

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-4VB-BP-1	MADISON	12	1
ILLINOIS			CONTRACT NO. 76N45	

FOR INDEX OF SHEETS, SEE SHEET NO. 2

TRAFFIC DATA (SN 060-0052, WB)

2020 ADT=22700

2040 ADT=26600

SU=2.2% MU=20.0%

TRAFFIC DATA (SN 060-0051 EB)

2020 ADT=19500

2040 ADT=22800

SU=2.5% MU=18.1%

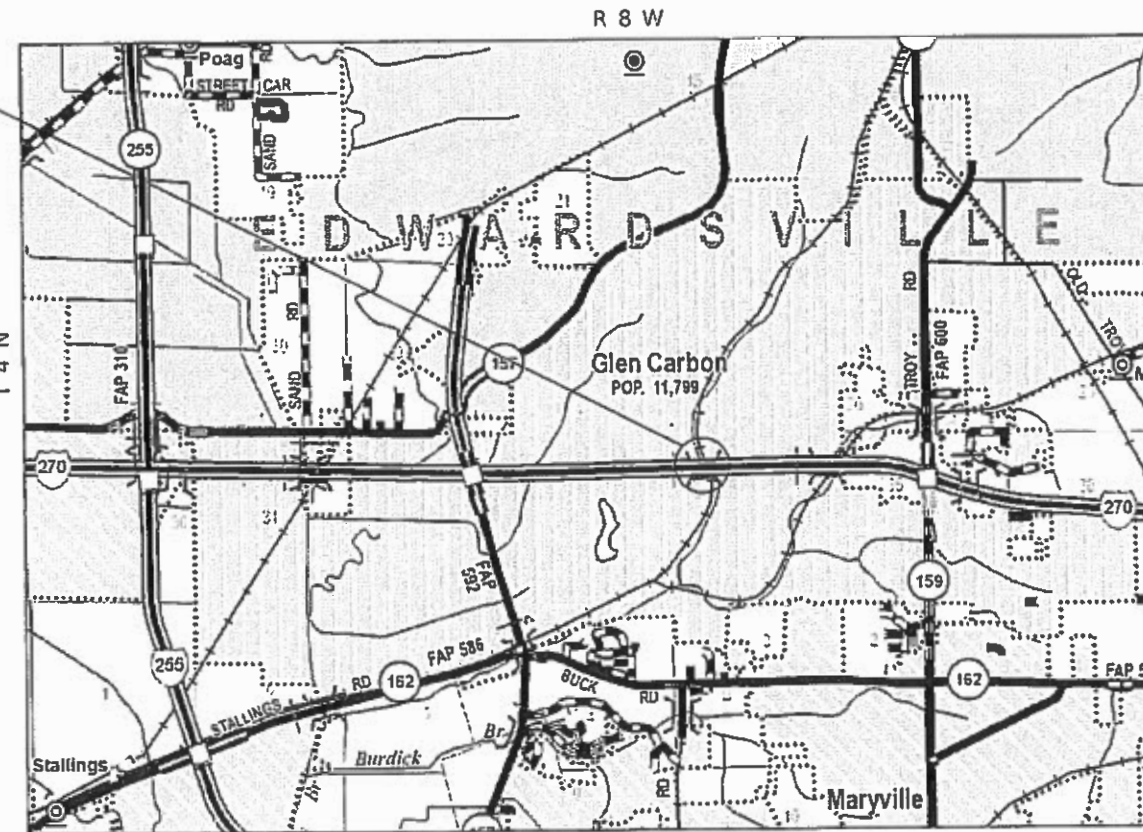
PROPOSED HIGHWAY PLANS

FAI 270 ROUTE I-270
SECTION 60-4VB-BP-1
PROJECT NHPP-LGF3(688)
BRIDGE PAINTING
MADISON COUNTY

C-98-091-20

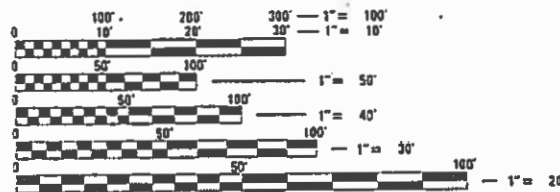


PROJECT LOCATION
I-270 1.4 MILES EAST OF IL 157
OVER MCT TRAIL & CREEK
SN 060-0051 (EB)
SN 060-0052 (WB)
LATITUDE: 38.756699
LONGITUDE: -89.980868



NOT TO SCALE

GROSS LENGTH = 272 FT. = 0.051 MILE
NET LENGTH = 272 FT. = 0.051 MILE



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS
1-800-892-0123
OR 811

PROJECT ENGINEER: TIM PADGETT (618) 346-3325
PROJECT MANAGER: RAHSHUN J MILLER (618) 346-3196

CONTRACT NO. 76N45

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED *Jan 21, 2020*
Keith Roberts
REGIONAL ENGINEER

March 20, 2020
A. Etk
ENGINEER OF DESIGN AND ENVIRONMENT

March 20, 2020
John M. Yun
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

INDEX OF SHEETS

- 1 COVER SHEET
- 2 INDEX OF SHEETS, GENERAL NOTES, HIGHWAY STANDARDS, COMMITMENTS AND DETAILED LOCATION MAP
- 3 SUMMARY OF QUANTITIES
- 4-12 EXISTING STRUCTURE DETAILS SN 060-0051 & SN 060-0052 (FOR INFORMATION ONLY)

GENERAL NOTES

1. THE FOLLOWING UTILITIES ARE KNOWN TO HAVE FACILITIES WITHIN THE PROJECT AREA ARE AS FOLLOWS:

- * AMEREN ILLINOIS -- GAS & ELECTRIC (AERIAL AND BURIED)
- * AT&T ILLINOIS -- COMMUNICATIONS (AERIAL AND BURIED)
- * BOND MADISON WATER COMPANY -- WATER (BURIED)
- * BUCKEYE PARTNERS L.P. WOOD RIVER PIPELINE -- PIPELINE (BURIED)
- * CHARTER COMMUNICATIONS, INC -- CABLE TV (AERIAL AND BURIED)
- * CONSOLIDATED COMMUNICATIONS -- COMMUNICATIONS (AERIAL AND BURIED)
- * ENABLE MIDSTREAM PARTNERS -- PIPELINE (BURIED)
- * LEVEL 3 COMMUNICATIONS, LLC -- COMMUNICATIONS (AERIAL AND BURIED)
- * SOUTHWESTERN ELECTRIC COOPERATIVE, INC. -- ELECTRIC (AERIAL & BURIED)
- * VILLAGE OF GLEN CARBON -- WATER & SANITARY SEWER (BURIED)
- * VERIZON BUSINESS -- COMMUNICATIONS (AERIAL AND BURIED)

ILLINOIS STATE LAW REQUIRES A 48-HOUR NOTICE BE GIVEN TO UTILITIES BEFORE DIGGING. FIELD MARKING OF FACILITIES MAY BE OBTAINED BY CONTACTING J.U.L.I.E. (1-800-892-0123 OR 811) OR FOR NON-MEMBERS, THE UTILITY COMPANY DIRECTLY.

2. THE SSPC-OP1 AND SSPC-OP2 CERTIFICATIONS WILL BE REQUIRED FOR THE BRIDGE.
3. THE DEPARTMENT STRONGLY ENCOURAGES THE PRIME CONTRACTOR AND THEIR APPROVED SUB-CONTRACTORS TO HIRE MINORITY, WOMEN AND DISADVANTAGED INDIVIDUALS FROM ITS FEDERALLY FUNDED HIGHWAY CONSTRUCTION CAREERS TRAINING PROGRAM (HCCTP) TO HELP MEET WORKFORCE AND TRAINEE GOALS. THIS PROGRAM IS TRAINING MINORITIES, WOMEN AND DISADVANTAGED INDIVIDUALS IN HIGHWAY CONSTRUCTION-RELATED SKILLS, E.G., MATH FOR THE TRADES, JOB READINESS, TECHNICAL SKILLS COURSEWORK (CARPENTRY, CONCRETE FLATWORK, BLUEPRINT READING, SITE PLANS, SITE WORK, TOOLS USE, ETC.) AND OSHA 10 HOUR CERTIFICATION, TO PREPARE THEM FOR A CAREER IN THE HIGHWAY CONSTRUCTION TRADES. GRADUATES ARE WELL-TRAINED AND READY TO BECOME PRODUCTIVE ENTRY-LEVEL CONSTRUCTION WORKERS. CONTACT THE DISTRICT 8 EEO OFFICE AT 618-346-3360 AND/OR THE HCCTP COORDINATOR AT 618-874-6528 TO LEARN MORE ABOUT THE PROGRAM AND FOR ASSISTANCE IN MEETING WORKFORCE AND TRAINEE GOALS.
4. ALL TURF AREAS DISTURBED BY THE CONTRACTOR SHALL BE SEEDED WITH THE APPROPRIATE EROSION CONTROL, AS DIRECTED BY THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.
5. EXISTING STRUCTURAL DETAILS FOR SN 060-0051 AND 060-0052 ARE LOCATED WITHIN THE PLANS AND SPECIAL PROVISIONS IN THE CONTRACT DETAILS ON THE WEBSITE.
6. NO LANE CLOSURES WILL BE PERMITTED ON I-270.
7. A MINIMUM OF TWO AIR MONITORS WILL BE REQUIRED AT EACH STRUCTURE TO MONITOR ABRASIVE BLASTING OPERATIONS. SEE SPECIAL PROVISIONS FOR "CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES."
8. FOR BOTH STRUCTURES, CLEANING AND PAINTING OF THE EXISTING STRUCTURAL STEEL SHALL BE AS SPECIFIED IN THE SPECIAL PROVISION FOR "CLEANING AND PAINTING EXISTING STEEL STRUCTURES". ALL EXISTING STEEL SHALL BE CLEANED PER NEAR WHITE BLAST CLEANING -SPPC-SP10. ALL EXISTING STEEL SHALL BE PAINTED ACCORDING TO THE REQUIREMENTS OF PAINT SYSTEM 1-OZ/E/U. THE COLOR OF THE FINAL FINISH COAT SHALL BE GRAY (MUNSELL NO. 5B 7/1).
9. THE CONTRACTOR SHALL EXECUTE A TEMPORARY RIGHT OF ENTRY WITH MCT PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
10. IF A WORKING PLATFORM IS USED, THE CONTRACTOR SHALL SUBMIT CALCULATIONS AND DRAWINGS SIGNED AND SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF ILLINOIS. THAT ASSURE THE STRUCTURAL INTEGRITY OF THE BRIDGE UNDER THE LIVE AND DEAD LOADS IMPOSED, INCLUDING THE DESIGN WIND LOADING. COST WILL BE INCLUDED IN THE PAY ITEM, "CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES".
11. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID DAMAGING THE STATE OWNED FIBER OPTIC CABLE ON THE OUTSIDE FASCIA BEAM. ANY DAMAGE INCURRED SHALL BE REPAIRED TO THE SATISFACTION OF THE RESIDENT ENGINEER.
12. NEW GUIDELINES FOR THE INDIANA BAT AND THE NORTHERN LONG EARED BAT ARE BEING MANDATED BY THE US FISH AND WILDLIFE SERVICE.

IF CONSTRUCTION ACTIVITY IS PLANNED DURING THE INDIANA BAT AND NORTHERN LONG EARED BAT ACTIVE SEASON - FROM APRIL 1 THROUGH SEPTEMBER 30 - THE DEPARTMENT WILL PERFORM A FINAL INSPECTION OF THE BRIDGE NO MORE THAN 7 DAYS PRIOR TO THE START OF CONSTRUCTION ACTIVITY TO ENSURE BATS HAVE NOT STARTED TO USE THE AREA OF THE BRIDGE PROPOSED FOR WORK AFTER THE DEPARTMENT'S ORIGINAL INSPECTION.

IF THE BATS ARE FOUND ON THE BRIDGE, THE ENGINEER SHALL CONTACT JENNIFER HUNT (918-346-3156) IN THE DISTRICT 8 OFFICE. SHE WILL NOTIFY THE BUREAU OF DESIGN ENVIRONMENT BIOLOGY SECTION AND THEY WILL TASK SOMEONE FROM THE ILL. NATURAL HISTORY SURVEY TO INSPECT THE BRIDGE TO DETERMINE IF THE BATS ARE THE INDIANA BATS OR THE NORTHERN LONG EARED BAT. IF THE INDIANA BAT OR THE NORTHERN LONG EARED BAT ARE PRESENT ON THE BRIDGE, THE CONTRACTOR CANNOT WORK IN THE AREA THE BATS ARE LOCATED UNTIL OCTOBER 1. THE CONTRACTOR WILL BE ABLE TO WORK IN OTHER AREAS OF THE BRIDGE BUT NOT IN THE AREAS WHERE THE BATS ARE LOCATED. THE WORK AREA RESTRICTION DOES NOT APPLY TO OTHER NON-THREATENED OR ENDANGERED BATS FOUND ON THE BRIDGE.

PROJECTS WHERE WORK IS STARTED BEFORE APRIL 1 OF EACH YEAR WILL NOT REQUIRE AN INSPECTION OF THE BRIDGE FOR BATS.

THE DEPARTMENT STRONGLY SUGGESTS THAT THE CONTRACTOR COORDINATE THEIR WORK ACTIVITIES WITH THE ENGINEER AND START WORK BEFORE APRIL 1 OF EACH YEAR TO AVOID DELAYS DUE TO THE INSPECTION AND PRESENCE OF BATS. GAPS IN WORK ACTIVITIES FROM APRIL 1 TO SEPTEMBER 30 COULD CAUSE FOR ADDITIONAL BAT INSPECTIONS.

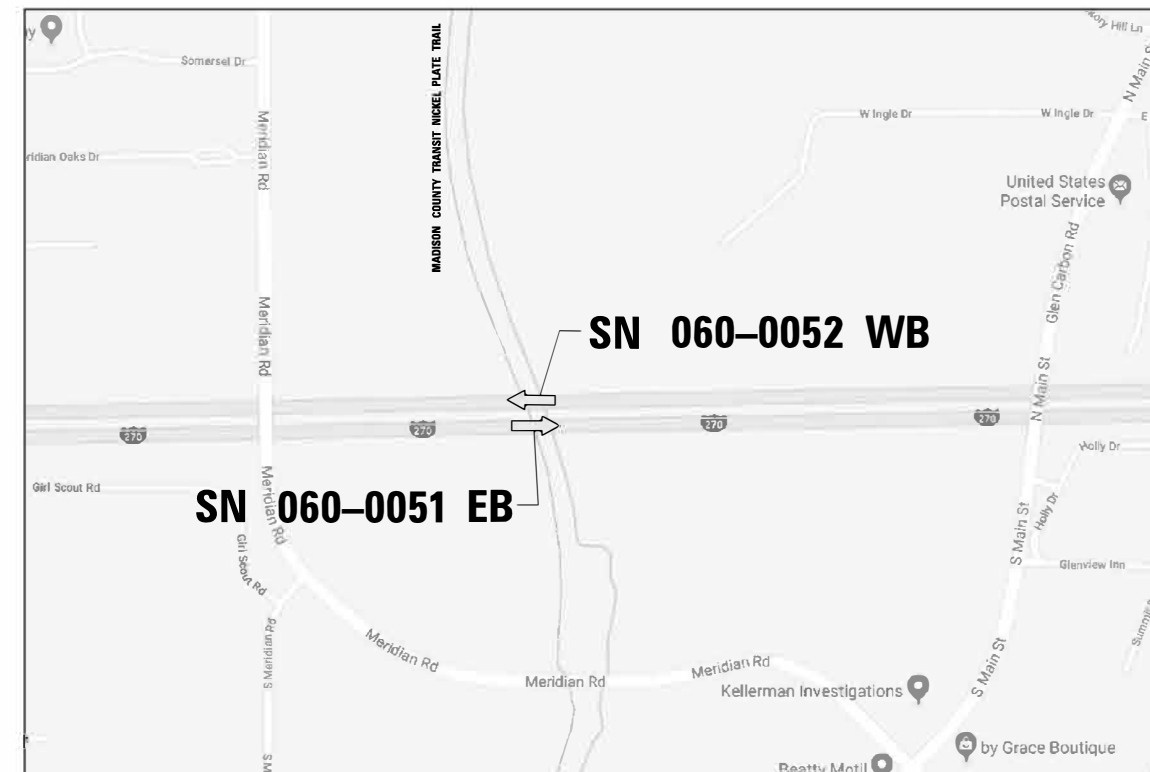
GRAFFITI REMOVAL SCHEDULE				
STRUCTURE		LOCATION		AREA
EB	060-0051	EAST MOST PIER	WEST FACE	8'X30'
			NORTH FACE	3'X3'
		MIDDLE PIER	WEST FACE	15'X6'
WB	060-0052	EAST MOST PIER	WEST FACE	37'X6'
			SOUTH FACE	3'X4'

COMMITMENTS: NONE

HIGHWAY STANDARDS

- 000001-07 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 001006 DECIMAL OF ANY INCH AND OF A FOOT
- 701006-05 OFF-ROAD OPERATIONS, 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE
- 701101-05 OFF ROAD OPERATIONS MULTILANE LESS THAN 15 FT TO 24' FROM PAVEMENT EDGE
- BLR 21-9 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

DETAILED LOCATION MAP



NOT TO SCALE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS, GENERAL NOTES, HIGHWAY STANDARDS,
COMMITMENTS AND DETAILED LOCATION MAP

SCALE: NTS SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-4VB-BP-1	MADISON	12	2
CONTRACT NO. 76N45			ILLINOIS / FED. AID PROJECT	

REV-SEP

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE	
				90% FEDERAL / 10% STATE MADISON	
				BRIDGE	BRIDGE
				0047	0047
				S.N. 060-0051 (URBAN)	S.N. 060-0052 (URBAN)
67100100	MOBILIZATION	L SUM	1	0.5	0.5
70200100	NIGHTTIME WORK ZONE LIGHTING	L SUM	1	0.5	0.5
Z0007101	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 1	L SUM	1	1	
Z0007102	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 2	L SUM	1		1
Z0010501	CLEANING AND PAINTING STEEL BRIDGE NO. 1	L SUM	1	1	
Z0010502	CLEANING AND PAINTING STEEL BRIDGE NO. 2	L SUM	1		1
X0300062	GRAFFITI REMOVAL	SQ YD	64	38	26

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USER NAME = millerraj	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100,0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 1/15/2020	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES

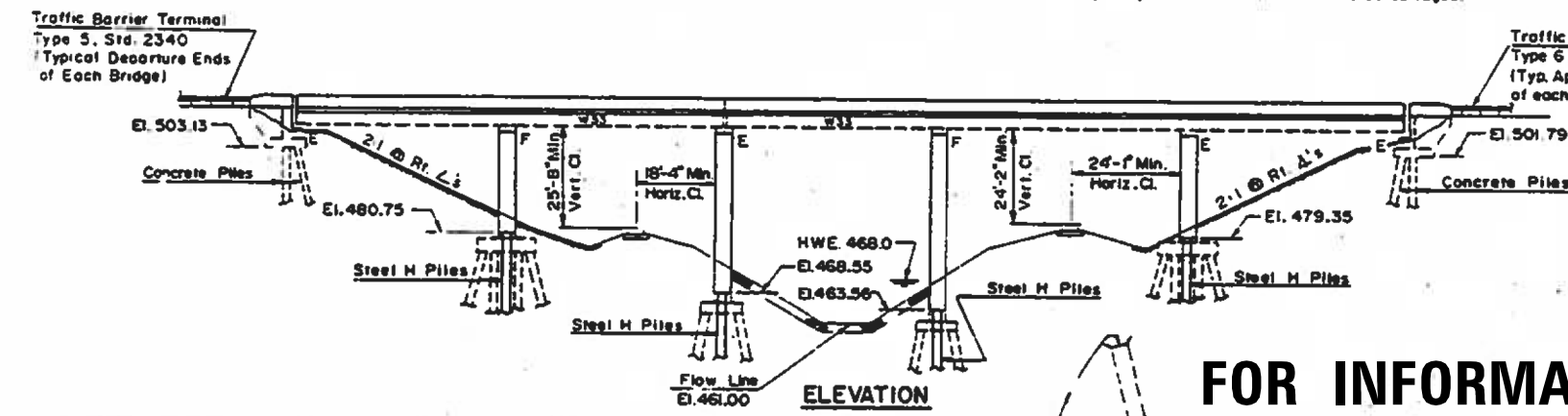
SCALE: NTS SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-4VB-BP-1	MADISON	12	3
			CONTRACT NO. 76N45	
		ILLINOIS	FED. AID PROJECT	

7'- Chiseted "C" Top of abutment seat, S.E. Corner of structure no. 060-0051 Elev. 505.87
 Existing Structures Built in 1963 as F.A.I. Route 270, Sec. 60-4VB-1. Superstructure consists of a non-composite 7" concrete deck on steel W.F. beams. 2-span continuous unit from West Abut. to Pier 2, 3-span continuous unit from Pier 2 to East Abut. Substructure consists of pile bent abutments & single column hammerhead piers. Concrete deck to be removed & replaced.
 Abutments & Piers to be widened to carry new outside beam. Traffic to be maintained using Stage Construction. Handrail to be salvaged.

The existing metal stay-in-place forms may have been tack welded to the top flanges of the existing beams. If this is the case, the welded areas between the centerline pier and first row of shear studs should be ground smooth prior to the placement of the new deck. If this work is necessary, it shall be paid for in accordance with Article 100.04 of the Standard Specifications. The cost of removing the stay-in-place forms shall be incidental to "Removal of Existing Concrete Deck".

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. RTE. 270	60-4VB-Y-1	MADISON	228	31
SHEET 1 OF 34				



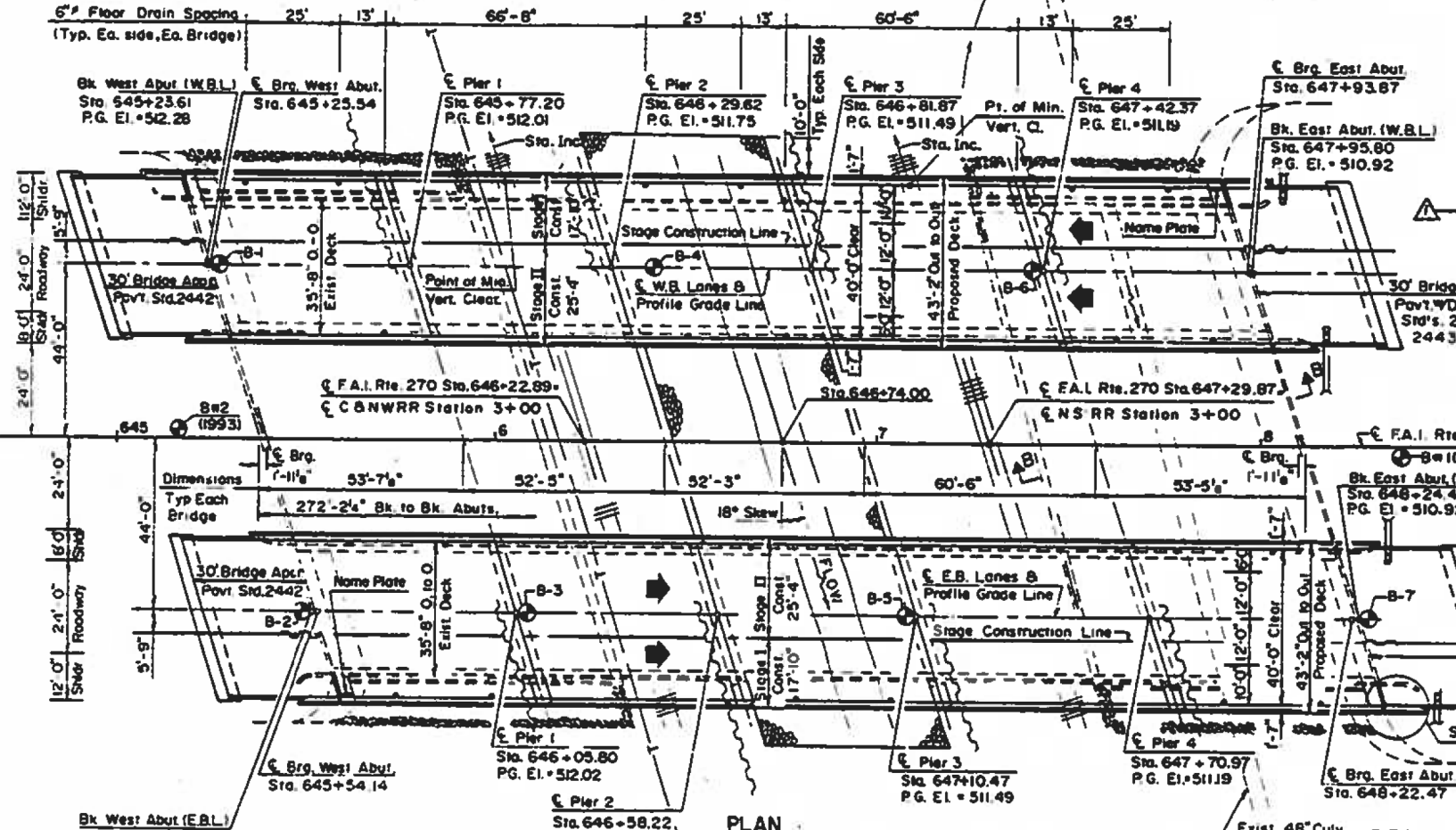
STATION 646+74.00
 REBUILT 199 BY
 STATE OF ILLINOIS
 F.A.I. RTE. 270 SEC. 60-4VB-Y-1
 PROJECT ID#-270-6(9)49
 LOADING HS20-44 & ALT.
 STR. NO. 060-0051

NAME PLATE
 SOUTH BRIDGE SEE SHT. 11

STATION 646+74.00
 REBUILT 199 BY
 STATE OF ILLINOIS
 F.A.I. RTE. 270 SEC. 60-4VB-Y-1
 PROJECT ID#-270-6(9)49
 LOADING HS20-44 & ALT.
 STR. NO. 060-0052

NAME PLATE
 NORTH BRIDGE SEE SHT. 11

FOR INFORMATION ONLY



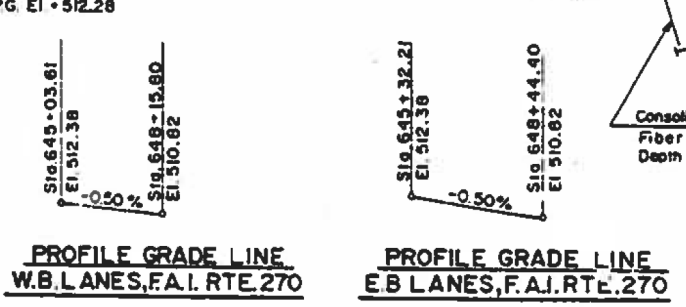
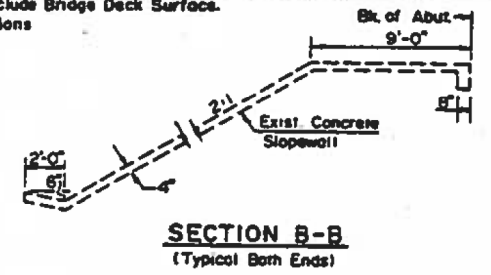
TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Concrete Deck	Each	2		2
Concrete Removal	Cu Yd		31.6	31.6
Floor Drains	Each	24		24
Neoprene Expansion Joint 2"	Foot	284		284
Structure Excavation	Cu Yd		508	508
Concrete Structures	Cu Yd		483.4	483.4
Concrete Superstructure	Cu Yd	685.4		685.4
Bridge Deck Grooving	Sq Yd	2,368		2,368
Protective Coat	Sq Yd	440		440
Elastomeric Bearing Assembly, Type I	Each	70		70
Formed Concrete Repair (Depth Equal to or Less than 5")	Sq Ft		63	63
Furnishing and Erecting Structural Steel	L Sum	1		1
Stud Shear Connectors	Each	12,810		12,810
Jack and Remove Existing Bearings	Each	84		84
Reinforcement Bars, Epoxy Coated	Pound	159,920		207,640
Furnishing Concrete Piles	Foot		504	504
Furnishing Steel Piles HP10x42	Foot		1,402	1,402
Driving Concrete Piles	Foot		504	504
Driving Steel Piles	Foot		1,402	1,402
Test Pile Steel HP10x42	Each		3	3
Test Pile Concrete	Each		2	2
Name Plates	Each	2		2
Epoxy Crack Sealing	Foot		208	208
Bridge Seat Sealer	Sq Ft		314	314
Broken Concrete Riprap	Sq Yd		258	258
Stone Riprap, Class A4	Sq Yd		955	955
Filter Fabric for Use with Riprap	Sq Yd		955	955
Slope Wall Removal	Sq Yd		15	15
Bar Splicers	Each	1,860		1,708
Clean and Paint Steel Bridge	L Sum	1		1
Power Tool Cleaning Residue Containment and Disposal	L Sum	1		1
Blasting Residue Containment and Disposal	L Sum	1		1
Temporary Sheet Piling	Sq Ft		8,394	8,394
Slope Wall 4 Inch	Sq Yd		15	15

Quantity does not include Bridge Deck Surface.
 See Special Provisions

TOP OF EAST RAIL ELEVATION

STATION	C.&N.W. R.R.	N. S. R.R.
1+50	481.55	482.09
2+00	481.63	482.44
2+50	481.61	482.73
3+00	481.89	482.99
3+50	482.11	483.22
4+00	482.32	483.46
4+50	482.54	483.69



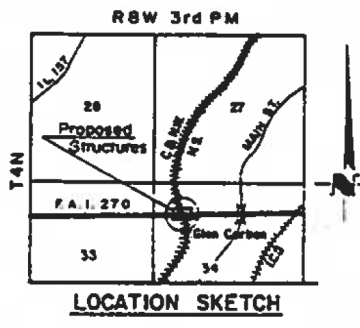
SEISMIC DATA
 Seismic Performance Category: B
 Bed Rock Acceleration: 0.10
 Site Coefficient: 1.0

Ralph E. Anderson
 David Booher, Illinois S.E. 081-004775 Date 7-26-94
 Expires 11-30-94



DESIGN SPECIFICATIONS
 1992 A.A.S.H.T.O. Standard Specifications for Highway Bridges and 1993 Interim Specifications.
 FHWA/RD - 83/007 "Seismic Retrofitting Guidelines For Highway Bridges"
LOADING HS 20-44 & ALT.
 Allow 25' Set ft. for future wearing surface

DESIGN STRESSES
 f_c = 3,500 p.s.i.
 f_y = 60,000 p.s.i. (Reinf.)
 f_s = 20,000 p.s.i. (Struct. Prop. M270, Gr. 36)
 f_s = 20,000 p.s.i. (Struct., Exst., A36)



GENERAL PLAN & ELEVATION
 F.A.I. ROUTE 270 OVER
 C.&N.W. R.R. & N.S. R.R.
 F.A.I. RTE. 270, SEC. 60-4VB-Y-1
 STA. 646+74.00
 MADISON COUNTY
 STR. NO. 060-0051 (E.B.) &
 STR. NO. 060-0052 (W.B.)

MTA, INCORPORATED
 ENGINEER GBM, B.G.H. CHECKER D.R.B.
 DRAWN MBM DATE 7/94 NO. S133

LOCATION NO. 1

USER NAME = millerraj	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -
PLOT DATE = 12/19/2019	DATE -	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE DETAILS SN 060-0051
 EXISTING STRUCTURE DETAILS SN 060-0052

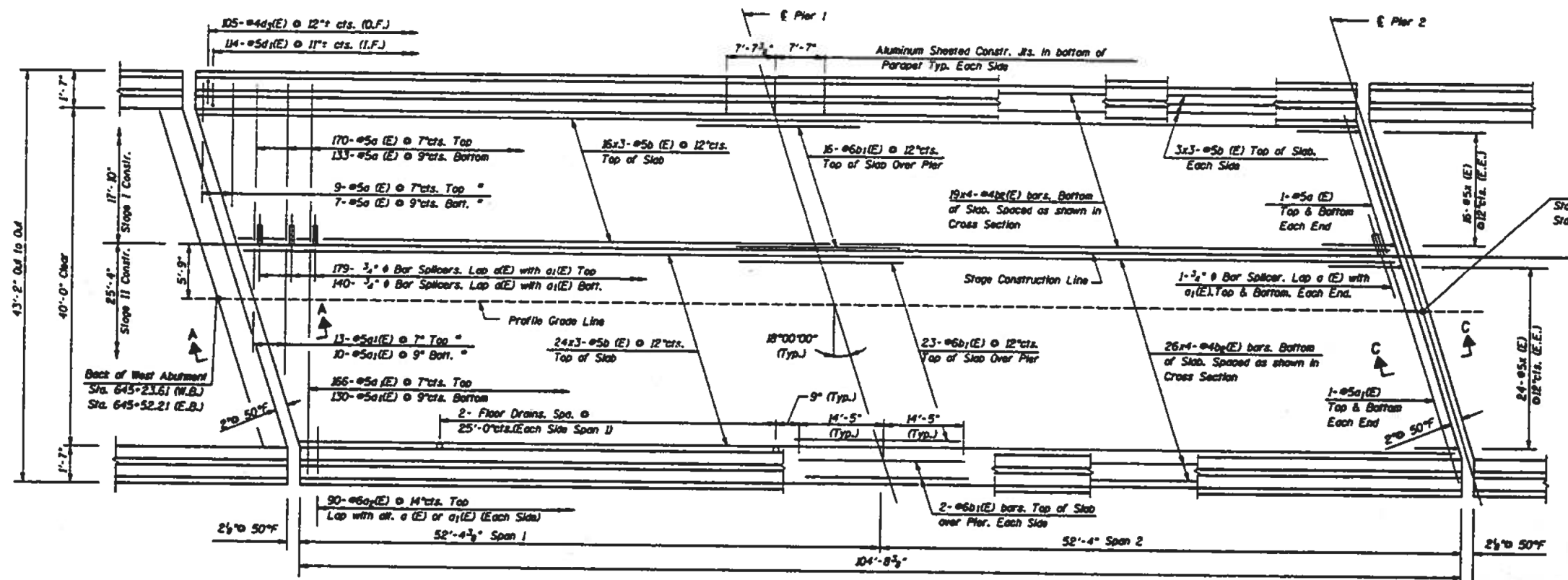
SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-4VB-BP-1	MADISON	12	4
CONTRACT NO. 76N45				
ILLINOIS FED. AID PROJECT				

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 PLOT DATE: 12/19/2019

PROJECT NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. RTE. 270	60-4VB-1	MADISON	12	5
PROJECT NO.	DATE	PROJECT		
60-4VB-1	JULY 1994	CONTRACT NO. 76N45		

Sheet 9 of 34



DECK PLAN

W.B. Bridge Shown
E.B. Bridge Similar

Notes: Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
See Sheet # 11 of 34 for parapet reinforcement.
See Sheet # 30 of 34 for Bar Splicer Details.

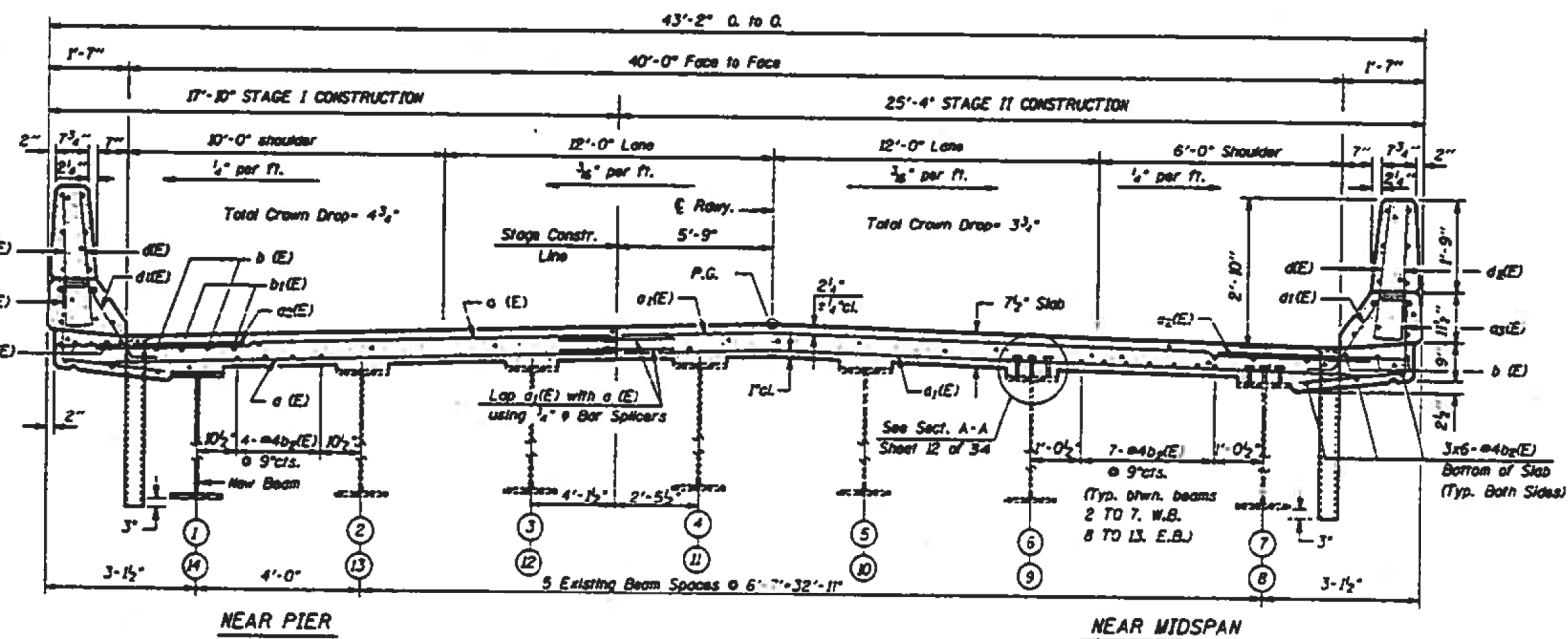
* Order a (E) & a₁(E) bars full length. Cut to fit slab and place remainder in opposite end.

FOR INFORMATION ONLY

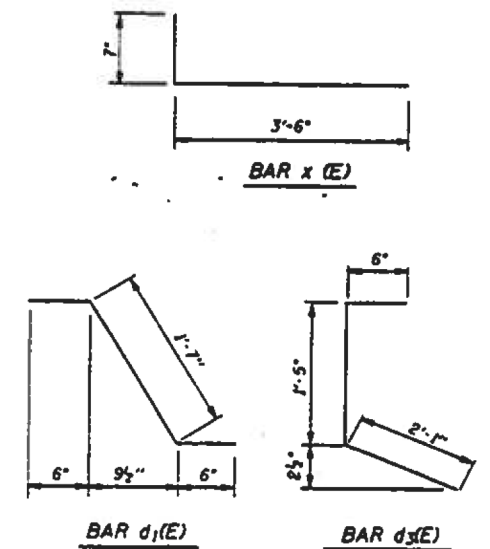
MIN. BAR LAP	SIZE	LENGTH
a	#4	1'-8"
b	#5	2'-2"
c	#6	2'-7"

**2 STRUCTURES
BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH	SHAPE
a (E)	646	#5	17'-3"	—
a ₁ (E)	646	#5	24'-9"	—
a ₂ (E)	360	#6	4'-0"	—
b (E)	276	#5	35'-6"	—
b ₁ (E)	86	#6	28'-10"	—
b ₂ (E)	360	#4	27'-6"	—
c (E)	456	#5	2'-7"	—
c ₁ (E)	420	#4	4'-0"	—
x (E)	160	#5	4'-1"	—
ITEM	UNIT	QTY.		
Reinforcement Bars, Epoxy Coated	Lbs.	54,340		
Concrete Superstructure	Cu. Yds.	225.0		
Bar Splicers	Each	646		



CROSS SECTION
(Looking East on W.B. Bridge)
(Looking West on E.B. Bridge)



DECK DETAILS SPAN 1 & 2
F.A.I. RTE. 270 OVER
C. & N.W. R.R. & M.S. R.R.
F.A.I. RTE. 270, SEC. 60-4VB-Y-1
STA. 646+74.00
MADISON COUNTY
STR. NO. 060-0051 (E.B.) &
STR. NO. 060-0052 (W.B.)

MTA INCORPORATED	
DESIGNED: GBM	CHECKED: BGM
DRAWN: TMJ	DATE: July, 1994

LOCATION NO. 1

USER NAME = millerraj	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -
PLOT DATE = 12/19/2019	DATE -	REVISED -

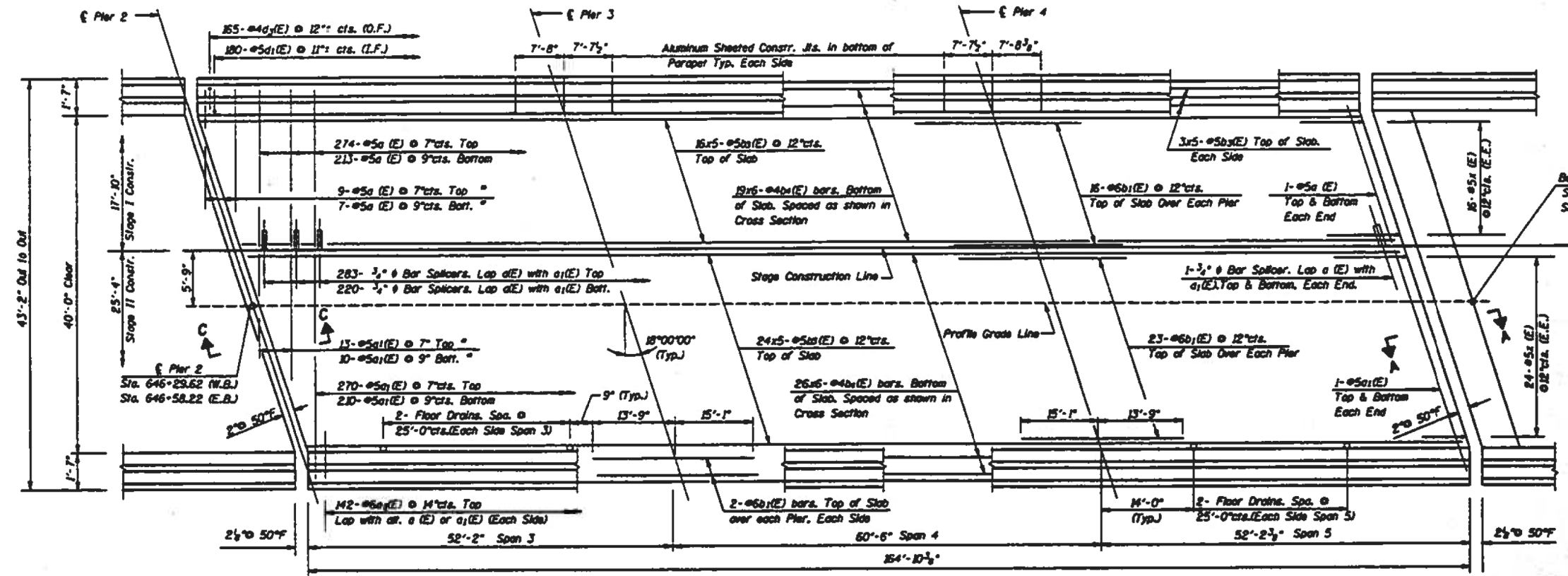
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE DETAILS SN 060-0051
EXISTING STRUCTURE DETAILS SN 060-0052

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-4VB-BP-1	MADISON	12	5
ILLINOIS FED. AID PROJECT			CONTRACT NO. 76N45	

MODEL: Default
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 PROJECT: D:\Projects\060-4VB-1\060-4VB-1.dwg
 PLOT DATE: 12/19/2019



Notes: Reinforcement bars designated (E) shall be epoxy coated.
 Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
 See Sheet # 11 of 34 for parapet reinforcement.
 See Sheet # 30 of 34 for Bar Splicer Details.

* Order a (E) & a1(E) bars full length. Cut to fit stair and place remainder in opposite end.

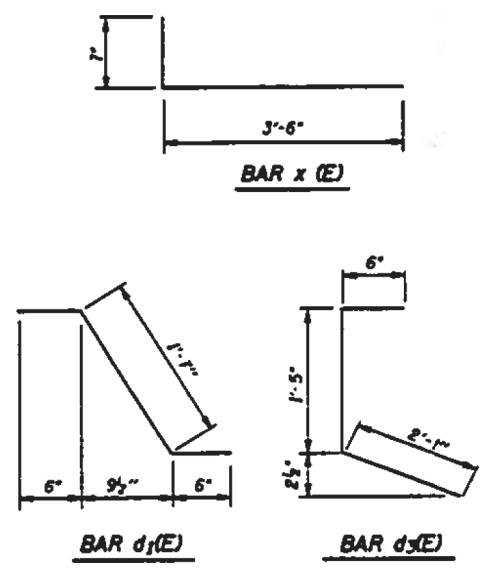
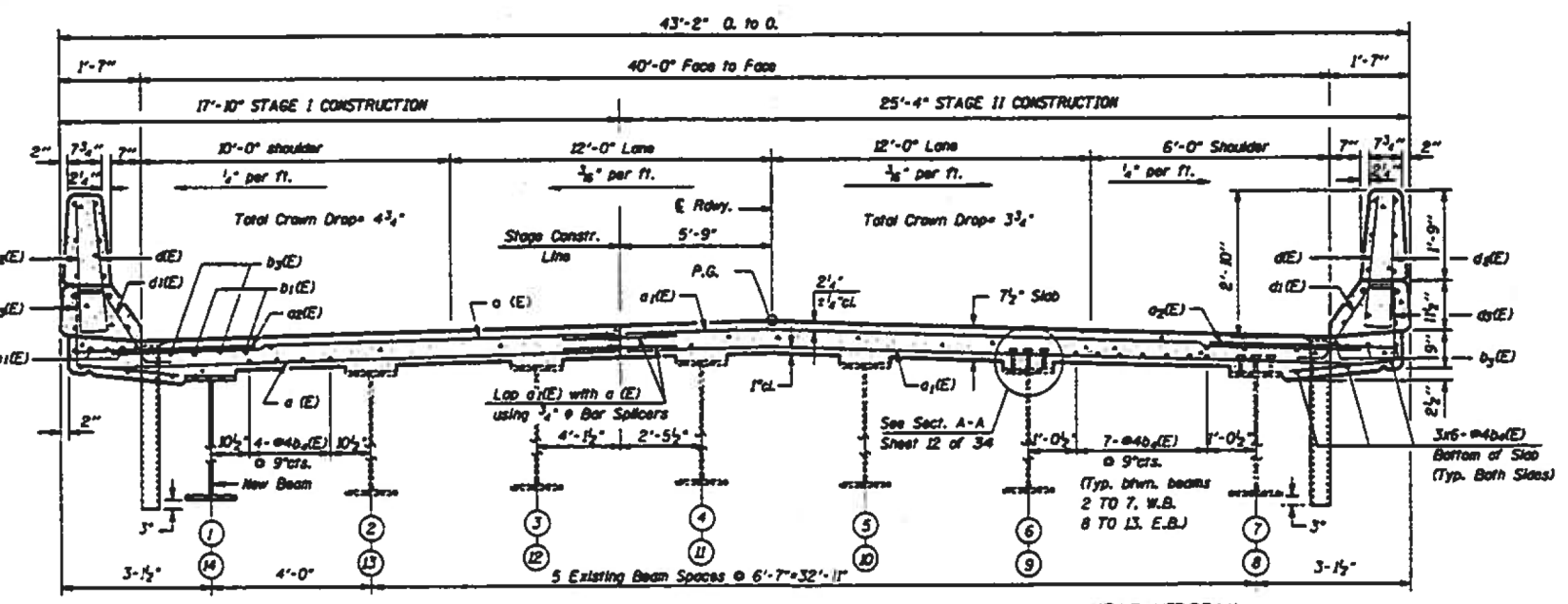
DECK PLAN
 W.B. Bridge Shown
 E.B. Bridge Similar

FOR INFORMATION ONLY

Min. Bar Lap
#4 1'-8"
#5 2'-2"
#6 2'-7"

2 STRUCTURES BILL OF MATERIAL

BAR NO.	NO.	SIZE	LENGTH	SHAPE
a (E)	104	#5	17'-3"	—
a1(E)	104	#5	24'-9"	—
a2(E)	568	#6	4'-0"	—
b1(E)	172	#6	28'-10"	—
b2(E)	480	#5	34'-9"	—
b3(E)	540	#4	28'-11"	—
d1(E)	720	#5	2'-7"	—
d2(E)	660	#4	4'-0"	—
x (E)	150	#5	4'-1"	—
ITEM	UNIT	QTY.		
Bar Splicers	Each	1014		
Reinforcement Bars, Epoxy Coated	Lbs.	86,770		
Concrete Superstructure	Cu. Yds.	351.4		

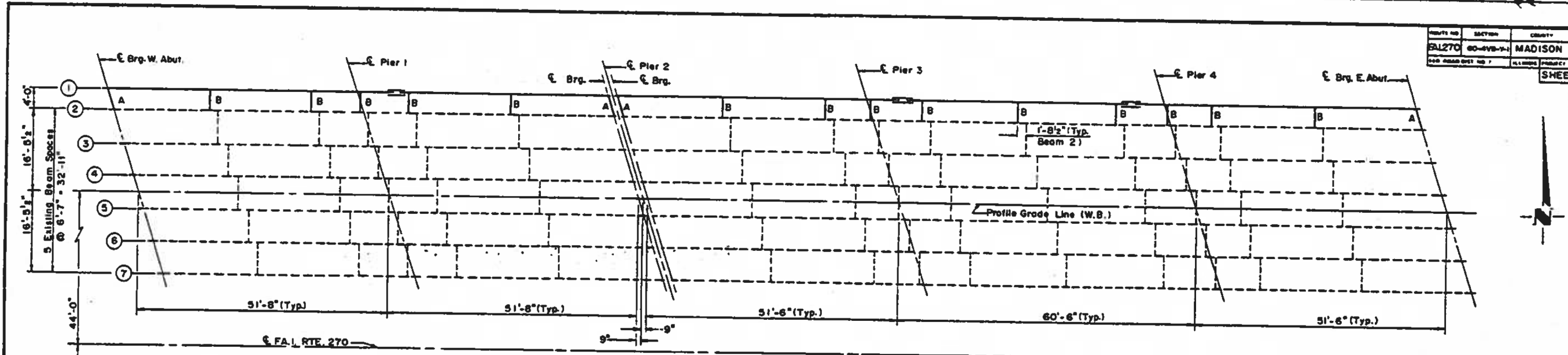


DECK DETAILS SPAN 3, 4 & 5
 F.A.I. RTE. 270 OVER
 C. & N.W. R.R. & N.S. R.R.
 F.A.I. RTE. 270, SEC. 60-418-Y-1
 STA. 646+74.00
 MADISON COUNTY
 STR. NO. 060-0051 (E.B.) &
 STR. NO. 060-0052 (W.B.)

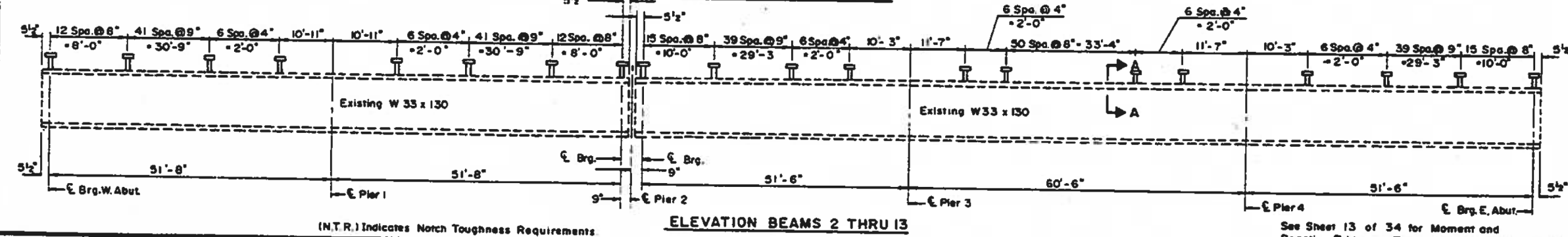
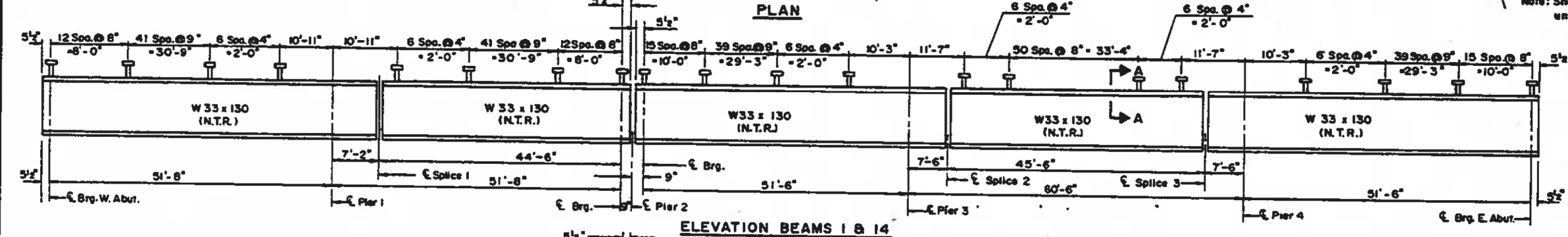
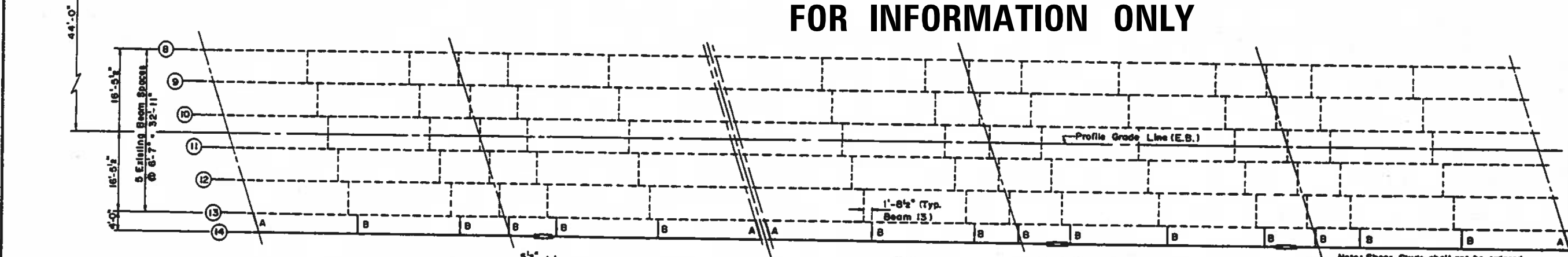
MTA INCORPORATED
 DESIGNED: GBW CHECKED: BGH
 DRAWN: TXJ. DATE: July, 1994

LOCATION NO. 1

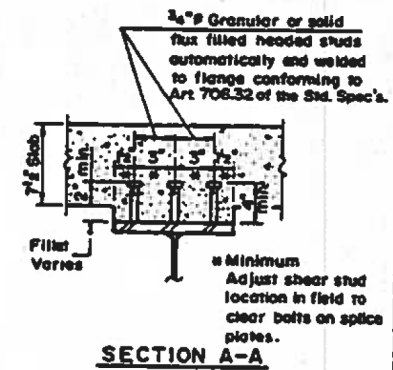
SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
60-4VB-Y-1	MADISON	228	42
SHEET 12 OF 34			



FOR INFORMATION ONLY



Note: Shear Studs shall not be ordered until fillet heights are measured.



FRAMING PLAN
F.A.I. ROUTE 270 OVER
C.B.N.W.R.R. & N.S.R.R.
F.A.I. RTE. 270, SEC. 60-4VB-Y-1
STA. 646+74.00
MADISON COUNTY
STR. NO. 060-0051 (E.B.) &
STR. NO. 060-0052 (W.B.)

MTA INCORPORATED
 DESIGNED: G.B.M. CHECKED: T.M.M.
 DRAWN: J.P.H. DATE: July, 1994

USER NAME = millerraj	DESIGNED -	REVISED -
PLOT SCALE = 100,0000' / in.	DRAWN -	REVISED -
PLOT DATE = 12/19/2019	CHECKED -	REVISED -
	DATE -	REVISED -

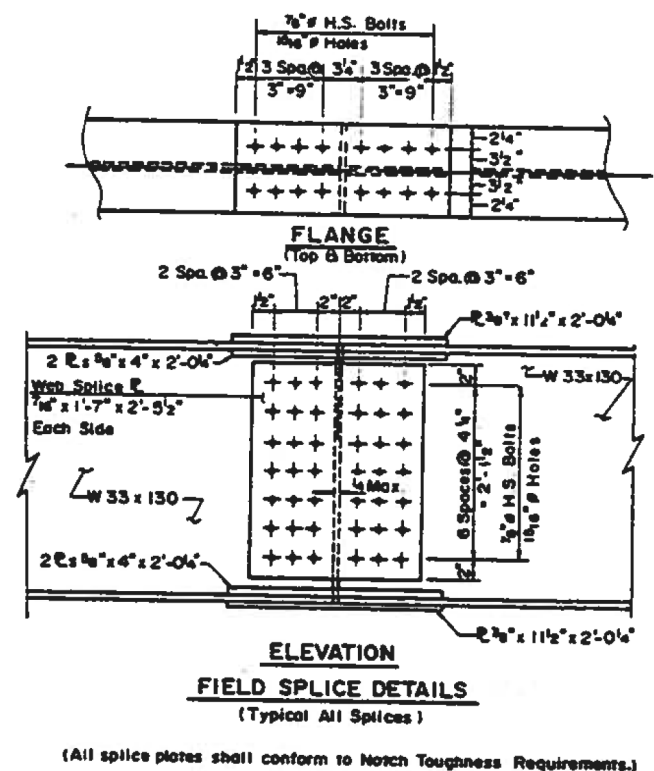
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE DETAILS SN 060-0051
EXISTING STRUCTURE DETAILS SN 060-0052

LOCATION NO. 1

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-4VB-BP-1	MADISON	12	7
CONTRACT NO. 76N45				
ILLINOIS FED. AID PROJECT				

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 OFFICE: J:\Projects\060-4VB-BP-1\060-4VB-BP-1.dwg
 PLOT DATE: 12/19/2019



	℄ Sp. W. Abut.	℄ Sp. Pier 1	Splice 1	℄ Sp. Pier 2	CL Sp. Pier 3	Splice 2	Splice 3	℄ Sp. Pier 4	℄ Sp. E. Abut.
Beam 1	511.18	510.89	510.85	510.63	510.32	510.27	510.06	510.04	509.88
Beam 14	511.09	510.80	510.76	510.55	510.23	510.18	509.93	509.90	509.66

ELEVATIONS - TOP OF BEAM
(For Estimation Only)

FOR INFORMATION ONLY

	0.4 Sp. 1	Pier 1	0.6 Sp. 2	Pier 2	0.4 Sp. 3	Pier 3	0.5 Sp. 4	Pier 4	0.5 Sp. 5
I_x (in ⁴)	6,710	6,710	6,710	-	6,710	6,710	6,710	6,710	6,710
I_y (in ⁴)	17,061	-	17,061	-	17,061	-	17,061	-	17,061
$I_{c(3n)}$ (in ⁴)	12,506	-	12,506	-	12,506	-	12,506	-	12,506
S_x (in ³)	406	406	406	-	406	406	406	406	406
S_y (in ³)	583	-	583	-	583	-	583	-	583
$S_{c(3n)}$ (in ³)	527	-	527	-	527	-	527	-	527
\bar{c} (in)	0.79	1.07	0.79	-	0.79	1.07	0.79	1.07	0.79
$M \bar{c}$ (ft)	147.9	340.8	147.9	-	152.3	324.7	113.2	324.7	152.3
I_x (non-comp.) (in ⁴)	4.37	10.06	4.37	-	4.51	9.61	3.35	9.61	4.51
$S \bar{c}$ (in ²)	0.283	--	0.283	-	0.283	--	0.283	--	0.283
$M \bar{c} \bar{c}$ (ft)	59.9	--	59.9	-	59.7	--	53.6	--	59.7
I_x (comp.) (in ⁴)	1.37	--	1.37	-	1.36	--	1.22	--	1.36
$M \bar{c}^2$ (ft)	335.1	170.9	335.1	-	335.3	181.7	348.2	181.7	335.3
M (kip-ft)	94.8	48.4	94.8	-	94.9	50.1	93.5	50.1	94.9
$P_{u(imp)}$ (kip)	8.86	6.49	8.86	-	8.86	6.86	8.08	6.86	8.86
I_x (total) (in ⁴)	14.60	16.57	14.60	-	14.73	16.47	13.63	16.47	14.73
VR (ft)	47.3	-	47.3	-	47.8	-	37.2	-	47.8

	W. Abut.	Pier 1	Pier 2 Span 2	Pier 2 Span 3	Pier 3	Pier 4	E. Abut.
$R \bar{c}$ (k)	21.2	68.7	21.2	21.4	66.5	66.5	21.4
$R \bar{c}$ (k)	34.2	39.8	34.2	34.2	39.9	39.9	34.2
R (imp.) (k)	9.7	11.3	9.7	9.7	11.0	11.0	9.7
R (Total) (k)	65.1	119.8	65.1	65.3	117.4	117.4	65.3

I_x and S_x are the moment of inertia and section modulus of the steel section used in computing I_x (total and over load).

$I_{c(3n)}$, $I_{c(3n)}$, $S_{c(3n)}$ and $S_{c(3n)}$ are the moment of inertia and section modulus of the composite section used in computing stresses due to live load.

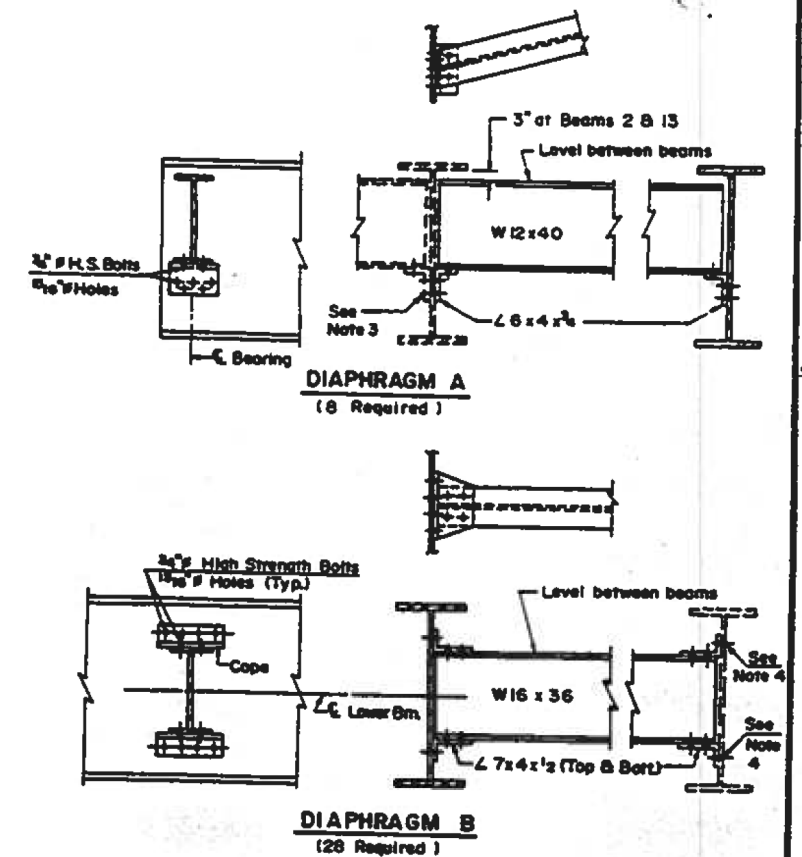
VR is the maximum V_u + impact shear range in span.

$I_{c(3n)}$ and $S_{c(3n)}$ are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (see AASHTO 10.38)

M_0 (Applied Moment) = $L_3[M \bar{c} - M_S \bar{c} - S_3(M \bar{c} - M_{imp})]$.

I_s (Overload) is the sum of the stresses due to $M \bar{c} - M_S \bar{c} - S_3(M \bar{c} - M_{imp})$.

I_s (Total) (Non-compact section) is the sum of the stresses due to $L_3[M \bar{c} - M_S \bar{c} - S_3(M \bar{c} - M_{imp})]$.



- NOTES:**
- For diaphragm connections use $1\frac{1}{8}$ " holes and two hardened washers over oversize holes.
 - Remove existing bolts in existing beam. Field drill $1\frac{1}{8}$ " holes in new angle using holes in existing beam as a template. Existing bolts are to be replaced with $3\frac{1}{2}$ " H.S. bolts. Cost of Bolt Removal and Field Drilling is incidental to "Structural Steel".
 - Field drill $1\frac{1}{8}$ " holes in existing beam using new angle as a template. Cost of Field Drilling is incidental to "Structural Steel".

BEAM DETAILS
F.A.I. ROUTE 270 OVER
C.&N.W.R.R. & N.S.R.R.
F.A.I. RTE. 270, SEC. 60-4VB-Y-1
STA. 646+74.00
MADISON COUNTY
STR. NO. 060-0051 (E.B.)
STR. NO. 060-0052 (W.B.)

MTA INCORPORATED
DESIGNED: G.B.M. CHECKED: T.M.M.
DRAWN: J.P.H. DATE: July, 1994

LOCATION NO. 1

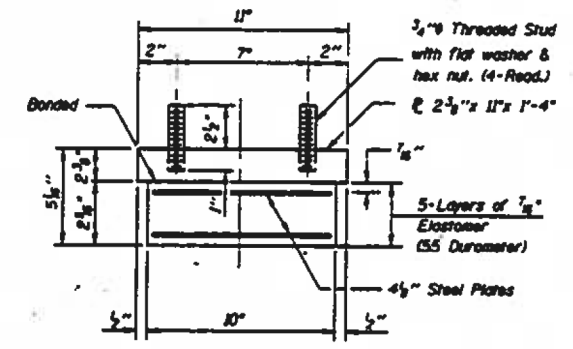
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	DRAWN -	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -
PLOT DATE = 12/19/2019	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**EXISTING STRUCTURE DETAILS SN 060-0051
EXISTING STRUCTURE DETAILS SN 060-0052**

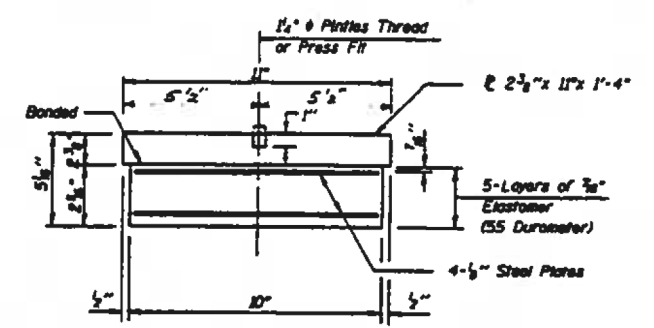
SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-4VB-BP-1	MADISON	12	8
			CONTRACT NO. 76N45	
		ILLINOIS FED. AID PROJECT		



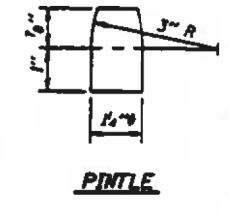
BEARING ASSEMBLY - TYPE I
(BEAMS 1 & 14)

Note: Shim plates shall not be placed under Bearing Assembly.

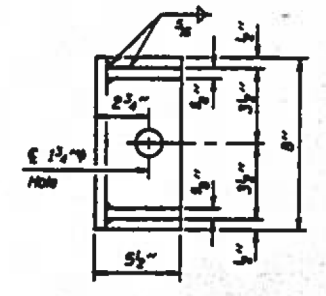
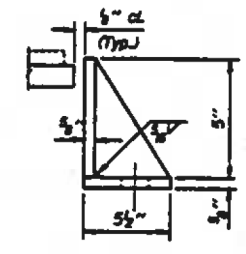


BEARING ASSEMBLY - TYPE I
(BEAMS 2 THRU 13)

Note: Shim plates shall not be placed under Bearing Assembly.

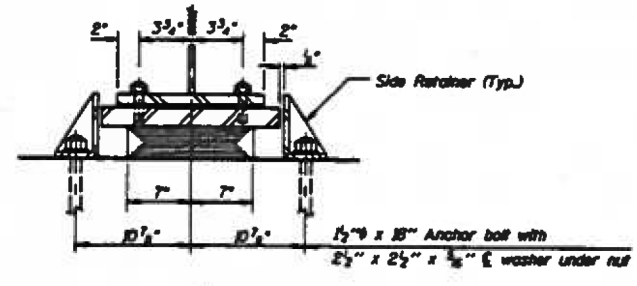


PINTLE

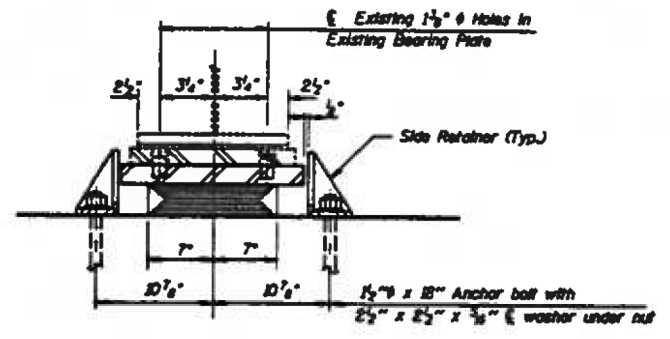


SIDE RETAINER
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. (28 Required)

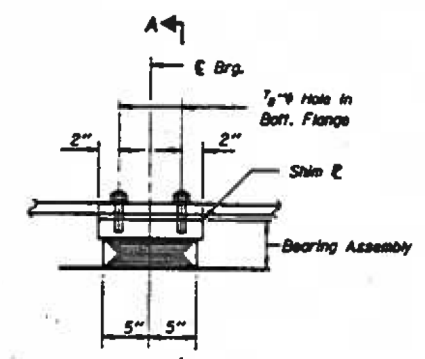
For Anchor Bolts Installation details See Sheet 29 of 34



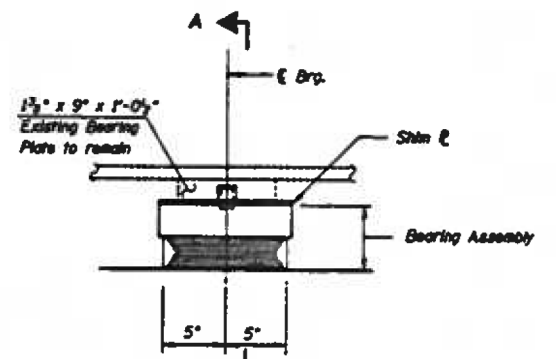
SECTION A-A



SECTION A-A



ELEVATION AT PIER 4
TYPE I ELASTOMERIC EXP. BRG.
(BEAMS 1 & 14)
2 Required



ELEVATION AT PIER 4
TYPE I ELASTOMERIC EXP. BRG.
(BEAMS 2 THRU 13)
12 Required

NOTES: Cost of Side Retainers, Sole Plates, Shim Plates, Plates and Anchor Bolts shall be included in the unit price per pound for "Furnishing & Erecting Structural Steel."

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Elastomeric Bearing Assembly, Type I	Each	14
Jack and Remove Existing Bearings	Each	12

* See Sheet 27 of 34 for Jacking and Removing of Existing Bearings Procedure.

PIER 4
TYPE I ELASTOMERIC BEARING DETAILS
F.A.I. RTE. 270 OVER
G. & N.W. R.R. & N.S. R.R.
F.A.I. RTE. 270, SEC. 60-4VB-Y-1
STA. 646+74.00
MADISON COUNTY
S.N. 060-0051 (E.B.) &
S.N. 060-0052 (N.B.)

MTA INCORPORATED
DESIGNED: GBM CHECKED: BGH
DRAWN: TLR. DATE: July, 1994

LOCATION NO. 1

FOR INFORMATION ONLY

USER NAME = millerraj	DESIGNED -	REVISED -
PLOT SCALE = 100,0000' / in.	DRAWN -	REVISED -
PLOT DATE = 12/19/2019	CHECKED -	REVISED -
	DATE -	REVISED -

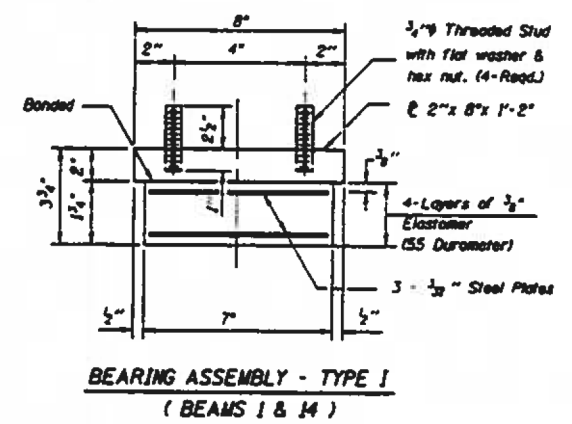
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE DETAILS SN 060-0051
EXISTING STRUCTURE DETAILS SN 060-0052

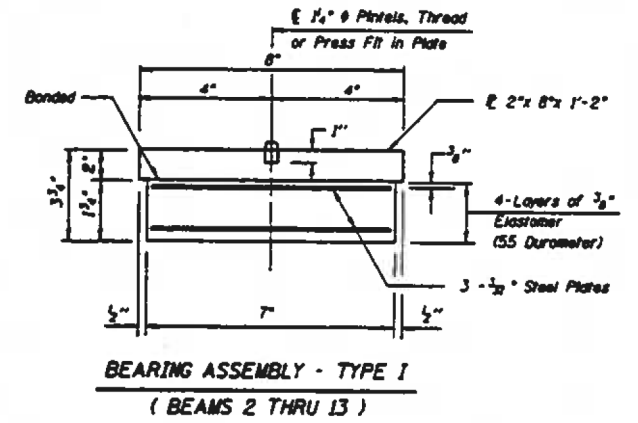
SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-4VB-BP-1	MADISON	12	9
CONTRACT NO. 76N45				
ILLINOIS FED. AID PROJECT				

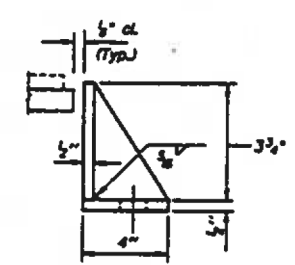
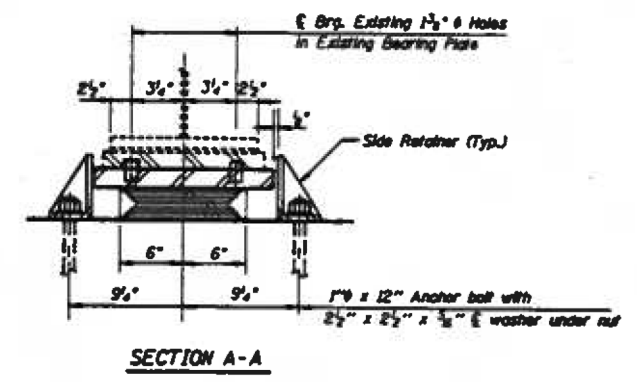
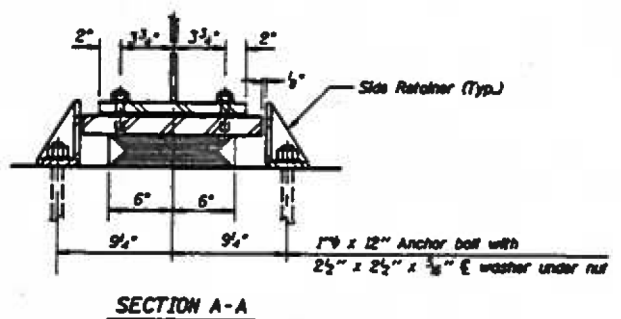
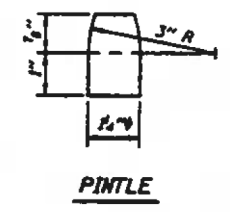
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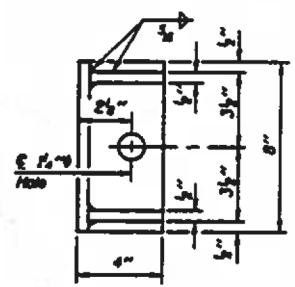
Note: Shim plates shall not be placed under Bearing Assembly.



Note: Shim plates shall not be placed under Bearing Assembly.



Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. (8# Required)

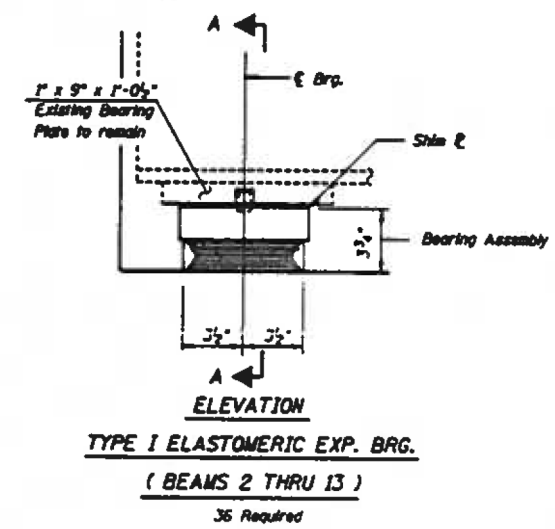
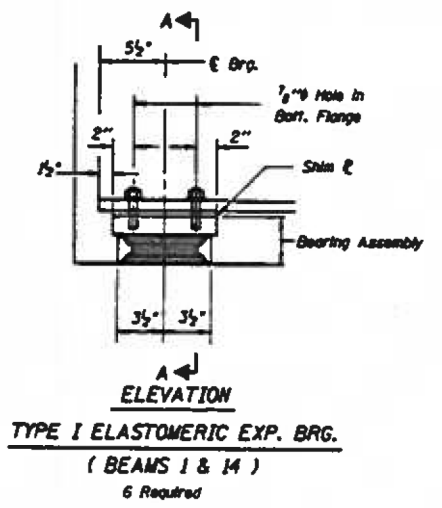


BILL OF MATERIAL

ITEM	UNIT	TOTAL
Elastomeric Bearing Assembly, Type I	Each	42
Jack and Remove Existing Bearings	Each	36

* See Sheet 27 of 34 for Jacking and Removing of Existing Bearings Procedure.

For Anchor Bolt Installation details See Sheet 29 of 34



FOR INFORMATION ONLY

NOTES: Cost of Side Retainers, Sole Plates, Shim Plates, Plates and Anchor Bolts shall be included in the unit price per pound for "Furnishing & Erecting Structural Steel."

**WEST ABUT., PIER 2 (SPAN 2) & PIER 2 (SPAN 3)
TYPE I ELASTOMERIC BEARING DETAILS
F.A.I. RTE. 270 OVER
C. & N.W. R.R. & N.S. R.R.
F.A.I. RTE. 270, SEC. 60-4VB-Y-1
STA. 646+74.00
MADISON COUNTY
S.N. 060-0051 (E.B.) &
S.N. 060-0052 (W.B.)**

MTA INCORPORATED
DESIGNED: GBM CHECKED: GBM
DRAWN: TML DATE: July, 1994

LOCATION NO. 1

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-4VB-BP-1	MADISON	12	10
				CONTRACT NO. 76N45
ILLINOIS FED. AID PROJECT				

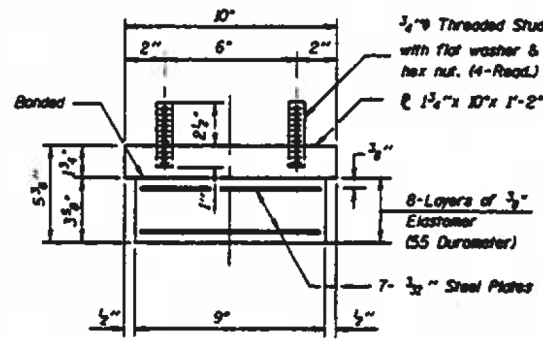
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	DRAWN -	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -
PLOT DATE = 12/19/2019	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**EXISTING STRUCTURE DETAILS SN 060-0051
EXISTING STRUCTURE DETAILS SN 060-0052**

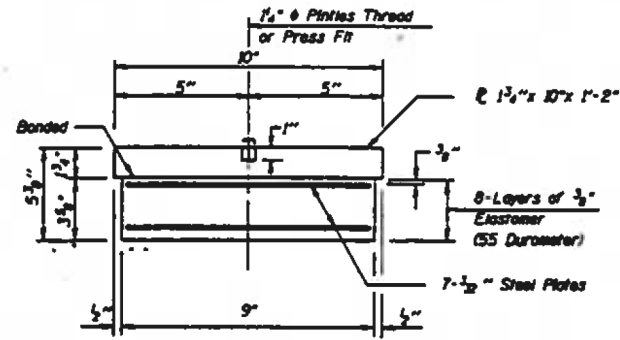
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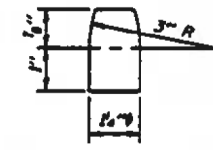
BEARING ASSEMBLY - TYPE I
(BEAMS 1 & 14)

Note: Shim plates shall not be placed under Bearing Assembly.

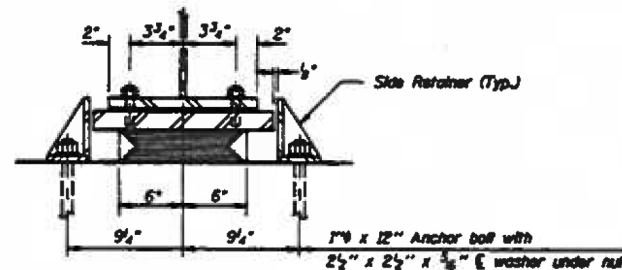


BEARING ASSEMBLY - TYPE I
(BEAMS 2 THRU 13)

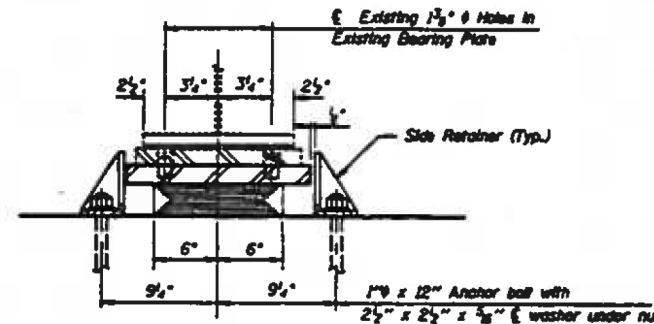
Note: Shim plates shall not be placed under Bearing Assembly.



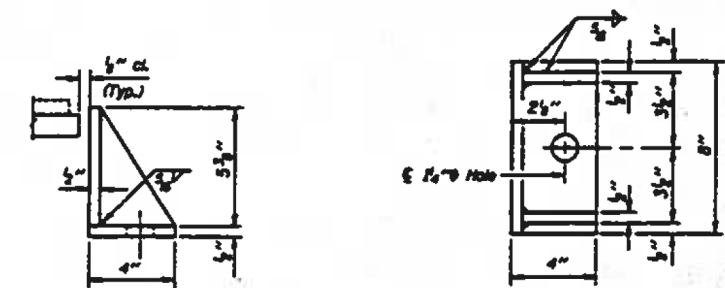
PINTLE



SECTION A-A



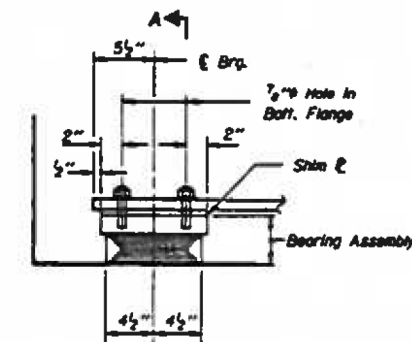
SECTION A-A



SIDE RETAINER

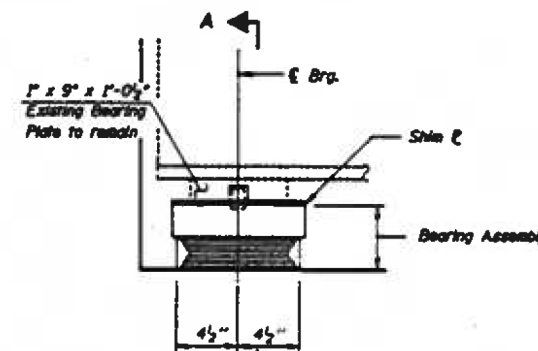
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. (28 Required)

For Anchor Bolt Installation details See Sheet 29 of 34



ELEVATION AT EAST ABUTMENT
TYPE I ELASTOMERIC EXP. BRG.

(BEAMS 1 & 14)
2 Required



ELEVATION AT EAST ABUTMENT
TYPE I ELASTOMERIC EXP. BRG.

(BEAMS 2 THRU 13)
12 Required

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Elastomeric Bearing Assembly, Type I	Each	14
Jack and Remove Existing Bearings	Each	12

* See Sheet 27 of 34 for Jacking and Removing of Existing Bearings Procedure.

EAST ABUTMENT
TYPE I ELASTOMERIC
BEARING DETAILS
F.A.I. RTE. 270 OVER
C. & N.W. R.R. & N.S. R.R.
F.A.I. RTE. 270, SEC. 60-4VB-Y-1
STA. 646+74.00
MADISON COUNTY
S.N. 060-0051 (E.B.) &
S.N. 060-0052 (W.B.)

MTA INCORPORATED

DESIGNED: GBW CHECKED: GBW
DRAWN: TMR. DATE: July, 1994

FOR INFORMATION ONLY

NOTES: Cost of Side Retainers, Side Plates, Shim Plates, Plates and Anchor Bolts shall be included in the unit price per pound for "Furnishing & Erecting Structural Steel."

LOCATION NO. 1

USER NAME = millerraj	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -
PLOT DATE = 12/19/2019	DATE -	REVISED -

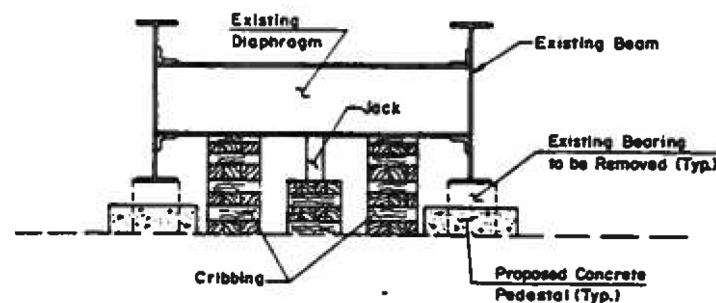
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE DETAILS SN 060-0051
EXISTING STRUCTURE DETAILS SN 060-0052

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-4VB-BP-1	MADISON	12	11
CONTRACT NO. 76N45				
ILLINOIS FED. AID PROJECT				

PROJECT NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAL270	60-4VB-1	MADISON	228	57
FED. ROAD DIST. NO. 7	ILLINOIS PROJECT			
SHEET 27 OF 34				



ELEVATION AT JACK
(Typical Between Existing Beams)

*** PROCEDURE FOR JACKING AND REMOVING OF EXISTING BEARINGS**

Jacking operations shall be limited to removing of existing bearings, construction of new concrete pedestals as shown in the plans, and installing new bearings.

After the concrete deck has been removed; beams shall be jacked and cribbed, existing bearings shall be removed, new concrete pedestals shall be constructed as shown in the plans, and new bearings shall be installed. Jacks shall be lowered before new concrete deck is poured.

Maximum lift = 1" to clear pintles. Lift beams simultaneously in 1/4" increments.

Anchor bolts shall be removed or cut off and ground flush with the top of concrete. If anchor bolts are removed, existing holes shall be filled with non-shrink grout.

With new bearings in position, new holes shall be drilled through base plates for new anchor bolts.

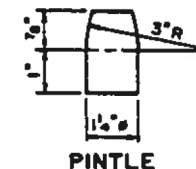
The maximum dead load reaction with the deck removed (per bearing) is as follows:

Abutments	4.2 kips
Pier 1	14.6 kips
Pier 2	4.2 kips
Pier 3	15.9 kips
Pier 4	15.9 kips

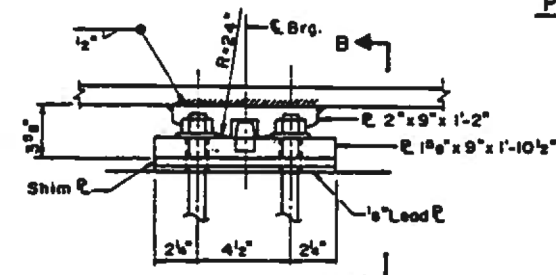
The minimum jack capacity shall be 7 tons at abutments and Pier 2, and 24 tons at Piers 1,3, & 4.

Prior to jacking, one end of each diaphragm in the bay along the stage construction line shall be disconnected. The Contractor shall furnish and install new A325 bolts of the appropriate size to reconnect the diaphragms after the new bearings are installed. Furnishing and installing of the new bolts shall be incidental to JACK AND REMOVE EXISTING BEARINGS.

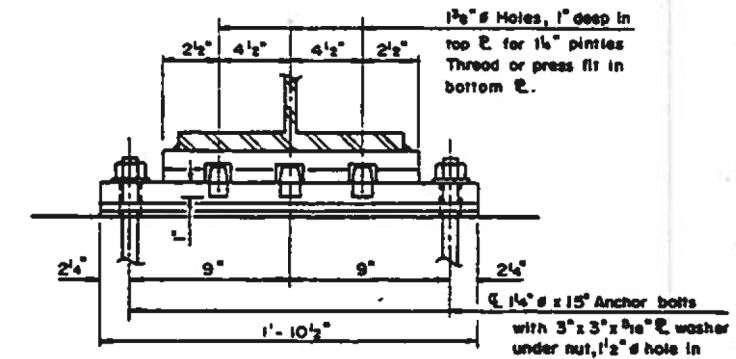
The jacking scheme shown is one possible method. The contractor may submit an alternate jacking design for review. Regardless of the jacking scheme used, the contractor shall be responsible for the complete design and safety of the jacking operations.



PINTLE

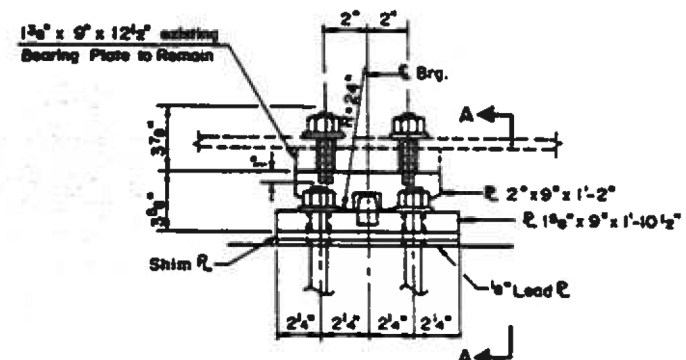


ELEVATION AT PIERS 1 & 3
4 Required

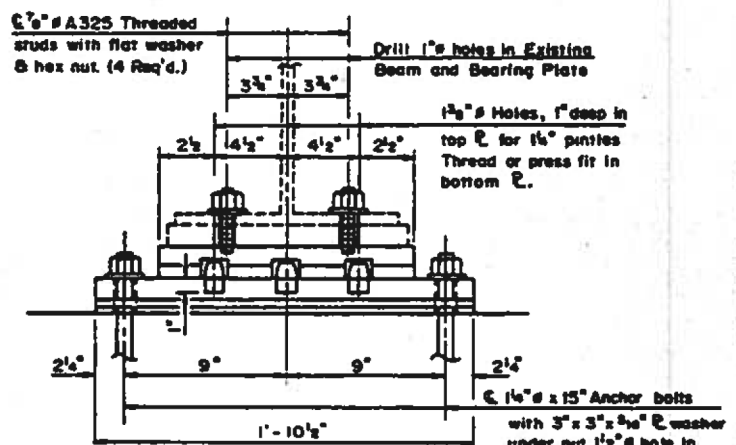


SECTION B-B

FIXED BEARING
(BEAMS 1 AND 14)



ELEVATION AT PIERS 1 & 3
24 Required



SECTION A-A

FIXED BEARING
(BEAMS 2 THRU 13)

FOR INFORMATION ONLY

NOTES:
See sheet No.29 for Anchor Bolt Installation.
Cost of Fixed Bearings is included in Structural Steel.

* Jack and Remove Existing Bearings	Each	24
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**PIERS 1 & 3
BEARING DETAILS
F.A.I. ROUTE 270 OVER
C.B.N.W.R.R. & N.S.R.R.
F.A.I. RTE. 270, SEC. 60-4VB-Y-1
STA. 646+74.00
MADISON COUNTY
STR. NO. 060-0051 (E.B.)
STR. NO. 060-0052 (W.B.)**

MTA INCORPORATED
DESIGNED: G.B.M. CHECKED: B.G.H.
DRAWN: J.P.H. DATE: July, 1994

LOCATION NO. 1

MODEL: Default FILE: \\mtrc-pix\pub\room\dat\illink\gov\PIWDOT\Documents\IBDOT_Offices\Illinet\B\Project\060-4VB-1\CADD\DATA\CAD\Sheet\060-4VB-1-57-CONV.dgn

USER NAME = millerraj	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -
PLOT DATE = 12/19/2019	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**EXISTING STRUCTURE DETAILS SN 060-0051
EXISTING STRUCTURE DETAILS SN 060-0052**

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-4VB-BP-1	MADISON	12	12
CONTRACT NO. 76N45				
ILLINOIS FED. AID PROJECT				