DRAWING INDEX	
SHEET NO.	SHEET TITLE
T1	TITLE SHEET
1	GENERAL NOTES
2	STRUCTURE P-40-509 TRAFFIC CONTROL PLAN 1 OF 2
3	STRUCTURE P-40-509 TRAFFIC CONTROL PLAN 2 OF 2
4	STRUCTURE P-40-848 TRAFFIC CONTROL PLAN
5	MISCELLANEOUS QUANTITIES
6	INLET PROTECTION
HS1	STRUCTURE P-40-509 GENERAL PLAN AND ELEVATION
HS2	TYPICAL SECTION AND QUANTITIES
HS3	FRAMING PLAN
HS4	STEEL DETAILS
S1	STRUCTURE P-40-848 GENERAL PLAN AND ELEVATION
S2	TYPICAL SECTION AND QUANTITIES
S3	DEMOLITION PLAN
S4	TEMPORARY SHORING AND DEMOLITION STAGING 1 OF 3
S5	TEMPORARY SHORING AND DEMOLITION STAGING 2 OF 3
S6	TEMPORARY SHORING AND DEMOLITION STAGING 3 OF 3
S7	FRAMING PLAN
S8	GIRDER DETAILS 1 OF 3
S9	GIRDER DETAILS 2 OF 3
S10	GIRDER DETAILS 3 OF 3
S11	SUPERSTRUCTURE DETAILS
S12	DECK ELEVATIONS
S13	PARAPET DETAILS

CITY OF MILWAUKEE

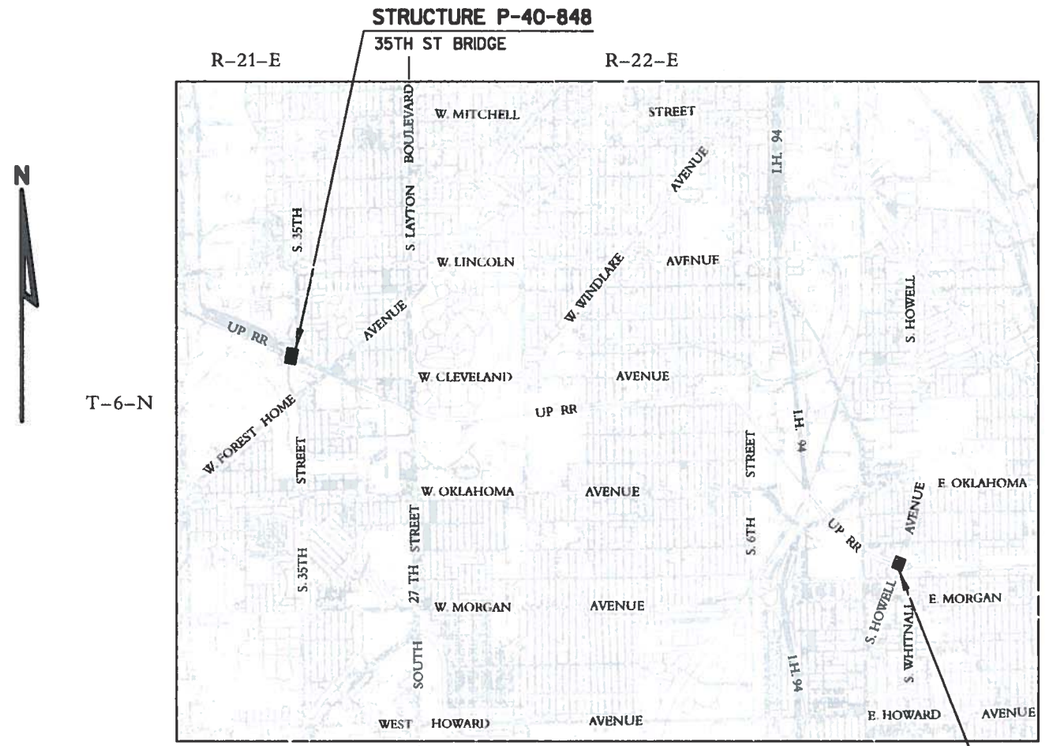
REHABILITATION OF

35TH ST. / HOWELL AVE. OVER UPRR

IMPACT DAMAGE REPAIRS AT THE 35TH ST BRIDGE AND HOWELL AVENUE BRIDGE

LOCAL STREET

MILWAUKEE COUNTY



STRUCTURE P-40-509
HOWELL AVE. BRIDGE

GROUND COORDINATES ON THIS PLAN ARE BASED ON THE WISCONSIN STATE PLANE COORDINATE SYSTEM SOUTH ZONE, NAD 83(91) DATUM.

TO CONVERT GROUND COORDINATES (N & E) TO GRID COORDINATES (X & Y) MULTIPLY BY 0.99992362.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE CITY OF MILWAUKEE DATUM.

TO CONVERT ELEVATIONS SHOWN ON THIS PLAN TO NATIONAL GEODEDIC VERTICAL DATUM OF 1929, ADD 580.603 TO ELEVATIONS SHOWN ON THIS PLAN.

WISCONSIN
JASON R. SADOWSKI
E-38660
BROOKFIELD, WI
PROFESSIONAL ENGINEER
5/6/2014

APPROVED BY:

Craig S. Roberts — 5/7/14
STRUCTURAL DESIGN MANAGER — DATE

5.7.14
FACILITIES OPERATIONS MANAGER — DATE

5/8/14
CITY ENGINEER & SPECIAL DEPUTY COMMISSIONER OF PUBLIC WORKS — DATE

City of Milwaukee
Department of Public Works
Infrastructure Services Division

BLOOM COMPANIES, LLC
Infrastructure, Innovation and Ingenuity
10501 W. Research Drive • Milwaukee, WI 53226
Phone: (414) 771-3380 Fax: (414) 771-4490

SOUTH 35TH ST/HOWELL AVE
BRIDGES OVER UPRR
TITLE SHEET

REVISIONS

DESIGNED BY	BDT
DRAWN BY	TAL
CHECKED BY	JRS
DATE	MAY 2014
SCALE	NTS
JOB NUMBER	BR100-14-0108/109
SHEET NUMBER	T1 OF T1
OF	24

FILE NAME: F:\RNH-3259C 35th Street over UPRR Bridge Repairs_Designs\04_Structures_Bridges\cdsPrelimsP-40-848\Intro Sheets\DLP-40-509 848_A-TITLE new.dgn
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UTILITY AND PROJECT CONTACTS

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Karen.rogney@milwaukee.gov

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841 N. BROADWAY, ROOM 920
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841 N. BROADWAY, ROOM 512
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david.henke@milwaukee.gov

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MR. DAVE GOLDAPP
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MR. KRISTINA BETZOLD
WISCONSIN DNR SOUTHEAST REGION
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AT&T

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jb5175@att.com

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MILWAUKEE METRO SEWERAGE DIST.

MS. DEBRA JENSEN,
PLANNING SERVICES SUPERVISOR
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DJensen@mmsd.com

WE ENERGIES (GAS, ELECTRIC, STEAM)

MR. JON MEIERS
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jon.meiers@we-energies.com

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UNION PACIFIC RAILROAD

MR. JOHN VENICE
101 N. WACKER DRIVE, SUITE 1920
CHICAGO, IL 60606
PHONE: (312) 777-2043
jnvenice@up.com

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

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

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

GENERAL NOTES

THE CONTRACTOR SHALL CONTACT THE UTILITY DIGGERS HOTLINE TO LOCATE AND FIELD VERIFY UTILITIES PRIOR TO THE START OF WORK. THE LOCATIONS OF EXITING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE, AND ARE BASED ON EXISTING UTILITY MAPS. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. ANY LOCAL, MUNICIPAL OR OTHER UTILITY THAT IS NOT A MEMBER OF DIGGERS HOTLINE SHALL BE CONTACTED SEPARATELY.

THE CONTRACTOR SHALL PROTECT AND USE CAUTION AROUND EXISTING UTILITIES. ANY COST INCURRED TO REPAIR EXISTING FACILITIES DAMAGED DURING CONSTRUCTION WILL BE CHARGED TO THE CONTRACTOR.

RIGHT OF WAY LINES SHOWN ARE APPROXIMATE.

PROTECT INLETS WITH PROPER INLET PROTECTION AT LOCATIONS EXHIBITING RISK OF BEING IMPACTED BY CONSTRUCTION OPERATIONS AS SHOWN ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.

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

WHEN PORTIONS OF THE EXISTING ROADWAYS, DRIVEWAYS, AND SIDEWALKS ARE TO BE REMOVED TO ACCOMMODATE NEW CONSTRUCTION, THE LINE OF REMOVAL SHALL BE NEATLY DELINEATED WITH A SAW CUT THROUGH THE ASPHALTIC AND/OR CONCRETE PAVEMENT SUCH THAT REMOVAL OF THE PAVEMENT WILL BE ACCOMPLISHED WITHOUT DAMAGE TO THE REMAINING PORTIONS OR REMOVED TO THE NEXT JOINT AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL NOTIFY THE CITY TRAFFIC UNIT TWO WEEKS PRIOR TO PROJECT COMPLETION TO ALLOW FOR THE PLACEMENT OF ANY PERMANENT SIGNING WHICH WAS REMOVED OR MOVED DURING CONSTRUCTION OPERATIONS.

ABBREVIATIONS

AGG	AGGREGATE
BAD	BASE AGGREGATE DENSE
C&G	BENCH MARK
C/L	CURB AND GUTTER
CONC	CENTER OR CONSTRUCTION LINE
CP	CONCRETE
CY	CONTROL POINT
CS	CUBIC-YARD
D	DEGREE OF CURVE
Δ	DELTA
E	EASTING
HMA	HOT MIX ASPHALT
INV	INVERT
L	LENGTH OF CURVE
MH	MAN HOLE
N	NORTHING
NC	NORMAL CROWN
O.C.	ON CENTER
OCS	OVERHEAD CONTACT SYSTEM
PAVT	PAVEMENT
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PE	PRIVATE ENTRANCE
PI	POINT OF INTERSECTION
PLE	PERMANENT LIMITED EASEMENT
PT	POINT OF TANGENT
R	RADIUS OF CURVE
R/L	REFERENCE LINE
R/W	RIGHT OF WAY
RC	REVERSE CROWN
REQD	REQUIRED
RT	RIGHT
SALC	SALVAGED
SB	SOUTH BOUND
SC	POINT OF SPIRAL TO CURVE
SDD	STANDARD DETAIL DRAWINGS
SE	SUPERELEVATION
SF	SQUARE FOOT
SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
STA	STATION
SY	SQUARE YARD
ST	POINT OF SPIRAL TO TANGENT
T	TANGENT LENGTH
TLE	TEMPORARY LIMITED EASEMENT
TS	POINT OF TANGENT TO SPIRAL
V	VELOCITY
VCL	VERTICAL CURVE LENGTH

INDEX OF CIVIL SHEETS

City of Milwaukee
Department of Public Works
Infrastructure Services Division

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10501 W. Research Drive • Milwaukee, WI 53226
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SOUTH 35TH ST/HOWELL AVE BRIDGES OVER UPRR GENERAL NOTES

REVISIONS

DESIGNED BY JRS
DRAWN BY TAL
CHECKED BY BDT
DATE MAY 2014 | SCALE NTS
JOB NUMBER BR100-14-0108/109
SHEET NUMBER 1 OF 6
OF 24

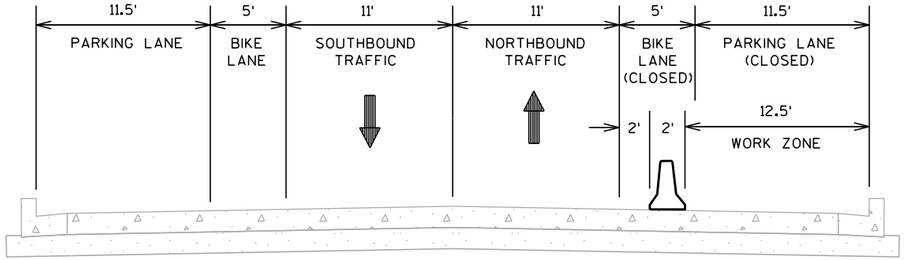
FILE NAME: F:\BM\32520 35th Street over UPRR Bridge Repair\5.Design\04.Structures.Bridges\dsd\Prelim\F-40-848\intro Sheets\01_F-40-509-848_GENERAL NOTES.dgn
DATE: 5/6/2014 4:27:17 PM Plotted by: tregear PEN TABLE: V8_STRUCTURAL_REV.TBL

NOTES

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

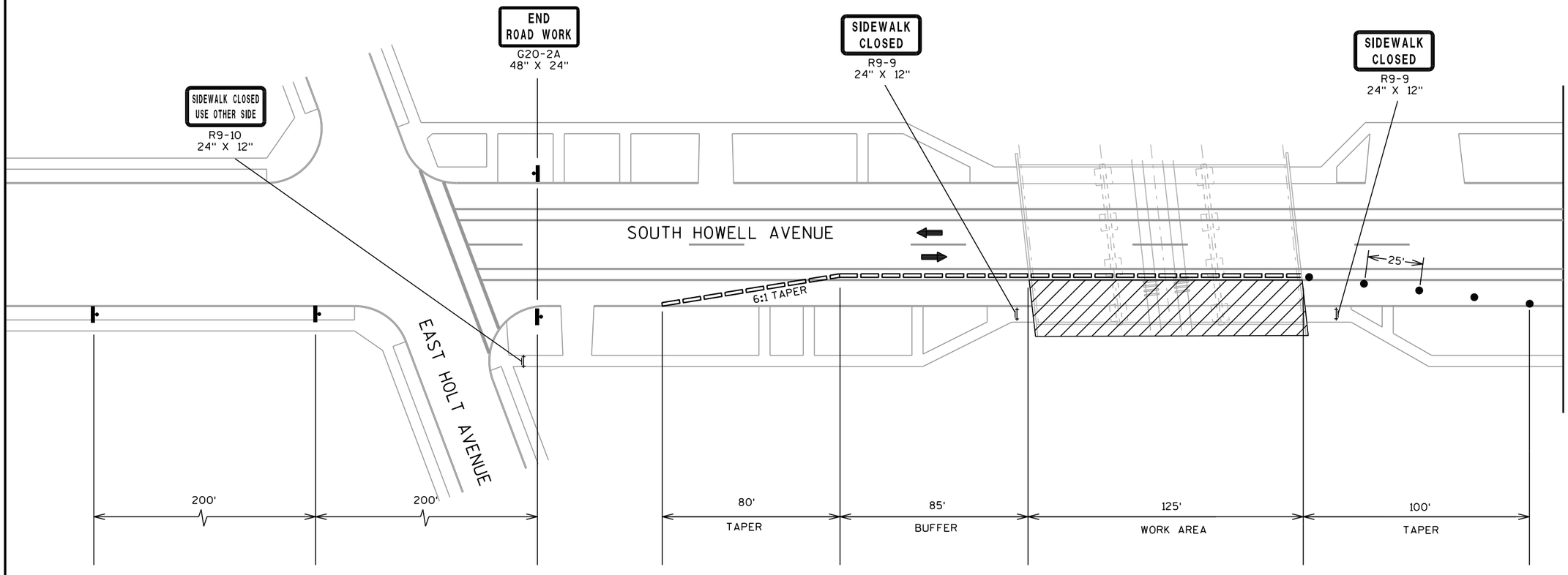
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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.



HOWELL AVENUE

LOOKING NORTH



LEGEND

- TYPE II BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC

City of Milwaukee

Department of Public Works

Infrastructure Services Division

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Infrastructure, Innovation and Ingenuity
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Phone: (414) 771-3390 • Fax: (414) 771-4490

SOUTH HOWELL AVENUE BRIDGE OVER UNION PACIFIC RAILROAD STRUCTURE P-40-509 TRAFFIC CONTROL PLAN 1 OF 2

REVISIONS

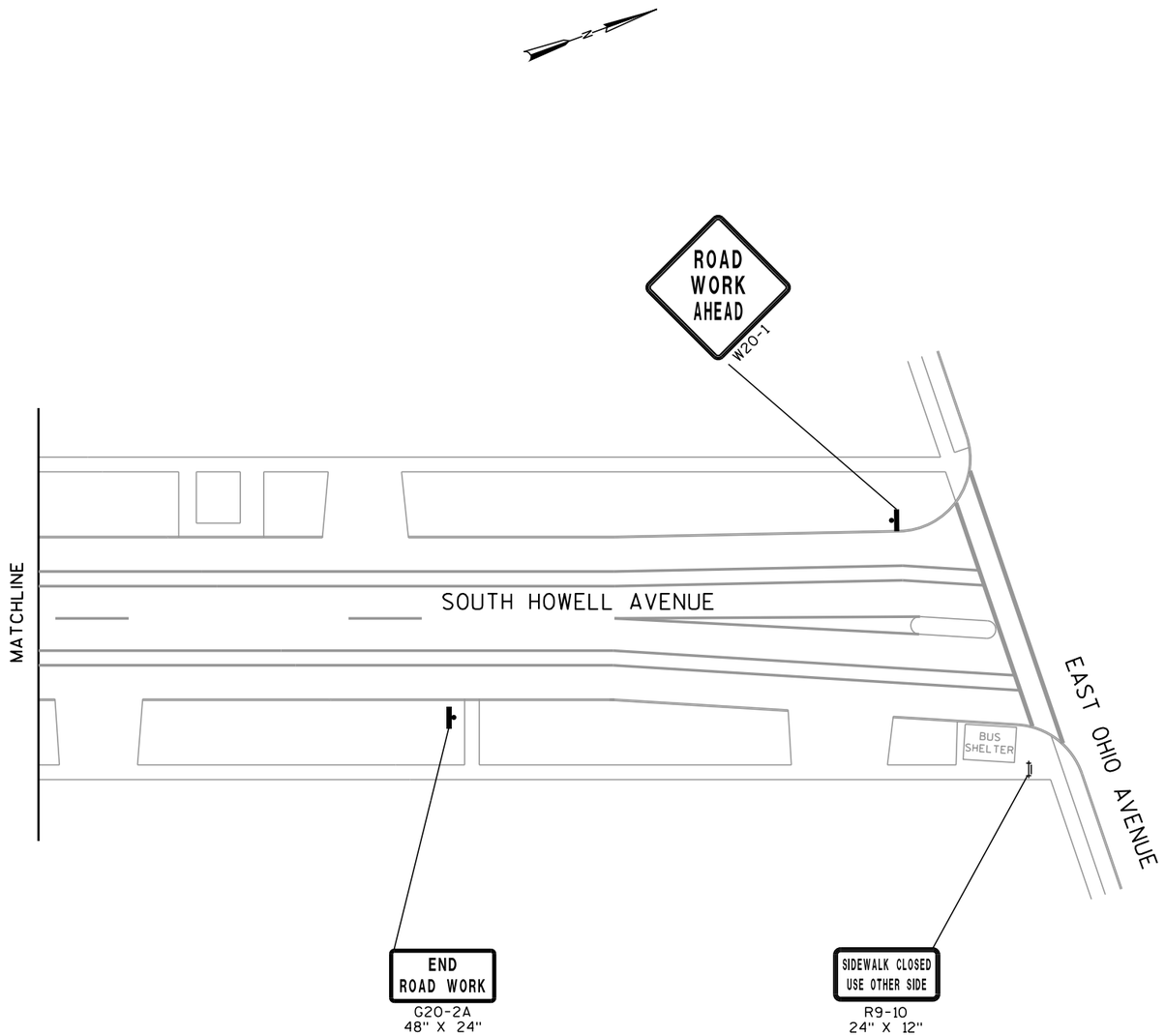
DESIGNED BY	NRK
DRAWN BY	NRK
CHECKED BY	BDT
DATE	MAY 2014
SCALE	NTS.
JOB NUMBER	BR100-14-0108/109
SHEET NUMBER	2 OF 6
OF	24

NOTES

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

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

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.



LEGEND

- TYPE II BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC

City of Milwaukee

Department of Public Works

Infrastructure Services Division

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Infrastructure Innovation and Ingenuity
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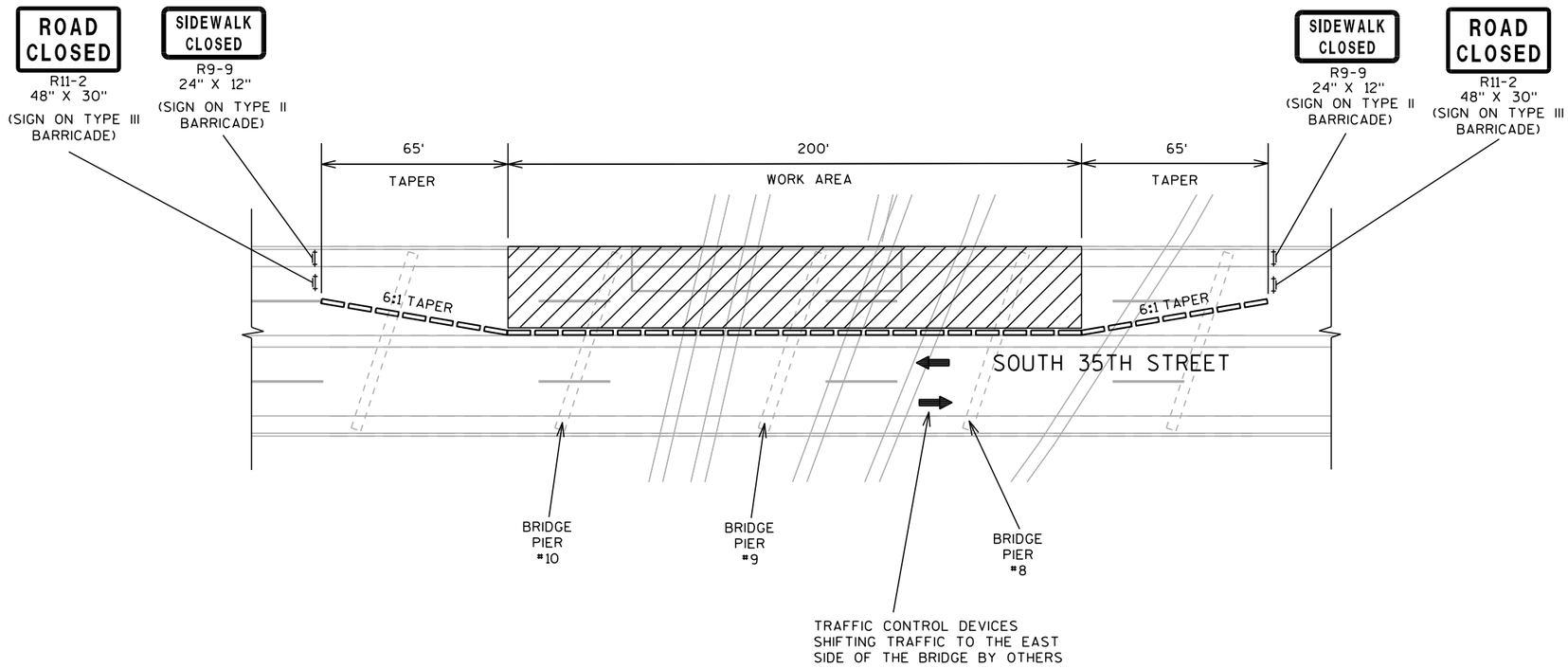
SOUTH HOWELL AVENUE BRIDGE OVER UNION PACIFIC RAILROAD STRUCTURE P-40-509 TRAFFIC CONTROL PLAN 2 OF 2

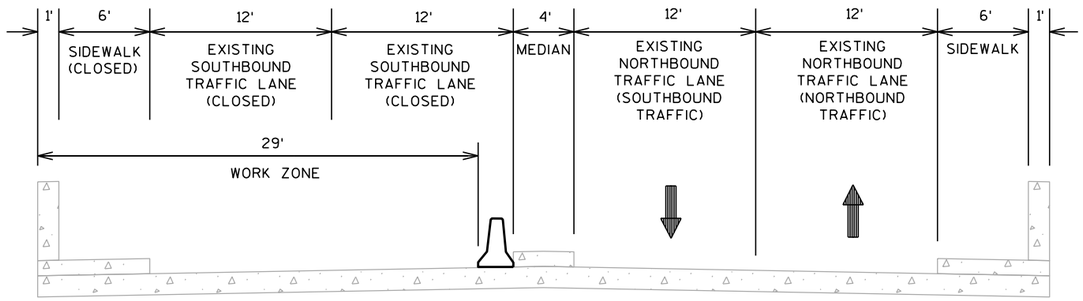
REVISIONS

DESIGNED BY	NRK
DRAWN BY	NRK
CHECKED BY	BDT
DATE	MAY 2014
SCALE	NTS
JOB NUMBER	BR100-14-0108/109
SHEET NUMBER	3 OF 6
OF	24



INLET PROTECTION

INLET PROTECTION TYPE B TO BE USED AT THE BRIDGE DRAINS LOCATED BOTH NORTH AND SOUTH OF THE REPAIR LOCATION



35TH STREET
LOOKING NORTH

TRAFFIC CONTROL NOTES

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES 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.

CITY OF MILWAUKEE TO MAINTAIN OTHER TRAFFIC CONTROL DEVICES.

LEGEND

- TYPE II OR TYPE III BARRICADE (DEPENDING ON LOCATION) WTH ATTACHED SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC

City of Milwaukee
Department of Public Works
Infrastructure Services Division

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Infrastructure, Innovation and Ingenuity
10501 W. Research Drive • Milwaukee, WI 53226
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SOUTH 35TH STREET BRIDGE OVER UNION PACIFIC RAILROAD
STRUCTURE P-40-848
TRAFFIC CONTROL PLAN

REVISIONS

DESIGNED BY NRK
DRAWN BY NRK
CHECKED BY BDT
DATE MAY 2014
SCALE NTS
JOB NUMBER BR100-14-0108/109
SHEET NUMBER 4 OF 6
OF 24

MISCELLANEOUS QUANTITIES - SOUTH HOWELL AVENUE BRIDGE								
	603.8000	603.8125	643.0300		643.0410		643.0900	
DURATION	CONCRETE BARRIER TEMPORARY PRECAST DELIVERED	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED	TRAFFIC CONTROL DRUMS		TRAFFIC CONTROL BARRICADES TYPE II		TRAFFIC CONTROL SIGNS	
DAYS	LF	LF	EACH *	DAY	EACH *	DAY	EACH *	DAY
28	290	290	5	140	4	112	10	280

*FOR INFORMATION ONLY

MISCELLANEOUS QUANTITIES - SOUTH 35TH STREET BRIDGE								
	603.8000	603.8125	628.7010	643.0410		643.0420		643.0900	
DURATION	CONCRETE BARRIER TEMPORARY PRECAST DELIVERED	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED	INLET PROTECTION TYPE B	TRAFFIC CONTROL BARRICADES TYPE II		TRAFFIC CONTROL BARRICADES TYPE III		TRAFFIC CONTROL SIGNS	
DAYS	LF	LF	EACH	EACH*	DAY	EACH*	DAY	EACH*	DAY
42	330	330	2	2	84	2	84	4	168

*FOR INFORMATION ONLY

City of Milwaukee

Department of Public Works

Infrastructure Services Division

BLOOM COMPANIES, LLC
Infrastructure Innovation and Ingenuity
10501 W. Research Drive • Milwaukee, WI 53226
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SOUTH HOWELL AVENUE BRIDGE,
SOUTH 35TH STREET BRIDGE
OVER UNION PACIFIC RAILROAD
MISCELLANEOUS QUANTITIES

REVISIONS

DESIGNED BY
NRK

DRAWN BY
NRK

CHECKED BY
BDT

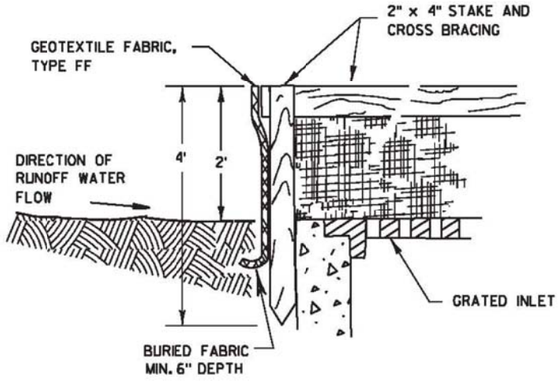
DATE
MAY 2014

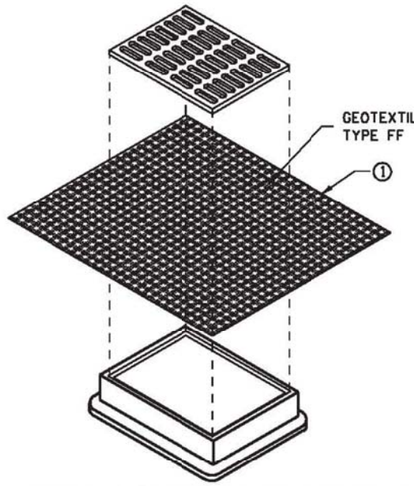
SCALE
NTS.

JOB NUMBER
BR100-14-0108/109

SHEET NUMBER
5 OF 6

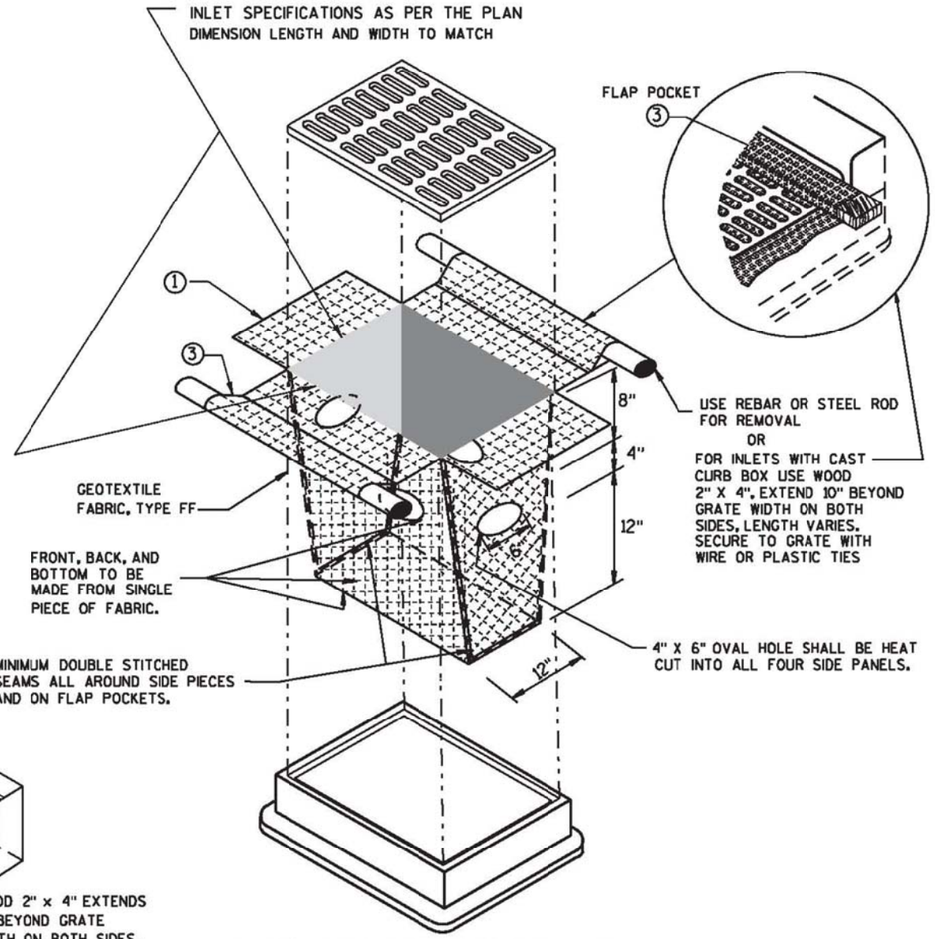
OF
24

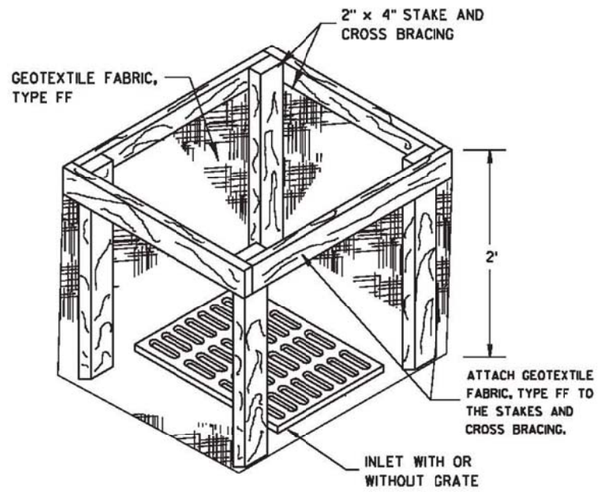




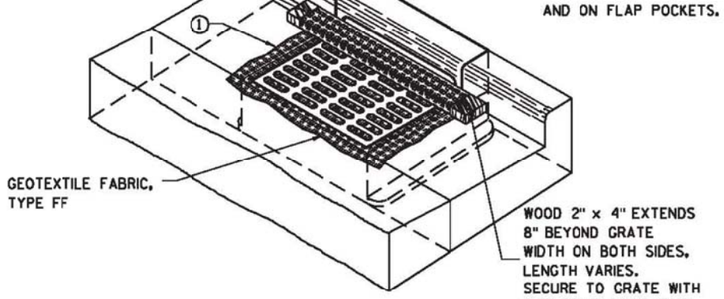
INLET PROTECTION, TYPE B (WITHOUT CURB BOX)

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)





INLET PROTECTION, TYPE A



INLET PROTECTION, TYPE C (WITH CURB BOX)

INLET PROTECTION, TYPE D

(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE ②)

GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.

③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

INSTALLATION NOTES

TYPE B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

City of Milwaukee
Department of Public Works
Infrastructure Services Division

BLOOM COMPANIES, LLC
Infrastructure Innovation and Ingenuity
10501 W. Research Drive • Milwaukee, WI 53226
Phone: (414) 771-3390 • Fax: (414) 771-4490

SOUTH 35TH ST/HOWELL AVE
BRIDGES OVER UPRR
INLET PROTECTION

REVISIONS

DESIGNED BY JRS
DRAWN BY TAL
CHECKED BY BDT
DATE MAY 2014 | SCALE NTS
JOB NUMBER BR100-14-0108/109
SHEET NUMBER 6 OF 6
OF 24

FILE NAME: F:\BM\32\20 35th Street over UPRR Bridge Repair\5_Design\04_Structures_Bridges\dgn\PrelimsP-40-848intro Sheets\06_P-40-509-848_add.dgn
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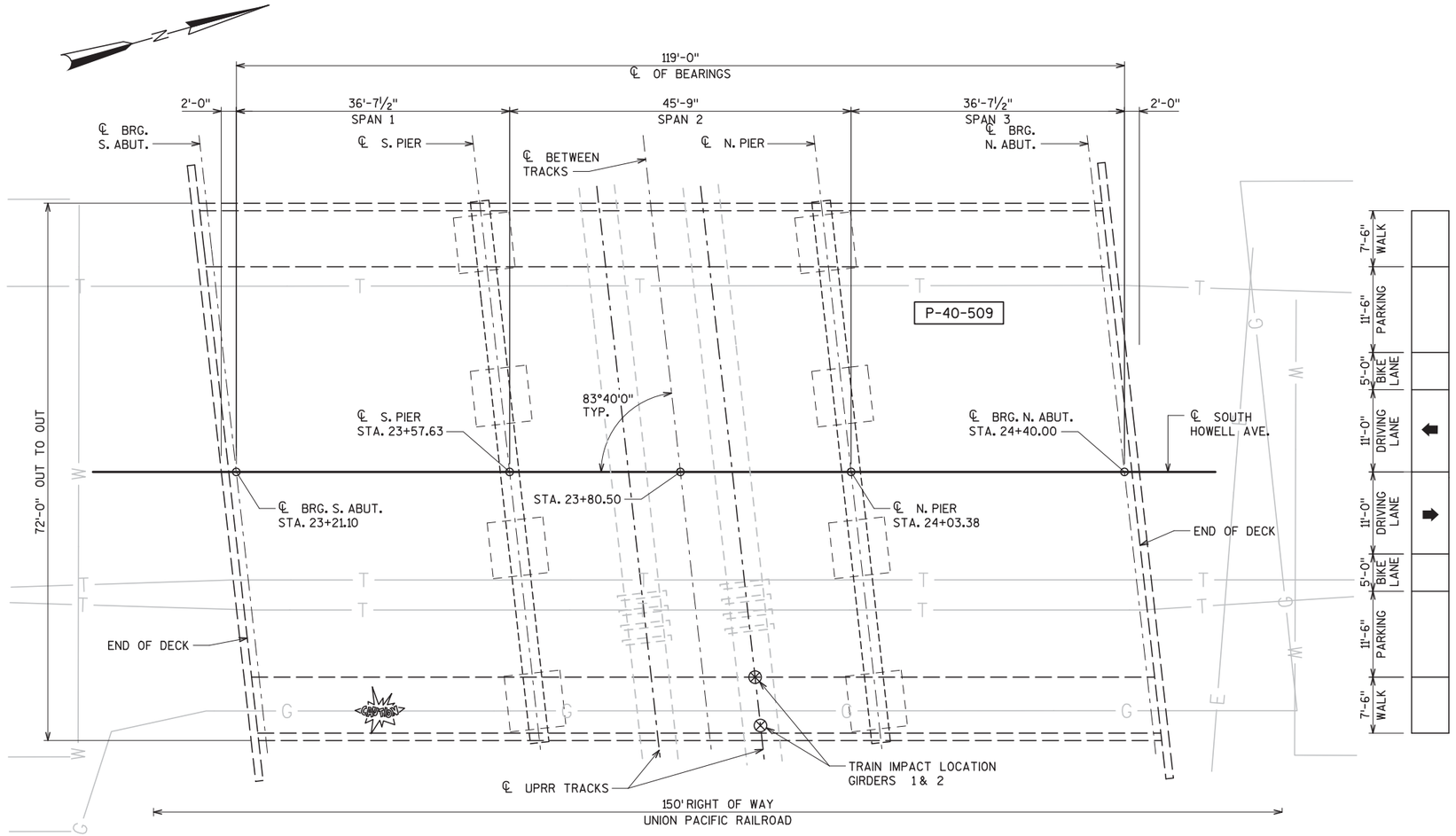
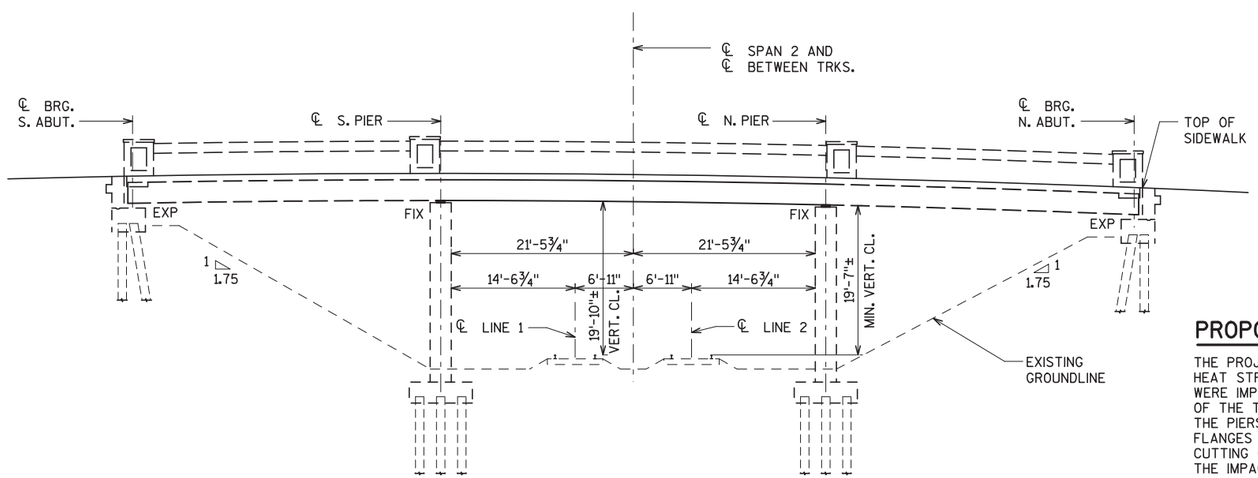


PLAN



ELEVATION

(LOOKING WEST)

WISCONSIN
BABU D. THENGANAKUNNEL
E-35905
MILWAUKEE, WI
PROFESSIONAL ENGINEER
5/6/2014

PROPOSED IMPROVEMENTS

THE PROJECT AS PROPOSED CONSISTS OF: HEAT STRAIGHTENING OF TWO GIRDERS THAT WERE IMPACTED BY TRAIN; BLASTING AND PAINTING OF THE TWO IMPACT DAMAGED GIRDERS BETWEEN THE PIERS; OVERCOATING THE BOTTOM FLANGES OF REMAINING GIRDERS OVER THE TRACKS; CUTTING OUT THE FRACTURED WEB OF ONE OF THE IMPACT DAMAGED GIRDERS AND INSTALLING NEW WEB SPLICE; REMOVING AND REPLACING TWO DIAPHRAGMS CONNECTED AT THE NEW WEB SPLICE LOCATION; REPLACING HIGH STREGNTH BOLTS AT ONE OF THE EXISTING GIRDER SPLICES; AND PROTECTING THE GAS MAIN ADJACENT TO THE GIRDERS TO BE HEAT STRAIGHTENED.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL DETAILS, MATERIALS AND FABRICATION SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION OF THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION, EDITION OF 2014, EXCEPT AS OTHERWISE NOTED.

ALL STATIONS AND ALL ELEVATIONS ARE IN FEET.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

PORTIONS OF EXISTING STRUCTURE P-40-509 ARE TO REMAIN AND BE INCORPORATED INTO NEW WORK. DIMENSIONS SHOWN FOR EXISTING PORTIONS ARE BASED ON THE ORIGINAL STRUCTURE PLANS AND SHOP DRAWINGS, WHICH ARE AVAILABLE UPON REQUEST FROM THE CITY OF MILWAUKEE.

ALL BOLTED CONNECTIONS SHALL BE FRICTION TYPE MADE WITH ¾" DIAMETER HOT DIPPED GALVANIZE HIGH-TENSILE STRENGTH BOLTS (ASTM A325) UNLESS SHOWN OR NOTED OTHERWISE.

FIELD WELDING WILL NOT BE PERMITTED UNLESS SHOWN ON THE PLANS OR AUTHORIZED IN WRITING BY THE ENGINEER.

THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATIONS AS TO THE TYPE AND LOCATION OF UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE.

UTILITIES ON BRIDGE SHALL BE PROTECTED AND WILL REMAIN IN SERVICE DURING CONSTRUCTION. PROTECT GAS MAIN UNDER BID ITEM "GAS MAIN PROTECTION P-40-509". PROTECTION OF ALL OTHER UTILITIES IS INCIDENTAL TO BID ITEM "HEAT STRAIGHTEN GIRDERS P-40-509".

IF THERE IS A CONFLICT BETWEEN THE STANDARD SPECIFICATIONS AND DRAWINGS OR SPECIAL PROVISIONS, DRAWINGS OR SPECIAL PROVISIONS SHALL GOVERN.

ALL PAINTING SHALL BE FEDERAL COLOR *10055 BROWN.

MAINTAIN TRACK CLEARANCES SHOWN ON SHEET HS2. UNLESS A TRACK WINDOW IS APPROVED BY UNION PACIFIC RAILROAD.

TOUCH UP PAINT DAMAGED DURING CONSTRUCTION OPERATIONS AS DIRECTED BY FIELD ENGINEER UNDER BID ITEM "STRUCTURE OVERCOATING CLEANING AND PRIMING P-40-509".

"REMOVING OLD STRUCTURE STA. 23+80.50" BID ITEM INCLUDES REMOVAL OF EXISTING DIAPHRAGMS AS SHOWN ON FRAMING PLAN, AND PARTIAL REMOVAL OF THE FRACTURED GIRDER WEB.

TRAFFIC VOLUME

ADT (2007) = 7,100
ADT (2027) = 8,200
R.D.S. = 30 M.P.H.

UTILITIES

EXISTING UTILITIES ARE TO BE KEPT IN SERVICE AND PROTECTED DURING THE REHABILITATION PROJECT. PLEASE SEE PROJECT SPECIAL PROVISIONS.

DESIGN DATA

DESIGN SPECIFICATIONS - AASHTO LRFD
DESIGN LIVE LOAD - HL-93
INVENTORY RATING FACTOR = 1.17*
OPERATING RATING FACTOR = 1.52*
WISCONSIN STANDARD PERMIT VEHICLE (Wis-SPV) = 250 KIPS*

*TAKEN FROM PLANS 3/10/2010

ULTIMATE DESIGN STRESSES:

EXISTING STRUCTURAL STEEL
ASTM A7 .....Fy=33,000 psi

NEW STRUCTURAL STEEL
ASTM A709 GRADE 50.....Fy=50,000 psi

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SOUTH HOWELL AVE BRIDGE OVER UNION PACIFIC RAILROAD STRUCTURE P-40-509 GENERAL PLAN AND ELEVATION

REVISIONS

DESIGNED BY	BDT
DRAWN BY	TAL
CHECKED BY	JRS
DATE	MAY 2014
SCALE	NTS
JOB NUMBER	BR100-14-0108/109
SHEET NUMBER	HS1 OF HS4
OF	24

FILE NAME: F:\BMI-32\20 Howell Ave over UPRR Bridge Repair\5_Design\04_Structures_Bridges\dgn\Prelim\P-40-509\501-02_P-40-509_GP&E.dgn
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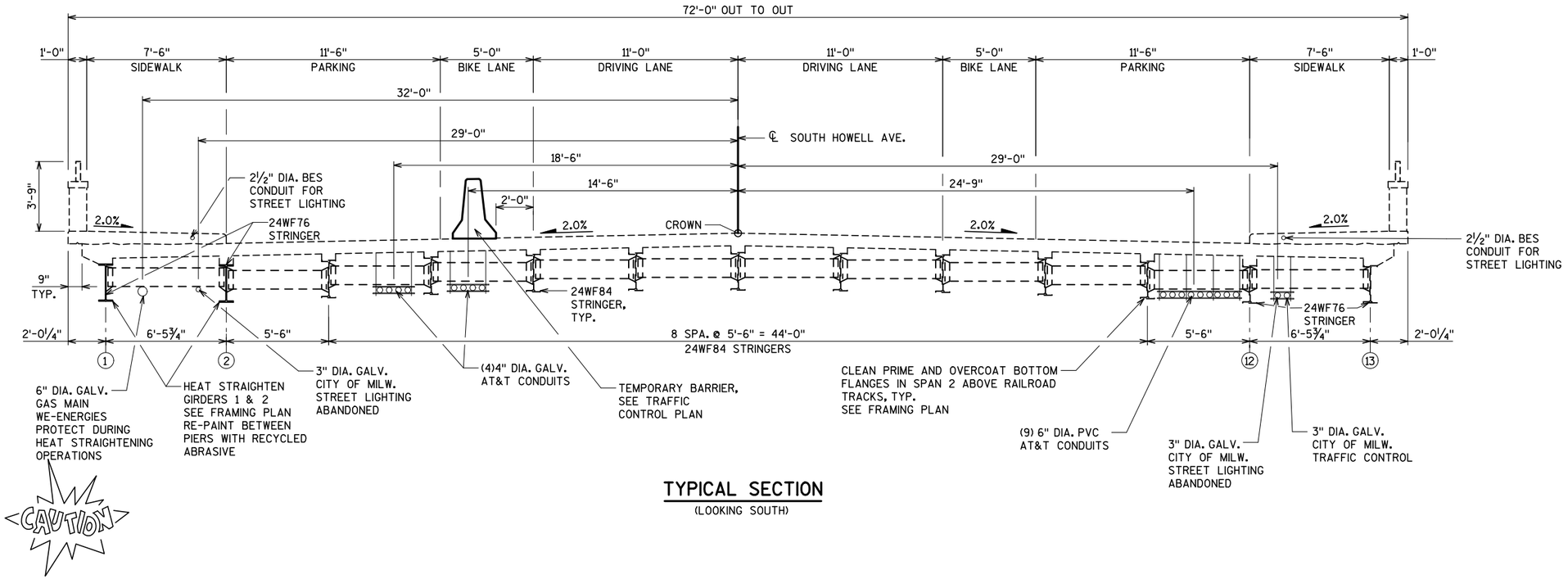


TYPICAL SECTION

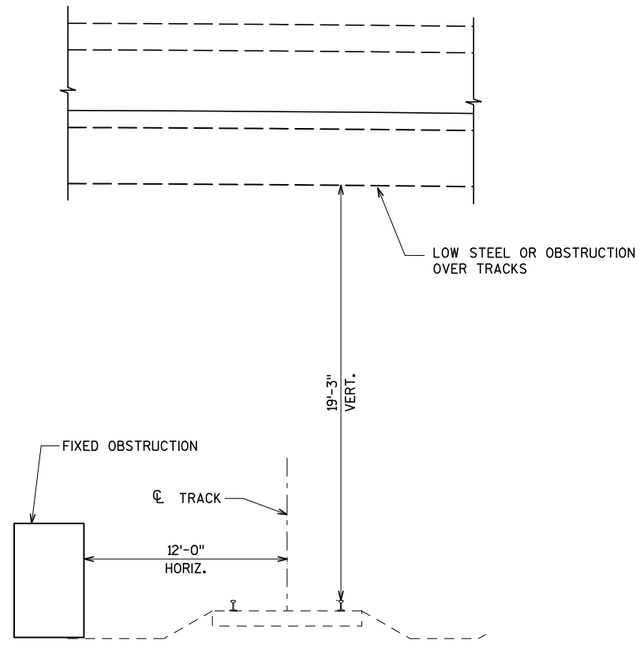
(LOOKING SOUTH)

CAUTION

ESTIMATE OF QUANTITIES

ITEM NO.	BID ITEMS	UNIT	SUPER.	TOTAL
203.0200	REMOVING OLD STRUCTURE STA. 23+80.50	LS	-	1
506.0605	STRUCTURAL STEEL HS	LB	630	630
517.0600	PAINTING EPOXY SYSTEM P-40-509	LS	-	1
517.1800.S	STRUCTURE REPAINTING RECYCLED ABRASIVE P-40-509	LS	-	1
517.3000.S.01	STRUCTURE OVERCOATING CLEANING AND PRIMING P-40-509	LS	-	1
517.4000.S.01	CONTAINMENT AND COLLECTION OF WASTE MATERIALS P-40-509	LS	-	1
SPV.0060.01	REPLACING HIGH STRENGTH BOLTS P-40-509	EACH	48	48
SPV.0060.03	RE-MOBILIZATION P-40-509	EACH	-	20*
SPV.0105.01	MOBILIZATION P-40-509	LS	-	1
SPV.0105.03	HEAT STRAIGHTEN GIRDERS P-40-509	LS	-	1
SPV.0105.05	GAS MAIN PROTECTION P-40-509	LS	-	1
	NON-BID ITEMS			

*QUANTITY IS ESTIMATED.



RAILROAD CLEARANCE FOR CONSTRUCTION

City of Milwaukee

Department of Public Works

Infrastructure Services Division

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SOUTH HOWELL AVE BRIDGE OVER UNION PACIFIC RAILROAD TYPICAL SECTION AND QUANTITIES

REVISIONS

DESIGNED BY BDT

DRAWN BY TAL

CHECKED BY JRS

DATE MAY 2014 | SCALE NTS

JOB NUMBER BR100-14-0108/109

SHEET NUMBER HS2 OF HS4

OF 24

FILE NAME: F:\BMI-3252D Howell Ave over UPRR Bridge Repair\5_Design\04_Structures_Bridges\cds\Prelim\P-40-509\s01-02_P-40-509_OP&E.dgn
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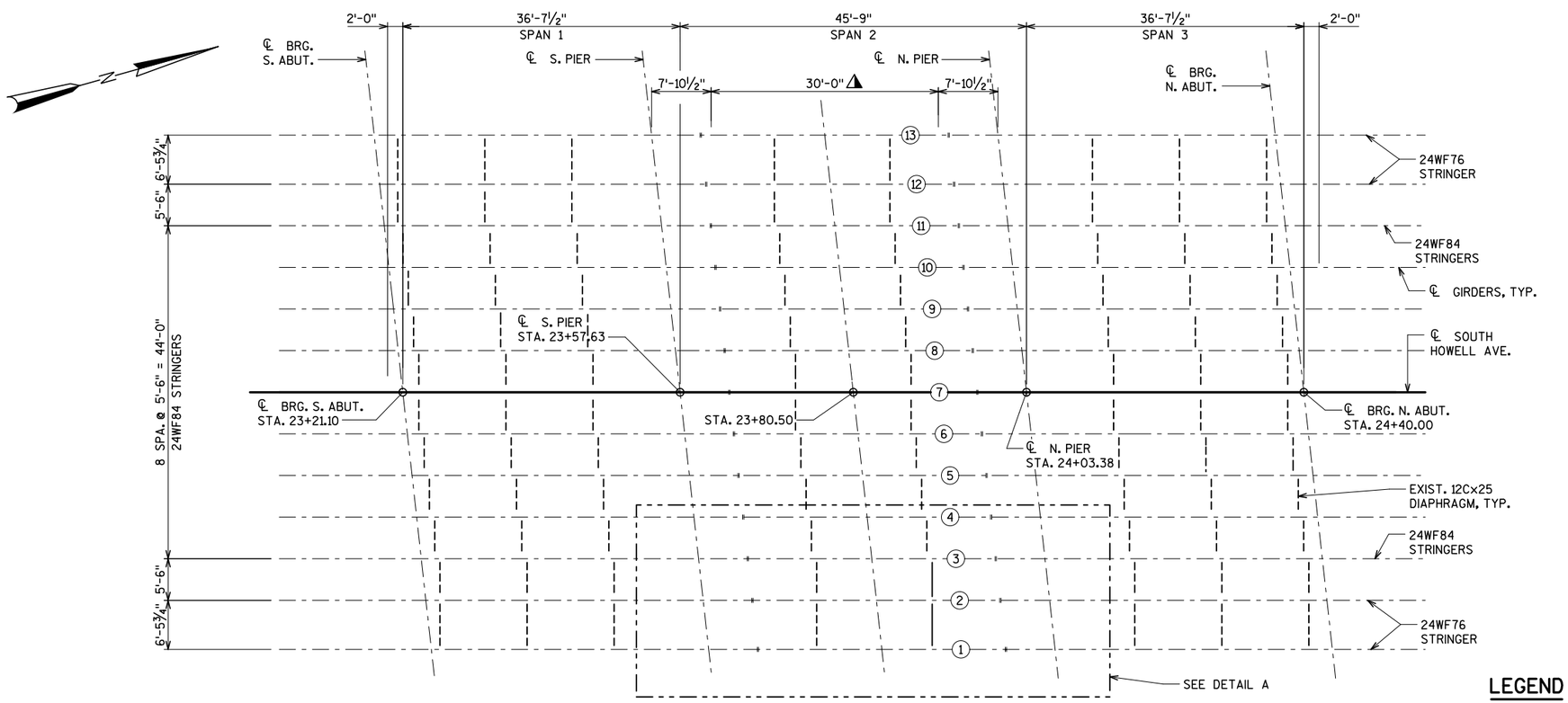
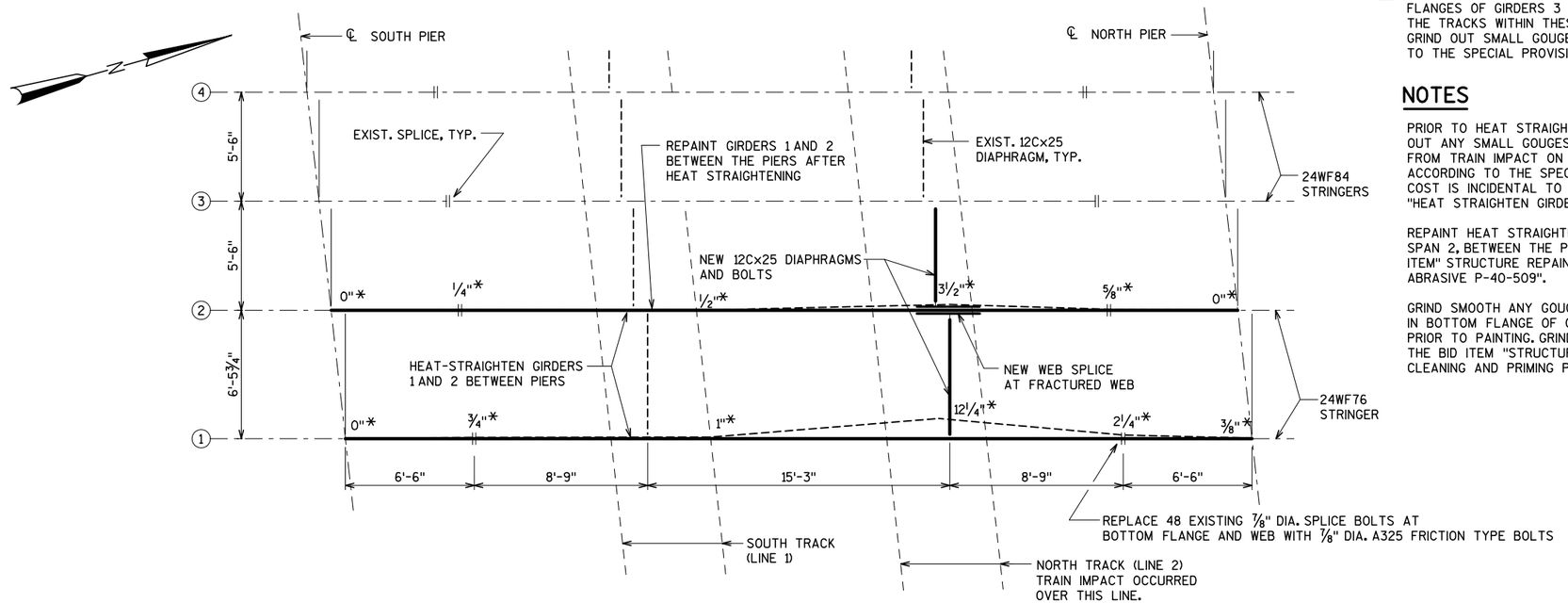


FRAMING PLAN



DETAIL A

LEGEND

* MEASURED HORIZONTAL DEFORMATION AT BOTTOM FLANGE

⚠ OVERCOAT PAINT DAMAGE OF BOTTOM FLANGES OF GIRDERS 3 THRU 13 OVER THE TRACKS WITHIN THESE LIMITS. GRIND OUT SMALL GOUGES ACCORDING TO THE SPECIAL PROVISIONS.

NOTES

PRIOR TO HEAT STRAIGHTENING, GRIND OUT ANY SMALL GOUGES RESULTING FROM TRAIN IMPACT ON GIRDERS 1 AND 2 ACCORDING TO THE SPECIAL PROVISIONS. COST IS INCIDENTAL TO BID THE ITEM "HEAT STRAIGHTEN GIRDERS P-40-509".

REPAINT HEAT STRAIGHTENED GIRDERS IN SPAN 2, BETWEEN THE PIERS, UNDER BID ITEM" STRUCTURE REPAINTING RECYCLED ABRASIVE P-40-509".

GRIND SMOOTH ANY GOUGES OR SCRATCHES IN BOTTOM FLANGE OF GIRDERS 3 THRU 13 PRIOR TO PAINTING. GRINDING IS INCIDENTAL TO THE BID ITEM "STRUCTURE OVERCOATING CLEANING AND PRIMING P-40-509".

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SOUTH HOWELL AVE BRIDGE OVER UNION PACIFIC RAILROAD FRAMING PLAN

REVISIONS

DESIGNED BY	BDT
DRAWN BY	TAL
CHECKED BY	JRS
DATE	MAY 2014
SCALE	NTS
JOB NUMBER	BR100-14-0108/109
SHEET NUMBER	HS3 OF HS4
OF	24

FILE NAME: F:\BMI-32520 Howell Ave over UPRR Bridge Repair\5_Design\04_Structures_Bridges\cds\Prelim\P-40-509\s03_P-40-509_FRAMING PLAN.dgn
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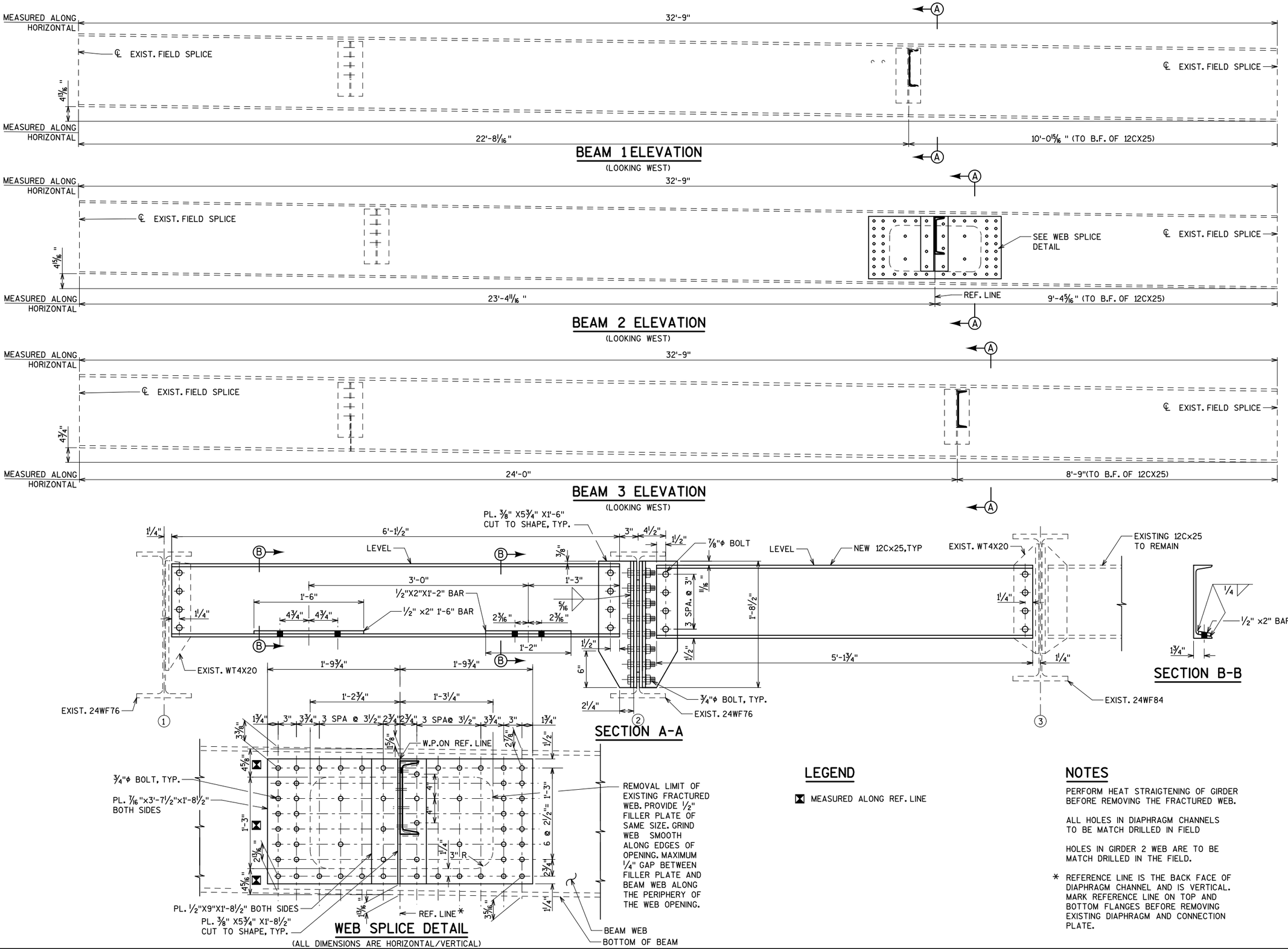

LEGEND

▣ MEASURED ALONG REF. LINE

NOTES

PERFORM HEAT STRAIGTENING OF GIRDER BEFORE REMOVING THE FRACTURED WEB.

ALL HOLES IN DIAPHRAGM CHANNELS TO BE MATCH DRILLED IN FIELD

HOLES IN GIRDER 2 WEB ARE TO BE MATCH DRILLED IN THE FIELD.

* REFERENCE LINE IS THE BACK FACE OF DIAPHRAGM CHANNEL AND IS VERTICAL. MARK REFERENCE LINE ON TOP AND BOTTOM FLANGES BEFORE REMOVING EXISTING DIAPHRAGM AND CONNECTION PLATE.

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SOUTH HOWELL AVE BRIDGE OVER UNION PACIFIC RAILROAD
STEEL DETAILS

REVISIONS

DESIGNED BY	BDT
DRAWN BY	TAL
CHECKED BY	JRS
DATE	MAY 2014
SCALE	NTS
JOB NUMBER	BR100-14-0108/109
SHEET NUMBER	HS4 OF HS4
OF	24

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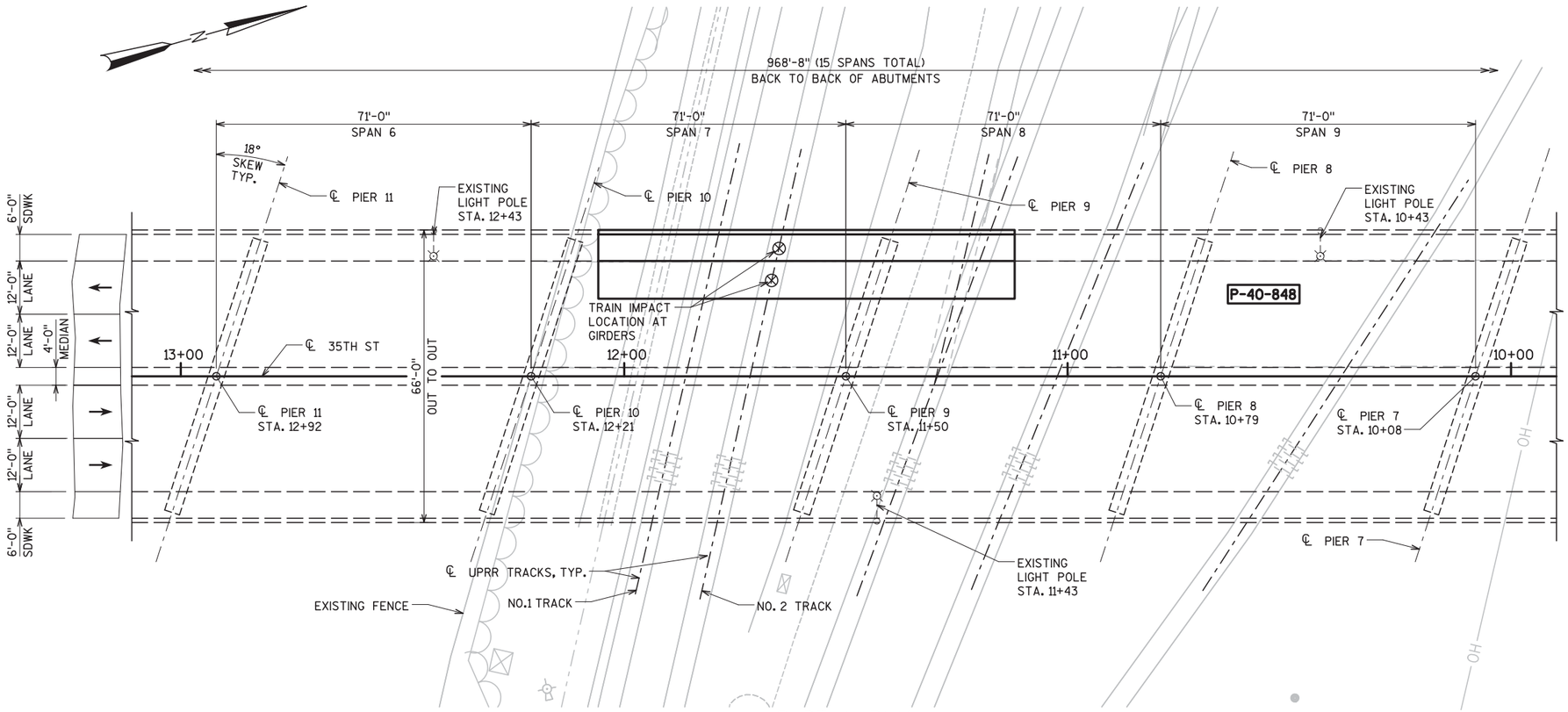
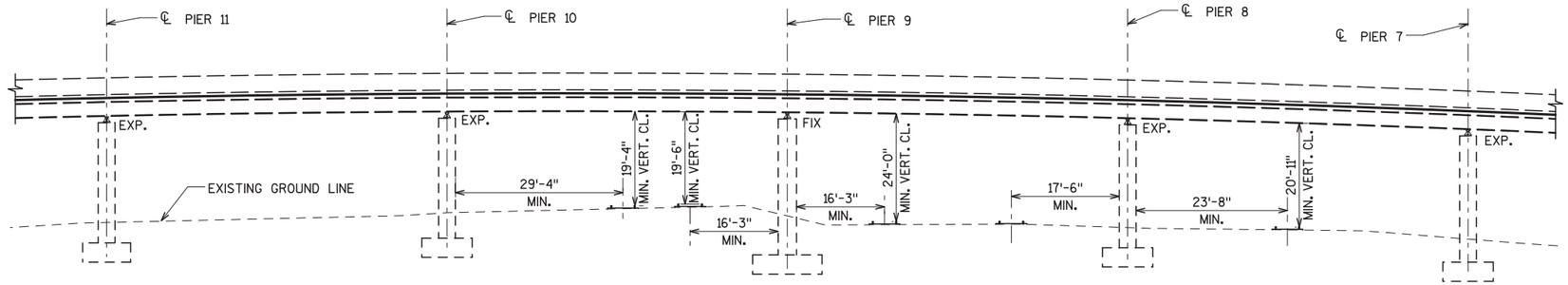


PARTIAL PLAN

(REPAIR OF STEEL GIRDER BRIDGE)



PARTIAL ELEVATION

(LOOKING WEST)

DESIGN DATA

DESIGN LIVE LOAD - HS20
INVENTORY RATING - HS 20*
OPERATING RATING - HS 45*
MAX STANDARD PERMIT VEHICLE LOAD - 250 KIPS*

*EXISTING LOAD RATINGS PER 1997 PLANS

ULTIMATE DESIGN STRESSES:

NEW CONCRETE SUPERSTRUCTURE.....f'c=4,000 psi

NEW STRUCTURAL STEEL
ASTM A709 GRADE 50.....Fy=50,000 psi

NEW HIGH STRENGTH BAR STEEL
REINFORCEMENT (GRADE 60).....fy=60,000 psi

DESIGN SPECIFICATIONS

AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17TH EDITION, FOR STRUCTURAL DESIGN.

CONSTRUCTION SPECIFICATIONS

WISCONSIN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, 2014 EDITION, EXCEPT AS NOTED.

A.W.S. BRIDGE WELDING CODE D1.5, LATEST EDITION.

A.W.S. STRUCTURAL WELDING CODE- STEEL D1.1, LATEST EDITION.

TRAFFIC DATA

35TH ST

ADT (2011).....15,851
RDS.....30 MPH

PROJECT IMPROVEMENTS

THE PROJECT AS PROPOSED CONSISTS OF: REMOVING AND REPLACING A PORTION OF THE EXISTING DECK AND GIRDERS DAMAGED BY A TRAIN IMPACT; REPLACING A DAMAGED BEARING; PROVIDING TEMPORARY SUPPORT TO THE EXISTING GIRDERS AND DECK DURING CONSTRUCTION; OVERCOAT PAINTING THE GIRDER BOTTOM FLANGES OVER THE RAILROAD TRACKS.

WISCONSIN
JASON R. SADOWSKI
E-38660
BROOKFIELD, WI
PROFESSIONAL ENGINEER
5/6/2014

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL DETAILS, MATERIALS AND FABRICATION SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION OF THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION, EDITION OF 2014, EXCEPT AS OTHERWISE NOTED.

ALL STATIONS AND ALL ELEVATIONS ARE IN FEET.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

BEVEL ALL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

APPLY STAIN TO ALL FACES OF NEW PARAPETS, AND EXTERIOR VERTICAL FACE OF DECK AND SIDEWALK, COLORS TO MATCH EXISTING PARAPETS.

PORTIONS OF EXISTING STRUCTURE P-40-848 ARE TO REMAIN AND BE INCORPORATED INTO NEW WORK. DIMENSIONS SHOWN FOR EXISTING PORTIONS ARE BASED ON THE ORIGINAL STRUCTURE PLANS AND SHOP DRAWINGS, WHICH ARE AVAILABLE UPON REQUEST FROM THE CITY OF MILWAUKEE.

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

ALL REINFORCING BARS ARE ENGLISH DESIGNATION AND THE FIRST DIGIT OF A 3-DIGIT BAR MARK OR FIRST TWO DIGITS OF A 4-DIGIT BAR MARK SIGNIFY THE BAR SIZE.

BENDING DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.

ALL BOLTED CONNECTIONS SHALL BE FRICTION TYPE MADE WITH ¾" DIAMETER HOT DIPPED GALVANIZE HIGH-TENSILE STRENGTH BOLTS (ASTM A325) UNLESS SHOWN OR NOTED OTHERWISE.

FIELD WELDING WILL NOT BE PERMITTED UNLESS SHOWN ON THE PLANS OR AUTHORIZED IN WRITING BY THE ENGINEER.

THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATIONS AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE.

CLEAN, STRAIGHTEN AND EPOXY COAT EXISTING BAR STEEL REINFORCEMENT THAT IS TO BE INCORPORATED INTO THE NEW WORK. COST INCIDENTAL TO BID ITEM "BAR STEEL REINFORCEMENT BRIDGES HS COATED".

IF THERE IS A CONFLICT BETWEEN THE STANDARD SPECIFICATIONS AND DRAWINGS OR SPECIAL PROVISIONS, DRAWINGS OR SPECIAL PROVISIONS SHALL GOVERN.

ALL CONCRETE REMOVAL SHALL BE DEFINED BY A 1" DEEP SAWCUT.

PAINTING OF NEW STEEL UNDER BID ITEM "PAINTING EPOXY SYSTEM P-40-848" AND OVERCOATING OF EXISTING STEEL UNDER BID ITEM "STRUCTURE OVER-COATING CLEANING AND PRIMING P-40-848" SHALL BE GREY. SUBMIT PAINT SAMPLES TO THE CITY TO ENSURE PAINT MATCHES EXISTING GIRDERS.

MAINTAIN TRACK CLEARANCES SHOWN ON SHEET S2. UNLESS A TRACK WINDOW IS APPROVED BY UNION PACIFIC RAILROAD.

COORDINATE WORK WITH CITY OF MILWAUKEE LIGHTING FOR CONNECTION OF CONDUITS IN SIDEWALK AND PARAPET.

APPLY PROTECTIVE SURFACE TREATMENT TO THE TOP OF DECK, TOP OF SIDEWALK AND FACE OF CURB WITHIN THE DECK REPLACEMENT LIMITS.

EPOXY CRACK SEAL CRACKS IN THE EXISTING SOUTHBOUND DECK IN SPANS 7 & 8, AS DIRECTED BY THE FIELD ENGINEER AND AS SHOWN ON SHEET S11.

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SOUTH 35TH ST VIADUCT OVER UNION PACIFIC RAILROAD STRUCTURE P-40-848 GENERAL PLAN AND ELEVATION

REVISIONS

DESIGNED BY	JRS
DRAWN BY	TAL
CHECKED BY	BDT
DATE	MAY 2014
SCALE	NTS
JOB NUMBER	BR100-14-0108/109
SHEET NUMBER	S1 OF S13
OF	24

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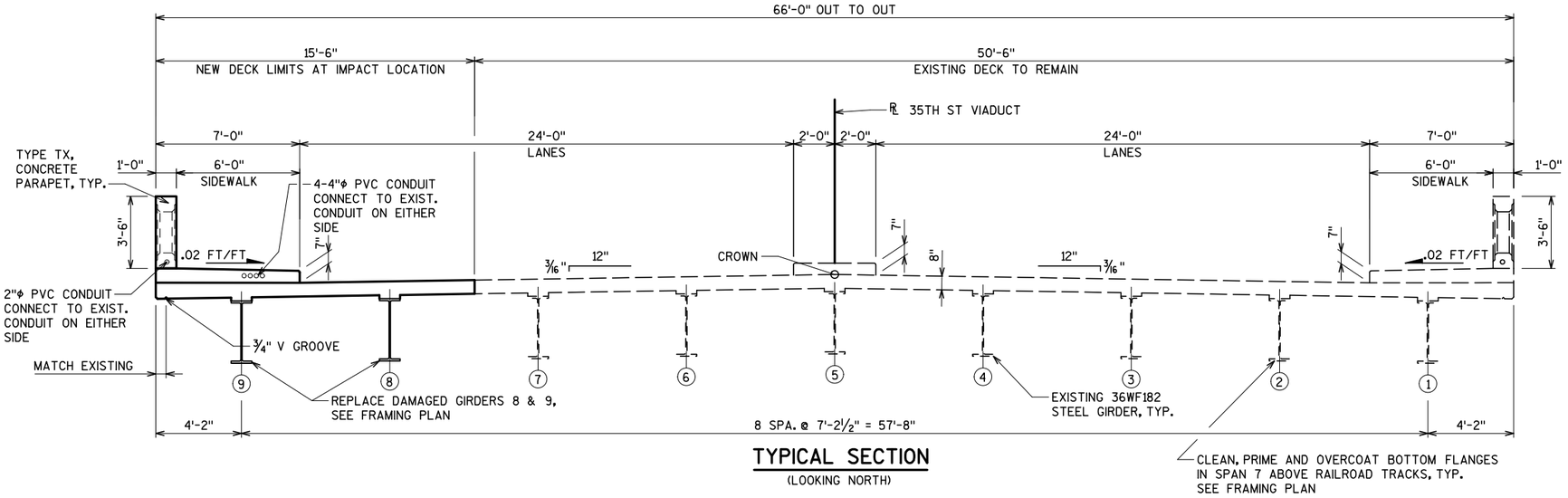


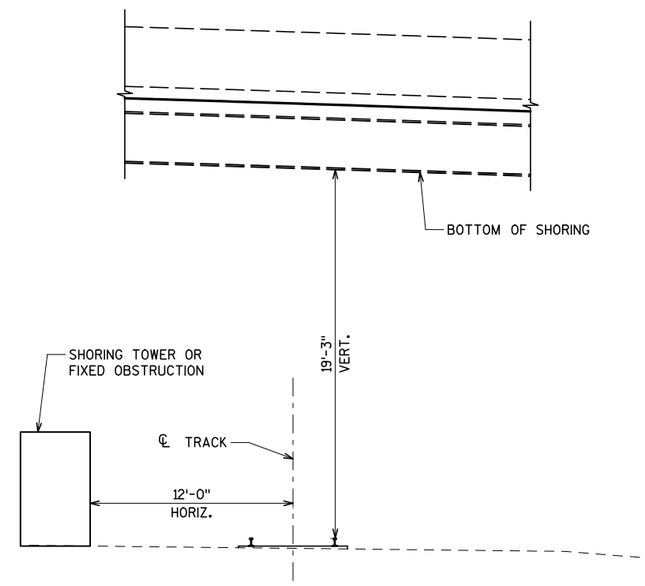
TYPICAL SECTION
(LOOKING NORTH)

BENCH MARKS

NO.	DESCRIPTION	ELEVATION
STD. 352	W. FOREST HOME AVE. BETWEEN S. 35TH ST AND S 37TH ST IN SIDEWALK AT NE CORNER OF BRIDGE APPROX. 99' SW OF WEST CURB OF ENTRANCE TO JACKSON PARK.	66.745
STD. 356	S. 31ST ST AND W. FOREST HOME AVE. (NW CORNER) 2.5' WEST OF FENCE AND 4' NW OF FACE (IN CONCRETE BOX).	84.724

ESTIMATE OF QUANTITIES

ITEM NO.	BID ITEMS	UNIT	SUPER.	TOTAL
203.0200	REMOVING OLD STRUCTURE STA. 11+50	LS	-	1
203.0225.S	DEBRIS CONTAINMENT SPECIAL P-40-848	LS	-	1
502.0100	CONCRETE MASONRY BRIDGES	CY	50	50
502.0717.S	CRACK SEALING EPOXY	LF	100	100
502.3200	PROTECTIVE SURFACE TREATMENT	SY	141	141
502.5005	MASONRY ANCHORS TYPE L NO. 5 BARS	EACH	170	170
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	12,400	12,400
506.0605	STRUCTURAL STEEL HS	LB	33,900	33,900
506.5000	BEARING ASSEMBLIES FIXED P-40-848	EACH	1	1
517.0600	PAINTING EPOXY SYSTEM P-40-848	LS	-	1
517.0900.S	PREPARATION AND COATING OF TOP FLANGES P-40-848	LS	-	1
517.1010.S	CONCRETE STAINING P-40-848	SF	672	672
517.3000.S.02	STRUCTURE OVERCOATING CLEANING AND PRIMING P-40-848	LS	-	1
517.4000.S.02	CONTAINMENT AND COLLECTION OF WASTE MATERIALS P-40-848	LS	-	1
642.5001	FIELD OFFICE TYPE B	EACH	-	1
650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT P-40-848	LS	-	1
652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	LF	84	84
652.0240	CONDUIT RIGID NONMETALLIC SCHEDULE 40 4-INCH	LF	336	336
SPV.0060.02	REMOVE AND REINSTALL EXISTING DIAPHRAGMS	EACH	4	4
SPV.0090.01	PARAPET CONCRETE TYPE 'TX'	LF	84	84
SPV.0105.02	MOBILIZATION P-40-848	LS	-	1
SPV.0105.04	TEMPORARY SHORING SUPERSTRUCTURE P-40-848	LS	-	1
	NON-BID ITEMS			



RAILROAD CLEARANCE FOR CONSTRUCTION

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SOUTH 35TH ST VIADUCT OVER UNION PACIFIC RAILROAD TYPICAL SECTION AND QUANTITIES

REVISIONS

DESIGNED BY JRS
DRAWN BY TAL
CHECKED BY BDT
DATE MAY 2014 | SCALE NTS
JOB NUMBER BR100-14-0108/109
SHEET NUMBER S2 OF S13
OF 24

FILE NAME: F:\BMI-32526 35th Street over UPRR Bridge Repairs\Design\04_Structures_Bridges\acds\Prelim\P-40-848\502_P-40-848_TYP SECT.dgn
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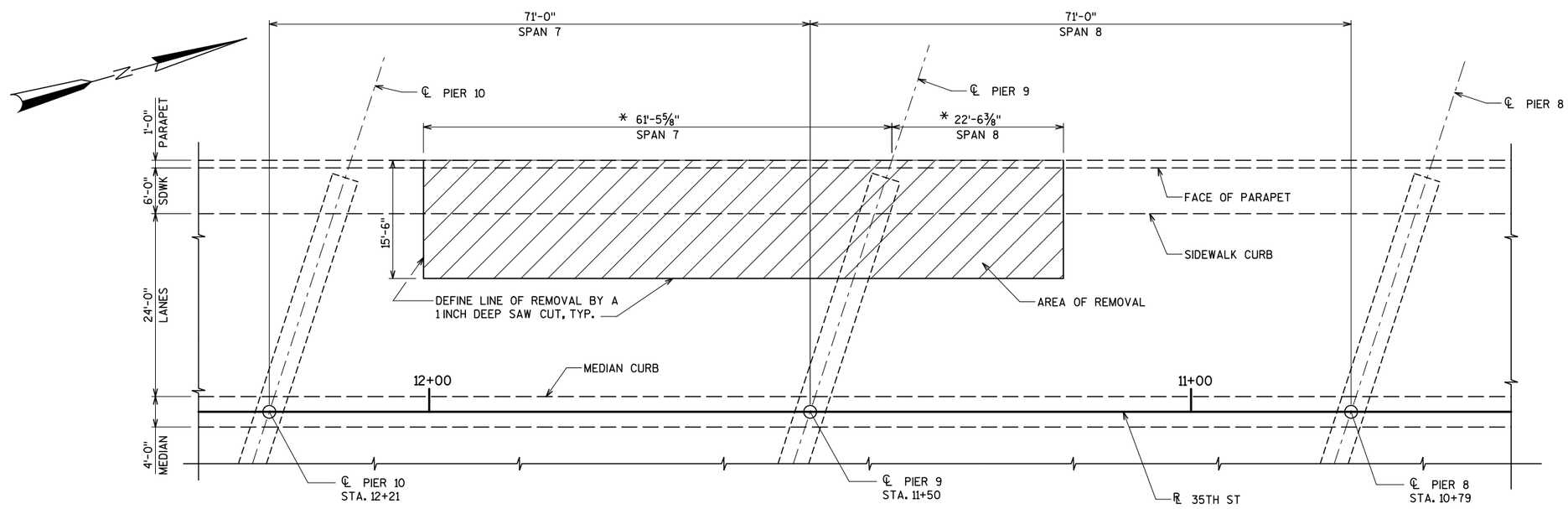
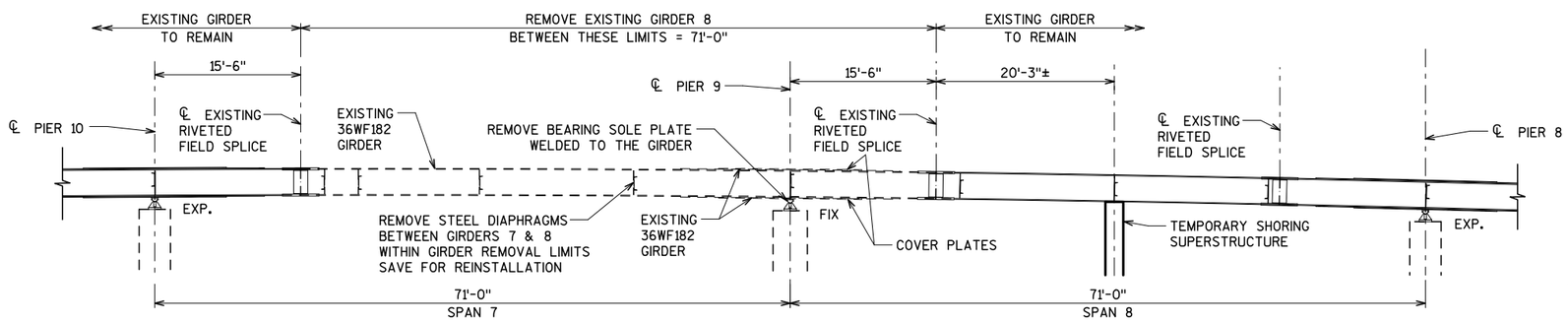
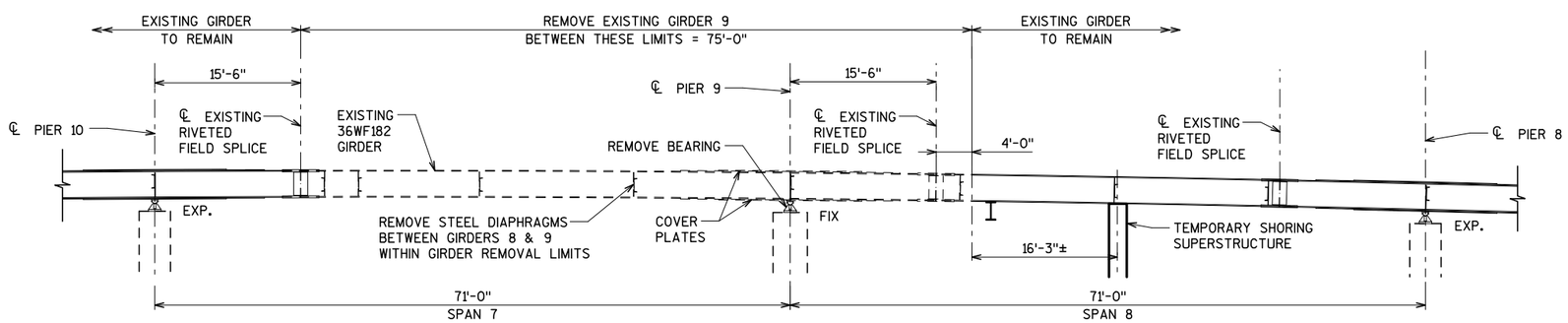


DECK DEMO PLAN



GIRDER 8 DEMOLITION ELEVATION



GIRDER 9 DEMOLITION ELEVATION

NOTES

* ADJUST DECK REMOVAL LIMITS SO THAT REMOVAL LIMIT AT PARAPET IS CENTERED BETWEEN WINDOWS AS SHOWN ON "PARAPET DETAILS" SHEET. MAINTAIN OVERALL 84'-0" DECK REMOVAL LENGTH.

SHORE DECK AND EXISTING GIRDERS 8 & 9 PRIOR TO DEMOLITION ACCORDING TO BID ITEM "TEMPORARY SHORING SUPERSTRUCTURE".

SALVAGE, CLEAN, STRAIGHTEN, AND EPOXY COAT EXISTING DECK, SIDEWALK, AND PARAPET REINFORCEMENT AND INCORPORATE INTO NEW WORK. ACCOMMODATE MIN. LAP LENGTHS SHOWN IN THE PLANS.

USE CARE WHEN REMOVING FIELD SPLICE RIVETS NOT TO DAMAGE GIRDER. RIVET REMOAL IS INCLUDED IN BID ITEM "REMOVING OLD STRUCTURE P-40-848".

DO NOT LOAD EXISTING GIRDERS 8 & 9. IN SPANS 7 & 8, WITH CONSTRUCTION EQUIPMENT OR MATERIALS.

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SOUTH 35TH ST VIADUCT OVER UNION PACIFIC RAILROAD
DEMOLITION PLAN

REVISIONS

DESIGNED BY	JRS
DRAWN BY	TAL
CHECKED BY	BDT
DATE	MAY 2014
SCALE	NTS
JOB NUMBER	BR100-14-0108/109
SHEET NUMBER	S3 OF S13
OF	24

FILE NAME: F:\BM\3252C 35th Street over UPRR Bridge Repair\5.Design\04.Structures.Bridges\cds\Preliim\F-40-848\S03_P-40-848_demo plan.dgn
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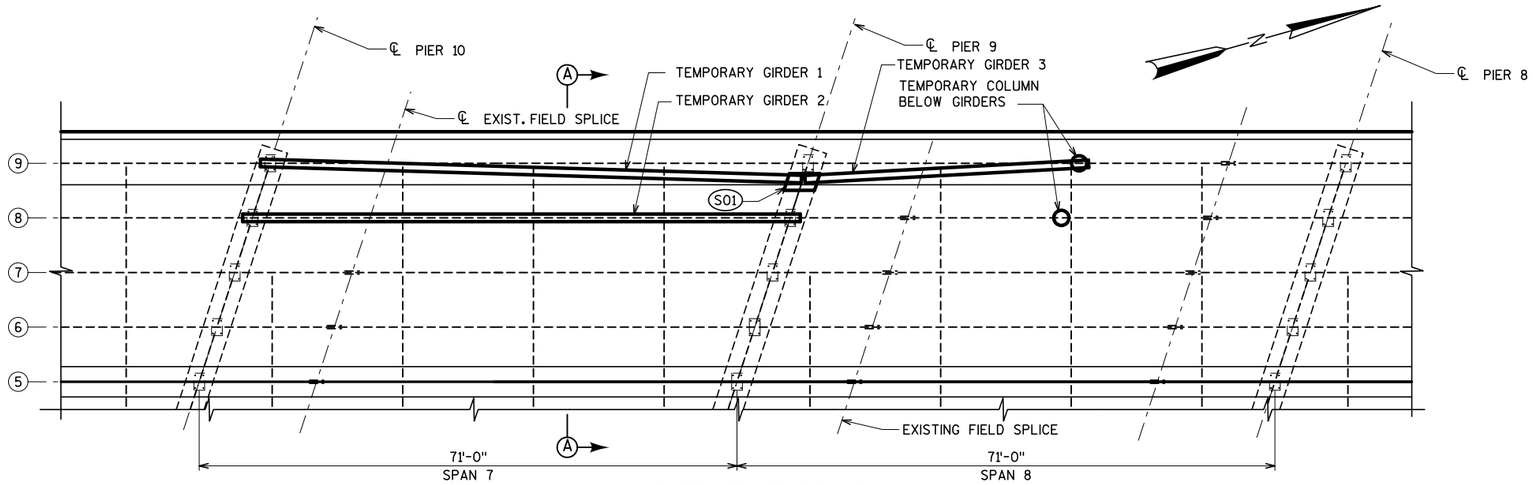
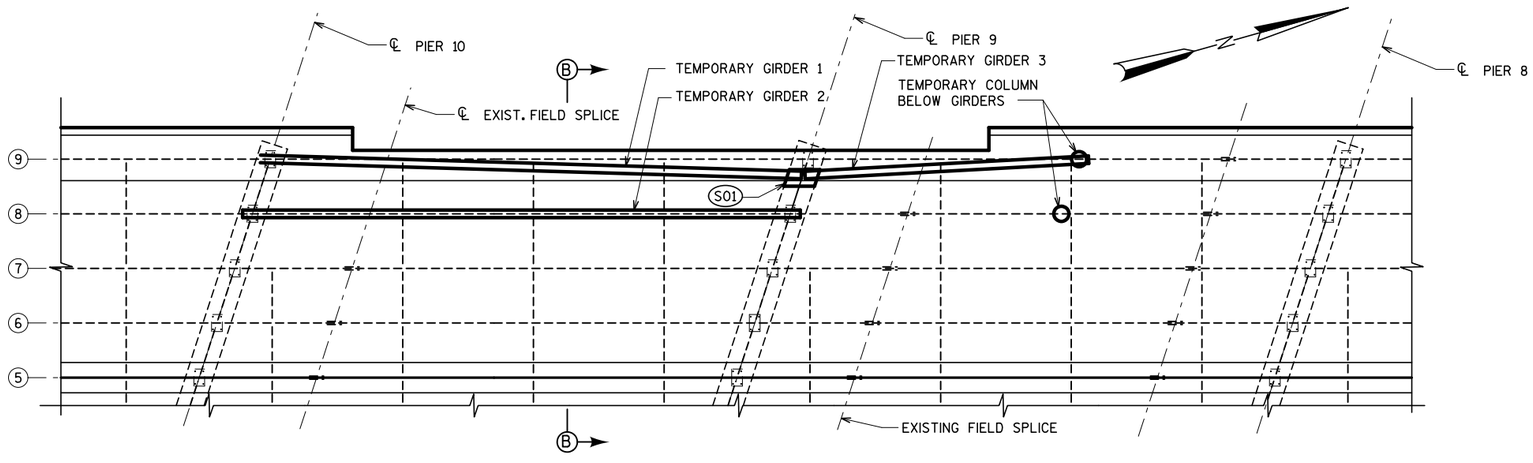


DEMOLITION-STAGE 1



DEMOLITION-STAGE 2

NOTES

THE TEMPORARY SUPPORT SCHEME SHOWN ON THE PLANS IS ONE OF THE MANY METHODS TO SUPPORT THE DECK DURING DEMOLITION. THE CONTRACTOR MAY USE ALTERNATIVE METHODS TO SUPPORT THE DECK, SUBJECT TO THE APPROVAL OF THE ENGINEER.

THE DESIGN OF TEMPORARY SUPPORTING SYSTEM IS THE RESPONSIBILITY OF THE CONTRACTOR, IRRESPECTIVE OF THE ALTERNATIVE SELECTED.

SUBMIT SHOP DRAWINGS OF THE TEMPORARY SUPPORTING SCHEME FOR ENGINEER'S REVIEW BEFORE STARTING ANY DEMOLITION.

THE TEMPORARY SUPPORTS SHALL NOT REDUCE THE REQUIRED LATERAL AND VERTICAL CLEARANCES FOR THE RAILROAD TRACKS BELOW THE BRIDGE. MAINTAIN RAILROAD TRAFFIC BELOW THE BRIDGE AT ALL TIMES.

REMOVE ALL TEMPORARY SUPPORTS ON COMPLETION OF WORK.

STAGE 1

BEFORE STARTING ANY DEMOLITION INSTALL TEMPORARY GIRDERS OVER THE DECK IN SPAN 7 & 8 AND TEMPORARY SUPPORT COLUMNS IN SPAN 8 TO TEMPORARILY SUPPORT THE DECK ABOVE THE DAMAGED GIRDERS. EXISTING DAMAGED GIRDER 9 IS NOT TO BE USED TO SUPPORT THE DECK IN SPANS 7 AND 8, DURING THE DEMOLITION PROCESS. EXISTING DAMAGED GIRDER 8 DURING THE DEMOLITION PROCESS. THE TEMPORARY SUPPORT COLUMNS FOR GIRDERS 8 AND 9 SHALL HAVE MINIMUM 12 FEET LATERAL CLEARANCE TO THE CENTERLINE OF ALL RAILROAD TRACKS UNDER THE BRIDGE. THE SUPPORT COLUMN DIAMETER SHALL NOT EXCEED 2 FEET IN ORDER TO MEET THIS REQUIREMENT.

THERE IS AN EXISTING VERTICAL GAP BETWEEN BOTTOM OF CONCRETE HAUNCH AND TOP OF GIRDER 9 IN SPAN 8. THIS GAP SHALL BE CLOSED BY RAISING THE GIRDER WHILE INSTALLING THE TEMPORARY SUPPORT COLUMN.

SUPPORT THE DECK FROM THE TEMPORARY GIRDERS USING TIES BETWEEN THE TEMPORARY GIRDER AND THE DECK. THE TIE MAY BE ATTACHED TO THE DECK USING MASONRY ANCHORS OR DRILLING HOLES THROUGH THE DECK TO BE REMOVED.

STAGE 2

REMOVE EXISTING DECK OUTSIDE OF EXISTING DAMAGED GIRDER 9.

(S01) CONSTRUCT TEMPORARY SUPPORT FOR TEMPORARY GIRDERS BETWEEN TOP OF PIER CAP AND BOTTOM OF DECK, BETWEEN GIRDERS 8 AND 9. THIS TEMPORARY SUPPORT SHALL BE REMOVED AFTER THE TEMPORARY GIRDERS ARE REMOVED.

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Department of Public Works
Infrastructure Services Division

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SOUTH 35TH ST VIADUCT
OVER UNION PACIFIC RAILROAD
TEMPORARY SHORING AND
DEMOLITION STAGING 1 OF 3

REVISIONS

DESIGNED BY JRS
DRAWN BY TAL
CHECKED BY BDT
DATE MAY 2014
SCALE NTS
JOB NUMBER BR100-14-0108/109
SHEET NUMBER S4 OF S13
OF 24

FILE NAME: F:\BMI-3252C 35th Street over UPRR Bridge Repair\5.Design\04_Structures_Bridges\cds\Prelim\F-40-848+S04-06_P-40-848_temporary support.dgn
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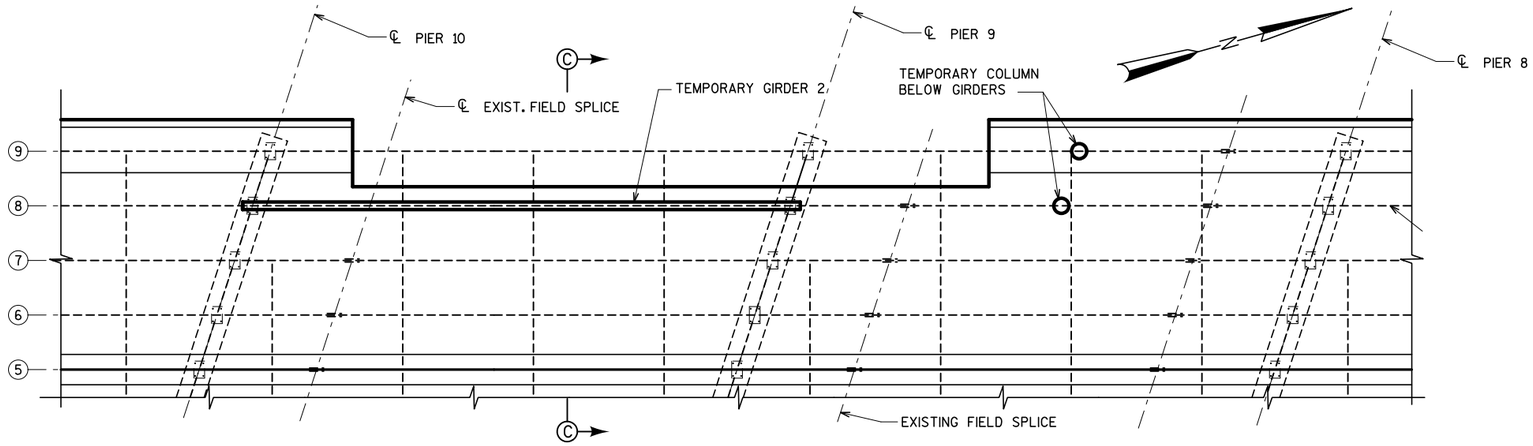
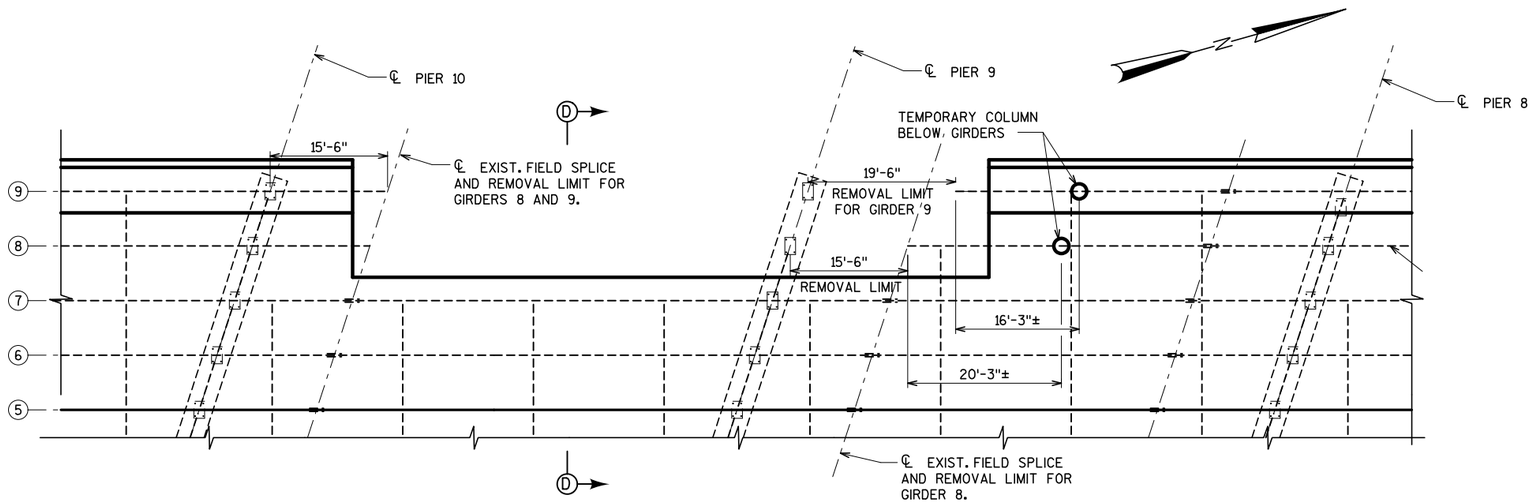


DEMOLITION-STAGE 3

STAGE 3

REMOVE EXISTING DECK OUTSIDE OF EXISTING DAMAGED GIRDER 8.
REMOVE TEMPORARY GIRDERS 1 AND 3.



DEMOLITION-STAGE 4

STAGE 4

REMOVE EXISTING DECK TO THE FINAL REMOVAL LINE BETWEEN GIRDERS 7 AND 8. REMOVE TEMPORARY GIRDER 2.

REMOVE IMPACT DAMAGED GIRDERS 8 AND 9 WITHIN THE REMOVAL LIMITS.

TEMPORARY COLUMNS SHALL REMAIN UNTIL THE DAMEGED PORTION OF GIRDERS 8 AND 9 ARE REPLACED WITH NEW GIRDERS AND SUPPORTED ON PIER 9.

City of Milwaukee

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SOUTH 35TH ST VIADUCT OVER UNION PACIFIC RAILROAD TEMPORARY SHORING AND DEMOLITION STAGING 2 OF 3

REVISIONS

DESIGNED BY	JRS
DRAWN BY	TAL
CHECKED BY	BDT
DATE	MAY 2014
SCALE	NTS
JOB NUMBER	BR100-14-0108/109
SHEET NUMBER	S5 OF S13
OF	24

FILE NAME: F:\BM\32520 35th Street over UPRR Bridge Repair\5.Design\04.Structures.Bridges\cds\Preliim\F-40-848\S04-06.P-40-848_temporary support.dgn
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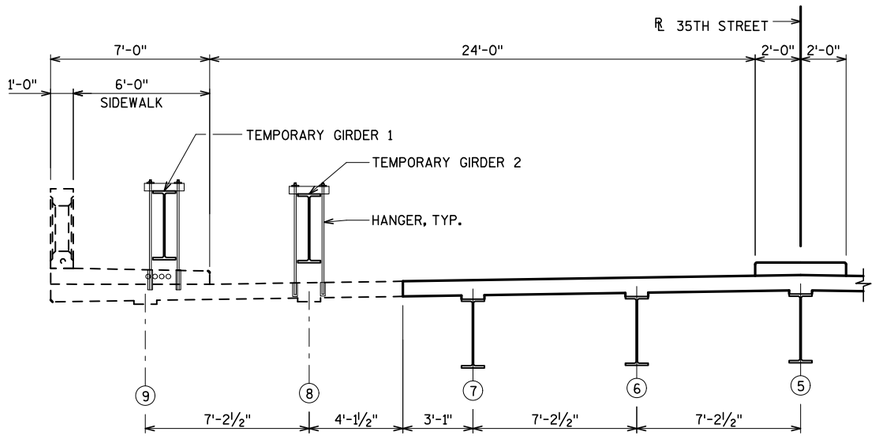
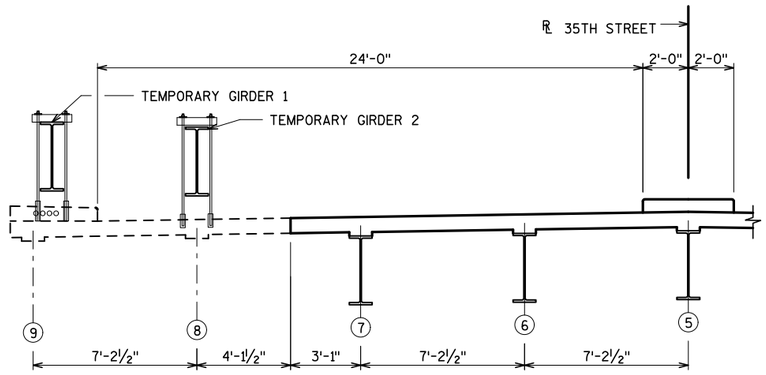


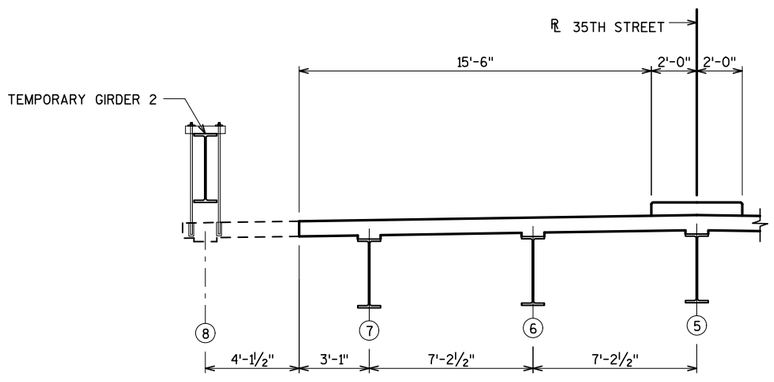
SECTION A-A (DEMOLITION STAGE 1)

(CROSS SECTION LOOKING NORTH)



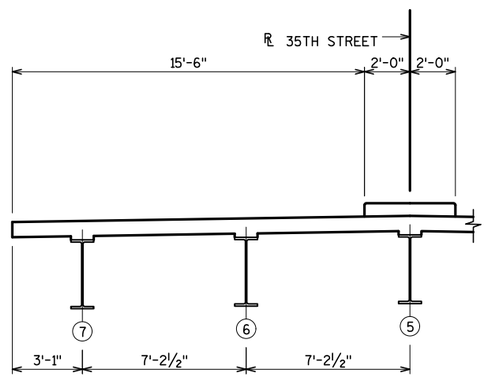
SECTION B-B (DEMOLITION STAGE 2)

(CROSS SECTION LOOKING NORTH)



SECTION C-C (DEMOLITION STAGE 3)

(CROSS SECTION LOOKING NORTH)



SECTION D-D (DEMOLITION STAGE 4)

(CROSS SECTION LOOKING NORTH)

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Department of Public Works

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SOUTH 35TH ST VIADUCT OVER UNION PACIFIC RAILROAD TEMPORARY SHORING AND DEMOLITION STAGING 3 OF 3

REVISIONS

DESIGNED BY	JRS
DRAWN BY	TAL
CHECKED BY	BDT
DATE	MAY 2014
SCALE	NTS
JOB NUMBER	BR100-14-0108/109
SHEET NUMBER	S6 OF S13
OF	24

FILE NAME: F:\BM\3252C 35th Street over UPRR Bridge Repair#5_Design\04_Structures_Bridges\cds\Prelim\F-40-848\S04-06_P-40-848_temporary support.dgn
DATE: 5/6/2014 4:32:15 PM Plotted by: tregear
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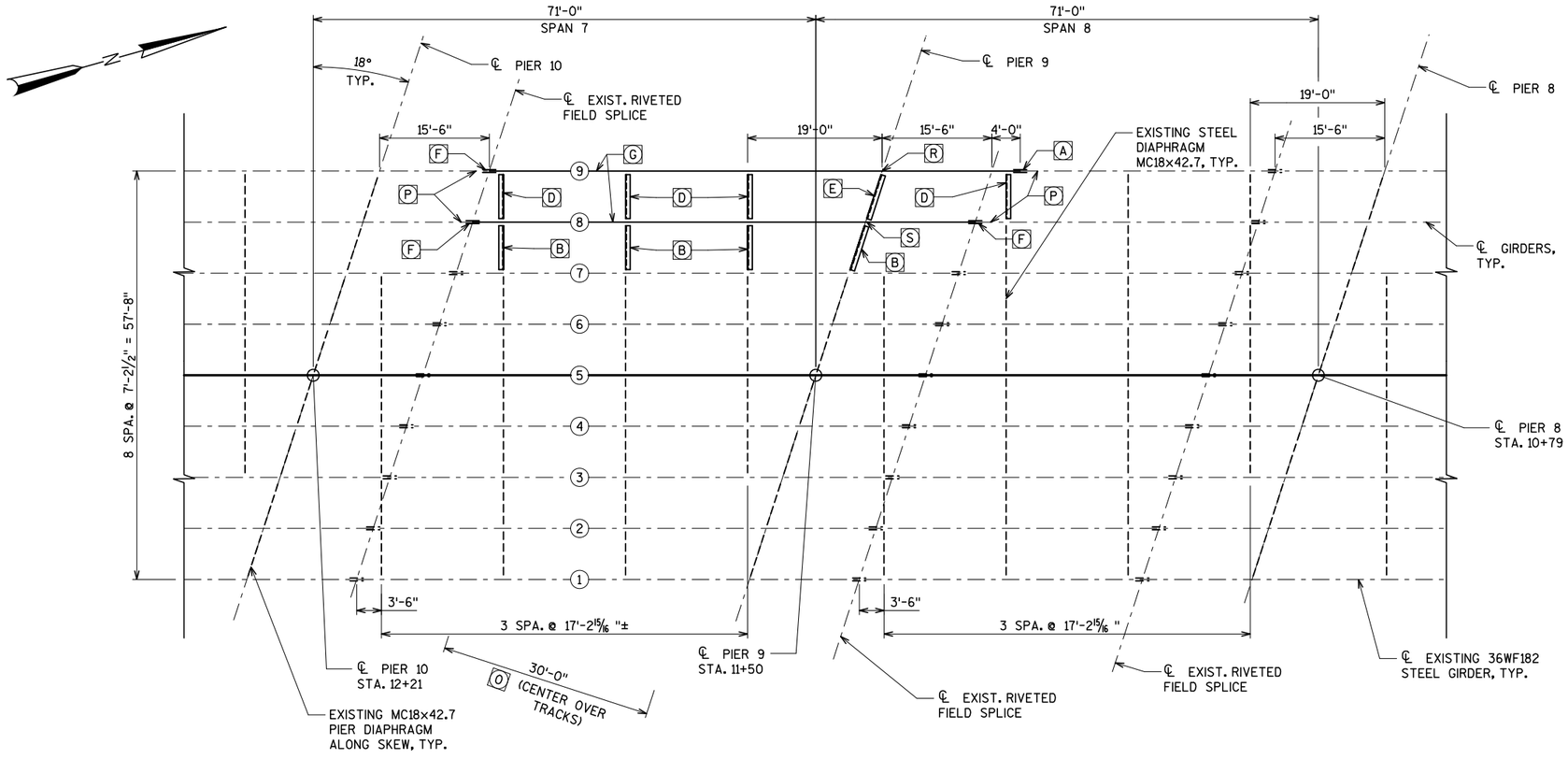
LEGEND

- [A] NEW BOLTED SPLICE AWAY FROM EXISTING SPLICE LOCATION
- [B] REMOVE EXISTING DIAPHRAGM FOR ERECTION OF REPLACEMENT GIRDERS 8 & 9. REINSTALL EXISTING DIAPHRAGM WITH NEW 1"ϕ A325 BOLTS.
- [D] NEW STEEL INTERMEDIATE DIAPHRAGM MC18x42.7
- [E] NEW STEEL PIER DIAPHRAGM MC18x42.7
- [F] NEW BOLTED FIELD SPLICE AT EXISTING SPLICE LOCATION
- [G] NEW W36x182 GIRDER
- [O] OVERCOAT PAINT DAMAGE ON BOTTOM FLANGES OF EXISTING GIRDERS FROM PRIOR TRAIN IMPACTS WITHIN LIMITS SHOWN. GRIND SMOOTH ANY SMALL GOUGES OR SCRATCHES IN BOTTOM FLANGE, PRIOR TO PAINTING. GRINDING IS INCIDENTAL TO BID ITEM "STRUCTURE OVERCOATING, CLEANING AND PRIMING P-40-848".
- [P] PREPARATION AND COATING OF TOP FLANGES WHERE EXISTING GIRDER IS EXPOSED BY DECK REMOVAL.
- [R] REPLACE FIXED BEARING (OR REPAIR AT CONTRACTOR'S OPTION)
- [S] NEW SOLE PLATE AT EXISTING BEARING



PARTIAL FRAMING PLAN

City of Milwaukee
Department of Public Works
Infrastructure Services Division

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SOUTH 35TH ST VIADUCT OVER UNION PACIFIC RAILROAD FRAMING PLAN

REVISIONS

DESIGNED BY	JRS
DRAWN BY	TAL
CHECKED BY	BDT
DATE	MAY 2014
SCALE	NTS
JOB NUMBER	BR100-14-0108/109
SHEET NUMBER	S7 OF S13
OF	24

FILE NAME: F:\BMI-3252C 35th Street over UPRR Bridge Repair-f5_Design\04_Structures_Bridges\cds\Prelim\P-40-848\S07_P-40-848_FRAMING PLAN.dgn
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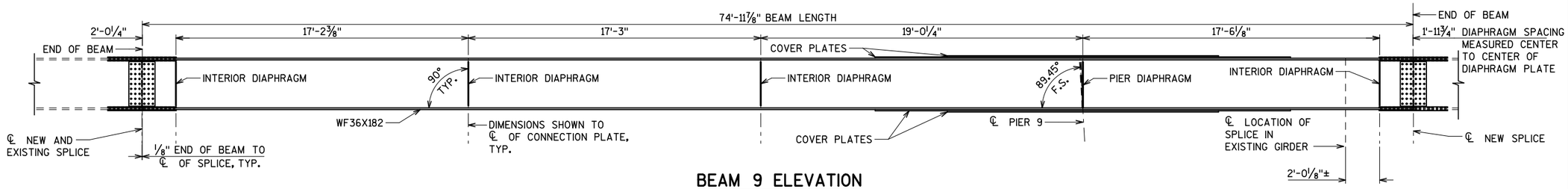
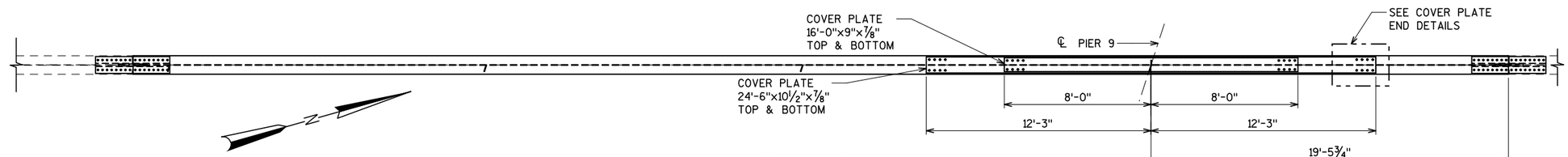
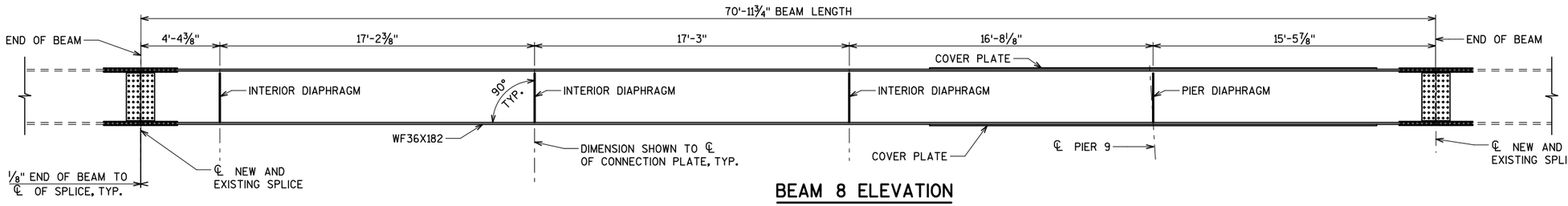


BEAM 9 ELEVATION

(LOOKING WEST)

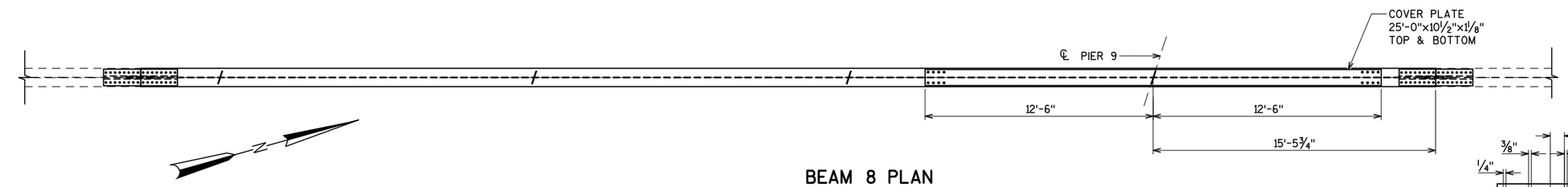


BEAM 9 PLAN

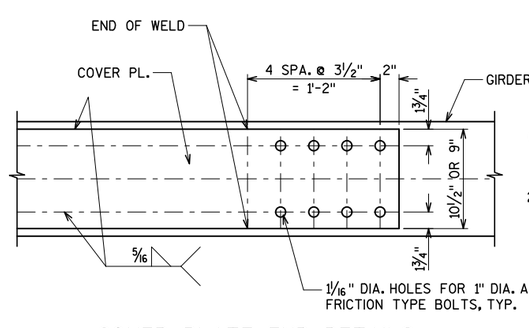


BEAM 8 ELEVATION

(LOOKING WEST)



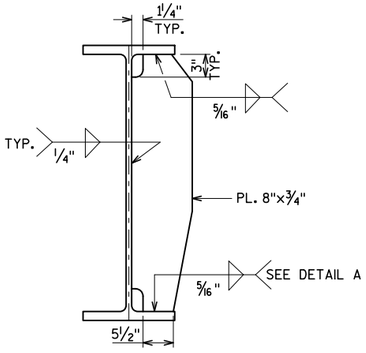
BEAM 8 PLAN



COVER PLATE FABRICATION SEQUENCE:

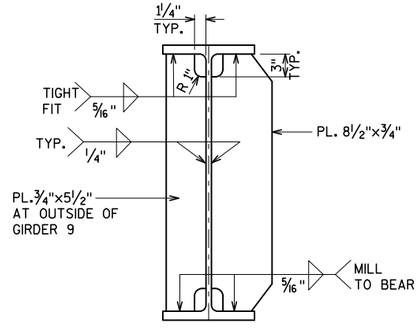
1) DRILL HOLES
2) CLEAN FAYING SURFACES
3) INSTALL BOLTS
4) WELD

COVER PLATE END DETAILS



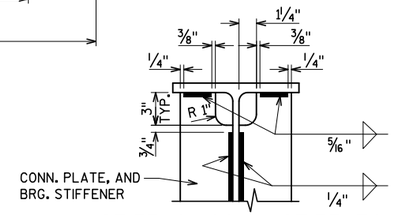
CONNECTION STIFFENER DETAILS

(FOR INTERIOR DIAPHRAGMS)
ALIGN PERP. TO GIRDER FLANGE

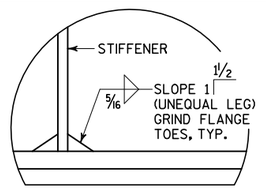


BEARING STIFFENER DETAIL

ALIGN PERP. TO GIRDER FLANGE EXCEPT
AT OUTSIDE FACE OF GIRDER 9 - SET VERTICAL



STIFF. & CONN. STIFF TO WEB/FLANGE CONN. WELDS



⊕ DETAIL A

(CONNECTION STIFFENER DETAIL @ TENSION FLANGE)

City of Milwaukee

Department of Public Works

Infrastructure Services Division

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SOUTH 35TH ST VIADUCT OVER UNION PACIFIC RAILROAD GIRDER DETAILS 1 OF 3

REVISIONS

DESIGNED BY	JRS
DRAWN BY	TAL
CHECKED BY	BDT
DATE	MAY 2014
SCALE	NTS
JOB NUMBER	BR100-14-0108/109
SHEET NUMBER	S8 OF S13
OF	24

FILE NAME: F:\RPM\3252C 35th Street over UPRR Bridge Repair#5.Design+04.Structures.Bridges+cds+PrelimsF-40-848+S08.P-40-848_beam_details.dgn
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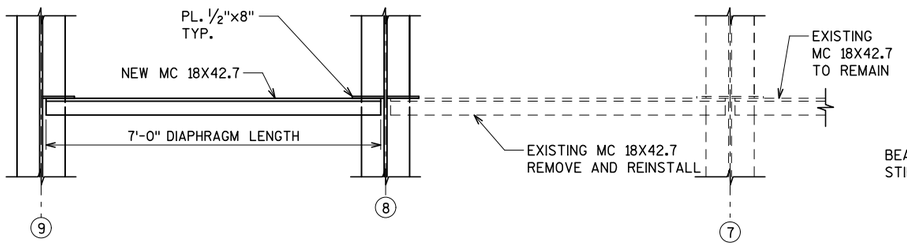
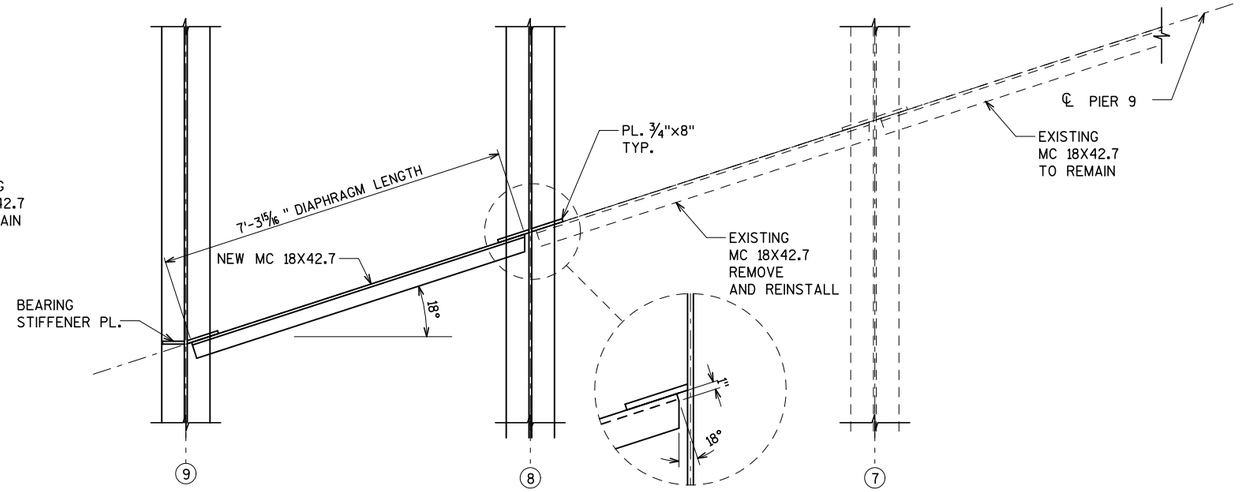


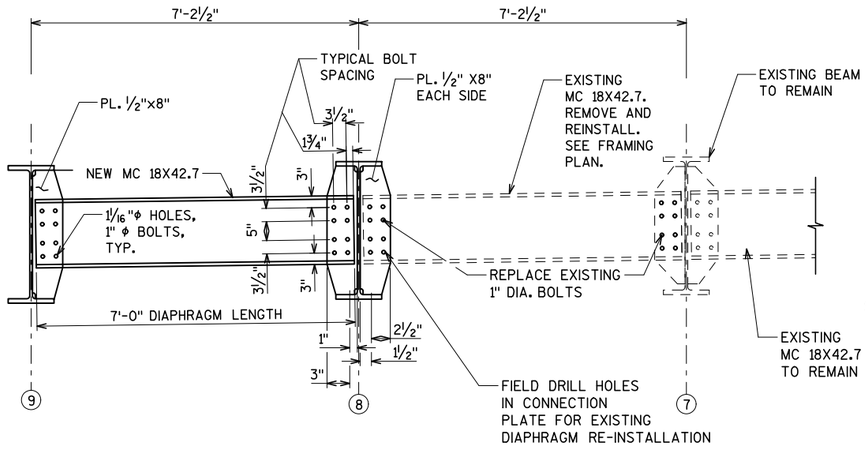
INTERMEDIATE DIAPHRAGM PLAN

(SEE FRAMING PLAN FOR LOCATIONS)



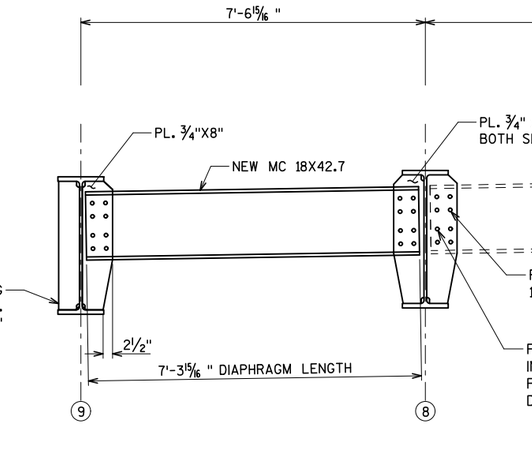
PIER DIAPHRAGM PLAN

AT PIER 9



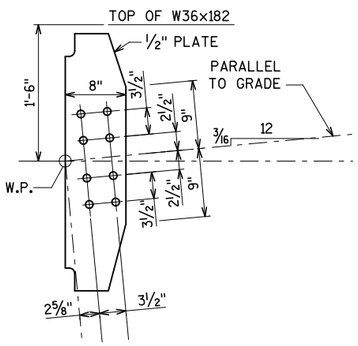
INTERMEDIATE DIAPHRAGM ELEVATION

(LOOKING NORTH)
PERPENDICULAR TO BEAM

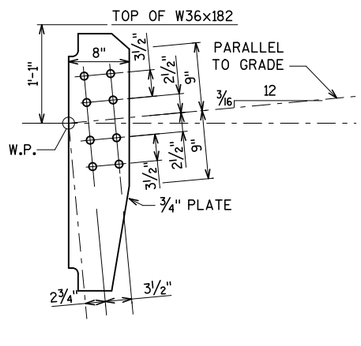


PIER DIAPHRAGM ELEVATION

(LOOKING NORTH)
PARALLEL TO PIER



TYPICAL INTERMEDIATE DIAPHRAGM CONNECTION PLATE



TYPICAL PIER DIAPHRAGM CONNECTION PLATE

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City of Milwaukee
Department of Public Works
Infrastructure Services Division

BLOOM COMPANIES, LLC
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SOUTH 35TH ST VIADUCT OVER UNION PACIFIC RAILROAD GIRDER DETAILS 2 OF 3

REVISIONS

DESIGNED BY	JRS
DRAWN BY	TAL
CHECKED BY	BDT
DATE	MAY 2014
SCALE	NTS
JOB NUMBER	BR100-14-0108/109
SHEET NUMBER	S9 OF S13
OF	24

BEARING NOTES

ALL BEARINGS ARE SYMMETRICAL ABOUT ℄ OF GIRDER AND ℄ OF BEARING UNLESS SHOWN OTHERWISE.

PROVIDE ONE 1/4", TWO 1/8", AND TWO 1/16" STAINLESS STEEL SHIMS FOR EACH BEARING FOR HEIGHT ADJUSTMENT OF BEARING IF NECESSARY.

ALL STRUCTURAL STEEL BEARING PLATES SHALL BE FLAT ROLLED STEEL PLATES WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL.

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

ALL NEW MATERIAL EXCLUDING SHIMS, PINTLES, ANCHOR BOLTS, NUTS & WASHERS SHALL CONFORM TO ASTM A709 GRADE 50W.

ALL MATERIALS IN BEARINGS, INCLUDING SHIMS, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "BEARING ASSEMBLIES FIXED P-40-848" EACH. PAYMENT IS THE SAME FOR REPAIR OR REPLACEMENT OPTION.

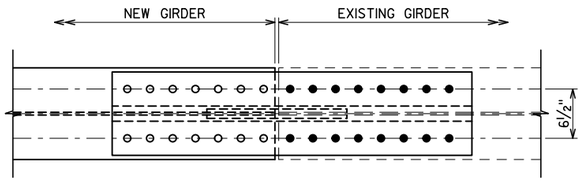
PLACE SHIM PLATES IF NEEDED BETWEEN BEARING PAD AND MASONRY PLATE. PLATES SHALL HAVE DIMENSIONS THAT MATCH MASONRY PLATE.

NEW BEARING STEEL SHALL BE SHOP PAINTED WITH A WELDABLE PRIMER. FIELD PAINT ENTIRE BEARING UNDER "STRUCTURE OVERCOATING CLEANING AND PRIMING P-40-848" BID ITEM.

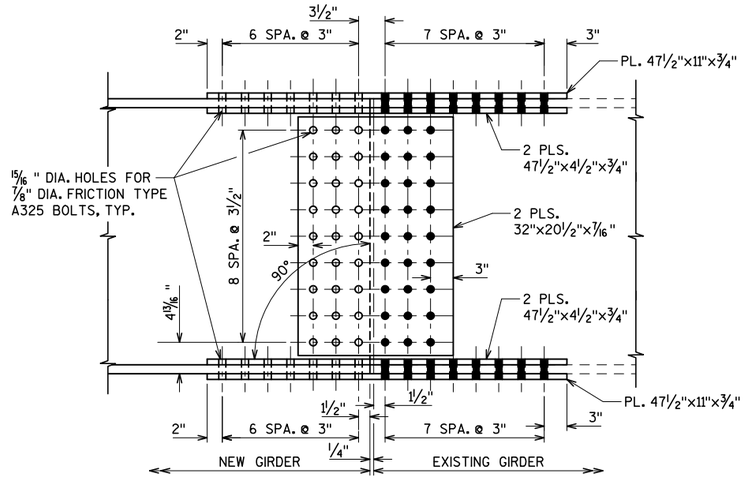
BEARING 9, AT PIER 9, IS SLIGHTLY DAMAGED ABOVE THE VERTICAL STIFFENERS. THIS BEARING MAY BE REMOVED AND REPAIRED IN SHOP. REPLACE EXISTING BEARING PAD WITH NEW BEARING PAD AND REUSE EXISTING ANCHOR BOLTS. PAYMENT IS THE SAME FOR REPAIR AND REPLACEMENT OPTIONS.

BEARING 8, AT PIER 9, REQUIRES A NEW SOLE PLATE AND SHOULDER PLATES. PAYMENT FOR THE NEW SOLE PLATE AND SHOULDER PLATE IS INCLUDED IN BID ITEM " STRUCTURAL STEEL HS".

REMOVAL OF EXISTING BEARINGS, AS REQUIRED FOR GIRDERS 8 AND 9 AT PIER 9, IS INCLUDED IN THE BID ITEM "REMOVING OLD STRUCTURE STA 11+50".



FIELD SPLICE PLAN



FIELD SPLICE ELEVATION

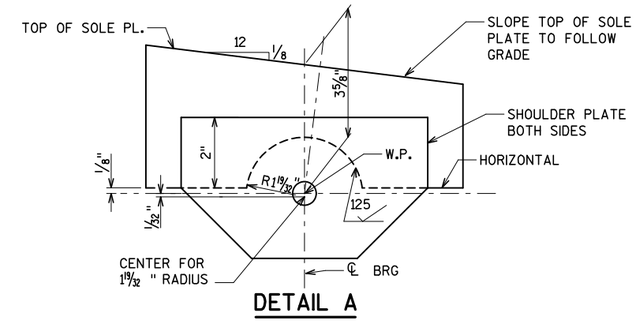
FIELD SPLICE NOTES

REAM OUT EXISTING RIVET HOLES TO 15/16 " DIA. MAX IF NECESSARY

GRIND SMOOTH ALL HOLES IN EXISTING GIRDER.

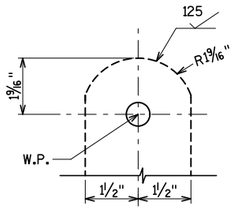
GRINDING AND REAMING ARE INCIDENTAL TO BID ITEM "STRUCTURAL STEEL HS".

- ● FIELD DRILL HOLES IN SPLICE PLATE, AT GIRDER 9 NEAR PIER 9 FIELD DRILL HOLES IN EXISTING GIRDER
- ○ SHOP DRILL HOLES IN SPLICE PLATE AND GIRDER

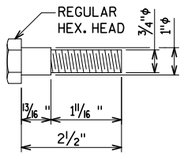


DETAIL A

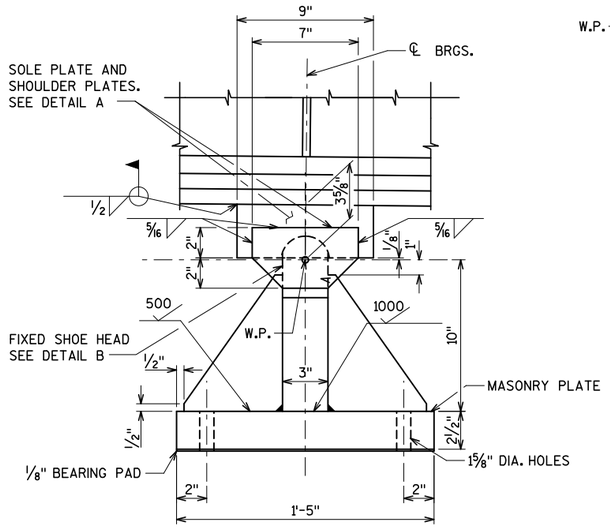
(LOOKING WEST)
(FOR GIRDERS 8 AND 9)



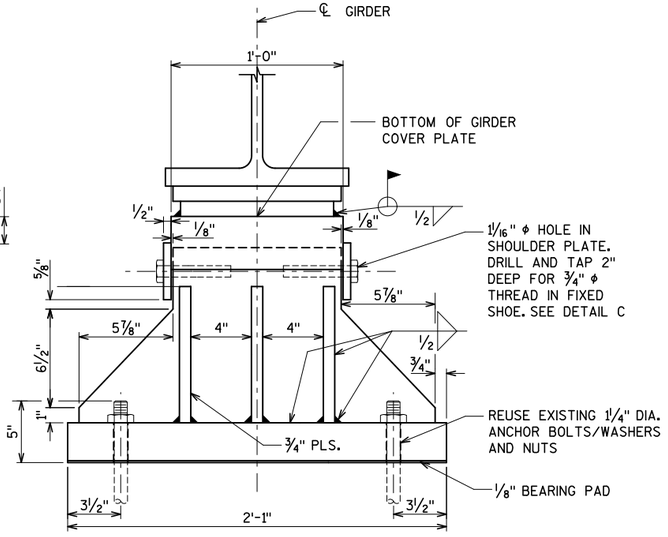
DETAIL B



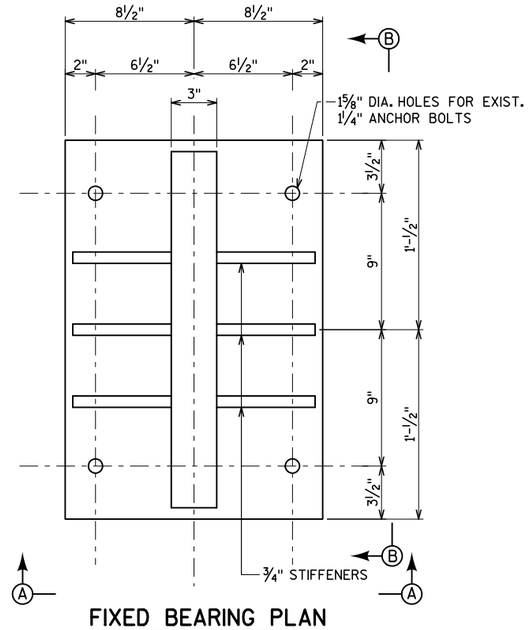
DETAIL C



ELEVATION A-A



ELEVATION B-B



FIXED BEARING PLAN

City of Milwaukee

Department of Public Works

Infrastructure Services Division

BLOOM COMPANIES, LLC
Infrastructure, Innovation and Ingenuity
10501 W. Research Drive • Milwaukee, WI 53226
Phone: (414) 771-3390 Fax: (414) 771-4490

SOUTH 35TH ST VIADUCT OVER UNION PACIFIC RAILROAD GIRDER DETAILS 3 OF 3

REVISIONS

DESIGNED BY	JRS
DRAWN BY	TAL
CHECKED BY	BDT
DATE	MAY 2014
SCALE	NTS
JOB NUMBER	BR100-14-0108/109
SHEET NUMBER	S10 OF S13
OF	24

FILE NAME: F:\BMI-3252C 35th Street over UPRR Bridge Repair\5_Design\04_Structures_Bridges\dgn\Preliim\P-40-848\S10_P-40-848_steel_details.dgn
DATE: 5/6/2014 8:04:11 PM Plotted by: tlegear
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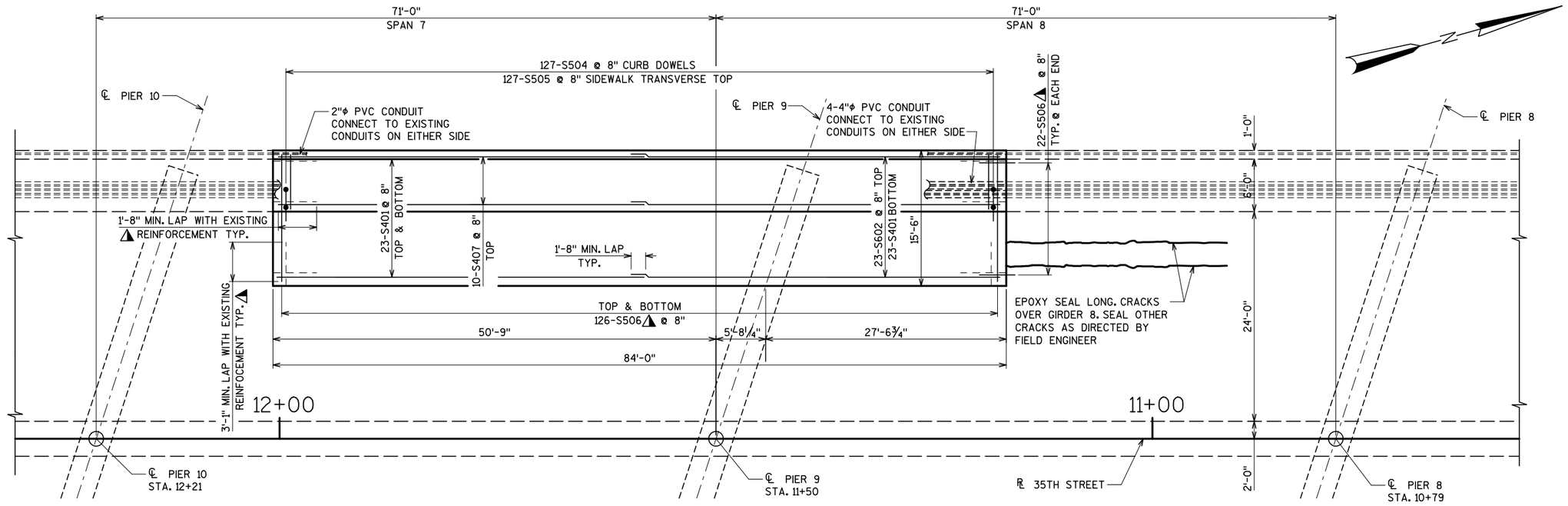
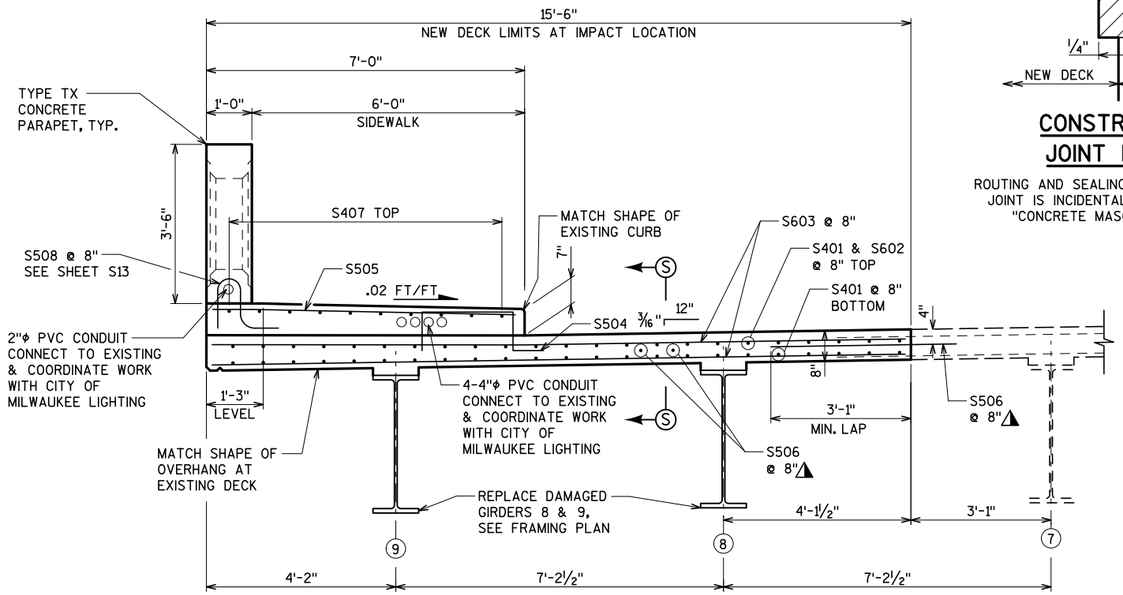
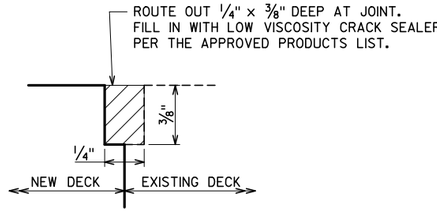


PLAN VIEW



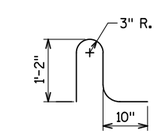
TYPICAL SECTION

(LOOKING NORTH)

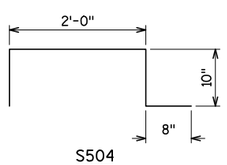


CONSTRUCTION JOINT DETAIL

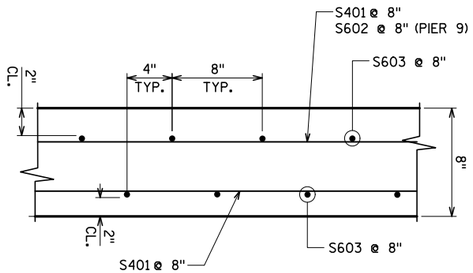
ROUTING AND SEALING OF CONSTRUCTIUON JOINT IS INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY BRIDGES".



S508



S504



SECTION S-S

NOTES

PROVIDE TEMPORARY BRACING FOR GIRDERS ACCORDING TO THE STANDARD SPECIFICATIONS SECTION 502.3.2.3 TO SUPPORT THE DECK OVERHANG AT BOTH GIRDERS, AND PREVENT GIRDER ROTATION.

⚠ PROVIDE NO. 5 CONCRETE MASONRY ANCHORS TYPE 'L' BETWEEN EXISTING REINFORCING BARS AT CENTER OF SLAB. EMBED 1'-6" INTO EXISTING CONCRETE.

S506 BARS ARE NOT REQUIRED WHEN REQUIRED LAP WITH EXISTING BARS IS AVAILABLE. PROVIDE AT DIRECTION OF FIELD ENGINEER.

BILL OF BARS

BAR MARK	COAT	NO.	LENGTH	BENT	BAR SERIES	LOCATION
S401	X	69	42'-8"			LONGITUDINAL TOP AND BOTTOM
S602	X	23	42'-8"			LONGITUDINAL TOP OVER PIER 9
S603	X	254	15'-2"			TRANSVERSE TOP AND BOTTOM
S504	X	127	4'-0"	X		DECK - CURB DOWELS
S505	X	127	6'-6"			SIDEWALK - TRANSVERSE - TOP
S506	X	170	4'-8"			DECK ANCHORS TO EXISTING
S407	X	20	42'-8"			SIDEWALK LONGITUDINAL
S508	X	112	3'-4"	X		PARAPET DOWELS

⚠

City of Milwaukee

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SOUTH 35TH ST VIADUCT OVER UNION PACIFIC RAILROAD SUPERSTRUCTURE DETAILS

REVISIONS

DESIGNED BY JRS

DRAWN BY TAL

CHECKED BY BDT

DATE MAY 2014 | SCALE NTS

JOB NUMBER BR100-14-0108/109

SHEET NUMBER S11 OF S13

OF 24

FILE NAME: F:\BMI-3252\ 35th Street over UPRR Bridge Repair\5.Design\04.Structures.Bridges\cds\Preliim\F-40-848\S11_F-40-848_deck.dgn
DATE: 5/6/2014 4:56:44 PM Plotted by: tlegeor
PEN TABLE: V8_STRUCTURAL_REV.TBL

TOP OF DECK ELEVATIONS* - SPAN 7

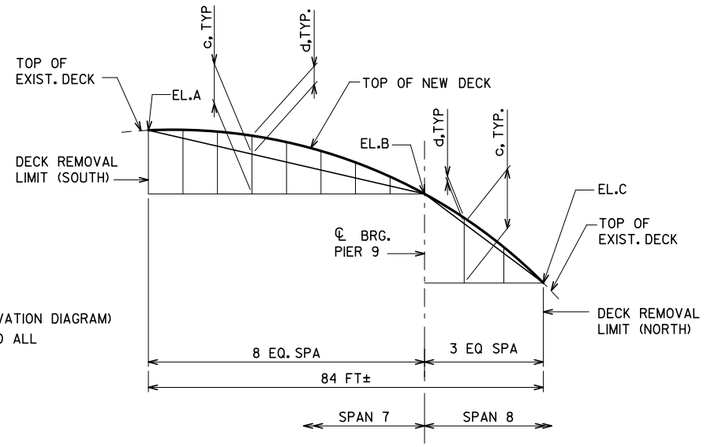
	'd' VALUES IN FEET									
	SOUTH END OF NEW DECK	⅛ PT.	¼ PT.	⅜ PT.	½ PT.	⅝ PT.	¾ PT.	⅞ PT.	℄ BRG PIER 9	EL. B
GIRDER 8	0	0.04	0.07	0.09	0.08	0.07	0.04	0.04	0	98.51
GIRDER 9	0	0.04	0.07	0.08	0.09	0.08	0.07	0.04	0	98.38
WEST EDGE	0	0.04	0.07	0.09	0.10	0.09	0.07	0.04	0	98.29

*TOP OF DECK ELEVATION = EL. B+c+d (SEE TOP OF DECK ELEVATION DIAGRAM)
OBTAIN EL. A AFTER ALL NEW STEEL HAS BEEN ERECTED AND ALL TEMPORARY SUPPORTS REMOVED.
OBTAIN 'c' BY LINEAR INTERPOLATION BETWEEN EL. A AND EL. B

TOP OF DECK ELEVATIONS* - SPAN 8

	'd' VALUES IN FEET			
	℄ BRG PIER 9	⅓ PT.	⅔ PT.	NORTH END OF NEW DECK
GIRDER 8	0	0.02	0.02	0
GIRDER 9	0	0.01	0.01	0
WEST EDGE	0	0.01	0.01	0

*TOP OF DECK ELEVATION = EL. C+c+d (SEE TOP OF DECK ELEVATION DIAGRAM)
OBTAIN EL. C AFTER ALL NEW STEEL HAS BEEN ERECTED AND ALL TEMPORARY SUPPORTS REMOVED.
OBTAIN 'c' BY LINEAR INTERPOLATION BETWEEN EL. B AND EL. C



TOP OF DECK ELEVATION DIAGRAM

DEAD LOAD DEFLECTIONS - SPAN 7

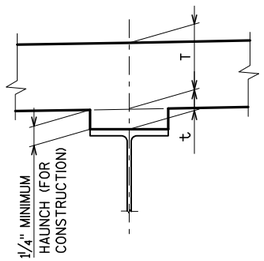
	DEFLECTION IN INCHES								
	SOUTH END OF NEW DECK	⅛ PT.	¼ PT.	⅜ PT.	½ PT.	⅝ PT.	¾ PT.	⅞ PT.	℄ BRG PIER 9
GIRDER 8	0	0.06	0.15	0.22	0.24	0.21	0.15	0.07	0
GIRDER 9	0	0.11	0.27	0.40	0.45	0.4	0.27	0.12	0

DEFLECTIONS ARE IN INCHES
POSITIVE VALUES INDICATE DOWNWARD DEFLECTIONS

DEAD LOAD DEFLECTIONS - SPAN 8

	DEFLECTION IN INCHES			
	℄ BRG PIER 9	⅓ PT.	⅔ PT.	NORTH END OF NEW DECK
GIRDER 8	0	0.02	0.01	0
GIRDER 9	0	0.04	0.02	0

DEFLECTIONS ARE IN INCHES
POSITIVE VALUES INDICATE DOWNWARD DEFLECTIONS

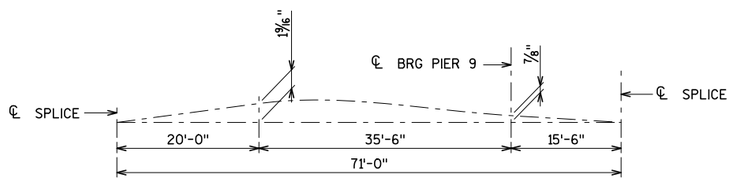


HAUNCH DETAIL

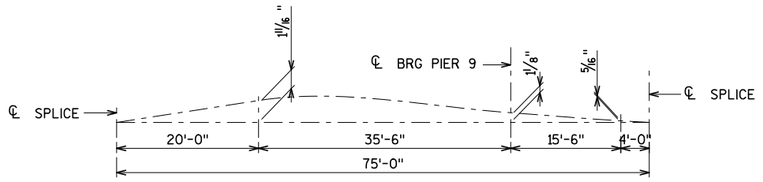
NOTES

t = HAUNCH HEIGHT AT CENTERLINE OF GIRDER.
(TO DETERMINE "t": AFTER ALL STRUCTURAL STEEL HAS BEEN ERECTED ELEVATIONS OF THE TOP FLANGES, TOP OF SPLICE PLATES, OR TOP OF COVER PLATES, WHICHEVER APPLIES, SHALL BE TAKEN AT LOCATIONS SHOWN ON THE TOP OF DECK ELEVATIONS TABLE. THEN FOLLOW THE PROCEDURE BELOW TO OBTAIN HAUNCH HEIGHT.

TOP OF DECK ELEVATION PER 'TOP OF DECK ELEVATIONS' TABLE
\- TOP OF STEEL ELEV. AFTER PLACEMENT AND REMOVAL OFTEMPORARY SUPPORTS
\+ DEADLOAD DEFLECTION, ADD DOWNWARD DEFLECTIONS AND SUBTRACT UPWARD DEFLECTIONS
\- SLAB THICKNESS ('T')
= "t" VALUE FOR SETTING HAUNCH.



BEAM 8 CAMBER DIAGRAM



BEAM 9 CAMBER DIAGRAM

City of Milwaukee
Department of Public Works
Infrastructure Services Division

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SOUTH 35TH ST VIADUCT OVER UNION PACIFIC RAILROAD DECK ELEVATIONS

REVISIONS

DESIGNED BY JRS
DRAWN BY TAL
CHECKED BY BDT
DATE MAY 2014 | SCALE NTS
JOB NUMBER BR100-14-0108/109
SHEET NUMBER S12 OF S13
OF 24

FILE NAME: F:\BMI-3252C 35th Street over UPRR Bridge Repair\5_Design\04_Structures_Bridges\dgs\Prelims\P-40-848\S12_P-40-848_T00 .dgn
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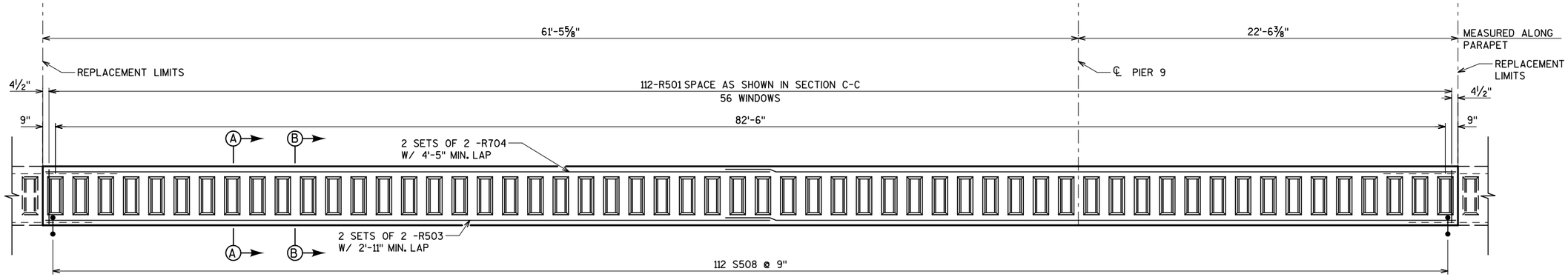
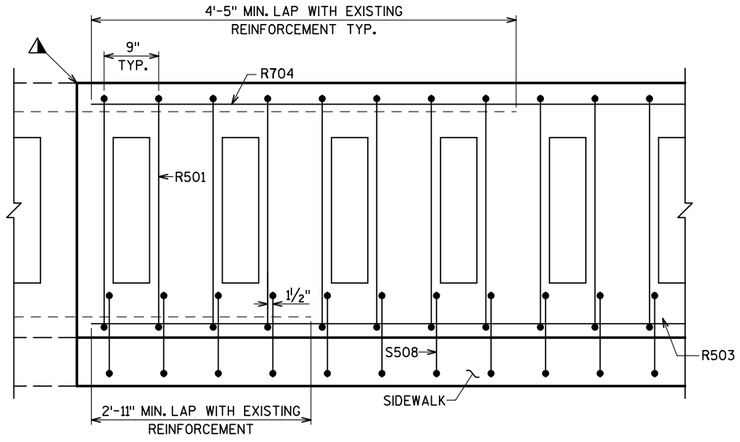


PARAPET INSIDE ELEVATION

(LOOKING WEST)



OUTSIDE ELEVATION SHOWING TYPICAL REINFORCEMENT PLACEMENT

NOTES

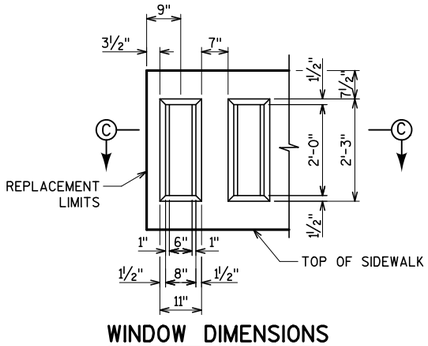
APPLY CONCRETE STAIN TO REPLACED PARAPETS. COLOR TO MATCH EXISTING PARAPETS.

BID ITEM SHALL BE "PARAPET CONCRETE TYPE 'TX'", WHICH SHALL INCLUDE ALL ITEMS SHOWN.

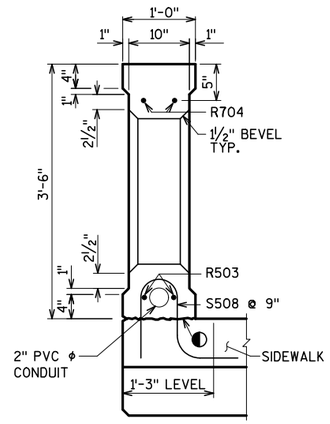
LEGEND

◐ HORIZ. CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH.

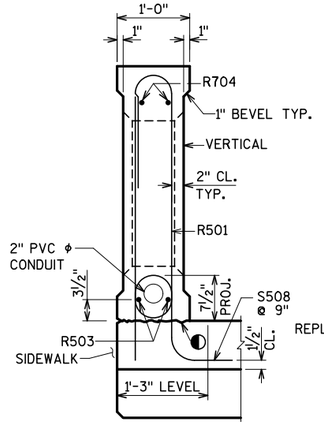
⚠ DEFINE CONSTRUCTION JOINT WITH ¾" V-GROOVE AND SEAL WITH WHITE NON-BITUMINOUS JOINT SEALER. COLOR TO CLOSELY MATCH CONCRETE STAIN.



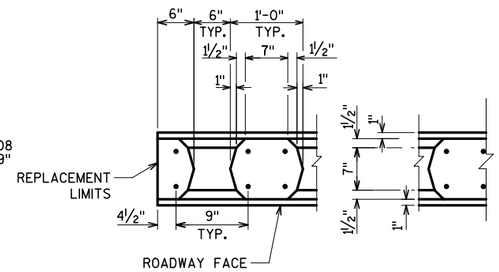
WINDOW DIMENSIONS



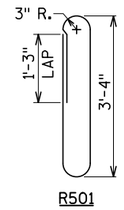
SECTION A-A



SECTION B-B



SECTION C-C



R501

BAR BENDING DIAGRAM

BILL OF BARS

(FOR INFORMATION ONLY, NOT FOR PAYMENT)

BAR MARK	COAT	NO.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	112	8'-6"	X		PARAPET VERT.
R503	X	4	43'-6"			PARAPET HORIZ. BOT.
R704	X	4	44'-3"			PARAPET HORIZ. TOP

City of Milwaukee

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SOUTH 35TH ST VIADUCT OVER UNION PACIFIC RAILROAD PARAPET DETAILS

REVISIONS

DESIGNED BY JRS

DRAWN BY TAL

CHECKED BY BDT

DATE MAY 2014 | SCALE NTS

JOB NUMBER BR100-14-0108/109

SHEET NUMBER S13 OF S13

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FILE NAME: F:\BMI-32520 35th Street over UPRR Bridge Repair\5.Design\04.Structures.Bridges\dgn\Preliml\P-40-848\S13_P-40-848_parapet.dgn
DATE: 5/6/2014 4:57:05 PM Plotted by: Hegeer
PEN TABLE: V8_STRUCTURAL_REV.TBL