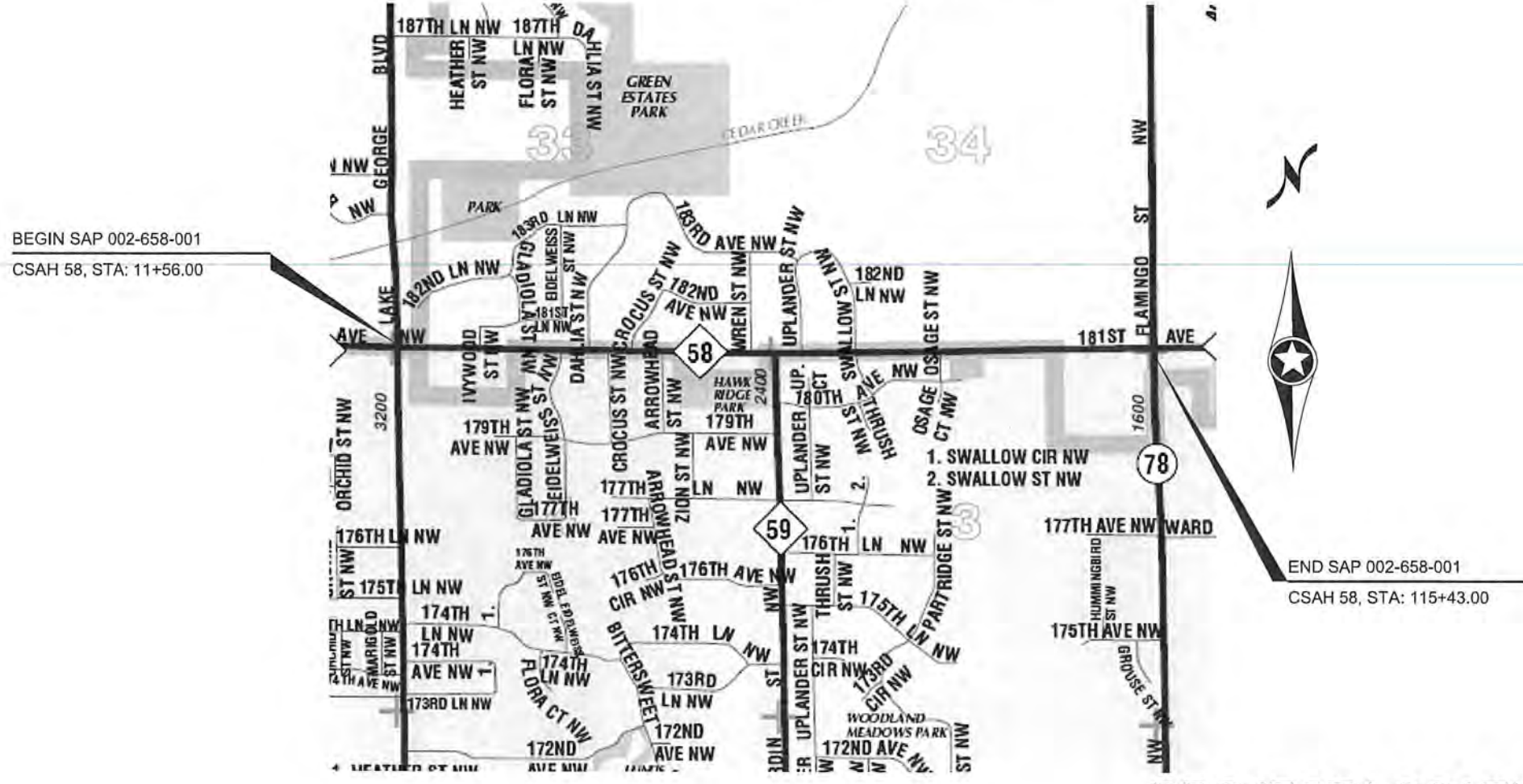


# MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

CONSTRUCTION PLAN FOR \_\_\_\_\_ MILL BITUMINOUS, BITUMINOUS SURFACING, CURB & GUTTER, BITUMINOUS RECLAMATION

LOCATED ON CSAH 58 BETWEEN CSAH 9 AND CSAH 78

	CSAH 58	
GROSS LENGTH	10387 FEET	1.967 MILES
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES
NET LENGTH	10387 FEET	1.967 MILES



### PROJECT LOCATION



GOVERNING SPECIFICATIONS  
THE 2018 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE WITH THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MNMUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."

THIS PLAN CONTAINS 19 SHEETS

### INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES
3	TYPICAL SECTIONS
4-7	DETAILS
8-11	CONSTRUCTION PLAN
12	PERMANENT MARKING TABULATIONS
13-14	SIGN & STRIPING DETAILS
15-19	TEMPORARY SIGNING & PERMANENT SIGNING & STRIPING

Approved \_\_\_\_\_ .20\_\_\_\_  
CITY OF ANDOVER ENGINEER

Approved \_\_\_\_\_ .20\_\_\_\_  
CITY OF OAK GROVE ENGINEER

Approved *[Signature]* 3-1-21 .20\_\_\_\_  
ANOKA COUNTY ENGINEER

DESIGN DESIGNATION (CSAH 58)	
ESAL 20	210048
R VALUE	70
ADT (2021)	1778
PROJ. ADT (2041)	1778
PROJ. HCADT (2041)	105
SOIL FACTOR	N/A
10 TON DESIGN	
FUNCTIONAL CLASSIFICATION	MAJOR COLLECTOR
NO. OF TRAFFIC LANES	2
NO. OF PARKING LANES	0
DESIGN SPEED	55 MPH
STOPPING SIGHT DISTANCE BASED ON:	
HEIGHT OF EYE	3.5'
HEIGHT OF OBJECT	2.0'
DESIGN SPEED NOT ACHIEVED AT:	
STA.	TO STA. MPH

CITY OF ANDOVER  
CITY OF OAK GROVE  
ANOKA COUNTY  
MN/DOT TRANSPORTATION DISTRICT - METRO  
SECTION 3, 4, 33, 34  
TOWNSHIP 32,33 NORTH  
RANGE 24 WEST

For \_\_\_\_\_ DATE \_\_\_\_\_  
DISTRICT STATE AID ENGINEER:REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY

For \_\_\_\_\_ DATE \_\_\_\_\_  
STATE AID ENGINEER  
APPROVED FOR STATE AID FUNDING

**STATEMENT OF ESTIMATED QUANTITIES**

Notes	Item Number	ITEM DESCRIPTION	Unit	TOTAL PROJECT QUANTITIES ESTIMATED
	2021.501	MOBILIZATION	LUMP SUM	1
	2104.502	SALVAGE SIGN PANEL TYPE C	EACH	1
1	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	16
2	2104.503	SAWING BIT PAVEMENT (FULL DEPTH)	LIN FT	523
	2104.503	REMOVE PIPE CULVERTS	LIN FT	66
3	2104.504	REMOVE CONCRETE DRIVEWAY PAVEMENT	SQ YD	35
4	2104.504	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	SQ YD	391
	2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	1271
17	2105.602	CONSTRUCT TURN LANES	EACH	3
5	2123.510	MOTOR GRADER	HOUR	12
	2130.523	WATER	M GALLON	229
7	2211.509	AGGREGATE BASE CLASS 5	TON	162
	2215.504	FULL DEPTH RECLAMATION	SQ YD	32667
	2215.507	HAUL FULL DEPTH RECLAMATION (LV)	CU YD	60
6	2221.509	SHOULDER BASE AGGREGATE CLASS 5	TON	628
8	2232.604	MILL BITUMINOUS PAVEMENT (SPECIAL)	SQ YD	206
	2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	1899
9	2360.509	TYPE SP 9.5 WEARING COURSE MIX (3;B)	TON	65
10	2360.509	TYPE SP 12.5 WEARING COURSE MIX (4;C)	TON	293
	2360.509	TYPE SP 12.5 WEARING COURSE MIX (4;C)	TON	8629
	2501.502	15" RC SAFETY APRON & GRATE DES 3128	EACH	2
	2501.503	15" RC PIPE CULVERT CLASS V	LIN FT	56
	2531.504	6" CONCRETE DRIVEWAY PAVEMENT	SQ YD	35
11	2540.602	MAIL BOX SUPPORT	EACH	18
12	2563.601	TRAFFIC CONTROL SUPERVISOR	LUMP SUM	1
12	2563.601	TRAFFIC CONTROL	LUMP SUM	1
13	2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	UNIT DAY	20
	2564.502	INSTALL SIGN PANEL TYPE C	EACH	1
	2564.518	SIGN PANELS TYPE C	SQ FT	20.75
	2573.501	EROSION CONTROL SUPERVISOR	LUMP SUM	1
18	2574.507	COMMON TOPSOIL BORROW	CU YD	55
14	2575.508	HYDRAULIC REINFORCED FIBER MATRIX	POUND	2297
15	2581.503	REMOVABLE PREFORM PAVEMENT MARKING TAPE	LIN FT	416
16	2582.503	4" SOLID LINE MULTI COMP	LIN FT	29470
16	2582.503	4" BROKEN LINE MULTI COMP	LIN FT	1949
16	2582.503	4" DBLE SOLID LINE MULTI COMP	LIN FT	653

**CONSTRUCTION NOTES**

1	REFERENCE DETAILS (PAGE 6) FOR REMOVAL DETAILS
2	REFERENCE DETAILS (PAGE 5) FOR REMOVAL DETAILS
3	ITEM FOR CONCRETE DRIVEWAYS. CONTRACTOR IS RESPONSIBLE FOR CONTACTING PROPERTY OWNER 48 HOURS BEFORE STARTING OPERATION.
4	ITEM FOR BITUMINOUS DRIVEWAYS AND STREET APPROACHES. CONTRACTOR IS RESPONSIBLE FOR CONTACTING PROPERTY OWNER 48 HOURS BEFORE STARTING OPERATION.
5	ITEM USED TO MOVE EXCESS RECLAIM MATERIAL AT THE RECLAIM AREA LIMITS TO CREATE A SMOOTH TRANSITION BETWEEN THE PROPOSED AND EXISTING PAVEMENT
6	GRAVEL BASE FOR CONCRETE AND BITUMINOUS STREET APPROACHES AND DRIVEWAYS, ALSO 10 TONS FOR EACH GRAVEL ENTRANCE.
7	GRAVEL BASE FOR BITUMINOUS DRIVEWAYS, AND CURB PATCHES.
8	TO BE USED FOR MILLING STREET APPROACHES AND/OR DETAIL MILLING AREAS AS IDENTIFIED IN THE PLAN. DETAIL MILLING AROUND MANHOLES, CATCH BASINS, GATE VALVES, AND ALONG CURB LINE IS INCIDENTAL TO THIS ITEM.
9	ITEM FOR BITUMINOUS DRIVEWAYS. DRIVEWAYS SHALL BE PAVED AFTER MAINLINE AND BEFORE FINAL STRIPING.
10	ITEM FOR STREET APPROACHES. STREET APPROACHES SHALL BE PAVED AFTER MAINLINE, AND BEFORE FINAL STRIPING
11	MAILBOXES ARE TO BE INSTALLED AT THE EXISTING MAILBOX LOCATION OR AS DIRECTED BY THE LOCAL POSTAL AUTHORITY, CONTRACTOR IS RESPONSIBLE FOR CONTACTING. MAILBOX REMOVAL AND ALL MATERIALS ARE INCIDENTAL TO INSTALLATION.
12	ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO, AND BE INSTALLED IN ACCORDANCE WITH, THE MOST CURRENT REVISION OF THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". "DO NOT PASS, PASS WITH CARE, NO CENTER STRIPE, AND STOP HERE ON RED SIGNS SHALL BE INPLACE WHENEVER PERMANENT PAVEMENT MARKINGS ARE NOT PRESENT.
13	2 MESSAGE BOARDS, ONE ON THE EACH END OF PROJECT, SHALL BE INSTALLED 10 DAYS PRIOR TO ANY CONSTRUCTION; REFERENCE STRIPING PLAN FOR DETAILS.
14	TYPE 3 FERTILIZER AND TYPE 25-121 SEED ARE INCIDENTAL TO THIS ITEM. SEE "BASIS OF PLANNED QUANTITIES" FOR APPLICATION RATES.
15	CENTERLINE AND LANE DESIGNATION SKIPS TO BE APPLIED AS SOON AS POSSIBLE ON MILLED SURFACE AND EACH NEW LIFT OF PAVEMENT; SKIPS MUST BE INPLACE BEFORE THE CONTRACTOR LEAVES FOR THE DAY. CONTRACTOR IS TO REMOVE PRIOR TO FINAL STRIPING.
16	FINAL STRIPING SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING.
17	ITEMS INCLUDED IN THE TURNLANE BY THE EACH ARE - COMMON EXCAVATION, SELECT GRANULAR BORROW, TOPSOIL, AGG BASE CL-5. SHAPING OF SUBGRADE AND AGGREGATE BASE ARE INCIDENTAL TO CONSTRUCT TURN
18	ITEM USED AT ENGINEER'S DISCRETION FOR RESTORATION OF DISTURBED AREAS ALONG DRIVEWAYS, STREET APPROACHES AND BEHIND CURB

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

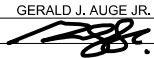
**MNDOT STANDARD PLATES**

PLATE NO.	DESCRIPTION
3000M	REINFORCED CONCRETE PIPE (6 SHEETS)
3022C	PRECAST CONCRETE SAFETY APRON (3 SHEETS)
8000J	CHANNELIZERS
9350A	MAILBOX SUPPORT (SWNG-AWAY TYPE)

**BASIS OF PLANNED QUANTITIES**

2357	BITUMINOUS MATERIAL FOR TACK COAT	0.05 GAL / SQ YD
2211	AGGREGATE BASE CLASS 5	1.8 TONS / CU YD
2360	ALL BITUMINOUS PAVEMENT	115 LBS / SQ YD / IN THICKNESS
2581	REMOVABLE PREFORM PAVEMENT MARKING TAPE	2' AT 50' INTERVALS
2575	SEED MIXTURE 25-121	61 LBS./ ACRE
2574	FERTILIZER TYPE 3	350 LBS./ ACRE
2575	HYDRAULIC REINFORCED FIBER MATRIX	3900 LBS./ ACRE

NO	DATE	BY	CKD	APPR	REVISION	2/26/2021	11:28:03 AM
NAME: P:\21-01-00\CSAH_58_(CSAH9-CSAH78)\Base\Proposed\CSAH58_SEQ.dgn							

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.  
 PRINT NAME: GERALD J. AUGER JR.  
 SIGNATURE:   
 DATE: 02-24-2021 LICENSE NO. 26511

DRAWN BY MA DATE 12/11/2020  
 DESIGN BY MA DATE 12/11/2020  
 CHECKED BY CO DATE 12/11/2020



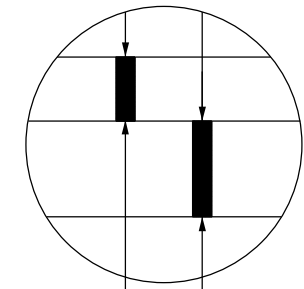
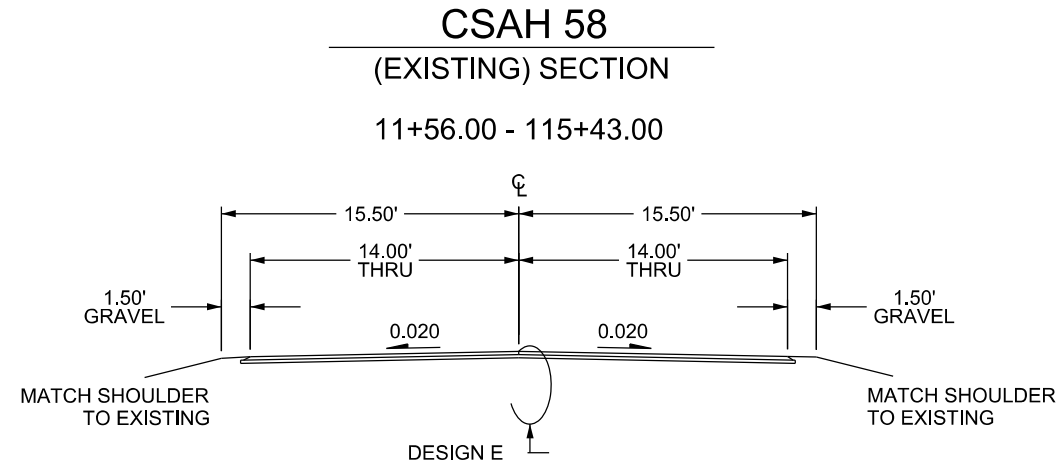
**ANOKA COUNTY  
HIGHWAY DEPT.**

STATE AID PROJECT 002-658-001

STATEMENT OF ESTIMATED QUANTITIES

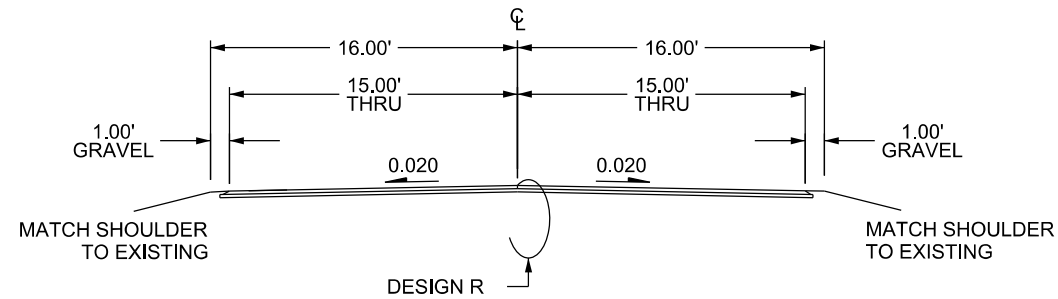
Sheet 2 of 19 Sheets

EXISTING SECTION

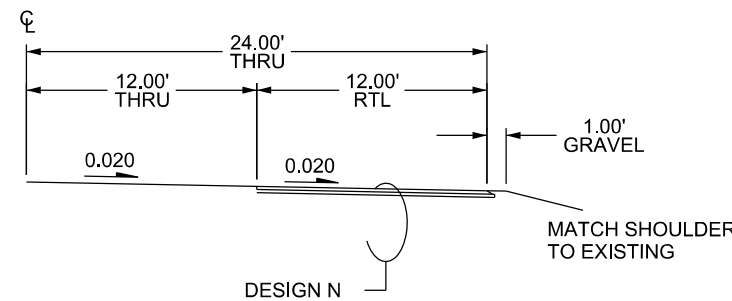


4" EXISTING BITUMINOUS  
6" EXISTING CLASS V BASE

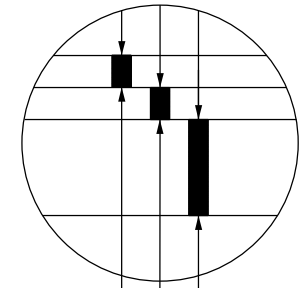
**CSAH 58**  
(PROPOSED) SECTION  
27+70.10 - 28+61.20  
33+62.30 - 37+70.10  
42+71.80 - 58+29.40  
63+29.00 - 115+43.00



**RIGHT TURN**  
(PROPOSED) SECTION  
28+61.20 - 33+62.30  
58+29.40 - 63+29.00

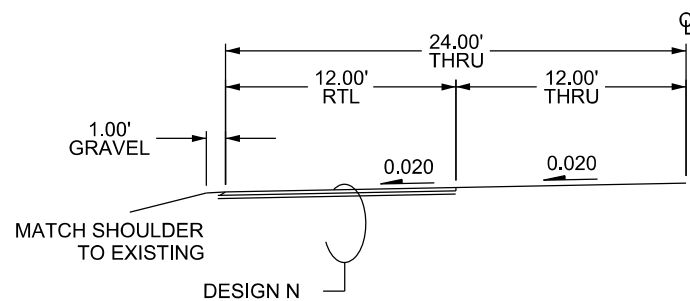


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RECLAIM SECTION

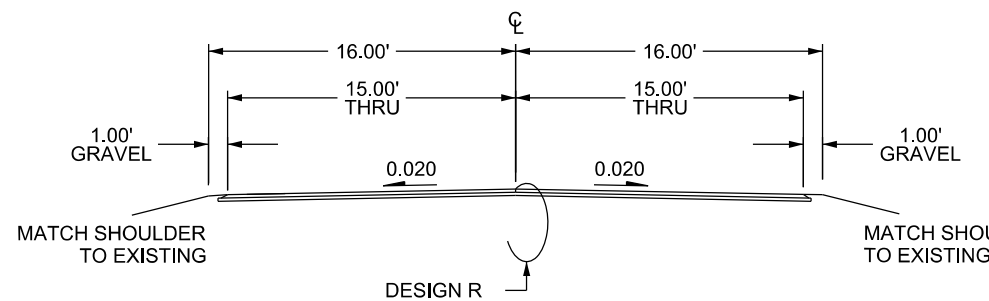


2.0" BITUMINOUS WEAR(SPWEB440C)  
2.0" BITUMINOUS WEAR(SPWEB440C)  
RECLAIMED BITUMINOUS

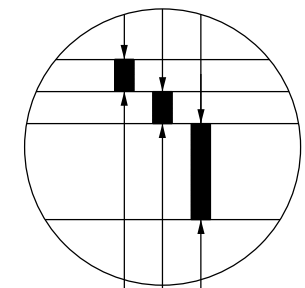
**RIGHT TURN**  
(PROPOSED) SECTION  
22+69.20 - 27+70.10  
37+71.10 - 42+71.80



**CSAH 58**  
(PROPOSED) SECTION  
11+56.00 - 22+69.20  
27+70.10 - 28+61.20  
33+62.30 - 37+71.10  
42+71.80 - 58+29.40



**DESIGN N**  
RIGHT TURN



2.0" BITUMINOUS WEAR(SPWEB440C)  
2.0" BITUMINOUS WEAR(SPWEB440C)  
6" AGGREGATE BASE, CLASS 5

NO	DATE	BY	CKD	APPR	REVISION	02/24/2021	3:22:30 PM
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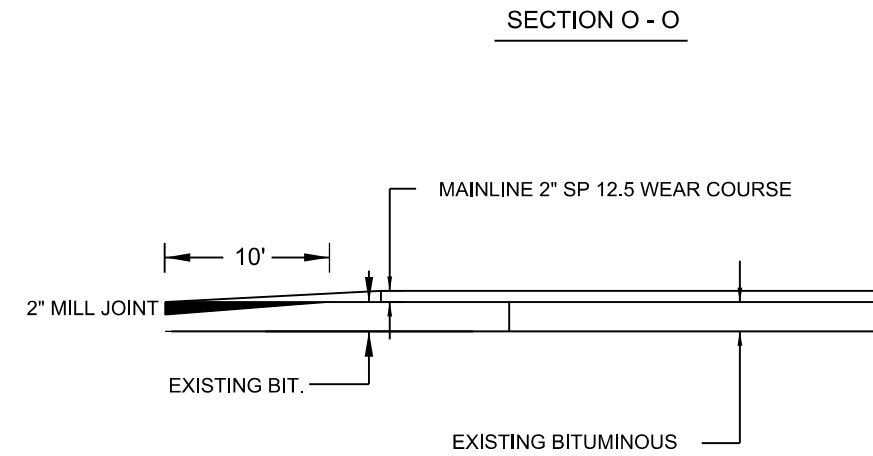
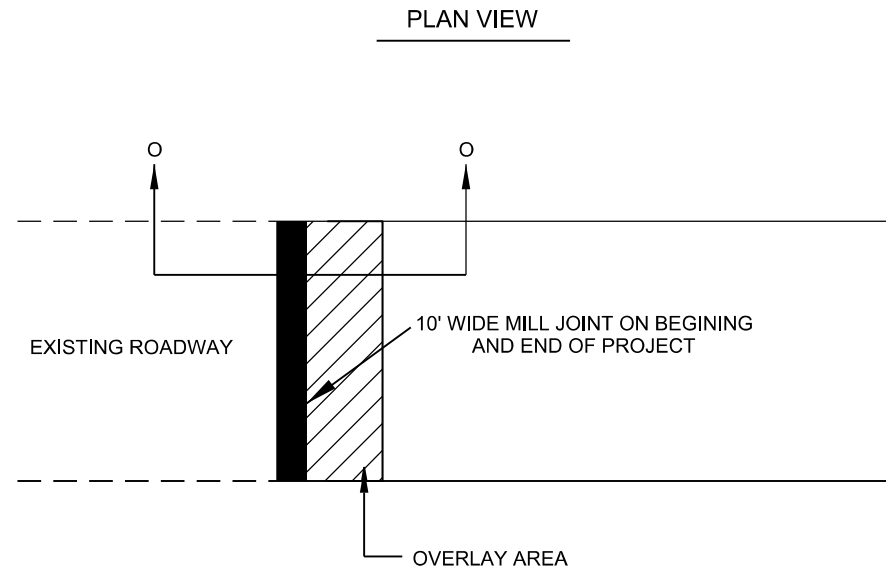
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
PRINT NAME: GERALD J. AUGER JR.  
SIGNATURE:   
DATE: 02-24-2021 LICENSE NO. 26511

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CHECKED BY CO DATE 12/11/2020

**ANOKA COUNTY**  
**HIGHWAY DEPT.**

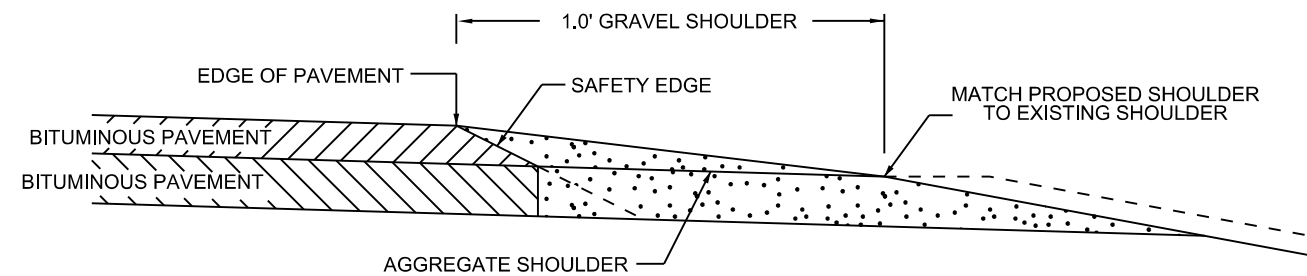
STATE AID PROJECT 002-658-001

## MAINLINE JOINT DETAIL (OVERLAY)



## SHOULDER DETAIL

BITUMINOUS SAFETY EDGE  
GRAVEL SHOULDER



SAFETY EDGE TO BE USED IN ALL NON-CURB AREAS ON SHOULDER.

OPTIONAL DESIGN EXTENDS SAFETY EDGE DEEPER THAN 6" AND WIDER THAN 10.5". SEE SPECIAL PROVISIONS .

NO	DATE	BY	CKD	APPR	REVISION	02/24/2021	3:22:32 PM
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**ANOKA COUNTY**  
**HIGHWAY DEPT.**

STATE AID PROJECT 002-658-001

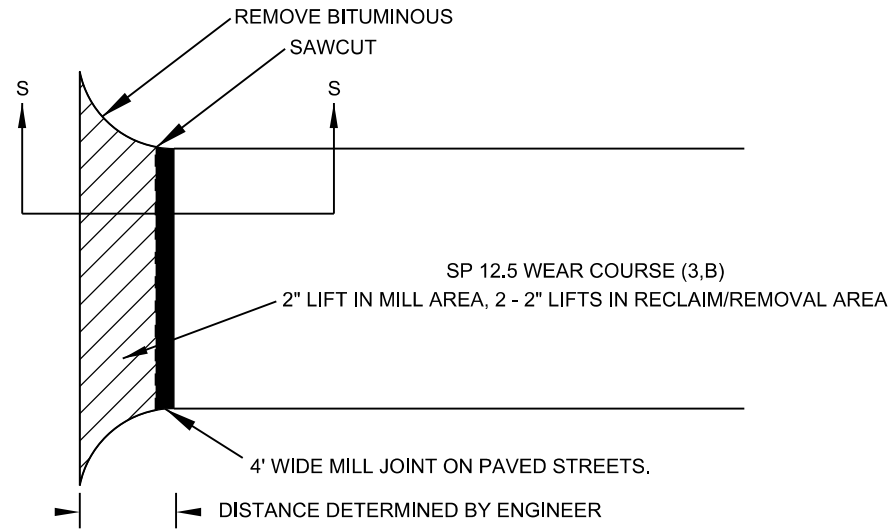
DETAILS

Sheet 4 of 19 Sheets

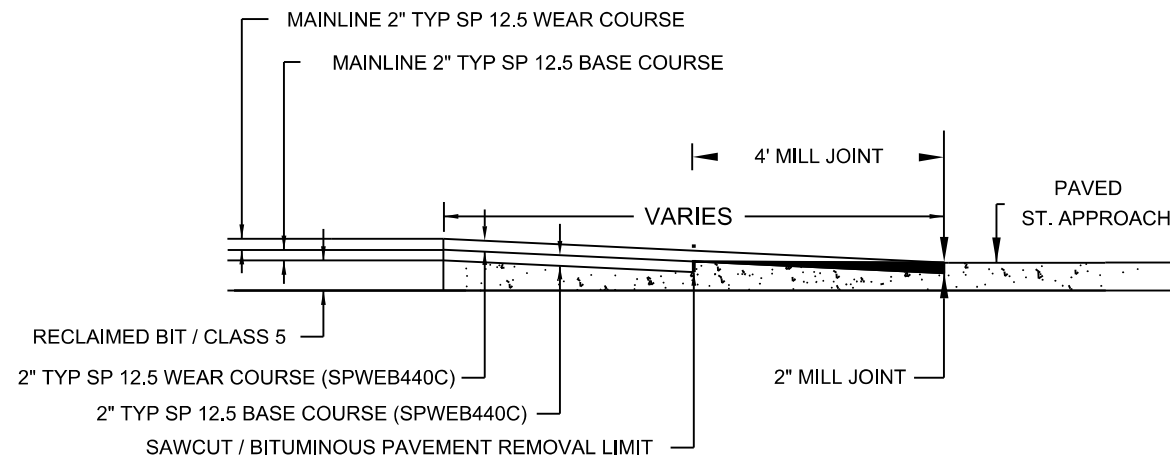
# STREET APPROACH DETAIL (RECLAIM)

## BITUMINOUS STREET

PLAN VIEW



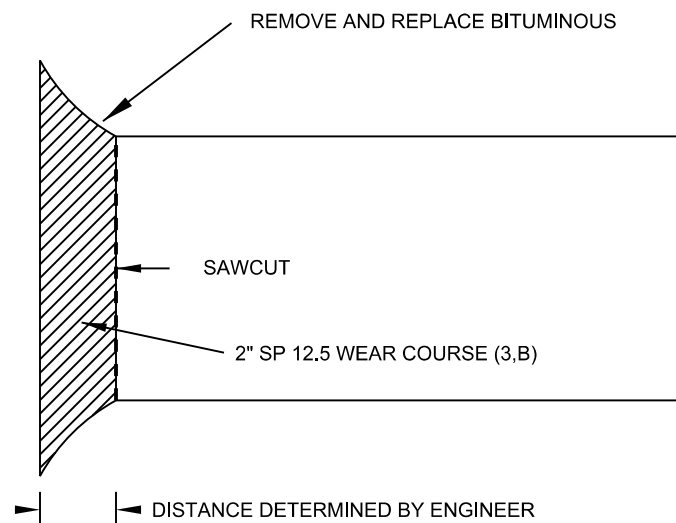
SECTION S - S



# RECLAIM AREA - DRIVEWAY DETAIL

## BITUMINOUS

PLAN VIEW



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 PRINT NAME: GERALD J. AUGER JR.  
 SIGNATURE: *[Signature]*  
 DATE: 02-24-2021 LICENSE NO. 26511

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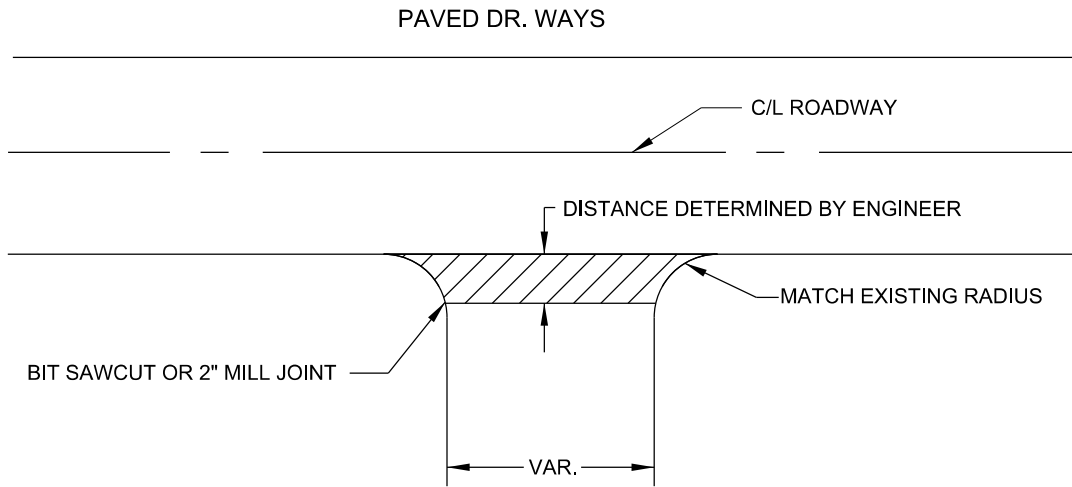


**ANOKA COUNTY  
HIGHWAY DEPT.**

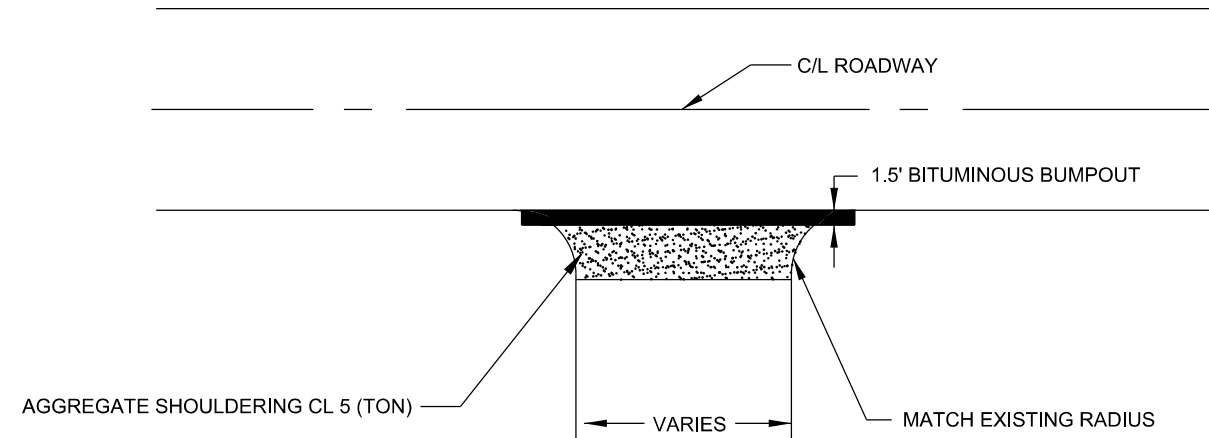
STATE AID PROJECT 002-658-001

DETAILS  
Sheet 5 of 19 Sheets

**DRIVEWAY DETAIL**  
BITUMINOUS DRIVEWAY

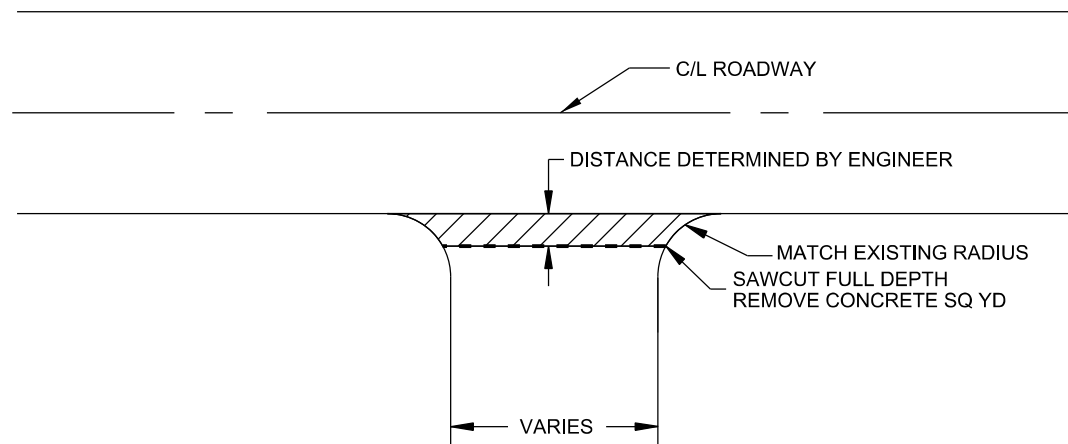


**DRIVEWAY DETAIL**  
GRAVEL / FIELD ENTRANCE

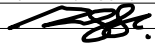


DRIVEWAYS BUMPED OUT AND PAVED WITH MAINLINE PAID AS MAINLINE.  
DRIVEWAYS PAVED IN DIFFERENT OPERATION FROM MAIN LINE PAVING PAID AS DRIVEWAY OR STREET APPROACH.

**DRIVEWAY DETAIL**  
CONCRETE DRIVEWAY



NO	DATE	BY	CKD	APPR	REVISION	
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NAME: P:\21-01-00\CSAH_58_(CSAH9-CSAH78)\Base\Proposed\CSAH58_DETAILS.dgn						

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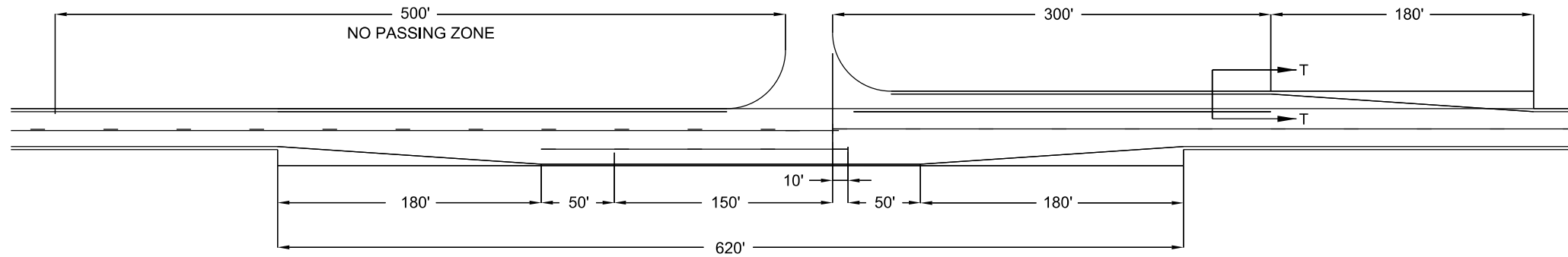


STATE AID PROJECT 002-658-001

DETAILS  
 Sheet 6 of 19 Sheets

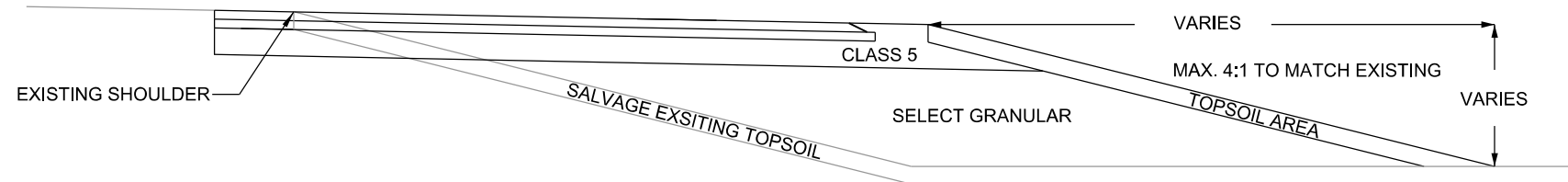
### RIGHT TURN AND BYPASS LANE

#### GENERAL LAYOUT PLAN VIEW



### RIGHT TURN AND BYPASS LANE

#### SECTION T - T



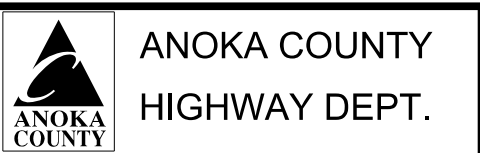
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 SIGNATURE:   
 DATE: 02-24-2021 LICENSE NO. 26511

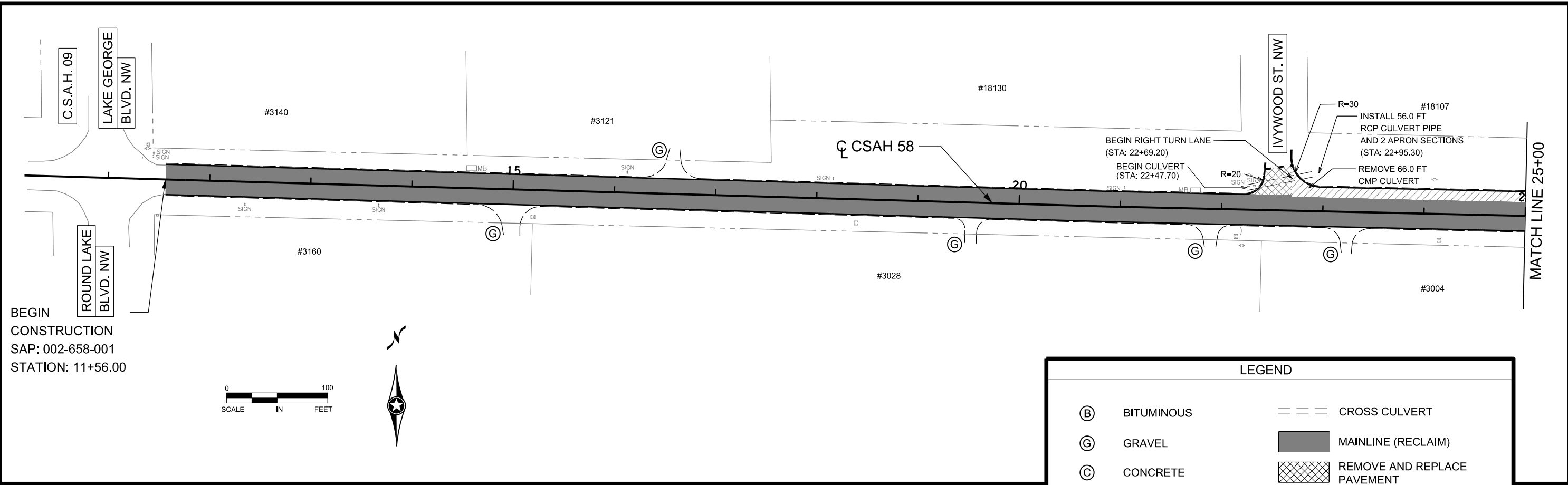
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 CHECKED BY CO DATE 12/11/2020



STATE AID PROJECT 002-658-001

DETAILS  
 Sheet 7 of 19 Sheets

\$USERS



BEGIN  
CONSTRUCTION  
SAP: 002-658-001  
STATION: 11+56.00

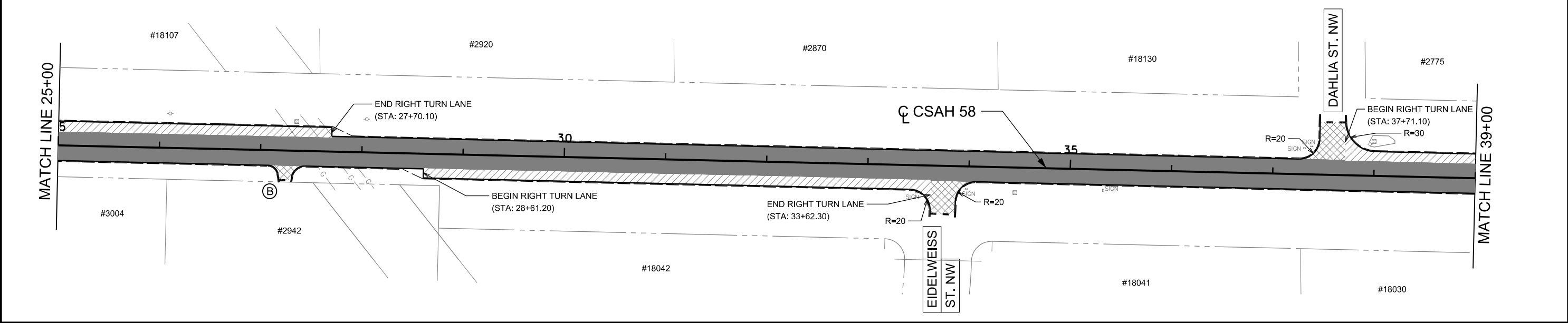
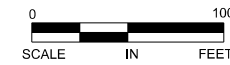


**LEGEND**

(B)	BITUMINOUS	---	CROSS CULVERT
(G)	GRAVEL	[Solid Grey Box]	MAINLINE (RECLAIM)
(C)	CONCRETE	[Cross-hatched Box]	REMOVE AND REPLACE PAVEMENT
(●)	CORE LOCATION	[Diagonal-hatched Box]	CONSTRUCT TURN LANE AREA
---	SAWCUT	---	R / W

**RIGHT TURN LANE TAB**

STREET	STATION RANGE	RTL / BYPASS	COMMON EXCAVATION (CU YDS)	GRANULAR BORROW (CV) (CU YDS)	TOPSOIL BORROW (LV) (CU YDS)	CLASS 5 (TON)
IVYWOOD ST.	22+69 - 27+70	RTL	180	211	48	168
EIDELWEISS ST.	28+61 - 33+62	RTL	160	194	40	160
DAHLIA ST.	37+71 - 42+72	RTL	145	241	60	170
<b>TOTALS:</b>			<b>485</b>	<b>646</b>	<b>148</b>	<b>498</b>



NO	DATE	BY	CKD	APPR	REVISION	\$DATES	\$TIMES

NAME: SDGNS

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.

PRINT NAME: GERALD J. AUGER JR.

SIGNATURE: *[Signature]*

DATE: 02-24-2021 LICENSE NO. 26511

DRAWN BY: SPH DATE: 12/11/2020

DESIGN BY: SPH DATE: 12/11/2020

CHECKED BY: CO DATE: 12/11/2020

**ANOKA COUNTY  
HIGHWAY DEPT.**

STATE AID PROJECT 002-658-001

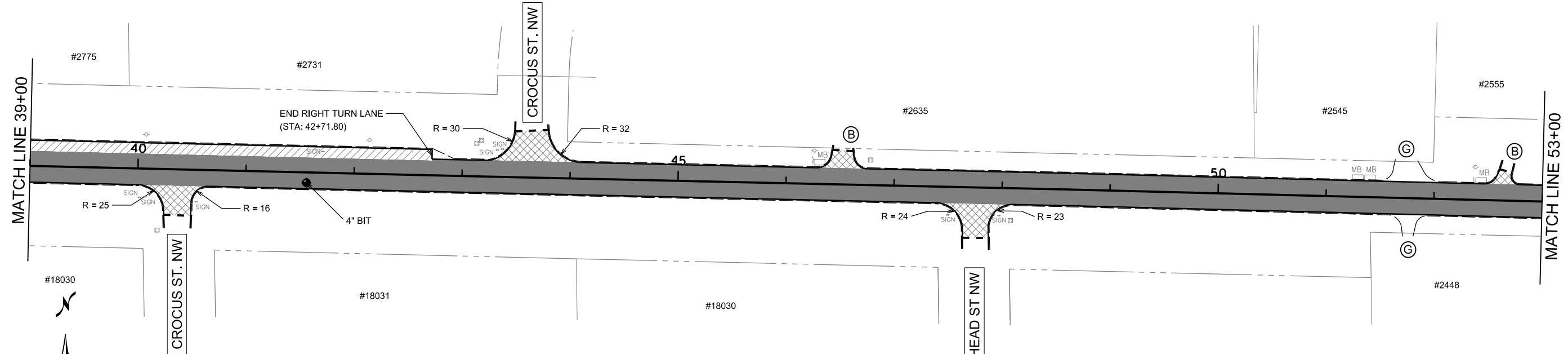
**CONSTRUCTION PLAN**

STA 11+56.00 TO 39+00.00

Sheet 8 of 19 Sheets



\$USERS

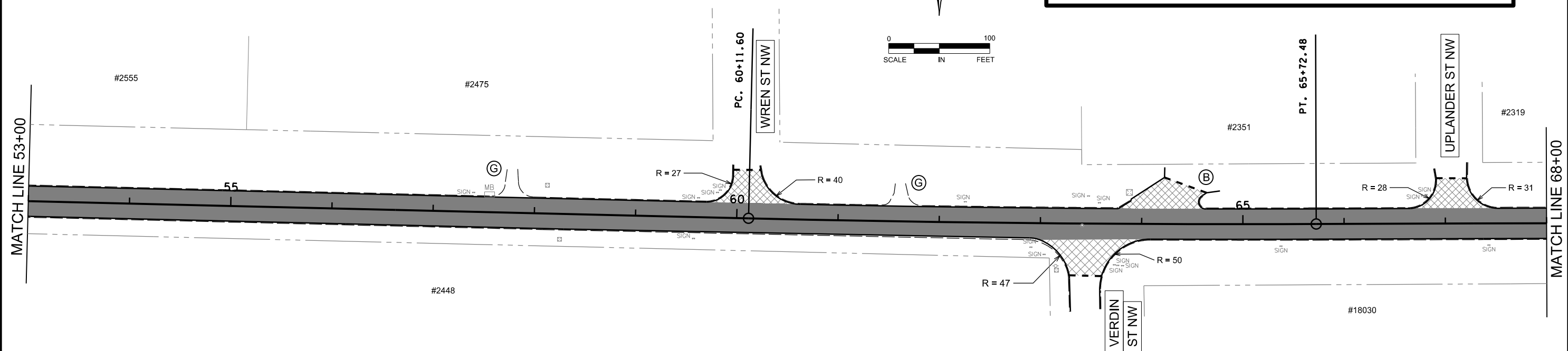
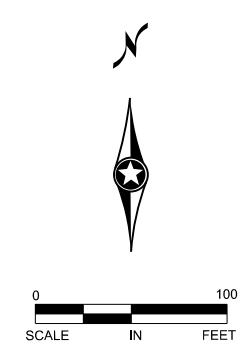


**LEGEND**

(B)	BITUMINOUS	---	CROSS CULVERT
(G)	GRAVEL	[Solid Grey Box]	MAINLINE (RECLAIM)
(C)	CONCRETE	[Cross-hatched Box]	REMOVE AND REPLACE PAVEMENT
●	CORE LOCATION	[Diagonal-hatched Box]	CONSTRUCT TURN LANE AREA
---	SAWCUT	---	R / W

**RIGHT TURN LANE TAB**

STREET	STATION RANGE	RTL / BYPASS	COMMON EXCAVATION (CU YDS)	GRANULAR BORROW (CV) (CU YDS)	TOPSOIL BORROW (LV) (CU YDS)	CLASS 5 (TON)
DAHLIA ST.	37+71 - 42+72	RTL	145	241	60	170
<b>TOTALS:</b>			<b>145</b>	<b>241</b>	<b>60</b>	<b>170</b>



NO	DATE	BY	CKD	APPR	REVISION	\$DATES	\$TIMES

NAME: SDGNS

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.

PRINT NAME: GERALD J. AUGER JR.

SIGNATURE: *[Signature]*

DATE: 02-24-2021 LICENSE NO. 26511

DRAWN BY: SPH DATE: 12/11/2020

DESIGN BY: SPH DATE: 12/11/2020

CHECKED BY: CO DATE: 12/11/2020

**ANOKA COUNTY HIGHWAY DEPT.**

STATE AID PROJECT 002-658-001

**CONSTRUCTION PLAN**

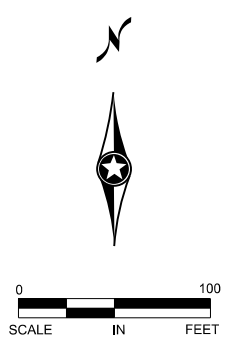
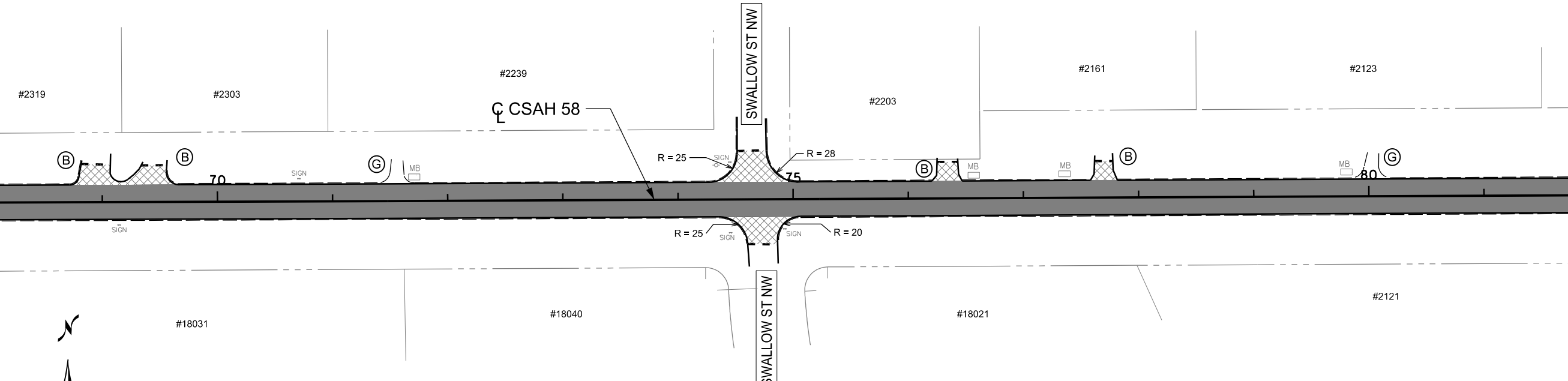
STA 39+00.00 TO 68+00.00

Sheet 9 of 19 Sheets

\$USERS\$

MATCH LINE 68+00

MATCH LINE 82+00

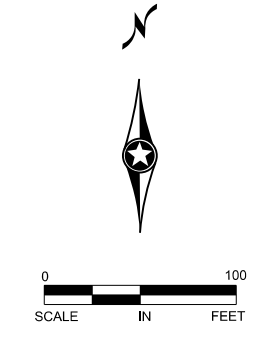
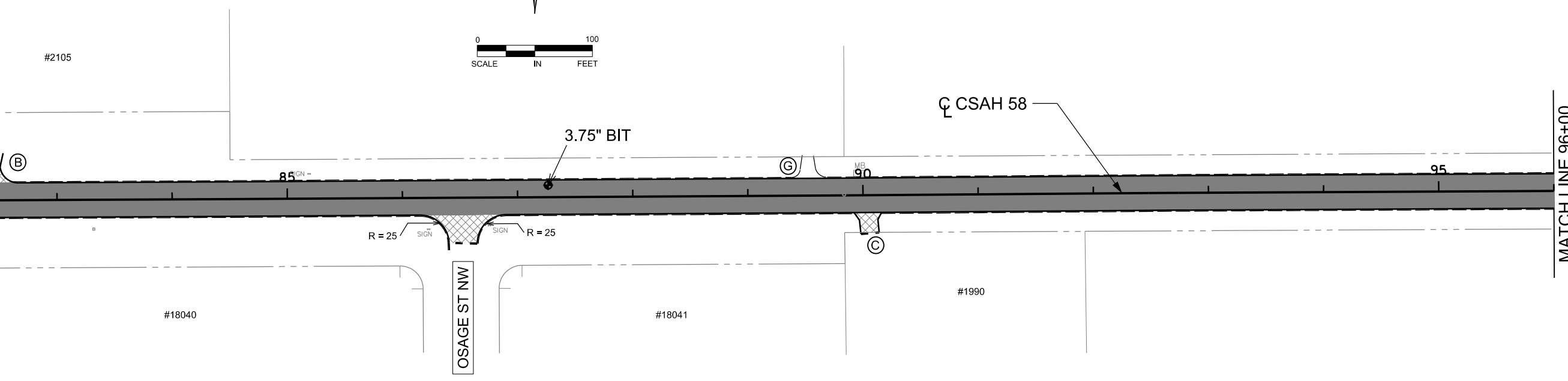


**LEGEND**

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(G)	GRAVEL	[Solid Grey Box]	MAINLINE (RECLAIM)
(C)	CONCRETE	[Cross-hatched Box]	REMOVE AND REPLACE PAVEMENT
●	CORE LOCATION	[Diagonal-hatched Box]	CONSTRUCT TURN LANE AREA
---	SAWCUT	---	R / W

MATCH LINE 82+00

MATCH LINE 96+00



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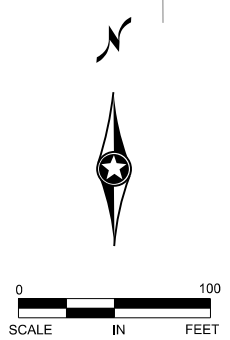
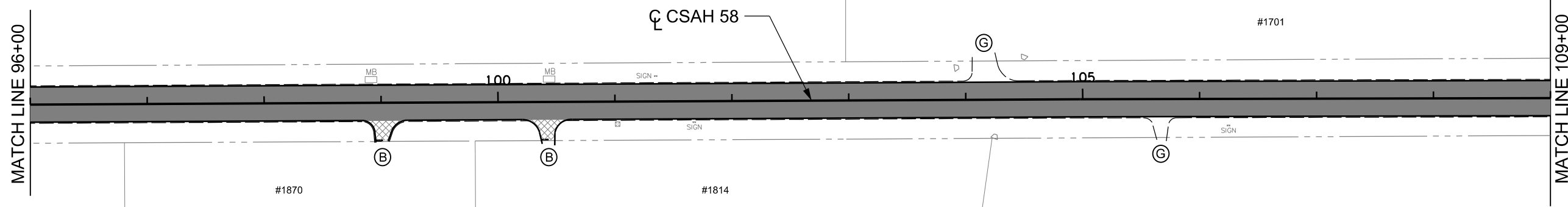
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**ANOKA COUNTY  
HIGHWAY DEPT.**

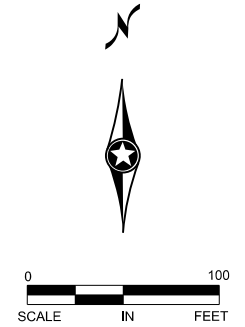
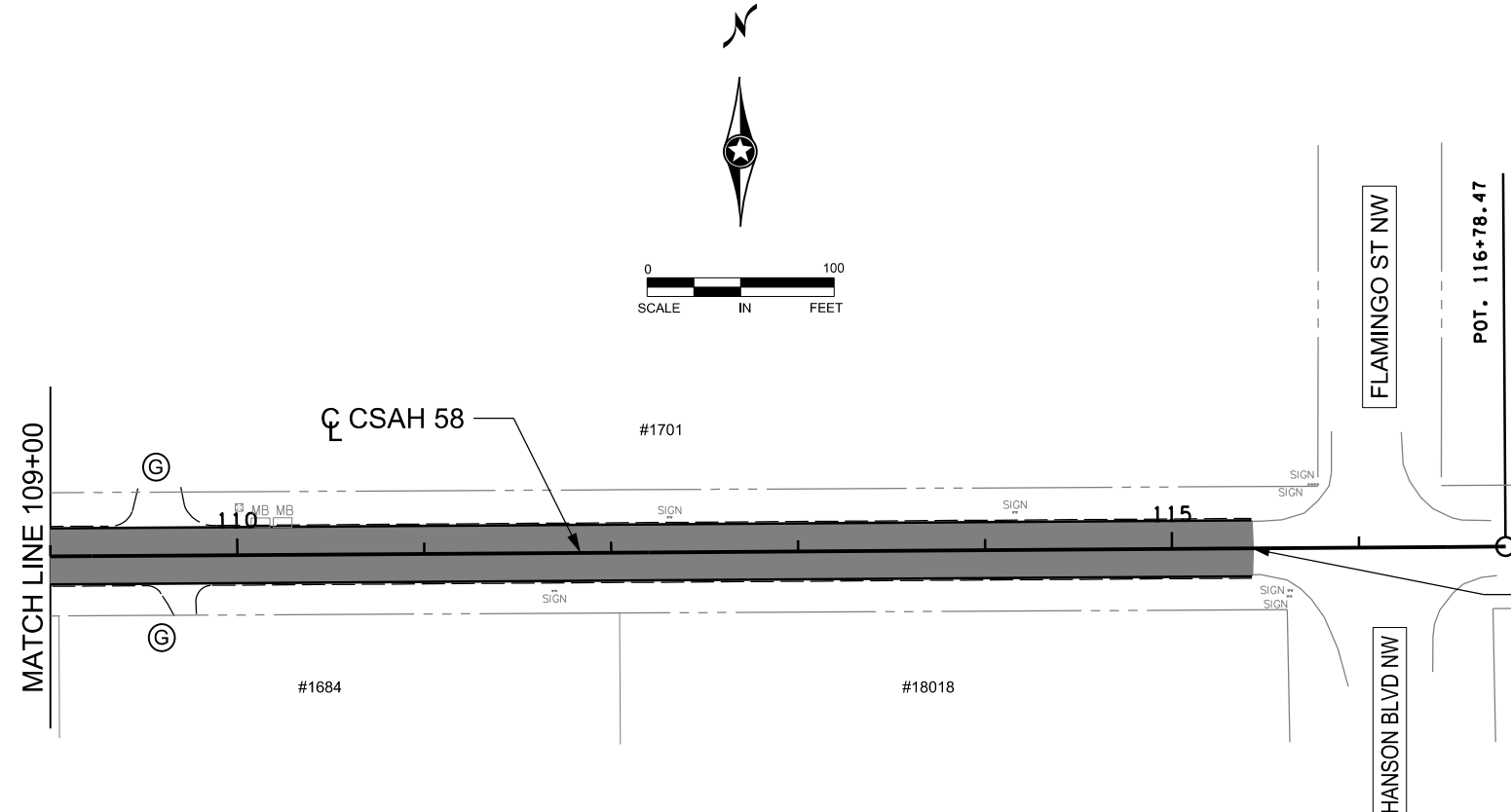
STATE AID PROJECT 002-658-001

**CONSTRUCTION PLAN**  
STA 68+00.00 TO 96+00.00  
Sheet 10 of 19 Sheets

\$USERS\$



LEGEND			
(B)	BITUMINOUS	---	CROSS CULVERT
(G)	GRAVEL	█	MAINLINE (RECLAIM)
(C)	CONCRETE	▨	REMOVE AND REPLACE PAVEMENT
●	CORE LOCATION	▩	CONSTRUCT TURN LANE AREA
---	SAWCUT	---	R / W



NO	DATE	BY	CKD	APPR	REVISION	\$DATES	\$TIMES

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**ANOKA COUNTY**  
**HIGHWAY DEPT.**

STATE AID PROJECT 002-658-001

CONSTRUCTION PLAN  
STA 96+00 TO 115+43  
Sheet 11 of 19 Sheets

**PERMANENT PAVEMENT MARKING PLAN**  
NOTES AND GUIDELINES

**GENERAL INFORMATION:**

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. ANOKA COUNTY HIGHWAY DEPARTMENT WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS, LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 1/4 INCH UNDER OR 1/4 INCH OVER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARANCE. BROKEN LINE SEGMENTS MAY VARY UP TO ONE-HALF FOOT FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 1 INCH. MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINTS, ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.

**MULTI COMPONENT (MULTI COMP):**

THE ROAD SURFACE SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER JUST PRIOR TO APPLICATION. PAVEMENT CLEANING SHALL CONSIST OF AT LEAST BRUSHING WITH A ROTARY BROOM (NON-METALLIC) OR AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. NEW PORTLAND CEMENT CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENT AND/OR LAITANCE ON LOW SPEED (SPEED LIMIT 35 MPH OR LESS) URBAN PORTLAND CEMENT CONCRETE ROADWAYS. SANDBLAST CLEANING SHALL BE USED FOR ALL MULTI COMP PAVEMENT MARKINGS.

THE MULTI COMP MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEANS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE MULTI COMP RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

A MULTI COMP RESIN LINE SHALL BE APPLIED WITH A MINIMUM THICKNESS OF 20 MILS (WET) AND 4" WIDE. GLASS BEADS SHALL BE APPLIED AT A MINIMUM RATE OF 25LBS POUNDS PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES FAHRENHEIT OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

**PREFORMED THERMOPLASTIC:**

THE PREFORMED THERMOPLASTIC MARKINGS SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS ON CLEAN AND DRY SURFACES. SEE SPECIAL PROVISIONS FOR PREFORMED THERMOPLASTIC MARKING SPECIFICATIONS.

**PAINT:**

AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICATION IN A MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.

GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.

EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 50 DEGREES FARHENHEIT OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILD OR DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

THE FILLING OF TANKS, POURING OF MATERIALS OR CLEANING OF EQUIPMENT SHALL NOT BE PERFORMED ON UNPROTECTED PAVEMENT SURFACES UNLESS ADEQUATE PROVISIONS ARE MADE TO PREVENT SPILLAGE OF MATERIAL.

1

PAVEMENT MARKING TABULATION		
ITEM	UNIT	TOTAL QUANTITY
4" SOLID LINE WHITE - MULTI COMP	LIN FT	21990
4" BROKEN LINE YELLOW - MULTI COMP	LIN FT	1949
4" SOLID LINE YELLOW - MULTI COMP	LIN FT	7480
4" SOLID DOUBLE LINE YELLOW - MULTI COMP	LIN FT	653

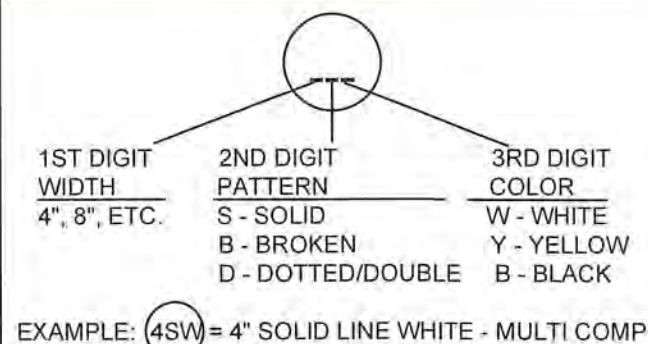
1 10' STRIPE, 40' GAP

**SYMBOLS & MATERIALS LEGEND**

- CROSSWALK BLOCK WHITE-POLY PREFORM
- ↩ PAVEMENT MESSAGE (LEFT ARROW) POLY PREFORM

**STRIPING KEY**

- CIRCLE - MULTI COMP
- SQUARE - POLY PREFORM THERMOPLASTIC
- △ TRIANGLE - PAINT
- ⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\20-01-00\CSAH 581\Bases\Traffic\Perm Pvmt Mrkg Guide Notes.dwg

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.

PRINT NAME: JOSEPH J. MACPHERSON, P.E.

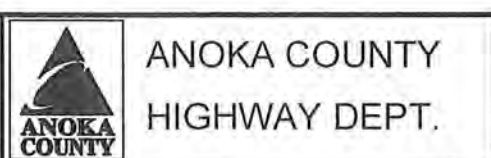
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DATE: 3-1-20

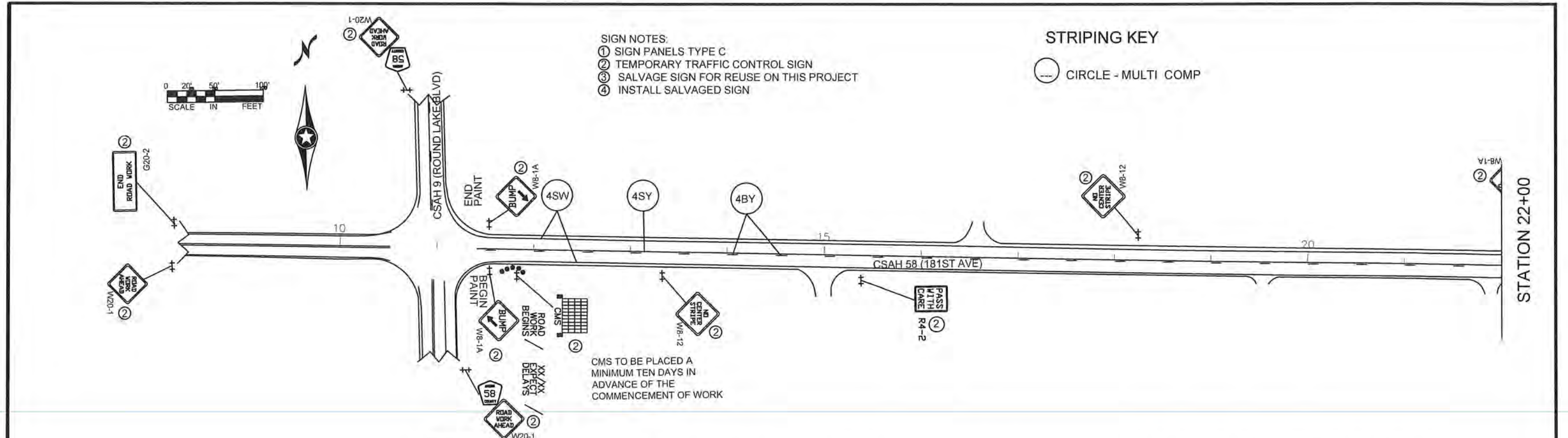
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DESIGN BY: TMV DATE: 09/04/20

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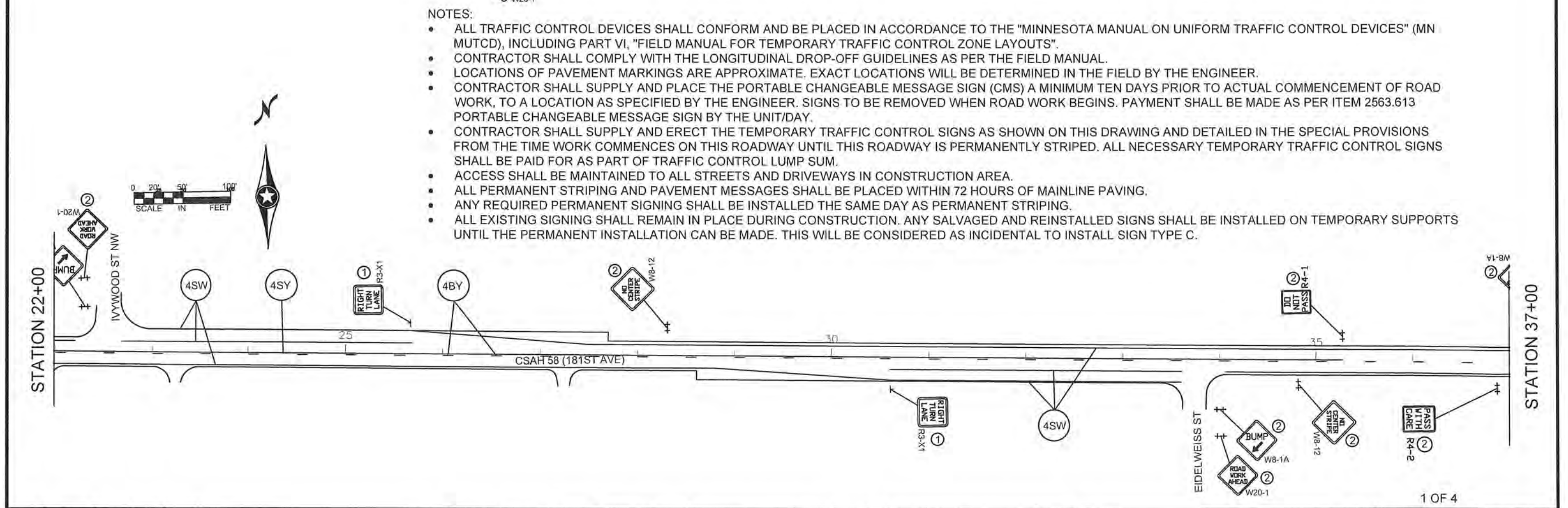


STATE AID PROJECT 002-658-001



**NOTES:**

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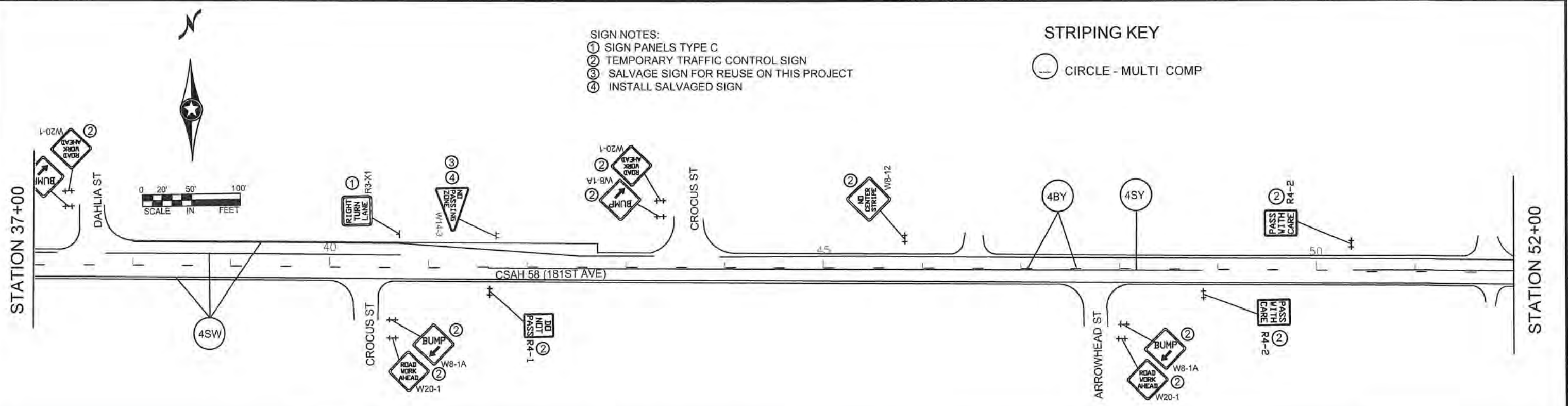


I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: JOSEPH J. MACPHERSON, P.E. SIGNATURE: DATE: 3-1-21 REG. NO. 46732					DRAWN BY: TMV DATE: 09/02/20 DESIGN BY: TMV DATE: 09/02/20 CHECKED BY: _____ DATE: _____		 <b>ANOKA COUNTY</b> <b>HIGHWAY DEPT.</b>		STATE AID PROJECT 002-658-001		1 OF 4 TEMPORARY SIGNING PERMANENT SIGNING AND STRIPING Sheet 13 of 19 Sheets	
NO	DATE	BY	CKD	APPR	REVISION	NAME: P:\21-01-00\CSAH_58_(CSAH9-CSAH78)\Base\Traffic\Sign&Stripe.dwg						

- SIGN NOTES:
- ① SIGN PANELS TYPE C
  - ② TEMPORARY TRAFFIC CONTROL SIGN
  - ③ SALVAGE SIGN FOR REUSE ON THIS PROJECT
  - ④ INSTALL SALVAGED SIGN

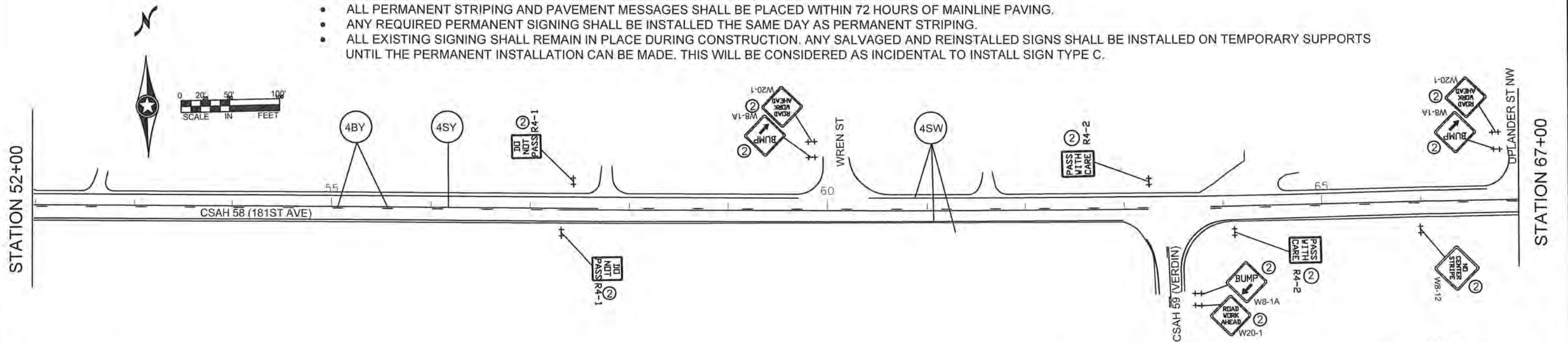
STRIPING KEY

○ CIRCLE - MULTI COMP



NOTES:

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2 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\21-01-00\CSAH58\_(CSAH9-CSAH78)\Base\TrafficSign&Stripe.dwg

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PRINT NAME: JOSEPH J. MCPHERSON, P.E.

SIGNATURE: *[Signature]*

DATE: 3-1-21 REG. NO. 46732

DRAWN BY: TMV DATE: 09/02/20

DESIGN BY: TMV DATE: 09/02/20

CHECKED BY: DATE:


**ANOKA COUNTY**  
HIGHWAY DEPT.

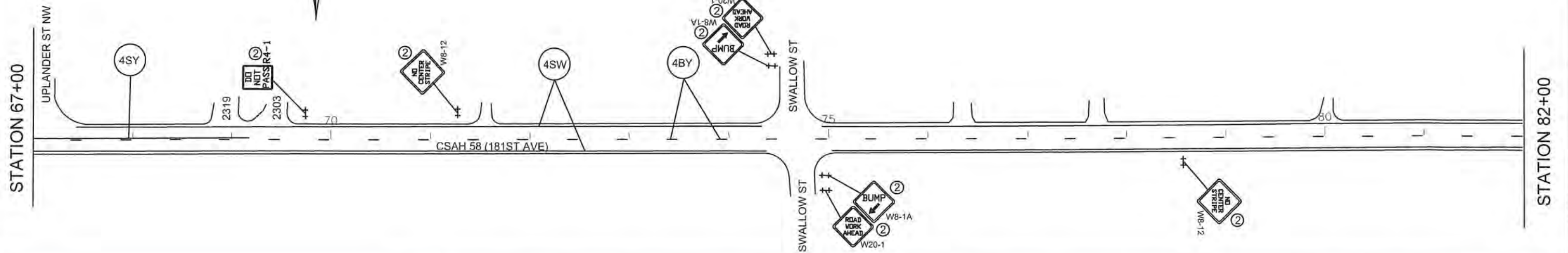
STATE AID PROJECT 002-658-001

TEMPORARY SIGNING  
PERMANENT SIGNING  
AND STRIPING

Sheet 14 of 19 Sheets

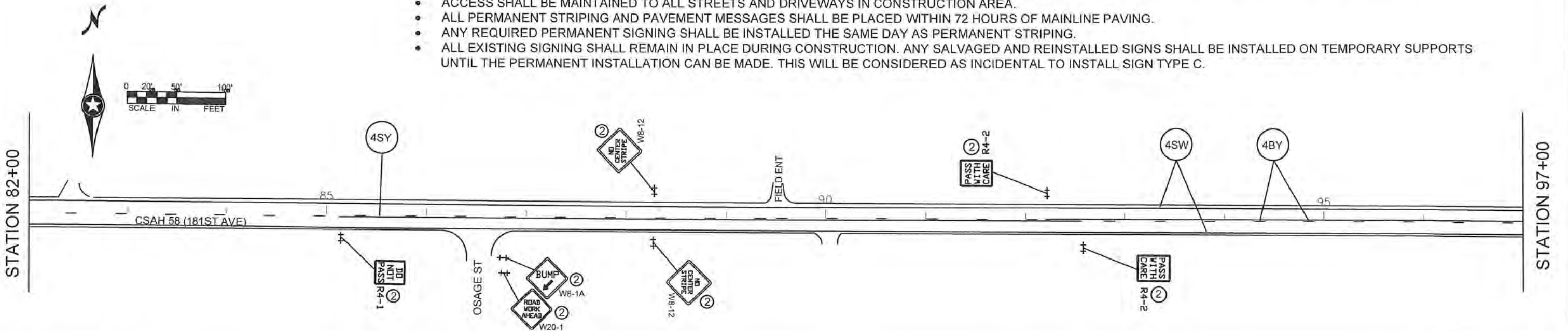
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STRIPING KEY  
 CIRCLE - MULTI COMP

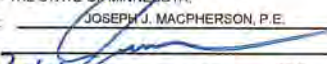


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 SIGNATURE:   
 DATE: 3-1-15 REG. NO. 46732

DRAWN BY: TMV DATE: 09/02/20  
 DESIGN BY: TMV DATE: 09/02/20  
 CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

 ANOKA COUNTY  
 HIGHWAY DEPT.

STATE AID PROJECT 002-658-001

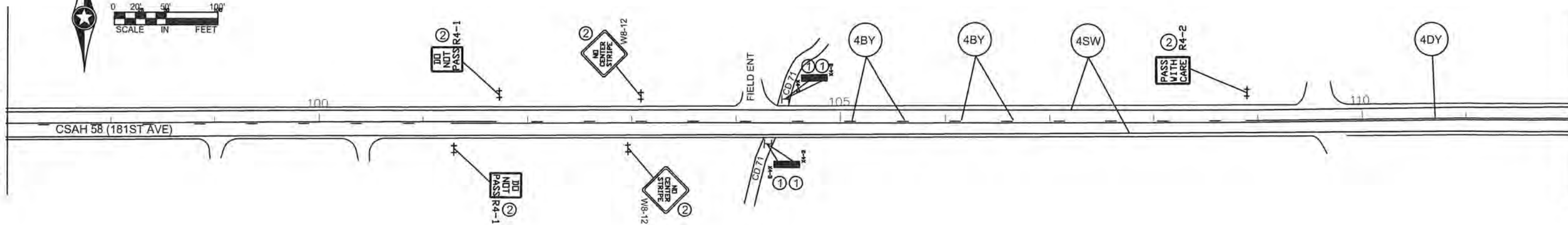
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 ① SIGN PANELS TYPE C  
 ② TEMPORARY TRAFFIC CONTROL SIGN  
 ③ SALVAGE SIGN FOR REUSE ON THIS PROJECT  
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STRIPING KEY

○ CIRCLE - MULTI COMP

STATION 97+00

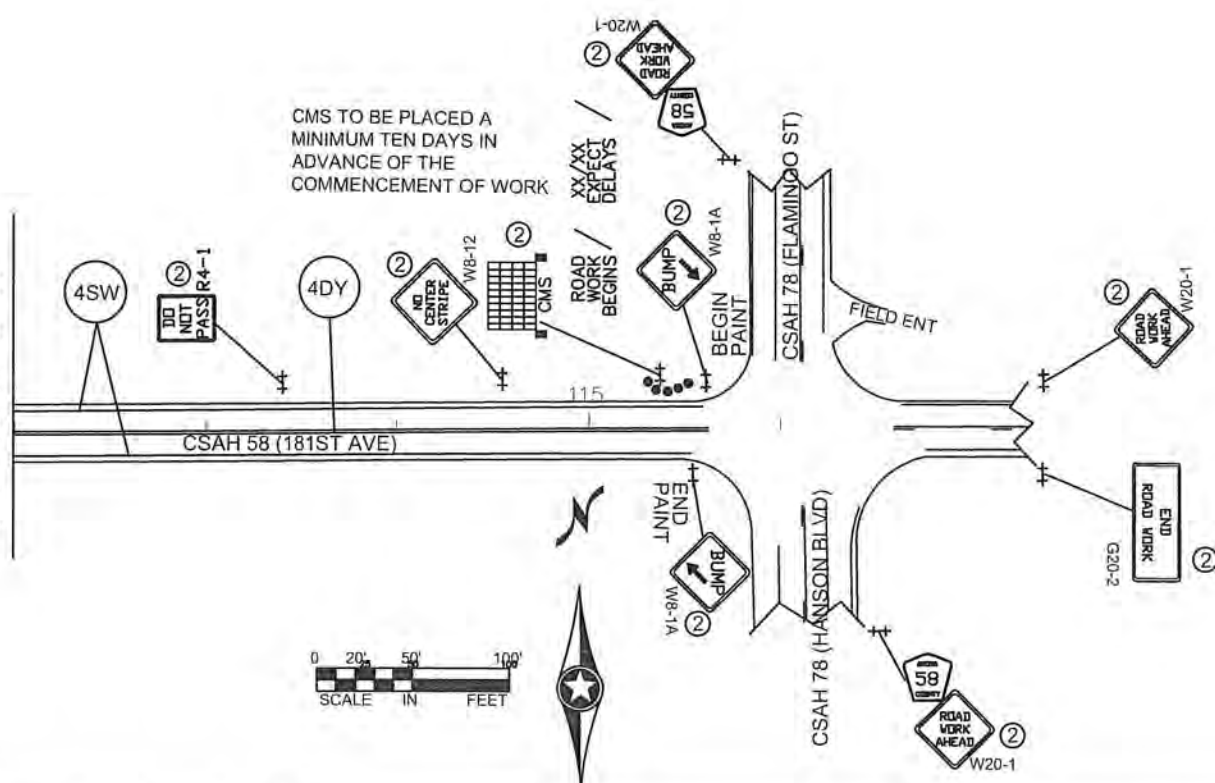
STATION 112+00



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STATION 112+00




NO	DATE	BY	CHKD	APPR	REVISION

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 PRINT NAME: JOSEPH J. MACPHERSON, P.E.  
 SIGNATURE: *[Signature]*  
 DATE: 3-1-24 REG. NO. 46732

DRAWN BY: TMV DATE: 09/02/20  
 DESIGN BY: TMV DATE: 09/02/20  
 CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

**ANOKA COUNTY**  
**HIGHWAY DEPT.**



STATE AID PROJECT 002-658-001

TEMPORARY SIGNING  
 PERMANENT SIGNING  
 AND STRIPING

Sheet 16 of 19 Sheets



TEMPORARY TRAFFIC CONTROL SIGNS							
M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY	NO. POST	MOUNTING HEIGHT TO Pavement Edge	FT.	
W8-12	48" x 48"		13	2	7.0'		
R4-1	24" x 30"		9	1	7.0'		
R4-2	24" x 30"		9	1	7.0'		
G20-2	36" x 18"		2	2	7.0'		
W8-1A	48" x 48"		16	2	7.0'		
W8-1	48" x 48"		AS NEEDED				
W8-8	48" x 48"		AS NEEDED				
W8-9	48" x 48"		AS NEEDED				
	48" x 48"		AS NEEDED				
W8-11	48" x 48"		AS NEEDED				
M1-6	24" x 24"		4				
W20-1	48" x 48"		AS NEEDED (ESTIMATED 18)				
REFLECTORIZED REBOUNDABLE DRUM			AS NEEDED (ESTIMATED 10)				
CMS sign to be placed a minimum of ten days prior to actual commencement of road work. Signs to be removed when road work begins.			2 AT 10 DAYS EA				

SALVAGE SIGN PANELS TYPE C					
STATION	ADDRESS/ DESCRIPTION (NOTES)	SALVAGE SIGN TYPE C	INSTALL SALVAGE SIGN TYPE C	SIGN NUMBER	SIGN LEGEND
		EACH	EACH		
41+68	LT	1	1	W14-3	NO PASSING ZONE
TOTAL		1	1		

F & I SIGN PANELS TYPE C							
M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY	PANEL AREA	TOTAL AREA	MOUNTING POST PER INSTALLATION	MOUNTING HEIGHT To pavement edge
				SQ. FT.	SQ. FT.		
R3-7	30" x 30"		3	6.25	18.75	1	7.0'
X4-3	6" x 12"		4	0.50	2.00	1	4.0'
TOTAL TYPE C SIGN SQ FT					20.75		
PROJECT TOTAL SQ FT					20.75		

CHANGEABLE MESSAGE BOARD - MESSAGE SEQUENCE LAYOUT

		R	O	A	D		
		W	O	R	K		
		B	E	G	I	N	S

	<	D	A	T	E	>	
		E	X	P	E	C	T
		D	E	L	A	Y	S

CMS sign to be placed a minimum of ten days prior to actual commencement of road work. Signs to be removed when road work begins.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\21-01-00\CSAH\_58 (CSAH9-CSAH78)\Base\Traffic\Sign&Stripe.dwg

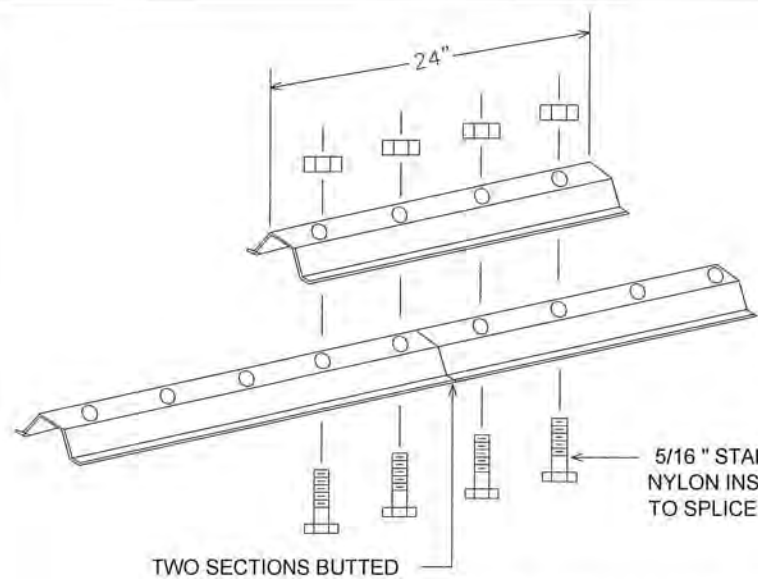
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: JOSEPH J. MACPHERSON, P.E.  
 SIGNATURE:   
 DATE: 3-1-21 REG. NO. 46732

DRAWN BY: TMV DATE: 09/02/20  
 DESIGN BY: TMV DATE: 09/02/20  
 CHECKED BY: DATE:

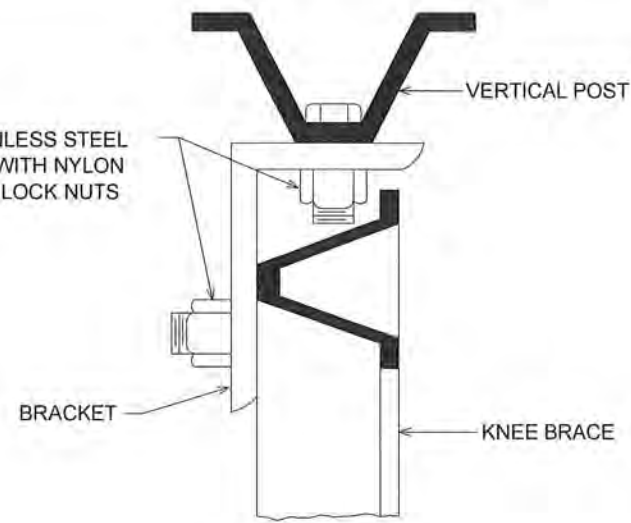


ANOKA COUNTY  
 HIGHWAY DEPT.

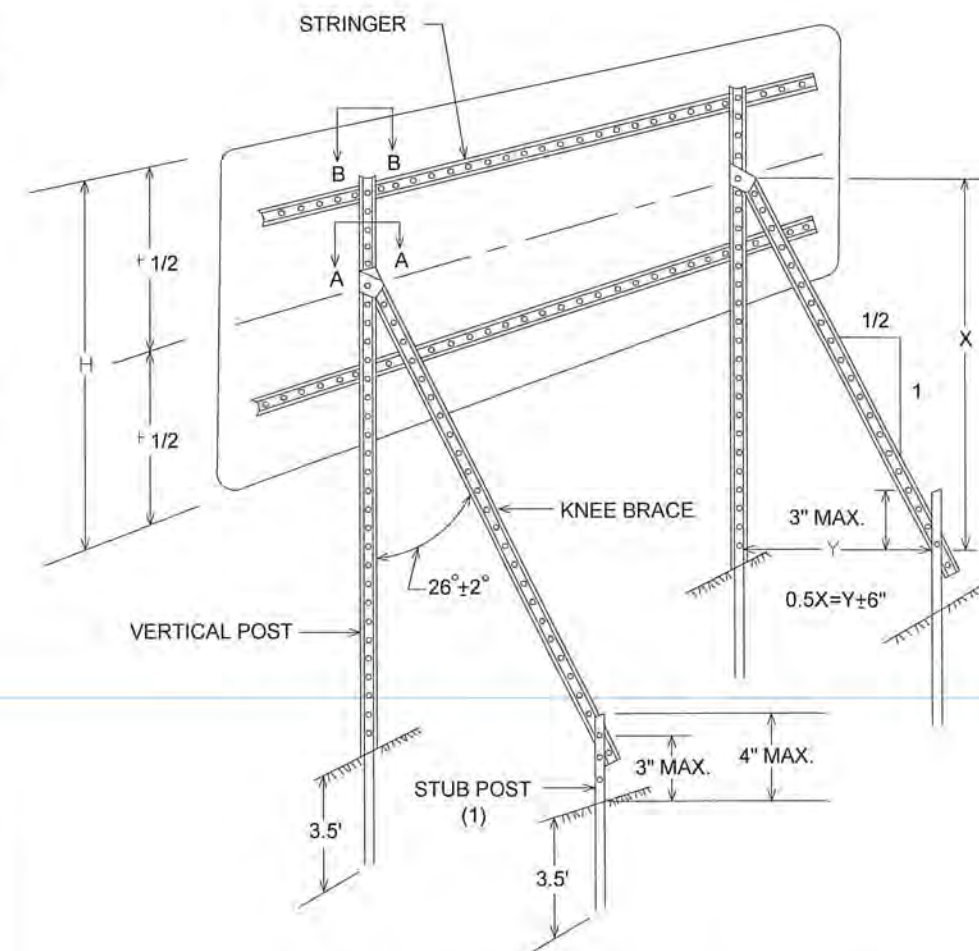
STATE AID PROJECT 002-658-001



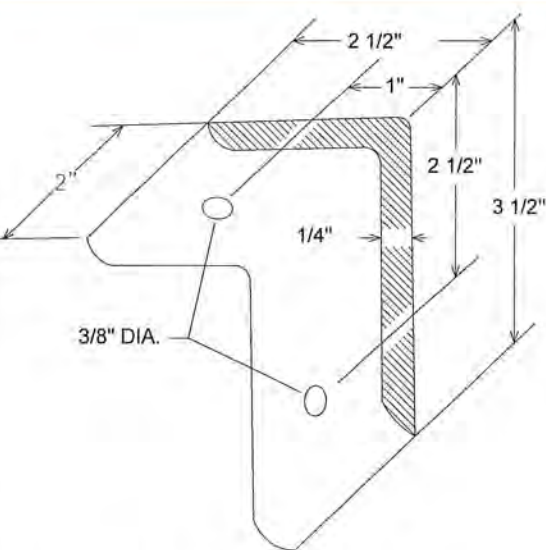
LATERAL BRACE OR STRINGER  
SPLICE DETAIL (EXPLODED VIEW)



SECTION A-A

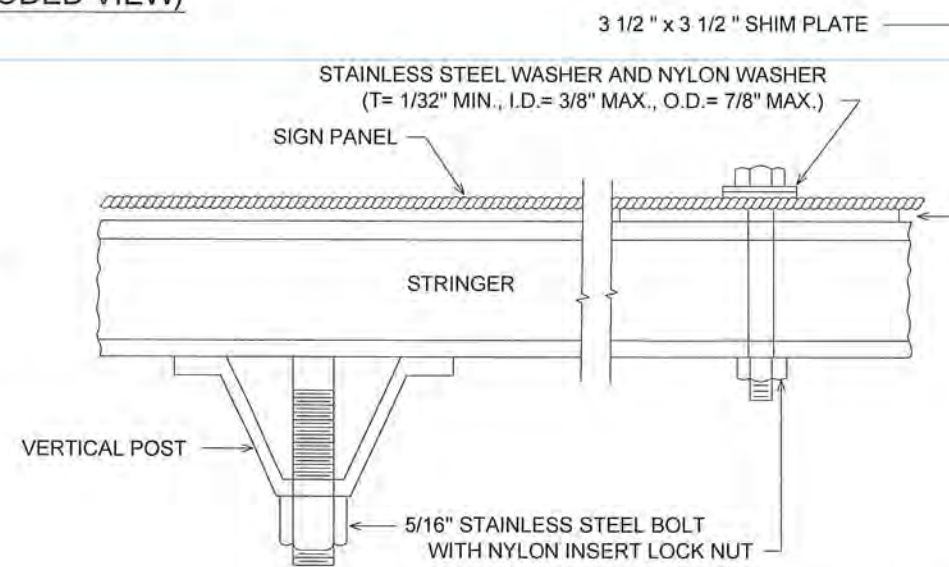


TYPICAL "A-FRAME" INSTALLATION  
TYPE "D" SIGNS

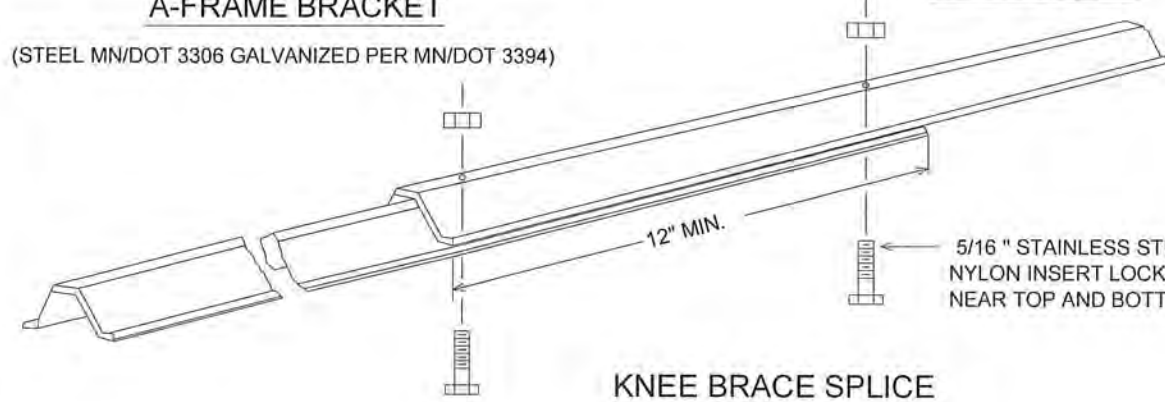


A-FRAME BRACKET

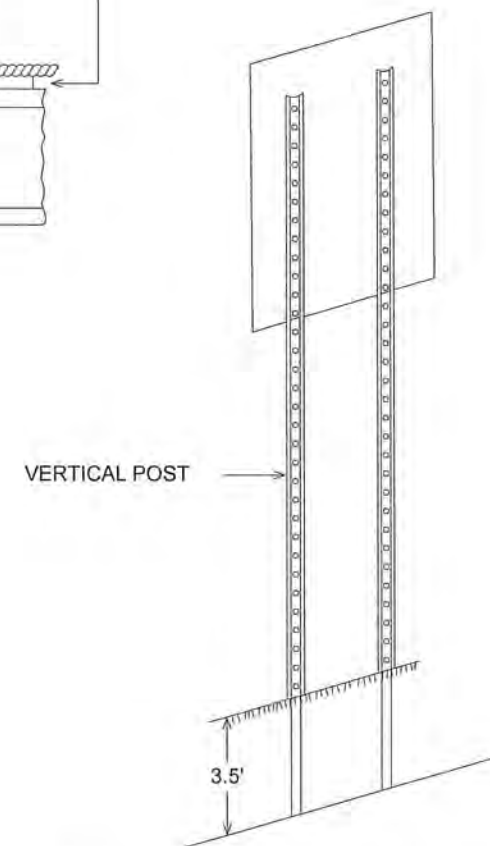
(STEEL MN/DOT 3306 GALVANIZED PER MN/DOT 3394)



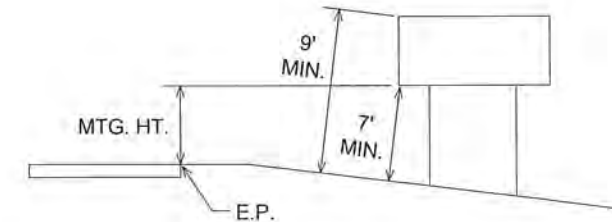
SECTION B-B



KNEE BRACE SPLICE



TYPICAL INSTALLATION 36" AND LARGER  
TYPE "C" SIGNS



TYPICAL MOUNTING

(1) OFFSET STUB POST 1' TOWARD ROADWAY  
RELATIVE TO VERTICAL POST.

TYPE C & D SIGN  
STRUCTURAL DETAILS

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\21-01-00\CSAH\_58 (CSAH9-CSAH78)\BaseTrafficSign&Stripe Details.dwg

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.

PRINT NAME: JOSEPH J. MACPHERSON, P.E.  
SIGNATURE: *[Signature]*  
DATE: 3-1-21 LICENSE NO. 46732

DRAWN BY: TMV DATE: 08/28/20  
DESIGN BY: TMV DATE: 08/28/20  
CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

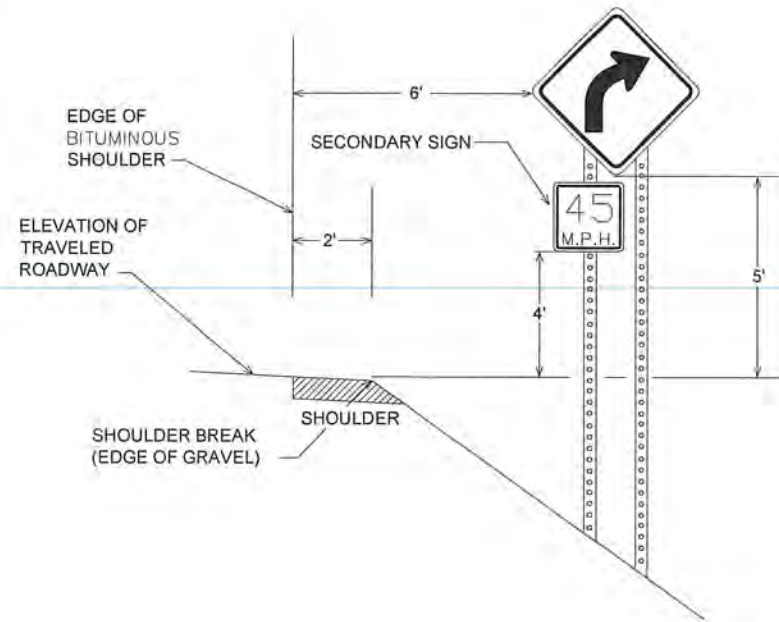


ANOKA COUNTY  
HIGHWAY DEPT.

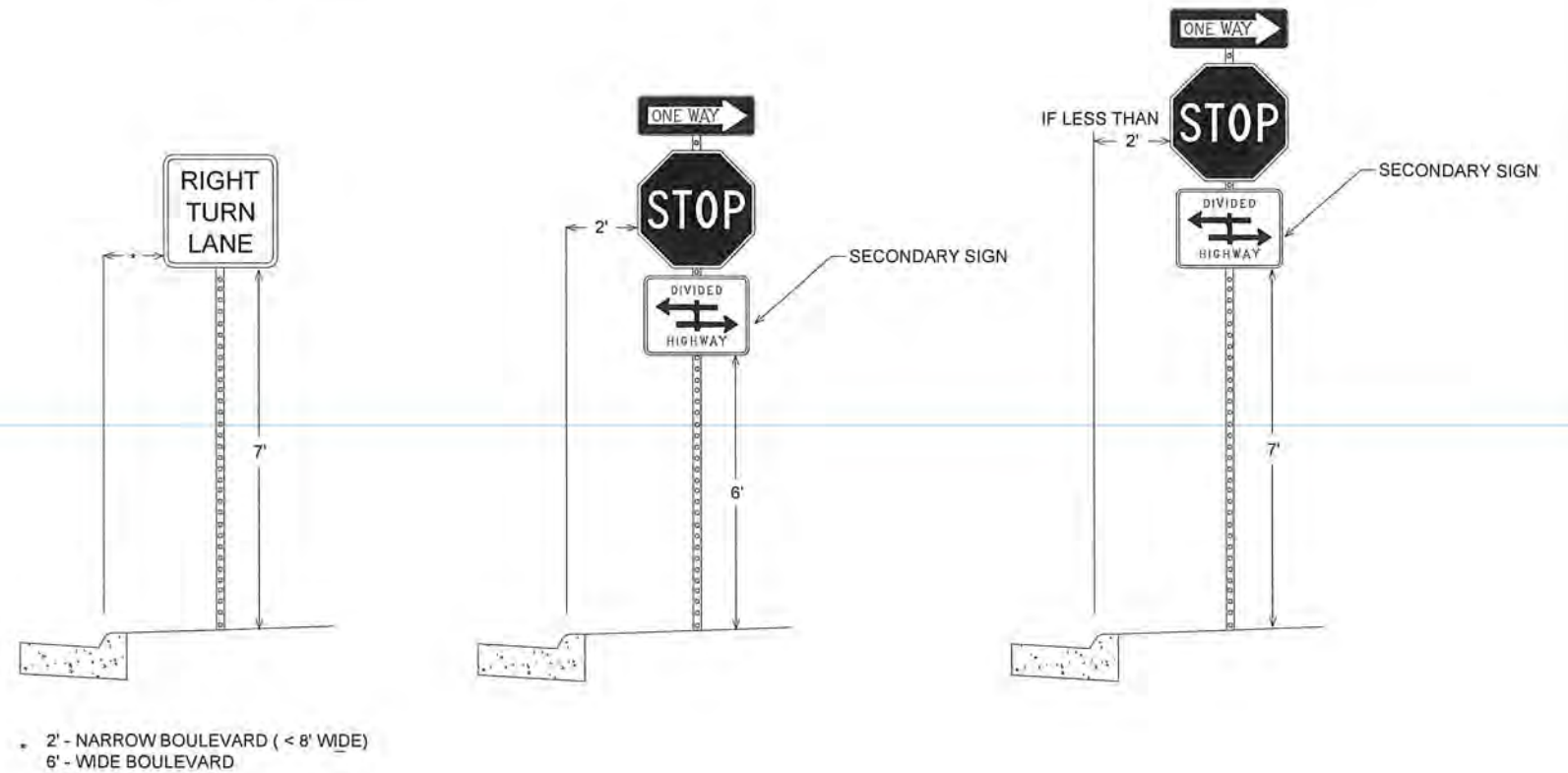
STATE AID PROJECT 002-658-001

SIGNING & STRIPING  
DETAILS  
Sheet 18 of 19 Sheets

TYPICAL SIGN PLACEMENT  
(RURAL)

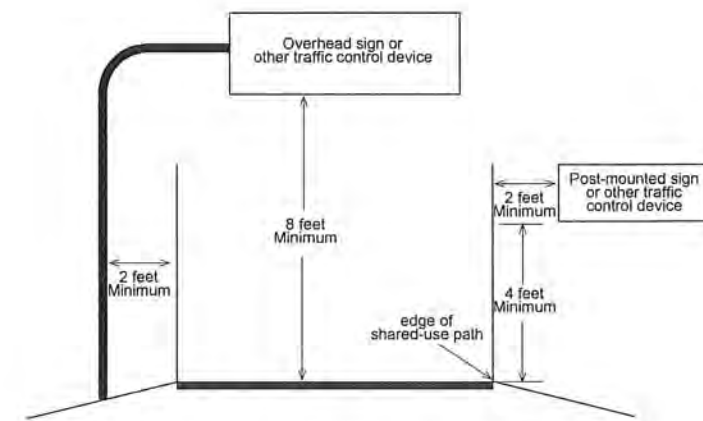


TYPICAL SIGN PLACEMENT  
(URBAN)



NOTES:

- ALL DIMENSIONS ARE MINIMUMS
- MAINTAIN A CLEAR DISTANCE OF 2' BETWEEN SIGNS AND BITUMINOUS TRAIL
- 7' SIGN CLEARANCE IF A CLEAR DISTANCE OF 2' BETWEEN SIGNS AND BITUMINOUS TRAIL CANNOT BE MAINTAINED



TYPICAL SIGN PLACEMENT  
SHARED-USE PATH

NO	DATE	BY	CHKD	APPR	REVISION

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.  
 PRINT NAME: JOSEPH J. MACPHERSON, P.E.  
 SIGNATURE: *[Signature]*  
 DATE: 3-1-21 LICENSE NO. 46732

DRAWN BY: TMV DATE: 09/28/20  
 DESIGN BY: TMV DATE: 08/28/20  
 CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_



ANOKA COUNTY  
HIGHWAY DEPT.

STATE AID PROJECT 002-658-001

SIGNING & STRIPING  
DETAILS  
Sheet 19 of 19 Sheets