

# MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

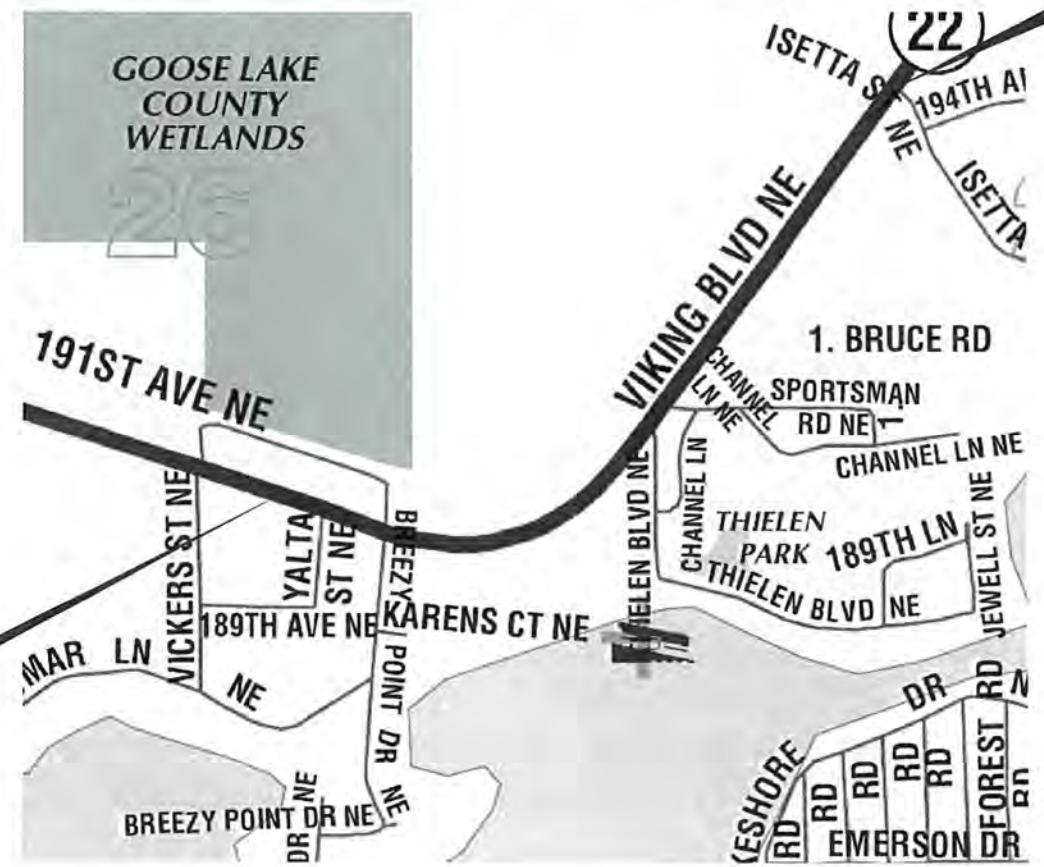
CONSTRUCTION PLAN FOR CONSTRUCTION OF RIGHT TURN LANES AT YALTA ST NE/BREEZY POINT DR NE, THIELEN BLVD NE, AND ISETTA ST NE

LOCATED ON CSAH 22 BETWEEN YALTA ST NE AND ISETTA ST NE

CSAH 22			
GROSS LENGTH	5188.00 FEET	0.982 MILES	
EXCEPTIONS-LENGTH	3354.00 FEET	0.635 MILES	
NET LENGTH	1834.00 FEET	0.347 MILES	

END SAP 002-622-040  
CSAH, STA: 66+30.00

BEGIN SAP 002-622-040  
CSAH, STA: 14+42.00



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 18 SHEETS

### INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES
3	TYPICAL SECTIONS
4	DETAILS
5-6	REMOVAL PLAN
7-8	CONSTRUCTION PLAN
9-18	SIGNING AND STRIPING PLANS

## PROJECT LOCATION



CITY OF EAST BETHEL  
ANOKA COUNTY  
MN/DOT TRANSPORTATION DISTRICT - METRO  
SECTION 25,26  
TOWNSHIP 33 NORTH  
RANGE 23 WEST

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

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

Approved \_\_\_\_\_, 20\_\_\_\_  
CITY OF EAST BETHEL ENGINEER

Approved *[Signature]*, 3-1-2021  
ANOKA COUNTY ENGINEER

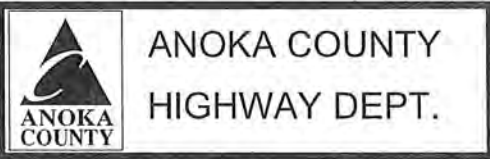
DESIGN DESIGNATION (CSAH 22)			
ESAL 20	499,011	FUNCTIONAL CLASSIFICATION	A-MINOR CONNECTOR
R VALUE	70	NO. OF TRAFFIC LANES	2
ADT (2021)	4224	NO. OF PARKING LANES	0
PROJ. ADT (2041)	4224	DESIGN SPEED	55 MPH
PROJ. HCADT (2041)	249	STOPPING SIGHT DISTANCE BASED ON:	
SOIL FACTOR	N/A	HEIGHT OF EYE	3.5'
		HEIGHT OF OBJECT	2.0'
		DESIGN SPEED NOT ACHIEVED AT:	
		STA. _____ TO STA. _____	MPH _____

NO	DATE	BY	CKD	APPR	REVISION
	02/24/2021				10:33:05 AM

NAME: P:\21-01-00\CSAH\_22\_(RTLs)\Base\Proposed\TITLE.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: *[Signature]*  
DATE: 02-24-2021 LICENSE NO. 26511

DRAWN BY: APA DATE: 02/24/2021  
DESIGN BY: APA DATE: 02/24/2021  
CHECKED BY: CO DATE: 02/24/2021



STATE AID PROJECT 002-622-040

TITLE SHEET  
Sheet 1 of 18 Sheets

**STATEMENT OF ESTIMATED QUANTITIES**

NOTES	ITEM NUMBER	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED
	2021.501	MOBILIZATION	LUMP SUM	1
	2102.503	PAVEMENT MARKING REMOVAL	LIN FT	1840
	2104.502	SALVAGE SIGN TYPE SPECIAL	EACH	4
	2104.502	SALVAGE SIGN PANEL TYPE C	EACH	4
	2104.503	SAWING BIT PAVEMENT (FULL DEPTH)	LIN FT	2013
1	2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	2054
2	2105.507	COMMON EXCAVATION	CU YD	30
3	2123.510	MOTOR GRADER	HOUR	40
4	2221.509	SHOULDER BASE AGGREGATE CLASS 5	TON	47
5	2232.504	MILL BITUMINOUS SURFACE (2.0")	SQ YD	123
	2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	125
	2360.509	TYPE SP 12.5 WEARING COURSE MIX (4:C)	TON	573
	2563.601	TRAFFIC CONTROL SUPERVISOR	LUMP SUM	1
6	2563.601	TRAFFIC CONTROL	LUMP SUM	1
7	2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	UNIT DAY	20
	2564.502	INSTALL SIGN PANEL TYPE C	EACH	4
	2564.518	SIGN PANELS TYPE C	SQ FT	25.00
	2564.602	INSTALL SIGN TYPE SPECIAL	EACH	4
	2573.501	EROSION CONTROL SUPERVISOR	LUMP SUM	1
	2574.507	COMMON TOPSOIL BORROW	CU YD	30
8	2575.508	HYDRAULIC REINFORCED FIBER MATRIX	POUND	50
9	2582.503	4" SOLID LINE MULTI COMP	LIN FT	3501

**CONSTRUCTION NOTES**

1	GRAVEL UNDER BITUMINOUS SHOULDER SHALL BE SALVAGED AND RE-USED FOR WIDENING PURPOSES
2	ONCE RIGHT TURN LANE WIDTH IS ACHIEVED AND REQUIRED ONSITE SHOULDER MATERIAL MET, EXCESS GRAVEL TO BE HAULED OFF AND PAID AS COMMON EXCAVATION
3	WIDENING OF SHOULDER AND INSTALLATION OF 1' GRAVEL SHOULDER USING SALVAGED GRAVEL WILL BE PAID AS MOTOR GRADER HOURS.
4	INSTALLATION OF 1' GRAVEL SHOULDER SHALL MAKE USE OF SALVAGED GRAVEL WHICH WILL BE CONSIDERED INCIDENTAL TO THE SHOULDER WIDENING. THE NEED FOR ANY ADDITIONAL GRAVEL SHOULDER WILL BE PAID AS SHOULDER BASE AGGREGATE CLASS 5.
5	STEP JOINT TO BE MILLED AFTER BASE LIFT OF ASPHALT IS PAVED
6	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.
7	2 MESSAGE BOARDS, ONE ON THE EACH END OF PROJECT, SHALL BE INSTALLED 10 DAYS PRIOR TO ANY CONSTRUCTION; REFERENCE STRIPING PLAN FOR DETAILS.
8	TO BE USED AT ENGINEER'S DISCRETION
9	FINAL STRIPING SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING.

**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


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

**MNDOT STANDARD PLATES**

PLATE NO.	DESCRIPTION
8000J	CHANNELIZERS

NO	DATE	BY	CKD	APPR	REVISION
	02/24/2021				10:33:09 AM

NAME: P:\21-01-00\CSAH\_22\_(RTLs)\Base\Proposed\SEQ.dgn

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**ANOKA COUNTY  
HIGHWAY DEPT.**

STATE AID PROJECT 002-622-040

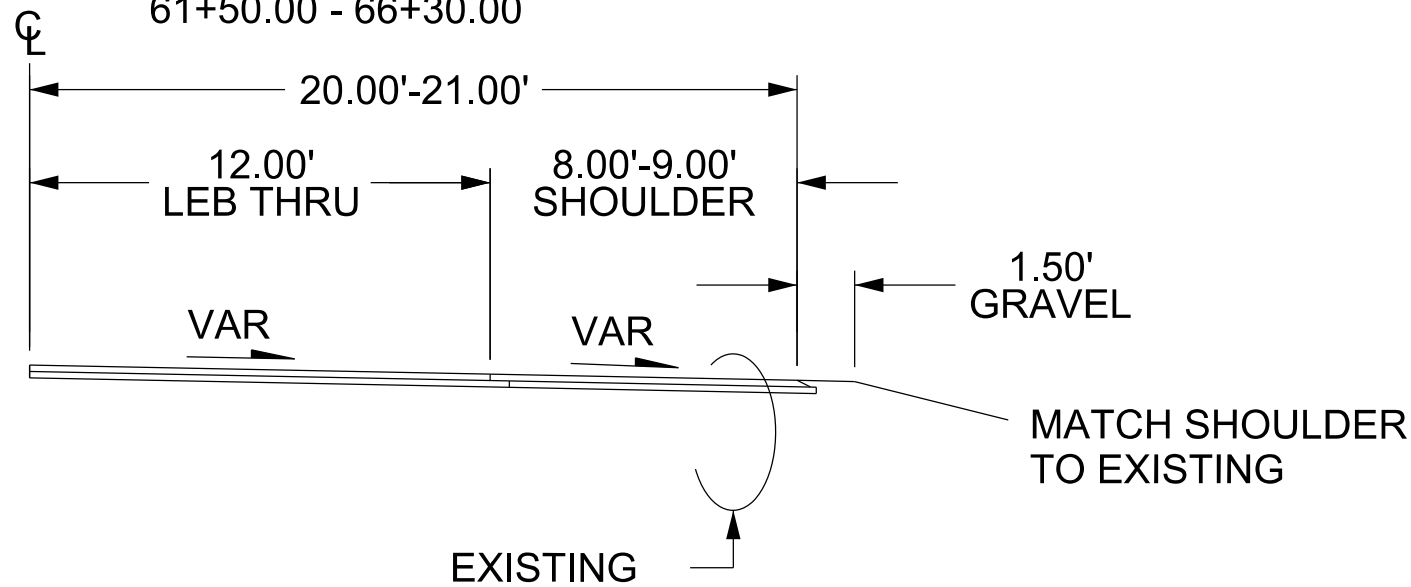
STATEMENT OF ESTIMATED QUANTITIES

Sheet 2 of 18 Sheets

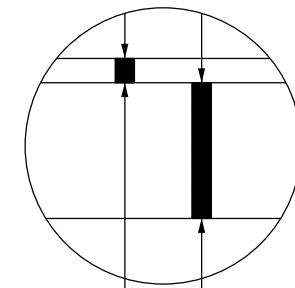
### CSAH 22 - Viking Blvd

#### EXISTING SECTION

14+42.00 - 23+12.00  
 36+48.00 - 41+32.00  
 61+50.00 - 66+30.00

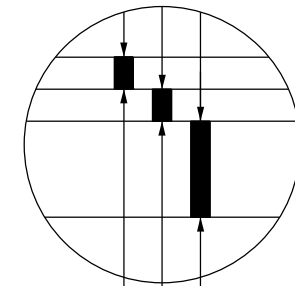


#### EXISTING SECTION



2" EXISTING BITUMINOUS  
 EXISTING RECLAIM BASE

#### PROPOSED SECTION RIGHT TURN LANE

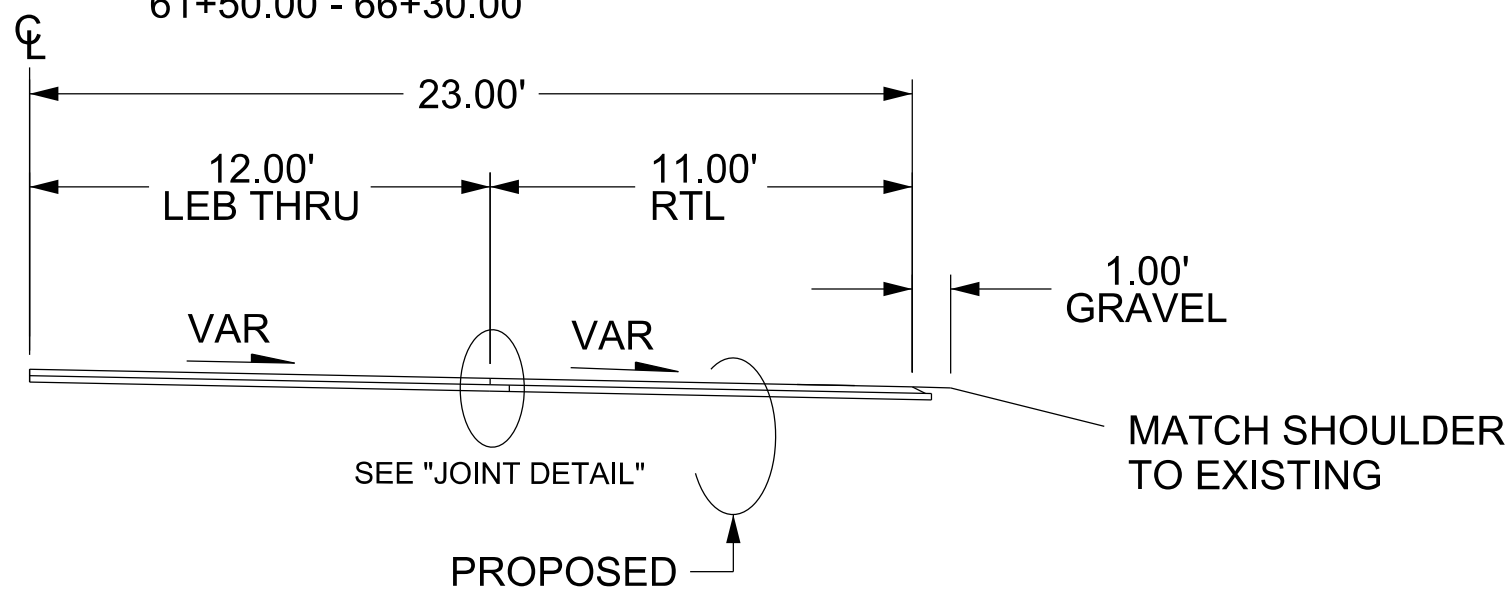


2.0" BITUMINOUS WEAR(SPWEB440C)  
 2.0" BITUMINOUS WEAR(SPWEB440C)  
 6.0" EXISTING RECLAIM BASE

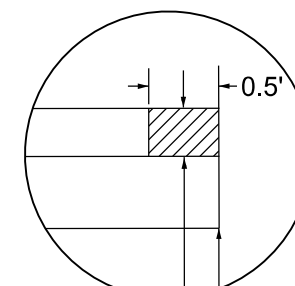
### CSAH 22 - Viking Blvd

#### PROPOSED SECTION

14+42.00 - 23+12.00  
 36+48.00 - 41+32.00  
 61+50.00 - 66+30.00




#### JOINT DETAIL



2" MILL JOINT  
 SAWCUT LOCATION

NO	DATE	BY	CKD	APPR	REVISION	02/24/2021	10:33:15 AM
NAME: P:\21-01-00\CSAH_22_(RTLs)\Base\Proposed\TYPICALS.dgn							

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ANOKA COUNTY  
 HIGHWAY DEPT.

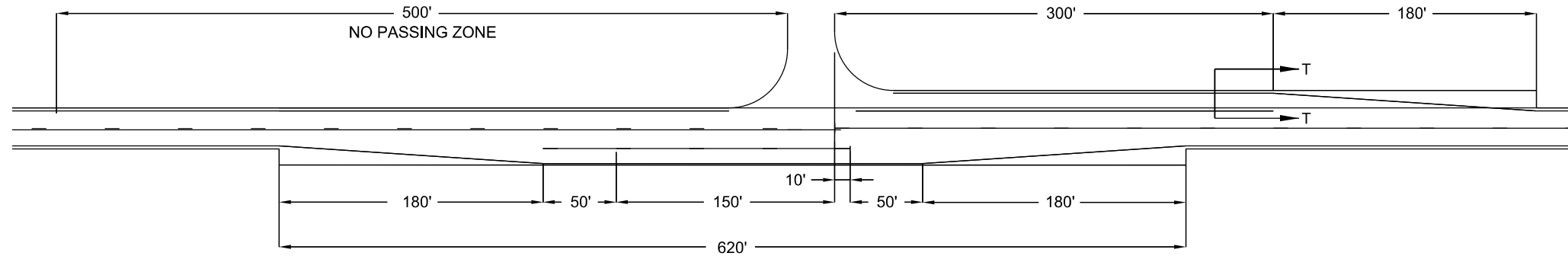
STATE AID PROJECT 002-622-040

TYPICAL SECTIONS

Sheet 3 of 18 Sheets

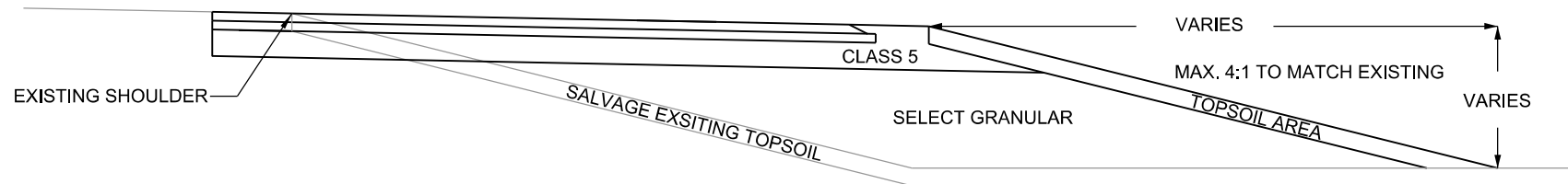
### RIGHT TURN AND BYPASS LANE

#### GENERAL LAYOUT PLAN VIEW



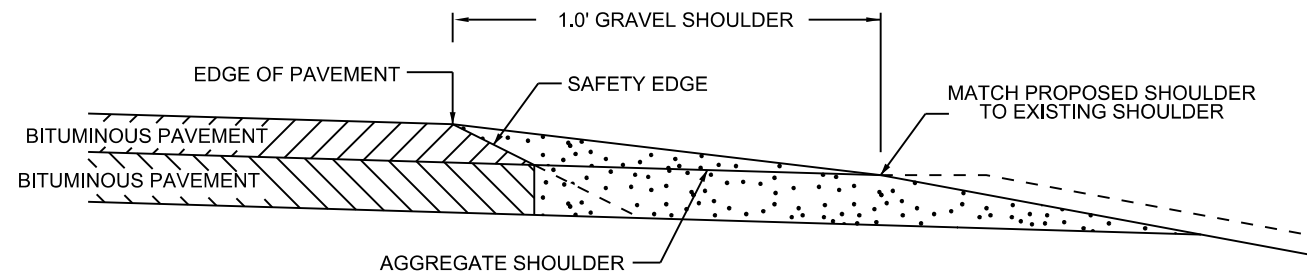
### RIGHT TURN AND BYPASS LANE

#### SECTION T - T



### 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					10:33:17 AM

NAME: P:\21-01-00\CSAH\_22\_(RTLs)\Base\Proposed\DETAILS.dgn

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STATE AID PROJECT 002-622-040

DETAILS  
 Sheet 4 of 18 Sheets

NOTES:

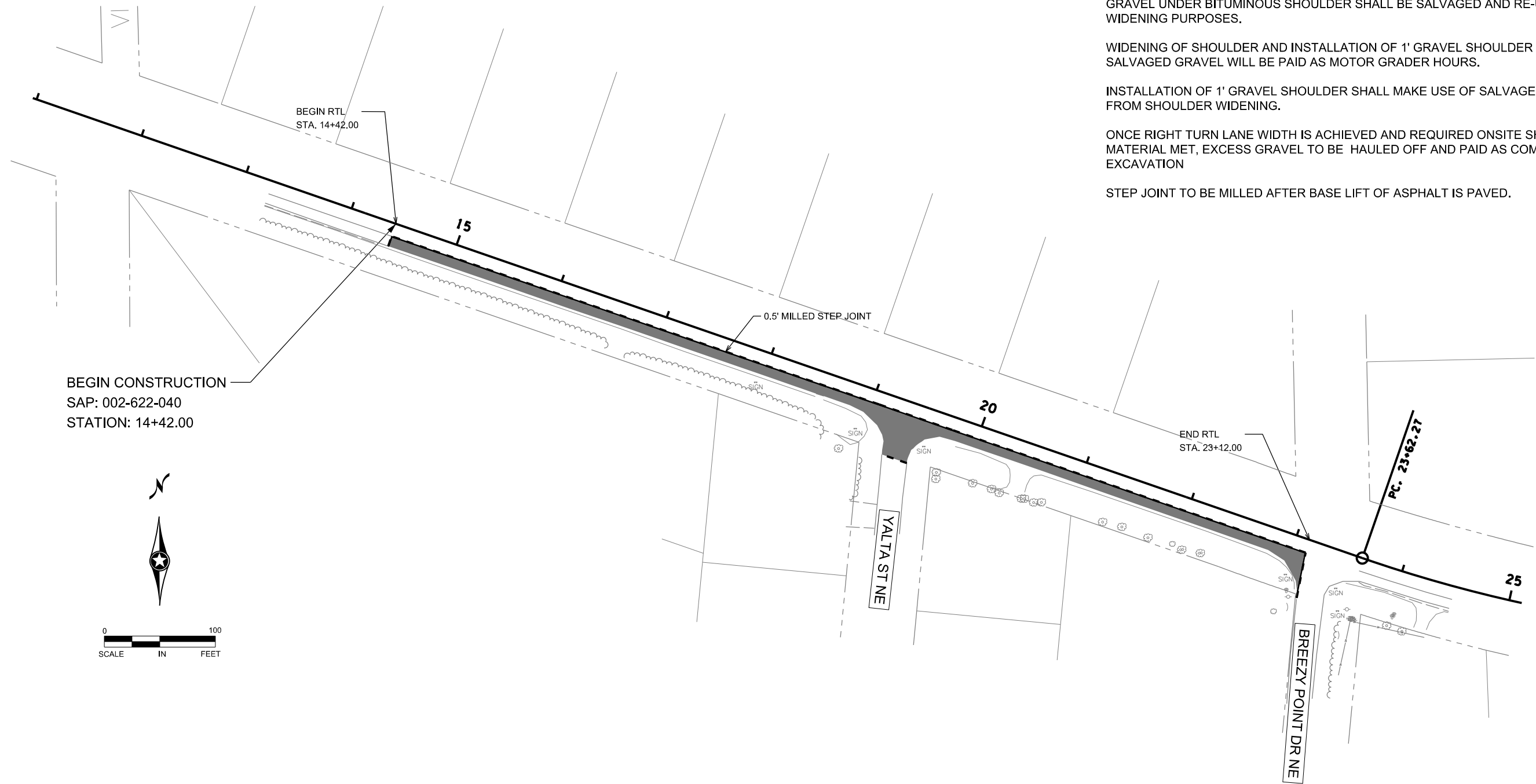
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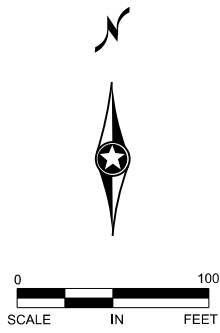
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STEP JOINT TO BE MILLED AFTER BASE LIFT OF ASPHALT IS PAVED.



BEGIN CONSTRUCTION  
SAP: 002-622-040  
STATION: 14+42.00



LEGEND						
[Shaded Box] REMOVE BITUMINOUS PAVEMENT						
[Dashed Line] SAWCUT						
[Solid Line] R / W						

NO	DATE	BY	CKD	APPR	REVISION	
	02/24/2021					10:33:19 AM

NAME: P:\21-01-00\CSAH\_22\_(RTLs)\Base\Proposed\REM\_YALTA-BREEZY\_RTL.dgn

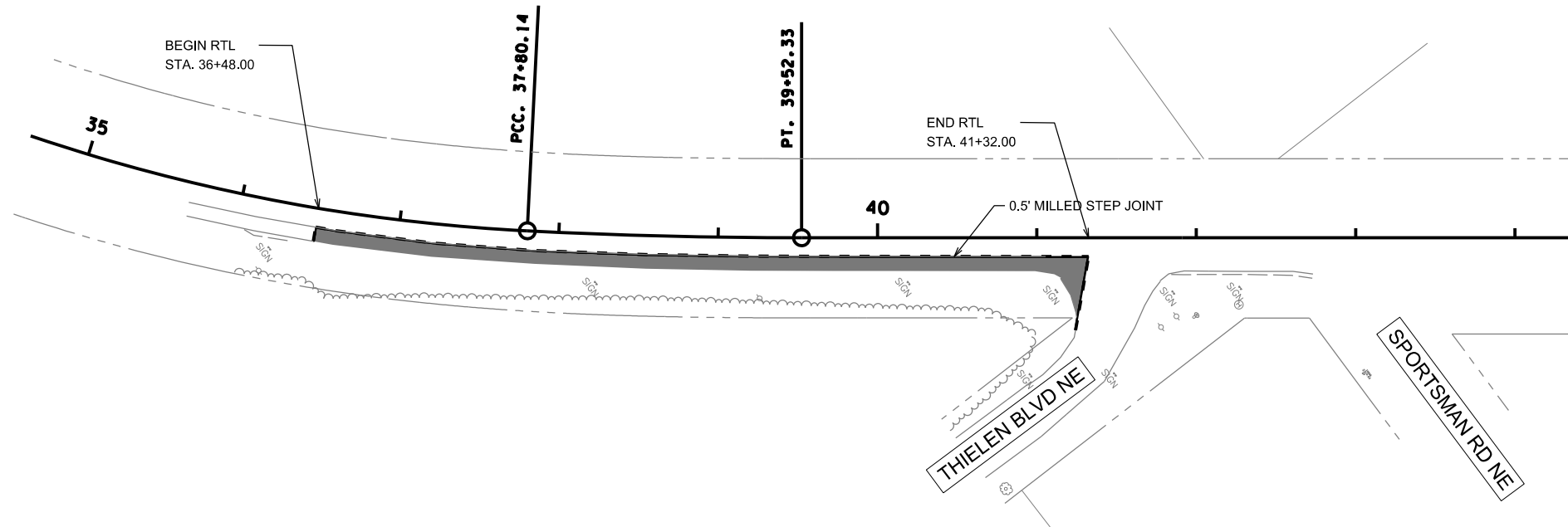
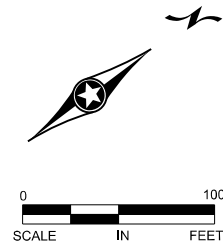
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**ANOKA COUNTY  
HIGHWAY DEPT.**

STATE AID PROJECT 002-622-040

REMOVAL PLAN  
 STA 14+42 TO 23+12  
 Sheet 5 of 18 Sheets



**LEGEND**

- REMOVE BITUMINOUS PAVEMENT
- SAWCUT
- R / W

**NOTES:**

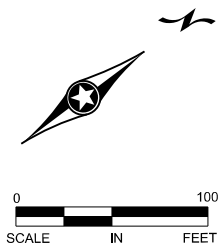
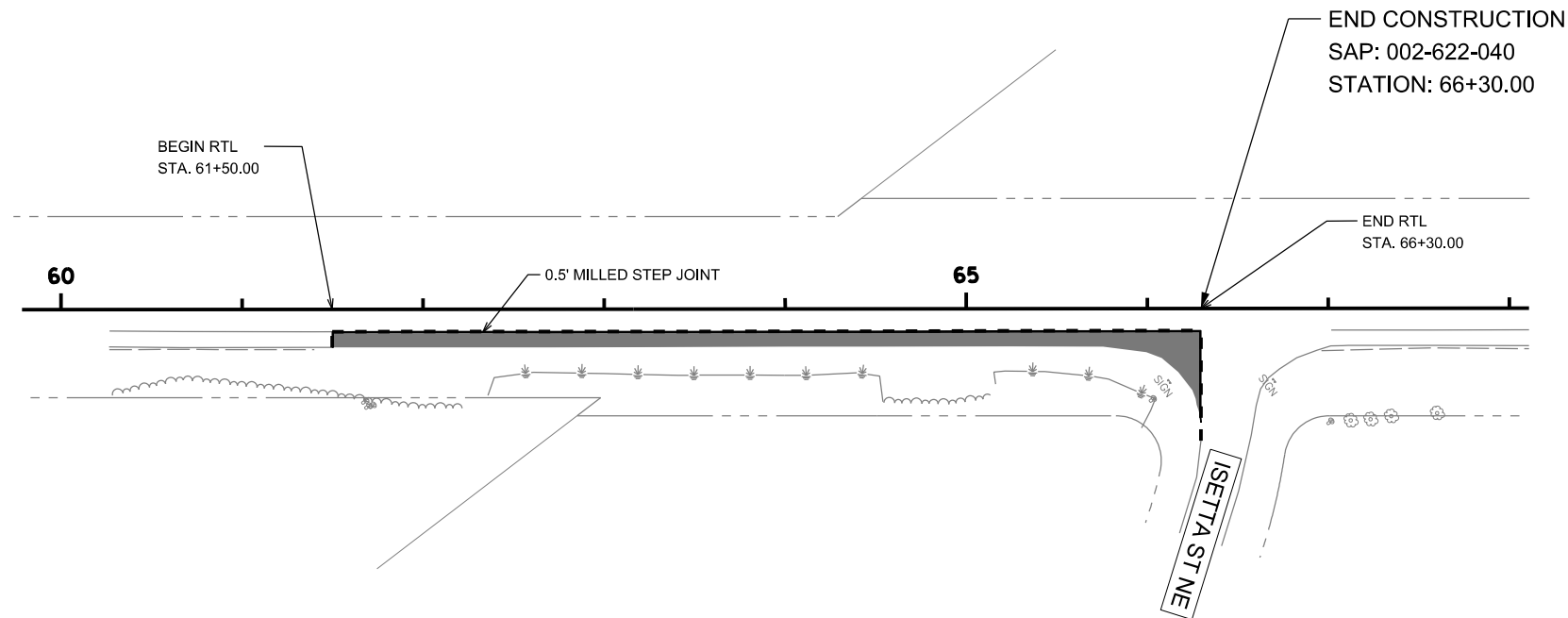
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NO	DATE	BY	CKD	APPR	REVISION	TIME
	02/24/2021					10:33:21 AM

NAME: P:\21-01-00\CSAH\_22\_(RTLs)\Base\Proposed\REM\_THIELEN-SETTA\_RTL.dgn

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

STATE AID PROJECT 002-622-040

**REMOVAL PLAN**

STA 36+48 TO 41+32  
61+50 TO 66+30

Sheet 6 of 18 Sheets

NOTES:

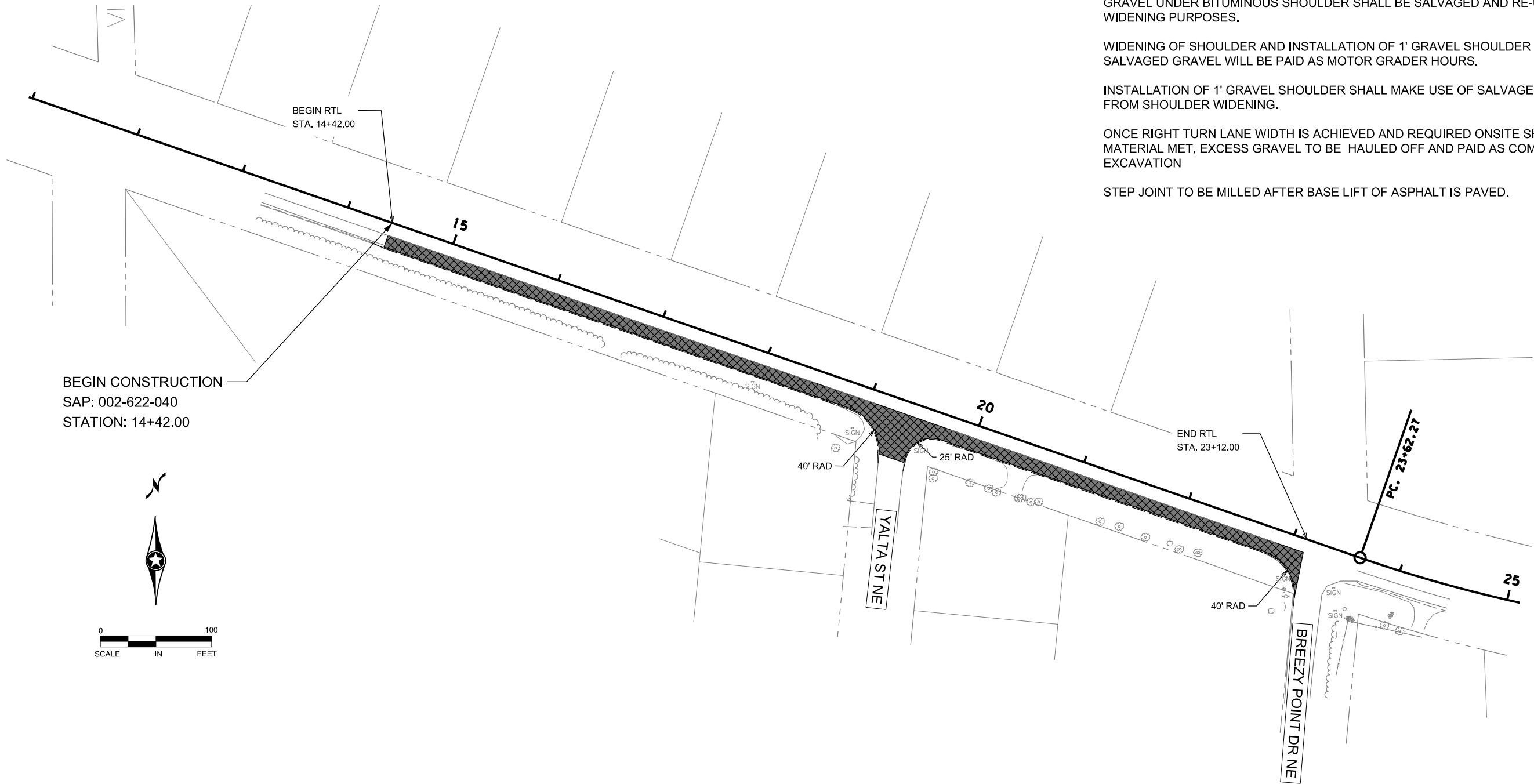
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BEGIN CONSTRUCTION  
SAP: 002-622-040  
STATION: 14+42.00

BEGIN RTL  
STA. 14+42.00

END RTL  
STA. 23+12.00

LEGEND

BITUMINOUS PAVING (SPWEB440C)

R / W

NO	DATE	BY	CKD	APPR	REVISION	
	02/24/2021					10:33:22 AM
NAME: P:\21-01-00\CSAH_22_(RTLs)\Base\Proposed\CP_YALTA-BREEZY_RTL.dgn						

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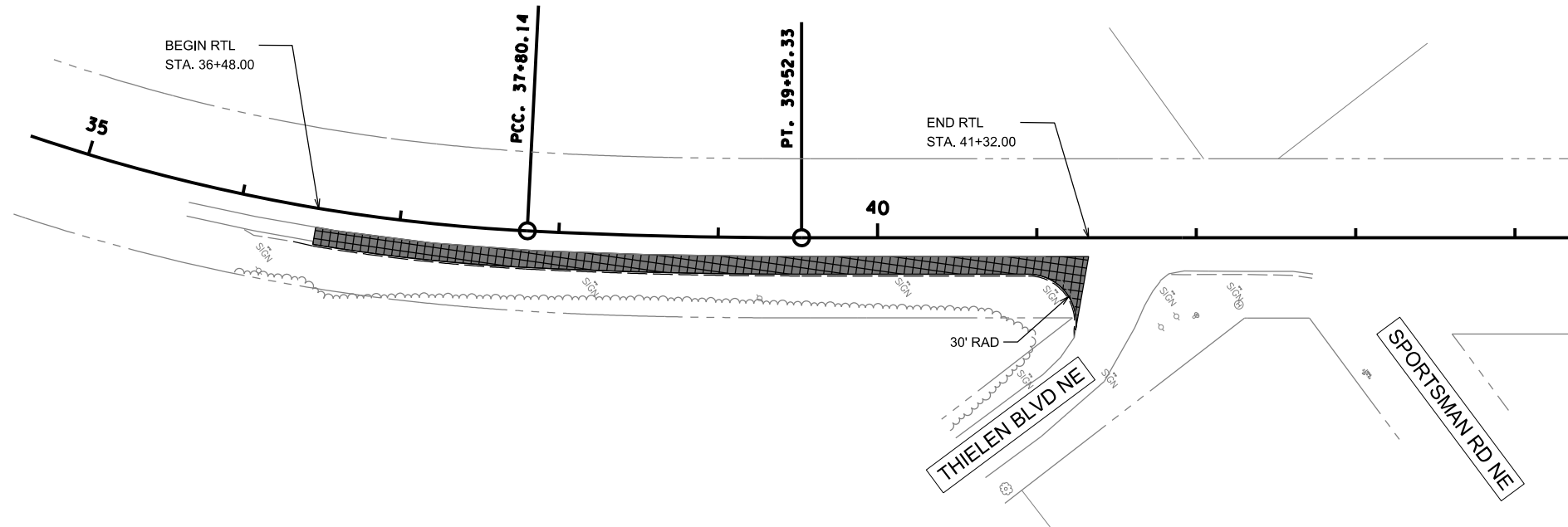
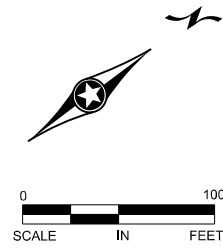
ANOKA COUNTY  
HIGHWAY DEPT.

STATE AID PROJECT 002-622-040

CONSTRUCTION PLAN

STA 14+42 TO 23+12

Sheet 7 of 18 Sheets



**LEGEND**

BITUMINOUS PAVING (SPWEB440C)

R / W

**NOTES:**

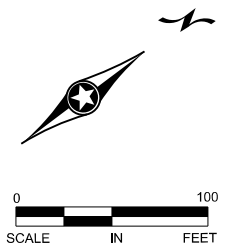
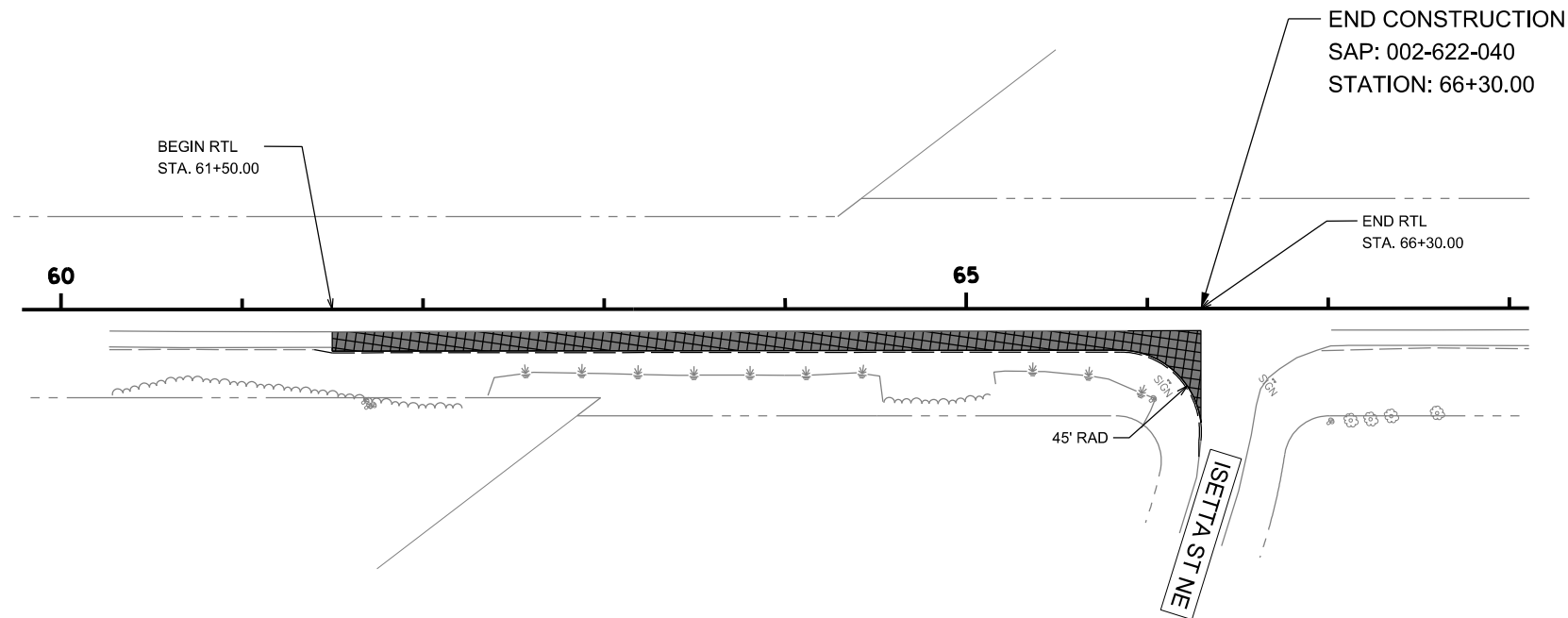
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NO	DATE	BY	CKD	APPR	REVISION	
	02/24/2021					10:33:24 AM

NAME: P:\21-01-00\CSAH\_22\_(RTLs)\Base\Proposed\CP\_THIELEN-ISETTA\_RTL.dgn

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**ANOKA COUNTY  
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STATE AID PROJECT 002-622-040

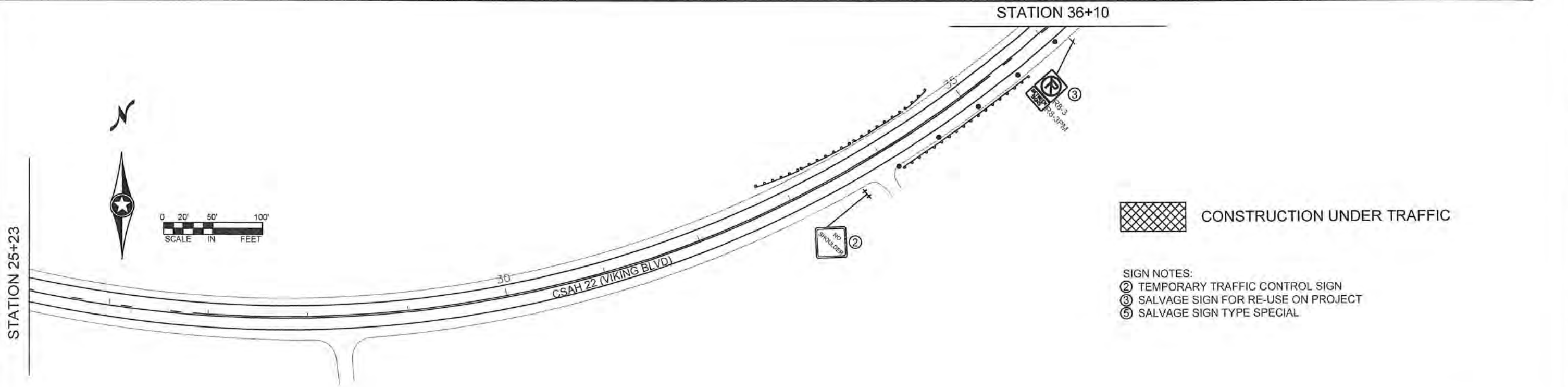
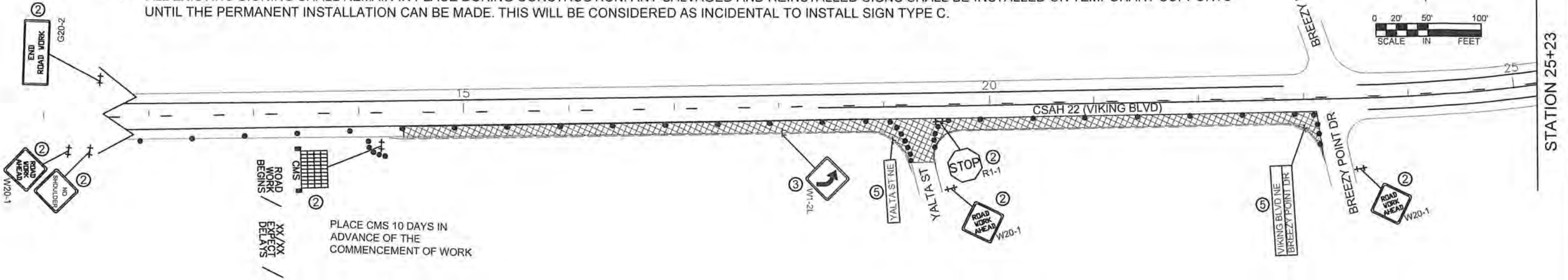
**CONSTRUCTION PLAN**  
STA 36+48 TO 41+32  
61+50 TO 66+30


Sheet 8 of 18 Sheets



NOTES:

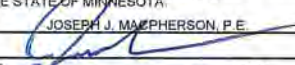
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.
- CONTRACTOR SHALL SUPPLY AND PLACE THE PORTABLE CHANGEABLE MESSAGE SIGN (CMS) A MINIMUM TEN DAYS PRIOR TO ACTUAL COMMENCEMENT OF ROAD WORK, TO A LOCATION AS SPECIFIED BY THE ENGINEER. SIGNS TO BE REMOVED WHEN ROAD WORK BEGINS. PAYMENT SHALL BE MADE AS PER ITEM 2563.613 PORTABLE CHANGEABLE MESSAGE SIGN BY THE UNIT/DAY.
- CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN ON THIS DRAWING AND DETAILED IN THE SPECIAL PROVISIONS FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THIS ROADWAY IS PERMANENTLY STRIPED. ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
- ACCESS SHALL BE MAINTAINED TO ALL STREETS AND DRIVEWAYS IN CONSTRUCTION AREA.
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. ANY SALVAGED AND REINSTALLED SIGNS SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE. THIS WILL BE CONSIDERED AS INCIDENTAL TO INSTALL SIGN TYPE C.



 CONSTRUCTION UNDER TRAFFIC

SIGN NOTES:  
 ② TEMPORARY TRAFFIC CONTROL SIGN  
 ③ SALVAGE SIGN FOR RE-USE ON PROJECT  
 ⑤ SALVAGE SIGN TYPE SPECIAL

NO	DATE	BY	CKD	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. MAMPHERSON, P.E.  
 SIGNATURE:   
 DATE: 3-1-21 LICENSE NO. 46732

DRAWN BY: TMV DATE: 12/14/20  
 DESIGN BY: TMV DATE: 12/14/20  
 CHECKED BY: KR DATE: 01/29/21




ANOKA COUNTY  
 HIGHWAY DEPT.

STATE AID PROJECT 002-622-040

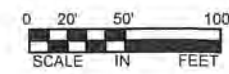
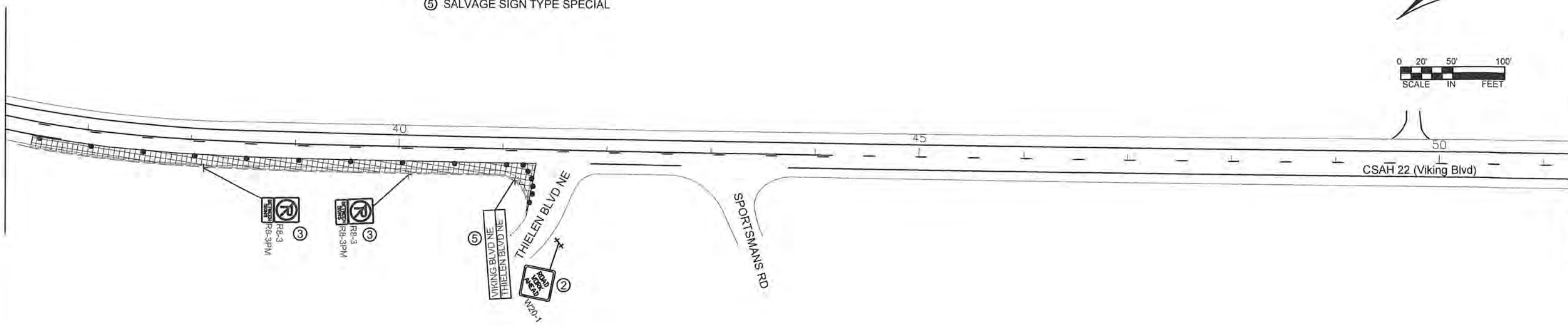
TRAFFIC CONTROL PLAN

Sheet 9 of 18 Sheets

 CONSTRUCTION UNDER TRAFFIC

SIGN NOTES:  
 ② TEMPORARY TRAFFIC CONTROL SIGN  
 ③ SALVAGE SIGN FOR RE-USE ON PROJECT  
 ⑤ SALVAGE SIGN TYPE SPECIAL

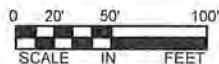
STATION 36+10



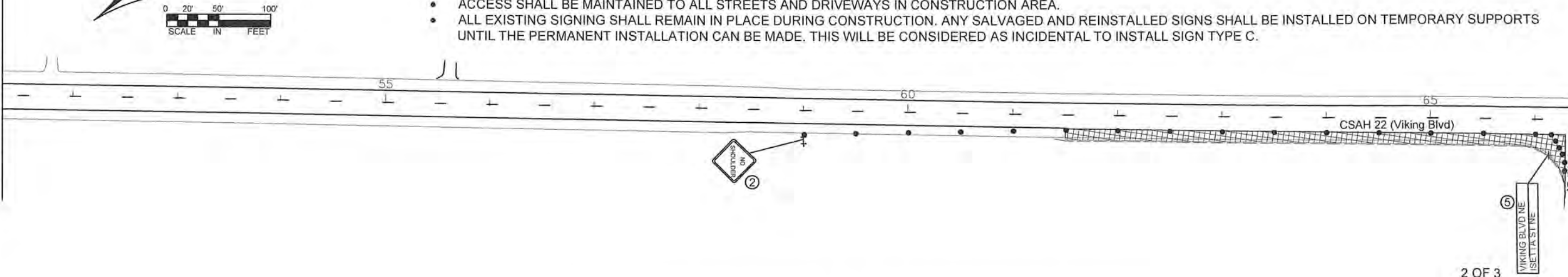
STATION 51+31

NOTES:

- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.
- CONTRACTOR SHALL SUPPLY AND PLACE THE PORTABLE CHANGEABLE MESSAGE SIGN (CMS) A MINIMUM TEN DAYS PRIOR TO ACTUAL COMMENCEMENT OF ROAD WORK, TO A LOCATION AS SPECIFIED BY THE ENGINEER. SIGNS TO BE REMOVED WHEN ROAD WORK BEGINS. PAYMENT SHALL BE MADE AS PER ITEM 2563.613 PORTABLE CHANGEABLE MESSAGE SIGN BY THE UNIT/DAY.
- CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN ON THIS DRAWING AND DETAILED IN THE SPECIAL PROVISIONS FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THIS ROADWAY IS PERMANENTLY STRIPED. ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
- ACCESS SHALL BE MAINTAINED TO ALL STREETS AND DRIVEWAYS IN CONSTRUCTION AREA.
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. ANY SALVAGED AND REINSTALLED SIGNS SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE. THIS WILL BE CONSIDERED AS INCIDENTAL TO INSTALL SIGN TYPE C.



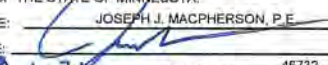
STATION 51+31



STATION 66+46

2 OF 3

NO	DATE	BY	CKD	APPR	REVISION

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 SIGNATURE:   
 DATE: 9-1-21 LICENSE NO. 45732

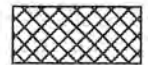
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 CHECKED BY: KR DATE: 01/29/21



ANOKA COUNTY  
 HIGHWAY DEPT.

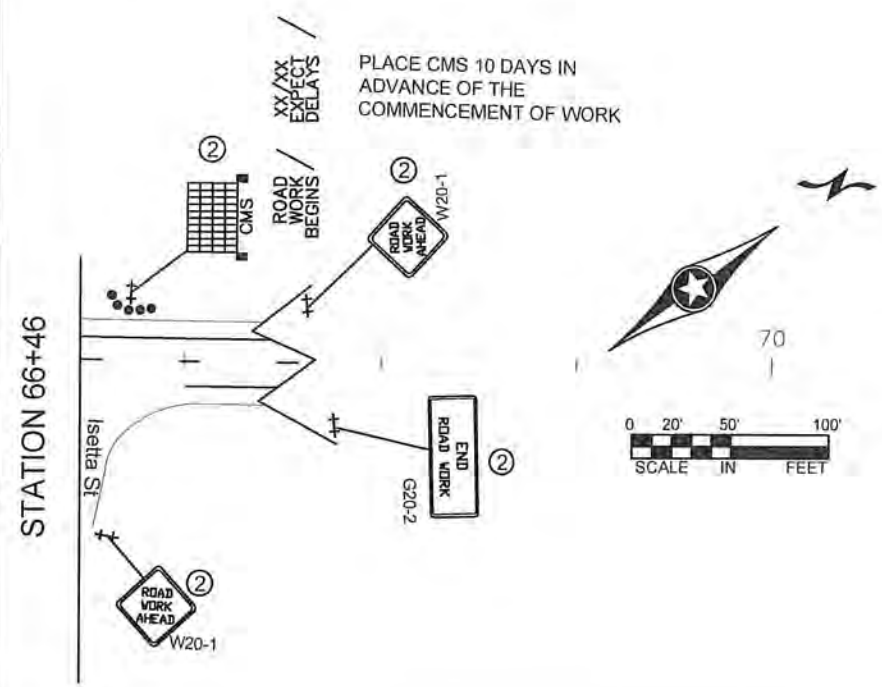
STATE AID PROJECT 002-622-040







TRAFFIC CONTROL PLAN  
 Sheet 10 of 18 Sheets

 CONSTRUCTION UNDER TRAFFIC

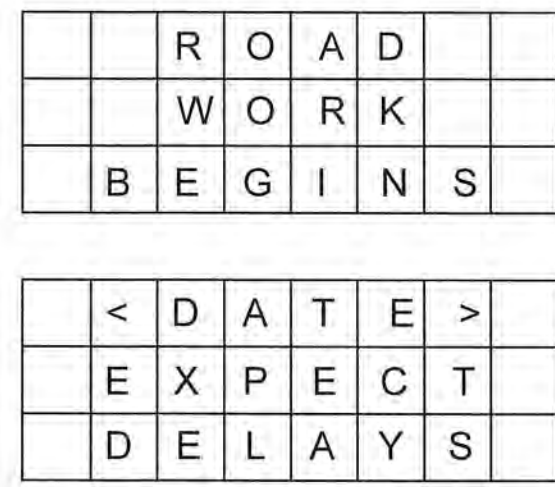
SIGN NOTES:  
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 ③ SALVAGE SIGN FOR RE-USE ON PROJECT  
 ⑤ SALVAGE SIGN TYPE SPECIAL

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TEMPORARY TRAFFIC CONTROL SIGNS			
M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY
R1-1	30" x 30"		1
	48" x 48"		3
W20-1	48" x 48"		6
G20-2	36" x 18"		2
REFLECTORIZED REBOUNDBLE DRUM			90
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 (10 days ea)

CHANGEABLE MESSAGE BOARD - MESSAGE SEQUENCE LAYOUT



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.

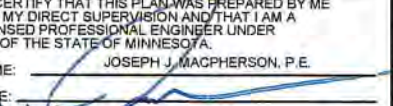
EXISTING SIGN TAB					
STATION	ADDRESS/ DESCRIPTION (NOTES)	SALVAGE SIGN TYPE C	REINSTALL SIGN TYPE C	SIGN NUMBER	SIGN LEGEND
		EACH	EACH		
18+00	RT	1	1	W1-2L	LT CURVE
19+00	RT	1	1		STREET SIGN
23+00	RT	1	1		STREET SIGN
36+19	RT	1	1	R8-3	NO PARKING
				R8-3PM	BETWEEN SIGNS
38+12	RT	1	1	R8-3	NO PARKING
				R8-3PM	BETWEEN SIGNS
48+08	RT	1	1	R8-3	NO PARKING
				R8-3PM	BETWEEN SIGNS
41+10	RT	1	1		STREET SIGN
66+08	RT	1	1		STREET SIGN
TOTAL		8	8		

TEMPORARY PAVEMENT MARKING TABULATION		
ITEM	UNIT	QUANTITY
PAVEMENT MARKING REMOVALS 4" SOLID LINE WHITE	LIN FT	1840


NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\21-01-00\CSAH\_22\_(RTLs)\Base\Traffic\TC Plan.dwg

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PRINT NAME: JOSEPH J. MACPHERSON, P.E.  
 SIGNATURE:   
 DATE: 5-1-21 LICENSE NO. 46732

DRAWN BY: TMV DATE: 12/14/20  
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 ANOKA COUNTY HIGHWAY DEPT.

STATE AID PROJECT 002-622-040

**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.

PAVEMENT MARKING TABULATION		
ITEM	UNIT	TOTAL QUANTITY
4" SOLID LINE WHITE - MULTI COMP	LIN FT	3501

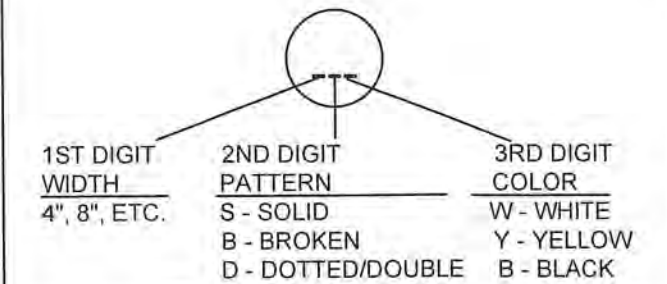
\* PAVEMENT MARKING SPECIAL

**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



EXAMPLE: (4SW) = 4" SOLID LINE WHITE - MULTI COMP

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\21-01-00\CSAH\_22\_(RTLs)\Base\Traffic\Perm Pvm\Mrkg Guide Notes.dwg

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

DRAWN BY: TMV DATE: 12/15/20  
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**ANOKA COUNTY  
HIGHWAY DEPT.**

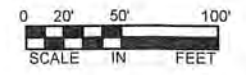
STATE AID PROJECT 002-622-040

PERMANENT MARKING  
TABULATION

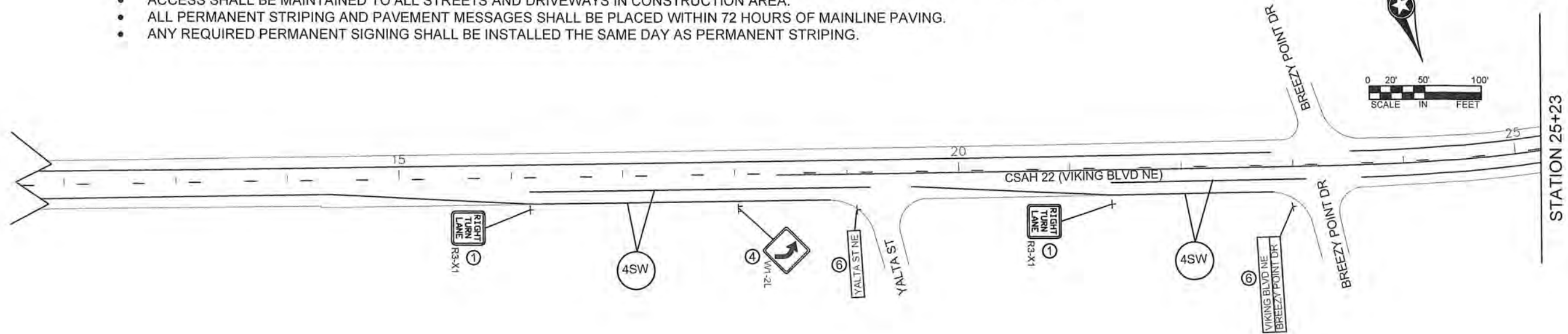
Sheet 12 of 18 Sheets

**NOTES:**

- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- ACCESS SHALL BE MAINTAINED TO ALL STREETS AND DRIVEWAYS IN CONSTRUCTION AREA.
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- ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING.

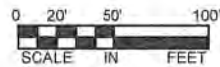


MATCHLINE "BD"

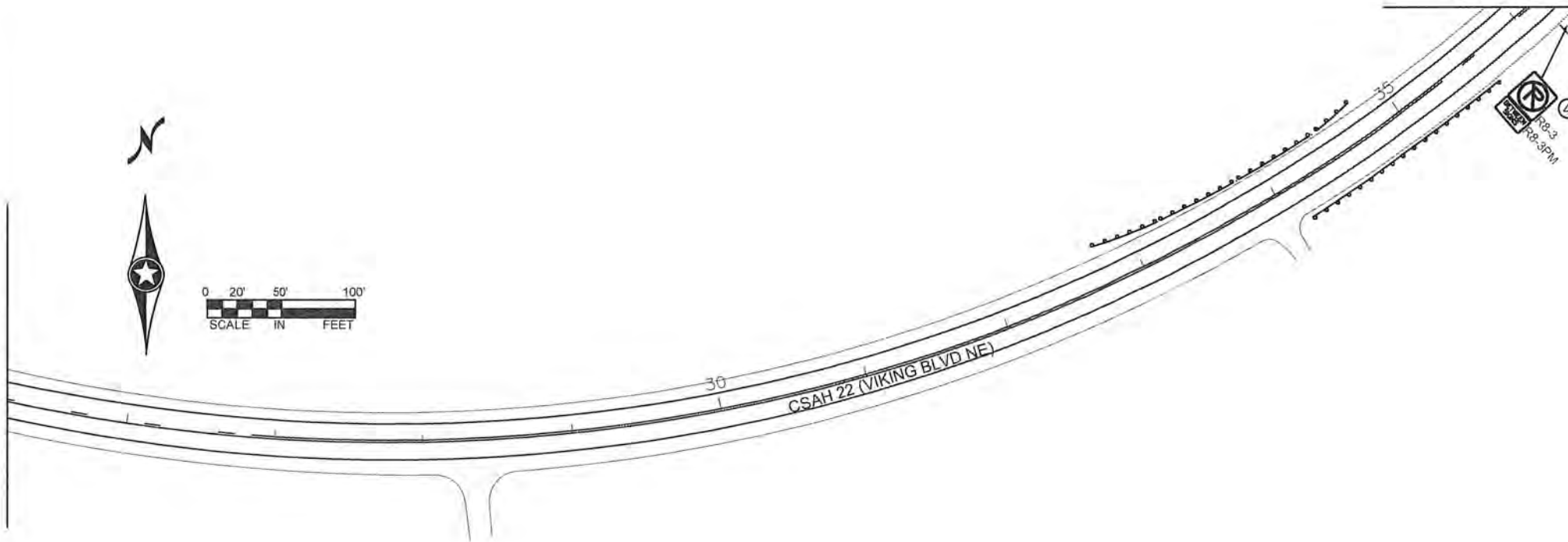


STATION 25+23

STATION 36+10



STATION 25+23



**STRIPING KEY**

--- CIRCLE - MULTI COMP

**SIGN NOTES:**

- ① FURNISH & INSTALL SIGN TYPE C
- ④ INSTALL SALVAGE SIGN
- ⑥ INSTALL SALVAGE SIGN TYPE SPECIAL

1 OF 3

NO	DATE	BY	CKD	APPR	REVISION

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

STATE AID PROJECT 002-622-040

PERMANENT SIGNING & STRIPING PLAN

Sheet 13 of 18 Sheets

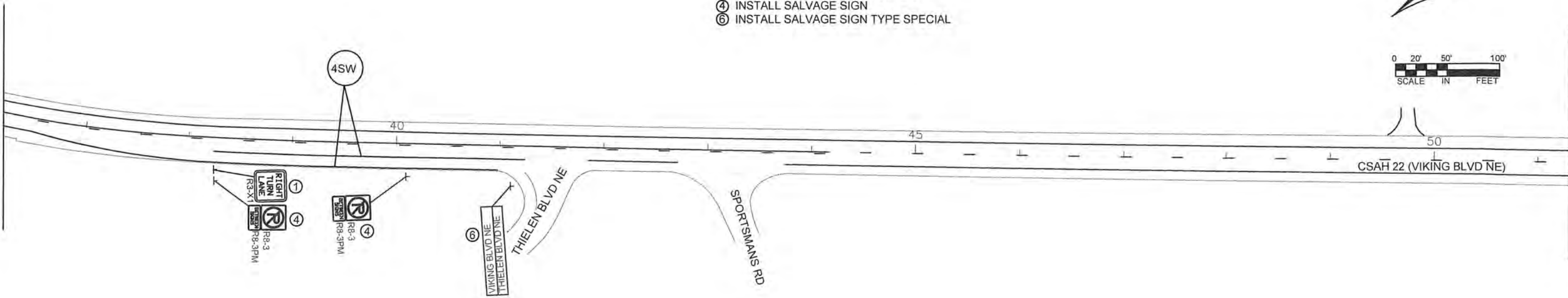
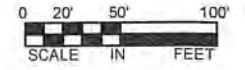
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○ CIRCLE - MULTI COMP

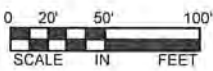
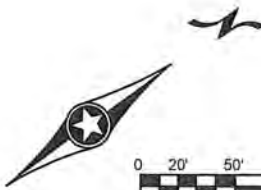
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STATION 36+10

STATION 51+31

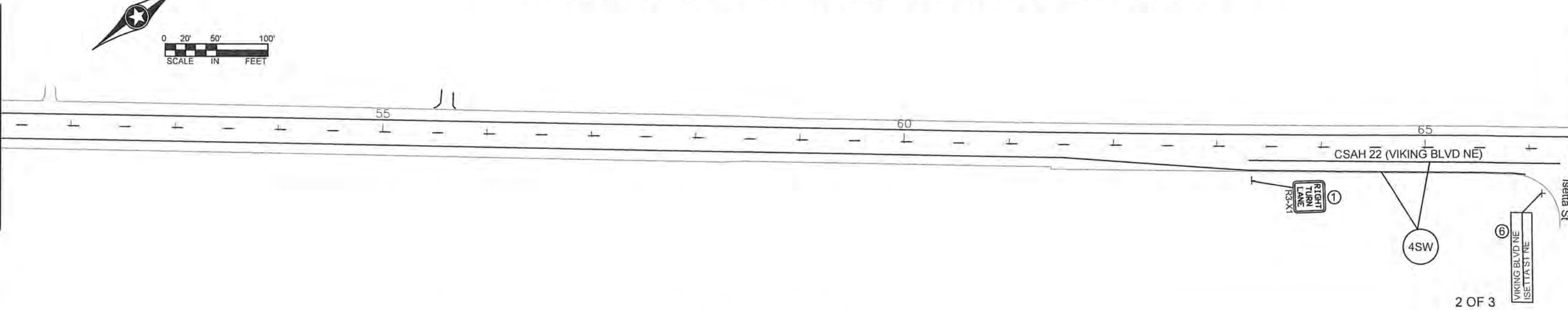


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STATION 51+31

STATION 66+46



2 OF 3

NO	DATE	BY	CKD	APPR	REVISION

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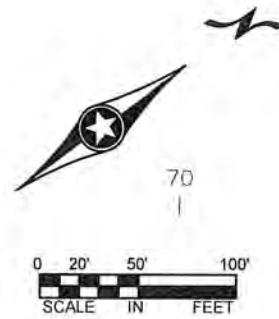
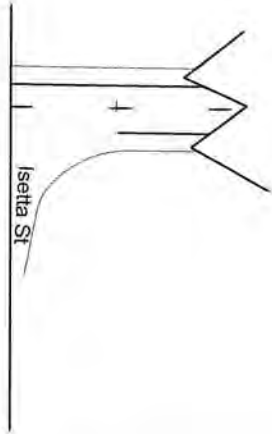


ANOKA COUNTY  
 HIGHWAY DEPT.

STATE AID PROJECT 002-622-040

PERMANENT SIGNING & STRIPING PLAN  
 Sheet 14 of 18 Sheets

STATION 66+46



STRIPING KEY

CIRCLE - MULTI COMP

- SIGN NOTES:  
 ① FURNISH & INSTALL SIGN TYPE C  
 ④ INSTALL SALVAGE SIGN  
 ⑥ INSTALL SALVAGE SIGN TYPE SPECIAL

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INSTALL SALVAGE SIGNS

STATION	LOCATION	SIGN NUMBER	INSERT	ASSEMBLY QUANTITY	MOUNTING POST PER INSTALLATION	MOUNTING HEIGHT To pavement edge
18+00	RIGHT	W1-2L		1	1	7.0'
19+00	RIGHT	STREET SIGN	YALTA ST NE	1	1	7.0'
23+00	RIGHT	STREET SIGN	VIKING BLVD NE BREEZY POINT DR	1	1	7.0'
36+19	RIGHT	R8-3 R8-3PM		1	1	7.0'
38+21	RIGHT	R8-3 R8-3PM		1	1	7.0'
48+08	RIGHT	R8-3 R8-3PM		1	1	7.0'
41+10	RIGHT	STREET SIGN	VIKING BLVD NE THIELEN BLVD NE	1	1	7.0'
66+08	RIGHT	STREET SIGN	VIKING BLVD NE ISETTA ST NE	1	1	7.0'
TOTAL INSTALL TYPE C SIGN ASSEMBLIES				8		

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"		4	6.25	25.00	1	7.0'
TOTAL TYPE C SIGN SQ. FT.					25.00		
PROJECT TOTAL SQ. FT.					25.00		

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\21-01-00\CSAH\_22\_(RTL)\Base\Traffic\Signing & Striping.dwg

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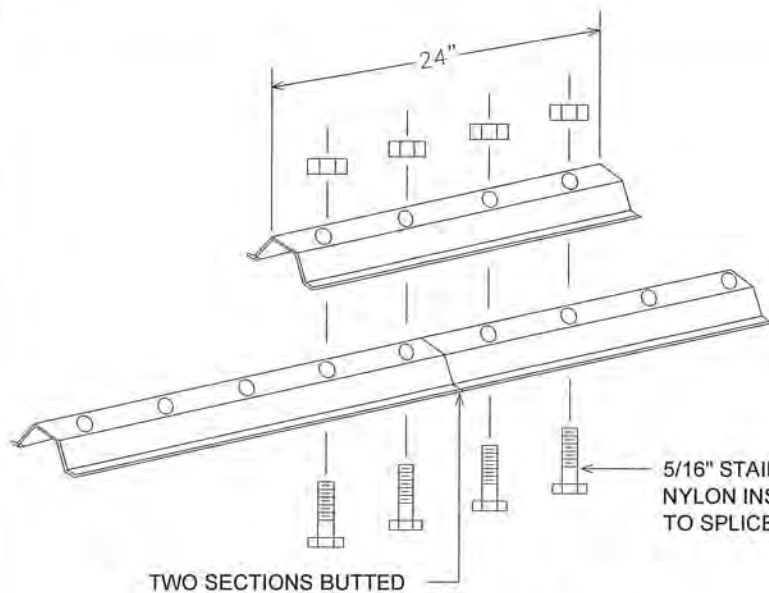
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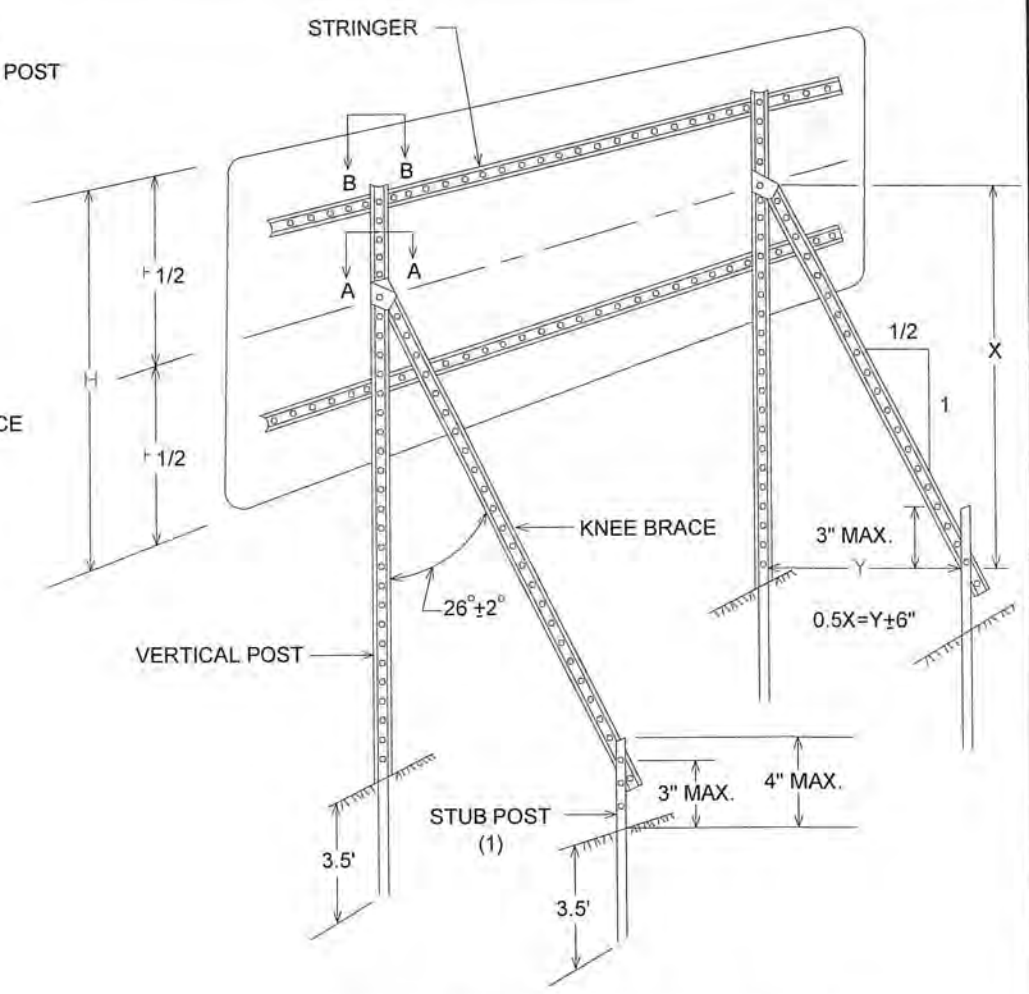
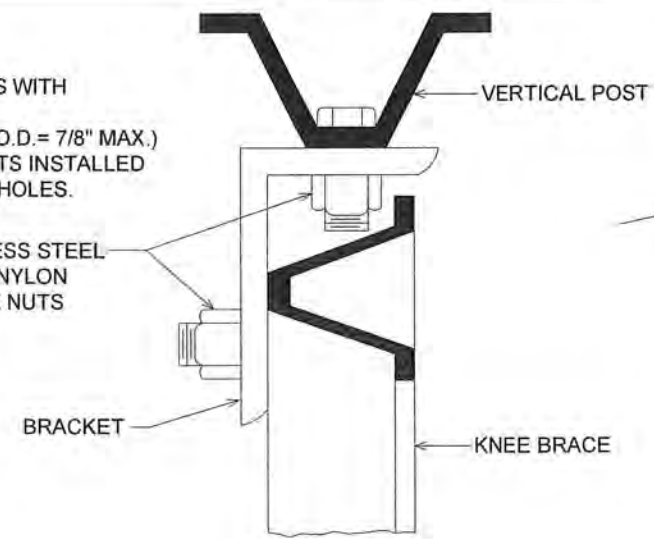
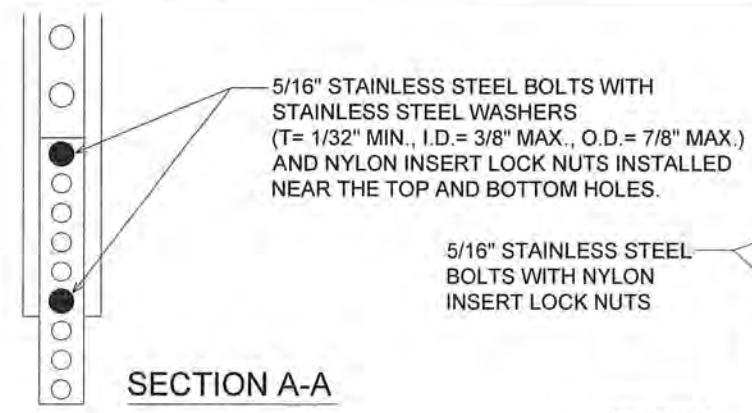
ANOKA COUNTY  
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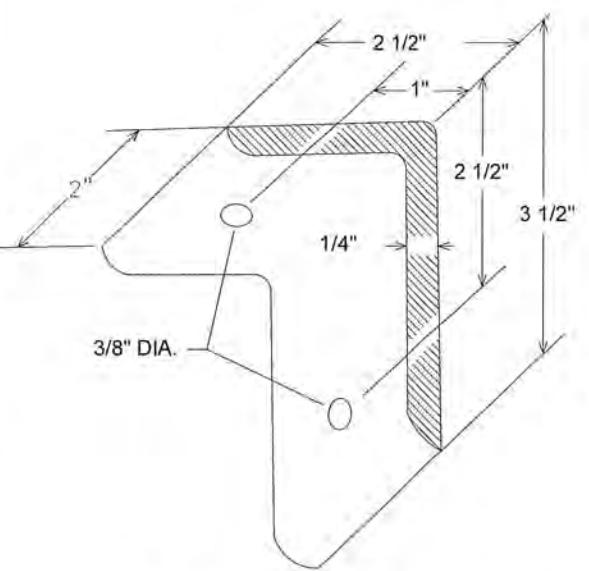
PERMANENT SIGNING &  
 STRIPING PLAN



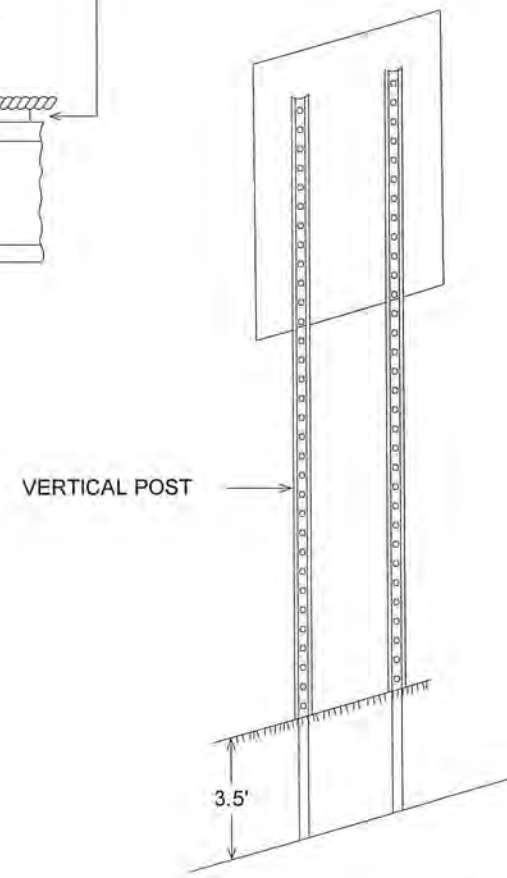
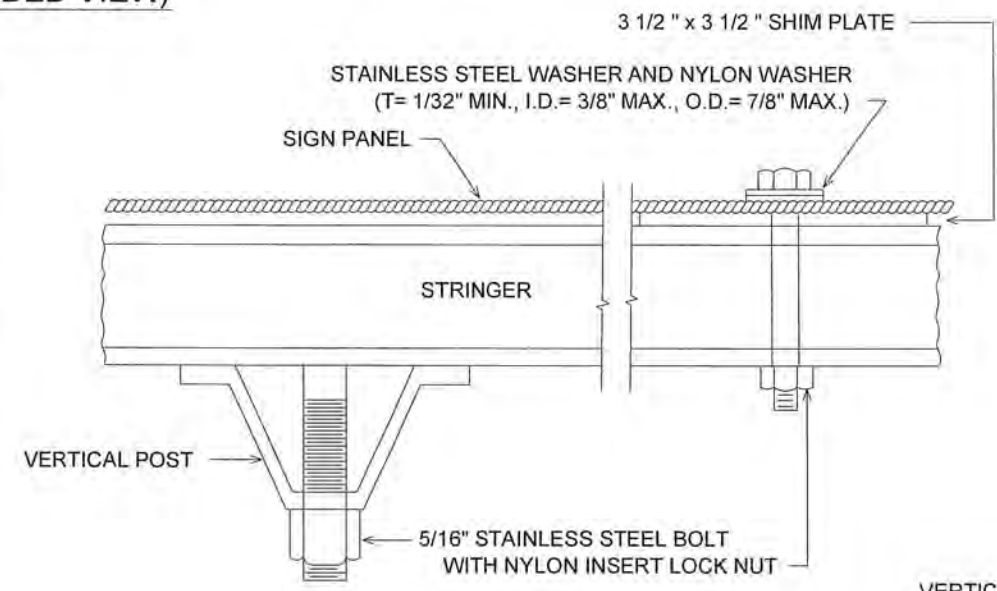
LATERAL BRACE OR STRINGER SPLICE DETAIL (EXPLODED VIEW)



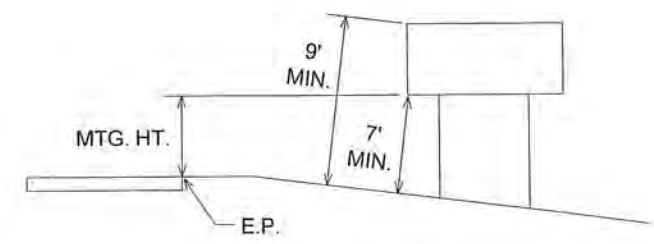
TYPICAL "A-FRAME" INSTALLATION TYPE "D" SIGNS



A-FRAME BRACKET (STEEL MN/DOT 3306 GALVANIZED PER MN/DOT 3394)



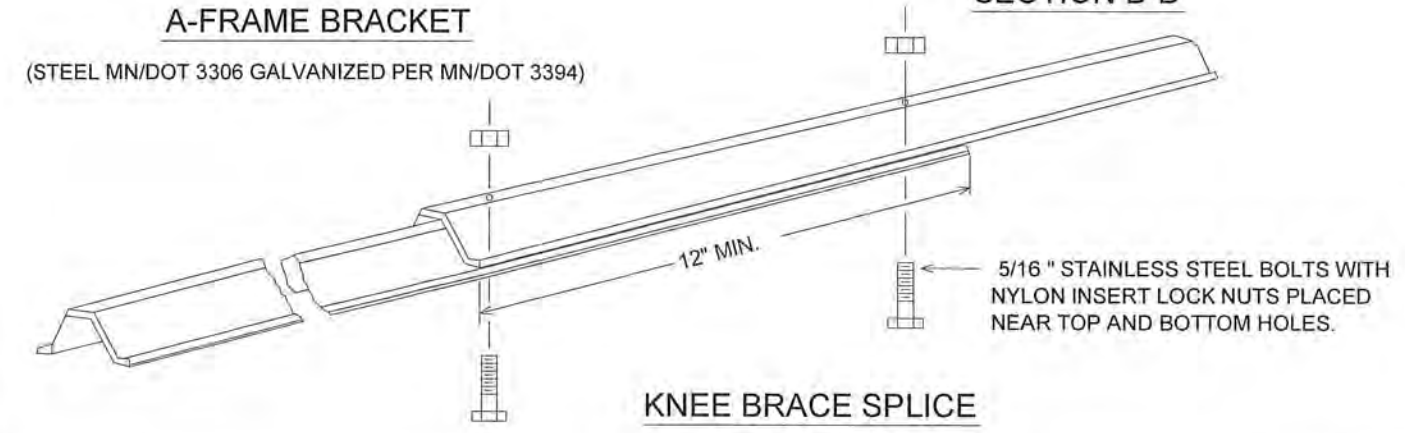
TYPICAL INSTALLATION 36" AND LARGER TYPE "C" SIGNS



TYPICAL MOUNTING

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

TYPE C & D SIGN STRUCTURAL DETAILS



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\21-01-00\CSAH\_22\_(RTLs)\Base\Traffic\Sign&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: 7-1-21 LICENSE NO. 46732

DRAWN BY: TMV DATE: 12/15/20

DESIGN BY: TMV DATE: 12/15/20

CHECKED BY: KR DATE: 01/29/21

ANOKA COUNTY HIGHWAY DEPT.

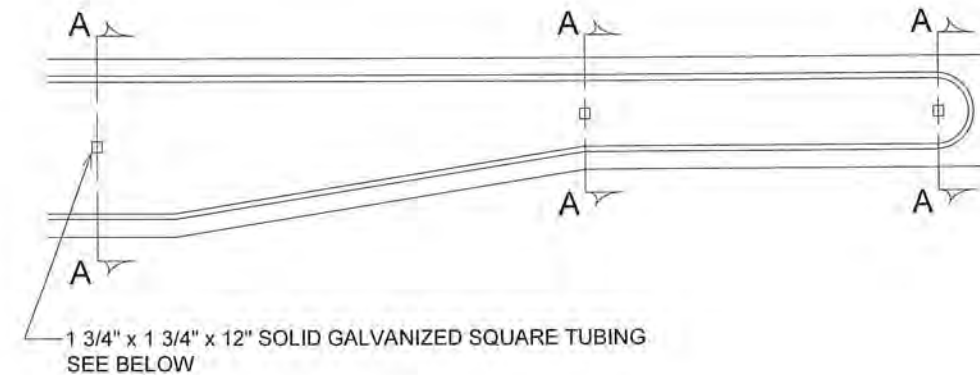
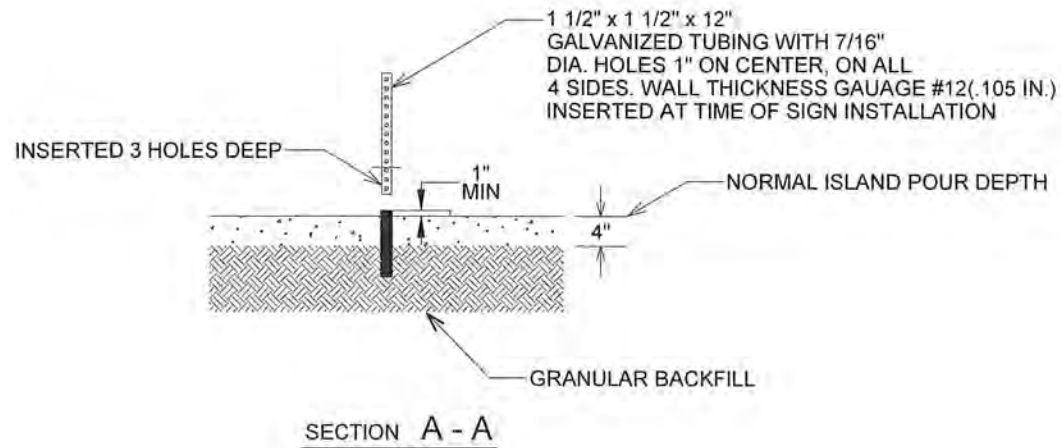
ANOKA COUNTY

STATE AID PROJECT 002-622-040

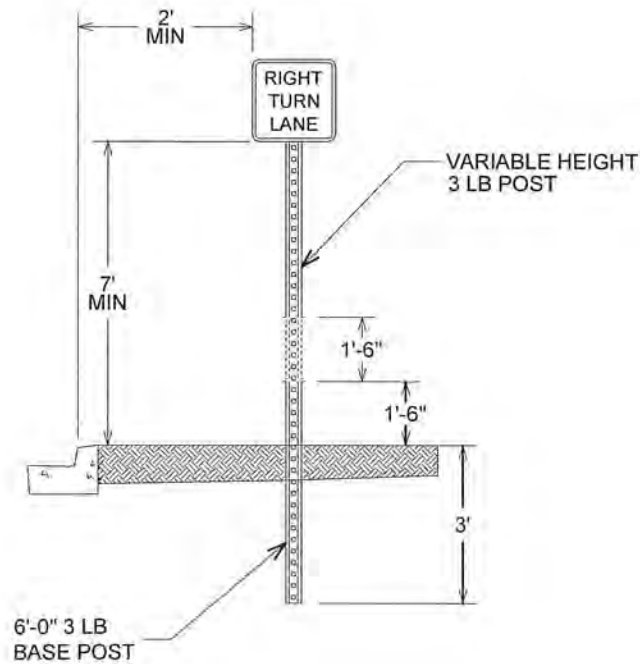
SIGNING & STRIPING DETAILS

Sheet 16 of 18 Sheets

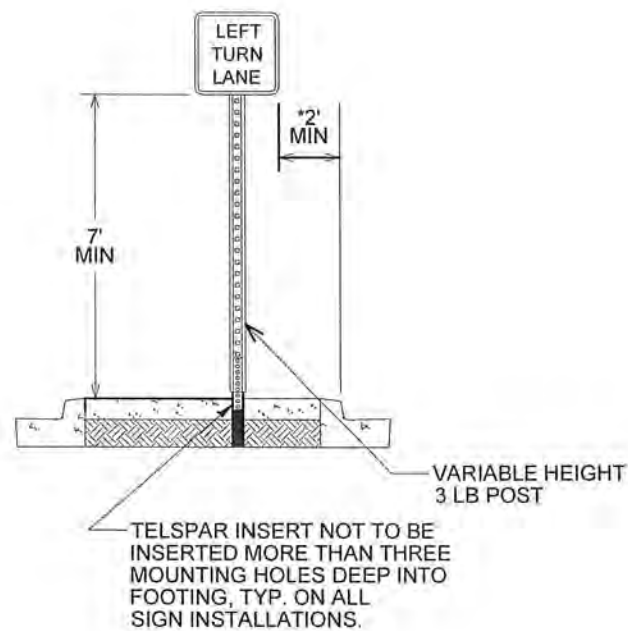




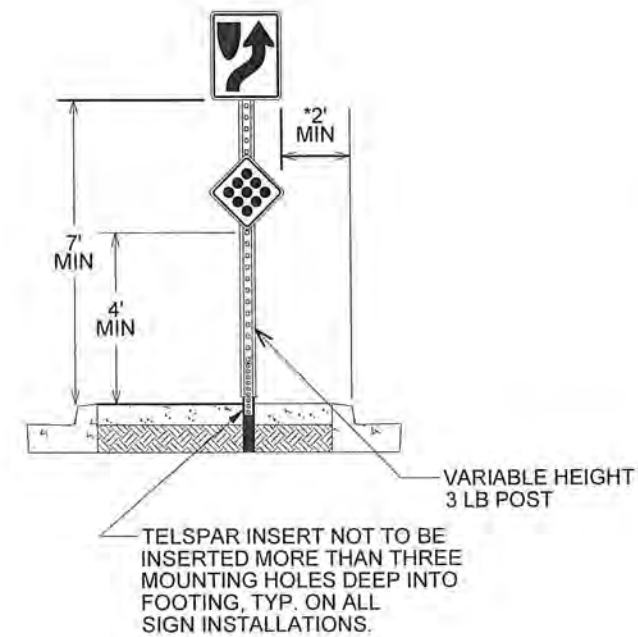
GROUND POST MOUNT SIGN  
INSTALLATION TYPICAL



ISLAND MOUNT BREAK-AWAY SIGN  
INSTALLATION TYPICAL



ISLAND MOUNT BREAK-AWAY SIGN  
SIGN INSTALLATION TYPICAL  
KEEP RIGHT/CLUSTER



\*1' MIN FOR NARROW URBAN LOCATIONS

**INSTALLATION NEAR SIDEWALK (MN MUTCD)**  
The minimum height, measured vertically from the bottom of the sign to the sidewalk, of signs installed above sidewalks shall be 7 feet. If the bottom of a secondary sign that is mounted below another sign is mounted lower than 7 feet above a pedestrian sidewalk or pathway, the secondary sign shall not project more than 4 inches into the pedestrian facility.

NO	DATE	BY	CKD	APPR	REVISION

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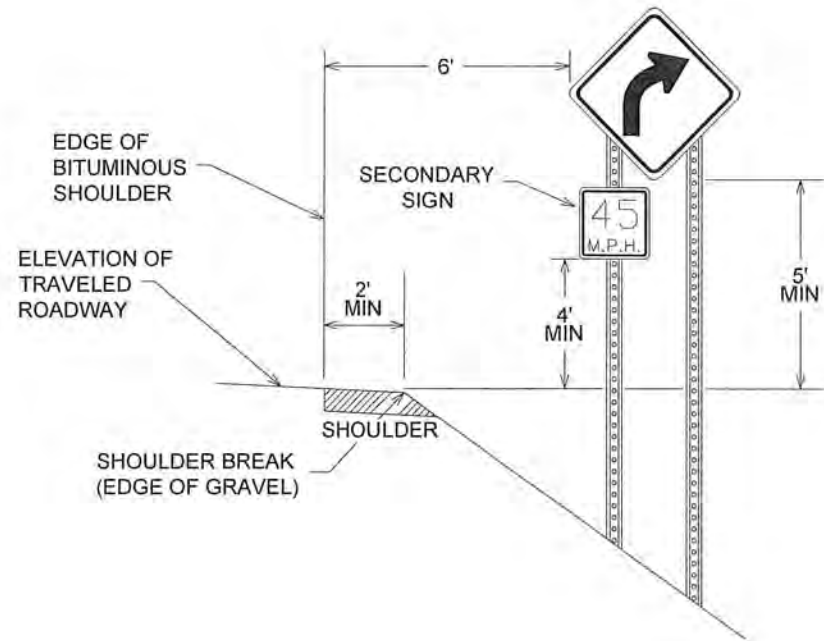
ANOKA COUNTY  
HIGHWAY DEPT.

STATE AID PROJECT 002-622-040

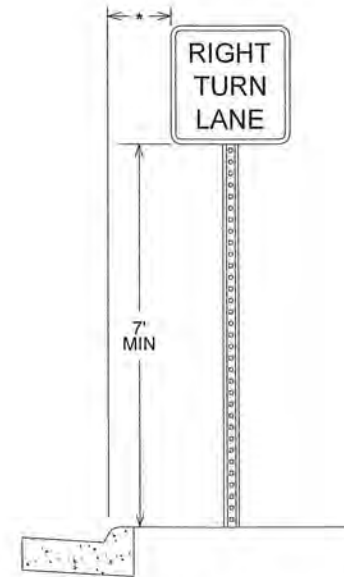
SIGNING & STRIPING  
DETAILS

Sheet 17 of 18 Sheets

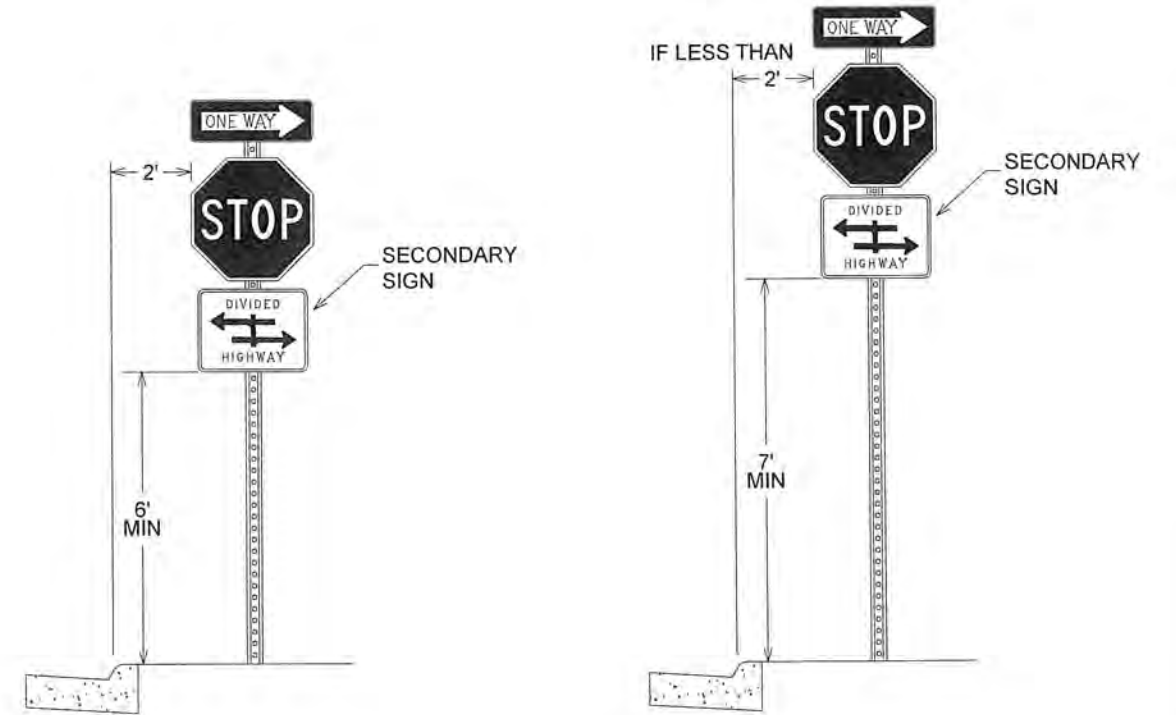
TYPICAL SIGN PLACEMENT  
(RURAL)



TYPICAL SIGN PLACEMENT  
(URBAN)



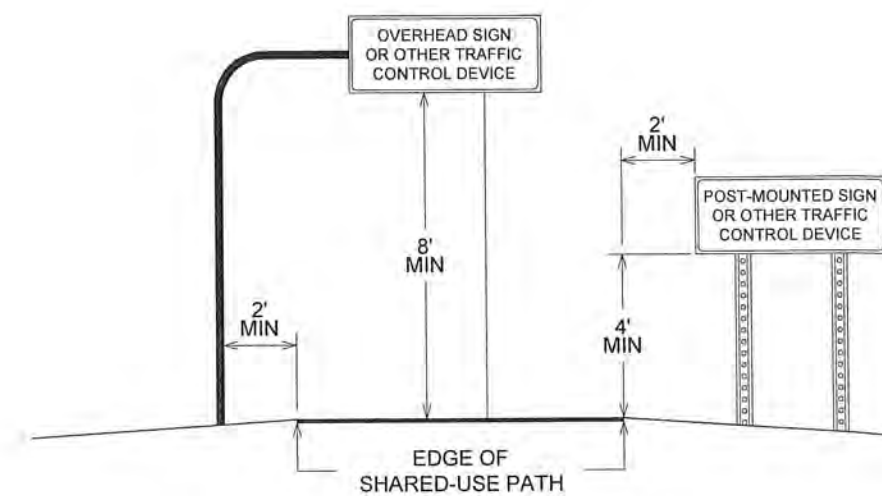
\*2' - NARROW BOULEVARD (≤ 8' WIDE)  
6' - WIDE BOULEVARD



NOTES:

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

TYPICAL SIGN PLACEMENT  
SHARED-USE PATH



NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY  
HIGHWAY DEPT.

STATE AID PROJECT 002-622-040

SIGNING & STRIPING  
DETAILS  
Sheet 18 of 18 Sheets