					501,539.1626	118,390.1962	
1601	POT	☉ NB 5TH ST	601+50.231					501,538.7646	118,540.4262	
<b>☉ SB 5TH ST &lt;SB5TH&gt;</b>										
1500	POT	☉ SB 5TH ST	500+00.000					501,528.1626	118,390.1671	
1501	POT	☉ SB 5TH ST	501+50.020					501,527.7652	118,540.1865	
<b>☉ ROUNDABOUT &lt;RAB&gt;</b>										
C500	PC	☉ ROUNDABOUT	50+00.000					502,131.0023	118,542.2800	180° 00' 00.00"
C501	PI		50+24.000	90° 00' 00.00" LT	238° 43' 56.69"	24.000'	24.000'	502,131.0023	118,518.2800	PI
C502	CC	①						502,155.0023	118,542.2800	
C503	PCC		50+37.699					502,155.0023	118,518.2800	90° 00' 00.00"
C504	PI		50+61.699	90° 00' 00.00" LT	238° 43' 56.69"	24.000'	24.000'	502,179.0023	118,518.2800	PI
C505	CC	①						502,155.0023	118,542.2800	
C506	PCC		50+75.398					502,179.0023	118,542.2800	0° 00' 00.00"
C507	PI		50+99.398	90° 00' 00.00" LT	238° 43' 56.69"	24.000'	24.000'	502,179.0023	118,566.2800	PI
C508	CC	①						502,155.0023	118,542.2800	
C509	PCC		51+13.097					502,155.0023	118,566.2800	270° 00' 00.00"
C510	PI		51+37.096	89° 59' 51.41" LT	238° 43' 56.69"	24.000'	23.999'	502,131.0033	118,566.2800	PI
C511	CC	①						502,155.0023	118,542.2800	
C512	PT	☉ ROUNDABOUT	51+50.795=					502,131.0023	118,542.2810	180° 00' 08.59"
A PT ON ☉ ROUNDABOUT POC 50+00.000										
<b>☉ SW CURB &lt;SWCURB&gt;</b>										
A PT 15.49' RT ☉ EB CSAH 6 POT 207+18.827=										
C100	POT	☉ SW CURB	60+00.000					501,874.1715	118,523.7344	
C101	POT		61+25.178					501,999.3471	118,523.0021	
C102	PC		61+50.367					502,024.5264	118,523.6939	88° 25' 33.87"
C103	PI		61+72.942	4° 13' 55.24" LT	9° 22' 38.56"	611.000'	22.575'	502,047.0932	118,524.3140	PI
C104	CC	①						502,007.7443	119,134.4634	
C105	PRC		61+95.497					502,069.5526	118,526.5977	84° 11' 38.64"
C106	PI		62+14.844	24° 15' 53.01" RT	63° 39' 43.12"	90.000'	19.348'	502,088.8009	118,528.5549	PI
C107	CC	①						502,078.6570	118,437.0594	
C108	PCC		62+33.612					502,107.1530	118,522.4290	108° 27' 31.65"
C109	PI		62+50.765	59° 31' 15.03" RT	190° 59' 09.35"	30.000'	17.154'	502,123.4241	118,516.9978	PI
C110	CC	①						502,097.6543	118,493.9725	
C111	PCC		62+64.777					502,126.9965	118,500.2202	167° 58' 46.67"
C112	PI		62+80.166	5° 52' 23.56" RT	19° 05' 54.94"	300.000'	15.390'	502,130.2015	118,485.1682	PI
C113	CC	①						501,833.5744	118,437.7424	
C114	PCC		62+95.529					502,131.8495	118,469.8671	173° 51' 10.23"
C115	PI		62+98.819	12° 31' 07.36" RT	190° 59' 09.35"	30.000'	3.290'	502,132.2018	118,466.5956	PI
C116	CC	①						502,102.0220	118,466.6547	
C117	PT		63+02.083					502,131.8367	118,463.3254	186° 22' 17.59"
C118	POT	☉ SW CURB	63+59.355=					502,125.4809	118,406.4078	
A PT 22.87' LT ☉ SB 7TH ST POT 301+70.977										

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH		
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y			
			SPIRAL CURVE DATA									
ANGLE (Θs)	DEGREE	ST	LT	LS								
<b>☉ SE CURB &lt;SECURB&gt;</b>												
A PT 19.65' RT ☉ NB 7TH ST POT 401+69.954=												
C200	POT	☉ SE CURB	70+00.000							502,178.8064	118,411.0154	
C201	PC		70+34.098							502,168.9953	118,443.6709	343° 16' 39.13"
C202	PI		70+61.811	38° 12' 50.04" RT	71° 37' 11.01"	80.000'	27.713'	53.357'		502,161.0211	118,470.2123	PI
C203	CC	①								502,245.6121	118,466.6898	
C204	PCC		70+87.454							502,171.1743	118,495.9988	21° 29' 29.17"
C205	PI		71+00.660	47° 30' 58.55" RT	190° 59' 09.35"	30.000'	13.205'	24.879'		502,176.0122	118,508.2860	PI
C206	CC	①								502,199.0884	118,485.0079	
C207	PCC		71+12.334							502,188.3412	118,513.0168	69° 00' 27.72"
C208	PI		71+32.647	9° 17' 25.28" RT	22° 55' 05.92"	250.000'	20.313'	40.537'		502,207.3059	118,520.2937	PI
C209	CC	①								502,277.9018	118,279.6096	
C210	PCC		71+52.870							502,227.1966	118,524.4136	78° 17' 53.00"
C211	PI		71+74.729	17° 44' 51.96" RT	40° 55' 32.00"	140.000'	21.858'	43.366'		502,248.6004	118,528.8469	PI
C212	CC	①								502,255.5915	118,387.3234	
C213	PT		71+96.236							502,270.3369	118,526.5447	96° 02' 44.96"
C214	POT		72+62.848							502,336.5779	118,519.5289	
C215	POT	☉ SE CURB	72+67.848							502,341.5778	118,519.4997	
A PT 22.95' RT ☉ EB CSAH 6 POT												
<b>☉ NE CURB &lt;NECURB&gt;</b>												
A PT 17.75' RT ☉ NB 7TH ST POT 404+53.432=												
C300	POT	☉ NE CURB	80+00.000							502,169.7460	118,684.2830	
C301	POT		80+17.068							502,169.7035	118,667.2155	
C302	PC		80+38.932							502,167.4007	118,645.4728	186° 02' 44.96"
C303	PI		80+45.856	15° 10' 12.77" LT	110° 11' 03.09"	52.000'	6.925'	13.768'		502,166.6714	118,638.5868	PI
C304	CC	①								502,219.1114	118,639.9960	
C305	PCC		80+52.700							502,167.7694	118,631.7499	170° 52' 32.19"
C306	PI		80+78.492	9° 49' 39.03" LT	19° 05' 54.94"	300.000'	25.792'	51.457'		502,171.8594	118,606.2847	PI
C307	CC	①								502,463.9734	118,679.3234	
C308	PCC		81+04.157							502,180.2359	118,581.8912	161° 02' 53.15"
C309	PI		81+18.389	50° 45' 37.86" LT	190° 59' 09.35"	30.000'	14.232'	26.578'		502,184.8582	118,568.4303	PI
C310	CC	①								502,208.6096	118,591.6344	
C311	PCC		81+30.735							502,198.2077	118,563.4955	110° 17' 15.29"
C312	PI		81+48.966	29° 11' 47.07" LT	81° 51' 04.01"	70.000'	18.231'	35.670'		502,215.3080	118,557.1741	PI
C313	CC	①								502,222.4789	118,629.1529	
C314	PRC		81+66.405							502,233.3193	118,559.9974	81° 05' 28.22"
C315	PI		81+97.451	6° 57' 12.41" RT	11° 12' 44.93"	511.000'	31.046'	62.015'		502,263.9905	118,564.8052	PI
C316	CC	①								502,312.4541	118,055.1621	
C317	PT		82+28.420							502,295.0182	118,565.8646	88° 02' 40.63"
C318	POT		82+63.656							502,330.2335	118,567.0669	
C319	POT	☉ NE CURB	82+75.278=							502,341.8557	118,566.9989	
A PT 12.59' LT ☉ WB CSAH 6 POT 111+91.467												

NOTES:  
 ① ALIGNMENT POINT IS NOT SHOWN ON ALIGNMENT PLAN VIEW.  
 <XXXX> INDICATES OPENROADS ALIGNMENT NAME.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: ZACHARIAH F. HEIMER  
*Zach Heimer*  
 Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036  
 DRAWN BY M. WENDLER  
 DESIGNED BY M. WENDLER  
 CHECKED BY Z. HEIMER  
 COMM. NO. 2417338



ANOKA COUNTY, MINNESOTA  
 ALIGNMENT TABULATIONS  
 SP 002-606-014, SP 127-020-036

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ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH	
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y		
			SPIRAL CURVE DATA								
ANGLE (θs)	DEGREE	ST	LT	LS							
<b>☉ NW CURB &lt;NWCURB&gt;</b>											
A PT 15.50' LT ☉ WB CSAH 6 POT 108+74.381=											
C400	POT	☉ NW CURB	90+00.000					502,030.7382	118,565.8191		
C401	PC		90+33.190					502,063.7435	118,562.3234	96° 02' 44.96"	
C402	PI		90+39.560	14° 31' 12.80" LT	114° 35' 29.61"	50.000'	6.370'	12.671'	502,070.0778	118,561.6525	PI
C403	CC	①							502,069.0097	118,612.0453	
C404	PCC		90+45.861						502,076.3781	118,562.5912	81° 31' 32.16"
C405	PI		90+69.079	8° 51' 03.03" LT	19° 05' 54.94"	300.000'	23.218'	46.343'	502,099.3422	118,566.0128	PI
C406	CC	①							502,032.1678	118,859.3158	
C407	PCC		90+92.204						502,121.5065	118,572.9269	72° 40' 29.13"
C408	PI		91+03.094	57° 08' 04.40" LT	286° 28' 44.03"	20.000'	10.890'	19.944'	502,131.9019	118,576.1697	PI
C409	CC	①							502,115.5506	118,592.0195	
C410	PCC		91+12.148						502,134.8194	118,586.6612	15° 32' 24.72"
C411	PI		91+28.869	26° 52' 07.30" LT	81° 51' 04.01"	70.000'	16.721'	32.826'	502,139.2991	118,602.7706	PI
C412	CC	①							502,067.3784	118,605.4152	
C413	PT		91+44.974						502,136.0146	118,619.1656	348° 40' 17.43"
C414	POT	☉ NW CURB	92+12.640=						502,122.7227	118,685.5135	
A PT 19.54' LT ☉ SB 7TH ST POC 304+53.622											
<b>☉ SB 5TH CURB &lt;5TH_CURB1&gt;</b>											
A PT 23.38' RT ☉ EB CSAH 6 POT 202+90.076=											
C600	POT	☉ SB 5TH CURB	10+00.000						501,446.9651	118,513.9738	
C601	PC		10+24.696						501,471.6488	118,514.7435	88° 12' 49.91"
C602	PI		10+76.816	102° 56' 39.35" RT	138° 03' 43.63"	41.500'	52.121'	74.564'	501,523.7441	118,516.3681	PI
C603	CC	①							501,472.9423	118,473.2637	
C604	PT		10+99.259						501,513.6578	118,465.2327	191° 09' 29.26"
C605	POT	☉ SB 5TH CURB	11+38.492						501,506.0657	118,426.7420	
A PT 22.00' LT ☉ SB 5TH ST POT 500+36.633											
<b>☉ NB 5TH CURB &lt;5TH_CURB2&gt;</b>											
A PT 22.00' RT ☉ NB 5TH ST POT 600+73.460=											
C700	POT	☉ NB 5TH CURB	20+00.000						501,560.9679	118,463.7139	
C701	PC		20+20.000						501,560.9149	118,483.7138	359° 50' 53.51"
C702	PI		20+61.854	90° 29' 13.32" RT	138° 03' 43.63"	41.500'	41.854'	65.541'	501,560.8040	118,525.5679	PI
C703	CC	①							501,602.4148	118,483.8238	
C704	PT		20+85.541						501,602.6576	118,525.3230	90° 20' 06.82"
C705	POT	☉ NB 5TH CURB	21+05.541						501,622.6572	118,525.2060	
A PT 15.50' RT ☉ EB CSAH 6 POT 204+66.793											
<b>☉ RETAINING WALL A &lt;RWA&gt;</b>											
A PT 28.00' LT ☉ WB CSAH 6 POT 106+58.83=											
2000	POT	☉ RETAINING WALL A	10+00.000						501,815.2590	118,579.5801	
2001	PC		10+76.064						501,891.3214	118,579.1351	90° 20' 06.82"
2002	PI		10+80.087	90° 20' 06.82" LT	1432° 23' 40.16"	4.000'	4.023'	6.307'	501,895.3449	118,579.1115	PI
2003	CC	①							501,891.3449	118,583.1350	
2004	PT	☉ RETAINING WALL A	10+82.370						501,895.3449	118,583.1350	0° 00' 00.00"
A PT 32.02' LT ☉ WB CSAH 6 POT 107+38.89											

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH	
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y		
			SPIRAL CURVE DATA								
ANGLE (θs)	DEGREE	ST	LT	LS							
<b>☉ RETAINING WALL B &lt;RWB&gt;</b>											
A PT 28.00' LT ☉ WB CSAH 6 POT 107+86.57=											
2100	POT	☉ RETAINING WALL B	20+00.000						501,942.9995	118,578.8327	
2101	PC		21+27.003						502,070.0002	118,578.0896	90° 20' 06.82"
2102	PI	①	21+30.324	95° 48' 50.19" LT	1909° 51' 33.54"	3.000'	3.321'	5.017'	502,073.3211	118,578.0702	PI
2103	CC	①							502,070.0177	118,581.0896	
2104	PT	☉ RETAINING WALL B	21+32.020						502,073.0040	118,581.3760	354° 31' 16.63"
A PT 30.98' LT ☉ WB CSAH 6 POC 109+18.25											
<b>☉ RETAINING WALL C &lt;RWC&gt;</b>											
A PT 30.50' LT ☉ WB CSAH 6 POC 109+24.81=											
2200	PC	☉ RETAINING WALL C	30+00.000						502,078.7780	118,581.2560	217° 50' 27.22"
2201	PI	①	30+04.056	127° 30' 20.40" LT	2864° 47' 20.31"	2.000'	4.056'	4.451'	502,076.2897	118,578.0528	PI
2202	CC	①							502,080.3574	118,580.0291	
2203	PT	①	30+04.451						502,080.3457	118,578.0291	90° 20' 06.82"
2204	PC	①	30+30.230						502,106.1249	118,577.8783	90° 20' 06.82"
2205	PI	①	30+32.845	32° 23' 56.68" LT	636° 37' 11.18"	9.000'	2.615'	5.089'	502,108.7396	118,577.8630	PI
2206	CC	①							502,106.1776	118,586.8781	
2207	PT	☉ RETAINING WALL C	30+35.320						502,110.9554	118,579.2510	57° 56' 10.14"
A PT 23.83' LT ☉ WB CSAH 6 POC 109+60.23											

NOTES:  
 ① ALIGNMENT POINT IS NOT SHOWN ON ALIGNMENT PLAN VIEW.  
 <XXXX> INDICATES GEOPAK ALIGNMENT NAME.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: ZACHARIAH F. HEIMER  
*Zach Heimer*  
 Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036  
 DRAWN BY M. WENDLER  
 DESIGNED BY M. WENDLER  
 CHECKED BY Z. HEIMER  
 COMM. NO. 2417338



ANOKA COUNTY, MINNESOTA  
 ALIGNMENT TABULATIONS  
 SP 002-606-014, SP 127-020-036

SHEET 66 OF 118

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NO	DATE	BY	CKD	APPR	REVISION

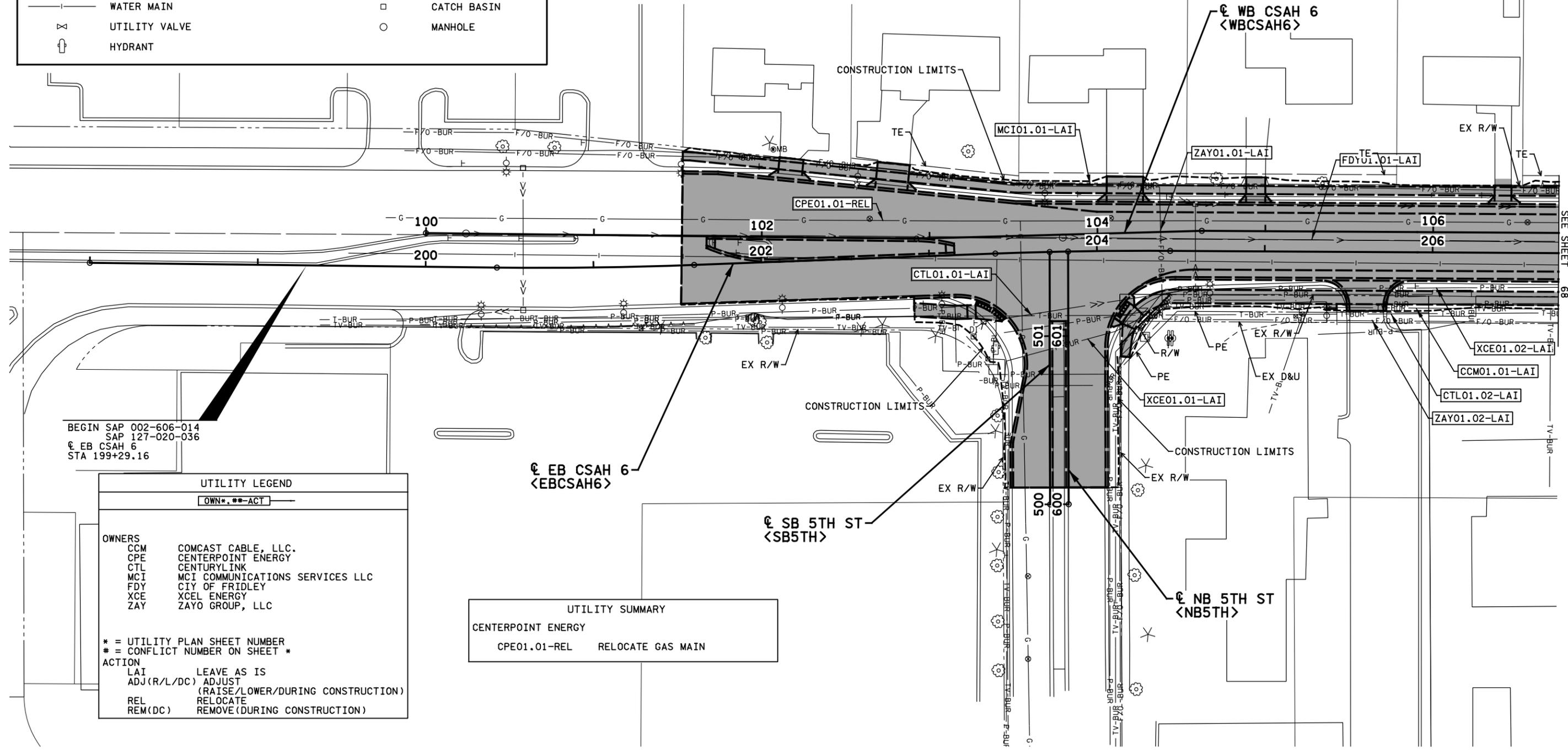
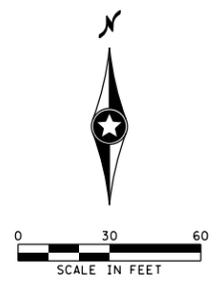
LEGEND	
	PROPOSED PERMANENT CONSTRUCTION
	BURIED POWER
	OVERHEAD POWER
	BURIED TELECOMMUNICATIONS
	OVERHEAD TELECOMMUNICATIONS
	BURIED FIBER OPTIC
	OVERHEAD FIBER OPTIC
	GAS
	WATER MAIN
	UTILITY VALVE
	HYDRANT
	SANITARY SEWER
	STORM SEWER
	UTILITY POLE
	LIGHT POLE
	ELECTRIC MANHOLE
	TELEPHONE MANHOLE
	GAS VALVE
	CATCH BASIN
	MANHOLE

**GENERAL NOTES:**

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY 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".

SOME UTILITIES MAY BE RELOCATED PRIOR TO CONSTRUCTION.

THE RIGHT-OF-WAY SHOWN IN THIS PLAN GIVES A GRAPHICAL LOCATION WITH RESPECT TO THE GEOMETRIC DESIGN AND MAP DATA. THE EXACT RIGHT OF WAY AND BOUNDARY CORNERS ARE LOCATED BY REFERENCE TO THE RIGHT OF WAY PLATS AND ARE IDENTIFIED ON THE RIGHT OF WAY MAP.



BEGIN SAP 002-606-014  
 SAP 127-020-036  
 @ EB CSAH 6  
 STA 199+29.16

UTILITY LEGEND	
OWN*	**ACT
CCM	COMCAST CABLE, LLC.
CPE	CENTERPOINT ENERGY
CTL	CENTURYLINK
MCI	MCI COMMUNICATIONS SERVICES LLC
FDY	CITY OF FRIDLEY
XCE	XCEL ENERGY
ZAY	ZAYO GROUP, LLC
* = UTILITY PLAN SHEET NUMBER	
** = CONFLICT NUMBER ON SHEET *	
ACTION	
LAI	LEAVE AS IS
ADJ(R/L/DC)	ADJUST (RAISE/LOWER/DURING CONSTRUCTION)
REL	RELOCATE
REM(DC)	REMOVE (DURING CONSTRUCTION)

UTILITY SUMMARY	
CENTERPOINT ENERGY	CPE01.01-REL RELOCATE GAS MAIN

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NO	DATE	BY	CKD	APPR	REVISION

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Print Name: ZACHARIAH F. HEIMER

*Zach Heimer*

Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036

STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036

DRAWN BY M. WENDLER  
 DESIGNED BY M. WENDLER  
 CHECKED BY Z. HEIMER  
 COMM. NO. 2417338



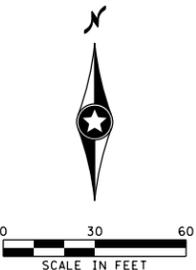
ANOKA COUNTY, MINNESOTA

TOPOGRAPHY AND UTILITY PLANS

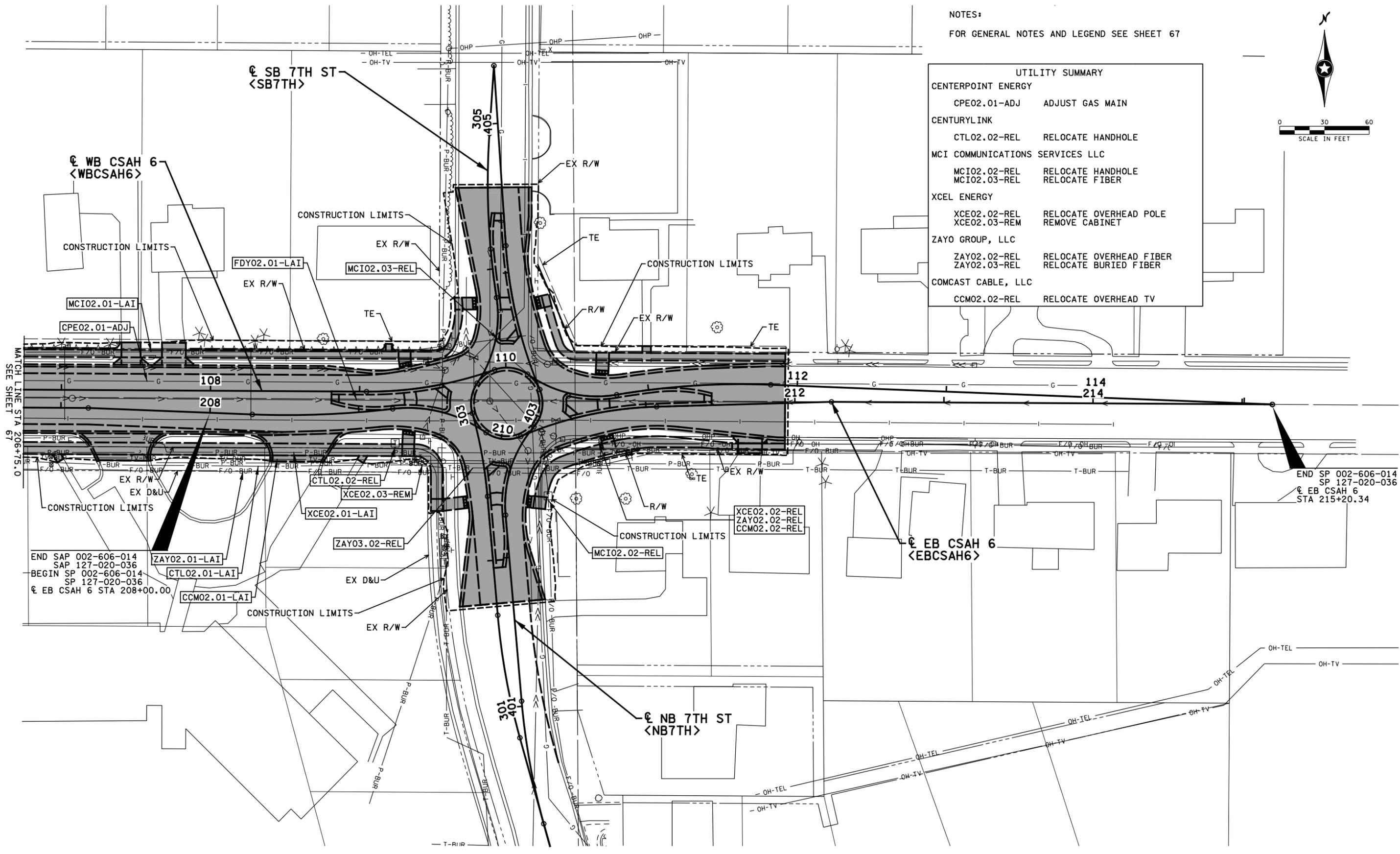
SP 002-606-014, SP 127-020-036

SHEET 67 OF 118

NOTES:  
FOR GENERAL NOTES AND LEGEND SEE SHEET 67



UTILITY SUMMARY	
CENTERPOINT ENERGY	
CPE02.01-ADJ	ADJUST GAS MAIN
CENTURYLINK	
CTL02.02-REL	RELOCATE HANDHOLE
MCI COMMUNICATIONS SERVICES LLC	
MCI02.02-REL	RELOCATE HANDHOLE
MCI02.03-REL	RELOCATE FIBER
XCEL ENERGY	
XCE02.02-REL	RELOCATE OVERHEAD POLE
XCE02.03-REM	REMOVE CABINET
ZAYO GROUP, LLC	
ZAY02.02-REL	RELOCATE OVERHEAD FIBER
ZAY02.03-REL	RELOCATE BURIED FIBER
COMCAST CABLE, LLC	
CCM02.02-REL	RELOCATE OVERHEAD TV



MATCH LINE STA 206+75.0  
SEE SHEET 67

END SP 002-606-014  
SP 127-020-036  
EB CSAH 6  
STA 215+20.34

END SAP 002-606-014  
SAP 127-020-036  
BEGIN SP 002-606-014  
SP 127-020-036  
EB CSAH 6 STA 208+00.00

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Print Name: ZACHARIAH F. HEIMER  
*Zach Heimer*  
Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
STATE PROJECT NO. 127-020-036  
STATE AID PROJECT NO. 002-606-014  
STATE AID PROJECT NO. 127-020-036

DRAWN BY M. WENDLER  
DESIGNED BY M. WENDLER  
CHECKED BY Z. HEIMER  
COMM. NO. 2417338



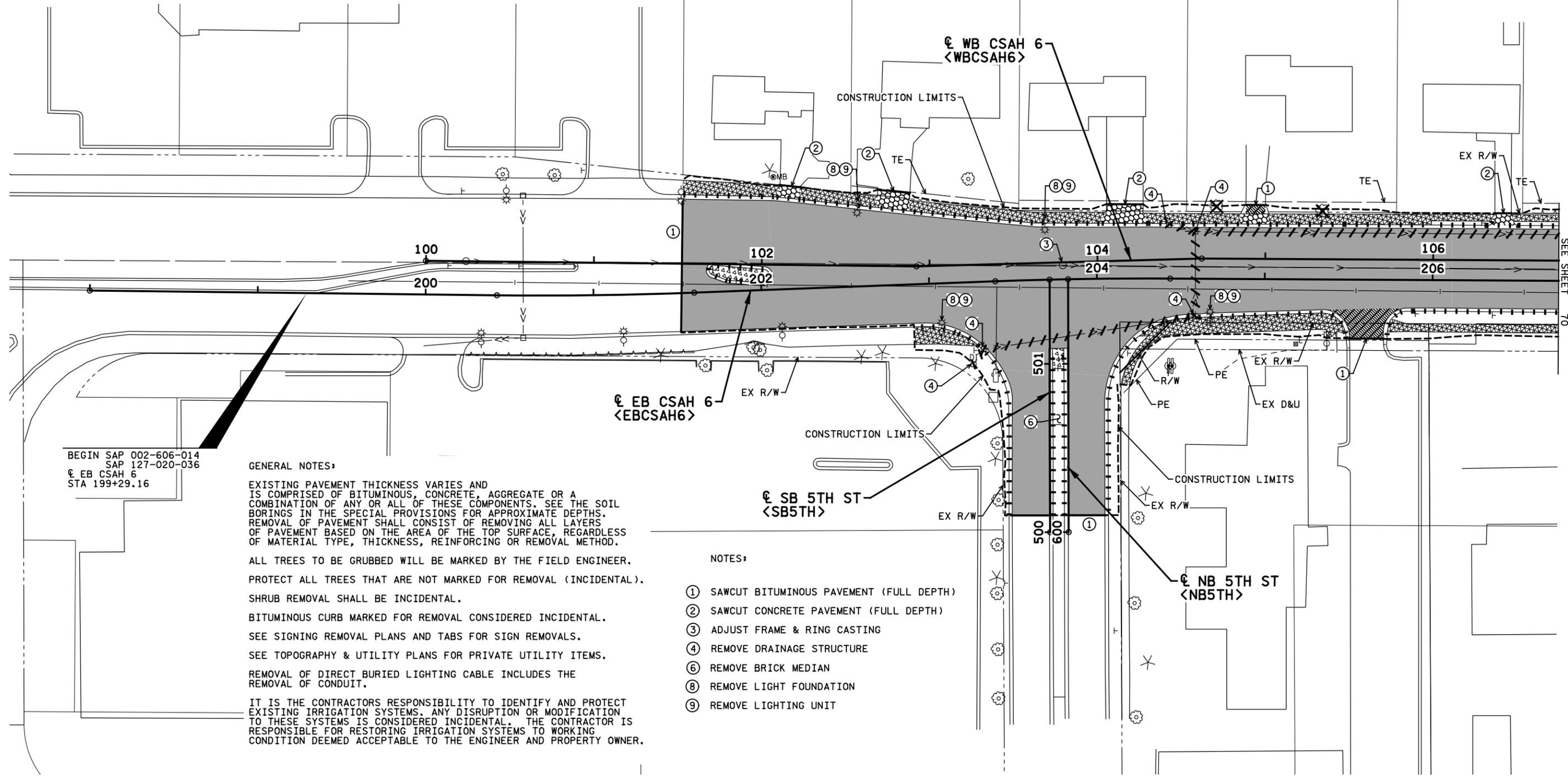
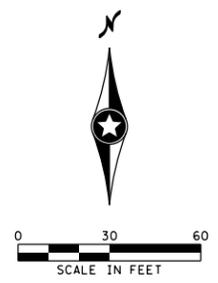
ANOKA COUNTY, MINNESOTA  
TOPOGRAPHY AND UTILITY PLANS  
SP 002-606-014, SP 127-020-036

SHEET 68 OF 118

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NO	DATE	BY	CKD	APPR	REVISION

LEGEND			
	REMOVE BITUMINOUS PAVEMENT		REMOVE CONCRETE MEDIAN
	REMOVE CONCRETE DRIVEWAY PAVEMENT		REMOVE CONCRETE CURB
	REMOVE BITUMINOUS DRIVEWAY PAVEMENT		REMOVE SEWER PIPE (STORM)
	REMOVE CONCRETE WALK		CLEAR AND GRUB TREE



BEGIN SAP 002-606-014  
 SAP 127-020-036  
 EB CSAH 6  
 STA 199+29.16

**GENERAL NOTES:**

EXISTING PAVEMENT THICKNESS VARIES AND IS COMPRISED OF BITUMINOUS, CONCRETE, AGGREGATE OR A COMBINATION OF ANY OR ALL OF THESE COMPONENTS. SEE THE SOIL BORINGS IN THE SPECIAL PROVISIONS FOR APPROXIMATE DEPTHS. REMOVAL OF PAVEMENT SHALL CONSIST OF REMOVING ALL LAYERS OF PAVEMENT BASED ON THE AREA OF THE TOP SURFACE, REGARDLESS OF MATERIAL TYPE, THICKNESS, REINFORCING OR REMOVAL METHOD.

ALL TREES TO BE GRUBBED WILL BE MARKED BY THE FIELD ENGINEER. PROTECT ALL TREES THAT ARE NOT MARKED FOR REMOVAL (INCIDENTAL). SHRUB REMOVAL SHALL BE INCIDENTAL.

BITUMINOUS CURB MARKED FOR REMOVAL CONSIDERED INCIDENTAL.

SEE SIGNING REMOVAL PLANS AND TABS FOR SIGN REMOVALS.

SEE TOPOGRAPHY & UTILITY PLANS FOR PRIVATE UTILITY ITEMS.

REMOVAL OF DIRECT BURIED LIGHTING CABLE INCLUDES THE REMOVAL OF CONDUIT.

IT IS THE CONTRACTORS RESPONSIBILITY TO IDENTIFY AND PROTECT EXISTING IRRIGATION SYSTEMS. ANY DISRUPTION OR MODIFICATION TO THESE SYSTEMS IS CONSIDERED INCIDENTAL. THE CONTRACTOR IS RESPONSIBLE FOR RESTORING IRRIGATION SYSTEMS TO WORKING CONDITION DEEMED ACCEPTABLE TO THE ENGINEER AND PROPERTY OWNER.

**NOTES:**

- ① SAWCUT BITUMINOUS PAVEMENT (FULL DEPTH)
- ② SAWCUT CONCRETE PAVEMENT (FULL DEPTH)
- ③ ADJUST FRAME & RING CASTING
- ④ REMOVE DRAINAGE STRUCTURE
- ⑥ REMOVE BRICK MEDIAN
- ⑧ REMOVE LIGHT FOUNDATION
- ⑨ REMOVE LIGHTING UNIT

MATCH LINE STA 206+75.0  
SEE SHEET 70

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Print Name: ZACHARIAH F. HEIMER

*Zach Heimer*

Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036

STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036

DRAWN BY M. WENDLER  
 DESIGNED BY M. WENDLER  
 CHECKED BY Z. HEIMER  
 COMM. NO. 2417338



ANOKA COUNTY, MINNESOTA

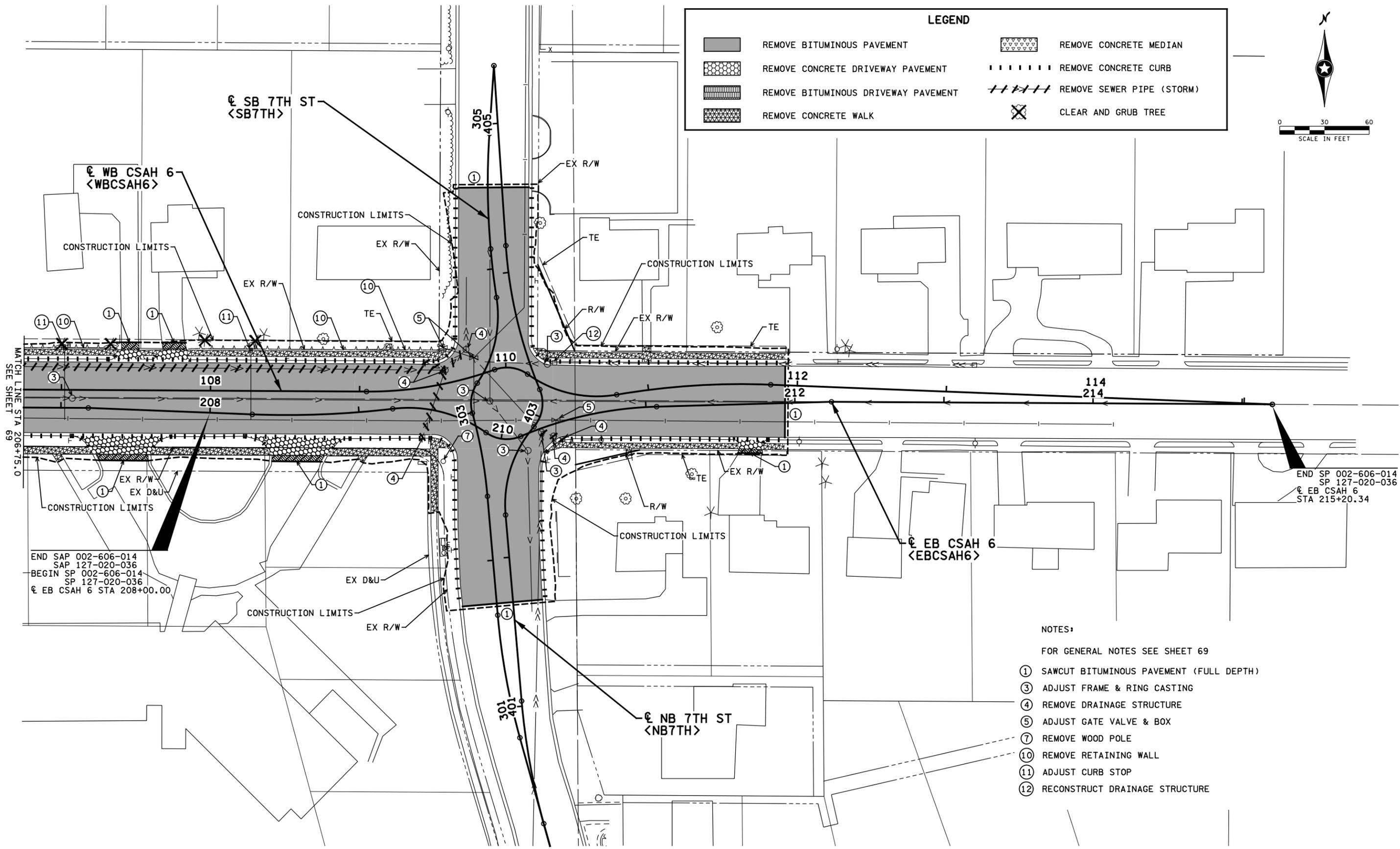
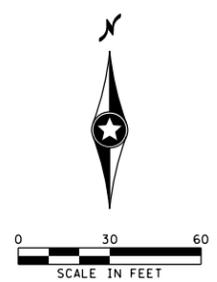
REMOVAL PLANS

SP 002-606-014, SP 127-020-036

SHEET 69 OF 118

**LEGEND**

	REMOVE BITUMINOUS PAVEMENT		REMOVE CONCRETE MEDIAN
	REMOVE CONCRETE DRIVEWAY PAVEMENT		REMOVE CONCRETE CURB
	REMOVE BITUMINOUS DRIVEWAY PAVEMENT		REMOVE SEWER PIPE (STORM)
	REMOVE CONCRETE WALK		CLEAR AND GRUB TREE



END SAP 002-606-014  
 SAP 127-020-036  
 BEGIN SP 002-606-014  
 SP 127-020-036  
 EB CSAH 6 STA 208+00.00

END SP 002-606-014  
 SP 127-020-036  
 EB CSAH 6  
 STA 215+20.34

- NOTES:**
- FOR GENERAL NOTES SEE SHEET 69
- ① SAWCUT BITUMINOUS PAVEMENT (FULL DEPTH)
  - ③ ADJUST FRAME & RING CASTING
  - ④ REMOVE DRAINAGE STRUCTURE
  - ⑤ ADJUST GATE VALVE & BOX
  - ⑦ REMOVE WOOD POLE
  - ⑩ REMOVE RETAINING WALL
  - ⑪ ADJUST CURB STOP
  - ⑫ RECONSTRUCT DRAINAGE STRUCTURE

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*Zach Heimer*

Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036

STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036

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 DESIGNED BY M. WENDLER  
 CHECKED BY Z. HEIMER  
 COMM. NO. 2417338



**ANOKA COUNTY, MINNESOTA**

REMOVAL PLANS

SP 002-606-014, SP 127-020-036

**SHEET**  
 70  
 OF  
 118

LEGEND	
	INPLACE PAVEMENT
	PROPOSED CONSTRUCTION
	PROPOSED RETAINING WALL
	DIRECTION OF TRAFFIC
	3" BITUMINOUS TRAIL (INSET B)
	4" CONCRETE WALK (INSET C)
	CONCRETE PAVEMENT 10" - SPECIAL (INSET D)
	6" CONCRETE WALK (INSET E)
	8" CONCRETE DRIVEWAY PAVEMENT (INSET F)
	BITUMINOUS DRIVEWAY PAVEMENT (INSET G)
	6" CONCRETE WALK - SPECIAL (INSET H)

GENERAL NOTES:

CURB & GUTTER DES R424 (MOD) USED FOR ROUNDABOUT ISLANDS.

THE RIGHT-OF-WAY SHOWN IN THIS PLAN GIVES A GRAPHICAL LOCATION WITH RESPECT TO THE GEOMETRIC DESIGN AND MAP DATA. THE EXACT RIGHT OF WAY AND BOUNDARY CORNERS ARE LOCATED BY REFERENCE TO THE RIGHT OF WAY PLATS AND ARE IDENTIFIED ON THE RIGHT OF WAY MAP.

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED.

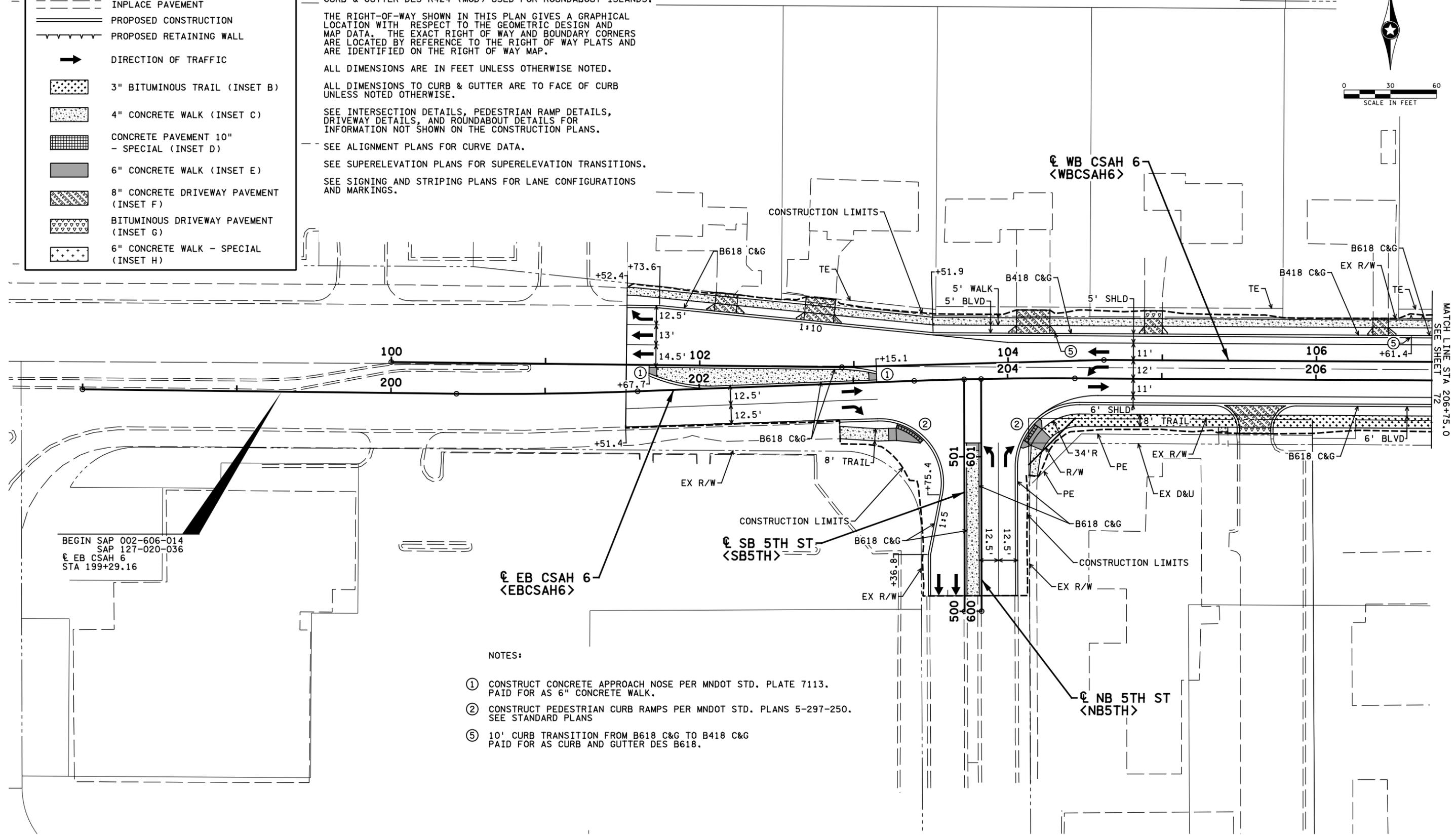
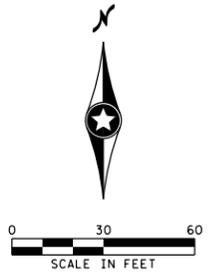
ALL DIMENSIONS TO CURB & GUTTER ARE TO FACE OF CURB UNLESS NOTED OTHERWISE.

SEE INTERSECTION DETAILS, PEDESTRIAN RAMP DETAILS, DRIVEWAY DETAILS, AND ROUNDABOUT DETAILS FOR INFORMATION NOT SHOWN ON THE CONSTRUCTION PLANS.

SEE ALIGNMENT PLANS FOR CURVE DATA.

SEE SUPERELEVATION PLANS FOR SUPERELEVATION TRANSITIONS.

SEE SIGNING AND STRIPING PLANS FOR LANE CONFIGURATIONS AND MARKINGS.



- NOTES:
- ① CONSTRUCT CONCRETE APPROACH NOSE PER MNDOT STD. PLATE 7113. PAID FOR AS 6" CONCRETE WALK.
  - ② CONSTRUCT PEDESTRIAN CURB RAMPS PER MNDOT STD. PLANS 5-297-250. SEE STANDARD PLANS
  - ③ 10' CURB TRANSITION FROM B618 C&G TO B418 C&G PAID FOR AS CURB AND GUTTER DES B618.

BEGIN SAP 002-606-014  
 SAP 127-020-036  
 E EB CSAH 6  
 STA 199+29.16

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NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: ZACHARIAH F. HEIMER

*Zach Heimer*

Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036

STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036

DRAWN BY M. WENDLER  
 DESIGNED BY M. WENDLER  
 CHECKED BY Z. HEIMER  
 COMM. NO. 2417338



ANOKA COUNTY, MINNESOTA

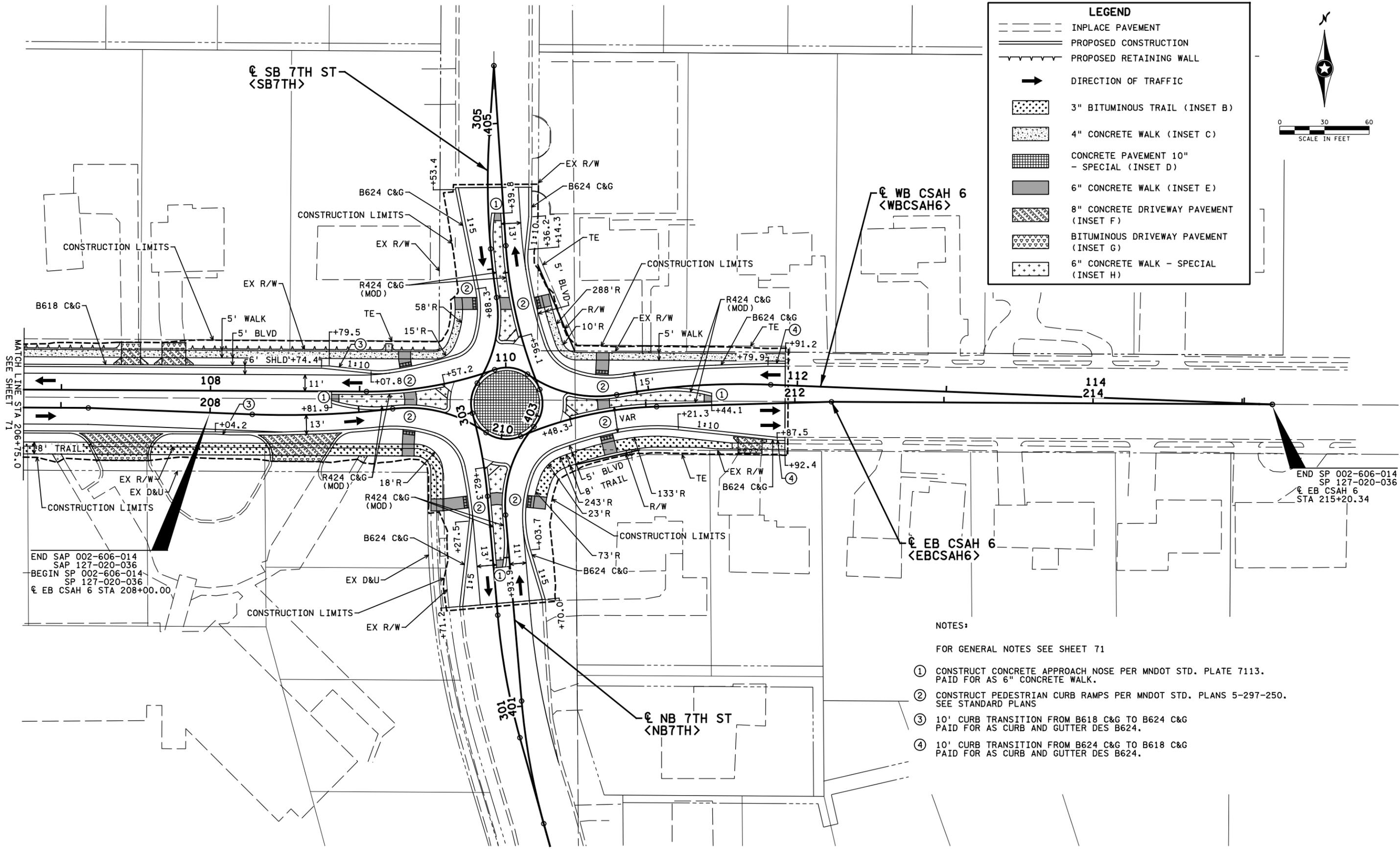
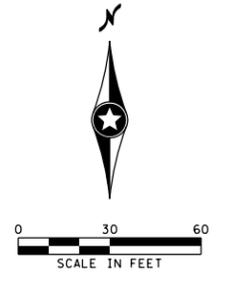
CONSTRUCTION PLANS

SP 002-606-014, SP 127-020-036

SHEET 71 OF 118

**LEGEND**

- INPLACE PAVEMENT
- ==== PROPOSED CONSTRUCTION
- - - - PROPOSED RETAINING WALL
- DIRECTION OF TRAFFIC
- [Pattern] 3" BITUMINOUS TRAIL (INSET B)
- [Pattern] 4" CONCRETE WALK (INSET C)
- [Pattern] CONCRETE PAVEMENT 10" - SPECIAL (INSET D)
- [Pattern] 6" CONCRETE WALK (INSET E)
- [Pattern] 8" CONCRETE DRIVEWAY PAVEMENT (INSET F)
- [Pattern] BITUMINOUS DRIVEWAY PAVEMENT (INSET G)
- [Pattern] 6" CONCRETE WALK - SPECIAL (INSET H)



- NOTES:
- FOR GENERAL NOTES SEE SHEET 71
- ① CONSTRUCT CONCRETE APPROACH NOSE PER MNDOT STD. PLATE 7113. PAID FOR AS 6" CONCRETE WALK.
  - ② CONSTRUCT PEDESTRIAN CURB RAMPS PER MNDOT STD. PLANS 5-297-250. SEE STANDARD PLANS
  - ③ 10' CURB TRANSITION FROM B618 C&G TO B624 C&G PAID FOR AS CURB AND GUTTER DES B624.
  - ④ 10' CURB TRANSITION FROM B624 C&G TO B618 C&G PAID FOR AS CURB AND GUTTER DES B624.

END SAP 002-606-014  
 SAP 127-020-036  
 BEGIN SP 002-606-014  
 SP 127-020-036  
 EB CSAH 6 STA 208+00.00

END SP 002-606-014  
 SP 127-020-036  
 EB CSAH 6  
 STA 215+20.34

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NO	DATE	BY	CKD	APPR	REVISION

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Print Name: ZACHARIAH F. HEIMER

*Zach Heimer*

Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036

STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036

DRAWN BY M. WENDLER  
 DESIGNED BY M. WENDLER  
 CHECKED BY Z. HEIMER  
 COMM. NO. 2417338



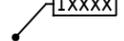
ANOKA COUNTY, MINNESOTA

CONSTRUCTION PLANS

SP 002-606-014, SP 127-020-036

SHEET 72 OF 118

**LEGEND**

-  GUTTER OUT
-  PROPOSED STORM SEWER
-  PROPOSED MANHOLE
-  PROPOSED CATCH BASIN
-  DRAINAGE FLOW ARROW
-  IXXXX INTERSECTION POINT NUMBER
-  CXXX INDICATES CURB ALIGNMENTS, SEE ALIGNMENT PLANS AND TABULATIONS FOR ADDITIONAL INFORMATION

**GENERAL NOTES:**

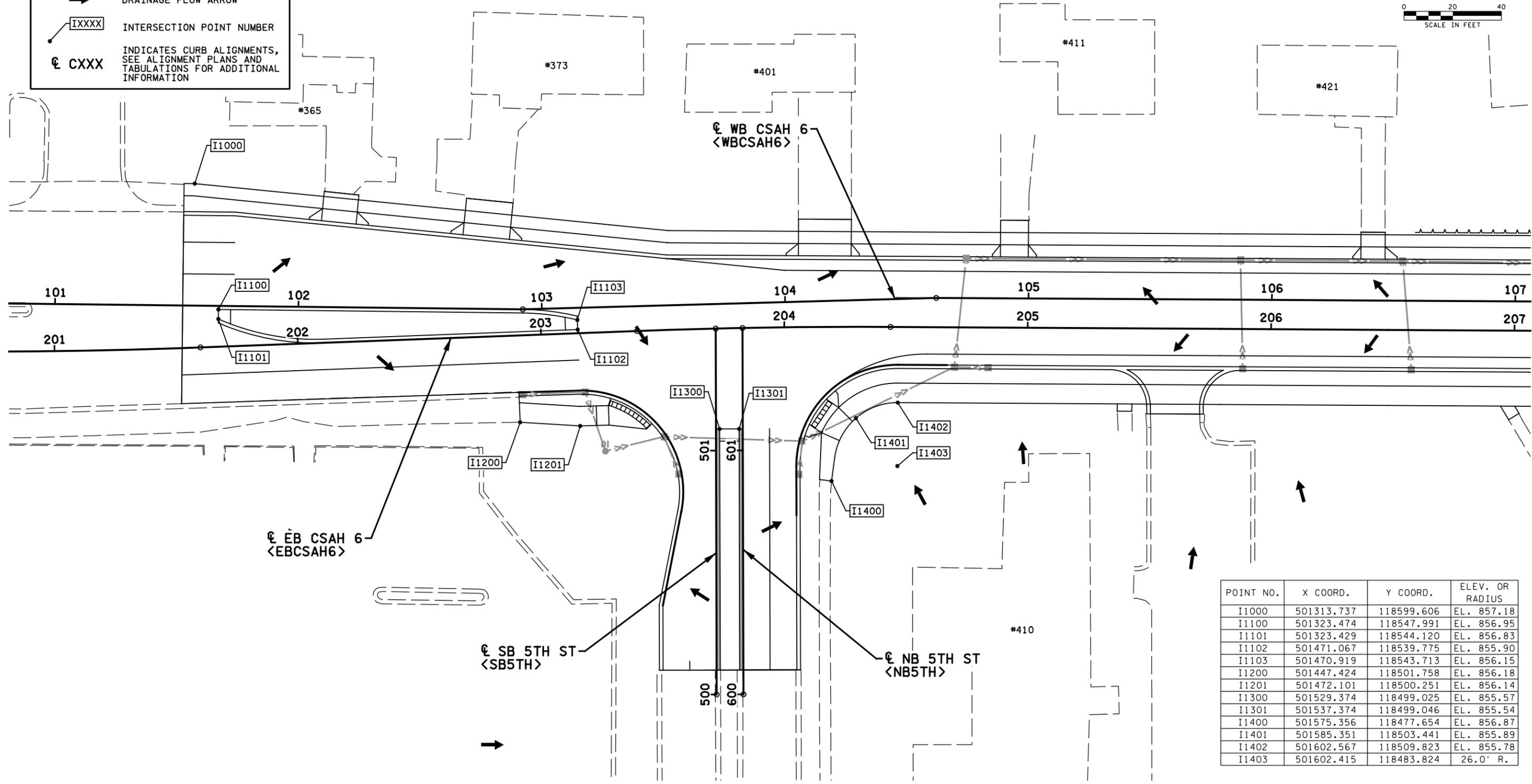
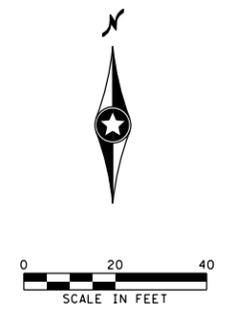
OFFSETS, ELEVATIONS AND RADIUS LENGTHS ARE TO FLOWLINE OF GUTTER, WHERE APPLICABLE, AND DO NOT ACCOUNT FOR DRAINAGE STRUCTURE SUMPS.

SEE CONSTRUCTION PLAN SHEETS FOR CURB & GUTTER TYPES, LANE AND WALK DIMENSIONS.

SEE DRAINAGE PLANS, AND SUPERELEVATION PLANS FOR ADDITIONAL INFORMATION.

**NOTES:**

SEE SHEET 82 FOR 5TH ST TOE OF GUTTER PROFILES.



POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS
I1000	501313.737	118599.606	EL. 857.18
I1100	501323.474	118547.991	EL. 856.95
I1101	501323.429	118544.120	EL. 856.83
I1102	501471.067	118539.775	EL. 855.90
I1103	501470.919	118543.713	EL. 856.15
I1200	501447.424	118501.758	EL. 856.18
I1201	501472.101	118500.251	EL. 856.14
I1300	501529.374	118499.025	EL. 855.57
I1301	501537.374	118499.046	EL. 855.54
I1400	501575.356	118477.654	EL. 856.87
I1401	501585.351	118503.441	EL. 855.89
I1402	501602.567	118509.823	EL. 855.78
I1403	501602.415	118483.824	26.0' R.

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NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: ZACHARIAH F. HEIMER

*Zach Heimer*

Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
STATE PROJECT NO. 127-020-036

STATE AID PROJECT NO. 002-606-014  
STATE AID PROJECT NO. 127-020-036

DRAWN BY M. WENDLER  
DESIGNED BY M. WENDLER  
CHECKED BY Z. HEIMER  
COMM. NO. 2417338



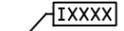
**ANOKA COUNTY, MINNESOTA**

INTERSECTION DETAILS

SP 002-606-014, SP 127-020-036

**SHEET 73 OF 118**

**LEGEND**

-  GUTTER OUT
-  PROPOSED STORM SEWER
-  PROPOSED MANHOLE
-  PROPOSED CATCH BASIN
-  DRAINAGE FLOW ARROW
-  IXXXX INTERSECTION POINT NUMBER
-  CXXX INDICATES CURB ALIGNMENTS, SEE ALIGNMENT PLANS AND TABULATIONS FOR ADDITIONAL INFORMATION

**GENERAL NOTES:**

OFFSETS, ELEVATIONS AND RADIUS LENGTHS ARE TO FLOWLINE OF GUTTER, WHERE APPLICABLE, AND DO NOT ACCOUNT FOR DRAINAGE STRUCTURE SUMPS.

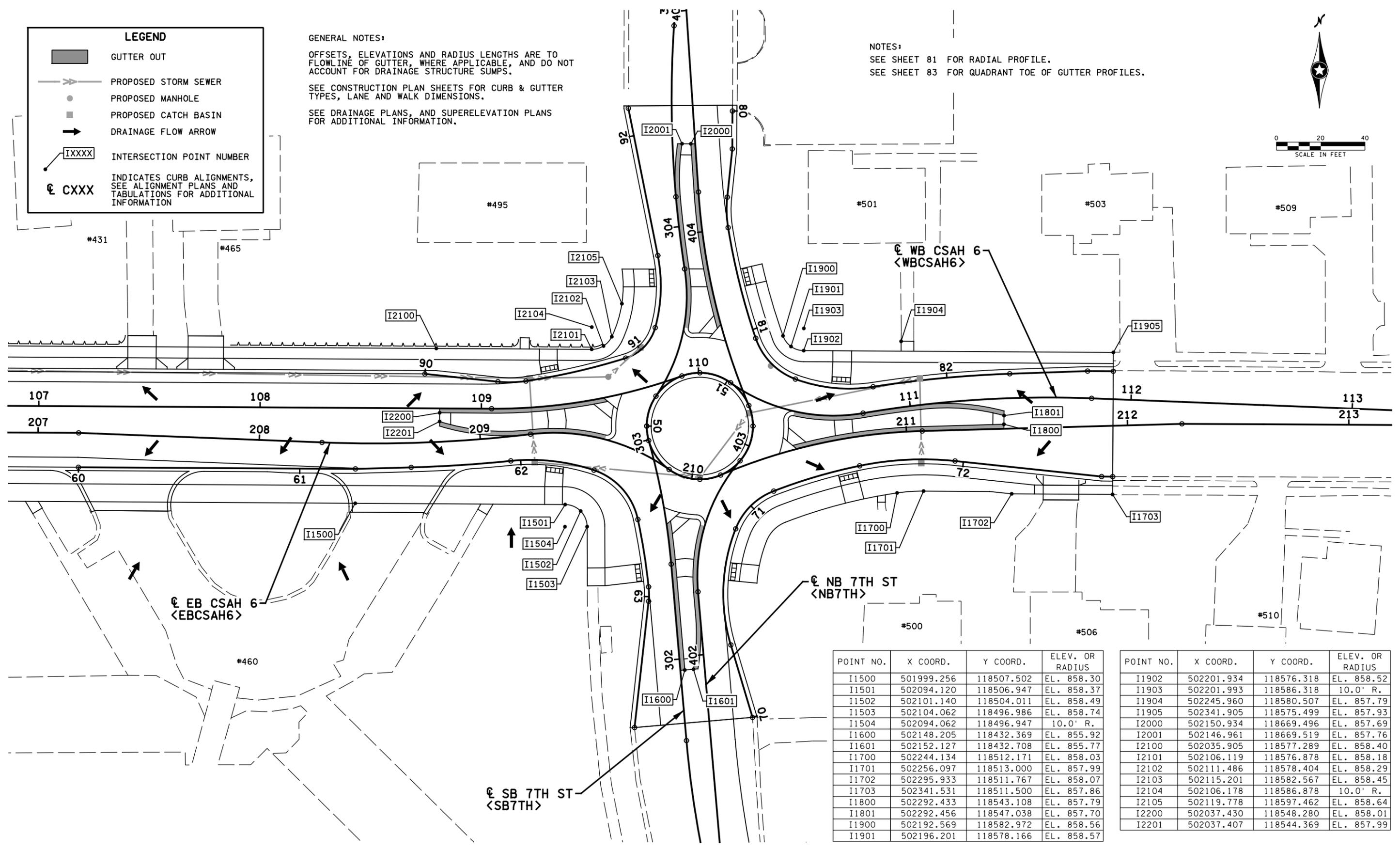
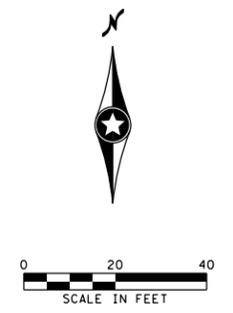
SEE CONSTRUCTION PLAN SHEETS FOR CURB & GUTTER TYPES, LANE AND WALK DIMENSIONS.

SEE DRAINAGE PLANS, AND SUPERELEVATION PLANS FOR ADDITIONAL INFORMATION.

**NOTES:**

SEE SHEET 81 FOR RADIAL PROFILE.

SEE SHEET 83 FOR QUADRANT TOE OF GUTTER PROFILES.



POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS
I1500	501999.256	118507.502	EL. 858.30
I1501	502094.120	118506.947	EL. 858.37
I1502	502101.140	118504.011	EL. 858.49
I1503	502104.062	118496.986	EL. 858.74
I1504	502094.062	118496.947	10.0' R.
I1600	502148.205	118432.369	EL. 855.92
I1601	502152.127	118432.708	EL. 855.77
I1700	502244.134	118512.171	EL. 858.03
I1701	502256.097	118513.000	EL. 857.99
I1702	502295.933	118511.767	EL. 858.07
I1703	502341.531	118511.500	EL. 857.86
I1800	502292.433	118543.108	EL. 857.79
I1801	502292.456	118547.038	EL. 857.70
I1900	502192.569	118582.972	EL. 858.56
I1901	502196.201	118578.166	EL. 858.57

POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS
I1902	502201.934	118576.318	EL. 858.52
I1903	502201.993	118586.318	10.0' R.
I1904	502245.960	118580.507	EL. 857.79
I1905	502341.905	118575.499	EL. 857.93
I2000	502150.934	118669.496	EL. 857.69
I2001	502146.961	118669.519	EL. 857.76
I2100	502035.905	118577.289	EL. 858.40
I2101	502106.119	118576.878	EL. 858.18
I2102	502111.486	118578.404	EL. 858.29
I2103	502115.201	118582.567	EL. 858.45
I2104	502106.178	118586.878	10.0' R.
I2105	502119.778	118597.462	EL. 858.64
I2200	502037.430	118548.280	EL. 858.01
I2201	502037.407	118544.369	EL. 857.99

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NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: ZACHARIAH F. HEIMER

*Zach Heimer*

Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036

STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036

DRAWN BY M. WENDLER  
 DESIGNED BY M. WENDLER  
 CHECKED BY Z. HEIMER  
 COMM. NO. 2417338

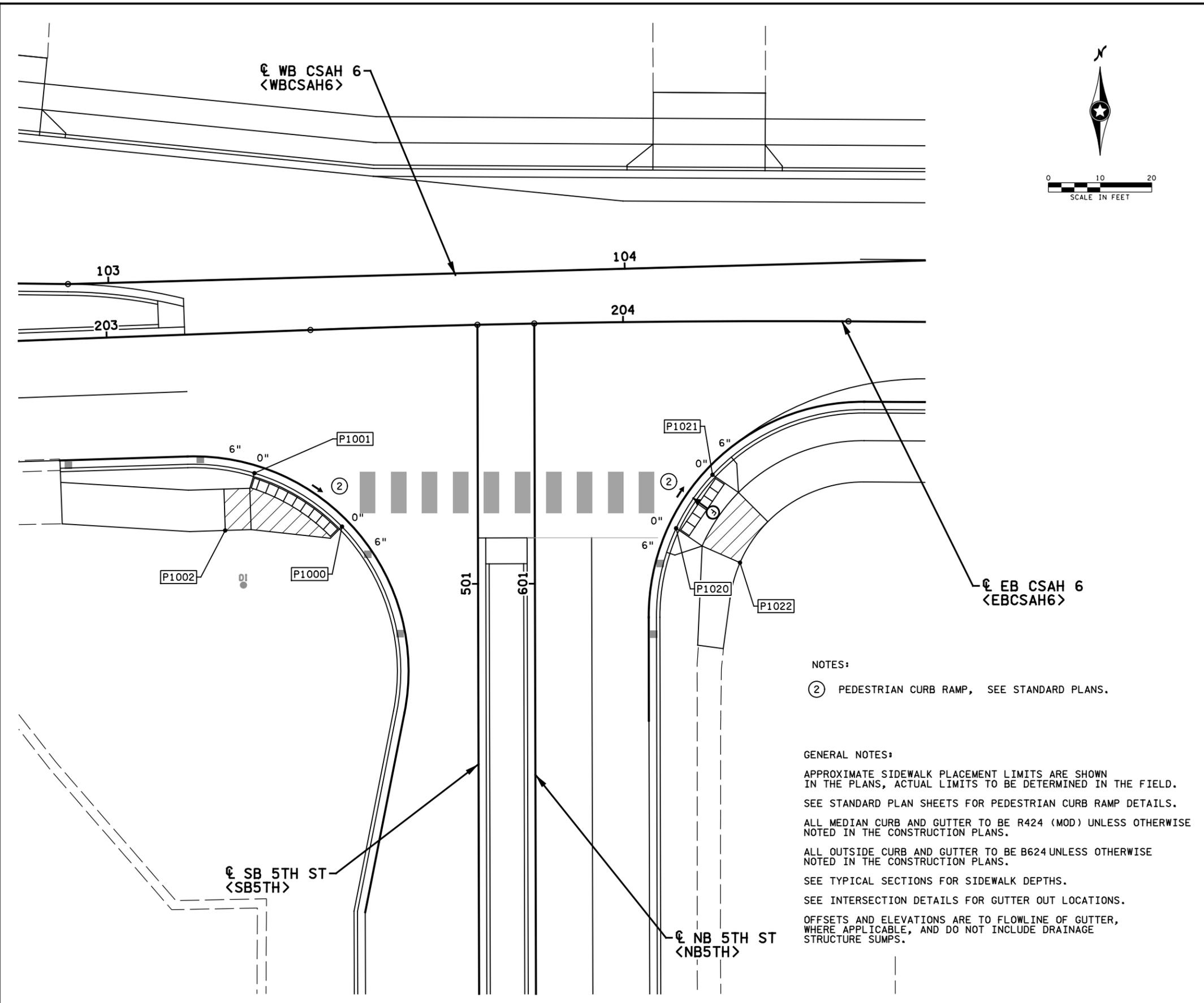


**ANOKA COUNTY, MINNESOTA**

INTERSECTION DETAILS

SP 002-606-014, SP 127-020-036

**SHEET 74 OF 118**



**LEGEND**

	CONTROL POINTS AT GUTTER FLOW LINE
	TRUNCATED DOMES (SEE STANDARD PLATE 7038)
	CONSTRUCT CONCRETE CURB & GUTTER
X"	CURB HEIGHT
	LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
	DIRECTION OF CURBLINE FLOW
	PROPOSED CATCH BASIN
	PROPOSED MANHOLE (STORM)

POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS
P1000	501501.563	118501.208	EL. 855.18
P1001	501484.609	118511.524	EL. 855.31
P1002	501478.954	118500.464	EL. 855.56
P1020	501566.234	118500.881	EL. 855.29
P1021	501573.266	118511.216	EL. 855.16
P1022	501578.596	118494.249	EL. 855.71

**NOTES:**

② PEDESTRIAN CURB RAMP, SEE STANDARD PLANS.

**GENERAL NOTES:**

APPROXIMATE SIDEWALK PLACEMENT LIMITS ARE SHOWN IN THE PLANS, ACTUAL LIMITS TO BE DETERMINED IN THE FIELD.

SEE STANDARD PLAN SHEETS FOR PEDESTRIAN CURB RAMP DETAILS.

ALL MEDIAN CURB AND GUTTER TO BE R424 (MOD) UNLESS OTHERWISE NOTED IN THE CONSTRUCTION PLANS.

ALL OUTSIDE CURB AND GUTTER TO BE B624 UNLESS OTHERWISE NOTED IN THE CONSTRUCTION PLANS.

SEE TYPICAL SECTIONS FOR SIDEWALK DEPTHS.

SEE INTERSECTION DETAILS FOR GUTTER OUT LOCATIONS.

OFFSETS AND ELEVATIONS ARE TO FLOWLINE OF GUTTER, WHERE APPLICABLE, AND DO NOT INCLUDE DRAINAGE STRUCTURE SUMPS.

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NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: ZACHARIAH F. HEIMER

*Zach Heimer*

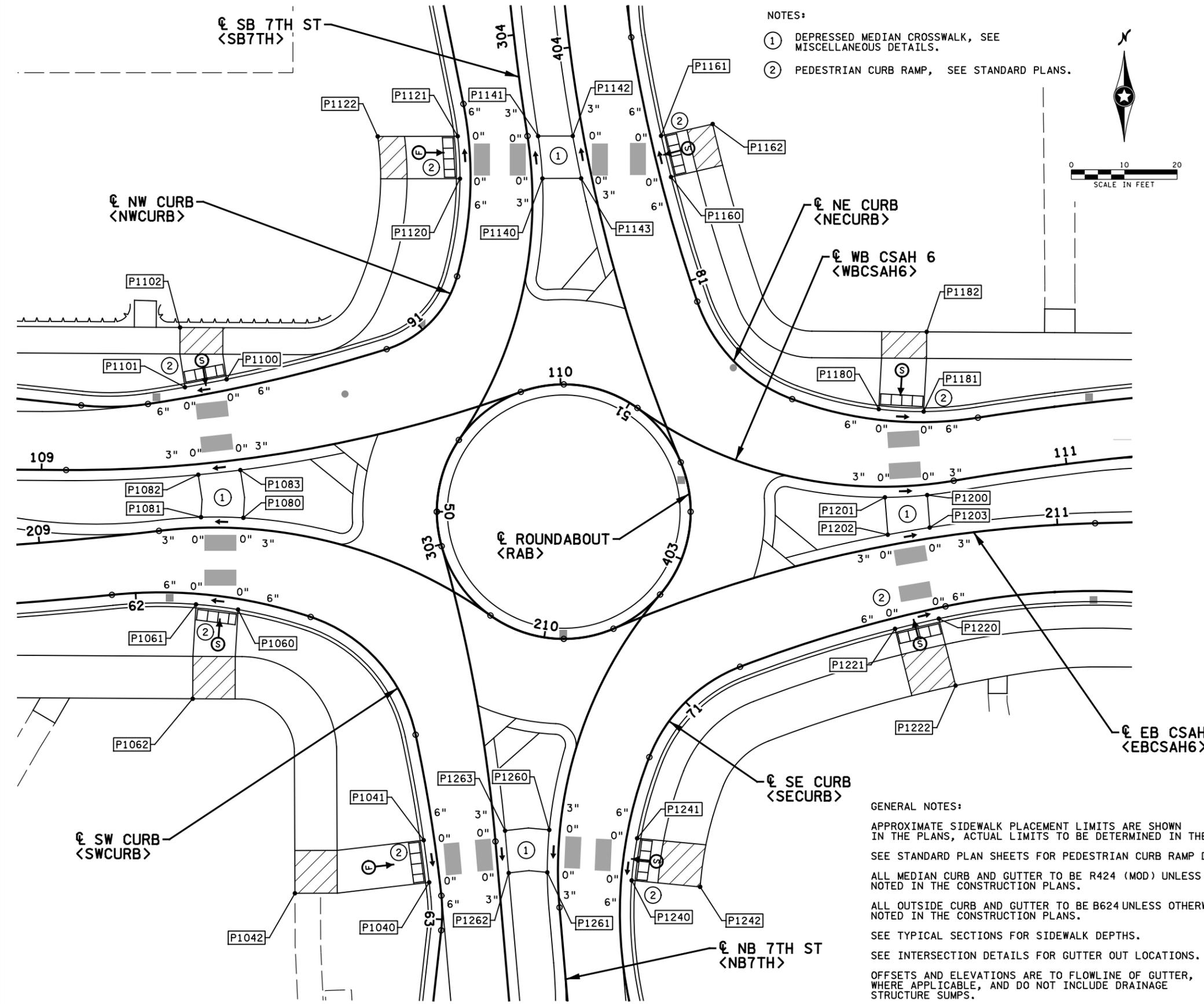
Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014	DRAWN BY M. WENDLER
STATE PROJECT NO. 127-020-036	DESIGNED BY M. WENDLER
STATE AID PROJECT NO. 002-606-014	CHECKED BY Z. HEIMER
STATE AID PROJECT NO. 127-020-036	COMM. NO. 2417338

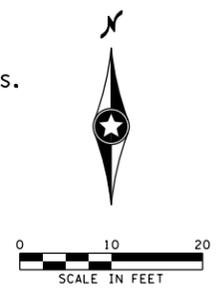


**ANOKA COUNTY, MINNESOTA**  
 PEDESTRIAN CURB RAMP DETAILS  
 SP 002-606-014, SP 127-020-036

**SHEET**  
 75  
 OF  
 118



- NOTES:
- ① DEPRESSED MEDIAN CROSSWALK, SEE MISCELLANEOUS DETAILS.
  - ② PEDESTRIAN CURB RAMP, SEE STANDARD PLANS.



**LEGEND**

- PXXXX CONTROL POINTS AT GUTTER FLOW LINE
- [ ] TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- ==== CONSTRUCT CONCRETE CURB & GUTTER
- X" CURB HEIGHT
- [ ] LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- (S) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
- (F) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
- DIRECTION OF CURBLINE FLOW
- PROPOSED CATCH BASIN
- PROPOSED MANHOLE (STORM)

POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS
P1040	502129.555	118472.378	EL. 857.03
P1041	502128.518	118480.311	EL. 857.21
P1042	502104.164	118470.312	EL. 857.19
P1060	502093.411	118523.814	EL. 857.50
P1061	502085.454	118524.796	EL. 857.49
P1062	502084.838	118507.002	EL. 858.20
P1080	502094.417	118541.119	EL. 857.77
P1081	502086.410	118541.235	EL. 857.74
P1082	502085.892	118549.241	EL. 857.77
P1083	502093.851	118550.115	EL. 857.79
P1100	502091.239	118567.229	EL. 857.52
P1101	502083.372	118565.748	EL. 857.51
P1102	502082.444	118577.017	EL. 858.10
P1120	502135.378	118605.078	EL. 857.70
P1121	502134.945	118613.077	EL. 857.66
P1122	502119.826	118613.044	EL. 858.17
P1140	502150.965	118605.112	EL. 858.05
P1141	502150.156	118613.111	EL. 857.97
P1142	502156.702	118613.125	EL. 857.96
P1143	502158.285	118605.129	EL. 857.99
P1160	502175.292	118605.385	EL. 857.67
P1161	502173.411	118613.162	EL. 857.64
P1162	502183.161	118615.382	EL. 858.12
P1180	502214.573	118561.614	EL. 857.48
P1181	502223.061	118561.155	EL. 857.37
P1182	502223.632	118576.191	EL. 858.15
P1200	502223.729	118545.405	EL. 857.62
P1201	502215.738	118544.978	EL. 857.69
P1202	502216.282	118537.939	EL. 857.68
P1203	502224.202	118539.281	EL. 857.63
P1220	502225.934	118522.104	EL. 857.37
P1221	502217.653	118520.180	EL. 857.42
P1222	502229.094	118509.485	EL. 857.89
P1240	502167.847	118472.741	EL. 856.93
P1241	502168.877	118480.679	EL. 857.07
P1242	502180.791	118471.514	EL. 857.45
P1260	502152.261	118482.255	EL. 857.38
P1261	502151.895	118474.253	EL. 857.23
P1262	502145.007	118474.112	EL. 857.34
P1263	502143.901	118482.111	EL. 857.48

GENERAL NOTES:

APPROXIMATE SIDEWALK PLACEMENT LIMITS ARE SHOWN IN THE PLANS, ACTUAL LIMITS TO BE DETERMINED IN THE FIELD.

SEE STANDARD PLAN SHEETS FOR PEDESTRIAN CURB RAMP DETAILS.

ALL MEDIAN CURB AND GUTTER TO BE R424 (MOD) UNLESS OTHERWISE NOTED IN THE CONSTRUCTION PLANS.

ALL OUTSIDE CURB AND GUTTER TO BE B624 UNLESS OTHERWISE NOTED IN THE CONSTRUCTION PLANS.

SEE TYPICAL SECTIONS FOR SIDEWALK DEPTHS.

SEE INTERSECTION DETAILS FOR GUTTER OUT LOCATIONS.

OFFSETS AND ELEVATIONS ARE TO FLOWLINE OF GUTTER, WHERE APPLICABLE, AND DO NOT INCLUDE DRAINAGE STRUCTURE SUMPS.

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NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: ZACHARIAH F. HEIMER

*Zach Heimer*

Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036

DRAWN BY M. WENDLER  
 DESIGNED BY M. WENDLER  
 CHECKED BY Z. HEIMER  
 COMM. NO. 2417338

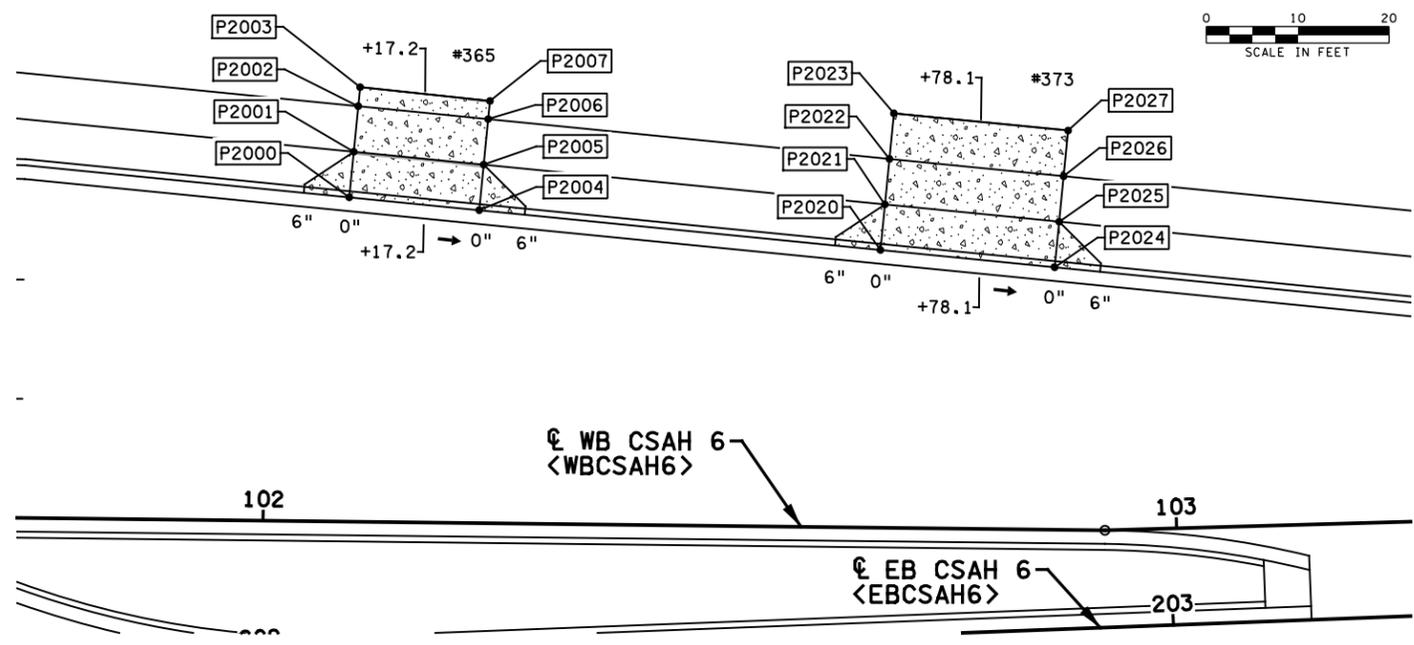
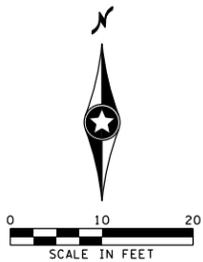


ANOKA COUNTY, MINNESOTA

PEDESTRIAN CURB RAMP DETAILS

SP 002-606-014, SP 127-020-036

SHEET 76 OF 118



POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS
P2000	501365.787	118584.410	EL. 855.97
P2001	501366.279	118589.386	EL. 856.41
P2002	501366.771	118594.362	EL. 856.49
P2003	501366.977	118596.443	EL. 856.78
P2004	501380.012	118583.003	EL. 855.91
P2005	501380.504	118587.979	EL. 856.35
P2006	501380.996	118592.955	EL. 856.43
P2007	501381.192	118594.938	EL. 856.72
P2020	501423.930	118578.660	EL. 855.73
P2021	501424.422	118583.636	EL. 855.99
P2022	501424.914	118588.612	EL. 856.07
P2023	501425.406	118593.588	EL. 856.03
P2024	501443.000	118576.775	EL. 855.65
P2025	501443.492	118581.750	EL. 855.91
P2026	501443.985	118586.726	EL. 855.99
P2027	501444.477	118591.702	EL. 855.92

**LEGEND**

- PXXXX DRIVEWAY CONTROL POINTS
- ==== CONSTRUCT CONCRETE CURB & GUTTER
- X" CURB HEIGHT
- 8" CONCRETE DRIVEWAY PAVEMENT SEE INSET F ON SHEET NO.12
- BITUMINOUS DRIVEWAY PAVEMENT SEE INSET G ON SHEET NO.12
- DIRECTION OF CURBLINE FLOW
- PROPOSED CATCH BASIN
- 118 HOUSE NUMBER

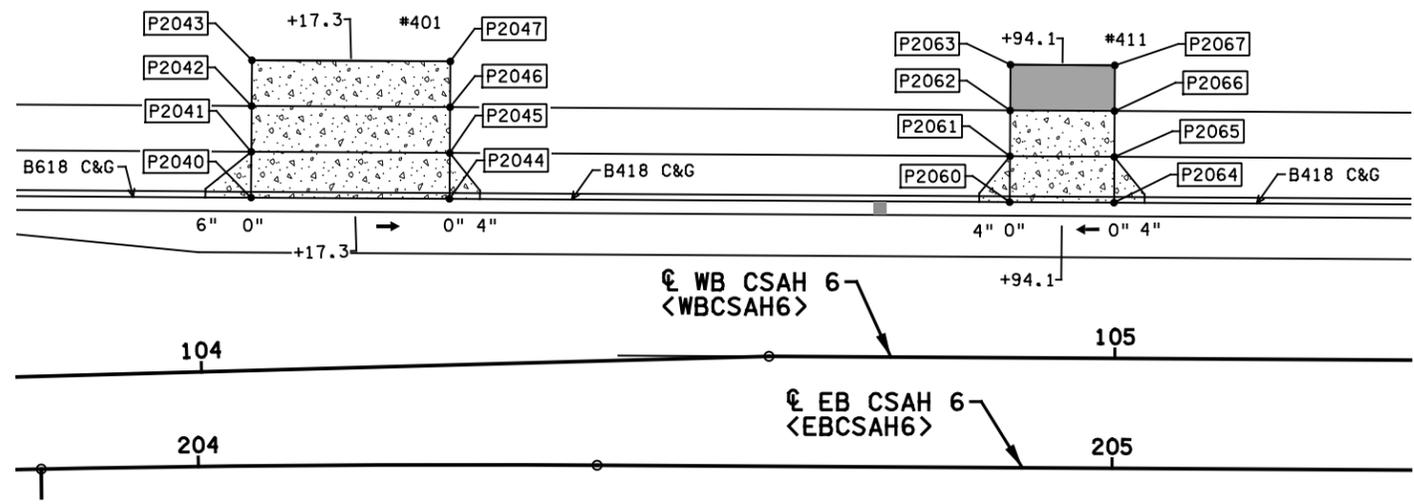
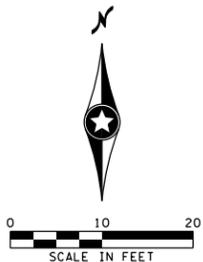
GENERAL NOTES:

SEE STANDARD PLAN SHEETS FOR DRIVEWAY DETAILS.

ALL CURB AND GUTTER TO BE B618 UNLESS OTHERWISE NOTED IN THE CONSTRUCTION PLANS.

SEE TYPICAL SECTIONS FOR SIDEWALK DEPTHS.

OFFSETS AND ELEVATIONS ARE TO FLOWLINE OF GUTTER, WHERE APPLICABLE, AND DO NOT INCLUDE DRAINAGE STRUCTURE SUMPS.



POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS
P2040	501561.726	118570.063	EL. 855.14
P2041	501561.755	118575.063	EL. 855.58
P2042	501561.784	118580.063	EL. 855.66
P2043	501561.813	118585.063	EL. 855.62
P2044	501583.439	118569.936	EL. 855.05
P2045	501583.468	118574.936	EL. 855.49
P2046	501583.497	118579.936	EL. 855.57
P2047	501583.527	118584.936	EL. 855.50
P2060	501644.758	118569.577	EL. 855.00
P2061	501644.787	118574.577	EL. 855.35
P2062	501644.817	118579.577	EL. 855.43
P2063	501644.846	118584.577	EL. 855.07
P2064	501656.181	118569.511	EL. 855.02
P2065	501656.210	118574.511	EL. 855.37
P2066	501656.239	118579.510	EL. 855.45
P2067	501656.268	118584.510	EL. 855.16

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NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: ZACHARIAH F. HEIMER

*Zach Heimer*

Date: 05/14/2025 License #: 58755

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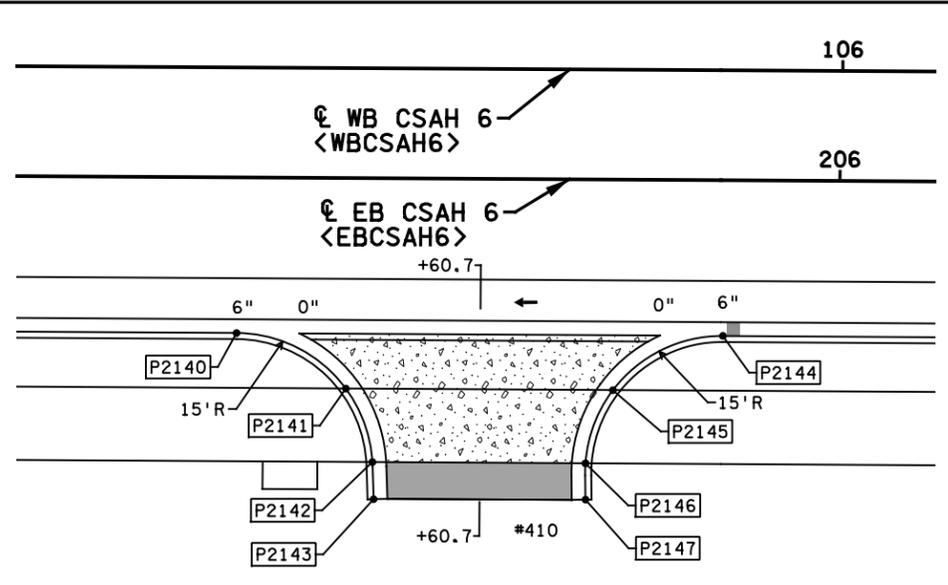
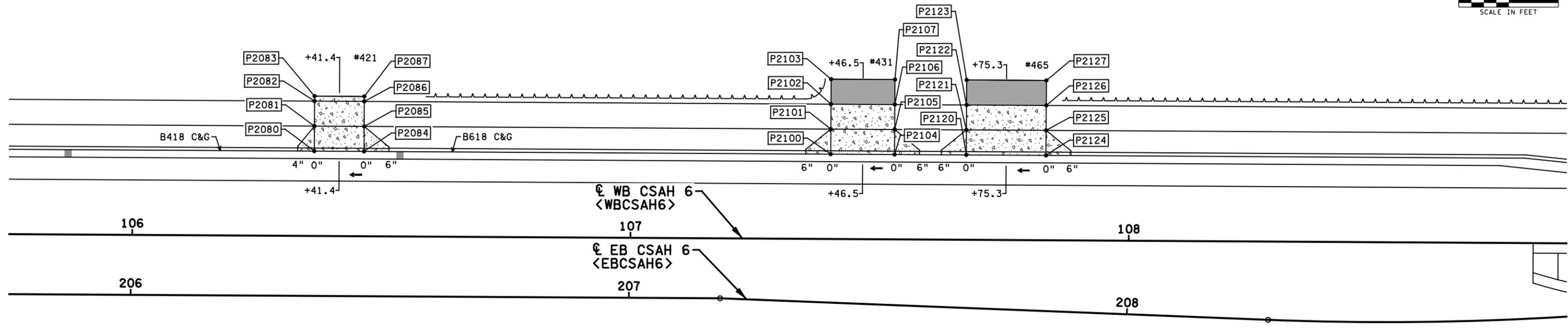
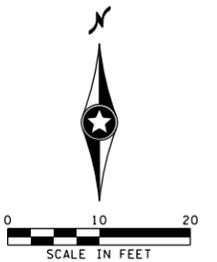


ANOKA COUNTY, MINNESOTA

DRIVEWAY DETAILS

SP 002-606-014, SP 127-020-036

SHEET 77 OF 118



POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS
P2080	501792.802	118568.711	EL. 856.01
P2081	501792.831	118573.711	EL. 856.27
P2082	501792.860	118578.711	EL. 856.32
P2083	501792.886	118579.711	EL. 856.26
P2084	501802.790	118568.653	EL. 856.12
P2085	501802.819	118573.653	EL. 856.38
P2086	501802.849	118578.653	EL. 856.43
P2087	501802.855	118579.653	EL. 856.36
P2100	501896.444	118568.105	EL. 857.06
P2101	501896.474	118573.105	EL. 857.50
P2102	501896.503	118578.105	EL. 857.58
P2103	501896.532	118583.105	EL. 857.67
P2104	501909.273	118568.030	EL. 857.19
P2105	501909.302	118573.030	EL. 857.63
P2106	501909.331	118578.030	EL. 857.71
P2107	501909.360	118583.030	EL. 857.87
P2120	501923.663	118567.946	EL. 857.32
P2121	501923.692	118572.946	EL. 857.76
P2122	501923.722	118577.945	EL. 857.84
P2123	501923.751	118582.945	EL. 858.12
P2124	501939.663	118567.852	EL. 857.47
P2125	501939.692	118572.852	EL. 857.91
P2126	501939.721	118577.852	EL. 857.99
P2127	501939.751	118582.852	EL. 858.39

**GENERAL NOTES:**

SEE STANDARD PLAN SHEETS FOR DRIVEWAY DETAILS.

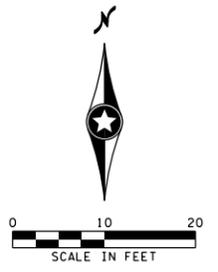
ALL CURB AND GUTTER TO BE B618 UNLESS OTHERWISE NOTED IN THE CONSTRUCTION PLANS.

SEE TYPICAL SECTIONS FOR SIDEWALK DEPTHS.

OFFSETS AND ELEVATIONS ARE TO FLOWLINE OF GUTTER, WHERE APPLICABLE, AND DO NOT INCLUDE DRAINAGE STRUCTURE SUMPS.

LEGEND	
	DRIVEWAY CONTROL POINTS
	CONSTRUCT CONCRETE CURB & GUTTER
	CURB HEIGHT
	8" CONCRETE DRIVEWAY PAVEMENT SEE INSET F ON SHEET NO.12
	BITUMINOUS DRIVEWAY PAVEMENT SEE INSET G ON SHEET NO.12
	DIRECTION OF CURBLINES FLOW
	PROPOSED CATCH BASIN
118	HOUSE NUMBER

POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS
P2140	501689.896	118523.313	EL. 855.10
P2141	501701.861	118517.242	EL. 855.72
P2142	501704.778	118509.225	EL. 855.85
P2143	501704.902	118505.174	EL. 856.16
P2144	501743.137	118523.001	EL. 855.48
P2145	501731.102	118517.071	EL. 855.92
P2146	501728.089	118509.089	EL. 856.02
P2147	501728.094	118505.122	EL. 856.26



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NO	DATE	BY	CKD	APPR	REVISION

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Print Name: ZACHARIAH F. HEIMER

*Zach Heimer*

Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
STATE PROJECT NO. 127-020-036

DESIGNED BY M. WENDLER  
CHECKED BY M. WENDLER

STATE AID PROJECT NO. 002-606-014  
STATE AID PROJECT NO. 127-020-036

COMM. NO. 2417338

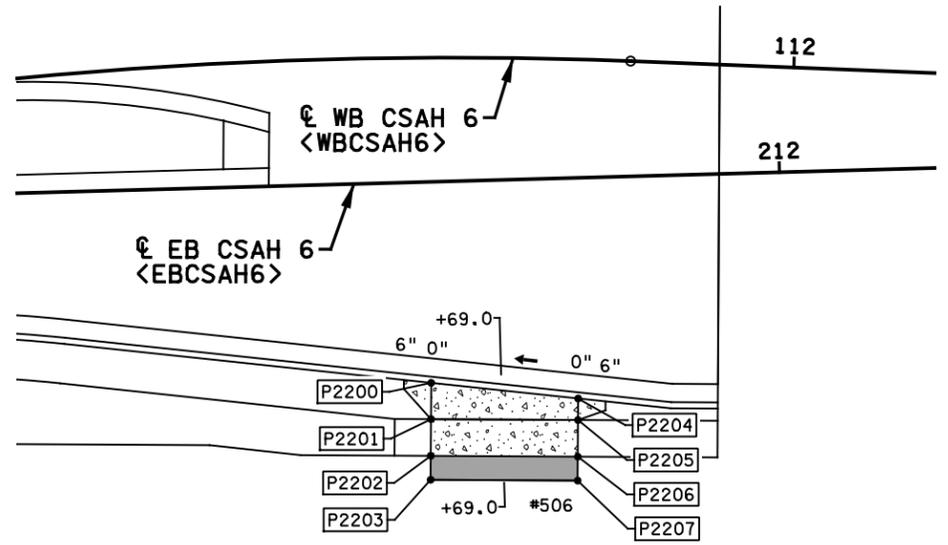
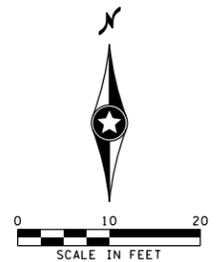
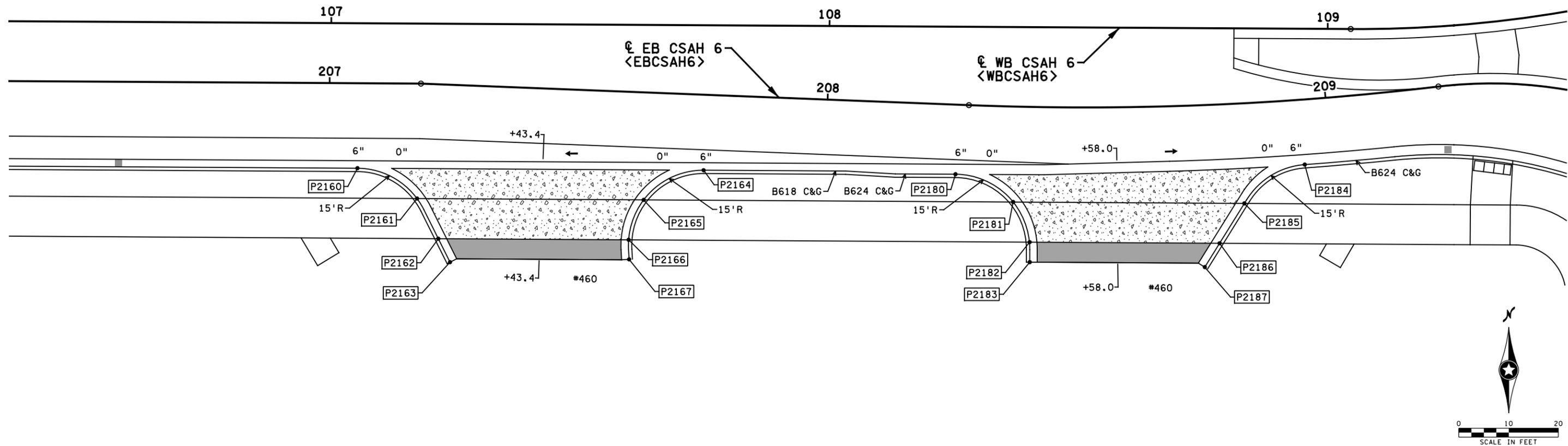


ANOKA COUNTY, MINNESOTA

DRIVEWAY DETAILS

SP 002-606-014, SP 127-020-036

SHEET 78 OF 118



POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS
P2200	502310.196	118519.641	EL. 857.42
P2201	502310.173	118515.683	EL. 857.56
P2202	502310.149	118511.683	EL. 857.62
P2203	502310.134	118509.065	EL. 857.67
P2204	502326.280	118517.938	EL. 857.46
P2205	502326.266	118515.589	EL. 857.61
P2206	502326.243	118511.589	EL. 857.67
P2207	502326.228	118508.971	EL. 857.90

POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS
P2160	501861.525	118522.308	EL. 856.68
P2161	501873.489	118516.238	EL. 857.35
P2162	501877.758	118508.213	EL. 857.52
P2163	501880.107	118503.520	EL. 857.63
P2164	501930.998	118521.902	EL. 857.33
P2165	501918.963	118515.972	EL. 857.78
P2166	501915.950	118507.990	EL. 857.87
P2167	501916.044	118504.081	EL. 857.82
P2180	501981.549	118521.106	EL. 857.66
P2181	501993.125	118515.538	EL. 858.24
P2182	501996.436	118507.519	EL. 858.36
P2183	501996.446	118503.519	EL. 858.15
P2184	502051.650	118523.038	EL. 857.48
P2185	502039.531	118515.267	EL. 858.18
P2186	502034.560	118507.296	EL. 858.30
P2187	502031.587	118502.527	EL. 858.16

**GENERAL NOTES:**  
 SEE STANDARD PLAN SHEETS FOR DRIVEWAY DETAILS.  
 ALL CURB AND GUTTER TO BE B618 UNLESS OTHERWISE NOTED IN THE CONSTRUCTION PLANS.  
 SEE TYPICAL SECTIONS FOR SIDEWALK DEPTHS.  
 OFFSETS AND ELEVATIONS ARE TO FLOWLINE OF GUTTER, WHERE APPLICABLE, AND DO NOT INCLUDE DRAINAGE STRUCTURE SUMPS.

**LEGEND**

- PXXXX DRIVEWAY CONTROL POINTS
- CONSTRUCT CONCRETE CURB & GUTTER
- X" CURB HEIGHT
- 8" CONCRETE DRIVEWAY PAVEMENT SEE INSET F ON SHEET NO. 12
- BITUMINOUS DRIVEWAY PAVEMENT SEE INSET G ON SHEET NO. 12
- DIRECTION OF CURBLINE FLOW
- PROPOSED CATCH BASIN
- 118 HOUSE NUMBER

3:16:00 PM  
 5/14/2025  
 ...\\F:\InoIP\anC\17338.dwg03.dgn

NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: ZACHARIAH F. HEIMER  
*Zach Heimer*  
 Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036  
 DRAWN BY M. WENDLER  
 DESIGNED BY M. WENDLER  
 CHECKED BY Z. HEIMER  
 COMM. NO. 2417338



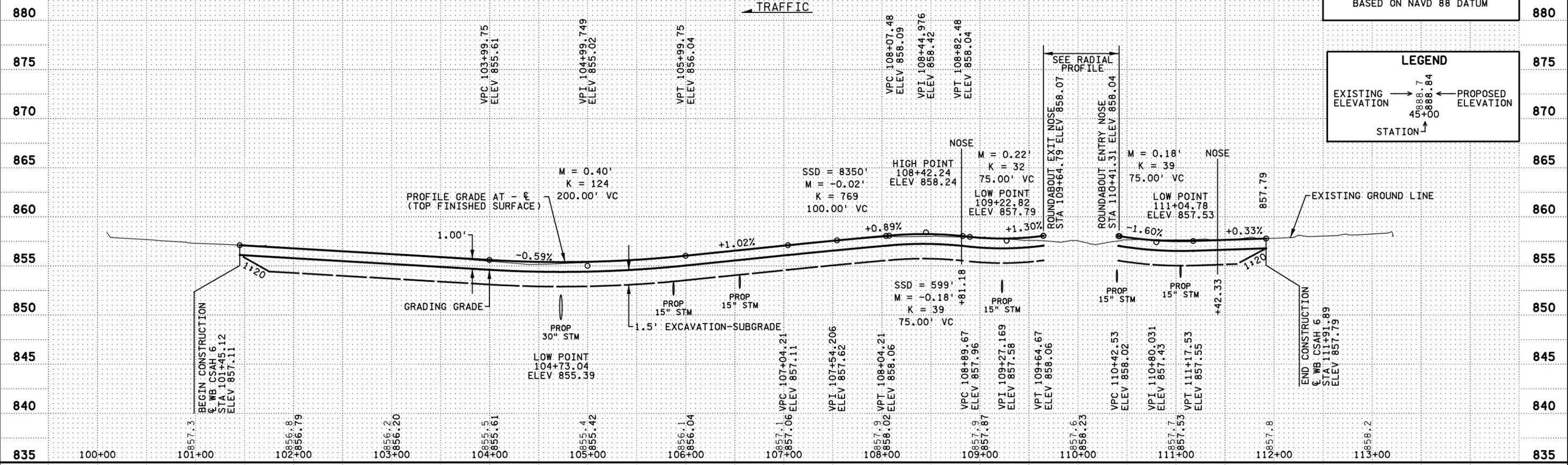
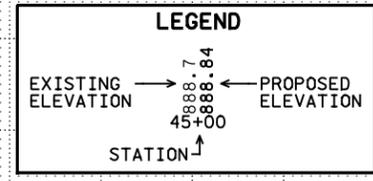
**ANOKA COUNTY, MINNESOTA**  
 DRIVEWAY DETAILS  
 SP 002-606-014, SP 127-020-036

**SHEET**  
 79  
 OF  
 118

WB CSAH 6 (MISSISSIPPI ST)

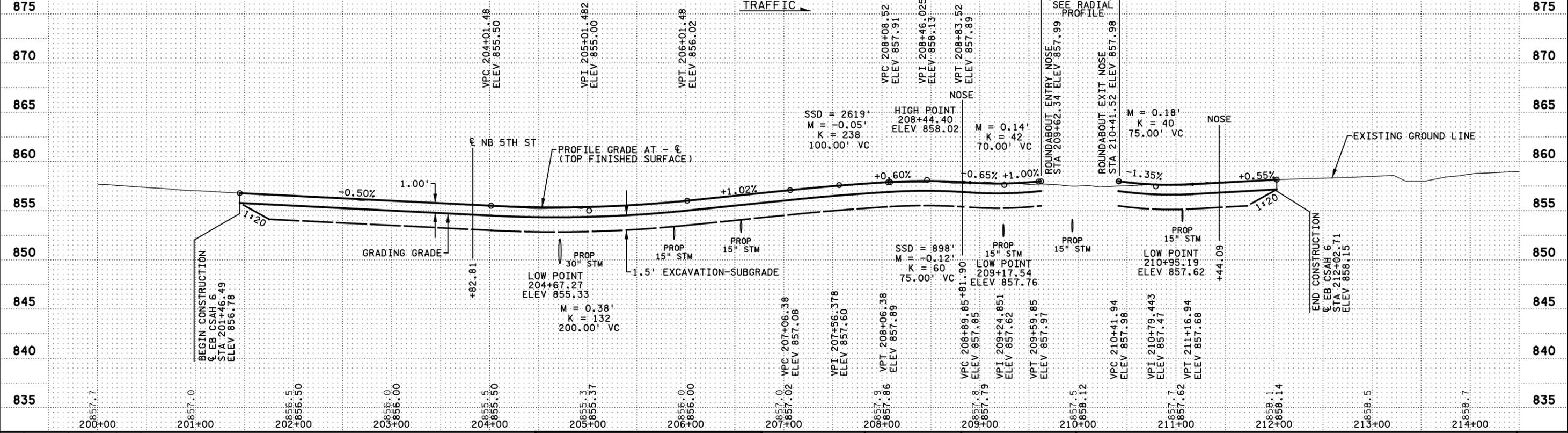
TRAFFIC

VERTICAL CONTROL  
ELEVATIONS FOR THIS PLAN ARE  
BASED ON NAVD 88 DATUM



EB CSAH 6 (MISSISSIPPI ST)

TRAFFIC



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Print Name: ZACHARIAH F. HEIMER  
*Zach Heimer*  
Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
STATE PROJECT NO. 127-020-036  
STATE AID PROJECT NO. 002-606-014  
STATE AID PROJECT NO. 127-020-036  
DRAWN BY M. WENDLER  
DESIGNED BY M. WENDLER  
CHECKED BY Z. HEIMER  
COMM. NO. 2417338



ANOKA COUNTY, MINNESOTA  
PROFILES  
SP 002-606-014, SP 127-020-036

SHEET 80 OF 118

**VERTICAL CONTROL**  
ELEVATIONS FOR THIS PLAN ARE  
BASED ON NAVD 88 DATUM

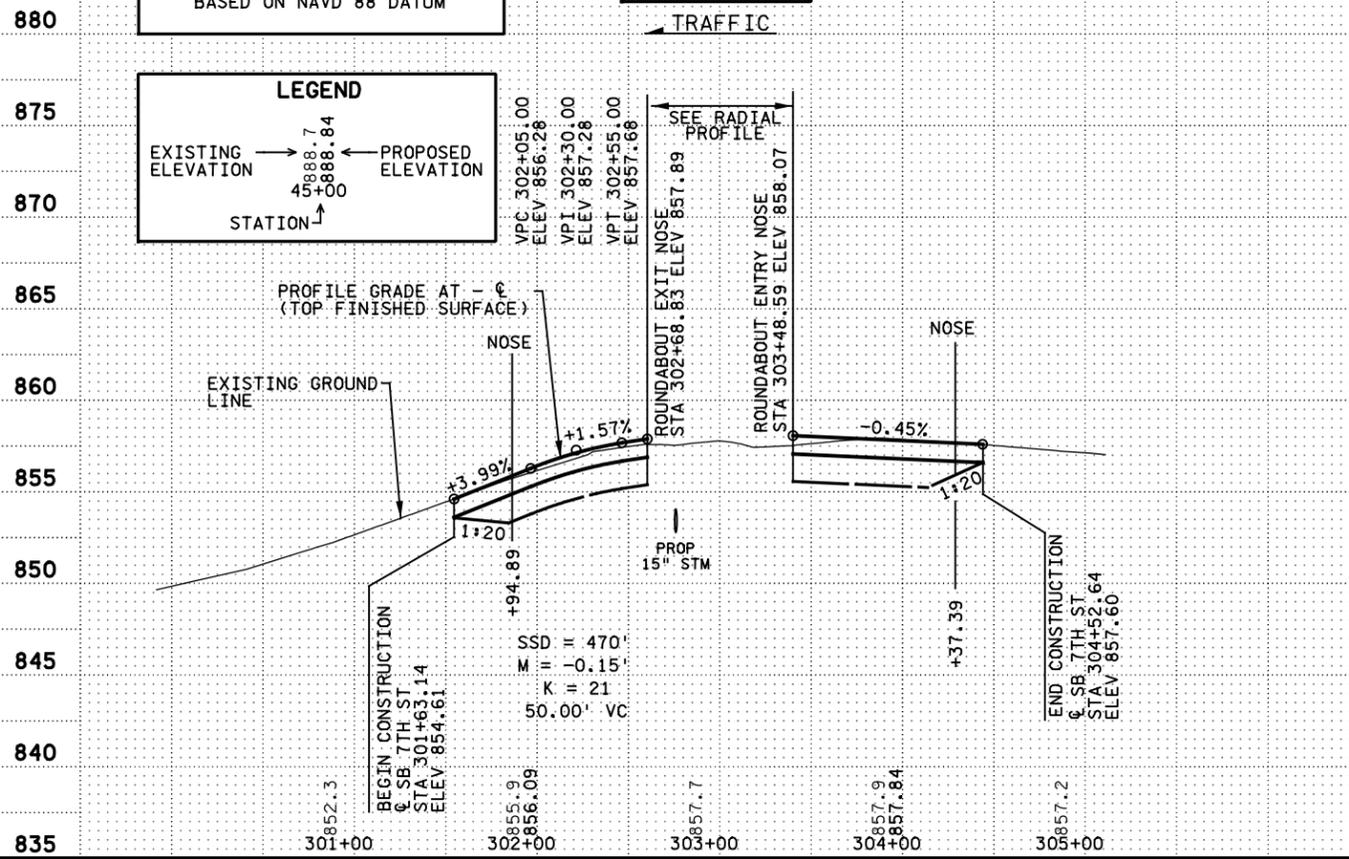
**SB 7TH ST**

TRAFFIC

**LEGEND**

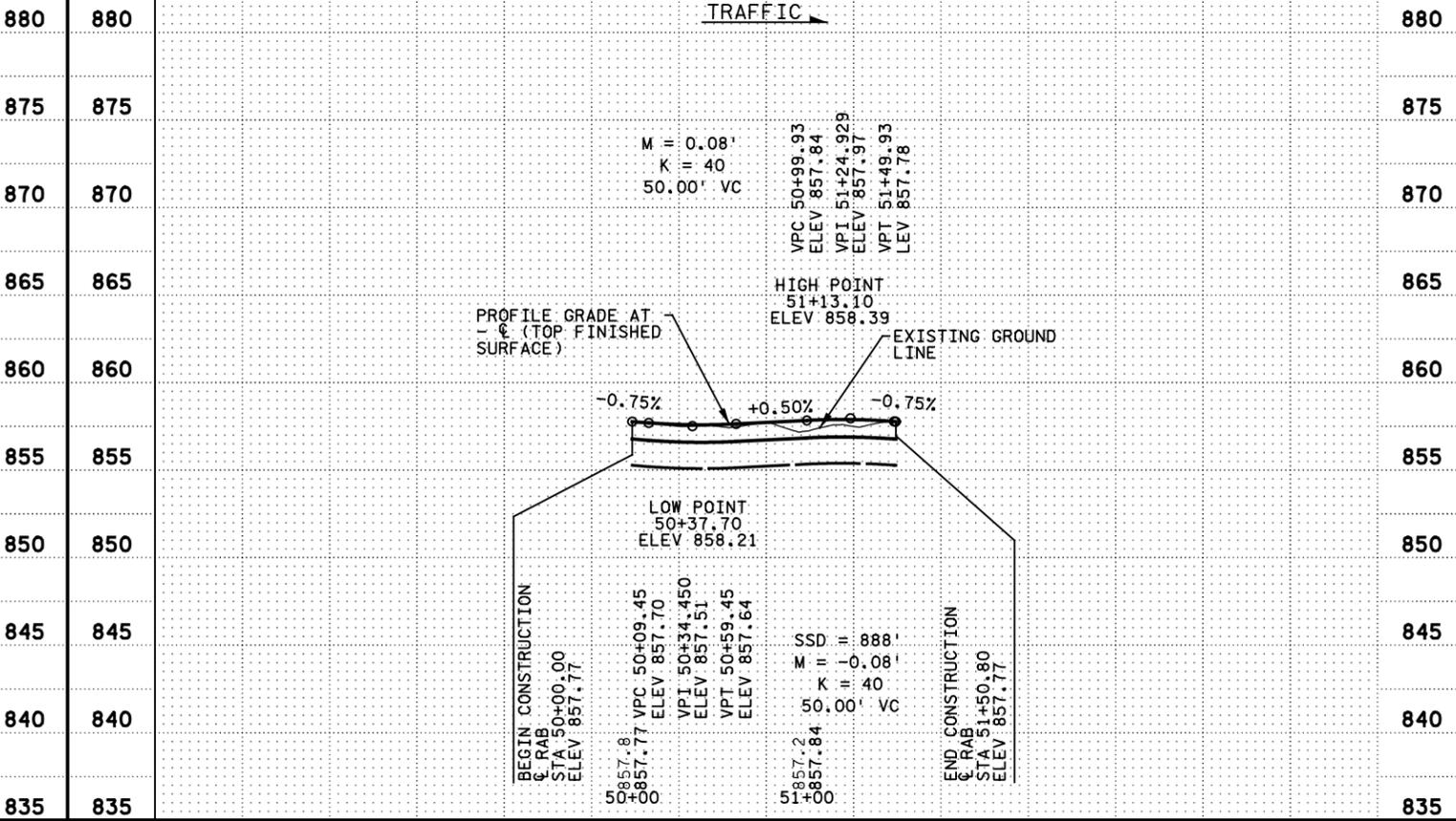
EXISTING ELEVATION → 888.7  
45+00  
← PROPOSED ELEVATION

STATION ↑



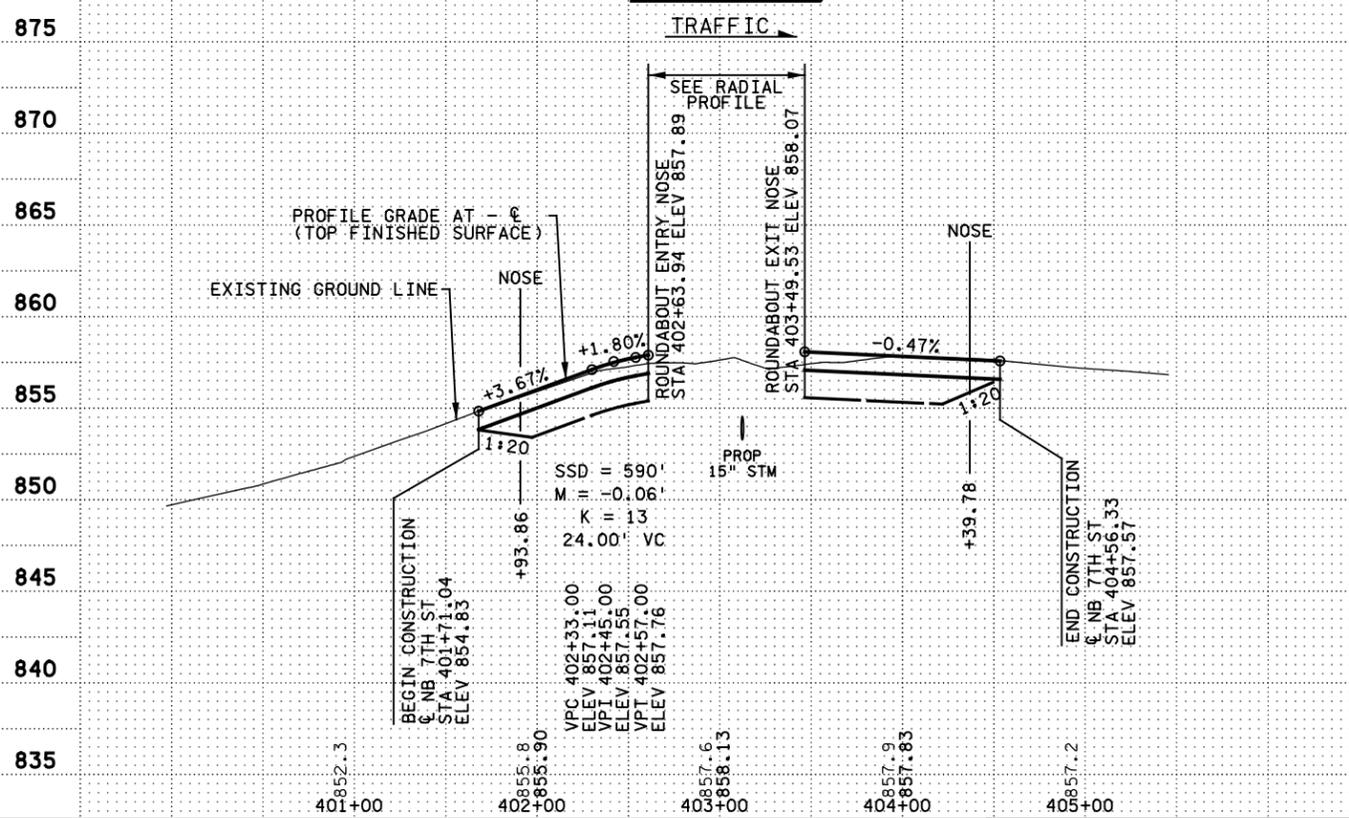
**RADIAL PROFILE (ROUNDAABOUT)**

TRAFFIC



**NB 7TH ST**

TRAFFIC



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Print Name: ZACHARIAH F. HEIMER

*Zach Heimer*

Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
STATE PROJECT NO. 127-020-036

STATE AID PROJECT NO. 002-606-014  
STATE AID PROJECT NO. 127-020-036

DRAWN BY M. WENDLER  
DESIGNED BY M. WENDLER  
CHECKED BY Z. HEIMER  
COMM. NO. 2417338

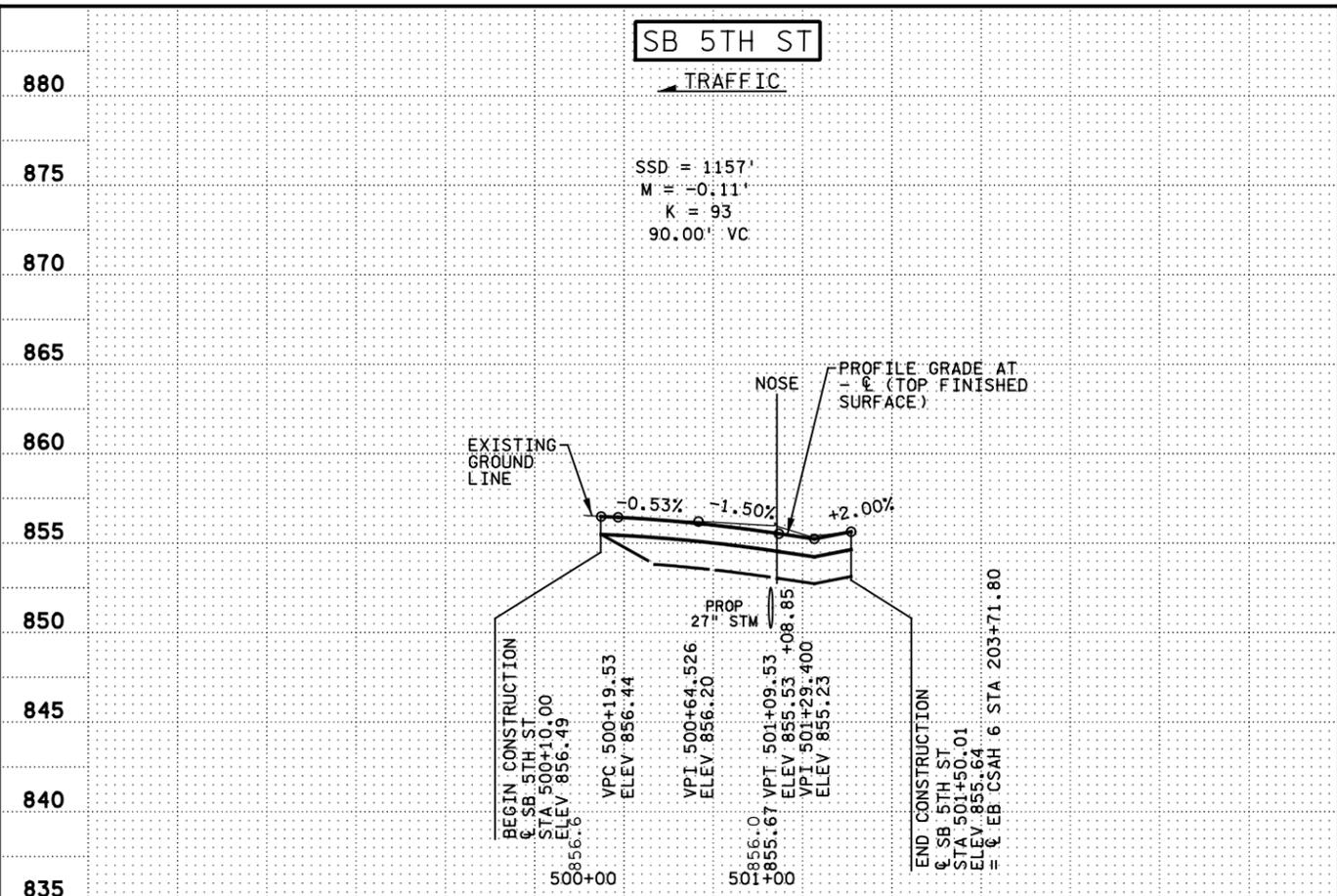


**ANOKA COUNTY, MINNESOTA**  
PROFILES  
SP 002-606-014, SP 127-020-036

**SHEET**  
81  
OF  
118

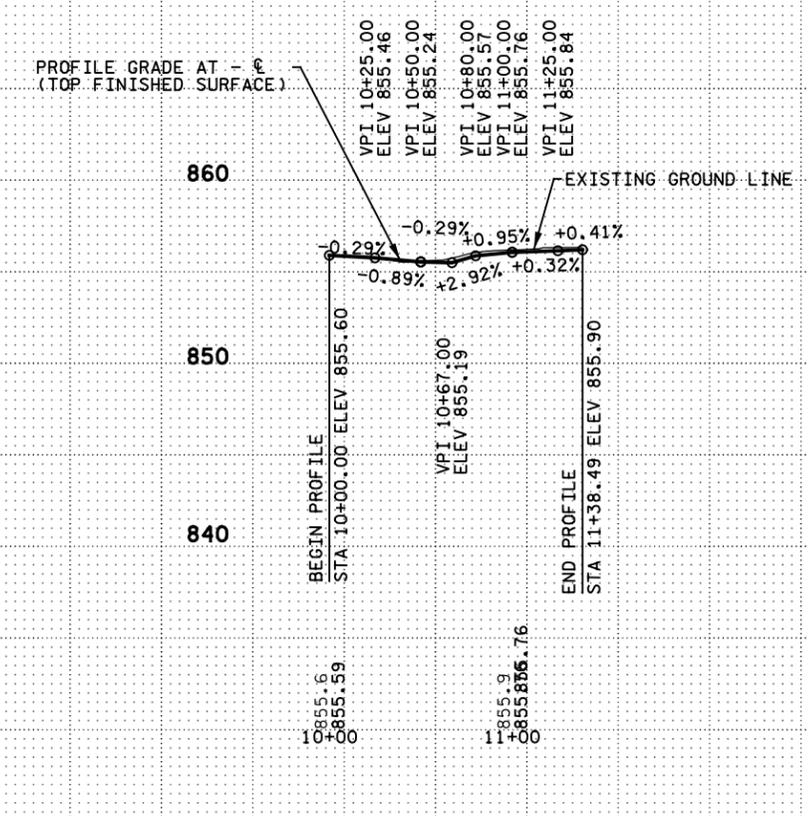
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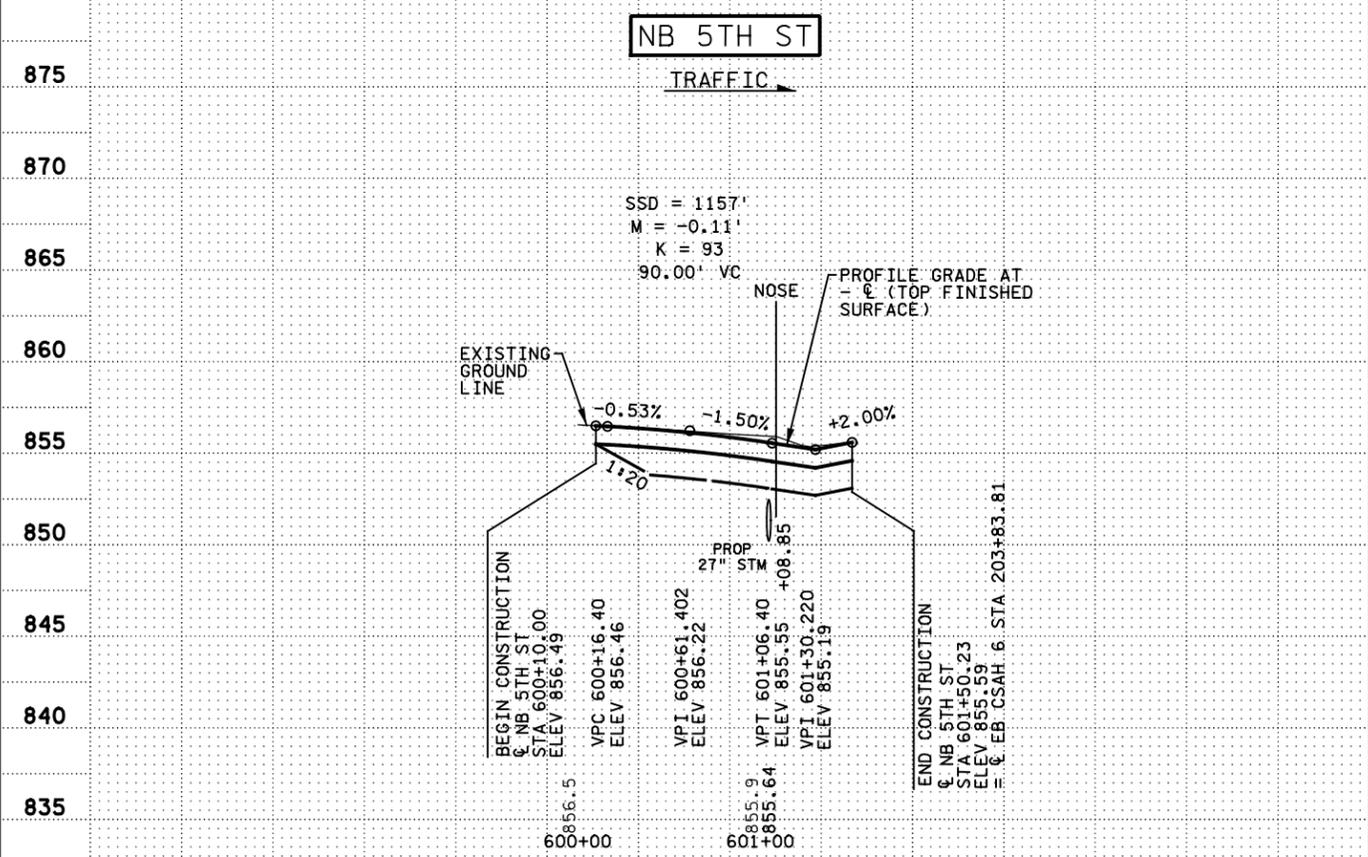


880	870
875	865
870	860
865	855
860	850
855	845
850	840
845	835
840	830
835	

**CURB PROFILE 5TH ST NE**  
**SB CURB <5TH\_CRB1>**

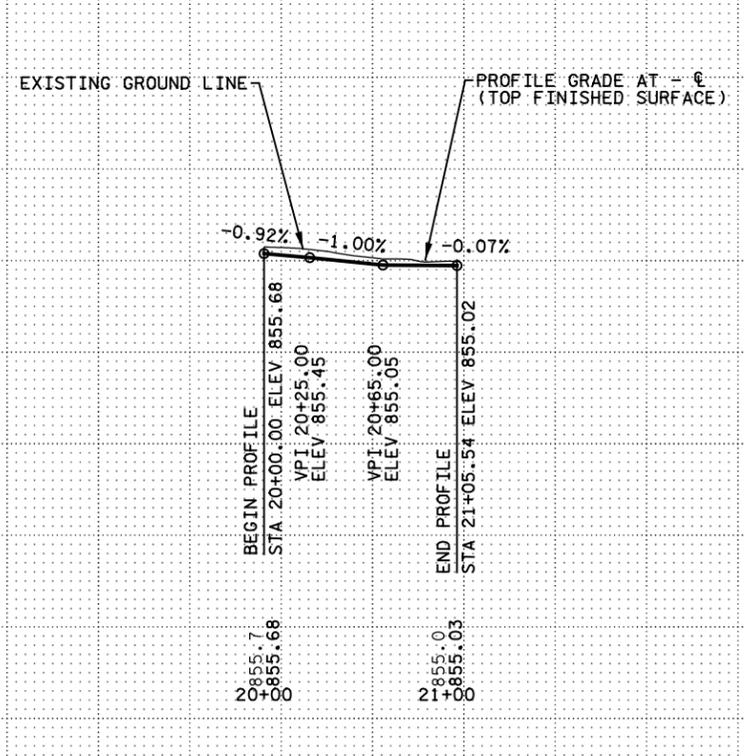


870	870
865	865
860	860
855	855
850	850
845	845
840	840
835	835
830	830



875	870
870	865
865	860
860	855
855	850
850	845
845	840
840	835
835	830

**CURB PROFILE 5TH ST NE**  
**NB CURB <5TH\_CRB2>**



870	870
865	865
860	860
855	855
850	850
845	845
840	840
835	835
830	830

NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: ZACHARIAH F. HEIMER

*Zach Heimer*

Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
STATE PROJECT NO. 127-020-036  
STATE AID PROJECT NO. 002-606-014  
STATE AID PROJECT NO. 127-020-036

DRAWN BY M. WENDLER  
DESIGNED BY M. WENDLER  
CHECKED BY Z. HEIMER  
COMM. NO. 2417338



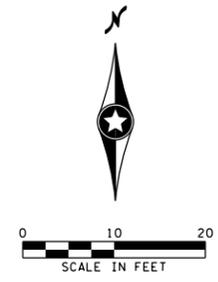
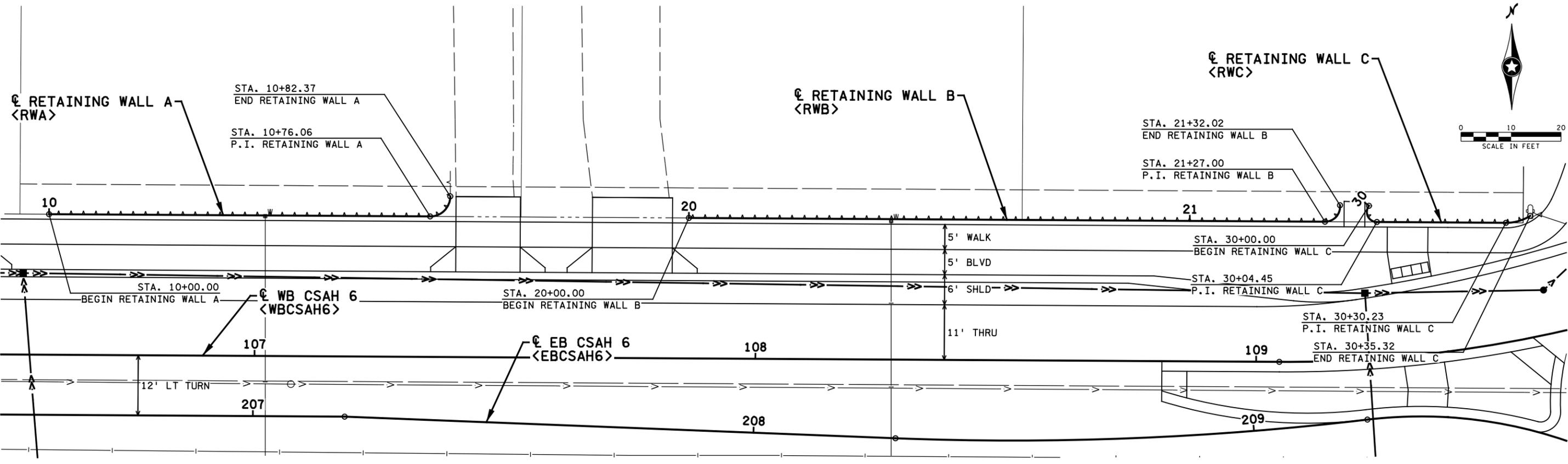
ANOKA COUNTY, MINNESOTA

PROFILES

SP 002-606-014, SP 127-020-036

SHEET 82 OF 118

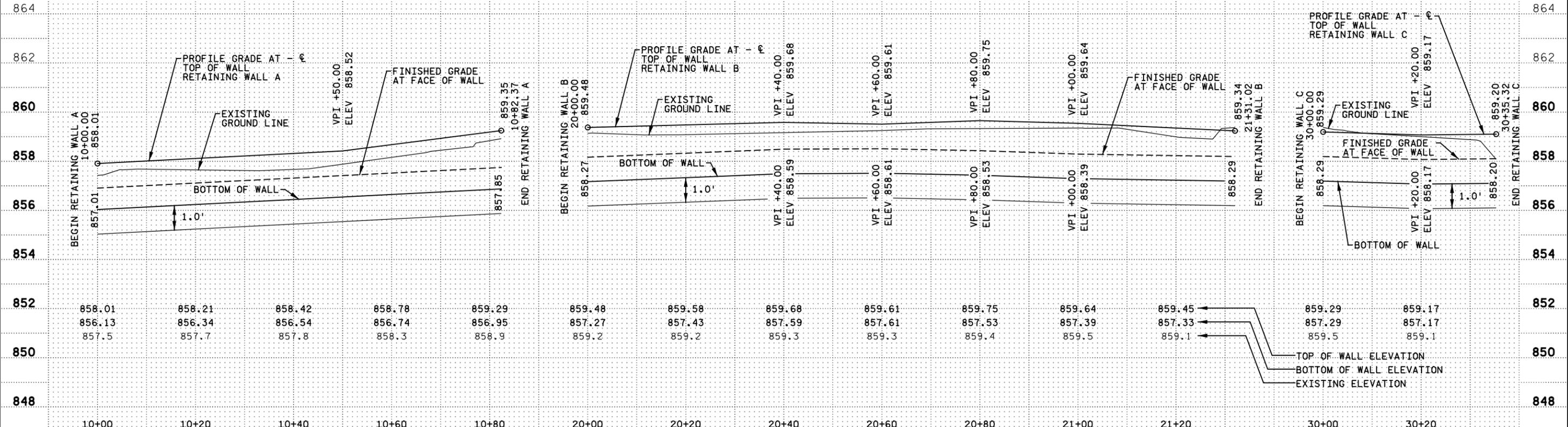




**RETAINING WALL A**

**RETAINING WALL B**

**RETAINING WALL C**



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 Print Name: ZACHARIAH F. HEIMER  
*Zach Heimer*  
 Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036  
 DRAWN BY M. WENDLER  
 DESIGNED BY M. WENDLER  
 CHECKED BY M. WENDLER  
 CHECKED BY M. WENDLER  
 COMM. NO. 2417338

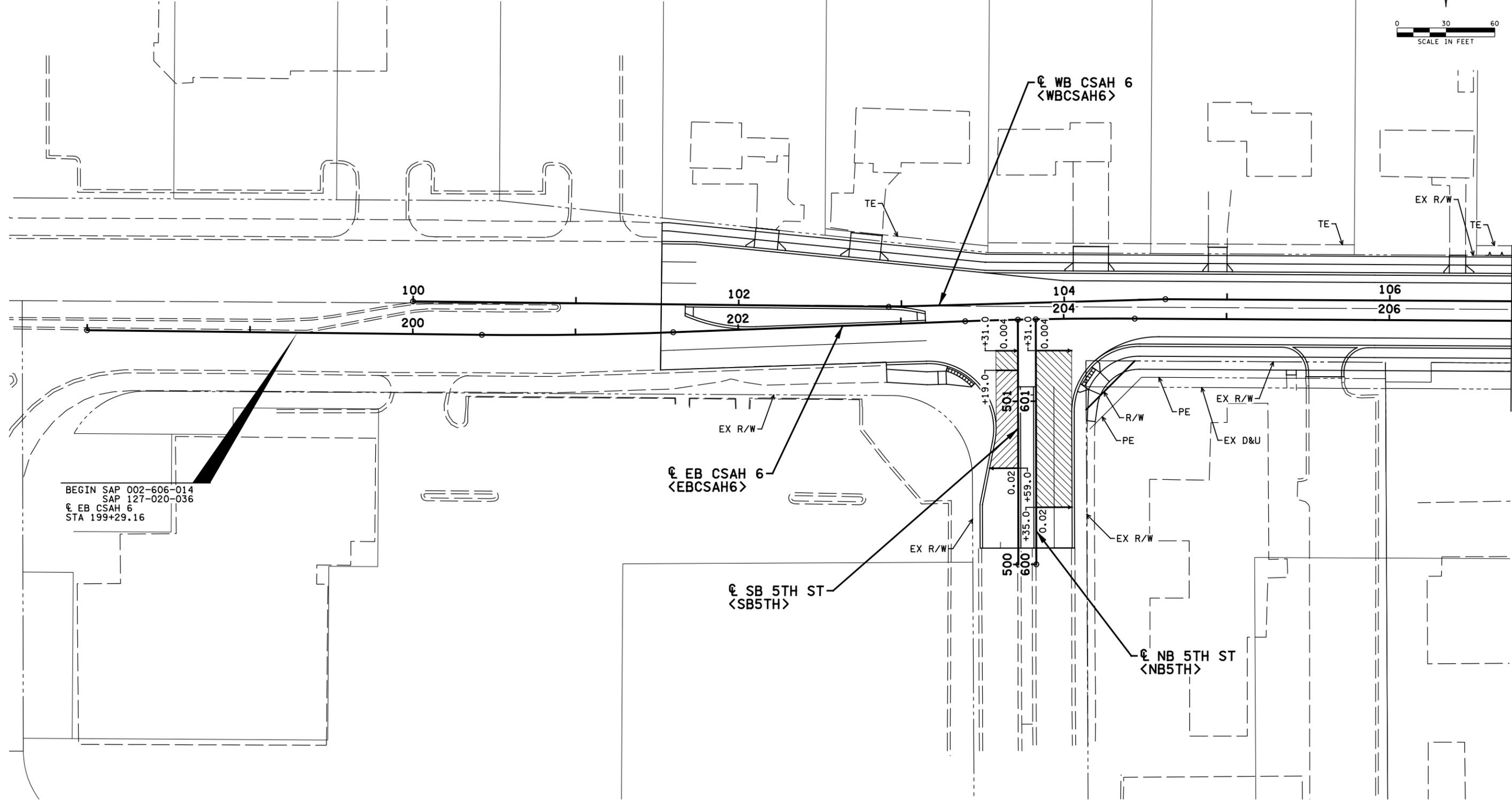
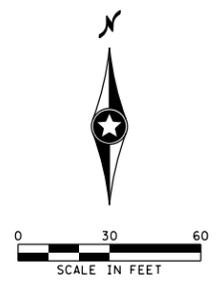


**ANOKA COUNTY, MINNESOTA**  
 RETAINING WALL PLAN AND PROFILE  
 SP 002-606-014, SP 127-020-036

**SHEET 84 OF 118**

LEGEND	
	SUPERELEVATION TRANSITION FT/FT
	INPLACE PAVEMENT
	PROPOSED CONSTRUCTION

GENERAL NOTES:  
 ALL CROSS SLOPES ARE IN FEET PER FOOT.  
 ALL DIMENSIONS ARE FEET UNLESS OTHERWISE NOTED.  
 SEE CONSTRUCTION PLANS FOR DIMENSIONS AND ADDITIONAL INFORMATION NOT SHOWN ON THE SUPERELEVATION PLANS.



BEGIN SAP 002-606-014  
 SAP 127-020-036  
 E EB CSAH 6  
 STA 199+29.16

MATCH LINE STA 206+75.0  
 SEE SHEET 86

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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: ZACHARIAH F. HEIMER  
*Zach Heimer*  
 Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036  
 DRAWN BY M. WENDLER  
 DESIGNED BY M. WENDLER  
 CHECKED BY Z. HEIMER  
 COMM. NO. 2417338

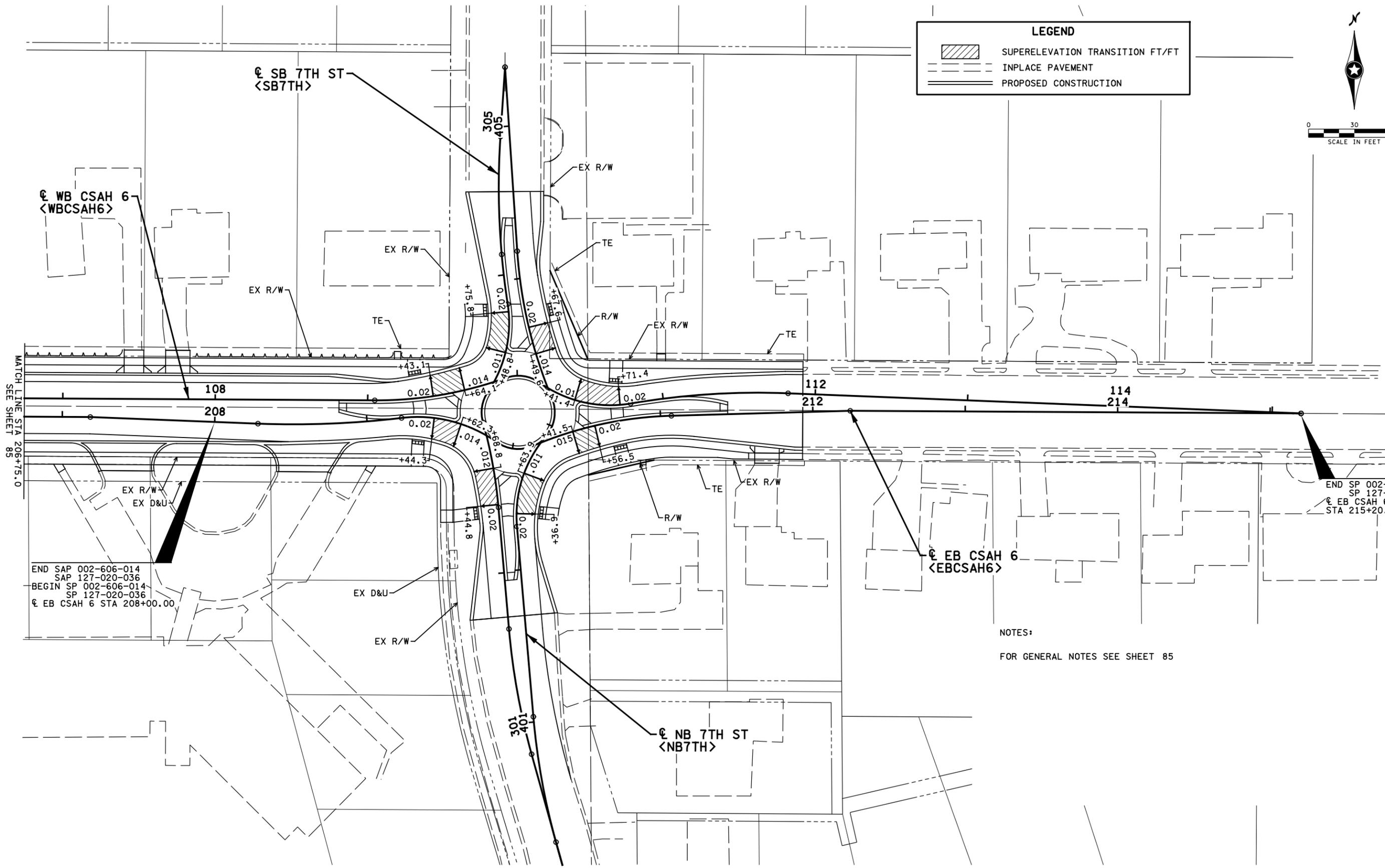
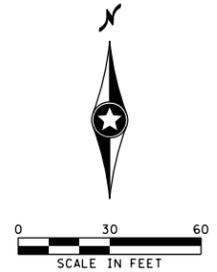


ANOKA COUNTY, MINNESOTA  
 SUPERELEVATION PLANS  
 SP 002-606-014, SP 127-020-036

SHEET 85 OF 118

**LEGEND**

-  SUPERELEVATION TRANSITION FT/FT
-  INPLACE PAVEMENT
-  PROPOSED CONSTRUCTION



MATCH LINE STA 208+75.0  
SEE SHEET 85

END SAP 002-606-014  
SAP 127-020-036  
BEGIN SP 002-606-014  
SP 127-020-036  
EB CSAH 6 STA 208+00.00

END SP 002-606-014  
SP 127-020-036  
EB CSAH 6  
STA 215+20.34

NOTES:  
FOR GENERAL NOTES SEE SHEET 85

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5/14/2025  
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NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: ZACHARIAH F. HEIMER

*Zach Heimer*

Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
STATE PROJECT NO. 127-020-036

STATE AID PROJECT NO. 002-606-014  
STATE AID PROJECT NO. 127-020-036

DRAWN BY M. WENDLER  
DESIGNED BY M. WENDLER  
CHECKED BY Z. HEIMER  
COMM. NO. 2417338



**ANOKA COUNTY, MINNESOTA**

SUPERELEVATION PLANS

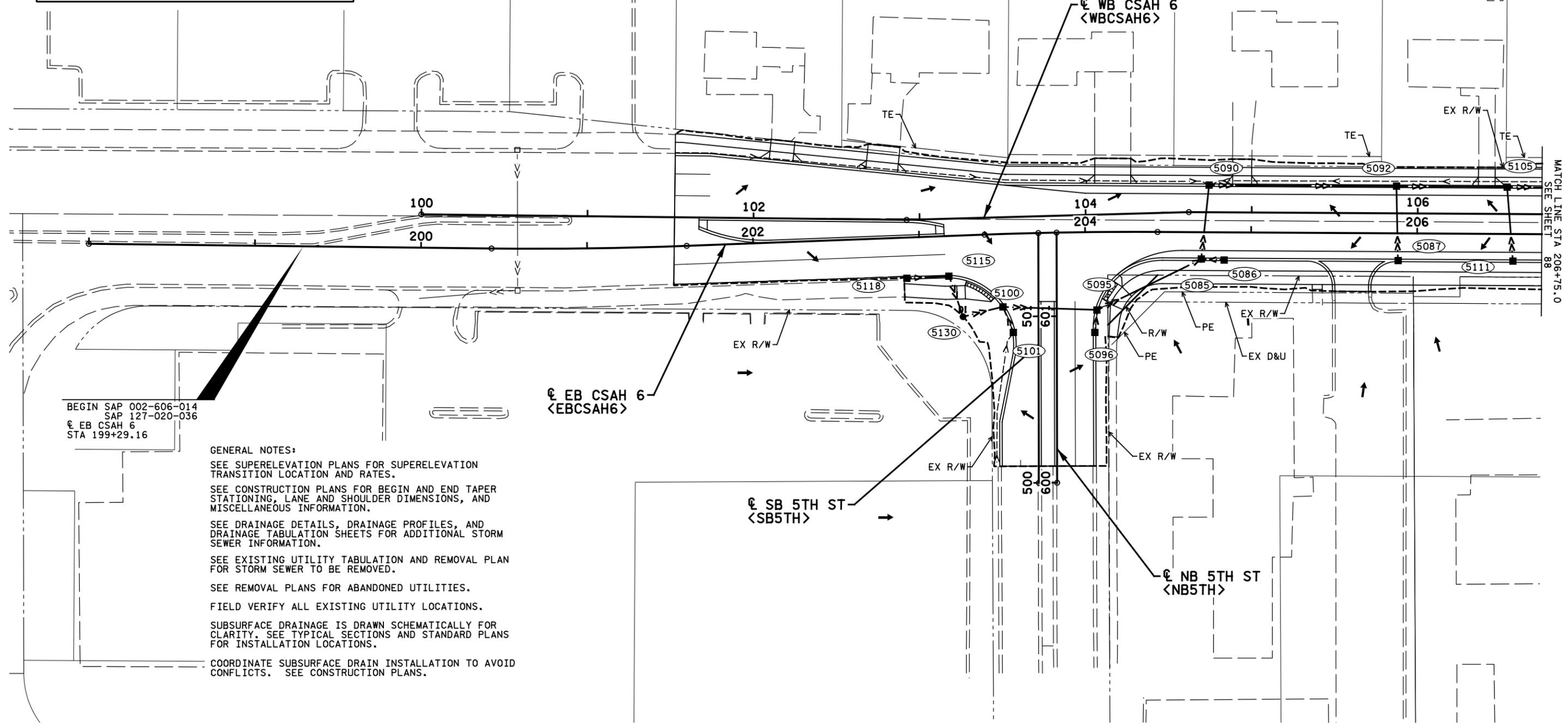
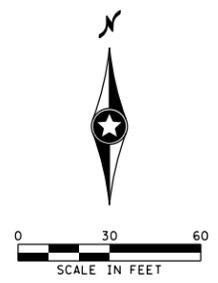
SP 002-606-014, SP 127-020-036

**SHEET**  
86  
**OF**  
118

**LEGEND**

- (XXX) STORM SEWER STRUCTURE NO.
- >— PROPOSED STORM SEWER
- - ->- - - EXISTING STORM SEWER
- - ->- - - 4" PERF. TP PIPE DRAIN
- / ■ EXISTING/PROPOSED CATCH BASIN
- / ● EXISTING/PROPOSED MANHOLE
- DI / DI EXISTING/PROPOSED DROP INLET
- SURFACE FLOW

- NOTES:**
- ① CONNECT TO EXISTING STORM SEWER
  - ② REMOVE EXISTING CASTING AND INSTALL NEW CASTING (SEE DRAINAGE TABULATIONS)
  - ③ STRUCTURE WITH HYDRODYNAMIC SEPARATOR



BEGIN SAP 002-606-014  
 SAP 127-020-036  
 EB CSAH 6  
 STA 199+29.16

**GENERAL NOTES:**

- SEE SUPERELEVATION PLANS FOR SUPERELEVATION TRANSITION LOCATION AND RATES.
- SEE CONSTRUCTION PLANS FOR BEGIN AND END TAPER STATIONING, LANE AND SHOULDER DIMENSIONS, AND MISCELLANEOUS INFORMATION.
- SEE DRAINAGE DETAILS, DRAINAGE PROFILES, AND DRAINAGE TABULATION SHEETS FOR ADDITIONAL STORM SEWER INFORMATION.
- SEE EXISTING UTILITY TABULATION AND REMOVAL PLAN FOR STORM SEWER TO BE REMOVED.
- SEE REMOVAL PLANS FOR ABANDONED UTILITIES.
- FIELD VERIFY ALL EXISTING UTILITY LOCATIONS.
- SUBSURFACE DRAINAGE IS DRAWN SCHEMATICALLY FOR CLARITY. SEE TYPICAL SECTIONS AND STANDARD PLANS FOR INSTALLATION LOCATIONS.
- COORDINATE SUBSURFACE DRAIN INSTALLATION TO AVOID CONFLICTS. SEE CONSTRUCTION PLANS.

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NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: **ANDREW TOAY**

*Andrew Toay*

Date: **05/14/2025** License #: **56747**

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036

STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036

DRAWN BY K. HAUSER  
 DESIGNED BY K. HAUSER  
 CHECKED BY A. TOAY  
 COMM. NO. 2417338



**ANOKA COUNTY, MINNESOTA**

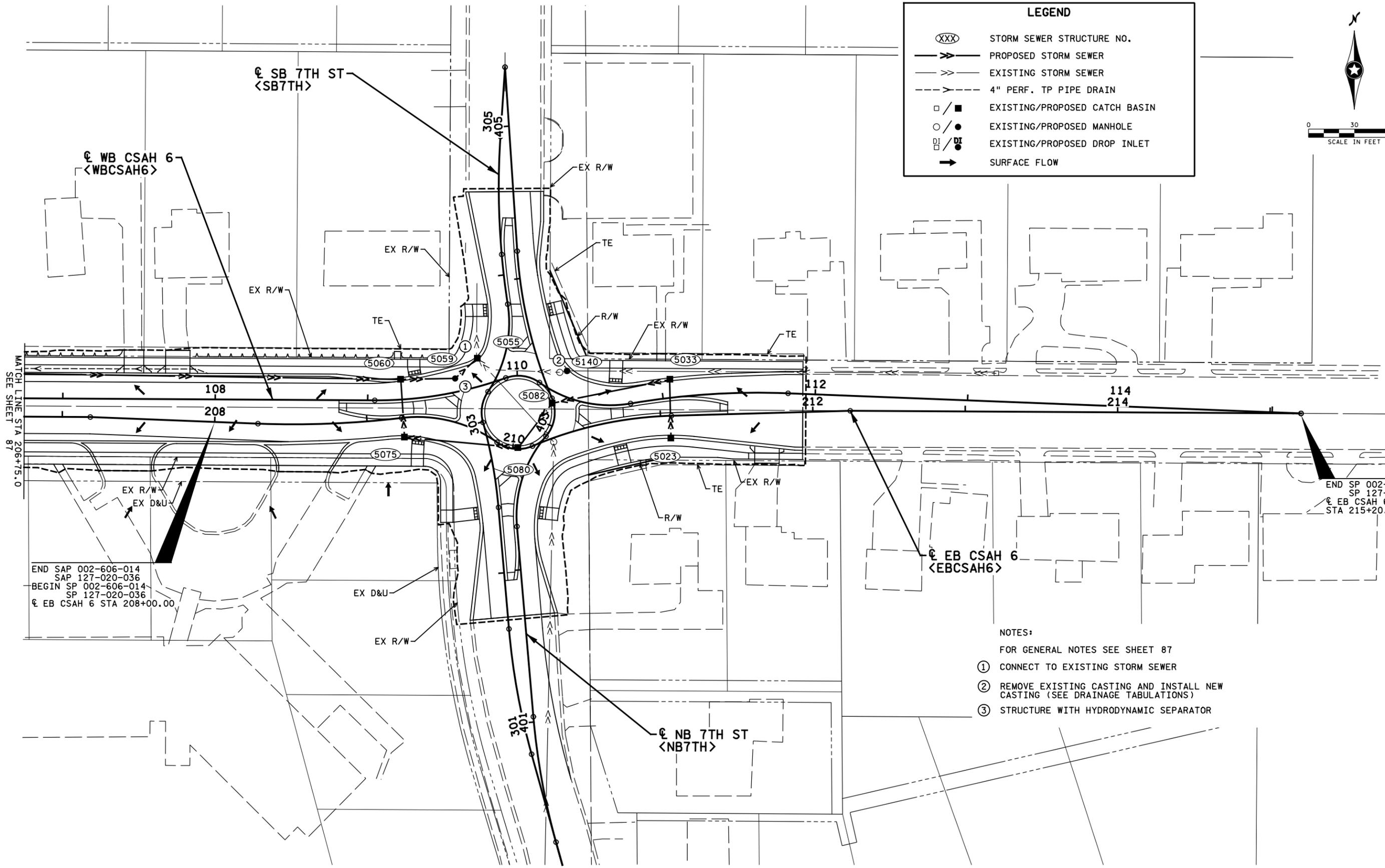
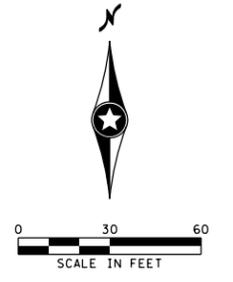
DRAINAGE PLANS

SP 002-606-014, SP 127-020-036

**SHEET 87 OF 118**

**LEGEND**

- (XXX) STORM SEWER STRUCTURE NO.
- >— PROPOSED STORM SEWER
- - ->- - - EXISTING STORM SEWER
- - ->- - - 4" PERF. TP PIPE DRAIN
- / ■ EXISTING/PROPOSED CATCH BASIN
- / ● EXISTING/PROPOSED MANHOLE
- / ● EXISTING/PROPOSED DROP INLET
- SURFACE FLOW



MATCH LINE STA 206+75.0  
SEE SHEET 87

END SAP 002-606-014  
SAP 127-020-036  
BEGIN SP 002-606-014  
SP 127-020-036  
EB CSAH 6 STA 208+00.00

END SP 002-606-014  
SP 127-020-036  
EB CSAH 6  
STA 215+20.34

- NOTES:**
- FOR GENERAL NOTES SEE SHEET 87
  - ① CONNECT TO EXISTING STORM SEWER
  - ② REMOVE EXISTING CASTING AND INSTALL NEW CASTING (SEE DRAINAGE TABULATIONS)
  - ③ STRUCTURE WITH HYDRODYNAMIC SEPARATOR

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5/14/2025  
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NO	DATE	BY	CKD	APPR	REVISION

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Print Name: **ANDREW TOAY**

*Andrew Toay*

Date: 05/14/2025 License #: 56747

STATE PROJECT NO. 002-606-014  
STATE PROJECT NO. 127-020-036

STATE AID PROJECT NO. 002-606-014  
STATE AID PROJECT NO. 127-020-036

DRAWN BY K. HAUSER  
DESIGNED BY K. HAUSER  
CHECKED BY A. TOAY  
COMM. NO. 2417338

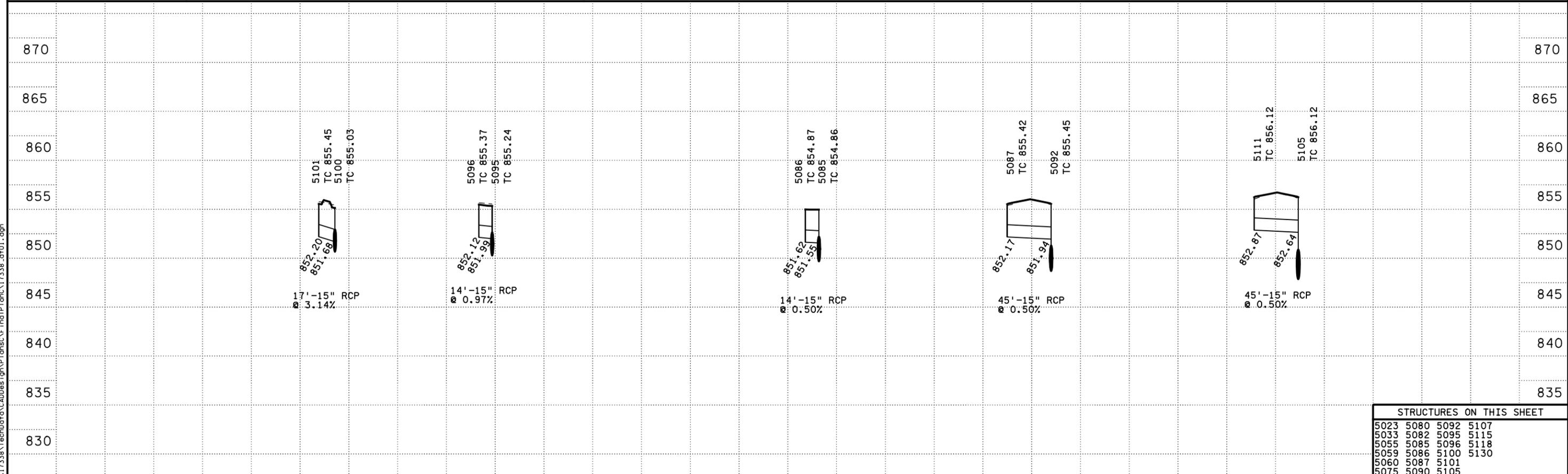
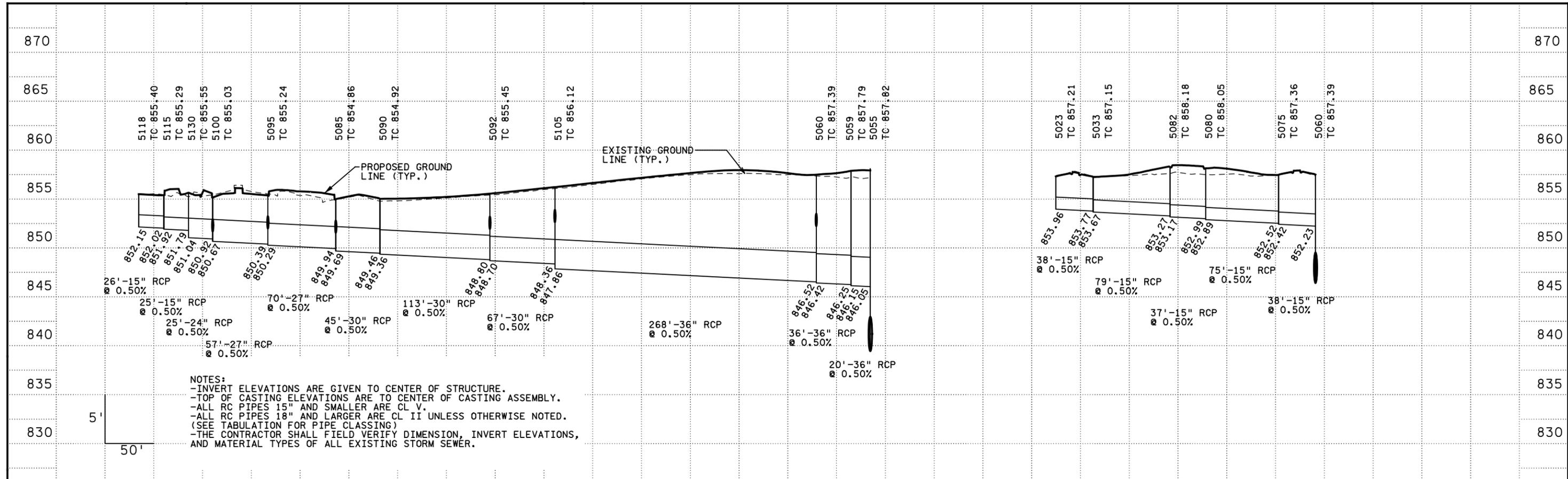


**ANOKA COUNTY, MINNESOTA**

DRAINAGE PLANS

SP 002-606-014, SP 127-020-036

**SHEET 88 OF 118**



STRUCTURES ON THIS SHEET			
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5033	5082	5095	5115
5055	5085	5096	5118
5059	5086	5100	5130
5060	5087	5101	
5075	5090	5105	

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NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: ANDREW TOAY

*Andrew Toay*

Date: 05/14/2025 License #: 56747

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036

STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036

DRAWN BY K. HAUSER  
 DESIGNED BY K. HAUSER  
 CHECKED BY A. TOAY  
 COMM. NO. 2417338



ANOKA COUNTY, MINNESOTA

DRAINAGE PROFILES

SP 002-606-014, SP 127-020-036

SHEET 89 OF 118

		DRAINAGE TABULATION																		H								
FLOWS FROM STR. OR APRON	STRUCTURE LOCATION			FLOWS TO STR. OR APRON	CASTING ASSEMBLY TYPE (1)	NEW STRUCTURE CONSTRUCTION (2)						TOP OF CASTING ELEVATION	PIPE UPSTREAM INVERT ELEVATION	PIPE DOWNSTREAM INVERT ELEVATION	PIPE SEWER					CONNECT TO EX. STORM SEWER (5)	NOTES							
	INLET POINT NO.	ALIGNMENT NAME	STATION			OFFSET FT	4020		SD		DES SP 1				DES SP 2	STEPS REQ'D (3)	RC (DESIGN 3006)											
							48	60	72	48	60				72		15"	24"	27"				30"	36"				
							CL V				CL III		CL V	CL V	CL V				CL V	CL V	EACH							
				LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT										
5023	EB CSAH 6	211+06.36	14.43 R	5033	B - 17							857.21	853.96	853.77	38									(4) (A)				
5033	WB CSAH 6	111+05.71	12.00 L	5082	B - 17							857.15	853.67	853.27	79									(A)				
5055	SB 7TH	303+38.70	16.57 L	EX6000	B - 9							857.82	839.45								1			(5) (A)				
5059	WB CSAH 6	109+59.65	8.81 L	5055	C - 3						1	857.79	846.15	846.05								20		(A)				
5060	WB CSAH 6	109+22.60	13.19 L	5059	B - 17							857.39	846.42	846.25								36		(A)				
5075	EB CSAH 6	209+23.32	12.75 R	5060	B - 17	4.9						857.36	852.42	852.23	38									(4) (A)				
5080	RAB	50+37.63	1.00 L	5075	B - 8	5.1						858.05	852.89	852.52	75									(A)				
5082	RAB	50+81.65	0.99 L	5080	B - 8	4.9						858.18	853.17	852.99	37									(4) (A)				
5085	EB CSAH 6	204+69.98	16.50 R	5090	C - 2							854.86	849.69	849.46								45		(4) (B)				
5086	EB CSAH 6	204+83.84	16.50 R	5085	C - 2							854.87	851.62	851.55	14									(B)				
5087	EB CSAH 6	205+88.44	16.50 R	5092	C - 1							855.42	852.17	851.94	45									(4) (B)				
5090	WB CSAH 6	104+74.25	16.50 L	5092	C - 2							854.92	849.36	848.80								113		(B)				
5092	WB CSAH 6	105+87.05	16.50 L	5105	C - 1		7.0					855.45	848.70	848.36								67		(B)				
5095	NB 5TH	601+03.78	24.22 R	5085	C - 1							855.24	850.29	849.94								70		(B)				
5096	NB 5TH	600+90.21	23.00 R	5095	C - 1							855.37	852.12	851.99	14									(B)				
5100	SB 5TH	501+05.72	21.31 L	5095	C - 2							855.03	850.67	850.39								57		(B)				
5101	SB 5TH	500+90.42	15.14 L	5100	C - 2							855.45	852.20	851.68	17									(B)				
5105	WB CSAH 6	106+53.69	16.50 L	5060	C - 1		8.5					856.12	847.86	846.52								268		(B)				
5111	EB CSAH 6	206+57.84	16.50 R	5105	C - 1							856.12	852.87	852.64	45									(4) (B)				
5115	EB CSAH 6	203+17.29	24.63 R	5130	C - 1							855.29	851.92	851.79	25									(B)				
5118	EB CSAH 6	202+91.57	24.39 R	5115	C - 1							855.40	852.15	852.02	26									(B)				
5130	EB CSAH 6	203+24.67	48.75 R	5100	M - 11							855.55	851.04	850.92								25		(B)				
5140	EB CSAH 6	210+48.17	39.21 L		A - 7D							857.88												(6) (A)				
SP (A) DRAINAGE SUBTOTAL THIS SHEET					9	14.9		29.2	6.6														267		56	1		
SP (B) DRAINAGE SUBTOTAL THIS SHEET					14		7.0	8.5	8.2	10.7	10.4	21.0												186	25	127	225	268

GENERAL NOTES:

STA., OFFSETS, AND COORDINATES ARE GIVEN TO THE END OF APRON OR CENTER OF CASTING ASSEMBLY  
 CASTING SUMP = 0.10 FT FOR CATCH BASIN CASTINGS, AND 0.20 FT FOR DROP INLET CASTINGS. SUMP HAS BEEN INCLUDED IN TOP OF CASTING ELEVATIONS.  
 ROTATE STRUCTURES SUCH THAT MAJORITY OF STRUCTURE IS BEHIND CURB LINE UNLESS DIRECTED BY THE ENGINEER OR ALTERNATE ROTATION IS REQUIRED  
 TO AVOID CONFLICTS (SEE DRAINAGE DETAILS).

(1) SEE DRAINAGE DETAILS FOR CASTING KEY AND SUMMARY TABULATION.

PIPE BEDDING SHALL BE PER MNDOT STANDARD PLAN 5-297.442 UNLESS OTHERWISE NOTED.

ITEMS IN EACH ROW ARE PAID UNDER THE SP OR SAP AS INDICATED BY THE NOTES BELOW:

- (A) PAID FOR UNDER SP 002-606-014 & SP 127-020-036
- (B) PAID FOR UNDER SAP 002-606-014 & SAP 127-020-036

(2) SEE APPLICABLE MNDOT STANDARD PLATES FOR DETAILS OF DRAINAGE STRUCTURE DESIGN, EXCEPT AS NOTED BELOW.  
 STRUCTURE DESIGN SD-XX SHALL BE CONSTRUCTED IN ACCORDANCE WITH MNDOT STD. PLATE 4024 WITH THE FOLLOWING EXCEPTIONS:  
 STRUCTURE DIAMETER SHALL BE XX IN. FOR SD-XX AND DEPTH SHALL BE AS REQUIRED IN THE DRAINAGE TABULATION.  
 WALL AND BASE SLAB THICKNESS AND ALL REINFORCEMENT SHALL BE IN ACCORDANCE WITH MNDOT STD. PLATE 4020.  
 DES SP 1 (DESIGN SPECIAL 1) SHALL BE A 2 FT X 3 FT RECTANGULAR CATCH BASIN.  
 DES SP 2 (DESIGN SPECIAL 2) SHALL BE A HYDRODYNAMIC SEPARATOR. SEE DRAINAGE DETAILS AND SPECIFICATIONS.

(3) STEPS REQUIRED WHEN DEPTH FROM TOP OF CASTING TO STRUCTURE INVERT IS GREATER THAN 4 FEET.

(4) INSULATE ALL CROSSINGS HAVING LESS THAN 2 FT OF CLEARANCE TO WATERMAIN OR 1 FT OF CLEARANCE TO SANITARY SEWER OR STORM SEWER WITH 8 FT X 8 FT X 4 IN POLYSTYRENE INSULATION.

(5) CONNECT INTO EXISTING STORM SEWER. FIELD VERIFY LOCATION AND ELEVATION.

(6) REMOVE EXISTING CASTING AND INSTALL NEW CASTING TO MATCH THE ELEVATION OF THE FINISHED GRADE. REMOVAL AND REPLACEMENT OF THE TOP SLAB MAY BE REQUIRED. PAID FOR AS CASTING ASSEMBLY AND RECONSTRUCT EXISTING DRAINAGE STRUCTURE.

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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: **ANDREW TOAY**  
 Date: 05/14/2025 License #: 56747

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036  
 DRAWN BY K. HAUSER  
 DESIGNED BY K. HAUSER  
 CHECKED BY A. TOAY  
 COMM. NO. 2417338



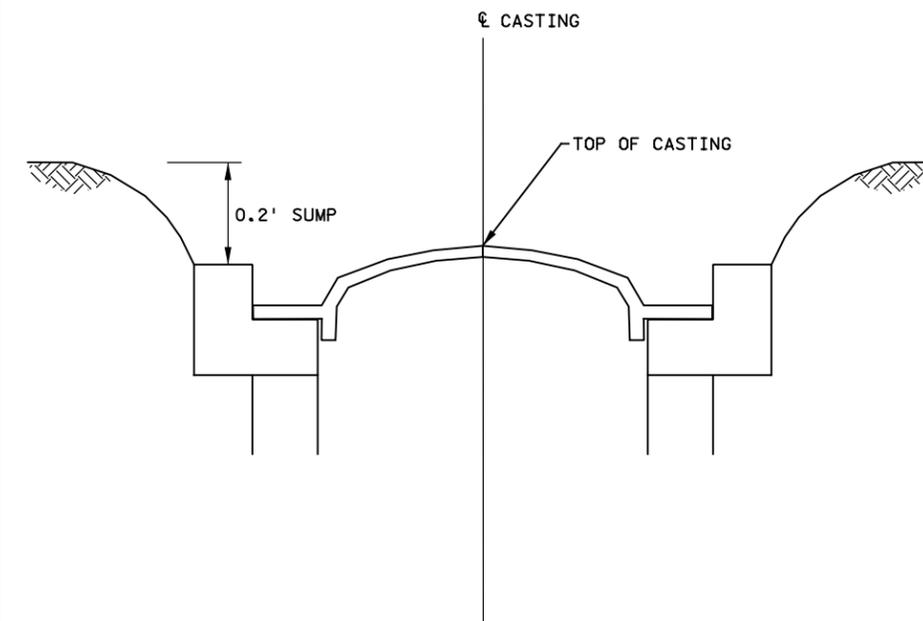
**ANOKA COUNTY, MINNESOTA**  
 DRAINAGE TABULATION  
 SP 002-606-014, SP 127-020-036

**SHEET 90 OF 118**

CASTING ASSEMBLIES SUMMARY						J
ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING (A)	CURB BOX	STANDARD PLATE NO.	QUANTITY (EACH)	REMARKS
A - 7D	700-7	715	N/A	4101	1	MANHOLE
				4110		
B - 8	805	815	N/A	4132	2	CATCH BASIN
				4153		
B - 9	805	816	N/A	4132	1	CATCH BASIN
				4154		
B - 17	806	816	825	4125	4	CATCH BASIN
				4154		
				4134		
C - 1	(B)	(B)	(B)	(B)	8	ON GRADE CATCH BASIN IN B618 CURB
				(B)		
				(B)		
C - 2	(C)	(C)	(C)	(C)	5	SAG CATCH BASIN IN B618 CURB
				(C)		
				(C)		
C - 3	(D)	(D)	N/A	(D)	1	HYDRODYNAMIC SEPARATOR
				(D)		
M - 11	ROUND CONC	731	N/A	4143	1	DROP INLET
				4143		
PROJECT TOTALS:					23	

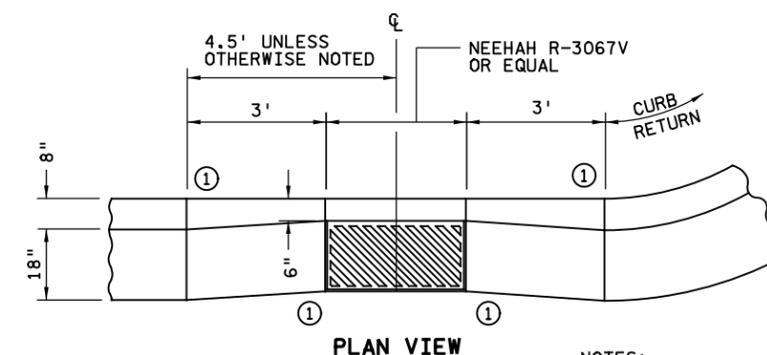
NOTES:

- (A) USE BENT BOLT WITH 816 GRATE.
- (B) CASTING TYPE: NEENAH R-3067V OR APPROVED EQUAL
- (C) CASTING TYPE: NEENAH R-3067VB OR APPROVED EQUAL
- (D) HYDRODYNAMIC SEPARATOR CASTING. SEE DETAILS. INCLUDED WITH DESIGN SPECIAL 2.



STAKING DETAIL: CASTING ASSEMBLY M-11

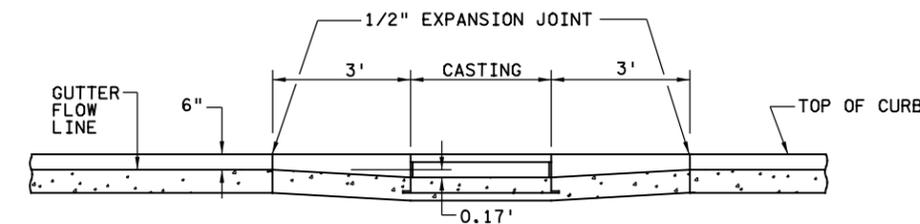
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PLAN VIEW

NOTES:

- ① TAPER CONC. CURB & GUTTER TO MATCH CASTING.



CROSS SECTION VIEW

CATCH BASIN INSTALLATION FOR B618 C&G

NOT TO SCALE

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NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: **ANDREW TOAY**

*Andrew Toay*

Date: **05/14/2025** License #: **56747**

STATE PROJECT NO. 002-606-014  
STATE PROJECT NO. 127-020-036

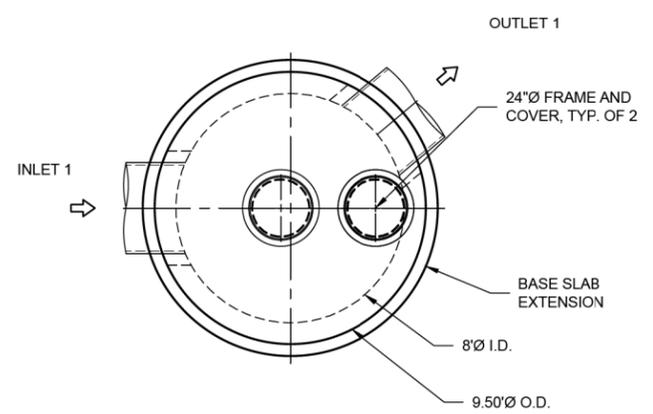
STATE AID PROJECT NO. 002-606-014  
STATE AID PROJECT NO. 127-020-036

DRAWN BY K. HAUSER  
DESIGNED BY K. HAUSER  
CHECKED BY A. TOAY  
COMM. NO. 2417338

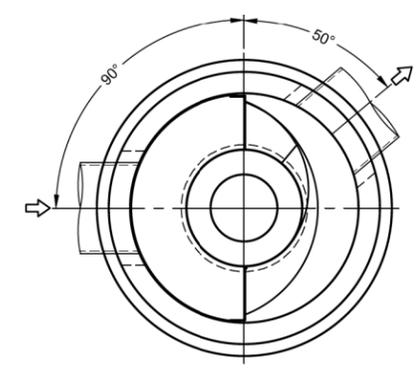


**ANOKA COUNTY, MINNESOTA**  
DRAINAGE DETAILS  
SP 002-606-014, SP 127-020-036

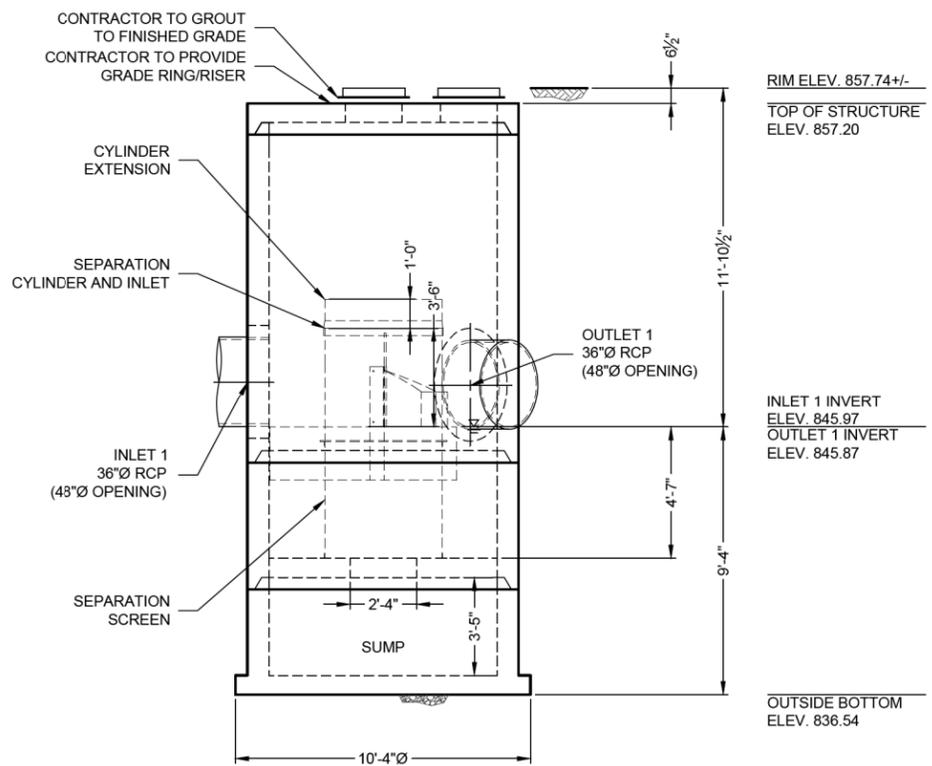
**SHEET 91 OF 118**



**PLAN VIEW**  
INTERNALS NOT SHOWN



**PLAN VIEW FOR PIPE ORIENTATION**  
TOP SLAB NOT SHOWN



**ELEVATION VIEW**

**MATERIAL LIST** (PROVIDED BY CONTECH)

COUNT	DESCRIPTION	INSTALLED BY
1	4040-8 CONCENTRIC FIBERGLASS INSERT	CONTRACTOR
1	4040, 2400 micron, 4.1' O.D. x 4.08' SCREEN, GREEN FLANGE UP	CONTRACTOR
1	20, 30, 40 SERIES HARDWARE KIT	CONTRACTOR
1	SEALANT FOR JOINTS	CONTRACTOR
1	CYLINDER EXTENSION	CONTRACTOR
2	24"Ø X 4" FRAME AND COVER, EJ #41600389, OR EQUIV.	CONTRACTOR

**SITE DESIGN DATA**

WATER QUALITY FLOW RATE	5.30 CFS
PEAK FLOW RATE	51 CFS
RETURN PERIOD OF PEAK FLOW	100 YRS

**GENERAL NOTES**

- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
- FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. [www.ContechES.com](http://www.ContechES.com)
- CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
- STRUCTURE SHALL MEET AASHTO HS-20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
- IF REQUIRED, PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.
- CDS STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

**INSTALLATION NOTES**

- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE.
- CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
- CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
- CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

STRUCTURE WEIGHT  
APPROXIMATE HEAVIEST PICK = 34000 LBS.  
STRUCTURE IS DELIVERED IN 4 PIECES

MAX FOOTPRINT = 10.33'Ø

CONTECH  
**PROPOSAL**  
DRAWING

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MARK	DATE	REVISION DESCRIPTION	BY
1	2/6/25	PER EOR MARKUPS	MPC

CDS4040-8-C - 836522-010  
ANOKA COUNTY CSAH 6/7TH ST  
ANDOVER, MN  
SITE DESIGNATION: CDS 4040

**CONTECH**  
ENGINEERED SOLUTIONS LLC  
www.ContechES.com  
6655 Wabasha Blvd., Suite 1300, Minneapolis, MN 55411  
612-331-0376 763-416-1837 FAX

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DATE:	1/24/25
DESIGNED:	WPC
DRAWN:	WPC
CHECKED:	WPC
APPROVED:	WPC
PROJECT No.:	836522
SEQUENCE No.:	010
SHEET:	1 OF 1

WIES-MR  
LAYOUT

**DESIGN SPECIAL 2**

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
Print Name: **ANDREW TOAY**  
*Andrew Toay*  
Date: 05/14/2025 License # 56747

STATE PROJECT NO. 002-606-014  
STATE PROJECT NO. 127-020-036  
STATE AID PROJECT NO. 002-606-014  
STATE AID PROJECT NO. 127-020-036

DRAWN BY K. HAUSER  
DESIGNED BY K. HAUSER  
CHECKED BY A. TOAY  
COMM. NO. 2417338



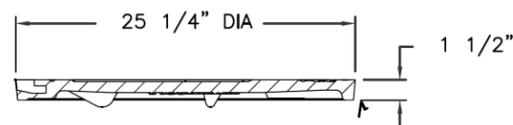
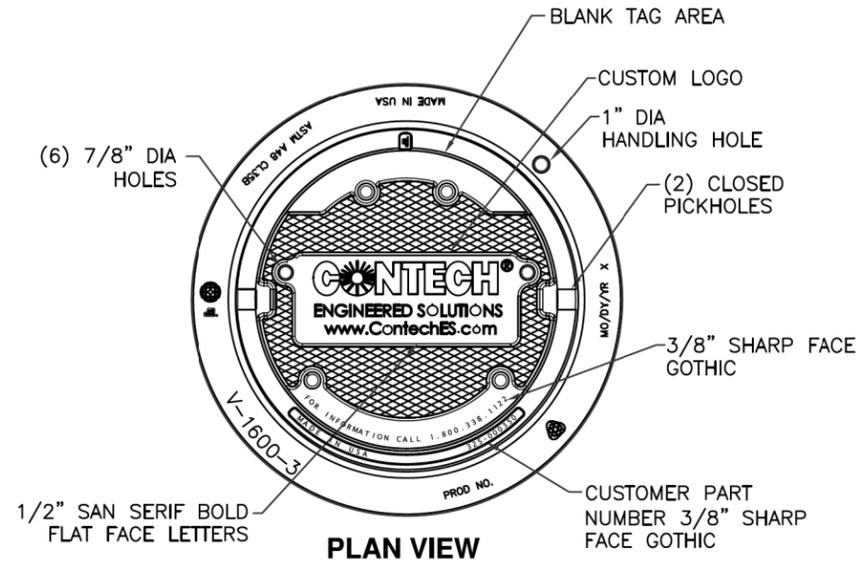
**ANOKA COUNTY, MINNESOTA**  
DRAINAGE DETAILS  
SP 002-606-014, SP 127-020-036

**SHEET 92 OF 118**

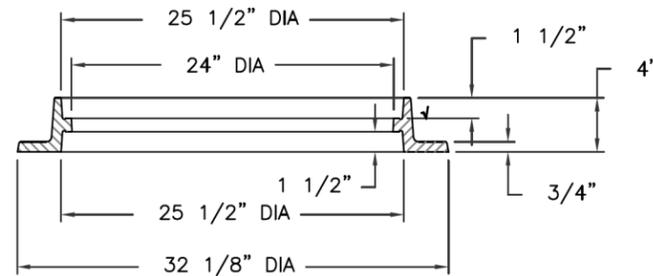
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NO	DATE	BY	CKD	APPR	REVISION

# V1600-3 V1610-3 Assembly



COVER SECTION



RING SECTION

DESIGN SPECIAL 2

**Product Number**  
41600389

**Design Features**

- Materials
- Frame  
Gray Iron (CL35B)
- Cover  
Gray Iron (CL35B)

- Design Load  
Heavy Duty
- Open Area  
n/a
- Coating  
Un dipped
- √ Designates Machined Surface

**Certification**

- ASTM A48
- Country of Origin: USA

**Major Components**

- 41600310
- 41600374

**Drawing Revision**

- 05/02/2008 Designer: DEW
- 6/20/2017 Revised By: DAE

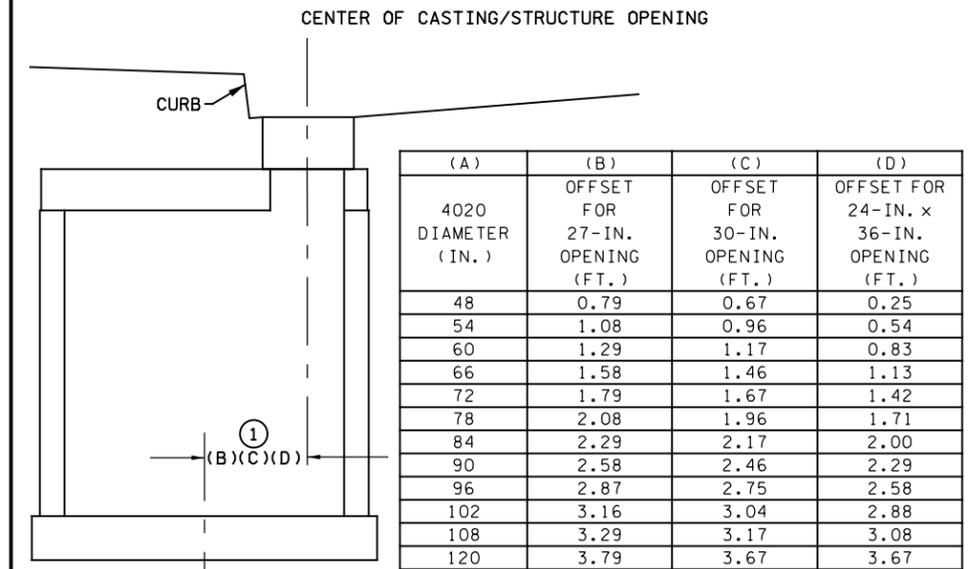
**Disclaimer**

Weights (lbs./kg) dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

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**Contact**

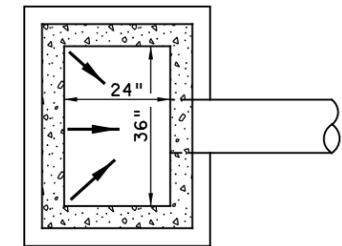
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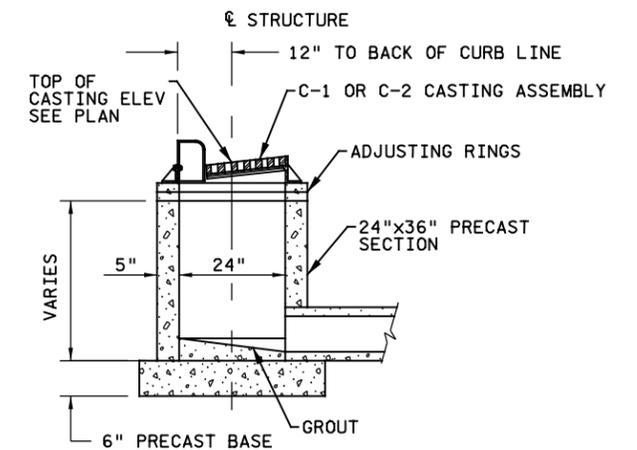
**NOTES:**  
① IN TYPICAL LOCATIONS WHERE CASTING IS IN CURB LINE, ROTATE STRUCTURE TO ALLOW AS MUCH AS POSSIBLE TO BE OUTSIDE OF ROADWAY (BEHIND CURB), OR ROTATE AS NECESSARY TO AVOID CONFLICTS.

**STAKING DETAIL: DESIGN XX-4020 OR SD-XX STRUCTURE**

NOT TO SCALE



PLAN VIEW



CROSS SECTION VIEW

**DRAINAGE STRUCTURE - DESIGN SPECIAL 1 (3' X 2')**

NOT TO SCALE

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

Print Name: ANDREW TOAY

Date: 05/14/2025 License #: 56747

STATE PROJECT NO. 002-606-014  
STATE PROJECT NO. 127-020-036  
STATE AID PROJECT NO. 002-606-014  
STATE AID PROJECT NO. 127-020-036

DRAWN BY K. HAUSER  
DESIGNED BY K. HAUSER  
CHECKED BY A. TOAY  
COMM. NO. 2417338



ANOKA COUNTY, MINNESOTA  
DRAINAGE DETAILS  
SP 002-606-014, SP 127-020-036

SHEET 93 OF 118

**STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE (SHEET 1 OF 4)**

**PROJECT DESCRIPTION/LOCATION AND SCOPE**

SEE COVER SHEET FOR LOCATION MAP, PROJECT NUMBERS AND DESCRIPTION OF PROJECT SCOPE. THE PERMANENT STORMWATER BEST MANAGEMENT PRACTICE (BMP) UTILIZED ON THE PROJECT INCLUDES A PROPRIETARY STORMWATER TREATMENT DEVICE.

**SPECIAL AND IMPAIRED WATERS**

THE FOLLOWING SPECIAL/IMPAIRED WATERS ARE LOCATED WITHIN ONE MILE OF THE PROJECT LIMITS AND RECEIVE RUNOFF FROM THE PROJECT SITE.

- EAST MOORE LAKE IS IMPAIRED FOR NUTRIENTS AND HAS AN APPROVED TMDL.
- RICE CREEK IS IMPAIRED FOR FISH AND INVERTEBRATE BIOASSESSMENTS AND HAS AN APPROVED TMDL FOR E. COLI.
- MISSISSIPPI RIVER IS IMPAIRED FOR NUTRIENTS AND HAS AN APPROVED TMDL.

**AREAS OF ENVIRONMENTAL SENSITIVITY**

ALL AREAS OF ENVIRONMENTAL SENSITIVITY, INCLUDING WETLANDS, ARE LABELED AS "AREAS OF ENVIRONMENTAL SENSITIVITY" IN THE PLANS.

**LONG TERM MAINTENANCE AND OPERATION**

MAINTENANCE STAFF FROM THE CITY OF FRIDLEY ARE RESPONSIBLE FOR THE LONG TERM MAINTENANCE AND OPERATION OF THE PERMANENT STORMWATER SYSTEMS.

**SWPPP DEVELOPMENT AND MAINTENANCE**

THIS SWPPP WAS PREPARED BY PERSONNEL WHO ARE CERTIFIED IN THE DESIGN OF CONSTRUCTION SWPPPS. COPIES OF THE CERTIFICATIONS ARE AVAILABLE UPON REQUEST.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A CERTIFIED EROSION AND SEDIMENT CONTROL SUPERVISOR WHO SHALL BE RESPONSIBLE FOR FINALIZING, CERTIFYING, AND MAINTAINING THE SWPPP DOCUMENT AND OVERSEEING THE IMPLEMENTATION OF THE SWPPP. SEE PAGE 2 OF THE SWPPP NARRATIVE FOR ADDITIONAL REQUIREMENTS.

IN ADDITION, EACH CONTRACTOR OR SUBCONTRACTOR THAT PLACES EROSION OR SEDIMENT CONTROL DEVICES AS LISTED IN MNDOT SPECIFICATION 2573 SHALL PROVIDE AT LEAST ONE CERTIFIED INSTALLER AS INDICATED IN THE MNDOT SPECIFICATION.

THE SWPPP SHALL BE AMENDED WITHIN 7 DAYS WHEN:

- A. THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE, WEATHER OR SEASON HAVING A SIGNIFICANT EFFECT ON DISCHARGE OF POLLUTANTS.
- B. INSPECTIONS INDICATE THE SWPPP IS NOT EFFECTIVE.
- C. A WATER QUALITY STANDARD CHANGES AND THE MPCA DETERMINES THE SWPPP SHALL BE AMENDED TO COMPLY.

A DESCRIPTION OF ANY CHANGE TO THE SWPPP, ALONG WITH THE DATE AND NAME OF THE REVISION SHALL BE RECORDED AND INCLUDED WITH THE SWPPP AND RETAINED ON SITE. THE OWNER SHALL RETAIN ALL RECORDS AFTER COMPLETION OF THE PROJECT.

**SITE PLANS**

THE CONTRACTOR SHALL PREPARE AND SUBMIT A SITE MANAGEMENT PLAN FOR CONCRETE MANAGEMENT, CONCRETE SLURRY APPLICATION AREAS, WORK IN AND NEAR AREAS OF ENVIRONMENTAL SENSITIVITY, DEWATERING AREAS, AREAS IDENTIFIED AS "SITE MANAGEMENT PLAN AREAS" AND AS REQUESTED BY THE PROJECT ENGINEER. SUBMIT ALL SITE MANAGEMENT PLANS IN WRITING AND ALLOW A MINIMUM OF 10 CALENDAR DAYS FOR REVIEW BY THE PROJECT ENGINEER. WORK SHALL NOT BE ALLOWED TO COMMENCE IF A SITE MANAGEMENT PLAN IS REQUIRED UNTIL ACCEPTANCE HAS BEEN GRANTED BY THE PROJECT ENGINEER.

**ENVIRONMENTAL REVIEW**

THE REQUIREMENTS OF RICE CREEK WATERSHED DISTRICT AND THE CITY OF FRIDLEY ARE SATISFIED BY THE PERMANENT BMPS LISTED ABOVE AND THE TEMPORARY MEASURES INCLUDED. THERE ARE NO ADDITIONAL STORMWATER MITIGATION MEASURES REQUIRED AS A RESULT OF AN ENVIRONMENTAL, ARCHAEOLOGICAL OR AGENCY REVIEW.

**DRINKING WATER SUPPLY MANAGEMENT AREA (DWSMA), EMERGENCY RESPONSE AREA (ERA) AND KARST REGIONS**

THE PROJECT IS LOCATED IN A DWSMA WITH VULNERABILITY DESIGNATED AS MEDIUM.

**SOIL TYPES**

SOIL TYPES FOUND ON THIS PROJECT ARE PREDOMINANTLY SANDY URBAN SOILS.

SEE SPECIAL PROVISIONS FOR ADDITIONAL WATER RELATED PERMITS SUCH AS WATERSHED DISTRICT PERMITS, WETLAND PERMITS, ARMY CORPS OF ENGINEERS OR DNR PUBLIC WATERS WORK PERMIT.

FOR PUBLIC WATERS IN WHICH THE DNR HAS PROMULGATED "WORK IN WATER RESTRICTIONS" NO WORK SHALL OCCUR IN LAKES FROM APRIL 1 - JUNE 30, IN NON-TROUT STREAMS FROM MARCH 15 - JUNE 15 OR IN TROUT STREAMS FROM SEPTEMBER 1 - APRIL 1. SEE DNR PERMIT FOR ADDITIONAL INFORMATION.

**LAND FEATURE CHANGES**

- TOTAL DISTURBED AREA: 2.38 ACRES
- TOTAL EXISTING IMPERVIOUS SURFACE AREA: 2.07 ACRES
- TOTAL PROPOSED IMPERVIOUS SURFACE AREA: 1.94 ACRES
- TOTAL PROPOSED NET CHANGE IN IMPERVIOUS SURFACE AREA: -0.13 ACRES

**PROJECT CONTACTS**

THE OWNER AND CONTRACTOR ARE RESPONSIBLE FOR THE IMPLEMENTATION OF THE SWPPP AND INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE, DURING AND AFTER CONSTRUCTION UNTIL THE NOTICE OF TERMINATION HAS BEEN FILED.

ORGANIZATION	CONTACT NAME	PHONE
CITY OF FRIDLEY	JIM KOSLUCHAR	763-572-3550
ANOKA COUNTY	CHRIS OSTERHUS	763-324-3189
MINNESOTA DEPARTMENT OF NATURAL RESOURCES	PATTY FOWLER	612-708-7732
MINNESOTA POLLUTION CONTROL AGENCY	JOSH NORMAN	651-757-2389
RICE CREEK WATERSHED DISTRICT	PATRICK HUGHES	763-398-3080
MNDOT RESIDENT ENGINEER	JASON SWENSON	651-234-7539
SRF WATER RESOURCES (OR SWPPP DESIGNER)	ANDREW TOAY	763-475-0010

MPCA DUTY OFFICER 24 HOUR EMERGENCY NOTIFICATION: 651-649-5451  
800-422-0798

**LOCATION OF SWPPP REQUIREMENTS**

THE REQUIRED SWPPP ELEMENTS MAY BE LOCATED IN MANY PLACES WITHIN THE PLAN SET AS WELL AS IN THE SPECIAL PROVISIONS, MNDOT SPEC BOOK (2020 EDITION), CONSTRUCTION DIARIES OR ON FILE WITH THE PROJECT OWNER. THE NOTES AND TABLE BELOW ARE INTENDED TO BE A QUICK REFERENCE FOR THE CONTRACTOR AND PROJECT ENGINEER TO USE IN THE FIELD. THERE MAY BE ADDITIONAL REQUIRED SWPPP ELEMENTS INCLUDED ON THE PROJECT THAT ARE NOT LISTED ON THIS SHEET. IN ADDITION, THE MINNESOTA NPDES/SDS CONSTRUCTION STORMWATER GENERAL PERMIT (NPDES PERMIT) SHOULD BE REVIEWED AND CONSULTED BY THE EROSION AND SEDIMENT CONTROL SUPERVISOR.

**LOCATION OF SWPPP REQUIREMENTS IN PROJECT PLAN**

DESCRIPTION	LOCATION
TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AND STAGING	SHEET NOS. 98 TO 99
PERMANENT EROSION AND SEDIMENT CONTROL MEASURES	SHEET NOS. 98 TO 99
DIRECTION OF FLOW	SHEET NOS. 87 TO 88
FINAL STABILIZATION	SHEET NOS. 98 TO 99
SOILS AND CONSTRUCTION NOTES	SHEET NOS. 8
DRAINAGE STRUCTURES	SHEET NOS. 87 TO 88
DRAINAGE TABULATION	SHEET NOS. 90 TO 91
STORM SEWER PROFILE SHEETS	SHEET NOS. 89 TO #DT02
STORM SEWER TABULATION	SHEET NOS. 90 TO 91
STATEMENT OF ESTIMATED QUANTITIES	SHEET NOS. 3 TO 4

**SITE MAPS AND DESIGN CALCULATIONS**

IN ADDITION TO WHAT IS LOCATED WITHIN THIS PLAN, SITE MAPS AND BMP DESIGN CALCULATIONS ARE AVAILABLE UPON REQUEST. PLEASE CONTACT THE PROJECT ENGINEER WITH ANY QUESTIONS REGARDING THE SITE MAPS OR CALCULATIONS.

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

Print Name: ANDREW TOAY

Date: 05/14/2025 License #: 56747

STATE PROJECT NO. 002-606-014  
STATE PROJECT NO. 127-020-036  
STATE AID PROJECT NO. 002-606-014  
STATE AID PROJECT NO. 127-020-036

DRAWN BY K. HAUSER  
DESIGNED BY K. HAUSER  
CHECKED BY A. TOAY  
COMM. NO. 2417338



**ANOKA COUNTY, MINNESOTA**  
STORMWATER POLLUTION PREVENTION PLAN  
SP 002-606-014, SP 127-020-036

**SHEET 94 OF 118**

NO	DATE	BY	CKD	APPR	REVISION

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**STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE (SHEET 2 OF 4)**

GENERAL SWPPP NOTES FOR CONSTRUCTION ACTIVITY

1. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH ALL ASPECTS OF THE NPDES CONSTRUCTION STORMWATER PERMIT AT ALL TIMES UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA (MPCA WEBSITE USING E-SERVICES). THE CONTRACTOR SHALL DEVELOP A CHAIN OF COMMAND WITH ALL OPERATORS ON THE SITE TO ENSURE THAT THE SWPPP SHALL BE IMPLEMENTED AND STAY IN EFFECT UNTIL THE CONSTRUCTION PROJECT IS COMPLETE, THE ENTIRE SITE HAS UNDERGONE FINAL STABILIZATION, AND THE NOTICE OF TERMINATION (NOT) HAS BEEN SUBMITTED TO THE MPCA. THE SWPPP MUST BE AVAILABLE ON SITE, OR ELECTRONICALLY, DURING NORMAL WORKING HOURS WITH PERSONNEL WHO HAVE OPERATIONAL CONTROL OVER THE APPLICABLE PORTION OF THE SITE, INCLUDING ALL CHANGES TO THE SWPPP, INSPECTIONS, AND MAINTENANCE RECORDS.
2. THE CONTRACTOR SHALL PREPARE A WRITTEN, NOT ORAL, WEEKLY SCHEDULE OF PROPOSED EROSION CONTROL ACTIVITIES FOR THE PROJECT ENGINEER'S APPROVAL AS PER MNDOT SPEC. 1717.2.
3. BURNING OF ANY MATERIAL IS NOT ALLOWED WITHIN PROJECT BOUNDARY.
4. THE CONTRACTOR SHALL PLACE STABILIZED CONSTRUCTION EXITS, AS NECESSARY, TO PREVENT TRACKING OF SEDIMENT ONTO PAVED SURFACES AND IN COMPLIANCE WITH THE NPDES PERMIT. STABILIZED CONSTRUCTION EXITS SHALL BE SUFFICIENTLY SIZED AND MAINTAINED TO PREVENT TRACK OUT. IF STABILIZED CONSTRUCTION EXITS ALONE DON'T PROVIDE ADEQUATE PREVENTION OF SEDIMENT TRACKING, STREET SWEEPING MUST BE USED IN ADDITION.
5. ALL TOPSOIL IN DISTURBED AREAS SHALL BE REMOVED AND STOCKPILED FOR LATER PLACEMENT. AVOID COMPACTION AS MUCH AS IS FEASIBLE IN ALL AREAS WHERE COMPACTION IS NOT REQUIRED FOR CONSTRUCTION. COMPACTION SHALL BE AVOIDED IN ALL AREAS DESIGNATED FOR INFILTRATION.
6. DO NOT DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS. DELINEATE AREAS NOT TO BE DISTURBED PRIOR TO STARTING GROUND DISTURBING ACTIVITIES. IF IT BECOMES NECESSARY TO DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS OBTAIN WRITTEN PERMISSION PRIOR TO PROCEEDING. PRESERVE ALL BUFFERS (IF ANY) SHOWN ON THE PLANS.
7. DIRECT DISCHARGES FROM BMPS TO VEGETATED AREAS AND ROUTE STORMWATER AROUND UNSTABILIZED AREAS OF THE SITE WHENEVER POSSIBLE. PROVIDE EROSION CONTROL AND VELOCITY DISSIPATION DEVICES AS NEEDED TO PREVENT EROSION AND NUISANCE CONDITIONS.
8. PROVIDE STABILIZATION IN ANY TRENCHES CUT FOR DEWATERING OR SITE DRAINING PURPOSES.
9. TEMPORARY DEWATERING ACTIVITIES MAY BE REQUIRED. THEREFORE, IT IS POSSIBLE THAT A PERMIT FOR THE TEMPORARY APPROPRIATION OF WATERS OF THE STATE FROM MNDNR SHALL BE REQUIRED FOR THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THIS PERMIT IF REQUIRED (FORMS ARE AVAILABLE FROM THE MNDNR WEBSITE). ALL TEMPORARY DEWATERING SHALL BE DISCHARGED TO AN APPROVED LOCATION FOR TREATMENT PRIOR TO DISCHARGE TO THE RECEIVING WATER. THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT SITE MANAGEMENT PLANS TO THE PROJECT ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK ACCORDING TO SPEC 1717.2. FOR ANY DEWATERING ACTIVITIES THAT LAST LONGER THEN A FEW MINUTES, VISUAL INSPECTION AND PHOTOGRAPHS MUST BE TAKEN AT THE START OF DEWATERING ACTIVITIES, AND AT LEAST ONCE EVERY 24 HOURS DURING OPERATION. IF NUISANCE CONDITIONS RESULT FROM THE DISCHARGE, DEWATERING ACTIVITIES MUST CEASE IMMEDIATELY AND CORRECTIVE ACTIONS MUST OCCUR BEFORE DEWATERING CAN RESUME. TEMPORARY DEWATERING SHALL BE INCIDENTAL.
10. BASIN DRAINING ACTIVITIES OF TURBID OR SEDIMENT LADEN WATER SHALL BE DISCHARGED TO TEMPORARY SEDIMENT BASINS WHENEVER POSSIBLE. IN THE EVENT THAT IT IS NOT POSSIBLE TO DISCHARGE THE SEDIMENT LADEN WATER TO A TEMPORARY SEDIMENT BASIN THE WATER SHALL BE TREATED SO THAT IT DOES NOT CAUSE A NUISANCE CONDITION IN THE RECEIVING WATERS OR TO DOWNSTREAM LANDOWNERS.
11. IT IS NOT ANTICIPATED THAT POLYMERS, FLOCCULANTS OR OTHER SEDIMENTATION TREATMENT CHEMICALS SHALL BE USED. HOWEVER, IF THE USE OF SUCH CHEMICALS BECOMES NECESSARY TO COMPLY WITH PERMIT REQUIREMENTS, IT SHALL BE IN ACCORDANCE WITH THE NPDES PERMIT.
12. CONSTRUCTION PHASING MUST INCORPORATE STORMWATER MANAGEMENT PRINCIPLES AS THE CONSTRUCTION PROGRESSES. UNLESS INFEASIBLE, TEMPORARY OR PERMANENT WET SEDIMENTATION BASINS SHOULD BE CONSTRUCTED IN FIRST CONSTRUCTION PHASE AND STORMWATER ROUTED TO THOSE BASINS.

POLLUTION PREVENTION NOTES

1. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS REGARDING POLLUTION PREVENTION MANAGEMENT DURING CONSTRUCTION, WHICH SHALL INCLUDE, BUT NOT BE LIMITED TO, PROVIDING THE FOLLOWING (ITEMS LISTED ARE INCIDENTAL):
  - A. WASHOUT AREAS FOR CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS FOR USE BY ALL SUBCONTRACTORS AND MATERIAL TESTING PERSONNEL. LOCATION OF WASHOUT AREAS SHALL BE IDENTIFIED BY SIGNAGE AND SHALL BE AT LEAST 200 FT FROM SITE MANAGEMENT PLAN REQUIREMENT AREAS (IF APPLICABLE) OR AREAS OF ENVIRONMENTAL SENSITIVITY, AND UTILIZE A LEAK-PROOF CONTAINMENT FACILITY OR IMPERMEABLE LINER THAT PREVENTS RUNOFF ONTO ADJACENT SOILS. AN ENGINEERED COLLECTION SYSTEM CAN ALSO BE USED IF IT IS APPROVED BY THE PROJECT ENGINEER.
  - B. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE PROJECT ENGINEER FOR A CHEMICAL STORAGE AREA AND SHALL DESIGNATE AN AREA FOR FUELING AND MINOR MAINTENANCE OF CONSTRUCTION VEHICLES (INCLUDING WASHING) WITH MEANS TO CAPTURE ANY FUEL SPILLS. RUNOFF SHALL BE CONTAINED IN A TEMPORARY SEDIMENT BASIN OR OTHER EFFECTIVE CONTROL AND ALL WASTE GENERATED SHALL BE PROPERLY DISPOSED OF. NO ENGINE DEGREASING IS ALLOWED ON SITE.
  - C. SOLID WASTE COLLECTION AND REMOVAL
  - D. SECONDARY CONTAINMENT FOR STORAGE OF HAZARDOUS MATERIALS
  - E. SECURED HAZARDOUS WASTE STORAGE CONTAINERS
  - F. CHEMICAL SPILL KITS (SHALL BE PROVIDED AT EACH LOCATION WHERE CHEMICALS ARE USED OR STORED AND ANY LOCATION WHERE VEHICLES ARE FUELED OR MAINTAINED).
  - G. PORTABLE RESTROOM FACILITIES THAT ARE ANCHORED TO PREVENT TIPPING

POLLUTION PREVENTION NOTES (CONT.)

2. CHEMICALS SHALL BE KEPT IN A SECURE STORAGE AREA WITH RESTRICTED ACCESS IN SEALED CONTAINERS WHEN NOT IN USE. RETURN ALL CHEMICALS TO THE DESIGNATED STORAGE AREA BY THE END OF THE DAY UNLESS INFEASIBLE. CHEMICAL STORAGE CONTAINERS SHALL HAVE SECONDARY CONTAINMENT WHEN BEING USED OR STORED ON THE PROJECT SITE, AND PRODUCTS OR CHEMICALS THAT MAY LEACH POLLUTANTS SHALL BE UNDER COVER (PLASTIC SHEETING OR TEMPORARY ROOF). CHEMICAL SPILLS OF ANY KIND (OIL, FUEL, FERTILIZER, ETC.) SHALL BE CLEANED UP AND REMOVED FROM THE SITE IMMEDIATELY. THE CONTRACTOR SHALL HAVE A SPILL KIT ON SITE AT ALL TIMES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CREATING AND FOLLOWING A WRITTEN DISPOSAL PLAN FOR ALL HAZARDOUS WASTE MATERIALS. THE PLAN SHALL INCLUDE HOW THE MATERIAL SHALL BE DISPOSED OF AND THE LOCATION OF THE DISPOSAL SITE AND SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO WORK ON SITE. LEAKS, SPILLS, OR OTHER RELEASES SHALL BE RESPONDED TO IN ACCORDANCE WITH MPCA SPILL CONTAINMENT AND REMEDIAL ACTION PROCEDURES.
4. THE CONTRACTOR SHALL USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT DISCHARGE OR PLACEMENT OF BITUMINOUS GRINDINGS, CUTTINGS, MILLINGS, AND OTHER BITUMINOUS WASTES FROM AREAS OF EXISTING OR FUTURE VEGETATED SOILS, AND ALL WATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES.
5. THE CONTRACTOR SHALL USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT CONCRETE DUST, PARTICLES, SAW CUT SLURRY, PLANING WASTE AND OTHER CONCRETE WASTES FROM LEAVING PUBLIC RIGHT OF WAY, DEPOSITING IN EXISTING OR FUTURE VEGETATED AREAS OR ENTERING STORMWATER CONVEYANCE SYSTEM INCLUDING INLETS AND CURB FLOW LINES. ONSITE RELEASE OF CONCRETE SLURRY IS PERMISSIBLE IF MINNESOTA POLLUTION CONTROL GUIDANCE FOR ROAD CONSTRUCTION CONCRETE SLURRY AND THE REQUIREMENTS OF THE SPECIAL PROVISIONS ARE FOLLOWED.

EROSION CONTROL SUPERVISOR, INSPECTIONS AND MAINTENANCE NOTES

1. IN ACCORDANCE WITH SPEC. 2573.3 A1, THE CONTRACTOR SHALL PROVIDE A CERTIFIED EROSION CONTROL SUPERVISOR IN GOOD STANDING WHO IS KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BMPS. PROVIDE PROOF OF CERTIFICATION (UNIVERSITY OF MINNESOTA - CONSTRUCTION SITE MANAGEMENT) AT THE PRECONSTRUCTION MEETING. WORK SHALL NOT BE ALLOWED TO COMMENCE UNTIL PROOF OF CERTIFICATION HAS BEEN PROVIDED. THE EROSION CONTROL SUPERVISOR IS INCIDENTAL.
2. THE EROSION CONTROL SUPERVISOR SHALL WORK WITH THE PROJECT ENGINEER TO OVERSEE THE IMPLEMENTATION OF THE SWPPP AND THE INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE, DURING AND AFTER CONSTRUCTION UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA.
3. THE EROSION CONTROL SUPERVISOR IS RESPONSIBLE FOR COMPLYING WITH ALL THE INSPECTION AND MAINTENANCE REQUIREMENTS STATED IN THE NPDES PERMIT. INSPECTIONS OF THE ENTIRE CONSTRUCTION SITE SHALL OCCUR A MINIMUM OF ONCE EVERY SEVEN DAYS (3 DAYS FOR PROHIBITED WATERS) DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS (IN NO CASE SHALL THE TIME BETWEEN INSPECTIONS EXCEED 7 DAYS; 3 DAYS FOR PROHIBITED WATERS). RAINFALL AMOUNTS SHALL BE OBTAINED USING A PROPERLY MAINTAINED RAIN GAUGE ONSITE OR BY A WEATHER STATION THAT IS WITHIN ONE MILE. THE EROSION CONTROL SUPERVISOR SHALL THOROUGHLY INSPECT ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPS TO ENSURE INTEGRITY AND EFFECTIVENESS OF EACH BMP.
4. ALL INSPECTIONS AND MAINTENANCE CONDUCTED DURING CONSTRUCTION SHALL BE RECORDED IN WRITING WITHIN 24 HOURS AND THESE RECORDS SHALL BE RETAINED WITH THE SWPPP. INSPECTION REPORTS SHALL BE SUBMITTED TO THE PROJECT ENGINEER AND SWPPP DESIGNER IN A FORMAT APPROVED BY THE ENGINEER. INSPECTION RECORDS SHALL INCLUDE:
  - A. DATE AND TIME OF INSPECTIONS;
  - B. NAME OF PERSONS CONDUCTING INSPECTIONS;
  - C. FINDINGS OF INSPECTIONS, INCLUDING RECOMMENDATIONS FOR CORRECTIVE ACTIONS;
  - D. CORRECTIVE ACTIONS TAKEN INCLUDING DATES, TIMES, AND THE PARTY COMPLETING MAINTENANCE ACTIVITIES;
  - E. DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN 0.5 INCH IN 24 HOURS;
  - F. LOCATION, DESCRIPTION AND PHOTO OF ANY DISCHARGES OFF THE PROJECT SITE.
  - G. DOCUMENTS AND CHANGES MADE TO THE SWPPP.
  - H. ALL PHOTOGRAPHS OF DEWATERING ACTIVITIES AND DOCUMENTATION OF NUISANCE CONDITIONS.
5. THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING INSPECTION AND MAINTENANCE REQUIREMENTS (INSPECTIONS MAY BE REDUCED UNDER CERTAIN CONDITIONS AS COVER IS ESTABLISHED AND CONDITIONS CHANGE AS DESCRIBED IN THE NPDES PERMIT):
  - A. SILT FENCE SHALL BE REPAIRED, REPLACED OR SUPPLEMENTED WHEN IT BECOMES NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT OF THE SILT FENCE.
  - B. INLET PROTECTION DEVICES SHOULD BE REPAIRED WHEN THEY BECOME NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT AND/OR DEPTH OF THE DEVICE.
  - C. TEMPORARY SEDIMENT BASINS SHALL HAVE THE SEDIMENT REMOVED ONCE THE SEDIMENT HAS REACHED 1/2 THE STORAGE VOLUME WITHIN 72 HOURS OF DISCOVERY.
  - D. REMOVE ANY SEDIMENT DEPOSITED IN SURFACE WATERS. SEDIMENT SHALL BE REMOVED AND ANY AREA DISTURBED BY THE REMOVAL RESTABILIZED WITHIN 7 DAYS OF DISCOVERY. A SITE MANAGEMENT PLAN IS REQUIRED FOR WORK IN ANY SURFACE WATER AND APPROPRIATE AUTHORITIES SHALL BE CONTACTED PRIOR TO COMMENCING WORK.
  - E. TRACKED SEDIMENT SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OF TRACKING ONTO PAVED SURFACES.
  - F. ALL NONFUNCTIONAL BMPS SHALL BE REPAIRED, REPLACED, OR SUPPLEMENTED BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY (UNLESS NOTED OTHERWISE ABOVE).
  - G. REINSTALL AS QUICKLY AS POSSIBLE ANY BMP REMOVED TO ACCOMMODATE SHORT TERM ACTIVITIES.
  - H. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL BMPS UNTIL WORK HAS BEEN COMPLETED, SITE HAS GONE UNDER FINAL STABILIZATION, AND THE NOTICE OF TERMINATION HAS BEEN SUBMITTED TO THE MPCA IN ACCORDANCE WITH THE NPDES PERMIT. SEDIMENT REMOVAL AND MAINTENANCE OF BMPS IS INCIDENTAL.
6. CLEAN OUT ALL PERMANENT STORMWATER BASINS REGARDLESS OF WHETHER USED AS A TEMPORARY SEDIMENT BASIN OR SEDIMENT TRAP TO THE DESIGN CAPACITY AFTER ALL UPGRADE LAND DISTURBING ACTIVITY IS COMPLETED.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: ANDREW TOAY  
  
 Date: 05/14/2025 License # 56747

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036

DRAWN BY K. HAUSER  
 DESIGNED BY K. HAUSER  
 CHECKED BY A. TOAY  
 COMM. NO. 2417338



**ANOKA COUNTY, MINNESOTA**  
 STORMWATER POLLUTION PREVENTION PLAN  
 SP 002-606-014, SP 127-020-036

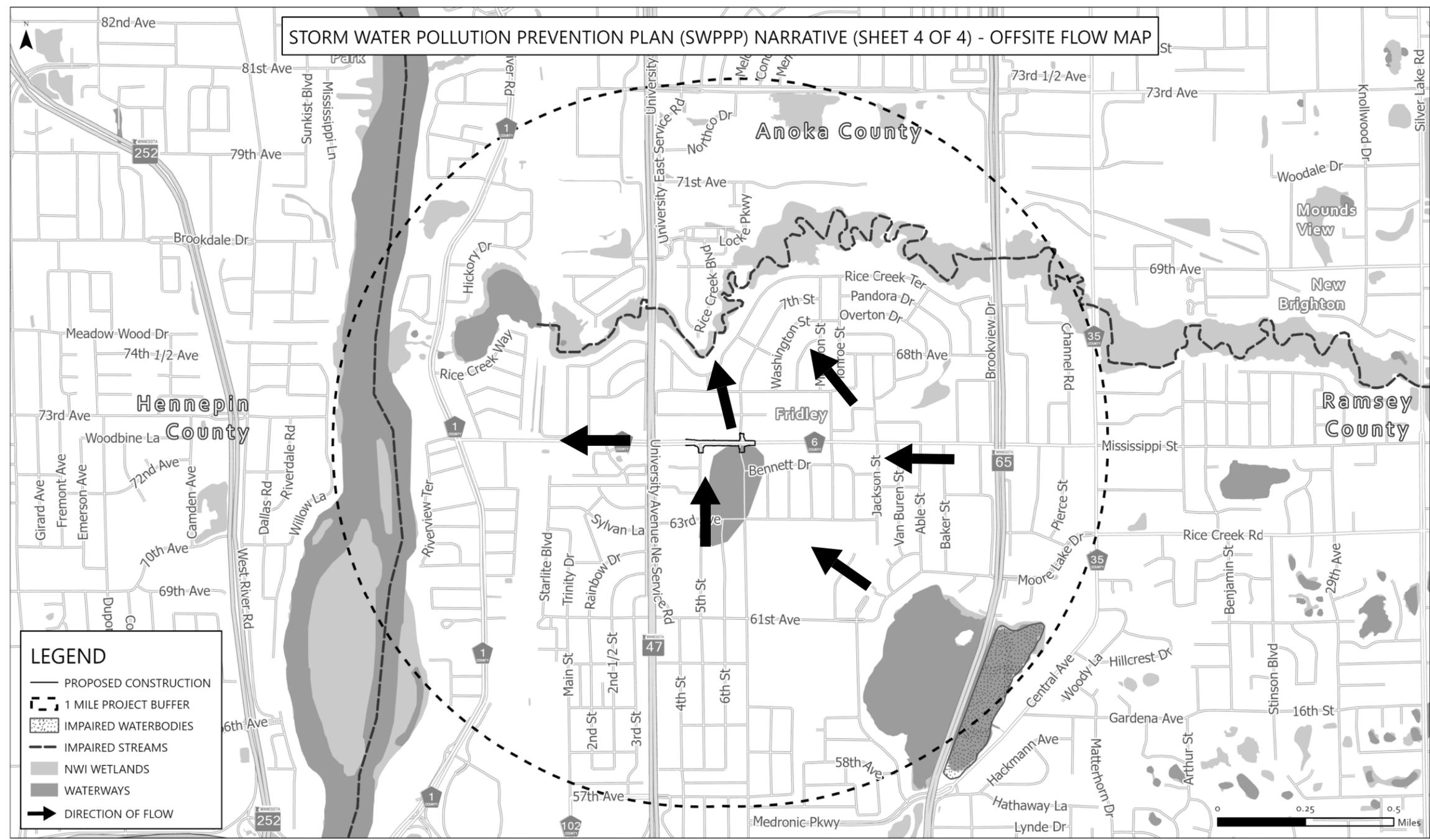
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STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE (SHEET 4 OF 4) - OFFSITE FLOW MAP



**LEGEND**

- PROPOSED CONSTRUCTION
- - - 1 MILE PROJECT BUFFER
- ▨ IMPAIRED WATERBODIES
- - - IMPAIRED STREAMS
- NWI WETLANDS
- WATERWAYS
- ➔ DIRECTION OF FLOW

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

Print Name: ANDREW TOAY

*Andrew Toay*

Date: 05/14/2025 License #: 56747

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036

DRAWN BY K. HAUSER  
 DESIGNED BY K. HAUSER  
 CHECKED BY A. TOAY  
 COMM. NO. 2417338



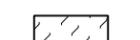
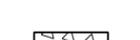
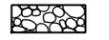
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 STORMWATER POLLUTION PREVENTION PLAN  
 SP 002-606-014, SP 127-020-036

**SHEET 97 OF 118**

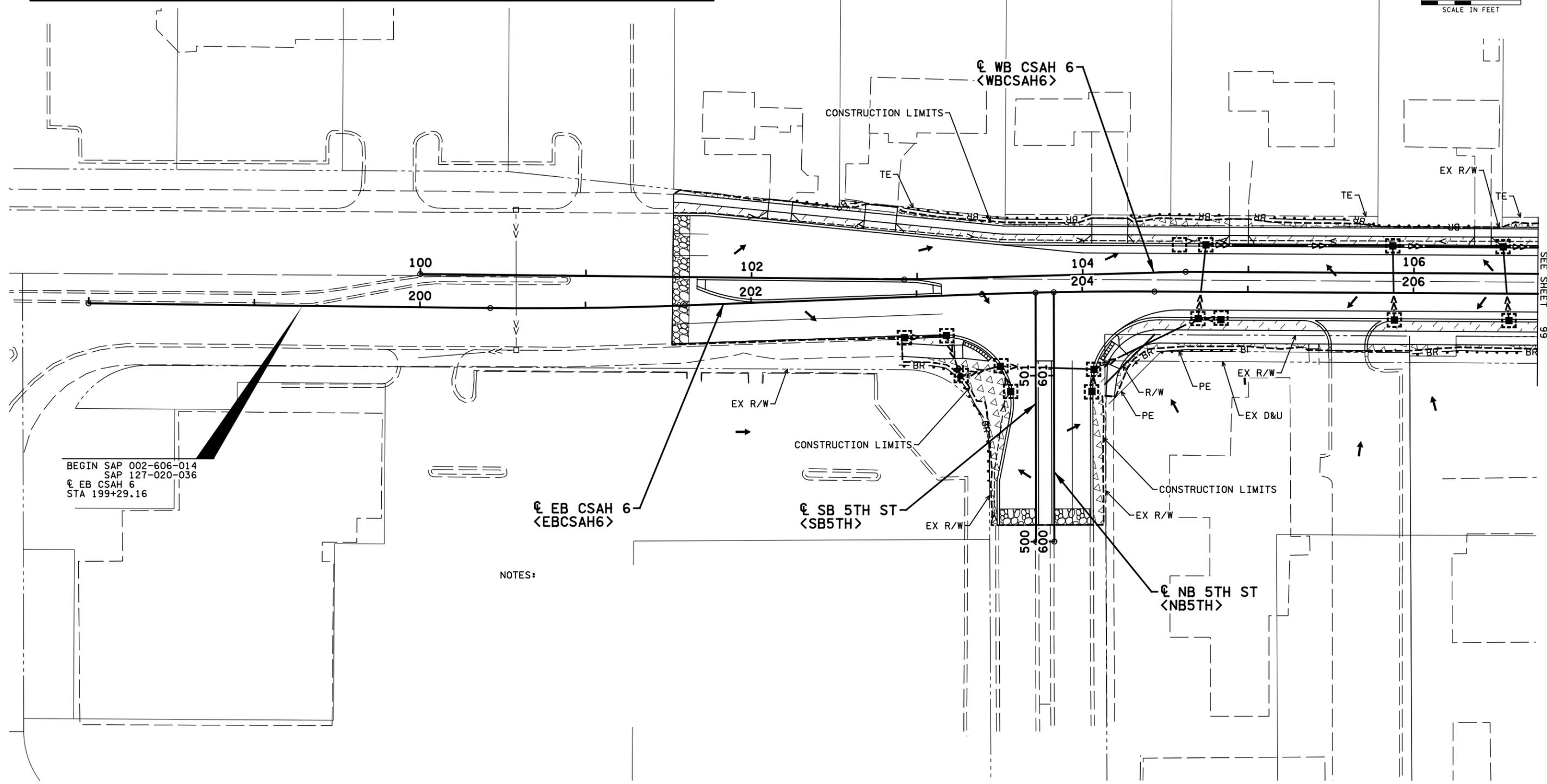
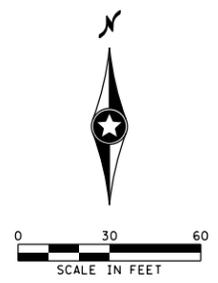
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NO	DATE	BY	CKD	APPR	REVISION

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LEGEND	
	PROPOSED CONSTRUCTION
	SEED SOUTHERN BOULEVARD (160 LBS/ACRE), FERTILIZER TYPE 1 (350 LBS/ACRE), HYDRAULIC MULCH MATRIX (2500 LBS/ACRE)
	SEED RESIDENTIAL TURFGRASS (200 LBS/ACRE), FERTILIZER TYPE 1 (350 LBS/ACRE), HYDRAULIC MULCH MATRIX (2500 LBS/ACRE)
	STABILIZED CONSTRUCTION EXIT
	SEDIMENT CONTROL LOG TYPE WOOD FIBER
	STORM DRAIN INLET PROTECTION
	DIRECTION OF FLOW

GENERAL NOTES:  
 SEE STAGING PLANS FOR ADDITIONAL EROSION CONTROL AND TEMPORARY TURF ESTABLISHMENT MEASURES.  
 SEE CONSTRUCTION/ SOILS NOTES FOR TYPES OF SEEDING, MULCH AND FERTILIZER.



NOTES:

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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: ZACHARIAH F. HEIMER  
*Zach Heimer*  
 Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036  
 DRAWN BY M. WENDLER  
 DESIGNED BY M. WENDLER  
 CHECKED BY Z. HEIMER  
 COMM. NO. 2417338

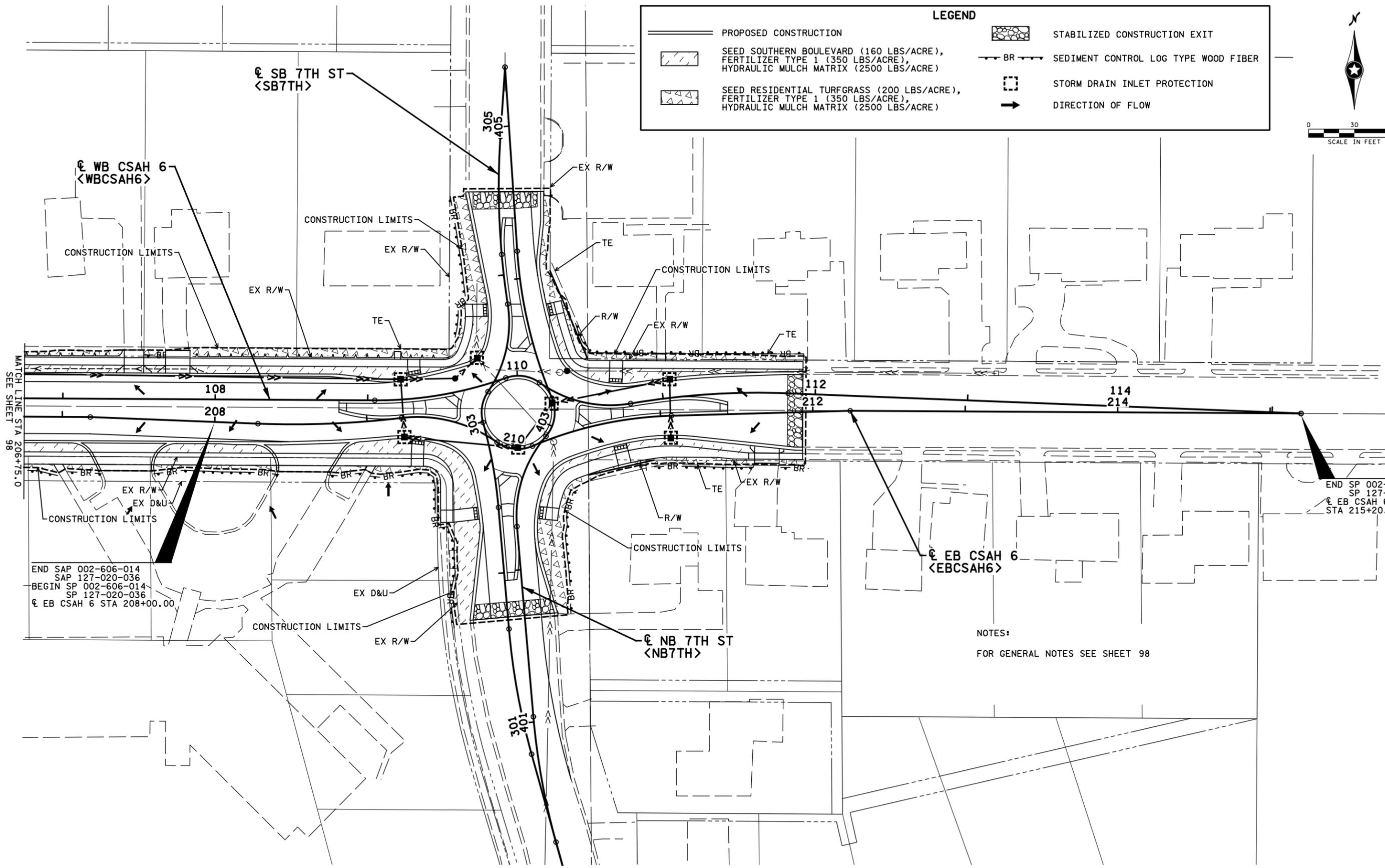
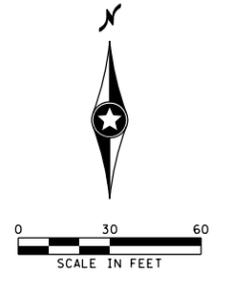


ANOKA COUNTY, MINNESOTA  
 EROSION CONTROL AND TURF ESTABLISHMENT PLANS  
 SP 002-606-014, SP 127-020-036

SHEET 98 OF 118

**LEGEND**

	PROPOSED CONSTRUCTION		STABILIZED CONSTRUCTION EXIT
	SEED SOUTHERN BOULEVARD (160 LBS/ACRE), FERTILIZER TYPE 1 (350 LBS/ACRE), HYDRAULIC MULCH MATRIX (2500 LBS/ACRE)		SEDIMENT CONTROL LOG TYPE WOOD FIBER
	SEED RESIDENTIAL TURFGRASS (200 LBS/ACRE), FERTILIZER TYPE 1 (350 LBS/ACRE), HYDRAULIC MULCH MATRIX (2500 LBS/ACRE)		STORM DRAIN INLET PROTECTION
			DIRECTION OF FLOW



MATCH LINE STA 206+75.0  
SEE SHEET 98

END SAP 002-606-014  
SAP 127-020-036  
BEGIN SP 002-606-014  
SP 127-020-036  
EB CSAH 6 STA 208+00.00

END SP 002-606-014  
SP 127-020-036  
EB CSAH 6  
STA 215+20.34

NOTES:  
FOR GENERAL NOTES SEE SHEET 98

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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
Print Name: ZACHARIAH F. HEIMER  
*Zach Heimer*  
Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
STATE PROJECT NO. 127-020-036  
STATE AID PROJECT NO. 002-606-014  
STATE AID PROJECT NO. 127-020-036  
DRAWN BY M. WENDLER  
DESIGNED BY M. WENDLER  
CHECKED BY Z. HEIMER  
COMM. NO. 2417338



ANOKA COUNTY, MINNESOTA  
EROSION CONTROL AND TURF ESTABLISHMENT PLANS  
SP 002-606-014, SP 127-020-036

SHEET 99 OF 118

**LEGEND**

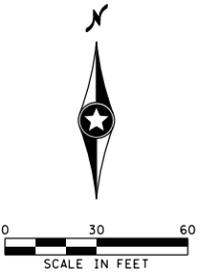
- LIGHTING UNIT TYPE 9-30
- 1.5" NMC WITH 3-1 8 AWG AND 1-1/C 8 AWG GR. (UNLESS OTHERWISE NOTED)
- SERVICE PEDESTAL CABINET TYPE L1
- INPLACE SOURCE OF POWER
- LIGHTING FOUNDATION
- INPLACE LIGHTING
- INPLACE CONDUIT

**GENERAL NOTES:**

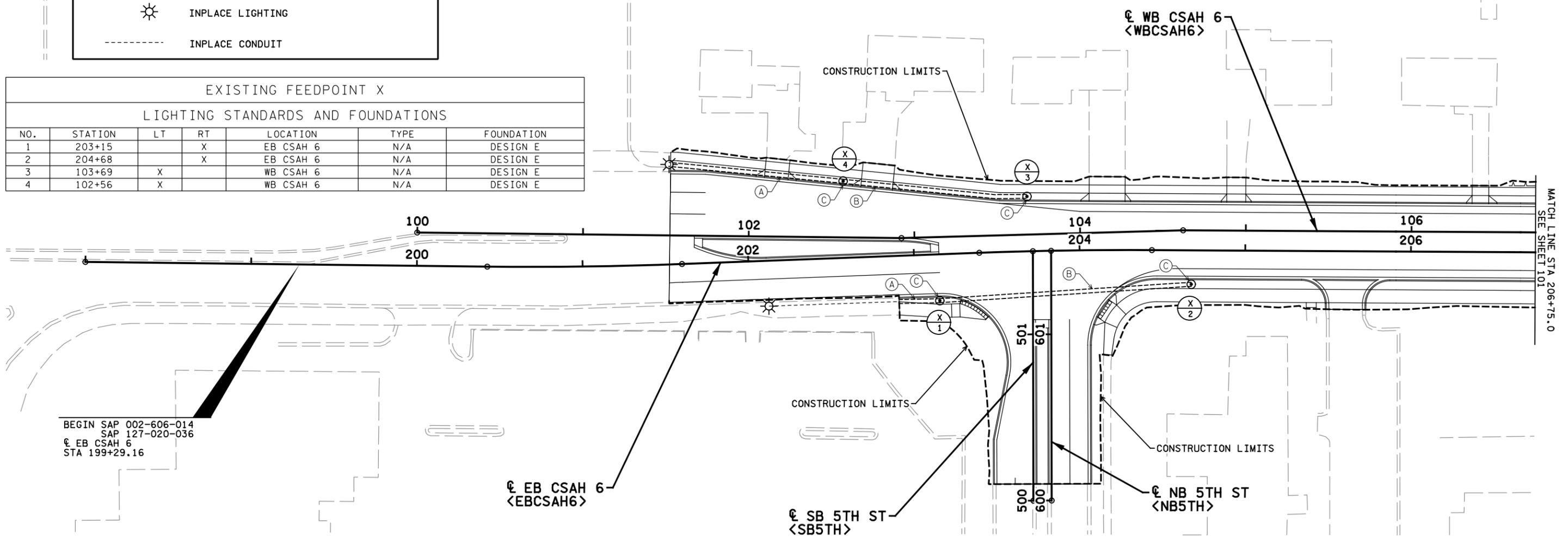
- ① THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES PRIOR TO WORK.
- ② THE CONTRACTOR SHALL COORDINATE THE PLACEMENT OF CONDUIT AND FOUNDATIONS WITH OTHER CONSTRUCTION ACTIVITIES IN THE AREA.
- ③ THE CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS AND UTILITY COORDINATION.
- ④ ALL MATERIAL AND WORK SHALL BE IN ACCORDANCE WITH THE N.E.C.
- ⑤ LIGHTING UNITS MUST MAINTAIN A MINIMUM CLEARANCE OF 10' FROM OVERHEAD POWER LINES.
- ⑥ EXACT LOCATIONS OF LIGHT, PEDESTAL, AND SERVICE CABINET FOUNDATIONS SHALL BE STAKED IN THE FIELD FOR ENGINEER APPROVAL.

**SPECIFIC NOTES:**

- (A) ROUTE PROPOSED CONDUIT TO INPLACE CONDUIT. FURNISH AND INSTALL TRACER WIRE FROM RELOCATED LIGHTING FOUNDATION TO INPLACE LIGHTING.
- (B) FURNISH AND INSTALL EMPTY 1.5" CONDUIT WITH TRACER WIRE.
- (C) FURNISH AND INSTALL LIGHTING FOUNDATION AS INDICATED. CITY TO INSTALL NEW LIGHTING UNIT AND PULL NEW LIGHTING CABLES.



EXISTING FEEDPOINT X						
LIGHTING STANDARDS AND FOUNDATIONS						
NO.	STATION	LT	RT	LOCATION	TYPE	FOUNDATION
1	203+15		X	EB CSAH 6	N/A	DESIGN E
2	204+68		X	EB CSAH 6	N/A	DESIGN E
3	103+69	X		WB CSAH 6	N/A	DESIGN E
4	102+56	X		WB CSAH 6	N/A	DESIGN E



**LIGHTING TABULATION**

ALIGNMENT	STATION TO STATION	LIGHTING UNIT TYPE 9-30	LIGHTING FOUNDATION DESIGN E	SERVICE CABINET TYPE L1	EQUIPMENT PAD B	2" RIGID STEEL CONDUIT	1.5" NON-METALLIC CONDUIT	UNDERGROUND WIRE 1/C 2 AWG	UNDERGROUND WIRE 1/C 8 AWG	UNDERGROUND WIRE 1/C 12 AWG	U
		EACH	EACH	EACH	EACH	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	
<b>SP 002-606-014 &amp; SP 127-020-036</b>											
EB CSAH 6	208+00.00 TO 209+38.63	1	1				214		939		
ROUNDBABOUT	50+00.00 TO 51+50.80										
EB CSAH 6	201+66.02 TO 215+20.34	1	1				137		615		
NB 7TH ST	301+70.98 TO 302+04.29	1	1	1	1	46	221	175	1008		
NB 7TH ST	303+69.61 TO 304+50.93	1	1				85		397		
<b>SP 002-606-014 &amp; SP 127-020-036 SUBTOTAL</b>		4	4	1	1	46	657	175	2959		
<b>SAP 002-606-014 &amp; SAP 127-020-036</b>											
EB CSAH 6	201+76.49 TO 208+00.00	1	5				474		2151	538	
<b>SAP 002-606-014 &amp; SAP 127-020-036 SUBTOTAL</b>		1	5				474		2151	538	
<b>TOTAL</b>		5	9	1	1	46	1131	175	5110	538	

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: STEVE MCHENRY  
  
 Date: 05/14/2025 License # 46710

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036  
 DRAWN BY R. THORNG  
 DESIGNED BY R. THORNG  
 CHECKED BY S. MCHENRY  
 COMM. NO. 2417338



**ANOKA COUNTY, MINNESOTA**  
 LIGHTING PLANS  
 SP 002-606-014, SP 127-020-036

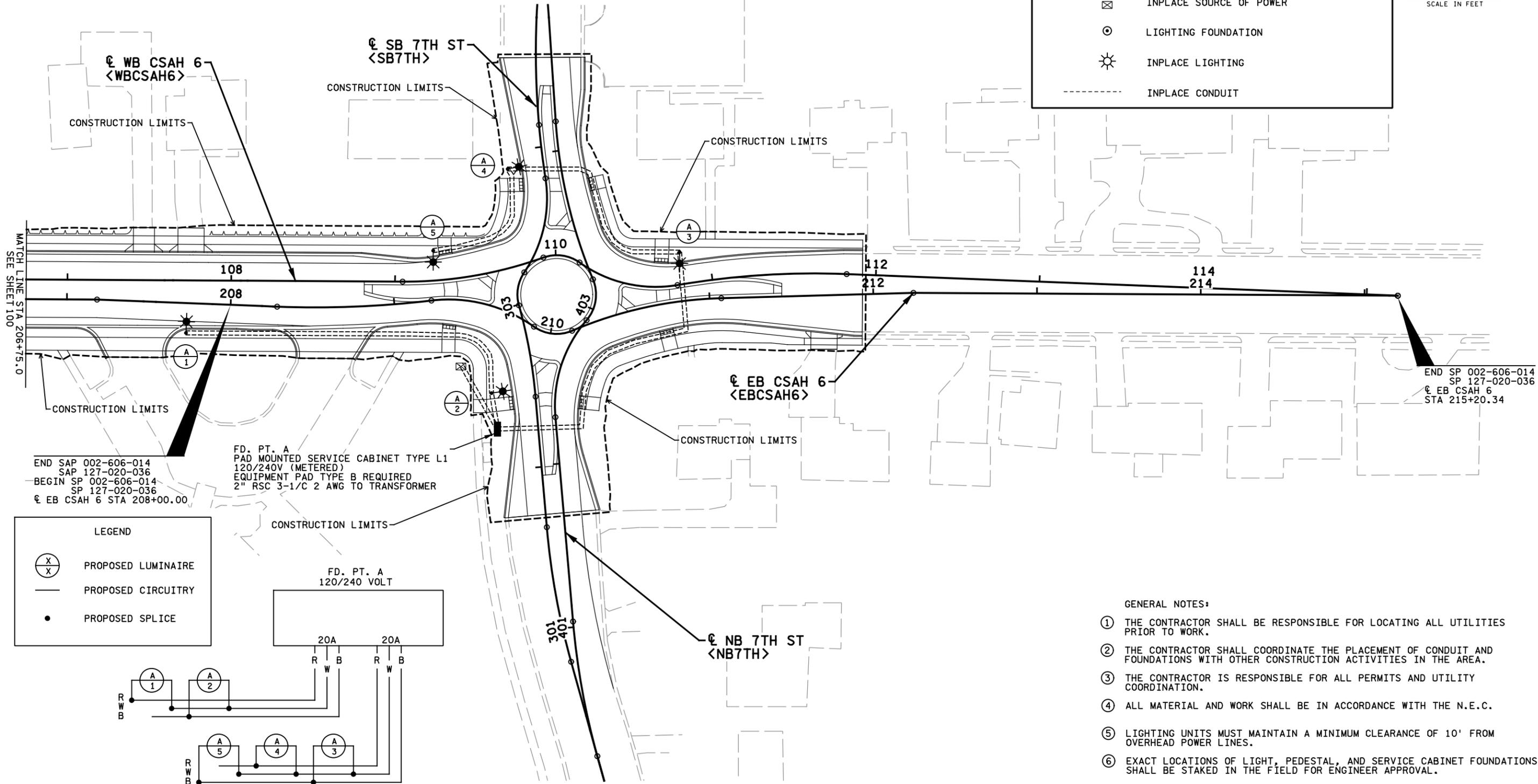
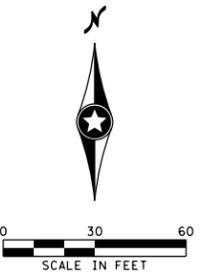
**SHEET 100 OF 118**

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FEEDPOINT A						
LIGHTING STANDARDS AND FOUNDATIONS						
NO.	STATION	LT	RT	LOCATION	TYPE	FOUNDATION
1	207+74		X	EB CSAH 6	9-30	DESIGN E
2	302+48	X		SB 7TH ST	9-30	DESIGN E
3	110+83	X		WB CSAH 6	9-30	DESIGN E
4	303+87	X		SB 7TH ST	9-30	DESIGN E
5	109+24	X		WB CSAH 6	9-30	DESIGN E

**LEGEND**

- LIGHTING UNIT TYPE 9-30
- 1.5" NMC WITH 3-1 8 AWG AND 1-1/C 8 AWG GR. (UNLESS OTHERWISE NOTED)
- SERVICE PEDESTAL CABINET TYPE L1
- INPLACE SOURCE OF POWER
- LIGHTING FOUNDATION
- INPLACE LIGHTING
- INPLACE CONDUIT



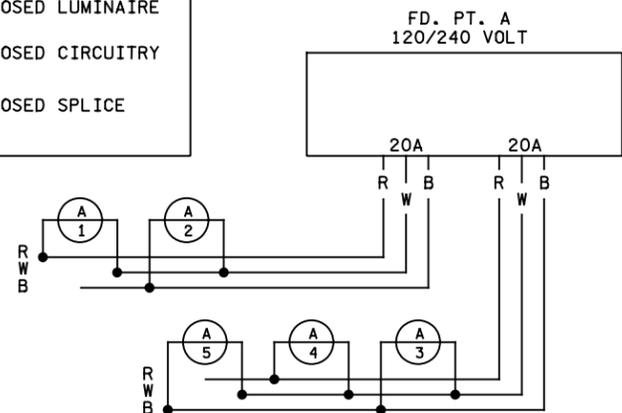
END SAP 002-606-014  
 SAP 127-020-036  
 BEGIN SP 002-606-014  
 SP 127-020-036  
 EB CSAH 6 STA 208+00.00

FD. PT. A  
 PAD MOUNTED SERVICE CABINET TYPE L1  
 120/240V (METERED)  
 EQUIPMENT PAD TYPE B REQUIRED  
 2" RSC 3-1/C 2 AWG TO TRANSFORMER

END SP 002-606-014  
 SP 127-020-036  
 EB CSAH 6  
 STA 215+20.34

**LEGEND**

- PROPOSED LUMINAIRE
- PROPOSED CIRCUITRY
- PROPOSED SPLICE



- GENERAL NOTES:**
- ① THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES PRIOR TO WORK.
  - ② THE CONTRACTOR SHALL COORDINATE THE PLACEMENT OF CONDUIT AND FOUNDATIONS WITH OTHER CONSTRUCTION ACTIVITIES IN THE AREA.
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  - ⑥ EXACT LOCATIONS OF LIGHT, PEDESTAL, AND SERVICE CABINET FOUNDATIONS SHALL BE STAKED IN THE FIELD FOR ENGINEER APPROVAL.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: STEVE MCHENRY  
 Date: 05/14/2025 License #: 46710

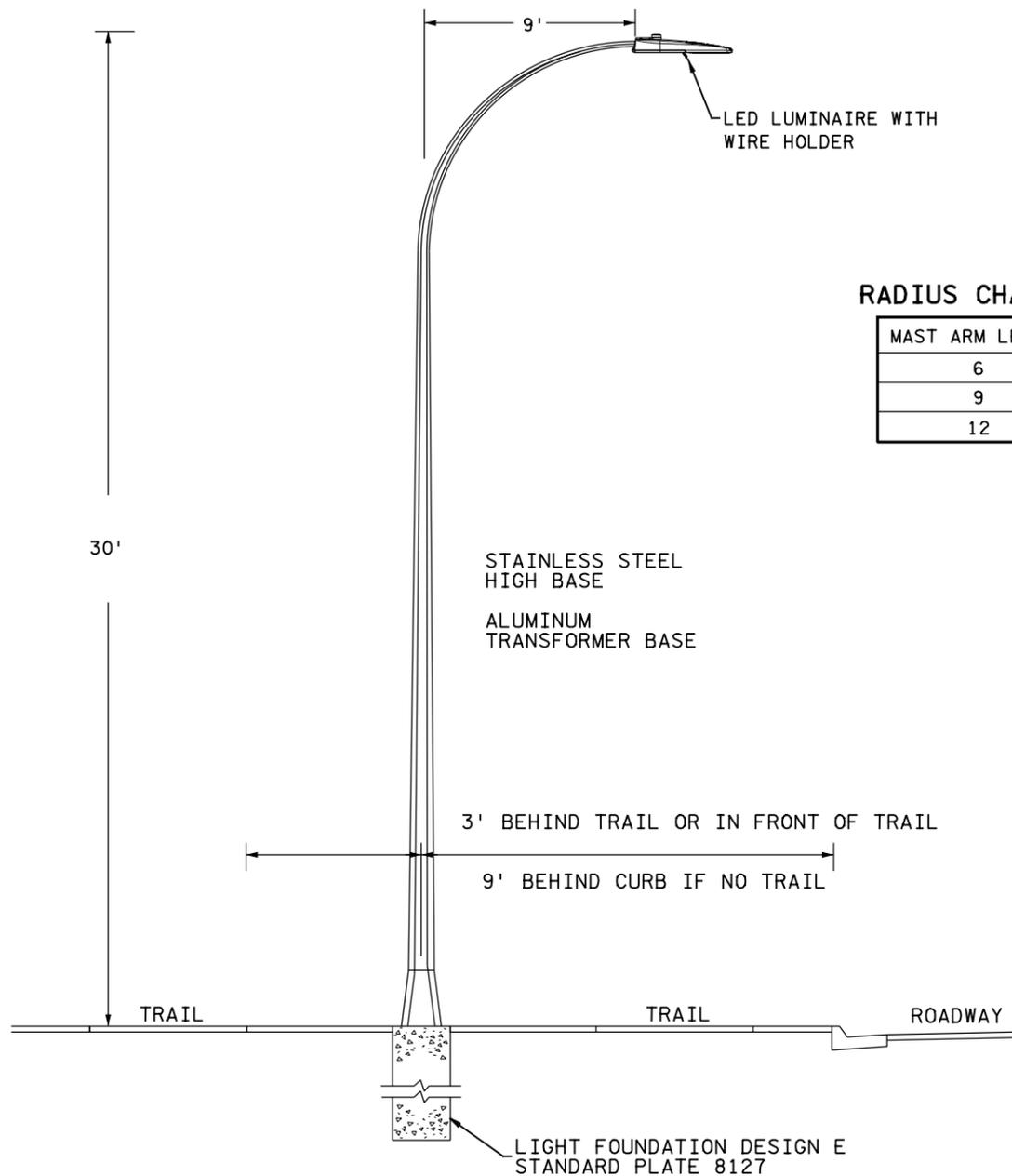
STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036  
 DRAWN BY R. THORNG  
 DESIGNED BY R. THORNG  
 CHECKED BY S. MCHENRY  
 COMM. NO. 2417338



**ANOKA COUNTY, MINNESOTA**  
 LIGHTING PLANS  
 SP 002-606-014, SP 127-020-036

**SHEET**  
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 OF  
 118

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**LIGHTING UNIT TYPE 9-30  
PLACEMENT DETAIL**  
(NON-BREAKAWAY, NOT TO SCALE)

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NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: STEVE MCHENRY

*Steve Mchenry*

Date: 05/14/2025 License # 46710

STATE PROJECT NO. 002-606-014	DRAWN BY R. THORNG
STATE PROJECT NO. 127-020-036	DESIGNED BY R. THORNG
STATE AID PROJECT NO. 002-606-014	CHECKED BY S. MCHENRY
STATE AID PROJECT NO. 127-020-036	COMM. NO. 2417338



**ANOKA COUNTY, MINNESOTA**  
 LIGHTING PLANS  
 SP 002-606-014, SP 127-020-036

**SHEET**  
**102**  
**OF**  
**118**

# SIGNING PLAN

## NOTES & GUIDELINES

### GENERAL INFORMATION:

1. MOUNTING HEIGHT IS MINIMUM (WITH A + 6 INCH TOLERANCE)
2. SEE CURRENT MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR STANDARD SIGN DESIGNS, SPLICE PLATES, STRINGERS AND PUNCHING CODES.
3. SEE PANEL LAYOUTS FOR SIGNS WITH THE CODE "DESIGN".
4. SEE STANDARD PLANS AND DETAILS FOR SIGN STRUCTURE INSTALLATION AND PLACEMENT.
5. STANDARD SIGN PANELS ARE LISTED IN THE TABULATIONS WITH TWO DIMENSIONS THAT MAY NOT BE THEIR ACTUAL WIDTH OR HEIGHT, BUT ARE LENGTHS OF THEIR SIDES OR DIAMETER. SEE THE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ACTUAL DIMENSIONS OF THESE PANELS BASED UPON THE CORRESPONDING DIMENSIONS IN THE TABULATIONS.
6. SIGNS AND DELINEATOR/MARKER TABULATIONS DISPLAY SIGN PANEL AND SUPPORT INFORMATION FOR PROPOSED SIGNS. SIGNS BEING REMOVED OR SALVAGED MAY NOT INCLUDE PANEL OR SUPPORT INFORMATION IN THE TABULATION.
7. PLACE SIGNS AFTER FINAL GRADING IS COMPLETE.
8. PLACE NEW REFERENCE LOCATION SIGNS AT THE SAME LOCATION OF THE EXISTING REFERENCE LOCATION SIGNS BEING REPLACED. IF LOCATION OF SIGNS CAN NO LONGER BE USED CONTACT MNDOT OFFICE OF TRANSPORTATION SYSTEM MANAGEMENT FOR GUIDANCE ON PLACEMENT.

## SIGNING PLAN INDEX

103	SIGNING TITLE SHEET
104 - 106	SIGNING TABULATIONS
107 - 109	SIGNING DETAILS
110 - 111	SIGNING REMOVAL PLANS
112 - 113	PROPOSED SIGNING PLANS

### ABBREVIATIONS

BR-SN	BRIDGE MOUNTED STREET NAME
BR-MG	BRIDGE MOUNTED MINOR GUIDE
CR	CONCRETE RAIL - POST TYPE
MA	MAST ARM
R	ROUND POST
SO-CONC	SQUARE TUBE ON CONCRETE
U-SOIL	U TUBE IN SOIL
U	U CHANNEL

### SIGNING LEGEND

┌	SIGN
┌┐	SIGN BACK TO BACK
┌┐┌	I-BEAM SIGN
☼	SIGN ON LIGHT POLE
○	SIGN ON ROUND POST
○┌	SIGN ON ROUND POST BACK TO BACK

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

Print Name: CLAYTON W. BAYER

*Clayton Bayer*  
Date: 05/14/2025 License # 57865

STATE PROJECT NO.  
002-606-014

STATE PROJECT NO.  
127-020-036

STATE AID PROJECT NO.  
002-606-014  
STATE AID PROJECT NO.  
127-020-036

DRAWN BY  
AA

DESIGNED BY  
SB

CHECKED BY  
CB

COMM. NO. 2417338



**ANOKA COUNTY, MINNESOTA**

SIGNING TITLE SHEET  
SP 002-606-014, SP 127-020-036

**SHEET  
103  
OF  
118**

NO	DATE	BY	CKD	APPR	REVISION

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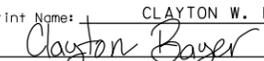
**SIGN AND DELINEATOR / MARKER**

SIGN NUMBER	PANEL				SUPPORT		REMOVE SIGN EACH	SIGN SQ FT	REMOVE DELINEATOR / MARKER EACH	DELINEATOR / MARKER EACH	DELINEATOR / MARKER PANEL EACH
	PANEL CODE	LEGEND	SIZE (W x H)	MOUNTING HEIGHT	TYPE (2)	NUMBER OF POSTS					
			INCHES	FEET							
<b>SAP 002-606-014 &amp; SAP 127-020-036 (NON-PARTICIPATING)</b>											
(1)	S-01	R3-4	NO U-TURN	24 x 24	7			4.00			
		R4-7	KEEP RIGHT	24 x 30		SQ-CONC	1	5.00			
		OM1-2	TYPE 1 OBJECT MARKER	18 x 18	4						1
	S-02	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7	U-SOIL	1	6.25			
	S-03	R5-1	DO NOT ENTER	30 x 30	7	SQ-CONC	1	6.25			
	S-04	OM3-L	TYPE 3 OBJECT MARKER LEFT	12 x 36	4	SQ-CONC	1		1	1	
(1)	S-05	R3-4	NO U-TURN	24 x 24	7			4.00			
		R4-7	KEEP RIGHT	24 x 30		SQ-CONC	1	5.00			
		OM1-2	TYPE 1 OBJECT MARKER	18 x 18	4						1
	S-06	R2-1	SPEED LIMIT 35	24 x 30	7	U-SOIL	1	5.00			
	S-07	R4-7	KEEP RIGHT	24 x 30	7						
		OM1-2	TYPE 1 OBJECT MARKER	18 x 18	4	SQ-CONC	1				1
	S-08	R5-1	DO NOT ENTER	30 x 30	7	SQ-CONC	1	6.25			
	S-09	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7	SQ-CONC	1	6.25			
	S-10	R6-1L	ONE WAY LEFT	54 x 18	7	U-SOIL	1	6.75			
	S-11	R3-8CA	T-R	36 x 30	7	SQ-CONC	1	7.50			
	S-12	R6-1R	ONE WAY RIGHT	36 x 12	7			3.00			
		R1-1	STOP	36 x 36		U-SOIL	2	9.00			
		X4-3W	CYLINDER STYLE DELINIATOR (WHITE)	6 x 9	4						1
	S-13	M2-1	JCT (BLUE)	21 x 15	7	U-SOIL	1	2.19			
		M1-5M	MINNEOSTA HWY 47	24 x 24				4.00			
		I-8	LIBRARY	24 x 24				4.00			
(1)	S-14	M6-1L	ARROW LEFT (GREEN)	21 x 15	7	U-SOIL	1	2.19			
		I-8	LIBRARY	24 x 24				4.00			
		M6-1R	ARROW RIGHT (GREEN)	21 x 15				2.19			
		R8-3	NO PARKING	24 x 24				4.00			
	S-15	W3-1	STOP AHEAD	x					1		
	S-16	R8-3	NO PARKING	x					1		
		W3-1	STOP AHEAD	x							
	S-30	W8-2	DIP	x					1		
		DESIGN	AT SIGNAL	x							
	S-31	W3-2	YIELD AHEAD	30 x 30	7	U-SOIL	1	6.25			
	S-63	R3-9B	TWO WAY LEFT TURN LANE	24 x 36	7	U-SOIL	1	6.00			
	S-64	R3-9B	TWO WAY LEFT TURN LANE	24 x 36	7	U-SOIL	1	6.00			
<b>TOTAL SAP 002-606-014 &amp; SAP 127-020-036 (NON-PARTICIPATING)</b>							<b>16</b>	<b>120</b>	<b>1</b>	<b>1</b>	<b>4</b>
<b>SP 002-606-014 &amp; SP 127-020-036 (PARTICIPATING)</b>											
	S-17	R1-1	STOP	x					1		
		R1-3P	ALL WAY PLAQUE	x							
		X4-3	CYLINDER STYLE DELINIATOR (WHITE)	x							
	S-18	R2-1	SPEED LIMIT 30	24 x 30	7	U-SOIL	1	5.00			
	S-19	R3-8DA	LT-R	x					1		
		R1-1	STOP	x							
	S-20	R1-3P	ALL WAY PLAQUE	x					1		
		X4-3	CYLINDER STYLE DELINIATOR (WHITE)	x							
		R1-1	STOP	x							
	S-21	R1-3P	ALL WAY PLAQUE	x					1		
		X4-3	CYLINDER STYLE DELINIATOR (WHITE)	x							
	S-22	W3-1	STOP AHEAD	x					1		
	S-23	W3-1	STOP AHEAD	x					1		
	S-24	R8-3	NO PARKING	x					1		
		R8-3PM	HERE TO CORNER	x							
		R1-1	STOP	x							
	S-25	R1-3P	ALL WAY PLAQUE	x					1		
		X4-3	CYLINDER STYLE DELINIATOR (WHITE)	x							
	S-26	R3-8AD	L-TR	x					1		
		R1-1	STOP	x							
	S-27	R1-3P	ALL WAY PLAQUE	x					1		
		X4-3	CYLINDER STYLE DELINIATOR (WHITE)	x							
		R1-1	STOP	x							
	S-28	R1-3P	ALL WAY PLAQUE	x					1		
		X4-3	CYLINDER STYLE DELINIATOR (WHITE)	x							
	S-29	R2-1	SPEED LIMIT 35	24 x 30	7	U-SOIL	1	5.00			

SPECIFIC NOTE(S):  
 (1) MOUNT BACK TO BACK.  
 (2) U -CHANNEL 3# PER FOOT BLACK POST

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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CLAYTON W. BAYER  
  
 Date: 05/14/2025 License # 57865

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036  
 DRAWN BY AA  
 DESIGNED BY SB  
 CHECKED BY CB  
 COMM. NO. 2417338



**ANOKA COUNTY, MINNESOTA**  
 SIGNING TABULATIONS  
**SP 002-606-014, SP 127-020-036**

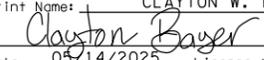
**SHEET 104 OF 118**

**SIGN AND DELINEATOR / MARKER**

SIGN NUMBER	PANEL				SUPPORT		REMOVE SIGN	SIGN	REMOVE DELINEATOR / MARKER	DELINEATOR / MARKER	DELINEATOR / MARKER PANEL
	PANEL CODE	LEGEND	SIZE (W x H)	MOUNTING HEIGHT	TYPE (2)	NUMBER OF POSTS					
			INCHES	FEET							
S-32	W16-8P	STREET NAME PLAQUE (7TH ST NE)	32 x 8	7	U-SOIL	1		1.78			
	W2-6	ROUNDAABOUT	30 x 30					6.25			
	W13-1P	15 MPH PLAQUE	24 x 24					4.00			
S-33	R3-4	NO U-TURN	24 x 24	7	SQ-CONC	1		4.00			
	R4-7	KEEP RIGHT	24 x 30					5.00			
	OM1-2	TYPE 1 OBJECT MARKER	18 x 18								
S-34	R1-6A	STATE LAW STOP FOR PED W/I X-WALK	12 x 36	7	U-SOIL	1		3.00			
S-35	R6-1R	ONE WAY RIGHT	36 x 12	7	U-SOIL	1		3.00			
	R1-2	YIELD	36 x 36 x 36					4.00			
S-36	D1-1D	ROUNDAABOUT DIRECTION (7TH ST NE) R45DEG	60 x 18	7	U-SOIL	1		7.50			
S-37	W11-2	PEDESTRIAN CROSSING	30 x 30	7	U-SOIL	1		6.25			
	W16-7PL	DOWN ARROW LEFT PLAQUE (FLUORESCENT YELLOW-GREEN)	30 x 18					3.75			
S-38	M3-4	WEST (BLUE)	24 x 12	7	U-SOIL	1		2.00			
	M1-6M	ANOKA COUNTY 6	24 x 24					4.00			
	M5-3	CURVED STEM (BLUE)	21 x 15					2.19			
S-39	M3-2	EAST (BLUE)	24 x 12	7	U-SOIL	1		2.00			
	M1-6M	ANOKA COUNTY 6	24 x 24					4.00			
	M5-1R	ADVANCE TURN RIGHT (BLUE)	21 x 15					2.19			
S-40	W3-2	YIELD AHEAD	30 x 30	7	U-SOIL	1		6.25			
S-41	W16-8P	STREET NAME PLAQUE (MISSISSIPPI ST)	42 x 8	7	U-SOIL	1		2.33			
	W2-6	ROUNDAABOUT	30 x 30					6.25			
	W13-1P	15 MPH PLAQUE	24 x 24					4.00			
S-42	R3-4	NO U-TURN	24 x 24	7	SQ-CONC	1		4.00			
	R4-7	KEEP RIGHT	24 x 30					5.00			
	OM1-2	TYPE 1 OBJECT MARKER	18 x 18								
S-43	R1-6A	STATE LAW STOP FOR PED W/I X-WALK	12 x 36	7	U-SOIL	1		3.00			
S-44	R6-1R	ONE WAY RIGHT	36 x 12	7	U-SOIL	1		3.00			
	R1-2	YIELD	36 x 36 x 36					4.00			
S-45	M3-2	EAST (BLUE)	24 x 12	7	U-SOIL	1		2.00			
	M1-6M	ANOKA COUNTY 6	24 x 24					4.00			
	M6-2R	ARROW RIGHT (BLUE)	21 x 15					2.19			
S-46	W11-2	PEDESTRIAN CROSSING	30 x 30	7	U-SOIL	1		6.25			
	W16-7PL	DOWN ARROW LEFT PLAQUE (FLUORESCENT YELLOW-GREEN)	30 x 18					3.75			
S-47	W3-2	YIELD AHEAD	30 x 30	7	U-SOIL	1		6.25			
S-48	W16-8P	STREET NAME PLAQUE (7TH ST NE)	32 x 8	7	U-SOIL	1		1.78			
	W2-6	ROUNDAABOUT	30 x 30					6.25			
	W13-1P	15 MPH PLAQUE	24 x 24					4.00			
S-49	R3-4	NO U-TURN	24 x 24	7	SQ-CONC	1		4.00			
	R4-7	KEEP RIGHT	24 x 30					5.00			
	OM1-2	TYPE 1 OBJECT MARKER	18 x 18								
S-50	R1-6A	STATE LAW STOP FOR PED W/I X-WALK	12 x 36	7	U-SOIL	1		3.00			
S-51	R6-1R	ONE WAY RIGHT	36 x 12	7	U-SOIL	1		3.00			
	R1-2	YIELD	36 x 36 x 36					4.00			
S-52	D1-1D	ROUNDAABOUT DIRECTION (7TH ST NE) R45DEG	60 x 18	7	U-SOIL	1		7.50			
S-53	W11-2	PEDESTRIAN CROSSING	30 x 30	7	U-SOIL	1		6.25			
	W16-7PL	DOWN ARROW LEFT PLAQUE (FLUORESCENT YELLOW-GREEN)	30 x 18					3.75			
S-54	M3-2	EAST (BLUE)	24 x 12	7	U-SOIL	1		2.00			
	M1-6M	ANOKA COUNTY 6	24 x 24					4.00			
	M5-3	CURVED STEM (BLUE)	21 x 15					2.19			
S-55	M3-4	WEST (BLUE)	24 x 12	7	U-SOIL	1		2.00			
	M1-6M	ANOKA COUNTY 6	24 x 24					4.00			
	M5-1R	ADVANCE TURN RIGHT (BLUE)	21 x 15					2.19			
S-56	W3-2	YIELD AHEAD	30 x 30	7	U-SOIL	1		6.25			
S-57	W16-8P	STREET NAME PLAQUE (MISSISSIPPI ST)	42 x 8	7	U-SOIL	1		2.33			
	W2-6	ROUNDAABOUT	30 x 30					6.25			
	W13-1P	15 MPH PLAQUE	24 x 24					4.00			
S-58	R3-4	NO U-TURN	24 x 24	7	SQ-CONC	1		4.00			
	R4-7	KEEP RIGHT	24 x 30					5.00			
	OM1-2	TYPE 1 OBJECT MARKER	18 x 18								

SPECIFIC NOTE(S):  
 (1) MOUNT BACK TO BACK.  
 (2) U -CHANNEL 3# PER FOOT BLACK POST

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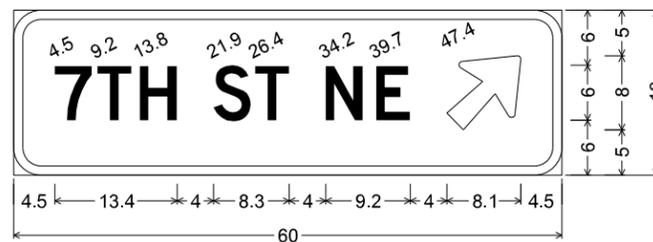
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: <u>CLAYTON W. BAYER</u>  Date: <u>05/14/2025</u> License # <u>57865</u>					STATE PROJECT NO. 002-606-014 STATE PROJECT NO. 127-020-036 STATE AID PROJECT NO. 002-606-014 STATE AID PROJECT NO. 127-020-036		DRAWN BY AA DESIGNED BY SB CHECKED BY CB COMM. NO. 2417338				<b>ANOKA COUNTY, MINNESOTA</b> SIGNING TABULATIONS SP 002-606-014, SP 127-020-036		SHEET <b>105</b> OF <b>118</b>
NO DATE BY CKD APPR REVISION													

SIGN AND DELINEATOR / MARKER											K
SIGN NUMBER	PANEL			SUPPORT		REMOVE SIGN	SIGN	REMOVE DELINEATOR / MARKER	DELINEATOR / MARKER	DELINEATOR / MARKER PANEL	
	PANEL CODE	LEGEND	SIZE (W x H)	MOUNTING HEIGHT	TYPE (2)						NUMBER OF POSTS
			INCHES	FEET			EACH	SQ FT	EACH	EACH	
S-59	R1-6A	STATE LAW STOP FOR PED W/I X-WALK	12 x 36	7	U-SOIL	1		3.00			
S-60	R6-1R	ONE WAY RIGHT	36 x 12	7	U-SOIL	1		3.00			
	R1-2	YIELD	36 x 36 x 36					4.00			
S-61	M3-4	WEST (BLUE)	24 x 12	7	U-SOIL	1		2.00			
	M1-6M	ANOKA COUNTY 6	24 x 24					4.00			
	M6-2R	ARROW RIGHT (BLUE)	21 x 15					2.19			
S-62	W11-2	PEDESTRIAN CROSSING	30 x 30	7	U-SOIL	1		6.25			
	W16-7PL	DOWN ARROW LEFT PLAQUE (FLUORESCENT YELLOW-GREEN)	30 x 18					3.75			
S-65	W4-2L	LANE REDUCTION LEFT	36 x 36	7	U-SOIL	1		9.00			
S-66	W9-1L	LEFT LANE ENDS	36 x 36	7	U-SOIL	1		9.00			
	W16-2P	300 FEET PLAQUE	24 x 18					3.00			
TOTAL SP 002-606-014 & SP 127-020-036 (PARTICIPATING)							13	279		4	
TOTAL SAP 002-606-014 & SAP 127-020-036 (NON-PARTICIPATING), SP 002-606-014 & SP 127-020-036 (PARTICIPATING)							29	399	1	1	8

SIGN SPECIAL								L	
SIGN NUMBER	PANEL			SUPPORT		REMOVE SIGN SPECIAL	SALVAGE SIGN SPECIAL	INSTALL SIGN SPECIAL	
	PANEL CODE	LEGEND	SIZE (W x H)	TYPE	NUMBER OF POSTS				
			INCH			EACH	EACH	EACH	
SAP 002-606-014 & SAP 127-020-036 (NON-PARTICIPATING)									
(1) S-501	D3-1	MISSISSIPPI ST	x	R	1		1	1	
	D3-1	MISSISSIPPI ST	x						
	D3-1	5TH ST NE	x						
	D3-1	5TH ST NE	x						
TOTAL SAP 002-606-014 & SAP 127-020-036 (NON-PARTICIPATING)								1	
SP 002-606-014 & SP 127-020-036 (PARTICIPATING)									
(1) S-502	D3-1	MISSISSIPPI ST	x	R		1			
	D3-1	MISSISSIPPI ST	x						
	D3-1	7TH ST NE	x						
	D3-1	7TH ST NE	x						
S-503	D3-1	RICE CREEK TERRACE W	x		1		1	1	
TOTAL SP 002-606-014 & SP 127-020-036 (PARTICIPATING)							1	1	1
TOTAL							1	2	2

SPECIFIC NOTE(S):  
(1) MOUNT BACK TO BACK.

S - 36 & 52



7TH ST NE RIGHT 45 DEG ARROW;  
3.0" Radius, 1.0" Border, White on Green;  
"7TH ST NE", D 2K; Arrow 3 - 10.0" 45°;

S - 48 & 32



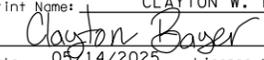
7TH ST NE;  
1.5" Radius, 0.4" Border, Black on Yellow;  
"7th St NE", D 2K;

S - 41 & 57



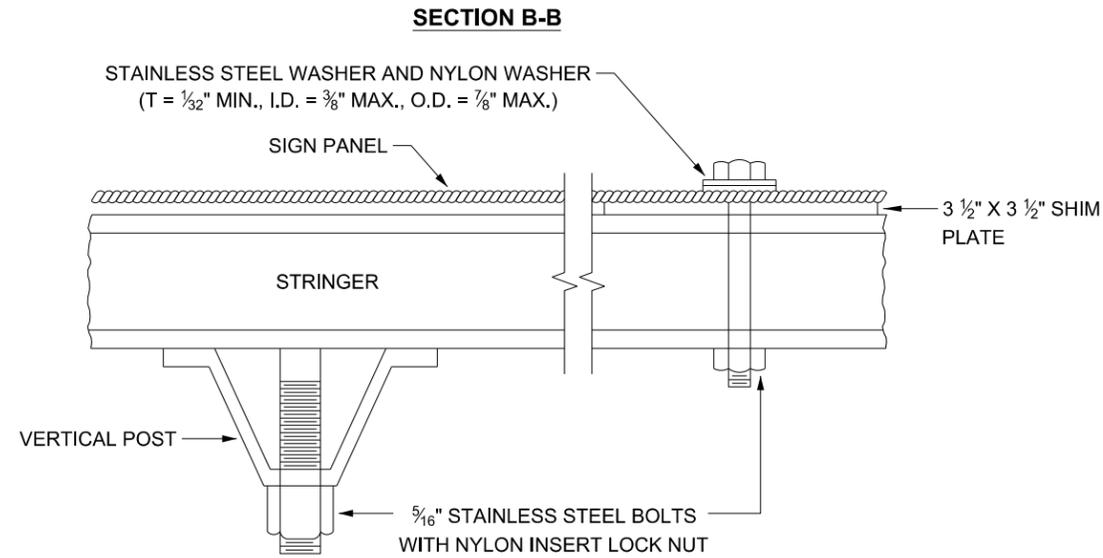
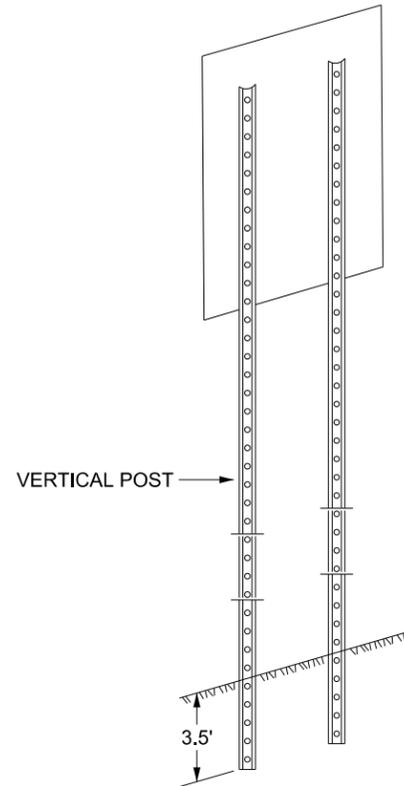
MISSISSIPPI ST NE PLAQUE;  
1.5" Radius, 0.4" Border, Black on Yellow;  
"Mississippi St", D 2K;

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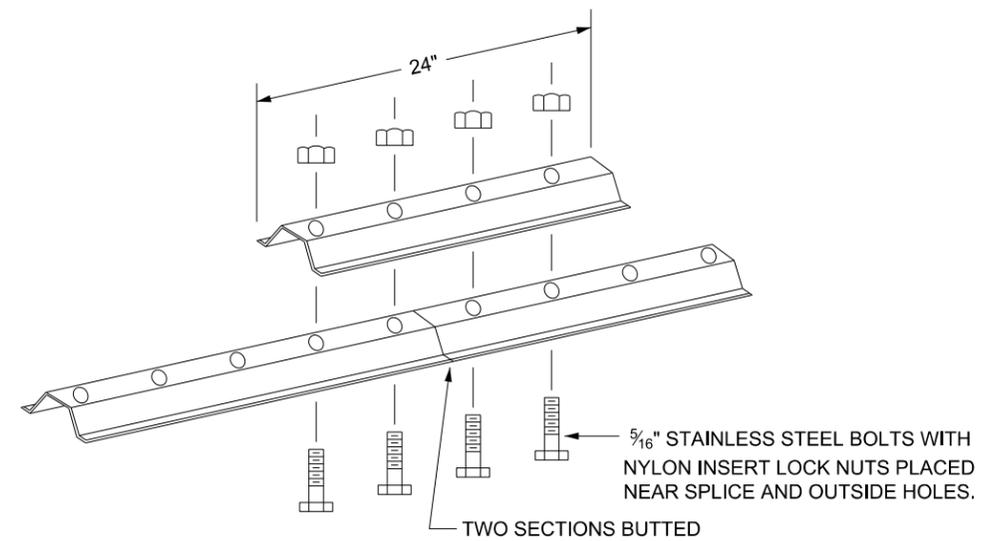
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NO DATE BY CKD APPR REVISION ...F InaIPlanC\17338_snd04.dgn								

# TYPE C & D SIGN STRUCTURAL DETAILS

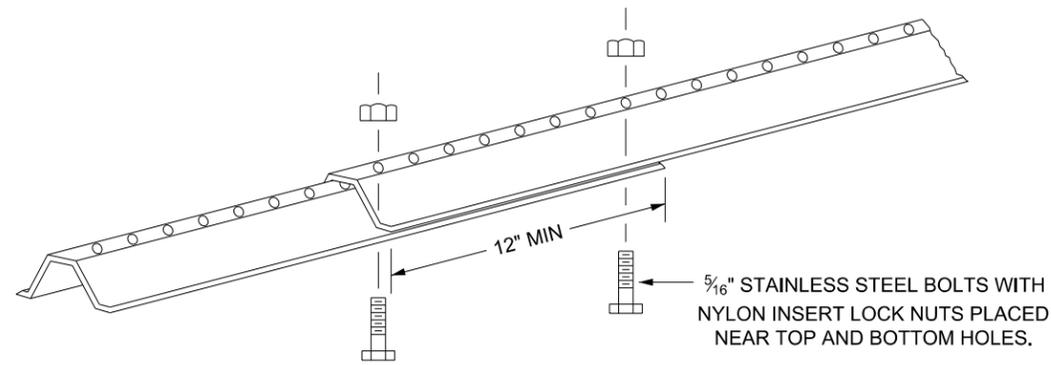
## TYPICAL INSTALLATION 36" AND LARGER TYPE "C" SIGNS



## LATERAL BRACE OR STRINGER SPLICE DETAIL (EXPLODED VIEW)



## KNEE BRACE SPLICE



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 Print Name: **CLAYTON W. BAYER**  
*Clayton Bayer*  
 Date: **05/14/2025** License #: **57865**

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036

DRAWN BY AA  
 DESIGNED BY SB  
 CHECKED BY CB  
 COMM. NO. 2417338

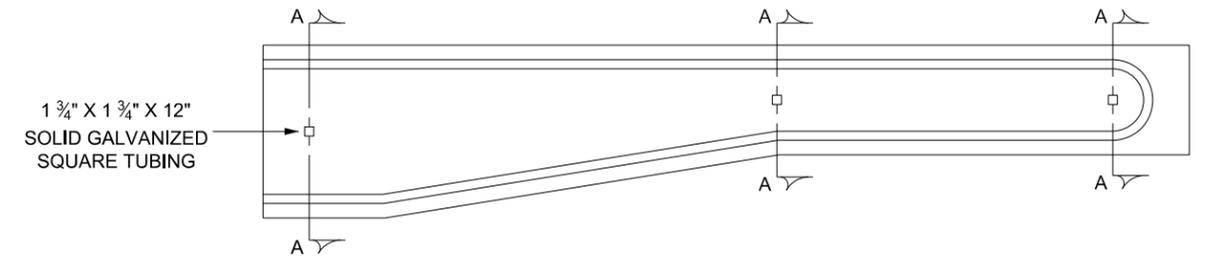


**ANOKA COUNTY, MINNESOTA**  
 SIGNING DETAILS  
 SP 002-606-014, SP 127-020-036

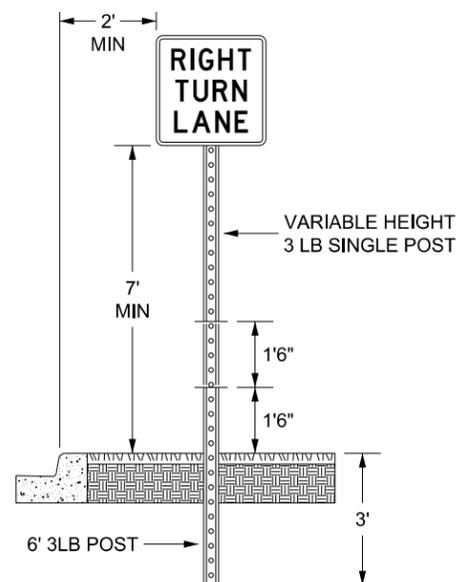
**SHEET 107 OF 118**

# SIGN INSTALLATION TYPICALS

## SECTION A-A



## GROUND POST MOUNT



### SIGN NOTES:

- TELES PAR INSERT NOT TO BE INSERTED MORE THAN 3 MOUNTING HOLES DEEP INTO BASE. TYPICAL ON ALL SIGN INSTALLATIONS.

### INSTALLATION NEAR SHARED-USE PATHWAY (MN MUTCD):

- THE MINIMUM HEIGHT MEASURED VERTICALLY FROM THE SHARED-USE PATHWAY TO THE BOTTOM OF THE SIGN SHALL BE 7 FEET. IF A SECONDARY SIGN IS MOUNTED BELOW THE PRIMARY SIGN AND IS MOUNTED LESS THAN 7 FEET, IT SHALL NOT PROJECT MORE THAN 4 INCHES INTO THE SHARED-USE PATHWAY.

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*Clayton Bayer*

Date: 05/14/2025 License # 57865

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036

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 CHECKED BY CB  
 COMM. NO. 2417338



**ANOKA COUNTY, MINNESOTA**

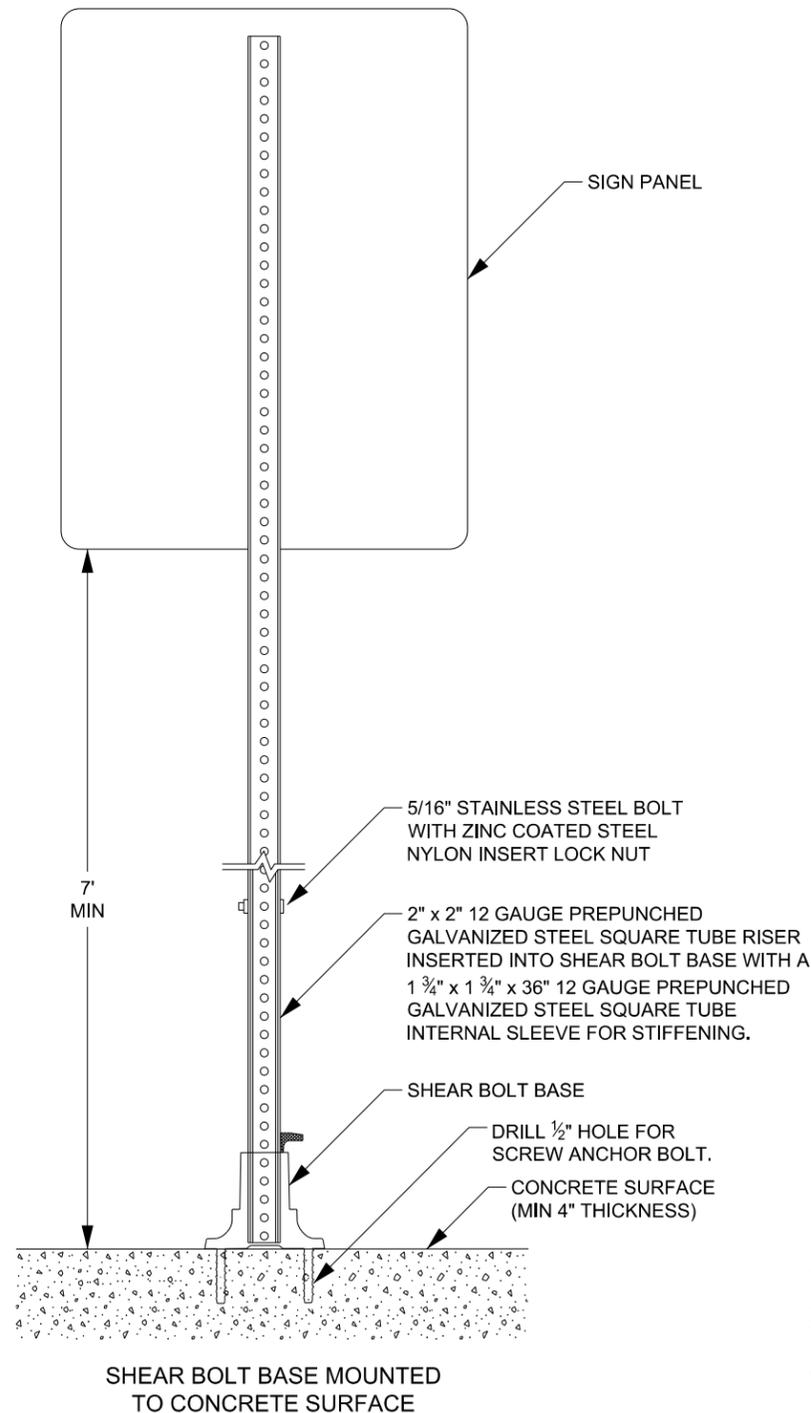
SIGNING DETAILS

SP 002-606-014, SP 127-020-036

SHEET 108 OF 118

# SIGN INSTALLATION TYPICALS

## ISLAND MOUNT SQUARE TUBE SHEAR BOLT BASE SIGN INSTALLATION TYPICAL

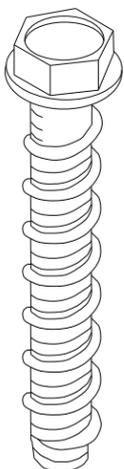


**SIGN NOTES:**

1. TO MEET CRASHWORTHY REQUIREMENTS THE DISTANCE BETWEEN THE BOTTOM OF THE SIGN PANEL AND THE GROUND SURFACE BELOW ANY PORTION OF THE PRIMARY SIGN PANEL MUST BE A MINIMUM OF 7 FEET. SEE TABULATIONS FOR MOUNTING HEIGHT.
2. INSTALLATION OF SHEAR BOLT BASE MUST BE NO EARLIER THAN 3 DAYS AFTER CONCRETE IS PLACED.
3. FOR SHEAR BOLT BASE USE APPROVED PRODUCT FROM MnDOT APPROVED PRODUCTS LIST. PRODUCT MUST BE MODIFIED AS SHOWN.
4. USE ANTI SEIZE ON THE SHEAR BOLT CONNECTIONS.

**INSTALLATION NEAR SHARED-USE PATHWAY (MN MUTCD):**

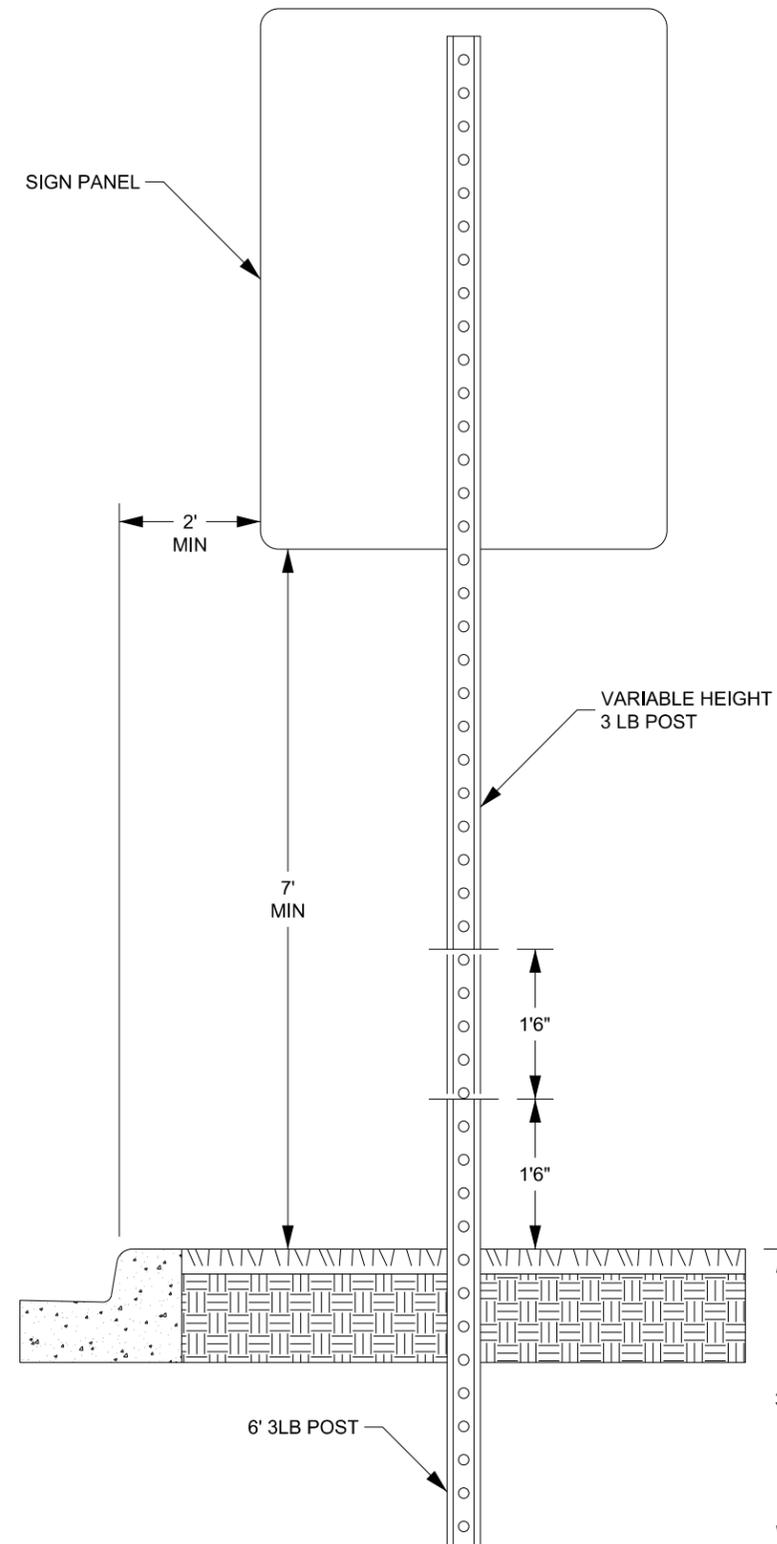
- THE MINIMUM HEIGHT MEASURED VERTICALLY FROM THE SHARED-USE PATHWAY TO THE BOTTOM OF THE SIGN SHALL BE 7 FEET. IF A SECONDARY SIGN IS MOUNTED BELOW THE PRIMARY SIGN AND IS MOUNTED LESS THAN 7 FEET, IT SHALL NOT PROJECT MORE THAN 4 INCHES INTO THE SHARED-USE PATHWAY.



**SCREW ANCHOR BOLT**

5" LONG CARBON STEEL THAT MUST MEET A MINIMUM ALLOWABLE TENSION LOAD OF 2270 PSI.

## GROUND POST MOUNT SIGN INSTALLATION TYPICAL



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*Clayton Bayer*

Date: **05/14/2025** License #: **57865**

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STATE PROJECT NO. 127-020-036	DESIGNED BY SB
STATE AID PROJECT NO. 002-606-014	CHECKED BY CB
STATE AID PROJECT NO. 127-020-036	COMM. NO. 2417338



**ANOKA COUNTY, MINNESOTA**

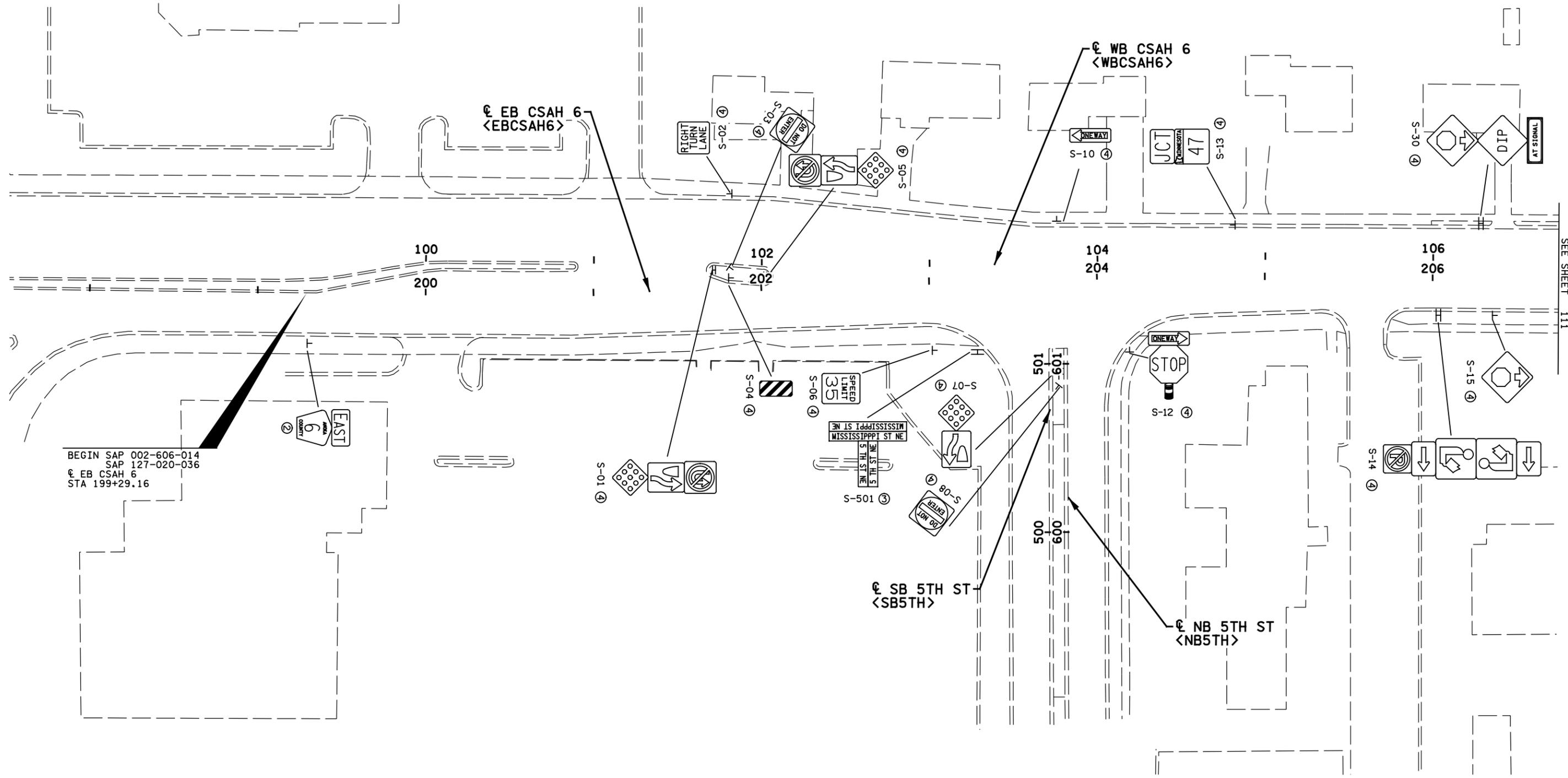
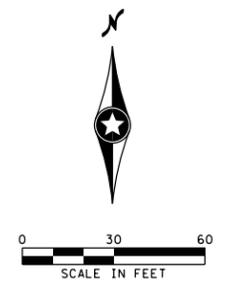
SIGNING DETAILS

SP 002-606-014, SP 127-020-036

SHEET  
109  
OF  
118

GENERAL NOTES:  
 CENTERLINE NOT SHOWN FOR CLARITY  
 APPLY REAR DELINEATOR TO ALL R4-7 SIGN PANELS.  
 (INCIDENTAL)

SPECIFIC NOTES:  
 ② INPLACE  
 ③ SALVAGE  
 ④ REMOVE



BEGIN SAP 002-606-014  
 SAP 127-020-036  
 EB CSAH 6  
 STA 199+29.16

MATCH LINE STA 206+75.0  
 SEE SHEET 111

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*Clayton Bayer*

Date: 05/14/2025 License #: 57865

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 STATE PROJECT NO. 127-020-036

DESIGNED BY SB  
 CHECKED BY CB

STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036

COMM. NO. 2417338



ANOKA COUNTY, MINNESOTA

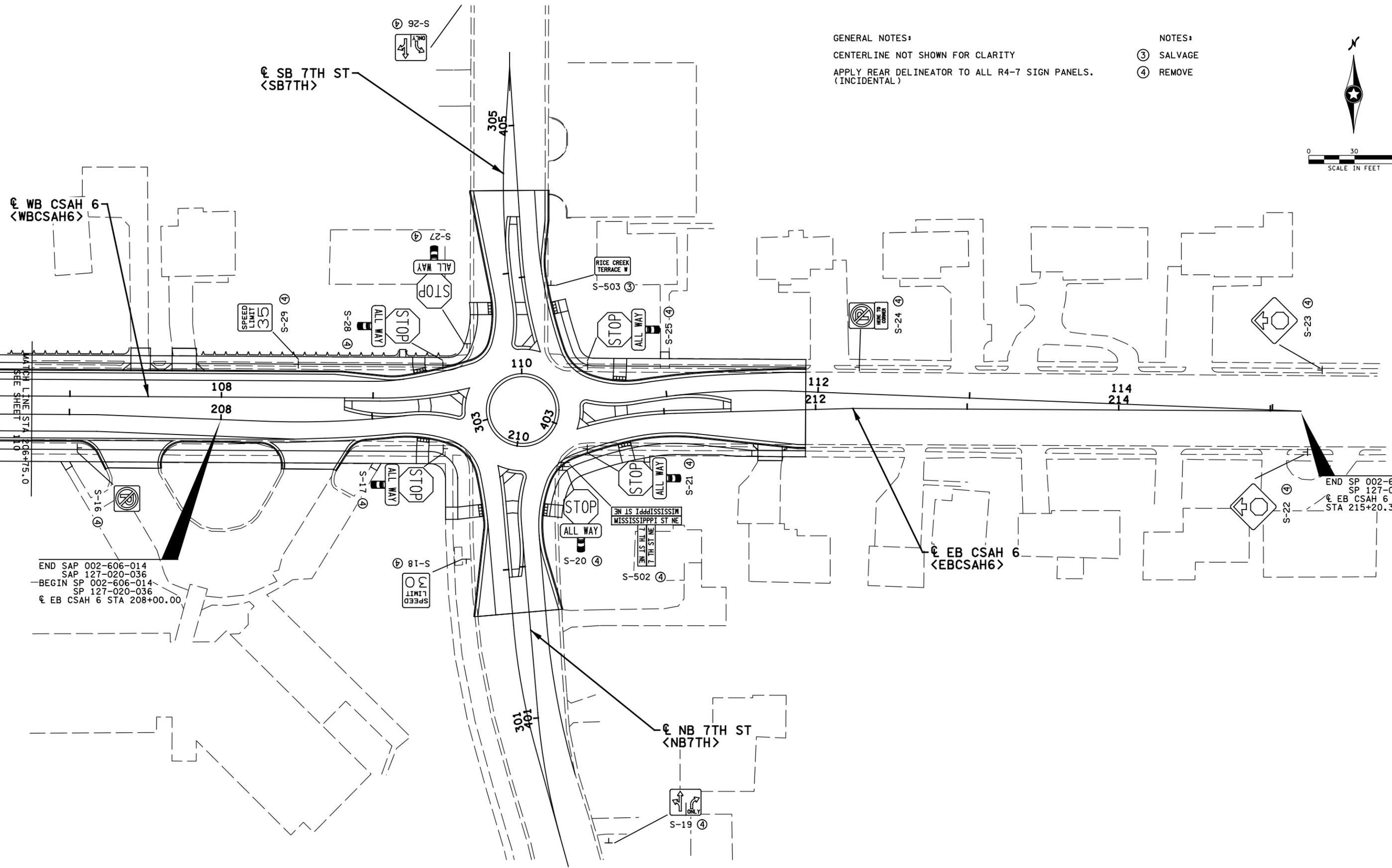
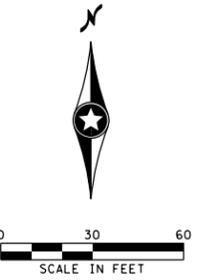
SIGNING REMOVAL PLANS

SP 002-606-014, SP 127-020-036

SHEET 110 OF 118

GENERAL NOTES:  
 CENTERLINE NOT SHOWN FOR CLARITY  
 APPLY REAR DELINEATOR TO ALL R4-7 SIGN PANELS.  
 (INCIDENTAL)

NOTES:  
 ③ SALVAGE  
 ④ REMOVE



END SAP 002-606-014  
 SAP 127-020-036  
 BEGIN SP 002-606-014  
 SP 127-020-036  
 EB CSAH 6 STA 208+00.00

END SP 002-606-014  
 SP 127-020-036  
 EB CSAH 6  
 STA 215+20.34

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*Clayton W. Bayer*  
 Date: 05/14/2025 License #: 57865

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036  
 DRAWN BY AA  
 DESIGNED BY SB  
 CHECKED BY CB  
 COMM. NO. 2417338

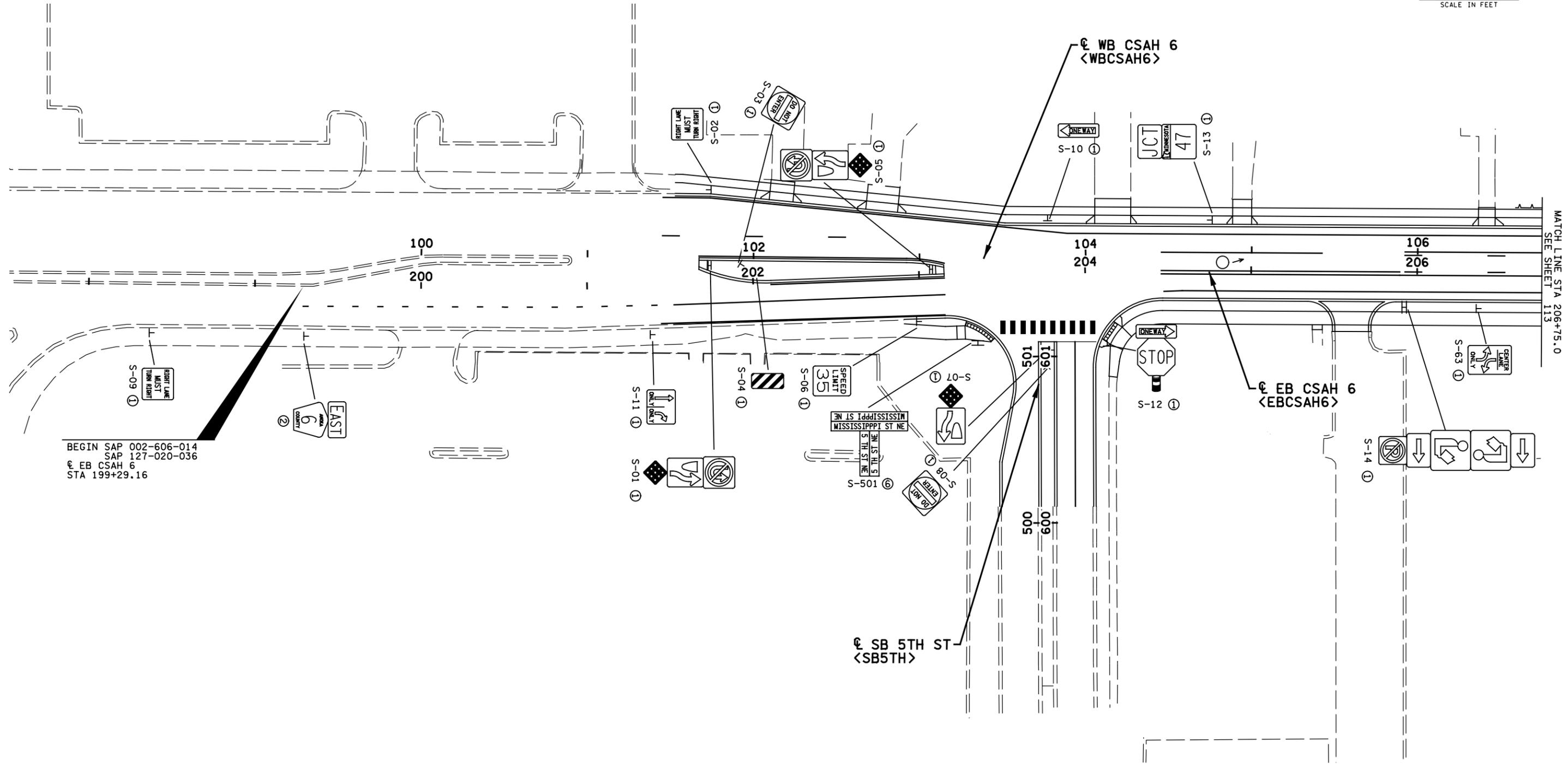
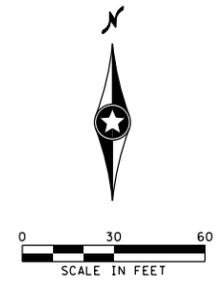


ANOKA COUNTY, MINNESOTA  
 SIGNING REMOVAL PLANS  
 SP 002-606-014, SP 127-020-036

SHEET  
 111  
 OF  
 118

GENERAL NOTES:  
 CENTERLINE NOT SHOWN FOR CLARITY  
 APPLY REAR DELINEATOR TO ALL R4-7 SIGN PANELS.  
 (INCIDENTAL)

SPECIFIC NOTES:  
 ① F & I  
 ② INPLACE  
 ⑥ INSTALL



BEGIN SAP 002-606-014  
 SAP 127-020-036  
 EB CSAH 6  
 STA 199+29.16

MATCH LINE STA 206+75.0  
 SEE SHEET 113

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NO	DATE	BY	CKD	APPR	REVISION

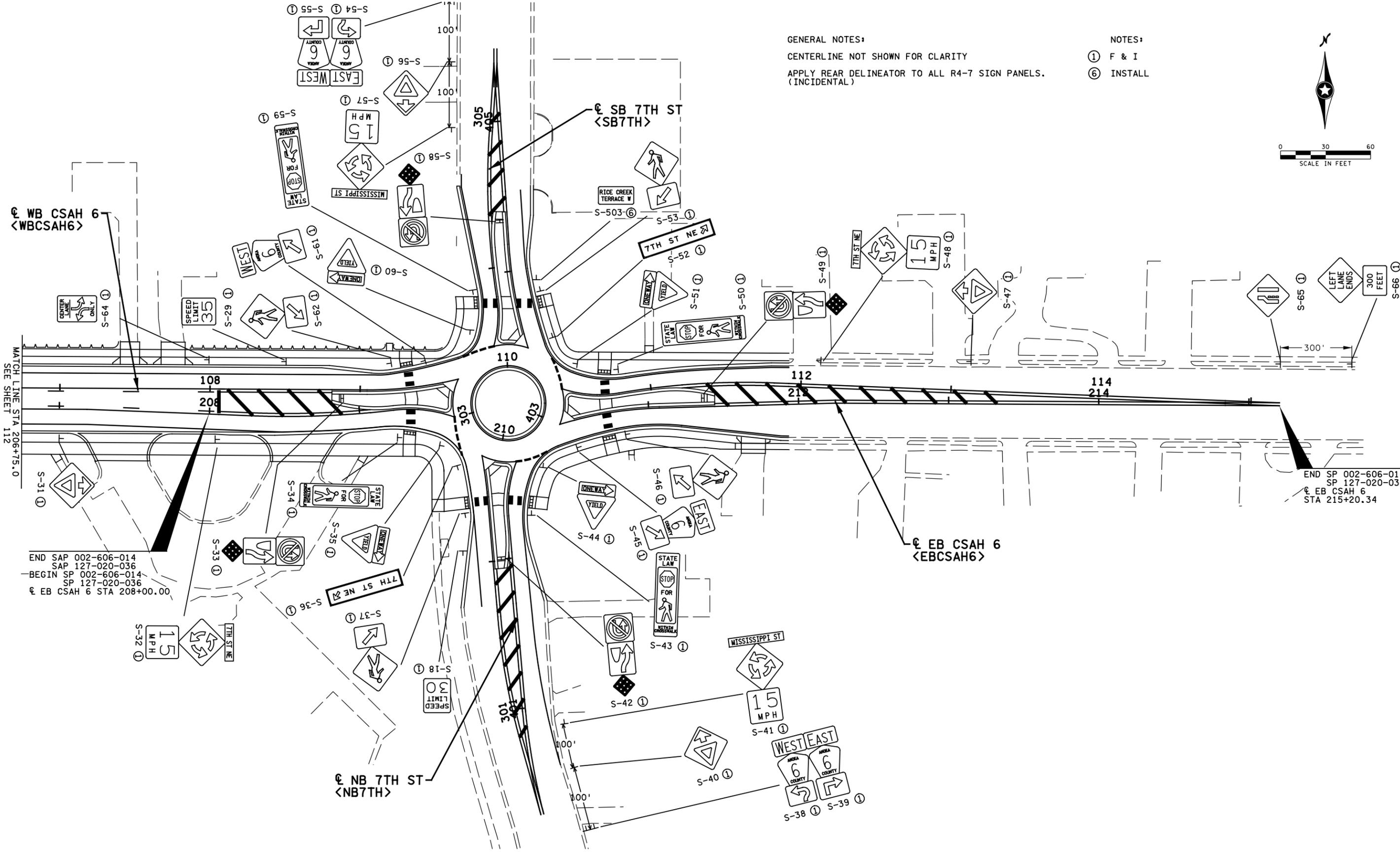
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*Clayton Bayer*  
 Date: 05/14/2025 License #: 57865

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036  
 DRAWN BY AA  
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 COMM. NO. 2417338



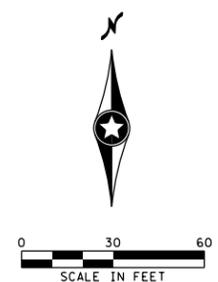
ANOKA COUNTY, MINNESOTA  
 PROPOSED SIGNING PLANS  
 SP 002-606-014, SP 127-020-036

SHEET 112 OF 118



GENERAL NOTES:  
 CENTERLINE NOT SHOWN FOR CLARITY  
 APPLY REAR DELINEATOR TO ALL R4-7 SIGN PANELS.  
 (INCIDENTAL)

NOTES:  
 ① F & I  
 ⑥ INSTALL



MATCH LINE STA 206+75.0  
SEE SHEET 112

END SAP 002-606-014  
 SAP 127-020-036  
 BEGIN SP 002-606-014  
 SP 127-020-036  
 EB CSAH 6 STA 208+00.00

END SP 002-606-014  
 SP 127-020-036  
 EB CSAH 6  
 STA 215+20.34

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 5/14/2025  
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 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036  
 DRAWN BY AA  
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 CHECKED BY CB  
 COMM. NO. 2417338

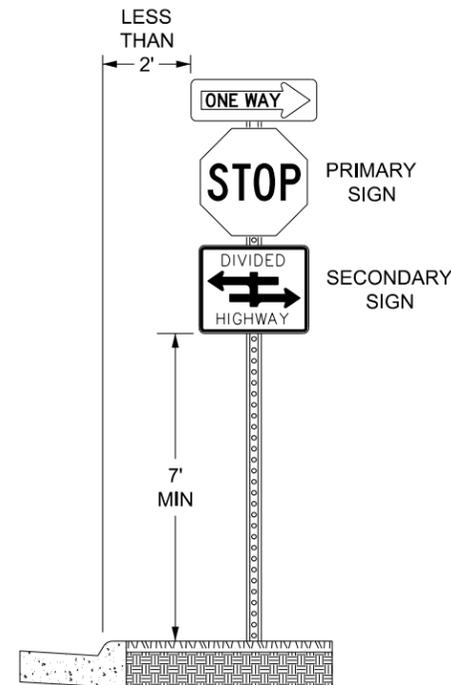
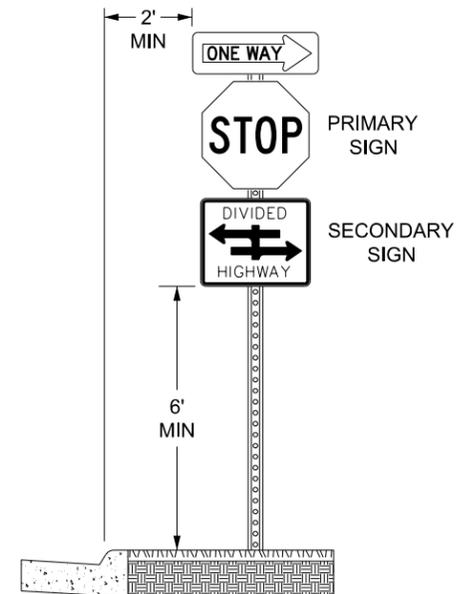
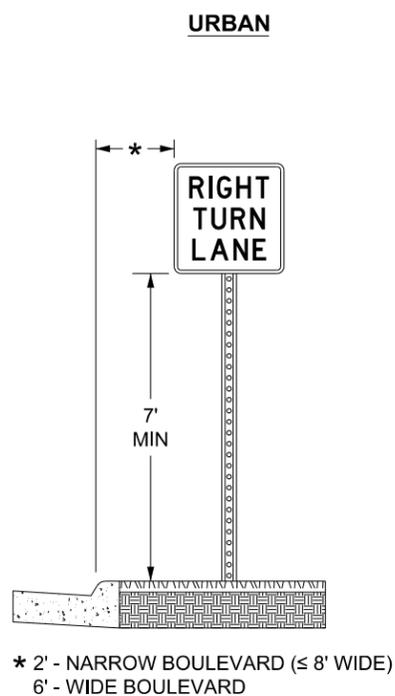
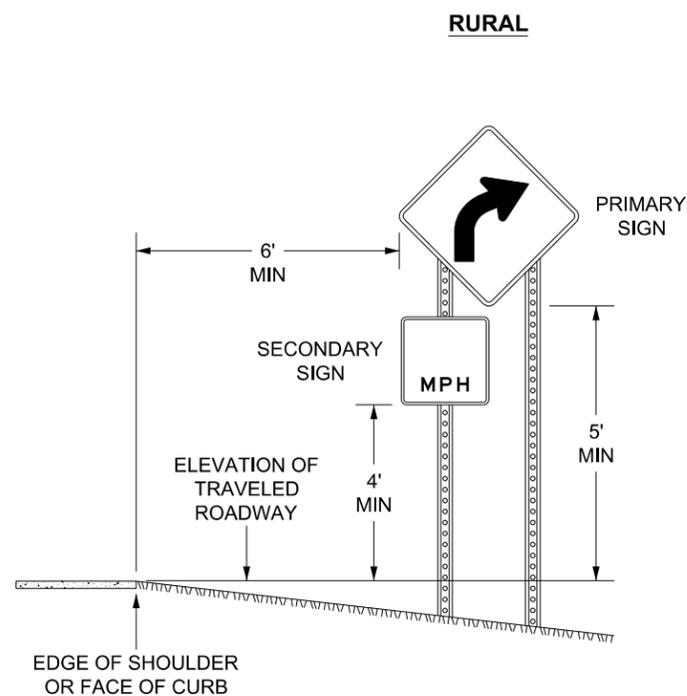


ANOKA COUNTY, MINNESOTA  
 PROPOSED SIGNING PLANS  
 SP 002-606-014, SP 127-020-036

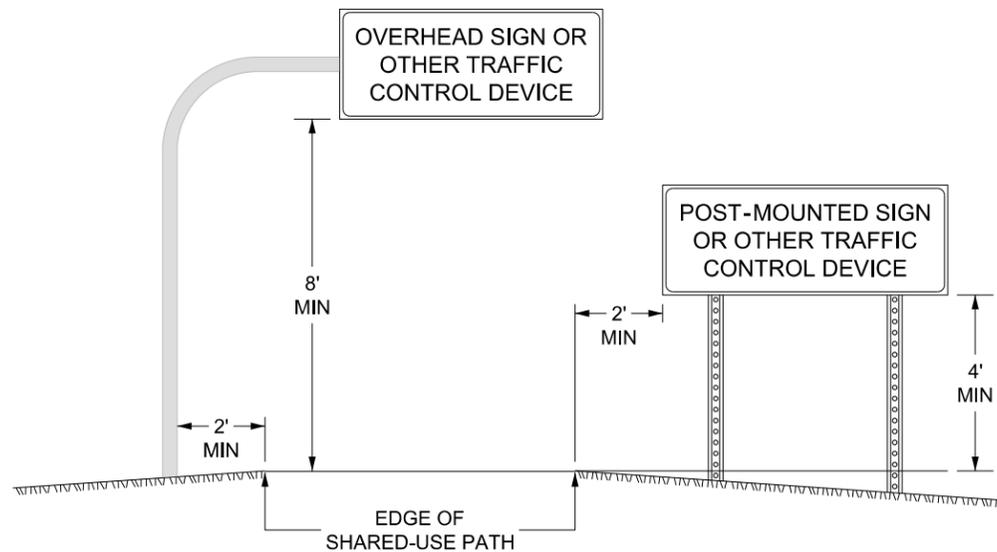
SHEET  
 113  
 OF  
 118



# SIGN PLACEMENT TYPICALS



## SHARED-USE PATH



- NOTES:**
- ALL DIMENSIONS ARE MINIMUMS.
  - MAINTAIN A DISTANCE OF 2' BETWEEN TRAFFIC CONTROL DEVICE AND SHARED-USE PATH.
  - 7' SIGN CLEARANCE IF 2' DISTANCE BETWEEN SIGN AND SHARED-USE PATH CANNOT BE MAINTAINED.

3:16:55 PM 05/14/2025 C:\Users\17000\17000\17338\TechData\CADD\Sign\Plan\Anoka\17338\_pmd02.dgn

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*Clayton Bayer*

Date: **05/14/2025** License #: **57865**

STATE PROJECT NO. 002-606-014  
STATE PROJECT NO. 127-020-036

STATE AID PROJECT NO. 002-606-014  
STATE AID PROJECT NO. 127-020-036

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DESIGNED BY SB  
CHECKED BY CB  
COMM. NO. 2417338



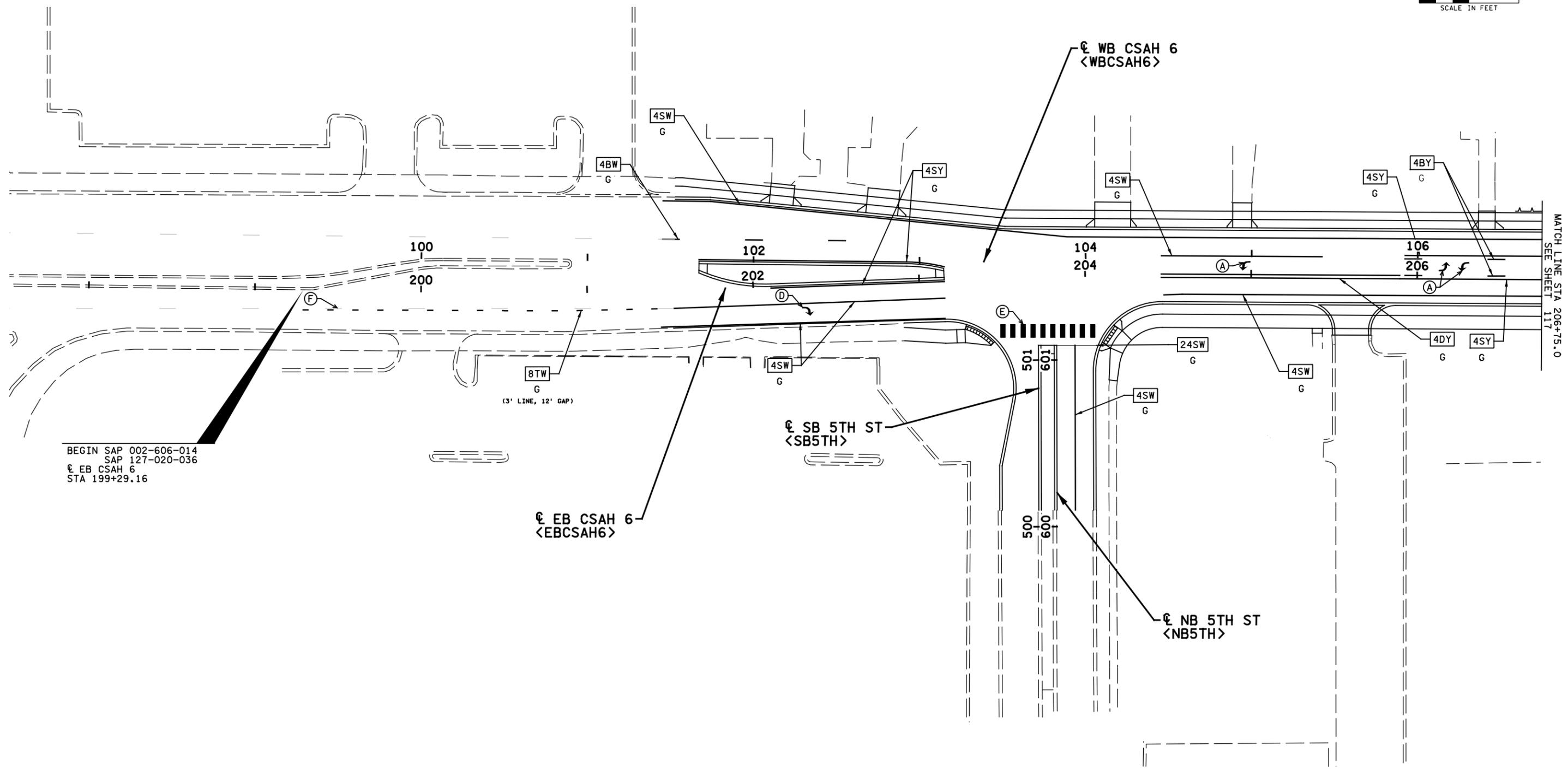
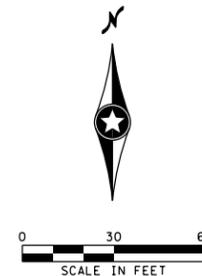
**ANOKA COUNTY, MINNESOTA**

PAVEMENT MARKING DETAILS

SP 002-606-014, SP 127-020-036

**SHEET 115 OF 118**

- SPECIFIC NOTES:
- (A) PAVEMENT MESSAGE THERMOPLASTIC  
- LEFT TURN ARROW
  - (D) PAVEMENT MESSAGE THERMOPLASTIC  
- RIGHT TURN ARROW
  - (E) CROSSWALK PREFORM THERMOPLASTIC  
GROUND IN - 3' X 8' ZEBRA CROSSWALK
  - (F) PAVEMENT MARKING REMOVAL



BEGIN SAP 002-606-014  
SAP 127-020-036  
EB CSAH 6  
STA 199+29.16

MATCH LINE STA 206+75.0  
SEE SHEET 117

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*Clayton Bayer*

Date: 05/14/2025 License #: 57865

STATE PROJECT NO. 002-606-014  
STATE PROJECT NO. 127-020-036

DESIGNED BY SB  
CHECKED BY CB

STATE AID PROJECT NO. 002-606-014  
STATE AID PROJECT NO. 127-020-036

COMM. NO. 2417338



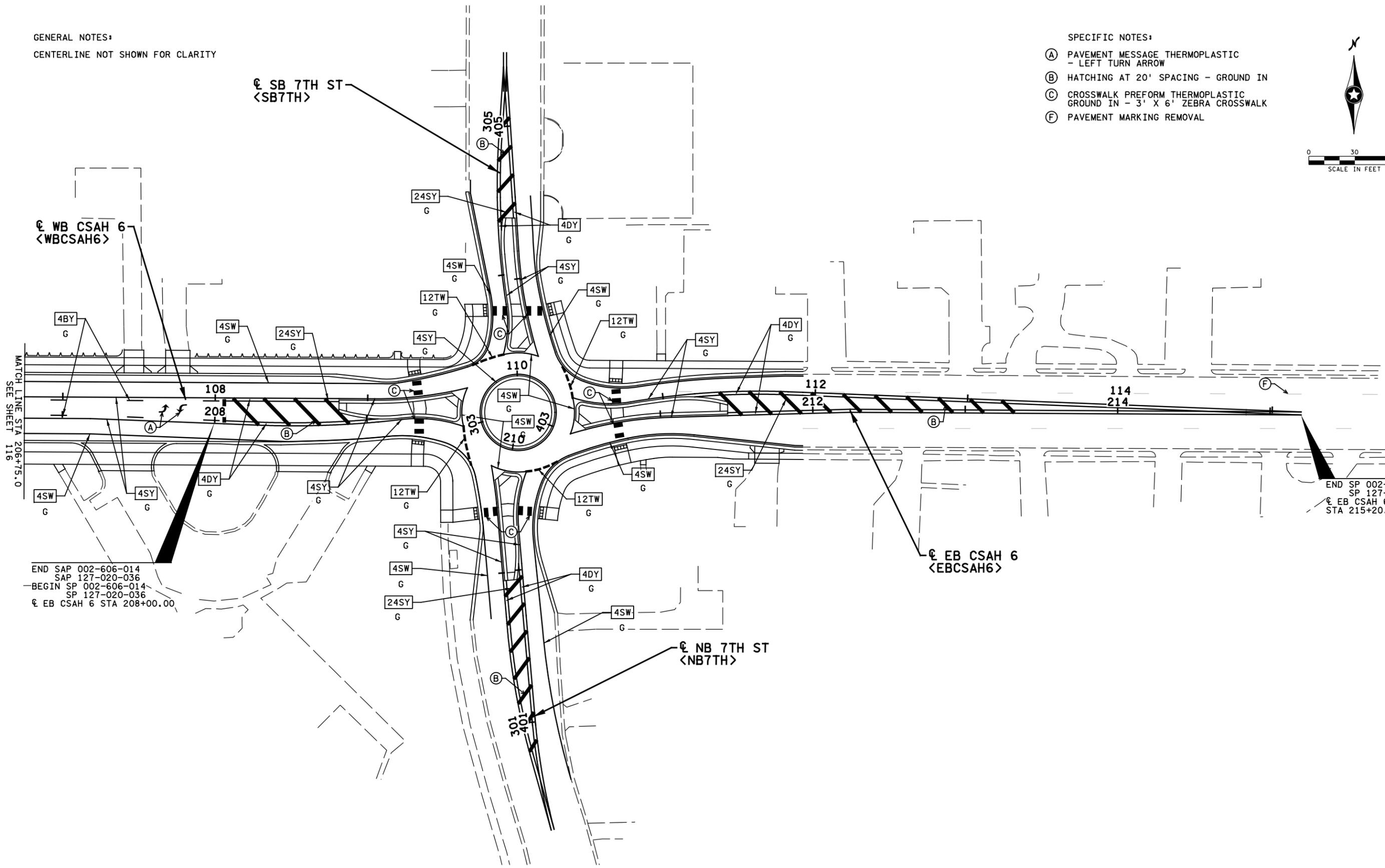
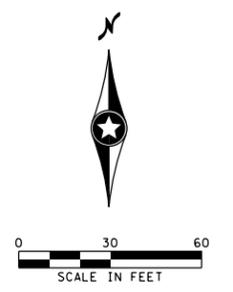
**ANOKA COUNTY, MINNESOTA**

PROPOSED PAVEMENT MARKING PLAN  
SP 002-606-014, SP 127-020-036

**SHEET 116 OF 118**

GENERAL NOTES:  
 CENTERLINE NOT SHOWN FOR CLARITY

- SPECIFIC NOTES:
- (A) PAVEMENT MESSAGE THERMOPLASTIC - LEFT TURN ARROW
  - (B) HATCHING AT 20' SPACING - GROUND IN
  - (C) CROSSWALK PREFORM THERMOPLASTIC GROUND IN - 3' X 6' ZEBRA CROSSWALK
  - (F) PAVEMENT MARKING REMOVAL



END SAP 002-606-014  
 SAP 127-020-036  
 BEGIN SP 002-606-014  
 SP 127-020-036  
 EB CSAH 6 STA 208+00.00

END SP 002-606-014  
 SP 127-020-036  
 EB CSAH 6  
 STA 215+20.34

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NO	DATE	BY	CKD	APPR	REVISION

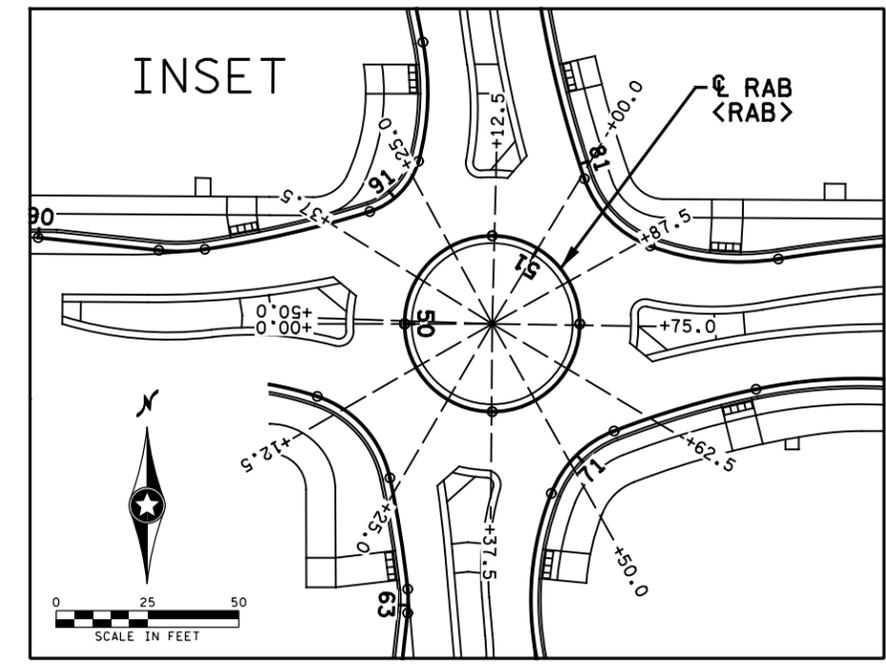
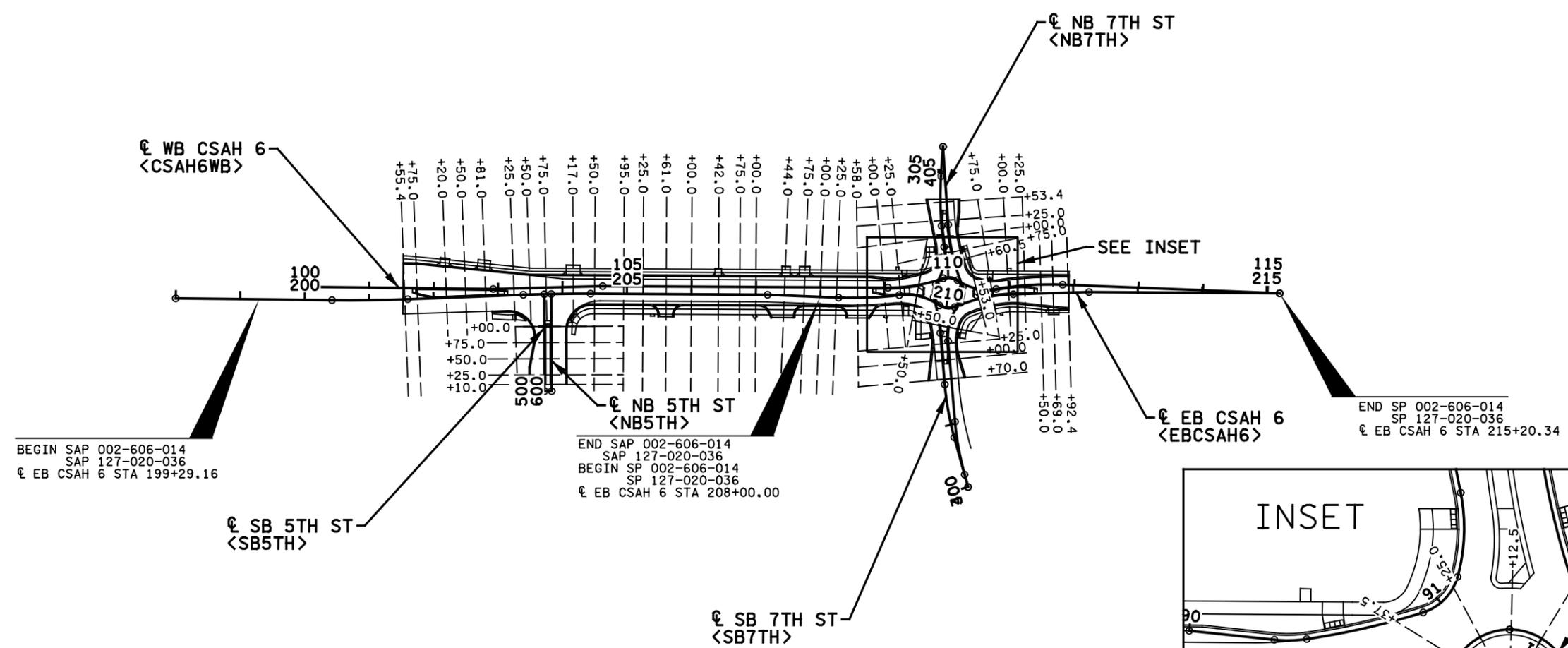
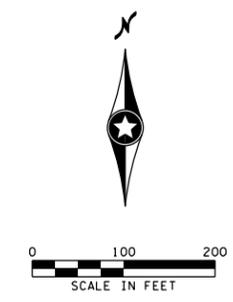
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CLAYTON W. BAYER  
*Clayton Bayer*  
 Date: 05/14/2025 License #: 57865

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036  
 STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036  
 DRAWN BY AA  
 DESIGNED BY SB  
 CHECKED BY CB  
 COMM. NO. 2417338



ANOKA COUNTY, MINNESOTA  
 PROPOSED PAVEMENT MARKING PLANS  
 SP 002-606-014, SP 127-020-036

SHEET  
 117  
 OF  
 118



BEGIN SAP 002-606-014  
 SAP 127-020-036  
 € EB CSAH 6 STA 199+29.16

END SAP 002-606-014  
 SAP 127-020-036  
 BEGIN SP 002-606-014  
 SP 127-020-036  
 € EB CSAH 6 STA 208+00.00

END SP 002-606-014  
 SP 127-020-036  
 € EB CSAH 6 STA 215+20.34

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NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: ZACHARIAH F. HEIMER

*Zach Heimer*

Date: 05/14/2025 License #: 58755

STATE PROJECT NO. 002-606-014  
 STATE PROJECT NO. 127-020-036

STATE AID PROJECT NO. 002-606-014  
 STATE AID PROJECT NO. 127-020-036

DRAWN BY M. WENDLER  
 DESIGNED BY M. WENDLER  
 CHECKED BY Z. HEIMER  
 COMM. NO. 2417338



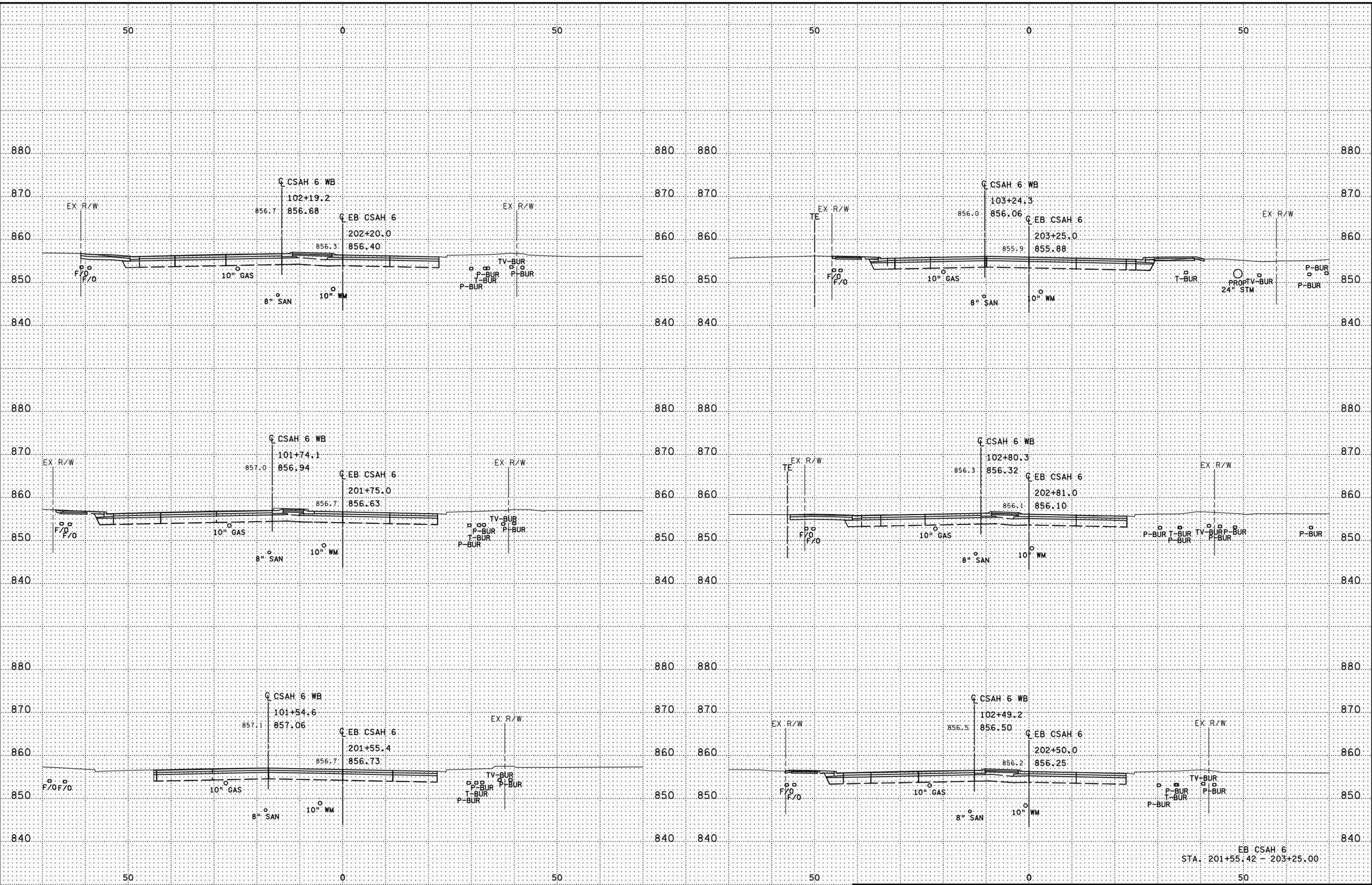
ANOKA COUNTY, MINNESOTA

CROSS SECTION LAYOUT PLANS

SP 002-606-014, SP 127-020-036

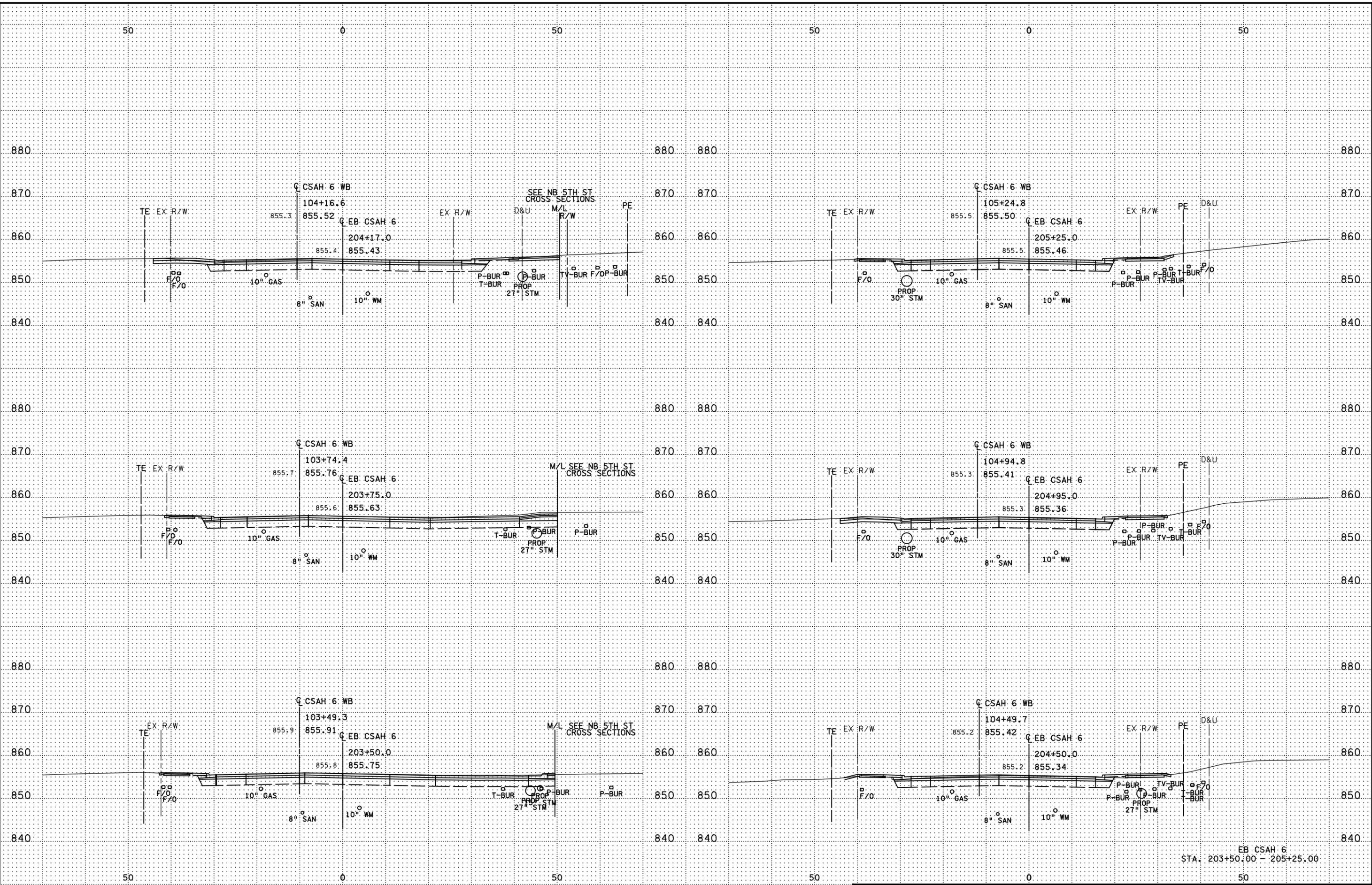
SHEET 118 OF 118

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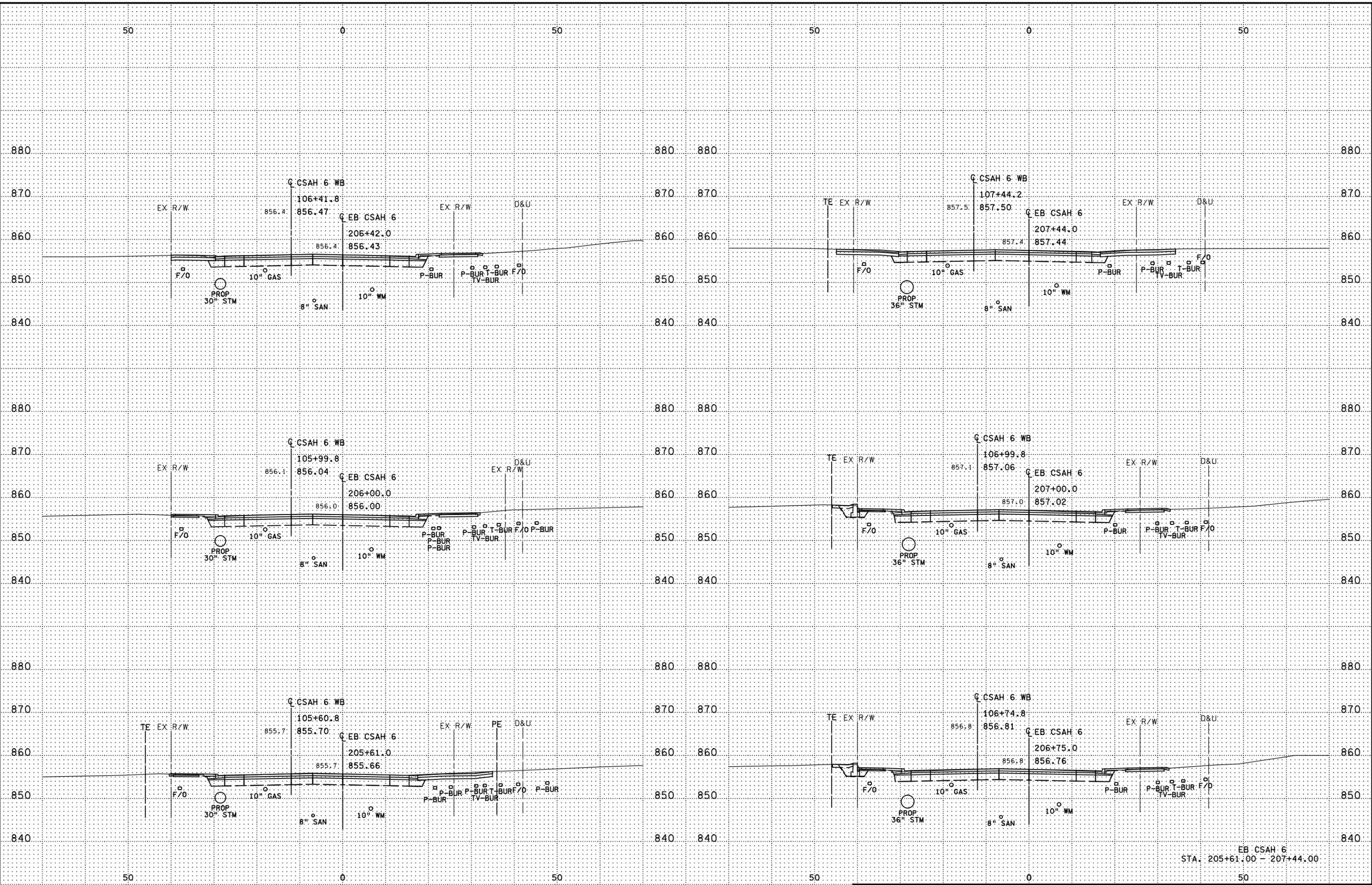


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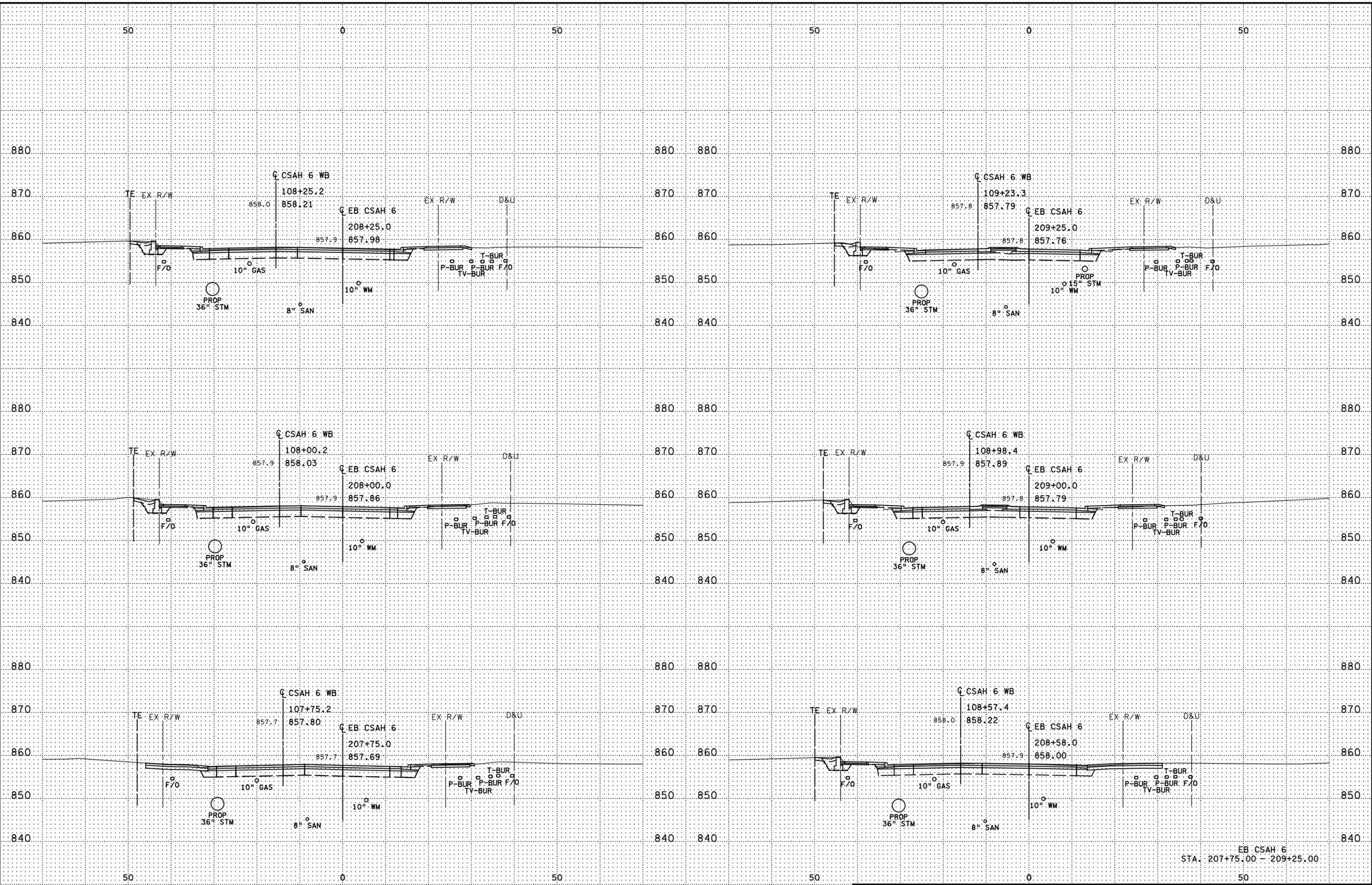


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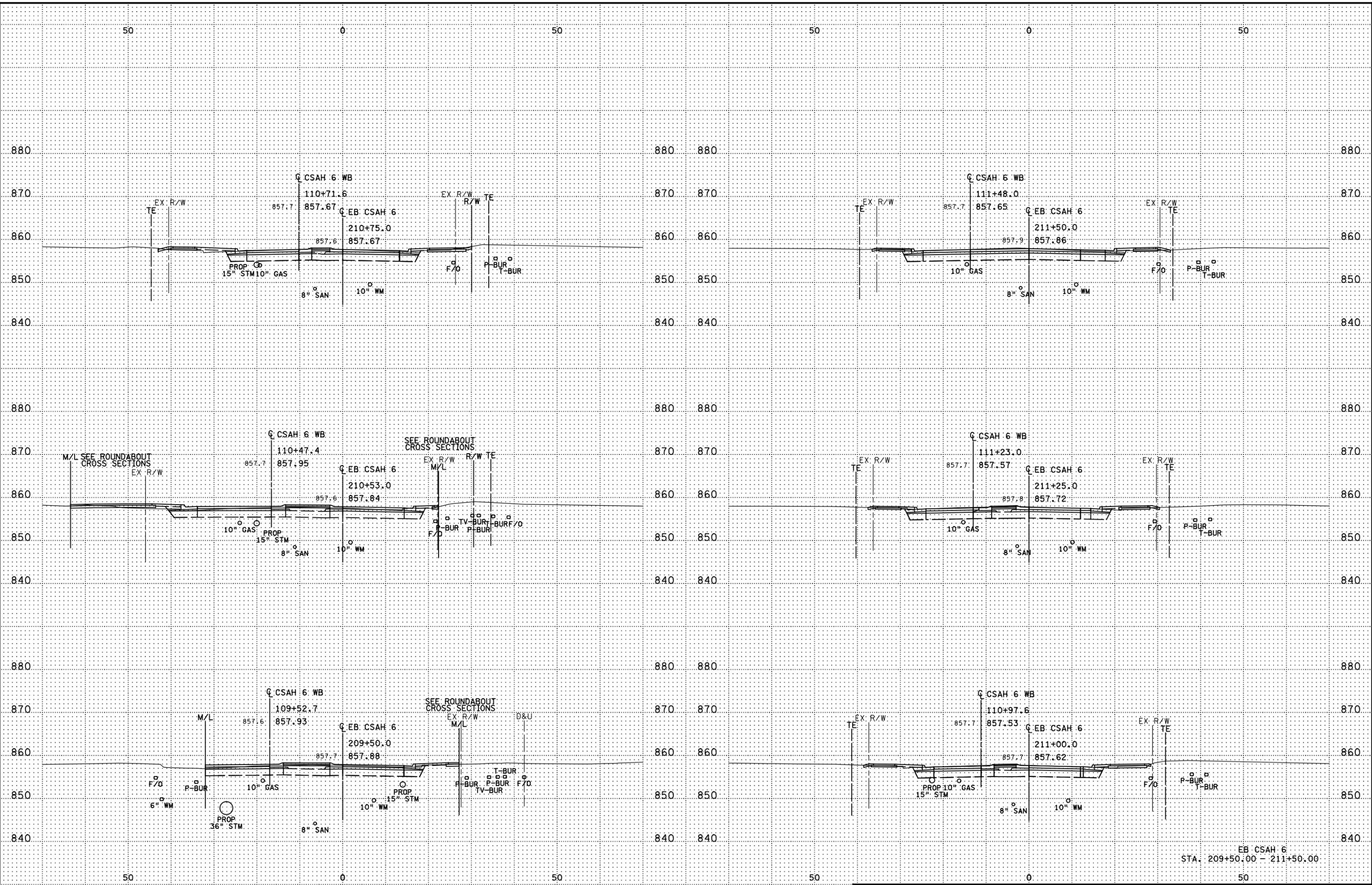
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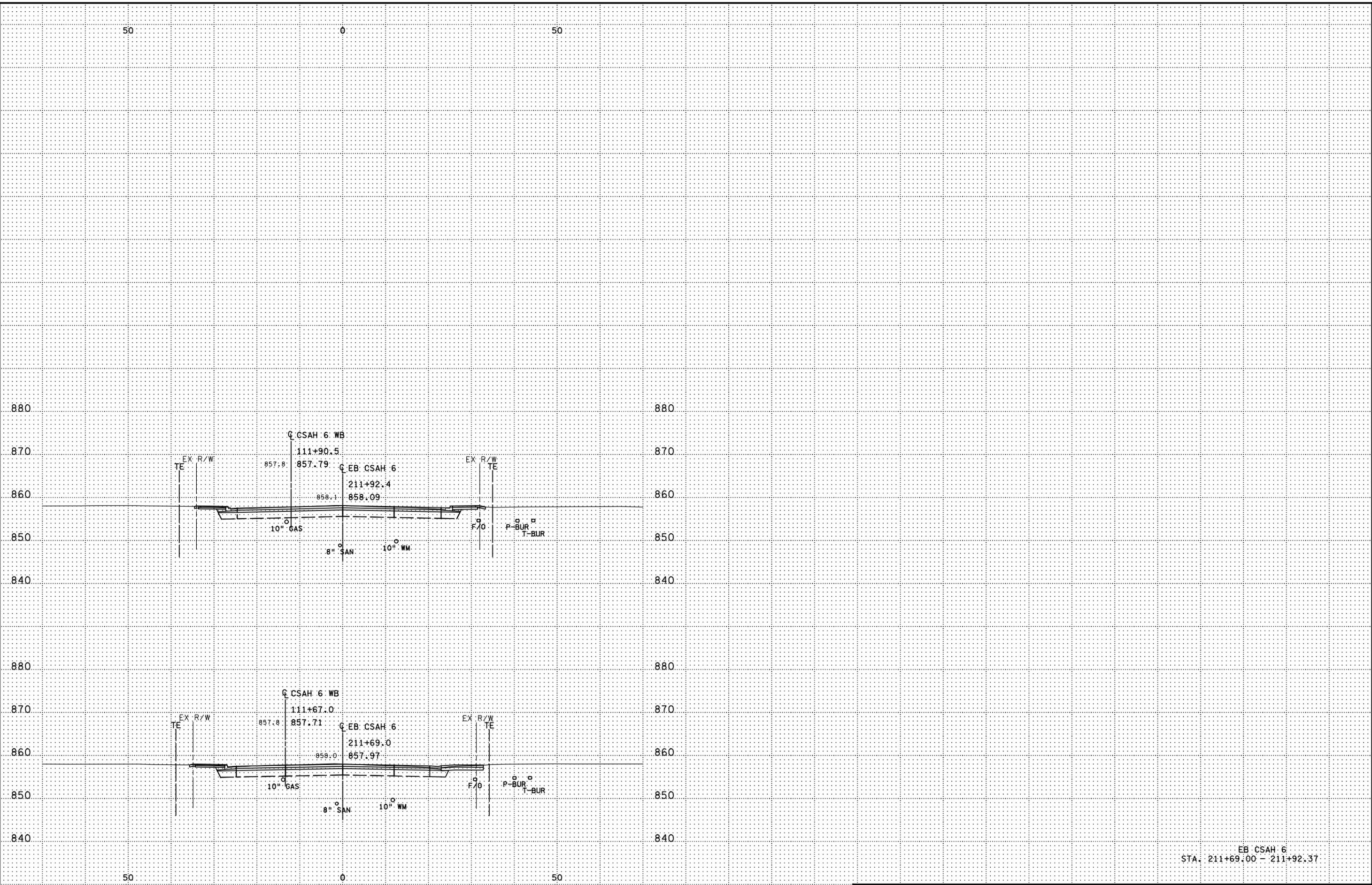


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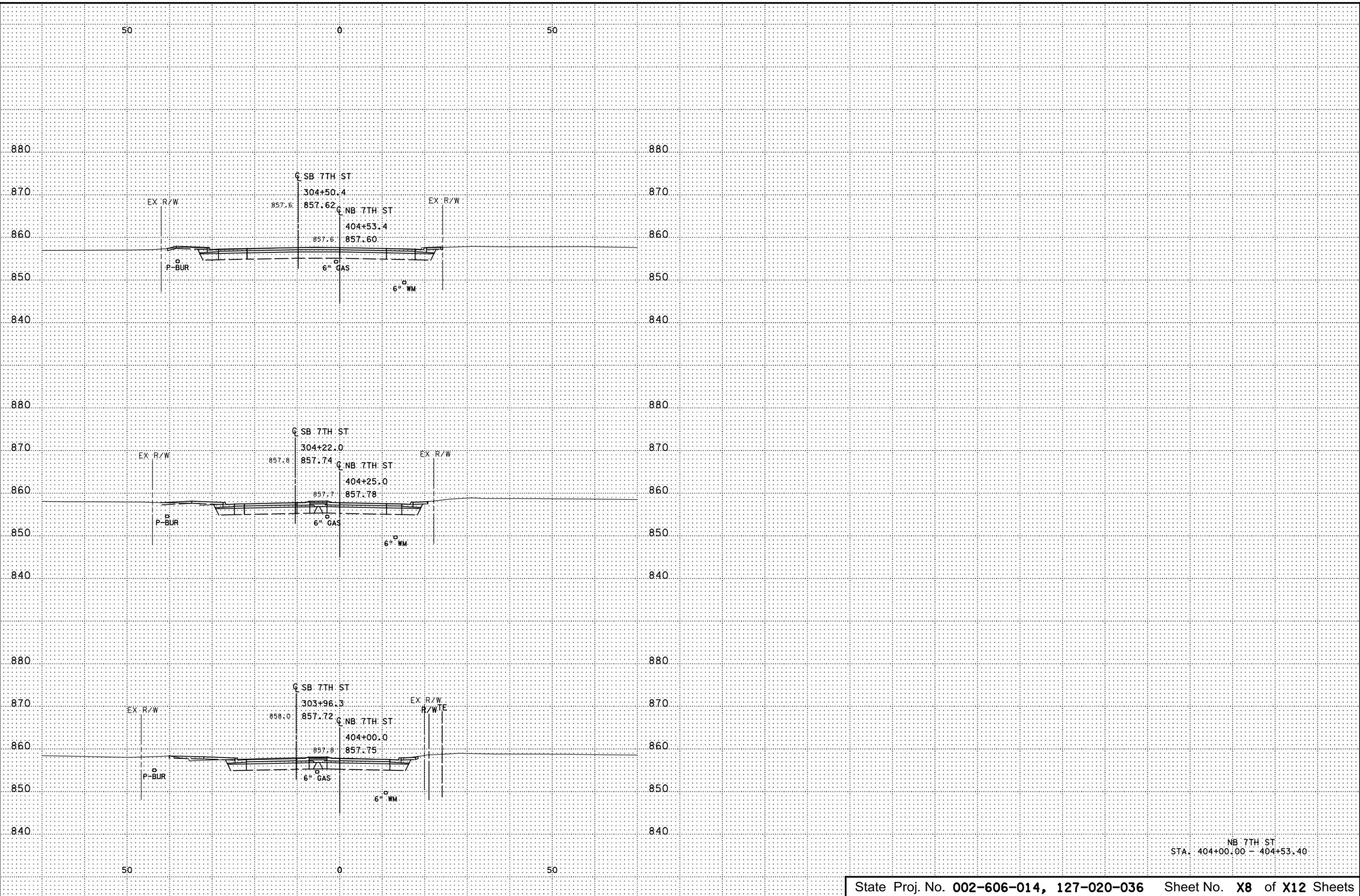
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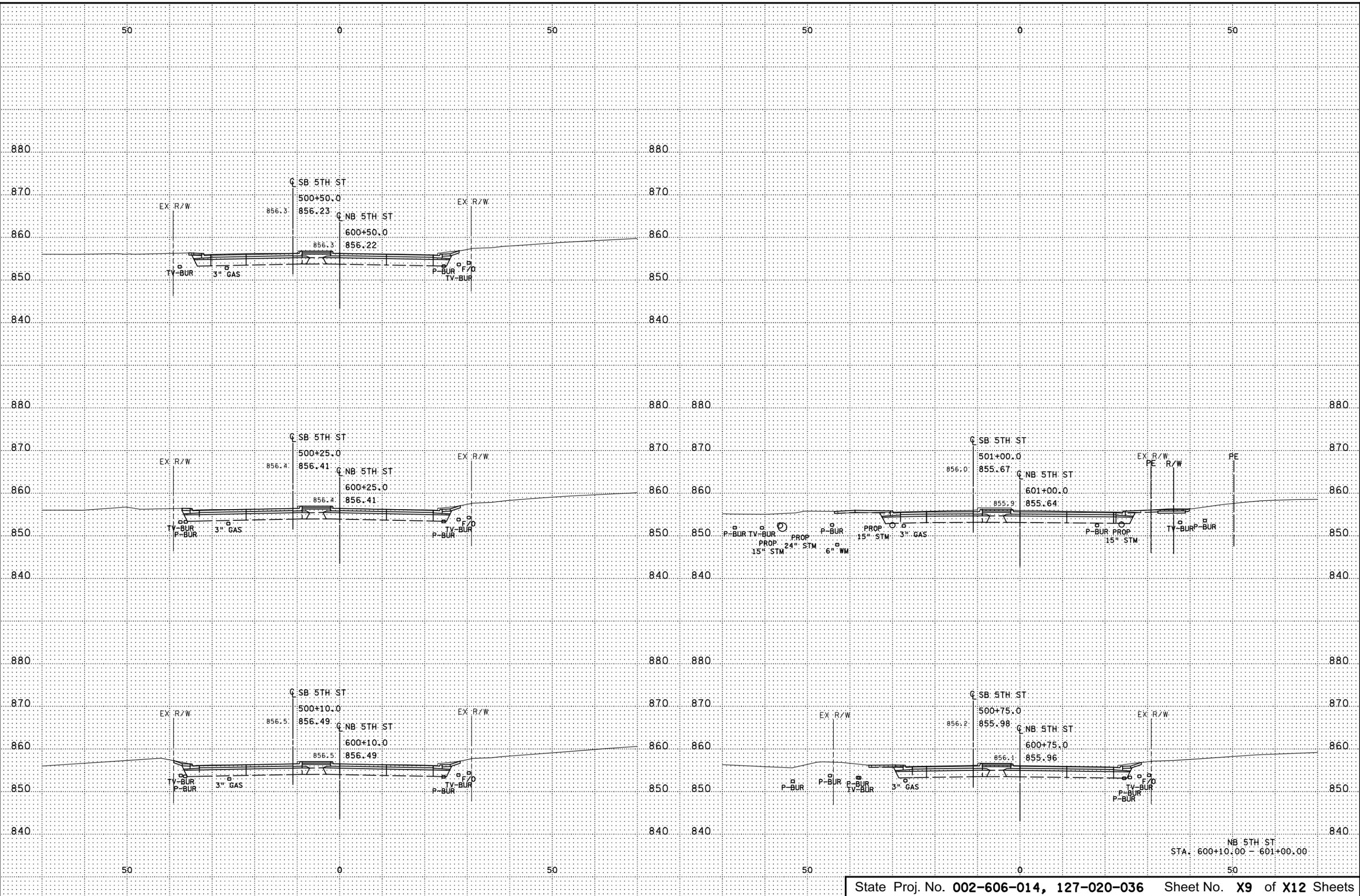


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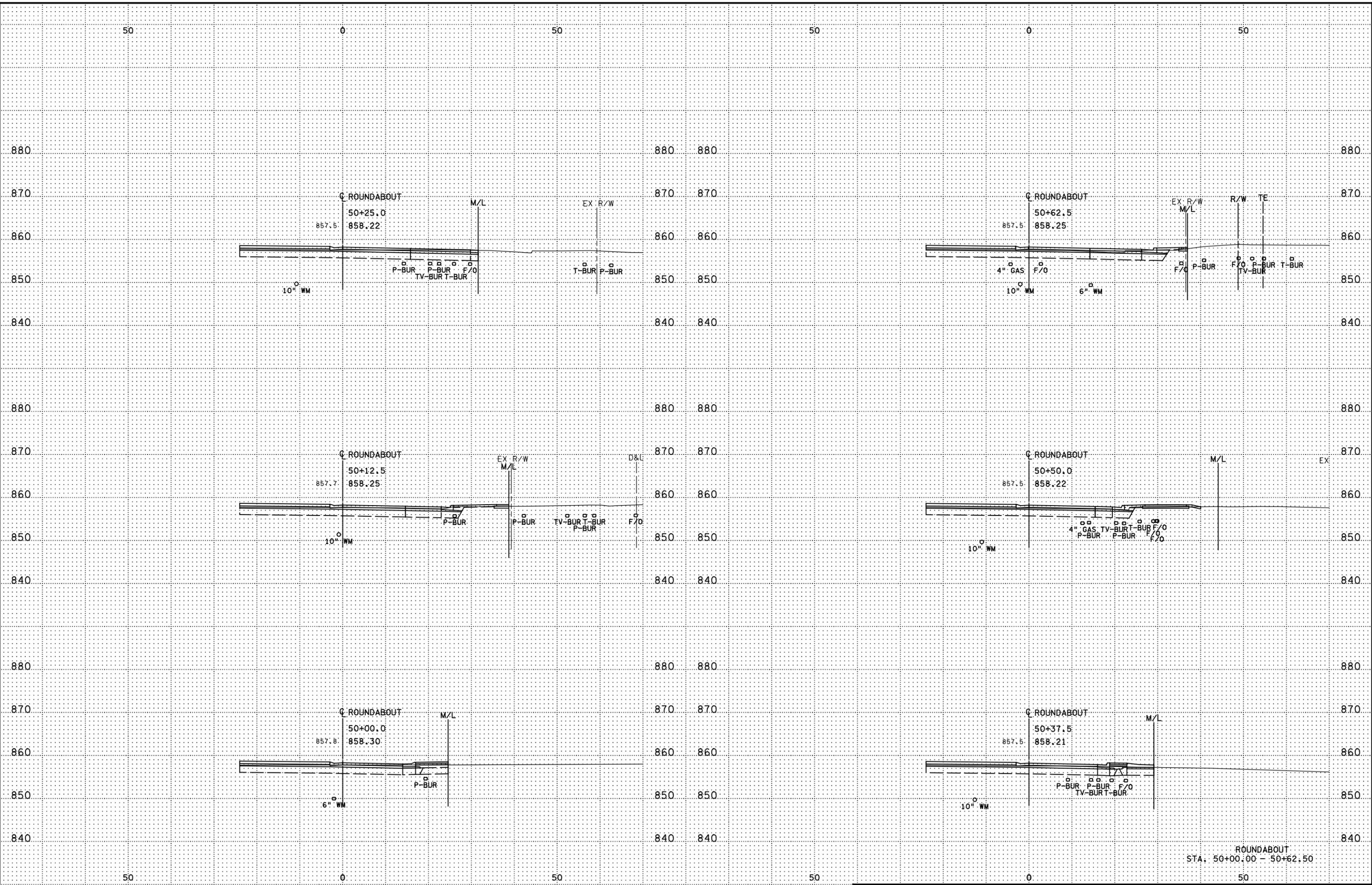
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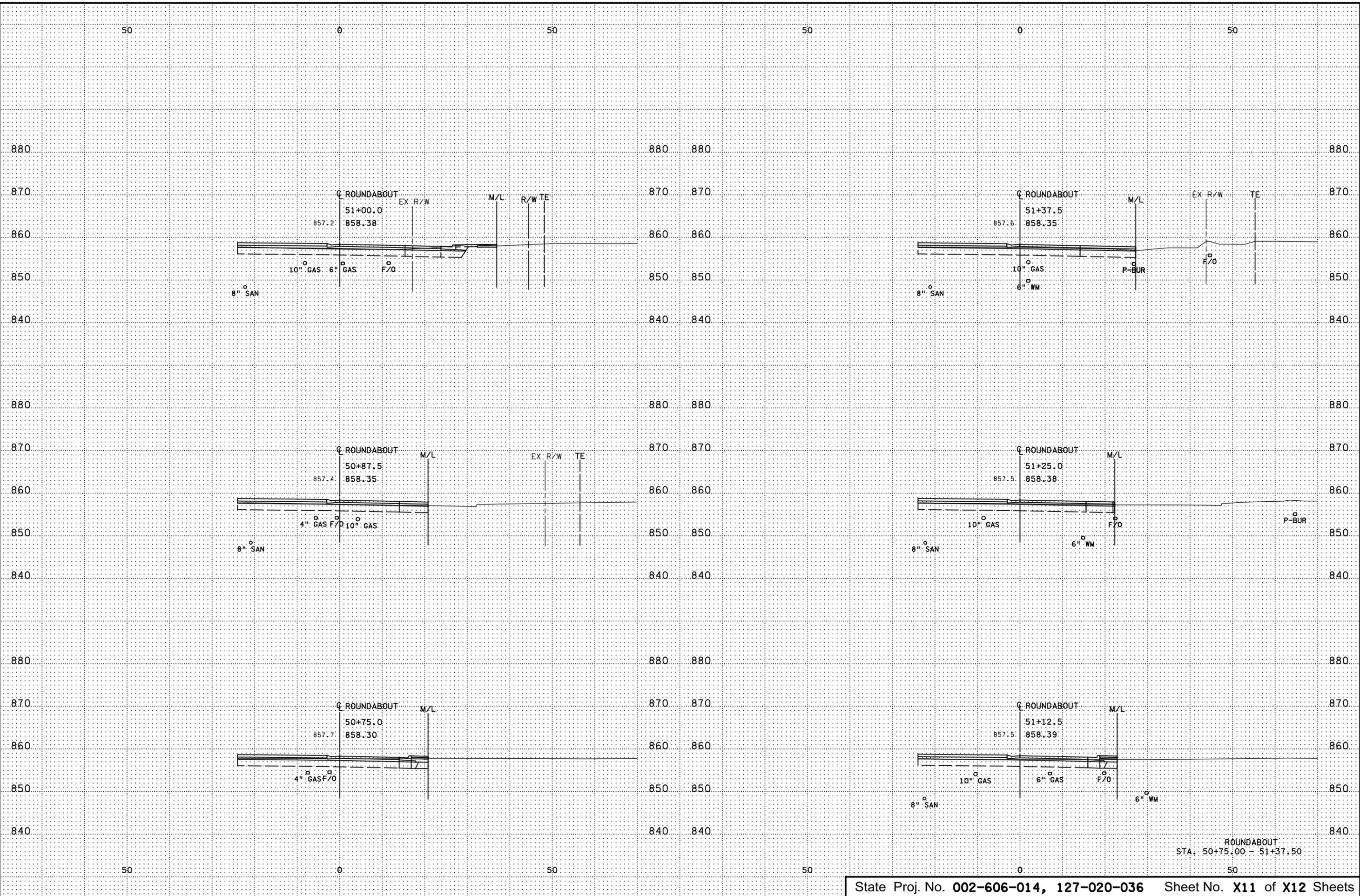


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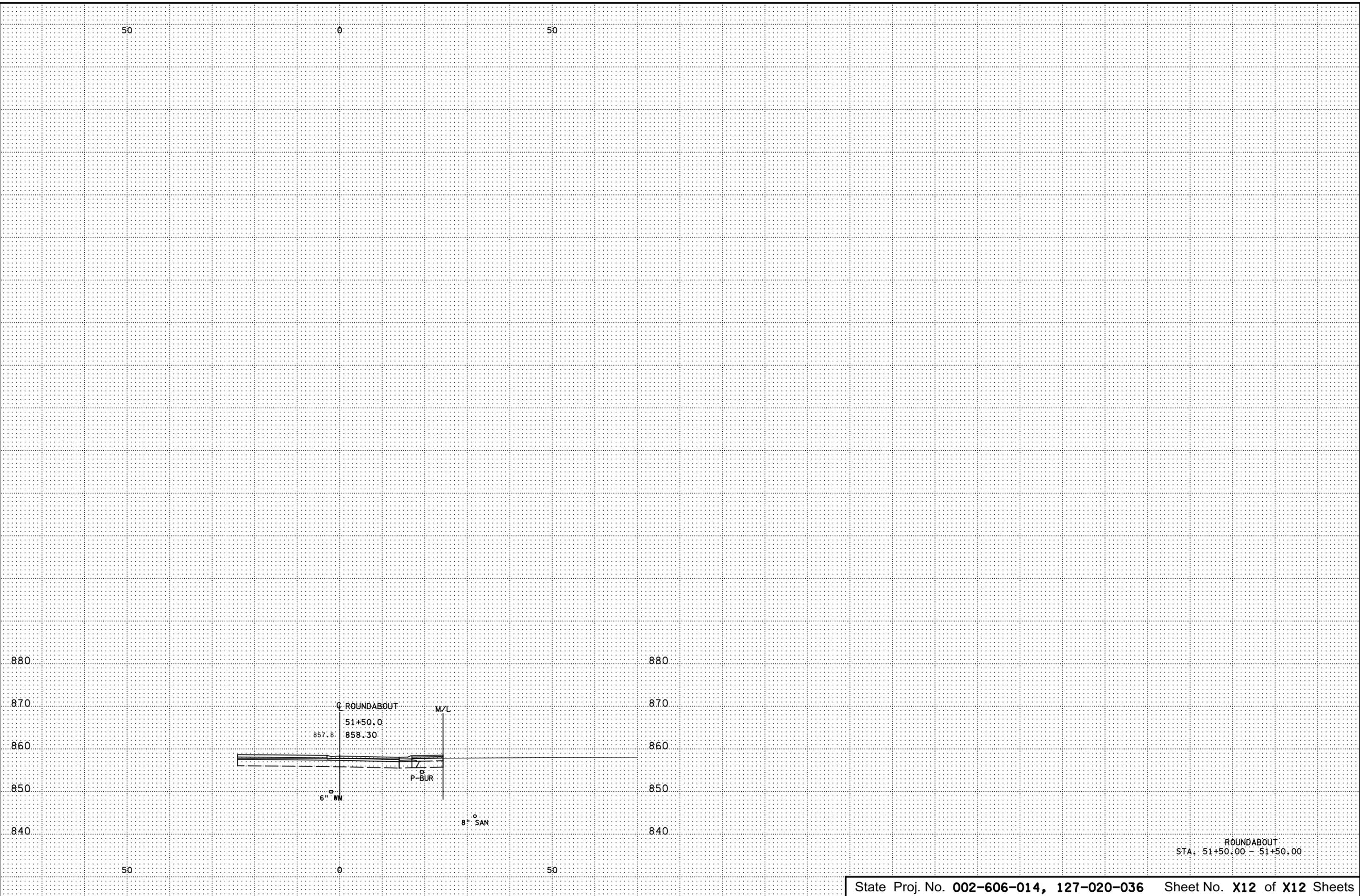


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ROUNDABOUT  
STA: 50+75.00 - 51+37.50

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ROUNDABOUT  
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