

WKE

WITH:

PROJECT ID:

1228-03-64

COUNTY:

OZAUKEE

JUNE 2017

ORDER OF SHEETS

Section No. 1	Title
Section No. 2	Typical Sections and Details
Section No. 3	Estimate of Quantities
Section No. 3	Miscellaneous Quantities
Section No. 4	Right of Way Plat
Section No. 5	Plan and Profile
Section No. 6	Standard Detail Drawings
Section No. 7	Sign Plates
Section No. 8	Structure Plans
Section No. 9	Computer Earthwork Data
Section No. 9	Cross Sections

TOTAL SHEETS = 22

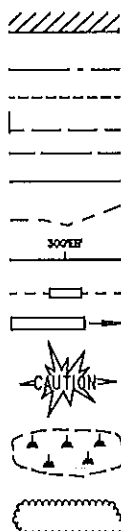


DESIGN DESIGNATION

A.A.D.T.	2014	=	55,800
A.A.D.T.	2034	=	75,140
D.H.V.	"	"	"
D.O.	"	"	"
T.	"	"	"
DESIGN SPEED	"	"	70 MPH
ESALS	"	"	"

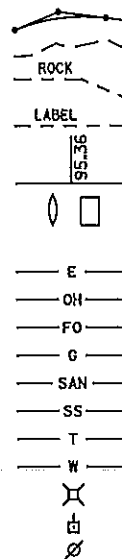
CONVENTIONAL SYMBOLS

PLAN
CORPORATE LIMITS
PROPERTY LINE
LOT LINE
LIMITED HIGHWAY EASEMENT
EXISTING RIGHT OF WAY
PROPOSED OR NEW R/W LINE
SLOPE INTERCEPT
REFERENCE LINE
EXISTING CULVERT
PROPOSED CULVERT (Box or Pipe)
COMBUSTIBLE FLUIDS
MARSH AREA
WOODED OR SHRUB AREA



PROFILE

GRADE LINE
ORIGINAL GROUND
MARSH OR ROCK PROFILE (To be noted as such)
SPECIAL DITCH
GRADE ELEVATION
CULVERT (Profile View)
UTILITIES
ELECTRIC
OVERHEAD UTILITY
FIBER OPTIC
GAS
SANITARY SEWER
STORM SEWER
TELEPHONE
WATER
UTILITY PEDESTAL
POWER POLE
TELEPHONE POLE



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
ROADWAY MAINTENANCE PROJECT
NORTH - SOUTH FREEWAY

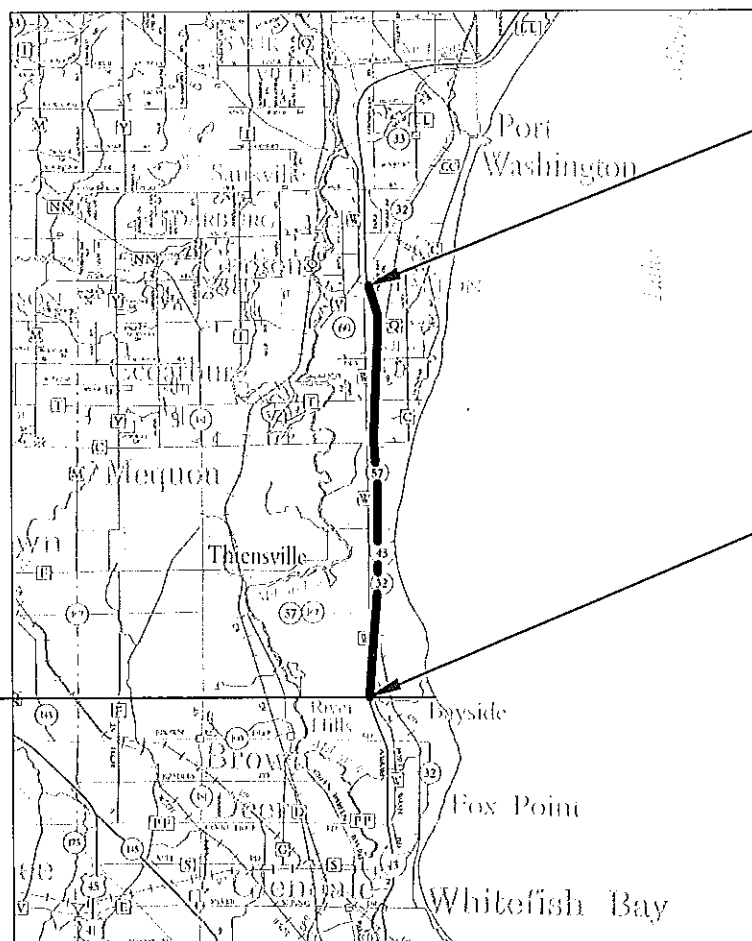
OZAUKEE COUNTY LINE TO STH 32

IH 43

OZAUKEE COUNTY

STATE PROJECT NUMBER

1228-03-64



END PROJECT

BEGIN PROJECT
MILWAUKEE/OZAUKEE COUNTY LINE
X = 602038
Y = 355531

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	WISDOT
Designer	EVAN LIMBERATOS
Project Manager	EVAN LIMBERATOS
Regional Examiner	
Regional Supervisor	JOE GALLAMORE

APPROVED FOR THE DEPARTMENT
DATE: 2/1/17
(Signature)

E

STANDARD ABBREVIATIONS

BM	BENCH MARK
C/L	CENTER OR CONSTRUCTION LINE
D	LANE DISTRIBUTION
DHV	DESIGN HOURLY VOLUME
DIM	DIMENSION
EB	EASTBOUND
HMA	HOT MIX ASPHALT
LT	LEFT
MAX	MAXIMUM
MIN	MINIMUM
NB	NORTHBOUND
NORM	NORMAL
PAVT	PAVEMENT
R/L	REFERENCE LINE
RT	RIGHT
SB	SOUTHBOUND
SDD	STANDARD DETAIL DRAWING
SF	SQUARE FOOT
STA	STATION
SY	SQUARE YARD
TYP	TYPICAL
WB	WESTBOUND
V	DESIGN SPEED

ORDER OF SECTION 2 SHEETS

- GENERAL NOTES
- PROJECT OVERVIEW
- TYPICAL SECTION
- CONSTRUCTION DETAILS
- TRAFFIC CONTROL OVERVIEW

GENERAL NOTES

NO UTILITY FACILITIES ARE EXPECTED TO BE IMPACTED WITHIN THE PROJECT LIMITS. CONTRACTOR SHOULD CONFIRM THIS.

NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY LOCAL MUNICIPAL UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

EXISTING EDGELINE PAVEMENT MARKINGS WILL BE REFRESHED WITH STANDARD EPOXY PAVEMENT MARKINGS WITHIN THE PROJECT LIMITS.

ROUTE AND SEAL AND CRACK SEALING LOCATIONS ARE APPROXIMATE AND WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

ROUTE AND SEAL AND CRACK SEALING AREA INCLUDES MAINLINE TRAVEL LANES, TURN LANES, AUXILLARY LANES AND TAPER SECTIONS AND RAMPS.

AVOID ROUTE AND SEALING AROUND PAVEMENT SENSORS FOR THE WEATHER STATION LOCATED ON THE SOUTH SIDE OF THE SOUTHBOUND BRIDGE OVER LAKEFIELD RD.

TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

DURING THE ROUTE AND SEAL, CRACK SEALING AND CLEANING OPERATIONS, COVER INLETS WITHIN 10 FEET OF THE WORKING AREA WITH PLYWOOD OR STEEL PLATE. COVERING AND UNCOVERING INLETS IS INCEDENTAL TO THE CONTRACTOR.

DURING LANE CLOSURE AND PRIOR TO OPENING ROADWAY TO TRAFFIC, VACCUM ROADWAY OF ANY DEBRIS GENERATED BY THE ROUTE AND SEAL OPERATION.

ALL LANE AND RAMP CLOSURES TO PERFORM CONTRACT WORK SHALL BE INCIDENTAL TO ITEM 643.0100.0001 TRAFFIC CONTROL.

DO NOT PERFORM WORK BEFORE AUGUST 31, 2017.

CONTACTS

WISDOT MAINTAINENCE

NICK MARTIN
MAINTAINENCE PROGRAM ENGINEER
WISDOT SE REGION
141 NW BARSTOW ST.
WAUKESHA, WI 53187
PHONE: (414) 750-0626

WISDOT MAINTAINENCE-OZAUKEE COUNTY

JIM WEIGLEIN
AREA MAINTAINENCE COORDINATOR
WISDOT SE REGION
141 NW BARSTOW ST.
WAUKESHA, WI 53187
PHONE: (414) 750-1406

OZAUKEE COUNTY SHERIFF

JAMES JOHNSON
1201 SOUTH SPRING STREET
PORT WASHINGTON, WI 53074
PHONE: (262) 284-8436

WISDOT REGION CONTACT

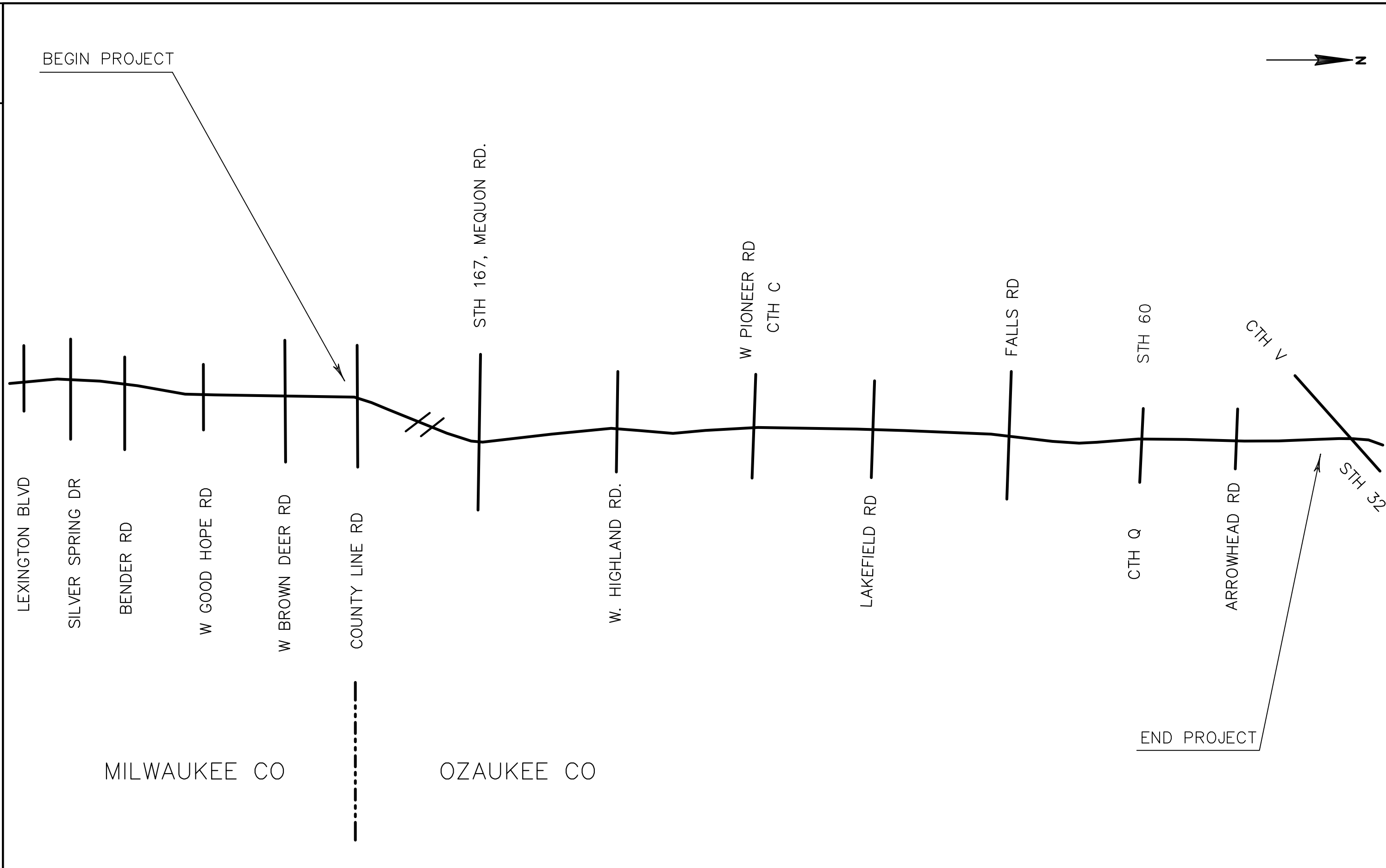
EVAN LIMBERATOS
WISDOT PROJECT MANAGER
141 NW BARSTOW ST.
WAUKESHA, WI 53187
PHONE: (262) 548-8797
EVAN.LIMBERATOS@DOT.WI.GOV

WISDNR CONTACT

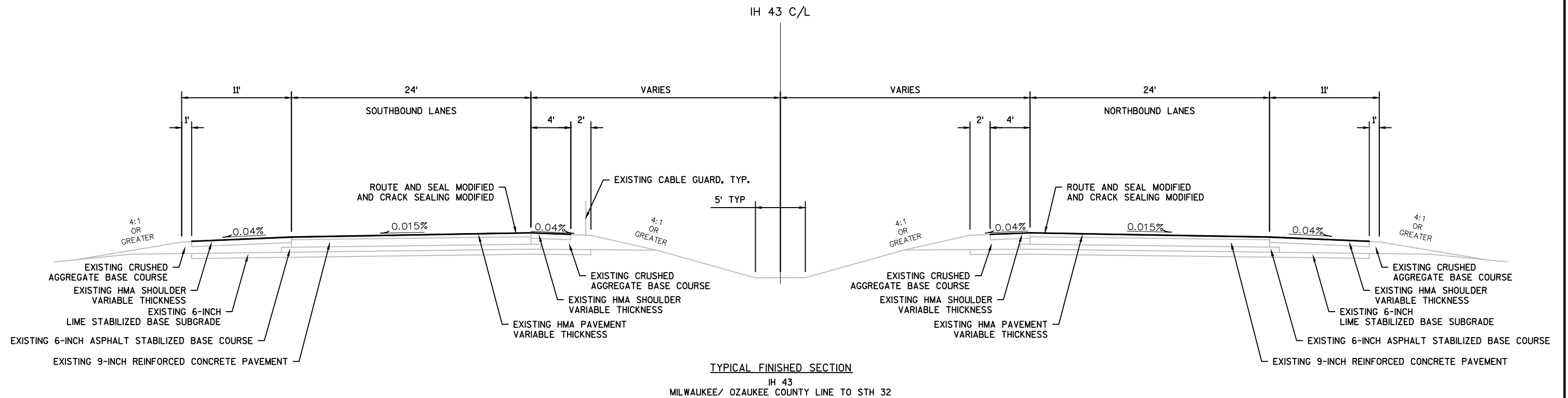
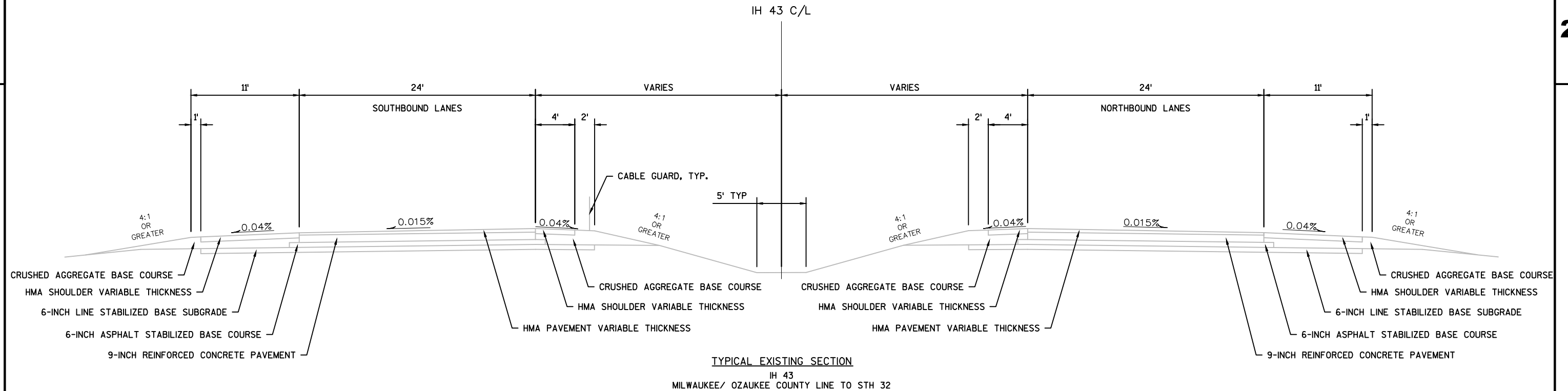
KRISTINA BETZOLD
WDNR – SE REGION
2300 N DR. MARTIN LUTHER KING JR. DR.
MILWAUKEE, WI 53212
PHONE: (414) 263-8517
KRISTINA.BETZHOLD@WISCONSIN.GOV

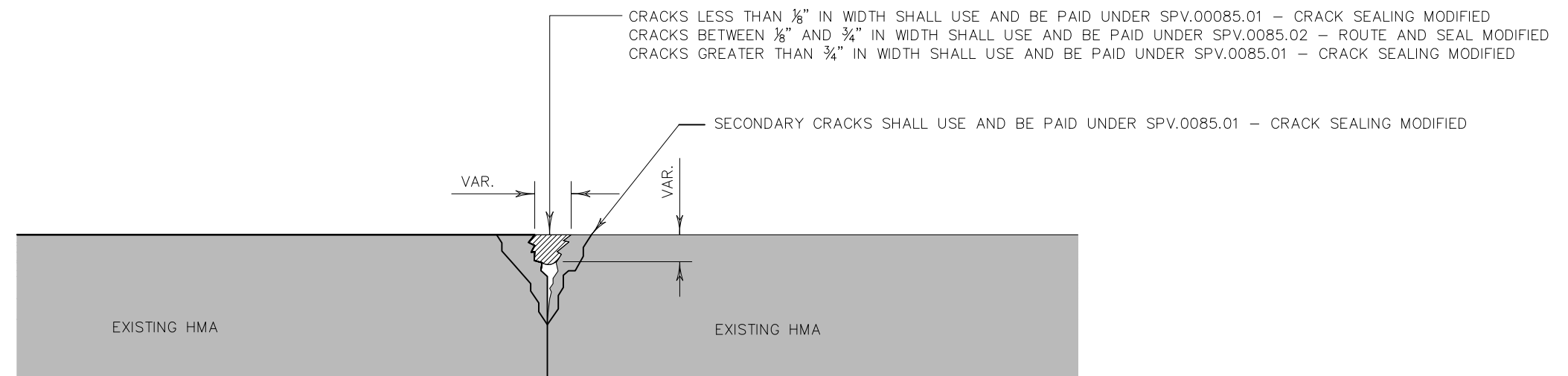


Dial 811 or (800) 242-8511
www.DiggersHotline.com



PROJECT NO:1228-03-64	HWY:IH 43	COUNTY:OZAUKEE	PROJECT OVERVIEW	SHEET	E
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LONGITUDINAL AND / OR TRANSVERSE
ROUTE AND SEAL AND CRACK SEALING – DETAIL

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA

POSTED SPEED	X
50 MPH	200'
55 MPH	250'
60 MPH	300'
65 MPH	350'
70 MPH	400'

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIRABLE) DISTANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

"W0" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

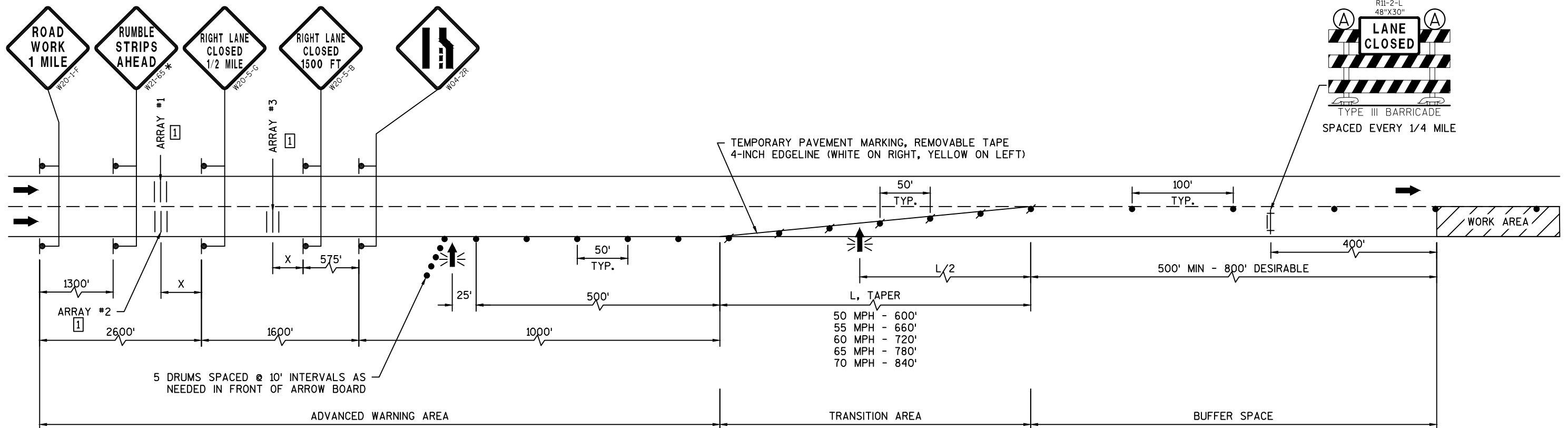
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

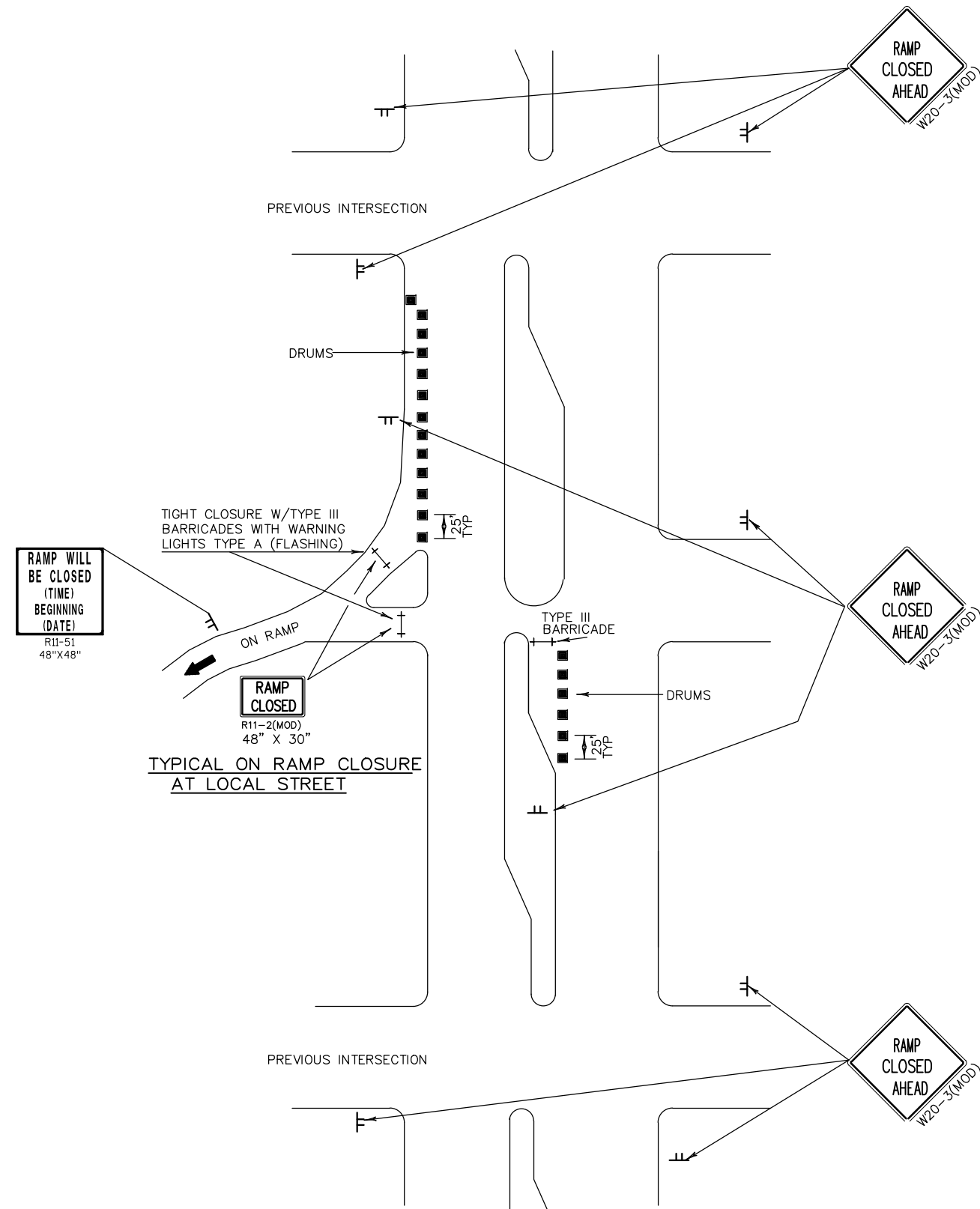
- 1 EACH RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURE'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURE'S RECOMMENDATIONS.

- * IF TRAFFIC IS OBSERVED TO BE QUEUING OR IS EXPECTED TO QUEUE BEYOND RUMBLE ARRAY "1" AND "2" THE W21-65 SIGN AND RUMBLE STRIP ARRAY "1" AND "2" MAY BE RELOCATED UPSTREAM OF THE W20-1F SIGN AS NECESSARY TO PROVIDE NEEDED WARNING.



TRAFFIC CONTROL - SINGLE LANE CLOSURE



TRAFFIC CONTROL NOTES

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

LEGEND

- DRUM WITH WARNING LIGHT, TYPE C
- DRUM
- ⊥ SIGN ON TEMPORARY SUPPORT FOR SHORT TERM 3 DAYS OR LESS
- ⊥ TYPE III BARRICADE
- ⊗ WARNING LIGHT, TYPE A (FLASHING)

TRAFFIC CONTROL FOR ON-RAMP CLOSURE (SHORT TERM ONLY)

2

BROWN DEER RD
(STH 100)

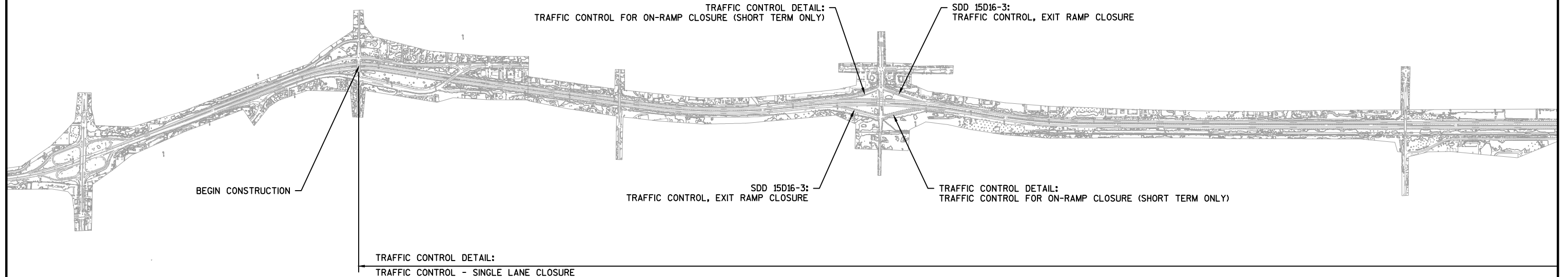
COUNTY LINE RD

DONGES BAY RD

MEQUON RD
(STH 57)

HIGHLAND RD

2



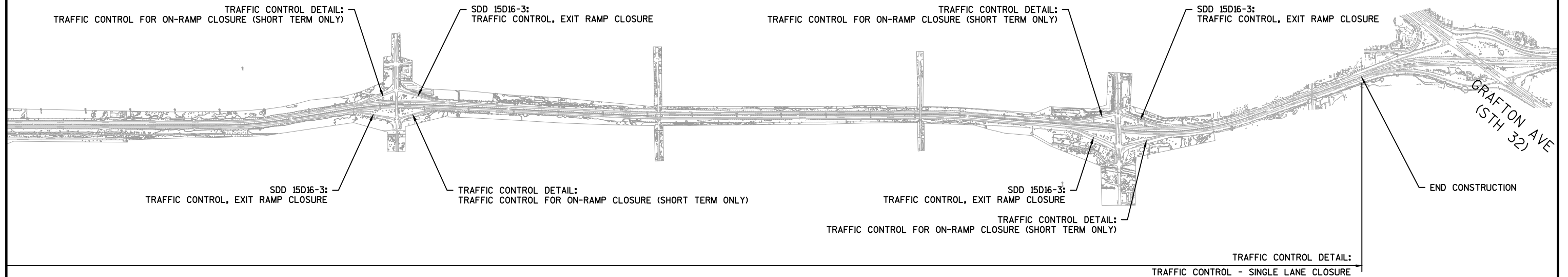
PIONEER RD
(CTH C)

LAKEFIELD RD

FALLS RD

WASHINGTON ST
(STH 60)

GRAFTON AVE
(CTH V)



PROJECT NO:1228-03-64

HWY:IH 43

COUNTY:OZAUKEE

TRAFFIC CONTROL - OVERVIEW

SHEET

E

Estimate Of Quantities

1228-03-64					
Line	Item	Item Description	Unit	Total	Qty
0010	213.0100	Finishing Roadway (project) 01. 1228-03-64	EACH	1.000	1.000
0020	619.1000	Mobilization	EACH	1.000	1.000
0030	624.0100	Water	MGAL	10.000	10.000
0040	643.0100	Traffic Control (project) 01. 1228-03-64	EACH	1.000	1.000
0050	643.0300	Traffic Control Drums	DAY	4,680.000	4,680.000
0060	643.0310.S	Temporary Portable Rumble Strips	LS	1.000	1.000
0070	643.0420	Traffic Control Barricades Type III	DAY	408.000	408.000
0080	643.0705	Traffic Control Warning Lights Type A	DAY	816.000	816.000
0090	643.0715	Traffic Control Warning Lights Type C	DAY	510.000	510.000
0100	643.0800	Traffic Control Arrow Boards	DAY	60.000	60.000
0110	643.0900	Traffic Control Signs	DAY	804.000	804.000
0120	643.1000	Traffic Control Signs Fixed Message	SF	192.000	192.000
0130	643.1050	Traffic Control Signs PCMS	DAY	96.000	96.000
0140	643.1055.S	Truck or Trailer Mounted Attenuator	DAY	30.000	30.000
0150	646.0106	Pavement Marking Epoxy 4-Inch	LF	254,495.000	254,495.000
0160	646.0126	Pavement Marking Epoxy 8-Inch	LF	11,665.000	11,665.000
0170	649.0400	Temporary Pavement Marking Removable Tape 4-Inch	LF	2,500.000	2,500.000
0180	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	400.000	400.000
0190	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	400.000	400.000
0200	SPV.0075	Special 01. Roadway Sweeping	HRS	60.000	60.000
0210	SPV.0085	Special 01. Crack Sealing Modified	LB	13,900.000	13,900.000
0220	SPV.0085	Special 02. Route and Seal Modified	LB	138,948.000	138,948.000

FINISHING ROADWAY (PROJECT)

213. 0100. 0001 FINISHING ROADWAY		
CATEGORY	PROJECT	EACH
0010		
	1228- 03- 64	1
TOTAL:		1

TRAFFIC CONTROL (PROJECT)

643. 0100. 0001 TRAFFIC CONTROL		
CATEGORY	PROJECT	EACH
0010		
	1228- 03- 64	1
TOTAL:		1

MOBILIZATION

619. 1000 MOBILIZATION		
CATEGORY	PROJECT	EACH
0010		
	1228- 03- 64	1
TOTAL:		1

CRACK SEALING

				624. 0100	SPV. 0075. 01	SPV. 0085. 01	SPV. 0085. 02			
				NUMBER OF LANES	LENGTH	WATER	ROADWAY SWEEPING	CRACK SEALING	ROUTE AND SEAL	
CATEGORY	LOCATION	STATION	TO	STATION	LF	MGAL	HRS	MODIFIED	MODIFIED	
0010										
	IH 43 NB	COUNTY LINE RD	-	950FT NORTH OF ARROWHEAD RD	2	51911	--	--	5, 899	58, 990
	IH 43 NB OFF RAMP	IH 43 NB	-	MEQUON RD	--	950	--	--	108	1, 080
	IH 43 NB ON RAMP	MEQUON RD	-	IH 43 NB	--	1300	--	--	74	739
	IH 43 NB OFF RAMP	IH 43 NB	-	PIONEER RD	--	1000	--	--	57	569
	IH 43 NB ON RAMP	PIONEER RD	-	IH 43 NB	--	1320	--	--	75	750
	IH 43 NB OFF RAMP	IH 43 NB	-	STH 60	--	1020	--	--	83	819
	IH 43 NB ON RAMP	STH 60	-	IH 43 NB	--	1400	--	--	80	796
	IH 43 SB	COUNTY LINE RD	-	950FT NORTH OF ARROWHEAD RD	2	51911	--	--	5, 899	58, 990
	IH 43 SB OFF RAMP	IH 43 SB	-	MEQUON RD	--	950	--	--	54	540
	IH 43 SB ON RAMP	IH 43 SB	-	PIONEER RD	--	1250	--	--	72	711
	IH 43 SB OFF RAMP	PIONEER RD	-	IH 43 SB	--	1000	--	--	57	569
	IH 43 SB ON RAMP	IH 43 SB	-	STH 60	--	1250	--	--	115	1, 138
	IH 43 SB OFF RAMP	STH 60	-	IH 43 SB	--	1100	--	--	63	625
UNDISTRIBUTED						10	60	1, 264	12, 632	
TOTAL:						10	60	13, 900	138, 948	

3

3

TRAFFIC CONTROL ITEMS

CATEGORY	LOCATION	643. 0300		643. 0310. S		643. 0420		643. 0705		643. 0715		643. 0800		643. 0900		643. 1000		643. 1050		643. 1055. S	
		NUMBER OF CLOSURES	TRAFFIC CONTROL DRUMS	TRAFFIC CONTROL PORTABLE STRIPS	RUMBLE STRIPS	TRAFFIC CONTROL BARRICADES III	TYPE	WARNING LIGHTS TYPE A	WARNING LIGHTS TYPE C	TRAFFIC CONTROL ARROW BOARDS	TRAFFIC CONTROL SIGNS	TRAFFIC CONTROL FIXED MESSAGE	TRAFFIC CONTROL SIGNS PCMS	TRUCK OR TRAILER MOUNTED ATTENUATOR							
EACH	**EACH**	DAY	LS	**EACH**	DAY	**EACH**	DAY	**EACH**	DAY	**EACH**	DAY	**EACH**	DAY	SF	**EACH**	DAY	**EACH**	DAY			
0010																					
	IH 43 NB OUTSIDE LANE	8	150	1200	--	11	88	22	176	17	136	2	16	23	184	--	1	16	1	8	
	IH 43 NB INSIDE LANE	5	150	750	--	11	55	22	110	17	85	2	10	23	115	--	1	10	1	5	
	IH 43 SB INSIDE LANE	5	150	750	--	11	55	22	110	17	85	2	10	23	115	--	1	10	1	5	
	IH 43 SB OUTSIDE LANE	8	150	1200	--	11	88	22	176	17	136	2	16	23	184	--	1	16	1	8	
	IH 43 OFF RAMPS	6	--	--	--	4	24	8	48	--	--	--	--	7	42	96	1	18	--	--	
	IH 43 ON RAMPS	6	30	180	--	9	54	18	108	--	--	--	--	12	72	96	1	18	--	--	
	UNDISTIBUTED	4	150	600	--	11	44	22	88	17	68	2	8	23	92	--	1	8	1	4	
TOTAL:				4680	1			408	816			510	60			804	192			96	30
FOR INFORMATION ONLY																					

PAVEMENT MARKING ITEMS

CATEGORY	LOCATION	STATION	TO	STATION	646. 0106			646. 0126		649. 0400	
					PAVEMENT MARKING	EPOXY		PAVEMENT MARKING	EPOXY	REMOVABLE TAPE	
					4- INCH	8- INCH	4- INCH				
					LF	LF	LF				
0010					<u>WHITE</u>	<u>WHITE</u>	<u>YELLOW</u>	<u>WHITE</u>			
					SOLID	DASHED	SOLID	SOLID			
	IH 43 NB	COUNTY LINE RD	-	950FT NORTH OF ARROWHEAD RD	51911	12978	51911	--		--	
	IH 43 NB OFF RAMP	IH 43 NB	-	MEQUON RD	950	125	700	560		--	
	IH 43 NB ON RAMP	MEQUON RD	-	IH 43 NB	1300	--	665	1160		--	
	IH 43 NB OFF RAMP	IH 43 NB	-	PIONEER RD	1000	--	750	605		--	
	IH 43 NB ON RAMP	PIONEER RD	-	IH 43 NB	1320	--	715	1190		--	
	IH 43 NB OFF RAMP	IH 43 NB	-	STH 60	1020	--	785	1395		--	
	IH 43 NB ON RAMP	STH 60	-	IH 43 NB	1400	50	815	1075		--	
	IH 43 SB	COUNTY LINE RD	-	950FT NORTH OF ARROWHEAD RD	51911	12978	51911	--		--	
	IH 43 SB ON RAMP	MEQUON RD	-	IH 43 SB	--	--	--	875		--	
	IH 43 SB OFF RAMP	IH 43 SB	-	MEQUON RD	950	--	710	455		--	
	IH 43 SB ON RAMP	IH 43 SB	-	PIONEER RD	1250	--	665	1075		--	
	IH 43 SB OFF RAMP	PIONEER RD	-	IH 43 SB	1000	--	735	645		--	
	IH 43 SB ON RAMP	IH 43 SB	-	STH 60	1250	100	620	1595		--	
	IH 43 SB OFF RAMP	STH 60	-	IH 43 SB	1100	50	870	1035		--	
	UNDISTRIBUTED				--	--	--	--		2500	
TOTAL:					116362	26281	111852	11665		2500	
					254495						

PROJECT NO: 1228-03-64

HWY: IH 43

COUNTY: OZAUKEE

MISCELLANEOUS QUANTITIES

SHEET:

E

FILE NAME

PLOT DATE :

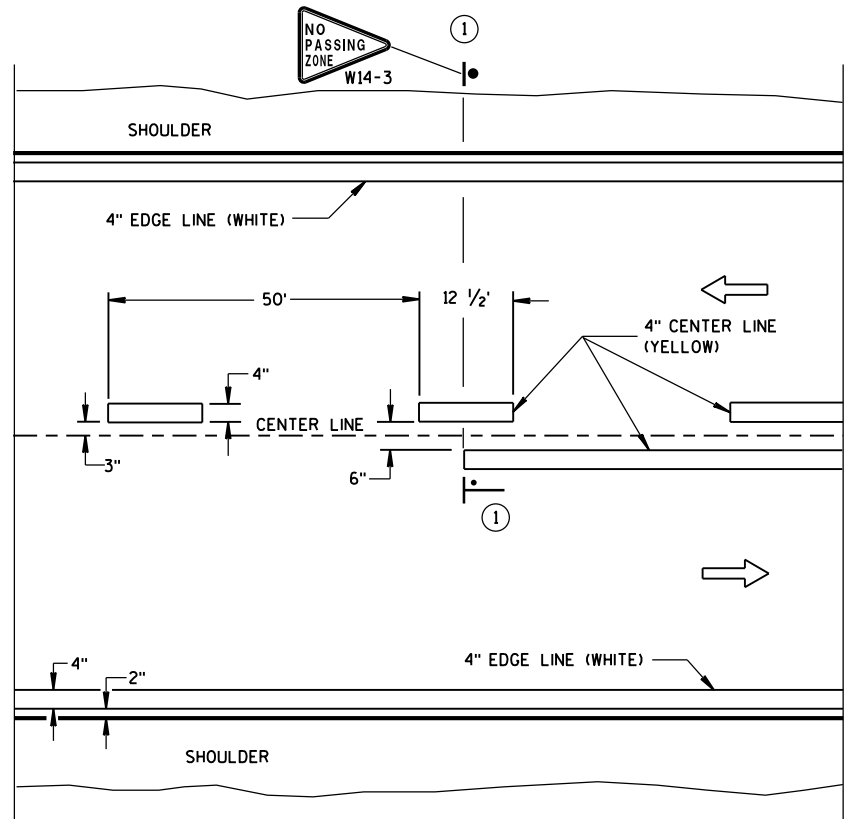
PLOT BY :

PLOT NAME :

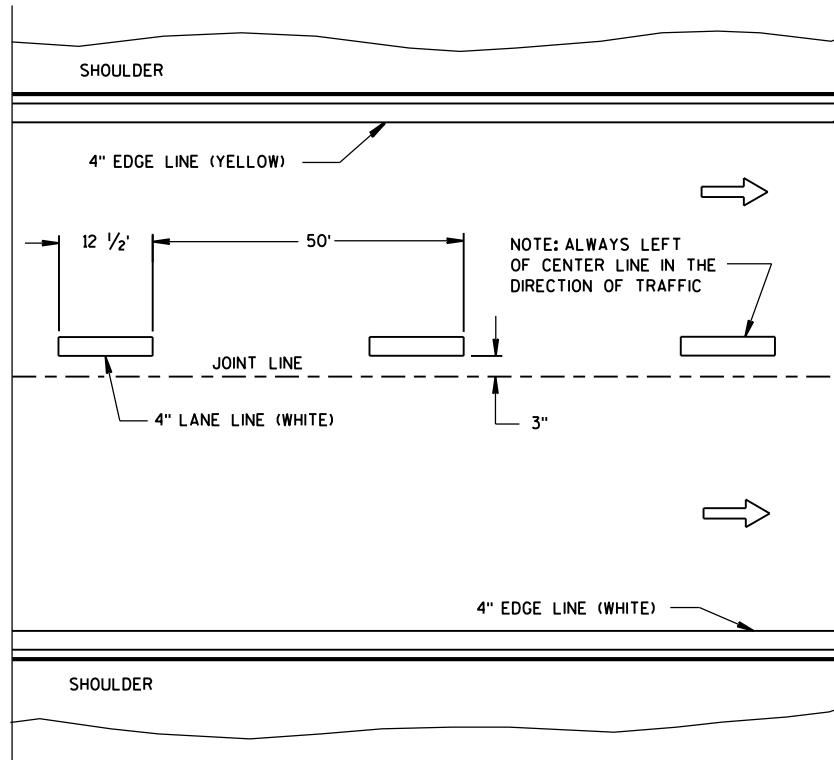
PLOT SCALE : 1:1

Standard Detail Drawing List

15C08-17A	LONGITUDINAL MARKING (MAINLINE)
15C19-04C	MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY
15C31-02A	PAVEMENT MARKING (RAMPS AND GORES)
15C31-02C	PAVEMENT MARKING FOR PARALLEL ON-RAMP AND PARALLEL OFF-RAMP
15D12-06A	TRAFFIC CONTROL, LANE CLOSURE
15D16-03	TRAFFIC CONTROL, EXIT RAMP CLOSURE
15D38-01A	TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS
15D38-01B	ATTACHMENT OF SIGNS TO POSTS

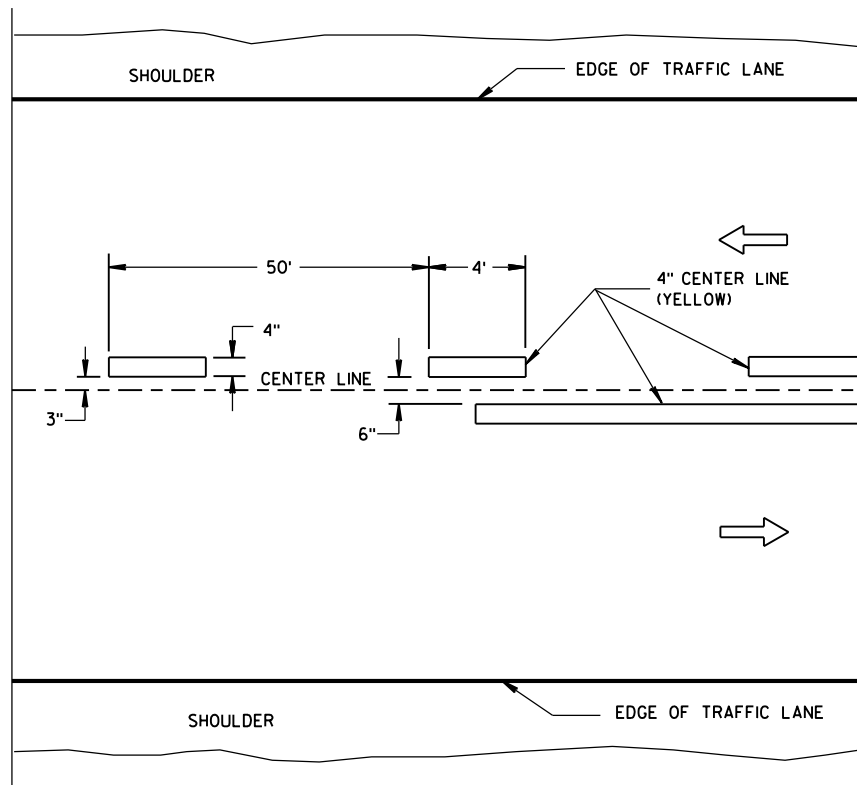


TWO WAY TRAFFIC

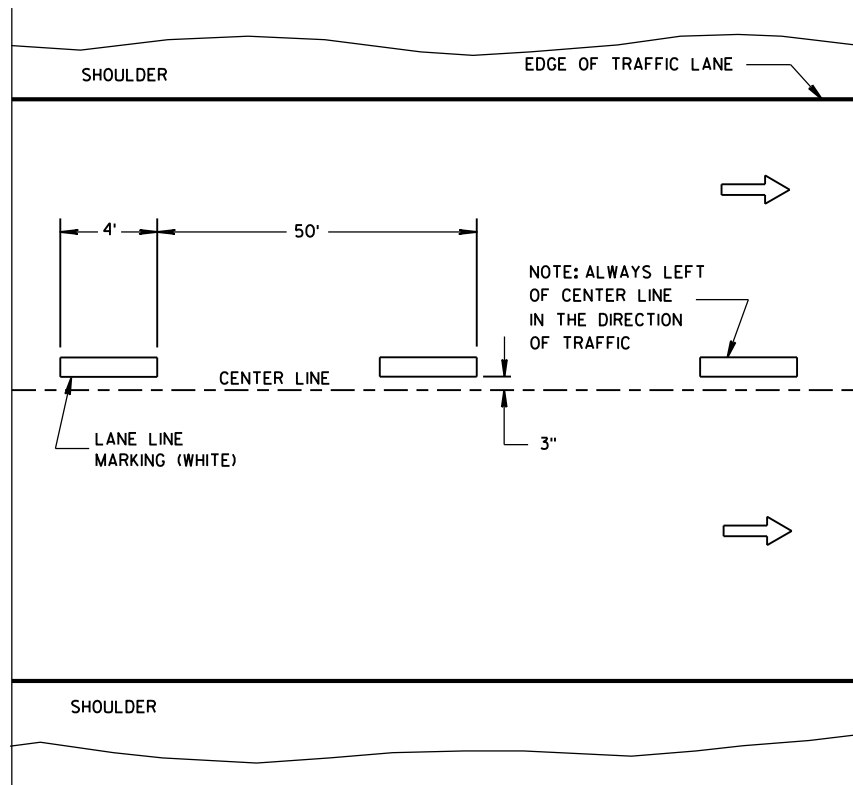


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

① NO PASSING ZONE W14-3 SIGN SHALL BE LOCATED WITHIN 50 FEET OF THE "T" MARKING.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

LEGEND

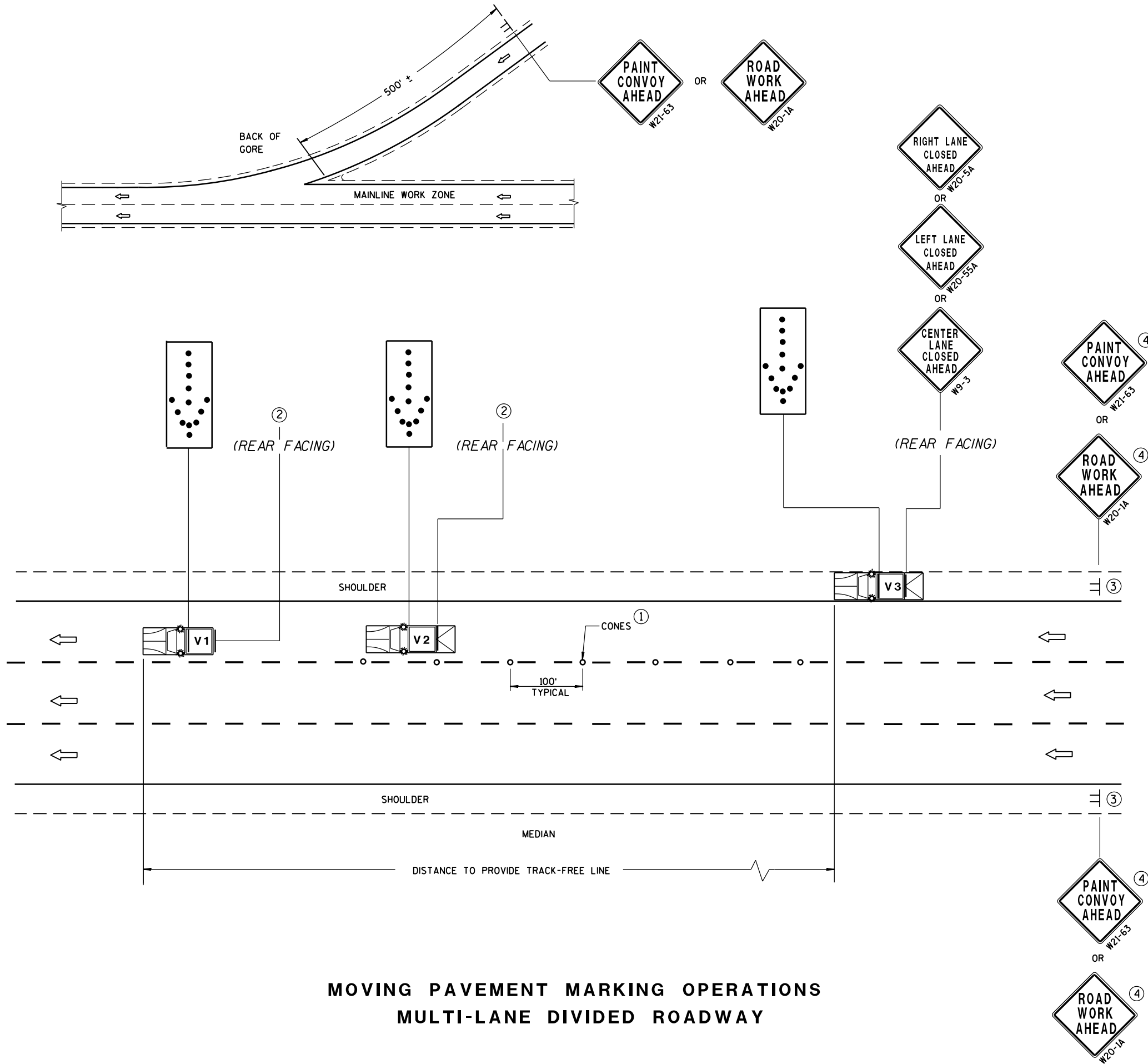
├── "T" MARKING

● POST MOUNTED SIGN

LONGITUDINAL MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA



GENERAL NOTES

ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE SPECIFIED.

IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.

ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

WHEN WORK ACTIVITY BLOCKS THE LEFT LANE, REVERSE TRAFFIC CONTROL.

WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.

USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.

FOR EDGELINE MARKING OR IF CONES ARE NOT USED, POSITION THE REARMOST SHADOW VEHICLE ON THE SHOULDER AS SHOWN IN THE MUTCD IF THE SHOULDER HAS ADEQUATE WIDTH. USE DOUBLE ARROWS WHEN CONVOY IS IN CENTER LANE ONLY.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.

THIS DRAWING SHALL BE USED FOR EDGELINE OR LANELINE MARKING FOR MULTILANE DIVIDED ROADWAYS.

- ① CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.
- ② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.

WET PAINT W21-64

OR

WET PAINT W21-64
- ③ SIGNS SHALL BE REPEATED AFTER EVERY ON RAMP OR EVERY THREE MILES.
- ④ IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.

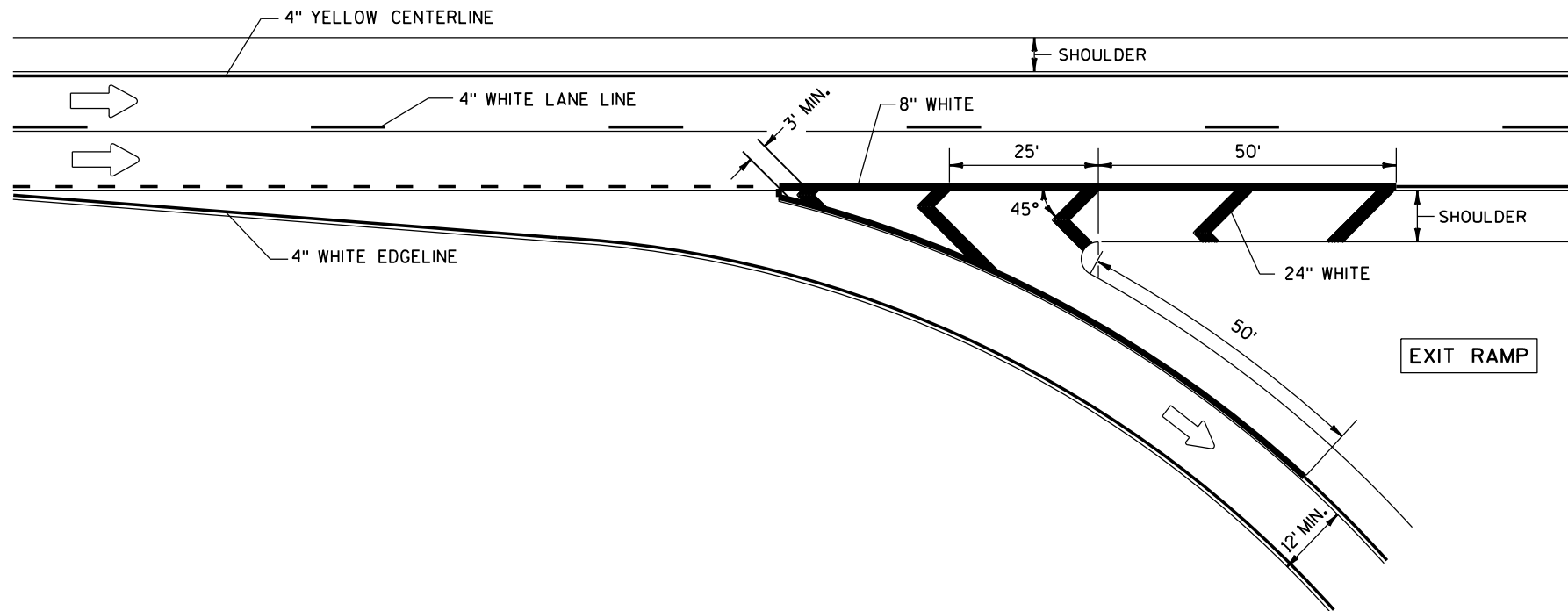
LEGEND

- V1 LEAD VEHICLE
- V2 SHADOW VEHICLE
- V3 TRAIL VEHICLE WITH TMA
- TMA TRUCK-MOUNTED ATTENUATOR
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- CONES
- FLASHING ARROW PANEL (MERGE)

MOVING PAVEMENT MARKING OPERATION
MULTI-LANE DIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 /S/ Peter Amakobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC
SAFETY ENGINEER
FHWA



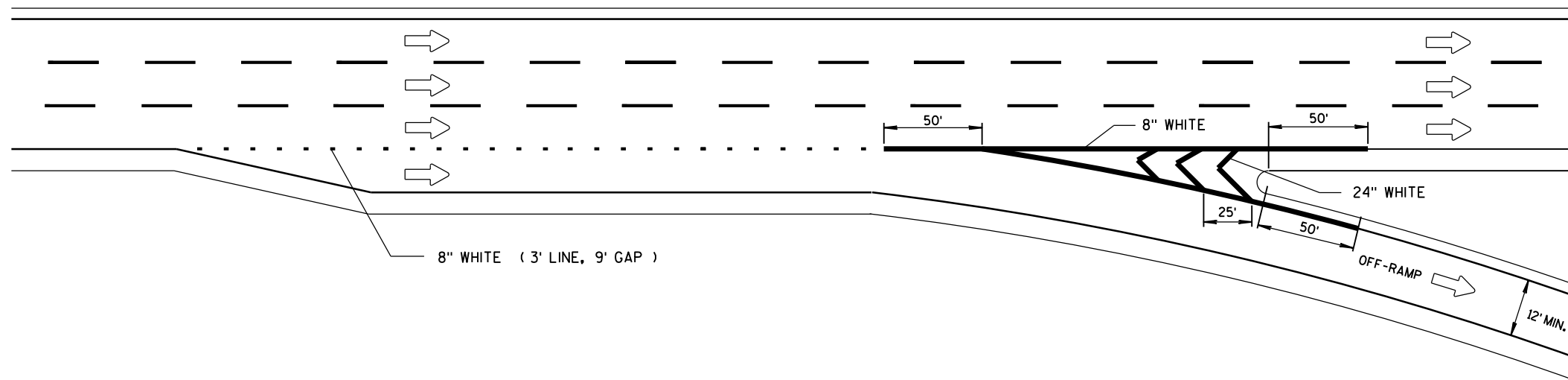
PAVEMENT MARKING FOR EXIT RAMP

GENERAL NOTES

PLACE GROOVE 3 INCHES LEFT OF JOINT.

LEGEND

→ DIRECTION OF TRAVEL



SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL EXIT-RAMP

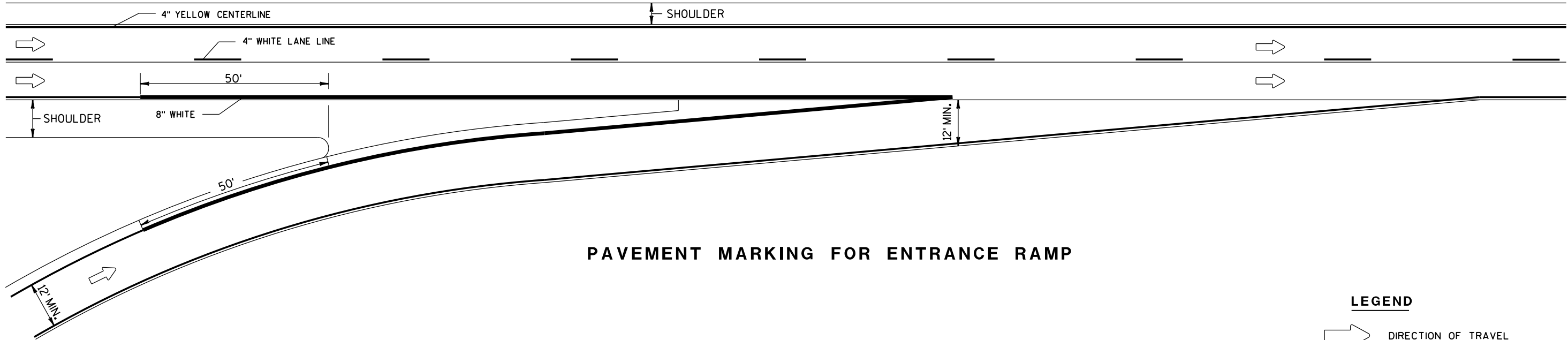
PAVEMENT MARKING
(RAMPS AND GOES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

PLACE GROOVE 3 INCHES LEFT OF JOINT.

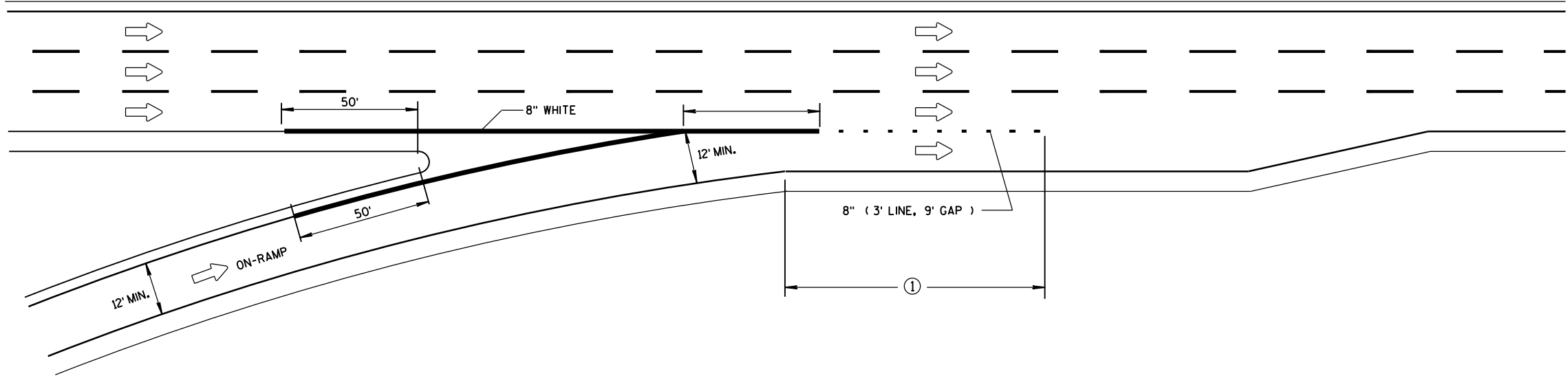
① 1/2 LENGTH OF FULL WIDTH ACCELERATION LANE.



PAVEMENT MARKING FOR ENTRANCE RAMP

LEGEND

➡ DIRECTION OF TRAVEL



SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL ENTRANCE-RAMP

**PAVEMENT MARKING FOR
PARALLEL ON-RAMP AND
PARALLEL OFF-RAMP**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMENENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKING
- DIRECTION OF TRAFFIC
- WORK AREA

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIREABLE) DISTANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

"W0" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

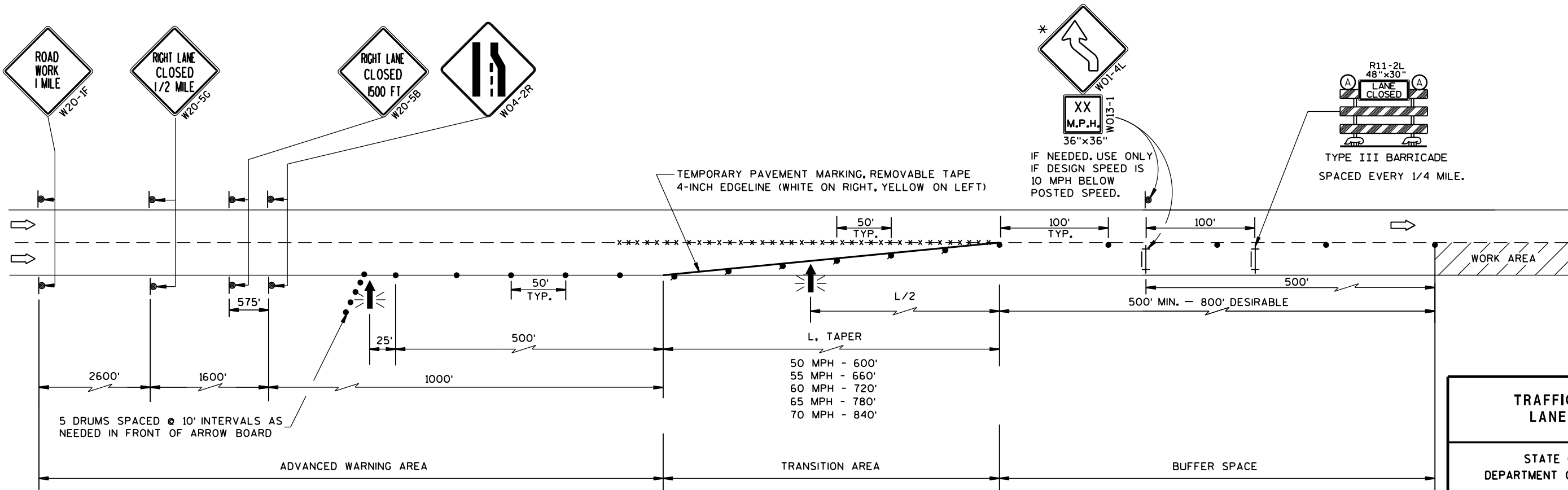
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

* THE LEFT REVERSE CURVE SIGN (W01-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.

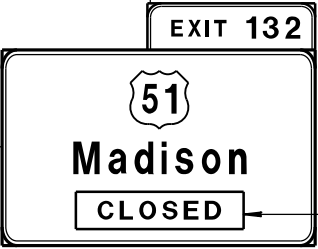


TRAFFIC CONTROL, LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March 2016 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	



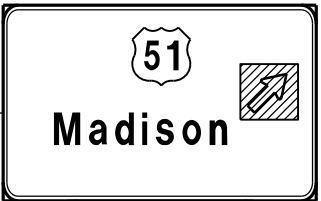
G20-60
108"x24"

OR



G20-60
108"x24"

PLACE SIGN G20-60 OVER MILEAGE
ON EXISTING E1-1A SIGN



COVER ARROW ON
EXISTING E4-1A
SIGN (COVERING
SIGNS TYPE I)

G20-61
120"x30"

GENERAL NOTES

THIS RAMP CLOSURE DETAIL IS TYPICAL FOR CLOSING A RIGHT SIDE EXIT RAMP. FOR A LEFT SIDE EXIT RAMP, REVERSE THE TRAFFIC CONTROL.

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF RAMP CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

WORK AREAS WITH A DROPOFF ALONG THE EDGE OF AN OPEN TRAVEL LANE SHALL BE LEVELED WITH TEMPORARY FILL WHEN THE CONTRACTOR IS NOT WORKING ADJACENT TO THE TRAVEL LANE. DRUMS SHALL BE PLACED ENTIRELY OUTSIDE THE TRAVEL LANE, ALLOWING THE FULL UNOBSTRUCTED LANE WIDTH, WHEN THE WORK IS NOT IN PROGRESS.

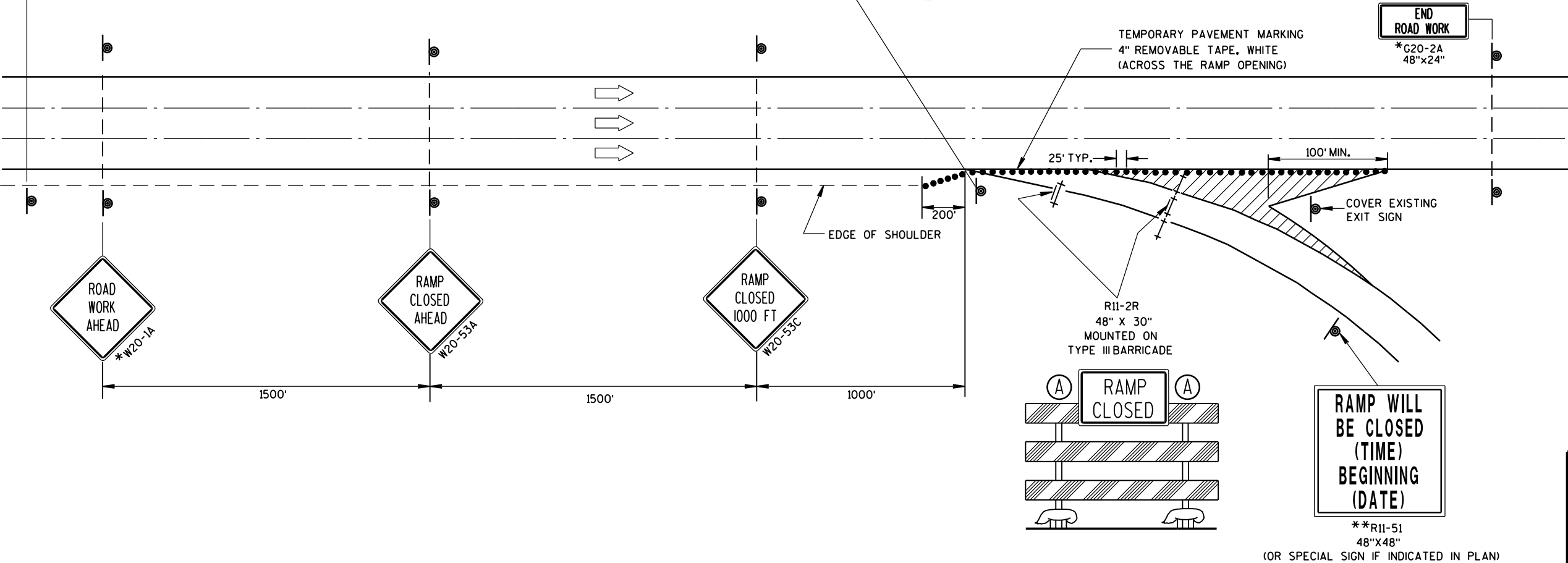
WHERE MEDIAN BARRIER IS IN PLACE, SIGNS SHOWN ON LEFT SIDE OF ROADWAY MAY BE OMITTED FOR RIGHT SIDE RAMP CLOSURES OF LESS THAN 12-HOUR DURATION.

* W20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE RAMP CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

** PLACE "RAMP WILL BE CLOSED" SIGN 7 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR SIGN LAYOUT.

6

6



LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC

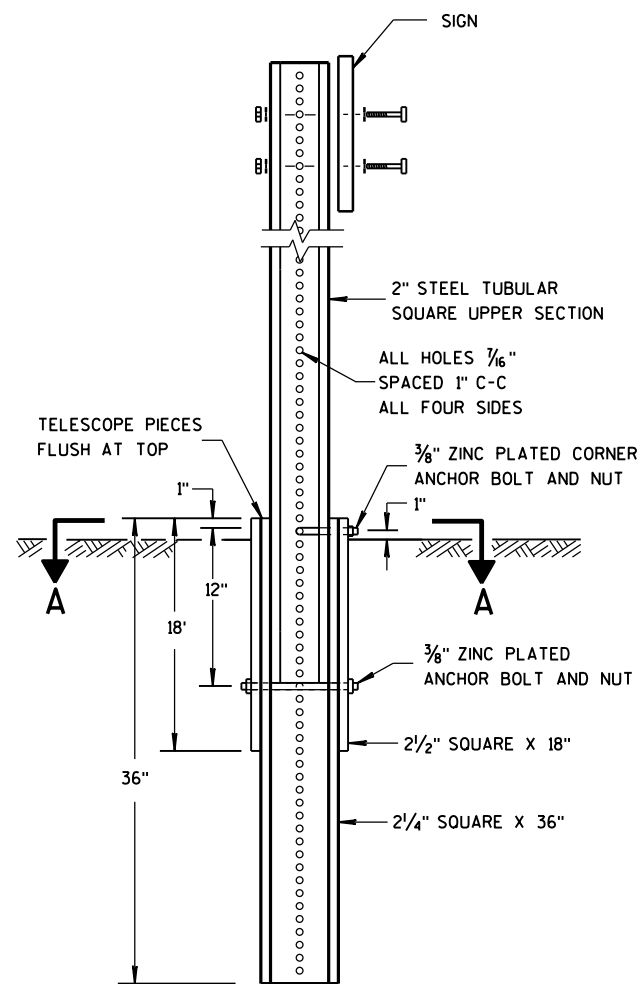
TRAFFIC CONTROL, EXIT RAMP CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2015 /S/ Peter Amakobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC
FHWA SAFETY ENGINEER

S.D.D. 15 D 16-3

S.D.D. 15 D 16-3



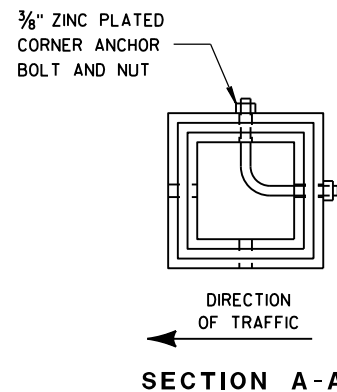
DETAIL OF TUBULAR
STEEL SIGN POST

TUBULAR STEEL POSTS

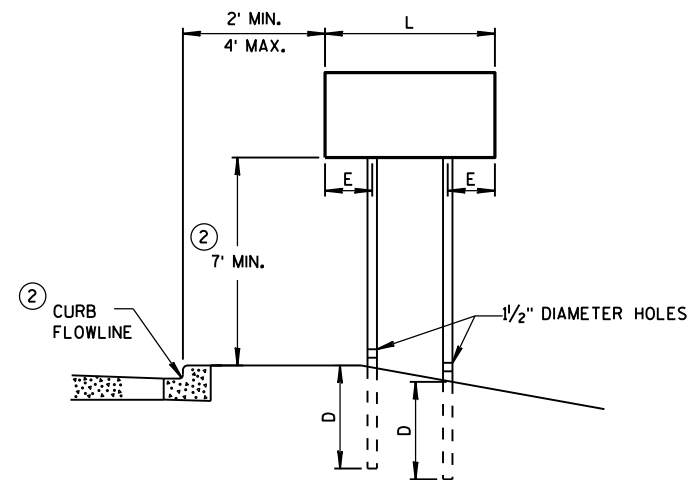
AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL
BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED
ON TUBULAR STEEL POSTS.



SECTION A-A

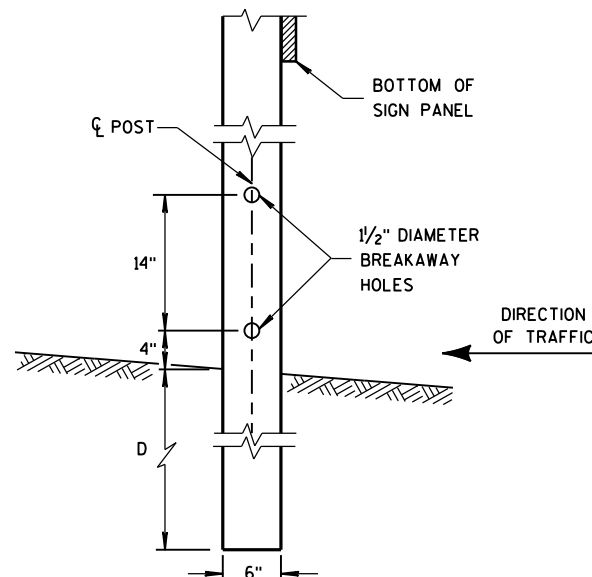


URBAN AREA

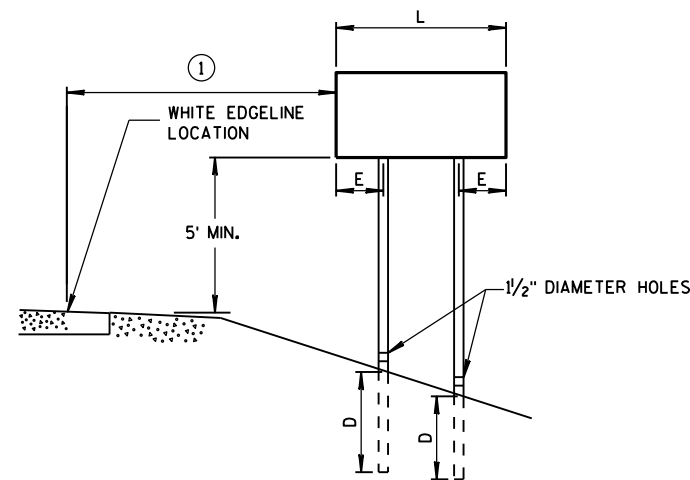
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST
EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'



4 "x6 " WOOD POST
MODIFICATION



RURAL AREA

4 " X 6 " WOOD POST

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

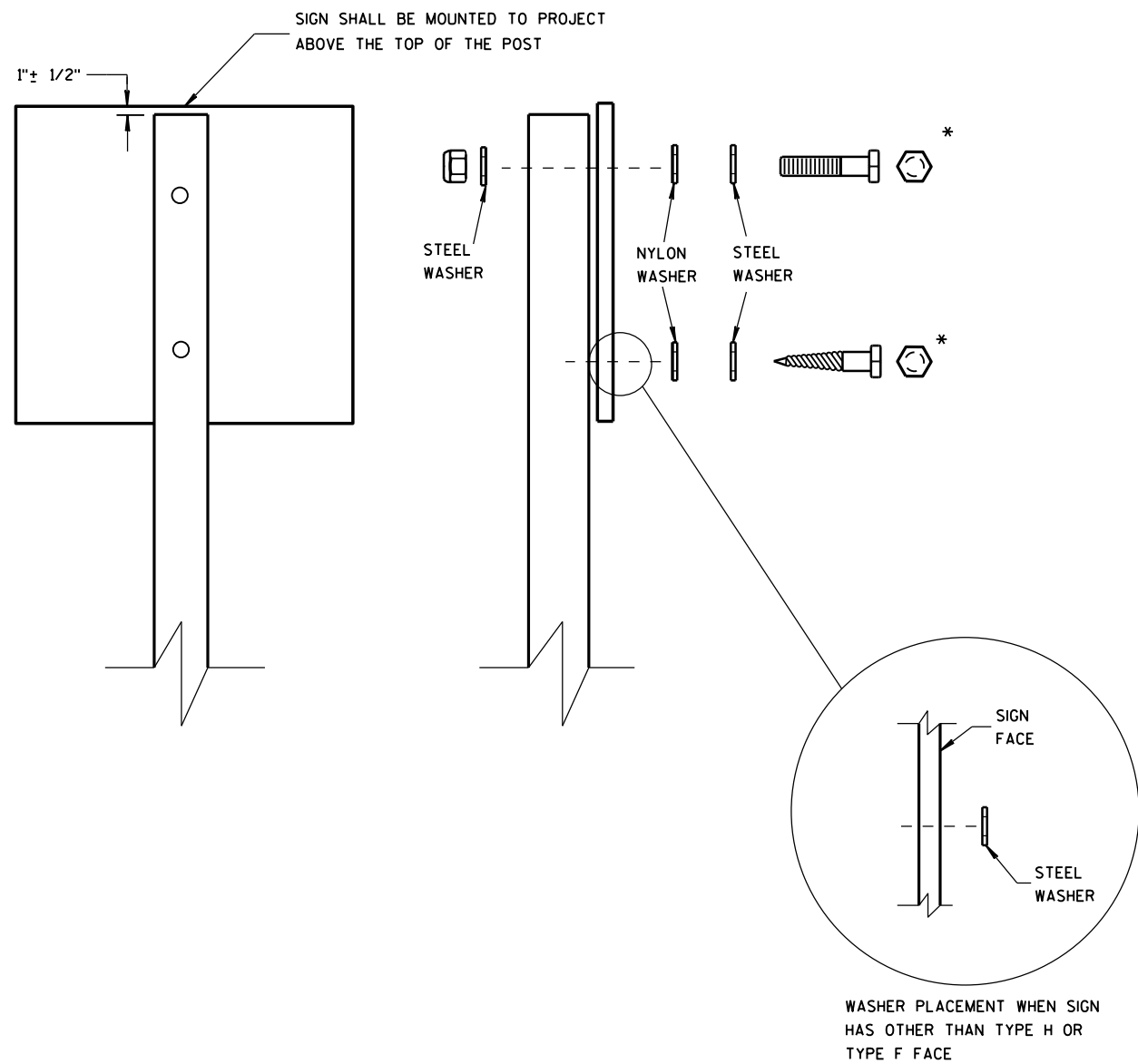
SEE NOTE ③

GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

TEMPORARY TRAFFIC CONTROL
FIXED MESSAGE SIGNS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

- A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3
- B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

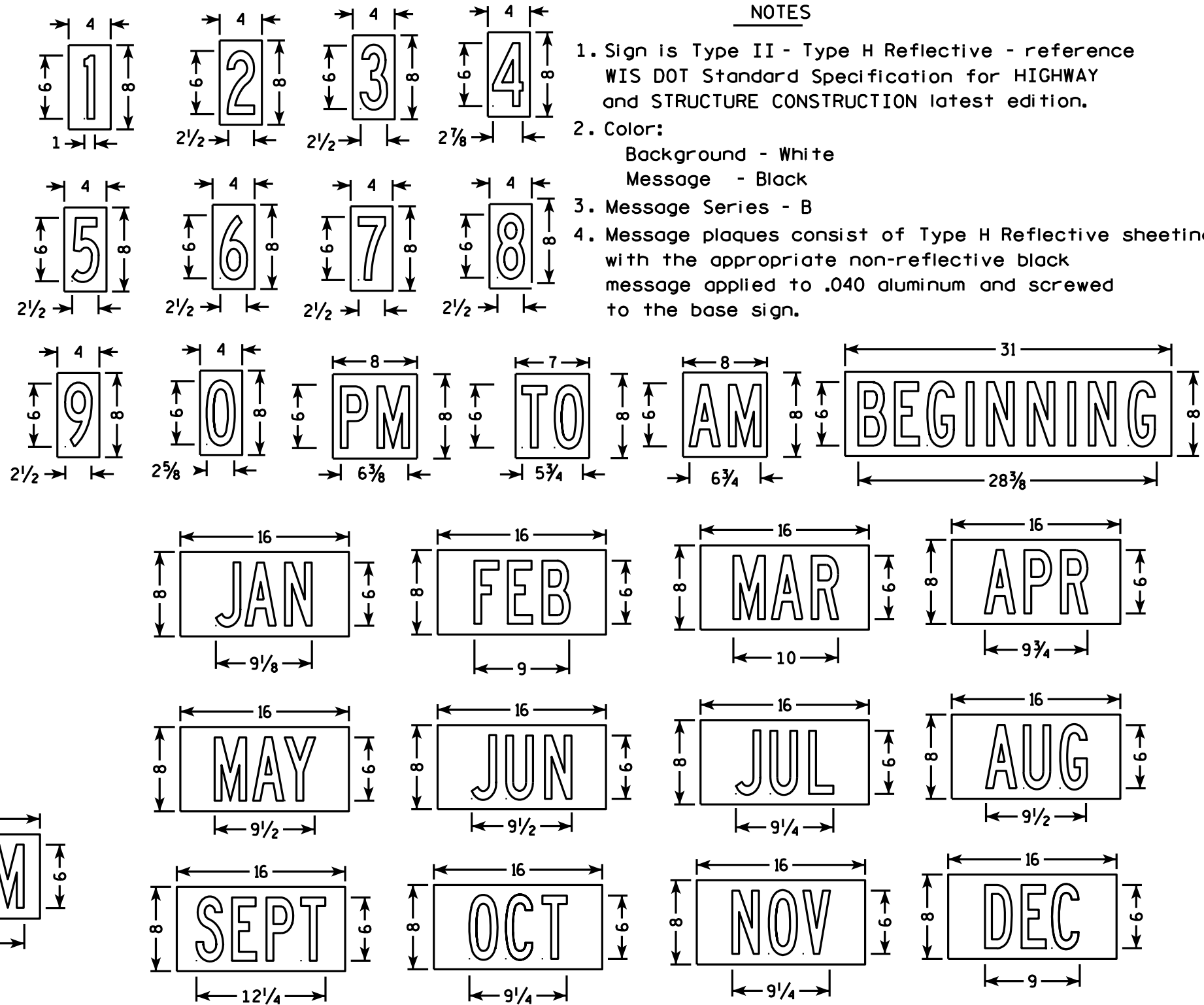
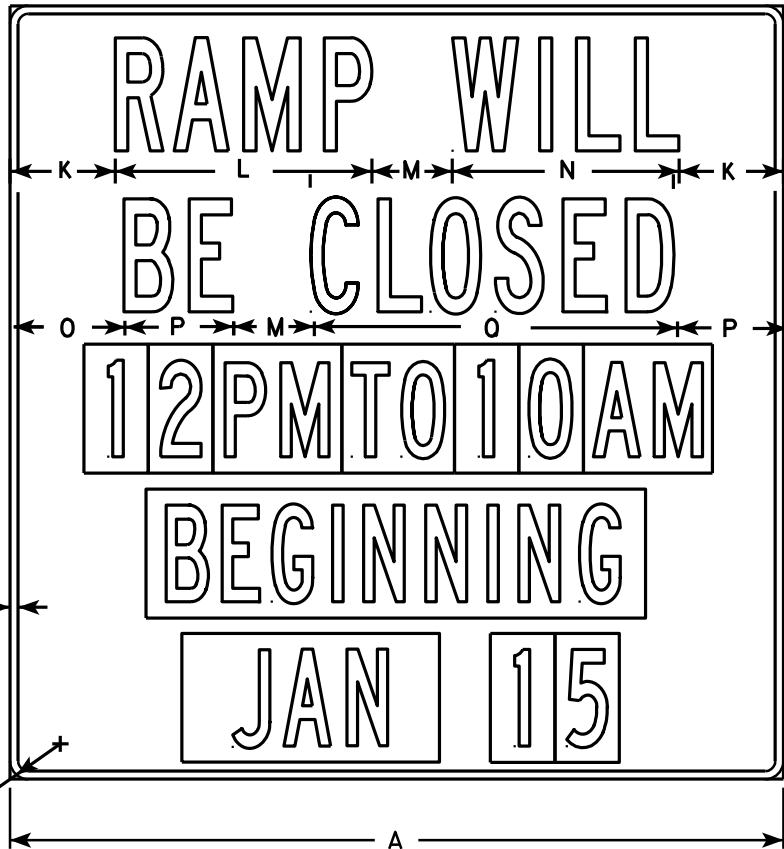
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" X 3"
 - MACHINE BOLTS - 5/16" X 6-1/2" OR 7" LENGTH W/ NUTS

- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" X 3-1/4" LENGTH W/ NUTS
 - RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

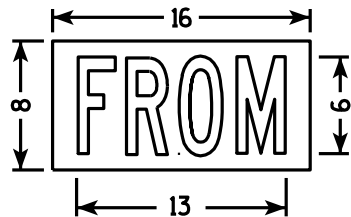
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
 - 1-1/4" O.D. X 3/8" I.D. X .080 NYLON FOR ALL TYPE H SIGNS

* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED Feb. 2015 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	



- NOTES
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
 2. Color:
Background - White
Message - Black
 3. Message Series - B
 4. Message plaques consist of Type H Reflective sheeting with the appropriate non-reflective black message applied to .040 aluminum and screwed to the base sign.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48		2 1/4	1/2		2	6	7	3		6 1/2	15 7/8	5	14 1/8	6 7/8	6 3/4	22 1/2										16.0
2M	48		2 1/4	1/2		2	6	7	3		6 1/2	15 7/8	5	14 1/8	6 7/8	6 3/4	22 1/2										16.0
3																											
4																											
5																											

STANDARD SIGN
R11-51

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-51.4

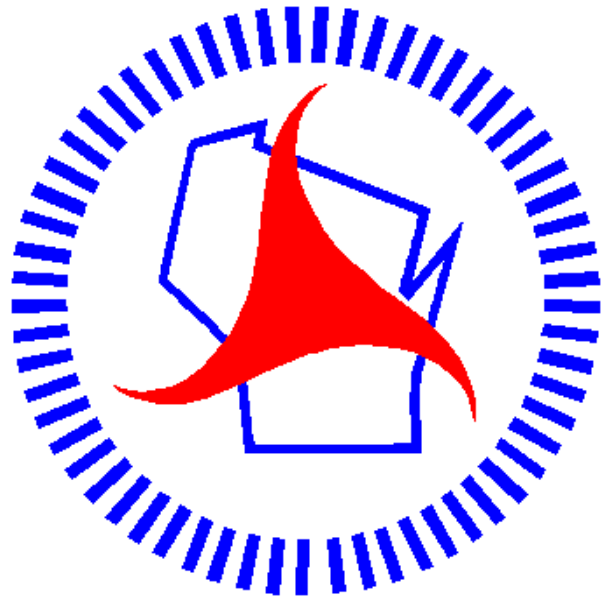
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

<http://www.dot.wisconsin.gov>