LAX MAY 2016

PROJECT ID: 1009-11-72

COUNTY: MONROE

ORDER OF SHEETS

TOTAL SHEETS = 26

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STATE HIGHWAY REHABILITATION-MAINTENANCE PROJECT

BLACK RIVER FALLS - TOMAH

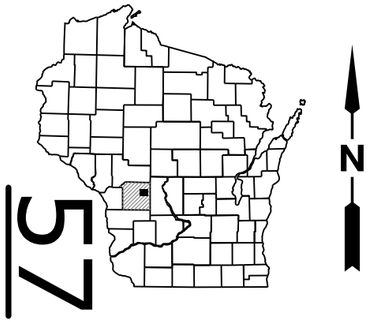
CTH "ET" B-41-0042

IH 94

MONROE COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1009-11-72	———	—

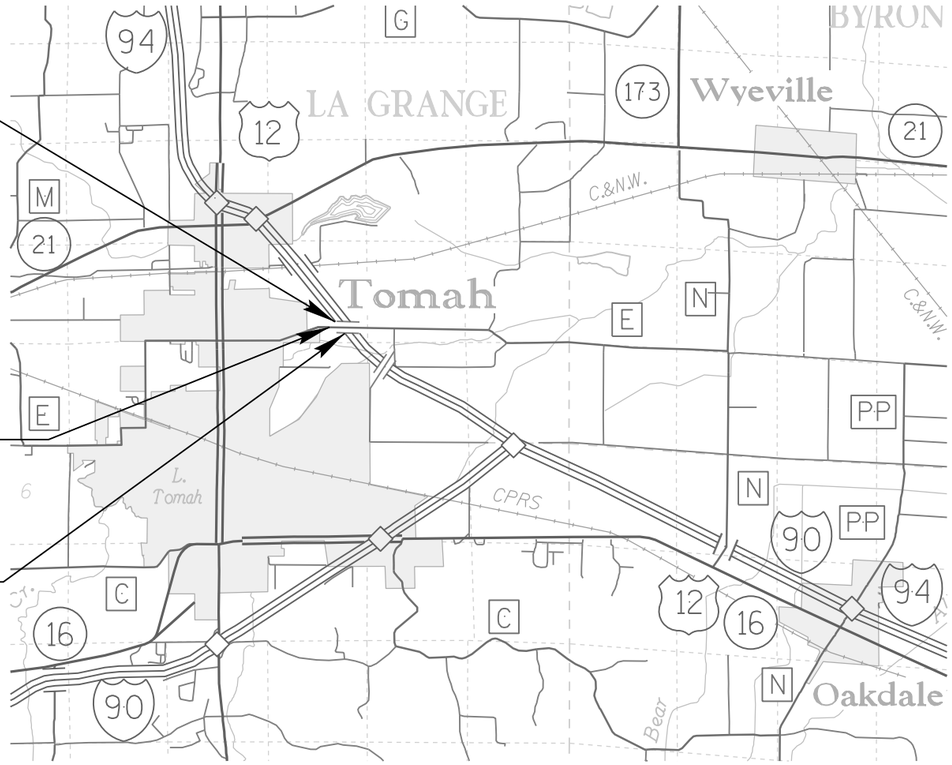
STATE PROJECT NUMBER
1009-11-72



BEGIN PROJECT 1009-11-72
STATION 2613+50 EB
X=699572.95
Y=438838.21

STRUCTURE B-41-0042
(CTH ET OVER IH 94)

END PROJECT 1009-11-72
STATION 2937+05 EB
X=706818.06
Y=407921.49



LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.000 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MONROE COUNTY.

DESIGN DESIGNATION

A.A.D.T.	=
A.A.D.T.	=
D.H.V.	=
D.D.	=
T.	=
DESIGN SPEED	=
ESALS	=

CONVENTIONAL SYMBOLS

PLAN

CORPORATE LIMITS	
REFERENCE LINE	
COMBUSTIBLE FLUIDS	CAUTION

UTILITIES

ELECTRIC	E
FIBER OPTIC	FO
GAS	G
SANITARY SEWER	SAN
STORM SEWER	SS
TELEPHONE	T
WATER	W
UTILITY PEDESTAL	
POWER POLE	
TELEPHONE POLE	

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WISDOT
Designer	ROB WINTERTON
Project Manager	BRIAN MEYER
Regional Examiner	BRIAN MEYER
Regional Supervisor	JIM SAVOLDELLI
C.O. Examiner	

APPROVED FOR THE DEPARTMENT

DATE: 04-01-2016 (Signature)

E

STANDARD ABBREVIATIONS

AC	ACRE
AGG	AGGREGATE
<	ANGLE
AE, AEW	APRON ENDWALL
ASPH.	ASPHALTIC
A.D.T.	AVERAGE DAILY TRAFFIC
A.A.D.T.	ANNUAL AVERAGE DAILY TRAFFIC
B.F.	BACK FACE
BM	BENCHMARK
BTWN	BETWEEN
CTR.	CENTER
C/L	CENTER LINE
Δ	CENTRAL ANGLE OR DELTA
C.E.	COMMERCIAL ENTRANCE
CONST.	CONSTRUCTION
CMCP	CORRUGATED METAL CULVERT PIPE
CMP	CORRUGATED METAL PIPE
CO.	COUNTY
CTH	COUNTY TRUNK HIGHWAY
CR.	CREEK
CABC	CRUSHED AGGREGATE BASE COURSE
CY	CUBIC YARD
CP	CONTROL POINT OR CULVERT PIPE
C&G	CURB AND GUTTER
D	DEGREE OF CURVE
D.H.V.	DESIGN HOURLY VOLUME
DIA.	DIAMETER
D.D.	DIRECTIONAL DISTRIBUTION
DISCH.	DISCHARGE
DMS	DYNAMIC MESSAGE SIGN
EA	EACH
E	EAST
EB	EASTBOUND
ELEC.	ELECTRIC(AL), ELEC. CABLE
EL., ELEV.	ELEVATION
ESALS	EQUIVALENT SINGLE AXLE LOADS
EXC.	EXCAVATION
EXIST	EXISTING
F.F.	FACE TO FACE
FERT.	FERTILIZER
F.E.	FIELD ENTRANCE
F/L, F.L.	FLOW LINE
GALV.	GALVANIZE
H.S.	HIGH STRENGTH
CWT	HUNDRED WEIGHT
INL	INLET
INTER.	INTERSECTION
IH	INTERSTATE HIGHWAY
JT.	JOINT
LT	LEFT
L.H.F.	LEFT HAND FORWARD
L.	LENGTH OF CURVE
L.F.	LINEAR FOOT(FEET)
LC.	LONG CHORD
LS	LUMP SUM
M.P.	MARKER POST
MGAL	1000 GALLONS
N.C.	NORMAL CROWN
N	NORTH
NB	NORTHBOUND
NOR	NORMAL
NO.	NUMBER
PAV'T	PAVEMENT
P.L.E.	PERMANENT LIMITED EASEMENT
P.C.	POINT OF CURVATURE
P.I.	POINT OF INTERSECTION
P.T.	POINT OF TANGENCY
PCC	PORTLAND CEMENT CONCRETE
P.E.	PRIVATE ENTRANCE
PGL	PROFILE GRADE LINE
P.L.	PROPERTY LINE
R	RADIUS OR RANGE
R/L	REFERENCE LINE
R.C.C.P.	REINFORCED CONCRETE CULVERT PIPE
REQ'D	REQUIRED
RT	RIGHT
R.H.F.	RIGHT HAND FORWARD
R/W	RIGHT OF WAY
RD.	ROAD
SHLD.	SHOULDER(S)
SHR.	SHRINKAGE
S	SOUTH
SB	SOUTHBOUND
S.F.	SQUARE FOOT (FEET)
SDD	STANDARD DETAIL DRAWING(S)
STH	STATE TRUNK HIGHWAY
STA.	STATION
S.E.	SUPERELEVATION
S/L	SURVEY LINE
SYM	SYMMETRICAL
T.	PERCENT TRUCKS
TEL.	TELEPHONE
TEMP.	TEMPORARY
T.L.E.	TEMPORARY LIMITED EASEMENT
T.O.C.	TOP OF CURB
TYP	TYPICAL
UNCL.	UNCLASSIFIED
U.G.	UNDERGROUND (CABLE)
VAR	VARIABLE
V.C.	VERTICAL CURVE
V.P.C.	VERTICAL POINT OF CURVATURE
V.P.I.	VERTICAL POINT OF INTERSECTION
V.P.T.	VERTICAL POINT OF TANGENCY
Wt.	WEIGHT
W	WEST
WB	WESTBOUND

GENERAL NOTES

- THERE ARE NO KNOWN UTILITY FACILITIES WITHIN THE PROJECT AREA. HOWEVER, IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM THIS.
- CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY HIS OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.

DNR LIAISON

KAREN KALVELAGE
ENVIRONMENTAL ANALYSIS & REVIEW SPECIALIST
WISCONSIN DEPT. OF NATURAL RESOURCES
WEST CENTRAL REGION
3550 MORMON COULEE ROAD
LA CROSSE, WI 54601
608-785-9115

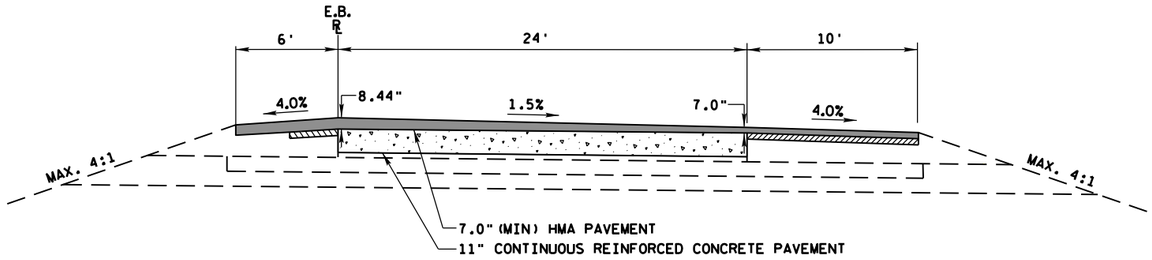
DESIGN CONTACTS

BRIAN MEYER
PROJECT MANAGER
WISDOT SW REGION
3550 MORMON COULEE RD.
LA CROSSE, WI 54601
(608) 789-5676

ROB WINTERTON
PROJECT DESIGNER
WISDOT SW REGION
3550 MORMON COULEE RD.
LA CROSSE, WI 54601
(608) 789-7879

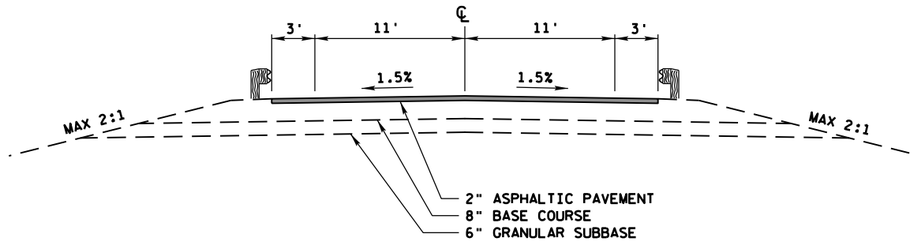
DIGGERS HOTLINE
Dial 811 or (800) 242-8511
www.DiggersHotline.com

2



TYPICAL EXISTING IH94 SECTION

LOOKING EAST



TYPICAL EXISTING CTH ET B-41-42

2

ROAD WORK 1000 FT
W20-1

TRAFFIC CONTROL DRUMS WITH LIGHT AT 50' SPACING
400' TAPER TO KEEP TRAFFIC IN SINGLE LANE

USH 12

R11-2(MOD)
48" X 30"
LANE CLOSED
TYPE III BARRICADE

ROAD WORK AHEAD
W20-1

ROAD WORK 500 FT
W20-1

TRAFFIC CONTROL DRUMS AT 100' SPACING
TO CLOSE RIGHT LANE

PANEL 1	PANEL 2
EB IH94 ON RAMP	CLOSED (DATE) 11PM-5AM

PCMS
PRE-WARN MESSAGE
3 DAYS PRIOR TO CLOSURE

PANEL 1	PANEL 2
EB IH94 CLOSED	USE HWY 12 EAST

PCMS
MESSAGE DURING CLOSURE

TRAFFIC CONTROL DRUMS AT 25' SPACING
TO CLOSE RIGHT TURN LANE

IH 94 WB
IH 94 EB

USH 12

R11-2(MOD)
48" X 30"
LANE CLOSED
TYPE III BARRICADE

PANEL 1	PANEL 2
EB IH94 ON RAMP	CLOSED (DATE) 11PM-5AM

PCMS
PRE-WARN MESSAGE
3 DAYS PRIOR TO CLOSURE

TRAFFIC CONTROL DRUMS AT 25' SPACING
TO CLOSE LEFT TURN LANE

R11-2(MOD)
48" X 30"
ROAD CLOSED
TYPE III BARRICADE (x5)

PANEL 1	PANEL 2
EB IH94	CLOSED (DATE) 11PM-5AM

PCMS
PRE-WARN MESSAGE
3 DAYS PRIOR TO CLOSURE

PANEL 1	PANEL 2
EB IH94 CLOSED	USE EXIT 143

PCMS
MESSAGE DURING CLOSURE

TRAFFIC CONTROL DRUMS AT 50' SPACING
TO RAMP GORE

PANEL 1	PANEL 2
EB IH94 CLOSED	USE EXIT 143

PCMS
MESSAGE DURING CLOSURE
(PLACE 1 MILE IN ADVANCE)

TRAFFIC CONTROL DRUMS WITH LIGHT AT 50' SPACING
420' TAPER TO DIRECT TRAFFIC ONTO OFF RAMP

IH 94 WB
IH 94 EB

LEFT LANE CLOSED
SEE S.D.D.
TRAFFIC CONTROL,
LANE CLOSURE

IH 94/USH 12
INTERCHANGE

N

PROJECT NO: 1009-11-72	HWY: IH 94	COUNTY: MONROE	TRAFFIC CONTROL - IH 94 DETOUR	SHEET 4	E

FILE NAME : P:\State\i94\10091102\Cad\025001_tc.dgn PLOT DATE : 31-MAR-2016 10:32 PLOT BY : dotwow PLOT NAME : PLOT SCALE : 200.000000:1.000000
WISDOT/CADDS SHEET 42

2

ROAD WORK 1000 FT W20-1

TRAFFIC CONTROL DRUMS WITH LIGHT AT 50' SPACING
400' TAPER TO KEEP TRAFFIC IN SINGLE LANE

USH 12

R11-2(MOD) 48" X 30" LANE CLOSED
TYPE III BARRICADE

ROAD WORK AHEAD W20-1

ROAD WORK 500 FT W20-1

TRAFFIC CONTROL DRUMS AT 100' SPACING
TO CLOSE RIGHT LANE

PANEL 1	PANEL 2
EB IH94 ON RAMP	CLOSED (DATE) 11PM-5AM

PCMS
PRE-WARN MESSAGE
3 DAYS PRIOR TO CLOSURE

PANEL 1	PANEL 2
EB IH94 CLOSED	USE HWY 12 EAST

PCMS
MESSAGE DURING CLOSURE

TRAFFIC CONTROL DRUMS AT 25' SPACING
TO CLOSE RIGHT TURN LANE

IH 94 WB

IH 94 EB

USH 12

R11-2(MOD) 48" X 30" LANE CLOSED
TYPE III BARRICADE

PANEL 1	PANEL 2
EB IH94 ON RAMP	CLOSED (DATE) 11PM-5AM

PCMS
PRE-WARN MESSAGE
3 DAYS PRIOR TO CLOSURE

TRAFFIC CONTROL DRUMS AT 25' SPACING
TO CLOSE LEFT TURN LANE

R11-2(MOD) 48" X 30" ROAD CLOSED
TYPE III BARRICADE (x5)

PANEL 1	PANEL 2
EB IH94	CLOSED (DATE) 11PM-5AM

PCMS
PRE-WARN MESSAGE
3 DAYS PRIOR TO CLOSURE

PANEL 1	PANEL 2
EB IH94 CLOSED	USE EXIT 143

PCMS
MESSAGE DURING CLOSURE

TRAFFIC CONTROL DRUMS AT 50' SPACING
TO RAMP GORE

PANEL 1	PANEL 2
EB IH94 CLOSED	USE EXIT 143

PCMS
MESSAGE DURING CLOSURE
(PLACE 1 MILE IN ADVANCE)

TRAFFIC CONTROL DRUMS WITH LIGHT AT 50' SPACING
420' TAPER TO DIRECT TRAFFIC ONTO OFF RAMP

IH 94 WB

IH 94 EB

LEFT LANE CLOSED
SEE S.D.D.
TRAFFIC CONTROL,
LANE CLOSURE

IH 94/USH 12 INTERCHANGE

N

PROJECT NO: 1009-11-72	HWY: IH 94	COUNTY: MONROE	TRAFFIC CONTROL - IH 94 DETOUR	SHEET 5	E

2

PANEL 1	PANEL 2
EB IH94 ON RAMP	CLOSED (DATE) 11PM-5PM

PCMS

PRE-WARN MESSAGE
3 DAYS PRIOR TO DETOUR

PANEL 1	PANEL 2
EB IH94 CLOSED	USE HWY 12 EAST

PCMS

MESSAGE DURING DETOUR

N

USH 12

TRAFFIC CONTROL DRUMS AT 25' SPACING
TO CLOSE LEFT TURN LANE

TRAFFIC CONTROL DRUMS AT 25' SPACING
TO CLOSE RIGHT TURN LANE

IH 94

STH 21

USH 12

PANEL 1	PANEL 2
EB IH94 ON RAMP	CLOSED (DATE) 11PM-5PM

PCMS

PRE-WARN MESSAGE
3 DAYS PRIOR TO DETOUR

R11-2(MOD)
48" X 30"
RAMP CLOSED

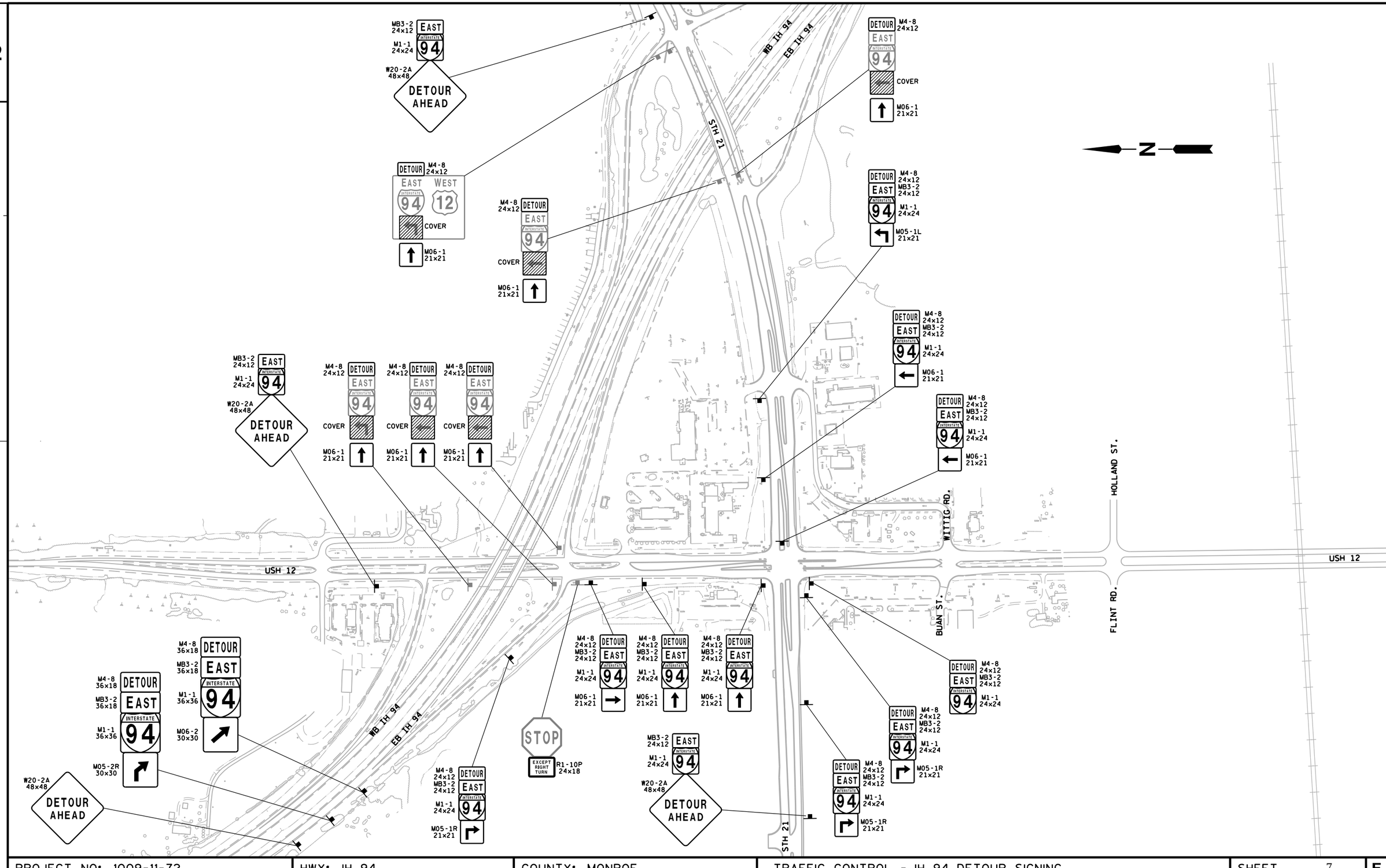
TYPE III BARRICADE | TYPE III BARRICADE | TYPE III BARRICADE | TYPE III BARRICADE | TYPE III BARRICADE

PLACE BARRICADES
AT THE END OF THE
ENTRANCE RAMP TAPER

IH 94
STH 21
INTERCHANGE

PROJECT NO: 1009-11-72	HWY: IH 94	COUNTY: MONROE	TRAFFIC CONTROL - IH 94 DETOUR	SHEET 6	E

2



PROJECT NO: 1009-11-72	HWY: IH 94	COUNTY: MONROE	TRAFFIC CONTROL - IH 94 DETOUR SIGNING	SHEET 7	E

2

N

E. WARREN ST.

E. VETERANS ST.

CTH "ET"

USH 12

USH 12

STRAW ST.

W. WARREN ST.

JULIE ST.

W. VETERANS ST.

LARKIN ST.

JEFFERSON ST.

M4-8 24x12
MB3-2 24x12
M1-1 24x24
M06-1 21x21
DETOUR
EAST
INTERSTATE 94

DETOUR
EAST
INTERSTATE 94
M4-8 24x12
MB3-2 24x12
M1-1 24x24

PROJECT NO: 1009-11-72	HWY: IH 94	COUNTY: MONROE	TRAFFIC CONTROL - IH 94 DETOUR SIGNING	SHEET 8	E

2

2

N

ARTHUR ST.

CLEVELAND ST.

E. WASHINGTON ST.

E. JACKSON ST.

E. NOTT ST.

E. FOSTER ST.

E. BROWNELL ST.

E. SARATOGA ST.

E. MONROE ST.

E. LACROSSE ST.

E. MILWAUKEE ST.

E. MONOWAU ST.

USH 12

USH 12

JEFFERSON ST.

W. WASHINGTON ST.

W. JACKSON ST.

W. NOTT ST.

W. FOSTER ST.

W. BROWNELL ST.

W. SARATOGA ST.

W. MONROE ST.

W. LACROSSE ST.

W. MILWAUKEE ST.

W. MONOWAU ST.

PROJECT NO: 1009-11-72	HWY: IH 94	COUNTY: MONROE	TRAFFIC CONTROL - IH 94 DETOUR SIGNING	SHEET 9	E

FILE NAME : P:\State\i94\10091102\Cad\027003_dt.dgn PLOT DATE : 31-MAR-2016 12:40 PLOT BY : dotwow PLOT NAME : PLOT SCALE : 400.000000:1.000000

WISDOT/CADDS SHEET 42

2

W. MILWAUKEE ST.

E. MILWAUKEE ST.

W. MONOWAU ST.

E. MONOWAU ST.

M4-8 24x12 DETOUR
WB3-2 24x12 EAST
M1-1 24x24 INTERSTATE 94

W. JUNEAU ST.

E. JUNEAU ST.

USH 12

W. COUNCIL ST.

E. COUNCIL ST.

W. HOLTON ST.

E. HOLTON ST.

N

SIME AVE.

W. CAMERON ST.

E. CAMERON ST.

M4-8 24x12 DETOUR
WB3-2 24x12 EAST
M1-1 24x24 INTERSTATE 94
M05-1L 21x21

STH 16

USH 12/STH 16

GRAIN AVE.

KILBOURN AVE.

STH 131

M4-8 24x12 DETOUR
WB3-2 24x12 EAST
COVER
M06-1 21x21
ALT
INTERSTATE 94
INTERSTATE 90

M4-8 24x12 DETOUR
WB3-2 24x12 EAST
M1-1 24x24 INTERSTATE 94

PROJECT NO: 1009-11-72	HWY: IH 94	COUNTY: MONROE	TRAFFIC CONTROL - IH 94 DETOUR SIGNING	SHEET 10	E

FILE NAME : P:\State\i94\10091102\Cad\027004_dt.dgn PLOT DATE : 31-MAR-2016 12:43 PLOT BY : dotwow PLOT NAME : PLOT SCALE : 400.000000:1.000000

2

2

N

REZIN RD.

USH 12/STH 16

WB IH 90
EB IH 90

GRANT RD.

USH 12/STH 16

ACADEMY AVE.

REZIN RD.

WB IH 90
EB IH 90

M4-8 36x18 DETOUR
MB3-2 36x18 EAST
M1-1 36x36 INTERSTATE 94
M06-1 30x30

M4-8 36x18 DETOUR
MB3-2 36x18 EAST
M1-1 36x36 INTERSTATE 94
M05-1L 30x30

DETOUR M4-8 36x18
ALT INTERSTATE 90
ALT INTERSTATE 94
EAST MB3-2 36x18
COVER
M06-1 30x30

PROJECT NO: 1009-11-72	HWY: IH 94	COUNTY: MONROE	TRAFFIC CONTROL - IH 94 DETOUR SIGNING	SHEET 11	E

FILE NAME : P:\State\i94\10091102\Cad\027005_dt.dgn PLOT DATE : 31-MAR-2016 11:08 PLOT BY : dotwow PLOT NAME : PLOT SCALE : 400.000000:1.000000

DATE 04APR16 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1009-11-72 QUANTITY
0010	203.0200	Removing Old Structure (station) 01. 1+00	LS	1.000	1.000
0020	213.0100	Finishing Roadway (project) 01. 1009-11-72	EACH	1.000	1.000
0030	502.0100	Concrete Masonry Bridges	CY	27.000	27.000
0040	502.3200	Protective Surface Treatment	SY	85.000	85.000
0050	502.3210	Pigmented Surface Sealer	SY	26.000	26.000
0060	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	7,705.000	7,705.000
0070	506.0105	Structural Steel Carbon	LB	3,965.000	3,965.000
0080	506.0605	Structural Steel HS	LB	11,910.000	11,910.000
0090	506.3004	Welded Stud Shear Connectors 3/4x4-Inch	EACH	280.000	280.000
0100	513.9005.S	Removing and Resetting Tubular Railing (structure) 01. B-41-0042	LS	1.000	1.000
0110	517.0600	Painting Epoxy System (structure) 01. B-41-0042	LS	1.000	1.000
0120	517.3000.S	Structure Overcoating Cleaning and Priming (structure) 01. B-41-0042	LS	1.000	1.000
0130	517.4000.S	Containment and Collection of Waste Materials (structure) 01. B-41-0042	LS	1.000	1.000
0140	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1009-11-72	EACH	1.000	1.000
0150	619.1000	Mobilization	EACH	1.000	1.000
0160	642.5001	Field Office Type B	EACH	1.000	1.000
0170	643.0100	Traffic Control (project) 01. 1009-11-72	EACH	1.000	1.000
0180	643.0300	Traffic Control Drums	DAY	1,340.000	1,340.000
0190	643.0420	Traffic Control Barricades Type III	DAY	1,008.000	1,008.000
0200	643.0705	Traffic Control Warning Lights Type A	DAY	1,592.000	1,592.000
0210	643.0715	Traffic Control Warning Lights Type C	DAY	380.000	380.000
0220	643.0800	Traffic Control Arrow Boards	DAY	54.000	54.000
0230	643.0900	Traffic Control Signs	DAY	1,134.000	1,134.000
0240	643.1050	Traffic Control Signs PCMS	DAY	38.000	38.000
0250	643.2000	Traffic Control Detour (project) 01. 1009-11-72	EACH	1.000	1.000
0260	643.3000	Traffic Control Detour Signs	DAY	224.000	224.000
0270	715.0502	Incentive Strength Concrete Structures	DOL	500.000	500.000
0280	SPV.0105	Special 01. Heat Straightening of Damaged Girders	LS	1.000	1.000
0290	SPV.0105	Special 02. Counterweight Structure	LS	1.000	1.000
0300	SPV.0105	Special 03. Magnetic Particle Testing and Grinding	LS	1.000	1.000

3

TRAFFIC CONTROL DETOUR SIGNS

CATEGORY	LOCATION	SERVICE DAYS	QTY	643.3000 DAY	REMARKS
0010	EB IH 94 & USH 12	2	112	224	
	TOTAL 0010			224	

TRAFFIC CONTROL SIGNS PCMS

CATEGORY	LOCATION	SERVICE DAYS	QTY	643.1050 DAY	REMARKS
0010	EB IH 94	1	1	1	DETOUR REMOVING BRIDGE
0010	EB IH 94	3	1	3	PRE-WARN REMOVING BRIDGE
0010	EB IH 94	1	1	1	DETOUR REMOVING BRIDGE
0010	EB USH 12	3	1	3	PRE-WARN REMOVING BRIDGE
0010	EB USH 12	1	1	1	DETOUR REMOVING BRIDGE
0010	WB USH 12	3	1	3	PRE-WARN REMOVING BRIDGE
0010	EB STH 21	3	1	3	PRE-WARN REMOVING BRIDGE
0010	WB STH 21	3	1	3	PRE-WARN REMOVING BRIDGE
0010	WB STH 21	1	1	1	DETOUR REMOVING BRIDGE
0010	EB IH 94	1	1	1	DETOUR SETTING GIRDERS
0010	EB IH 94	3	1	3	PRE-WARN SETTING GIRDERS
0010	EB IH 94	1	1	1	DETOUR SETTING GIRDERS
0010	EB USH 12	3	1	3	PRE-WARN SETTING GIRDERS
0010	EB USH 12	1	1	1	DETOUR SETTING GIRDERS
0010	WB USH 12	3	1	3	PRE-WARN SETTING GIRDERS
0010	EB STH 21	3	1	3	PRE-WARN SETTING GIRDERS
0010	WB STH 21	3	1	3	PRE-WARN SETTING GIRDERS
0010	WB STH 21	1	1	1	DETOUR SETTING GIRDERS
	TOTAL 0010			38	

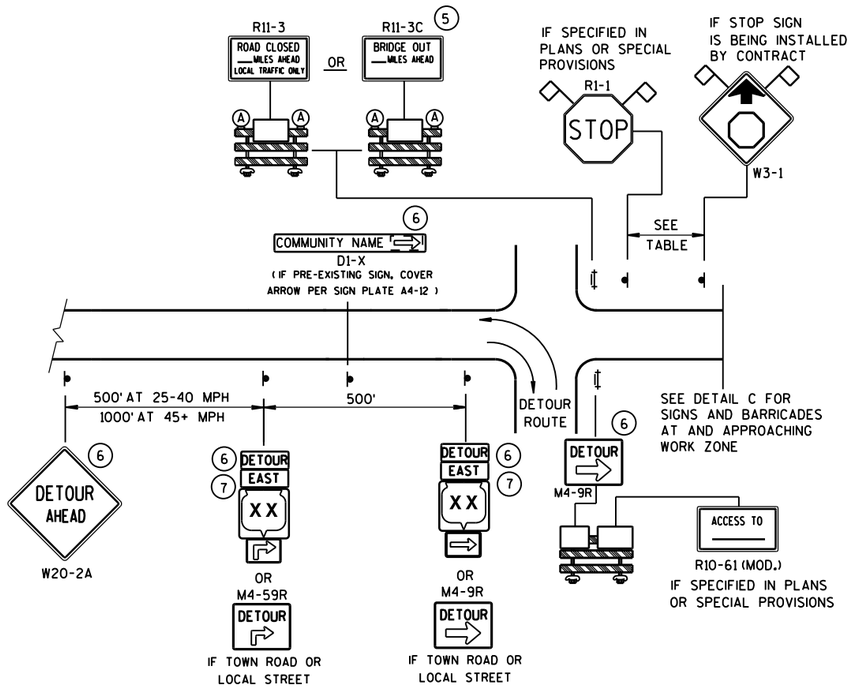
TRAFFIC CONTROL SUMMARY

CATEGORY	LOCATION	SERVICE DAYS	QTY	643.0300 DRUMS DAY	QTY	643.0420 BARRICADES TYPE III DAY	QTY	643.0705 LIGHTS TYPE A DAY	QTY	643.0715 LIGHTS TYPE C DAY	QTY	643.0800 ARROW BOARDS DAY	QTY	643.0900 SIGNS DAY	REMARKS
0010	EB IH 94	20	40	800	1	20	2	40	13	260	2	40	15	300	LANE CLOSURE AT STRUCTURE B-41-42 (SPEED REDUCTION)
0010	EB IH 94	2	50	100	6	12	8	16	26	52	2	4	9	18	LANE CLOSURE FOR DETOUR (NO SPEED REDUCTION)
0010	USH 12	2	56	112	8	16	12	24	9	18	-	-	7	14	LANE AND RAMP CLOSURE FOR DETOUR
0010	STH 21	2	38	76	5	10	6	12	-	-	-	-	1	2	RAMP CLOSURE FOR DETOUR
0010	COUNTY ET	50	-	-	18	900	28	1400	-	-	-	-	14	700	COUNTY ET CLOSURE
0010	UNDISTRIBUTED	6	20	120	-	-	-	-	-	-	-	-	-	-	4 DRUMS IN FRONT OF MESSAGE BOARDS (PRE-WARN)
0010	UNDISTRIBUTED	2	16	32	-	-	-	-	-	-	-	-	-	-	4 DRUMS IN FRONT OF MESSAGE BOARDS (DETOUR)
0010	UNDISTRIBUTED			100		50		100		50		10		100	
	TOTAL 0010			1340		1008		1592		380		54		1134	

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
15D12-05A	TRAFFIC CONTROL, LANE CLOSURE
15D12-05B	TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION

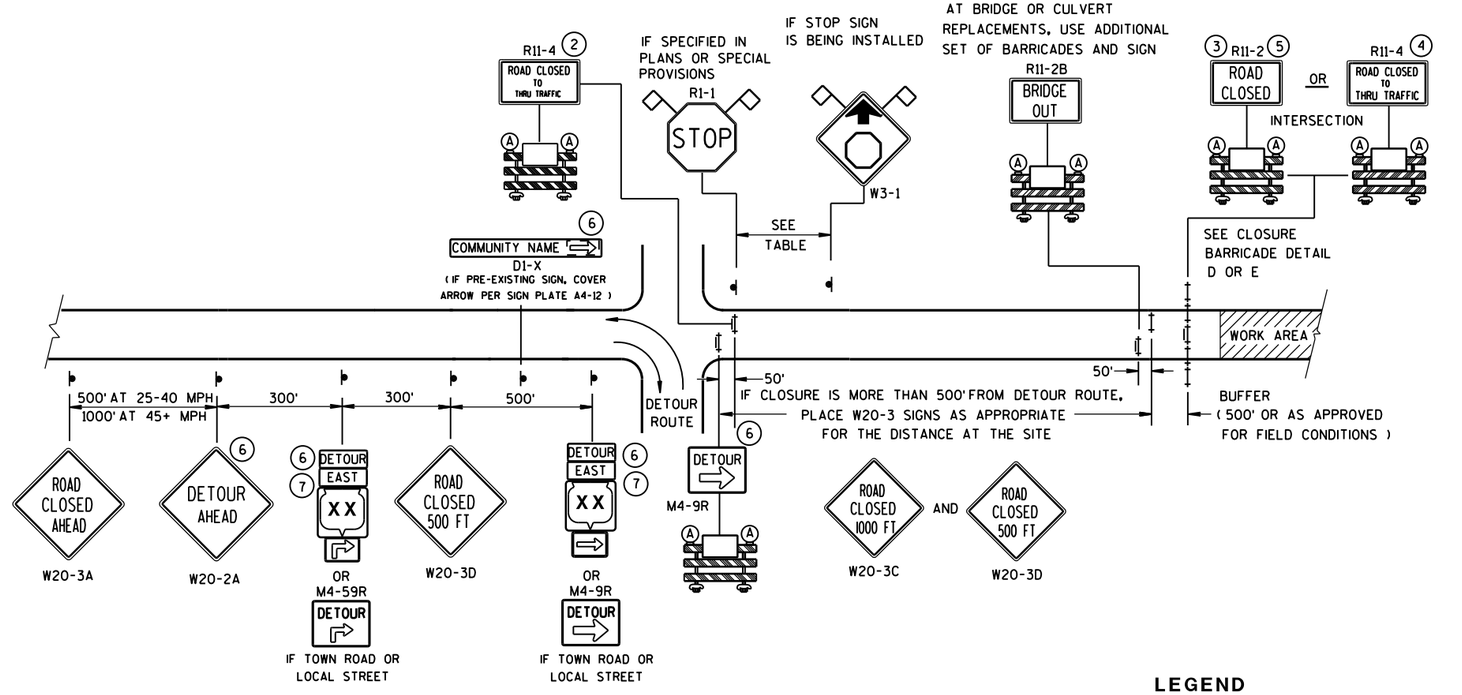
6



DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

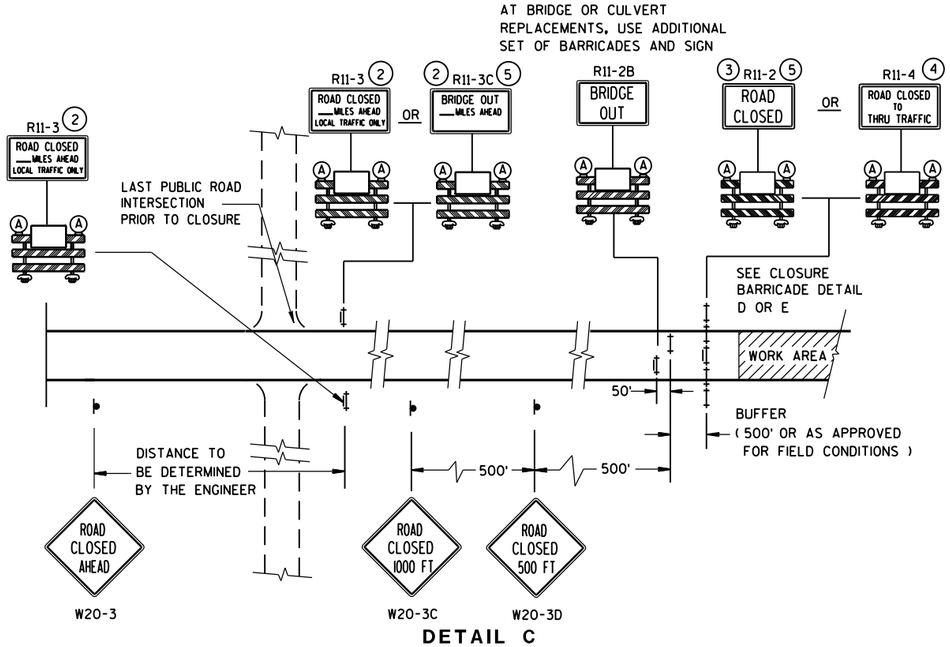
WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B

MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C

MAINLINE CLOSURE, NO POSTED DETOUR

SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

SEE SDD 15C2-SHEET "**b**" FOR GENERAL NOTES AND FOOTNOTES (1) THROUGH (7)

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

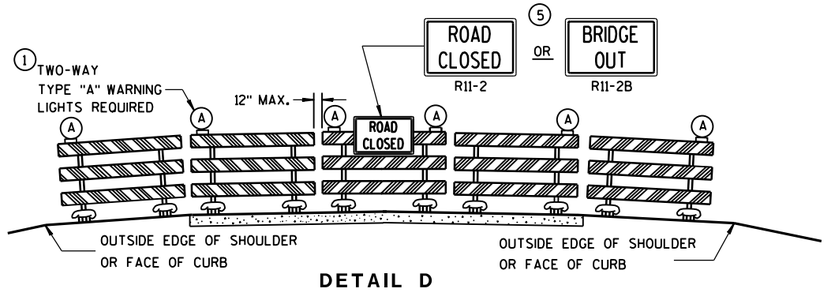
Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA

6

S.D.D. 15 C 2-6a

6

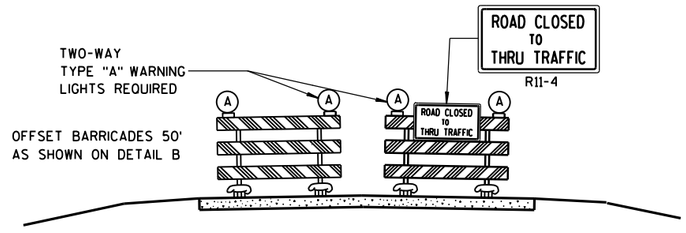
S.D.D. 15 C 2-6a



DETAIL D

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 BARRICADE.

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.)
- M05-1 AND M06-1 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 LIGHT SPACING).

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.

(6) 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.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 — DATE

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO[illegible] SAFETY ENGI[illegible] — FHWA

6

S.D.D. 15 C 2-6b

THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

GENERAL NOTES

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

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. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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.

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

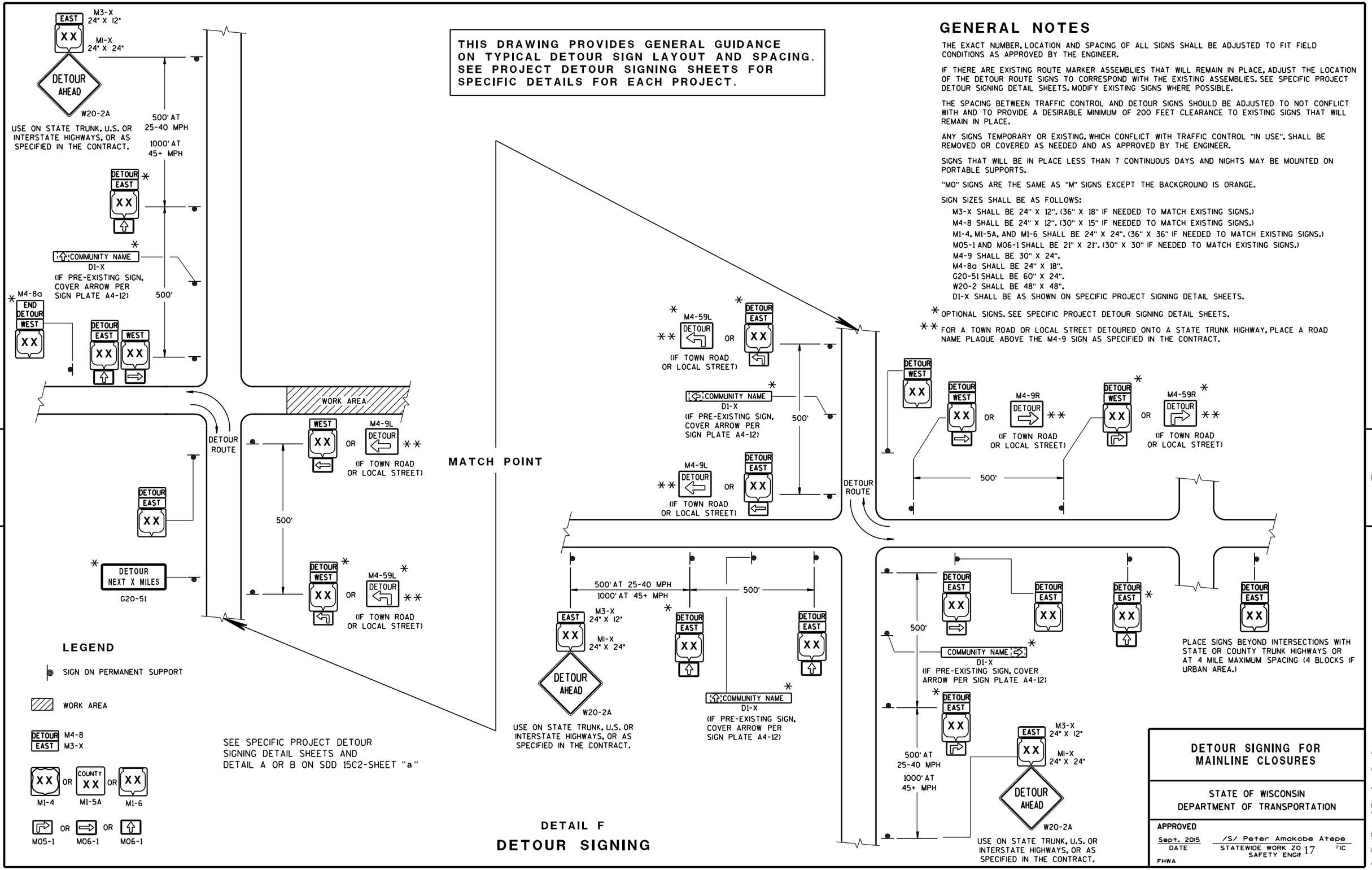
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

- 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.)
- M4-9 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 SHALL BE 48" X 48".
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



DETAIL F

DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2015 — DATE

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO[illegible] SAFETY ENGI[illegible] FIC

FHWA

S.D.D. 15 C 2-6c

S.D.D. 15 C 2-6c

LEGEND

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

GENERAL NOTES

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

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

"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. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

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

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

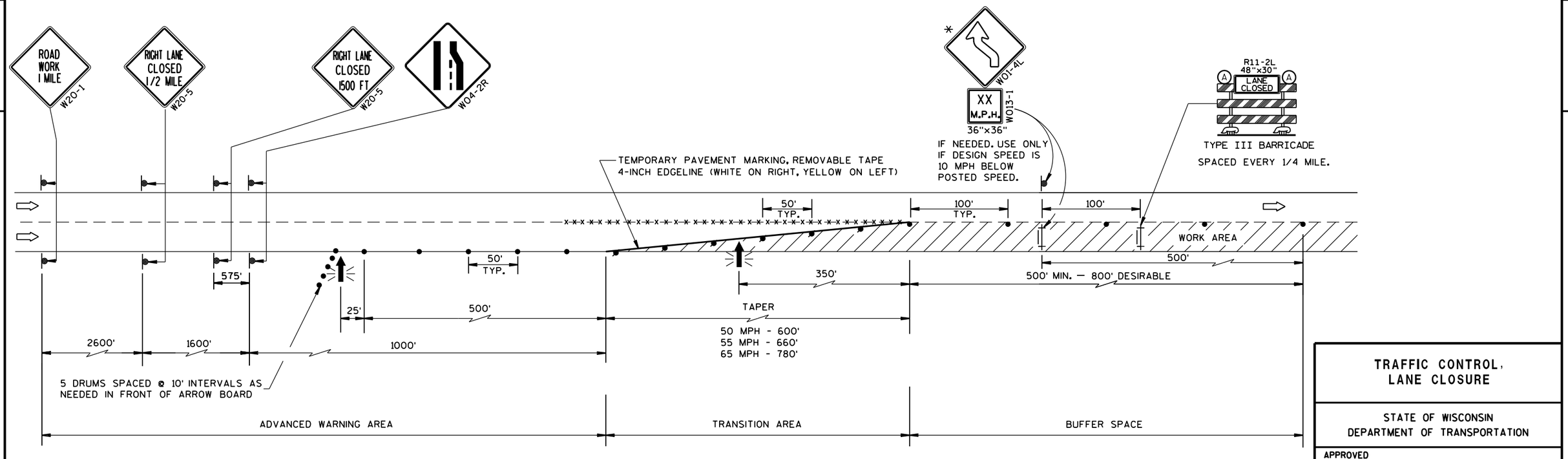
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

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

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

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

* THE LEFT REVERSE CURVE SIGN (WO1-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.



TRAFFIC CONTROL, LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Feb. 2015 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 D 12-5a

LEGEND

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

GENERAL NOTES

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

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

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

ALL SIGNS ARE 48"×48" 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. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

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

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

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

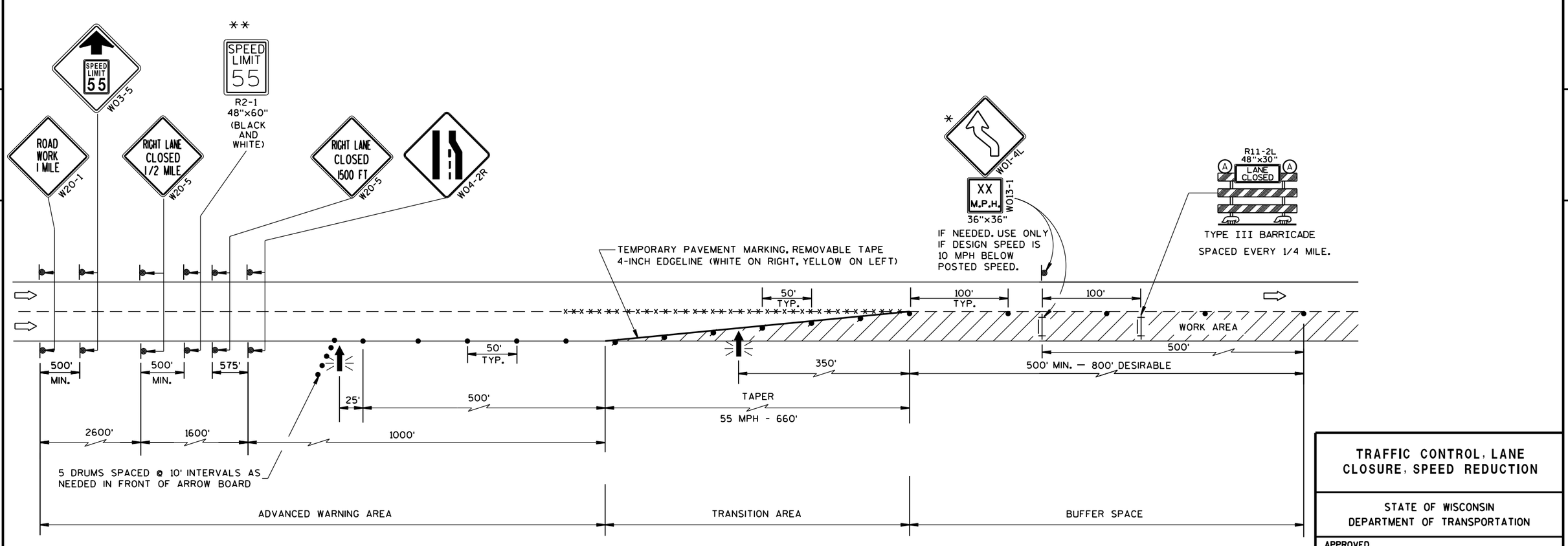
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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

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

* THE LEFT REVERSE CURVE SIGN (WO1-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.

** A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES. INCLUDE A 65 MPH RESUME SPEED LIMIT SIGN 200 FEET MINIMUM (500 FEET DESIREABLE) BEYOND THE "END OF ROADWORK" SIGN.



TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

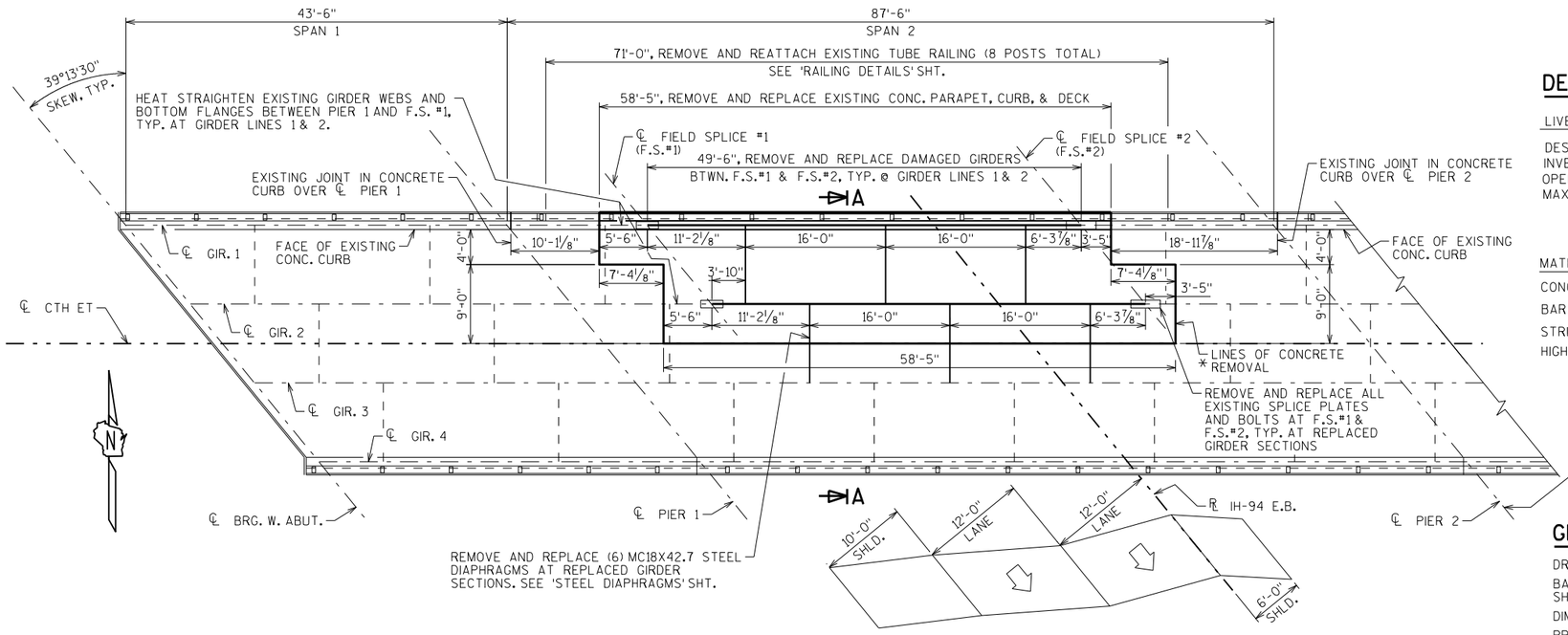
APPROVED
Feb. 2015 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

S.D.D. 15 D 12-5b

S.D.D. 15 D 12-5b

STATE PROJECT NUMBER

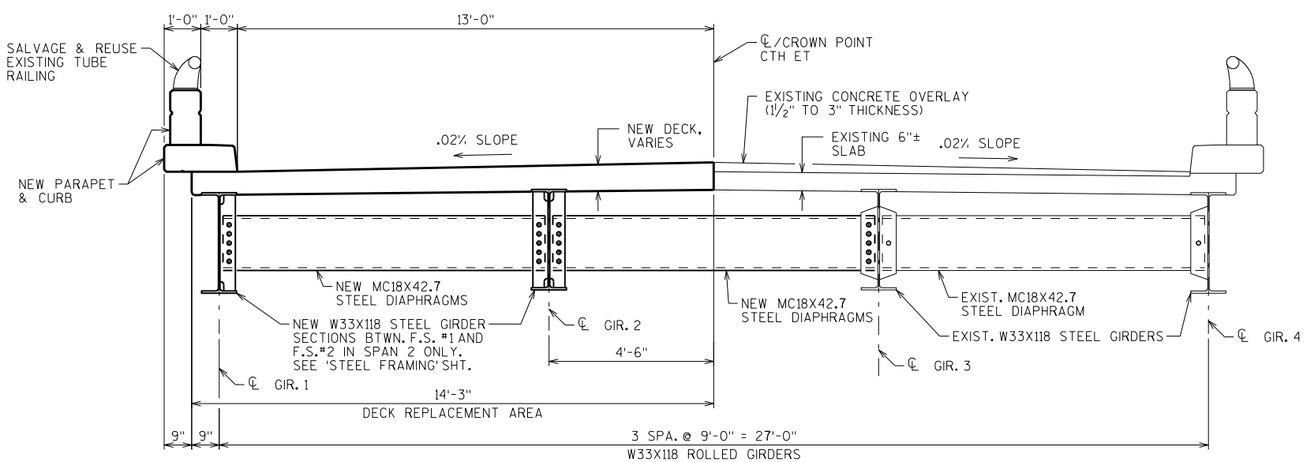
1009-11-72



HALF PLAN

(FOUR-SPAN W33X118 ROLLED GIRDER BRIDGE)

* DEFINE LINES OF CONCRETE REMOVAL WITH A 1/2" MIN. SAW CUT. TYPICAL AT EDGE OF DECK, TOP & FACES OF CURB, AND TOP & BOTH SIDES OF PARAPET. DEPTH OF SAW CUTTING SHALL BE LIMITED TO 1 1/2" AT ALL LOCATIONS (EXCEPT THE TOP OF DECK) IN ORDER TO PREVENT DAMAGE TO EXISTING REINFORCING TO BE INCORPORATED INTO NEW WORK.
SAW CUT DEPTH SHALL BE INCREASED TO 3 1/2" NEAR THE CROWN AND 2" NEAR THE GUTTERS AT TOP OF DECK SURFACE (DUE TO EXISTING OVERLAY).



SECTION A-A - THRU BRIDGE LOOKING EAST

DESIGN DATA

LIVE LOAD:

DESIGN RATING: HS-20
INVENTORY RATING: HS-14
OPERATIONAL RATING: HS-24
MAXIMUM STANDARD PERMIT VEHICLE LOAD = 155 KIPS.

MATERIAL PROPERTIES:

CONCRETE MASONRY — f'c = 4,000 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60 — fy = 60,000 P.S.I.
STRUCTURAL CARBON STEEL A.S.T.M. A709 GRADE 36 — Fy = 36,000 P.S.I.
HIGH STRENGTH STRUCTURAL STEEL A.S.T.M. A709 GRADE 50 — Fy = 50,000 P.S.I.

GENERAL 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.

PIGMENTED SURFACE SEALER IS TO BE APPLIED TO THE FRONT FACE AND TOP OF BOTH THE REPLACED CURB AND REPLACED PARAPET.

MATCH CURB/PARAPET TO EXISTING CURB/PARAPET.

MATCH TOP OF DECK TO TOP OF EXIST. OVERLAY.

SALVAGE EXIST. STEEL TUBE RAILING AND REATTACH TO NEW PARAPET. SEE 'RAILING DETAILS' SHT.

THE COLOR OF THE FINISH EPOXY TOP COAT SHALL BE GRAY. (FEDERAL STANDARD COLOR NO. 26293) OR SIMILAR COLOR APPROVED BY THE ENGINEER.

ALL FIELD CONNECTIONS SHALL BE MADE WITH 3/4" DIAMETER A325 HIGH-TENSILE STRENGTH BOLTS UNLESS SHOWN OR NOTED.

NEW STEEL PIECES SHALL BE SHOP PAINTED AND BE PAID FOR UNDER BID ITEM "PAINTING EPOXY SYSTEM B-41-42".

FIELD PAINTING OF EXISTING STEEL SHALL BE PAID FOR UNDER BID ITEM "STRUCTURE OVERCOATING CLEANING AND PRIMING B-41-42".

ALL CONSTRUCTION RELATED MATERIALS AND EQUIPMENT SHALL BE REMOVED FROM THE STRUCTURE PRIOR TO REMOVING AND REPLACING THE DAMAGED STEEL GIRDER SECTIONS, AND PRIOR TO THE NEW CONCRETE DECK TAKING ITS INITIAL SET.

SEE ROADWAY PLANS FOR INTERSTATE TRAFFIC CONTROL REQUIREMENTS AND CLOSURES.

STRUCTURE DESIGN CONTACT:

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

LIST OF DRAWINGS

NO.	DATE	REVISION	BY

Plans Prepared By WISDOT
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher LLS — 4/5/16
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-41-42

CTH ET OVER IH-94

COUNTY: MONROE — TOWN: ~~CITY/VILLAGE~~ LA GRANGE

DESIGN SPEC.: N/A REHABILITATION

DESIGNED BY	CAD	DESIGN CK'D.	ABS	DRAWN BY	CAD	PLANS CK'D.	ABS

GENERAL PLAN

SHEET 1 OF 6

20

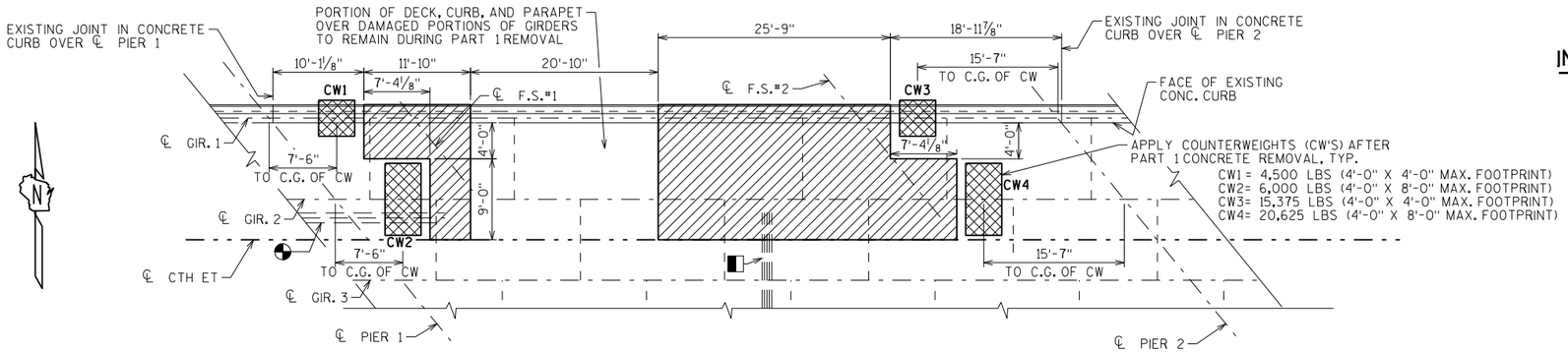
I.D. 1009-11-02A

DATE: APRIL 2016

SCALE = 8.0

8

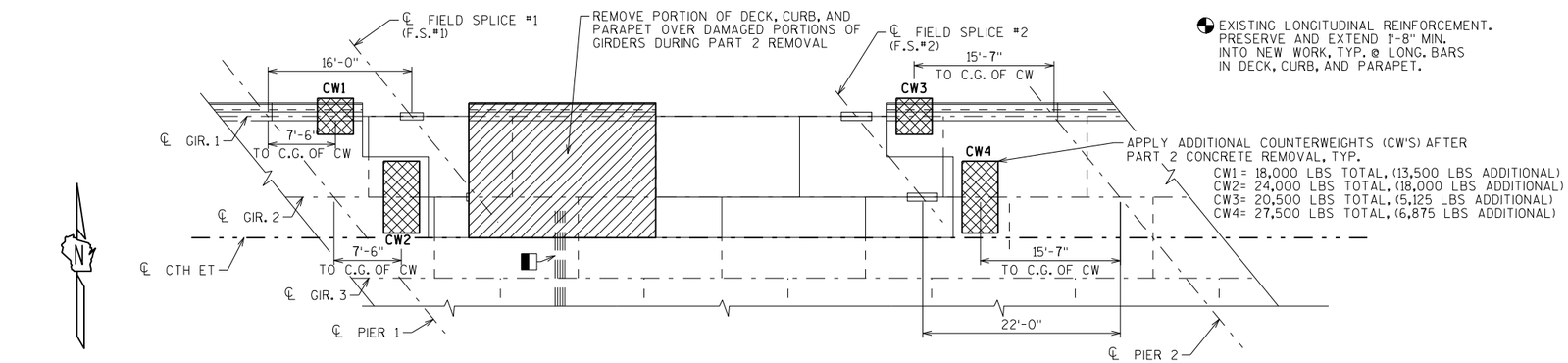
8



CONCRETE REMOVAL PLAN - PART 1

EXISTING TRANSVERSE REINFORCEMENT. PRESERVE AND EXTEND 3'-3" MIN. INTO NEW WORK, TYP. @ TRANS. BARS

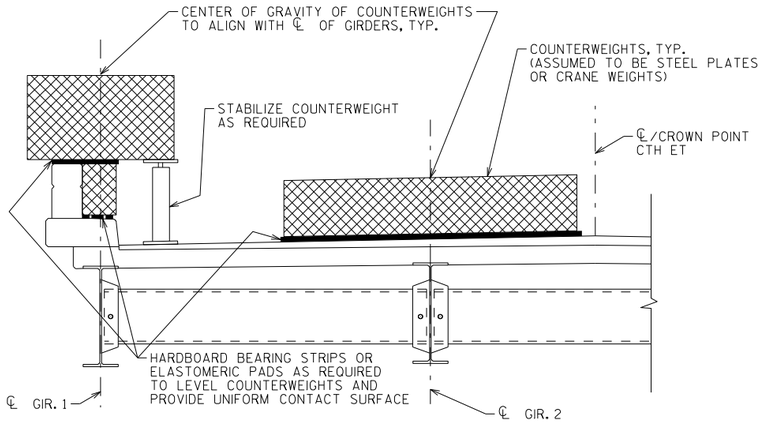
EXISTING LONGITUDINAL REINFORCEMENT. PRESERVE AND EXTEND 1'-8" MIN. INTO NEW WORK, TYP. @ LONG. BARS IN DECK, CURB, AND PARAPET.



CONCRETE REMOVAL PLAN - PART 2

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
203.0200	REMOVING OLD STRUCTURE STA. 1+00	LS	1
502.0100	CONCRETE MASONRY BRIDGES	CY	27
502.3200	PROTECTIVE SURFACE TREATMENT	SY	85
502.3210	PIGMENTED SURFACE SEALER	SY	26
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	7,705
506.0105	STRUCTURAL STEEL CARBON	LB	3,965
506.0605	STRUCTURAL STEEL HS	LB	11,910
506.3004	WELDED STUD SHEAR CONNECTORS 3/4 X4-INCH	EACH	280
513.9005.S	REMOVING AND RESETTING TUBULAR RAILING B-41-42	LS	1
517.0600	PAINTING EPOXY SYSTEM B-41-42	LS	1
517.3000.S	STRUCTURE OVERCOATING CLEANING AND PRIMING B-41-42	LS	1
517.4000.S	CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-41-42	LS	1
SPV.0105	HEAT STRAIGHTENING OF DAMAGED GIRDERS	LS	1
SPV.0105	COUNTERWEIGHT STRUCTURE	LS	1
SPV.0105	MAGNETIC PARTICLE TESTING AND GRINDING	LS	1



PARTIAL SECTION SHOWING COUNTERWEIGHT LOCATIONS

INTENDED SEQUENCE OF WORK

1. HEAT STRAIGHTEN EXISTING GIRDER WEBS AND BOTTOM FLANGES BETWEEN PIER 1 AND F.S.#1 AT GIRDER LINES 1 & 2. SEE SPECIAL PROVISIONS FOR REQUIREMENTS.

2. REMOVE PORTION OF TUBULAR RAILING TO EXTENTS SHOWN ON SHT.1 AND ON THE 'RAILING DETAILS' SHT.

3. REMOVE PARAPET, CURB, AND DECK TO THE EXTENTS SHOWN ON THE PLAN "CONCRETE REMOVAL PLAN - PART 1".

4. ADD THE INITIAL COUNTERWEIGHTS AS SHOWN ON THE PLAN "CONCRETE REMOVAL PLAN - PART 1". THE CENTER OF GRAVITY (C.G.) OF THE COUNTERWEIGHTS MUST BE LOCATED AS SHOWN FROM THE CENTER LINES OF THE ADJACENT PIERS, AND ALIGN WITH THE GIRDER CENTER LINES.

5. REMOVE THE REMAINING PORTION OF THE PARAPET, CURB, AND DECK TO THE EXTENTS SHOWN ON THE PLAN "CONCRETE REMOVAL PLAN - PART 2".

6. ADD THE ADDITIONAL COUNTERWEIGHTS AS SHOWN ON THE PLAN "CONCRETE REMOVAL PLAN - PART 2".

7. REMOVE EXISTING DIAPHRAGMS ATTACHED TO GIRDERS 1 AND 2 BETWEEN F.S.#1 AND F.S.#2. GRIND WELDS AT THE EXISTING CONNECTION STIFFENERS OF GIRDER 3 SMOOTH AT REMOVED DIAPHRAGM LOCATIONS. CONNECTION STIFFENERS AT GIRDER LINE 3 TO REMAIN. NOTE: DIAPHRAGMS BETWEEN GIRDERS 2 & 3 MAY BE UNDER SOME STRESS DUE TO THE RELATIVE DISPLACEMENTS OF THE TWO GIRDERS. REMOVE THE DIAPHRAGMS BY CUTTING THEM NEAR THE CONNECTION STIFFENERS, STARTING THE CUT ON THE TENSION SIDE/FLANGE TO SLOWLY RELIEVE THE STRESS. THE TENSION STRESS WILL BE ON THE TOP OF THE DIAPHRAGMS AT GIRDER 2 AND BOTTOM AT GIRDER 3.

8. REMOVE BOLTS FROM THE TOP AND BOTTOM FLANGE SPLICE PLATES AND THE WEB SPLICE PLATES ON THE REPLACEMENT SIDES OF THE FIELD SPLICE ONLY. TYPICAL AT F.S.#1 AND F.S.#2 OF GIRDERS 1 & 2.

9. SUPPORT THE SECTION OF GIRDER TO BE REMOVED AT GIRDER 1. REMOVE THE REMAINING BOLTS AT F.S.#1 AND F.S.#2 AND REMOVE THE SPLICE PLATES.

10. REMOVE DAMAGED PORTION OF GIRDER 1 BETWEEN F.S.#1 AND F.S.#2.

11. REPEAT STEPS (9.) AND (10.) AT GIRDER 2.

12. PERFORM NONDESTRUCTIVE TESTING AT EXISTING CONNECTION STIFFENERS TO IDENTIFY ANY CRACKS AT WELDS. SEE PLAN ON 'STEEL FRAMING' SHEET FOR LOCATIONS TO BE TESTED. SEE SPECIAL PROVISION "MAGNETIC PARTICLE TESTING AND GRINDING" FOR REQUIREMENTS.

13. SWING NEW SECTION OF GIRDER 2 INTO PLACE AND INSTALL THE NEW SPLICE PLATES BY INSTALLING ALL THE BOLTS IN THE EXISTING GIRDER PORTION/SIDE OF THE FIELD SPLICES WHILE THE NEW GIRDER SECTION IS SUPPORTED BY THE CRANE OR LIFT.

14. CLAMP THE SPLICE PLATES AT GIRDER LINE 2 TO THE NEW GIRDER SECTION TO BRING THEM TIGHT TO THE TOP AND BOTTOM FLANGES OF THE NEW GIRDER SECTION. AFTER PLATES ARE CLAMPED AT BOTH F.S.#1 AND F.S.#2, ALLOW THE GIRDERS TO REST ON THE SPLICE PLATES AND BE SUPPORTED BY THE STRUCTURE.

15. AFTER REMOVING GIRDERS FROM CRANE/LIFT, FIELD DRILL ALL THE SPLICE BOLT HOLES THROUGH THE NEW PORTION OF GIRDER 2 USING THE SHOP DRILLED SPLICE PLATES AS TEMPLATES. INSTALL THE BOLTS THROUGH THE FIELD DRILLED HOLES ON THE NEW GIRDER SIDE OF BOTH SPLICES AND REMOVE CLAMPS.

16. REPEAT STEPS (13.) THROUGH (15.) AT GIRDER 1.

17. INSTALL THE (6) NEW DIAPHRAGMS AS DETAILED ON THE 'STEEL DIAPHRAGMS' SHEET. PAY PARTICULAR ATTENTION TO THE INSTALLATION PROCEDURE/DETAIL FOR THE DIAPHRAGMS BETWEEN GIRDERS 2 & 3, AS NOT ALL BOLTS WILL BE INSTALLED AT THESE LOCATIONS UNTIL AFTER THE NEW DECK IS POURED.

18. REMOVE ALL COUNTERWEIGHTS.

19. FORM THE NEW PORTION OF DECK, INSTALL SHEAR STUDS, AND INSTALL DECK AND EMBEDDED CURB REINFORCING. POUR CONCRETE DECK.

20. INSTALL REMAINDER OF CONNECTION BOLTS AT THE DIAPHRAGMS BETWEEN GIRDERS 2 &3 (SEE 'STEEL DIAPHRAGMS' SHEET).

21. FORM CURB AND INSTALL CURB AND EMBEDDED PARAPET REINFORCING. POUR CONCRETE CURB.

22. FORM PARAPET AND INSTALL PARAPET REINFORCING AND RAILING ANCHOR BOLTS. POUR CONCRETE PARAPET.

23. REINSTALL THE TUBULAR RAILING, SEE 'RAILING DETAILS' SHEET.

24. INSTALL REPAIR 'WT'-SECTION CONNECTOR AT GIRDER 1 NEAR THE FIRST DIAPHRAGM CONNECTION STIFFENER WEST OF F.S. #1. SEE 'STEEL DIAPHRAGMS' SHT. FOR DETAILS.

25. FIELD PAINT PORTIONS OF STRUCTURE IN HEAT STRAIGHTENED AREAS AND OTHER AREAS WHERE PAINT WAS REMOVED AND APPLY FINISH COATS AT FIELD SPLICE LOCATIONS.

STATE PROJECT NUMBER

1009-11-72

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-41-42

DRAWN BY CAD | PLANS CK'D. ABS

SEQUENCING & QUANTITIES

SHEET 2

21

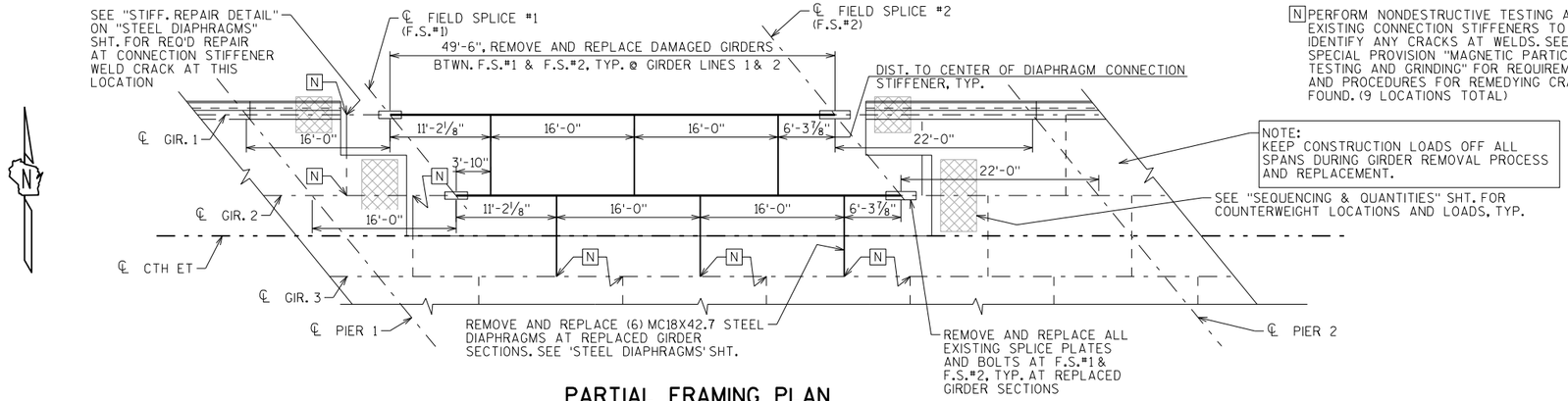
8

8

SCALE = 8.0

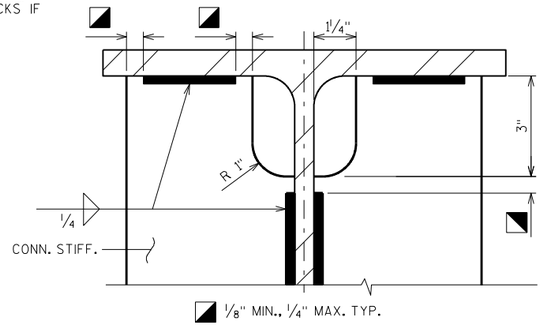
STATE PROJECT NUMBER

1009-11-72

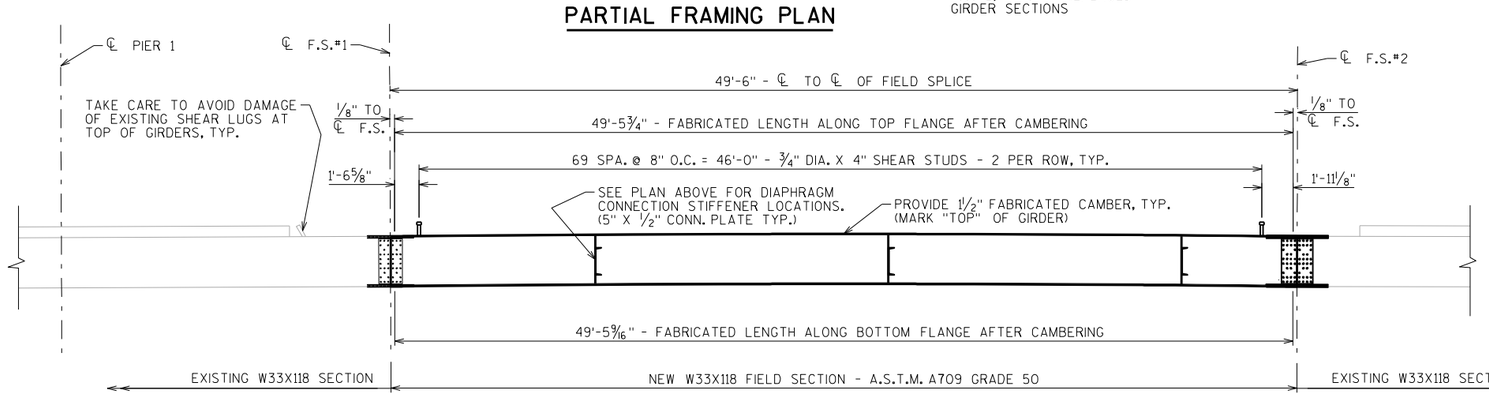


N PERFORM NONDESTRUCTIVE TESTING AT EXISTING CONNECTION STIFFENERS TO IDENTIFY ANY CRACKS AT WELDS. SEE SPECIAL PROVISION "MAGNETIC PARTICLE TESTING AND GRINDING" FOR REQUIREMENTS AND PROCEDURES FOR REMEDYING CRACKS IF FOUND. (9 LOCATIONS TOTAL)

PARTIAL FRAMING PLAN

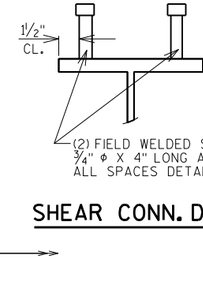


CONN. STIFF. TO WEB/FLANGE CONN. WELDS

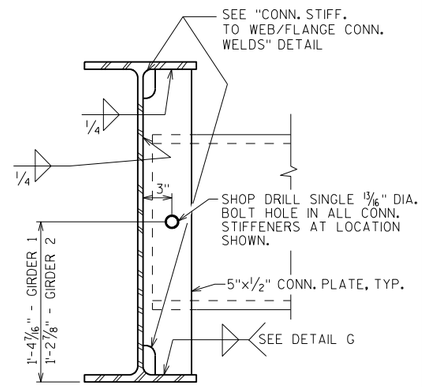


REPLACEMENT GIRDER ELEVATION

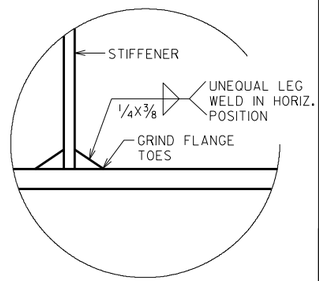
(NOTE - CAMBER SHALL CONFORM TO THE ARC OF A CIRCLE)



SHEAR CONN. DETAIL

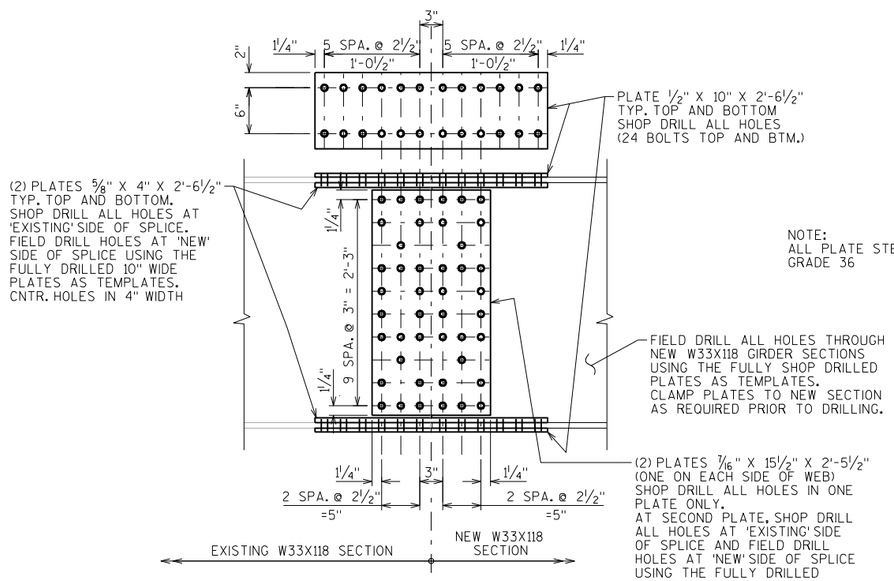


CONNECTION STIFF. DETAILS



DETAIL G

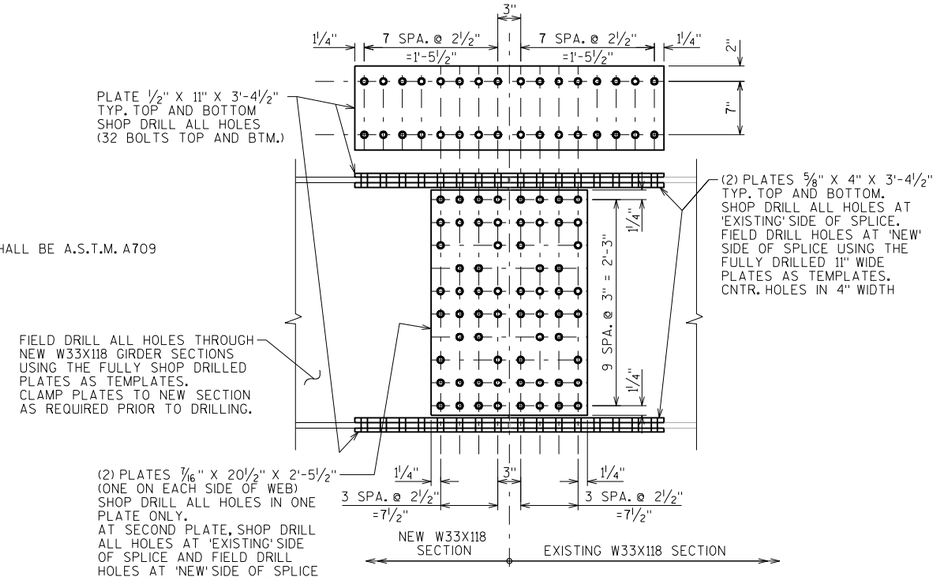
CONNECTION STIFFENER DETAIL AT TENSION/BOTTOM FLANGE



NOTE: ALL PLATE STEEL SHALL BE A.S.T.M. A709 GRADE 36

FIELD SPLICE #1

ALL BOLT HOLES SHALL BE STD. SIZE 13/16" DIA. HOLES FOR 3/4" DIA. BOLTS.



FIELD SPLICE #2

ALL BOLT HOLES SHALL BE STD. SIZE 13/16" DIA. HOLES FOR 3/4" DIA. BOLTS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-41-42

DRAWN BY CAD | PLANS CK'D. ABS

STEEL FRAMING

SHEET 3

22

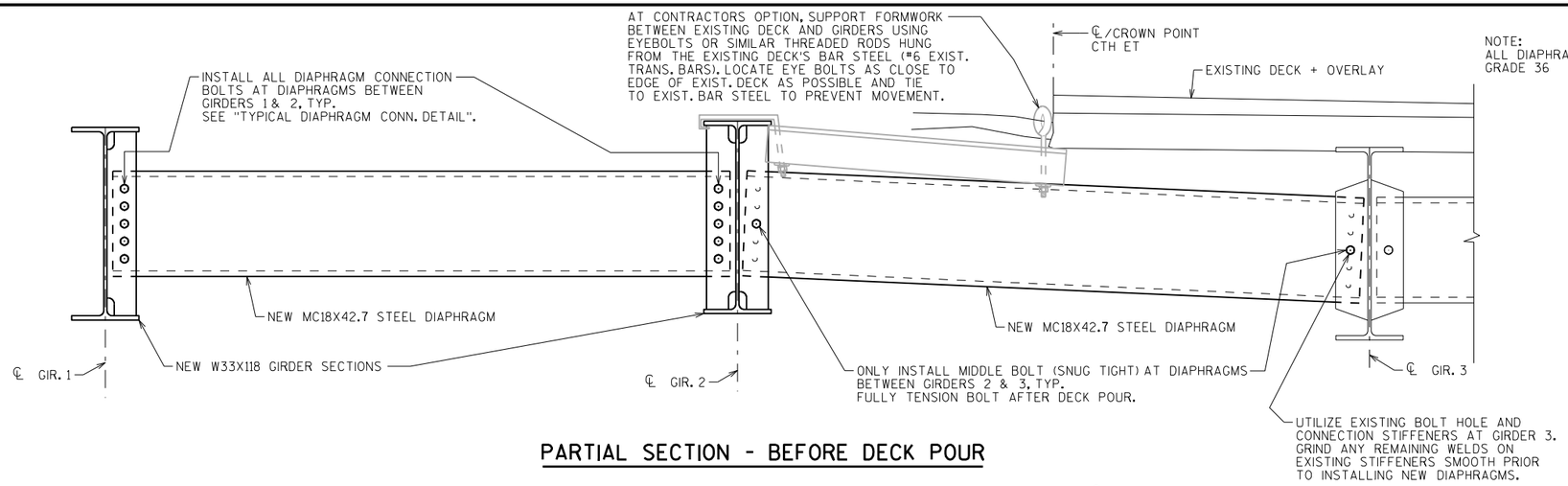
8

8

SCALE = 8.0

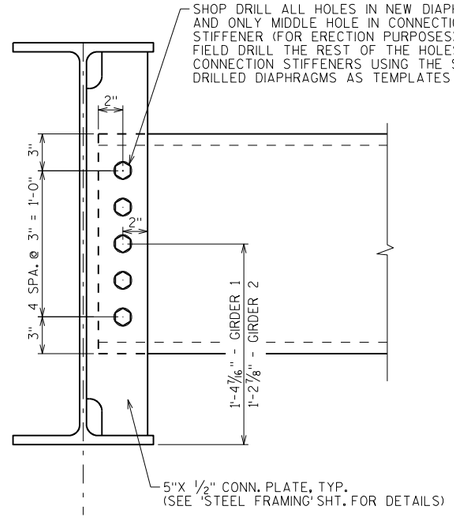
STATE PROJECT NUMBER

1009-11-72



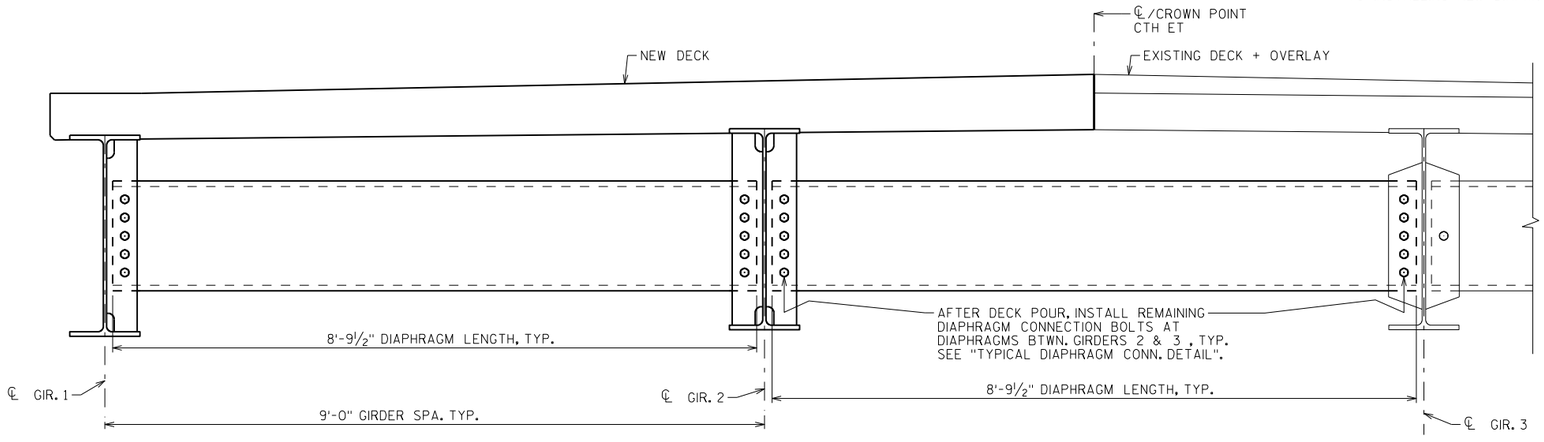
PARTIAL SECTION - BEFORE DECK POUR

NOTE:
ALL DIAPHRAGM STEEL SHALL BE A.S.T.M. A709 GRADE 36

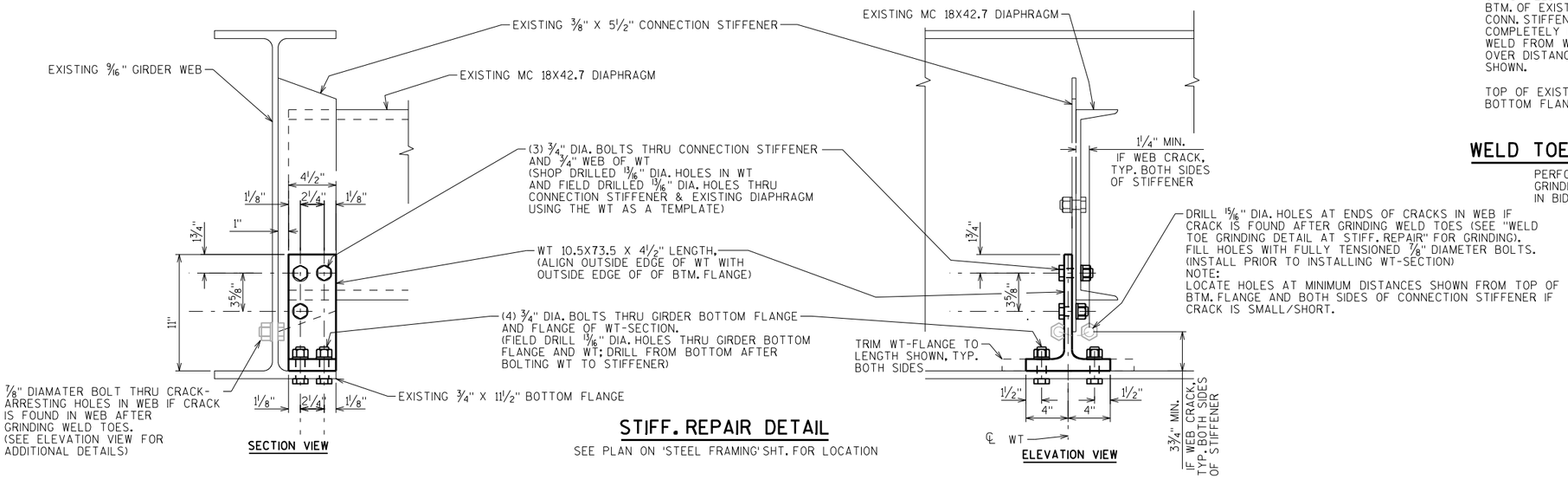


TYPICAL DIAPHRAGM CONN. DETAIL

ALL BOLT HOLES SHALL BE STD. SIZE 13/16" DIA. HOLES FOR 3/4" DIA. BOLTS.

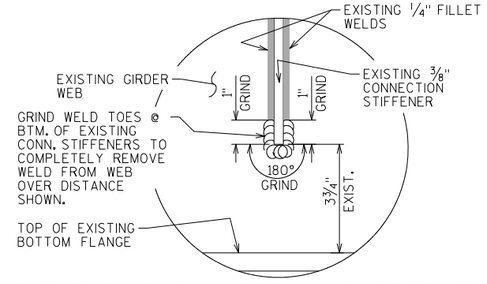


PARTIAL SECTION - AFTER DECK POUR



STIFF. REPAIR DETAIL

SEE PLAN ON 'STEEL FRAMING' SHT. FOR LOCATION



WELD TOE GRINDING DETAIL AT STIFF. REPAIR

PERFORM GRINDING PRIOR TO INSTALLING WT-CONN. PLATE. GRINDING AND SUBSEQUENT CRACK DETECTION SHALL BE INCLUDED IN BID ITEM "MAGNETIC PARTICLE TESTING AND GRINDING".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-41-42

DRAWN BY CAD | PLANS CK'D. ABS

STEEL DIAPHRAGMS

SHEET 4

23

SCALE = 1.0

8

8

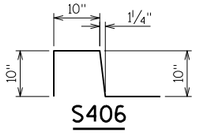
STATE PROJECT NUMBER

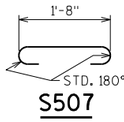
1009-11-72

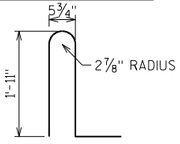
BILL OF BARS

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

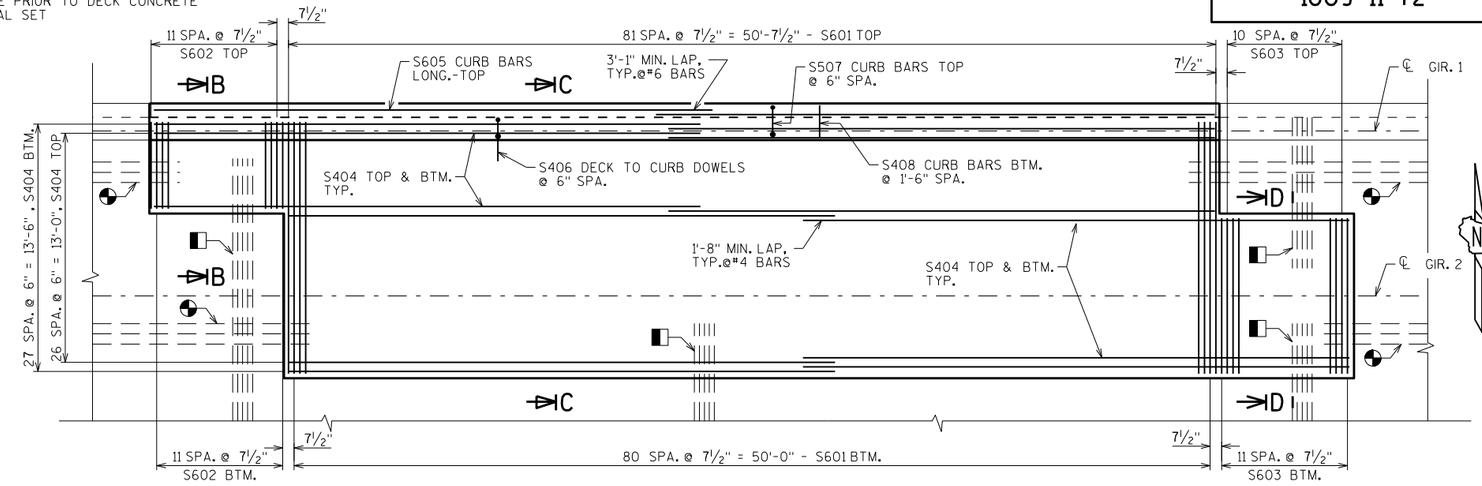
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S601	X	163	13'-11"			DECK-TRANS
S602	X	24	4'-11"			DECK-TRANS
S603	X	23	8'-8"			DECK-TRANS
S404	X	122	29'-10"			DECK, CURB, & PARAPET LONG.
S605	X	10	30'-6"			CURB LONG.-TOP
S406	X	117	3'-3"	X		DECK TO CURB DOWEL
S507	X	117	2'-10"	X		CURB TRANS.-TOP
S408	X	40	1'-7"			CURB TRANS.-BOTTOM
S509	X	59	4'-8"	X		PARAPET VERT.







NOTE:
REMOVE ALL CONSTRUCTION LOADS FROM BRIDGE PRIOR TO DECK CONCRETE TAKING INITIAL SET

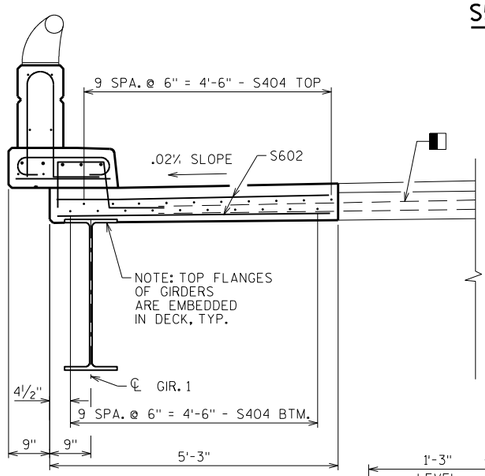


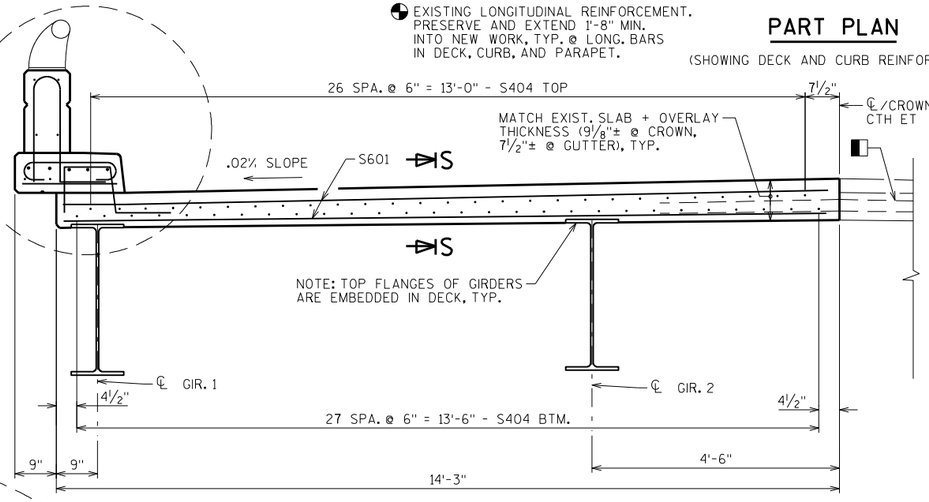
EXISTING LONGITUDINAL REINFORCEMENT. PRESERVE AND EXTEND 1'-8" MIN. INTO NEW WORK, TYP. @ LONG. BARS IN DECK, CURB, AND PARAPET.

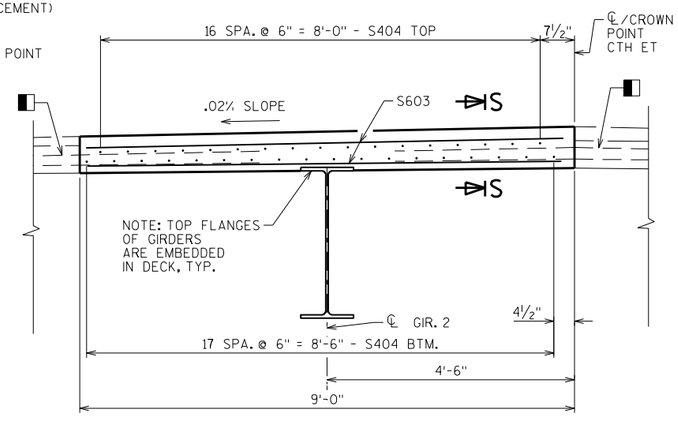
EXISTING TRANSVERSE REINFORCEMENT. PRESERVE AND EXTEND 3'-3" MIN. INTO NEW WORK, TYP. @ TRANS. BARS

PART PLAN

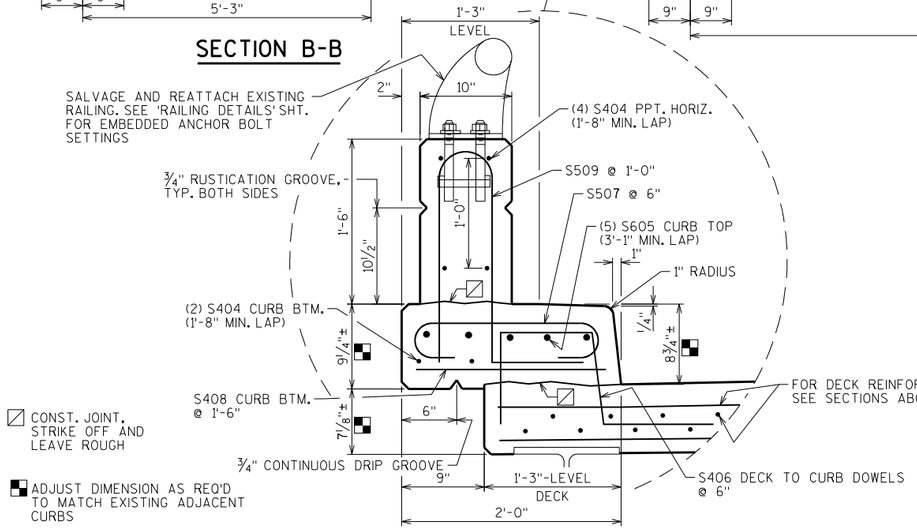
(SHOWING DECK AND CURB REINFORCEMENT)



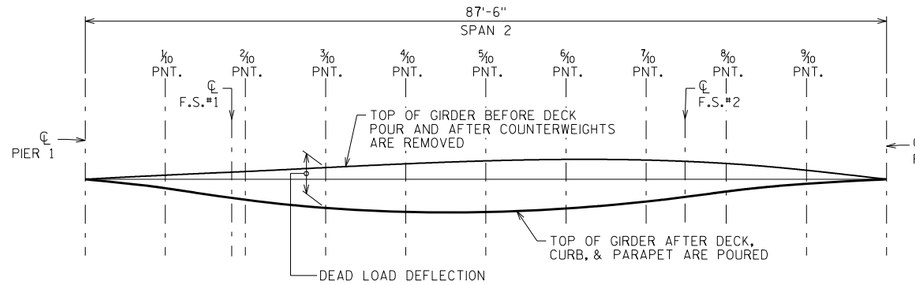




SECTION B-B



SECTION C-C

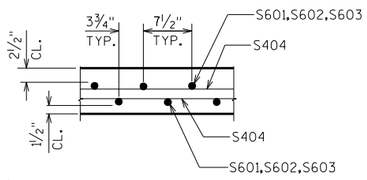


	PIER 1	1/10 PNT.	F.S.#1	2/10 PNT.	3/10 PNT.	4/10 PNT.	5/10 PNT.	6/10 PNT.	7/10 PNT.	F.S.#2	8/10 PNT.	9/10 PNT.	PIER 2
CONC. ONLY (INCHES)	0.0	0.5"	1.0"	1.1"	1.5"	1.8"	1.9"	1.9"	1.6"	1.3"	1.1"	0.5"	0.0

SPAN 2 DEAD LOAD DEFLECTIONS-GIRDERS 1 & 2

NOTE: DEFLECTIONS SHOWN ARE APPROXIMATE AND MAY VARY SLIGHTLY FROM ACTUAL DEFLECTIONS DUE TO LOAD SHEDDING TO THE UNEFFECTED GIRDERS (GIR. 3 AND 4) IN THE ADJACENT SPANS.

SECTION D-D



SECTION S-S

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-41-42

DRAWN BY CAD | PLANS CK'D. ABS

DECK & PARAPET DETAILS

SHEET 5

24

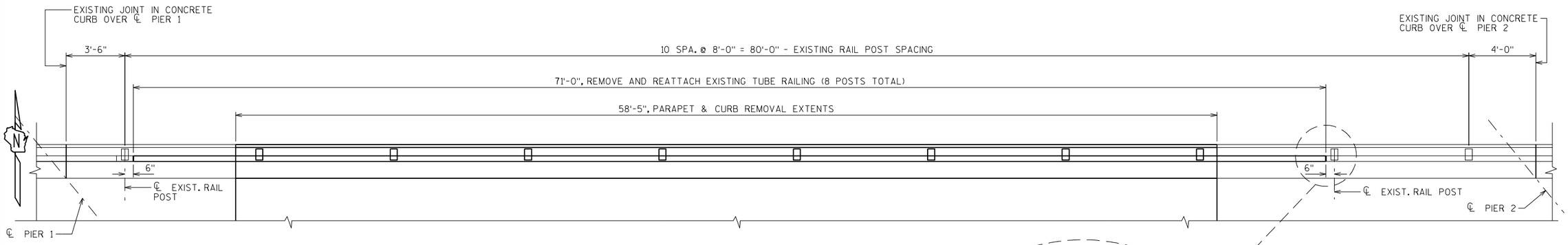
SCALE = 4.0

8

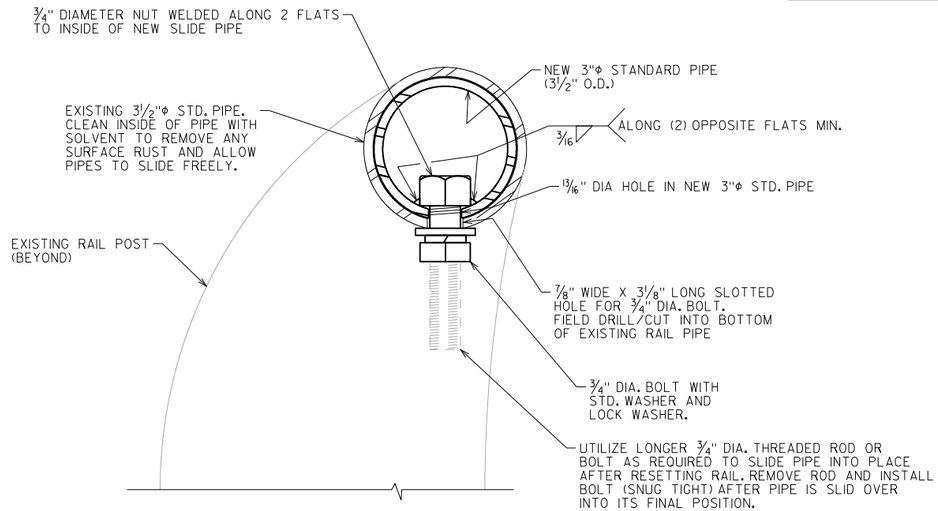
8

STATE PROJECT NUMBER

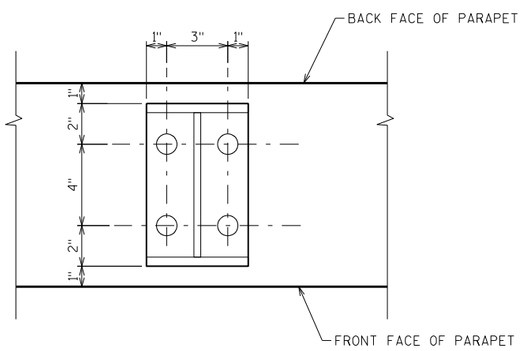
1009-11-72



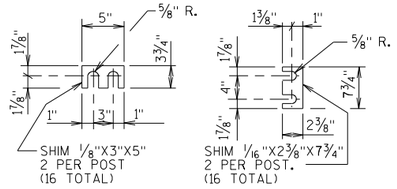
TUBULAR RAILING PLAN



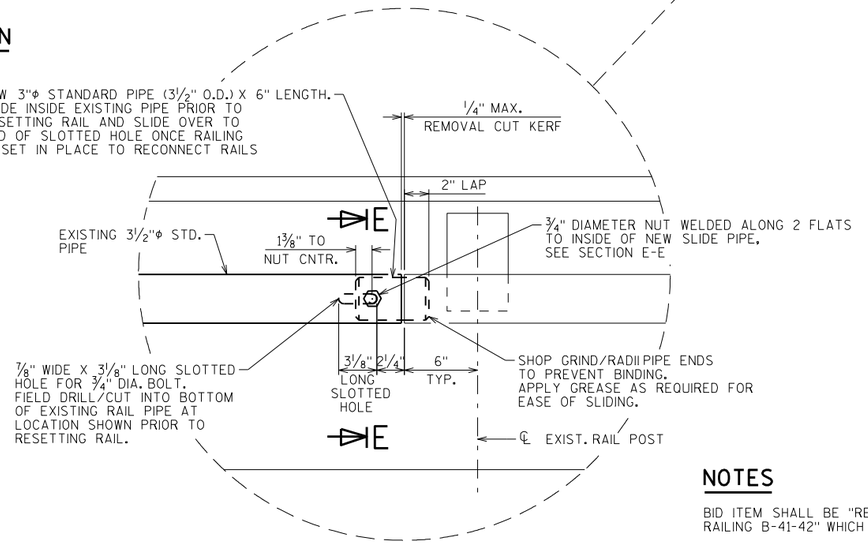
SECTION E-E



TYPICAL EXISTING POST BASE PLATE LAYOUT

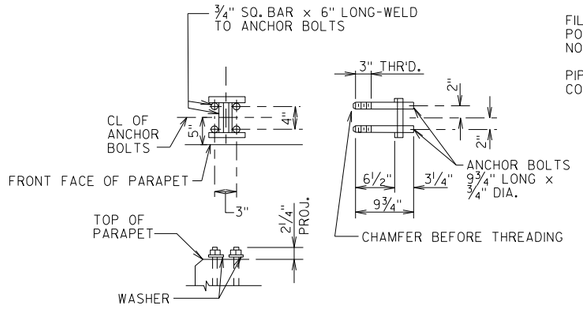


POST SHIM DETAILS



RAILING SLIDE CONNECTION DETAIL

(DETAIL TYPICAL/MIRRORED AT OTHER END)



ANCHOR BOLTS AT POSTS

NOTE: ANCHOR BOLTS MUST BE CAST-IN-PLACE WITH PARAPET CONCRETE. POST-INSTALLED EPOXY ANCHORS ARE NOT ALLOWED.

NOTES

BID ITEM SHALL BE "REMOVING AND RESETTING TUBULAR RAILING B-41-42" WHICH INCLUDES ALL ITEMS SHOWN.

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE EITHER STAINLESS STEEL OR ASTM A307. IF A307 IS USED ELECTRO-GALVANIZE NUTS, WASHERS & TOP 3½" OF ANCHOR BOLTS.

SHIMS SHALL BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.

FILL ALL EXPOSED OPENINGS BETWEEN SHIMS AND POST ANCHOR BOLT HOLES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

PIPES & SHIMS SHALL BE MADE FROM MATERIALS CONFORMING TO ASTM DESIGNATION A709, GRADE 36.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-41-42

DRAWN BY CAD | PLANS CK'D. ABS

RAILING DETAILS

SHEET 6

25

8

8

SCALE = 3.0

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov