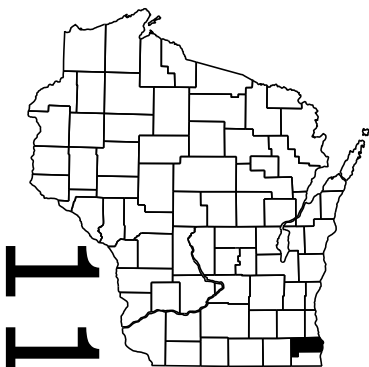


WKE  
PROJECT ID: 1033-02-80  
WITH:

MAR 13	
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 = 24



#### DESIGN DESIGNATION

	IH 94	STH 20
A.A.D.T. 2010	= 92,320	2010 = 32,620
A.A.D.T. 2035	= 114,600	2030 = 40,050
D.H.V.	= 9,740	= 3,710
D.D.	= 55/45	= 57/43
T.	= 14%	= 15%
DESIGN SPEED	= 70 MPH	= 50 MPH
ESALS	= 36,383,200	= 20,629,800

#### 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	
FIBER OPTIC	
GAS	
SANITARY SEWER	
STORM SEWER	
TELEPHONE	
WATER	
UTILITY PEDESTAL	
POWER POLE	
TELEPHONE POLE	

# STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

## PLAN OF PROPOSED IMPROVEMENT

# N-S FWY - STH 20 IC ADVANCED WORK

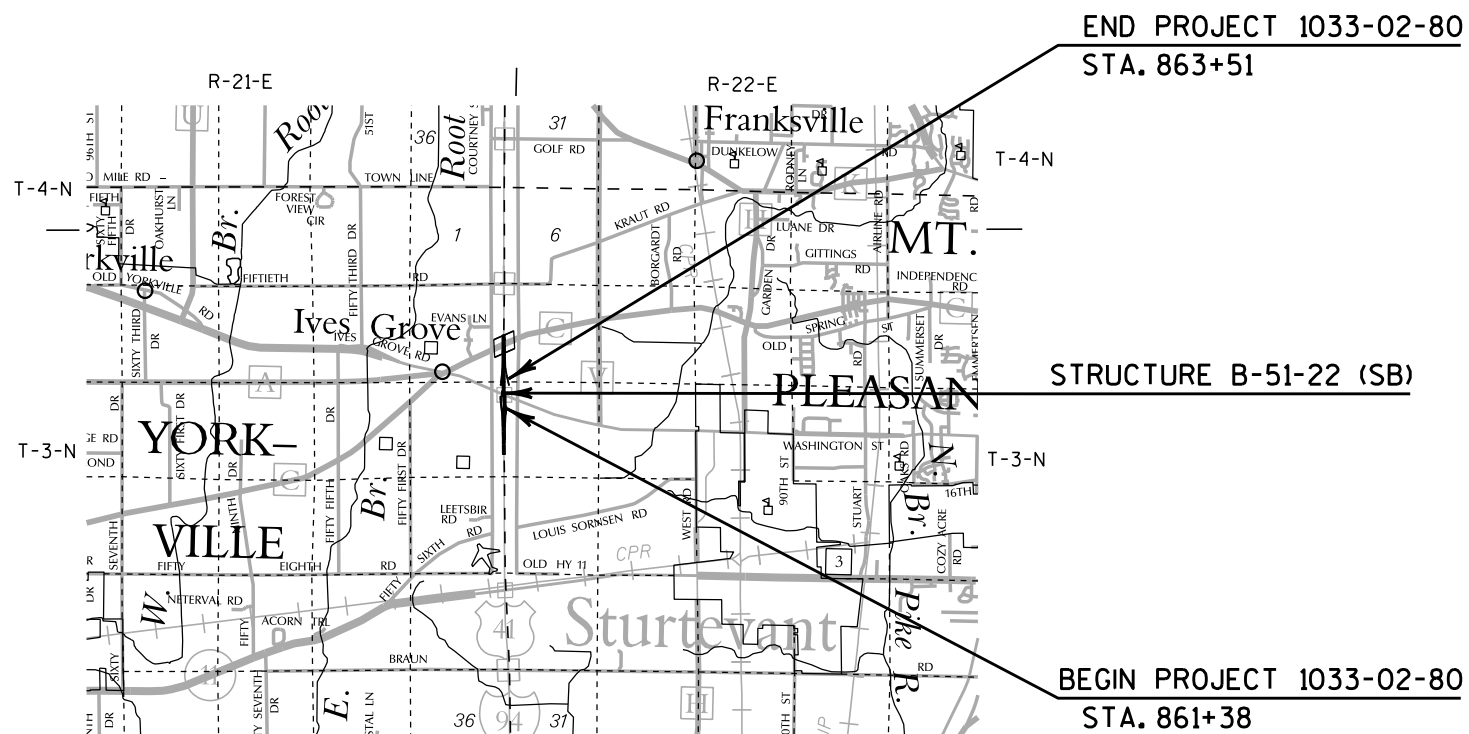
B-51-22 BRIDGE REPAIR

IH 94

RACINE COUNTY

STATE PROJECT NUMBER  
**1033-02-80**

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1033-02-80		



LAYOUT  
SCALE 0 1.0 MI.  
TOTAL NET LENGTH OF CENTERLINE = 0.040 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), RACINE COUNTY, NAD 1983(97)

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988(91) (NAVD 88(91)).

#### STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

##### PREPARED BY

Surveyor	WISDOT
Designer	WISDOT
Project Manager	JOSHUA LEVEQUE
District Examiner	
District Supervisor	WAFA ELOAO

##### APPROVED FOR DISTRICT OFFICE

DATE: 12/3/12

E

STANDARD ABBREVIATIONS

AEW	APRON ENDWALL	PE	PRIVATE ENTRANCE
AGG	AGGREGATE	PI	POINT OF INTERSECTION
BAD	BASE AGGREGATE DENSE	PLE	PERMANENT LIMITED EASEMENT
BM	BENCHMARK	PT	POINT OF TANGENT
C&G	CURB AND GUTTER	R	RADIUS OF CURVE
CL OR C <sub>L</sub>	CENTER OR CONSTRUCTION LINE	R/L	REFERENCE LINE
CMCP	CULVERT PIPE CORRUGATED METAL	R/W	RIGHT OF WAY
CONC	CONCRETE	RC	REVERSE CROWN
CP	CULVERT PIPE	RCAEW	APRON END WALL FOR CULVERT PIPE REINFORCED CONCRETE
CPRC	CULVERT PIPE REINFORCED CONCRETE	REQD	REQUIRED
CSD	CONCRETE SURFACE DRAIN	RHF	RIGHT HAND FORWARD
CY	CUBIC YARD	RO	RUN OFF LENGTH
D	DEGREE OF CURVE	RRSP	RAILROAD SPIKE
Δ	DELTA	RT	RIGHT
DISCH	DISCHARGE	SLV	SALVAGED
FE	FIELD ENTRANCE	SAPBC	SALVAGED ASPHALTIC PAVEMENT BASE COURSE
HMA	HOT MIX ASPHALTIC	SB	SOUTHBOUND
INV	INVERT	SDD	STANDARD DETAIL DRAWING
L	LENGTH OF CURVE	SE	SUPER ELEVATION
LHF	LEFT HAND FORWARD	SF	SQUARE FOOT
LT	LEFT	STA	STATION
M/L	MAINLINE	SY	SQUARE YARD
NB	NORTHBOUND	T	TANGENT LENGTH
NC	NORMAL CROWN	TLE	TEMPORARY LIMITED EASEMENT
PAVT	PAVEMENT	VCL	VERTICAL CURVE LENGTH
PC	POINT OF CURVE	VPC	POINT VERTICAL CURVE
PCC	POINT OF COMPOUND CURVE	VPI	POINT OF VERTICAL INTERSECTION
		VPT	POINT OF VERTICAL TANGENT

ORDER OF SECTION 2 DETAIL SHEETS

GENERAL NOTES  
PROJECT OVERVIEW  
CONSTRUCTION DETAILS  
TRAFFIC CONTROL  
DETOURS

UTILITY CONTACTS

AT&T CORPORATION

C.O. MR. BOB ANDERSON  
JMC ENGINEERS & ASSOC, INC  
CULVER, IN 46511  
PHONE: (574) 842.8830  
CELL: (618) 303-3533  
bobanderson@wabash.com

AT&T WISCONSIN

MR. DEAN HERRO  
435 S. 95TH STREET  
MILWAUKEE, WI 53214  
PHONE: (414) 678-2644  
CELL: (262) 352.0131  
DH2572@ATT.com

LEVEL 3 COMMUNICATIONS, LLC

MR. MARK DECHANT  
LEVEL 3 COMMUNICATIONS, LLC  
1025 ELDORADO BOULEVARD – 33A526  
BROOMFIELD, CO 80021  
PHONE: (414) 271-1128  
CELL: (414) 426-1875  
mark.dechant@level3.com

TIME WARNER CABLE

MR. ROBERT DETERT  
1320 N. MARTIN LUTHER KING JR. DR  
MILWAUKEE, WI 53212  
PHONE: (414) 277-4280  
robert.detert@twcable.com

WE ENERGIES (GAS OPERATIONS)

SEND ALL CORRESPONDENCE TO:  
MR. DAN SANDE  
333 W. EVERETT STREET - A299  
MILWAUKEE, WI 53203  
PHONE: (414) 221-4578  
FAX: (414) 221-2336  
dan.sande@we-energies.com

CONSTRUCTION FIELD CONTACT:

MR. BRANDON ERTS  
500 S. 116TH STREET  
WEST ALLIS, WI 53214  
PHONE: (414) 944-5767  
CELL: (262) 364.9142  
brandon.erts@we-energies.com

WE ENERGIES (ELECTRIC)

SEND ALL CORRESPONDENCE TO:  
MR. DAN SANDE  
333 W. EVERETT STREET - A299  
MILWAUKEE, WI 53203  
PHONE: (414) 221-4578  
FAX: (414) 221-2336  
dan.sande@we-energies.com

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brandon.erts@we-energies.com

WISDOT - SIGNALS

141 NW BARSTOW ST.  
P.O. BOX 798  
WAUKESHA, WI 53187  
JOHN HAUG  
(262) 521-5356  
[john.haug@dot.wi.gov](mailto:john.haug@dot.wi.gov)

WISDOT STOC

MR. JEFFERY MADSON  
WISDOT STOC  
433 W ST. PAUL AVE, SUITE 300  
MILWAUKEE, WI 53203  
PHONE: (414) 225-3723  
[jeffrey.madson@dot.wi.gov](mailto:jeffrey.madson@dot.wi.gov)

WISDOT - TRAFFIC LIGHTING

MR. MATTHEW PFEIFER  
WISDOT TRAFFIC LIGHTING  
935 S. 60TH STREET  
WEST ALLIS, WI 53214  
PHONE: (414) 266-1154  
[matthew.pfeifer@dot.wi.gov](mailto:matthew.pfeifer@dot.wi.gov)

WISDOT - TRAFFIC LIGHTING

DUTY ENGINEER  
141 NW BARSTOW ST.  
WAUKESHA, WI 53187  
PHONE: (414) 750-2605

ELECTRICAL FIELD UNIT

935 S. 60TH STREET  
WEST ALLIS, WI 53214  
PHONE: (414) 266-1170

STATE AGENCIES

WISCONSIN DEPARTMENT OF  
NATURAL RESOURCES

KRISTINA BETZOLD  
ENVIRONMENTAL SPECIALIST  
2300 N. MARTIN LUTHER KING DR.  
MILWAUKEE, WI 53212  
(414) 263-8517  
[Kristina.Betzold@wisconsin.gov](mailto:Kristina.Betzold@wisconsin.gov)

WISCONSIN DEPARTMENT OF  
TRANSPORTATION - UTILITY COORDINATOR

MR. MARIA ROJAS  
141 NW BARSTOW STREET  
WAUKESHA, WI 53187-0798  
CELL: (414) 750-4362  
[maria.rojas@dot.wi.gov](mailto:maria.rojas@dot.wi.gov)

WISCONSIN DEPARTMENT OF TRANSPORTATIO

MR. JOSHUA LEVEQUE PROJECT MANAGER  
141 NW BARSTOW ST.  
WAUKESHA, WI 53187-0798  
PHONE: (414) 220-5444  
[joshua.leveque@dot.wi.gov](mailto:joshua.leveque@dot.wi.gov)

OTHER AGENCIES

RACINE COUNTY DPW

MR. JEFFREY KATZ  
MANAGER PLANNING / ENGINEERING  
14200 WASHINGTON AVE.  
STURTEVANT, WI 53177  
PHONE: (262) 886-8440  
[jeff.katz@goracine.org](mailto:jeff.katz@goracine.org)

TOWN OF YORKVILLE

MS. JUDY AIMONE  
CLERK / TREASURER  
925 MAIN STREET  
P.O. BOX 15  
UNION GROVE, WI 53182  
PHONE: (262) 878-2123  
[judy@townofyorkville.com](mailto:judy@townofyorkville.com)

VILLAGE OF CALEDONIA

MR. BILL SASSE  
DIRECTOR OF ENGINEERING  
6126 DURAND AVE.  
RACINE, WI 53406  
PHONE: (262) 554- 8750  
[bsasse@mtpleasantwi.gov](mailto:bsasse@mtpleasantwi.gov)



Call 811 3 Work Days Before You Dig  
Or Toll Free (800) 242-8511  
Hearing Impaired TDD (800) 542-2289  
[www.DiggersHotline.com](http://www.DiggersHotline.com)

TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND  
FACILITIES BEFORE YOU DIG IN WISCONSIN

WIS. STATUTE 182.0175 (1974) REQUIRES MIN. OF 3 WORK  
DAYS NOTICE BEFORE YOU EXCAVATE.

GENERAL NOTES

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

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

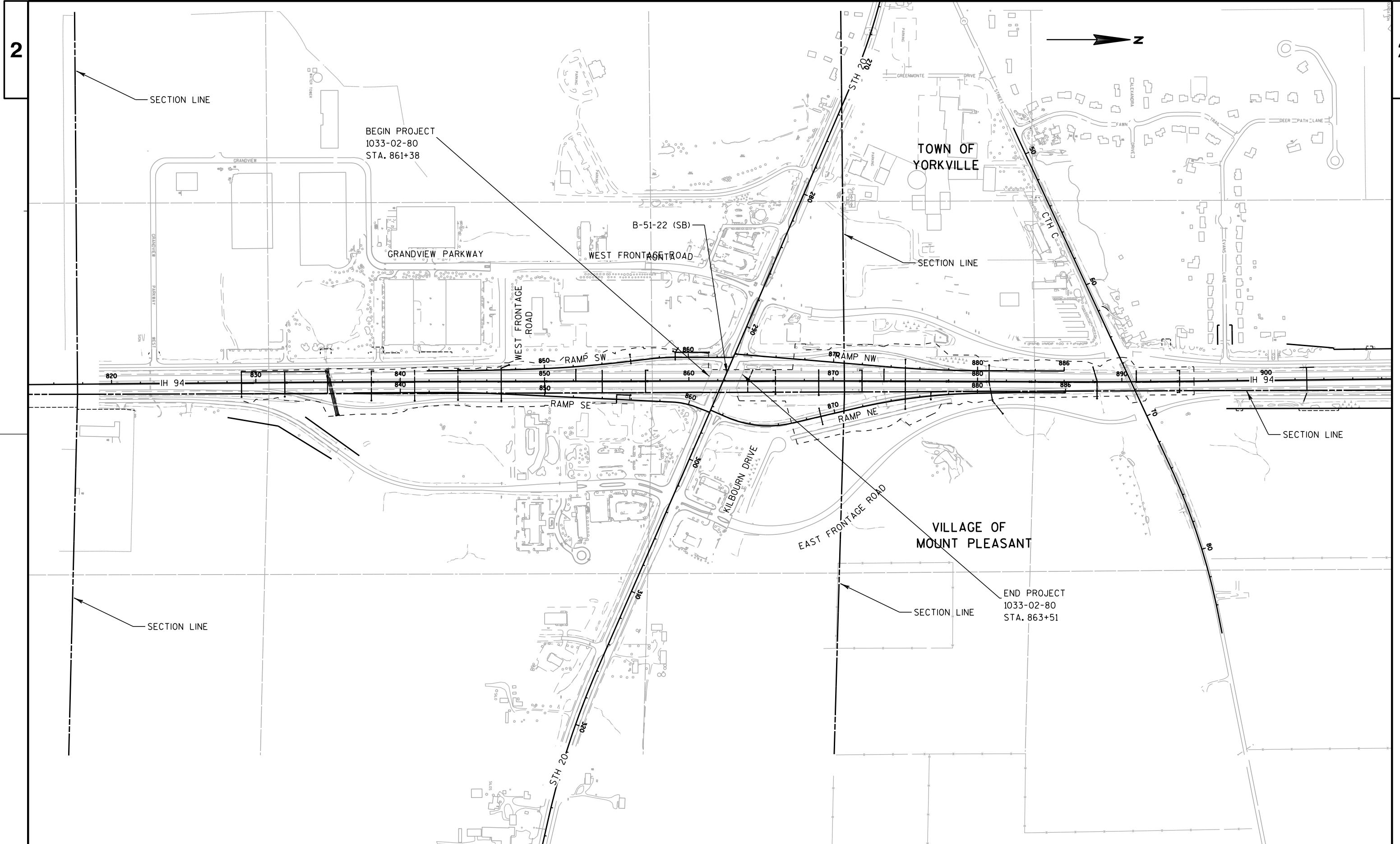
SIGNS IN CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE COVERED AS DIRECTED BY THE ENGINEER AND PAID FOR UNDER ITEM TRAFFIC CONTROL COVERING SIGNS

NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE AND MUST BE CONTACTED SEPARATELY.

DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE TOPSOILED, FERTILIZED, PROTECTED, AND SEEDED AS DIRECTED BY THE ENGINEER.

DO NOT REMOVE ANY TREES OR SHRUBS WITHOUT APPROVAL OF THE ENGINEER.

IF EXCESS MATERIAL IS STOCKPILED IT SHALL BE PROTECTED BY EROSION CONTROL MEASURES INCLUDING DUST CONTROL, SILT FENCE, AND SEEDING OR AS DIRECTED BY THE ENGINEER.



PROJECT NO:1033-02-80

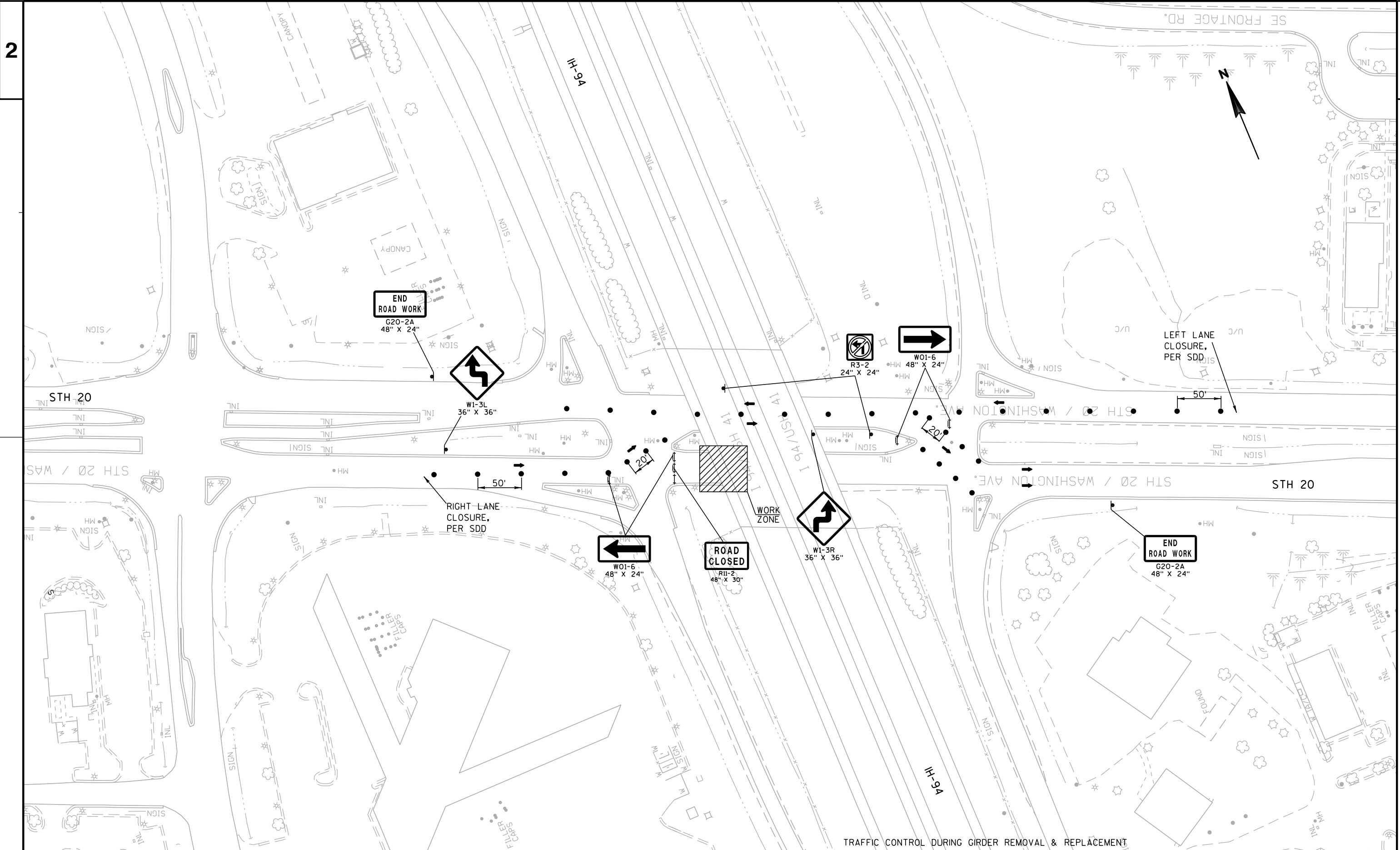
HWY: IH 94

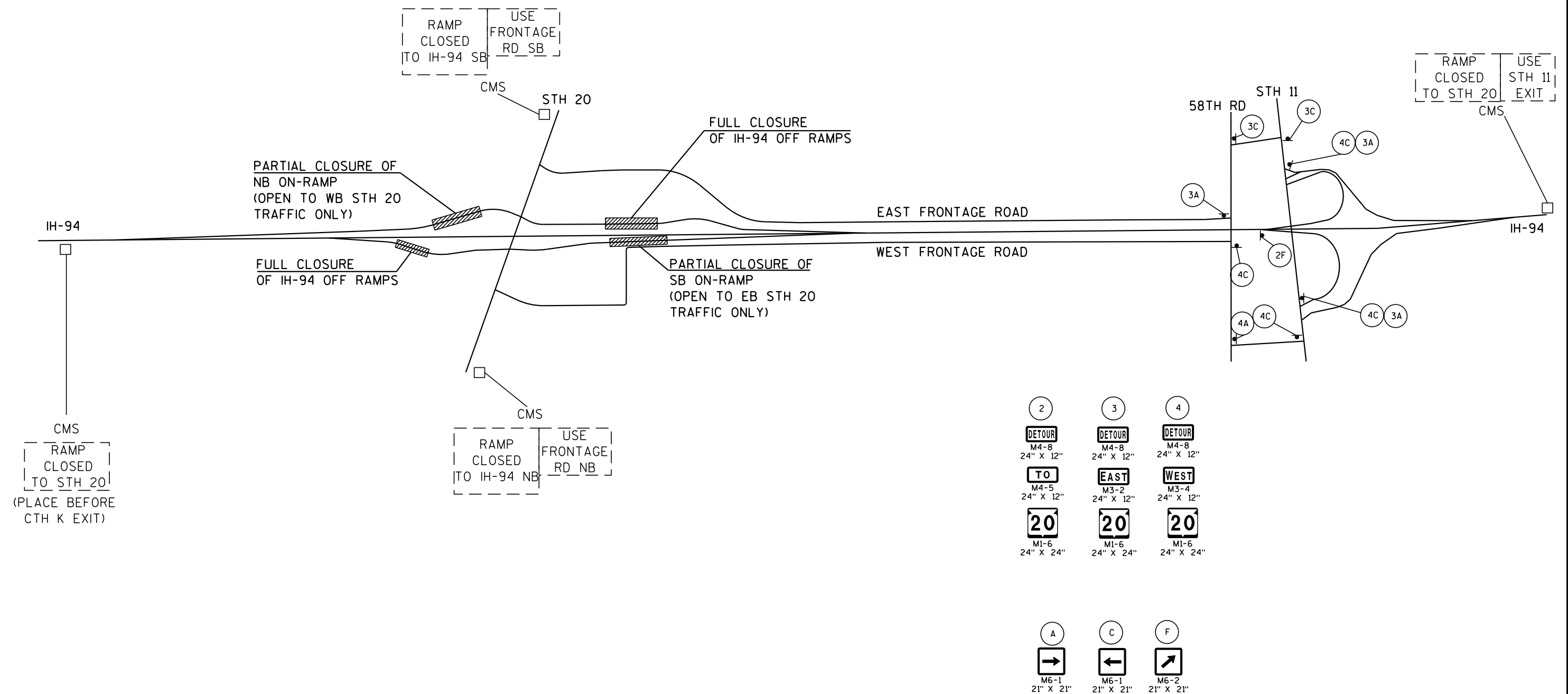
COUNTY: RACINE

PROJECT OVERVIEW

SHEET

E





DETOUR PLAN: GIRDER REMOVAL &amp; REPLACEMENT

PROJECT NO:1033-02-80

HWY: IH-94

COUNTY: RACINE

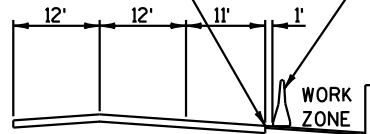
TRAFFIC CONTROL

SHEET

E

2

2

TEMPORARY PAVEMENT  
MARKINGCONCRETE BARRIER  
TEMPORARY PRECAST

SECTION A-A

WORK  
ZONE

STH 20

SIGN

IH-94

"SEE SDD FOR  
TRAFFIC CONTROL SHOULDER CLOSURE  
ON DIVIDED ROADWAY, SPEEDS  
GREATER THAN 40 MPH"

IH-94

END TREATMENT REQUIRED

15:1

WORK  
ZONETEMPORARY PAVEMENT  
MARKING REMOVABLE  
TAPE 4-INCH WHITECONCRETE BARRIER  
TEMPORARY PRECAST

N

PROJECT NO:1033-02-80

HWY: IH-94

COUNTY: RACINE

TRAFFIC CONTROL-SHOULDER CLOSURE DETAIL ON BRIDGE

SHEET

E

FILE NAME : J:\projects\d2\_10330294\80\025003\_TC.dgn

PLOT DATE : 03-DEC-2012 09:26

PLOT BY : dotshw

PLOT NAME :

PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42



DATE 19DEC12		E S T I M A T E O F Q U A N T I T I E S			
LINE					1033-02-80
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	203.0200	REMOVING OLD STRUCTURE (STATION) 001. 862+00	LS	1.000	1.000
0020	203.0210.S	ABATEMENT OF ASBESTOS CONTAINING MATERIAL (STRUCTURE) 001. B-51-22	LS	1.000	1.000
0030	502.0100	CONCRETE MASONRY BRIDGES	CY	101.000	101.000
0040	502.3200	PROTECTIVE SURFACE TREATMENT	SY	65.000	65.000
0050	502.6110	MASONRY ANCHORS TYPE S 3/4-INCH	EACH	28.000	28.000
0060	503.0136	PRESTRESSED GIRDER TYPE I 36-INCH	LF	66.000	66.000
0070	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	6,370.000	6,370.000
0080	506.4000	STEEL DIAPHRAGMS (STRUCTURE) 001. B-51-22	EACH	2.000	2.000
0090	513.9005.S	REMOVING AND RESETTING TUBULAR RAILING (STRUCTURE) 001. B-51-22	LS	1.000	1.000
0100	603.8000	CONCRETE BARRIER TEMPORARY PRECAST DELIVERED	LF	290.000	290.000
0110	603.8125	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED	LF	290.000	290.000
0120	619.1000	MOBILIZATION	EACH	1.000	1.000
0130	643.0100	TRAFFIC CONTROL (PROJECT) 001. 1033-02-80	EACH	1.000	1.000
0140	643.0300	TRAFFIC CONTROL DRUMS	DAY	1,892.000	1,892.000
0150	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	56.000	56.000
0160	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	112.000	112.000
0170	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	774.000	774.000
0180	643.0800	TRAFFIC CONTROL ARROW BOARDS	DAY	72.000	72.000
0190	643.0900	TRAFFIC CONTROL SIGNS	DAY	650.000	650.000
0200	643.0910	TRAFFIC CONTROL COVERING SIGNS TYPE I	EACH	2.000	2.000
0210	643.1050	TRAFFIC CONTROL SIGNS PCMS	DAY	4.000	4.000
0220	643.2000	TRAFFIC CONTROL DETOUR (PROJECT) 001. 1033-02-80	EACH	1.000	1.000
0230	643.3000	TRAFFIC CONTROL DETOUR SIGNS	DAY	44.000	44.000
0240	649.0400	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH	LF	290.000	290.000
0250	SPV.0060	SPECIAL 001. CLEANING AND PAINTING BEARINGS	EACH	2.000	2.000
0260	SPV.0105	SPECIAL 001. EPOXY COATING EXPOSED REINFORCEMENT	LS	1.000	1.000

TRAFFIC CONTROL ITEMS																	
		643.0300		643.0420		643.0705		643.0715		643.0800		643.0900		643.0910		643.1050	
		TRAFFIC CONTROL DRUMS		TRAFFIC CONTROL BARRICADES TYPE III		TRAFFIC CONTROL WARNING LIGHTS TYPE A		TRAFFIC CONTROL WARNING LIGHTS TYPE C		TRAFFIC CONTROL ARROW BOARDS		TRAFFIC CONTROL SIGNS		TRAFFIC CONTROL COVERING SIGNS TYPE 1		TRAFFIC CONTROL SIGNS PCMS	
CATEGORY	LOCATION	**STAGE** DURATION DAYS	**EACH**	DAY	**EACH**	DAY	**EACH**	DAY	**EACH**	DAY	**EACH**	DAY	**EACH**	DAY	EACH	**EACH**	DAY
0010	STH 20 (diaphragm work)	20	54	1,080	2	40	4	80	22	440	2	40	22	440	-	-	-
0020	STH 20 (night work)	1	86	86	8	8	16	16	34	34	2	2	23	23	-	4	4
	IH 94 SB off ramp closure	1	37	37	4	4	8	8	-	-	-	-	11	11	1	-	-
	IH 94 NB off ramp closure	1	44	44	4	4	8	8	-	-	-	-	11	11	1	-	-
	IH 94 (SB RT shoulder closure)	15	43	645	-	-	-	-	20	300	2	30	11	165	-	-	-
TOTAL:				1,892		56		112		774		72		650	2		4

\*\*FOR INFORMATION ONLY\*\*

DETOUR SIGNING - IH-94					
CATEGORY	SIGN MESSAGE	SIGN CODE	SIGN SIZE	DAYS	643.3000
			(2) QTY EACH		TRAFFIC CONTROL DETOUR SIGNS DAY
0020	EAST	M3-2	5	1	5
	WEST	M3-4	5	1	5
	TO	M4-5	1	1	1
	DETOUR	M4-8	11	1	11
	STH 20 SHIELD	M1-6	11	1	11
	ARROW TILT	M6-2	1	1	1
	RIGHT ARROW	M6-1	4	1	4
	LEFT ARROW	M6-1	6	1	6
TOTAL:			44		44

CONCRETE BARRIER TEMPORARY PRECAST ITEMS

CATEGORY	LOCATION	603.8000	603.8125
		CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF
0020	IH 94	290	290
TOTAL:		290	290

TRAFFIC CONTROL DETOUR

643.2000.001 TRAFFIC CONTROL DETOUR (1033-02-80)		
CATEGORY	LOCATION	EACH
0020	RAMP CLOSURES	1
TOTAL:		1

TRAFFIC CONTROL

643.0100.001	
TRAFFIC CONTROL PROJECT	
(1033-02-80)	
CATEGORY	EACH
0010	0.5
0020	0.5
TOTAL:	1

TEMPORARY PAVEMENT MARKING

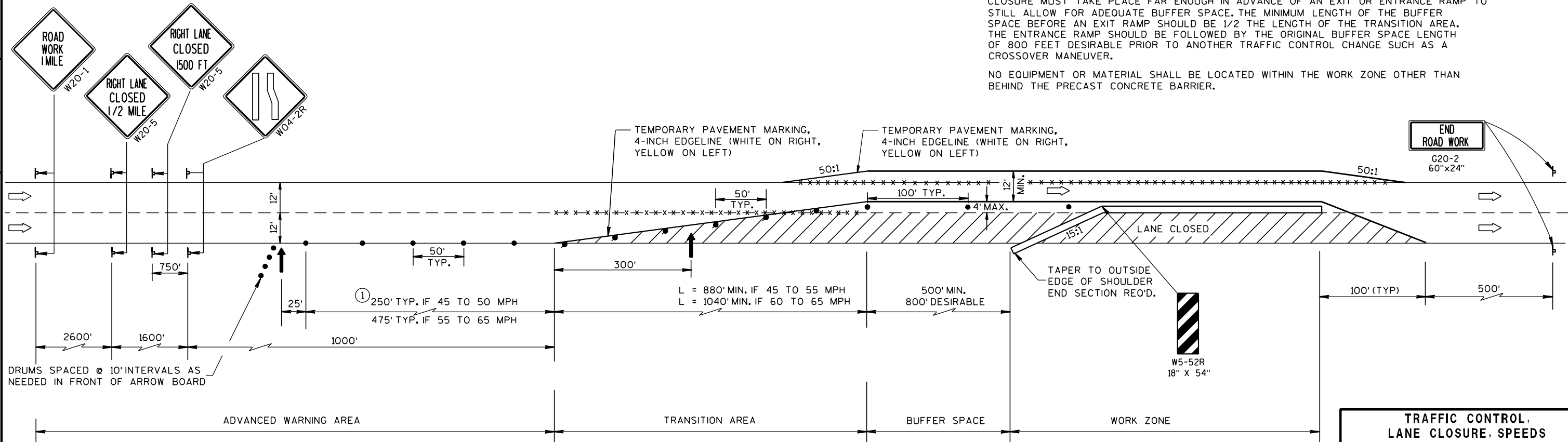
649.0400 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH (WHITE)		
CATEGORY	LOCATION	LF
0020	IH 94 SB	290
TOTAL:		290

Standard Detail Drawing List

15D03-01	TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M. P. H. WITH BARRIER
15D11-03	TRAFFIC CONTROL, SINGLE LANE CROSSOVER
15D15-01	TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE
15D16-01	TRAFFIC CONTROL, EXIT RAMP CLOSURE
15D20-01	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY

LEGEND

- POST WITH ATTACHED SIGN
- DRUM WITH WARNING LIGHT (TYPE C)
- DRUM
- ARROW BOARD
- REMOVING PAVEMENT MARKING
- TEMPORARY PRECAST CONCRETE BARRIER
- DIRECTION OF TRAFFIC
- WORK ZONE



GENERAL NOTES :

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

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) CLEARANCE TO EXISTING SIGNS.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

"WO" 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.

① CONSIDER ROADWAY 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.

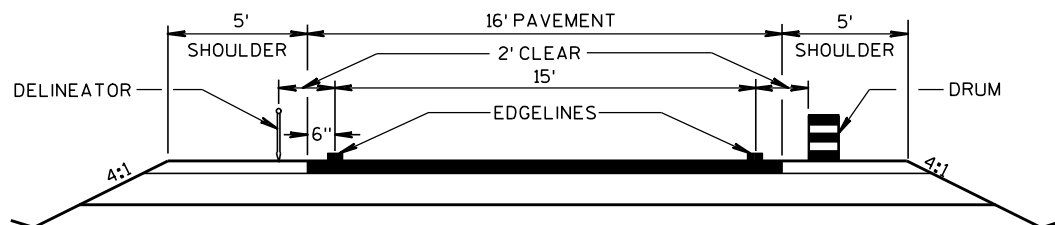
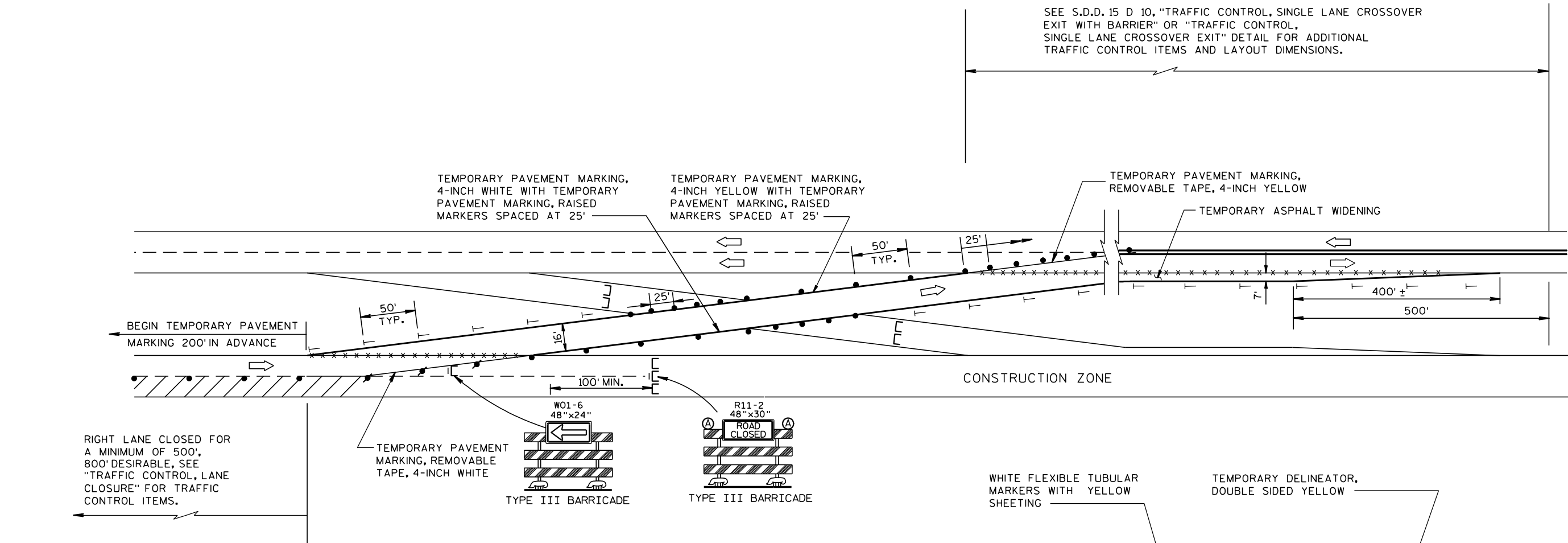
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 7 CONTINUOUS DAYS AND NIGHTS.

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 OR INTERSECTION. 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.

NO EQUIPMENT OR MATERIAL SHALL BE LOCATED WITHIN THE WORK ZONE OTHER THAN BEHIND THE PRECAST CONCRETE BARRIER.

TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 7-14-94 DATE	/S/ Chester J. Spang DIRECTOR, OFFICE OF TRAFFIC
FHWA	



TYPICAL CROSSOVER ROADWAY DIMENSIONS

LEGEND

- 8' TYPE III BARRICADE WITHOUT/WITH ATTACHED SIGN
- DRUM WITH WARNING LIGHTS, TYPE C
- DRUM
- TEMPORARY DELINEATOR (STEEL POST W/SINGLE DELINEATOR) COLOR OF DELINEATOR SHALL MATCH THE COLOR OF THE RESPECTIVE EDGELINE PAINT
- WARNING LIGHT, TYPE A
- REMOVING PAVEMENT MARKINGS
- TEMPORARY DELINEATOR (DOUBLE SIDED)
- FLEXIBLE TUBULAR MARKER AND BASE
- DIRECTION OF TRAFFIC

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

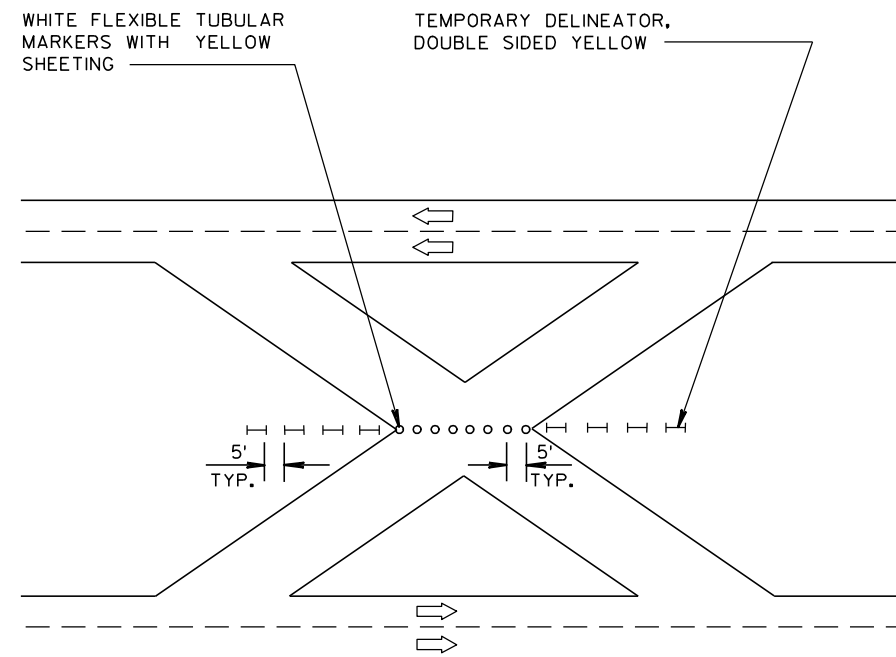
TEMPORARY PAVEMENT MARKING REMOVABLE TAPE SHALL BE USED WHEN CROSSING PERMANENT ROADWAY SURFACES THAT WILL REMAIN AFTER USE OF CROSSOVER AND TEMPORARY PAVEMENT MARKING WHERE USED.

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 THE 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.

REVERSE DEVICES WHEN OTHER LEG OF CROSSOVER IS IN USE.

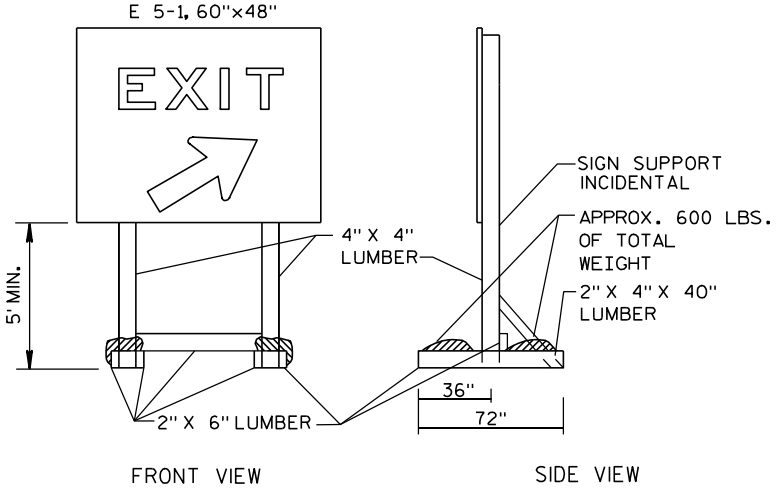
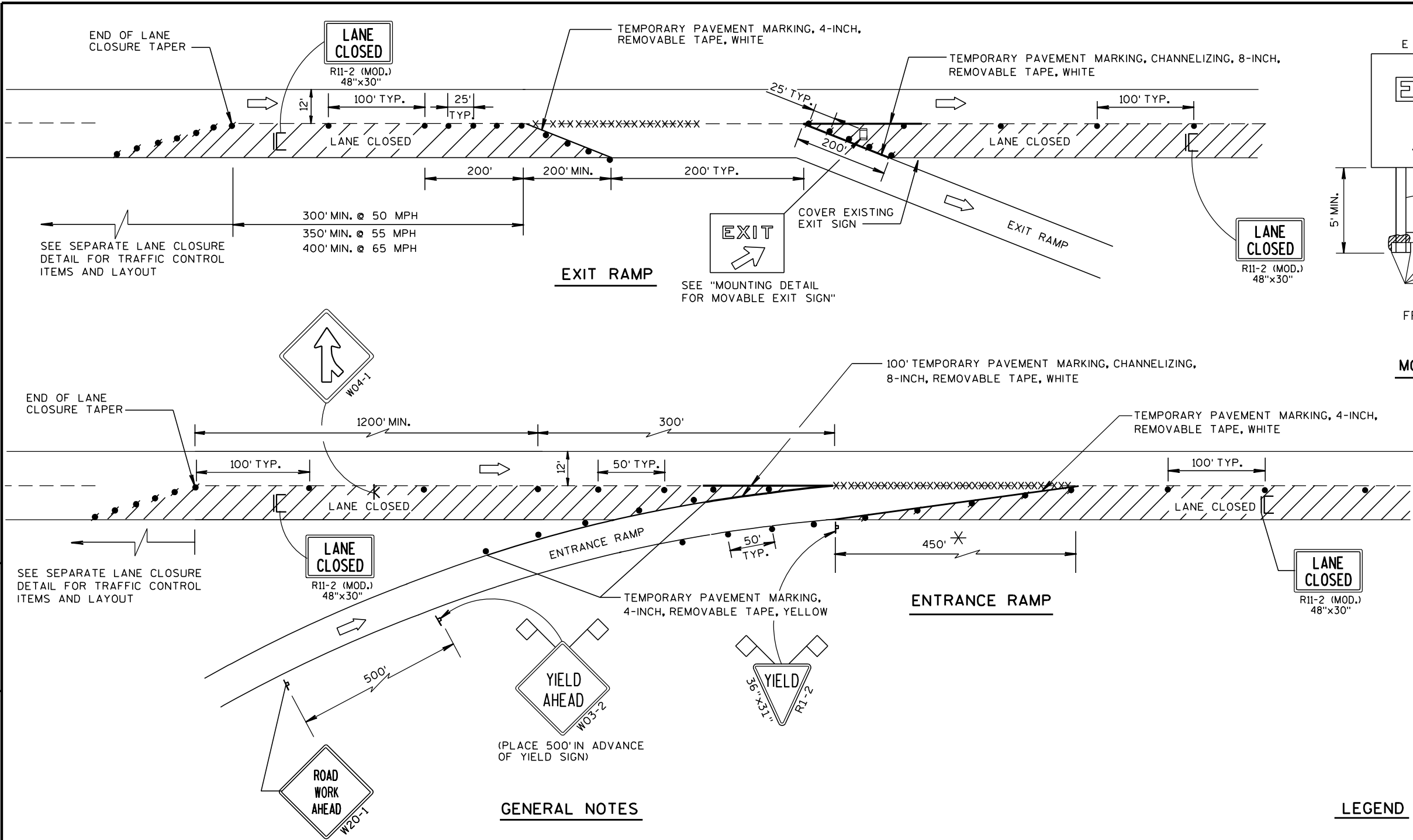


PROTECTION OF CROSSOVER NOT IN USE  
WHEN CONSTRUCTION IS NOT TAKING PLACE

TRAFFIC CONTROL,  
SINGLE LANE CROSSOVER

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
10-22-96  
DATE  
/S/ Chester J. Spang  
STATE TRAFFIC ENGINEER  
FHWA



NOTE: ALL LUMBER DIMENSIONS ARE NOMINAL  
**MOUNTING DETAIL FOR MOVABLE EXIT SIGN**

**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 R11-2 (MOD.) "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 7 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

\* LENGTH OF OPENING MAY BE REDUCED TO 150 FEET DURING STAGING OF WORK IN IMMEDIATE AREA OF RAMP TAPER.

**LEGEND**

- POST MOUNTED SIGN
- SIGN ON PORTABLE SUPPORT
- TRAFFIC CONTROL, DRUM
- TRAFFIC CONTROL, DRUM WITH WARNING LIGHT, TYPE C (STEADY-BURN)
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- TYPE III BARRICADE (8' EQUIVALENT) WITH SIGN
- FLAGS, 16"x16" MIN., ORANGE
- DIRECTION OF TRAFFIC FLOW

TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 5/24/2000 DATE	/S/ Chester J. Spang CHIEF SIGNS AND MARKING ENGINEER
FHWA	

## SYMBOLS

- IC/C TYPE III BARRICADE (8' EQUIVALENT)  
WITH/WITHOUT SIGN
- DRUM
- ┐ POST MOUNTED SIGN
- Ⓐ WARNING LIGHT, TYPE A (FLASHING)
- ➔ DIRECTION OF TRAFFIC

## 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.

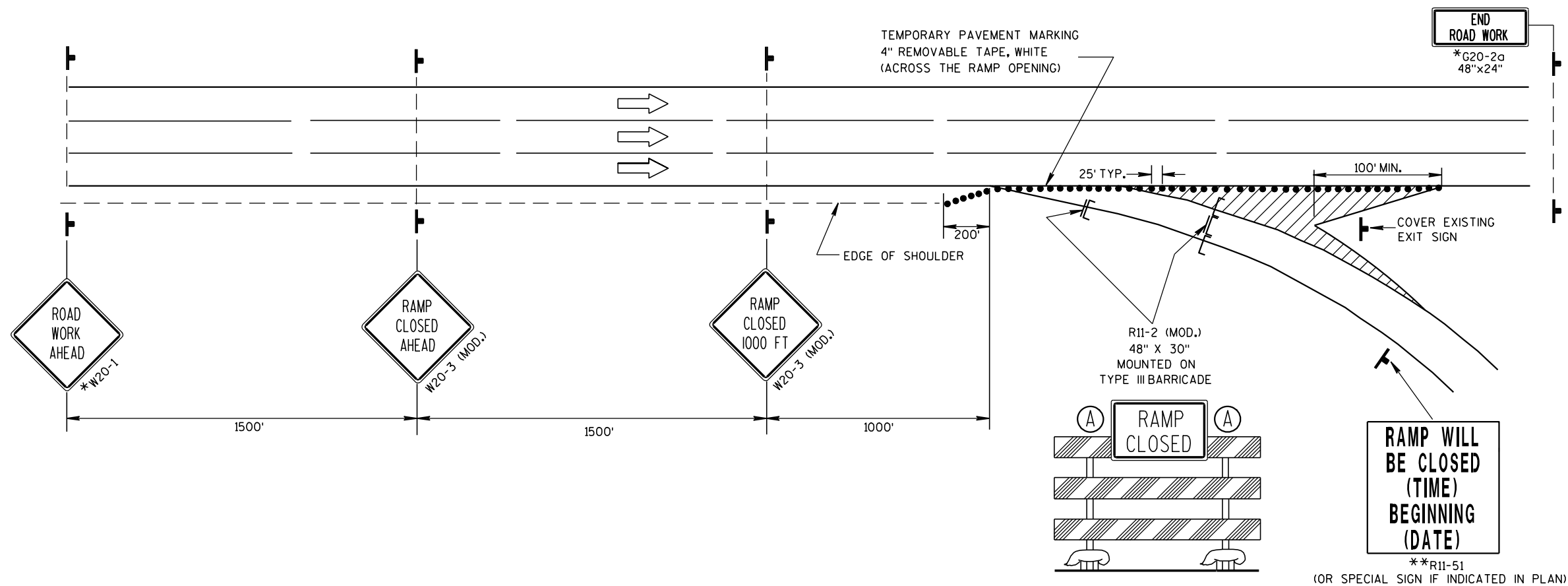
PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF RAMP CLOSURE IS TO BE IN PLACE FOR 7 OR MORE CONTINUOUS DAYS AND NIGHTS.

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.

\*\*USE THE "RAMP WILL BE CLOSED" SIGN IF INDICATED IN MISCELLANEOUS QUANTITIES. PLACE 10 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR SIGN LAYOUT.

TRAFFIC CONTROL,  
EXIT RAMP CLOSURE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

5/23/2000

DATE

FHWA

/S/ Chester J. Spang  
CHIEF SIGNS AND MARKING ENGINEER



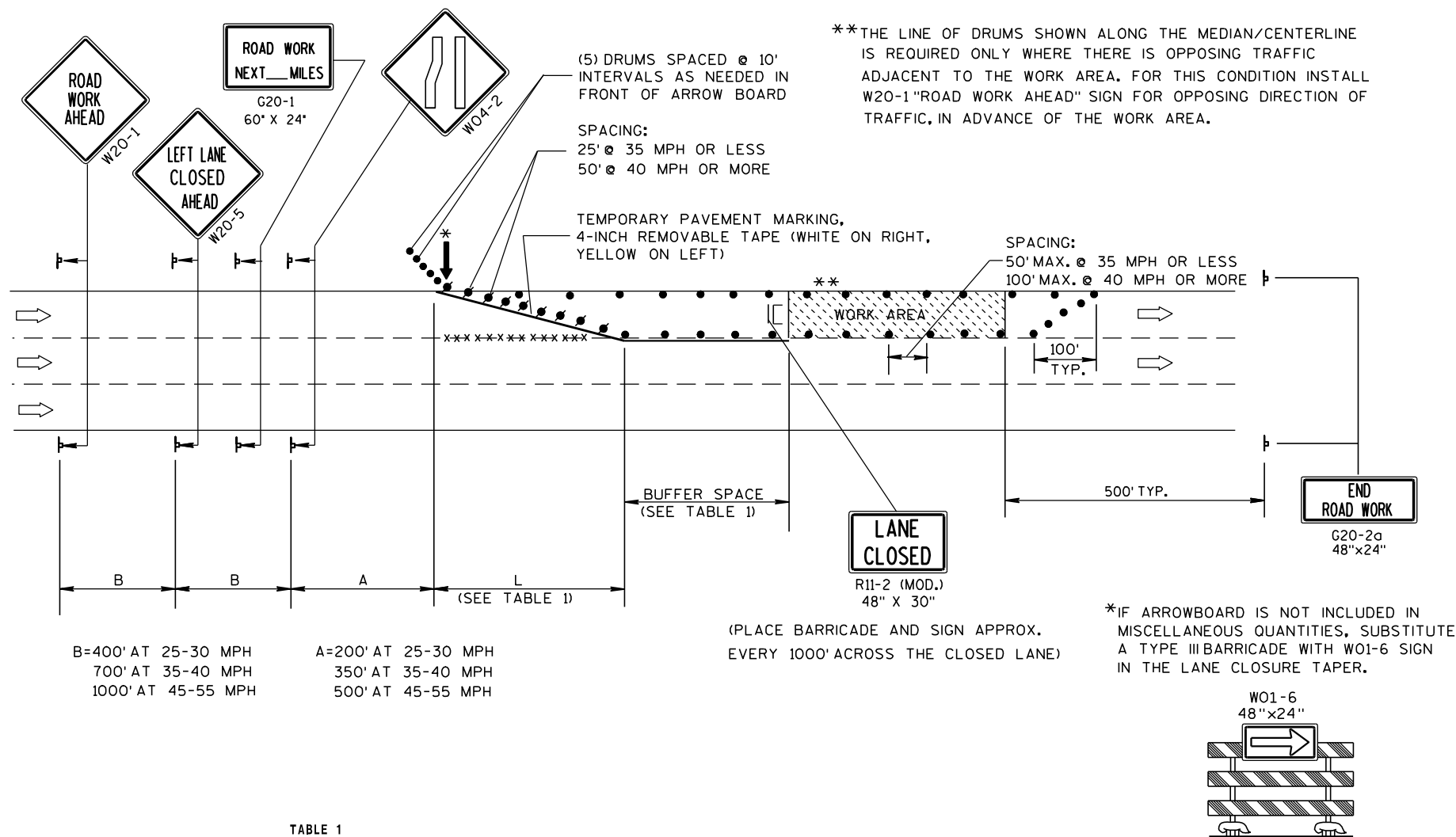


TABLE 1  
TAPER AND BUFFER SPACE  
FOR 12' LANE WIDTH

S	L	BUFFER SPACE
25	125'	55'
30	180'	85'
35	245'	120'
40	320'	170'
45	540'	220'
50	600'	280'
55	660'	335'

FOR LANE WIDTH OTHER THAN 12':

L = WS AT 45 MPH OR GREATER  
 $L = \frac{WS^2}{60}$  AT 40 MPH OR LESS  
L = TAPER LENGTH IN FEET  
S = NON-CONSTRUCTION SPEED LIMIT (MPH)  
W = WIDTH OF LANE CLOSURE

## GENERAL NOTES

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" X 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 7 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

W20-1, 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

5/23/00  
DATE

/S/ Chester J. Spang  
CHIEF SIGNS AND MARKING ENGINEER

FHWA

## DESIGN DATA

## LIVE LOAD:

DESIGN RATING; HS-20  
INVENTORY RATING; HS-16  
OPERATIONAL RATING; HS-26  
MAXIMUM STANDARD PERMIT VEHICLE LOAD = 190 KIPS.

## ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY SLAB & PARAPET —  $f'_c = 4,000$  P.S.I.  
ALL OTHER —  $f'_c = 3,500$  P.S.I.

BAR STEEL REINFORCEMENT, GRADE 60 —  $f_y = 60,000$  P.S.I.

36" PRESTRESSED GIRDERS, CONCRETE MASONRY —  $f'_c = 6,000$  P.S.I.  
STRANDS- 0.5" DIA. WITH ULTIMATE TENSILE STRENGTH OF 270,000 P.S.I.

## NOTES

DRAWINGS SHALL NOT BE SCALED.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

DIMENSIONS ARE BASED ON ORIGINAL STRUCTURE PLANS.

PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED TO THE ENTIRE TOP OF REPLACED DECK SURFACE AND THE FRONT FACE AND TOP OF THE REPLACED PARAPET.

MATCH PARAPET TO EXISTING PARAPET.

MATCH TOP OF DECK TO TOP OF EXIST. OVERLAY.

SALVAGE EXIST. TYPE "G" RAILING.  
ATTACH RAIL POSTS TO NEW PPT. WITH "CONCRETE MASONRY ANCHORS, TYPE S, 3/4" (4 PER POST)  
MAINTAIN EXISTING POST SPACING.

CUT ANY SEVERED REINFORCEMENT OR PRESTRESSING STRANDS IN REMAINING GIRDERS FLUSH WITH CONCRETE. ALL EXPOSED GIRDER REINFORCING AND PRESTRESSING STRANDS NOT ENCASED IN CONCRETE SHALL BE COVERED WITH AN EPOXY COATING. SEE SPECIAL PROVISIONS.

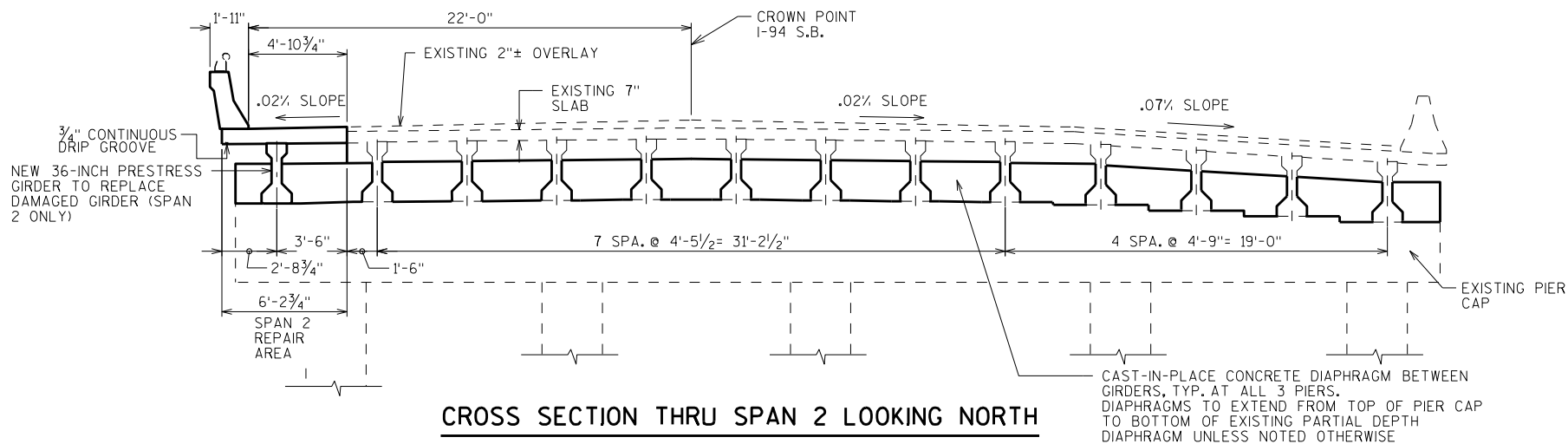
## STRUCTURES DESIGN CONTACTS:

CHRIS DOLL (608) 266-3229  
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY
<div>Plans Prepared By <b>WISDOT</b> <b>BUREAU OF STRUCTURES</b></div>			
ACCEPTED <i>William C. Diehn</i>		DATE <b>12/6/12</b>	
CHIEF STRUCTURES DESIGN ENGINEER			
<b>STRUCTURE B-51-22</b>			
I-94 S.B. OVER STH 20			
COUNTY	RACINE	TOWN/CITY/VILLAGE	YORKVILLE
DESIGN SPEC.	REHABILITATION	N/A	
DESIGNED BY	CAD	DESIGN CK'D.	SDR
DRAWN BY	CAD	PLANS CK'D.	SDR
GENERAL PLAN			SHEET 1 OF 5

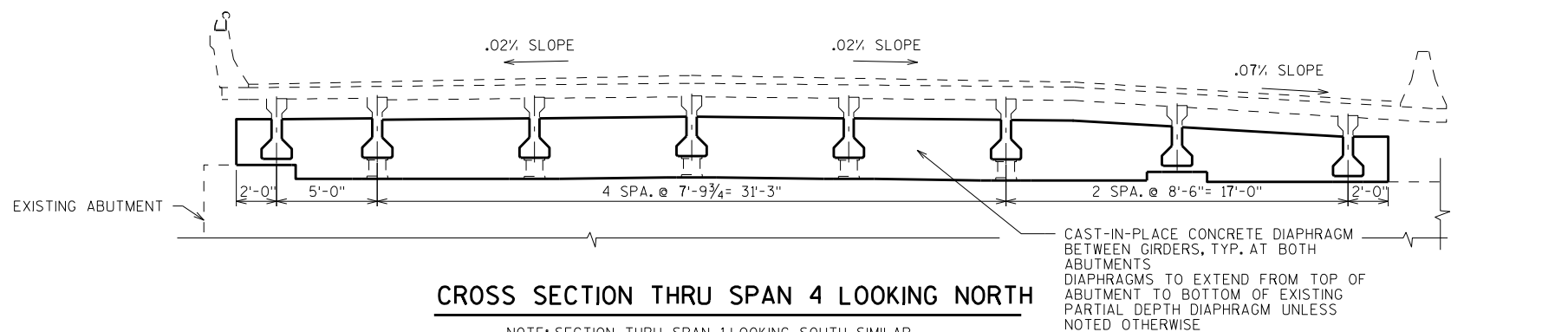
## LIST OF DRAWINGS

1. GENERAL PLAN
2. DETAILS & QUANTITIES
3. DIAPHRAGM DETAILS
4. 36" PRESTRESSED GIRDER
5. STEEL DIAPHRAGMS



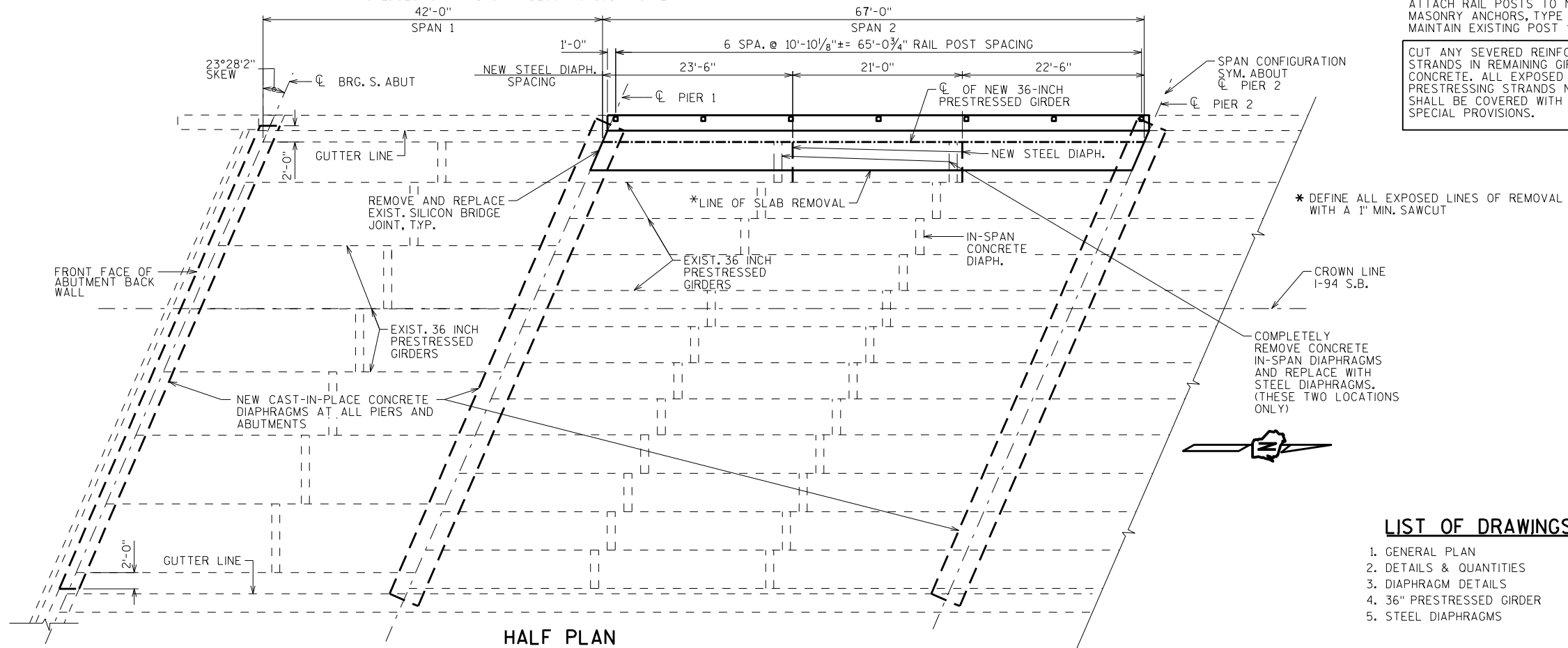
## CROSS SECTION THRU SPAN 2 LOOKING NORTH

NOTE: ONLY 8 GIRDERS ON SOUTH SIDE OF PIER 1 AND NORTH SIDE OF PIER 3



## CROSS SECTION THRU SPAN 4 LOOKING NORTH

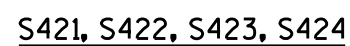
NOTE: SECTION THRU SPAN 1 LOOKING SOUTH SIMILAR



## HALF PLAN

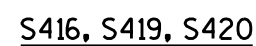
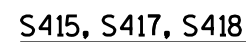
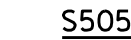
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE  
BAR MARK SIGNIFIES THE BAR SIZE.

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

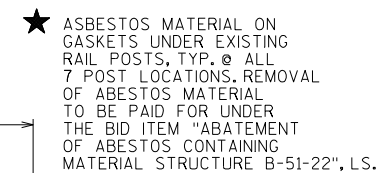
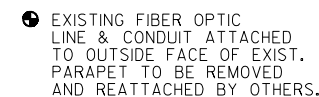


\* QUANTITIES ARE SEPARATED INTO 2 CATEGORIES:  
CAT. 0010 QUANTITIES ARE BRIDGE MAINTENANCE ITEMS UNRELATED TO THE GIRDER REPLACEMENT.  
CAT. 0020 QUANTITIES ARE REQUIRED TO REPLACE THE HIT GIRDER.

BUNDLE AND TAG EACH SERIES SEPARATELY.



MATCH TOP OF PPT.  
W/ EXISTING



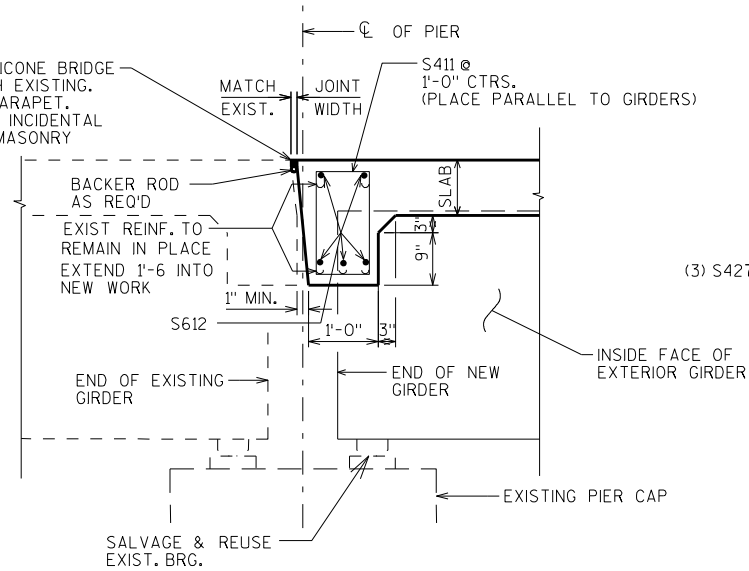
-MATCH EXISTING SLAB + OVERLAY  
THICKNESS ( $9\frac{3}{8}" \pm$ )

NEW STEEL IN-SPAN  
DIAPHRAGMS,  
SEE SHT. 5 FOR  
ATTACHMENT  
DETAILS & SIZE.  
SEE SHT. 1 FOR LOCATIONS.

— COMPLETELY REMOVE  
EXISTING IN-SPAN  
CONCRETE DIAPHRAGMS  
BETWEEN INSIDE FACES  
OF REPLACEMENT  
GIRDER AND ADJACENT  
GIRDER.

## SCALE = 8.0

REMOVE AND REPLACE SILICONE BRIDGE JOINT SEALANT TO MATCH EXISTING. EXTEND 6" UP FACE OF PARAPET. COST OF JOINT SHALL BE INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES"

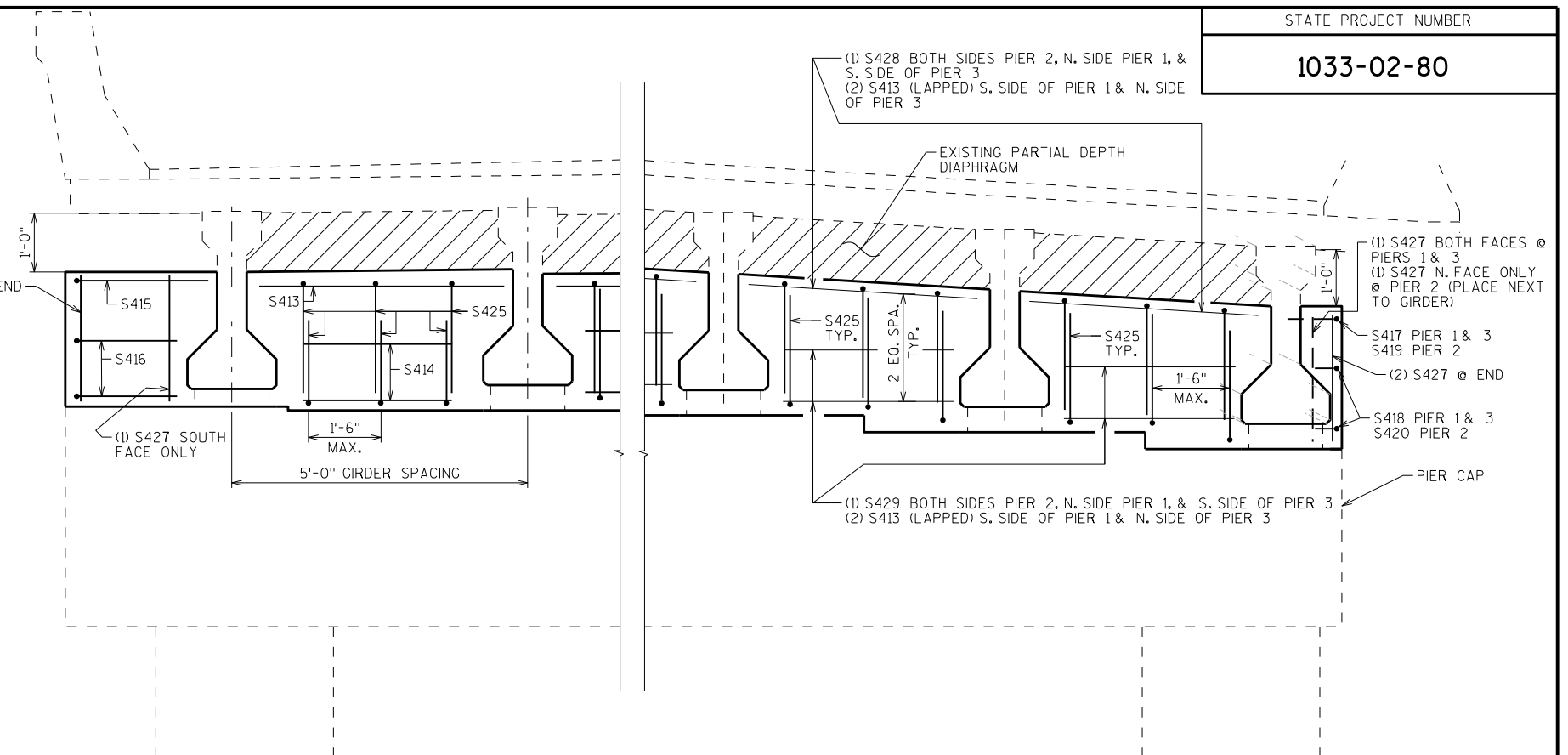


### SECTION THRU DIAPHRAGM AT PIERS

REMOVE & REPLACE CONC. DIAPH. IN REPAIR AREA AS REQ'D.

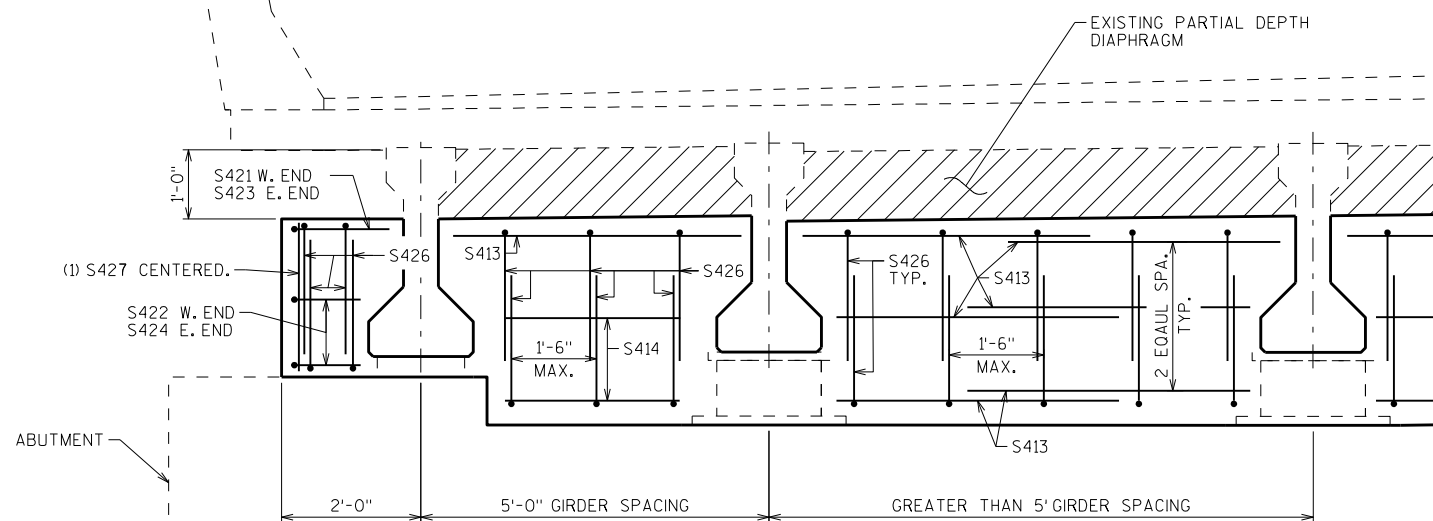
NOTE: SHOWING ONLY REPAIR WORK TO EXISTING PARTIAL DEPTH DIAPHRAGM. SEE ADDITIONAL DETAILS (THIS SHEET) FOR ADDITIONAL DIAPHRAGM WORK.

(3) S427 @ END



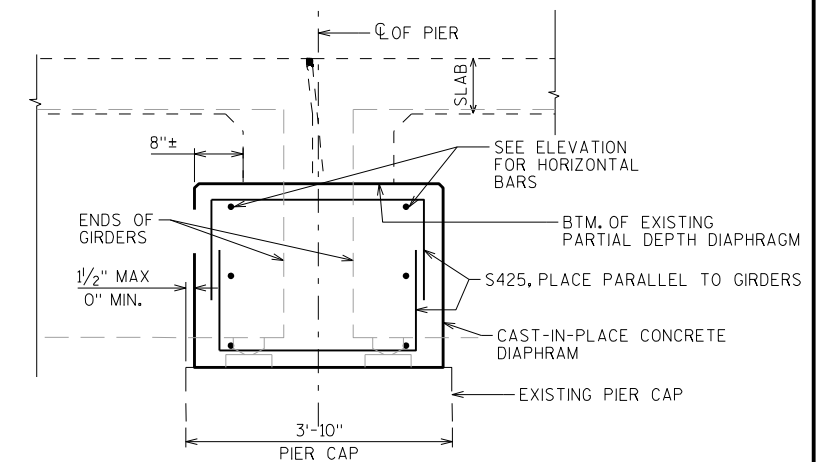
### ELEVATION VIEW OF NEW DIAPHRAGMS AT PIERS

(LOOKING NORTH)

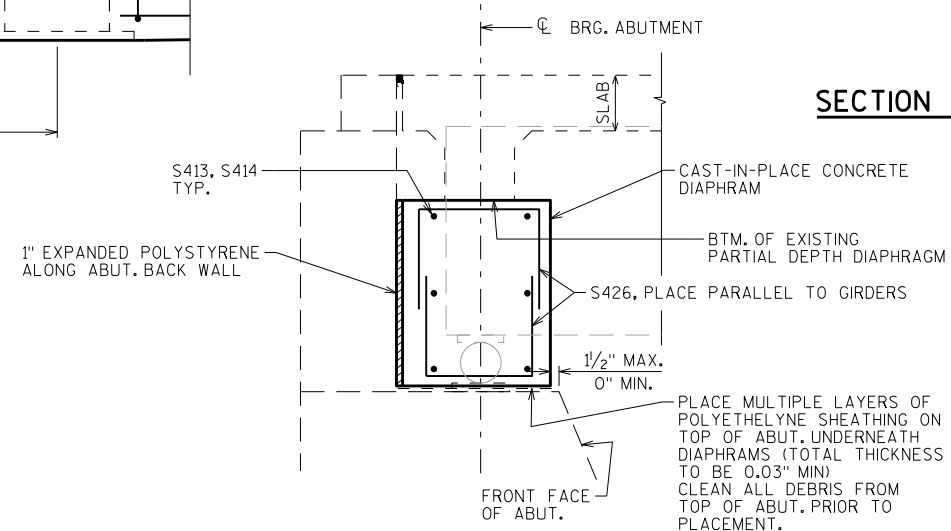


### ELEVATION VIEW OF NEW DIAPHRAGMS AT ABUTMENTS

(LOOKING NORTH AT NORTH ABUT., MIRRORED LOOKING SOUTH AT SOUTH ABUT.)



### SECTION THRU NEW DIAPHRAGMS AT PIERS



### SECTION THRU NEW DIAPHRAGMS AT ABUTMENTS

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-51-22			
DRAWN BY		CAD	PLANS CKD. SDR
DIAPHRAGM DETAILS		SHEET 3	

**GIRDER NOTES**

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 2" OF GIRDER, WHICH SHALL BE TROWEL FINISHED.

DO NOT APPLY CONCRETE SEALER TO SURFACES RECEIVING APPLICATION OF CONCRETE STAINING.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

STRANDS SHALL BE FLUSH WITH THE END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, ENDS OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2 FEET OF THE GIRDER ENDS WITH A NON-PIGMENTED EPOXY CONFORMING TO AASHTO M-235 TYPE III, GRADE 2, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO THE APPLICATION OF THE SEALER.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT. IF THE FABRICATOR WANTS TO BUILD A BAR STEEL CAGE BY WELDING LONGITUDINAL REINFORCEMENT TO THE #4 STIRRUPS, ONE OPTION IS AVAILABLE:

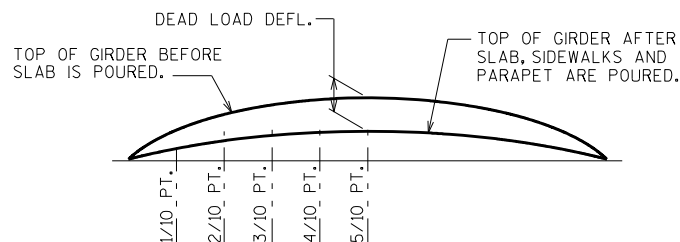
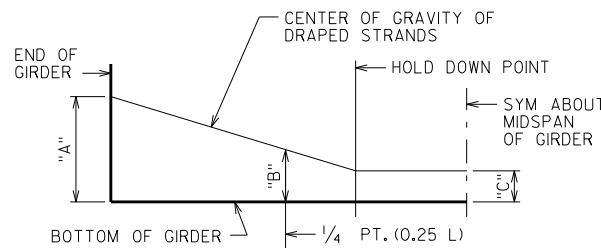
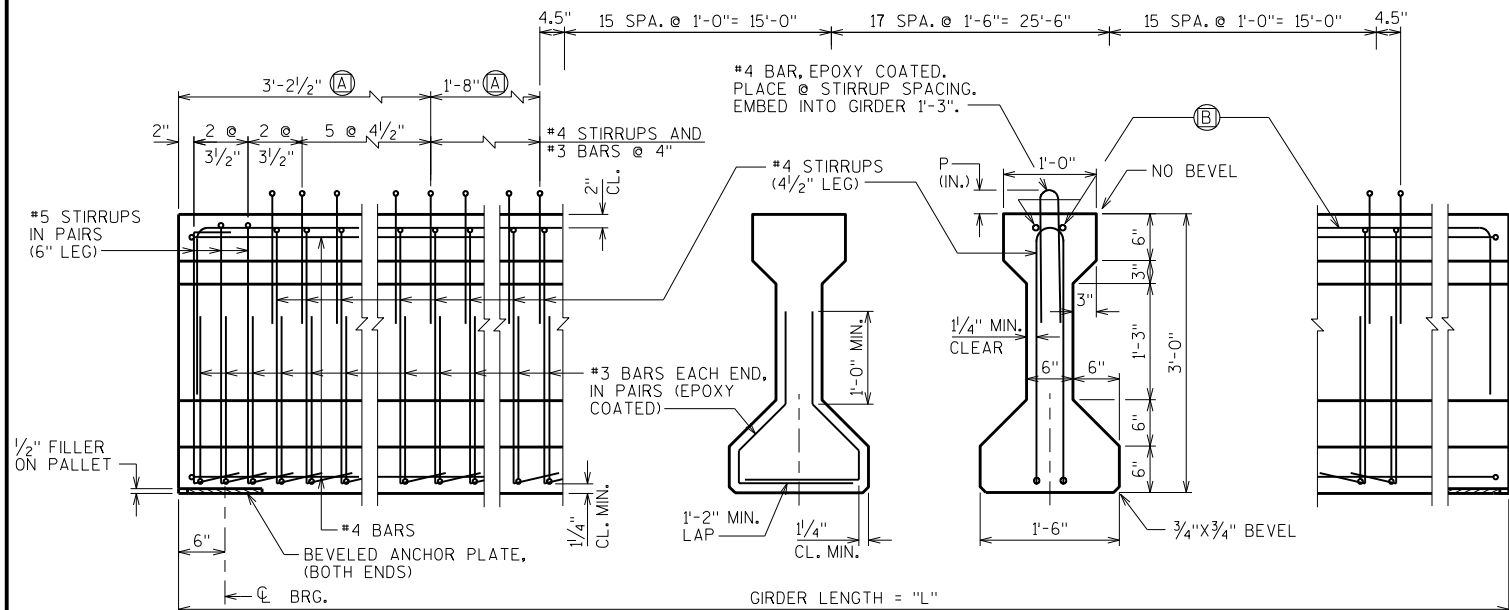
USE ASTM A706, GRADE 60 REINFORCEMENT AND THE STIRRUP SPACING AS SHOWN ON THE PLANS.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A497 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT CHIEF, (608)266-5161.

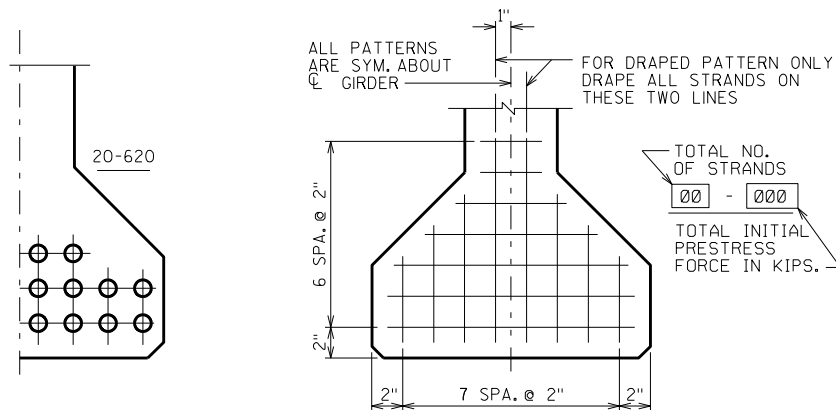
PRESTRESSING STRANDS SHALL BE 0.5" DIA. -7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 psi.

BEND EACH END OF #4 STIRRUPS 4 1/2" AND #5 STIRRUPS 6".

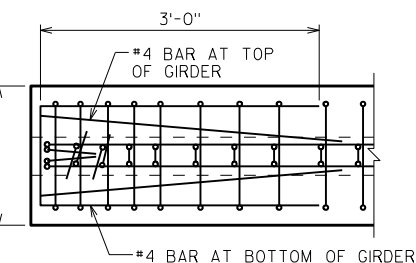
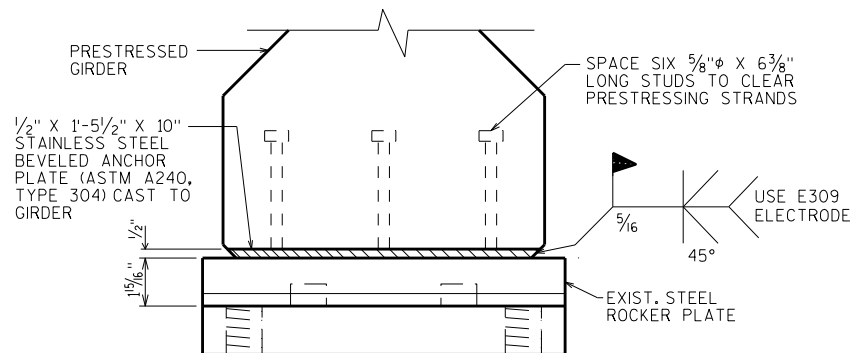
FOR DIAPHRAGM INSERT AND CONNECTION DETAILS SEE SHEET 5.

**DEAD LOAD DEFLECTION DIAGRAM****DRAPED STRAND PROFILE****SIDE VIEW & TYP. SECTION IN SPAN (A) DETAIL TYP. AT EACH END**

(B) 2- #4 BARS BEND DOWN 16 BAR DIA. AT ENDS (1'-11" LAP)

**DRAPED PATTERN**

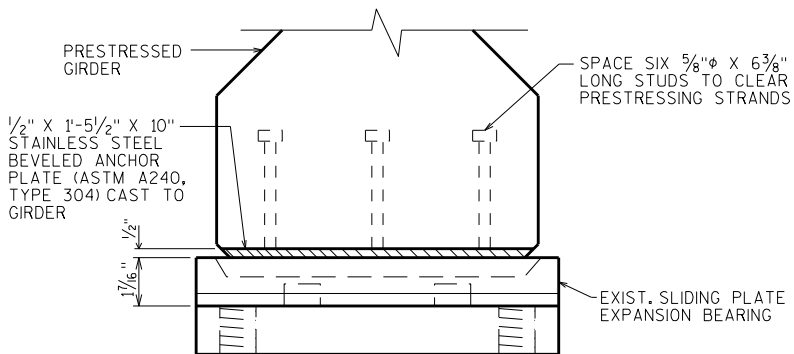
0.5"  $\phi$  STRANDS

**TYP. STRAND PATTERN****TOP VIEW OF GIRDER ENDS****PIER 2 BEARING DETAIL**

NOTE: REMOVE EXISTING WELDS. EXISTING BEARING TO BE SALVAGED, CLEAN AND PAINT BEARING PER SPECIAL PROVISION.

ATTACHED TO NEW GIRDER AS SHOWN.

REMOVING AND RESETTNG EXISTING BEARINGS SHALL BE CONSIDERED INCIDENTAL TO BID ITEM "PRESTRESSED GIRDER TYPE I 36-INCH"

**PIER 1 BEARING DETAIL**

NOTE: EXISTING BEARING TO BE SALVAGED, CLEAN AND PAINT BEARING PER SPECIAL PROVISION.

REMOVING AND RESETTNG EXISTING BEARINGS SHALL BE CONSIDERED INCIDENTAL TO BID ITEM "PRESTRESSED GIRDER TYPE I 36-INCH"

\* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA																					
SPAN	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.)										CONC. STRGTH. f'c (p.s.i.)	"P"	DIA. OF STRAND (IN.)	DRAPED PATTERN						
		1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	TOTAL NO. OF STRANDS				f'ci (P.S.I.) *	(IN.)					
																"A"	MIN.	"B" MAX.	"C"		
1 REQUIRED	2	66'-0"	0.3	0.6	0.8	0.9	1.0	0.9	0.8	0.6	0.3	6,000	4"	0.5	20	4,890	19	7.75	10.75	4	

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-51-22			
DRAWN BY		CAD	PLANS CKD. SDR
36" PRESTRESSED GIRDER		SHEET 4	

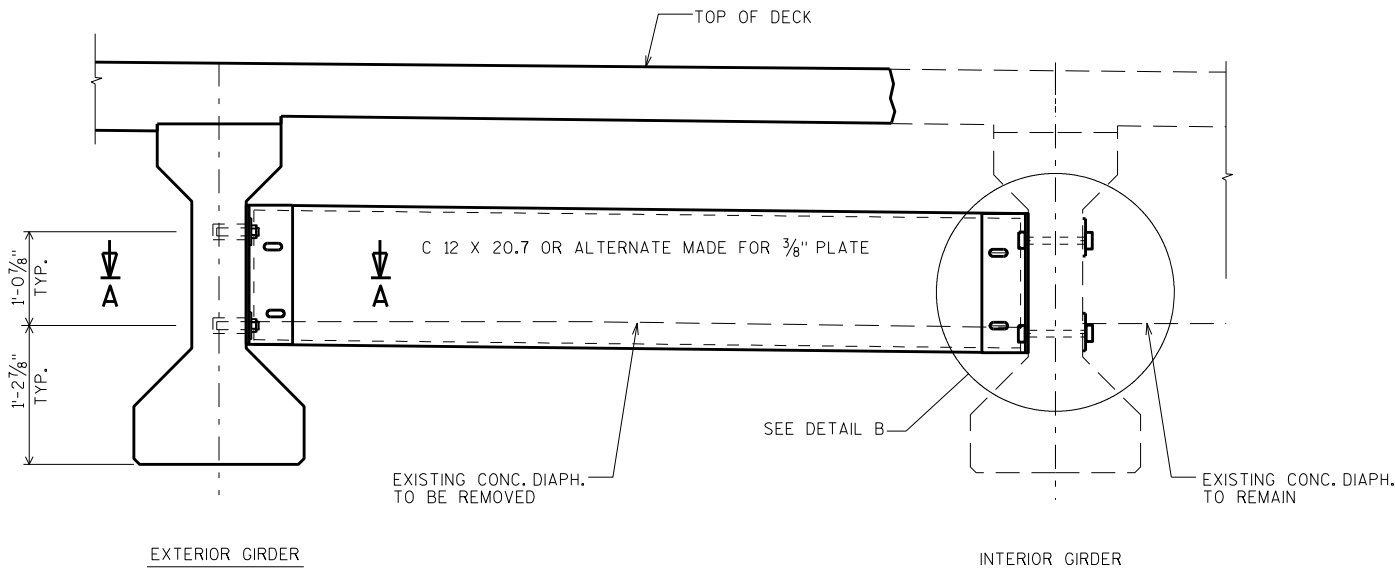
NOTES

ALL DIAPHRAGM MATERIAL AND CORED HOLES SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-51-22", EACH.

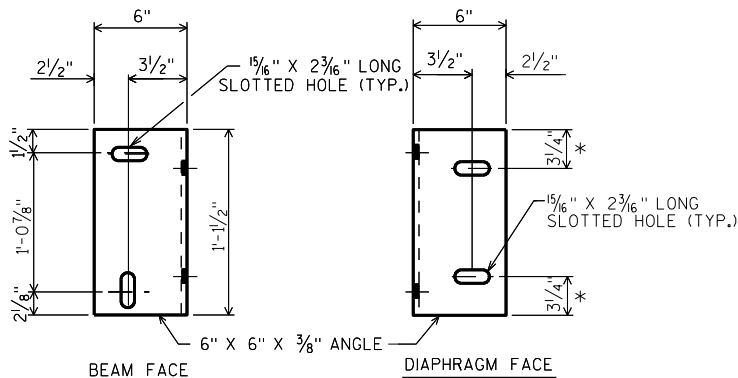
EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563, LUBRICANT AND TEST FOR COATED NUTS.

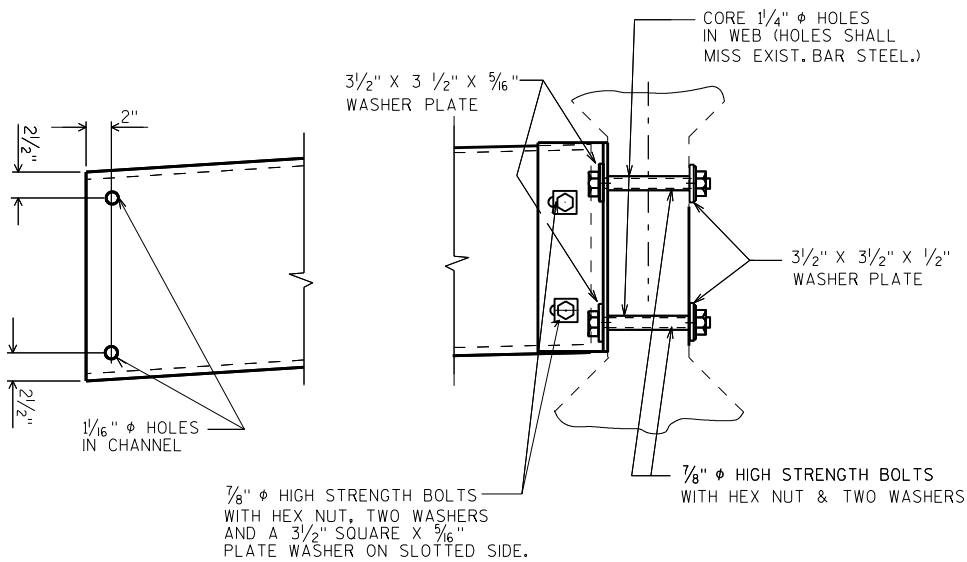


PART TRANSVERSE SECTION AT DIAPHRAGM



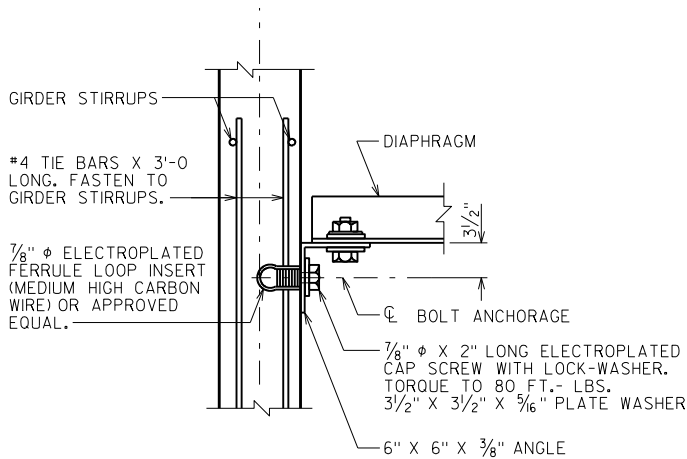
DIAPHRAGM SUPPORT

\* 2 1/2" IF ALTERNATE PLATE DIAPHRAGM IS USED



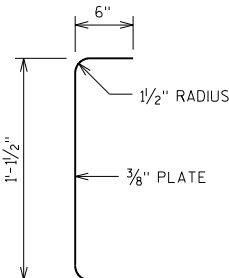
DETAIL B

(FOR INTERIOR GIRDER)



SECTION A-A

(FOR EXTERIOR ATTACHMENT)



SECTION THRU ALTERNATE DIAPHRAGM

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-51-22			
DRAWN BY CAD		PLANS CK'D.	SDR
STEEL DIAPHRAGMS		SHEET 5	

## Notes





## *Wisconsin Department of Transportation*

Dedicated people creating transportation solutions  
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