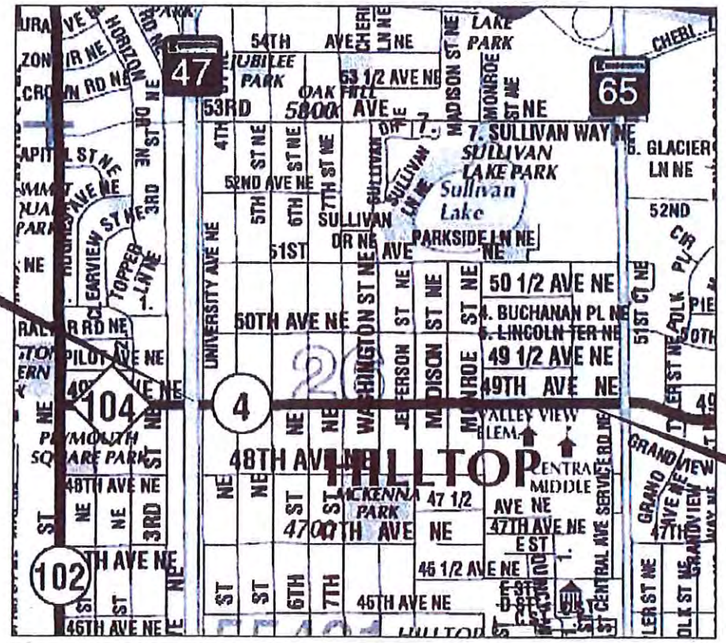
MINNESOTA DEPARTMENT OF TRANSPORTATION
ANOKA COUNTY

CONSTRUCTION PLAN FOR BITUMINOUS RECLAMATION, MILL BITUMINOUS SURFACE, BITUMINOUS SURFACING, CURB & GUTTER, AND SEWER REPAIRS

LOCATED ON CSAH 4 BETWEEN TH 47 AND JACKSON ST NE

GROSS LENGTH	3560.00	FEET	0.674 MILES
EXCEPTIONS-LENGTH	0.00	FEET	0.00 MILES
NET LENGTH	3560.00	FEET	0.674 MILES



PROJECT LOCATION

CITIES OF FRIDLEY AND COLUMBIA HEIGHTS
ANOKA COUNTY
MN/DOT TRANSPORTATION DISTRICT - METRO
SECTION 26
TOWNSHIP 30 NORTH
RANGE 24 WEST

DESIGN DESIGNATION (CSAH 04)

ESAL 20	643,894	FUNCTIONAL CLASSIFICATION	MINOR ARTERIAL
R VALUE	60	NO. OF TRAFFIC LANES 2	NO. OF PARKING LANES 0
ADT (2019)	6056	DESIGN SPEED 30 MPH	
PROJ. ADT (2039)	6056	STOPPING SIGHT DISTANCE BASED ON:	
PROJ. HCADT (2039)	357	HEIGHT OF EYE 3.5'	HEIGHT OF OBJECT 2.0'
SOIL FACTOR	N/A	DESIGN SPEED NOT ACHIEVED AT :	
10 TON DESIGN		STA. ____ TO STA. ____	MPH ____

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 TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MNMUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."

THIS PLAN CONTAINS 54 SHEETS

INDEX

Approved Keith Johnson 5/3 ,20 19
CITY OF COLUMBIA HEIGHTS ENGINEER

Approved 5/7 ,20 19
CITY OF FRIDLEY ENGINEER

Approved Brian Molin 5/17 ,20 19
CITY OF HILLTOP ENGINEER

Approved 5/2 ,20 19
ANOKA COUNTY ENGINEER

Julie Driesel DATE 5/16/19
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY
For

Julie Driesel DATE 5/16/19
STATE AID ENGINEER:APPROVED FOR STATE AID FUNDING
For

NO	DATE	BY	CKD	APPR	REVISION		
						04/30/2019	12:28:21 PM

NAME: P:\19-01-00\CSAH_04_(TH47-TH65)\Base\PROPOSED\PROPOSED.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: JOSEPH C. MACPHERSON
SIGNATURE:
DATE: 5-1-19 LICENSE NO. 46732

DRAWN BY APA DATE 04/30/2019
DESIGN BY APA DATE 04/30/2019
CHECKED BY CO DATE 04/30/2019

ANOKA COUNTY HIGHWAY DEPT.

STATE AID PROJECT 002-604-010

TITLE SHEET

Sheet 1 of 54 Sheets

DFFrey

STATEMENT OF ESTIMATED QUANTITIES

NOTES	ITEM NUMBER	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANT. EST.	ANOKA COUNTY QUANT. SAP 002-604-010	COLUMBIA HEIGHTS WATERMAIN PROJECT 1903
	2021.501	MOBILIZATION	LUMP SUM	1	1	
	2102.503	PAVEMENT MARKING REMOVAL	LIN FT	4540	4540	
	2102.518	PAVEMENT MARKING REMOVAL	SQ FT	200	200	
	2104.502	REMOVE CATCH BASIN	EACH	1		1
1	2104.502	REMOVE CASTING	EACH	23	23	
	2104.502	REMOVE WATER MAIN GATE VALVE & BOX	EACH	3		3
1	2104.502	REMOVE DRAINAGE STRUCTURE	EACH	1	1	
	2104.502	SALVAGE CASTING	EACH	1		1
	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	309	305	4
1	2104.503	SAWING BIT PAVEMENT (FULL DEPTH)	LIN FT	845	845	
	2104.503	REMOVE WATER MAIN	LIN. FT.	354		354
	2104.503	REMOVE CURB & GUTTER	LIN FT	692	686	6
	2104.503	REMOVE WATER SERVICE PIPE	LIN. FT.	10		10
	2104.503	SALVAGE CONCRETE PIPE STORM SEWER	LIN. FT.	16		16
	2104.504	REMOVE CONCRETE WALK	SQ YD	185	185	
1	2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	175	175	
2,3	2211.509	AGGREGATE BASE CLASS 5	TON	134	134	
	2215.504	FULL DEPTH RECLAMATION	SQ YD	16723	16723	
4	2215.507	HAUL FULL DEPTH RECLAMATION (LV)	CU YD	2323	2323	
5	2232.604	MILL BITUMINOUS PAVEMENT (SPECIAL)	SQ YD	761	761	
	2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	874	874	
6	2360.509	TYPE SP 12.5 BIT MIXTURE FOR PATCHING	TON	42	42	
7	2360.509	TYPE SP 12.5 WEARING COURSE MIX (4;C)	TON	88	88	
	2360.509	TYPE SP 12.5 WEARING COURSE MIX (4;E)	TON	4808	4808	
	2451.607	PIPE BEDDING MATERIAL	CU. YD.	20		20
	2503.503	12" CP PIPE SEWER	LIN FT	8	8	
	2503.503	6" PVC SANITARY SERVICE PIPE	LIN. FT.	20		20
	2503.503	INSTALL CONCRETE SEWER	LIN. FT.	16		16
	2503.602	RECONNECT SANITARY SEWER SERVICE	EACH	2		2
	2503.602	CONNECT TO EXISTING STORM SEWER	EACH	1	1	
	2503.602	CONNECT INTO EXISTING DRAINAGE STRUCTURE	EACH	1	1	
	2504.601	TEMPORARY WATER SERVICE ON CSAH 4 (49TH AVE	LUMP SUM	1		1
	2504.602	RECONNECT WATER SERVICE	EACH	2		2
9,10	2504.602	ADJUST GATE VALVE	EACH	16	16	
	2504.602	8"X 6" REDUCER	EACH	2		2
	2504.602	10" SLEEVE	EACH	1		1
	2504.602	1" CORPORATION STOP	EACH	2		2
	2504.602	8"X 8"X 8" TEE FITTING	EACH	1		1
	2504.602	10"X 8"X 10" TEE FITTING	EACH	1		1
	2504.602	8" GATE VALVE & BOX	EACH	2		2
	2504.602	10" GATE VALVE & BOX	EACH	2		2
	2504.602	6" COUPLING (D.I.P TO C.I.P.)	EACH	2		2
	2504.603	1" TYPE K COPPER PIPE	LIN. FT.	10		10
	2504.603	6" WATER MAIN D.I.P. CL-52	LIN. FT.	10		10
	2504.603	8" WATER MAIN D.I.P. CL-52	LIN. FT.	340		340
	2504.603	10" WATER MAIN D.I.P. CL-52	LIN. FT.	10		10
12	2506.502	CASTING ASSEMBLY	EACH	24	24	
	2506.502	INSTALL CASTING	EACH	1		1
11	2506.503	CONST DRAINAGE STRUCTURE DESIGN H	LIN FT	10.2	6.7	3.5
	2506.602	GROUT CATCH BASIN OR MANHOLE	EACH	4	4	
	2521.518	4" CONCRETE WALK	SQ FT	100	100	
	2521.518	6" CONCRETE WALK	SQ FT	1563	1563	
	2531.503	CONCRETE CURB & GUTTER DESIGN B618	LIN FT	82	76	6
	2531.503	CONCRETE CURB & GUTTER DESIGN S512	LIN FT	490	490	
8	2531.604	8" CONCRETE VALLEY GUTTER	SQ YD	26	26	

STATEMENT OF ESTIMATED QUANTITIES

NOTES	ITEM NUMBER	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANT. EST.	ANOKA COUNTY QUANT. SAP 002-604-010	COLUMBIA HEIGHTS WATERMAIN PROJECT 1903
	2531.618	TRUNCATED DOMES	SQ FT	228	228	
	2545.502	HANDHOLE	EACH	1	1	
	2545.602	ADJUST HANDHOLE	EACH	1	1	
14	2563.601	TRAFFIC CONTROL SUPERVISOR	LUMP SUM	1	1	
14	2563.601	TRAFFIC CONTROL	LUMP SUM	1	1	
20	2563.601	DETOUR SIGNING	LUMP SUM	1	1	
15	2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	UNIT DAY	40	40	
13	2565.602	RIGID PVC LOOP DETECTOR	EACH	4	4	
16	2573.502	STORM DRAIN INLET PROTECTION	EACH	15	15	
	2574.507	COMMON TOPSOIL BORROW	CU YD	31	31	
17	2575.504	EROSION CONTROL BLANKETS CATEGORY 0	SQ YD	186	186	
18	2581.503	REMOVABLE PREFORM PAVEMENT MARKING TAPE	LIN FT	284	284	
	2582.503	4" SOLID LINE PAINT	LIN FT	12310	12310	
	2582.503	24" SOLID LINE PAINT	LIN FT	120	120	
	2582.503	4" BROKEN LINE PAINT	LIN FT	450	450	
	2582.503	4" DBLE SOLID LINE PAINT	LIN FT	2100	2100	
19	2582.503	4" SOLID LINE MULTI COMP	LIN FT	8525	8525	
19	2582.503	4" BROKEN LINE MULTI COMP	LIN FT	320	320	
19	2582.503	4" DBLE SOLID LINE MULTI COMP	LIN FT	2330	2330	
	2582.518	PAVT MSSG PAINT	SQ FT	432	432	
19	2582.518	PAVT MSSG PREF THERMO	SQ FT	917	917	
19	2582.603	PAVEMENT MARKING SPECIAL	LIN FT	278	278.0	

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 1	350 LBS./ ACRE

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

MNDOT STANDARD PLATES

PLATE NO.	DESCRIPTION
4006L	MANHOLE OR CATCH BASIN PRECAST - DESIGNS G AND H
4020J	MANHOLE OR CATCH BASIN (FOR USE WITH OR WITHOUT TRAFFIC LOADS) (2 SHEETS)
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4110F	COVER CASTING FOR MANHOLE (FOR USE IN ALL TRAFFIC AREAS) – CASTING NO. 715 AND 716
4154B	CATCH BASIN GRATE CASTING - CASTING NO. 816
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)
8000J	CHANNELIZERS
8132B	PREFORMED RIGID PVC CONDUIT LOOP DETECTOR - LAYOUT DETAILS, LAYOUT NOTES, TYPICAL INSTALLATION (3 SHEETS)

NO	DATE	BY	CKD	APPR	REVISION	
1	5/14/19	DFF	CO	JM	WATERMAIN ITEMS ADDED TO SEQ	

NAME: P:\19-01-00\CSAH_04_(TH47-TH65)\Base\PROPOSED\PROPOSED.dgn 05/14/2019 2:37:01 PM

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ANOKA COUNTY HIGHWAY DEPT.

STATE AID PROJECT 002-604-010

STATEMENT OF ESTIMATED QUANTITIES

DFFrey

CONSTRUCTION NOTES

1	ITEM INCLUDES REMOVAL OF MANHOLE CASTINGS, PLATING OF STRUCTURE BELOW RECLAIM DEPTH, PRIOR TO OR IN CONJUNCTION WITH RECLAIMING OPERATION, AND FINAL ADJUSTMENT TO FINISH GRADE BETWEEN PAVING BASE AND WEAR LIFT. REFERENCE DETAILS (PAGE 5) FOR REMOVAL DETAILS
2	ITEM TO BE USED AS BASE FOR NEW CONCRETE WALK, BASE FOR NEW CURB, AND BASE FOR MANHOLE AND CATCH BASIN PATCHING.
3	PRIOR TO PLACEMENT, EXCAVATION AND DISPOSAL OF EXISTING GRADING MATERIAL IS INCIDENTAL TO THIS ITEM
4	IN EACH STAGE OF CONSTRUCTION, 5" OF RECLAIM MATERIAL IS TO BE REMOVED FOR PREPARATION OF 5" OF BITUMINOUS PAVEMENT.
5	DETAIL MILLING AROUND MANHOLES, CATCH BASINS, GATE VALVES, AND ALONG CURB LINE IS INCIDENTAL TO THIS ITEM.
6	ITEM INCLUDES BITUMINOUS PATCHING AROUND NEW CURB, STORM STRUCTURE REPAIRS, AND ANY POTHOLES.
7	ITEM FOR STREET APPROACHES. STREET APPROACHES SHALL BE PAVED AFTER MAINLINE, AND BEFORE FINAL STRIPING
8	#4 REINFORCEMENT BARS TO BE INSTALLED IN VALLEY GUTTER (SEE PLAN, PAGE 6).
9	GATE VALVES TO BE ADJUSTED ONLY AS NECESSARY AS DETERMINED BY THE ENGINEER.
10	EACH ADJUST GATE VALVE LOCATED IN THE MAINLINE RECLAIM AREA INCLUDES TEMPORARY ADJUSTMENT BELOW RECLAIM / AGGREGATE BASE ELEVATION PRIOR TO OR IN CONJUNCTION WITH RECLAIMING OPERATION, AND FINAL ADJUSTMENT TO FINISH GRADE BETWEEN PAVING BASE AND WEAR LIFTS
11	PAY HEIGHT IS MEASURED FROM INVERT OF OUTLET PIPE TO BOTTOM OF ADJUSTING RINGS, PLUS AN ALLOWANCE OF 0.70 FEET FOR THE DEPTH OF THE CONCRETE BASE, REGARDLESS OF ITS ACTUAL THICKNESS.
12	ITEM INCLUDES FULL REPLACEMENT OF CASTING ADJUSTMENT RINGS. SEE STORM TABULATIONS FOR RING HEIGHTS. CASTINGS IN ROADWAY SHALL BE INSTALLED BETWEEN BASE AND WEAR LIFT PAVING
13	LOOP REPLACEMENT REQUIRED ONLY IF DAMAGED DURING CONSTRUCTION OPERATIONS. EXISTING SIGNAL PLANS ARE INCLUDED AT THE END OF THIS PLAN.
14	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.
15	2 MESSAGE BOARDS, ONE ON THE EACH END OF PROJECT SHALL BE INSTALLED 10 DAYS PRIOR TO ANY CONSTRUCTION; REFERENCE STRIPING PLAN FOR DETAILS.
16	ALL DRAINAGE STRUCTURES AFFECTED BY THIS PROJECT MUST HAVE INLET PROTECTION.
17	TYPE 1 FERTILIZER AND TYPE 25-121 SEED ARE INCIDENTAL TO THIS ITEM. SEE "BASIS OF PLANNED QUANTITIES" FOR APPLICATION RATES.
18	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.
19	FINAL STRIPING SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING.
20	ITEM INCLUDES ALL DETOUR SIGNING FOR THE FIVE CONSTRUCTION STAGES. SEE THE STAGING PLAN AND DETOUR PLAN FOR ADDITIONAL INFORMATION.

STORM DRAINAGE TAB

NUMBER	TYPE	ACTION	NEW CASTING	FURNISH AND INSTALL CASTING ASSEMBLY	RING HEIGHT -INCIDENTAL- (LN FT)	REMOVE STRUCTURE	GROUT CATCH BASIN OR MANHOLE	CONSTRUCT DRAINAGE STRUCTURE DESIGN H (LIN FT)	12" CP PIPE SEWER	CONNECT TO EXISTING STORM SEWER	CONNECT INTO EXISTING DRAINAGE STRUCTURE	NOTES
				EACH	LIN FT	EACH	EACH	LIN FT	LIN FT	EACH	EACH	
100	CB	RE-RING	TYPE B	1	0.25							
101	CB	RE-RING	TYPE B	1	0.1							
101A	CB	NEW STRUCTURE	TYPE B	1				3	8		1	
102	CB	RECONSTRUCT	TYPE A	1		1		3.7		1		
103	CB	GROUT RINGS					1					
104	CB	GROUT RINGS					1					
105	CB	OK										
106	CB	OK										
107	CB	OK										
108	CB	OK										
109	CB	GROUT RINGS					1					
110	CB	RE-RING	TYPE A	1	0.7							
111	CB	RE-RING	TYPE A	1	0.8							
112	CB	RE-RING	TYPE A	1	0.9							
113	CB	RE-RING	TYPE A	1	0.5							
114	CB	RE-RING	TYPE A	1	2.4							
200	MH	RE-RING	A-7D	1	0.6							(1)
201	MH	RE-RING	A-7D	1	0.7							(1)
202	MH	GROUT RINGS					1					
300	MH SAN	RE-RING	A-7D	1	1							(1)
301	MH SAN	RE-RING	A-7D	1	0							(1)
302	MH SAN	RE-RING	A-7D	1	0.3							(1)
303	MH SAN	RE-RING	A-7D	1	0							(1)
304	MH SAN	RE-RING	A-7D	1	0							(1)
305	MH SAN	RE-RING	A-7D	1	0.9							(1)
306	MH SAN	RE-RING	A-7D	1	1							(1)
307	MH SAN	RE-RING	A-7D	1	0.6							(1)
308	MH SAN	RE-RING	A-7D	1	0.3							(1)
309	MH SAN	RE-RING	A-7D	1	0.9							(1)
310	MH SAN	OK										
311	MH SAN	RE-RING	A-7D	1	0							(1)
312	MH SAN	RE-RING	A-7D	1	0							(1)
313	MH SAN	RE-RING	A-7D	1	0.2							(1)
314	MH SAN	OK										
315	MH SAN	OK										
TOTALS:				24	12.2	1	4	6.7	8	1	1	

(1) MANHOLE CASTING TO BE REMOVED AND STRUCTURE PLATED BELOW RECLAIM DEPTH, PRIOR TO OR IN CONJUNCTION WITH RECLAIMING OPERATION, AND FINAL ADJUSTMENT TO FINISH GRADE BETWEEN PAVING BASE AND WEAR LIFT. PAID AS ONE "REMOVE CASTING" AND ONE "CASTING ASSEMBLY".

CASTING ASSEMBLIES SUMMARY

ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING	CURB BOX	DESCRIPTION	NOTES	QUANTITY
A-7D	700-7	715		STD. PLATE: 4101D, 4110F	CASTING COVER STAMPED "STORM SEWER"	2
A-7D	700-7	715		STD. PLATE: 4101D, 4110F	CASTING COVER STAMPED "SANITARY	13
TYPE A	SEE DETAILS - SHEET 7					6
TYPE B	SEE DETAILS - SHEET 7					3

ALL CASTING HEIGHTS ARE TO BE VERIFIED IN THE FIELD
ALL MANHOLE COVERS SHOULD BE LABELED AS STORM OR SANITARY
NEW CASTINGS TO BE INSTALLED AFTER ASPHALT MILLING IS COMPLETED
MANHOLE CASTINGS TO BE RECESSED 1/4" FROM TOP OF FINISHED MAT

NO	DATE	BY	CKD	APPR	REVISION		
1	5/14/19	DFF	CO	JM	CONSTRUCTION NOTES MOVED ONTO SHEET		

NAME: P:\19-01-00\CSAH_04_(TH47-TH65)\Base\PROPOSED\PROPOSED.dgn

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ANOKA COUNTY HIGHWAY DEPT.

STATE AID PROJECT 002-604-010

TABULATIONS

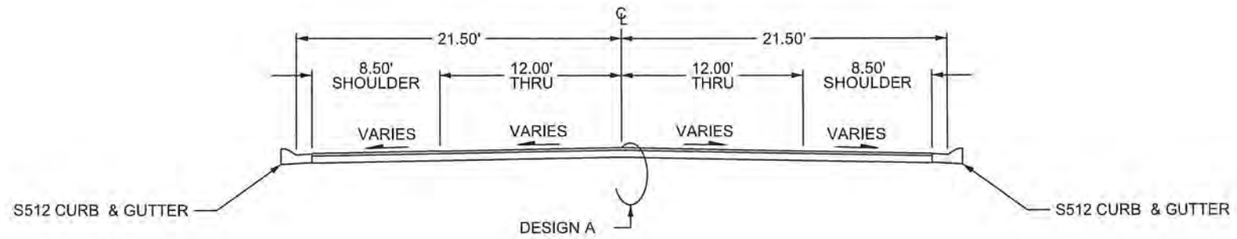
Sheet 3 of 54 Sheets

APAnders

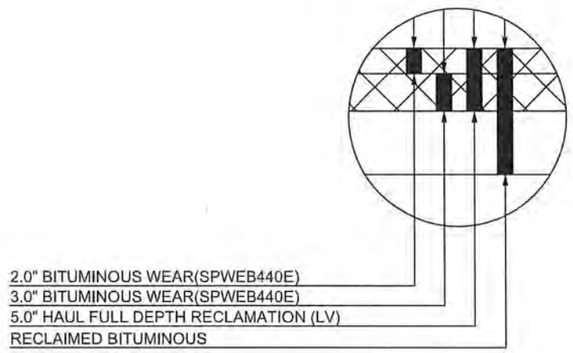
49TH AVE (CSAH 4)

(EXISTING/PROPOSED) SECTION

10+55.00 - 46+15.00



DESIGN A
RECLAIM SECTION



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ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE AID PROJECT 002-604-010

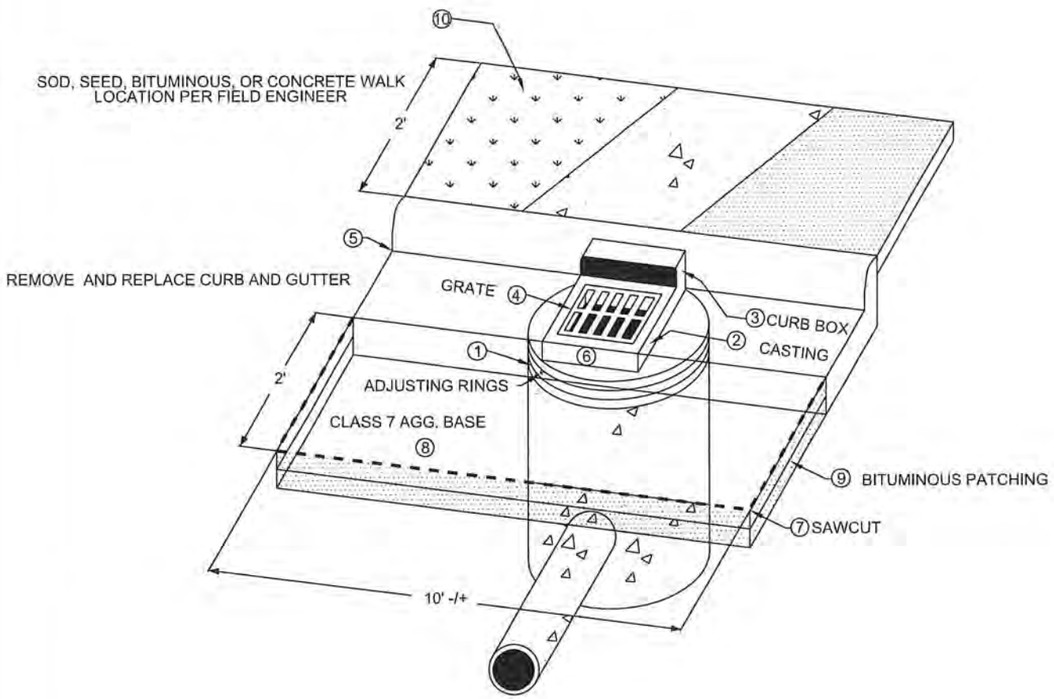
TYPICAL SECTIONS

Sheet 4 of 54 Sheets

APAnders

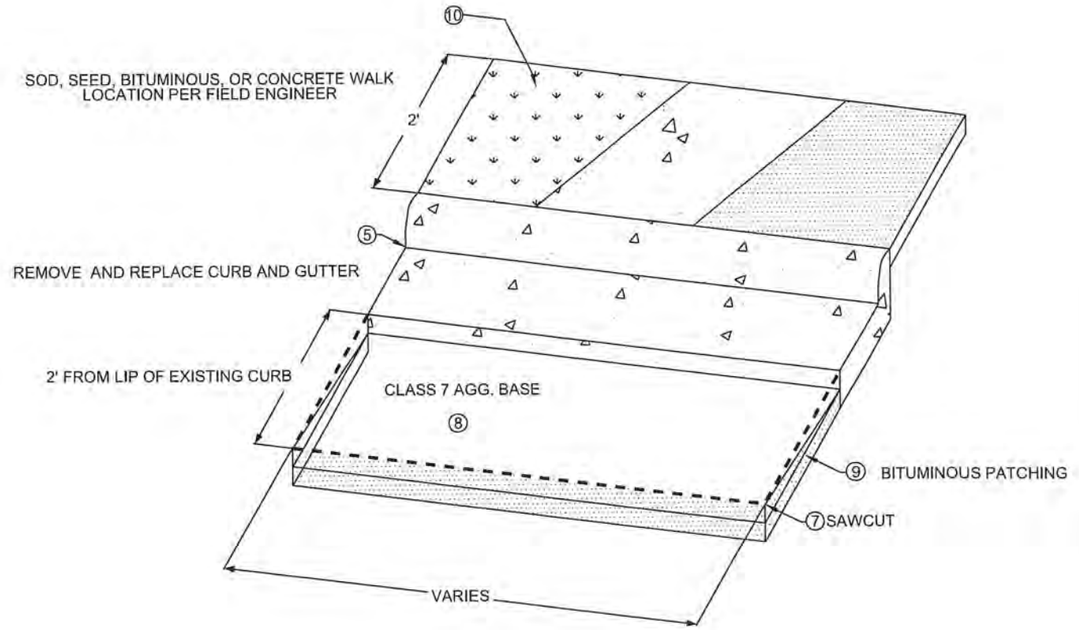
CATCH BASIN DETAIL

SEE STRUCTURE TAB FOR LOCATION
(PAGE 3)



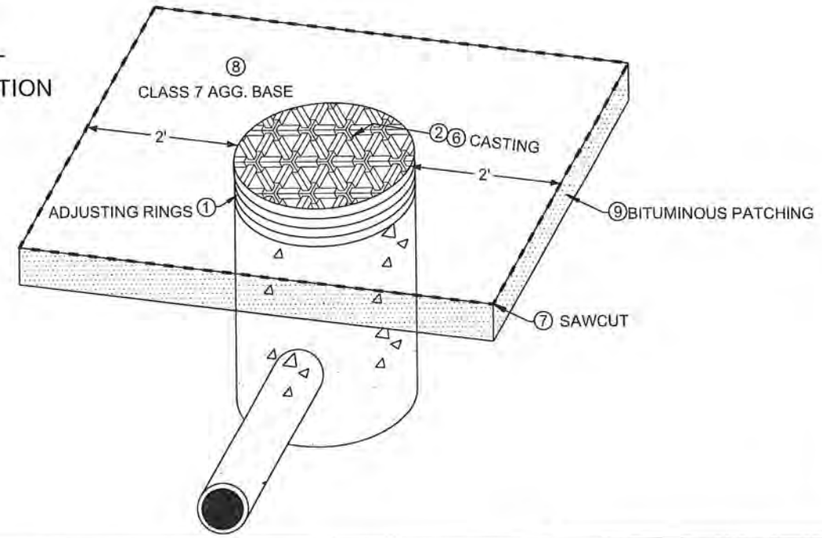
NEW CURB DETAIL

SEE PLAN FOR LOCATION



MANHOLE DETAIL

SEE STRUCTURE TAB FOR LOCATION
(PAGE 3)



NOTES

FOR TRAFFIC CONTROL AT CATCH BASIN AND MANHOLE REPAIRS REFER TO THE MINNESOTA MANUAL ON TEMPORARY TRAFFIC CONTROL LAYOUTS FIELD MANUAL.

① CONCRETE ENCASED CONCRETE ADJUSTING RINGS STANDARD PLATE 4026A
② RING AND FRAME CASTING; REFERENCE CASTING ASSEMBLIES SUMMARY CHART FOR CASTING TYPE
③ CURB BOX MATCHES CASTING REFERENCE CHART FOR CASTING TYPE
④ GRATE CASTING; REFERENCE CASTING ASSEMBLIES SUMMARY CHART FOR CASTING TYPE
⑤ CONCRETE CURB AND GUTTER DESIGN B STANDARD PLATE 7100H, FORM CURB TO FIT CASTING
⑥ INSTALLATION OF CATCH BASIN OR MANHOLE CASTINGS; REFERENCE STANDARD PLATE PER TYPE OF CASTING
⑦ SAWCUT BITUMINOUS PAVEMENT / CONCRETE CURB FULL DEPTH.
⑧ ADD AND COMPACT AGGREGATE BASE CLASS 7 AROUND REPAIRED STRUCTURE. ITEM INCIDENTAL TO ENTIRE STRUCTURE REPAIR
⑨ REMOVE VARIABLE DEPTH BITUMINOUS, PATCH WITH 2, 3" LIFTS OF BITUMINOUS, TOP LIFT SHOULD TAPER TO BOTTOM LIFT AT CURB.
⑩ REPLACE DISTURED AREA BEHIND CATCH BASIN WITH EITHER SOD (RESIDENTAL AREAS), EROSION CONTROL BLANKET, BITUMINOUS ,OR CONCRETE

NO	DATE	BY	CKD	APPR	REVISION	
						04/30/2019 12:28:38 PM

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DATE: 5-1-19 LICENSE NO. 46732

DRAWN BY APA DATE 04/30/2019
DESIGN BY APA DATE 04/30/2019
CHECKED BY CO DATE 04/30/2019

ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-604-010

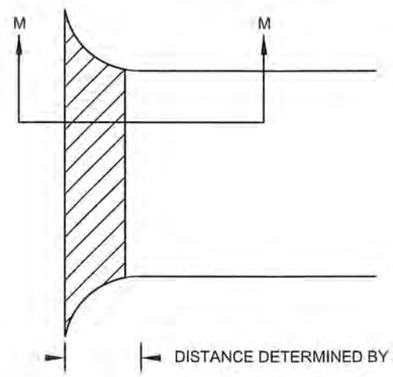
DETAILS

APAnders

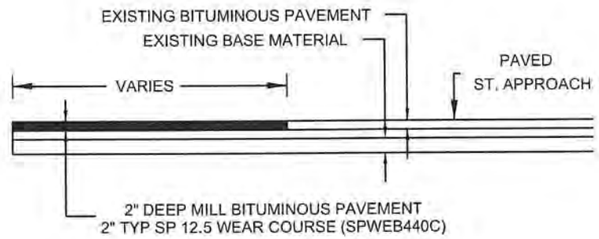
STREET APPROACH DETAIL (MILL & OVERLAY)

BITUMINOUS STREET

PLAN VIEW

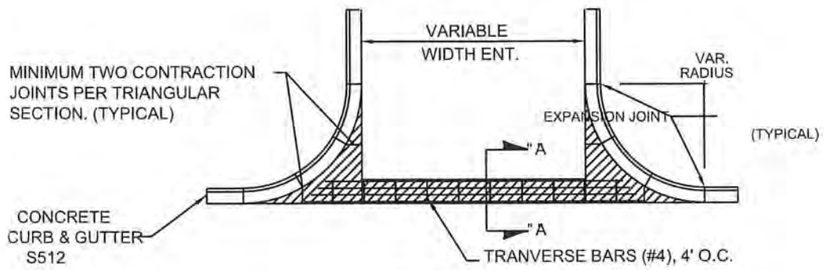


SECTION M - M

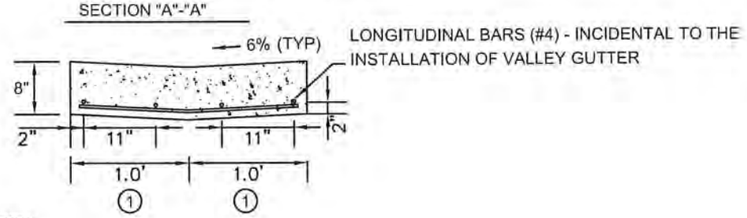


CROSS GUTTER DETAIL

PAID FOR AS 8" VALLEY GUTTER



SECTION "A"-"A"



= DESIGNATES 8 INCH DEPTH CONCRETE

(1) MATCH GUTTER WIDTH.

NO	DATE	BY	CKD	APPR	REVISION		
						04/30/2019	12:28:39 PM

NAME: P:\19-01-00\CSAH_04_(TH47-TH65)\Base\PROPOSED\PROPOSED.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: JOSEPH J. MACPHERSON

SIGNATURE:

DATE: 5-1-19 LICENSE NO. 46732

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ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE AID PROJECT 002-604-010

DETAILS

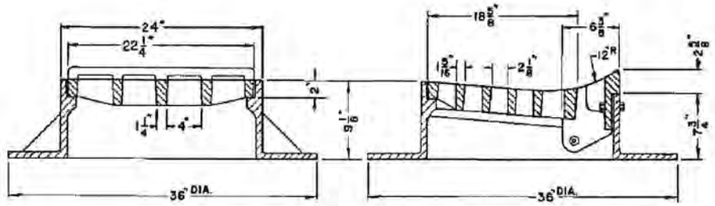
Sheet 6 of 54 Sheets

APAnders

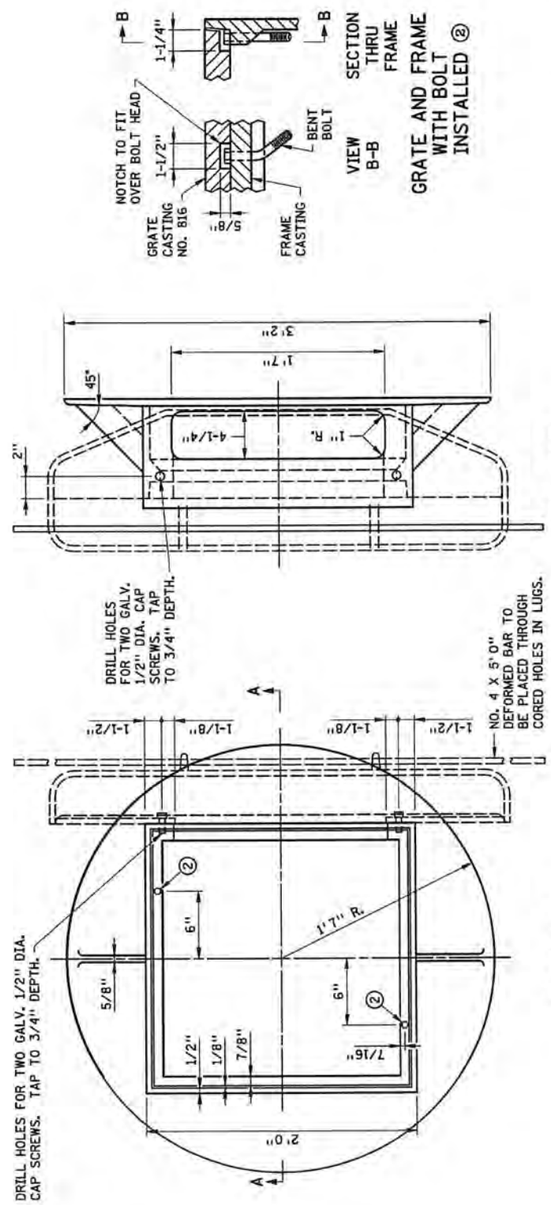
FRAME RING AND CASTING TYPE A

Roll Type Inlet Frame, Grate, Curb Box

Heavy Duty



FRAME RING AND CASTING TYPE B



CASTINGS USED FOR ASSEMBLY	
GRATE	NO. 816 (MNDOT STD PLATE 4154B)
CURB BOX ①	NO. 823A (MNDOT STD PLATE 4160) OR

NOTES:

USE 1/4" FILLETS IN ALL CORNERS.
SEE MNDOT STANDARD PLATE 7111 FOR INSTALLATION REQUIREMENTS.
① APPLIES TO DESIGN B OR V CURB AND GUTTER.
② AT LOCATIONS INDICATED IN TOP VIEW, PROVIDE 9/16" DIA. HOLES WHEN GRATE NO 816 (MNDOT STD PLATE 4154) IS USED WITH THIS FRAME. FIELD PLACE 1/2" DIA X 4" LONG GALV BOLT IN UP STREAM SIDE AND BENT UNDERSIDE TO PREVENT REMOVAL. THIS WILL PREVENT GRATE NO. 816 (MNDOT STD PLATE 4154) FROM BEING PLACED IN WRONG AND NOT BEING BICYCLE SAFE

NOTE: THE CONTRATOR SHALL TAPER THE LIP OF CONCRETE CURB AND GUTTER FROM THE LIP OF THE ADJACENT CURB LINE TO THE LIP OF THE CASTING OVER A DISTANCE OF 3' (ON EACH SIDE OF THE CASTING). THIS WORK SHALL BE INCIDENTAL TO THE CONCRETE CURB & GUTTER PAY ITEMS.

NO	DATE	BY	CKD	APPR	REVISION		
						04/30/2019	12:28:40 PM

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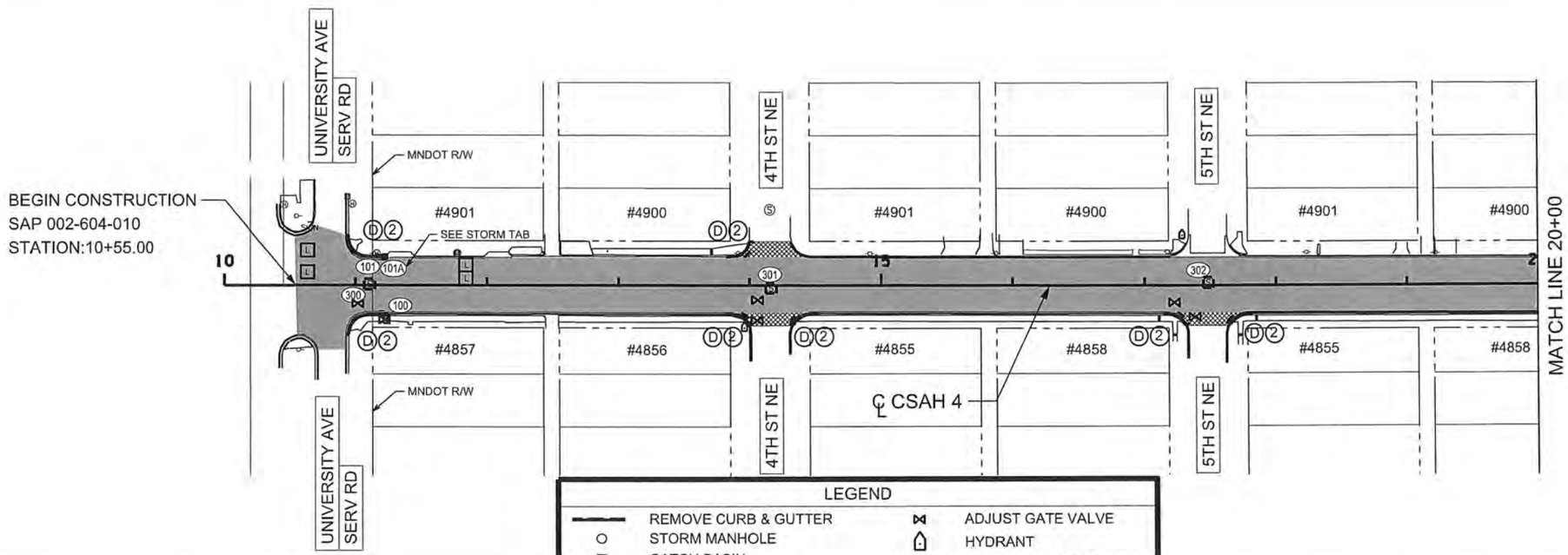
ANOKA COUNTY HIGHWAY DEPT.

STATE AID PROJECT 002-604-010

DETAILS

Sheet 7 of 54 Sheets

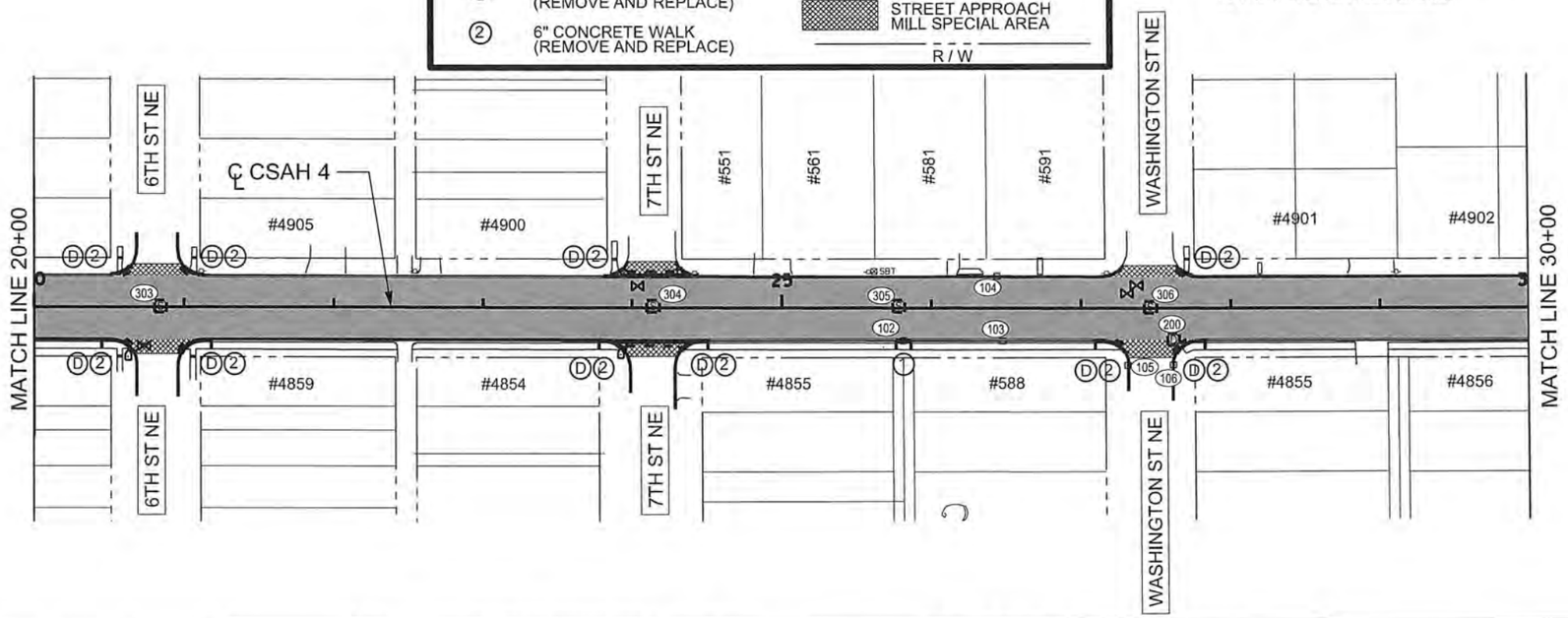
APAnders



LEGEND

REMOVE CURB & GUTTER	ADJUST GATE VALVE
STORM MANHOLE	HYDRANT
CATCH BASIN	(1) APPROX. LOOP LOCATION
SANITARY MANHOLE	SAWCUT
TRUNCATED DOMES	MAINLINE RECLAIM AREA
4" CONCRETE WALK (REMOVE AND REPLACE)	STREET APPROACH MILL SPECIAL AREA
6" CONCRETE WALK (REMOVE AND REPLACE)	R / W

(1) PLACE LOOPS IN THE AGGREGATE BASE OR RECLAIMED BITUMINOUS PRIOR TO PAVING. SEE MNDOT STANDARD PLATE 8132 FOR DETAILS. SEE EXISTING SIGNAL PLANS FOR LOOP LOCATIONS AND COORDINATE WITH THE MNDOT CONTACT PERSON WHO IS LISTED IN THE SPECIAL PROVISIONS.



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ANOKA COUNTY HIGHWAY DEPT.

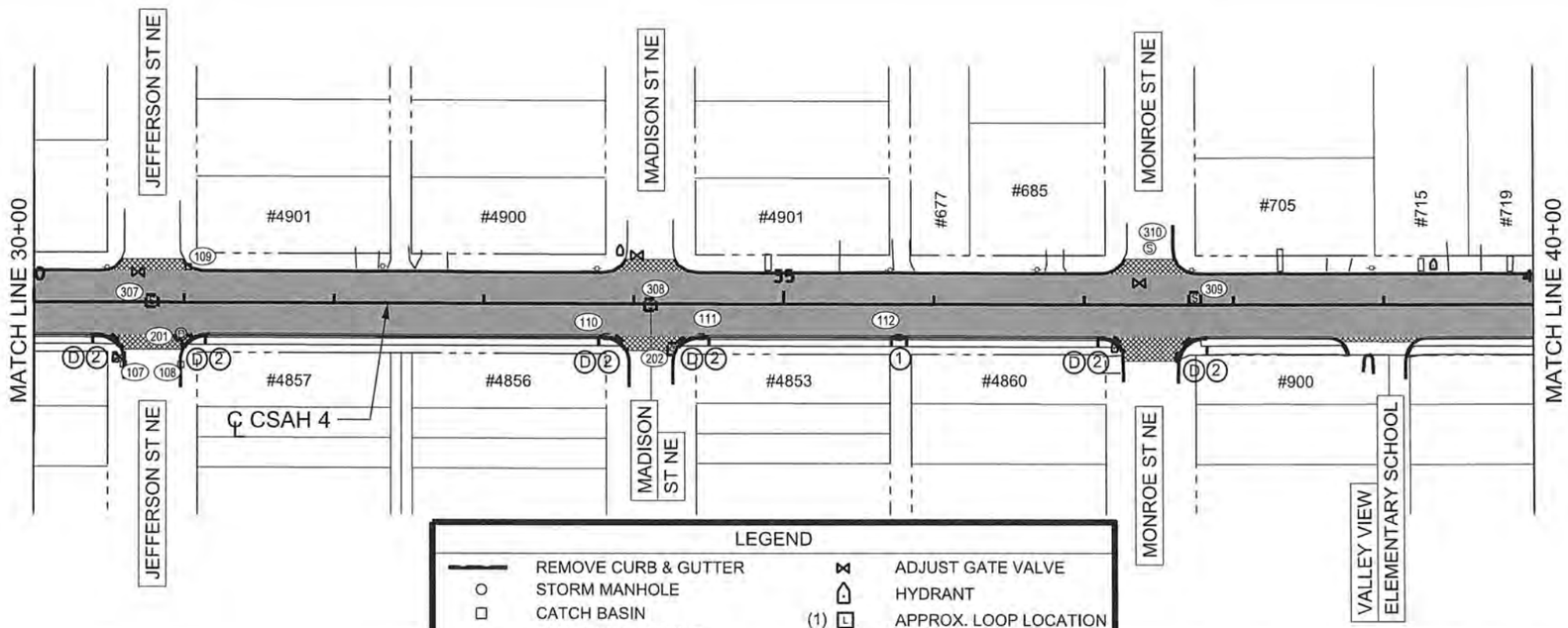
STATE AID PROJECT 002-604-010

CONSTRUCTION PLAN

STA 10+55 TO 30+00

Sheet 8 of 54 Sheets

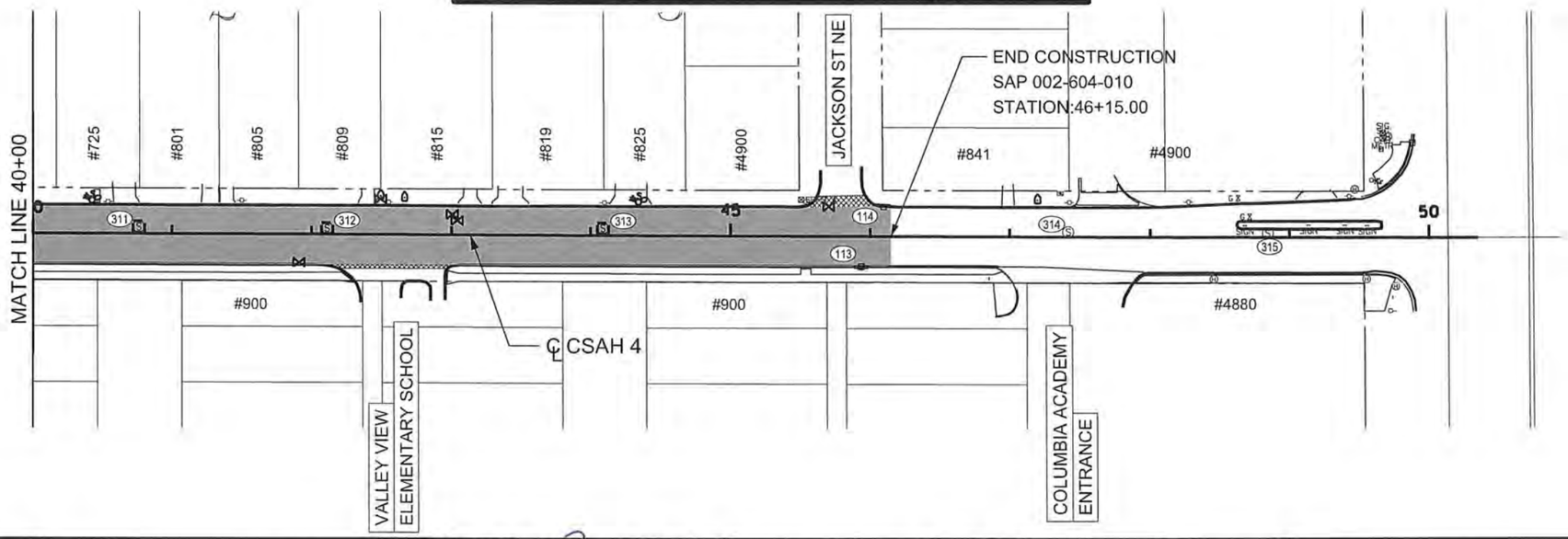
APanders



LEGEND

- REMOVE CURB & GUTTER
- STORM MANHOLE
- CATCH BASIN
- SANITARY MANHOLE
- (D) TRUNCATED DOMES
- (1) 4" CONCRETE WALK (REMOVE AND REPLACE)
- (2) 6" CONCRETE WALK (REMOVE AND REPLACE)
- ADJUST GATE VALVE
- HYDRANT
- (1) APPROX. LOOP LOCATION
- SAWCUT
- MAINLINE RECLAIM AREA
- STREET APPROACH MILL SPECIAL AREA
- R / W

(1) PLACE LOOPS IN THE AGGREGATE BASE OR RECLAIMED BITUMINOUS PRIOR TO PAVING. SEE MNDOT STANDARD PLATE 8132 FOR DETAILS. SEE EXISTING SIGNAL PLANS FOR LOOP LOCATIONS AND COORDINATE WITH THE MNDOT CONTACT PERSON WHO IS LISTED IN THE SPECIAL PROVISIONS.



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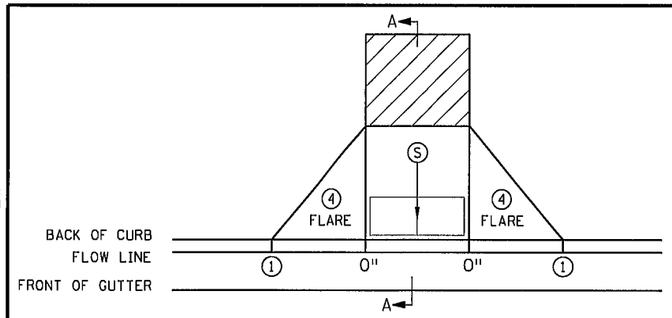
ANOKA COUNTY HIGHWAY DEPT.

STATE AID PROJECT 002-604-010

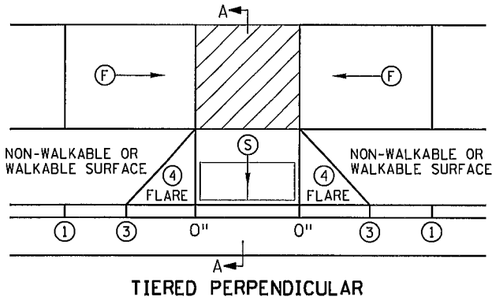
CONSTRUCTION PLAN

STA 30+00 TO 46+15

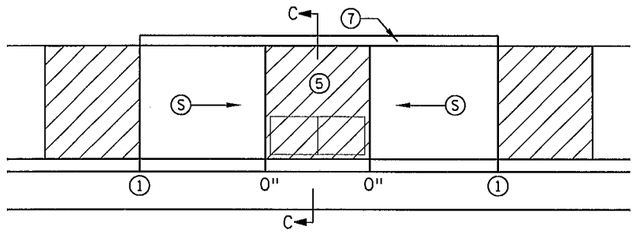
Sheet 9 of 54 Sheets



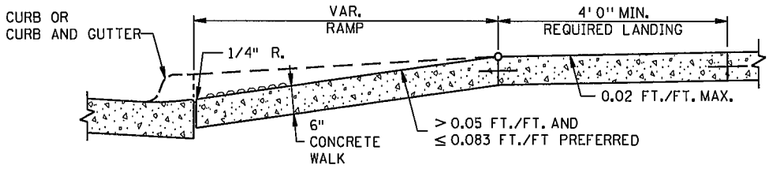
PERPENDICULAR



TIERED PERPENDICULAR

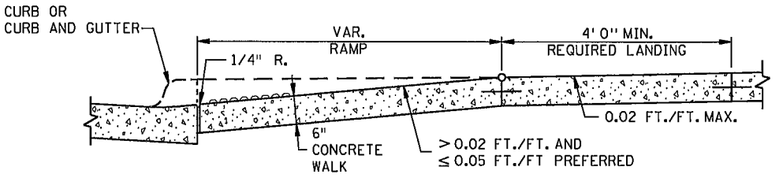


PARALLEL



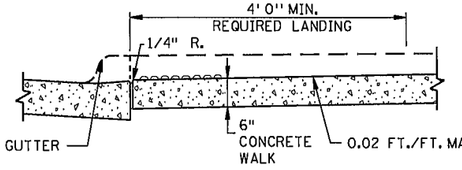
SECTION A-A

PERPENDICULAR/TIERED/DIAGONAL



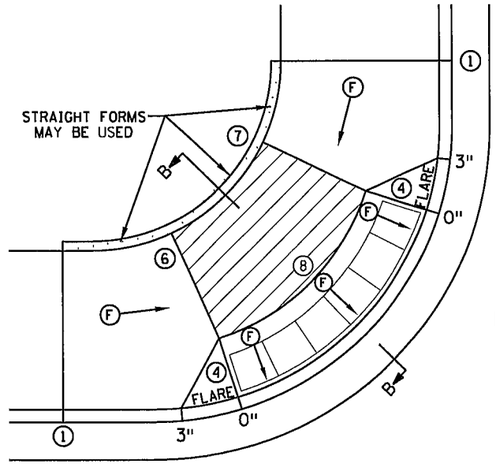
SECTION B-B

FAN

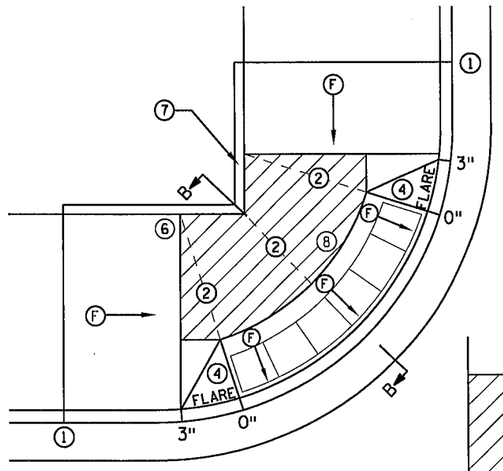


SECTION C-C

PARALLEL/DEPRESSED CORNER

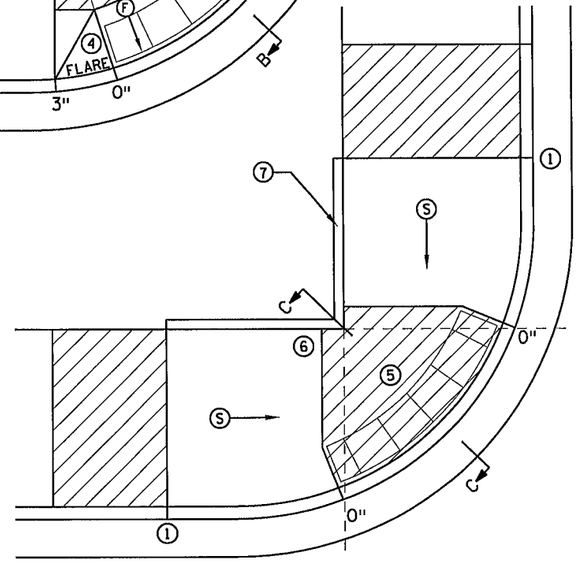


FAN⑩

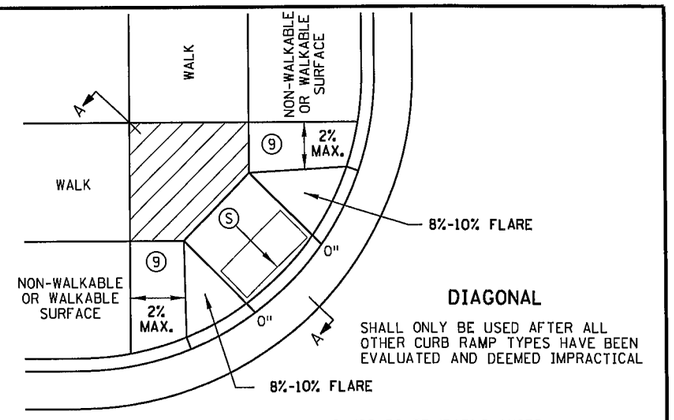


MODIFIED FAN ⑩

USED WHEN RIGHT-OF-WAY IS CONSTRAINED



DEPRESSED CORNER



DIAGONAL

SHALL ONLY BE USED AFTER ALL OTHER CURB RAMP TYPES HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL

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

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 ENTIRE WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK. DETECTABLE WARNING SHOULD BE 6" LESS THAN THE PAR/TRAIL WIDTH. ARC LENGTH OF 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, WHEN INITIAL LANDING IS AT FULL CURB HEIGHT.

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 SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.

⑧ A 7' MIN TOP RADIUS GRADE BREAK 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.

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 PARS.

X" CURB HEIGHT

REVISION:

APPROVED: JANUARY 23, 2017

OPERATIONS ENGINEER

002-604-010

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 1 OF 6

APPROVED: 1-23-2017

REVISED:

STATE DESIGN ENGINEER

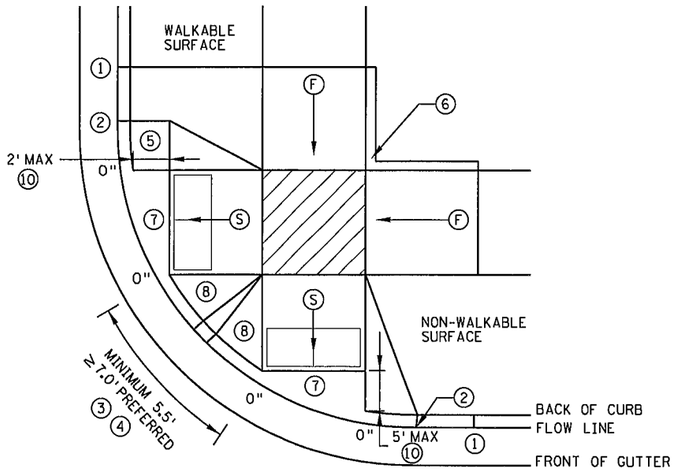
PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. (T.H.) SHEET NO. 10 OF 54 SHEETS

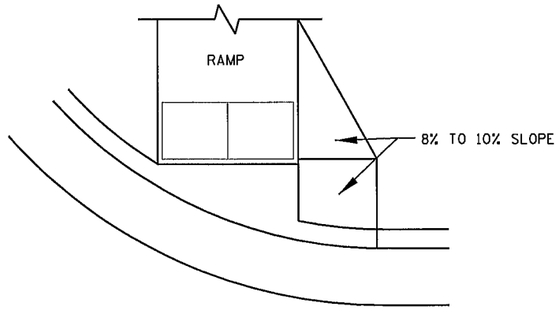
PLOTTED/REVISED: $$$$@DATE@$$$$

IPLOT NAME: $$@IPLOT$NAME@$$

PATH & FILENAME: $$$@PATHFILENAME@$$$



COMBINED DIRECTIONAL ⑨



DIRECTIONAL RAMP WALKABLE FLARE

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 ENTIRE WIDTH OF SHARED-USE PATH AND THE ENTIRE PAR WIDTH OF THE WALK. DETECTABLE WARNING SHOULD BE 6" LESS THAN THE PAR/PATH WIDTH. ARC LENGTH OF 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 SHOULD 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.

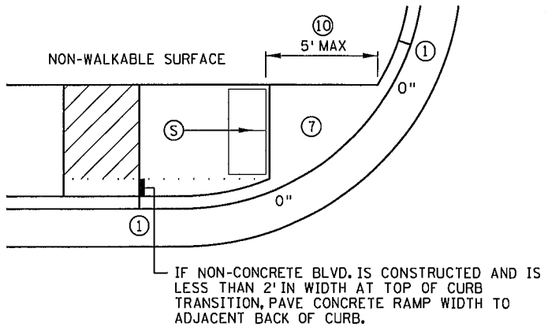
⑩ FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD 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.

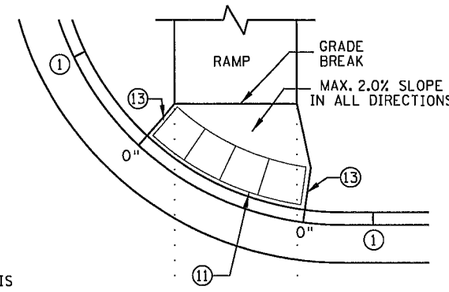
⑫ FOR DIRECTIONAL RAMPS WITH THE DETECTABLE WARNINGS PLACED AT THE BACK OF CURB, THE DETECTABLE WARNINGS SHALL COVER THE ENTIRE WIDTH OF THE WALK/PATH. THIS ENSURES A DETECTABLE EDGE AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.

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.

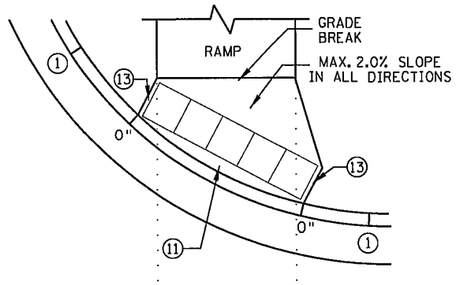


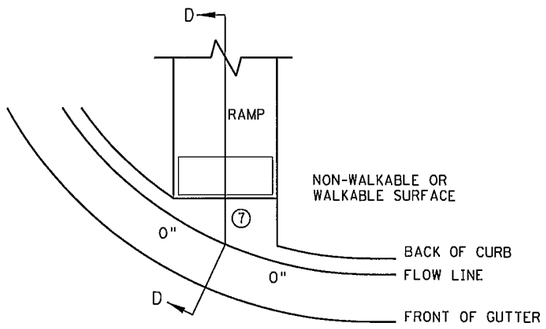
STANDARD ONE-WAY DIRECTIONAL ⑨



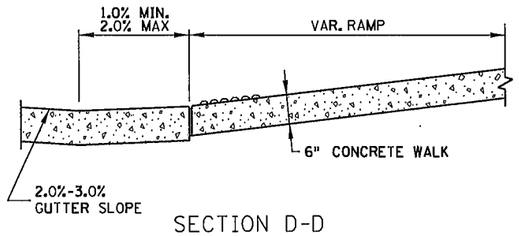
DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫

ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB

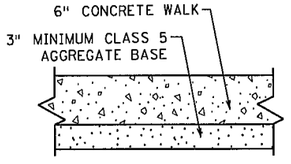




CURB FOR DIRECTIONAL RAMPS ⑭



SECTION D-D



TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER

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%.

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

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APPROVED: 1-23-2017

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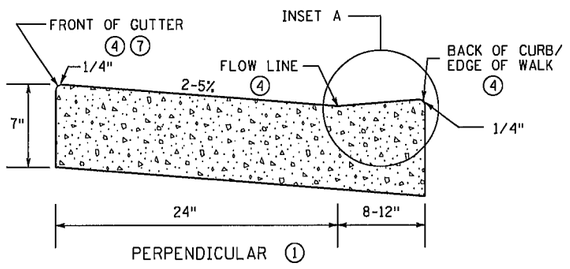
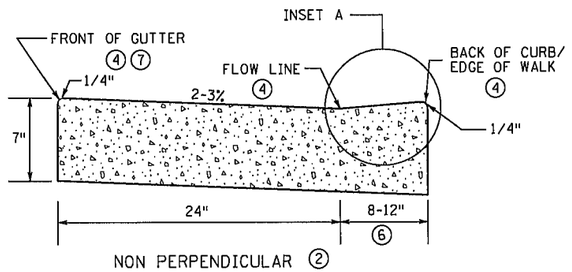
PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. (T.H.) SHEET NO. 11 OF 54 SHEETS

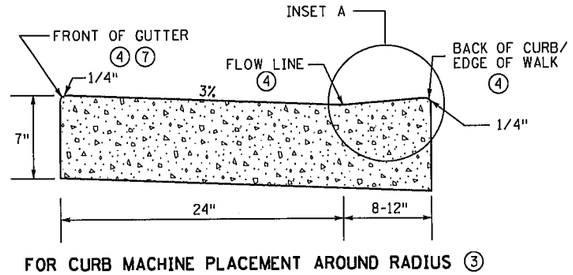


PERPENDICULAR ①

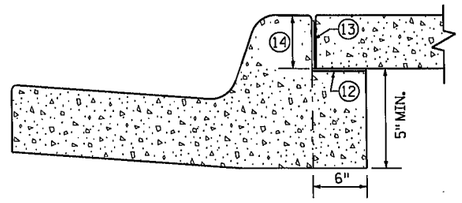


NON PERPENDICULAR ②

PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL

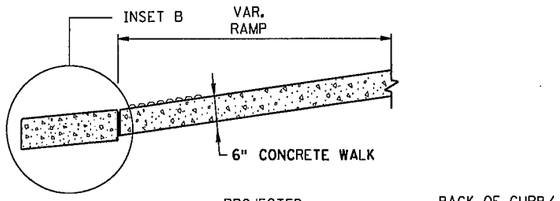


FOR CURB MACHINE PLACEMENT AROUND RADIUS ③
(REGARDLESS OF RAMP TYPE)



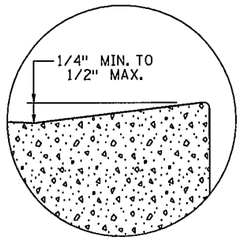
OPTIONAL SILL CURB WHEN SIDEWALK IS AT BACK OF CURB

CONCRETE SILL TO BE USED ONLY WHEN SPECIFIED IN THE PLAN.

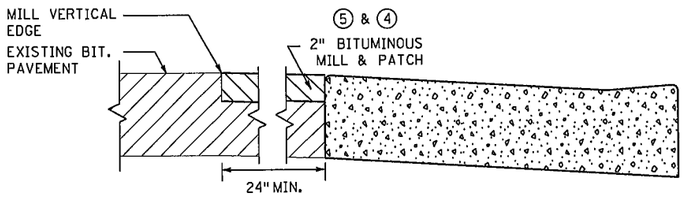


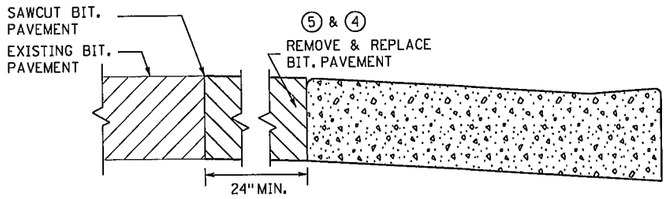
INSET B

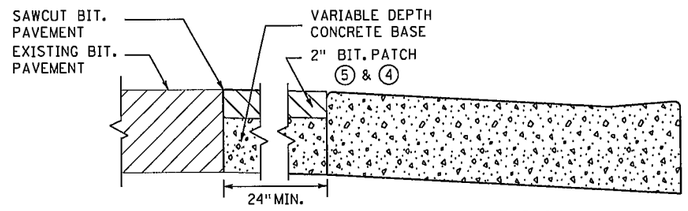
OUTFLOW GUTTER ⑧

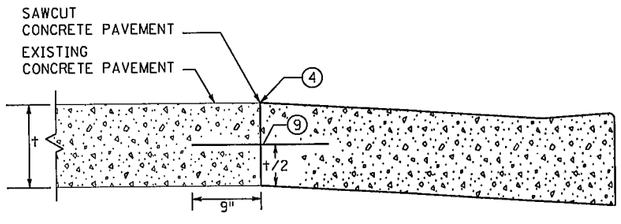


INSET A





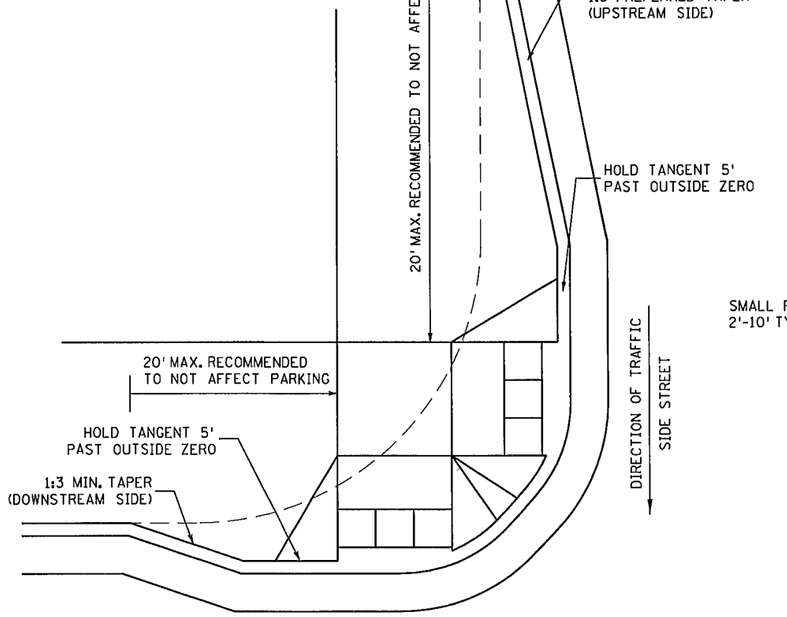




ONLY ALLOWED PER ENGINEER'S APPROVAL

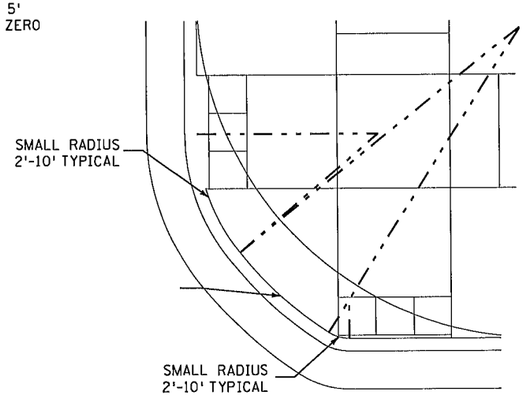
PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER

FOR USE ON CURB RAMP RETROFITS



ADA CURB EXTENSION WITH COMPOUND RADIUS (BUMP OUT) ⑪

DIRECTION OF TRAFFIC
MAIN STREET



COMBINED DIRECTIONAL ⑩
(COMPOUND RADIUS)

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.

⑫ PLACE BOND BREAKER BETWEEN WALK AND TOP OF SILL.

⑬ 1/2" PREFORMED JOINT FILLER PER MNDOT SPEC. 3702.

⑭ DIMENSION TO BE SAME AS SIDEWALK THICKNESS, 4" MIN.

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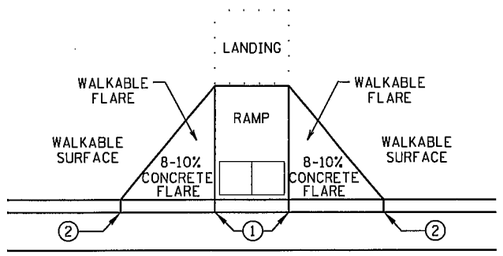
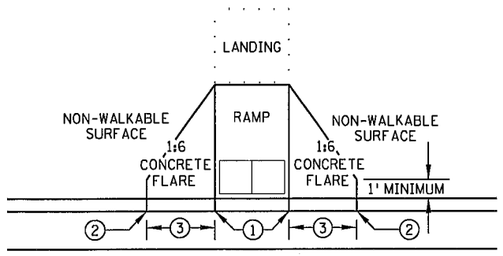
PEDESTRIAN CURB RAMP DETAILS

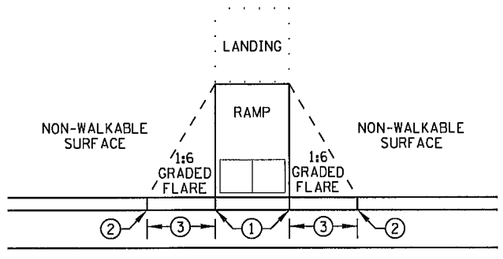
STATE PROJ. NO. (T.H.) SHEET NO. 12 OF 54 SHEETS



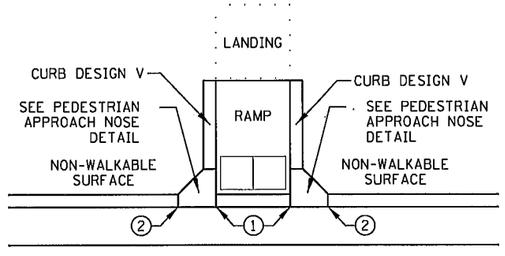
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

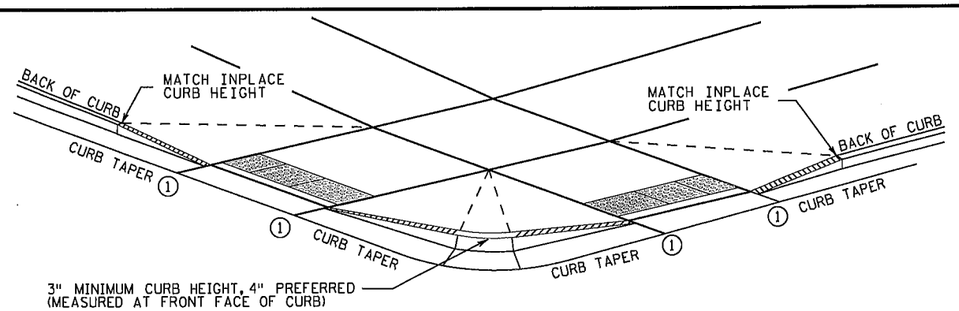


GRADED FLARES

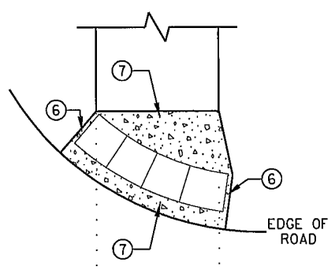


RETURNED CURB ⑤

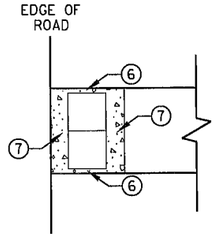
TYPICAL SIDE TREATMENT OPTIONS ④ ⑪



DETECTABLE EDGE WITH ⑧
CURB AND GUTTER

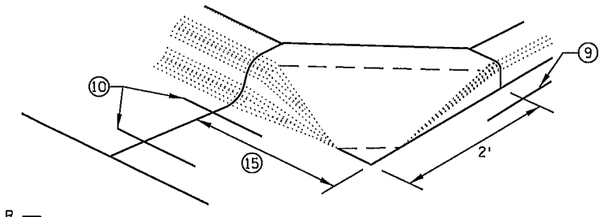


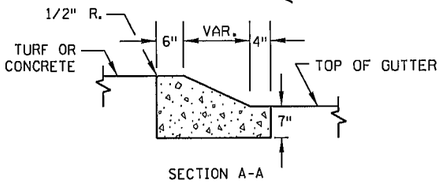
RADIAL DETECTABLE WARNING



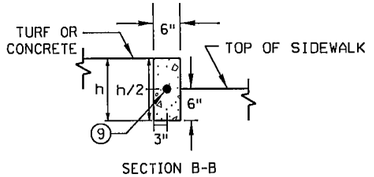
RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

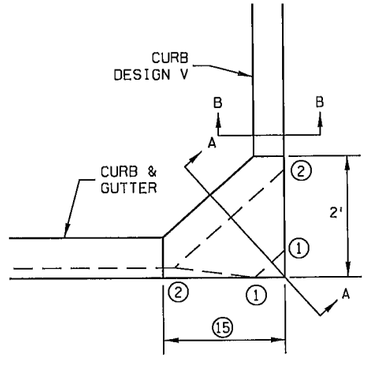




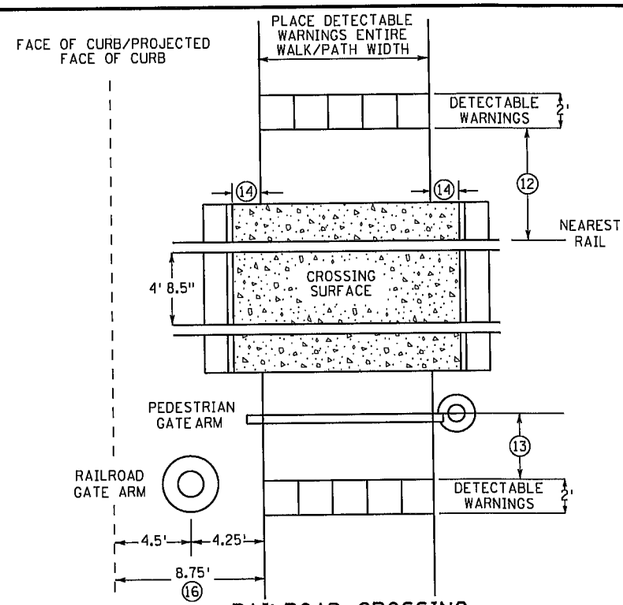
SECTION A-A



SECTION B-B



PEDESTRIAN APPROACH
NOSE DETAIL
(FOR RETURNED CURB
SIDE TREATMENT)



RAILROAD CROSSING
PLAN VIEW

NOTES:

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.

② FULL CURB HEIGHT.

③ 2' FOR 4" HIGH CURB AND 3' FOR 6" HIGH CURB.

④ 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.

⑤ TYPICALLY USED FOR MEDIANS AND ISLANDS.

⑥ 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.

⑦ 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.

⑧ 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.

⑨ 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.

⑩ 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.

⑪ 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.

⑫ 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.

⑬ 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 ⑫.

⑭ CROSSING SURFACE SHALL EXTEND 2' MINIMUM PAST THE OUTSIDE EDGE OF WALK OR SHARED-USE PATH.

⑮ 3' FOR MEDIANS AND SPLITTER ISLANDS. NOSE CAN BE REDUCED TO 2' ON FREE RIGHT ISLANDS.

⑯ 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.

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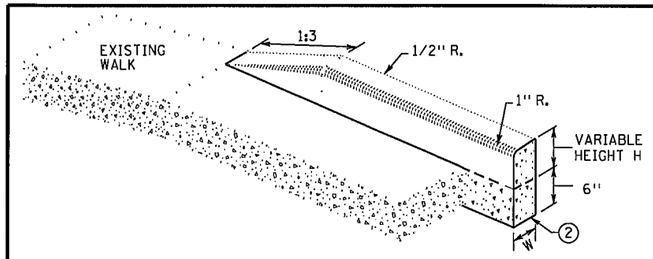
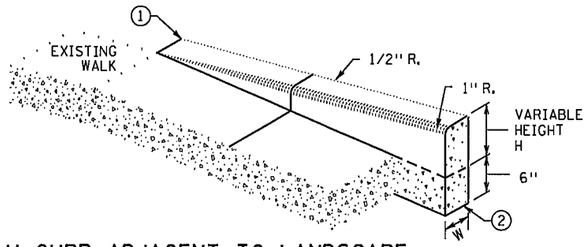
PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. (T.H.) SHEET NO. 13 OF 54 SHEETS



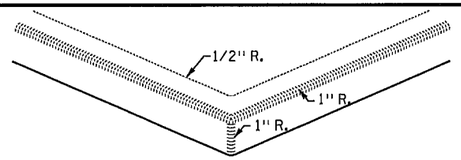
V CURB ADJACENT TO LANDSCAPE

CURB WITHIN SIDEWALK LIMITS

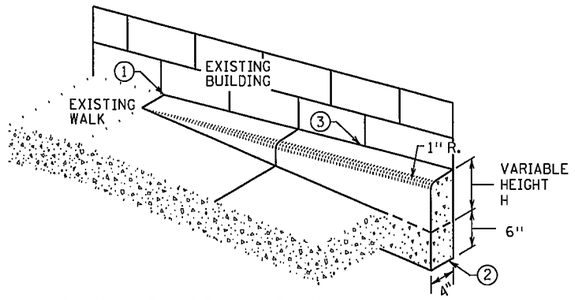


V CURB ADJACENT TO LANDSCAPE

CURB OUTSIDE SIDEWALK LIMITS

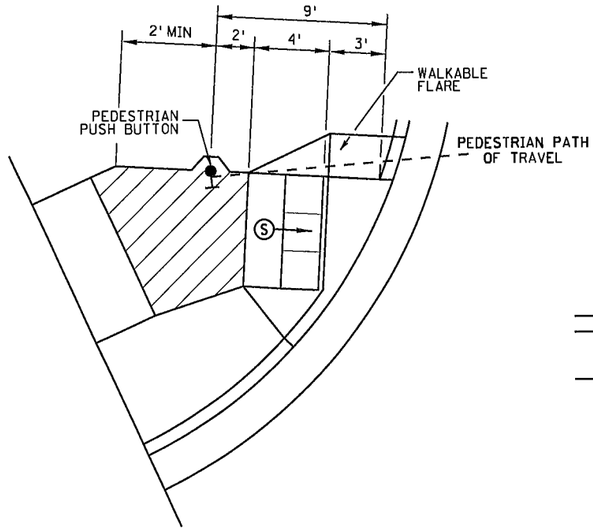


V CURB INTERSECTION



V CURB ADJACENT TO BUILDING OR BARRIER

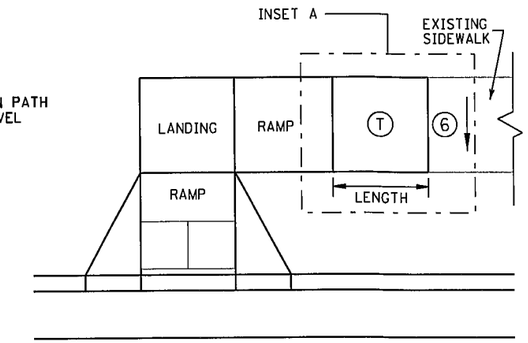
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"

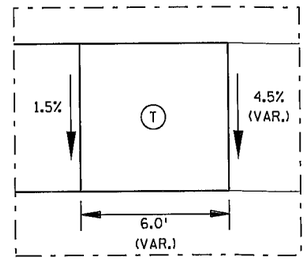


SEMI-DIRECTIONAL RAMP (3,4,9)

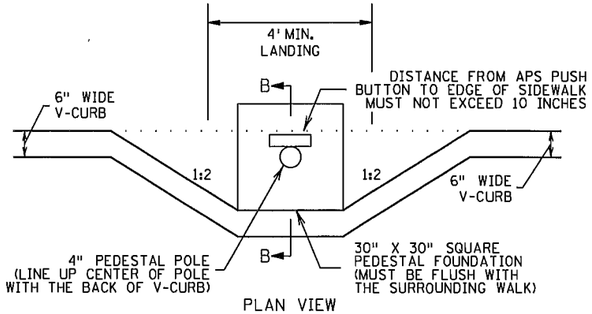
3' DOME SETBACK, 4' LONG RAMP AND PUSH BUTTON 9' FROM THE BACK OF CURB

PRIMARILY USED FOR APS APPLICATIONS WHERE THE PAR DOES NOT CONTINUE PAST THE PUSH BUTTON (DEAD-END SIDEWALK)

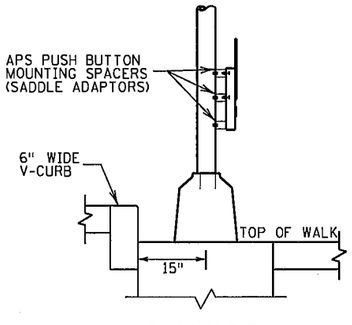




TRANSITION PANEL ④⑤

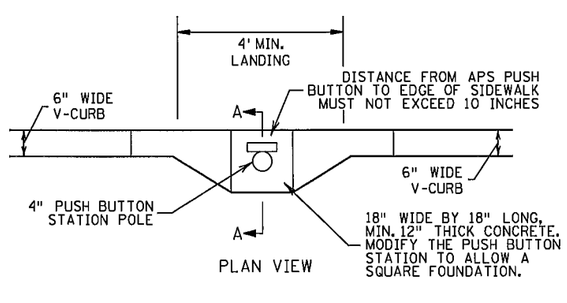


PLAN VIEW

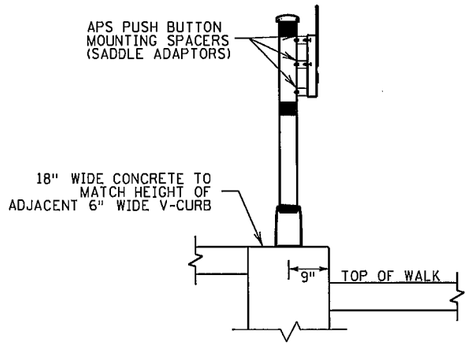


SECTION B-B

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)



PLAN VIEW



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 EDGE BETWEEN NEW V CURB AND INPLACE STRUCTURE SHALL BE SEALED AND BOND BREAKER SHALL BE USED BETWEEN EXISTING STRUCTURE AND PLACED V-CURB.

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 PANELS ARE TO ONLY 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.

Ⓢ 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%.

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.

Ⓣ 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.

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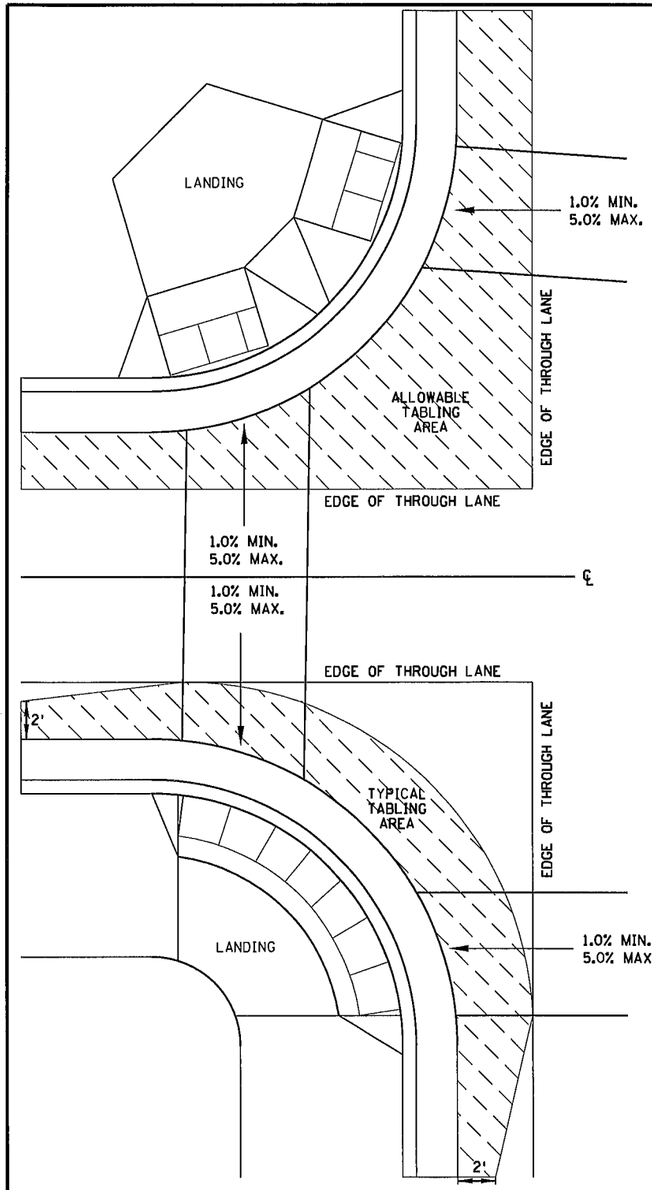
STANDARD PLAN 5-297.250 | 5 OF 6

APPROVED: 1-23-2017

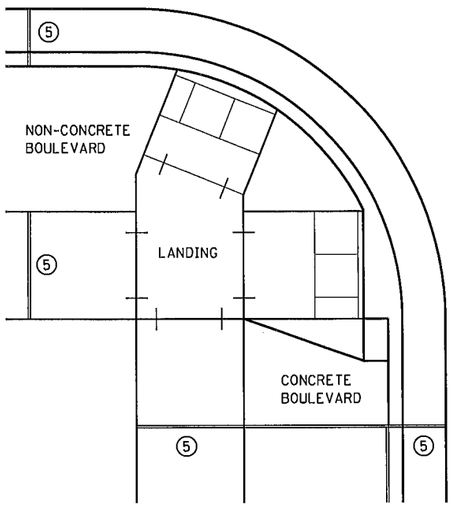
REVISED:

PEDESTRIAN CURB RAMP DETAILS

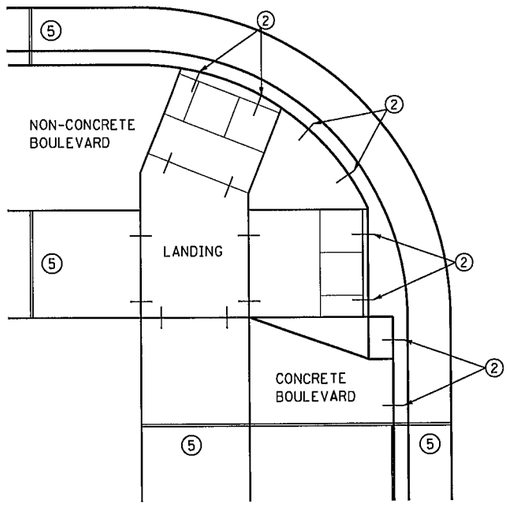
STATE PROJ. NO. (T.H.) SHEET NO. 14 OF 54 SHEETS



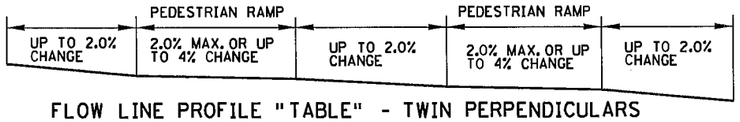
CURB LINE AND ROAD CROSSING ADJUSTMENTS



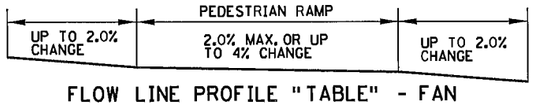
EXPANSION MATERIAL PLACEMENT FOR CONCRETE AND BITUMINOUS ROADWAYS



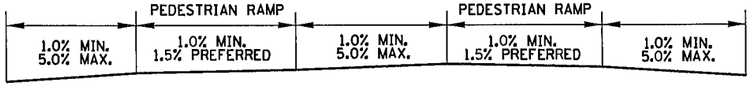
OPTIONAL CURB LINE REINFORCEMENT ④ PLACEMENT ON BITUMINOUS ROADWAYS



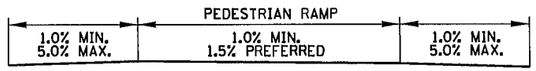
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



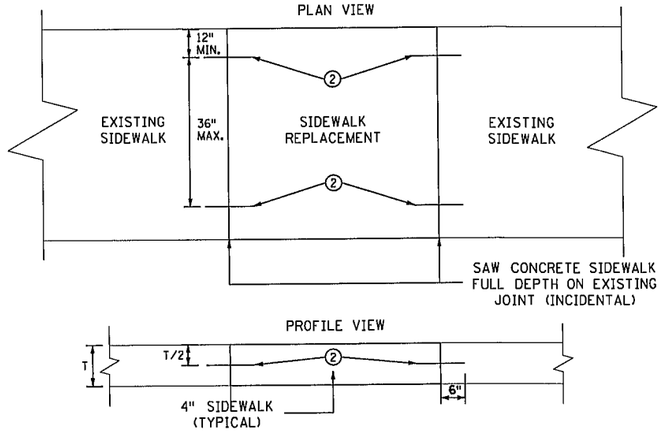
FLOW LINE PROFILE "TABLE" - FAN



FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS

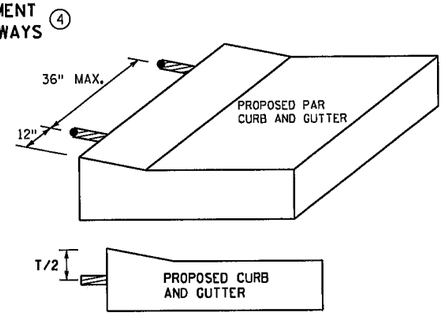


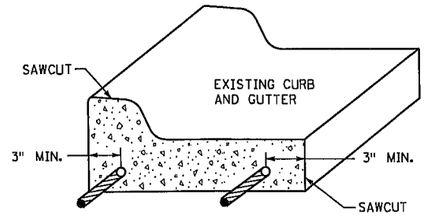
FLOW LINE PROFILE RAISE - FAN



OPTIONAL SIDEWALK REINFORCEMENT

SIDEWALK REINFORCEMENT TO BE USED ONLY WHEN SPECIFIED IN THE PLAN.

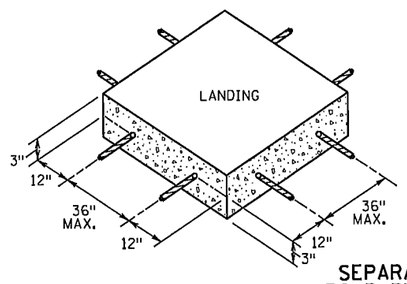


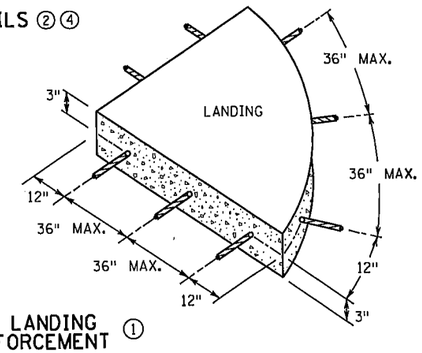


FOR USE ON CURB RAMP RETROFITS

CURB AND GUTTER REINFORCEMENT ③

OPTIONAL CURB LINE REINFORCEMENT DETAILS ②④





SEPARATE LANDING POUR REINFORCEMENT ①

"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 AT 36" MAXIMUM CENTER TO CENTER (EPOXY COATED). BARS TO BE ADJUSTED TO MATCH RAMP GRADE.

③ DRILL AND GROUT 2 - NO. 4 X 12" LONG REINFORCEMENT BARS (EPOXY COATED). REINFORCEMENT REQUIRED FOR ALL CONSTRUCTION JOINTS WITHIN RADIUS.

④ THIS OPTIONAL CURB LINE REINFORCEMENT DETAIL SHOULD ONLY BE USED ON BITUMINOUS ROADWAYS WHEN SPECIFIED IN THE PLAN.

⑤ 1/2 IN. PREFORMED JOINT FILLER MATERIAL PER MNDOT SPEC. 3702.

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STANDARD PLAN 5-297.250 | 6 OF 6

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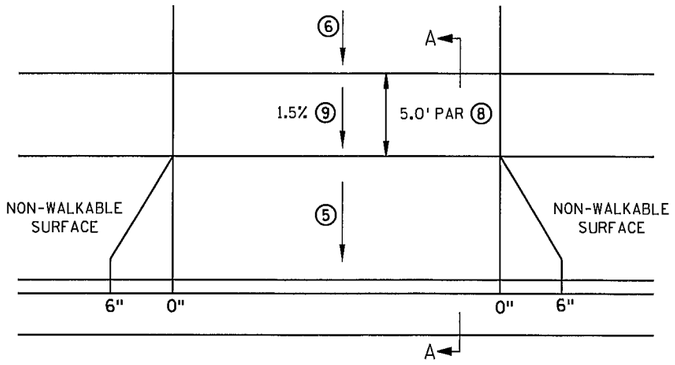
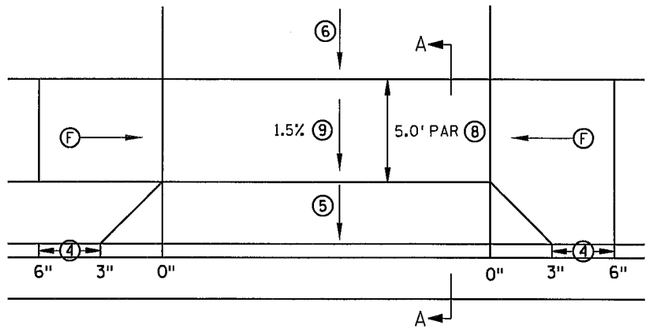
PEDESTRIAN CURB RAMP DETAILS

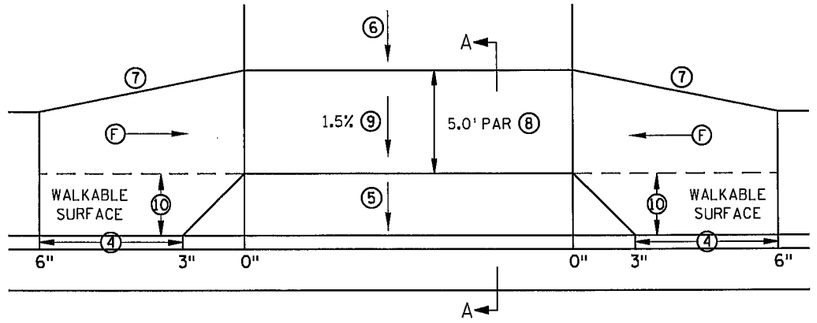
STATE PROJ. NO. (T.H.) SHEET NO. 15 OF 54 SHEETS



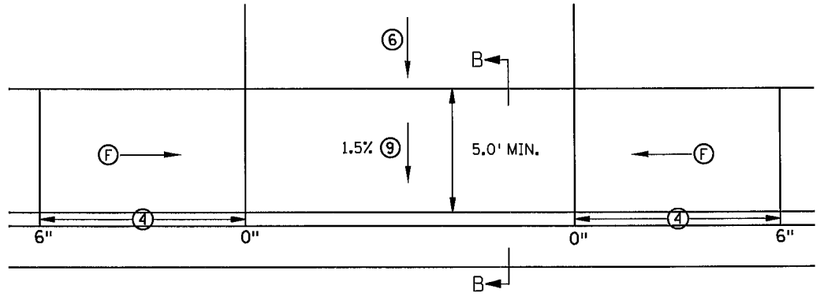
PERPENDICULAR DRIVEWAY ①



TIERED PERPENDICULAR DRIVEWAY ②



TIERED PERPENDICULAR OFFSET DRIVEWAY



PARALLEL DRIVEWAY ③

NOTES:

IN NO CASE SHALL SIDEWALK PROFILES EXCEED 5.0%, EXCEPT SIDEWALK PROFILES CAN MATCH ROADWAY GRADE IF ROADWAY GRADE IS GREATER THAN 5.0%. RAMPS 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 TO BE USED WHEN THE DRIVEWAY PAR IS LEVEL WITH OR ABOVE THE TOP OF CURB, RESULTING IN A CONTINUOUS PAR PROFILE.

② TO BE USED WHEN THE DRIVEWAY PAR IS BELOW THE ROADWAY CURB HEIGHT. THIS DRIVEWAY TYPE CAN BE USED FOR BOTH PAVED (AS SHOWN) AND GRASS BOULEVARDS.

③ SHOULD BE USED FOR NEGATIVE SLOPED DRIVEWAYS. DW CURB TYPE 2 CURB 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% MAX. PREFERRED, 10% MAX. FOR COMMERCIAL AND 12% MAX. FOR RESIDENTIAL. SEE GENERAL NOTES ON SHEET 2 FOR MORE INFORMATION.

⑥ 8% MAX. PREFERRED, SEE SHEET 2 FOR MORE INFORMATION.

⑦ 1:3 MIN. 1:5 PREFERRED FOR DRIVEWAY RETROFIT PROJECTS. 1:10 PREFERRED FOR SIDEWALK REPLACEMENT PROJECTS.

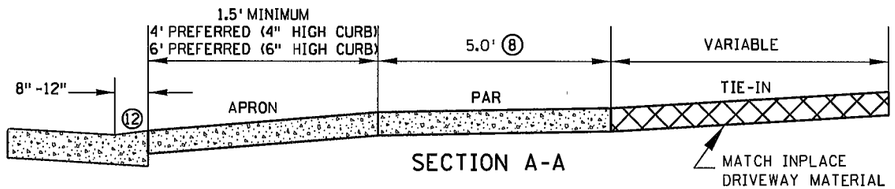
⑧ 5.0' MIN. PAR WIDTH IS THE STANDARD THROUGH DRIVEWAYS. IF FEASIBLE WIDEN DRIVEWAY PAR WIDTH TO MATCH APPROACHING SIDEWALK PAR WIDTHS. IN VERTICALLY CONSTRAINED AREAS PAR WIDTHS CAN INCREMENTALLY BE REDUCED TO 4.5' OR 4' MIN AFTER ALL OTHER OPTIONS HAVE BEEN APPLIED.

⑨ THE PEDESTRIAN ACCESS ROUTE, MAY NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.

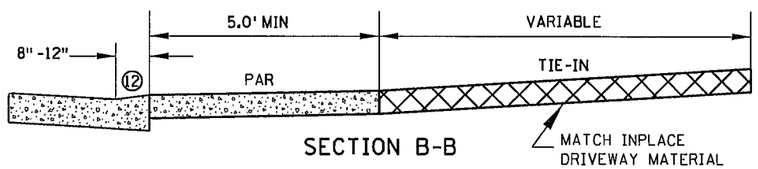
⑩ SIDEWALK OFFSET TO BE LESS THAN OR EQUAL TO HALF THE APPROACHING SIDEWALK WIDTH.

⑪ VALLEY GUTTER APRON TO BE POURED INTEGRAL WITH THE CURB AND GUTTER. SEE SHEET 2 FOR MORE INFORMATION.

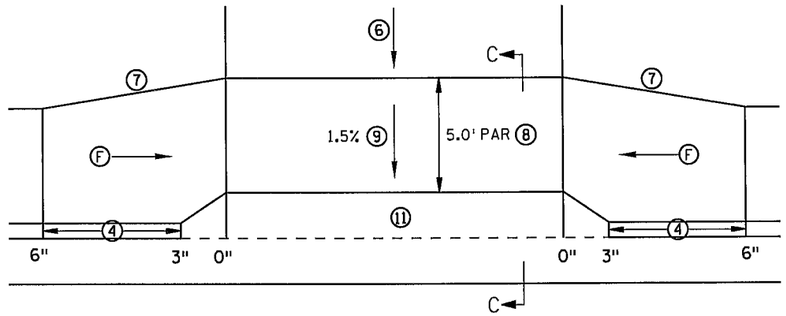
⑫ SEE SHEET 2 FOR CURB TYPE INFORMATION.



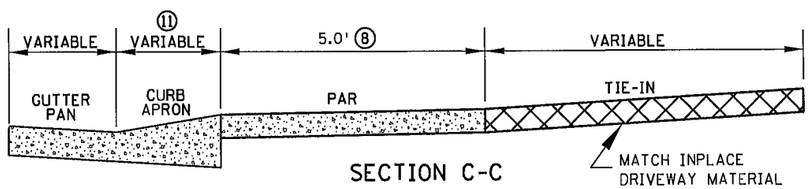
SECTION A-A



SECTION B-B



VALLEY GUTTER DRIVEWAY



SECTION C-C

LEGEND	
Ⓕ	INDICATES DRIVEWAY 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%
X"	CURB HEIGHT (INCHES)

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STANDARD PLAN 5-297.254 | 1 OF 4

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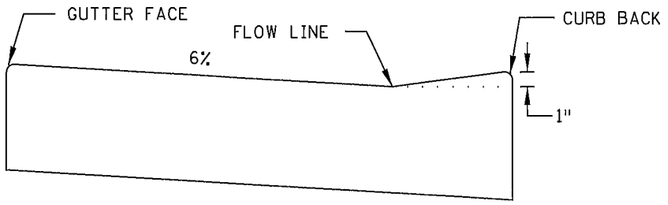
DRIVEWAY AND SIDEWALK DETAILS

STATE PROJ. NO. (T.H.) SHEET NO. 16 OF 54 SHEETS

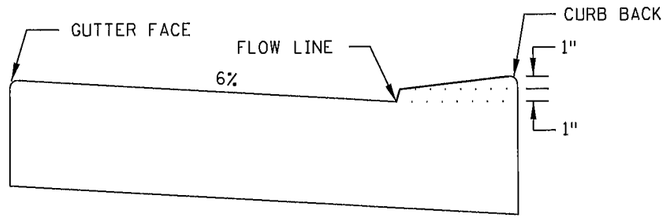
PLOTTED/REVISED: $$$$@DATE@$$$$

IPLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: $$$@PATHFILENAME@$$$



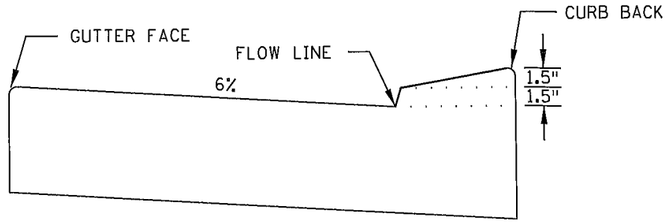
DW CURB STANDARD

STANDARD CURB AT DRIVEWAY



DW CURB TYPE 2

VERTICALLY CONSTRAINED



DW CURB TYPE 3

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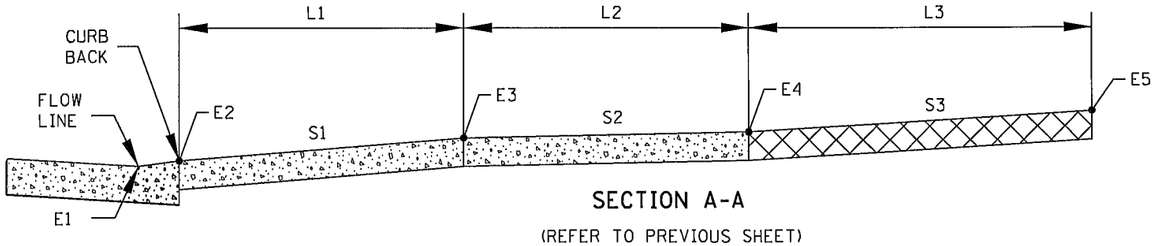
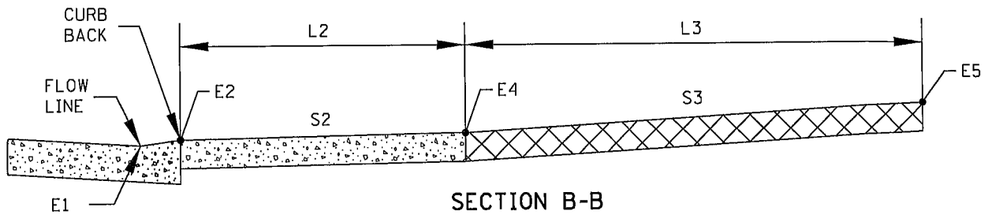


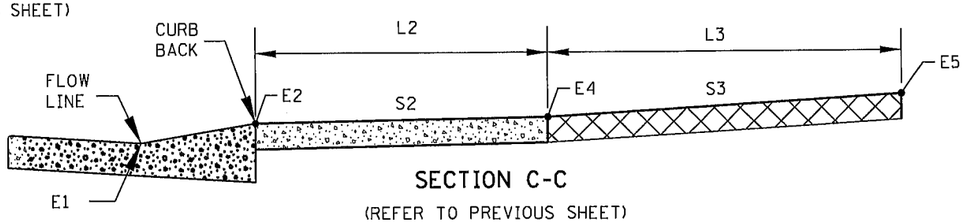
SECTION A-A

(REFER TO PREVIOUS SHEET)



SECTION B-B

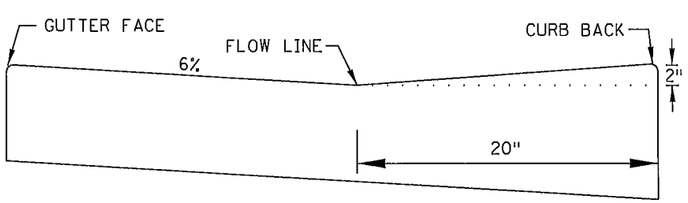
(REFER TO PREVIOUS SHEET)



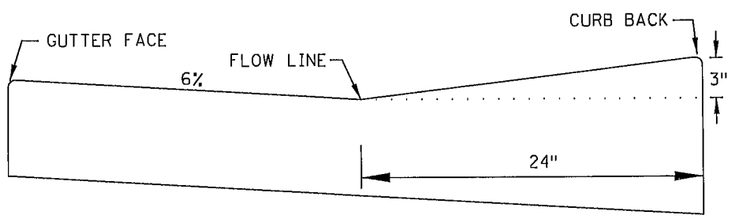
SECTION C-C

(REFER TO PREVIOUS SHEET)

DRIVEWAY TABULATION ①																
STATION	SIDE	DRIVEWAY TYPE	CURB TYPE ③	E1	E2	L1 FT	S1 %	E3	L2 FT	S2 ② %	E4	L3 FT	S3 %	EXISTING %	E5	COMMENTS



VG 220



VG 324

VALLEY GUTTER CURB

OTHER CURB HEIGHTS & CURB APRON LENGTHS CAN BE USED

NOTES:

DW CURB STANDARD SHALL BE USED WHEN THE DRIVEWAY ACTS AS A PEDESTRIAN RAMP. THE MAX. APRON SLOPE MUST ADHERE TO ADA CRITERIA AS WELL. DW CURB STANDARD SHOULD BE USED IF THERE IS ON STREET PARKING.

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.

S1 8% MAX PREFERRED, 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.

DW CURB TYPE 3 SHALL ONLY BE USED IN EXTREME TIE-IN CASES.

S3 8% MAX PREFERRED. IF THIS SLOPE IS EXCEEDED OR IS CONTINUED FOR MORE THAN 5' ANALYZE THE NEED FOR VERTICAL CURVE(S). SEE ROAD DESIGN MANUAL, CHAPTER 5, FOR GEOMETRIC DESIGNS OF DRIVEWAYS.

① EXAMPLE SHOWN TO BE INCLUDED IN PLAN FOR EACH DRIVEWAY.

② SHOULD BE DESIGNED AT 1.5%.

③ DW CURB STANDARD SHALL BE THE STARTING POINT FOR ALL PERPENDICULAR AND TIERED DRIVEWAYS. DW CURB TYPES 2 AND 3 SHALL ONLY BE USED AFTER UTILIZING BEST PRACTICES SUCH AS MAXIMIZING S1, S3, AND L3.

REVISION:

APPROVED: JANUARY 23, 2017

OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STATE DESIGN ENGINEER

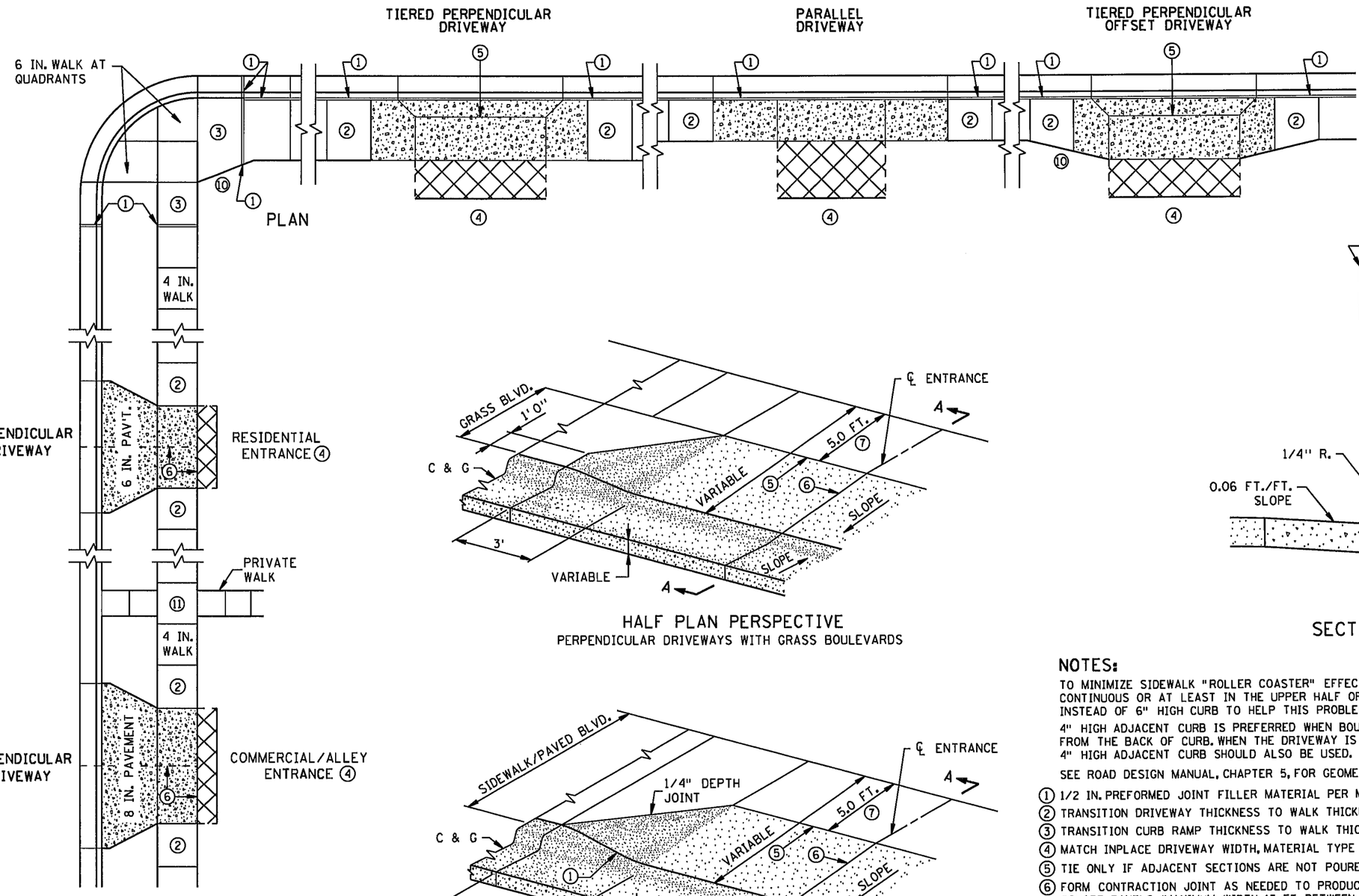
STANDARD PLAN 5-297.254 | 2 OF 4

APPROVED: 1-23-2017
REVISED:

DRIVEWAY AND SIDEWALK DETAILS

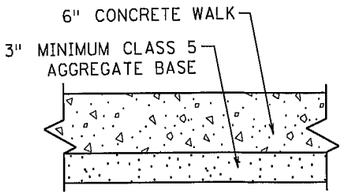
002-604-010

STATE PROJ. NO. (T.H.) SHEET NO. 17 OF 54 SHEETS

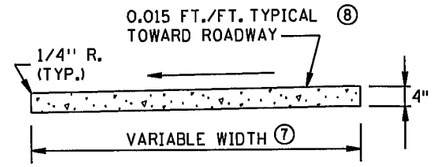


HALF PLAN PERSPECTIVE
PERPENDICULAR DRIVEWAYS WITH GRASS BOULEVARDS

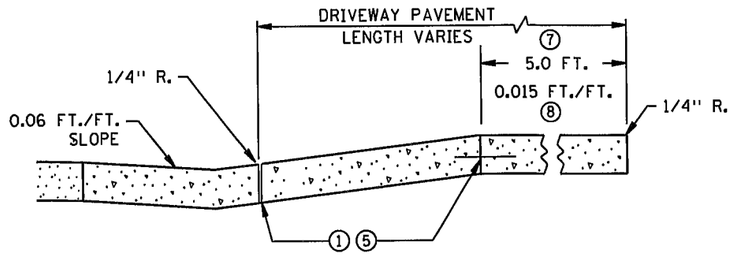
HALF PLAN PERSPECTIVE
PERPENDICULAR DRIVEWAYS WITH CONCRETE BOULEVARDS AND ALL TIERED DRIVEWAYS



SECTION THRU CURB RAMP



SECTION THRU WALK



SECTION A-A

SECTION THRU DRIVEWAY

NOTES:

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 ROAD DESIGN MANUAL, CHAPTER 5, FOR GEOMETRIC DESIGN OF DRIVEWAYS.

① 1/2 IN. PREFORMED JOINT FILLER MATERIAL PER MnDOT SPEC. 3702, EXCEPT AT GRASS BOULEVARDS.
② TRANSITION DRIVEWAY THICKNESS TO WALK THICKNESS.
③ TRANSITION CURB RAMP THICKNESS TO WALK THICKNESS.
④ MATCH INPLACE DRIVEWAY WIDTH, MATERIAL TYPE AND THICKNESS.
⑤ TIE ONLY IF ADJACENT SECTIONS ARE NOT POURED MONOLITHICALLY. SEE SECTION A-A.
⑥ FORM CONTRACTION JOINT AS NEEDED TO PRODUCE APPROXIMATELY SQUARE PANELS (MAXIMUM WIDTH 15 FT. BETWEEN JOINTS).
⑦ 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.
⑧ THE PEDESTRIAN ACCESS ROUTE CROSS-SLOPE, SHALL NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.
⑨ 8% TO 10% FLARES SHALL BE USED WHEN ADJACENT TO WALKABLE SURFACES AND FOR ALL TIERED DRIVEWAYS WITH GRASS BOULEVARDS.
⑩ 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.
⑪ LANDING REQUIRED. SEE NEXT SHEET FOR MORE INFORMATION.

REVISION:
APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

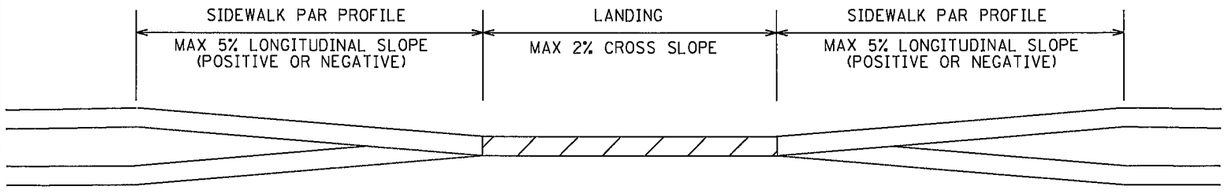
002-604-010

MINNESOTA DEPARTMENT OF TRANSPORTATION

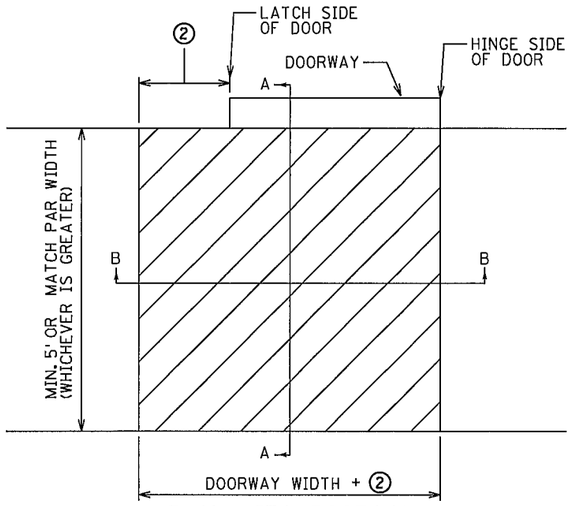
STANDARD PLAN 5-297.254 | 3 OF 4
APPROVED: 1-23-2017
REVISED:
STATE DESIGN ENGINEER

DRIVEWAY AND SIDEWALK DETAILS

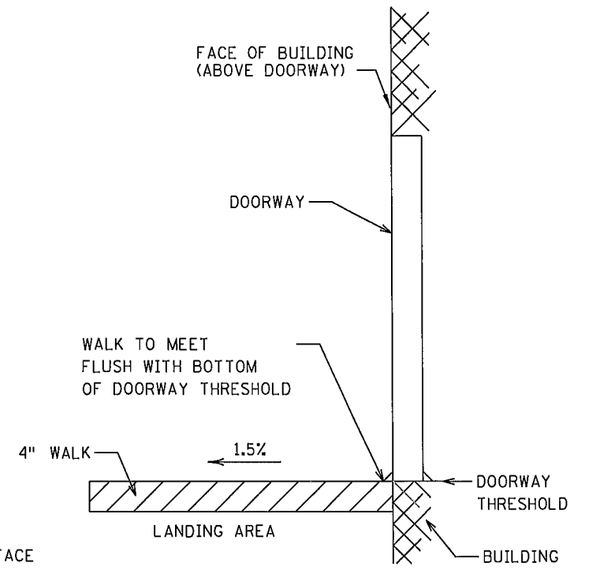
STATE PROJ. NO. (T.H.) SHEET NO. 18 OF 54 SHEETS



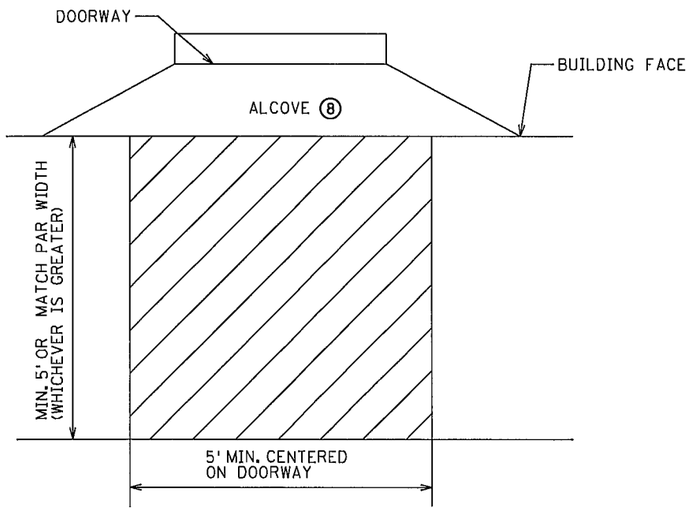
SECTION VIEW B-B



PLAN VIEW DOORWAY

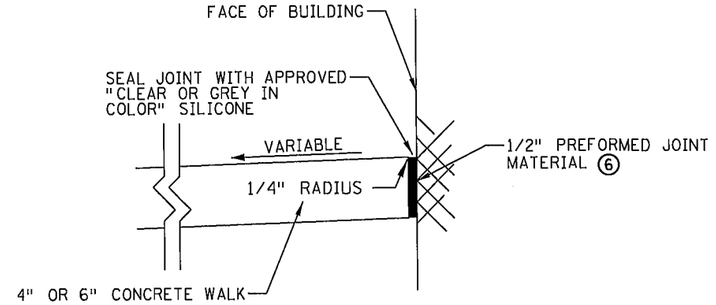


SECTION VIEW A-A

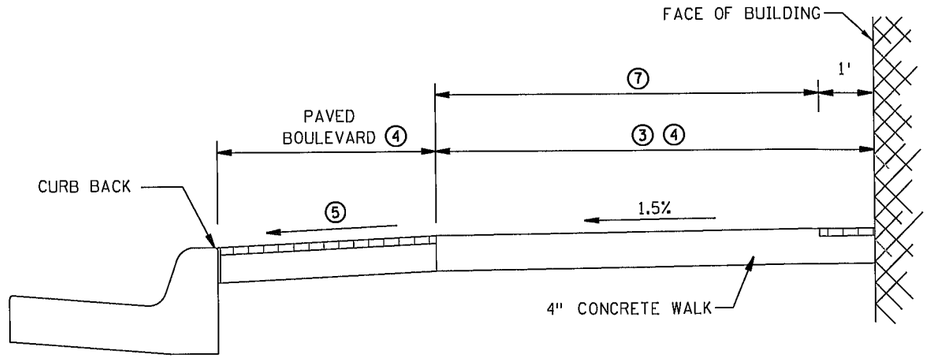


PLAN VIEW DOORWAY WITH ALCOVE

SIDEWALK LANDING REQUIREMENTS ①



BUILDING JOINT SEAL (INCIDENTAL)



DOWNTOWN SIDEWALK TYPICAL SECTION

NOTES:

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, PRIVATE WALKS AND STEPS.

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.

⑤ 1%-5% FOR THE MAJORITY OF THE BLOCK, WITH EXCEPTIONS UP TO 8% IN CONSTRAINED AREAS. 10% MAX. FOR SHORT SECTIONS ALLOWED TO ACCOUNT FOR FIELD TOLERANCES.

⑥ FURNISH AND INSTALL BACKER ROD OF APPROPRIATE DIAMETER.

⑦ TO MINIMIZE VIBRATION AND ROLLING RESISTANCE, AREA SHOULD BE FREE OF PAVERS, STAMPED CONCRETE, AND/OR EXCESSIVE JOINTING.

⑧ 2% MAX. PER BUILDING CODE. IF GREATER THAN 2%, FLATTEN AS FEASIBLE.

LEGEND	
	LANDING - ALL SLOPES TO BE LESS THAN 2%
	OPTIONAL AESTHETIC TREATMENT

PLOTTED/REVISED: $$$$@DATE@$$$$

IPLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: $$$@PATHFILENAME@$$$

REVISION:
APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

002-604-010

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.254 | 4 OF 4

APPROVED: 1-23-2017
REVISED:
STATE DESIGN ENGINEER

DRIVEWAY AND SIDEWALK DETAILS

STATE PROJ. NO. (T.H.) SHEET NO. 19 OF 54 SHEETS

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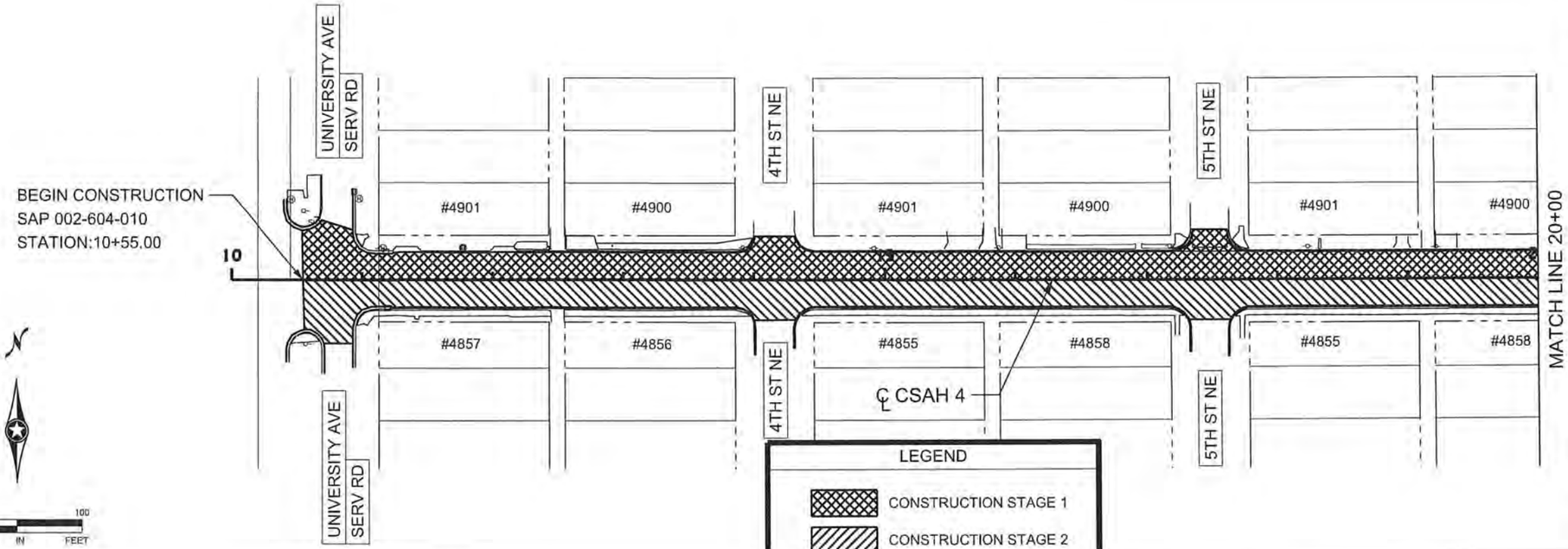


LEGEND

- CONSTRUCTION STAGE 1
- CONSTRUCTION STAGE 2
- CONSTRUCTION STAGE 3
- CONSTRUCTION STAGE 4
- R / W

NOTES

STAGE 1: CLOSE LANE WESTBOUND FROM TH 47 TO 6TH STREET. THE CONTRACTOR SHALL COMPLETE ALL WORK IN THIS STAGE EXCEPT FINAL LIFT OF BITUMINOUS PAVEMENT, TURF ESTABLISHMENT, FINAL ELEVATION OF MANHOLES, AND STRIPING. DURING STAGE 1 CONSTRUCTION, ONE-WAY EASTBOUND TRAFFIC ON 49TH AVENUE FROM TH 47 TO 6TH STREET ONLY.

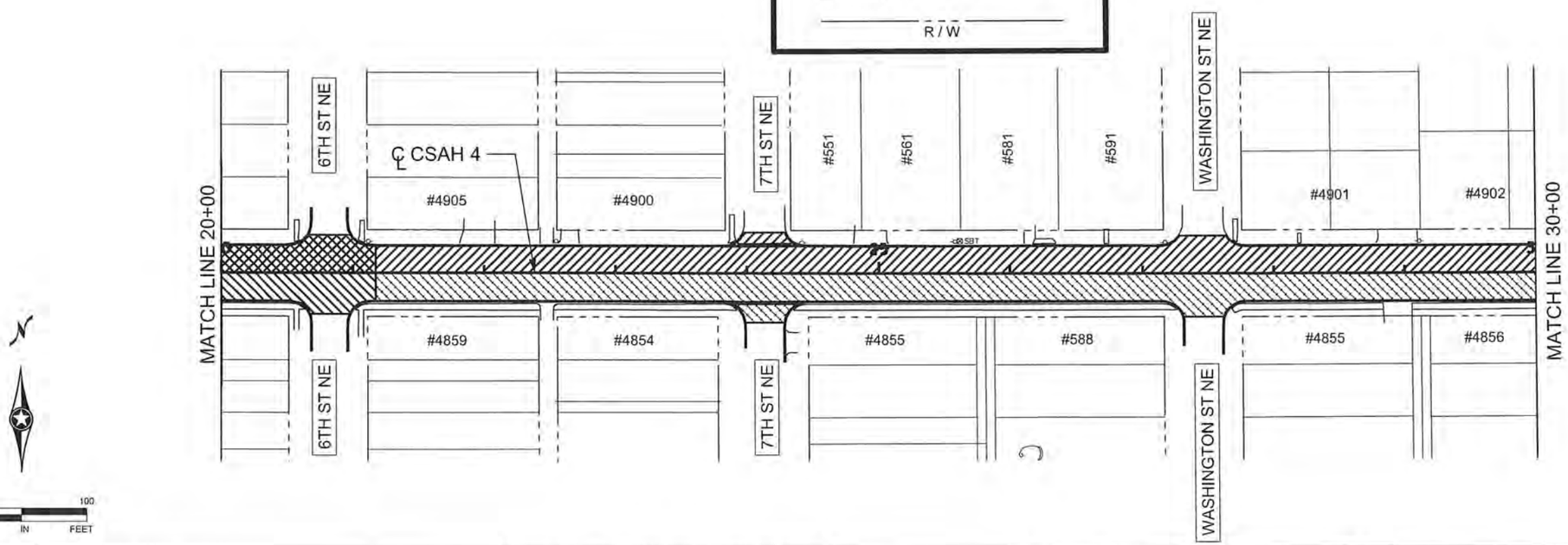
STAGE 2: CLOSE LANE WESTBOUND FROM 6TH STREET TO JACKSON STREET. THE CONTRACTOR SHALL COMPLETE ALL WORK IN THIS STAGE EXCEPT FINAL LIFT OF BITUMINOUS PAVEMENT, TURF ESTABLISHMENT, FINAL ELEVATION OF MANHOLES, AND STRIPING. DURING STAGE 2 CONSTRUCTION, ONE-WAY EASTBOUND TRAFFIC ON 49TH AVENUE FROM 6TH STREET TO JACKSON STREET ONLY.

STAGE 3: CLOSE LANE EASTBOUND FROM TH 47 TO 6TH STREET. THE CONTRACTOR SHALL COMPLETE ALL WORK IN THIS STAGE EXCEPT FINAL LIFT OF BITUMINOUS PAVEMENT, TURF ESTABLISHMENT, FINAL ELEVATION OF MANHOLES, AND STRIPING. DURING STAGE 3 CONSTRUCTION, ONE-WAY WESTBOUND TRAFFIC ON 49TH AVENUE FROM 6TH STREET TO TH 47 ONLY.

STAGE 4: CLOSE LANE EASTBOUND FROM 6TH STREET TO JACKSON STREET. THE CONTRACTOR SHALL COMPLETE ALL WORK IN THIS STAGE EXCEPT FINAL LIFT OF BITUMINOUS PAVEMENT, TURF ESTABLISHMENT, FINAL ELEVATION OF MANHOLES, AND STRIPING. DURING STAGE 4 CONSTRUCTION, ONE-WAY WESTBOUND TRAFFIC ON 49TH AVENUE FROM JACKSON STREET TO 6TH STREET ONLY.

STAGE 5: FINAL WEAR COURSE, TURF RESTORATION AND FINAL CLEAN UP FROM TH 47 TO JACKSON STREET.

ALL RESIDENTS ADJACENT TO 49TH AVENUE SHALL HAVE ACCESS TO THEIR PROPERTY AT ALL TIMES



NO	DATE	BY	CKD	APPR	REVISION		
						05/01/2019	10:13:08 AM

NAME: P:\19-01-00\CSAH_04_(TH47-TH65)\Base\PROPOSED\STAGING PLAN.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: JOSEPH J. MACPHERSON

SIGNATURE:

DATE: 5-1-19 LICENSE NO. 46732

DRAWN BY APA DATE 05/01/2019

DESIGN BY APA DATE 05/01/2019

CHECKED BY CO DATE 05/01/2019

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

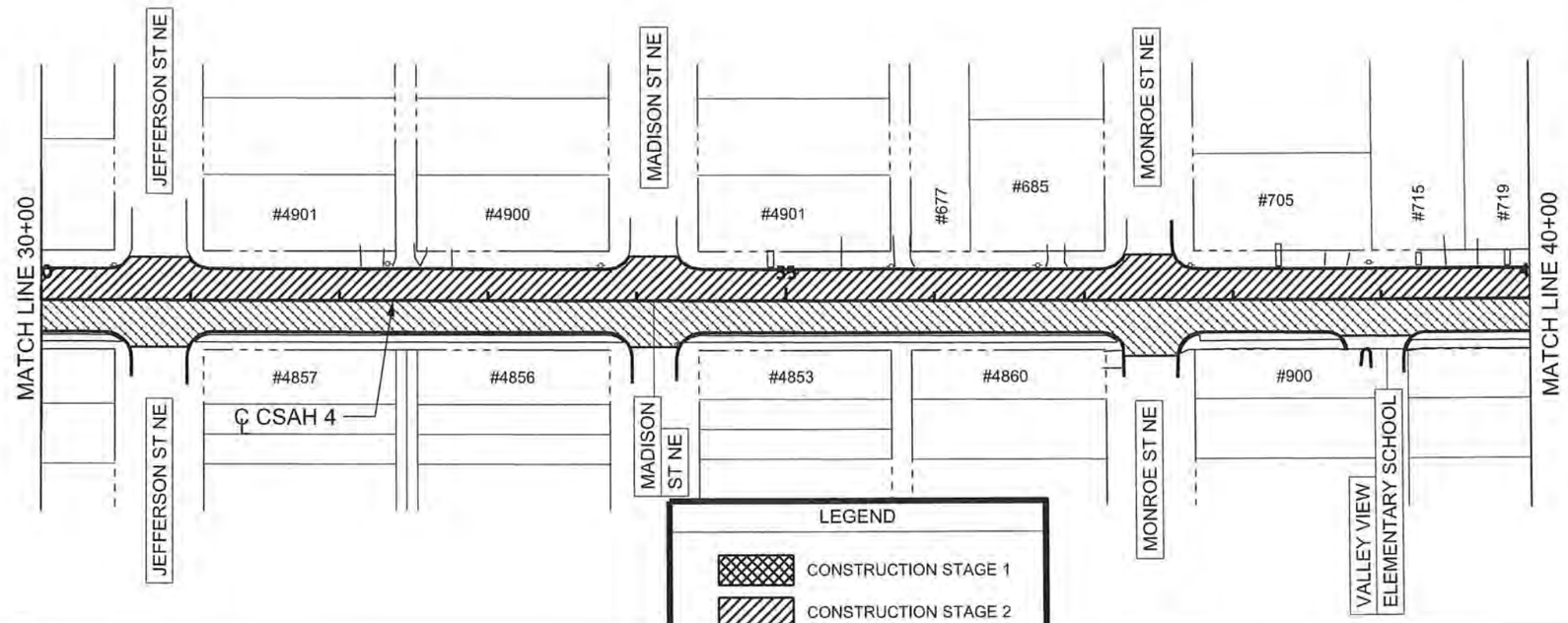
STATE AID PROJECT 002-604-010

STAGING PLAN

STA 10+55 TO 30+00

Sheet 20 of 54 Sheets

APAnders



LEGEND

- CONSTRUCTION STAGE 1
- CONSTRUCTION STAGE 2
- CONSTRUCTION STAGE 3
- CONSTRUCTION STAGE 4
- R / W

NOTES

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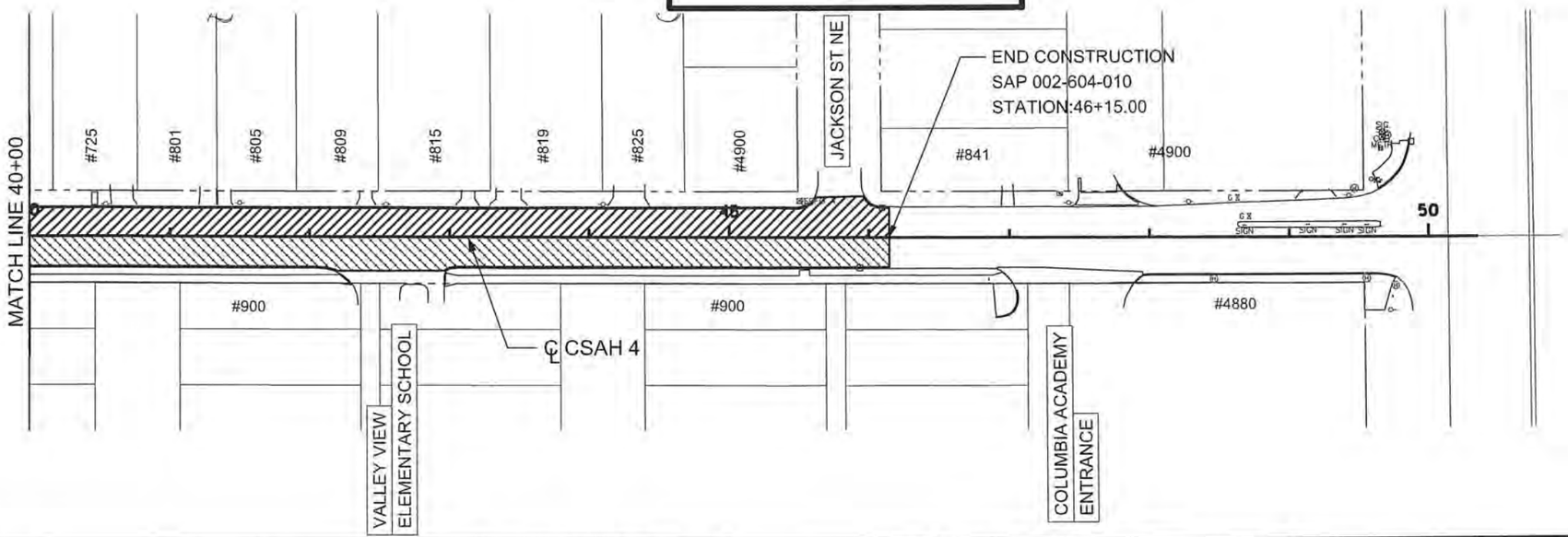


NO	DATE	BY	CKD	APPR	REVISION		
						05/01/2019	10:13:09 AM

NAME: P:\19-01-00\CSAH_04_(TH47-TH65)\Base\PROPOSED\STAGING PLAN.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: JOSEPH J. MACPHERSON

SIGNATURE:

DATE: 5-1-19 LICENSE NO. 46732

DRAWN BY APA DATE 05/01/2019

DESIGN BY APA DATE 05/01/2019

CHECKED BY CO DATE 05/01/2019

ANOKA COUNTY

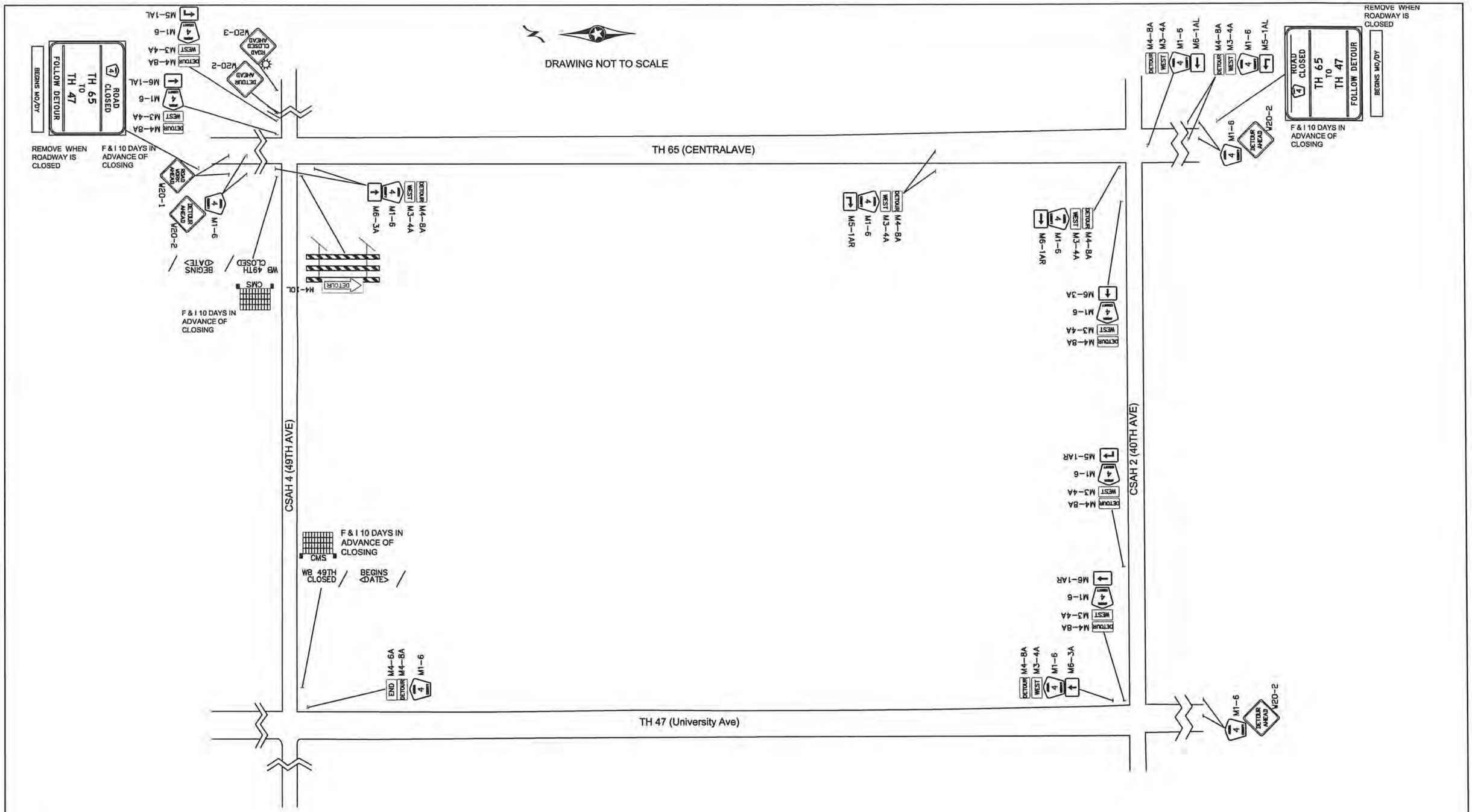
ANOKA COUNTY HIGHWAY DEPT.

STATE AID PROJECT 002-604-010

STAGING PLAN

STA 30+00 TO 46+15

Sheet 21 of 54 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\19-01-00\CSAH 4 (TH 47 - TH 65)\Base\Traffic\Detour Stg 1 &2.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: DOUGLAS W. FISCHER

SIGNATURE:

DATE: 5/16/19 LICENSE NO. 20235

DRAWN BY TMV DATE 04/06/19

DESIGN BY DATE

CHECKED BY DATE

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO.

STATE AID PROJECT NO. 002-604-010

CITY PROJECT NO.

COUNTY PROJECT NO.

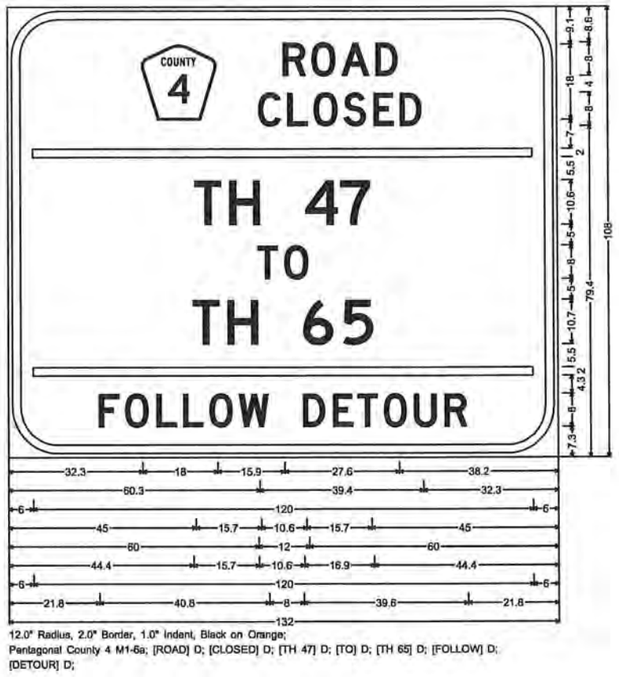
DETOUR 1 PLAN

Sheet 22 of 54 Sheets

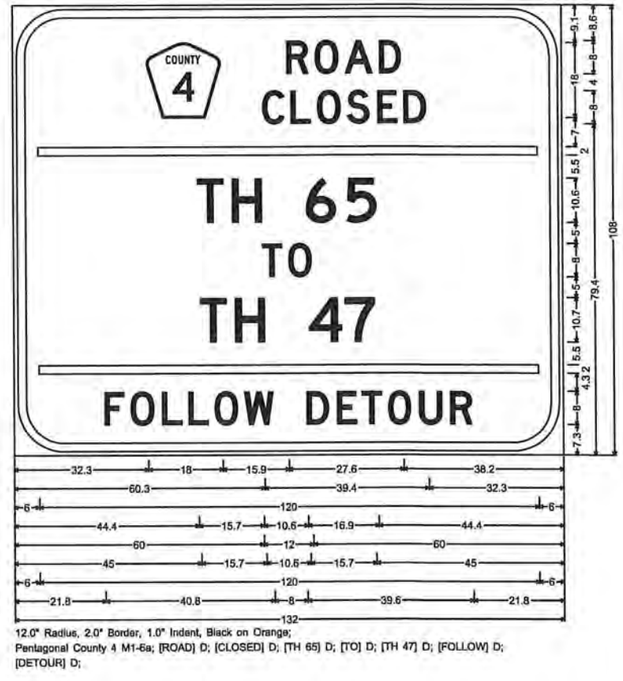
M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY
W20-1	36" x 36"	ROAD WORK AHEAD	4
M1-6	24" x 24"	COUNTY 4 DETOUR AHEAD	8
W20-2	36" x 36"		10
W20-3	36" x 36"	ROAD CLOSED AHEAD	2
M4-10L	48" x 18"	DETOUR	
TYPE III	8 FOOT		1
M4-8A	24" x 12"	DETOUR	12
M3-4A	24" x 12"	WEST	12
M1-6A	24" x 24"	COUNTY 4	12
	21" X 15"	M5–1AL	3
		M6–1AL	2
		M5–1AR	3
		M6–1AR	2
		M6–3A	4
M4-6A	24" x 12"	END DETOUR COUNTY 4	1
M4-8A	24" x 12"		1
M1-6A	24" x 24"		1

M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY
G20-X2	132" x 108"	ROAD CLOSED TH 47 TO TH 65 FOLLOW DETOUR	1
G20-X2A	90" x 20"	BEGINS MO/DY	✳ 1
G20-X2	132" x 108"	ROAD CLOSED TH 65 TO TH 47 FOLLOW DETOUR	2
G20-X2A	90" x 20"	BEGINS MO/DY	✳ 2
TYPE B REFLECTORIZED REBOUNDABLE DRUM			10
CMS sign to be installed a minimum of ten days prior to actual commencement of road closure. Signs to be removed when road closure begins.		CMS	✳ 2 (2 @ 10 = 20 DAY)

✳ SIGNS TO BE INSTALLED A MINIMUM OF TEN DAYS PRIOR TO ACTUAL CLOSING DATE OF ROAD CLOSURE AND IMPLEMENTATION OF DETOUR SIGNING. SIGNS TO BE REMOVED AT TIME OF DETOUR INSTALLATION. THESE SIGNS ARE INCIDENTAL TO DETOUR PAY ITEM.



12.0" Radius, 2.0" Border, 1.0" Indent, Black on Orange;
Pentagonal County 4 M1-6a; [ROAD] D; [CLOSED] D; [TH 47] D; [TO] D; [TH 65] D; [FOLLOW] D;
[DETOUR] D;



12.0" Radius, 2.0" Border, 1.0" Indent, Black on Orange;
Pentagonal County 4 M1-6a; [ROAD] D; [CLOSED] D; [TH 65] D; [TO] D; [TH 47] D; [FOLLOW] D;
[DETOUR] D;

CHANGEABLE MESSAGE BOARD - MESSAGE SEQUENCE LAYOUT

	W	B		4	9	T	H
	C	L	O	S	E	D	

	B	E	G	I	N	S	
	<	D	A	T	E	>	

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

NOTES:

1) ALL BARRICADES SHALL BE PROPERLY WEIGHTED WITH SANDBAGS.
2) ALL BARRICADES SHALL HAVE REFLECTIVE MATERIAL ON BOTH SIDES.
3) ALL BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE FIELD MANUAL DATED JANUARY, 1998
4) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED JANUARY, 1998
5) ADDITIONS OR CHANGES TO THIS PLAN MAY BE MADE AS DETERMINED BY THE ENGINEER.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\19-01-00\CSAH 4 (TH 47 - TH 65)\Base\Traffic\Detour Stg 1 &2..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: DOUGLAS W. FISCHER
SIGNATURE:
DATE: 5/14/19 LICENSE NO. 20235

DRAWN BY TMV DATE 04/06/19
DESIGN BY DATE
CHECKED BY DATE

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO.
STATE AID PROJECT NO. 002-604-010
CITY PROJECT NO.
COUNTY PROJECT NO.

DETOUR 1 PLAN QUANTITIES

Sheet 23 of 54 Sheets

DRAWING NOT TO SCALE

TH 65 (CENTRALAVE)

CSAH 4 (49TH AVE)

CSAH 2 (40TH AVE)

TH 47 (University Ave)

END DETOUR M4-6A M4-8A M1-6

DETOUR EAST M4-8A M3-2A M1-6 M6-3A

M20-1

EB 49TH CLOSED / BEGINS <DATE>

CMS

F & I 10 DAYS IN ADVANCE OF CLOSING

DETOUR EAST M4-8A M3-2A M1-6 M6-1AL

DETOUR EAST M4-8A M3-2A M1-6 M5-1AL

DETOUR EAST M4-8A M3-2A M1-6 M6-3A

DETOUR M4-10R

M1-6 M20-2 DETOUR AHEAD

DETOUR EAST M4-8A M3-2A M1-6 M6-1AR

DETOUR EAST M4-8A M3-2A M1-6 M5-1AR

M6-3A M1-6 EAST M3-2A DETOUR M4-8A

M5-1AL M1-6 EAST M3-2A DETOUR M4-8A

M6-1AL M1-6 EAST M3-2A DETOUR M4-8A

ROAD CLOSED TH 47 TO TH 65 FOLLOW DETOUR

REMOVE WHEN ROADWAY IS CLOSED

BEGINS MO/DY

ROAD WORK AHEAD W20-1

DETOUR AHEAD W20-2

ROAD CLOSED AHEAD W20-3

M1-6

M6-1AR

M5-1AR

M4-8A

M3-2A

M1-6

M5-1AL

M6-1AL

M6-3A

M4-10R

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\19-01-00\CSAH 4 (TH 47 - TH 65)\Base\Traffic\Detour Stg 1 &2.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: DOUGLAS W. FISCHER

SIGNATURE:

DATE: 5/16/19 LICENSE NO. 20235

DRAWN BY TMV DATE 04/08/19

DESIGN BY ____ DATE ____

CHECKED BY ____ DATE ____

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. ____

STATE AID PROJECT NO. 002-604-010

CITY PROJECT NO. ____

COUNTY PROJECT NO. ____

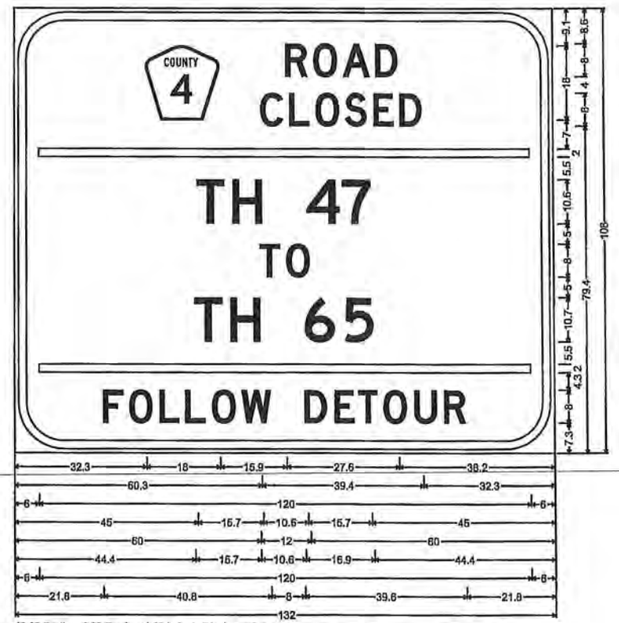
DETOUR 2 PLAN

Sheet 24 of 54 Sheets

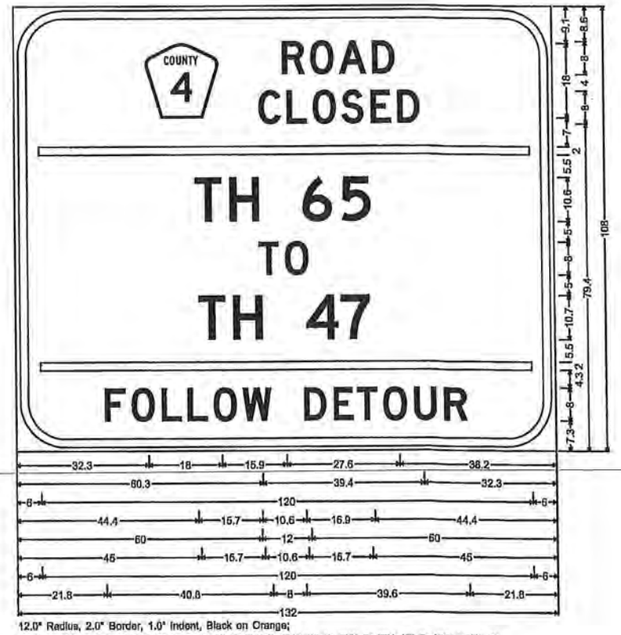
M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY
W20-1	36" x 36"	ROAD WORK AHEAD	4
M1-6	24" x 24"	COUNTY 4 DETOUR AHEAD	8
W20-2	36" x 36"		10
W20-3	36" x 36"	ROAD CLOSED AHEAD	2
M4-10R	48" x 18"	DETOUR	
TYPE III	8 FOOT		1
M4-8A	24" x 12"	DETOUR	12
M3-4A	24" x 12"	EAST	12
M1-6A	24" x 24"	COUNTY 4	12
	21" X 15"	M5-1AL	3
		M6-1AL	2
		M5-1AR	2
		M6-1AR	1
		M6-3A	4
M4-6A	24" x 12"	END DETOUR COUNTY 4	1
M4-8A	24" x 12"		1
M1-6A	24" x 24"		1

M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY
G20-X2	132" x 108"	ROAD CLOSED TH 47 TO TH 65 FOLLOW DETOUR	2
G20-X2A	90" x 20"	BEGINS MO/DY	* 2
G20-X2	132" x 108"	ROAD CLOSED TH 65 TO TH 47 FOLLOW DETOUR	2
G20-X2A	90" x 20"	BEGINS MO/DY	* 2
TYPE B REFLECTORIZED REBOUNDABLE DRUM			10
CMS sign to be installed a minimum of ten days prior to actual commencement of road closure. Signs to be removed when road closure begins.		CMS	* 2 (2 @ 10 = 20 DAY)

* SIGNS TO BE INSTALLED A MINIMUM OF TEN DAYS PRIOR TO ACTUAL CLOSING DATE OF ROAD CLOSURE AND IMPLEMENTATION OF DETOUR SIGNING. SIGNS TO BE REMOVED AT TIME OF DETOUR INSTALLATION. THESE SIGNS ARE INCIDENTAL TO DETOUR PAY ITEM.



12.0" Radius, 2.0" Border, 1.0" Indent, Black on Orange;
Pentagonal County 4 M1-6a; [ROAD] D; [CLOSED] D; [TH 47] D; [TO] D; [TH 65] D; [FOLLOW] D;
[DETOUR] D;



12.0" Radius, 2.0" Border, 1.0" Indent, Black on Orange;
Pentagonal County 4 M1-6a; [ROAD] D; [CLOSED] D; [TH 65] D; [TO] D; [TH 47] D; [FOLLOW] D;
[DETOUR] D;

CHANGEABLE MESSAGE BOARD - MESSAGE SEQUENCE LAYOUT

	E	B		4	9	T	H
	C	L	O	S	E	D	

	B	E	G	I	N	S	
	<	D	A	T	E	>	

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

NOTES:

1) ALL BARRICADES SHALL BE PROPERLY WEIGHTED WITH SANDBAGS.
2) ALL BARRICADES SHALL HAVE REFLECTIVE MATERIAL ON BOTH SIDES.
3) ALL BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE FIELD MANUAL DATED JANUARY, 1998
4) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED JANUARY, 1998
5) ADDITIONS OR CHANGES TO THIS PLAN MAY BE MADE AS DETERMINED BY THE ENGINEER.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\19-01-00\CSAH 4 (TH 47 - TH 65)\Base\Traffic\Detour Stg 1 &2.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: DOUGLAS W. FISCHER
SIGNATURE:
DATE: 5/24/19 LICENSE NO. 20235

DRAWN BY TMV DATE 04/08/19
DESIGN BY DATE
CHECKED BY DATE

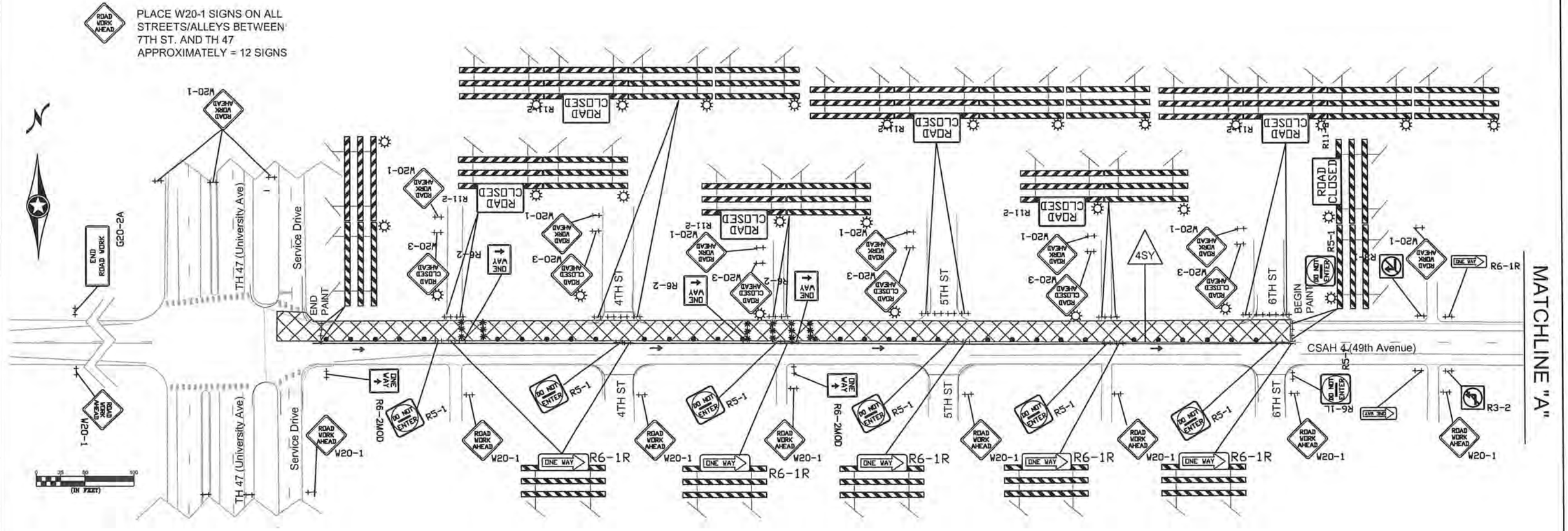
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO.
STATE AID PROJECT NO. 002-604-010
CITY PROJECT NO.
COUNTY PROJECT NO.

DETOUR 2 PLAN QUANTITIES

Sheet 25 of 54 Sheets

PLACE W20-1 SIGNS ON ALL STREETS/ALLEYS BETWEEN 7TH ST. AND TH 47 APPROXIMATELY = 12 SIGNS



NOTES:

- WESTBOUND LANE CLOSED BETWEEN TH 47 SERVICE DRIVE THRU 6TH STREET.
- DETOUR 1 IN PLACE FOR WESTBOUND TRAFFIC. REFER TO DETOUR 1 PLAN.
- ROADWAY OPEN TO EASTBOUND TRAFFIC.
- 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.
- ACCESS SHALL BE MAINTAINED TO ALL DRIVEWAYS IN CONSTRUCTION AREA.
- TEMPORARY PAVEMENT MARKINGS SHALL BE PLACED PRIOR TO OPENING TO TRAFFIC.
- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. ALL 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 AREA
REFLECTORIZED DRUM
TYPE A - WEIGHTED CHANNELIZER
TRAFFIC FLOW

STRIPING KEY
TRIANGLE - PAINT

MATCHLINE "A"

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\19-01-00\CSAH 4 (TH47-TH65)\Base\Traffic\Stage 1.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: DOUGLAS W. FISCHER
SIGNATURE:
DATE: 5/14/19 LICENSE NO. 20235

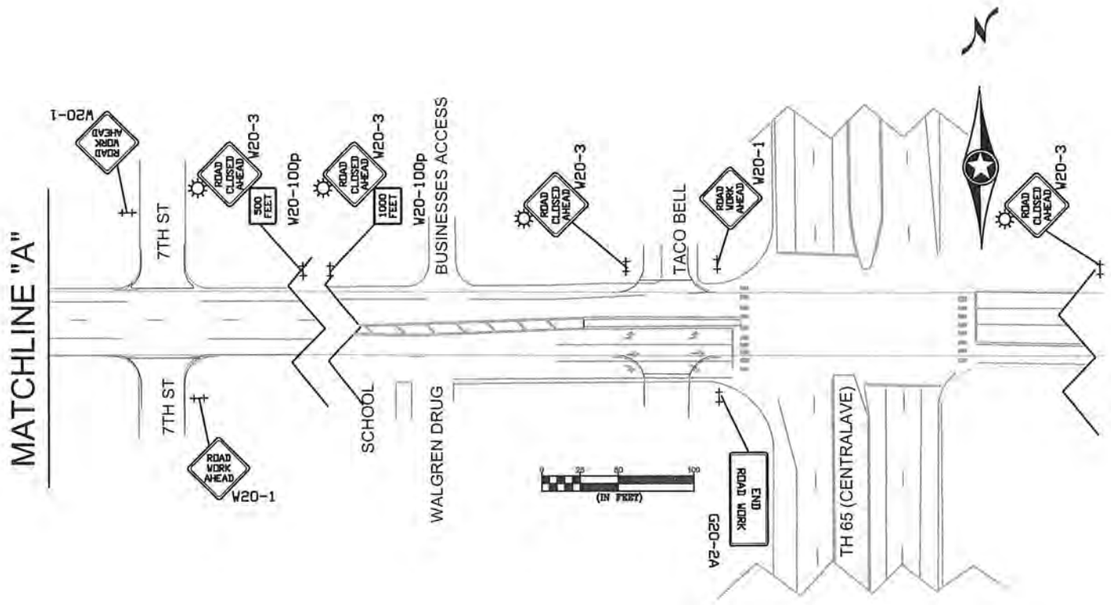
DRAWN BY TMV DATE 04/04/19
DESIGN BY ____ DATE ____
CHECKED BY ____ DATE ____

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. ____
STATE AID PROJECT NO. 002-604-010
CITY PROJECT NO. ____
COUNTY PROJECT NO. ____

TRAFFIC CONTROL STAGE 1

Sheet 26 of 54 Sheets



NOTES:

- WESTBOUND LANE CLOSED BETWEEN TH 47 SERVICE DRIVE THRU 6TH STREET.
- DETOUR 1 IN PLACE FOR WESTBOUND TRAFFIC. REFER TO DETOUR 1 PLAN.
- ROADWAY OPEN TO EASTBOUND TRAFFIC.
- 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".
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CONSTRUCTION AREA

REFLECTORIZED DRUM

TYPE A - WEIGHTED CHANNELIZER

TRAFFIC FLOW

STRIPING KEY

TRIANGLE - PAINT

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\19-01-00\CSAH 4 (TH47-TH65)\Base\Traffic\Stage 1.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: DOUGLAS W. FISCHER

SIGNATURE:

DATE: 5/16/19 LICENSE NO. 20235

DRAWN BY TMV DATE 04/04/19

DESIGN BY ____ DATE ____

CHECKED BY ____ DATE ____

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. ____

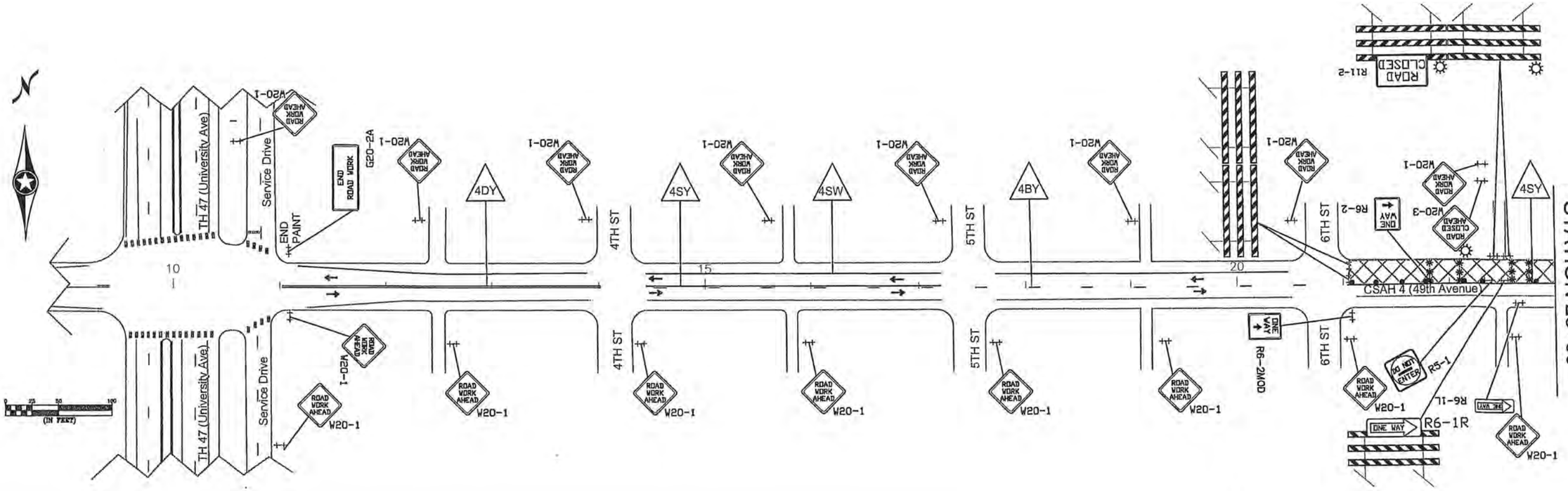
STATE AID PROJECT NO. 002-604-010

CITY PROJECT NO. ____

COUNTY PROJECT NO. ____

TRAFFIC CONTROL STAGE 1

Sheet 27 of 54 Sheets



CONSTRUCTION AREA

● REFLECTORIZED DRUM

✳ TYPE A - WEIGHTED CHANNELIZER

→ TRAFFIC FLOW

STRIPING KEY

TRIANGLE - PAINT

NOTES:

- WESTBOUND LANE CLOSED BETWEEN 6TH STREET AND TH 65.
- DETOUR 1 IN PLACE FOR WESTBOUND TRAFFIC. REFER TO DETOUR 1 PLAN.
- ROADWAY OPEN TO EASTBOUND TRAFFIC.
- 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".
- SCHOOL CROSSINGS SHALL BE MAINTAINED.
- CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.
- ACCESS SHALL BE MAINTAINED TO ALL DRIVEWAYS IN CONSTRUCTION AREA.
- TEMPORARY PAVEMENT MARKINGS SHALL BE PLACED PRIOR TO OPENING WESTBOUND LANE TO TRAFFIC.
- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. ALL 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.

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\10-01-00\CSAH 4 (TH47-TH65)\Base\Traffic\Stage 2.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: DOUGLAS W. FISCHER
SIGNATURE:
DATE: 5/21/19 LICENSE NO. 20235

DRAWN BY TMV DATE 04/04/19
DESIGN BY DATE
CHECKED BY DATE

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO.
STATE AID PROJECT NO. 002-604-010
CITY PROJECT NO.
COUNTY PROJECT NO.

TRAFFIC CONTROL
STAGE 2

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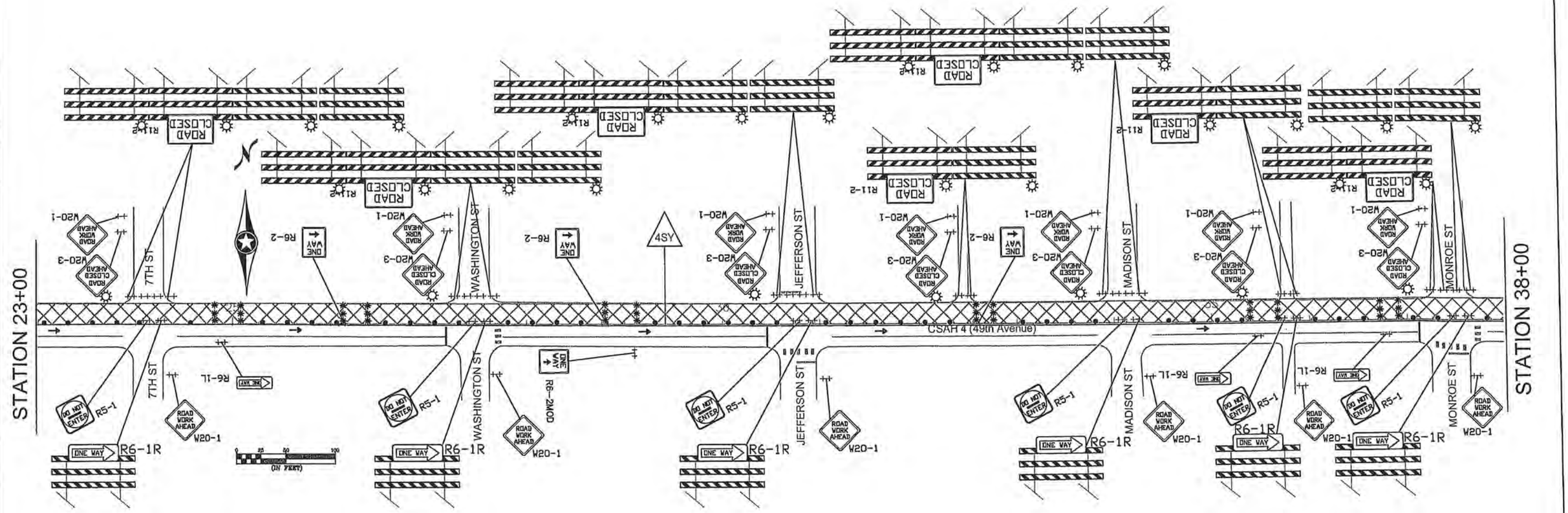


CONSTRUCTION AREA

REFLECTORIZED DRUM

TYPE A - WEIGHTED CHANNELIZER

TRAFFIC FLOW

STRIPING KEY

TRIANGLE - PAINT

PENTAGON - REMOVABLE PREFORMED

NOTES:

- WESTBOUND LANE CLOSED BETWEEN 6TH STREET AND TH 65.
- DETOUR 1 IN PLACE FOR WESTBOUND TRAFFIC. REFER TO DETOUR 1 PLAN.
- ROADWAY OPEN TO EASTBOUND TRAFFIC.
- 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".
- SCHOOL CROSSINGS SHALL BE MAINTAINED.
- CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.
- ACCESS SHALL BE MAINTAINED TO ALL DRIVEWAYS IN CONSTRUCTION AREA.
- TEMPORARY PAVEMENT MARKINGS SHALL BE PLACED PRIOR TO OPENING WESTBOUND LANE TO TRAFFIC.
- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. ALL 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.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\18-01-00\CSAH 4 (TH47-TH65)\Base\Traffic\Stage 2.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: DOUGLAS W. FISCHER

SIGNATURE:

DATE: 5/2/19 LICENSE NO. 20235

DRAWN BY TMV DATE 04/04/19

DESIGN BY ____ DATE ____

CHECKED BY ____ DATE ____

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. ____

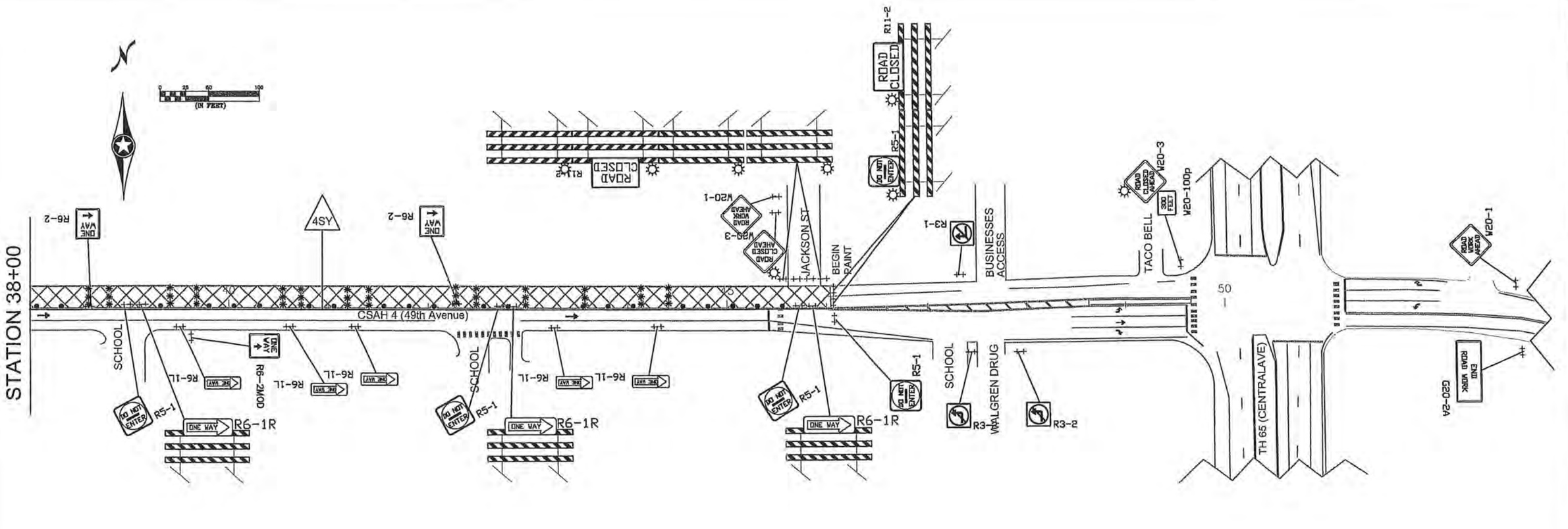
STATE AID PROJECT NO. 002-604-010

CITY PROJECT NO. ____

COUNTY PROJECT NO. ____

TRAFFIC CONTROL STAGE 2

Sheet 29 of 54 Sheets



NOTES:

- WESTBOUND LANE CLOSED BETWEEN 6TH STREET AND TH 65.
- DETOUR 1 IN PLACE FOR WESTBOUND TRAFFIC. REFER TO DETOUR 1 PLAN.
- ROADWAY OPEN TO EASTBOUND TRAFFIC.
- 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".
- SCHOOL CROSSINGS SHALL BE MAINTAINED.
- CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.
- ACCESS SHALL BE MAINTAINED TO ALL DRIVEWAYS IN CONSTRUCTION AREA.
- TEMPORARY PAVEMENT MARKINGS SHALL BE PLACED PRIOR TO OPENING WESTBOUND LANE TO TRAFFIC.
- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. ALL 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 AREA
REFLECTORIZED DRUM
TYPE A - WEIGHTED CHANNELIZER
TRAFFIC FLOW

STRIPING KEY

TRIANGLE - PAINT

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\10-01-00\CSAH 4 (TH47-TH65)\Base\Traffic\Signing & Striping.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: DOUGLAS W. FISCHER
SIGNATURE:
DATE: 5/2/19 LICENSE NO. 20235

DRAWN BY TMV DATE 02/28/19
DESIGN BY DATE
CHECKED BY DATE

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO.
STATE AID PROJECT NO. 002-604-010
CITY PROJECT NO.
COUNTY PROJECT NO.

TRAFFIC CONTROL STAGE 2

Sheet 30 of 54 Sheets

NOTES:

- EASTBOUND LANE CLOSED BETWEEN TH 47 SERVICE DRIVE THRU 6TH STREET.
- DETOUR 2 IN PLACE FOR EASTBOUND TRAFFIC. REFER TO DETOUR 2 PLAN.
- ROADWAY OPEN TO WESTBOUND TRAFFIC.
- 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".
- SCHOOL CROSSINGS SHALL BE MAINTAINED.
- CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.
- ACCESS SHALL BE MAINTAINED TO ALL DRIVEWAYS IN CONSTRUCTION AREAS.
- TEMPORARY PAVEMENT MARKINGS SHALL BE PLACED PRIOR TO OPENING WESTBOUND TRAFFIC LANE.
- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
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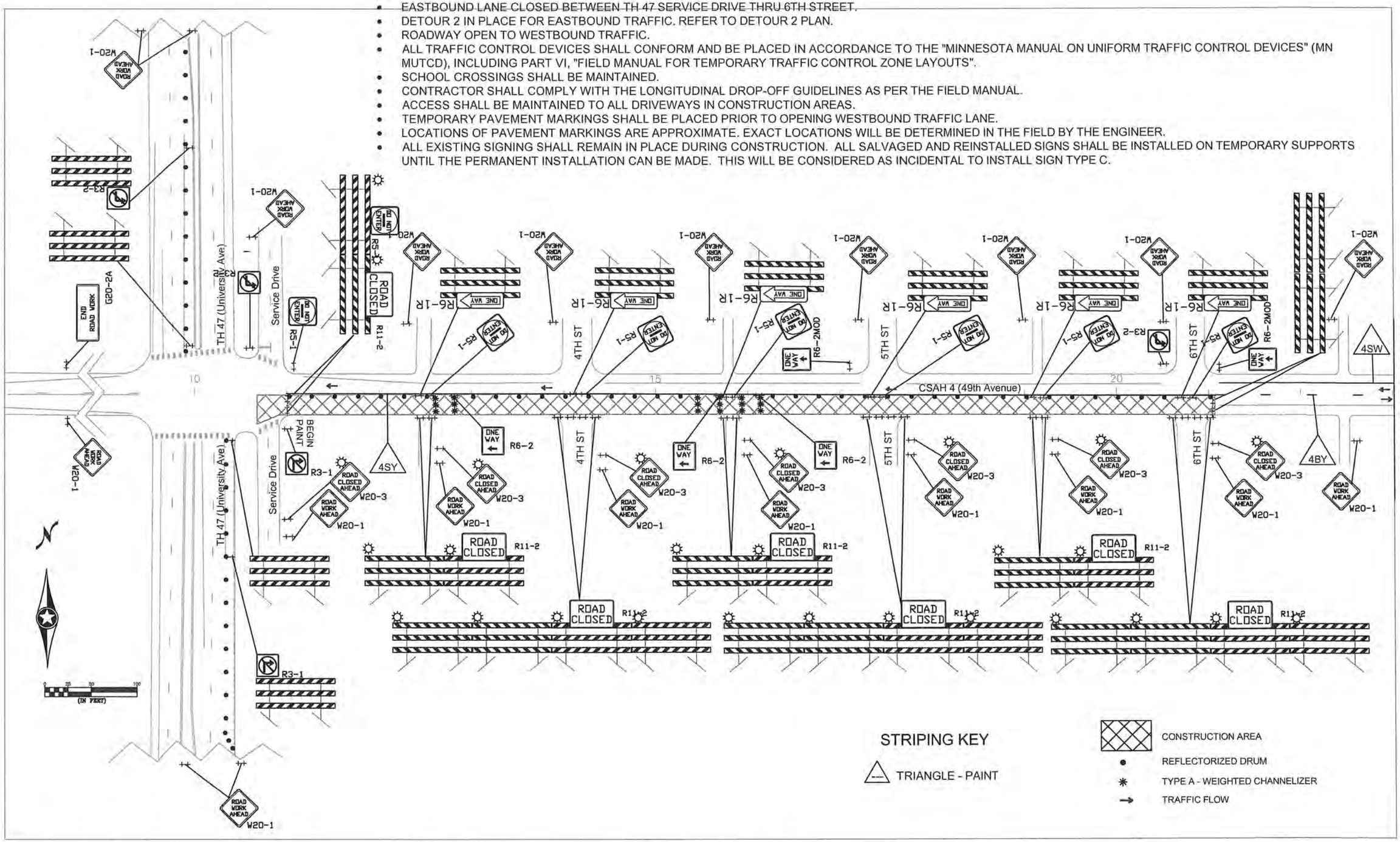

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\19-01-00\CSAH 4 (TH47-TH65)\Base\Traffic\Stage 3.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: DOUGLAS W. FISCHER

SIGNATURE:

DATE: 5/16/19 LICENSE NO. 20235

DRAWN BY TMV DATE 04/05/19

DESIGN BY ____ DATE ____

CHECKED BY ____ DATE ____

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. ____

STATE AID PROJECT NO. 002-604-010

CITY PROJECT NO. ____

COUNTY PROJECT NO. ____

TRAFFIC CONTROL STAGE 3

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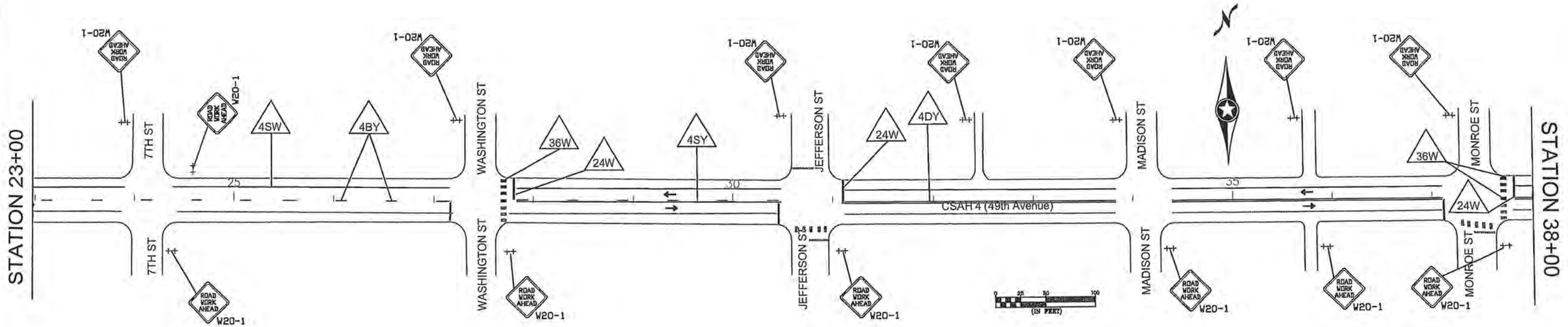


NOTES:

- EASTBOUND LANE CLOSED BETWEEN TH 47 SERVICE DRIVE THRU 6TH STREET.
- DETOUR 2 IN PLACE FOR EASTBOUND TRAFFIC. REFER TO DETOUR 2 PLAN.
- ROADWAY OPEN TO WESTBOUND TRAFFIC.
- 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".
- SCHOOL CROSSINGS SHALL BE MAINTAINED.
- CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.
- ACCESS SHALL BE MAINTAINED TO ALL DRIVEWAYS IN CONSTRUCTION AREAS.
- TEMPORARY PAVEMENT MARKINGS SHALL BE PLACED PRIOR TO OPENING WESTBOUND TRAFFIC LANE.
- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. ALL 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 AREA

REFLECTORIZED DRUM

TYPE A - WEIGHTED CHANNELIZER

TRAFFIC FLOW

STRIPING KEY

TRIANGLE - PAINT

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\19-01-00\CSAH 4 (TH47-TH65)\Rose\Traffic\Stage 3.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: DOUGLAS W. FISCHER
SIGNATURE:
DATE: 5/2/19 LICENSE NO. 20235

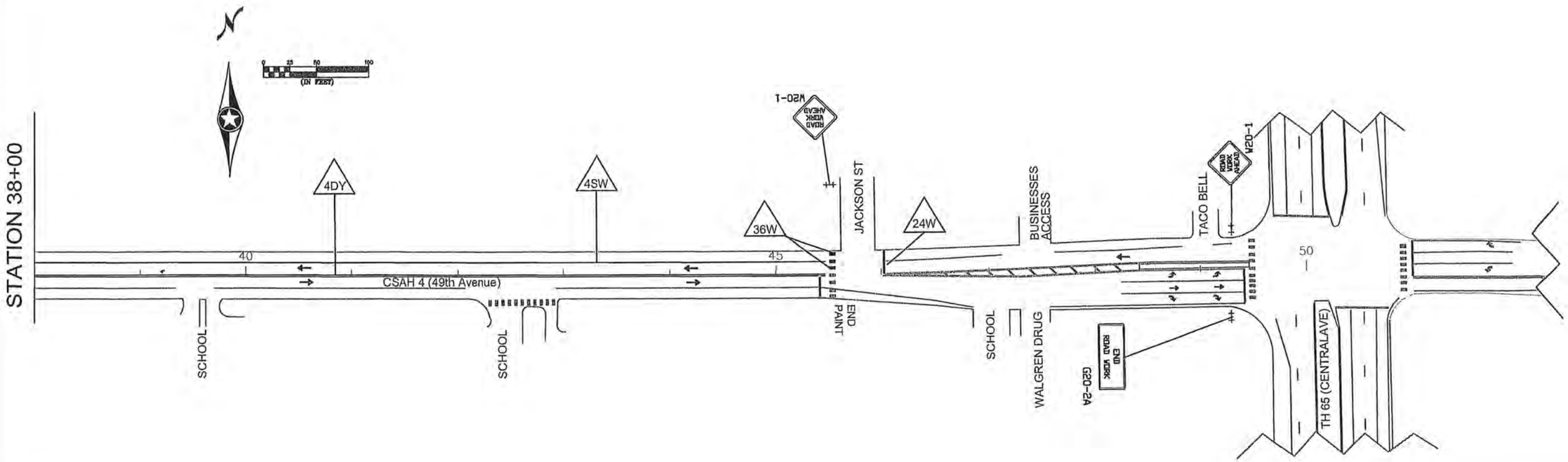
DRAWN BY TMV DATE 04/05/19
DESIGN BY DATE
CHECKED BY DATE

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO.
STATE AID PROJECT NO. 002-604-010
CITY PROJECT NO.
COUNTY PROJECT NO.

TRAFFIC CONTROL STAGE 3

Sheet 32 of 54 Sheets



NOTES:

- EASTBOUND LANE CLOSED BETWEEN TH 47 SERVICE DRIVE THRU 6TH STREET.
- DETOUR 2 IN PLACE FOR EASTBOUND TRAFFIC. REFER TO DETOUR 2 PLAN.
- ROADWAY OPEN TO WESTBOUND TRAFFIC.
- 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".
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CONSTRUCTION AREA

● REFLECTORIZED DRUM

✱ TYPE A - WEIGHTED CHANNELIZER

→ TRAFFIC FLOW

STRIPING KEY

TRIANGLE - PAINT

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\19-01-00\CSAH 4 (TH47-TH65)\Base\Traffic\Stage 3.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: DOUGLAS W. FISCHER
SIGNATURE:
DATE: 5/21/19 LICENSE NO. 20235

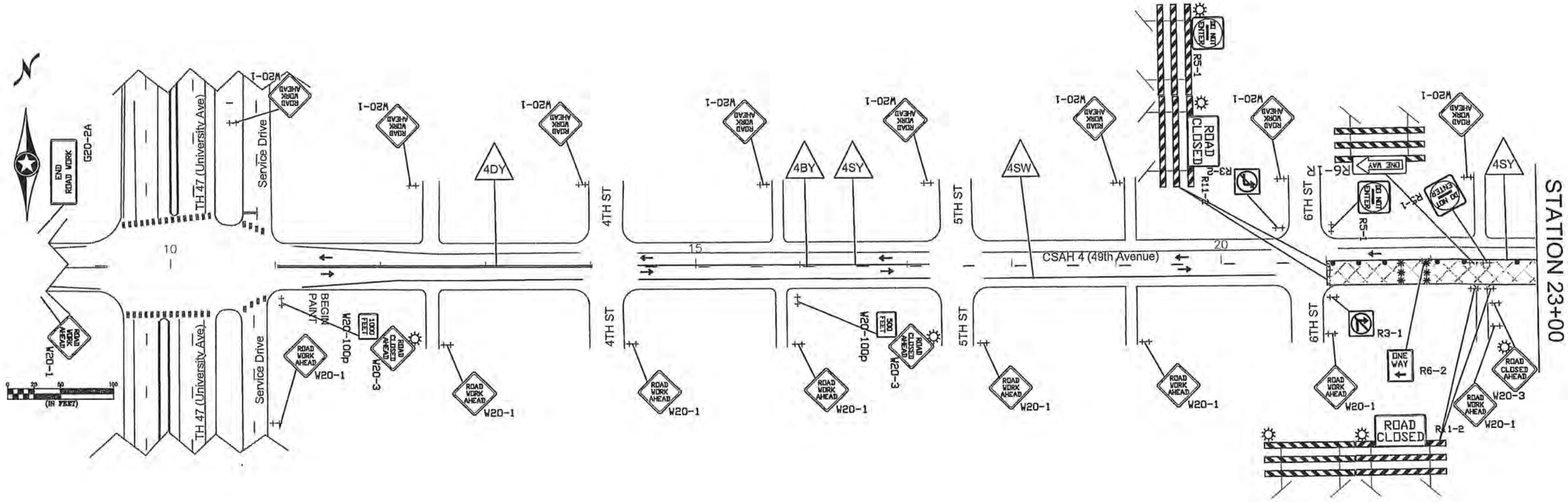
DRAWN BY TMV DATE 04/05/19
DESIGN BY ____ DATE ____
CHECKED BY ____ DATE ____

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. ____
STATE AID PROJECT NO. 002-604-010
CITY PROJECT NO. ____
COUNTY PROJECT NO. ____

TRAFFIC CONTROL STAGE 3

Sheet 33 of 54 Sheets



NOTES:

- EASTBOUND LANE CLOSED BETWEEN 6TH STREET AND JACKSON ST.
- DETOUR 2 IN PLACE FOR EASTBOUND TRAFFIC. REFER TO DETOUR 2 PLAN.
- ROADWAY OPEN TOWESTBOUND TRAFFIC.
- 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".
- SCHOOL CROSSINGS SHALL BE MAINTAINED.
- CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.
- ACCESS SHALL BE MAINTAINED TO ALL DRIVEWAYS IN CONSTRUCTION AREA.
- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE, EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. ALL 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 AREA

● REFLECTORIZED DRUM

✱ TYPE A - WEIGHTED CHANNELIZER

→ TRAFFIC FLOW

STRIPING KEY

TRIANGLE - PAINT

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\10-01-00\CSAH 4 (TH47-TH65)\Base\Traffic\Stage 4.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: DOUGLAS W. FISCHER
SIGNATURE:
DATE: 5/2/19 LICENSE NO. 20235

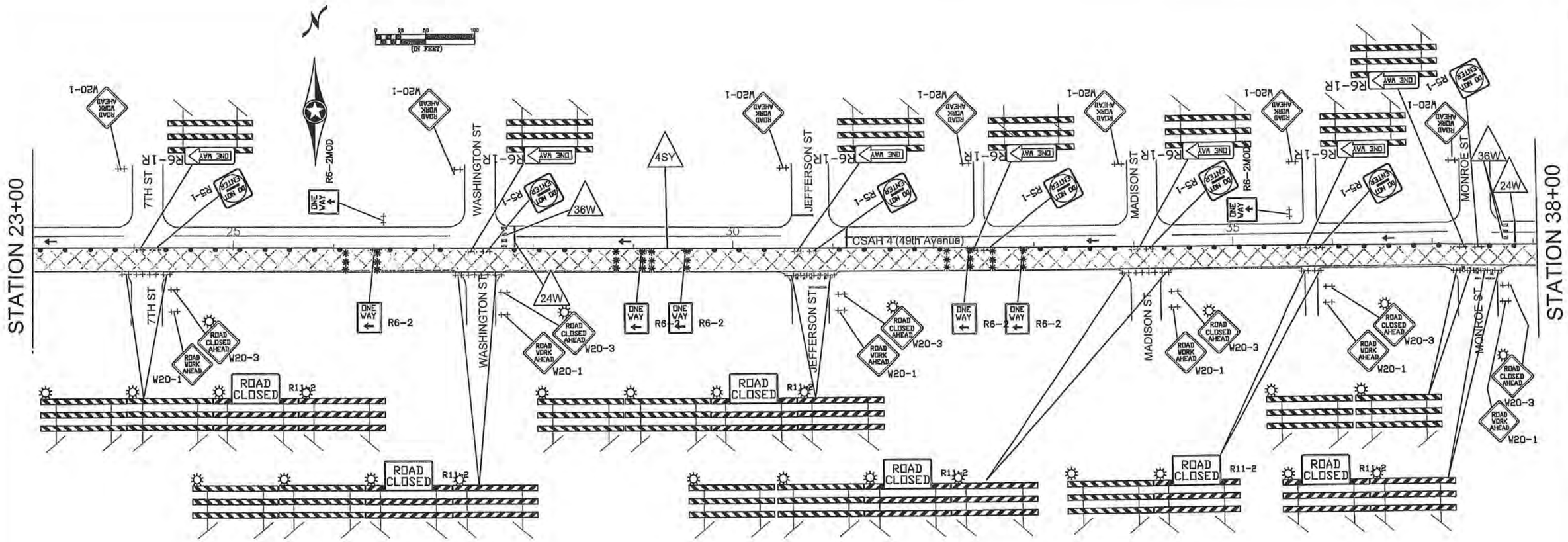
DRAWN BY TMV DATE 04/08/19
DESIGN BY DATE
CHECKED BY DATE

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO.
STATE AID PROJECT NO. 002-604-010
CITY PROJECT NO.
COUNTY PROJECT NO.

TRAFFIC CONTROL STAGE 4

Sheet 34 of 54 Sheets



NOTES:

- EASTBOUND LANE CLOSED BETWEEN 6TH STREET AND JACKSON ST.
- DETOUR 2 IN PLACE FOR EASTBOUND TRAFFIC. REFER TO DETOUR 2 PLAN.
- ROADWAY OPEN TOWESTBOUND TRAFFIC.
- 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".
- SCHOOL CROSSINGS SHALL BE MAINTAINED.
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- ACCESS SHALL BE MAINTAINED TO ALL DRIVEWAYS IN CONSTRUCTION AREA.
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CONSTRUCTION AREA

REFLECTORIZED DRUM

TYPE A - WEIGHTED CHANNELIZER

TRAFFIC FLOW

STRIPING KEY

TRIANGLE - PAINT

NO	DATE	BY	CKD	APPR	REVISION

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PRINT NAME: DOUGLAS W. FISCHER

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DATE: 5/2/19 LICENSE NO. 20235

DRAWN BY TMV DATE 04/05/19

DESIGN BY ____ DATE ____

CHECKED BY ____ DATE ____

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. ____

STATE AID PROJECT NO. 002-604-010

CITY PROJECT NO. ____

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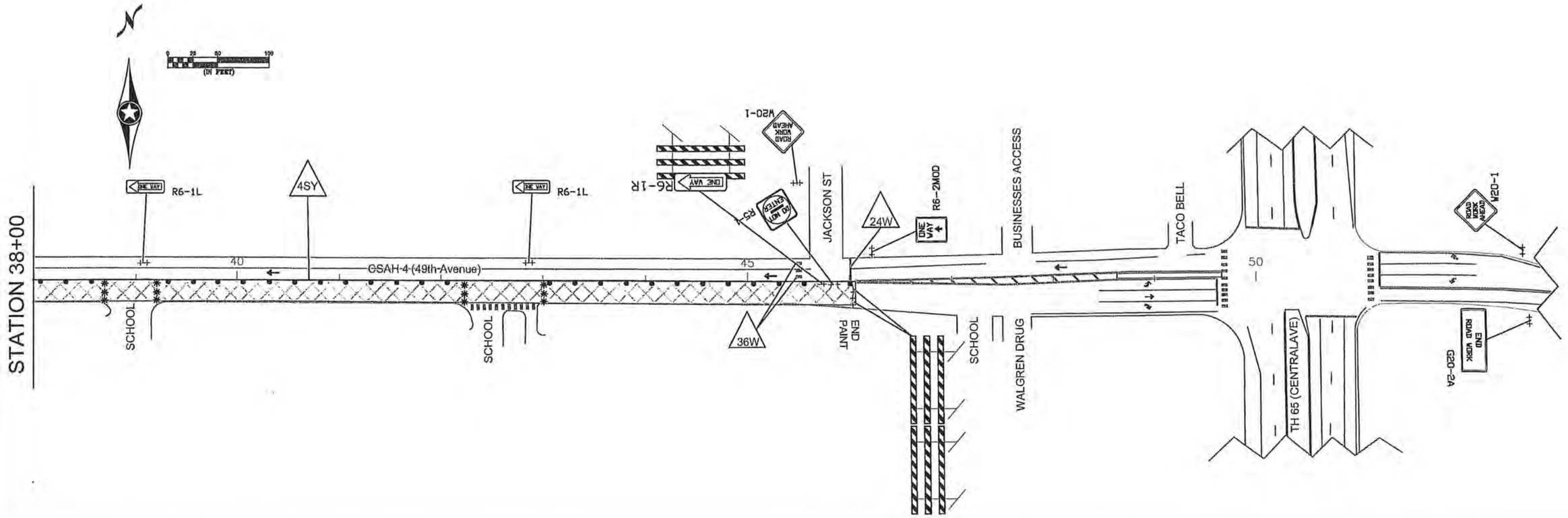
TRAFFIC CONTROL STAGE 4

Sheet 35 of 54 Sheets



NOTES:

- EASTBOUND LANE CLOSED BETWEEN 6TH STREET AND JACKSON ST.
- DETOUR 2 IN PLACE FOR EASTBOUND TRAFFIC. REFER TO DETOUR 2 PLAN.
- ROADWAY OPEN TOWESTBOUND TRAFFIC.
- 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".
- SCHOOL CROSSINGS SHALL BE MAINTAINED.
- CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.
- ACCESS SHALL BE MAINTAINED TO ALL DRIVEWAYS IN CONSTRUCTION AREA.
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CONSTRUCTION AREA
REFLECTORIZED DRUM
TYPE A - WEIGHTED CHANNELIZER
TRAFFIC FLOW

STRIPING KEY

TRIANGLE - PAINT

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NAME: P:\10-01-00\CSAH 4 (TH47-TH65)\Base\Traffic\Stage 4.dwg

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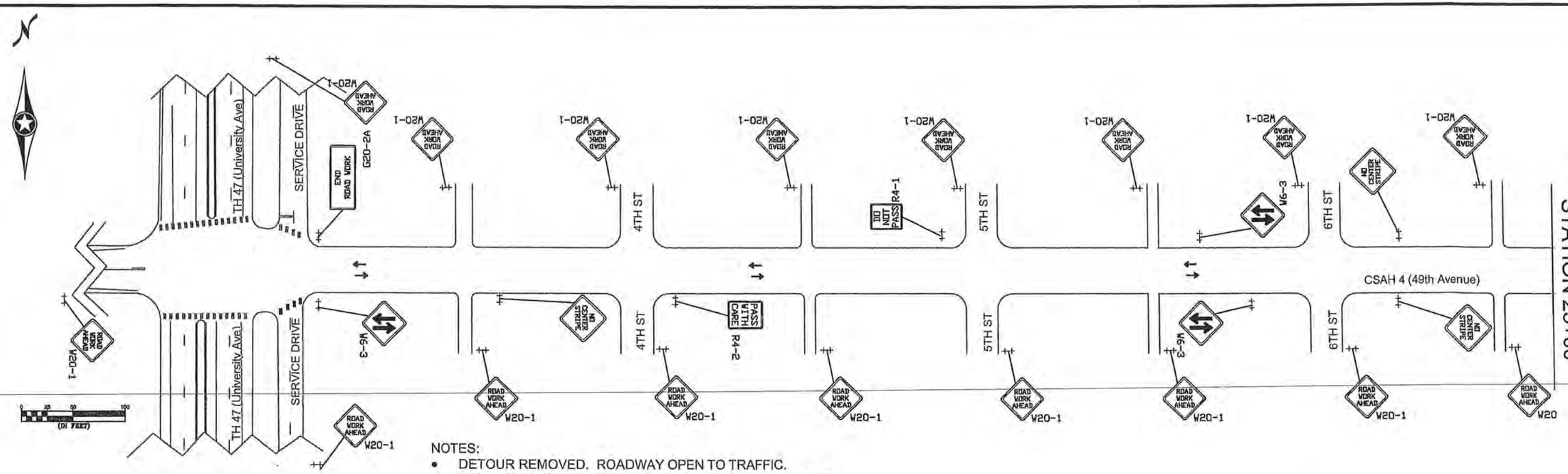
TRAFFIC CONTROL STAGE 4

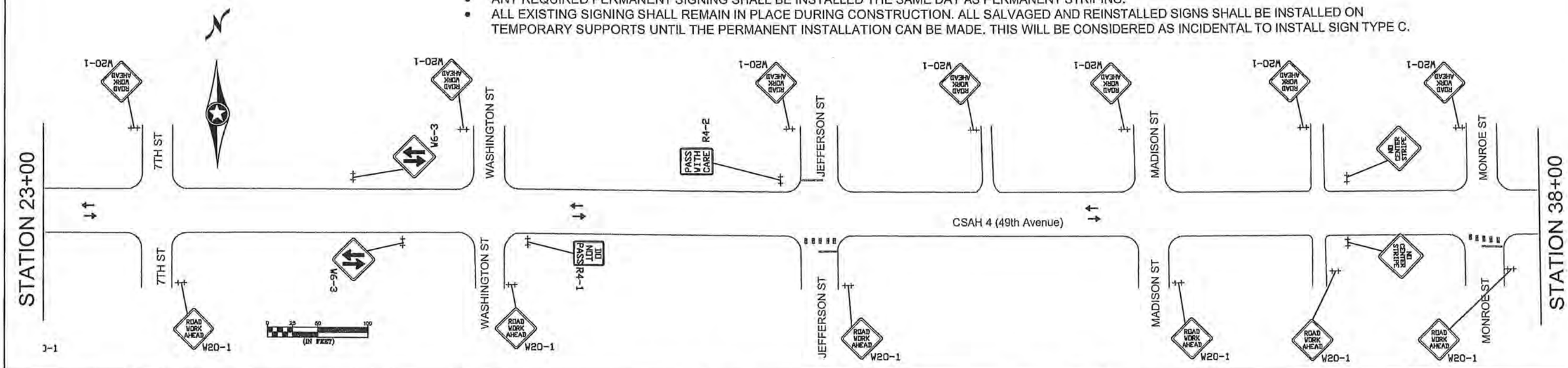
Sheet 36 of 54 Sheets



→ TRAFFIC FLOW

NOTES:

- DETOUR REMOVED. ROADWAY OPEN TO TRAFFIC.
- FINAL LIFT BITUMINOUS SHALL BE PAVED UNDER TRAFFIC.
- 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".
- SCHOOL CROSSINGS SHALL BE MAINTAINED.
- CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.
- ACCESS SHALL BE MAINTAINED TO ALL DRIVEWAYS IN CONSTRUCTION AREA.
- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
- ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING.
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. ALL 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.



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PRINT NAME: DOUGLAS W. FISCHER

SIGNATURE:

DATE: 5/2/19 LICENSE NO. 20235

DRAWN BY TMV DATE 04/06/19

DESIGN BY DATE

CHECKED BY DATE

ANOKA COUNTY HIGHWAY DEPT.

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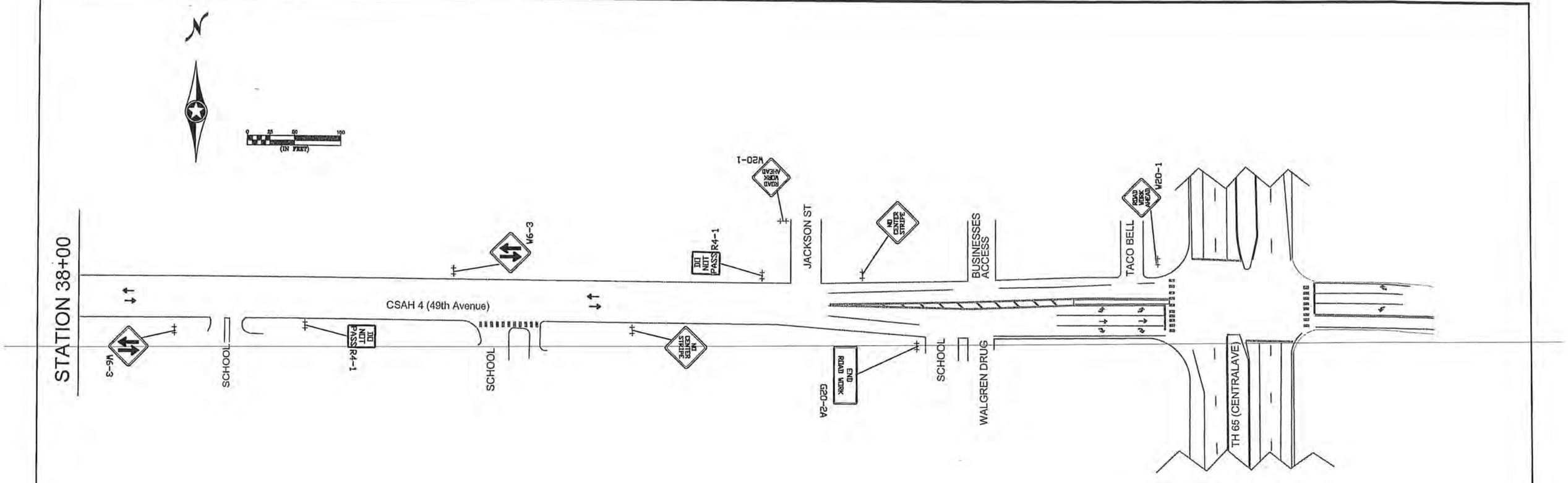
CITY PROJECT NO.

COUNTY PROJECT NO.

TRAFFIC CONTROL STAGE 5

Sheet 37 of 54 Sheets



NOTES:

- DETOUR REMOVED. ROADWAY OPEN TO TRAFFIC.
- FINAL LIFT BITUMINOUS SHALL BE PAVED UNDER TRAFFIC.
- 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".
- SIGN COVERS SHALL BE A RIGID PANEL. NO PLASTIC, BURLAP, ROPE, ETC.
- CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.
- ACCESS SHALL BE MAINTAINED TO ALL DRIVEWAYS IN CONSTRUCTION AREA.
- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
- ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING.
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. ALL 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.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\19-01-00\CSAH 4 (TH47-TH65)\Base\Traffic\Signing & Striping.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: DOUGLAS W. FISCHER
SIGNATURE:
DATE: 5/2/19 LICENSE NO. 20235

DRAWN BY TMV DATE 02/28/19
DESIGN BY ____ DATE ____
CHECKED BY ____ DATE ____

ANOKA COUNTY HIGHWAY DEPT.

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CITY PROJECT NO. ____
COUNTY PROJECT NO. ____

TRAFFIC CONTROL STAGE 5

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M.U.T.C.D. CODE	SIZE	INSERT	QTY. STG. 1	QTY. STG. 2	QTY. STG. 3	QTY. STG. 4	QTY. STG. 5
R3-2	24" x 24"		1	2	3	1	0
R3-2	24" x 24"		1	1	2	1	0
R4-1	24" x 30"	DO NOT PASS	0	0	0	0	4
R4-2	24" x 30"	PASS WITH CARE	0	0	0	0	2
R5-1	30" x 30"	DO NOT ENTER	7	11	7	10	0
R6-1R	54" x 18"	ONE WAY	1	0	0	0	0
R6-1L	54" x 18"	ONE WAY	1	9	0	2	0
R6-2MOD	24" x 30"	ONE WAY ↑	2	3	2	3	0
R6-2MOD	24" x 30"	ONE WAY ←	3	6	3	6	0
W6-3	48" x 48"		0	0	0	0	7
W8-12	48" x 48"	NO CENTER STRIPE	0	0	0	0	7
W20-1	48" x 48"	ROAD WORK AHEAD	33	32	37	32	32
W20-3	48" x 48"	ROAD CLOSED AHEAD	10	10	7	9	0
W20-100p	42" x 24"	300 FEET	0	1	0	0	0
W20-100p	42" x 24"	500 FEET	1	0	0	1	0
W20-100p	42" x 24"	1000 FEET	1	0	0	1	0
W8-1A	48" x 48"	BUMP AHEAD	AS NEEDED				
W8-1A	48" x 48"	BUMP	AS NEEDED				
W8-8	48" x 48"	ROUGH ROAD	AS NEEDED				
W8-9	48" x 48"	LOW SHOULDER	AS NEEDED				
	48" x 48"	NO SHOULDER	AS NEEDED				
W8-11	48" x 48"	UNEVEN LANES	AS NEEDED				

M.U.T.C.D. CODE	SIZE	INSERT	QTY. STG. 1	QTY. STG. 2	QTY. STG. 3	QTY. STG. 4	QTY. STG. 5
R11-2	48" x 30"	ONE WAY	6	10	6	9	0
TYPE III	8 FOOT		6	10	6	9	0
R11-2	48" x 30"	ROAD CLOSED	7	10	7	7	0
TYPE III	8 FOOT		7	10	7	7	0
FLASHER							
R11-2	48" x 30"	ROAD CLOSED	0	0	0	1	0
TYPE III	8 FOOT		0	0	0	1	0
FLASHER							
TYPE III	8 FOOT		10	17	9	12	0
FLASHER							
TYPE III	8 FOOT		4	6	9	7	0
FLASHER							
R11-2	48" x 30"	DO NOT ENTER	0	0	1	1	0
TYPE III	8 FOOT		0	0	1	1	0
FLASHER							
R11-4	48" x 30"	DO NOT ENTER	1	1	0	0	0
TYPE III	8 FOOT		1	1	0	0	0
FLASHER							
G20-2A	48" x 24"	END ROAD WORK	2	2	2	2	2

M.U.T.C.D. CODE	SIZE	INSERT	QTY. STG. 1	QTY. STG. 2	QTY. STG. 3	QTY. STG. 4	QTY. STG. 5
TYPE A WEIGHTED CHANNELIZER 42" HT MINIMUM			18	90	18	48	0
TYPE B REFLECTORIZED REBOUNDABLE DRUM			32	72	66	77	0

NOTES:

- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.
- ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE M.U.T.C.D.

TEMPORARY PAVEMENT MARKING TABULATION		
REMOVALS - 4" SOLID YELLOW PAINT	LIN FT	4500
24" SOLID WHITE - PAINT	LIN FT	120
3' X 6' SOLID WHITE - PAINT	SQ FT	432
4" SOLID LINE WHITE - PAINT	LIN FT	4500
4" SOLID LINE YELLOW - PAINT	LIN FT	7810
4" SOLID LINE DOUBLE YELLOW - PAINT	LIN FT	2100
1 4" BROKEN LINE YELLOW - PAINT	LIN FT	450
PORTABLE CHANGEABLE MESSAGE SIGN	UDAY	20

1 - SPACED EVERY 10 FEET

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\19-01-00\CSAH 4 (TH 47-TH 65\Basis\Traffic\Stg Qty.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: DOUGLAS W. FISCHER, P.E.
SIGNATURE:
DATE: 5/14/19 REG. NO. 20235

DRAWN BY TMV DATE 04/06/19
DESIGN BY DATE
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ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO.
STATE AID PROJECT NO. 002-604-010
CITY PROJECT NO.
COUNTY PROJECT NO.

STAGING QUANTITIES

Sheet 39 of 54 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 $\frac{1}{4}$ INCH UNDER OR $\frac{1}{4}$ 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 APPLICAITON 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
REMOVALS - 24" SOLID WHITE	LIN FT	40
REMOVALS - 3'x6' ZEBRA CROSSWALK	SQ FT	200
4" SOLID LINE WHITE - MULTI COMP	LIN FT	7935
1 4" BROKEN LINE YELLOW - MULTI COMP	LIN FT	320
4" SOLID LINE YELLOW - MULTI COMP	LIN FT	590
4" SOLID DOUBLE LINE YELLOW - MULTI COMP	LIN FT	2330
24" SOLID LINE YELLOW - PREFORMED THERMOPLASTIC (PMS*)	LIN FT	74
24" SOLID LINE WHITE - PREFORMED THERMOPLASTIC (PMS*)	LIN FT	204
3'x6' ZEBRA CROSSWALK - PREFORMED THERMOPLASTIC	SQ FT	830
PAVEMENT MESSAGE (RT ARROW) - PREFORMED THERMOPLASTIC	SQ FT	31
PAVEMENT MESSAGE (LEFT ARROW) - PREFORMED THERMOPLASTIC	SQ FT	31
PAVEMENT MESSAGE (STRAIGHT ARROW) - PREFORMED THERMOPLASTIC	SQ FT	25

1 10' STRIPE, 40' GAP

* PAVEMENT MARKING SPECIAL

SYMBOLS & MATERIALS LEGEND

CROSSWALK BLOCK WHITE-POLY PREFORM

PAVEMENT MESSAGE (LEFT ARROW) POLY PREFORM

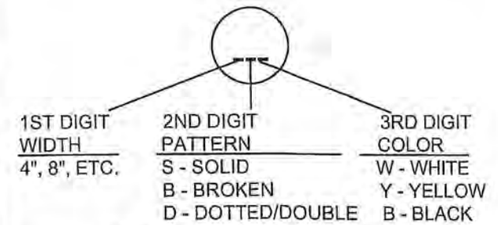
STRIPING KEY

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:\19-01-00\CSAH 4 (TH47-TH65)\Base\Traffic\Perm pvmt mrkg guide notes_guidelines.dwg

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PRINT NAME: DOUGLAS W. FISCHER, P.E.
SIGNATURE:
DATE: 5/22/19 REG. NO. 20235

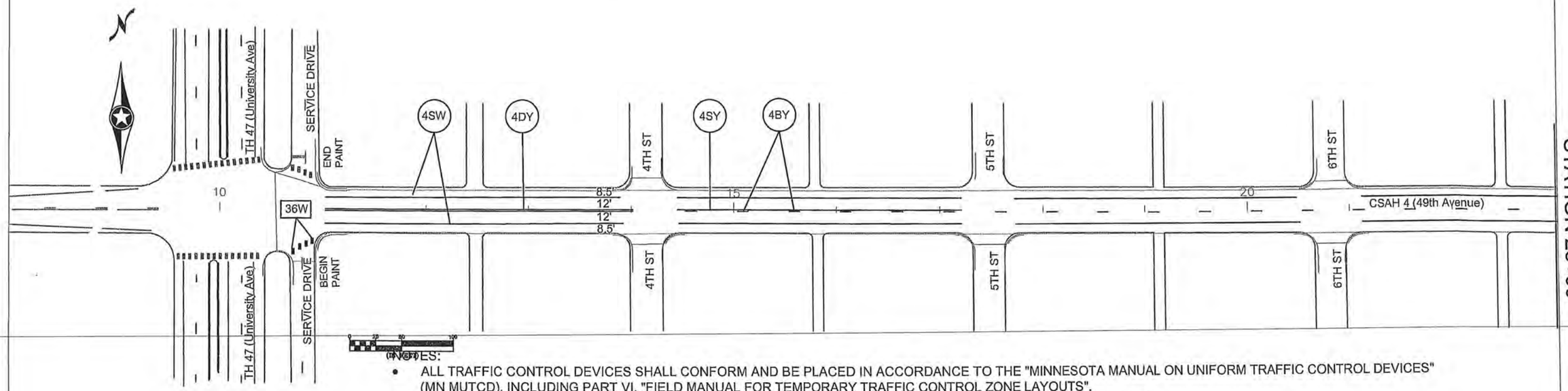
DRAWN BY TMV DATE 02/28/19
DESIGN BY ____ DATE ____
CHECKED BY ____ DATE ____

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. ____
STATE AID PROJECT NO. 002-604-010
CITY PROJECT NO. ____
COUNTY PROJECT NO. ____

PERMANENT MARKING TABULATION

Sheet 40 of 54 Sheets



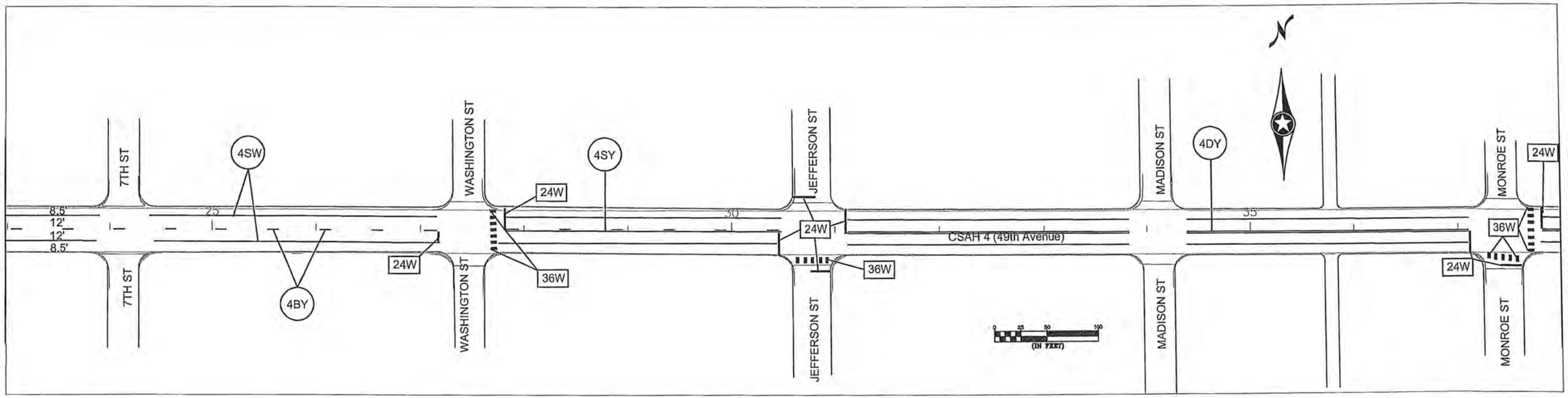
STATION 23+00

STATION 23+00

STATION 38+00

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".
- ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
- ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING.
- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.



NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\19-01-00\CSAH 4 (TH47--TH65)\Base\Traffic\Permanent Striping.dwg					

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PRINT NAME: DOUGLAS W. FISCHER
SIGNATURE:
DATE: 3/12/19 LICENSE NO. 20235

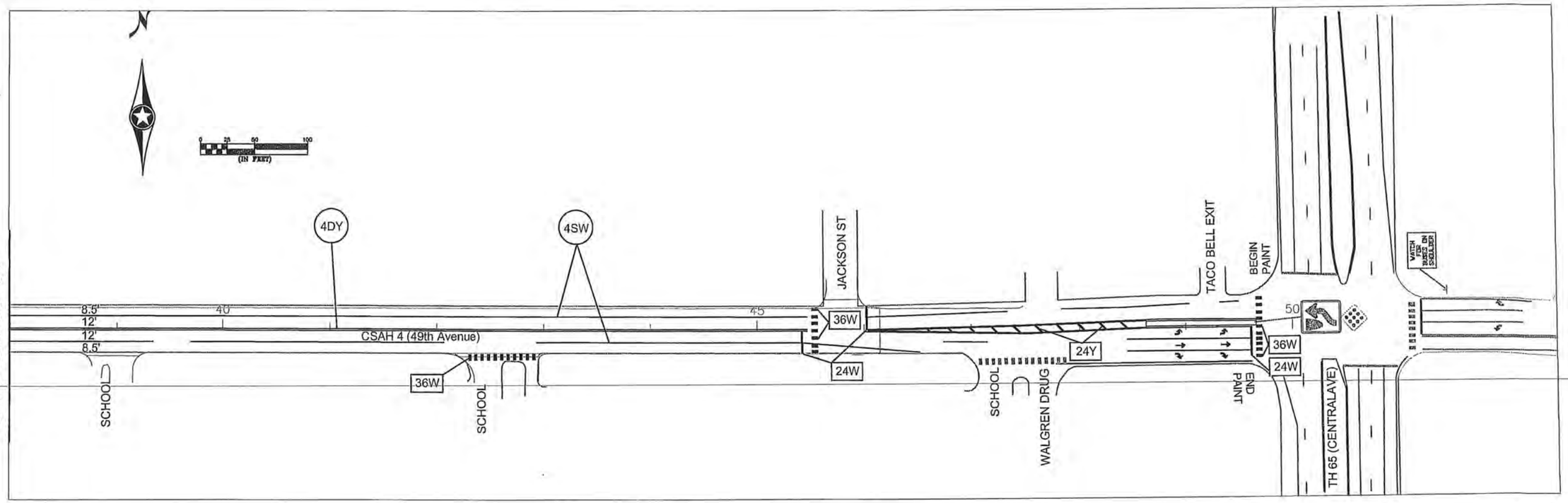
DRAWN BY TMV DATE 02/26/19
DESIGN BY DATE
CHECKED BY DATE

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO.
STATE AID PROJECT NO. 002-604-010
CITY PROJECT NO.
COUNTY PROJECT NO.

PERMANENT STRIPING PLAN

Sheet 41 of 54 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".
- ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
- ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING.
- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\10-01-00\CSAH 4 (TH47-TH65)\Base\Traffic\Permanent Striping.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: DOUGLAS W. FISCHER

SIGNATURE:

DATE: 5/2/19 LICENSE NO. 20235

DRAWN BY TMV DATE 04/05/19

DESIGN BY ____ DATE ____

CHECKED BY ____ DATE ____

ANOKA COUNTY

HIGHWAY DEPT.

STATE PROJECT NO. ____

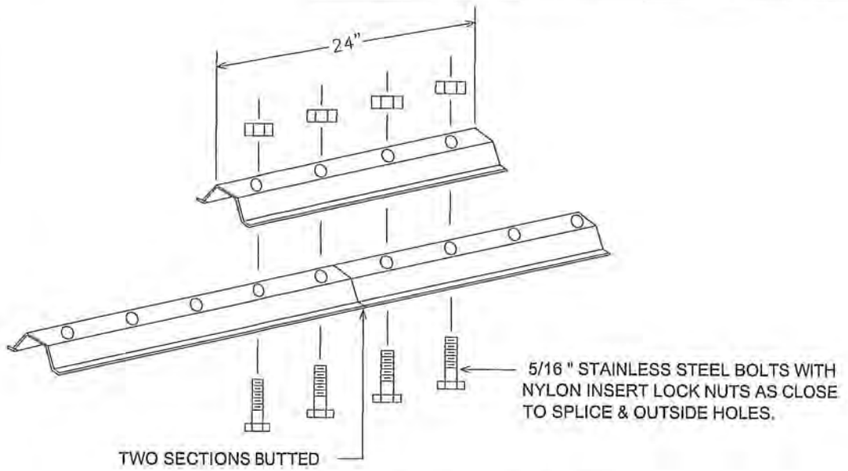
STATE AID PROJECT NO. 002-604-010

CITY PROJECT NO. ____

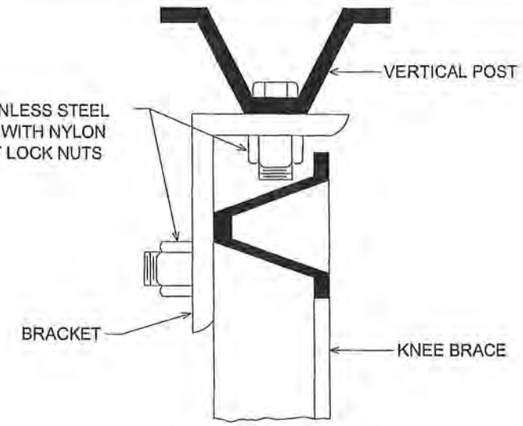
COUNTY PROJECT NO. ____

PERMANENT STRIPING PLAN

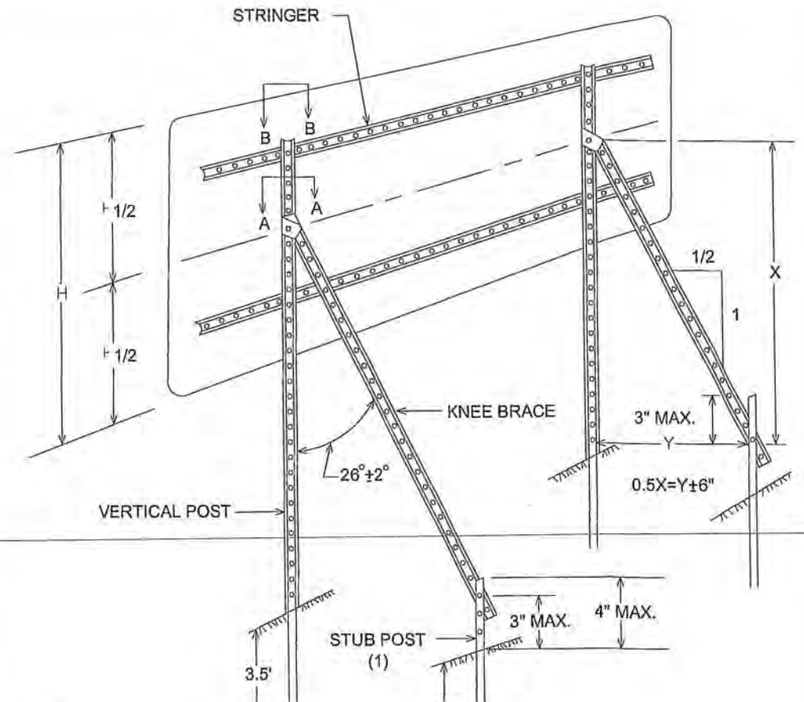
Sheet 42 of 54 Sheets



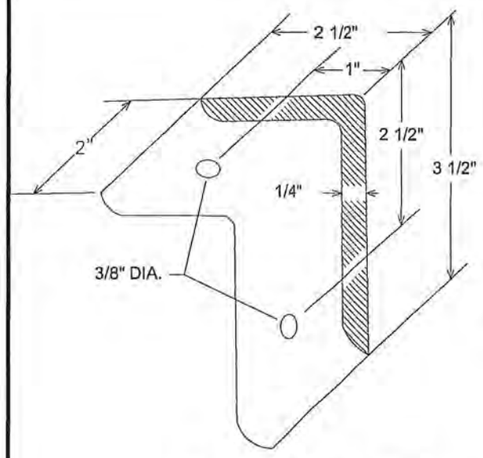
LATERAL BRACE OR STRINGER SPLICE DETAIL (EXPLODED VIEW)



SECTION A-A

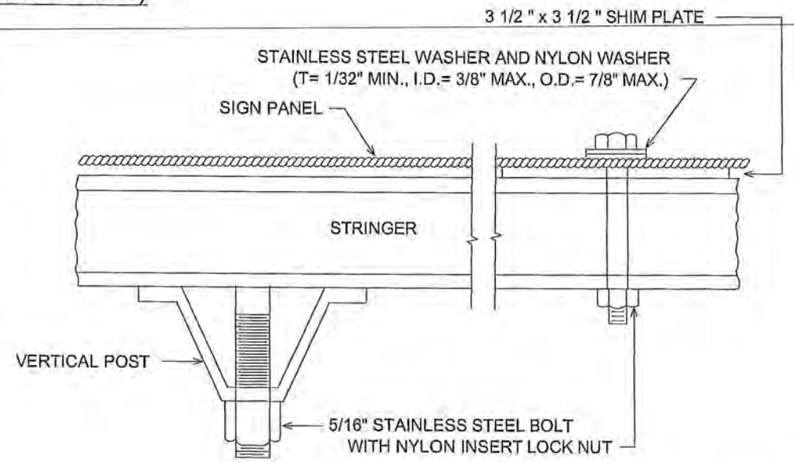


TYPICAL "A-FRAME" INSTALLATION TYPE "D" SIGNS

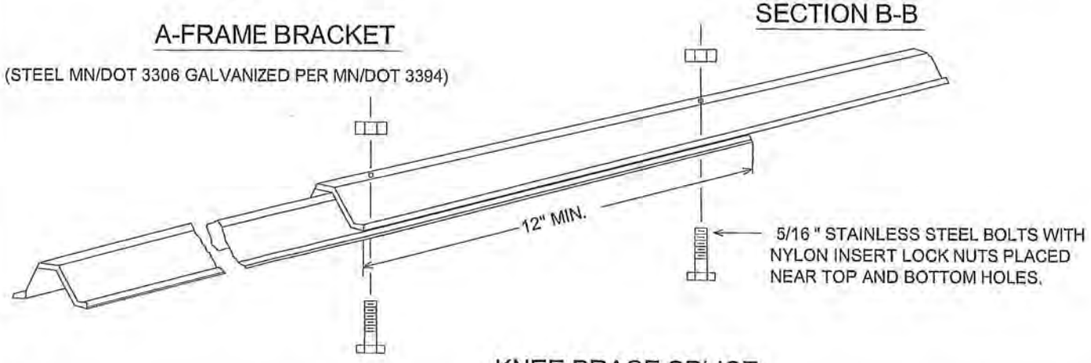


A-FRAME BRACKET

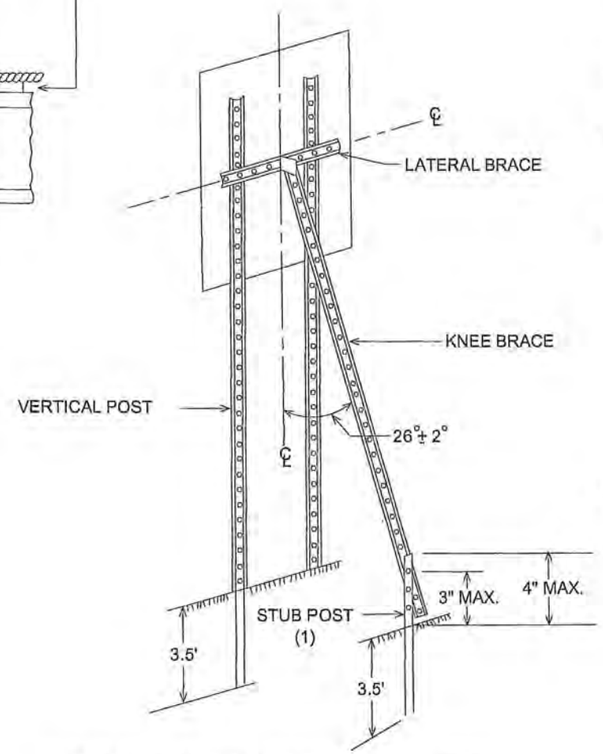
(STEEL MN/DOT 3306 GALVANIZED PER MN/DOT 3394)



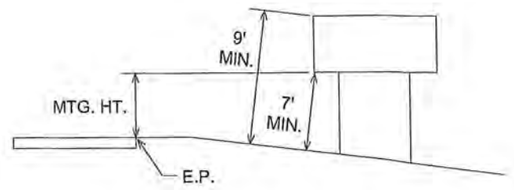
SECTION B-B



KNEE BRACE SPLICE



TYPICAL "A-FRAME" INSTALLATION 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:\19-01-00\CSAH 4 (TH47-TH65)\Base\Traffic\Signing & Striping Details.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: DOUGLAS W. FISCHER, P.E.
SIGNATURE:
DATE: 5/6/19 REG. NO. 20235

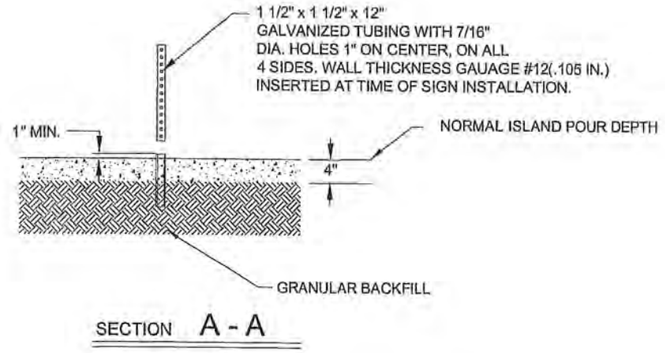
DRAWN BY TMV DATE 02/25/19
DESIGN BY DATE
CHECKED BY DATE

ANOKA COUNTY HIGHWAY DEPT.

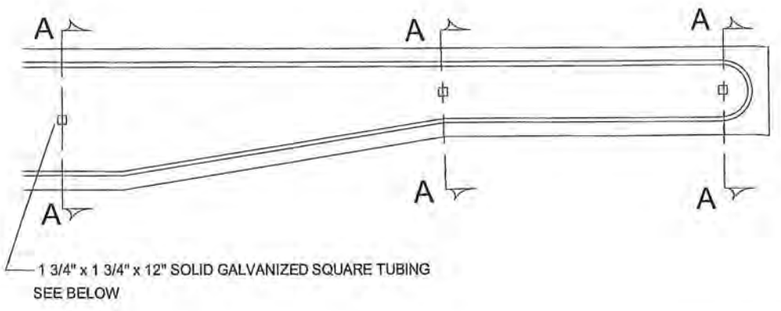
STATE PROJECT NO.
STATE AID PROJECT NO. 002-604-010
STATE AID PROJECT NO.
COUNTY PROJECT NO.

SIGNING & STRIPING DETAILS

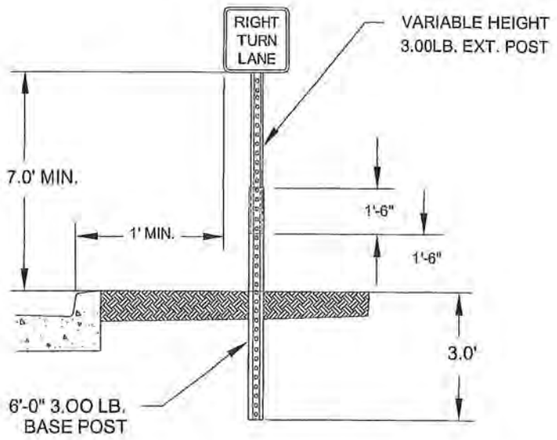
Sheet 43 of 54 Sheets



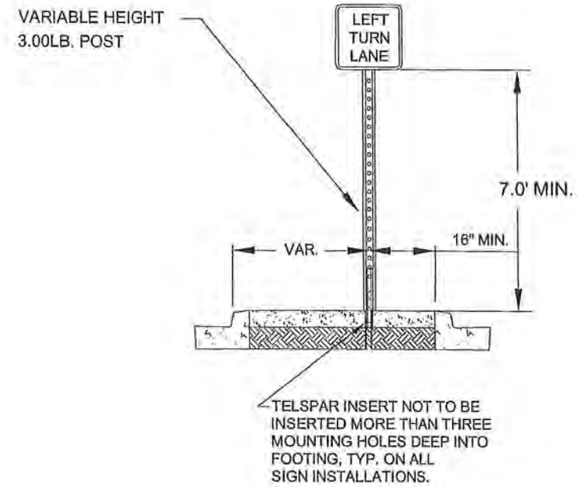
SECTION A - A



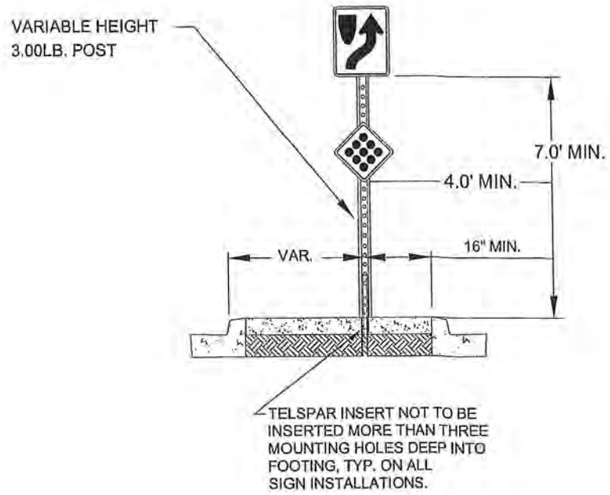
GROUND POST MOUNT SIGN
INSTALLATION TYPICAL



ISLAND MOUNT BREAK-AWAY SIGN
INSTALLATION TYPICAL



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



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\19-01-00\CSAH 4 (TH47-TH65)\Base\Traffic\Signing & Striping Details.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: DOUGLAS W. FISCHER, P.E.
SIGNATURE:
DATE: 5/24/19 REG. NO. 20235

DRAWN BY TMV DATE 02/26/19
DESIGN BY DATE
CHECKED BY DATE

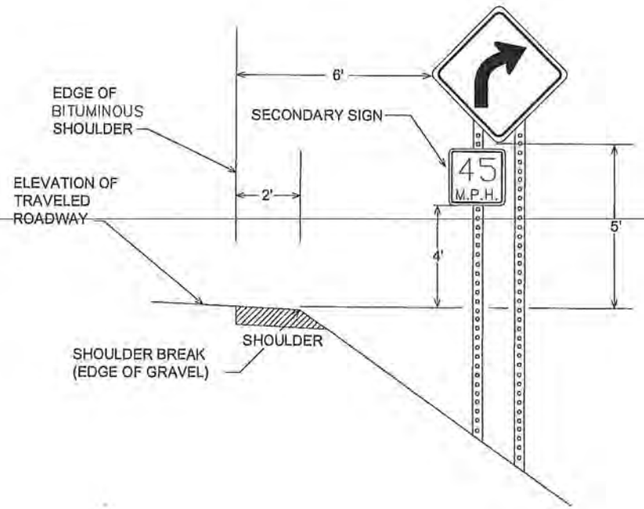
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO.
STATE AID PROJECT NO. 002-604-010
STATE AID PROJECT NO.
COUNTY PROJECT NO.

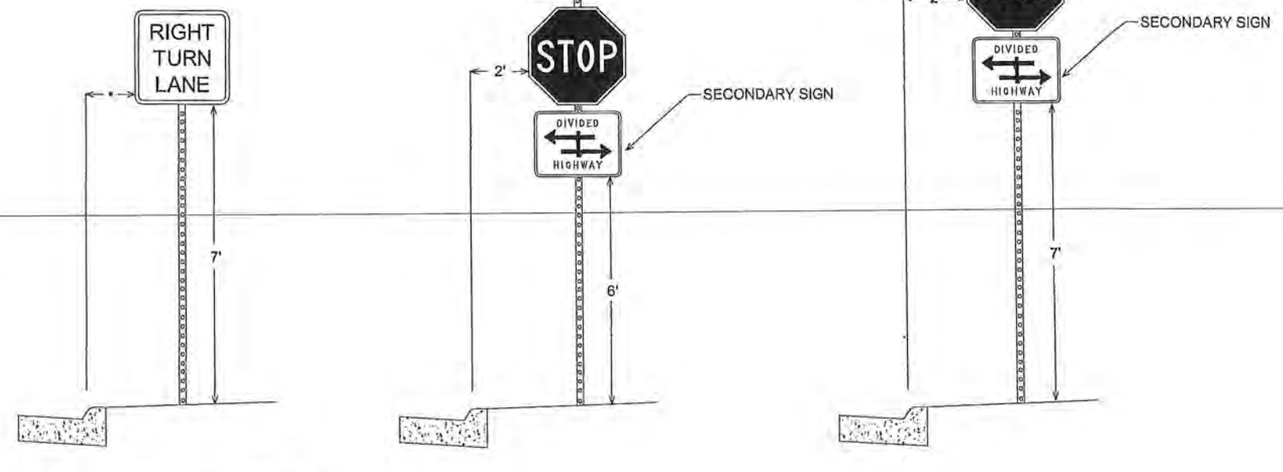
SIGNING & STRIPING
DETAILS

Sheet 44 of 54 Sheets

TYPICAL SIGN PLACEMENT
(RURAL)



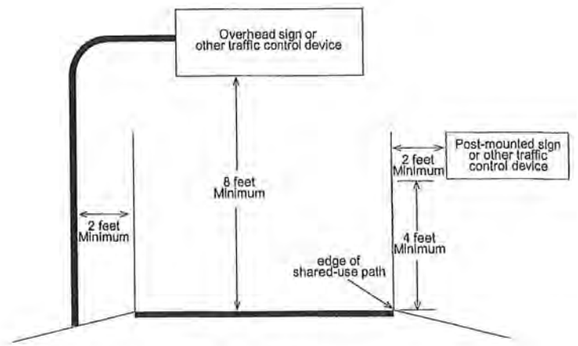
TYPICAL SIGN PLACEMENT
(URBAN)



* 2' - NARROW BOULEVARD (< 8' WIDE)
6' - WIDE BOULEVARD

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	CKD	APPR	REVISION

NAME: P:\19-01-00\CSAH 4 (TH47-TH65)\Base\Traffic\Signing & Striping Details.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: DOUGLAS W. FISCHER, P.E.

SIGNATURE:

DATE: 5/2/19 REG. NO. 20235

DRAWN BY TMV DATE 02/26/19

DESIGN BY ____ DATE ____

CHECKED BY ____ DATE ____

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. ____

STATE AID PROJECT NO. 002-604-010

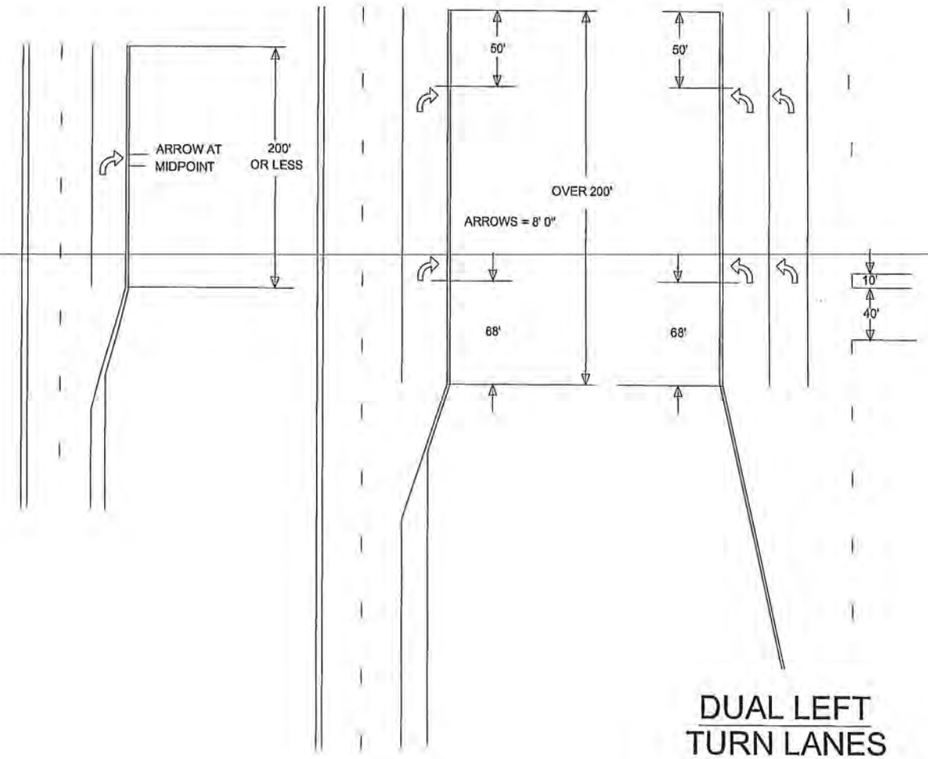
STATE AID PROJECT NO. ____

COUNTY PROJECT NO. ____

SIGNING & STRIPING DETAILS

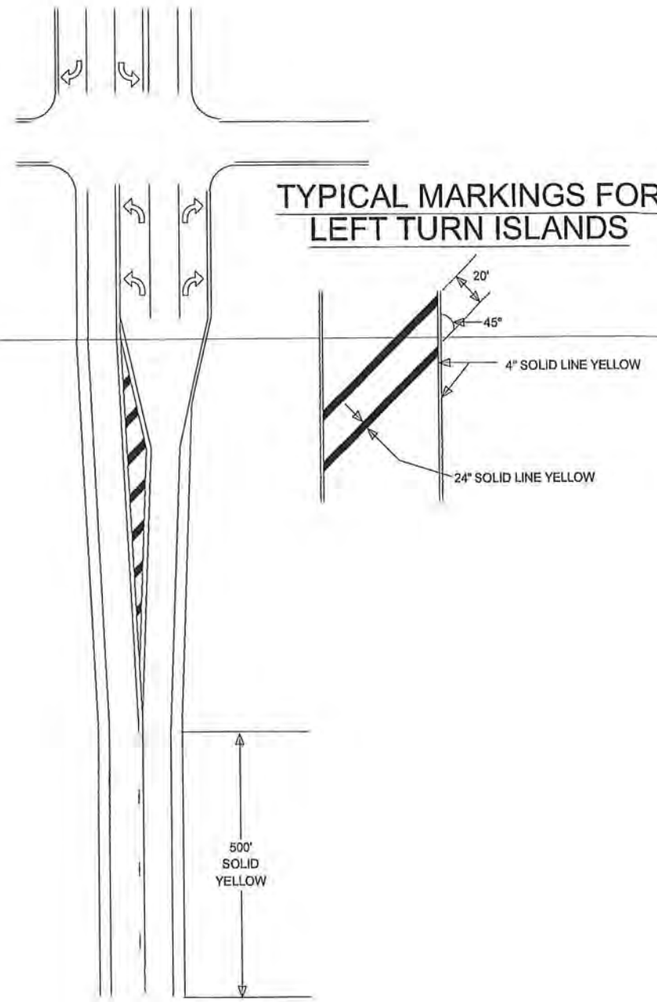
Sheet 45 of 54 Sheets

TYPICAL MESSAGE PLACEMENT FOR TURN LANES



DUAL LEFT TURN LANES

TYPICAL MARKINGS FOR LEFT TURN ISLANDS



NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\19-01-00\CSAH 4 (IH47-IH65)\Base\Traffic\Signing & Striping Details.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: DOUGLAS W. FISCHER, P.E.

SIGNATURE:

DATE: 5/2/19 REG. NO. 20235

DRAWN BY TMV DATE 02/28/19

DESIGN BY ____ DATE ____

CHECKED BY ____ DATE ____

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. ____

STATE AID PROJECT NO. 002-604-010

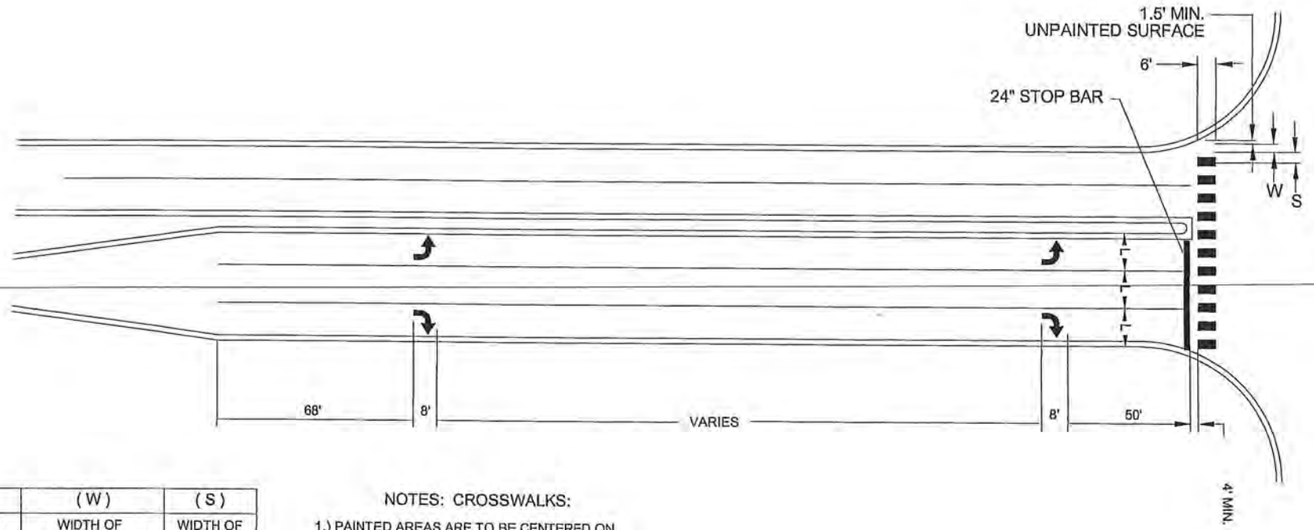
STATE AID PROJECT NO. ____

COUNTY PROJECT NO. ____

SIGNING & STRIPING DETAILS

Sheet 46 of 54 Sheets

MARKINGS FOR PEDESTRIAN CROSSWALKS



(L)	(W)	(S)
WIDTH OF INSIDE LANE	WIDTH OF PAINTED AREAS	WIDTH OF SPACE
9'	2.0'	2.5'
10'	2.5'	2.5'
11'	2.5'	3.0'
12'	3.0'	3.0'
13'	3.0'	3.5'

NOTES: CROSSWALKS:

1.) PAINTED AREAS ARE TO BE CENTERED ON CENTER AND LANE LINES, EVEN IF INTERSECTION IS NOT ALIGNED.

2.) LOCATION OF ZEBRA CROSSWALKS AND STOP BARS, SIGNAL LOOPS AND PED RAMPS ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE DETERMINED AND FIELD VERFIED DURING CONSTRUCTION BY THE FIELD ENGR.

3.) ZEBRA CROSSWALKS ARE TO BE PARALLEL TO THE DRIVING LANE OR LANES. EVEN IF THE STREET IS ON AN ANGLE TO THE INTERSECTION.

4.) A MIN. OF 1.5' (450mm) CLEAR DISTANCE MUST BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS AREA, IT MUST BE OMITTED.

5.) ON TWO LANE STREETS, USE SPACING SHOWN FOR AN 11' (3.3mm) INSIDE LANE.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\19-01-00\CSAH 4 (TH47-TH65)\Base\Traffic\Signing & Striping Details.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: DOUGLAS W. FISCHER, P.E.

SIGNATURE:

DATE: 5/2/19 REG. NO. 20235

DRAWN BY TMV DATE 02/26/19

DESIGN BY DATE

CHECKED BY DATE

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO.

STATE AID PROJECT NO. 002-604-010

STATE AID PROJECT NO.

COUNTY PROJECT NO.

SIGNING & STRIPING DETAILS

Sheet 47 of 54 Sheets

APAnders

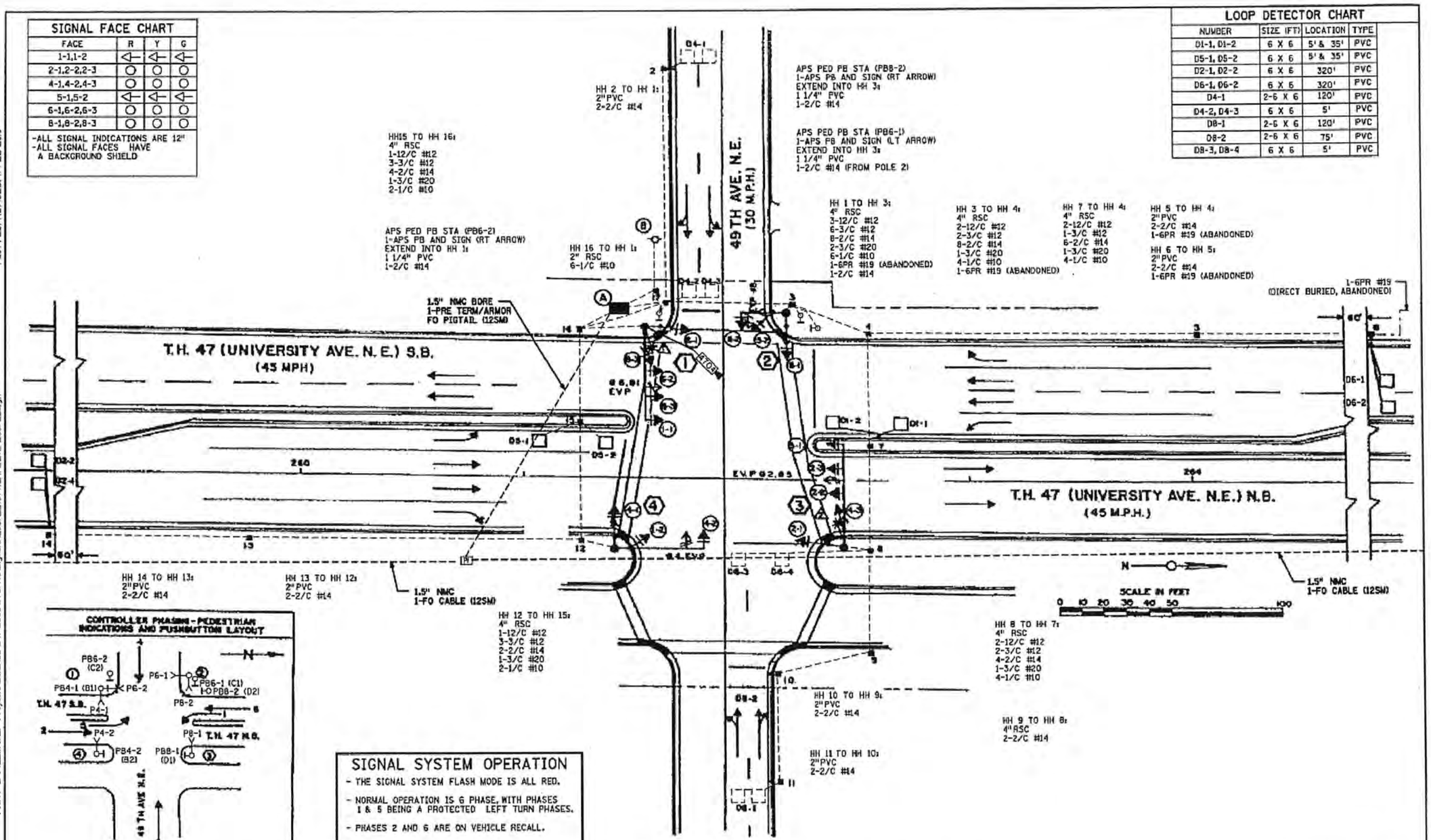
PLOTTED/REVISED: 11-FEB-2019

DISTRICT *: Metro
PLOT NAME: 20672B
PATH & FILENAME: Projects\CM_ROS\04P\00003Traffic\Signals\20672_49TH_AVE_NE\20672Bdgn

SIGNAL FACE CHART			
FACE	R	Y	G
1-1,1-2	◁	◁	◁
2-1,2-2,2-3	○	○	○
4-1,4-2,4-3	○	○	○
5-1,5-2	◁	◁	◁
6-1,6-2,6-3	○	○	○
8-1,8-2,8-3	○	○	○

-ALL SIGNAL INDICATIONS ARE 12"
-ALL SIGNAL FACES HAVE A BACKGROUND SHIELD

LOOP DETECTOR CHART			
NUMBER	SIZE (FT)	LOCATION	TYPE
D1-1, D1-2	6 X 6	5'& 35'	PVC
D5-1, D5-2	6 X 6	5'& 35'	PVC
D2-1, D2-2	6 X 6	320'	PVC
D6-1, D6-2	6 X 6	320'	PVC
D4-1	2-6 X 6	120'	PVC
D4-2, D4-3	6 X 6	5'	PVC
D8-1	2-6 X 6	120'	PVC
D8-2	2-6 X 6	75'	PVC
D8-3, D8-4	6 X 6	5'	PVC



CONTROLLER PHASING - PEDESTRIAN INDICATIONS AND PUSHBUTTON LAYOUT

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 6 PHASE, WITH PHASES 1 & 5 BEING A PROTECTED LEFT TURN PHASES.
- PHASES 2 AND 6 ARE ON VEHICLE RECALL.

BY	DATE	REVISIONS
JJT	11-20-18	AS-BUILT FOR SP 0205-101

SYSTEM ID: 1735315 T.E. 2656
METER ADDRESS: 4898 UNIVERSITY AVE. NE
OLD ID: 20672

INTERSECTION LAYOUT
T.H. 47 (UNIVERSITY AVE.) AT CSAH 4/CR 104
(49TH AVE. NE.)
COLUMBIA HEIGHTS, ANOKA COUNTY

S.A.P. NO. | DRAWN BY: | CKD BY: | DATE:
CERTIFIED BY _____ (LICENSED PROFESSIONAL ENGINEER) LIC. NO. _____ DATE: _____
STATE PROJ. NO. (T.H.47) SHEET NO. 1 OF 3 SHEETS

FOR REFERENCE PURPOSES ONLY

NO	DATE	BY	CKD	APPR	REVISION		
						04/30/2019	2:50:11 PM

NAME: P:\19-01-00\CSAH_04_(TH47-TH65)\Base\PROPOSED\PROPOSED.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: DOUGLAS W. FISCHER
SIGNATURE: _____
DATE: 5/2/19 LICENSE NO. 20235

DRAWN BY APA DATE 04/30/2019
DESIGN BY APA DATE 04/30/2019
CHECKED BY CO DATE 04/30/2019

ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-604-010

EXISTING SIGNAL PLANS

Sheet 48 of 54 Sheets

APAnders

PLOTTED/REVISED: 11-FEB-2019

DISTRICT = Metro
PLOT NAME: 206728
PATH & FILENAME: Projects\DNL_ROS\04P\00003\traffic\Signals\20672_49TH_AVE_NE\20672849sgn

(1) P100 POLE FOUNDATION
TYPE P100-A-45
1-X6-350/CAN 400 EXTENSION (MOUNTED AT 350 DEG)
(INCLUDES LIGHTNING ROD)
7/16" GROUND BRAID & GROUND ROD)
1-VIDEO CAMERA WITH MOUNT
3-ONE WAY SIGNALS (OVERHEAD)
MID ARM MOUNTER 12' & 24' FROM END
LUMINAIRE - 200 WATT HPS WITH PEC
ONE WAY EVP DETECTOR AND LIGHT (6&1)
2-TYPE 10B AT 0 AND 270 DEG
2-C.D. PED INDICATIONS
1-APS PB AND SIGN (LT ARROW) (PB4-1)
INTERNALLY LIT SIGN WITH PEC
EXTEND INTO HH 16
3" RSC
2-12/C #12
3-3/C #12
4-1/C #10
1-3/C #20
1-7/16" GROUND BRAID
TO GROUND ROD
1-COM CABLE (CAT 5E)

(2) P90 POLE FOUNDATION
TYPE P90-A-20
ONE WAY SIGNALS (OVERHEAD)
ONE WAY EVP DETECTOR AND LIGHT (8)
2-TYPE 10B AT 0° AND 270 DEG
2-C.D. PED INDICATIONS
INTERNALLY LIT SIGN WITH PEC
EXTEND INTO HH 3
3" RSC
1-12/C #12
4-3/C #12
2-1/C #10
1-3/C #20
1-2/C #14

(A) EQUIPMENT PAD
CONTROLLER AND CABINET
SERCIVE EQUIPMENT (PAD MOUNTED)
CABINET TO HH 1
4" RSC
3-12/C #12
7-3/C #12
11-2/C #14
1-3/C #20
1-6PR #19
1-2/C #14

CABINET TO HH 16
3-12/C #12
6-3/C #12
4-2/C #14
2-3/C #20
1-2/C #14
1-COM CABLE (CAT 5E)
STUB OUT 3" RSC NORTH
1-6PR #19 TO 53RD AVE NE (ABANDONED)
STUB OUT 3" RSC
1-6PR #19 TO 44TH AVE NE (ABANDONED)

CONTROLLER CABINET TO PULL VAULT
1-1.5" NMC (IN SPARE 3")
1-PRE TERMINATED ARMORED
FO PIGTAIL (12SM)

(4) P90 POLE FOUNDATION
TYPE P90-A-40
ONE WAY SIGNALS (OVERHEAD)
ONE WAY EVP DETECTOR AND LIGHT (4)
1-TYPE 10B AT 270 DEG
1-TYPE 10A AT 0 DEG
1-C.D. PED INDICATION
1-APS PB AND SIGN (RT ARROW) (PB4-2)
INTERNALLY LIT SIGN WITH PEC
EXTEND INTO HH 12
3" RSC
1-12/C #12
3-3/C #12
2-1/C #10
1-3/C #20

(3) A100 POLE FOUNDATION
TYPE A100-A-50-040-9 (DAVIT AT 350 DEG)
3-ONE WAY SIGNALS (OVERHEAD)
MID ARM MOUNTER 12' & 24' FROM END
LUMINAIRE - 200 WATT HPS WITH PEC
ONE WAY EVP DETECTOR AND LIGHT (2&5)
1-TYPE 10B AT 0 DEG
1-TYPE 10A AT 270 DEG
1-C.D. PED INDICATIONS
1-APS PB AND SIGN (LT ARROW) (PB8-1)
INTERNALLY LIT SIGN WITH PEC
EXTEND INTO HH 8
3" RSC
2-12/C #12
3-3/C #12
4-1/C #10
1-3/C #20

(B) WOOD POLE (XCEL ENERGY)
EXTEND INTO HH 17:
2"RSC
3-1/C #2
2" RISER AND WEATHERHEAD
3-1/C #2

METER TO HH 17
2" RSC
3-1/C #2

LOAD CENTER TO CABINET
1 1/4" RSC
2-1/C #6
1-1/C #6 BR. GR.

LOAD CENTER TO HH 1
1 1/4" RSC
12-1/C #10

FOR REFERENCE PURPOSES ONLY

BY	DATE	REVISIONS
JST	11-20-18	AS-BUILT FOR SP 0205-101

SYSTEM IO: 1735315 T.E. 2656
METER ADDRESS: 4898 UNIVERSITY AVE. NE
OLD ID: 20672

INTERSECTION NOTES
T.H. 47 (UNIVERSITY AVE.) AT CSAH 4/CR 104
(49TH AVE. NE.)
COLUMBIA HEIGHTS, ANOKA COUNTY

S.A.P. NO. | DRAWN BY: | CKD BY: | DATE:
CERTIFIED BY _____ LICENSED PROFESSIONAL ENGINEER LIC. NO. _____ DATE: _____
STATE PROJ.NO. (T.H.47) SHEET NO. 2 OF 3 SHEETS

NO	DATE	BY	CKD	APPR	REVISION		
						04/30/2019	2:50:21 PM

NAME: P:\19-01-00\CSAH_04_(TH47-TH65)\Base\PROPOSED\PROPOSED.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: DOUGLAS W. FISCHER
SIGNATURE:
DATE: LICENSE NO. 20235

DRAWN BY APA DATE 04/30/2019
DESIGN BY APA DATE 04/30/2019
CHECKED BY CO DATE 04/30/2019

ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-604-010

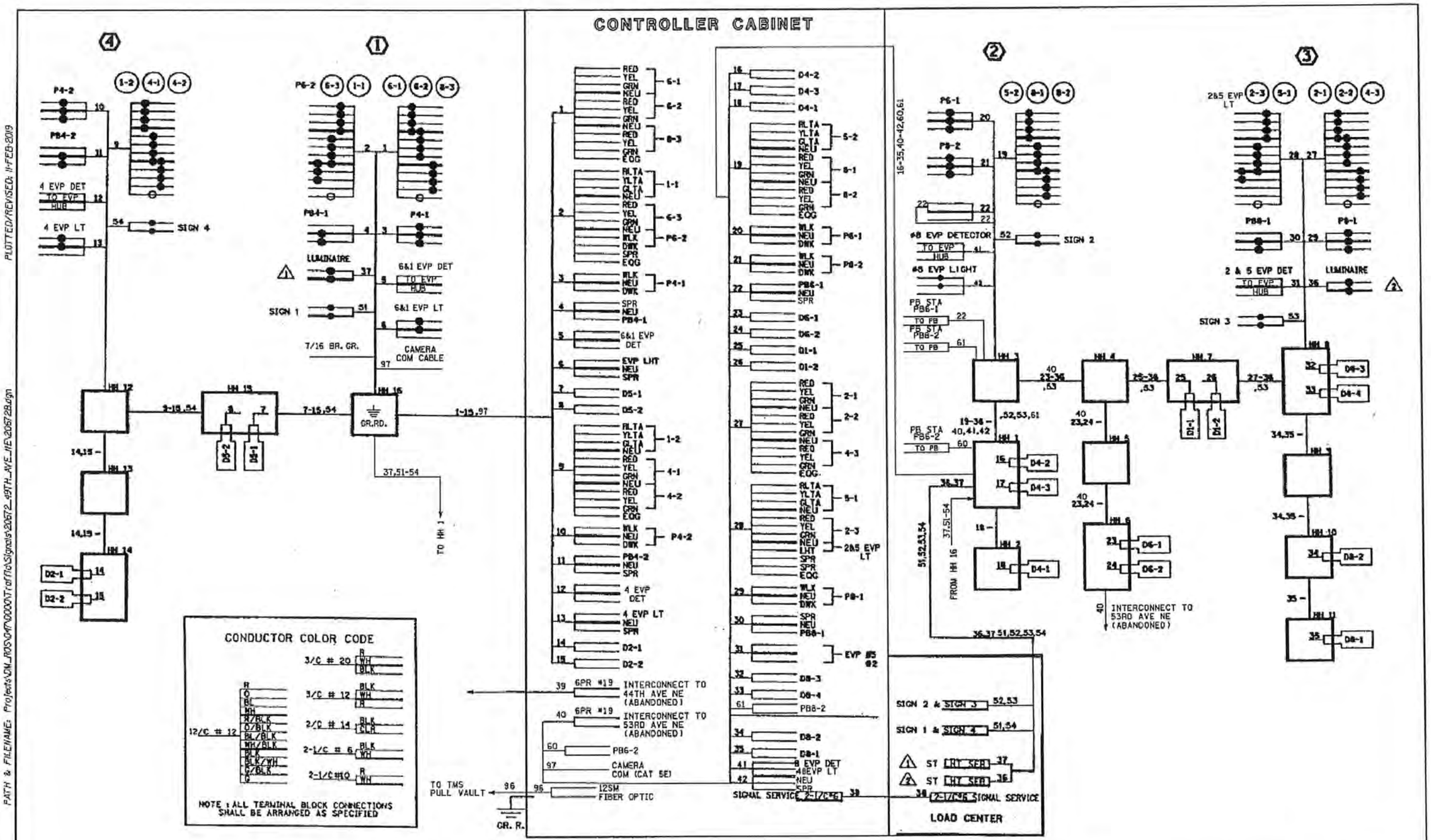
EXISTING SIGNAL PLANS

Sheet 49 of 54 Sheets

APAnders

PLOTTED/REVISED: 11-FEB-2019

DISTRICT #: Metro
PLOT NAME: 20672
PATH & FILENAME: Projects\DNL_ROSOM\00000Traffic\Signals\20672_49TH_AVE_NE\20672B.dgn



BY	DATE	REVISIONS
JST	11-20-18	AS-BUILT FOR SP 0205-101

SYSTEM ID: 1735315 T.E. 2656
METER ADDRESS: 4898 UNIVERSITY AVE. NE
OLD ID: 20672

FIELD WIRING DIAGRAM
T.H. 47 (UNIVERSITY AVE.) AT CSAH 4/CR 104
(49TH AVE. NE.)
COLUMBIA HEIGHTS, ANOKA COUNTY

S.A.P. NO. | DRAWN BY: | CKD BY: | DATE:
CERTIFIED BY _____ (LICENSED PROFESSIONAL ENGINEER) LIC. NO. _____ DATE: _____
STATE PROJ.NO. (T.H.47) SHEET NO. 3 OF 3 SHEETS

FOR REFERENCE PURPOSES ONLY

NO	DATE	BY	CKD	APPR	REVISION	
						04/30/2019 2:50:31 PM

NAME: P:\19-01-00\CSAH_04_(TH47-TH65)\Base\PROPOSED\PROPOSED.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: DOUGLAS W. FISCHER
SIGNATURE:
DATE: 5/2/19 LICENSE NO. 20235

DRAWN BY APA DATE 04/30/2019
DESIGN BY APA DATE 04/30/2019
CHECKED BY CO DATE 04/30/2019

ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-604-010

EXISTING SIGNAL PLANS

Sheet 50 of 54 Sheets

APAnders

PLOTTED/REVISED: $$$$DATE$$$$

DISTRICT #: $$DISTRICT$$$
PLOT NAME: $$PLOTSAVE$$$
PATH & FILENAME: $$$$PATHFILENAME$$$$

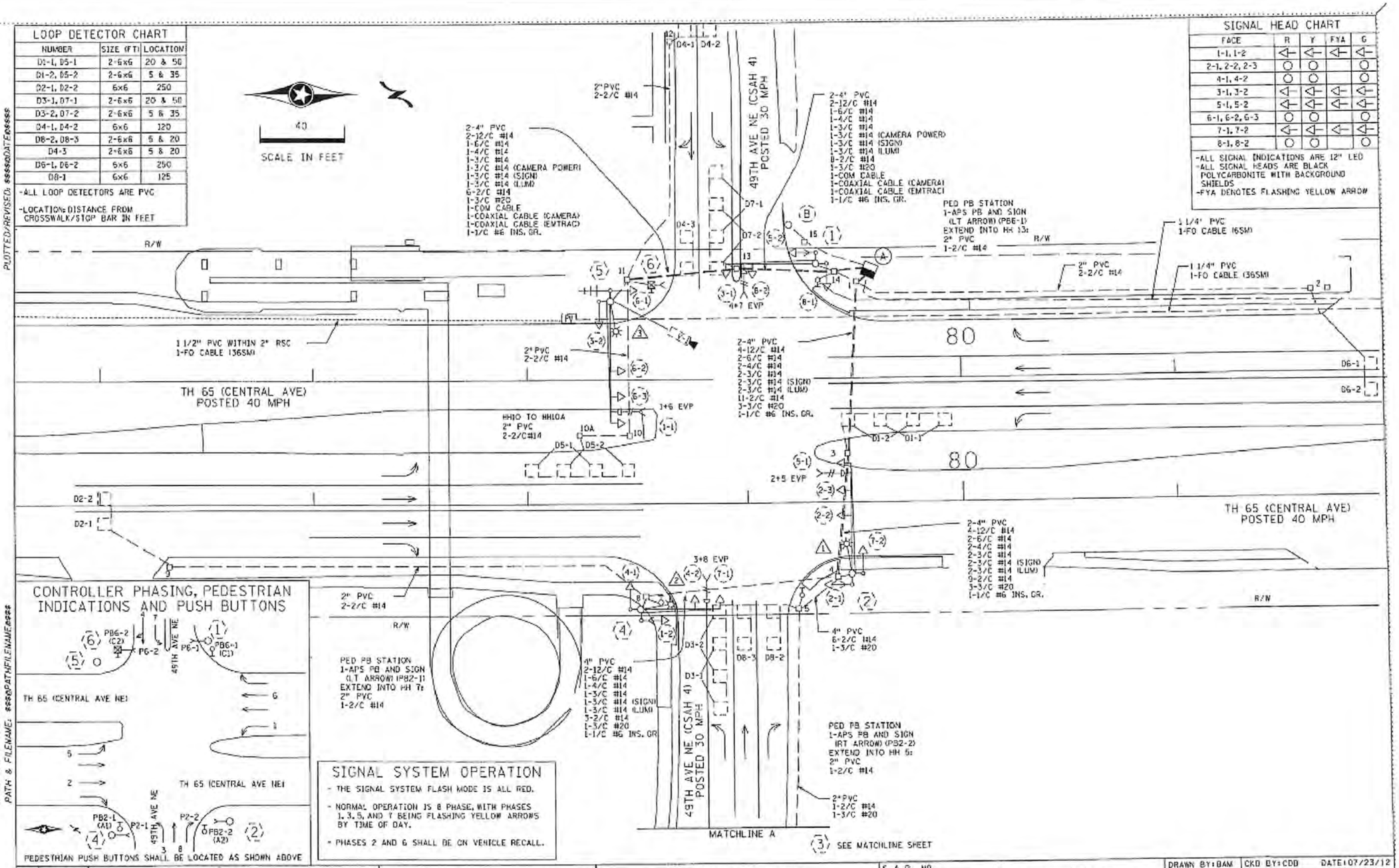
LOOP DETECTOR CHART		
NUMBER	SIZE (FT)	LOCATION
D1-1, D5-1	2-6x6	20 & 50
D1-2, D5-2	2-6x6	5 & 35
D2-1, D2-2	6x6	250
D3-1, D7-1	2-6x6	20 & 50
D3-2, D7-2	2-6x6	5 & 35
D4-1, D4-2	6x6	120
D8-2, D8-3	2-6x6	5 & 20
D4-3	2-6x6	5 & 20
D6-1, D6-2	6x6	250
D8-1	6x6	125

-ALL LOOP DETECTORS ARE PVC

-LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

SIGNAL HEAD CHART				
FACE	R	Y	FYA	G
1-1, 1-2	◁	◁	◁	◁
2-1, 2-2, 2-3	○	○		○
4-1, 4-2	○	○		○
3-1, 3-2	◁	◁	◁	◁
5-1, 5-2	◁	◁	◁	◁
6-1, 6-2, 6-3	○	○		○
7-1, 7-2	◁	◁	◁	◁
8-1, 8-2	○	○		○

-ALL SIGNAL INDICATIONS ARE 12" LED
-ALL SIGNAL HEADS ARE BLACK POLYCARBONITE WITH BACKGROUND SHIELDS
-FYA DENOTES FLASHING YELLOW ARROW



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASES 1, 3, 5, AND 7 BEING FLASHING YELLOW ARROWS BY TIME OF DAY.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

BY	DATE	REVISIONS
EJA	04-10-14	AS-BUILT OF SP 0207-96 SIGNAL REPLACEMENT

SYSTEM ID: 21153 T.E. 5640
METER ADDRESS: TH 65 AND 49TH SE QUAD
MASTER ID: T.E.

INTERSECTION LAYOUT
T.H. 65 (CENTRAL AVE NE) AT
49TH AVE NE (CSAH 4)
IN COLUMBIA HEIGHTS, ANOKA COUNTY

S.A.P. NO. | DRAWN BY: BAM | CKD BY: CDD | DATE: 07/23/12
CERTIFIED BY _____ (LICENSED PROFESSIONAL ENGINEER) LIC. NO. 19863 DATE: 08/02/12
STATE PROJ. NO. (T.H. 65) SHEET NO. 1 OF 4 SHEETS

FOR REFERENCE PURPOSES ONLY

NO	DATE	BY	CKD	APPR	REVISION		
						04/30/2019	12:29:26 PM

NAME: P:\19-01-00\CSAH_04_(TH47-TH65)\Base\PROPOSED\PROPOSED.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: DOUGLAS W. FISCHER
SIGNATURE:
DATE: 5/2/19 LICENSE NO. 20235

DRAWN BY APA DATE 04/30/2019
DESIGN BY APA DATE 04/30/2019
CHECKED BY CO DATE 04/30/2019

ANOKA COUNTY HIGHWAY DEPT.

STATE AID PROJECT 002-604-010

EXISTING SIGNAL PLANS

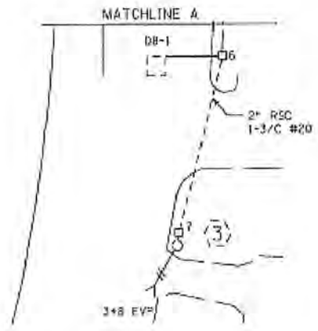
Sheet 51 of 54 Sheets

APAnders

PLOTTED/REVISED: $$$$DATE$$$$

DISTRICT #: $DISTRICT$$
PLOT NAME: $$PLOTNAME$$
PATH & FILENAME: $$$$PATH\FILENAME$$$$

MATCHLINE



POLE NOTES

(5)

PA100 POLE FOUNDATION
TYPE PA100-A-55-X6-350/CAM 100 (AT 350 DEG)
1-VIDEO CAMERA WITH MOUNT
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11' AND 23'
2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
1-ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASES 1+6)
LUMINAIRE-250W HPS
1-EMTRAC DETECTOR ANTENNA FOR METRO
TRANSIT BUS TRACKING (POLE MOUNTED)
1-R10-X12 SIGN ADJACENT TO HEAD (1-1)
1-INTERNALLY LIT LED SIGN (D-2)
3" PVC TO HH 11:
2-12/C #14
1-6/C #14
1-4/C #14
1-3/C #14 (CAMERA POWER)
1-3/C #14 (SIGN)
1-3/C #14 (LUM)
1-3/C #20
1-COM CABLE
1-COAXIAL CABLE (CAMERA)
1-COAXIAL CABLE (EMTRAC) (BACK TO THE SIGNAL CABINET)
1-7/16" GROUNDING BRAID (FROM LIGHTNING ROD TO GROUND ROD
1-1/C #6 INS. GR.

(6)

PEDESTAL FOUNDATION
TYPE 4A
9' PEDESTAL POLE AND BASE (8' POLE PLUS BASE)
1-C.D. PED HEAD
1-APS PB AND SIGN (R7 ARROW) (PB6-2)
3" PVC TO HH 11:
1-4/C #14
1-2/C #14
1-1/C #6 INS. GR.

(1)

PA90 POLE FOUNDATION
TYPE PA90-A-40
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
1-ANGLE MOUNT C.D. PED HEAD 180 DEG
1-ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASES 3+8)
1-R10-X12 SIGN ADJACENT TO HEAD (3-1)
1-INTERNALLY LIT LED SIGN (D-1) (SEE SIGN DETAILS)
3" PVC TO HH 14:
2-12/C #14
1-6/C #14
1-4/C #14
1-3/C #14
1-3/C #14 (SIGN)
1-3/C #20
1-1/C #6 INS. GR.

(A)

EQUIPMENT PAD
SERVICE CABINET (SSB)
SIGNAL CABINET AND CONTROLLER

2-4" PVC TO HH 14:	2-4" PVC TO HH 1:
4-12/C #14	4-12/C #14
2-6/C #14	2-6/C #14
2-4/C #14	2-4/C #14
2-3/C #14	2-3/C #14
1-3/C #14 (CAMERA POWER)	13-2/C #14
9-2/C #14	3-3/C #20
2-3/C #20	1-1/C #6 INS. GR.

1-COM CABLE
1-COAXIAL CABLE (CAMERA)
1-COAXIAL CABLE (EMTRAC)
1-1/C #6 INS. GR.

2-2" AND 1-3" PVC STUBBED OUT (CAPPED BOTH ENDS
3/4" PVC STUBBED OUT (FOR TELEPHONE LINE)
1-2" PVC

CONTROLLER CABINET TO SERVICE CABINET:
2" PVC
2-1/C #6
1-1/C #6 INS. GR.

CONTROLLER CABINET TO SERVICE CABINET (COMMS):
2" PVC
1-SPR #19

SERVICE CABINET TO POLE MOUNTED TRANSFORMER:
2" PVC
3-1/C #2

SERVICE CABINET TO HH 14:
2" PVC
3-3/C #14 (LUM)
4-3/C #14 (SIGN)

HH 14 TO HH 1:
2" PVC
2-3/C #14 (LUM)
2-3/C #14 (SIGN)

CONTROLLER CABINET TO TMS PULL VAULT:
1-1/4" PVC
1-FO PATCH/PIGTAIL (GSM)

(4)

PA100 POLE FOUNDATION
TYPE PA100-A-35-D40-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
1-ANGLE MOUNT C.D. PED HEAD AT 90
1-ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASES 4+7)
LUMINAIRE-250W HPS
1-R10-X12 SIGN ADJACENT TO HEAD (7-1)
1-INTERNALLY LIT LED SIGN (D-1) (SEE SIGN DETAILS)
3" PVC TO HH 8:
2-12/C #14
1-6/C #14
1-4/C #14
1-3/C #14
1-3/C #14 (SIGN)
1-3/C #14 (LUM)
1-3/C #20
1-1/C #6 INS. GR.

(3)

WOOD POLE
1-ONE WAY EVP DETECTOR (PHASE 3+8)
2" RSC HH 7:
1-3/C #20

(2)

PA100 POLE FOUNDATION
TYPE PA100-A-50-400-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11' AND 23'
2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
1-ANGLE MOUNT C.D. PED HEAD AT 180 DEG
1-ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASES 2+5)
LUMINAIRE-250W HPS
1-R10-X12 SIGN ADJACENT TO HEAD (5-1)
1-INTERNALLY LIT LED SIGN (D-2)
3" PVC TO HH 4:
2-12/C #14
1-6/C #14
1-4/C #14
1-3/C #14
1-3/C #14 (SIGN)
1-3/C #14 (LUM)
1-3/C #20
1-1/C #6 INS. GR.

(B)

INPLACE SDP
WOOD POLE
EXTEND INTO HH 15:
2" PVC AND WEATHERHEAD
WITH 3-1/C #2

BY	DATE	REVISIONS
EJA	04-10-14	AS-BUILT OF SP 002-07-96 SIGNAL REPLACEMENT

SYSTEM ID: 21153 T.E. 5640
METER ADDRESS: TH 65 AND 49TH SE QUAD
MASTER ID: N/A T.E.

MATCHLINE & POLE NOTES
T.H. 65 (CENTRAL AVE NE) AT
49TH AVE NE (CSAH 4)
IN COLUMBIA HEIGHTS, ANOKA COUNTY

S.A.P. NO. DRAWN BY: APAM CKD BY: CDD DATE: 07/23/12
CERTIFIED BY _____ (LICENSED PROFESSIONAL ENGINEER) LIC. NO. 19863 DATE: 08/02/12
STATE PROJ. NO. (T.H. 65) SHEET NO. 2 OF 4 SHEETS

FOR REFERENCE PURPOSES ONLY

NO	DATE	BY	CKD	APPR	REVISION		
						04/30/2019	12:29:36 PM

NAME: P:\19-01-00\CSAH_04_(TH47-TH65)\Base\PROPOSED\PROPOSED.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: DOUGLAS W. FISCHER
SIGNATURE:
DATE: 5/2/19 LICENSE NO. 20235

DRAWN BY APA DATE 04/30/2019
DESIGN BY APA DATE 04/30/2019
CHECKED BY CO DATE 04/30/2019

ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-604-010

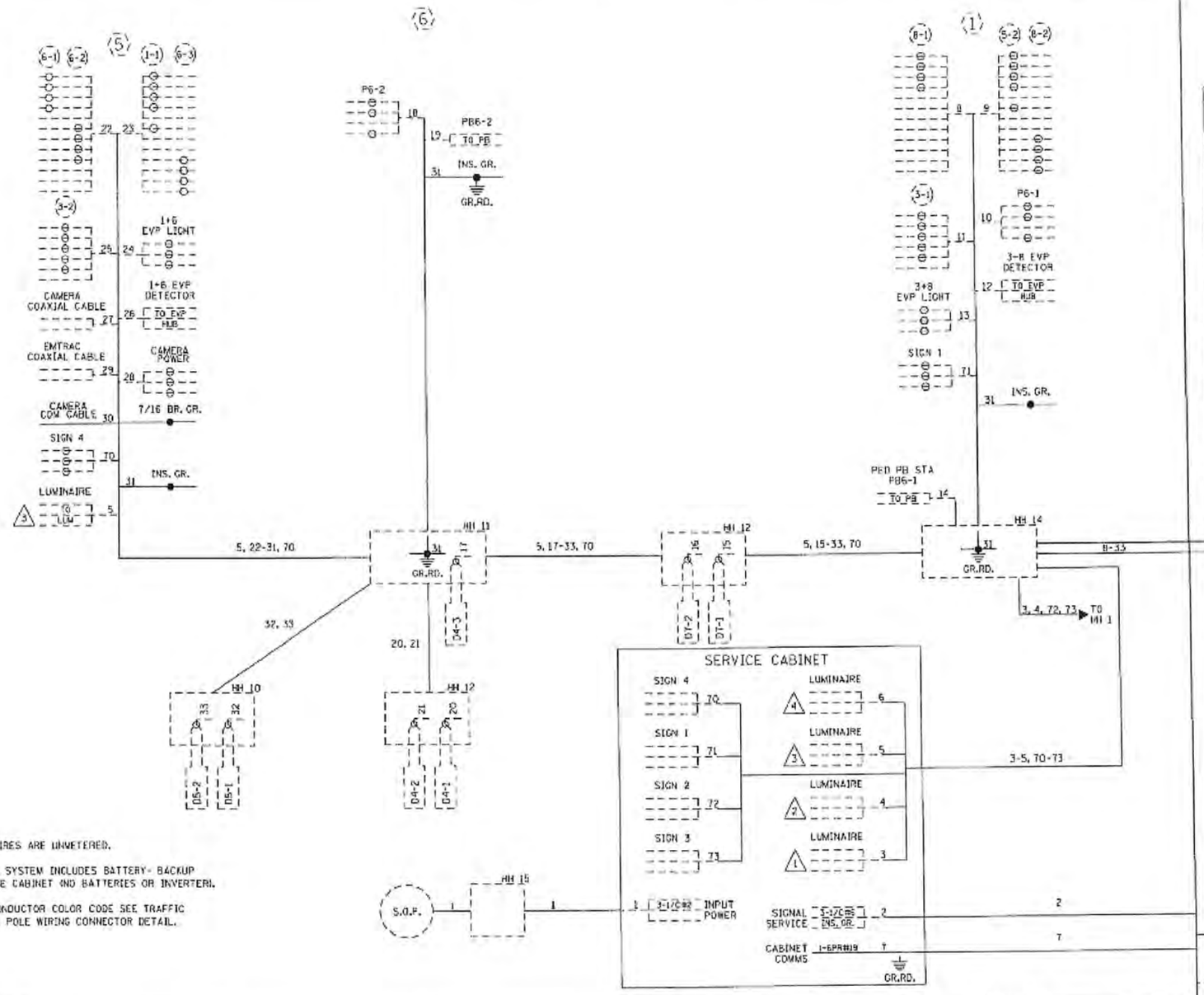
EXISTING SIGNAL PLANS

Sheet 52 of 54 Sheets

APAnders

PLOTTED/REVISED: $$$$DATE$$$$

DISTRICT #: $$DISTRICT$$
PLOT NAME: $$$PLOTNAME$$$
PATH & FILENAME: $$$$PATHFILENAME$$$$



NOTES:
1. LUMINAIRES ARE UNMETERED.
2. SIGNAL SYSTEM INCLUDES BATTERY- BACKUP SERVICE CABINET AND BATTERIES OR INVERTER).
3. FOR CONDUCTOR COLOR CODE SEE TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL.

BY	DATE	REVISIONS
EJA	04-10-14	AS-BUILT OF SP 0207-96 SIGNAL REPLACEMENT

SYSTEM ID: 21153 T.E. 5640
METER ADDRESS: TH 65 AND 49TH SE QUAD
MASTER ID: N/A T.E.

FIELD WIRING DIAGRAM (1 OF 2)
T.H. 65 (CENTRAL AVE NE) AT
49TH AVE NE (CSAH 4)
IN COLUMBIA HEIGHTS, ANOKA COUNTY

S.A.P. NO. DRAWN BY:BAM CKD BY:CDB DATE:07/23/12
CERTIFIED BY Michael P. Schmidt LICENSED PROFESSIONAL ENGINEER LIC. NO. 19863 DATE: 08/02/12
STATE PROJ.NO. (T.H.65) SHEET NO. 3 OF 4 SHEETS

FOR REFERENCE PURPOSES ONLY

NO	DATE	BY	CKD	APPR	REVISION		

NAME: P:\19-01-00\CSAH_04_(TH47-TH65)\Base\PROPOSED\PROPOSED.dgn 04/30/2019 12:29:46 PM

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: DOUGLAS W. FISCHER
SIGNATURE:
DATE: 5/2/19 LICENSE NO. 20235

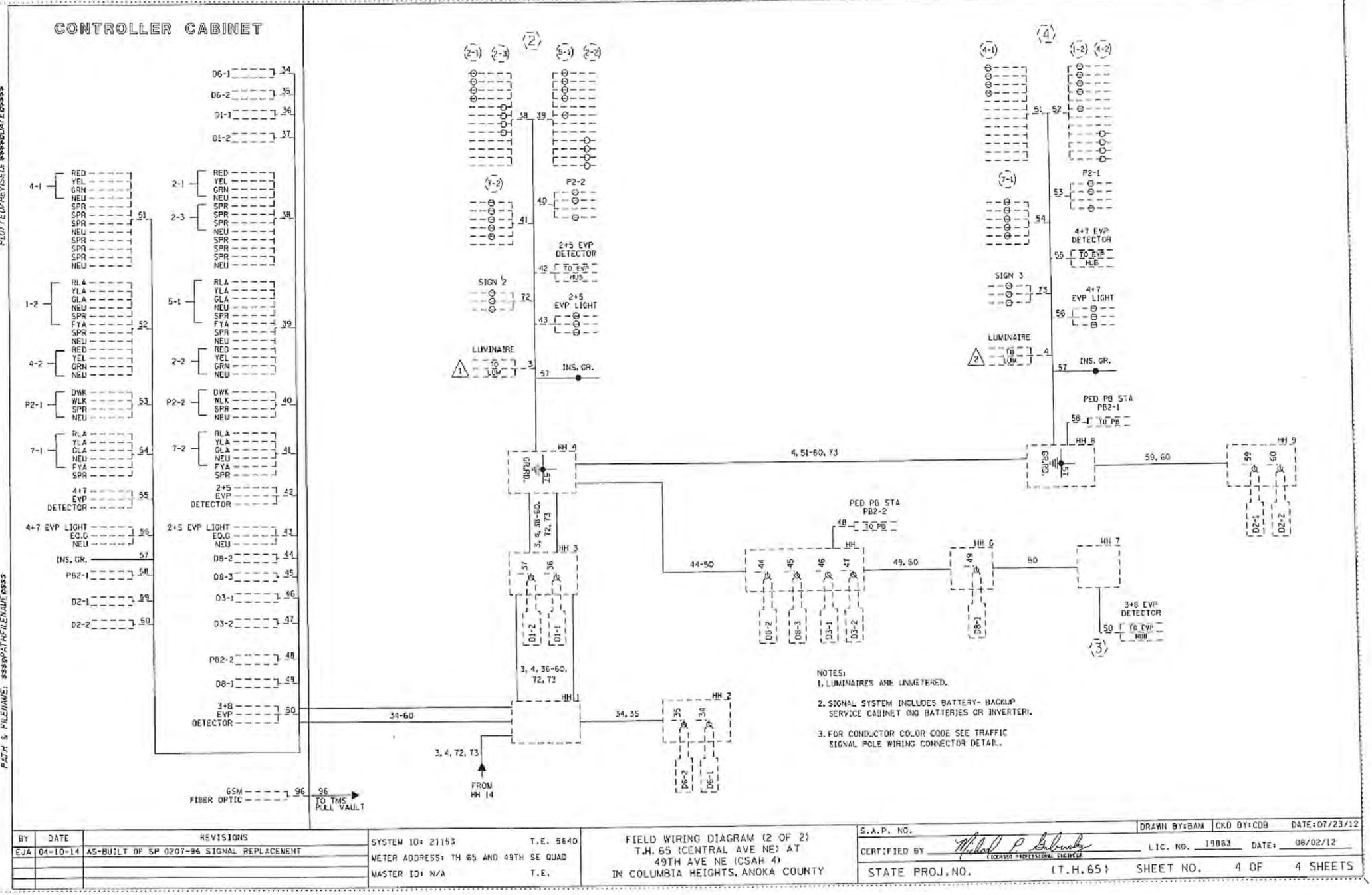
DRAWN BY APA DATE 04/30/2019
DESIGN BY APA DATE 04/30/2019
CHECKED BY CO DATE 04/30/2019

ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-604-010

EXISTING SIGNAL PLANS

Sheet 53 of 54 Sheets



BY	DATE	REVISIONS
EJA	04-10-14	AS-BUILT OF SP 0207-96 SIGNAL REPLACEMENT

SYSTEM ID: 21153 T.E. 5640
METER ADDRESS: TH 65 AND 49TH SE QUAD
MASTER ID: N/A T.E.

FIELD WIRING DIAGRAM (2 OF 2)
T.H. 65 (CENTRAL AVE NE) AT
49TH AVE NE (CSAH 4)
IN COLUMBIA HEIGHTS, ANOKA COUNTY

S.A.P. NO.
DRAWN BY: BAM | CKD BY: CDB | DATE: 07/23/12
CERTIFIED BY Michael P. Gibowski (LICENSED PROFESSIONAL ENGINEER) LIC. NO. 19863 DATE: 08/02/12
STATE PROJ. NO. (T.H. 65) SHEET NO. 4 OF 4 SHEETS

NO	DATE	BY	CKD	APPR	REVISION

04/30/2019 12:29:56 PM
NAME: P:\19-01-00\CSAH_04_(TH47-TH65)\Base\PROPOSED\PROPOSED.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: DOUGLAS W. FISCHER
SIGNATURE:
DATE: 5/2/19 LICENSE NO. 20235

DRAWN BY APA DATE 04/30/2019
DESIGN BY APA DATE 04/30/2019
CHECKED BY CO DATE 04/30/2019

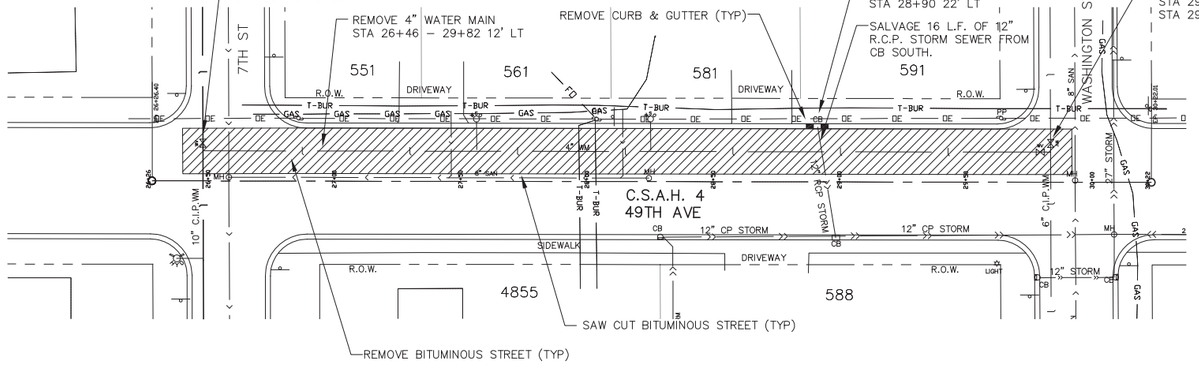
ANOKA COUNTY HIGHWAY DEPT.

STATE AID PROJECT 002-604-010

EXISTING SIGNAL PLANS

Sheet 54 of 54 Sheets

49TH AVENUE – EXISTING



CASTING AND STOP BOX ADJUSTMENTS

- CONTRACTOR SHALL ADJUST MANHOLE, CATCH BASIN AND VALVE CASTINGS PER SPECIFICATIONS PRIOR TO PAVING.
- CONTRACTOR SHALL ADJUST STOP BOX TO MATCH FINISH GRADE.
- ALL ADJUSTMENTS ARE CONSIDERED INCIDENTAL.

UTILITY LOCATIONS

- UTILITIES ARE SHOWN IN THE APPROXIMATE LOCATION. QUALITY LEVEL "D". CONTRACTOR SHALL FIELD VERIFY LOCATIONS PRIOR TO CONSTRUCTION.

WATER SERVICE PIPE

- THE CONTRACTOR SHALL FIELD VERIFY WATER PIPE TYPE AND SIZE DURING CONSTRUCTION.

CONSTRUCTION LIMITS

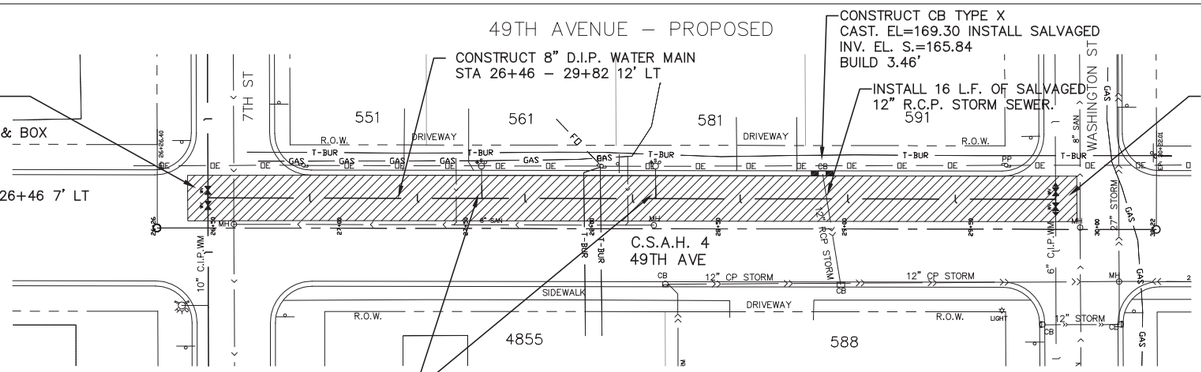
- THE CONSTRUCTION LIMITS ARE FROM THE NORTH RIGHT OF WAY TO THE STREET CENTERLINE AND AS MARKED IN THE FIELD.

49TH AVENUE – PROPOSED

INSTALL 10"X 8" TEE
STA 26+46 12' LT

INSTALL 10" GATE VALVE & BOX
STA 26+46 15' LT
STA 26+46 9' LT

INSTALL 10" SLEEVE STA 26+46 7' LT



INSTALL 8"X 8" TEE
STA 29+82 12' LT

INSTALL 8" GATE VALVE & BOX
INSTALL 8"X 6" REDUCER
STA 29+82 15' LT

INSTALL 8" GATE VALVE & BOX
INSTALL 8"X 6" REDUCER
STA 29+82 9' LT

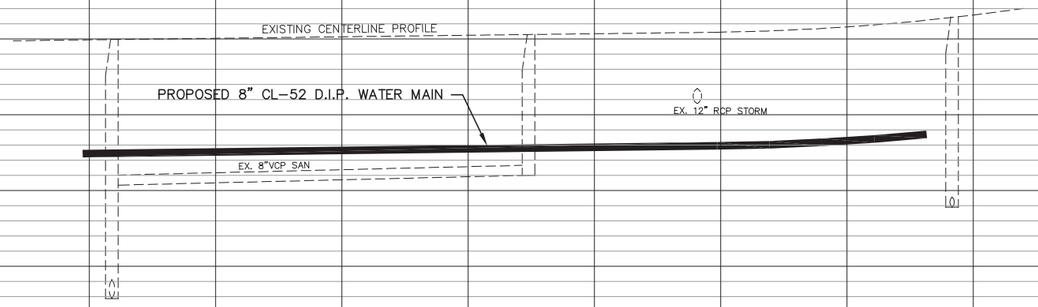
INSTALL 6" COUPLING
STA 29+82 7' LT
STA 29+82 17' LT

TEMPORARY WATER SERVICE

- CONTRACTOR SHALL PROVIDE TEMPORARY WATER SERVICE TO CUSTOMERS WHEN SERVICE IS INTERRUPTED FOR MORE THAN 8 HOURS.

TURF RESTORATION

- PLACE TOPSOIL AND SOD FROM CURB TO RIGHT OF WAY.



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.

Kathy Joan Young

Date 5/16/19 License No. 17212

DESIGNED BY :	RICH NORDSTROM
DRAWN BY :	RICH NORDSTROM
DATE :	MARCH 2019
REVISED :	MAY 16, 2019
CONSTRUCTED :	
ASBUILT :	

COLUMBIA HEIGHTS

SCALE
0 30 60
HORIZONTAL : 1" = 30'
VERTICAL : 1" = 5'
0 5

49TH AVENUE NE
7TH ST TO WASHINGTON ST
WATER MAIN CONSTRUCTION

PROJECT NO. 1903
1903_WM_49TH.dwg
SHEET 1 of 1