WKE JULY 2018 STATE PROJECT STATE OF WISCONSIN ORDER OF SHEETS 2984-27-71 Section No. **DEPARTMENT OF TRANSPORTATION** Section No. Typical Sections and Details Section No. Estimate of Quantities Section No. Miscellaneous Quantities PLAN OF PROPOSED IMPROVEMENT Section No. Standard Detail Drawings 2984-**VARIOUS LOCATIONS HEAT STRAIGHTENING BRIDGE GIRDERS VARIOUS HIGHWAYS** TOTAL SHEETS = 56 **SE REGION WIDE** STATE PROJECT NUMBER STRUCTURE B-40-939 STRUCTURE B-40-208 2984-27-71 IH-41 NB EXIT OVER HWY 175 SB **CENTER STREET OVER IH-43 MILWAUKEE MILWAUKEE MILWAUKEE MILWAUKEE** 5 190 DR 75 E 145 APP_{LETON} 175 T-8-N 57 43 AVF MILL RD T-7-N T-8-N STRUCTURE B-40-360 E HAMPTON AVE HAMPTON AVE. OVER IH-41/HWY 45 CENTER ST DESIGN DESIGNATION AADT A.A.D.T. D.H.V. 15 AVE DΩ NORTH DESIGN SPEED R-21-E **WALWORTH WALWORTH** STRUCTURE B-40-271 STRUCTURE B-64-19 **HWY 145 SB OVER LITTLE MENOMONEE PKWY** S CTH B OVER USH 12 HUNT RIDGE CONVENTIONAL SYMBOLS П 104TH PLAN PROFILE GRADE LINE CORPORATE LIMITS <u>///////</u> ORIGINAL GROUND PROPERTY LINE П MARSH OR ROCK PROFILE LOTLINE (To be noted as such) T-1-N **G** ID RD $\mathbb{R}^{\mathbb{R}}$ B T-2-N TWIN LK LIMITED HIGHWAY EASEMENT SPECIAL DITCH EXISTING RIGHT OF WAY Н GRADE ELEVATION PROPOSED OR NEW R/W LINE P SLOPE INTERCEPT CULVERT (Profile View) STRUCTURE B-64-39 119TH UTILITIES **SPRINGFIELD OVER USH 12** REFERENCE LINE ELECTRIC EXISTING CULVERT FIBER OPTIC 125TH PROPOSED CULVERT SANITARY SEWER R-18-E R-17-E COMBUSTIBLE FLUIDS LAYOUT STORM SEWER TELEPHONE SCALE MARSH AREA Ħ TOTAL NET LENGTH OF CENTERLINE = 0.000 ⋴ Ø WOODED OR SHRUB AREA TELEPHONE POLE

FEDERAL PROJECT

PROJECT

145

MILL RD

PREPARED BY

Surveyor

Designer

Project Manage

Regional Examiner

ATE: 02/01/2018

R-21-E

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

Jonglas a Cas

CONTRACT

T-8-N

FILE NAME : N:\PDS\C3D\CAD\29842701\010101_TI.DWG PLOT DATE : 1/29/2018 5:58 AM HAYNES, RONNIE Jennifer Navarro AT&T Local Network - Communication Line 6070 N Flint Rd Glendale, WI 53209 (414) 459-3564

j.navarro@northwindtech.com

ca2624@att.com

Carol Anason AT&T Wisconsin - Communication Line 316 W Washington Ave Madison, WI 53701 (608) 252-2385

Jane Oldenburg WISDOT ATR Pull Boxes - Electricity Travel Surveys Shop, 3633 Pierstorff St Madison, WI 53704-2583 (608) 245-2679

Michael Brolin Alliant Energy - Gas/Petroleum 4902 North Biltmore Ln Madison, WI 53713 (608) 458-4871 MichaelBrolin@alliantenergy.com

jane.oldenburg@dot.wi.gov

Kirk Thoelke CenturyLink Communications, LLC - Communication Line 11111 Dorsett Rd Maryland Heights, MO 63043

(636) 887-4752 kirk.thoelke@centurylink.com

Tom Grisa City of Brookfield - Road Facility 2000 N Calhoun Rd Brookfield, WI 53005 (262) 782-9650 grisa@ci.brookfield.wi.us

Jeffrey Polenske City of Milwaukee - Electricity Room 701 841 N Broadway Milwaukee, WI 53202 (414) 286-2400 jpolen@milwaukee.gov

Randy Michelz City of Wauwatosa - Street Lighting 11100 W Walnut Rd Wauwatosa, WI 53226 (414) 471-8429 rmichelz@wauwatosa.net

Elkhorn Light And Water - Electricity P.O. Box 920 Elkhorn, WI 53121-1702

Genoa Mun Water And Sewer Utility - Sewer P.O. Box 322

Genoa, WI 54632-9617 Network Relocations

Level 3 Communications LLC - Communication Line 1025 Fldorado Blvd Broomfield, CO 80021

relo@level3.com

Neal Kolb Lake Como Sanitary District #1 - Sewer N3420 Dell Pl Lake Geneva, WI 53147 (262) 248-2077 neal@lcsd1.org

Jay Bulanek AT&T Wisconsin - Communication Line 2005 Pewaukee Rd Waukesha, WI 53188-2443 (262) 896-7669 jb5175@att.com

Mike Olsen ATC Management, Inc. - Electricity-transmission 801 O'keefe Rd P.O. Box 6113 De Pere, WI 54115-6113 (920) 338-6582 molsen@atcllc.com

Michael Brolin Alliant Energy - Electricity 4902 North Biltmore Ln Madison, WI 53713 (608) 458-4871 MichaelBrolin@alliantenergy.com

Mark Simon Brookfield Water Utility, City of - Water 19700 Riverview Dr Brookfield, WI 53045 (262) 796-6717 simon@ci.brookfield.wi.us

Brandon Opheim Charter Communications - Communication Line 510 Beloit St Walworth, WI 53184 (608) 209-3195 brandon.opheim@charter.com

Ron Eifler City of Brookfield - Sewer 21225 Enterprise Ave Brookfield, WI 53045 (262) 782-0199 eifler@ci.brookfield.wi.us

William Wehrley City of Wauwatosa - Road Facility 7725 W North Ave Wauwatosa, WI 53213 (414) 479-8929 wwehrley@wauwatosa.net

James Wojcehowicz City of Wauwatosa - Water 7725 W North Ave Wauwatosa WI 53213 (414) 479-8965 iwoicehowicz@wauwatosa.net

Geneva National Sanitary District - Sewer N3496 Como Rd Lake Geneva, WI 53147 (262) 248-2135 hwydept@townofgenevawi.com

Randy Parker

C Barry Bateman Lawrence J. Timmerman Field - Airport Facility 5300 S Howell Ave Milwaukee WI 53207 (414) 747-5300 bbateman@mitchellairport.com

Richard Trgovec Midwest Fiber Networks LLC - Communication Line 6070 North Flint Rd Glendale WI 53209 (414) 459-3554 rtraovec@midwestfibernetworks.com

Gregory Heisel Milwaukee County Department of Public Works - Road Facility Village of Menomonee Falls Public Works - Road Facility 10320 W. Watertown Plank Rd.

Milwaukee, WI 53226 (414) 257-6566 Greg.Heisel@milwcnty.com

Micki Klappa-Sullivan Milwaukee Metropolitan Sewerage District - Sewer 260 W Seeboth St Milwaukee, WI 53204 (414) 225-2178 MKlappaSullivan@mmsd.com

Mary Fisher PaeTec Communications, LLC - Communication Line 13935 Bishops Dr Brookfield, WI 53005 (262) 792-7938 Mary.B.Fisher@windstream.com

Mel Gregory Powers-Benedict-Tombeau Lakes - Sewer P.O. Box 668 Genoa City, WI 53120 (262) 279-5016

Vickie Moran Rogers Telecom - Communication Line 4804 N 40th St Sheboygan, WI 53083 (920) 395-7125 vmoran@gabes.com

James Burton Sprint Communications Co LP - Communication Line 1901 N. Roselle Rd., Suite 500 Schaumburg, IL 60195 (708) 955-6659 james.m.burton@sprint.com

State Long Distance Telcom Ltd - Communication Line P.O. Box 230 Elkhorn, WI 53121-0230

Matthew Schulte TDS Metrocom - Communication Line 16924 West Victor Rd New Berlin, WI 53151 (262) 754-3063 matt.schulte@tdstelecom.com

Steven Cramer Time Warner Cable - Communication Line 1320 N Dr Martin Luther King Jr Dr Milwaukee WI 53212-4002 (414) 277-4045 wis.engineering@twcable.com

Jesse Thyes Village of Butler - Sewer 12621 W Hampton Ave Butler WI 53007 (262) 783-2525 ithves@butlerwi.gov

Mike Flaherty Village of Elm Grove Department of Public Works - Water 13600 Juneau Blvd Elm Grove, WI 53212-0906 (262) 782-6700

Todd Schiller Village of Genoa City - Road Facility 715 Walworth St P O Box 428 Genoa City, WI 53128-0428 (262) 279-5728 gcpw@sbcglobal.net

John Waller W156 N8480 Pilgrim Rd Menomonee Falls, WI 53051-3140 (262) 532-4745 jwaller@menomonee-falls.org

Jacqueline Hopkins Village of Williams Bay - Sewe P.O. Box 580 Williams Bay, WI 53191 (262) 245-2702 wbclerk@genevaonline.com

Jeff Madson

Wisconsin Department of Transportation - Communication Line Ste. 300 433 W. St. Paul Ave Milwaukee, WI 53203-3007 (414) 225-3723 Jeffrey.Madson@dot.wi.gov

Eric Perea Wisconsin Department of Transportation - Street Lighting 141 NW Barstow Street Waukesha, WI 53087-0798 (262) 574-5422 Eric.Perea@dot.wi.gov

Elizabeth Llovd-Weis Wisconsin Department of Transportation - Wisconsin Signal 141 NW Barstow St P.O. Box 798 Waukesha, WI 53187-0798

Elizabeth.Lloyd-Weis@dot.wi.gov Dan Sande We Energies - Electricity 333 W Everett St Milwaukee, WI 53203

Dan.Sande@we-energies.com

(262) 521-4404

(414) 221-4578

David Jones West Shore Pipe Line Company - Gas/Petroleum Five Tek Park, 9999 Hamilton Blvd Breinigsville, PA 18031 (610) 904-4409 DAJones@buckeye.com

Mary Fisher Windstream KDL, LLC - Communication Line 13935 Bishops Dr Brookfield WI 53005 (262) 792-7938 Mary.B.Fisher@windstream.com



DNR CONTACTS:

MILWAUKEE COUNTY: KRISTINA BETZOLD WDNR - SE REGION 2300 N. MARTIN LUTHER KING DR. MILWAUKEE, WI 53212 PHONE: (414) 263-8517 kristina.betzold@wisconsin.gov

WALWORTH COUNTY: CRAIG WEBSTER 141 NW BARSTOW ST **ROOM 180** WAUKESHA, WI 53188 PHONE: (414) 574-2141 craig.webster@wisconsin.gov

GENERAL NOTES

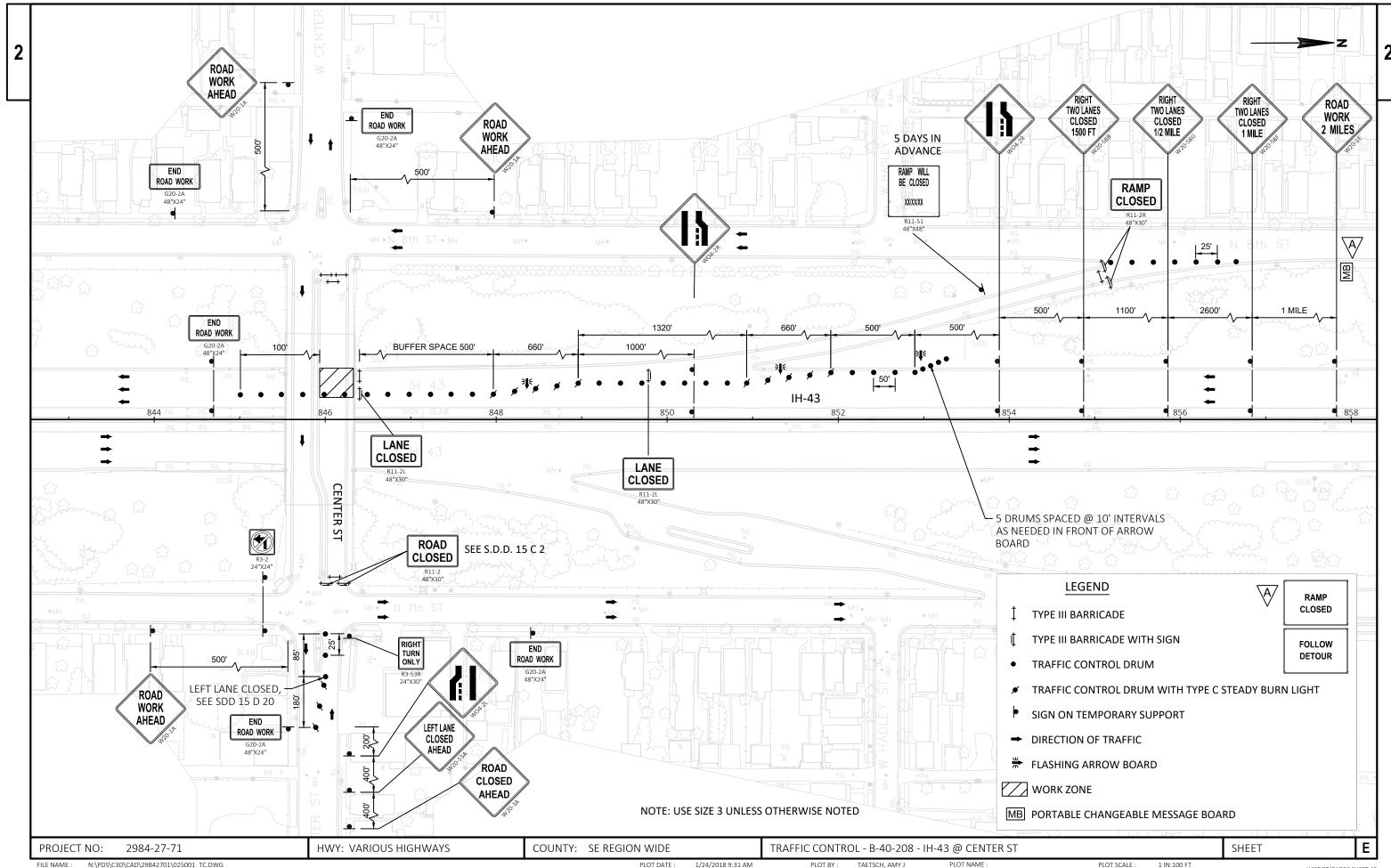
THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.

DO NOT REMOVE ANY TREES OR SHRUBSWITHOUT APPROVAL OF THE ENGINEEER

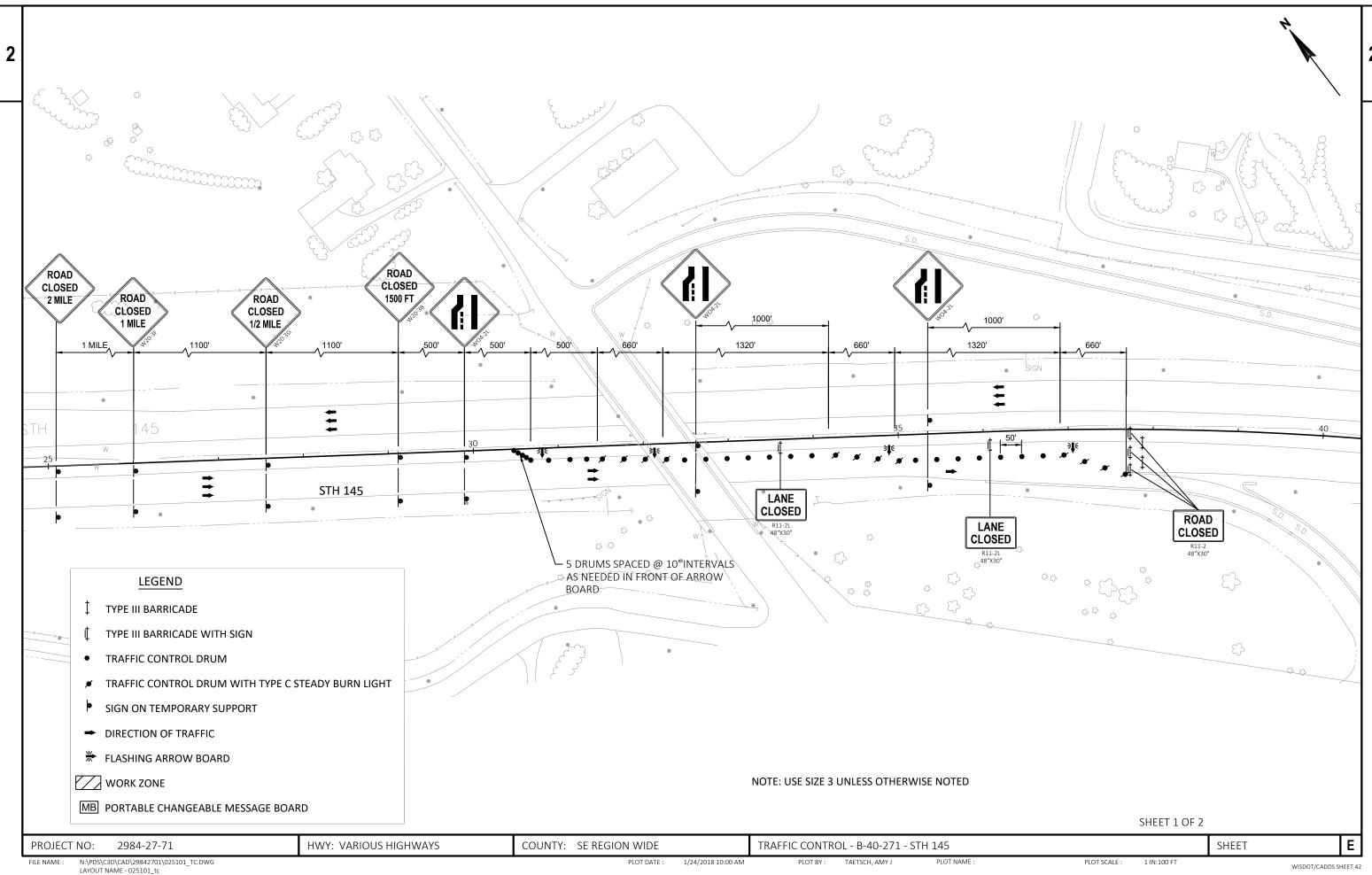
Ε **HWY: VARIOUS HIGHWAYS COUNTY: SE REGION WIDE GENERAL NOTES** SHEET: PROJECT NO: 2984-27-71

FII F NAME PLOT DATE PLOT BY PLOT NAME PLOT SCALE: 1:1

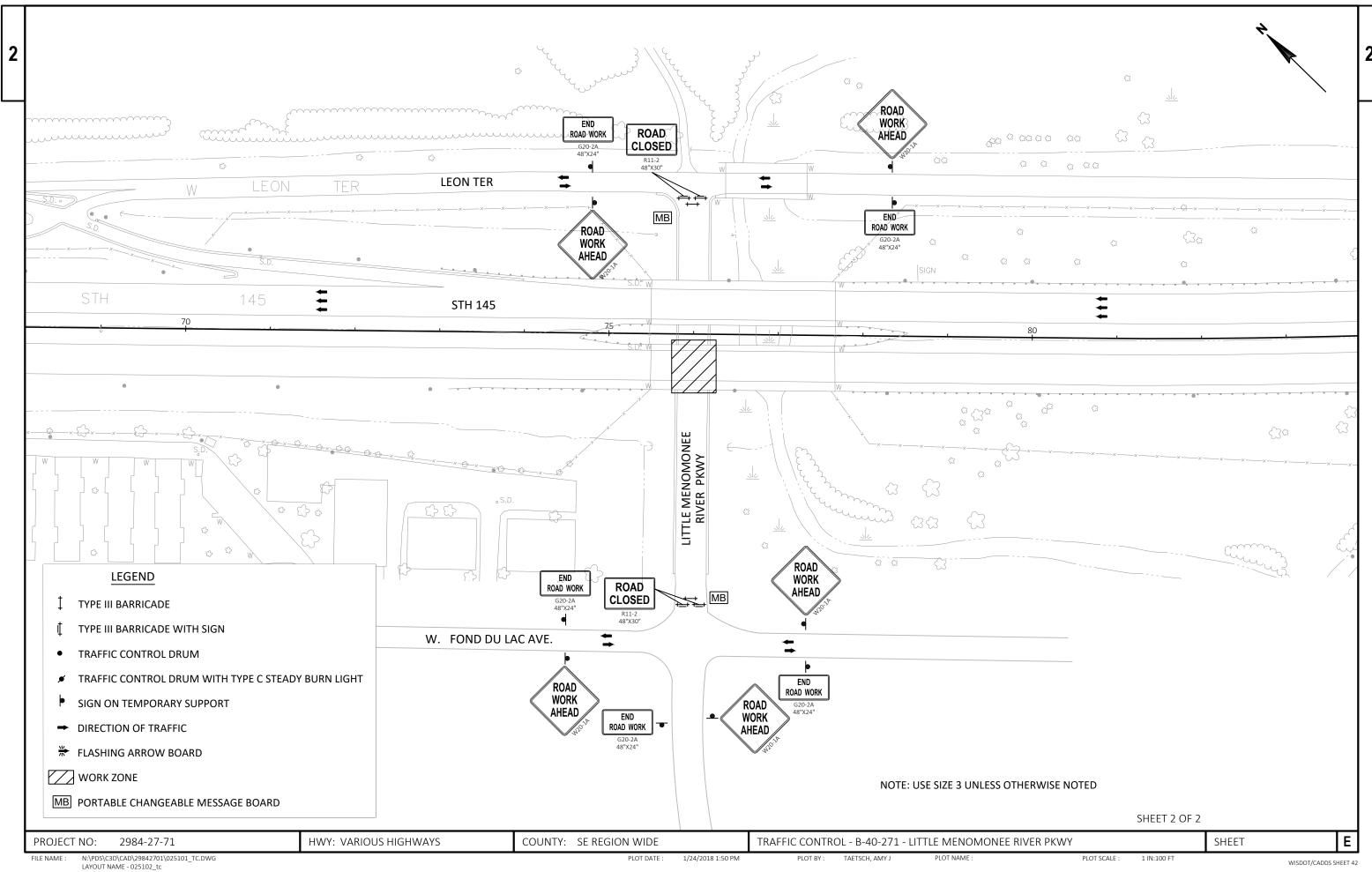


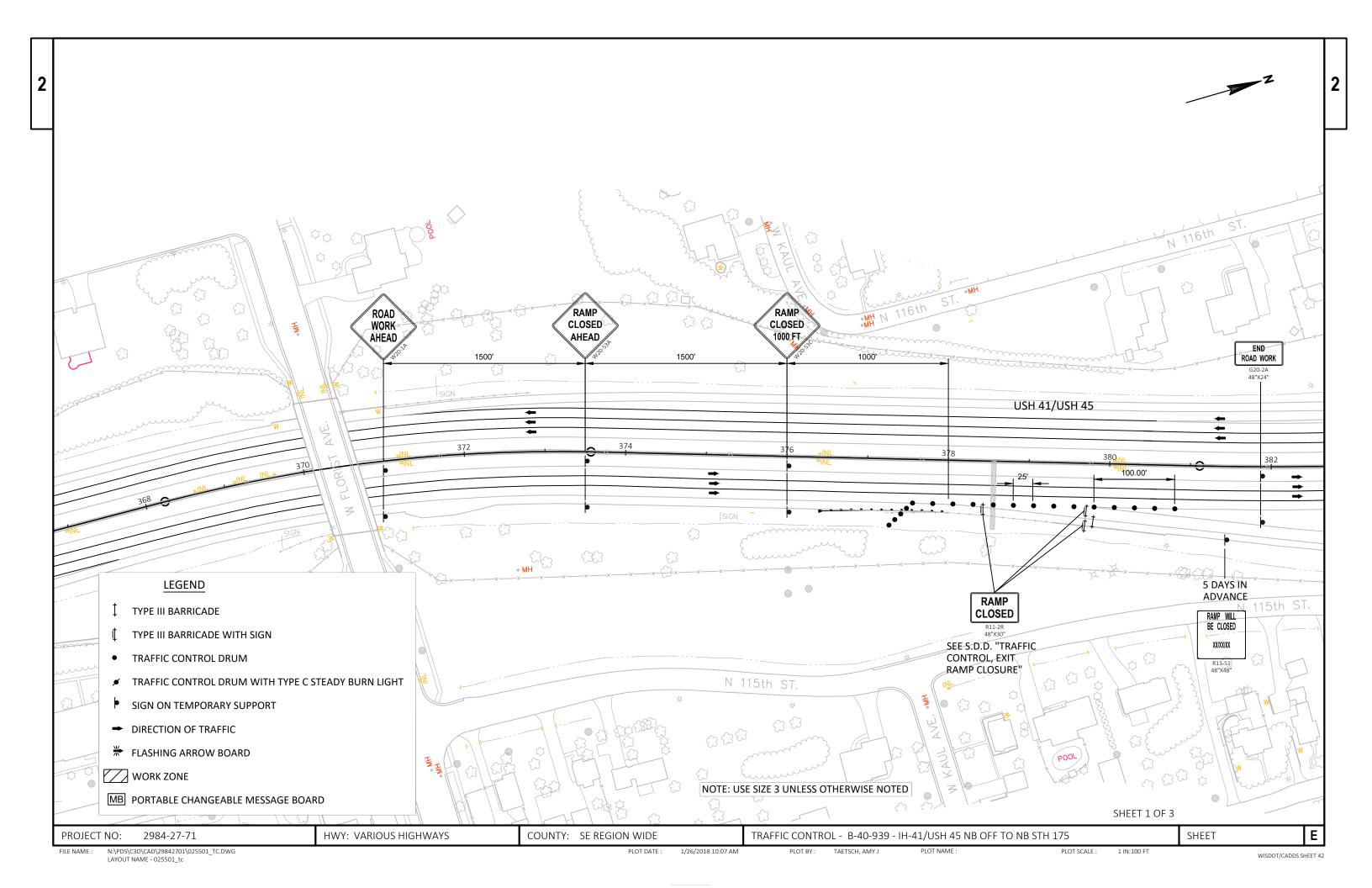
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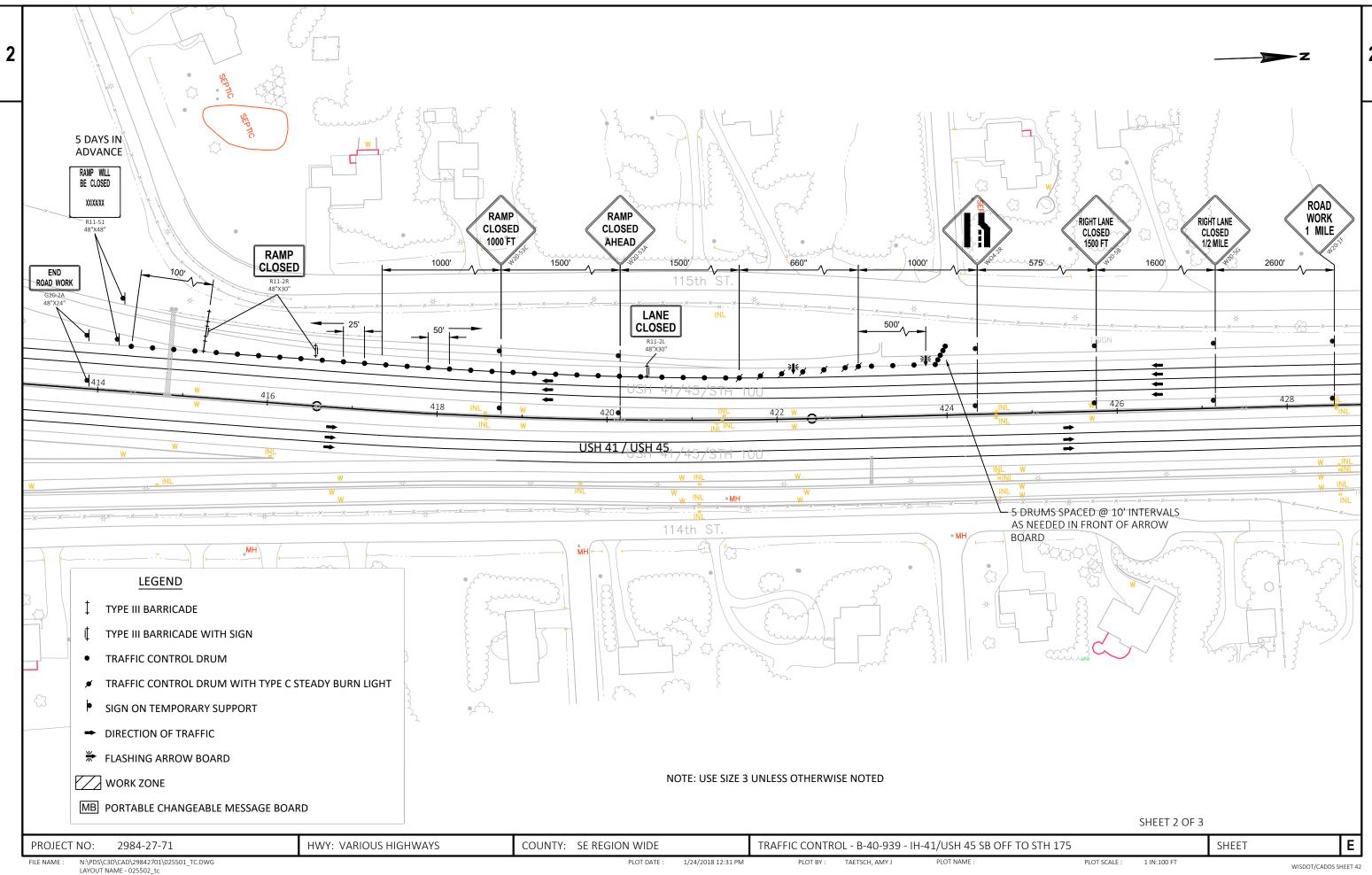
WISDOT/CADDS SHEET 42

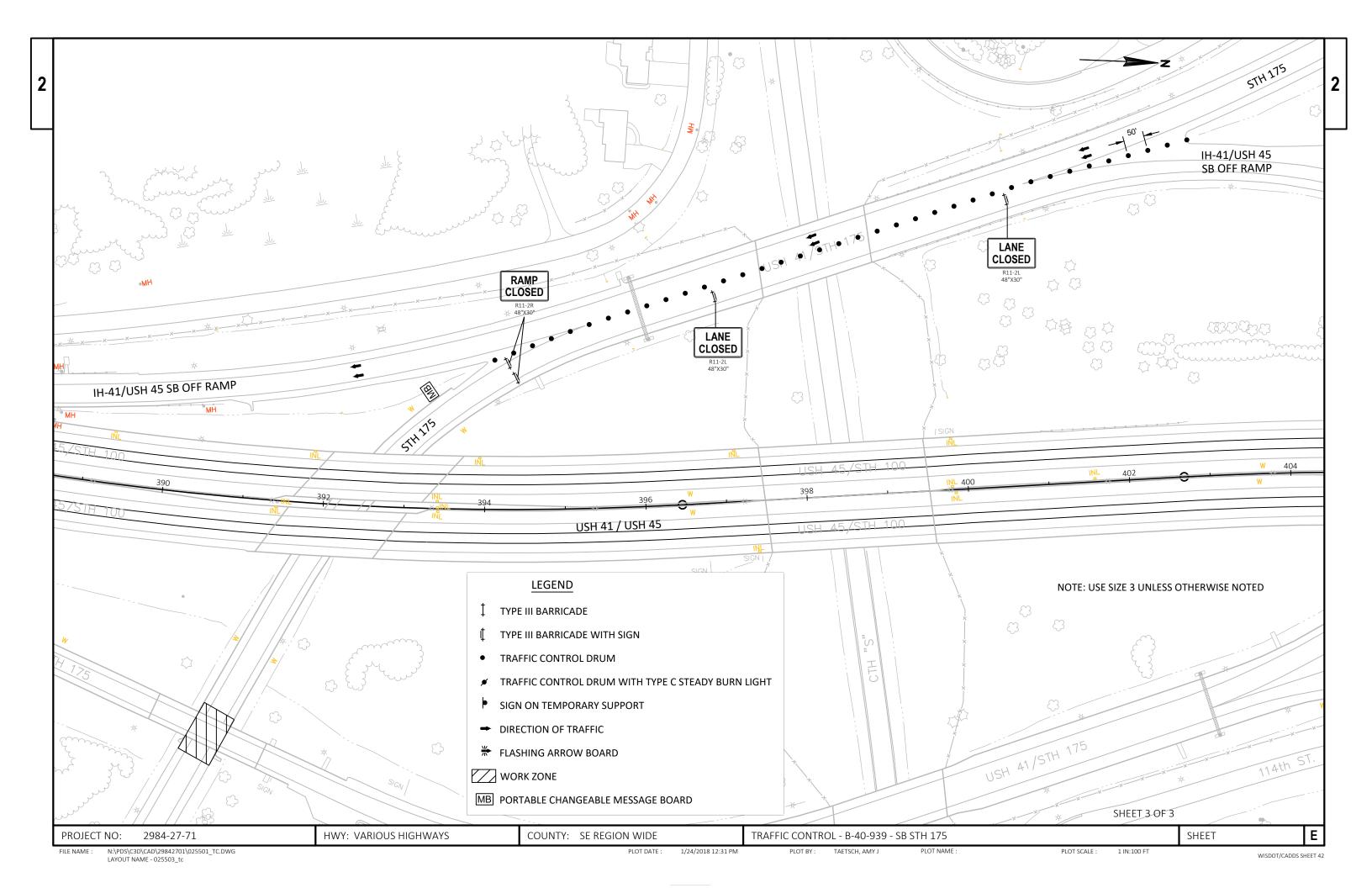


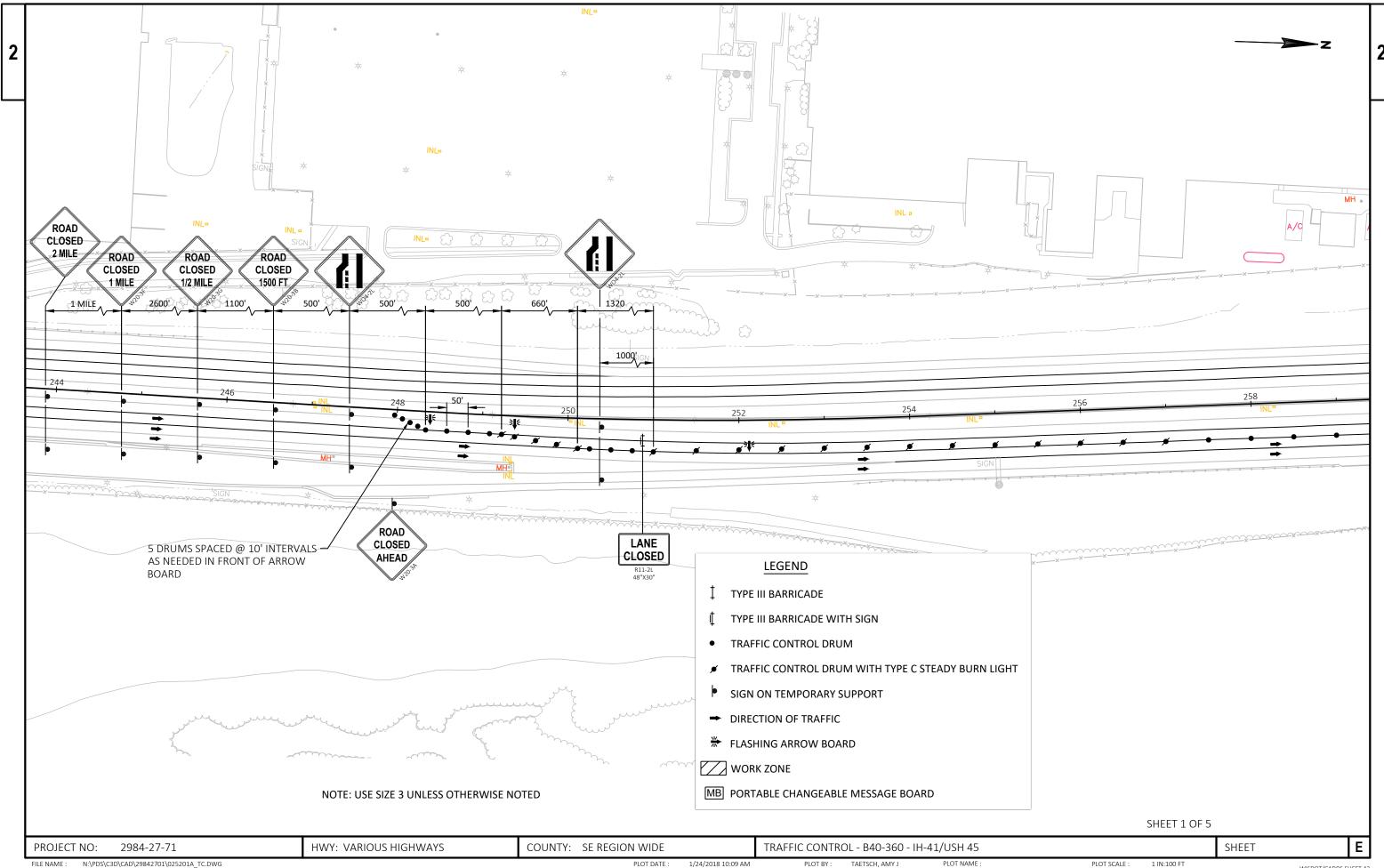
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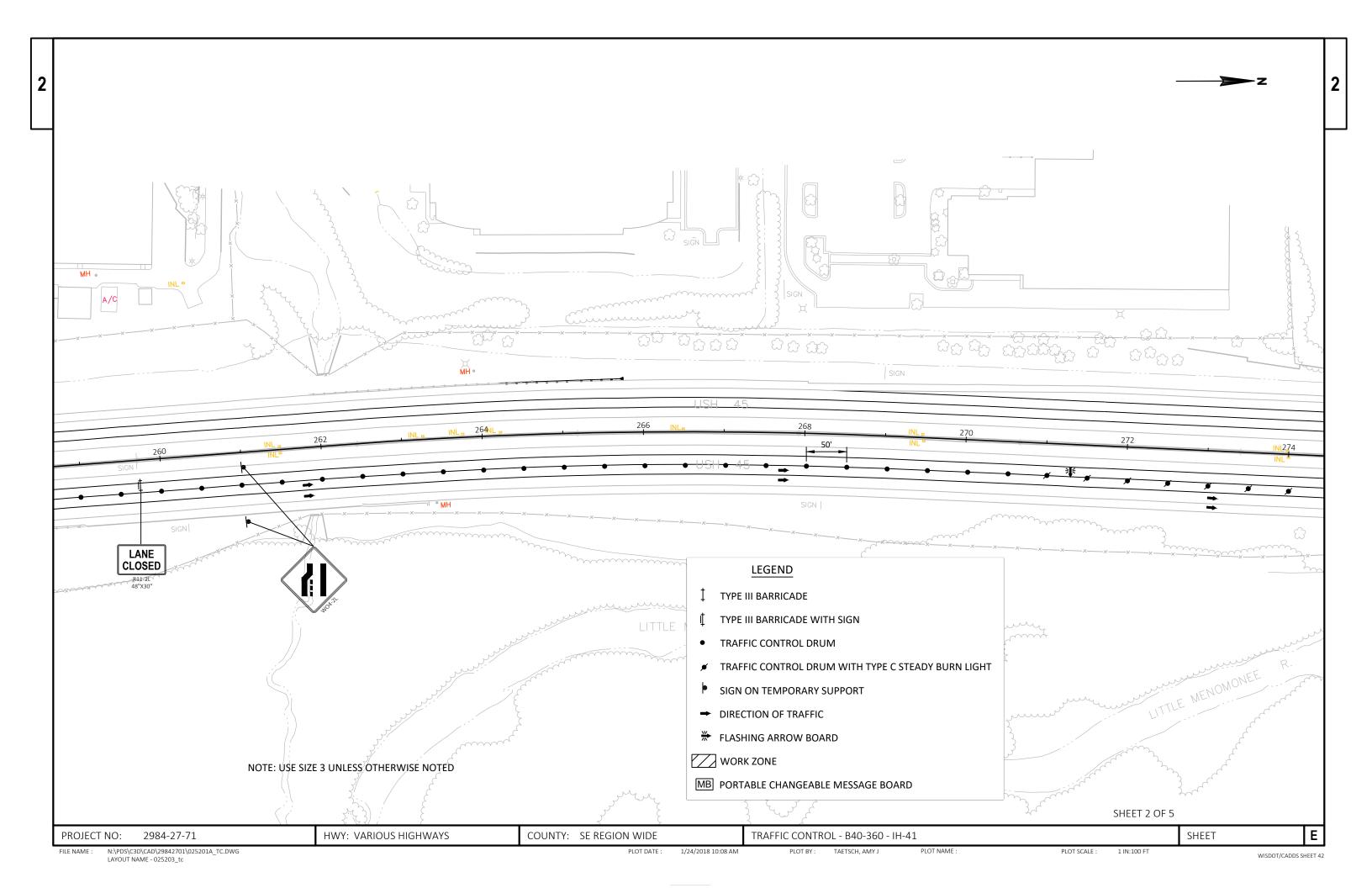


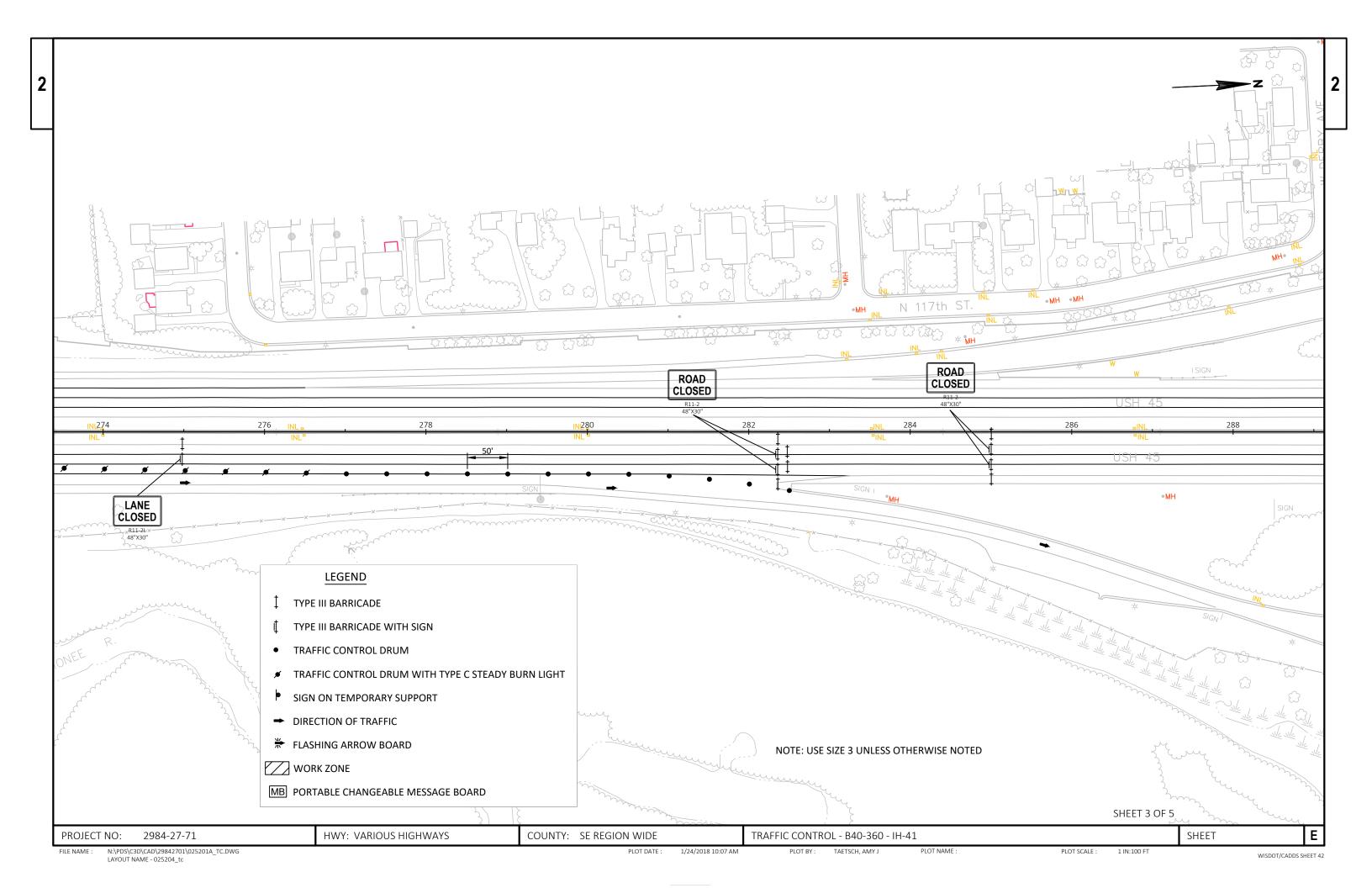


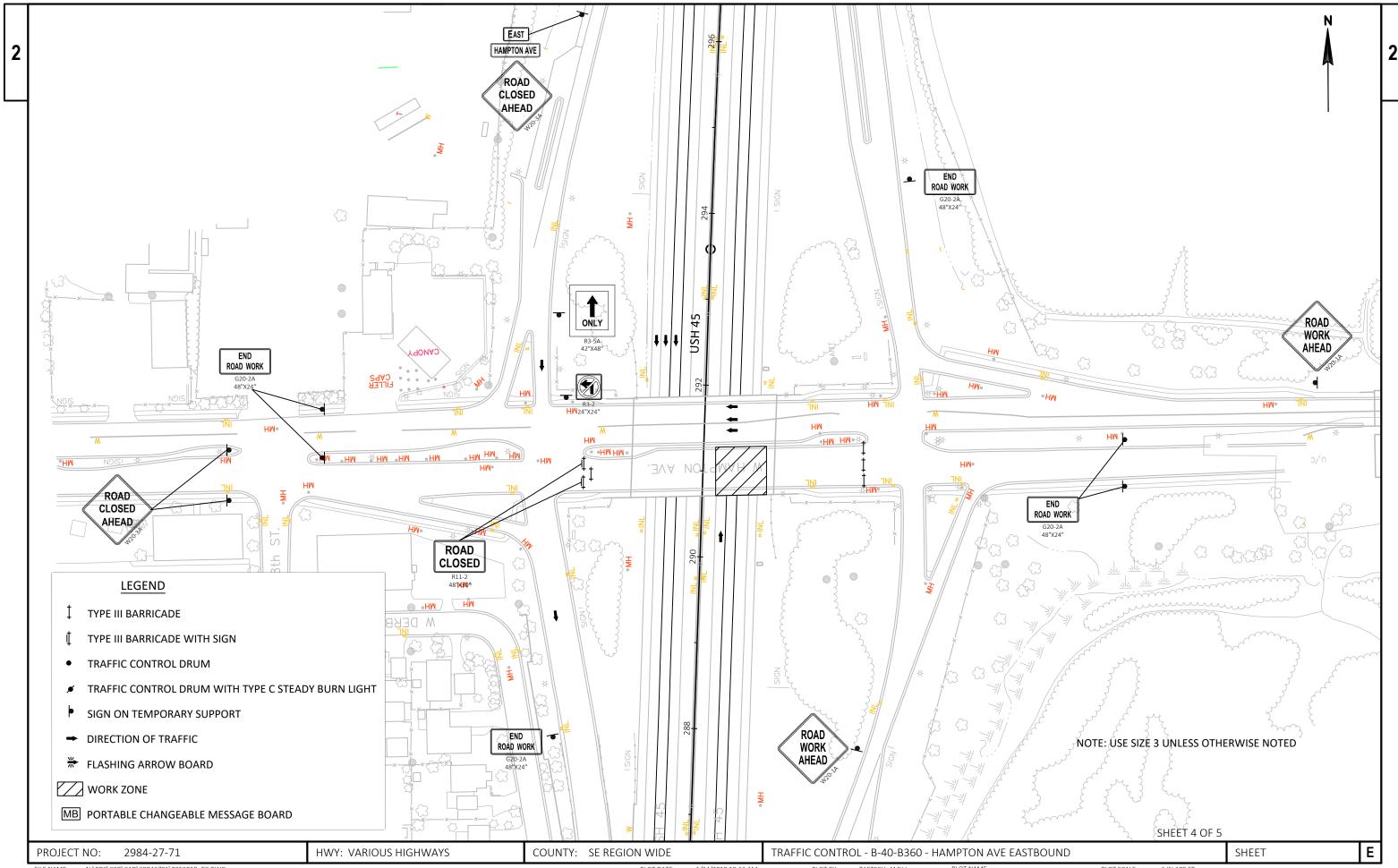


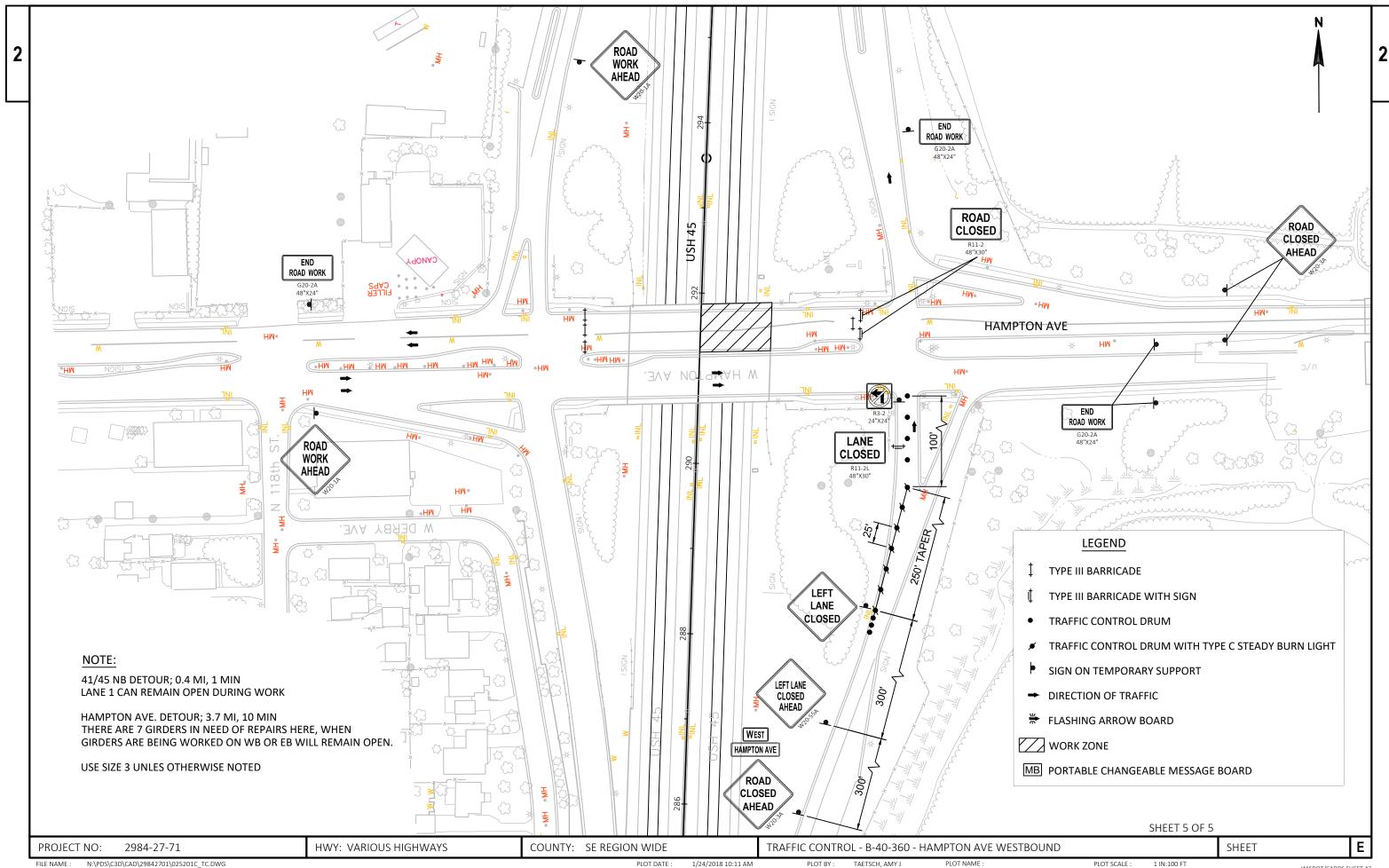


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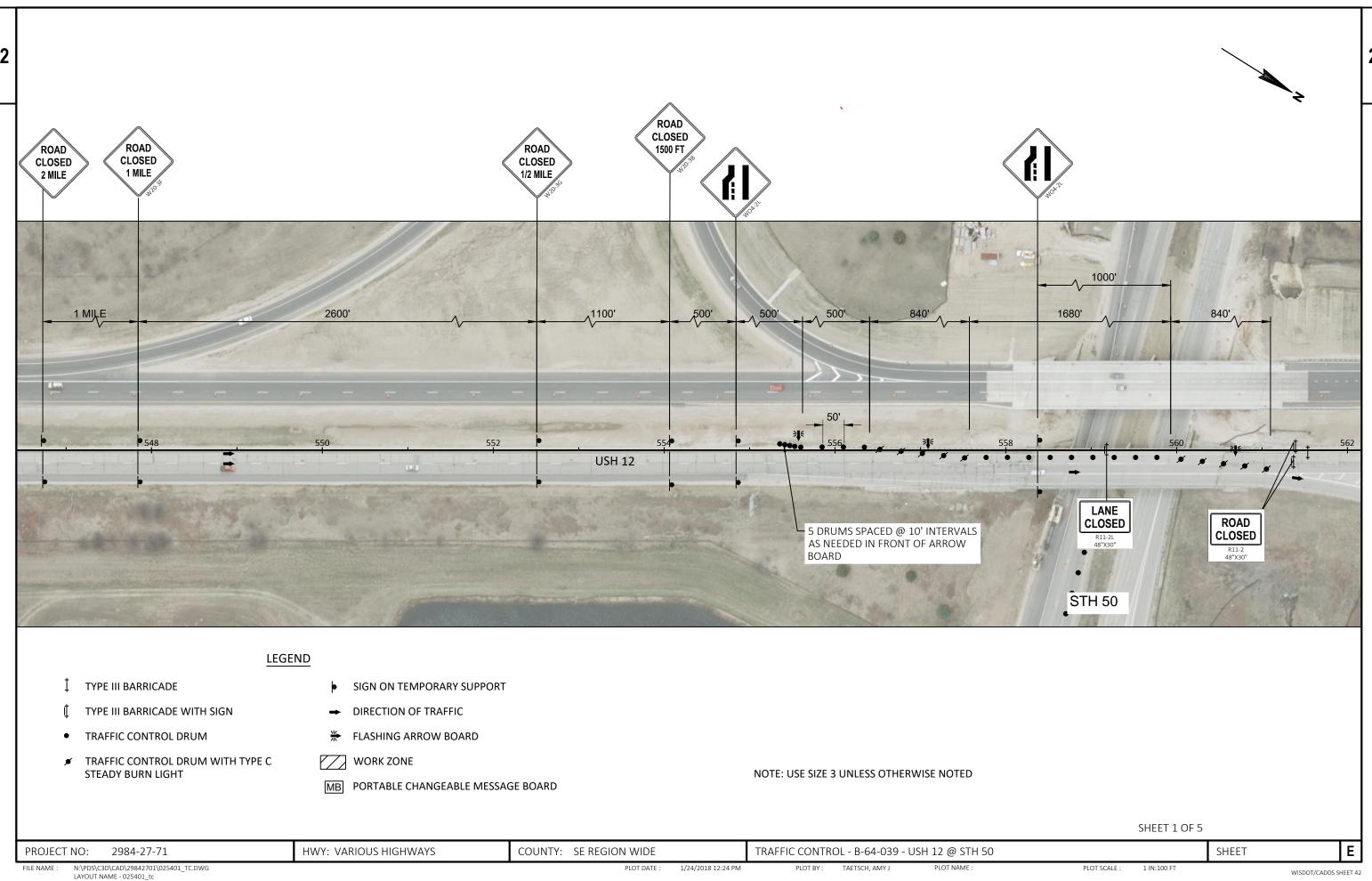




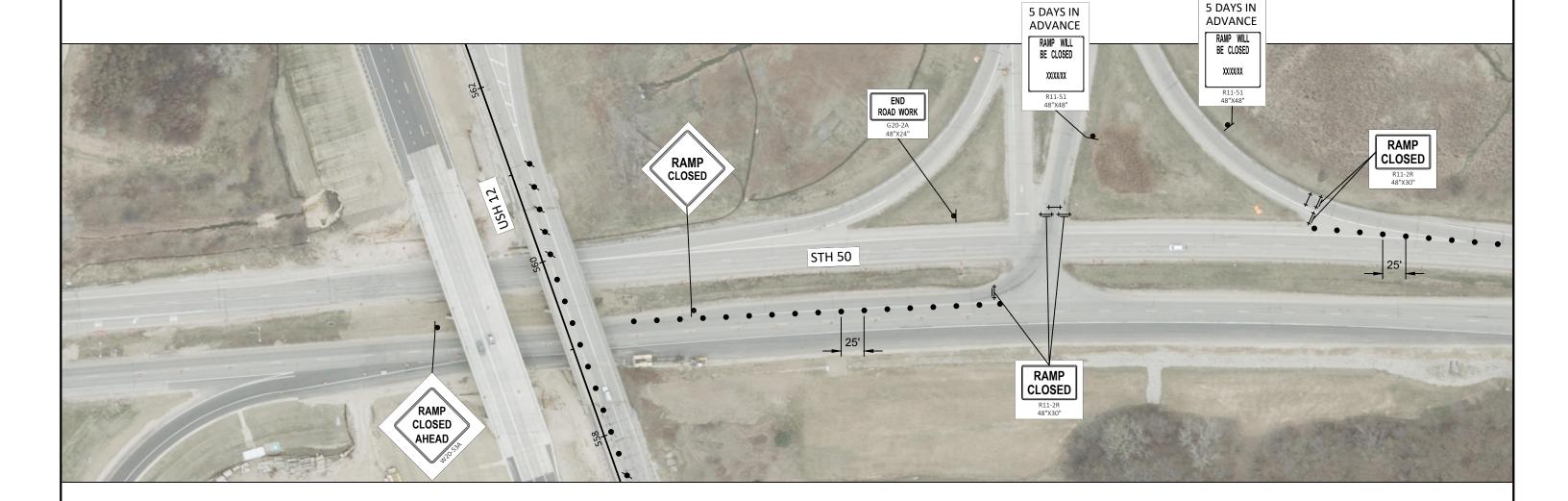




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TYPE III BARRICADE

TYPE III BARRICADE WITH SIGN

- TRAFFIC CONTROL DRUM
- ▼ TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- SIGN ON TEMPORARY SUPPORT
- → DIRECTION OF TRAFFIC

WORK ZONE

LEGEND

MB PORTABLE CHANGEABLE MESSAGE BOARD

NOTE: USE SIZE 3 UNLESS OTHERWISE NOTED

SHEET 2 OF 5

HWY: VARIOUS HIGHWAYS COUNTY: SE REGION WIDE SHEET PROJECT NO: 2984-27-71 TRAFFIC CONTROL - B-64-039 - STH 50 RAMP @ USH 12 PLOT NAME : PLOT SCALE : PLOT DATE : 1/25/2018 1:05 PM TAETSCH, AMY J PLOT BY :





LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH SIGN
- TRAFFIC CONTROL DRUM
- ▼ TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- SIGN ON TEMPORARY SUPPORT
- → DIRECTION OF TRAFFIC

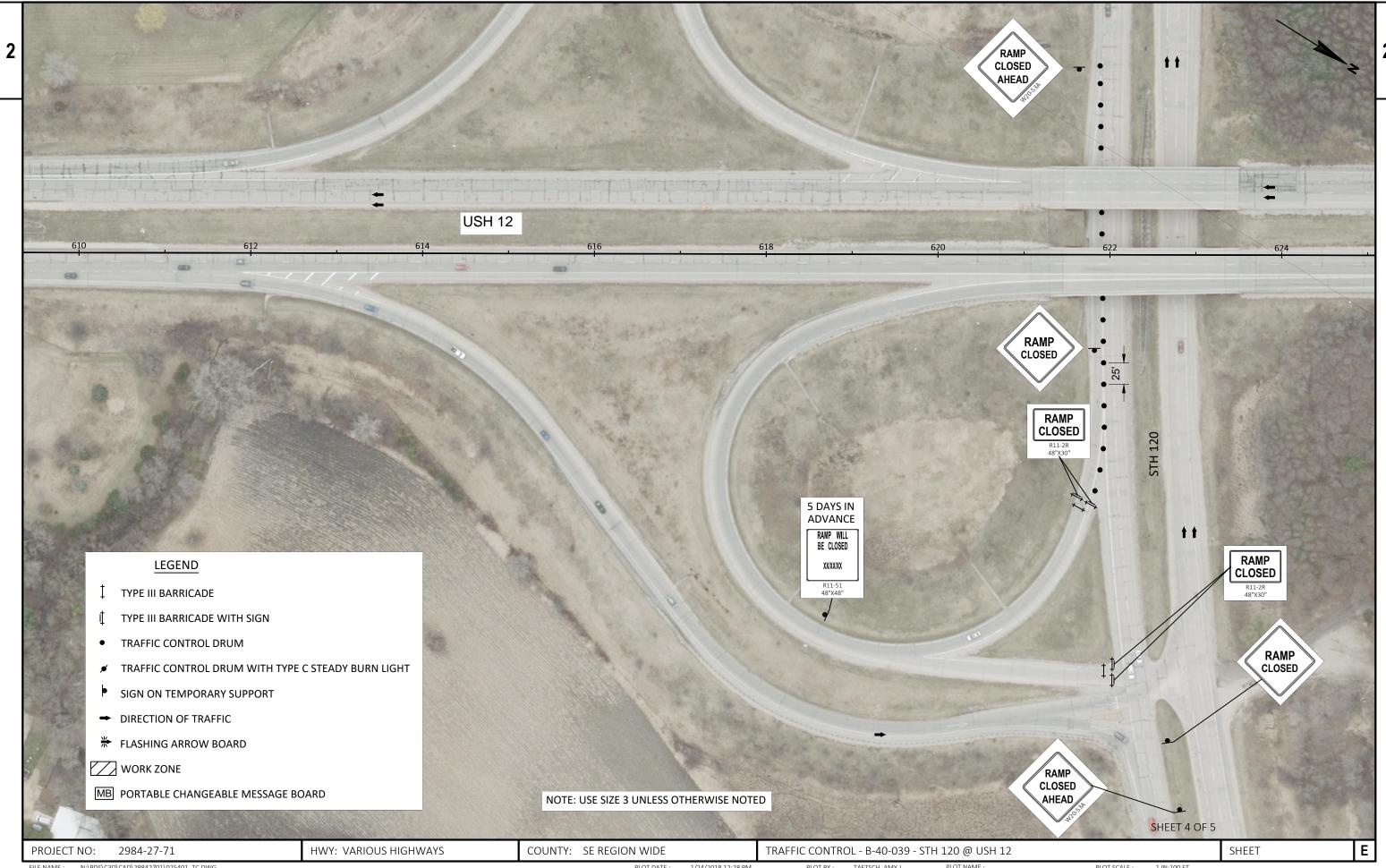
WORK ZONE

MB PORTABLE CHANGEABLE MESSAGE BOARD

NOTE: USE SIZE 3 UNLESS OTHERWISE NOTED

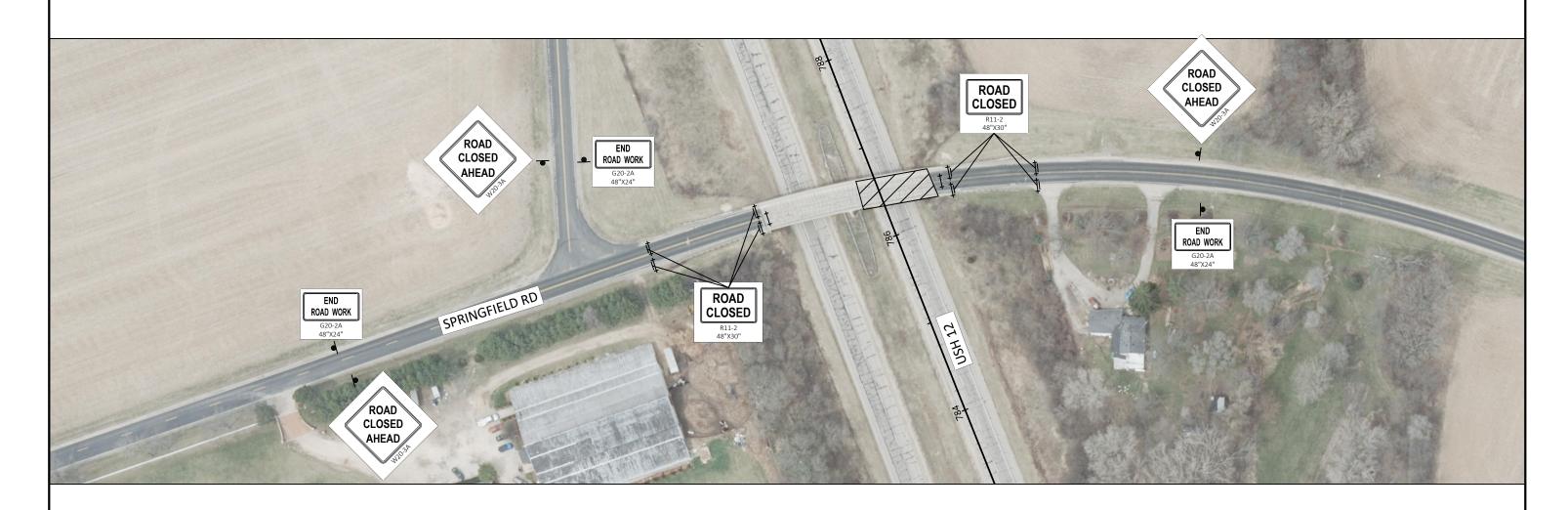
SHEET 3 OF 5

PROJECT NO: 2984-27-71 HWY: VARIOUS HIGHWAYS COUNTY: SE REGION WIDE TRAFFIC CONTROL - B-64-039 - STH 50 @ USH 12 SHEET



AME: N:\PD5\C3D\CAD\29842701\025401_TC.DWG
PLOT DATE: 1/24/2018 12:28 PM
PLOT BY: TAETSCH, AMY J
PLOT NAME:
LAYOUT NAME - 025404_tc





LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH SIGN
- TRAFFIC CONTROL DRUM
- ▼ TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- **▶** SIGN ON TEMPORARY SUPPORT
- → DIRECTION OF TRAFFIC
- ★ FLASHING ARROW BOARD

WORK ZONE

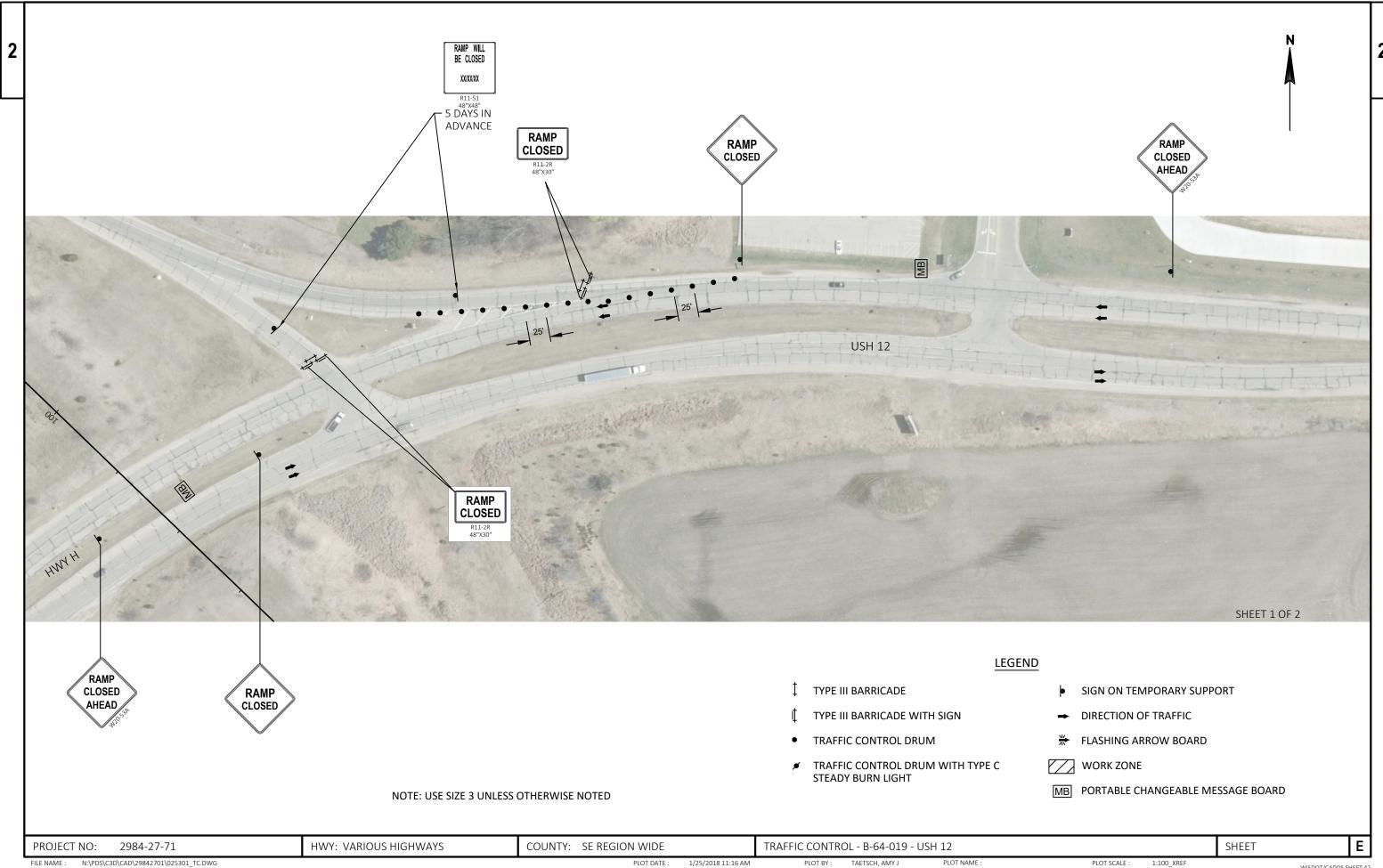
MB PORTABLE CHANGEABLE MESSAGE BOARD

NOTE: USE SIZE 3 UNLESS OTHERWISE NOTED

SHEET 5 OF 5

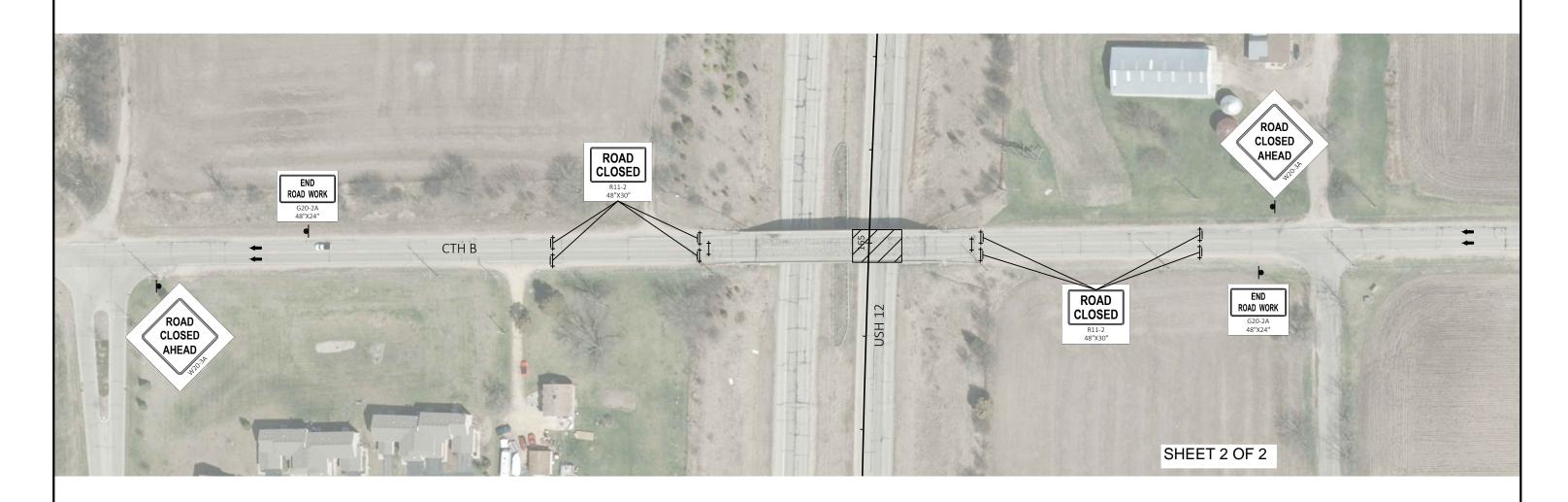
PROJECT NO: 2984-27-71 HWY: VARIOUS HIGHWAYS COUNTY: SE REGION WIDE TRAFFIC CONTROL - B-64-039 - SPRINGFIELD RD @ USH 12 SHEET

FILE NAME: N:\PDS\C3D\C401\29842701\025401_TC.DWG PLOT DATE: 1/24/2018 12:28 PM PLOT BY: TAETSCH, AMY J PLOT NAME: PLOT SCALE: 1 IN:100 FT WISDOT/CADDS SHE LAYOUT NAME - 025405_tc



N:\PDS\C3D\CAD\29842701\025301_TC.DWG LAYOUT NAME - 025301_tc WISDOT/CADDS SHEET 42





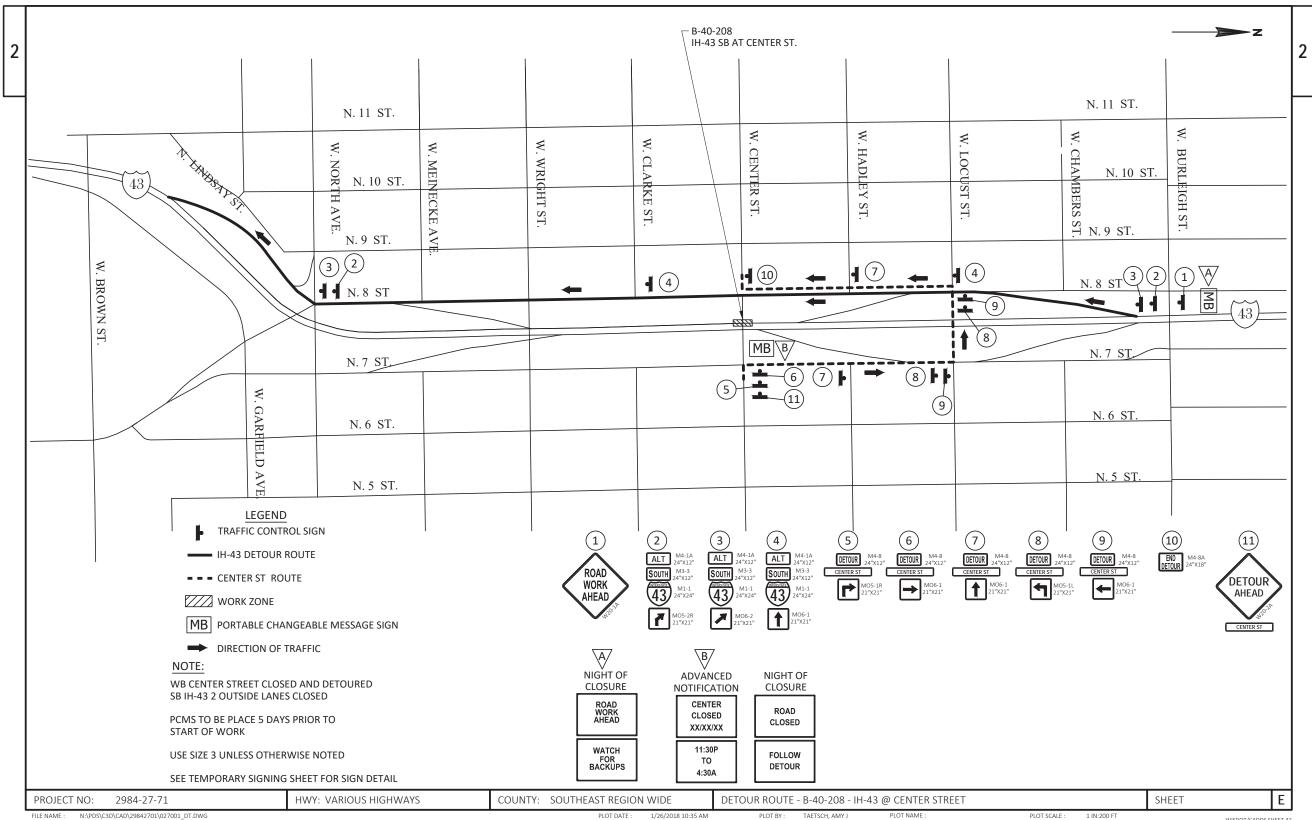
LEGEND

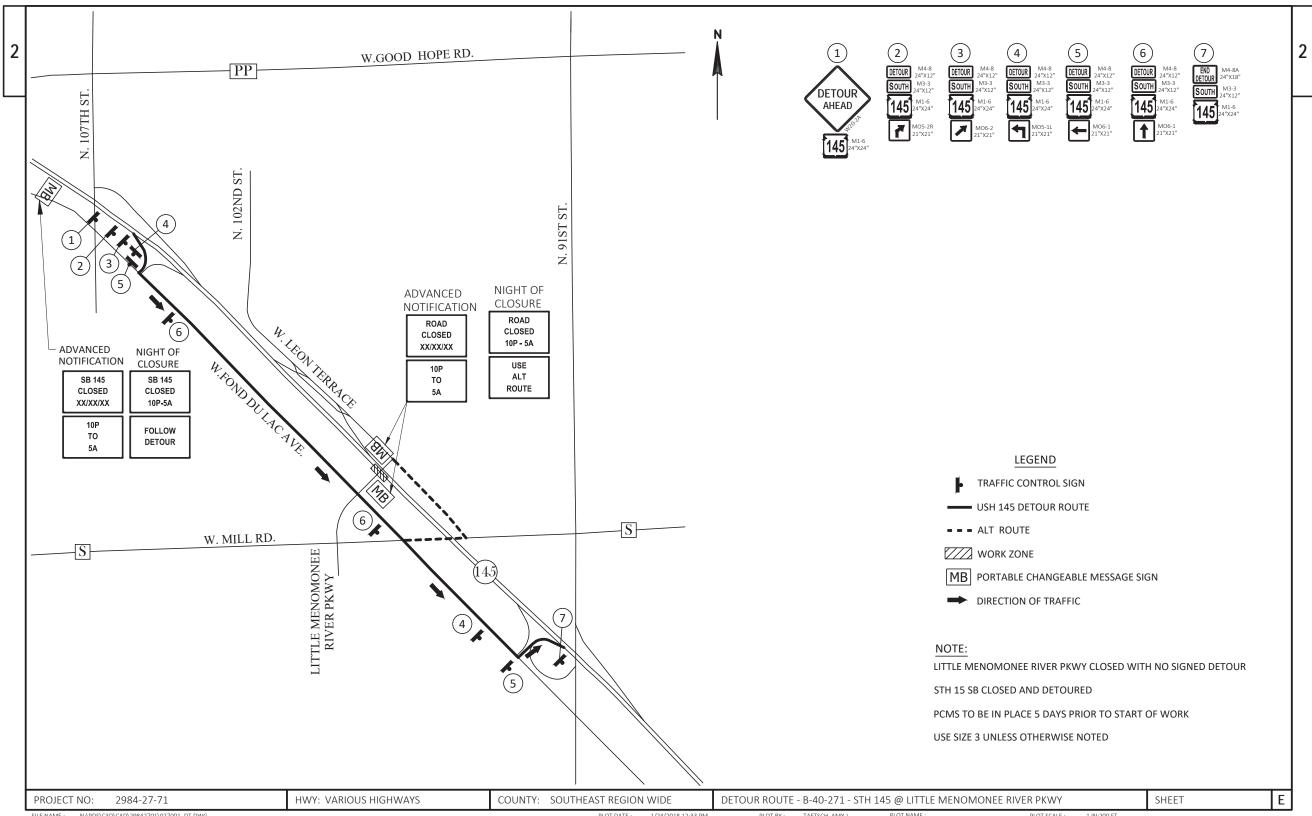
- TYPE III BARRICADE
- TYPE III BARRICADE WITH SIGN
- TRAFFIC CONTROL DRUM
- ▼ TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- **■** SIGN ON TEMPORARY SUPPORT
- → DIRECTION OF TRAFFIC
- ★ FLASHING ARROW BOARD
- WORK ZONE

MB PORTABLE CHANGEABLE MESSAGE BOARD

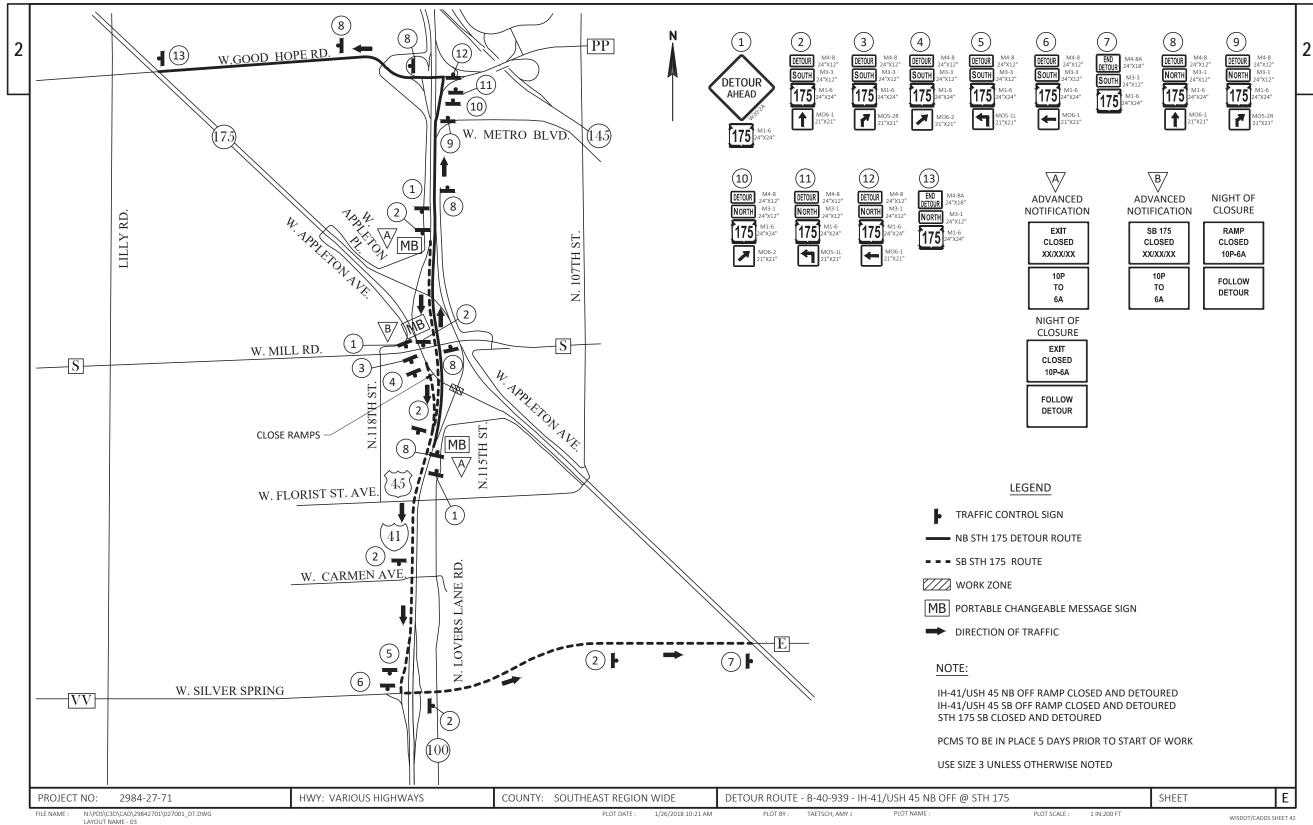
NOTE: USE SIZE 3 UNLESS OTHERWISE NOTED

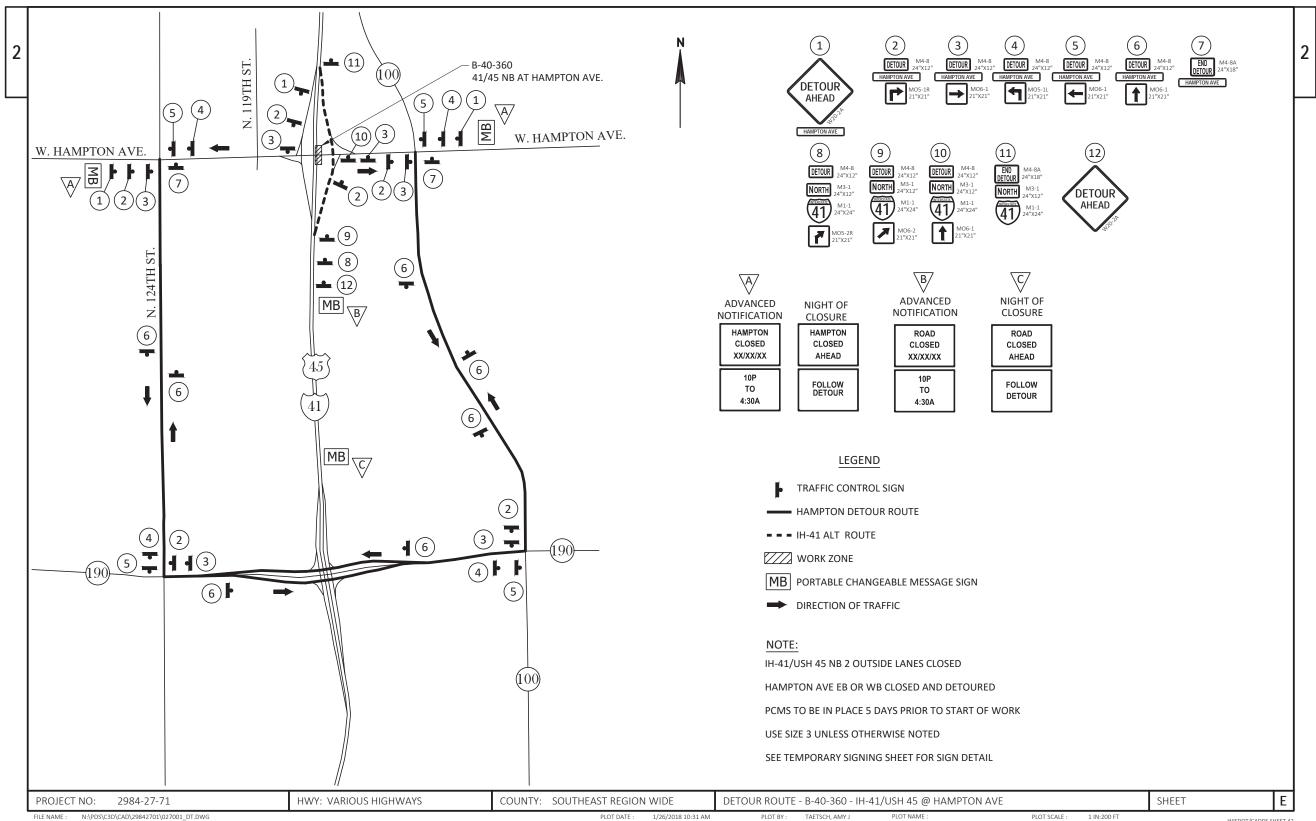
PROJECT NO: 2984-27-71 HWY: VARIOUS HIGHWAYS COUNTY: SE REGION WIDE TRAFFIC CONTROL - B-64-019 - CTH B



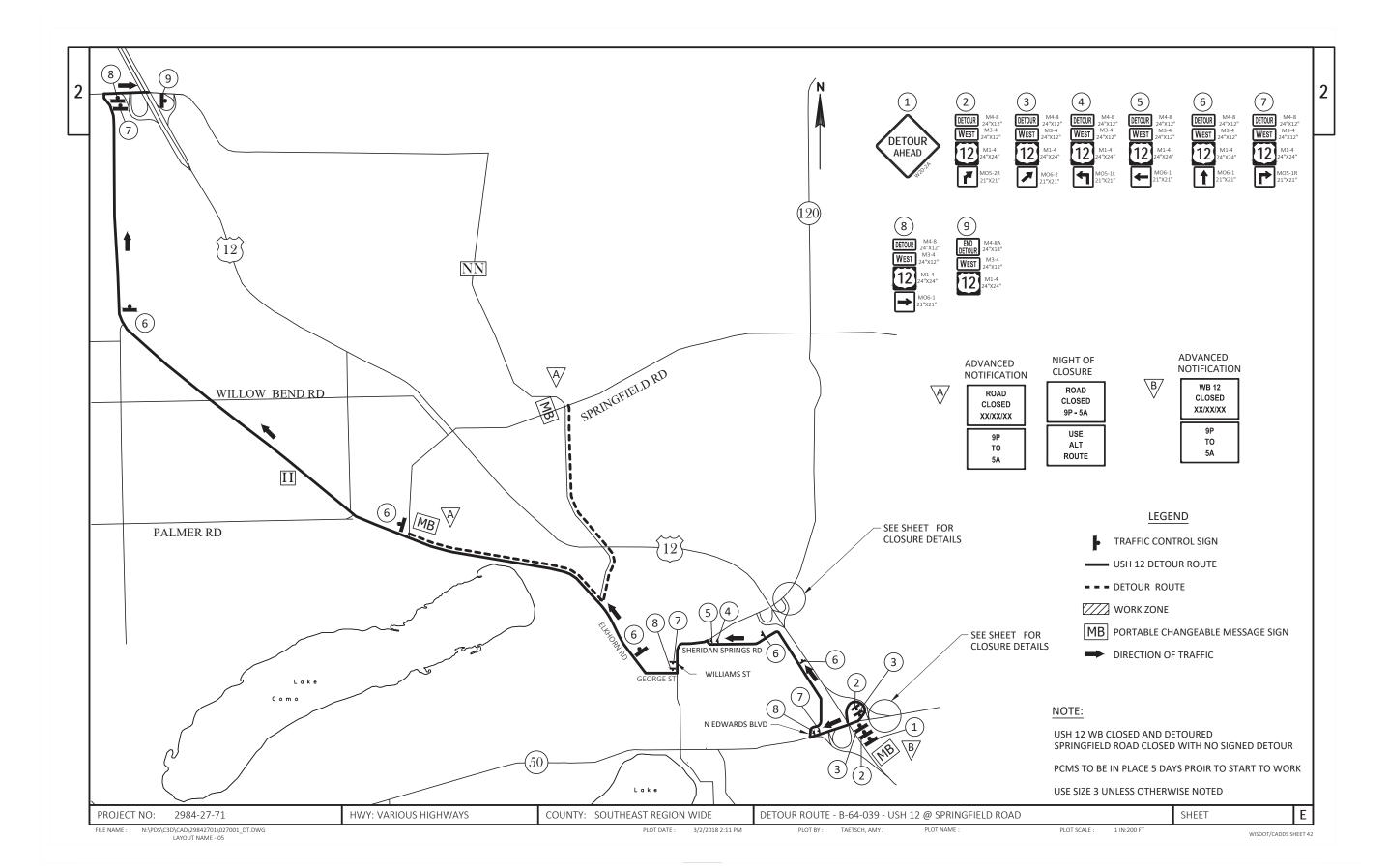


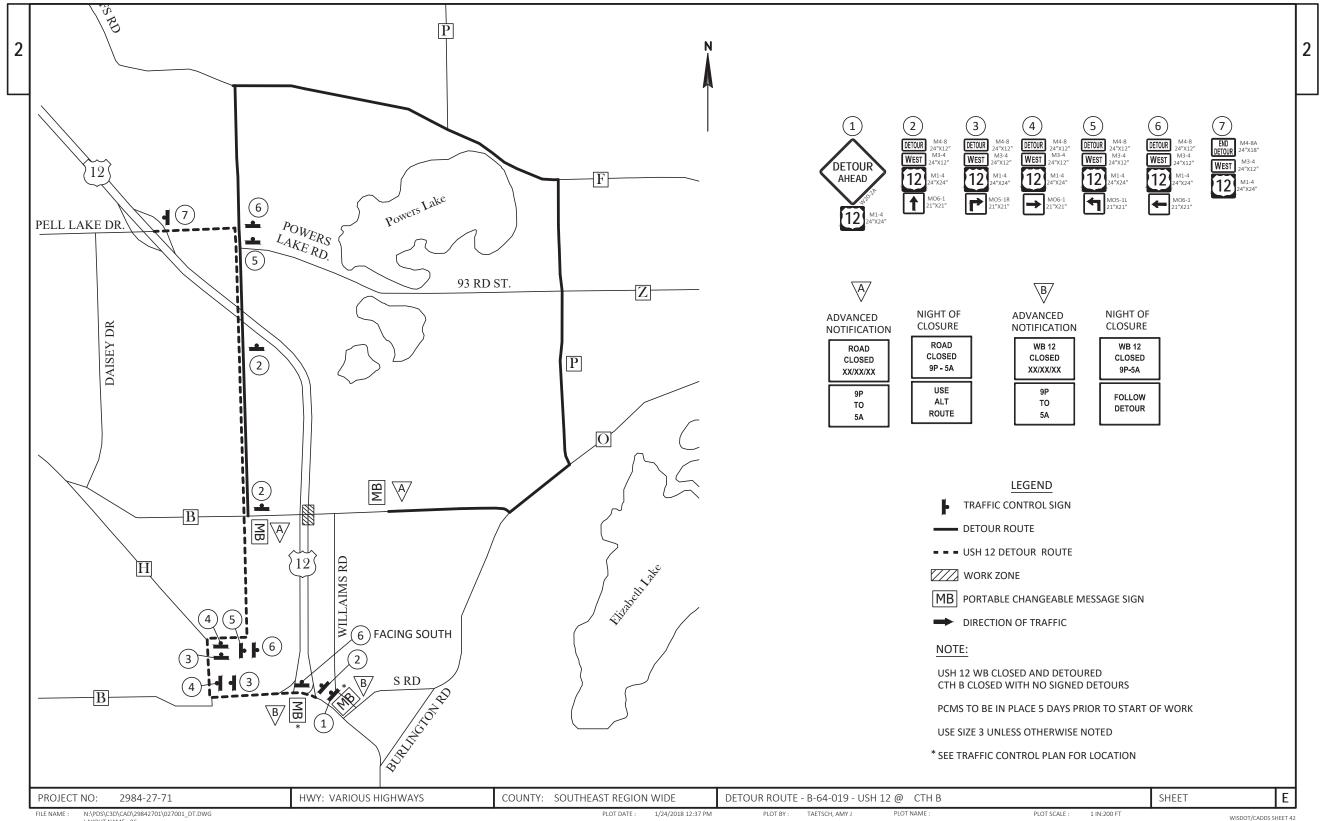
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N:\PDS\C3D\CAD\29842701\027001_DT.DWG LAYOUT NAME - 04 WISDOT/CADDS SHEET 42





N:\PDS\C3D\CAD\29842701\027001_DT.DW0 LAYOUT NAME - 06

					2984-27-71
Line	Item	Item Description	Unit	Total	Qty
0002	506.0105	Structural Steel Carbon	LB	81.000	81.000
0004		Structure Overcoating Cleaning and Priming (structure)		1.000	1.000
		01. B-40-208			
0006	517.3000.S	Structure Overcoating Cleaning and Priming (structure) 02. B-40-271	LS	1.000	1.000
8000	517.3000.S	Structure Overcoating Cleaning and Priming (structure)	LS	1.000	1.000
		03. B-40-939			
0010	517.3000.S	Structure Overcoating Cleaning and Priming (structure)	LS	1.000	1.000
0010	E47 2000 0	04. B-40-360	10	4.000	4 000
0012	517.3000.8	Structure Overcoating Cleaning and Priming (structure) 05. B-64-039	LS	1.000	1.000
0014	517.3000.S	Structure Overcoating Cleaning and Priming (structure)	LS	1.000	1.000
	2	06. B-64-019			
0016	517.4000.S	Containment and Collection of Waste Materials	LS	1.000	1.000
		(structure) 01. B-40-208			
0018	517.4000.S	Containment and Collection of Waste Materials (structure) 02. B-40-271	LS	1.000	1.000
0020	517 /000 9	Containment and Collection of Waste Materials	LS	1.000	1.000
0020	317.4000.3	(structure) 03. B-40-939	LO	1.000	1.000
0022	517.4000.S	Containment and Collection of Waste Materials	LS	1.000	1.000
		(structure) 04. B-40-360			
0024	517.4000.S	Containment and Collection of Waste Materials	LS	1.000	1.000
0000	E47 4000 0	(structure) 05. B-64-039	1.0	4 000	4.000
0026	517.4000.S	Containment and Collection of Waste Materials (structure) 06. B-64-019	LS	1.000	1.000
0028	517 6001 S	Portable Decontamination Facility 01. B-40-208	EACH	1.000	1.000
0020		Portable Decontamination Facility 01. B-40-200	EACH	1.000	1.000
0032		Portable Decontamination Facility 03. B-40-939	EACH	1.000	1.000
0032		Portable Decontamination Facility 04. B-40-360	EACH	1.000	1.000
0034		Portable Decontamination Facility 05. B-64-039	EACH	1.000	1.000
0038		Portable Decontamination Facility 06. B-64-019	EACH	1.000	1.000
0040	619.1000	Mobilization	EACH	1.000	1.000
0042	643.0300	Traffic Control Drums	DAY	3,607.000	3,607.000
0044	643.0420	Traffic Control Barricades Type III	DAY	633.000	633.000
0044	643.0705	Traffic Control Warning Lights Type A	DAY	1,266.000	1,266.000
0048	643.0715	Traffic Control Warning Lights Type C	DAY	914.000	914.000
0050	643.0800	Traffic Control Arrow Boards	DAY	95.000	95.000
0052	643.0900	Traffic Control Signs	DAY	3,324.000	3,324.000
0054	643.1050	Traffic Control Signs PCMS	DAY	187.000	187.000
0054	643.5000	Traffic Control	EACH	1.000	1.000
0058	SPV.0060	Special 02. Steel Crack Repair B-40-271	EACH	3.000	3.000
0060	SPV.0060	Special 04. Steel Crack Repair B-40-360	EACH	7.000	7.000
0000	OI V.0000	opoolal of. Otool Olaok Nopall D-40-000	LAOIT	7.000	7.000

					2984-27-71
Line	Item	Item Description	Unit	Total	Qty
0062	SPV.0060	Special 05. Steel Crack Repair B-64-039	EACH	2.000	2.000
0064	SPV.0060	Special 06. Steel Crack Repair B-64-019	EACH	4.000	4.000
0066	SPV.0105	Special 01. Heat Straightening of Damaged Girders B-40-208	LS	1.000	1.000
0068	SPV.0105	Special 02. Heat Straightening of Damaged Girders B-40-271	LS	1.000	1.000
0070	SPV.0105	Special 03. Heat Straightening of Damaged Girders B-40-939	LS	1.000	1.000
0072	SPV.0105	Special 04. Heat Straightening of Damaged Girders B-40-360	LS	1.000	1.000
0074	SPV.0105	Special 05. Heat Straightening of Damaged Girders B-64-039	LS	1.000	1.000
0076	SPV.0105	Special 06. Heat Straightening of Damaged Girders B-64-019	LS	1.000	1.000

CATEGORY 0010

	CONTROL
I RAFFIL.	CUMIRU

			110 4 1	IO O O I I I I I I I			
		BARRICADES	WARNING LIGHTS	WARNING LIGHTS	ARROW		SIGNS
	DRUMS	TYPE III	TYPE A	TYPE C	BOARDS	SIGNS	PCMS
	643.0300	643.0420	643.0705	643.0715	643.0800	643.0900	643.1050
LOCATION	DAYS	DAYS	DAYS	DAYS	DAYS	DAYS	DAYS
B-40-208	282	36	72	99	9	263	14
Center St. over IH43							
B-40-271 HWY145 SB over Little Menomonee Pkwy.	328	52	104	156	16	280	27
B-40-939 IH41 NB exit over HWY175 SB	845	65	130	65	10	630	30
B-40-360	1190	205	410	380	40	1005	35
Hampton Ave. over IH41/USH45							
B-64-039	745	135	270	170	15	700	40
Springfield Rd. over USH 12							
B-64-019	45	110	220	0	0	288	32
CTH B over USH 12							
UNDISTRIBUTED	172	30	60	44	5	158	9
TOTALS:	3607	633	1266	914	95	3324	187

 TRAFFIC CONTROL

 643.5000

 LOCATION
 EACH

 VARIOUS HIGHWAYS
 1

 TOTAL
 1

 MOBILIZATION

 619.1000

 LOCATION
 EACH

 VARIOUS HIGHWAYS
 1

 TOTAL
 1

PROJECT NO: 2984-27-71 HWY: VARIOUS HIGHWAYS COUNTY: SE REGION WIDE MISCELLANEOUS QUANTITIES SHEET: **E**

| PLOT DATE : _____ PLOT BY : _____ PLOT NAME : ____ PLOT SCALE

Standard Detail Drawing List

15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C11-07A	CHANNELIZING DEVICES FLEXIBLE TUBULAR MARKER POST
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D12-06A	TRAFFIC CONTROL, LANE CLOSURE
15D14-03	TRAFFIC CONTROL, TWO LANE CLOSURE ON FREEWAY OR EXPRESSWAY, SHORT-TERM (LESS THAN 24 HOURS)
15D15-04A	TRAFFIC CONTROL, PARALLEL ENTRANCE RAMP WITHIN LANE CLOSURE
15D15-04B	TRAFFIC CONTROL, ENTRANCE RAMP WITHIN LANE CLOSURE
15D15-04C	TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE
15D15-04D	TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE
15D15-04E	TRAFFIC CONTROL, PARALLEL EXIT RAMP WITHIN LANE CLOSURE
15D16-03	TRAFFIC CONTROL, EXIT RAMP CLOSURE
15D20-04	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS
15D39-01	TRAFFIC CONTROL DROP-OFF SIGNING

6



ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E LANE CLOSURE BARRICADE DETAIL APPROACH VIEW

SEE SDD 15C2-SHEET "a" FOR LEGEND

GENERAL NOTES

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

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.

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

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

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

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL D FOR FULL ROAD CLOSURES.

TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE

THE R11-2, R11-3, M4-9, R11-4 AND R10-61 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

R11-2 SHALL BE 48" X 30". R11-3, R11-4 AND R10-61 SHALL BE 60" X 30". M4-9 SHALL BE 30" X 24". M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.) M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.) M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.) MO5-1 AND MO6-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.) D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS. R1-1 SHALL BE 36" X 36".

- (1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT
- THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.
- FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.
- FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.
- FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.
- INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS. PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

2

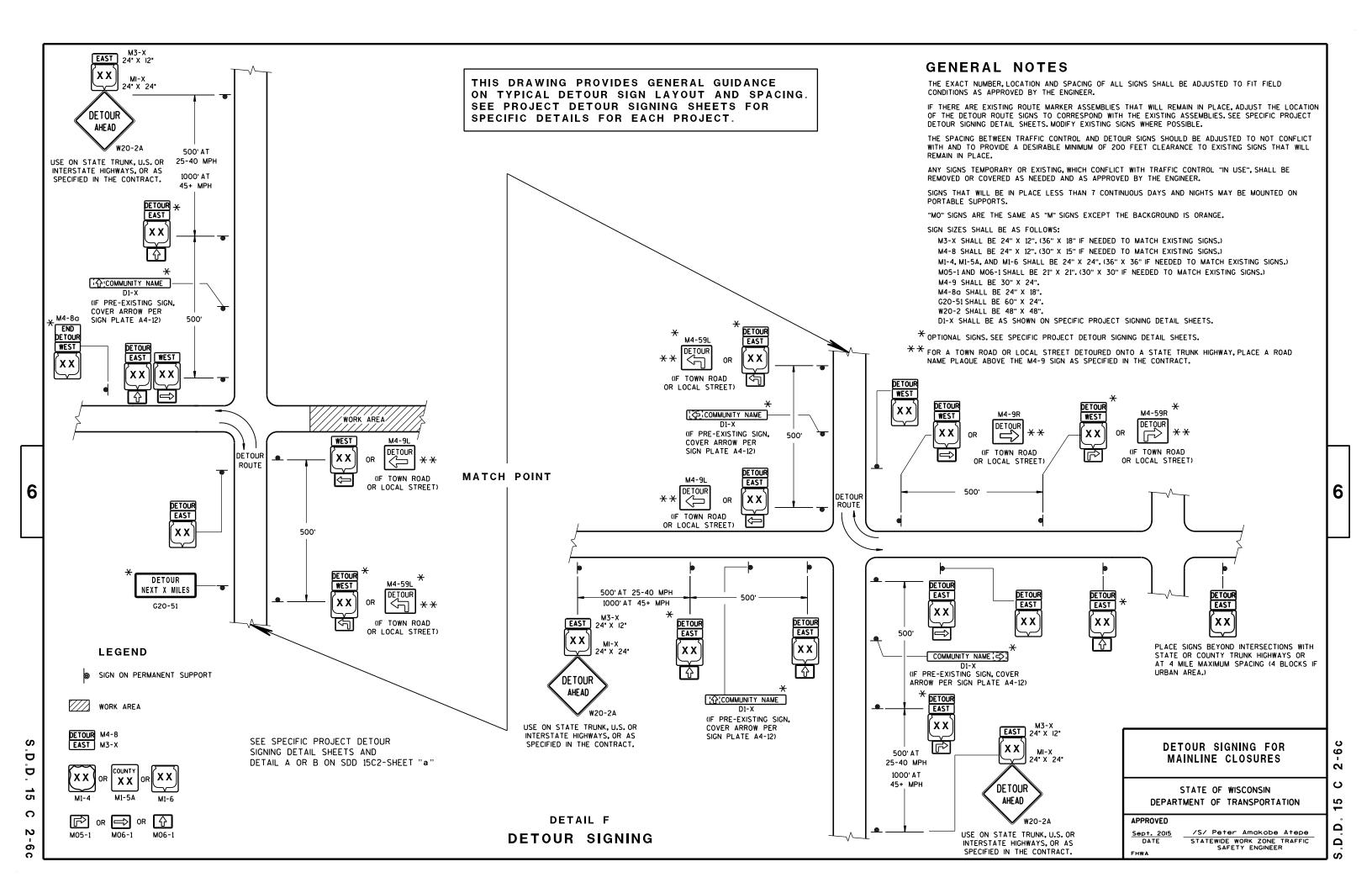
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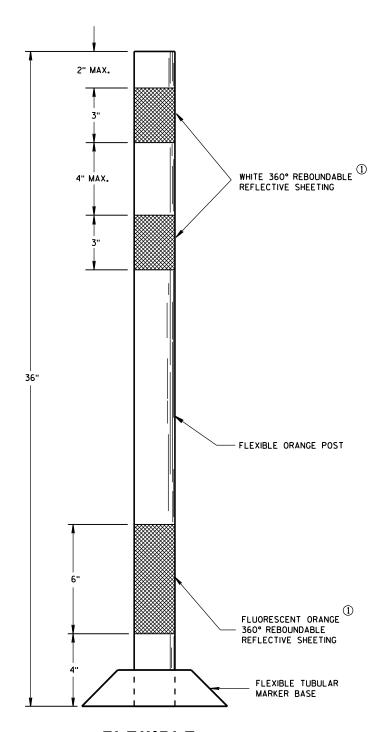
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STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

/S/ Peter Amakobe Atepe

STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER





FLEXIBLE TUBULAR MARKER POST **WORK ZONE**

GENERAL NOTES

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

SURFACE MOUNTED BASES SHALL BE FURNISHED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS TO BE COMPATIBLE WITH FLEXIBLE TUBULAR MARKER POSTS TO A SIZE AND SHAPE THAT WILL PROVIDE A STABLE POST FOUNDATION WHEN SECURED TO THE PAVEMENT.

THE ASPHALTIC ADHESIVE OR BUTYL PAD FURNISHED SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, UNLESS DIRECTED BY THE ENGINEER TO USE BOLTS.

1 REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.

> CHANNELIZING DEVICES FLEXIBLE TUBULAR MARKER POST

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED

/S/ Andrew Heidtke WORK ZONE ENGINEER FHWA

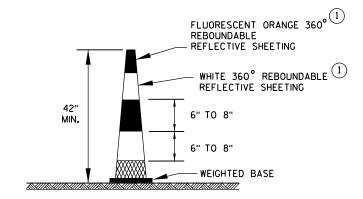
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Ω Ω **DRUM**

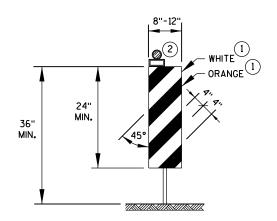
TYPE 2 BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES MAY BE USED. ALL STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



42" CONE

DO NOT USE IN TAPERS 1/2 SPACING OF DRUMS

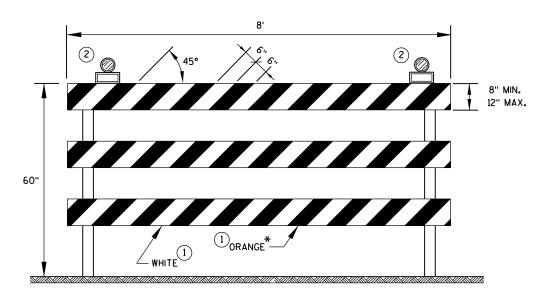


VERTICAL PANEL

THE STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.

GENERAL NOTES

- REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- (2) LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.



TYPE 3 BARRICADE

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

* IF USED FOR A PERMANENT APPLICATION, USE RED SHEETING.

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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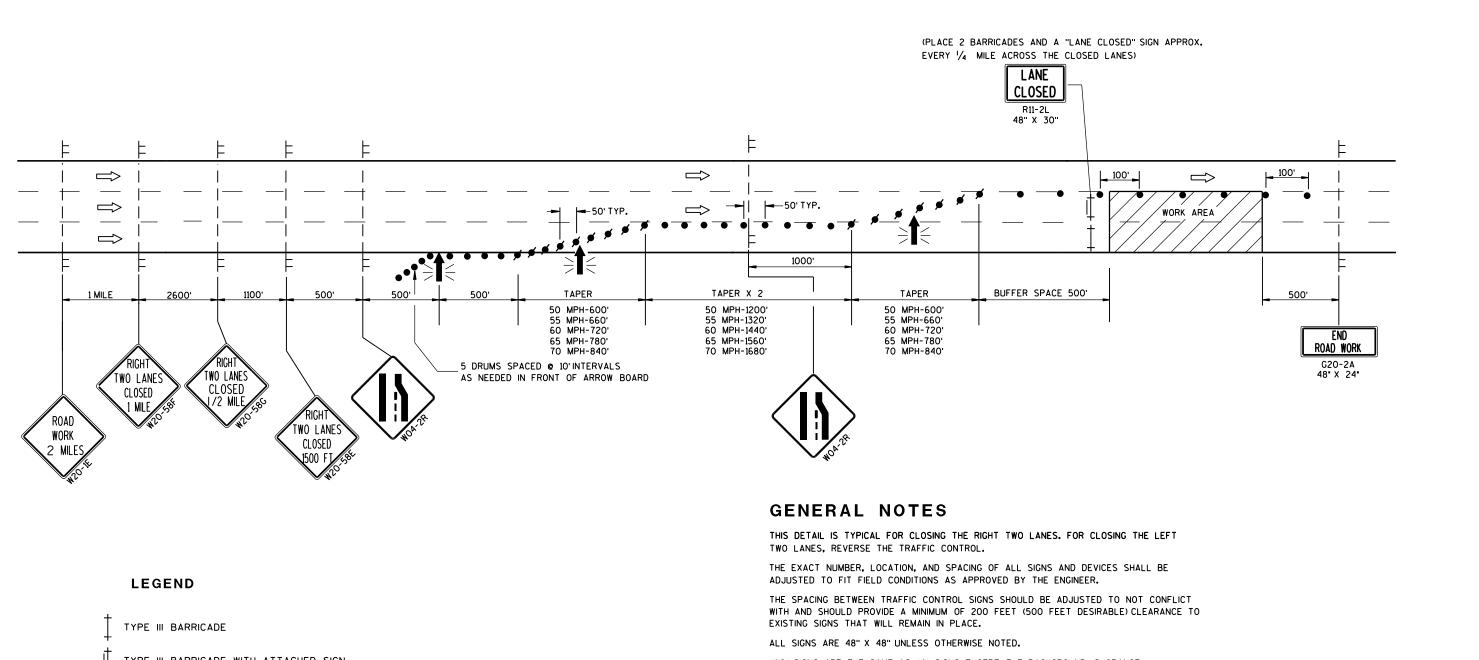
June 2017
DATE

WORK ZONE ENGINEER
FHWA

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GENERAL NOTES LEGEND THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER. 4 OR MORE DAYS AND NIGHTS. TYPE III BARRICADE WITH ATTACHED SIGN 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 WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION. SIGN ON PERMENENT SUPPORT IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING DELINEATION. THE DEVICE SPACING MAY BE DECREASED TO 50 FEET. LEFT LANE. TRAFFIC CONTROL DRUM ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST FLASHING ARROW BOARD "WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE. 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. ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" TYPE "A" WARNING LIGHT (FLASHING) 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 SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS. * X -X REMOVING PAVEMENT MARKING CROSSOVER MANEUVER. CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS * THE LEFT REVERSE CURVE SIGN (WO1-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL. DIRECTION OF TRAFFIC 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. 6 6 WORK CLOSED CLOSED I MILE 1500 F XX м.Р.н 36"×36" IF NEEDED. USE ONLY TYPE III BARRICADE IF DESIGN SPEED IS TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE SPACED EVERY 1/4 MILE. 10 MPH BELOW 4-INCH EDGELINE (WHITE ON RIGHT, YELLOW ON LEFT) POSTED SPEED. 100' \Rightarrow \Rightarrow \Longrightarrow WORK AREA 50' TYP. L/2 500' MIN. - 800' DESIRABLE 575 L. TAPER 500 50 MPH - 600' 55 MPH - 660' 2600' 1600' 1000' 60 MPH - 720' TRAFFIC CONTROL, 9 65 MPH - 780' D 70 MPH - 840' LANE CLOSURE 5 DRUMS SPACED @ 10' INTERVALS AS 2 D NEEDED IN FRONT OF ARROW BOARD 15 Ω STATE OF WISCONSIN ADVANCED WARNING AREA TRANSITION AREA BUFFER SPACE DEPARTMENT OF TRANSPORTATION D **APPROVED** /S/ Peter Amakobe Atepe 2 March 2016 STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER Ω 6 FHWA



TYPE III BARRICADE WITH ATTACHED SIGN

SIGN ON TEMPORARY SUPPORT

TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT

TRAFFIC CONTROL DRUM

FLASHING ARROW BOARD

DIRECTION OF TRAFFIC

"WO" SIGNS ARE THE SAME AS "W" SIGNS 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.

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

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

WHEN A RAMP OR SIDE ROAD INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

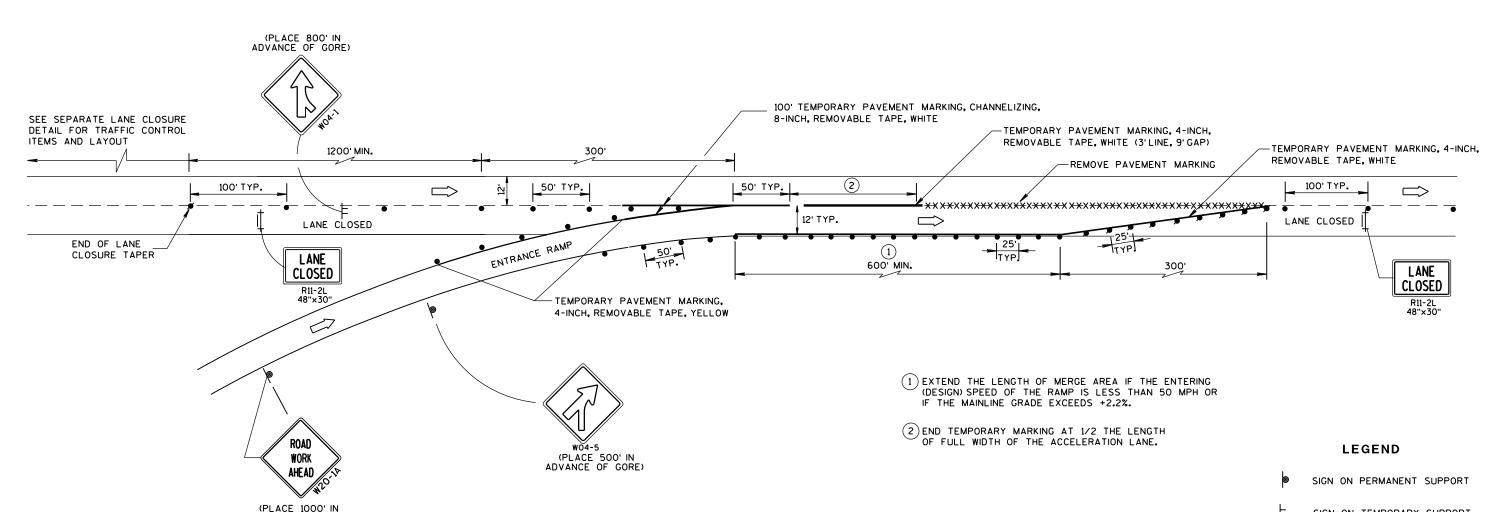
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

TRAFFIC CONTROL, TWO LANE CLOSURE ON FREEWAY OR EXPRESSWAY, SHORT TERM (LESS THAN 24 HOURS)

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

July 14, 2015 /S/ Peter Amakobe Atepe DATE STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER

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PARALLEL ENTRANCE RAMP

GENERAL NOTES

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.

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.

ADVANCE OF GORE)

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2L "LANE CLOSED" SIGNS.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS. OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS. USE SUPPORTS THAT PROVIDE A MINIMUM OF 5 FEET FROM THE BOTTOM OF THE SIGN TO THE PAVEMENT.

IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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.

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

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

SIGN ON TEMPORARY SUPPORT

TRAFFIC CONTROL DRUM

TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT

TYPE III BARRICADE WITH ATTACHED SIGN

REMOVING PAVEMENT MARKING

DIRECTION OF TRAFFIC

TRAFFIC CONTROL, PARALLEL ENTRANCE RAMP WITHIN LANE CLOSURE

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED				
Sept., 2017	/S/ Andrew Heidtke			
DATE	WORK ZONE ENGINEER			

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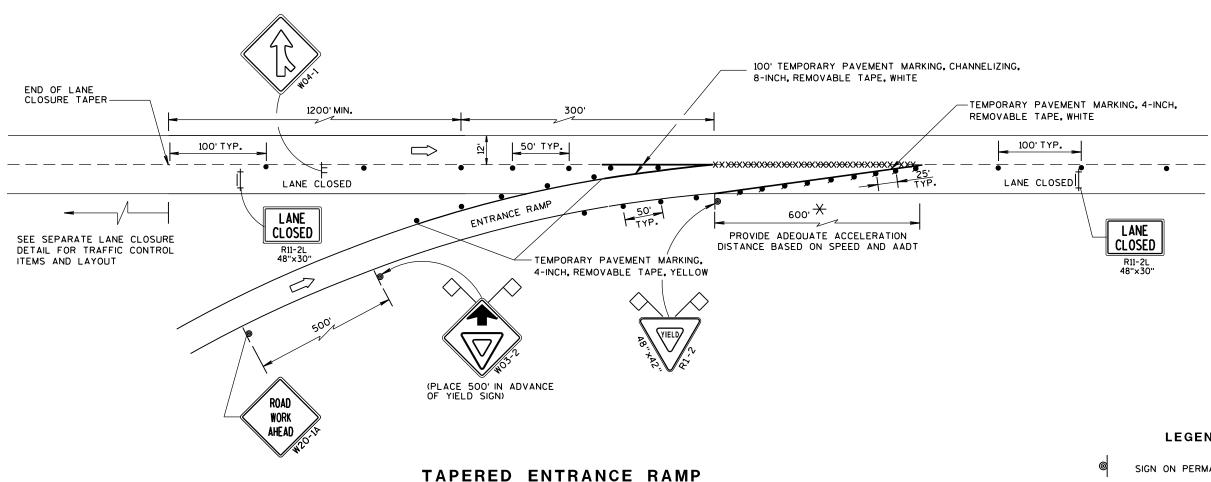
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WITHIN RIGHT LANE CLOSURE

GENERAL NOTES

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.

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"x48" UNLESS OTHERWISE NOTED.

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

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2L "LANE CLOSED" SIGNS.

YIELD SIGN AND WARNING SIGNS ON ENTRANCE RAMP ARE ALSO APPROPRIATE FOR CLOSURE OF THE MAINLINE LEFT LANE, OMIT THE YIELD SIGN IF MORE THAN ONE LANE REMAINS OPEN ON THE MAINLINE AND THE RAMP TAPER IS AT LEAST AS LONG AS THE NORMAL ENTRANCE RAMP TAPER AT THE SITE.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS. OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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.

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

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

X CONSULT WITH REGIONAL WORK ZONE ENGINEER IF NEED TO REDUCE LENGTH EXISTS.

LEGEND

SIGN ON PERMANENT SUPPORT

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SIGN ON TEMPORARY SUPPORT

TRAFFIC CONTROL DRUM

TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT

REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)

> TYPE III BARRICADE WITH ATTACHED SIGN

FLAGS, 16" × 16" MIN., (ORANGE)

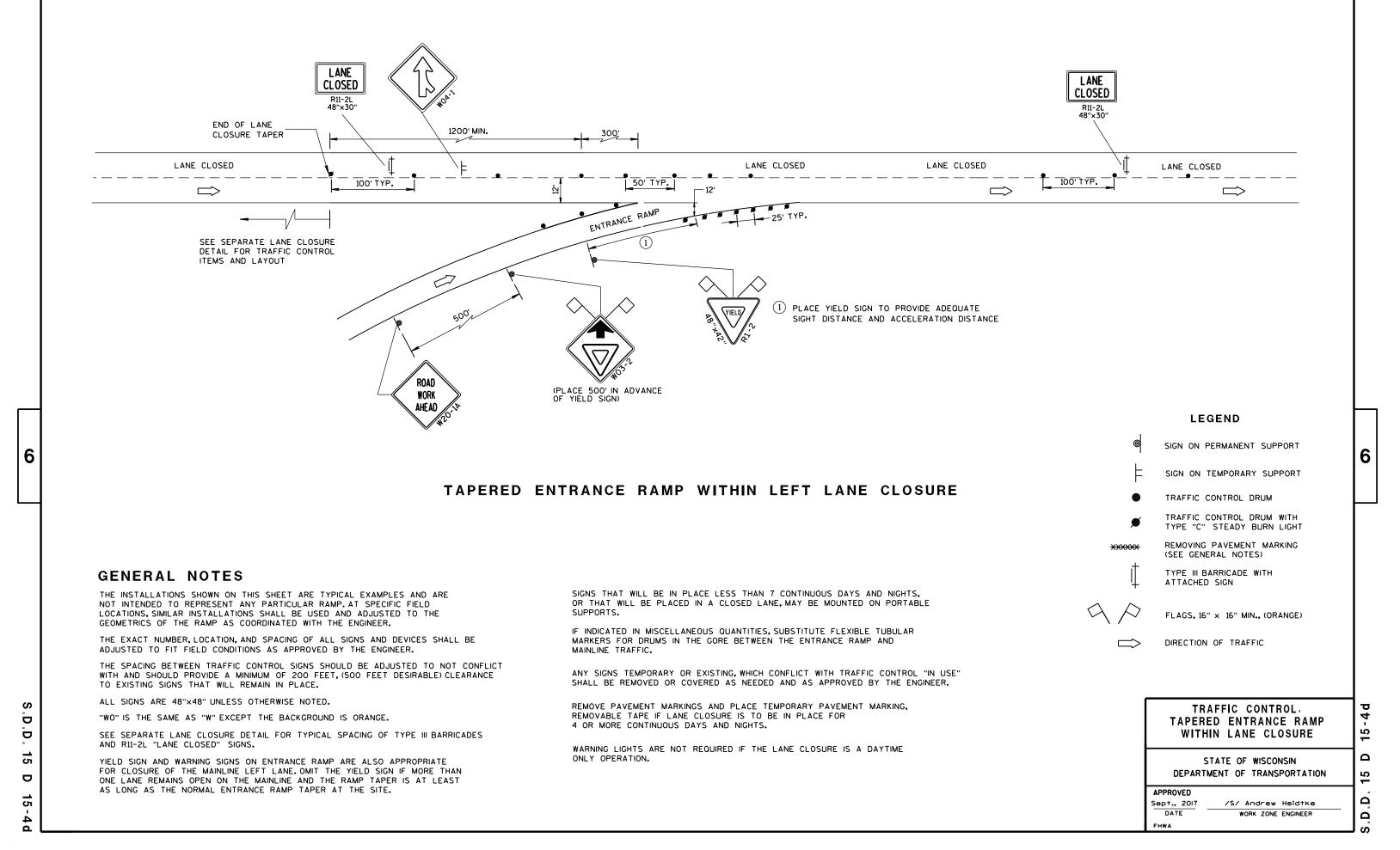
DIRECTION OF TRAFFIC

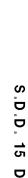
TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE

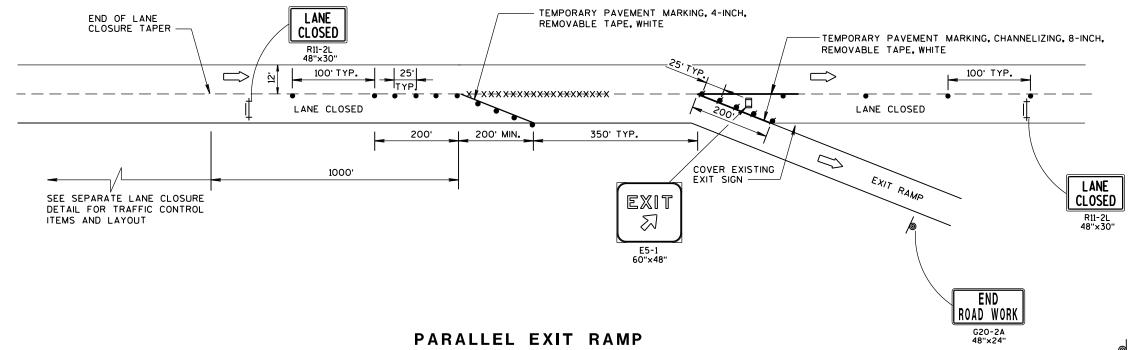
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

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Sept., 2017	/S/ Andrew Heidtke
DATE	WORK ZONE ENGINEER
FHWA	







GENERAL NOTES

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.

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"×48" UNLESS OTHERWISE NOTED.

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

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2L "LANE CLOSED" SIGNS.

YIELD SIGN AND WARNING SIGNS ON ENTRANCE RAMP ARE ALSO APPROPRIATE FOR CLOSURE OF THE MAINLINE LEFT LANE. OMIT THE YIELD SIGN IF MORE THAN ONE LANE REMAINS OPEN ON THE MAINLINE AND THE RAMP TAPER IS AT LEAST AS LONG AS THE NORMAL ENTRANCE RAMP TAPER AT THE SITE.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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.

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

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

LEGEND

SIGN ON PERMANENT SUPPORT

SIGN ON TEMPORARY SUPPORT

TRAFFIC CONTROL DRUM

TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT

REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)

> TYPE III BARRICADE WITH ATTACHED SIGN

FLAGS, 16" × 16" MIN., (ORANGE)

DIRECTION OF TRAFFIC

TRAFFIC CONTROL, PARALLEL EXIT RAMP WITHIN LANE CLOSURE

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

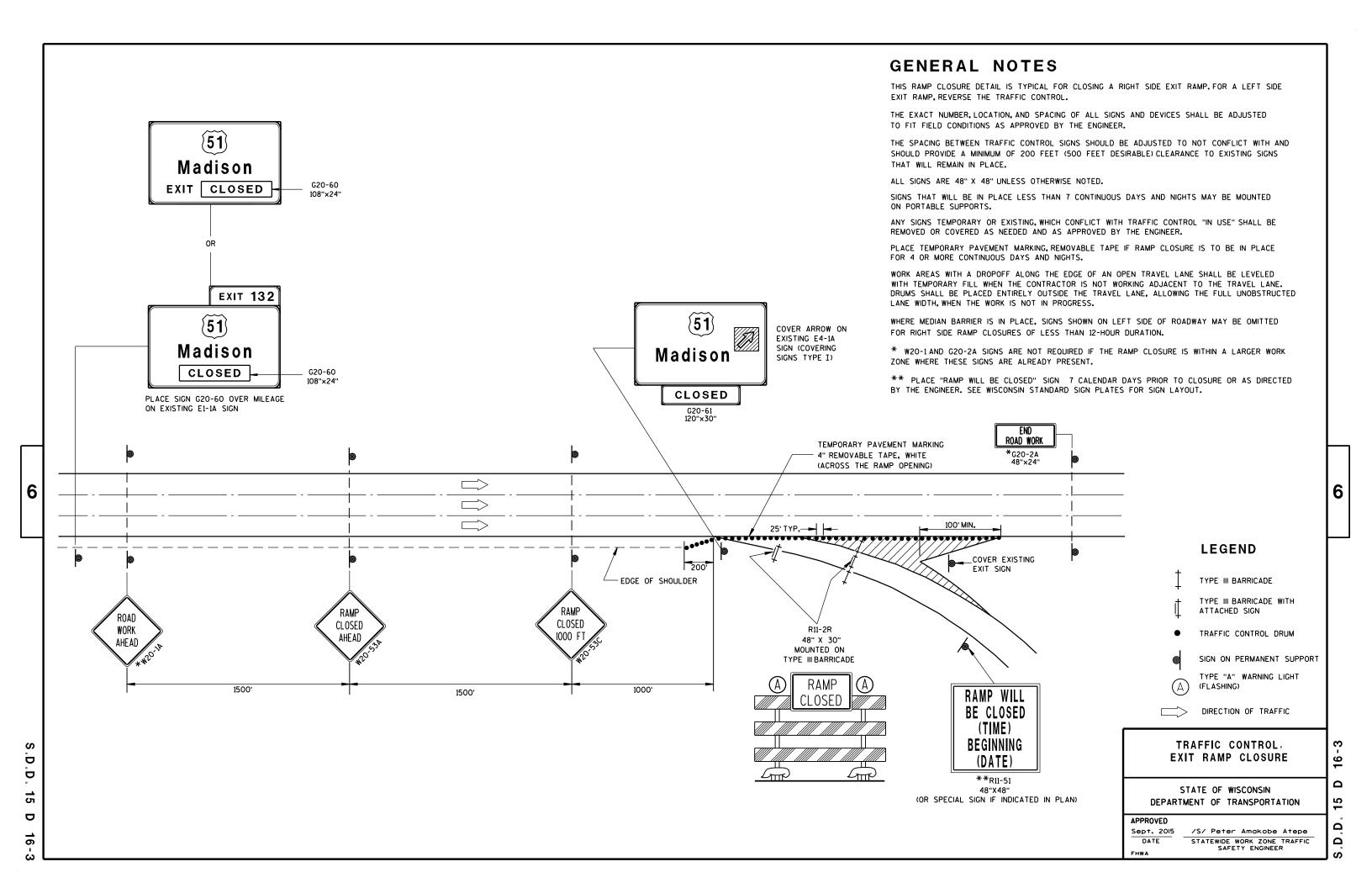
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Sept., 2017 /S/ Andrew Heidtke WORK ZONE ENGINEER DATE FHWA

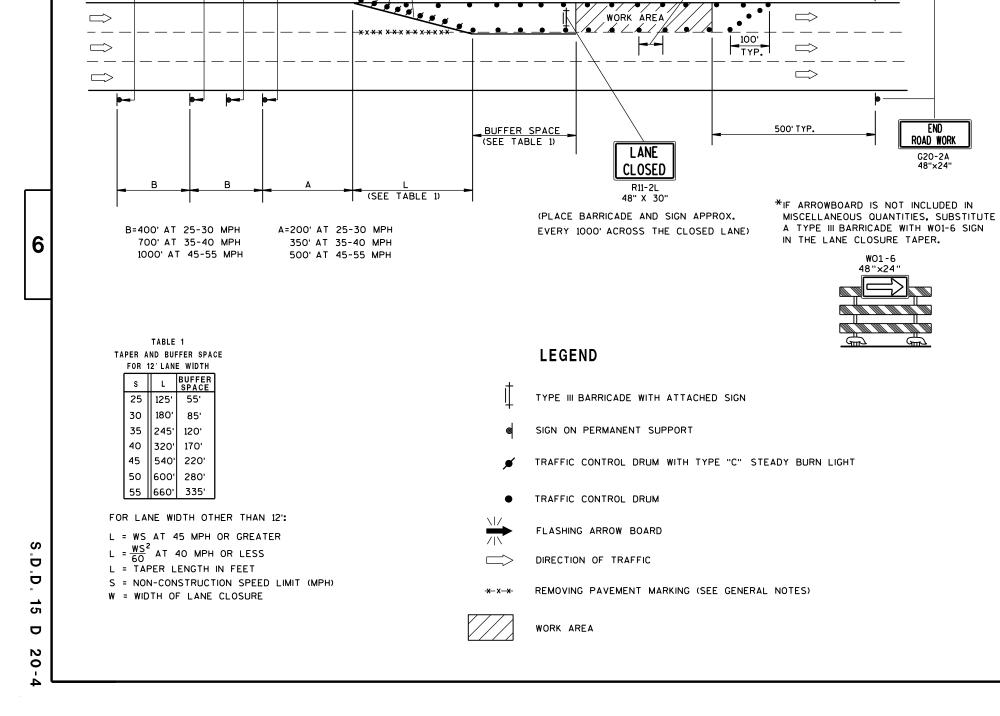
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(5) DRUMS SPACED @ 10'

INTERVALS AS NEEDED IN

FRONT OF ARROW BOARD

TEMPORARY PAVEMENT MARKING.

4-INCH REMOVABLE TAPE (WHITE ON RIGHT,

25'@ 35 MPH OR LESS 50'@ 40 MPH OR MORE

YELLOW ON LEFT)

SPACING:

ROAD WORK

NEXT___MILES

G20-1

60" X 24"

CLOSED

AHEAD

AHEAD

GENERAL NOTES

**THE LINE OF DRUMS SHOWN ALONG THE MEDIAN/CENTERLINE

ADJACENT TO THE WORK AREA. FOR THIS CONDITION INSTALL

W20-1 "ROAD WORK AHEAD" SIGN FOR OPPOSING DIRECTION OF

50' MAX. @ 35 MPH OR LESS

100' MAX. @ 40 MPH OR MORE

IS REQUIRED ONLY WHERE THERE IS OPPOSING TRAFFIC

TRAFFIC. IN ADVANCE OF THE WORK AREA.

SPACING:

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

THIS DETAIL MAY BE USED FOR ROADWAYS WITH EITHER TWO OR THREE LANES IN EACH DIRECTION.

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 DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"×48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, 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.

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

ON UNDIVIDED ROADWAYS, OMIT THE SIGNS SHOWN ON LEFT SIDE OF ROAD.

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

OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROWBOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROWBOARDS AND LANE CLOSURE DRUMS.

PLACE THE ARROWBOARD AS CLOSE AS POSSIBLE TO THE BEGINNING OF THE LANE CLOSURE TAPER, PREFERABLY ON THE SHOULDER OR TERRACE.

CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

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

TRAFFIC CONTROL SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED June 2016

/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER

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TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SO. 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 SO.FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE). SIGNS LARGER THAN 27 SO.FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

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" X 6" WOOD POST

POST SPACING REQUIREM	POST SPACING REQUIREMENTS		
L	E	WOOD POSTS REQUIRED	
48" OR LESS AND LESS THAN 20 SO.FT.	-	1	
LESS THAN 60"	12"	2	٤
60" TO 120"	L/5	2	
GREATER THAN 120" LESS THAN 168"	12"	3	
168" AND GREATER	12"	4	

SEE NOTE (3)

RURAL AREA

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

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- 11/2" DIAMETER HOLES

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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 - 1/6" 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 - 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

June 2017 /S/ Andrew Heidtke DATE WORK ZONE ENGINEER FHWA

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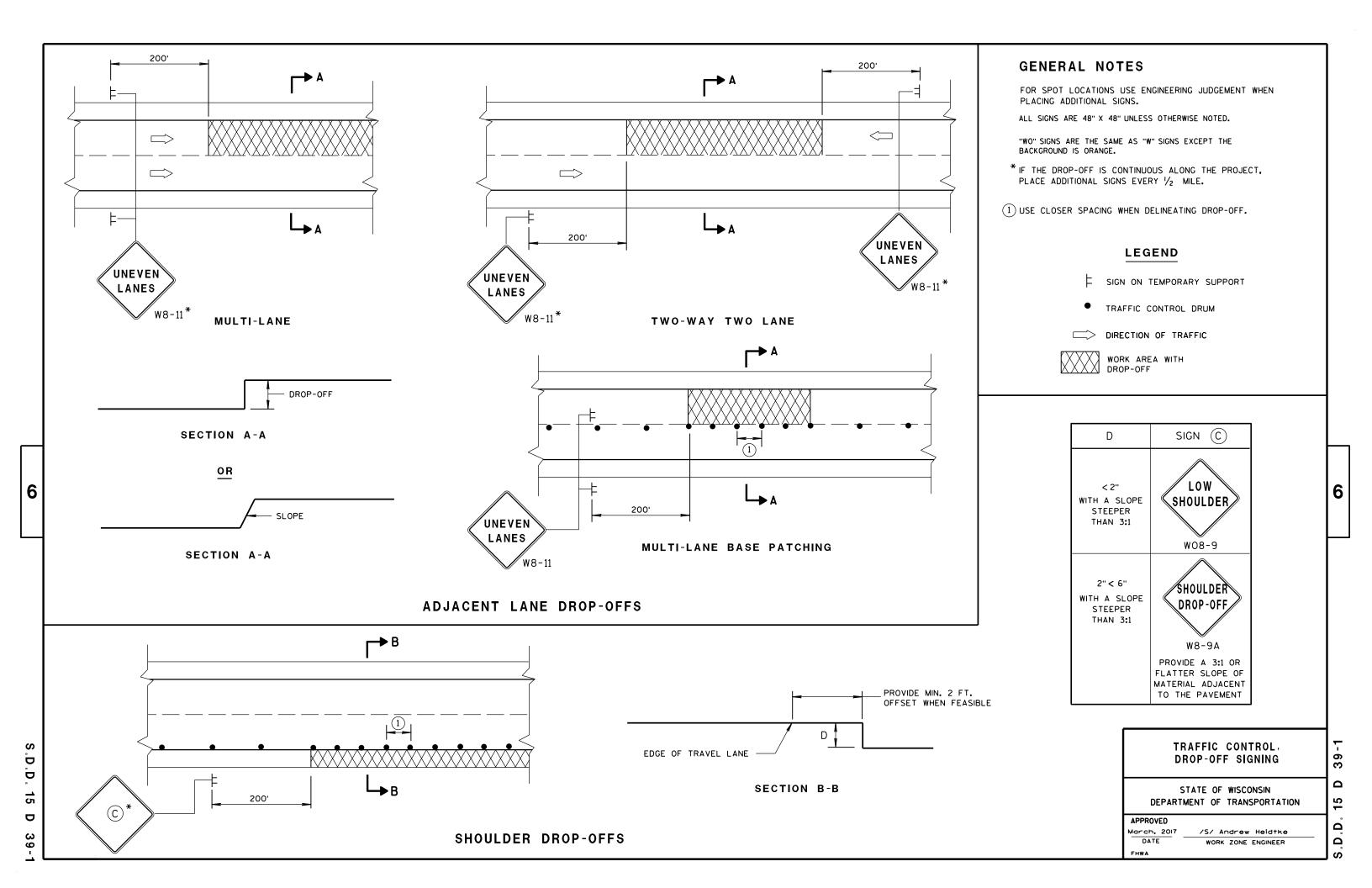
6

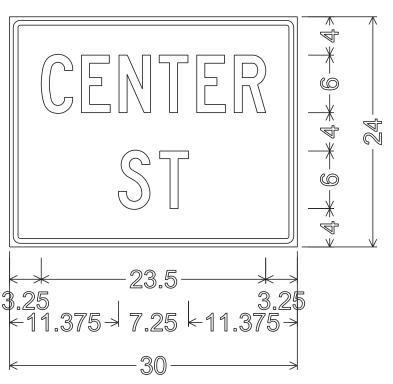
2 b

18

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38-2b





1.125" Radius, 0.500" Border, 0.375" Indent

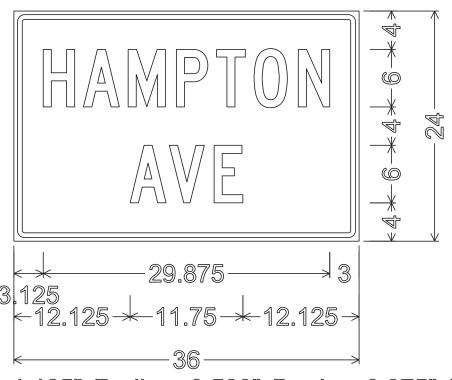
NOTES

- 1. Fixed Message Type II Signs Type F Reflective
- 2. Color:

Background - Orange

Message - Black

3. Message Series - C



1.125" Radius, 0.500" Border, 0.375" Indent

PROJECT NO: 2984-27-71

HWY: VARIOUS HIGHWAYS

COUNTY: SOUTHEAST REGION WIDE TEMPORARY SIGNING

PLOT SCALE: 8.379940:1.000000

WISDOT/CADDS SHEET 42

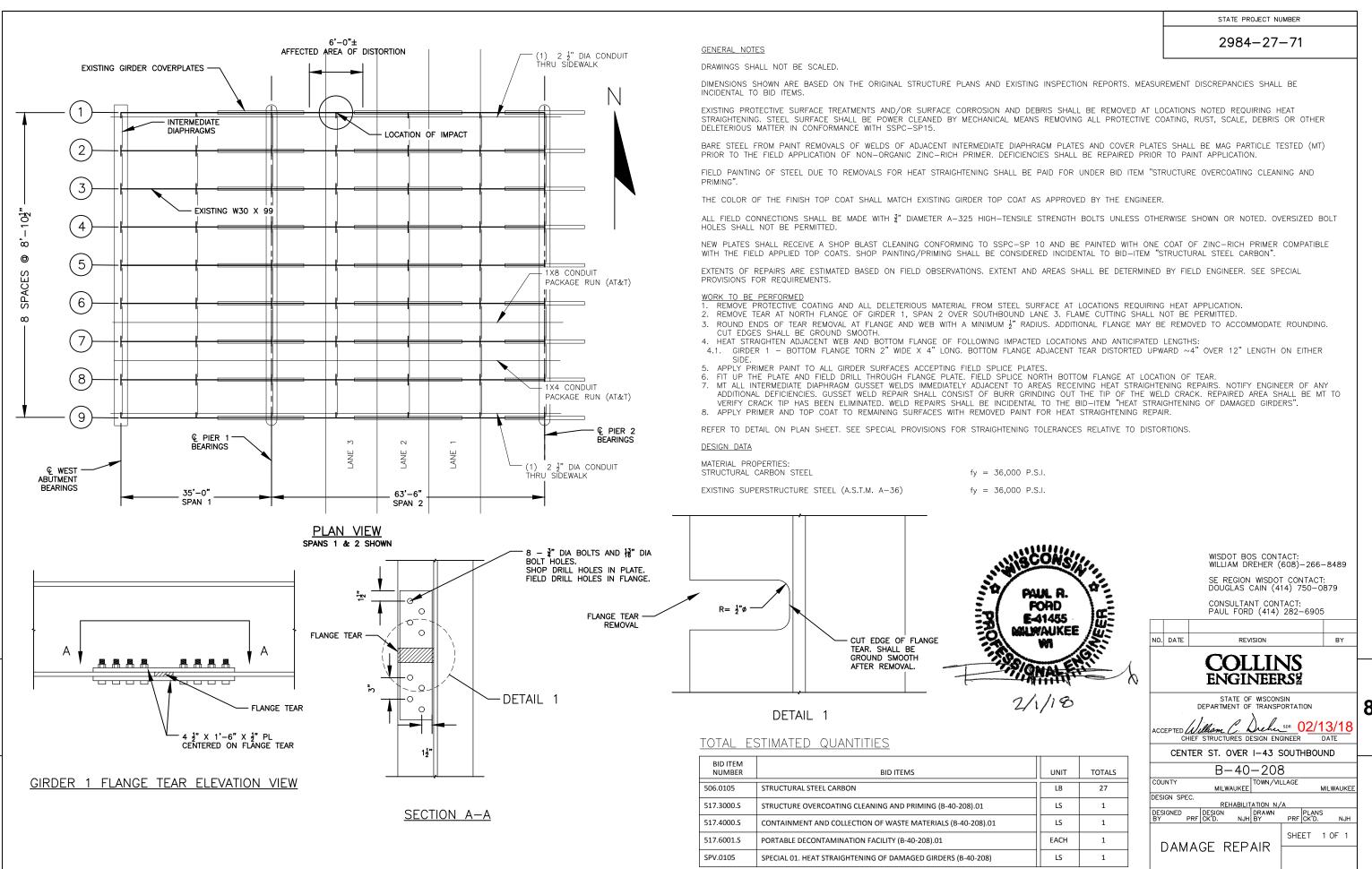
SHEET NO:

Ε

FILE NAME : C:\CAEfiles\Projects\tr_d2\CenterStFMS.DGN

PLOT DATE : 22-JAN-2018 07:53

PLOT BY: \$\$...plotuser...\$\$ PLOT NAME:



DESIGN DATA

GIRDERS"

MATERIAL PROPERTIES: EXISTING SUPERSTRUCTURE STEEL (A.S.T.M. A-36)

fy = 36,000 P.S.I.

ANY ADDITIONAL DEFICIENCIES. GUSSET WELD REPAIR SHALL CONSIST OF BURR GRINDING OUT THE TIP OF THE WELD CRACK. REPAIRED AREA SHALL BE MT TO VERIFY CRACK TIP HAS BEEN ELIMINATED. WELD REPAIRS SHALL BE INCIDENTAL TO THE BID-ITEM "HEAT STRAIGHTENING OF DAMAGED

9. APPLY PRIMER AND TOP COAT TO REMAINING SURFACES WITH REMOVED PAINT FOR HEAT STRAIGHTENING REPAIR.

SEE SPECIAL PROVISIONS FOR STRAIGHTENING TOLERANCES RELATIVE TO DISTORTIONS.

FORD E-41455 MUWAUKEE

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
517.3000.S	STRUCTURE OVERCOATING CLEANING AND PRIMING (B-40-271).02	LS	1
517.4000.S	CONTAINMENT AND COLLECTION OF WASTE MATERIALS (B-40-271).02	LS	1
517.6001.S	PORTABLE DECONTAMINATION FACILITY (B-40-271).02	EACH	1
SPV.0105	SPECIAL 02. HEAT STRAIGHTENING OF DAMAGED GIRDERS (B-40-271)	LS	1
SPV.0060	SPECIAL 02. STEEL CRACK REPAIR (B-40-271)	EACH	3

WISDOT BOS CONTACT: WILLIAM DREHER (608)-266-8489

SE REGION WISDOT CONTACT: DOUGLAS CAIN (414) 750-0879

CONSULTANT CONTACT: PAUL FORD (414) 282-6905

NO. DATE BY

COLLINS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURES DESIGN ENGINEER

HWY 145 SB OVER LITTLE MENOMONEE PRKW

B - 40 - 271MILWAUKEE TOWN/VILLAGE MILWAUKEI DESIGN SPEC. REHABILITATION N/A PRF CK'D. SHEET 1 OF 1 DAMAGE REPAIR

FILE NAME: G: \10750 - KR INTERCHANGE\CAD\Sheet Drawings\Sheet Drawing

3"± ITS OF RFPAIR

WELD TO BE GROUND TO 10:1

TRANSITION THROUGHOUT.

INTERMEDIATE DIAPHRAGM GUSSET WELD REPAIR DETAIL

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SPACES

11" X 8" COVERPLATE

PLOT DATE: 2/1/2018 10:58 AM

PLOT BY: PAUL FORD

PLOT NAME : B-40-271

WISDOT/CADDS SHEET

PLOT SCALE .

EXISTING WELD CRACKING

LOCATION OF MAXIMUM IMPACT

12.7' WEST OF FIELD SPLICE

OVER 30'-0" AFFECTED AREA OF DISTORTION

ANTICIPATED 1" DIA. ARREST HOLE

PLAN VIEW SPAN 1 SHOWN

STATE PROJECT NUMBER

2984-27-71

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS AND EXISTING INSPECTION REPORTS. MEASUREMENT DISCREPANCIES SHALL BE INCIDENTAL TO BID ITEMS.

EXISTING PROTECTIVE SURFACE TREATMENTS AND/OR SURFACE CORROSION AND DEBRIS SHALL BE REMOVED AT LOCATIONS NOTED REQUIRING HEAT STRAIGHTENING. STEEL SURFACE SHALL BE POWER CLEANED BY MECHANICAL MEANS REMOVING ALL PROTECTIVE COATING, RUST, SCALE, DEBRIS OR OTHER DELETERIOUS MATTER IN CONFORMANCE WITH SSPC-SP15.

BARE STEEL FROM PAINT REMOVALS OF WELDS OF ADJACENT INTERMEDIATE DIAPHRAGM PLATES AND COVER PLATES SHALL BE MAG PARTICLE TESTED (MT) PRIOR TO THE FIELD APPLICATION OF NON-ORGANIC ZINC-RICH PRIMER. DEFICIENCIES SHALL BE REPAIRED PRIOR TO PAINT APPLICATION.

FIELD PAINTING OF STEEL DUE TO REMOVALS FOR HEAT STRAIGHTENING SHALL BE PAID FOR UNDER BID ITEM "STRUCTURE OVERCOATING CLEANING AND

THE COLOR OF THE FINISH EPOXY TOP COAT SHALL MATCH EXISTING GIRDER TOP COAT AS APPROVED BY THE ENGINEER.

EXTENTS OF REPAIRS ARE ESTIMATED BASED ON FIELD OBSERVATIONS. EXTENT AND AREAS SHALL BE DETERMINED BY FIELD ENGINEER. SEE SPECIAL PROVISIONS FOR REQUIREMENTS.

- WORK TO BE PERFORMED

 1. REMOVE PROTECTIVE COATING AND ALL DELETERIOUS MATERIAL FROM STEEL SURFACE AT LOCATIONS REQUIRING HEAT APPLICATION 2. PLACE HEAT BLANKETS OVER THE ADJACENT UTILITIES PRIOR TO HEAT STRAIGHTENING. THE FOLLOWING BAYS WITH UTILITIES SHALL BE IMPACTED BY
- 2.A. BETWEEN GIRDER 5 / 6 2 X 3 CONDUIT PACKAGE
- BETWEEN GIRDER 10 / 11 8" GAS MAIN (WE ENERGIES). OPEN FLAMES ADJACENT TO GAS MAIN SHALL BE KEPT A MINIMUM DISTANCE OF 3'-0 2.B. AT ALL TIMES. WE ENERGIES SHALL SHUT GAS MAIN OFF DURING TIMES OF HEAT STRAIGHTENING. CONTRACTOR SHALL COORDINATE WITH WE ENERGIES
- 3. HEAT STRAIGHTEN ADJACENT WEB AND BOTTOM FLANGE OF FOLLOWING IMPACTED LOCATIONS AND ANTICIPATED LENGTHS:
- 3.A. GIRDER 1 BOTTOM FLANGE DISTORTED $\frac{1}{2}$ " OVER 3'-0".
- 3.B. GIRDER 3 BOTTOM FLANGE DISTORTED $2\frac{1}{2}$ " OVER 3'-0". GIRDER OUT OF PLANE 1" OVER 10'-0".
- GIRDER 6 BOTTOM FLANGE DISTORTED 17 OVER 2'-0".
- 3.D.
- GIRDER 9 BOTTOM FLANGE DISTORTED $1\frac{1}{2}$ " OVER 2'-0".GIRDER OUT OF PLANE $\frac{1}{2}$ " OVER 10'-0". GIRDER 11 BOTTOM FLANGE DISTORTED 3" OVER 3'-0". GIRDER OUT OF PLANE 1" OVER 10'-0". GIRDER 13 BOTTOM FLANGE DISTORTED 3" OVER 3'-0". GIRDER OUT OF PLANE 2" OVER 15'-0".
- 3.G. GIRDER 14 BOTTOM FLANGE DISTORTED 2" OVER 2'-0". GIRDER OUT OF PLANE 1" OVER 10'-0".
- 3. GRIND ¼" GOUGE ON BOTTOM FLANGE OF GIRDER 13 OVER LANE 2 TO A SLOPE NO STEEPER THAN 10:1. WORK SHALL BE INCIDENTAL TO ITEM "HEAT STRAIGHTENING DAMAGED GIRDERS".
- 4. PERFORM STEEL CRACK REPAIRS AT FOLLOWING DIAPHRAGM LOCATIONS:
- 4.A. GIRDER 1 DIAPHRAGM #2 FROM EAST, NORTH FACE, EAST AND WEST LOWER GUSSET TO WEB WELDS
- GIRDER 3 DIAPHRAGM #2 FROM EAST, SOUTH FACE, EAST AND WEST LOWER GUSSET TO WEB WELDS
- GIRDER 6 DIAPHRAGM #2 FROM EAST, SOUTH FACE, EAST AND WEST LOWER GUSSET TO WEB WELDS GIRDER 9 DIAPHRAGM #2 FROM EAST, SOUTH FACE, EAST AND WEST LOWER GUSSET TO WEB WELDS
- GIRDER 9 DIAPHRAGM #2 FROM EAST, NORTH FACE, EAST AND WEST LOWER GUSSET TO WEB WELDS
- GIRDER 11 DIAPHRAGM" #2 FROM EAST, NORTH FACE, WEST LOWER GUSSET TO WEB WELD
- GIRDER 14 DIAPHRAGM #2 FROM EAST, SOUTH FACE, WEST LOWER GUSSET TO WEB WELD
- 5. MT ALL INTERMEDIATE DIAPHRAGM GUSSET WELDS IMMEDIATELY ADJACENT TO AREAS RECEIVING HEAT STRAIGHTENING REPAIRS. NOTIFY ENGINEER OF ANY ADDITIONAL DEFICIENCIES. GUSSET WELD REPAIR SHALL CONSIST OF BURR GRINDING OUT THE TIP OF THE WELD CRACK. REPAIRED AREA SHALL BE MT TO VERIFY CRACK TIP HAS BEEN ELIMINATED. WELD REPAIRS SHALL BE INCIDENTAL TO THE BID-ITEM "HEAT STRAIGHTENING OF DAMAGED GIRDERS".
- 6. APPLY PRIMER AND TOP COAT TO REMAINING SURFACES WITH REMOVED PAINT FOR HEAT STRAIGHTENING REPAIR.

SEE SPECIAL PROVISIONS FOR STRAIGHTENING TOLERANCES RELATIVE TO DISTORTIONS.

DESIGN DATA

MATERIAL PROPERTIES:

EXISTING SUPERSTRUCTURE STEEL (A.S.T.M. A-36)

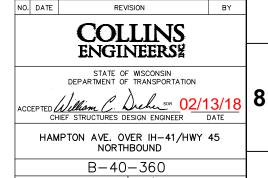
fy = 36,000 P.S.I.

PLOT NAME : B-40-360

WISDOT BOS CONTACT: WILLIAM DREHER (608)-266-8489

SE REGION WISDOT CONTACT: DOUGLAS CAIN (414) 750-0879

CONSULTANT CONTACT: PAUL FORD (414) 282-6905

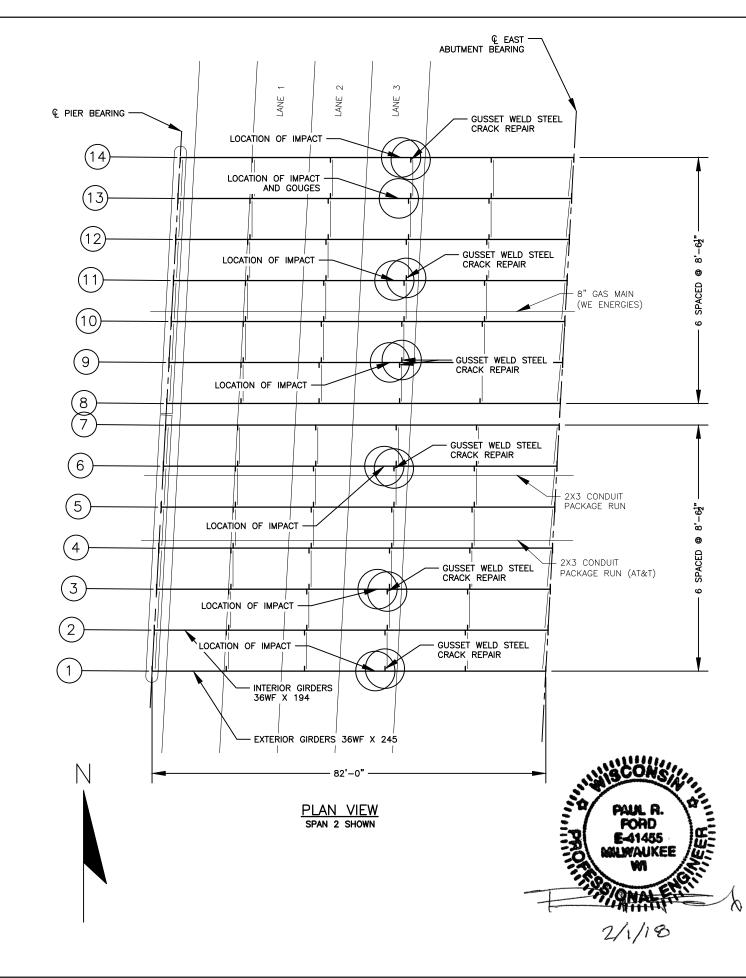


MILWAUKEE TOWN/VILLAGE MILWAUKE DESIGN SPEC. REHABILITATION N/A DESIGNED DESIGN DRAWN PLANS BY PRF CK'D. NJH BY PRF CK'D.

DAMAGE REPAIR

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
517.3000.S	STRUCTURE OVERCOATING CLEANING AND PRIMING (B-40-360).04	LS	1
517.4000.S	CONTAINMENT AND COLLECTION OF WASTE MATERIALS (B-40-360).04	LS	1
517.6001.S	PORTABLE DECONTAMINATION FACILITY (B-40-360).04	EACH	1
SPV.0105	SPECIAL 04. HEAT STRAIGHTENING OF DAMAGED GIRDERS (B-40-360)	LS	1
SPV.0060	SPECIAL 04. STEEL CRACK REPAIR (B-40-360)	EACH	7



SHEET 1 OF 1

2984-27-71

GENERAL NOTES

€ PIER BEARING

CONDUIT

(UNKNOWN)

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS AND EXISTING INSPECTION REPORTS. MEASUREMENT DISCREPANCIES SHALL BE INCIDENTAL TO BID ITEMS.

EXISTING PROTECTIVE SURFACE TREATMENTS AND/OR SURFACE CORROSION AND DEBRIS SHALL BE REMOVED AT LOCATIONS NOTED REQUIRING HEAT STRAIGHTENING. STEEL SURFACE SHALL BE POWER CLEANED BY MECHANICAL MEANS REMOVING ALL PROTECTIVE COATING, RUST, SCALE, DEBRIS OR OTHER DELETERIOUS MATTER IN CONFORMANCE WITH SSPC-SP 11.

BARE STEEL FROM PAINT REMOVALS OF WELDS OF ADJACENT INTERMEDIATE DIAPHRAGM PLATES AND COVER PLATES SHALL BE MAG PARTICLE TESTED (MT) PRIOR TO THE FIELD APPLICATION OF NON-ORGANIC ZINC-RICH PRIMER. DEFICIENCIES SHALL BE REPAIRED PRIOR TO PAINT APPLICATION.

FIELD PAINTING OF STEEL DUE TO REMOVALS FOR HEAT STRAIGHTENING SHALL BE PAID FOR UNDER BID ITEM "STRUCTURE OVERCOATING CLEANING AND PRIMING".

THE COLOR OF THE FINISH TOP COAT SHALL MATCH EXISTING GIRDER TOP COAT AS APPROVED BY THE ENGINEER.

EXTENTS OF REPAIRS ARE ESTIMATED BASED ON FIELD OBSERVATIONS. EXTENT AND AREAS SHALL BE DETERMINED BY FIELD ENGINEER. SEE SPECIAL PROVISIONS

- REMOVE PROTECTIVE COATING AND ALL DELETERIOUS MATERIAL FROM STEEL SURFACE AT LOCATIONS REQUIRING HEAT APPLICATION.
- 2. HEAT STRAIGHTEN ADJACENT WEB AND BOTTOM FLANGE OF FOLLOWING IMPACTED LOCATIONS AND ANTICIPATED LENGTHS:
- 2.A. GIRDER 1 3 1 OUT OF PLANE EAST OVER 30'-0"; BOTTOM FLANGE DISTORTED 1" AND 1 1 OVER 2'-0" AND 6'-0", RESPECTIVELY.
- 2.B. GIRDER 2 BOTTOM FLANGE DISTORTED 1 AND 8 OVER LANE 2 TO A SLOPE NO STEEPER THAN 10:1. WORK SHALL BE INCIDENTAL TO ITEM "HEAT STRAIGHTENING OF DAMAGED GIRDERS".
- MT ALL INTERMEDIATE DIAPHRAGM GUSSET WELDS IMMEDIATELY ADJACENT TO AREAS RECEIVING HEAT STRAIGHTENING REPAIRS. NOTIFY ENGINEER OF ANY ADDITIONAL DEFICIENCIES. GUSSET WELD REPAIR SHALL CONSIST OF BURR GRINDING OUT THE TIP OF THE WELD CRACK. REPAIRED AREA SHALL BE MT TO VERIFY CRACK TIP HAS BEEN ELIMINATED. WELD REPAIRS SHALL BE INCIDENTAL TO THE BID—ITEM "HEAT STRAIGHTENING OF DAMAGED GIRDERS".
- 5. APPLY PRIMER AND TOP COAT TO REMAINING SURFACES WITH REMOVED PAINT FOR HEAT STRAIGHTENING REPAIR.

SEE SPECIAL PROVISIONS FOR STRAIGHTENING TOLERANCES RELATIVE TO DISTORTIONS.

DESIGN DATA

MATERIAL PROPERTIES: EXISTING SUPERSTRUCTURE STEEL (ASSUMED)

fs = 20,000 P.S.I.



TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
517.3000.S	STRUCTURE OVERCOATING CLEANING AND PRIMING (B-40-939).03	LS	1
517.4000.S	CONTAINMENT AND COLLECTION OF WASTE MATERIALS (B-40-939).03	LS	1
517.6001.S	PORTABLE DECONTAMINATION FACILITY (B-40-939).03	EACH	1
SPV.0105	SPECIAL 03. HEAT STRAIGHTENING OF DAMAGED GIRDERS (B-40-939)	LS	1

WISDOT BOS CONTACT:
WILLIAM DREHER (608)-266-8489 SE REGION WISDOT CONTACT: DOUGLAS CAIN (414) 750-0879

CONSULTANT CONTACT: PAUL FORD (414) 282-6905

NO. DATE BY

COLLINS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

CHIEF STRUCTURES DESIGN ENGINEER RAMP IH-41 NB OVER STH 175 SB

B - 40 - 939MILWAUKEE TOWN/VILLAGE MILWAUKEI REHABILITATION N/A PRF CK'D. NJH BY PRF CK'D. SHEET 1 OF 1

DAMAGE REPAIR

WISDOT/CADDS SHEET

FILE NAME : G: \10750 - KR INTERCHANGE\CAD\Sheet Drawings\Sheet Drawing

LOCATION OF IMPACT

LOCATIONS OF IMPACT

EXISTING W27 X 94

SPAN 2

PLAN VIEW

SPAN 2 SHOWN

LOCATIONS OF GOUGING

© PIER 2 BEARING

3

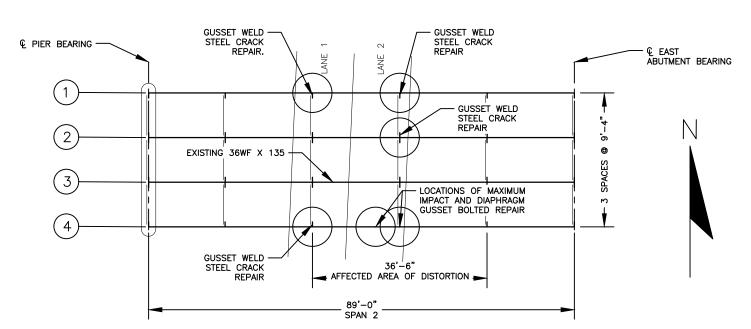
PLOT DATE: 2/1/2018 10:58 AM

PLOT BY · PAUL FORD

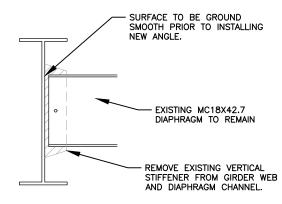
PLOT NAME : B-40-939

PLOT SCALE :

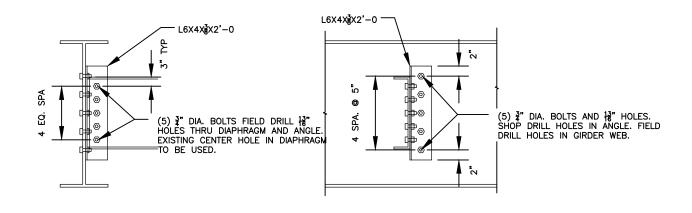
2984-27-71



PLAN VIEW SPAN 2 SHOWN



REMOVAL DETAIL



ELEVATION AT REPAIR DETAIL

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS AND EXISTING INSPECTION REPORTS. MEASUREMENT DISCREPANCIES SHALL BE INCIDENTAL TO BID ITEMS.

EXISTING PROTECTIVE SURFACE TREATMENTS AND/OR SURFACE CORROSION AND DEBRIS SHALL BE REMOVED AT LOCATIONS NOTED REQUIRING HEAT STRAIGHTENING. STEEL SURFACE SHALL BE POWER CLEANED BY MECHANICAL MEANS REMOVING ALL PROTECTIVE COATING, RUST, SCALE, DEBRIS OR OTHER DELETERIOUS MATTER IN CONFORMANCE WITH SSPC—SP15.

BARE STEEL FROM PAINT REMOVALS OF WELDS OF ADJACENT INTERMEDIATE DIAPHRAGM PLATES AND COVER PLATES SHALL BE MAG PARTICLE TESTED (MT) PRIOR TO THE FIELD APPLICATION OF NON-ORGANIC ZINC-RICH PRIMER. DEFICIENCIES SHALL BE REPAIRED PRIOR TO PAINT APPLICATION.

FIELD PAINTING OF STEEL DUE TO REMOVALS FOR HEAT STRAIGHTENING SHALL BE PAID FOR UNDER BID ITEM "STRUCTURE OVERCOATING CLEANING AND PRIMING".

THE COLOR OF THE FINISH TOP COAT SHALL MATCH EXISTING GIRDER TOP COAT AS APPROVED BY THE ENGINEER.

ALL FIELD CONNECTIONS SHALL BE MADE WITH 3" DIAMETER A-325 HIGH-TENSILE STRENGTH BOLTS UNLESS OTHERWISE SHOWN OR NOTED. OVERSIZED BOLT HOLES SHALL NOT BE PERMITTED.

EXTENTS OF REPAIRS ARE ESTIMATED BASED ON FIELD OBSERVATIONS. EXTENT AND AREAS SHALL BE DETERMINED BY FIELD ENGINEER. SEE SPECIAL PROVISIONS FOR REQUIREMENTS.

WORK TO BE PERFORMED

- REMOVE PROTECTIVE COATING AND ALL DELETERIOUS MATERIAL FROM STEEL SURFACE AT LOCATIONS REQUIRING HEAT APPLICATION. GRIND OUT GOUGES IN BOTTOM FLANGE TO 10:1 SLOPE MINIMUM.
- 3. HEAT STRAIGHTEN WEB AND BOTTOM FLANGE OF FOLLOWING IMPACTED LOCATIONS AND ANTICIPATED LENGTHS:
- 3.A. GIRDER 4 14" OUT OF PLANE NORTH OVER 36'-6"; BOTTOM FLANGE TORSION SOUTH UP 17" OVER 5'-0, NORTH DOWN 8" OVER
- 3.B. GIRDER 4 WEB BOTTOM DISTORTED 1 $\frac{1}{4}$ " OUT OF PLANE NORTH AT DIAPHRAGM 2 FROM EAST. 4. REMOVE DIAPHRAGM STIFFENER AT LOCATION NOTED. REFER TO REMOVAL DETAIL. 5. INSTALL NEW ANGLE AND BOLTED CONNECTION TO EXISTING DIAPHRAGM. REFER TO REPAIR DETAIL.
- PERFORM STEEL CRACK REPAIRS AT THE FOLLOWING LOCATIONS:
- 6.A. GIRDER 1, DIAPHRAGM #2 FROM EAST, SOUTH FACE, LOWER GUSSET TO WEB WELD.
- 6.B. GIRDER 1, DIAPHRAGM #3 FROM EAST, SOUTH FACE, LOWER GUSSET TO WEB WELD.
- GIRDER 2, DIAPHRAGM #2 FROM EAST, NORTH FACE, LOWER GUSSET TO WEB WELD
- GIRDER 4, DIAPHRAGM #3 FROM EAST, NORTH FACE, LOWER GUSSET TO WEB WELD.
- 7. MT ALL INTERMEDIATE DIAPHRAGM GUSSET WELDS IMMEDIATELY ADJACENT TO AREAS RECEIVING HEAT STRAIGHTENING REPAIRS. NOTIFY ENGINEER OF ANY ADDITIONAL DEFICIENCIES. GUSSET WELD REPAIR SHALL CONSIST OF BURR GRINDING OUT THE TIP OF THE WELD CRACK. REPAIRED AREA SHALL BE MT TO VERIFY CRACK TIP HAS BEEN ELIMINATED. WELD REPAIRS SHALL BE INCIDENTAL TO THE BID-ITEM "HEAT STRAIGHTENING OF DAMAGED GIRDERS"
- 8. APPLY PRIMER AND TOP COAT TO REMAINING SURFACES WITH REMOVED PAINT FOR HEAT STRAIGHTENING REPAIR.

SEE SPECIAL PROVISIONS FOR STRAIGHTENING TOLERANCES RELATIVE TO DISTORTIONS.

DESIGN DATA

MATERIAL PROPERTIES: STRUCTURAL CARBON STEEL

fy = 36,000 P.S.I.

EXISTING SUPERSTRUCTURE STEEL (A.S.T.M. A-36)

fy = 36,000 P.S.I.



TOTAL ESTIMATED QUANTITIES

			_
BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
506.0105	STRUCTURAL STEEL CARBON	LB	27
517.3000.S	STRUCTURE OVERCOATING CLEANING AND PRIMING (B-64-019).06	LS	1
517.4000.S	CONTAINMENT AND COLLECTION OF WASTE MATERIALS (B-64-019).06	LS	1
517.6001.S	PORTABLE DECONTAMINATION FACILITY (B-64-019).06	EACH	1
SPV.0105	SPECIAL 06. HEAT STRAIGHTENING OF DAMAGED GIRDERS (B-64-019)	LS	1
SPV.0060	SPECIAL 06. STEEL CRACK REPAIR (B-64-019)	EACH	4

WISDOT BOS CONTACT: WILLIAM DREHER (608)-266-8489 SE REGION WISDOT CONTACT: DOUGLAS CAIN (414) 750-0879 CONSULTANT CONTACT: PAUL FORD (414) 282-6905

NO. DATE BY



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION ACCEPTED William C. Drehuser 02/16/18 CHIEF STRUCTURES DESIGN ENGINEER

CTH B OVER USH 12

B-64-019WALWORTH TOWN/VILLAGE COUNT REHABILITATION N/A PRF CK'D.

DAMAGE REPAIR

WISDOT/CADDS SHEET

SHEET 1 OF 1

DIAPHRAGM BOLTED GUSSET

REPAIR DETAIL

2984-27-71

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS AND EXISTING INSPECTION REPORTS. MEASUREMENT DISCREPANCIES SHALL BE INCIDENTAL TO BID ITEMS.

EXISTING PROTECTIVE SURFACE TREATMENTS AND/OR SURFACE CORROSION AND DEBRIS SHALL BE REMOVED AT LOCATIONS NOTED REQUIRING HEAT STRAIGHTENING. STEEL SURFACE SHALL BE POWER CLEANED BY MECHANICAL MEANS REMOVING ALL PROTECTIVE COATING. RUST. SCALE. DEBRIS OR OTHER DELETERIOUS MATTER IN CONFORMANCE WITH SSPC-SP15.

BARE STEEL FROM PAINT REMOVALS OF WELDS OF ADJACENT INTERMEDIATE DIAPHRAGM PLATES AND COVER PLATES SHALL BE MAG PARTICLE TESTED (MT) PRIOR TO THE FIELD APPLICATION OF NON-ORGANIC ZINC-RICH PRIMER. DEFICIENCIES SHALL BE REPAIRED PRIOR TO PAINT APPLICATION.

FIELD PAINTING OF STEEL DUE TO REMOVALS FOR HEAT STRAIGHTENING SHALL BE PAID FOR UNDER BID ITEM "STRUCTURE OVERCOATING CLEANING AND PRIMING".

THE COLOR OF THE FINISH TOP COAT SHALL MATCH EXISTING GIRDER TOP COAT AS APPROVED BY THE ENGINEER.

ALL FIELD CONNECTIONS SHALL BE MADE WITH 3" DIAMETER A-325 HIGH-TENSILE STRENGTH BOLTS UNLESS OTHERWISE SHOWN OR NOTED. OVERSIZED BOLT HOLES SHALL NOT BE PERMITTED.

EXTENTS OF REPAIRS ARE ESTIMATED BASED ON FIELD OBSERVATIONS. EXTENT AND AREAS SHALL BE DETERMINED BY FIELD ENGINEER. SEE SPECIAL PROVISIONS FOR REQUIREMENTS.

- WORK TO BE PERFORMED

 1. REMOVE PROTECTIVE COATING AND ALL DELETERIOUS MATERIAL FROM STEEL SURFACE AT LOCATIONS REQUIRING HEAT APPLICATION.
- 2. HEAT STRAIGHTEN WEB AND BOTTOM FLANGE OF FOLLOWING IMPACTED LOCATIONS AND ANTICIPATED LENGTHS: 2.A. GIRDER 2 BOTTOM FLANGE DISTORTED UPWARD 1" OVER 3'-0" AND ½" OVER 2'-0".
- 2.B. GIRDER 4 $\frac{1}{4}$ " OUT OF PLANE NORTH OVER 24'-0"; BOTTOM FLANGE DISTORTED $\frac{1}{4}$ " AND 1 $\frac{3}{4}$ " OVER 0'-6" AND 1'-6", RESPECTIVELY
- REMOVE DIAPHRAGM STIFFENER AT LOCATION NOTED. REFER TO REMOVAL DETAIL.

 INSTALL NEW ANGLE AND BOLTED CONNECTION TO EXISTING DIAPHRAGM. REFER TO REPAIR DETAIL.
- PERFORM STEEL CRACK REPAIRS AT THE FOLLOWING LOCATIONS:
- 5.A. GIRDER 2, DIAPHRAGM #2 FROM EAST, SOUTH FACE, LOWER GUSSET TO WEB WELD.
- 5.B. GIRDER 4, DIAPHRAGM #3 FROM EAST, NORTH FACE, LOWER GUSSET TO WEB WELD
- 6. MT ALL INTERMEDIATE DIAPHRAGM GUSSET WELDS IMMEDIATELY ADJACENT TO AREAS RECEIVING HEAT STRAIGHTENING REPAIRS.

 NOTIFY ENGINEER OF ANY ADDITIONAL DEFICIENCIES. GUSSET WELD REPAIR SHALL CONSIST OF BURR GRINDING OUT THE TIP OF
 THE WELD CRACK. REPAIRED AREA SHALL BE MT TO VERIFY CRACK TIP HAS BEEN ELIMINATED. WELD REPAIRS SHALL BE INCIDENTAL TO THE BID-ITEM "HEAT STRAIGHTENING OF DAMAGED GIRDERS".
- 7. APPLY PRIMER AND TOP COAT TO REMAINING SURFACES WITH REMOVED PAINT FOR HEAT STRAIGHTENING REPAIR.

SEE SPECIAL PROVISIONS FOR STRAIGHTENING TOLERANCES RELATIVE TO DISTORTIONS

DESIGN DATA

MATERIAL PROPERTIES: STRUCTURAL CARBON STEEL

 $f_V = 36,000 \text{ P.S.I.}$

EXISTING SUPERSTRUCTURE STEEL (UNKNOWN)

fs = 20,000 P.S.I.

FORD **E-41455** MUWAUKEE

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
506.0105	STRUCTURAL STEEL CARBON	LB	27
517.3000.S	STRUCTURE OVERCOATING CLEANING AND PRIMING (B-64-039).05	LS	1
517.4000.S	CONTAINMENT AND COLLECTION OF WASTE MATERIALS (B-64-039).05	LS	1
517.6001.S	PORTABLE DECONTAMINATION FACILITY (B-64-039).05	EACH	1
SPV.0105	SPECIAL 05. HEAT STRAIGHTENING OF DAMAGED GIRDERS (B-64-039)	LS	1
SPV.0060	SPECIAL 05. STEEL CRACK REPAIR (B-64-039)	EACH	2

PAUL FORD (414) 282-6905 NO. DATE BY

CONSULTANT CONTACT:

WISDOT BOS CONTACT: WILLIAM DREHER (608)-266-8489

SE REGION WISDOT CONTACT: DOUGLAS CAIN (414) 750-0879

COLLINS STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION CHIEF STRUCTURES DESIGN ENGINEER

WALWORTH TOWN/VILLAGE COUNT REHABILITATION N/A

DAMAGE REPAIR

ACCEPTED William C. Drehuson 02/16/18 SPRINGFIELD RD OVER USH 12 B - 64 - 039PRF CK'D. NH BY PRF CK'D.

FILE NAME: G: \10750 - KR INTERCHANGE\CAD\Sheet Drawings\Sheet Drawing

TO BE USED.

DIAPHRAGM BOLTED GUSSET

REPAIR DETAIL

L6X4X3X2'-0

(5) ¾" DIA. BOLTS FIELD DRILL 1¾

HOLËS THRU DIAPHRAGM AND ANGLE. EXISTING CENTER HOLE IN DIAPHRAGM

· 29'-0"

GUSSET WELD

STEEL CRACK REPAIR

EXISTING 36WF X 135

Q PIER BEARING

8

62'-63/6

24'-0" AFFECTED AREA OF DISTORTION

PLAN VIEW

SPAN 2 SHOWN

NFW ANGLE

ELEVATION AT REPAIR DETAIL

REMOVAL DETAIL

L6X4X3X2'-0 -

0

SURFACE TO BE GROUND

EXISTING MC18X42.7

DIAPHRAGM TO REMAIN

REMOVE EXISTING VERTICAL STIFFENER FROM GIRDER WEB AND DIAPHRAGM CHANNEL.

SMOOTH PRIOR TO INSTALLING

LOCATIONS OF IMPACT

GUSSET WELD STEEL CRACK

DIAPHRAGM GUSSET

(5) 3" DIA. BOLTS AND 13" HOLES. SHOP DRILL HOLES IN ANGLE. FIELD

BOLTED REPAIR

- LOCATION OF IMPACT

PLOT BY · PAUL FORD

PLOT NAME : B-64-039

PLOT SCALE :

WISDOT/CADDS SHEET

SHEET 1 OF 1

PLOT DATE: 2/1/2018 10:58 AM

ARLITMENT REARING

Notes



Wisconsin Department of Transportation

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