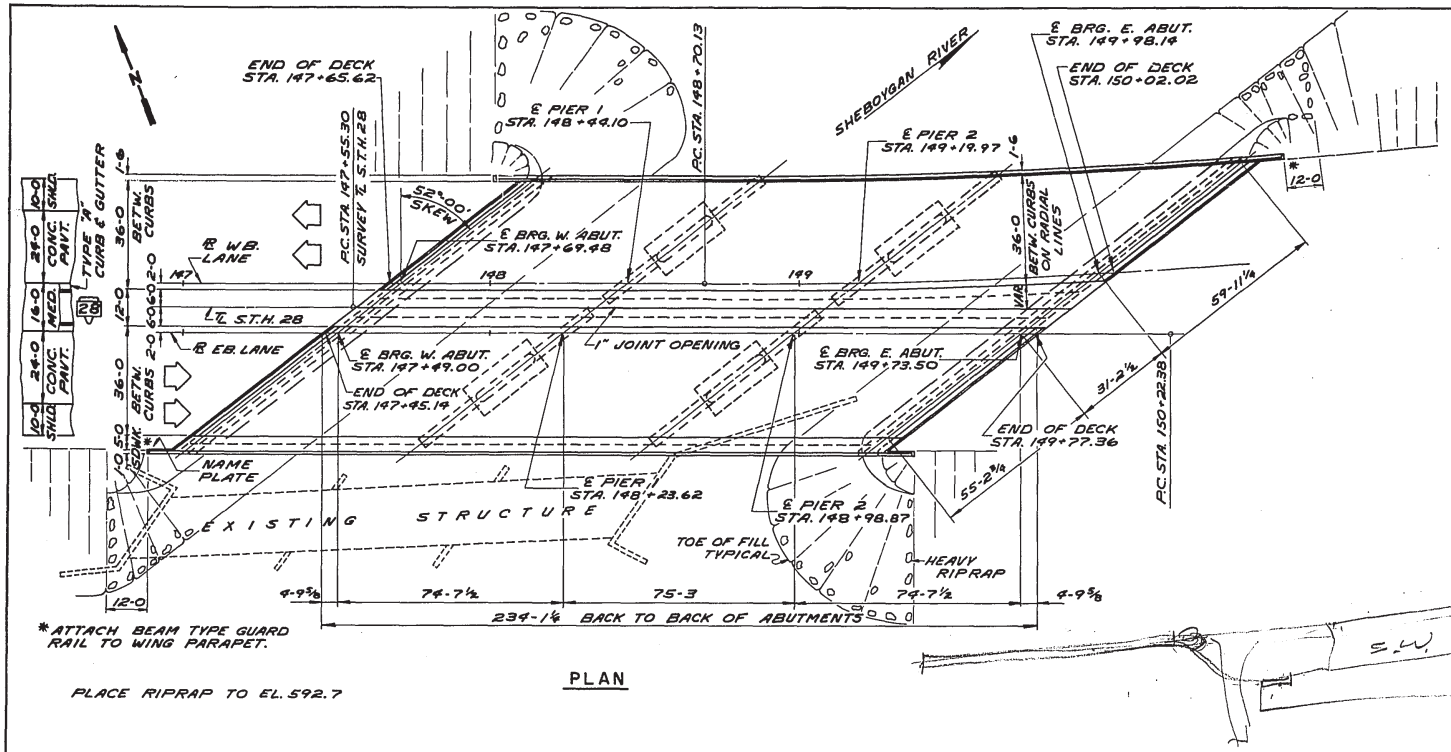
SELECT AS-BUILT DRAWINGS

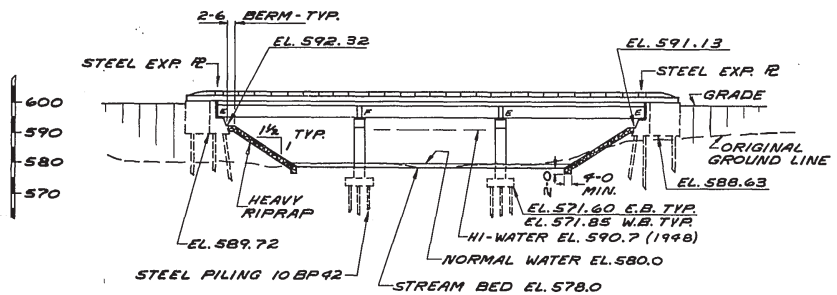
Form E-B-11-67

County & Highway	Route & Section	Class & Agreement State	Class & Agreement Federal	B.R.R. Division	Project	Sheet No.	Total Sheets
59.1	70.1	23.10		4	4012-1-70 F070-1(4)	8	28

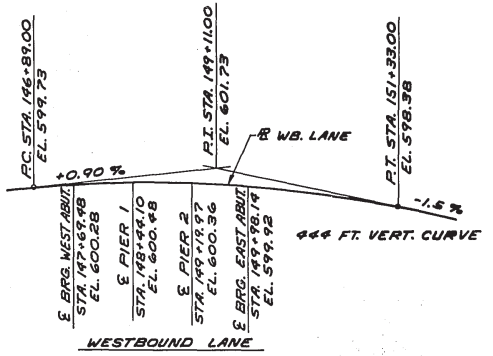
RI- 10/23/69

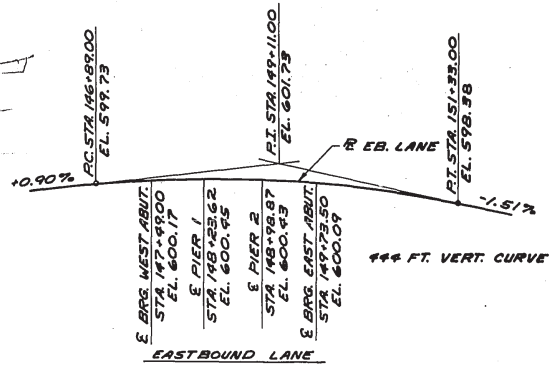
1970 Original Plans



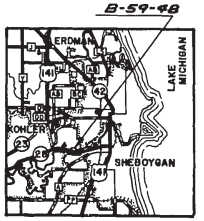


LIST OF DRAWINGS





PROFILE GRADE S.T.H. 28



LAYOUT
R-23-E

No.	Date	Revision	By
1	10-69	PLAN REVISIONS	D.J.A.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

STRUCTURE B-59-48

S.T.H. 28 OVER SHEBOYGAN RIVER

County SHEBOYGAN | City Village

Design Spec. A.A.S.H.O. 65 | Load HS-20 | Const. Spec. 1969

Designed By F.P.R. | Design Checked C.R.D. R.G.L. | Drawn By D.J.A. | Plans Checked FWG

Approved W. A. Kleine, Chief Bridge Engineer — 9-17-69 Date

GENERAL PLAN

SHEET 1 OF 19

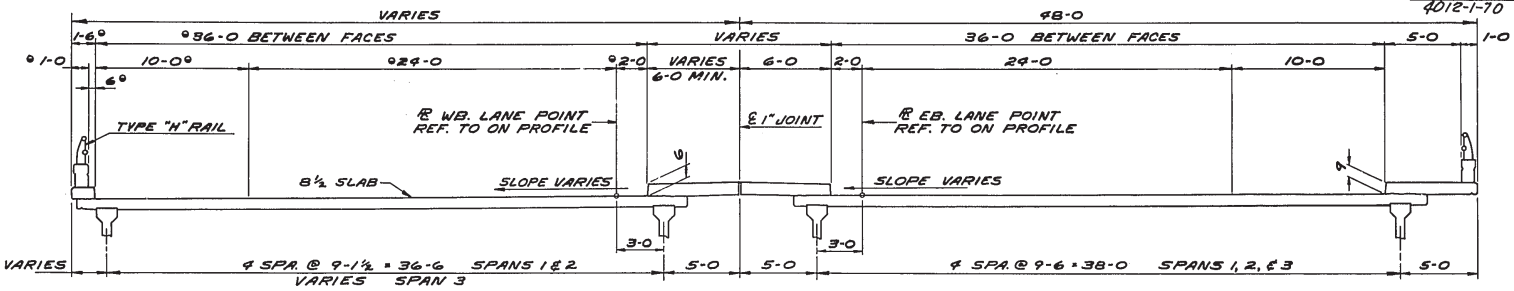
X41760

Form E-B-12-67

B. P. R. Division	Project	Sheet Number	Total Sheets
4		9	28

RI - 10/23/69

4012-1-70 FD70-1(4)



* MEASURED RADIALLY

CROSS SECTION THRU ROADWAY

3 SPAN CONTINUOUS 45" PRESTRESSED GIRDER SUPERSTRUCTURE

DESIGN DATA

LIVE LOAD: HS 20

ALLOWABLE DESIGN STRESSES:

CONCRETE MASONRY, GRADE "AA" { SLAB ____ f_c = 1200 P.S.I.
ALL OTHER ____ f_c = 1400 P.S.I.

BAR STEEL REINFORCEMENT ____ f_s = 20,000 P.S.I.

PRESTRESSED GIRDERS
CONCRETE MASONRY ____ f'_c = 6000 P.S.I.
STRANDS - ½"ϕ WITH ULTIMATE TENSILE STRENGTH ____ 270,000 P.S.I.

FOUNDATION DATA:
ABUTMENTS TO BE SUPPORTED ON 10 BP 42 STEEL PILING DRIVEN TO A MINIMUM BEARING CAPACITY OF 30 TONS/PILE. ESTIMATED LENGTH 40-0.
PIERS TO BE SUPPORTED ON 10 BP 42 STEEL PILING DRIVEN TO A MINIMUM BEARING CAPACITY OF 55 TONS/PILE. ESTIMATED LENGTH 20-0.

TRAFFIC VOLUME:
A.D.T. = 9,100 (1970)
D.H.V. = 670 (1990)

HYDRAULIC DATA:
WATERWAY AREA = 1,210 S.F.
V = 7.6 F.P.S.
Q_{ss} = 9,200 C.F.S.
HI-WATER = EL. 590.6 + 1.2 BW. = EL. 591.8
DRAINAGE AREA = 936 S.M.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE.
THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP TO THE EXTENT SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS.
THE STREAM BED WAS USED AS THE UPPER LIMIT OF EXCAVATION FOR THE COMPUTATION OF EXCAVATION QUANTITIES FOR THE PIERS.
THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES" FOR THE ABUTMENTS SHALL BE THE BOTTOM OF SLOPE PROTECTION AND THE QUANTITIES WERE COMPUTED FROM THIS LINE.
AT THE BACKFACE ALL EXCAVATED VOLUME NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH GRANULAR FILL. PAYMENT WILL BE MADE ONLY FOR MATERIAL ACTUALLY PLACED WITHIN THE LIMITS OF "EXCAVATION FOR STRUCTURES".

CURVE DATA

SURVEY ℄	ℜ E.B. LANE	ℜ W.B. LANE
P.I. = STA. 157+24.12	P.I. = STA. 152+91.69	P.I. = STA. 157+31.31
∠ = 142°-37'-50"	∠ = 161°-18'-55"	∠ = 142°-37'-50"
Δ = 37°-22'-10"	Δ = 18°-41'-05"	Δ = 37°-22'-10"
D = 2°-00'-00"	D = 3°-30'-00"	D = 2°-15'-00"
T = 968.83 FT.	T = 269.32 FT.	T = 861.18 FT.
L = 1868.47 FT.	L = 533.85 FT.	L = 1660.86 FT.
R = 2864.79 FT.	R = 1637.02 FT.	R = 2596.48 FT.
P.C. = STA. 147+55.30	SE = 0.05 FT/FT.	SE = 0.036 FT/FT.
P.T. = STA. 166+23.77	RO = 135 FT.	RO = 135 FT.
	P.C. = STA. 150+22.38	P.C. = STA. 148+70.13
	P.T. = STA. 155+56.23	P.T. = STA. 165+30.99

SEE SHEET 5
20 L.F. TYPE A
39 L.F. TYPE B

TOTAL ESTIMATED QUANTITIES

	BID ITEM	UNIT	W. ABUT.	PIER 1 W.B.	PIER 1 E.B.	PIER 2 W.B.	PIER 2 E.B.	E. ABUT.	SUPER	TOTAL
	REMOVING OLD BRIDGE	L.S.	——	——	——	——	——	——	——	1
	EXCAVATION FOR STRUCTURES	C.Y.	30	100	110	100	110	30	——	480
	GRANULAR BACKFILL	C.Y.	10	——	——	——	——	10	——	20
	CONCRETE MASONRY	C.Y.	212.2	137.8	150.0	134.3	150.2	244.9	751.8	1781.2
	PRESTRESSED GIRDER I TYPE, 45"	L.F.	——	——	——	——	——	——	2263	2263
	BAR STEEL REINFORCEMENT	L B.	7,300	15,930	16,530	15,890	16,530	7,750	210,700	290,580
	STRUCTURAL CARBON STEEL	LB.	——	——	——	——	——	——	21,900	21,900
	BEARING PADS	S.F.	——	——	——	——	——	——	84	84
	STRUCTURAL LOW-ALLOY STEEL	LB.	——	——	——	——	——	——	10,060	10,060
	LUBRICATED BRONZE PLATES	LB.	——	——	——	——	——	——	636	636
*	STEEL TEST PILING	L.S.	——	——	——	——	——	——	——	1
	STEEL PILING, DELIVERED (10 BP 42)	L.F.	1600	400	440	420	420	1720	——	5000
	STEEL PILING, DRIVEN (10 BP 42)	L.F.	1600	400	440	420	420	1720	——	5000
	TUBULAR RAILING, TYPE "H"	L.F.	——	——	——	——	——	——	509	509
	HEAVY RIPRAP	C.Y.	630	——	——	——	——	630	——	1260
	NON-BID ITEM									
	⅛" ALUMINUM OR ZINC PLATE	S.F.	——	——	——	——	——	——	56	56
	FILLER	SIZE	⅜	——	——	——	——	¾	¼	⅜ & ⅛
#	POLYVINYL CHLORIDE WATERSTOP	L.F.	28	——	——	——	——	31	——	59

* 2-55-0 & 2-35-0 STEEL TEST PILES REQ'D. DRIVE ONE 50-0 TEST PILE AT EACH ABUTMENT. DRIVE ONE 35-0 TEST PILE AT EACH PIER.

No.	Date	Revision	By
1	10-69	PLAN REVISIONS	D.J.A.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

STRUCTURE B-59-48

Const. Spec.	Drawn By	Plans Checked
1969	D.J.A.	FWG

ESTIMATED QUANTITIES

SHEET 2 OF 19

X 41761

Form E-B-12-69

R1-10/23/69

PROJECT I.D.	SHEET NUMBER	TOTAL SHEETS
4012-1-70	20	28
FEDERAL PROJECT DESIGNATION F070-1(4)		

* DIMENSIONS MEASURED RADIALLY.

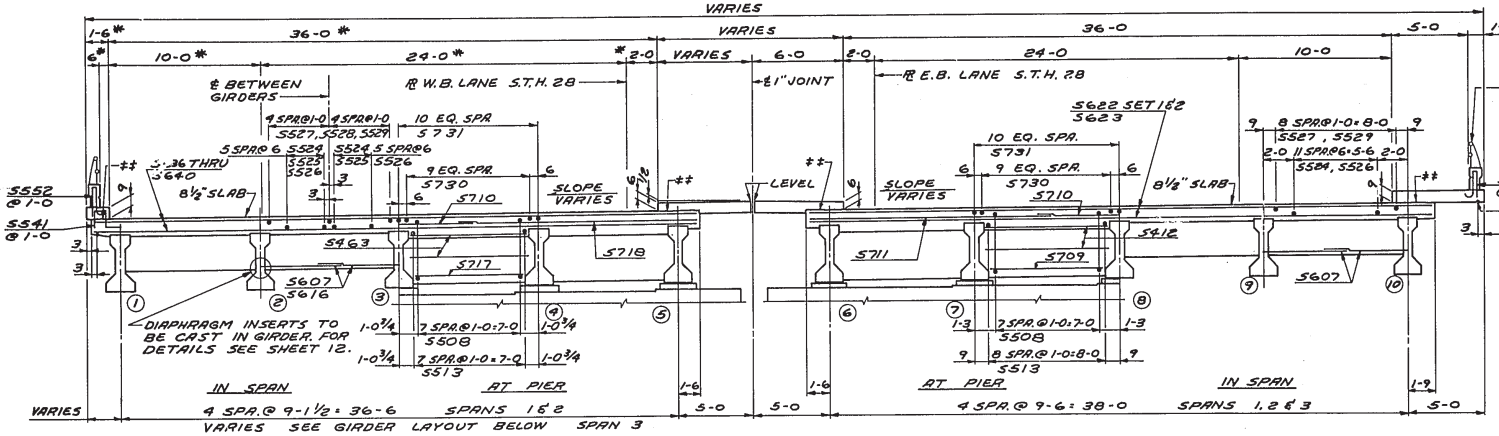
‡‡ LEVEL CONST. JOINT - STRIKE OFF AND LEAVE ROUGH.

TYPE "H" TUBULAR RAILING. FOR DETAILS OF RAILING, CURB, SIDEWALK & PARAPET, SEE SHEETS 18 & 19.

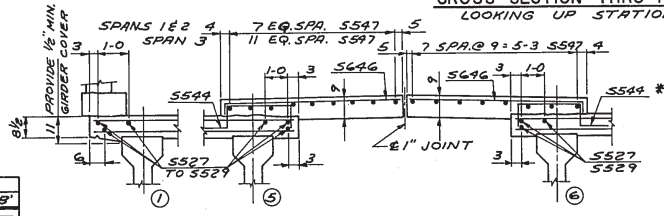
BOTTOM TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS ON OR ADJACENT TO EACH GIRDER, AND BY INDIVIDUAL BAR CHAIRS AT 2-0 CENTERS AT APPROXIMATELY THE 1/3 POINTS BETWEEN GIRDERS.

TOP LONGITUDINAL BAR STEEL SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4-0 CENTERS.

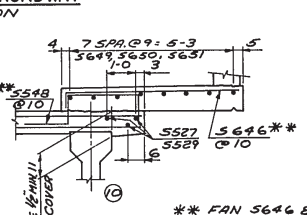
FOR DETAILS OF PILASTER AT EXTERIOR GIRDERS 1 & 10 AT PIER SEE SHEET 12.



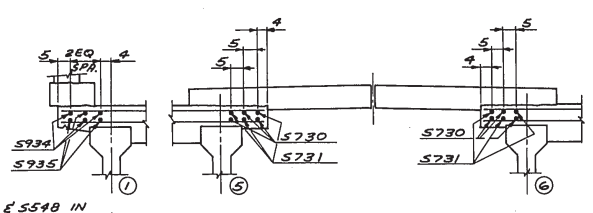
CROSS SECTION THRU ROADWAY
LOOKING UP STATION



PART SECTION IN SPAN



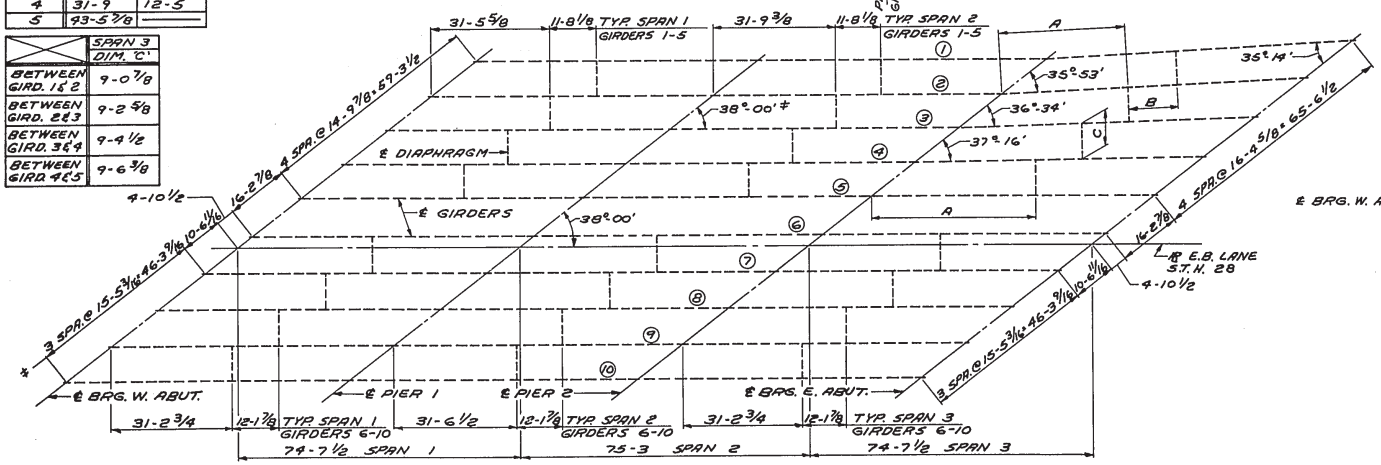
** FAN 5646 & 5548 IN SIDEWALK LIKE 5646 & 5544 IN MEDIAN.



PART SECTION AT PIER

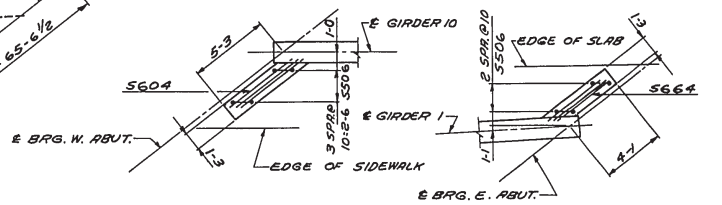
SPAN 3		
GIRDER	DIM. 'A'	DIM. 'B'
1	33-5¾	
2	32-10¾	12-7¾
3	32-3⅞	12-6⅜
4	31-9	12-5
5	93-5⅞	

	SPAN 3 DIM. 'C'
BETWEEN GIRD. 1 & 2	9-0⅞
BETWEEN GIRD. 2 & 3	9-2⅝
BETWEEN GIRD. 3 & 4	9-4½
BETWEEN GIRD. 4 & 5	9-6⅜



GIRDER LAYOUT

* DIMENSIONS AND ANGLES TYP. AT ALL SUBSTRUCTURE UNITS EXCEPT WHERE SHOWN OR NOTED OTHERWISE.



PLAN OF DIAPHRAGM AT ABUTMENTS
PLACE DIAPHRAGM AT GIRDERS SHOWN.

No.	Date	Revision	By
1	10-69	PLAN REVISION	G.L.D.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

STRUCTURE B-59-48

Const. Spec.	Drawn By	Plans Checked
1969	G.L.D.	FWG

SUPERSTRUCTURE

SHEET 13 OF 19

X 41772

Form E-B-12-69

TABLE OF OFFSETS AND ELEVATIONS

POINT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
DIM. 'A'							14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
DIM. 'B'												50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
EL. 'C'												600.06	600.08	600.09	600.01	599.93	599.84	599.75	599.66
EL. 'D'							600.18	600.24	600.28	600.33	600.37	600.40	600.42	600.45	600.46	600.47	600.48	600.48	600.47
EL. 'E'							600.20	600.25	600.30	600.35	600.38	600.42	600.44	600.47	600.49	600.50	600.51	600.52	600.52
EL. 'F'					600.08	600.14	600.20	600.26	600.30	600.35	600.38	600.42	600.44	600.47	600.48	600.49	600.50	600.50	600.49
EL. 'G'					600.06	600.12	600.18	600.24	600.28	600.33	600.37	600.40	600.42	600.45	600.46	600.47	600.48	600.48	600.47
EL. 'H'	599.40	599.49	599.57	599.65	599.72	599.78	599.84	599.90	599.94	599.99	600.02	600.06	600.08	600.11	600.12	600.13	600.14	600.14	600.13

POINT	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
DIM. 'A'	14.02	14.08	14.18	14.32	14.50	14.72	14.96	15.26	15.59	15.96	16.38	16.83	17.32					
DIM. 'B'	50.02	50.08	50.18	50.32	50.50	50.72	50.98	51.27	51.61	51.99	52.41	52.87	53.37	53.90	54.48	55.10	55.76	56.46
EL. 'C'	599.55	599.45	599.33	599.21	599.14	599.10	599.05	599.00	598.95	598.88	598.82	598.74	598.67	598.58	598.49	598.40	598.30	598.19	
EL. 'D'	600.46	600.44	600.42	600.39	600.36	600.32	600.28	600.23	600.18	600.12	600.05	599.98	599.90						
EL. 'E'	600.51	600.50	600.49	600.46	600.43	600.40	600.35	600.30	600.25	600.19	600.12	600.05	599.98						
EL. 'F'	600.48	600.46	600.44	600.41	600.37	600.33	600.27	600.22	600.16	600.09	600.02	599.94							
EL. 'G'	600.46	600.44	600.42	600.40	600.36	600.32	600.28	600.23	600.18	600.12	600.05	599.98							
EL. 'H'	600.12	600.10	600.08	600.12	600.21	600.30	600.38												

Cracks/spalls near top of north parapet for approx. 85% of length = 225 SF Conc. Surf. Repair.

Cracks/spalls at north curb for approx. 75% of length = 200 LF Curb Repair.

North Median = 135 SF Conc. Surf. Repair.

North Median Curb = 120 LF Curb Repair.

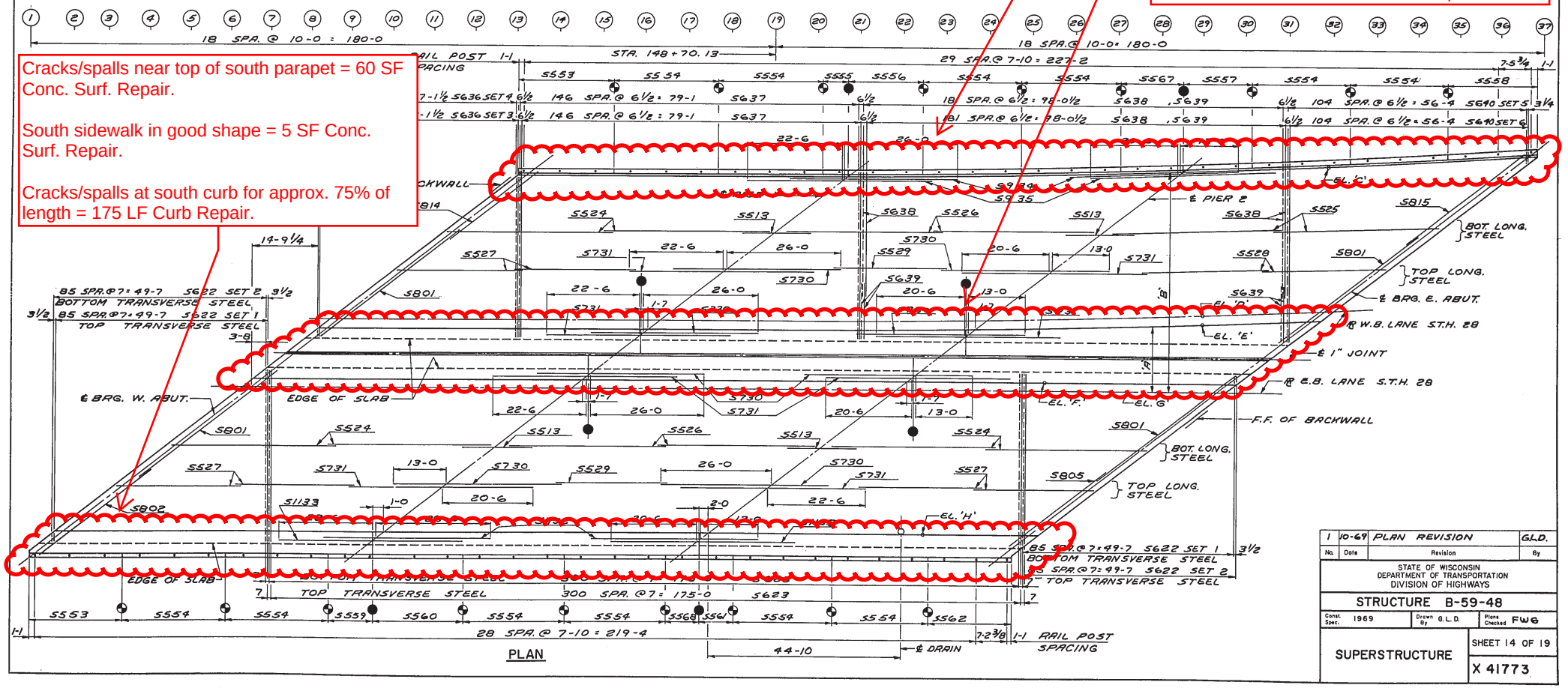
South Median = 5 SF Conc. Surf. Repair.

South Median Curb = 95 LF Curb Repair.

Cracks/spalls near top of south parapet = 60 SF Conc. Surf. Repair.

South sidewalk in good shape = 5 SF Conc. Surf. Repair.

Cracks/spalls at south curb for approx. 75% of length = 175 LF Curb Repair.



No.	Date	Revision	By
1	10-69	PLAN REVISION	GLD.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

STRUCTURE B-59-48

Const. Spec.	Drawn By	Plans Checked
1969	G.L.D.	FWG

SUPERSTRUCTURE

SHEET 14 OF 19

X 41773

Form E-B-12-69

R1-10/23/69

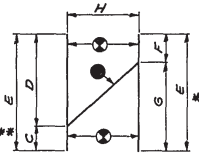
PROJECT I D	SHEET NUMBER	TOTAL SHEETS
4012-1-70	22	28
FEDERAL PROJECT DESIGNATION F070-1(4)		

BILL OF BARS

210,700#

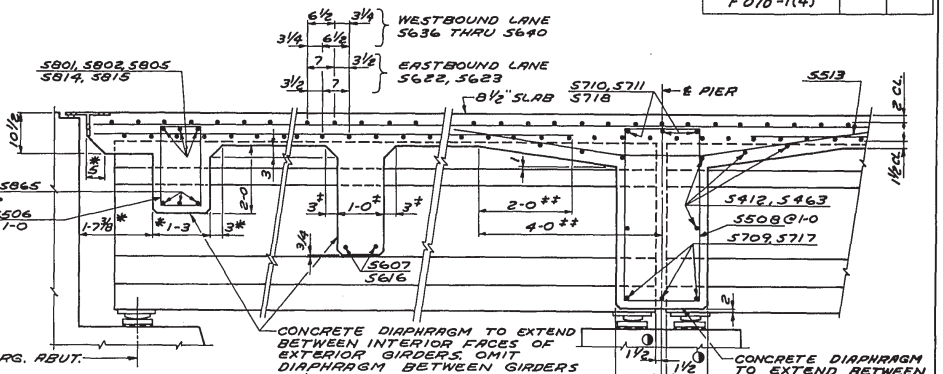
BAR NO.	NO. REQ'D	LENGTH	BENT	CUT DIAGR.	LOCATION
S801	12	40-10			DIAPHRAGM @ E.& W. ABUT., E.B. & W.B. LANE -TOP OVER GIRDER
S802	3	33-4			" @ W. ABUT., E.B. LANE - TOP OVER GIRDER
S803	24	14-2			" @ E. & W. ABUT., E.B. LANE - BETW. GIRDERS
S804	3	5-0			" @ W. ABUT. E.B. LANE - EXT. GIRDER
S805	3	28-10			" @ E. ABUT. E.B. LANE - TOP OVER GIRDERS
S506	197	8-3	X		" @ E. & W. ABUT. E.B. & W.B. LANE - STIR.
S607	64	5-7			" IN SPAN, E.B. LANE SPANS 1, 2, 3, & W.B. LANE SPAN 3 **
S508	128	14-2	X		" @ PIERS E.B. & W.B. LANE - STIR.
S709	24	12-2			" " " E.B. LANE - BOT.
S710	12	41-0			" " " E.B. & W.B. LANE - TOP OVER GIRDERS
S711	6	28-4			" " " E.B. LANE - " " "
S412	64	12-8			" " " " " -BETW. GIRDERS
S513	136	10-10	X		" " " E.B. & W.B. LANE
S814	3	26-7			" @ W. ABUT. W.B. LANE - TOP OVER GIRDERS
S815	3	36-0			" @ E. ABUT. W.B. LANE - TOP OVER GIRDERS
S616	32	5-4			" IN SPAN, W.B. LANE - SPANS 1 & 2
S717	24	11-5			" @ PIER W.B. LANE - BOT.
S718	6	25-11			" " " " " - TOP OVER GIRDERS
S419	8	3-4	X		PILASTER
S420	8	4-1	X		"
S321	12	3-4	X		" - STIR.
S622	172	43-0		X	SLAB TRANS. E.B. LANE - TOP & BOT. SETS 1 & 2
S623	602	40-11			" " " " " " " "
S5524	288	38-3			" LONG. E.B. LANE SPANS 1 & 3, W.B. LANE SPAN 1 - BOT.
S525	96	40-8			" " W.B. LANE SPAN 3 - BOT.
S526	192	36-3			" " E.B. & W.B. LANE SPAN 2 - BOT.
S527	252	28-5			" " E.B. LANE SPANS 1 & 3, W.B. LANE SPAN 1 - TOP
S528	84	31-0			" " W.B. LANE SPAN 3 - TOP
S529	84	26-0			" " E.B. & W.B. LANE SPAN 2 - TOP
S730	172	39-0			" " E.B. & W.B. LANE - TOP OVER PIERS
S731	176	43-0			" " " " " " " "
S1132	6	39-0			" " EDGE OF SLAB OVER PIERS GIRDER 10
S1133	6	43-0			" " " " " " " " " " " "
S934	6	39-0			" " " " " " " " " " 1
S935	6	43-0			" " " " " " " " " "
S636	88	39-9	X		" TRANS. W.B. LANE - TOP & BOT. SETS 3 & 4
S637	294	39-5			" " " " " " " "
S638	364	25-4			" " " " " " " "
S639	364	18-2			" " " " " " " "
S640	105	43-3		X	" " " " " " " " SETS 5 & 6
S541	237	3-11	X		" & CURB W.B. LANE - STIR.
S542	8	39-2			CURB LONG. W.B. LANE SPANS 1 & 2
S543	6	28-4			" " " " " 3
S544	548	4-3	X		SLAB & MEDIAN E.B. & W.B. LANE - STIR.
S545	103	6-1	X		" " " W.B. LANE - STIR.
S646	1058	5-10	X		MEDIAN TRANS. & SIDEWALK TRANS.
S547	156	28-2			" LONG. SPANS 1, 2, & 3
S548	274	4-11	X		SLAB & SIDEWALK - STIR.
S649	24	27-11			SIDEWALK LONG. SPAN 1
S650	16	37-7			" " " 2
S651	16	39-11			" " " 3
S552	466	4-11	X		CURB & PARAPET - STIR.
S553	8	20-2			RAIL PARAPET
S554	48	23-2			" "
S555	4	8-8			" "
S556	4	14-0			" "
S557	4	14-10			" "
S558	4	19-9			" "
S559	4	13-4			" "
S560	4	17-2			" "
S561	4	5-7			" "
S562	4	19-5			" "
S463	64	12-4			DIAPHRAGM @ PIER W.B. LANE
S664	3	4-0			" @ E. ABUT. W.B. LANE - EXT. GIRDER
S865	12	13-6			" @ W. ABUT. W.B. LANE - BETW. GIRDERS
S866	12	15-1			" @ E. ABUT. " " " "
S567	4	15-8			RAIL PARAPET
S568	4	9-5			" "

H - NUMBER OF BARS BEFORE CUTTING.
⊗ - BUNDLE AND MARK CUT BARS WITH BAR AND SET NUMBER. BENT BARS USED IN A CUTTING DIAGRAM SHALL BE BENT AFTER CUTTING.
● - MARK AND CUT ALL BARS ALONG THIS LINE MAKE ALL CUTS NORMAL TO BAR AXIS.
** - PLAIN BAR - THREAD ONE END 3".



CUTTING DIAGRAM

BAR NO.		C	D	E	F	G	H	SETS REQ'D.
S622	SET 1	2-3		43-0		41-0	86	2
**	SET 2		40-9		2-0			2
S636	SET 3	1-8		39-9		38-4	88	1
	SET 4		38-1		1-5			1
S640	SET 5	1-6		43-3		42-0	105	1
	SET 6		41-9		1-3			1



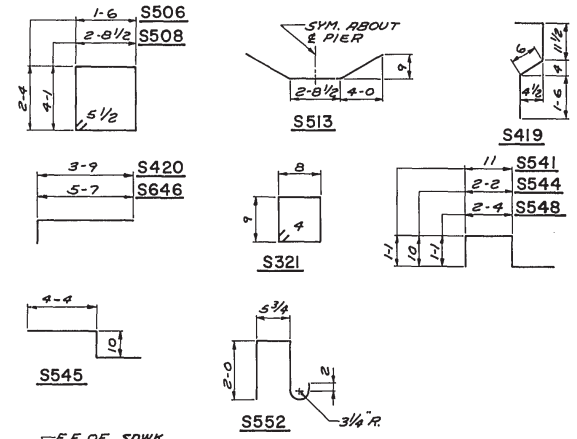
PART LONGITUDINAL SECTION

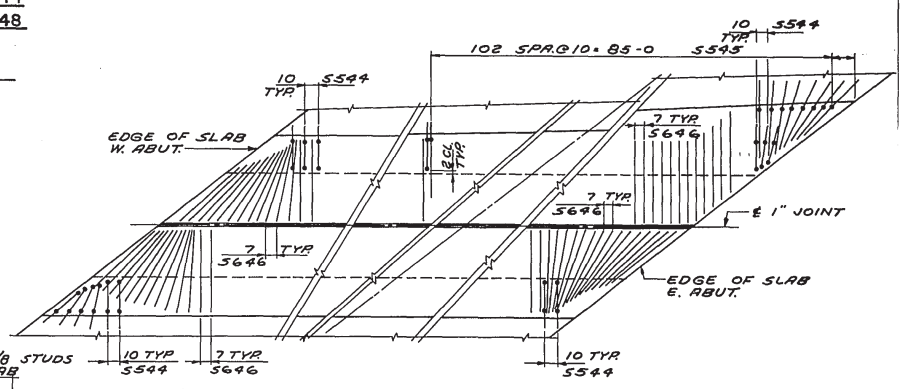
* DIMENSIONS MEASURED NORMAL TO ℄ OF SUBSTRUCTURE UNITS.

‡ DIMENSIONS MEASURED NORMAL TO ℄ OF DIAPHRAGM.

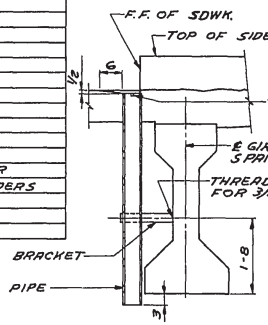
‡‡ DIMENSIONS MEASURED PARALLEL TO ℄ 1" JOINT.

◑ DIMENSIONS MEASURED ALONG ℄ OF GIRDER.

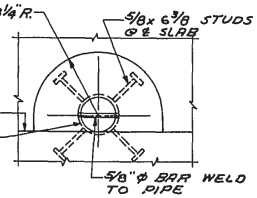




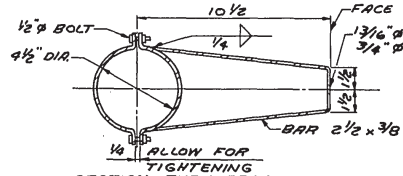
MEDIAN STEEL LAYOUT



SECTION AT GIRDER



PLAN



SECTION THRU BRACKET

DRAIN DETAILS

⊁ SECURE INSERT IN GIRDER SIMILAR TO DIAPHRAGM INSERTS SHOWN ON SHEET 12.

FOR LOCATION OF DRAIN SEE SHEET 14.

DRAIN TO BE PAID FOR AS "STRUCTURAL CARBON STEEL."

DRAIN TO BE FABRICATED FROM MATERIAL CONFORMING TO A.S.T.M. A53.

No.	Date	Revision	By
1	10-69	PLAN REVISION	G.L.D.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

STRUCTURE B-59-48

Const. Spec.	Drawn By	Plans Checked
1969	G.L.D.	FWG

SUPERSTRUCTURE

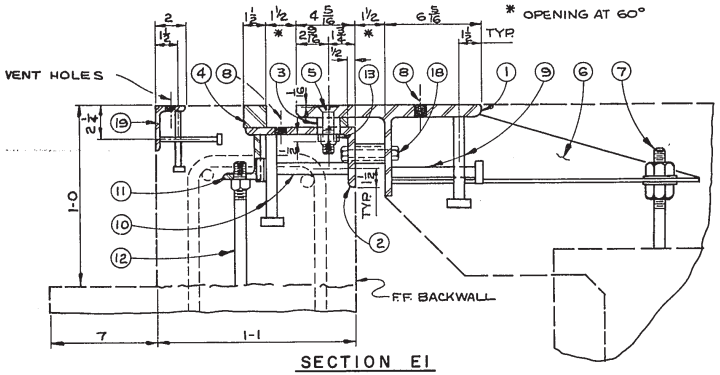
SHEET 15 OF 19

X 41774

Form E-B-12-69

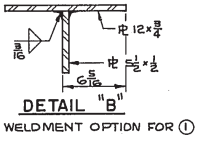
R1-10/23/69

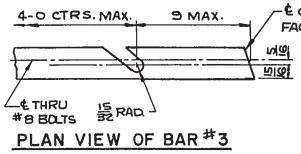
PROJECT ID	SHEET NUMBER	TOTAL SHEETS
4012-1-70	24	28
FEDERAL PROJECT DESIGNATION F070-1(4)		

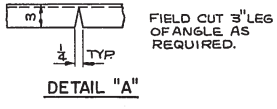


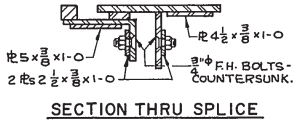
SECTION E1

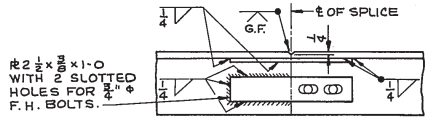
ABUTMENT DIAPHRAGMS TO EXTEND BETWEEN GIRDERS #1 TO 5 AND GIRDERS #6 TO 10. SEE SHEET 13 FOR DETAIL OF DIAPHRAGM OVERHANG AT EXTERIOR GIRDER #1 & 10.





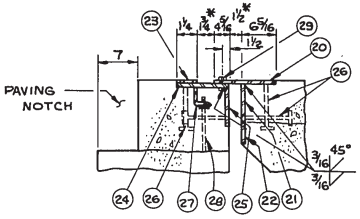






OPTIONAL FIELD SPLICE DETAIL

ONE SPLICE SHALL BE PERMITTED IN JOINT.



LEGEND

1. S.T. 6 WF 39.5 × RDWY WIDTH. SEE DETAIL "B." WELDMENT MAY BE USED.
2. ∠ 7×4×7/16 × RDWY WIDTH. LONGITUDINAL DIMENSION OF 15/16 × 1 1/2 SLOTTED HOLE TO BE PARALLEL TO ℄ OF RDWY.
3. BAR 2×3/4 × RDWY WIDTH. WELD TO L #2 WITH 2 LINES OF 1/4 FILLET WELD 2@6". LONG DIMENSION OF 15/16 SLOT TO BE PARALLEL TO ℄ OF 1" MEDIAN OPENING.
4. BAR 1 1/2×1 1/2 × RDWY WIDTH. WELD TO ∠#2 WITH 2 LINES OF 1/4" FILLET WELD. 2@6".
5. 3/4" ϕ FLAT HEAD CAP SCREW × 0-2 3/4 LONG WITH SQ. NUT AT 4-0 CENTERS. GREASE FOR EASY REMOVAL. 15/16 × 1 1/2 SLOTTED HOLE IN ∠#2. 13/16 HOLE COUNTER SUNK 7/16 DEEP IN ST.#1. ALIGN HOLES WITH SLOT IN BAR #3.
6. ∠ 3 1/2 × 3 × 3/8. FILLET WELD TO FLANGE AND STEM OF S.T.#1 NEAR SIDE AND FAR SIDE. FILLET WELD TO PLATES #22 & 35 IN AREA OF MEDIAN AND SIDEWALK. PROVIDE 13/16 ϕ HOLE IN 3 1/2 LEG FOR ROD #7.
7. 3/4" ϕ ROD × 1-3 LONG. THREAD 6". IMBED 6" IN GIRDER. PROVIDE 2 PLATE WASHERS AND 2 HEX NUTS PER BOLT. FIELD CUT TO PROVIDE 2" CL. AT TOP.
8. VENT HOLES, 13/16 ϕ PLACED AT 2-0 CENTERS ON S.T. #1 AND ∠#2.
9. 5/8" ϕ STUDS AT 0-9 ALT. CTRS. BETW. GIRDERS. 0-6 3/8 LG. WELD TO ST #1.
10. 5/8" ϕ STUDS AT 1-0 ALTERNATE CENTERS. 0-6 3/8 LONG. WELD TO ∠#2.
11. ∠ 3×2 1/2×3/8 × 0-3 AT 3-0 CENTERS. WELD TO ∠#2. PROVIDE 15/16 ϕ HOLE IN 2 1/2 LEG FOR ROD # 12.
12. 3/4" ϕ ROD × 0-9 LONG & NUT. THREAD 3". TACK WELD NUT TO ∠#11.
13. 1/4 × 1/2 × 1 1/4 LONG KEEPER BAR. ONE PER #5 BOLT. PLACE BAR WITH LONG DIMENSION PARALLEL TO ℄ OF ROADWAY 1/8" CLEAR FROM #5 SQUARE NUT AND WELD BAR AT SIDE FACING AWAY FROM NUT WITH 3/16 FILLET WELD 1/4" LONG TO ∠#2.
14. PLATE 3/8" × 19 1/2 CHAMFER AS SHOWN. FIELD WELD TO S.T. #1.
15. PLATE 3/8 × 11 3/8 CHAMFER AS SHOWN. WELD TO PLATE #16 WITH 1/4" MAX. FILLET WELD N.S. & F.S.
16. PLATE 3/8 × 2 CHAMFER AS SHOWN. FIELD WELD TO BAR #4.
17. 5/8" ϕ STUDS 0-6 3/8 LONG. WELD TO PLATES #14 AND #15; #40 AND #41.
18. BLOCK AND BOLT FOR SHIPMENT WITH PIPE SLEEVE AND 1/2" ϕ BOLT. PROVIDE 9/16" ϕ HOLES AT 3-0 CENTERS IN S.T. #1 AND ∠#2 FOR BOLT.
19. ∠ 3×2×5/16 × RDWY WIDTH. PROVIDE 11/16 ϕ VENT HOLES AT 3-0 CENTERS IN 2" LEG. ATTACH ANGLE TO CONCRETE WITH 3/8" ϕ ANCHOR STUDS 0-4 LONG. AT 6 ALTERNATE CENTERS. SEE DETAIL "A".
20. 3/8 PLATE WELD TO ℄ #21 AS SHOWN. BEND DOWN FLUSH WITH FACE OF MEDIAN. 15/16 × 1 1/2 SLOTTED HOLE SIMILAR TO HOLE IN ∠#2. ALIGN HOLES WITH BOLT # 29.
21. 3/8 ℄ CUT TO MEDIAN LIMITS AS SHOWN. FIELD WELD TO ℄ #22.
22. 3/8 ℄ CUT TO SLAB LIMITS AS SHOWN. SHOP WELD TO S.T. #1 AND SUPPORT # 5.
23. 3/8 ℄ WELD TO ℄ #24 WITH 1/4" MAX. FILLET WELD N.S. & F.S. BEND DOWN FLUSH WITH FACE OF CURB AND WELD IN FIELD TO ℄ #4.
24. 3/8 ℄ BEND FLUSH WITH FACE OF MEDIAN. WELD TO ℄ #25 WITH 3/16" FILLET WELD
25. 6×3/8 ℄ CUT TO MEDIAN LIMITS AS SHOWN.
26. 5/8" ϕ STUDS AT 1-0 CENTERS. 0-6 3/8 LONG. WELD TO PLATES 20-21 AND 24-25.
27. ANGLE 3×2 1/2×3/8 × 0-3 AT 3-0 CENTERS. WELD TO PLATE #24. PROVIDE 15/16 ϕ HOLE FOR ROD #28 IN 2 1/2" LEG.
28. 3/4" ϕ ROD × 1-4 LONG & NUT. TACK WELD NUT TO ∠#27 - THREAD 4".
29. 3/4" ϕ BOLT AT 4-0 CENTERS WITH SQUARE NUT. TACK WELD NUT TO ℄ #24. GREASE FOR EASY REMOVAL.
30. 3/8 ℄ BEND FLUSH WITH FACE OF SIDEWALK. WELD TO ℄ #34 AND #1 AS SHOWN.
31. 3/8 ℄ BEND DOWN FLUSH WITH FACE OF SIDEWALK. WELD TO ℄ #33.
32. 3/8 ℄ WELD TO ℄ #31 WITH 1/4" MAX. FILLET WELD N.S. & F.S. BEND DOWN FLUSH WITH FACE OF CURB AND WELD IN FIELD TO ℄ #4.
33. 6×3/8 ℄ CUT TO SIDEWALK LIMITS AS SHOWN.
34. 3/8 ℄ CUT TO SIDEWALK LIMITS AS SHOWN. FIELD WELD TO ℄ #35.
35. 3/8 ℄ CUT TO SLAB LIMITS AS SHOWN. SHOP WELD TO S.T. #1 AND SUPPORT #5.
36. 5/8" ϕ STUDS 0-6 3/8 LONG. WELD TO ℄'S #30 & 34 AND 31 & 33.
37. ANGLE 3×2 1/2×3/8 × 0-3 WELD TO ℄ #31. PROVIDE 15/16" ϕ HOLE IN 2 1/2 LEG FOR ROD #38.
38. 3/4" ϕ ROD × 0-7 LONG & NUT. TACK WELD NUT TO ∠#37 - THREAD 4". 3-0 CENTERS.
39. 3/4" ϕ BOLT WITH SQUARE NUT. TACK WELD NUT TO ℄ #31. GREASE FOR EASY REMOVAL. HOLE IN ℄ #30 SIMILAR TO HOLE IN ℄ #20.
40. PLATE 3/8 × 21 1/2 CHAMFER AS SHOWN. FIELD WELD TO ST #1. TAPERED SIDE ONLY.
41. PLATE 3/8 × 12 1/2 CHAMFER AS SHOWN. WELD TO PLATE #42 WITH 1/4" MAX. FILLET WELD N.S. & F.S. TAPERED SIDE ONLY.
42. PLATE 3/8 × 2 1/4 CHAMFER AS SHOWN. FIELD WELD TO BAR #4. TAPERED SIDE ONLY.

EXPANSION JOINT NOTES

EXPANSION JOINT SHALL BE BUILT TO CONFORM TO RDWY, SDWK, MEDIAN CROWN AND GRADE.

AFTER CONCRETE HAS SET THE JOINT OPENING SHALL BE THOROUGHLY CLEANED AND BOLTS # 5, 29 & 39 REMOVED AND THE HOLES FILLED WITH HOT POURED ELASTIC JOINT SEALER CONFORMING TO A.S.T.M. D1190.

APPLY 1/16" COAT OF BITUMASTIC TO METAL SURFACES FORMING JOINT AND FILL OPENING WITH HOT POURED ELASTIC JOINT SEALER. (A.S.T.M. D1190)

ALL MATERIAL SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STRUCTURAL CARBON STEEL"

ONE FIELD SPLICE SHALL BE PERMITTED IN EXPANSION JOINT.

No.	Date	Revision	By
1	10-69	PLAN REVISION	DEO.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

STRUCTURE B-59-48

Const. Spec.	Drawn By	Plans Checked
1969	DEO	FWG

EXPANSION JOINT

SHEET 17 OF 19

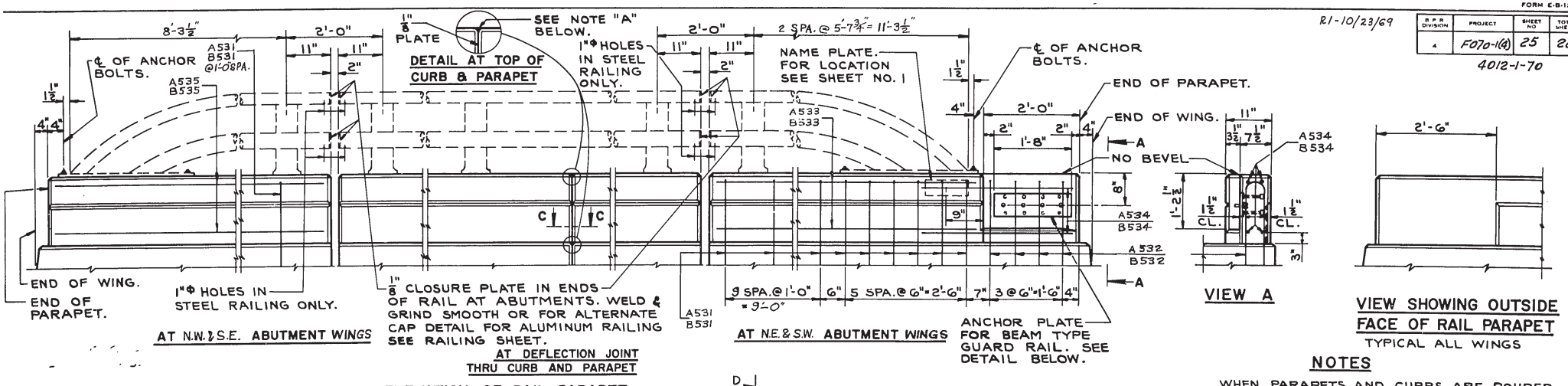
X41776

FORM E-B-12-62

R1-10/23/69

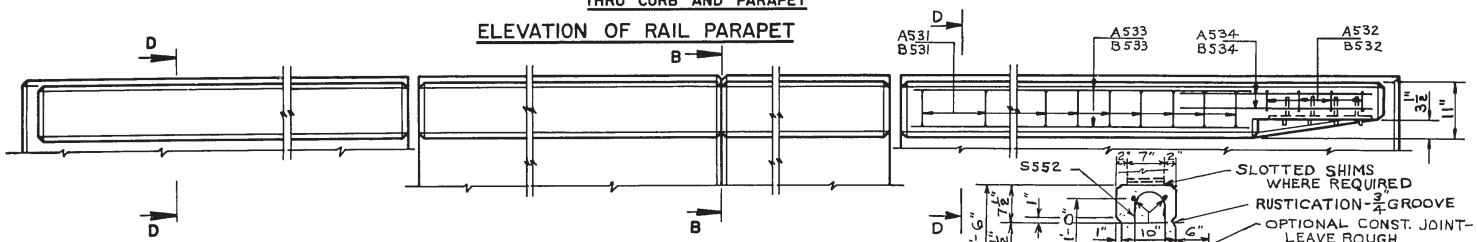
R.P.S. DIVISION	PROJECT	SHEET NO.	TOTAL SHEETS
4	F070-1(4)	25	28

4012-1-70

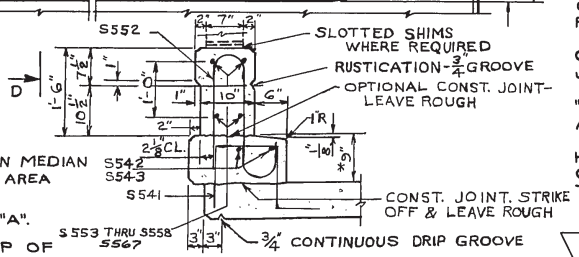


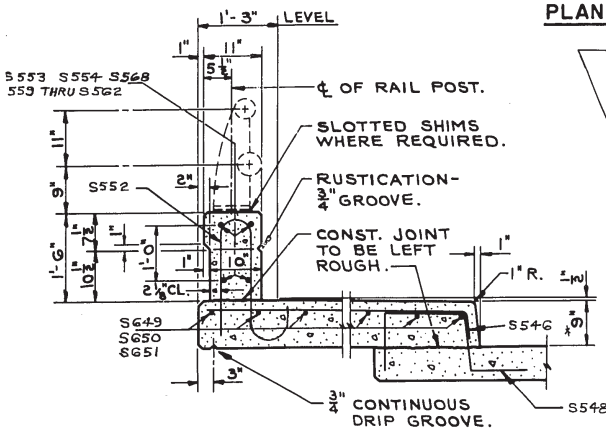
AT DEFLECTION JOINT THRU CURB AND PARAPET

ELEVATION OF RAIL PARAPET

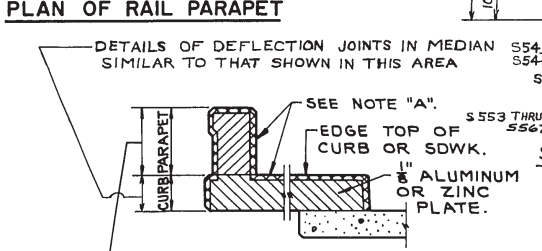


PLAN OF RAIL PARAPET



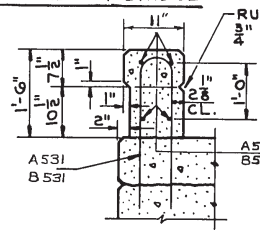


SECTION THRU PARAPET & SIDEWALK ON BRIDGE

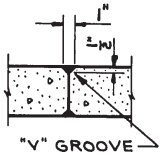


SECTION B

SECTION THRU PARAPET & CURB ON BRIDGE



SECTION D



SECTION C

* 9" HEIGHT OF CURB TO BE MAINTAINED AT POINTS OF BEARING.

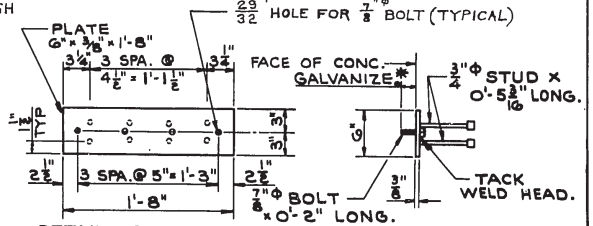
NOTES

WHEN PARAPETS AND CURBS ARE POURED CONTINUOUSLY FROM END TO END THEY SHALL BE SEPARATED AT THE DEFLECTION JOINTS BY A PIECE OF ⅛" ZINC OR ALUMINUM PLATE CUT AS SHOWN IN SECTION "B" BY SHADED AREA. IF CONSTRUCTION JOINTS IN PARAPETS AND CURBS ARE USED AT THE DEFLECTION JOINTS ONE SIDE OF JOINT SHALL BE COATED WITH BITUMINOUS PAINT AND PLATE SEPARATORS MAY BE OMITTED.

NOTE "A": FILL WITH NON-STAINING GRAY SINGLE COMPONENT NON-BITUMINOUS JOINT SEALER.

WORK THIS SHEET WITH SHEET TITLED "DETAILS FOR TYPE "H" TUBULAR ALUMINUM AND STEEL RAILING".

ALL POST SPACINGS ARE TAKEN HORIZONTALLY ALONG ℄ OF RAILING AT BASE OF POSTS. ALL POSTS SHALL BE SET NORMAL TO GRADE.



DETAIL OF ANCHOR PLATE FOR BEAM TYPE GUARD RAIL

NOTES: ONE NUT AND WASHER REQUIRED FOR EACH ⅞" ⌀ BOLT. *(ELECTRO GALV. A.S.T.M. A164 TYPE GS) ASSEMBLY SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STRUCTURAL CARBON STEEL".

No.	Date	Revision	By
1	10-69	PLAN REVISIONS	D.J.A.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

STRUCTURE B-59-48

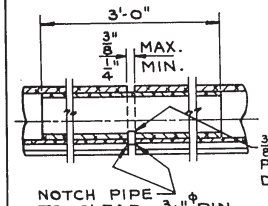
Const. Spec. 1969	Drawn By F.R.W.	Plans Checked F.W.G.

RAIL PARAPET DETAILS

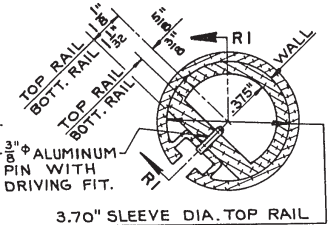
SHEET 18 OF 19

X 41777

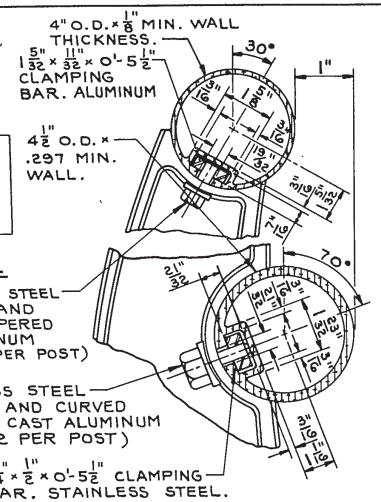
FORM E-B-12-62

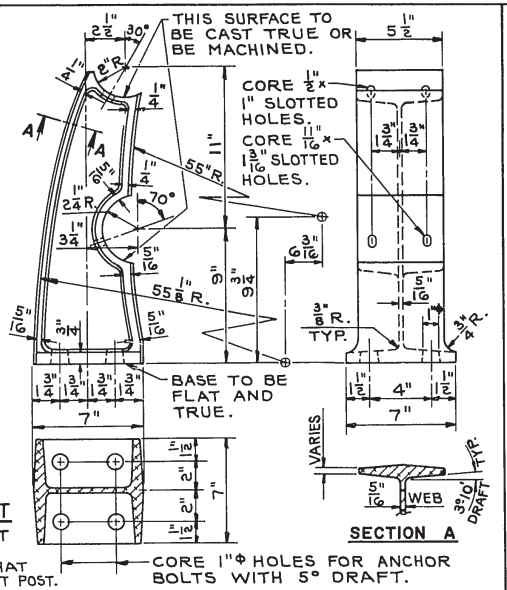


SECTION R1



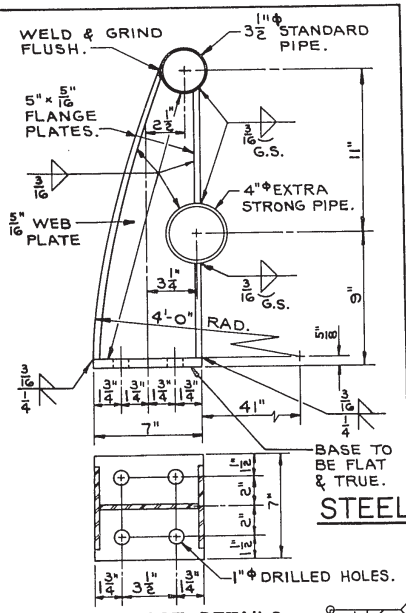
RAIL SPLICE DETAIL





SECTION A

ALUMINUM POST CASTING



STEEL POST DETAILS

NOTES: DETAIL OF RAIL ATTACHMENT TO POST

MAXIMUM REDUCTION IN DIAMETER OF BENT SECTION SHALL BE 3%.

RAILING SPLICES SHALL BE LOCATED SUCH THAT ℄ OF SPLICE IS 1/6 PANEL LENGTH ±4" OFF NEAREST POST.

ALUMINUM SHIMS SHALL BE USED UNDER POSTS AND END PLATES WHERE REQUIRED FOR ALIGNMENT.

RAILING SHALL BE FABRICATED IN TWO AND THREE PANEL LENGTHS.

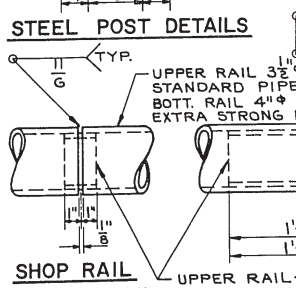
ANCHOR BOLTS, NUTS, & WASHERS TO BE STAINLESS STEEL.

WALL THICKNESS OF TUBING SHOWN ABOVE SHALL BE MINIMUM NOMINAL AVERAGE WALL THICKNESS.

CAULK EXPOSED OPENINGS BETWEEN SHIMS WITH LEAD WOOL.

MAXIMUM REDUCTION IN SLOT WIDTH IN BENT TUBING SHALL BE 5/16".

ALUMINUM RAILING DETAILS



SHOP RAIL SPLICE DETAIL

THE LOCATION OF THE SHOP SPLICE SHALL BE SHOWN ON THE SHOP DRWGS.

FIELD ERECTION JOINT DETAIL

UPPER RAIL - 3 7/16"Φ O.D. x 1/4" SEAMLESS MECHANICAL TUBING. LOWER RAIL 3 23/32"Φ O.D. x 11/32" SEAMLESS MECHANICAL TUBING.

STEEL RAILING DETAILS

NOTES

RAILING SHALL BE FABRICATED IN TWO AND THREE PANEL LENGTHS.

STEEL SHIMS SHALL BE USED UNDER POSTS AND END PLATES WHERE REQUIRED FOR ALIGNMENT.

THE FOLLOWING MATERIALS SHALL BE USED:

UPPER RAIL SHALL BE 3 1/2"Φ STANDARD PIPE CONFORMING TO A.S.T.M. DESIGNATION A 53.

LOWER RAIL SHALL BE 4"Φ EXTRA STRONG PIPE CONFORMING TO ASTM DESIGNATION A53, GRADE B.

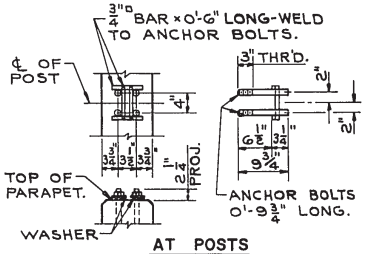
SLEEVES FOR UPPER RAIL SHALL BE 3 7/16"Φ O.D. x 1/4" SEAMLESS MECHANICAL TUBING. SLEEVES FOR LOWER RAIL SHALL BE 3 23/32"Φ O.D. x 11/32" SEAMLESS MECHANICAL TUBING. BOTH SLEEVES SHALL BE MADE OF STEEL WITH A MINIMUM ELONGATION OF 10% AND WITH A MINIMUM ULTIMATE TENSILE STRENGTH OF 60,000 P.S.I.

ANCHOR BOLTS TO BE MADE FROM MATERIAL CONFORMING TO ASTM DESIGNATION A307.

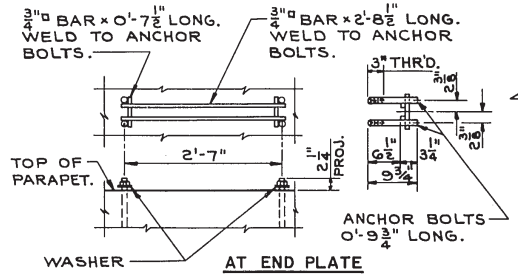
CAULK EXPOSED OPENINGS BETWEEN SHIMS WITH LEAD WOOL.

GALVANIZE ENTIRE RAILING AFTER FABRICATION INCLUDING NUTS, WASHERS, SHIMS AND TOP 3 1/2" OF ANCHOR BOLTS.

POSTS SHALL BE FABRICATED FROM MATERIAL CONFORMING TO ASTM DESIGNATION A 36.



AT POSTS

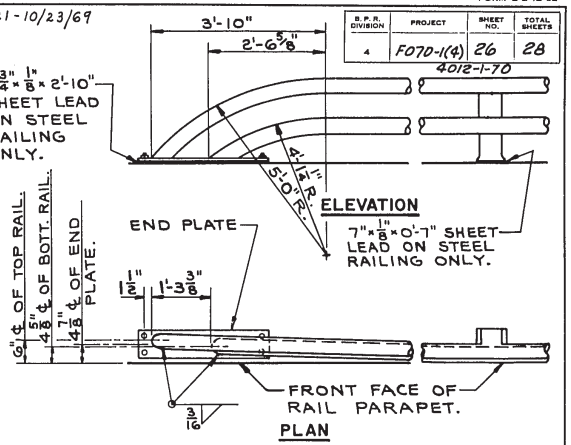


AT END PLATE

ANCHOR BOLT SETTING DETAILS

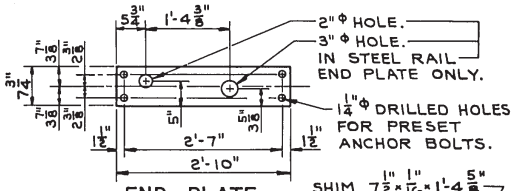
THE SHANK AND ROOT OF THREAD DIAMETER FOR ANCHOR BOLTS SHALL BE A MINIMUM OF 0.62 INCHES.

R1-10/23/69

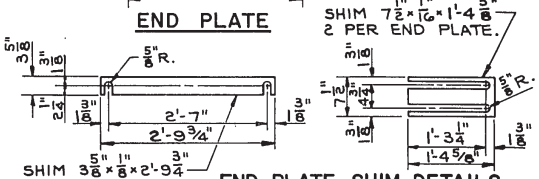


PLAN

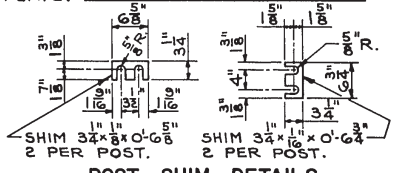
DETAIL OF RAIL BEND AT ABUTMENTS



END PLATE



END PLATE SHIM DETAILS



POST SHIM DETAILS

No.	Date	Revision	By
1	10-69	PLAN REVISIONS	D.J.A.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

STRUCTURE B-59-48

Const. Spec. 1969	Drawn By D.J.A.	Plans Checked FWG

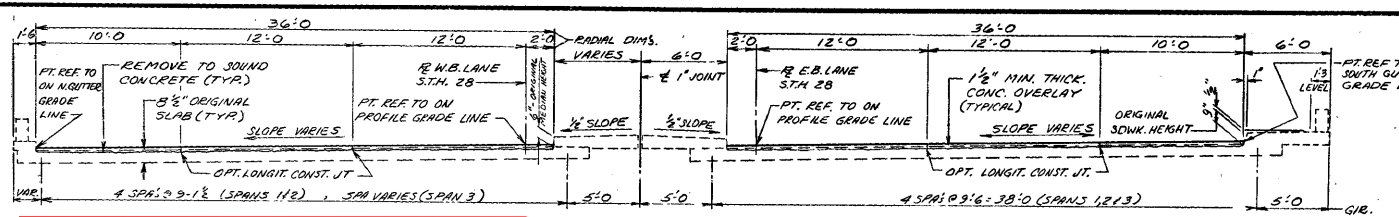
DETAILS FOR TYPE "H" TUBULAR ALUMINUM & STEEL RAILING

SHEET 19 OF 19

X41778

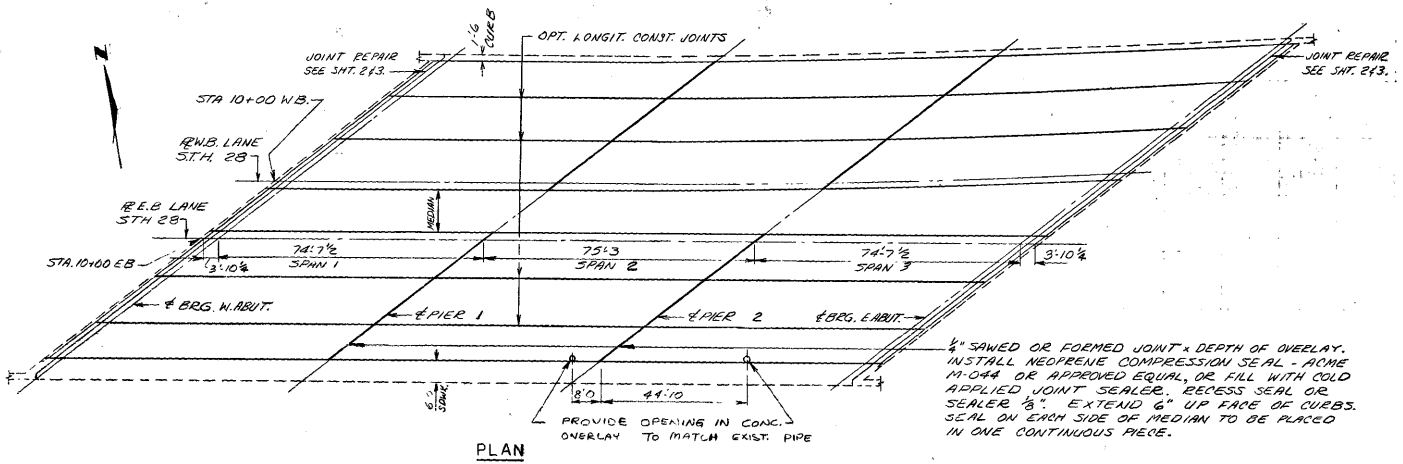
B.R.R. DIVISION	PROJECT	SHEET NO.	TOTAL SHEETS
4	F070-1(4)	26	28

4012-1-70



1985 Concrete Overlay Plans

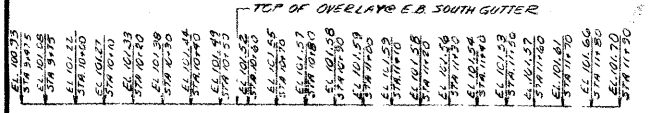
CROSS SECTION THRU RDWY.
(LOOKING EAST)



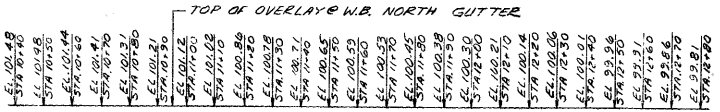
PLAN

¼" SAWED OR FORMED JOINT x DEPTH OF OVERLAY. INSTALL NEOPRENE COMPRESSION SEAL - ACME M-044 OR APPROVED EQUAL, OR FILL WITH COLD APPLIED JOINT SEALER. RECESS SEAL OR SEALER ⅛". EXTEND 6" UP FACE OF CURBS. SEAL ON EACH SIDE OF MEDIAN TO BE PLACED IN ONE CONTINUOUS PIECE.

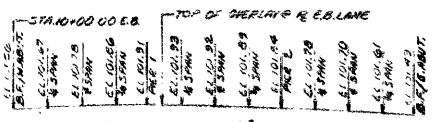
TOP OF OVERLAY @ E.B. SOUTH GUTTER



TOP OF OVERLAY @ W.B. NORTH GUTTER



PROPOSED SOUTH GUTTER GRADE LINE
(℄ E. B. LANE)

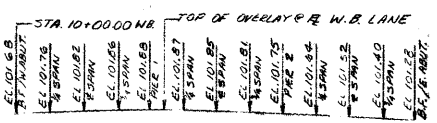


NOTE: AVERAGE OVERLAY THICKNESS = 2"

PROPOSED PROFILE GRADE LINE

BENCH MARK: N.E. COR @ TOP OF WHEEL GUARD PT. MK. CHISELED "□" EL. MK. 88

PROPOSED NORTH GUTTER GRADE LINE
(W. B. LANE)



NOTE: AVERAGE OVERLAY THICKNESS = 2"

PROPOSED PROFILE GRADE LINE

STATE PROJECT NUMBER	SHEET NO.
0059-34-12	8

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED. CONTRACTOR SHALL VERIFY DIMENSIONS IN THE FIELD.

ALL CONCRETE REMOVAL NOT COVERED WITH A CONCRETE OVERLAY SHALL BE DEFINED BY A 1" DEEP SAW CUT.

VARIATIONS TO THE NEW GRADE LINE OVER ¼" SHALL BE SUBMITTED BY THE FIELD ENGINEER TO THE BRIDGE SECTION FOR REVIEW.

BAR STEEL REINF SHALL BE EMBEDDED 2" CL. UNLESS OTHERWISE SHOWN OR NOTED.

THE FIRST DIGIT OF A BAR MARK SIGNIFIES THE BAR SIZE.

DESIGN DATA

LIVELOAD:
- INVENTORY RATING ____ H 23
- OPERATING RATING ____ HS 37

ALLOWABLE DESIGN STRESSES:
- CONCRETE MASONRY ____ F_c = 4,000 PSI
- HIGH STRENGTH BAR STEEL REINFORCEMENT ____ F_y = 60,000 PSI

TOTAL ESTIMATED QUANTITIES

DECK CLEANING	1875 S.Y.
DECK PREPARATION	188 S.Y.
FULL DEPTH DECK REPAIR	20 S.Y.
CONCRETE MASONRY, OVERLAY	151 C.Y.
JOINT REPAIR	48 S.Y.
HIGH STRENGTH BAR STEEL REINF.	730 LBS.
EXPANSION DEVICE	1 L.S.
STRUCTURAL CARBON STEEL	3250 LBS.

LIST OF DRAWINGS

1. OVERLAY LAYOUT ____ X 73930
2. EXPANSION JOINT ____ X 73931
3. EXPANSION JOINT DETAILS ____ X 73932

No.	Date	Revision	By

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

STRUCTURE B-59-48

S.T.H. 28 OVER SHEBOYGAN RIVER

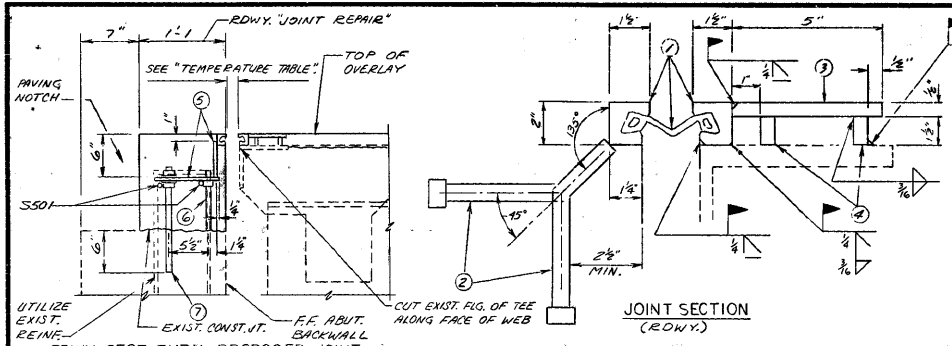
County SHEBOYGAN		Town/City/Village SHEBOYGAN	
Design Spec AASHTO '83		Load	Year Signs 1981
Designed By B.F.K.	Design Checked ____	Drawn By JHG	Plans Checked B.W.
Approved Stanley M. Woods, Highway Engineer		5-31-85 Date	

OVERLAY LAYOUT

SHEET 1 OF 3

X 73930

STATE PROJECT NUMBER	SHEET NO
0059-34-12	8.1



RDWY. SECT. THRU PROPOSED JOINT

JOINT SECTION (RDWY.)

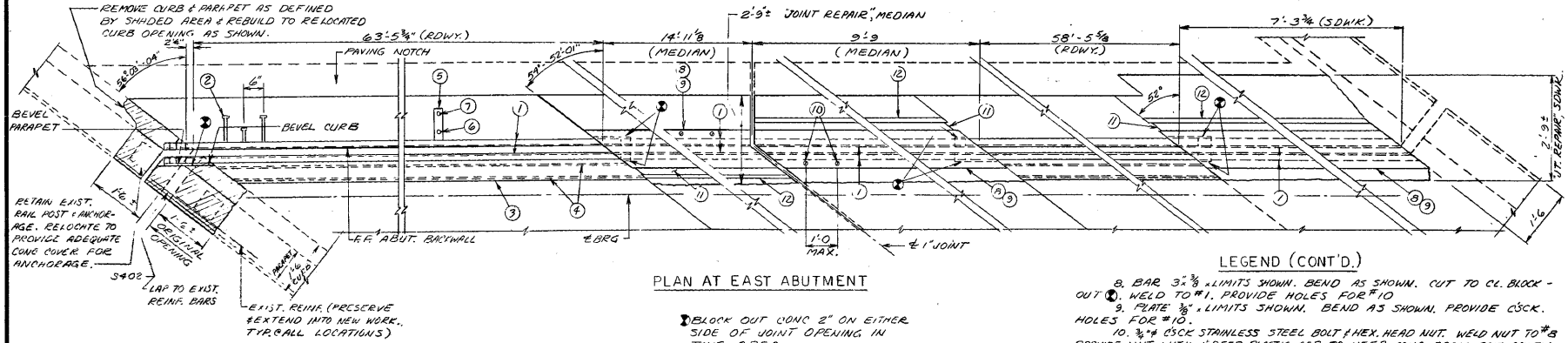
TEMPERATURE TABLE

TEMP.	JT. OPENING
90°	1 1/16"
80°	1 3/16"
70°	1 5/16"
60°	2 1/16"
50°	2 3/16"
40°	2 5/16"
30°	2 7/16"

SHADED UNDERSIDE OF DECK TEMPERATURE (°F.)

LEGEND

1. NEOPRENE STRIP SEAL & STEEL EXTRUSIONS ACME ACMA AS 400 A, D.S. BROWN S.S.-400, GENERAL TIRE GS-400 A, OR WATSON-BOWMAN S-400(A2). EXTRUSION TO BE EITHER ASTM. A 36, A588 OR A242.
2. STUDS ⅞"ϕ x 6⅜" LG. @ 6" ALT. CTRS. - WELD TO EXTRUSION & BEND AS SHOWN AFTER WELDING.
3. PLATE 5" x ½". FIELD WELD TO EXTRUSION AS SHOWN.
4. BAR 1½" x ½". WELD TO #3 & FIELD WELD TO EXIST. TEE AS SHOWN.
5. FABRICATE SUPPORT FROM 3" x ½" BAR AS SHOWN OR EQUIVALENT, AT 3'-0 CTRS. WELD TO #1. PROVIDE 1⅛"ϕ HOLE FOR #7 AND 1"ϕ HOLE FOR #6.
6. ¾"ϕ THREADED ROD WITH NUT. TACK WELD NUT TO #5.
7. SUPPORT ROD ⅜"ϕ x 1'-4 WITH 2 NUTS & WASHERS. THREAD ONE END 4". FIELD DRILL & GROUT INTO PLACE.

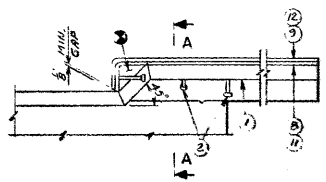


PLAN AT EAST ABUTMENT

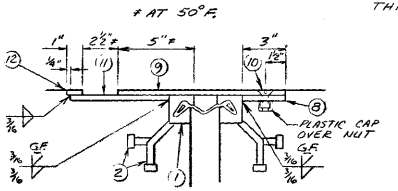
LEGEND (CONT'D.)

8. BAR 3" x ⅜ x LIMITS SHOWN. BEND AS SHOWN. CUT TO CL. BLOCK-OUT ⓓ. WELD TO #1. PROVIDE HOLES FOR #10
9. PLATE ⅜" x LIMITS SHOWN. BEND AS SHOWN. PROVIDE CSCK. HOLES FOR #10.
10. ⅜"ϕ CSCK STAINLESS STEEL BOLT & HEX. HEAD NUT. WELD NUT TO #8. PROVIDE NUT WITH 1" DEEP PLASTIC CAP TO KEEP CONC FROM BOLT CAVITY.
11. BAR ⅜" x LIMITS SHOWN. BEND AS SHOWN. CUT TO CL. BLOCK-OUT ⓓ. WELD TO #1.
12. BAR 1" x ⅜" x LIMITS SHOWN. BEND AS SHOWN. WELD TO # 11.

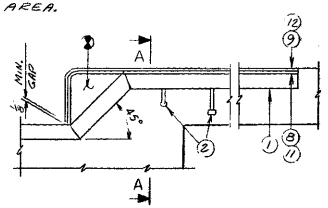
ⓓ BLOCK OUT CONC 2" ON EITHER SIDE OF JOINT OPENING IN THIS AREA.



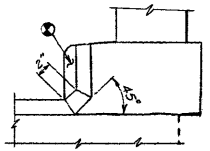
SECTION AT MEDIAN



SECTION A



SECTION AT SDWK



SECTION AT CURB

NOTE: WORK THIS SHEET WITH SHEET 3.

No.	Date	Revision	By

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

STRUCTURE B-59-48

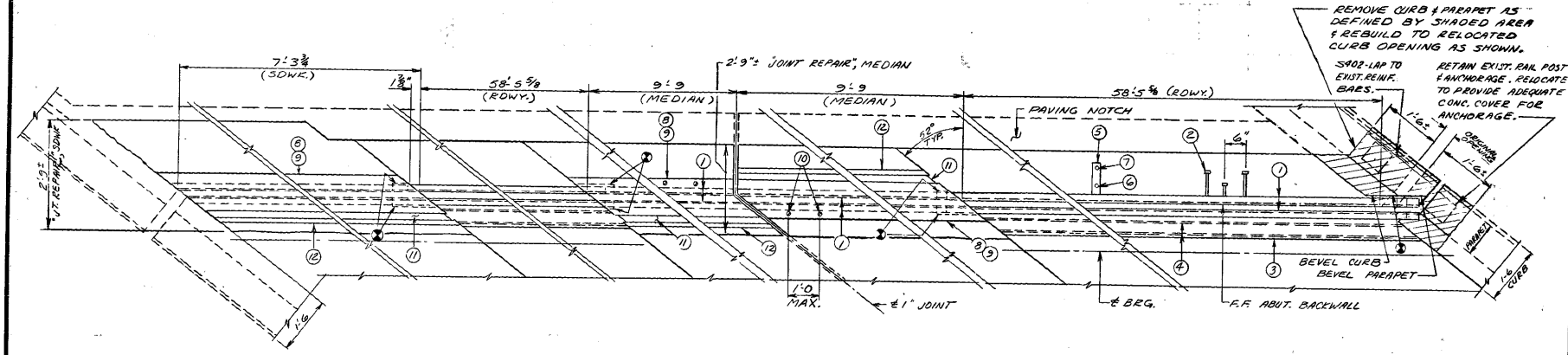
Const. Spec.	Drawn By	Plans Checked
1981	JHG	B.W.

EXPANSION JOINT

SHEET 2 OF 3

X 73931

STATE PROJECT NUMBER	SHEET NO.
0059-34-12	82



PLAN AT WEST ABUTMENT

② BLOCK OUT CONC. 2" ON EITHER SIDE OF JOINT OPENING IN THIS AREA.

BILL OF BARS

BAR MARK	NO. REQ'D.	LENGTH	LOCATION
5501	84	8'-3	PAVING BLOCK
5402	8	1'-9	PARAPET

NOTE: THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.

JOINT NOTES

ONE FIELD SPLICE PERMITTED ON EACH SIDE OF MEDIAN IN STEEL EXTRUSION, IF USED. DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE SEAL.

SAND BLAST CLEAN STEEL EXTRUSIONS PRIOR TO COATING WITH LUBRICANT ADHESIVE FOR NEOPRENE SEAL.

STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ARMOR, ANCHOR STUDS & HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE".

MANUFACTURER SHALL FURNISH GLAND WITH TOP SIDE LABELED.

ITEMS #3 & #4 WILL BE PAID FOR AS "STRUCTURAL CARBON STEEL"

AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN EXTRUSIONS SUCH THAT THEY ARE FREE FROM WARP, TWIST AND SWEEP.

NOTE: WORK THIS SHEET WITH SHEET 2.

No.	Date	Revision	By

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

STRUCTURE B-59-48

Const. Spec.	Drawn By	Plans Checked
1981	JHG	B.W.

EXPANSION JOINT DETAILS

SHEET 3 OF 3

X 73932

BRIDGE ASBESTOS INSPECTION REPORT

GEI Consultants
3159 Voyager Drive
Green Bay, WI 54311
920.455.8200 Phone

Bridge Asbestos Inspection Report

WisDOT Project ID: 4291-02-00
Structure Number: B-59-048
Structure Name: CTH PP over Sheboygan River
City/County: City of Sheboygan, Sheboygan County, Wisconsin
GEI project Number: 1904156
Date Inspected: August 13, 2019
Inspected by: Paul Garvey
Asbestos Inspector License Number: All-117079
Consultant Company: GEI Consultants, Inc.

Summary:

An asbestos inspection of Structure B-59-048 was conducted on August 13, 2019 by Paul M. Garvey, Asbestos Inspector License No. AII-117079. Asbestos-containing material (ACM) **IS** present on this structure.

The inspection to identify and collect samples of potential asbestos-containing material (ACM) was completed following WisDOT standard sampling procedures for bridge inspections found in FDM 21-35-45. The ACM was detected in grey caulk within the wall joints and sidewalk joints of the structure.

Asbestos-containing material has been found in Structure B-59-048 Standard Special Provision (STSP) 203-005 shall be included in the plans and abatement will be required if the gray caulk is disturbed during the structure rehabilitation. If the gray caulk is not disturbed during the structure rehabilitation, then Standard Special Provision (STSP) 107-120 shall be included in the plans and abatement will not be required. The contractor will be responsible for completion of the Notification of Demolition and/or Renovation (DNR form 4500-113) if required. A copy of the inspection report is available from the region office.

Sample #	Sample Description	Sample Location	Method and Analytical Results	Category I or II non-friable or No ACM	Total Amount of Material on Structure
B-59-48-1A	Gray paint	Concrete span shims	PLM, non-detect	No ACM	N/A
B-59-48-1B	Gray paint	Concrete span shims	PLM, non-detect	No ACM	N/A
B-59-48-1C	Gray paint	Concrete span shims	PLM, non-detect	No ACM	N/A
B-59-48-2A	Black tar	Deck joints and top of abutment	PLM, non-detect	No ACM	N/A
B-59-48-2B	Black tar	Deck joints and top of abutment	PLM, non-detect	No ACM	N/A

B-59-48-2C	Black tar	Deck joints and top of abutment	PLM, non-detect	No ACM	N/A
B-59-48-3A	Gray caulk	Wall joints and sidewalk joints	PLM, 2% Chrysotile Asbestos	Category II non-Friable	80 LF
B-59-48-3B	Gray caulk	Wall joints and sidewalk joints	Not Tested – Positive Stop	See 3A	See 3A
B-59-48-3C	Gray caulk	Wall joints and sidewalk joints	Not Tested – Positive Stop	See 3A	See 3A

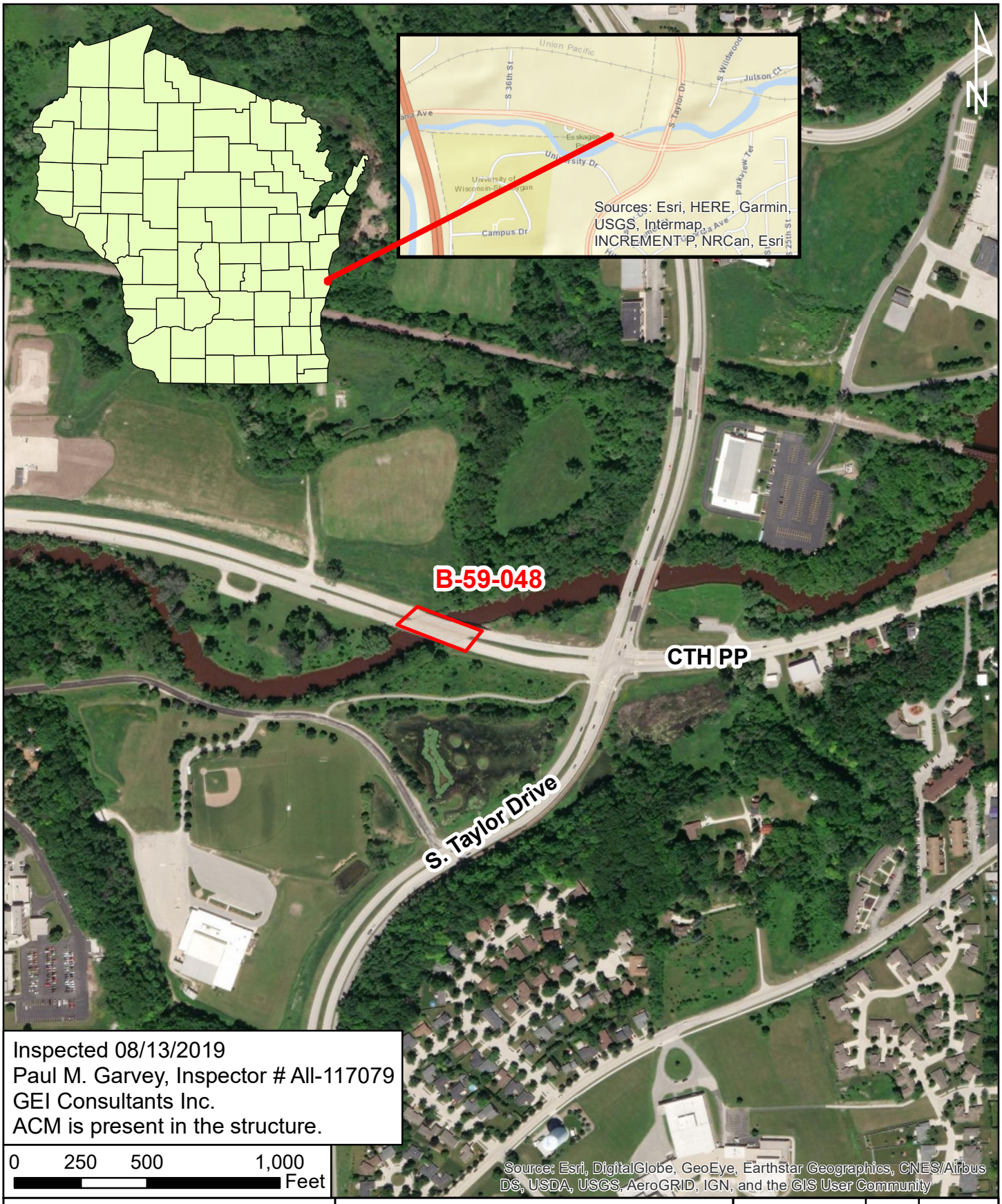
If you have any questions, please contact us at (920) 455-8200.

GEI CONSULTANTS, INC.

Kyle C. Sandmire
Environmental Scientist

Paul M. Garvey
Senior Scientist

Attachments:
B-59-048 Report Table
B-59-048 Map
B-59-048 Photo Log
B-59-048 Bulk Asbestos Sample Analysis Summary
B-59-048 Bulk Asbestos Sample Chain of Custody



Inspected 08/13/2019
Paul M. Garvey, Inspector # All-117079
GEI Consultants Inc.
ACM is present in the structure.

GEI Consultants
3159 Voyager Drive
Green Bay, WI 54311
920.455.8200

WisDOT Project 4291-02-00
Structure B-59-048
CTH PP
over Sheboygan River
Sheboygan County

DESIGNED BY	KCS	8/21/2019
DRAWN BY	KCS	8/21/2019
APPROVED BY	PMG	8/21/2019
SCALE	1 inch = 500 feet	
FIGURE NO.	B-59-048	

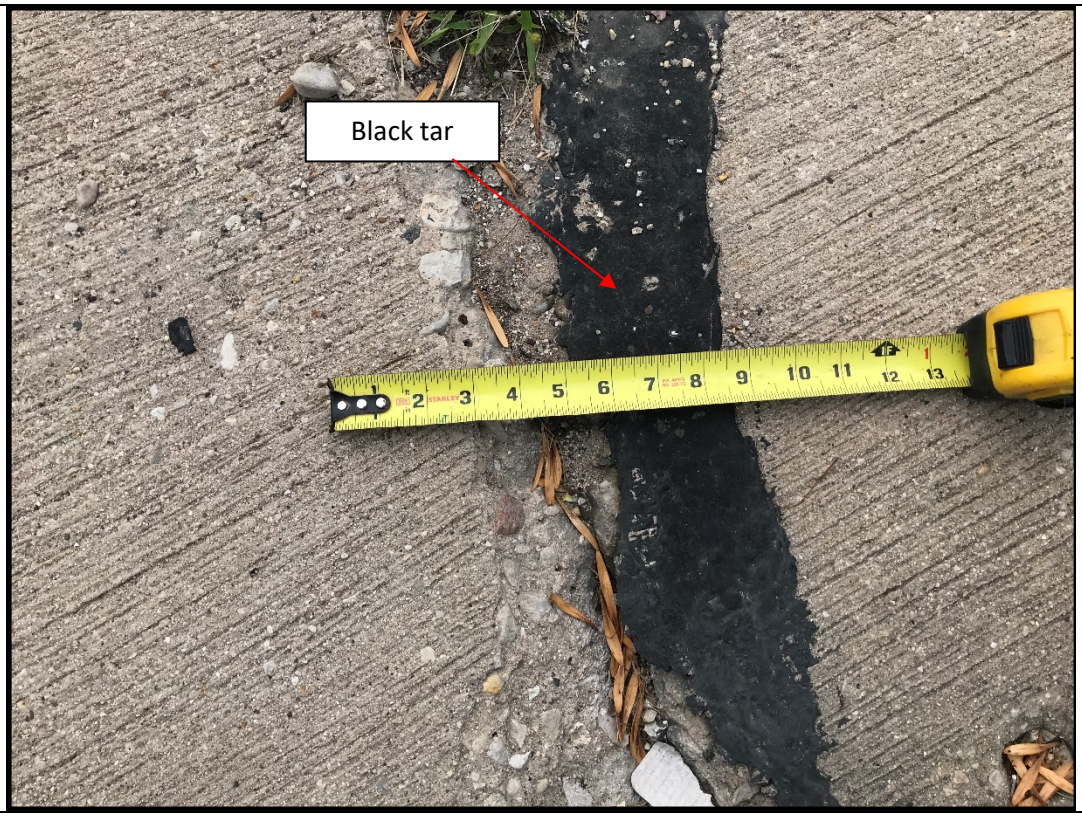
PHOTOGRAPHIC LOG

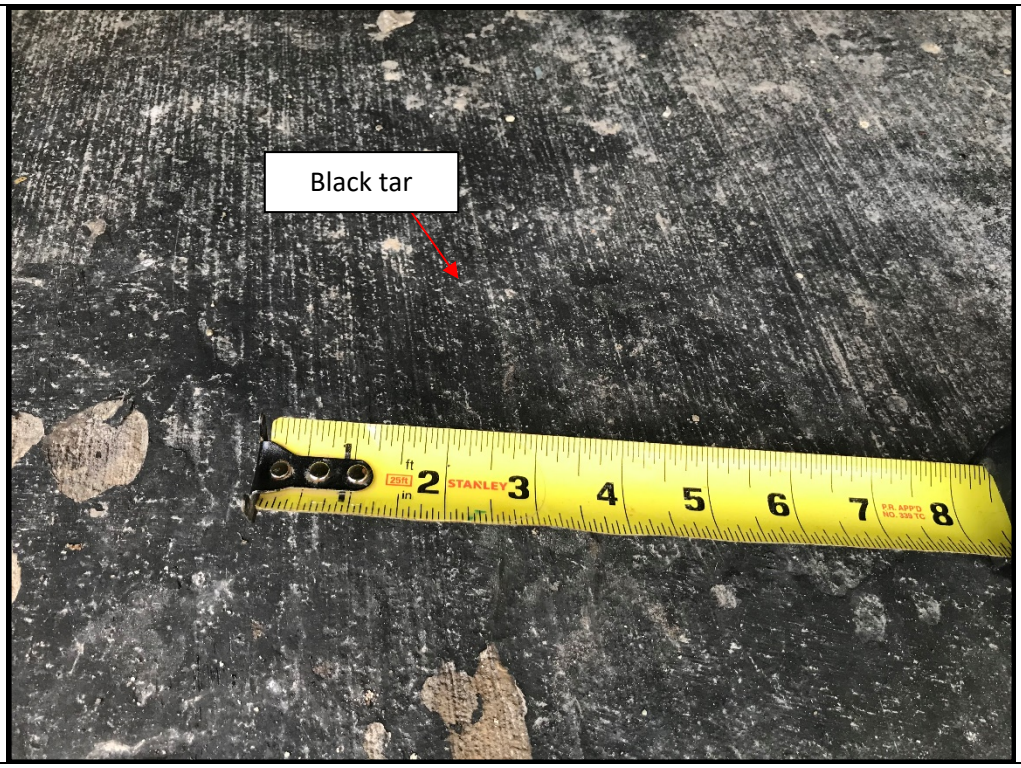
PHOTOGRAPH NO: 1	
DIRECTION: E	
DESCRIPTION: Looking east at structure B-59-048.	

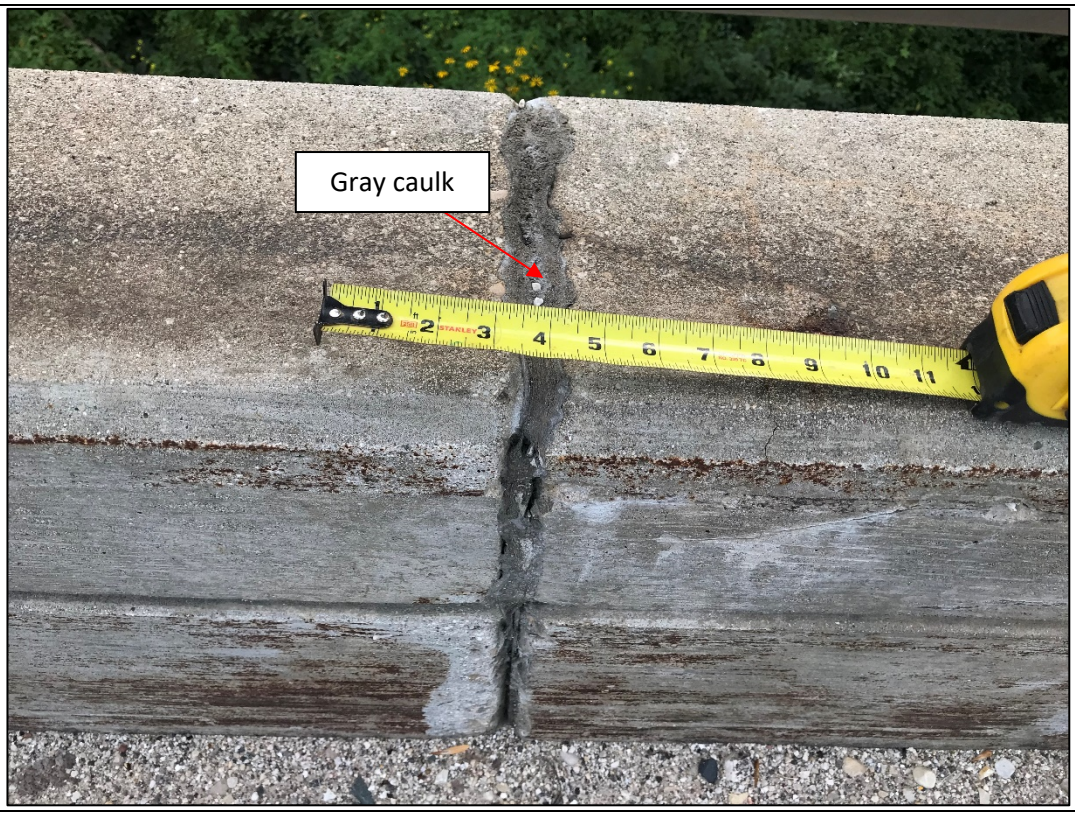
PHOTOGRAPH NO: 2	
DIRECTION: SE	
DESCRIPTION: Looking southeast at structure B-59-048.	

PHOTOGRAPH NO: 3	
DIRECTION: South	
DESCRIPTION: Looking at the structure identification plate.	

PHOTOGRAPH NO: 4	
DIRECTION: Down	
DESCRIPTION: Looking at the gray paint on the concrete span shims. The gray paint is not ACM.	

PHOTOGRAPH NO: 5 **DIRECTION**: Down **DESCRIPTION:** Looking at the black tar on the bridge deck joints. The black tar is not ACM.	

PHOTOGRAPH NO: 6 **DIRECTION**: North **DESCRIPTION:** Looking at the black tar on the top of the abutment. The black tar is not ACM.	

PHOTOGRAPH NO: 7	
DIRECTION: Down	
DESCRIPTION: Looking at the gray caulk on the deck wall and sidewalk joints. **The gray caulk on deck wall and sidewalk joints is non-friable ACM containing 2% Chrysotile asbestos.**	

Asbestos Bulk Analysis Report

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237

Telephone: 800.347.4010

Report Number: 19-08-02363

Client: GEI Consultants Inc
3159 Voyager Dr.
Green Bay, WI 54311

Received Date: 08/15/2019
Analyzed Date: 08/19/2019
Reported Date: 08/20/2019

Project/Test Address: Paul Garvey; B-59-048; Lower Falls Rd; Sheboygan Co; C-Sheboygan, WI

Client Number: 200598

Fax Number:

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
19-08-02363-001	B-59-48-1A		Silver/Gray Paint; Inhomogeneous	NAD	100% Non-Fibrous
19-08-02363-002	B-59-48-1B		Silver/Gray Paint; Inhomogeneous	NAD	100% Non-Fibrous
19-08-02363-003	B-59-48-1C		Silver/Gray Paint; Inhomogeneous	NAD	100% Non-Fibrous
19-08-02363-004	B-59-48-2A		Black Tar; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
19-08-02363-005	B-59-48-2B		Black Tar; Homogeneous	NAD	4% Cellulose 96% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 200598 Report Number: 19-08-02363

Project/Test Address: Paul Garvey; B-59-048; Lower Falls Rd; Sheboygan Co; C-Sheboygan, WI

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
19-08-02363-006	B-59-48-2C		Black Tar; Homogeneous	NAD	2% Cellulose 98% Non-Fibrous
19-08-02363-007	B-59-48-3A		Gray Pliable; Homogeneous	2% Chrysotile	98% Non-Fibrous
			Total Asbestos:	2%	
19-08-02363-008	B-59-48-3B			Did Not Analyze (Positive Stop)	
19-08-02363-009	B-59-48-3C			Did Not Analyze (Positive Stop)	

Environmental Hazards Services, L.L.C

Client Number: 200598 Report Number: 19-08-02363

Project/Test Address: Paul Garvey; B-59-048; Lower Falls Rd;
Sheboygan Co; C-Sheboygan, WI

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials

QC Sample: 32-M22010-2

QC Blank: SRM 1866 Fiberglass

Reporting Limit: 1% Asbestos

Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020

Analyst: Christian H. Schaible

Reviewed By Authorized Signatory: Melissa Kanode

Missy Kanode
QA/QC Clerk

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0 VELAP 460172. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EHS Laboratories™
Environmental Hazards Services, LLC

Asbestos Chain-of-Custody Form

SHIP TO: 7469 Whitepine Rd. Richmond, VA 23237
Phone: (800) 347-4010 FAX: (804) 275-4907
ONLINE CLIENT PORTAL AVAILABLE FOR ANALYSIS RESULTS AT:
www.leadlab.com

19-08-02363
Due Date:
08/20/2019
(Tuesday)
AE
9 PLM

Company Name: GEI Consultants, Inc Account Number:
Address: 3159 Voyager Drive City/State/Zip: Green Bay, WI 54311
Phone #: 920.455.8430 Email: pgarvey@geiconsultants.com Fax: 920.455.8225
Project Name / Testing Address: B-59-048, Lower Falls Rd., Sheboygan Co. City/State (Required): C-Sheboygan, WI
Collected by: Paul M. Garvey, AII-117079 P.O. # 1904156

TURN AROUND TIMES: IF NO TAT IS SPECIFIED, SAMPLE(S) WILL BE PROCESSED AND CHARGED AS 3 - DAY TAT.

1 Day | 2 Day | 3 Day | * Same Day – Must Call Ahead | * Weekend – Must Call Ahead

No.	Client Sample ID	HA Area #	Collection Date	Collection Time	PLM	PLM Point Count 400	PLM Point Count 1000	PLM NY Protocol	TEM - Bulk	Comments
1	B-59-48-1A thru 1C		8/13/19	1400 AM / PM	X					* Positive stop on all A thru C series. *
2	B-59-48-2A thru 2C		↓	1400 AM / PM	X					
3	B-59-48-3A thru 3C		↓	1400 AM / PM	X					
4				AM / PM						
5				AM / PM						
6				AM / PM						
7				AM / PM						
8				AM / PM						
9				AM / PM						
10				AM / PM						

Released by: Paul M. Garvey Signature: Date/Time: 8/13/19 1300
Received by: Edith Briggs Signature: Date/Time: 8/19/19 1210pm

BRIDGE INSPECTION REPORT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Inspection Report for B-59-048

PP LOWER FALLS RD over SHEBOYGAN RIVER

Jun 17,2019

Type	Prior	Team Leader	Frequency (mos)	Performed
Routine	06-14-17	Foshag, James (3518)	24	X
Interim	04-26-05	Leibham, Mark R (3500)	0	
SIA Review	09-17-15	Foshag, James (3518)	48	X

Start Coordinates		End Coordinates (optional)	
Latitude	43°44'24.00"N	Latitude	
Longitude	87°44'54.00"W	Longitude	

Owner		Maintainer	
	COUNTY		COUNTY

Time Log

Hours	Minutes
1	0

Team members

Dan Campbell

	Name	Number	Signature	Signature Date
Inspector	Foshag, James	3518	James Foshag E-signed by Jim Foshag(jamesfoshag)	06-24-19

BRIDGE INSPECTION REPORT
Wisconsin Department of Transportation
DT2007 2003 s.84.17 Wis. Stats.

Identification & Location

Feature On:	Section Town Range:	Structure Number:
PP LOWER FALLS RD	S28 T15N R23E	B-59-048
Feature Under:	County:	
SHEBOYGAN RIVER	SHEBOYGAN	
Location	Municipality:	Structure Name:
0.1M W JCT CTH TA	SHEBOYGAN	

Geometry

measurements in feet, except where noted

Approach Roadway Width:	Bridge Roadway Width:	Total Length:
44	72.0	232.2
Approach Pavement Width:	Deck Width:	Deck Area (sq ft):
24	93.9	21524

Traffic

	Lanes	ADT	ADT year	Traffic Pattern
On	4	13477	2015	TWO WAY TRAFFIC

Capacity

Load Rating

Inventory rating:	Overburden depth (in):	Last rating date:	Controlling:
HS16	2.0	03-09-10	INTERIOR DECK GIRDER Prestress Stress Chk
Operating rating:	Deck surface material:	Re-rate for capacity (Y/N):	Control location:
HS39	LOW SLUMP CONCRETE		0.5 SPAN 01, 37.5
Posting:	Re-rate notes:		

Hydraulic

Classification

Scour Critical Code(113):	Q100 (ft3/sec):	
(8) STABLE-ABOVE TOP FOOTING	9200	
High water elevation (ft):	Velocity (ft/sec):	Sufficiency #:
591.8	7.6	86.6

Span(s)

Span #	Material	Configuration	Depth (in)	Length (ft)	Main
1	CONT PREST CONC	DECK GIRDER	45	74.6	
2	CONT PREST CONC	DECK GIRDER	45	75.3	Y
3	CONT PREST CONC	DECK GIRDER	45	74.6	

Expansion joint(s)

Temperature:

File:	New:

Clearance

Item	File Measurement (ft)	File Date	New Measurement (ft)
Highway Min Vertical On Cardinal			
Horizontal On Cardinal			

Construction History

Year	Work Performed	FOS id
1985	OVERLAY - CONCRETE	0059-34-12
1970	NEW STRUCTURE	4012-01-70

Maintenance Items History

Item	Recommended by	Status	Status change	Year completed
Deck - Seal Surface Cracks	Foshag, James (3518)	COMPLETE	06/24/19	2019
Seal deck cracks with Dural 50 Done with TK 9030				
Substructure - Clean Abutment / Pier Seats	Foshag, James (3518)	COMPLETE	06/15/17	2017
Clean and paint bearings				

Maintenance Items

Item	Priority	Recommended by	Status	Status change
Deck - Surface Repair Curb / Sidewalk	MEDIUM	Foshag, James (3518)	IDENTIFIED	11/18/15
Repair parapit wall on North side				
Misc - Cut Brush	MEDIUM	Foshag, James (3518)	IDENTIFIED	06/15/17
Cut brush around structure				

Elements

Chk	Element	Defect	Description	UOM	Total	Quantity in Condition State 1	2	3	4
X	**12**		**Reinforced Concrete Deck**	SF	21,525	21,482	43	0	0
		1080	Delamination - Spall - Patched Area Small hole in under side of deck from core drilling.	SF		0	3	0	0
		1130	Cracking (RC) Cracking with effloresence.	SF		0	40	0	0
	8514		Concrete Overlay	SF	21,525	20,838	687	0	0
		3210	Debonding/Spall/Patched Area/Pothole Spall in west bound lane at joint.	SF		0	3	0	0
		3220	Crack (Wearing Surface) Med Density size cracks. Map cracking various areas	SF		0	684	0	0
X	**109**		**Prestressed Concrete Open Girder**	LF	2,319	2,272	47	0	0
		1080	Delamination - Spall - Patched Area #10 has 1"x1" spall at abut. #10 has a spall at abut.	LF		0	4	0	0
		1110	Cracking (PSC) **Hairline cracking**	LF		0	43	0	0
X	**210**		**Reinforced Concrete Pier Wall**	LF	121	89	32	0	0
		1080	Delamination - Spall - Patched Area **#1 has a small spall**	LF		0	2	0	0
		1130	Cracking (RC) Hairline vertical cracking. Pier #4 has diagonal cracking. Pier #1 Has cracking.	LF		0	30	0	0
X	**215**		**Reinforced Concrete Abutment** North 1/2/ leaking on Both sides	LF	186	160	26	0	0
		1080	Delamination - Spall - Patched Area	LF		0	0	0	0
		1130	Cracking (RC) **# 1 abutment has hairline vertical cracks with medium density cracks at the mid-point**	LF		0	26	0	0
X	**234**		**Reinforced Concrete Cap** Small spall at waterline vertical cracking,	LF	186	157	29	0	0
		1130	Cracking (RC) **# 2 pier cap has diangonal crack. #4 has diagonal cracks. #1 have diagnal cracks**	LF		0	29	0	0

X	**300**		**Strip Seal Expansion Joint**	LF	241	233	8	0	0
		2310	Leakage, Seal Adhesion, Damage,Cracking	LF		0	8	0	0
			Torn gland @ different locations, both sides						
X	**311**		**Moveable Bearing**	EA	40	40	0	0	0
		1000	Corrosion	EA		0	0	0	0
		2210	Movement	EA		0	0	0	0
		2220	Alignment	EA		0	0	0	0
X	**313**		**Fixed Bearing**	EA	20	20	0	0	0
		1000	Corrosion	EA		0	0	0	0
X	**330**		**Metal Bridge Rail**	LF	485	482	3	0	0
		1000	Corrosion	LF		0	0	0	0
		1900	Distortion	LF		0	3	0	0
			Dent on south east end.						
X	**331**		**Reinforced Concrete Bridge Rail**	LF	484	242	62	180	0
		1080	Delamination - Spall - Patched Area	LF		0	0	180	0
			North side - remove loose concrete from top of parapet wall						
		1130	Cracking (RC)	LF		0	62	0	0
			Cracking throughout rail.						

BRIDGE INSPECTION REPORT
Wisconsin Department of Transportation
DT2007 2003 s.84.17 Wis. Stats.

Structure No.:**B-59-048**

Assessments

Chk	Element	Defect	Description	UOM	Total	Quantity in Condition State 1	2	3	4
X	**9001**		**Drainage - Ends of Structure** Flumes on northeast and southwest. Gravel shoulders.	EA	4	4	0	0	0
X	**9004**		**Drainage - Drainage Along Structure (Deck Drains)**	EA	2	2	0	0	0
X	**9007**		**Median** Trip hazard at SW corner.	EA	464	338	120	0	6
X	**9045**		**Slope Protection- Riprap**	EA	2	2	0	0	0
X	**9168**		**Concrete Diaphragm** **#8 has a delam on south end**	EA	40	39	1	0	0
X	**9322**		**Approach Roadway - Concrete (non-structural)**	EA	2	2	0	0	0

NBI Ratings

	File	New
Deck	7	7
Superstructure	7	7
Substructure	6	6
Culvert	N	N
Channel	8	8
Waterway	8	8

Structure Specific Notes

Inspection Specific Notes

Remove all loose concrete along parapet wall on North side
Clean and paint bearings
Repair curb and parapit wall

Inspector Site-Specific Safety Considerations

Structure Inspection Procedures

Special Requirements

	Chk	Hours	Cost	Comments
Other	X			Visual

Underwater Probe Form
B-59-048

General Site Conditions - Scour

Small scour pocket at pier #2

General Site Conditions - Embankment Erosion/Conditions

No concerns

Substructure Notes

Chk	Unit	Max Water Depth(ft)	Mode	Notes
X	Cardinal		Dry	Rip rap
X	Pier 1	3.0	Wade	
X	Pier 2	4.0	Wade	
X	Non Cardinal		Dry	Rip rap

STRUCTURE INVENTORY AND APPRAISAL FIELD REVIEW FORM

B-59-048
PP LOWER FALLS RD over SHEBOYGAN RIVER

LOCATION

(3) Municipality:	SHEBOYGAN
(16) Latitiude(° ' "):	43°44'24.00"N
(17) Longitude(° ' "):	87°44'54.00"W

TRAFFIC SERVICE

(28A) Lanes On:	4
(28B) Lanes Under:	0
(102) Traffic Pattern On:	-NO TRAFFIC -ONE WAY TRAFFIC X-TWO WAY TRAFFIC
(102) Traffic Pattern Under:	X-NO TRAFFIC -ONE WAY TRAFFIC -TWO WAY TRAFFIC
(19) Detour Length(mi):	6

GEOMETRY

(49) Structure Length(ft):	232.2	
(50) Sidewalk Width(ft):	**Left:** 0.0	**Right:** 6.0
(50) Curb Width(ft):	1.5	
(52) Culvert Barrel Length(ft):		
(34) Skew:	**Angle(°):** 52	**Direction:** -RIGHT FORWARD X-LEFT FORWARD
	Cardinal	**Non-Cardinal**
(51) Bridge Roadway Width(ft):	72.0	72.0
(52) Deck Width(ft):	93.9	91.5
Right Wingwall Length(ft):		
Left Wingwall Length(ft):		
(32) Approach Roadway Width(ft):	44	0
	Cardinal Under Clearance	**Non-Cardinal Under Clearance**
(47) Minimum Horizontal(ft):		
(55) Minimum Right Lateral(ft):		
(56) Minimum Left Lateral(ft):		

RAILING APPRAISAL

(36A) Bridge Rail Adequacy:	-SUB-STANDARD X-STANDARD -NOT APPLICABLE
(36B) Transition Adequacy:	X-SUB-STANDARD -STANDARD -NOT APPLICABLE
(36C) Approach Guardrail Adequacy:	X-SUB-STANDARD -STANDARD -NOT APPLICABLE
(36D) Guardrail Termination Adequacy:	X-SUB-STANDARD -STANDARD -NOT APPLICABLE

Outer Rail:

Left	Right	Type
		TYPE F (TWO SQUARE TUBES) - STEEL(8)
		TYPE F (3 SQUARE TUBES) - STEEL(65)
		TYPE F (4 SQUARE TUBES) - STEEL(72)
		TYPE M-STEEL 3 SQUARE TUBES(93)
		SLOPED FACE PARAPET LF(91)
		SLOPED FACE PARAPET HF(92)
		VERTICAL FACE PARAPET TYPE A(74)
		TYPE W-THRIE BEAM(79)
		TYPE H ON VERTICAL PARAPET(80)
		TIMBER(38)
X	X	OTHER(99) (Please specify) **Left:** TYPE A ROADWAY - ALUMINUM(2) **Right:** TYPE A ROADWAY - ALUMINUM(2)

Transition Type:

	CONT GUARD RAIL
X	NO APP GRDRL
	NO ATTACHMENT
	22 MM(7/8") BOLT (Please enter quantity)
	25 MM(1") BOLT (Please enter quantity)
	OTHER (Please specify)

Approach Attachment Rail Note:

Guardrail Termination Type:

	(01) ENERGY ABSORBING TERMINAL/EAT
	(02) TURN DOWN
	(99) OTHER (Please specify)

Guardrail Termination Note:

ROADWAY ALIGNMENT APPRAISAL

(72) Approach Alignment Appraisal:

	3 Intolerable- Substantial speed reduction
	6 Fair- Minor speed reduction
X	8 Good- No speed reduction

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