

FOR INDEX OF SHEETS AND LIST OF HIGHWAY STANDARDS, SEE SHEET NO. 2

06-14-13 LETTING ITEM 148

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

FAP 301 (US 20)
S.N. 089-0042 OVER PECATONICA RIVER
SECTION (177-4B-1)M

BRIDGE REHABILITATION
STEPHENSON COUNTY
C-92-005-13

R 8 E 4th PM

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0301	(177-4B-1)M	STEPHENSON	43	1
		ILLINOIS	CONTRACT NO. 64J24	

D-92-110-12



LOCATION OF SECTION INDICATED THUS: -

UTILITY NOTE
THE LOCATIONS OF THOSE BURIED AND ABOVE GROUND UTILITIES SHOWN ARE APPROXIMATE, ARE SHOWN FOR CONTRACTOR INFORMATIONAL USE ONLY, AND ARE NOT TO BE REFERENCED FOR CONSTRUCTION PURPOSES. THE IMPLIED PRESENCE OR ABSENCE OF UTILITIES IS NOT TO BE CONSTRUED BY THE OWNER, ENGINEER, CONTRACTOR, OR SUBCONTRACTORS TO BE AN ACCURATE AND COMPLETE REPRESENTATION OF UTILITIES THAT MAY OR MAY NOT EXIST ON THE CONSTRUCTION SITE. BURIED AND ABOVEGROUND UTILITY LOCATION, IDENTIFICATION, AND MARKING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. REROUTING, DISCONNECTION, PROTECTION, ETC. OF AN UTILITIES MUST BE COORDINATED BETWEEN THE CONTRACTOR, UTILITY COMPANY, AND OWNER. SITE SAFETY, INCLUDING THE AVOIDANCE OF HAZARDS ASSOCIATED WITH BURIED AND ABOVEGROUND UTILITIES, REMAIN THE SOLE RESPONSIBILITY OF THE CONTRACTOR.



Know what's below.
Call before you dig.



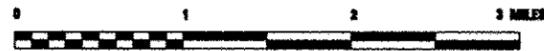
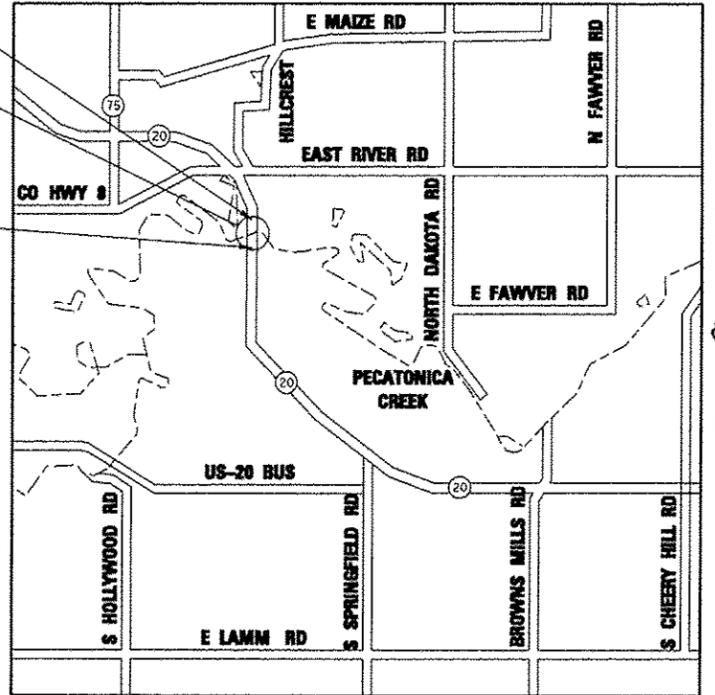
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-882-0123
OR 811

PROJECT MANAGER: MAHMOUD ETMADI (815) 284-5393
DESIGN PROJECT MANAGER: MOUSSA ISSA (708) 236-0900

CONTRACT NO. 64J24

IMPROVEMENT BEGINS:
STA. 904+27.50 (EB)
EASTBOUND US 20 OVER
PECATONICA RIVER
NORTHEAST OF FREEPORT
STRUCTURE NO. 089-0042
LENGTH = 943'-0"
BRIDGE REHABILITATION
IMPROVEMENT ENDS:
STA. 915+88.50 (EB)



AREA LOCATION PLAN

GROSS LENGTH = 1,142.00' = 0.216 MILE (EB)
NET LENGTH = 1,142.00' = 0.216 MILE (EB)



Signed *Joseph Glennon*
Joseph Glennon, P.E.
Il. Lic. No. 062-046610
Expires 11-30-2013

Date March 13, 2013
For Sheets 1 Thru 9



Signed *Moussa A. Issa*
Dr. Moussa A. Issa, S.E.
Il. Lic. No. 081-005738
Expires 11-30-2014

Date March 13, 2013
For Sheets S01 Thru S26

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FUNCTIONAL CLASSIFICATION
OTHER PRINCIPAL ARTERIAL
AADT = 6650
P.V. = 84% EST. TRUCK 16%
LANCASTER TOWNSHIP
SECTION 27

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
SUBMITTED 3/20/13
Paul Loeter
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
May 10 2013
John D. Baranowski, P.E.
ENGINEER OF DESIGN AND ENVIRONMENT
May 10 2013
Omer Osman, P.E.
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS**

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	Cover Sheet
2	Index of Sheets, Highway Standards, General Notes, Utility Notes
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4	Summary of Quantities (Sheet 2 of 2)
5	Schedule of Quantities (Sheet 1 of 2)
6	Schedule of Quantities (Sheet 2 of 2)
7	Shoulder Removal and Replacement Plan and Sections
8	Bridge Approach Pavement Resurfacing Plan and Sections
9	Traffic Control Plan and Sections- Pre-Stage I
10	Traffic Control Plan and Sections- Stage I
11	Traffic Control Plan and Section- Stage II
12	District 2 Standard - Informational Warning Sign - 39.2
13	District 2 Standard - Typical Pavement Markings - 41.1
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18-43	Bridge Plans

HIGHWAY STANDARDS

000001-06	Standard Symbols, Abbreviations and Patterns
609006-05	Bridge Approach Pavement (Drain Details)
630201-06	PCC/HMA Stabilization at Steel Plate Beam Guardrail
701101-03	Off-road Operations, Multilane, 15' to 24" From Pavement Edge
701400-06	Approach to Lane Closure, Freeway/Expressway
701401-07	Lane Closure Freeway/Expressway
701402-09	Lane Closure, Freeway/Expressway, with Barrier
701426-05	Lane Closure, Multilane, Intermittent or Moving Oper., For Speed >= 45 mph
701901-02	Traffic Control Devices
704001-07	Temporary Concrete Barrier
720011-01	Metal Posts For Signs, Markers and Delineators
728001-01	Telescoping Steel Sign Support
729001-01	Applications of Types A & B Metal Posts (For Signs & Markers)
780001-03	Typical Pavement Markings
781001-03	Typical Applications Raised Reflective Pavement Markers

GENERAL NOTES

- The Contractor shall verify all dimensions and conditions in the field prior to construction and ordering of materials.
- All areas disturbed by the Contractor outside the proposed construction limits shall be seeded as directed by the engineer, at the contractor's expense.
- In addition to the requirements of Article 107.16, the Contractor shall protect the surface of all bridge decks and bridge approach pavements in a manner satisfactory to the Engineer before any equipment is allowed to cross the structure. Protection shall be provided for all equipment, as defined in Article 101.17, regardless if track mounted or wheeled.
- These plans have been prepared using standard symbols as indicated in these plans, and they shall take precedence over those shown on Standard 000001 if there is a conflict.
- Any reference to a standard in these plans shall be interpreted to mean the edition as indicated by the copy of the standard included in these plans.
- The Engineer shall be the sole judge concerning curing time for bituminous surface before traffic is allowed on the pavement.

- Factors used for estimating plan quantities are as follows and shall not be used for the basis of final quantities:
Hot-Mix Asphalt - 112 lbs/sq yd-in (2.016 ton/cu. yd)
Bituminous materials (prime coat) - 0.10 gal/sy (on concrete base)
- The thickness of hot mix asphalt mixture shown on the plans is the nominal thickness. Deviations from the nominal thickness will be permitted when such deviations occur due to irregularities in the existing surface or base on which the hot mix asphalt mixture is placed.
- All borrow/waste/use sites must be approved by the department prior to removing any material from the project or initiating any earth moving activities, including temporary stockpiling outside the limits of construction.
- The area to be primed shall be limited to that which can be covered with HMA on the next days productivity, but no more than five days in advance of the placement of the HMA, unless approved by the Engineer.
- Temporary concrete barrier will be measured in feet along the centerline of the barrier and shall include the cost of renting/owning the barrier for the time required on the job plus hauling to and from the project site, as well as one placement and removal from the roadway in accordance with Section 704 of the Standard Specification. This shall be paid for at the contract unit price per foot for temporary concrete barrier.
- Relocate temporary concrete barrier will be paid for in feet along the centerline of the barrier, and will be paid for each time the barrier is required by staging to be picked up and moved to a different location on the project, whether it is to another location on the roadway or to a storage or staging location for the project. This shall be paid for at the contract unit price per foot for relocate temporary concrete barrier.
- All "Aggregate Subgrade Improvement" (Section 303), shall be completed in accordance with Articles 311.04, 311.05, 311.05(a), 311.06 and 311.07. All aggregate subgrade thicknesses less than 12 inches shall be constructed of aggregate of CA02 gradation.
- Bituminous and Aggregate prime coat shall be placed in accordance with Section 406 of the Standard Specifications. The cost of the prime coats shall be included in the contract unit price per ton for LEVELING BINDER (MACHINE METHOD) of the type specified.
- Tie bars shall be installed to tie PCC appurtenance to adjacent existing concrete pavement.

Tie the following to the existing concrete pavement Length, size, and spacing of Tie Bars

Gutter or Curb & Gutter	Std. 606001	24" long No. 6 @ 24" centers
PCC Base Course	Std. 353001	24" long No. 6 @ 30" centers
PCC Pavement	Std. 420101	24" long No. 6 @ 30" centers

Tie bars to be installed in accordance with the applicable portions of Article 420.05(b) of the Standard Specifications. See Highway Standard 420001 for detail on longitudinal construction joint grouted in place tie bar. The cost of the tie bars to be included in the cost of the PCC appurtenance adjacent to the existing pavement.

- At the time of the preconstruction conference, the contractor shall submit for approval, the proposed concrete truck washout locations. Runoff from wash areas shall be contained in designated areas so that runoff does not reach ditch systems or rivers.

UTILITY NOTES

- The Contractor shall be responsible for protecting utility property from construction operations as outlined in Article 107.31 of the Standard Specifications. A minimum of 48 hours notice is required for non-emergency work.
- Member of Julie known to be within or immediately adjacent to the limits of improvement are:

Electric:
Commonwealth Edison Company
Attn: Dave Schacht 630-437-2129
123 Energy Avenue
Rockford, IL 61109

Telephone:
Verizon
Attn: Kalin Hinshaw 815-895-1515
112 West Elm Street
Sycamore, IL 60178

Cable Television:
Insight Communications
Attn: Mike Owens, Donna Zies, Tom Yuccas
815-395-8977
4450 Kishwaukee Street
Rockford, IL 61109

Telephone:
SBC/Ameritech Company
Attn: Steven Jones 815-394-7271
2404 Eishon Ave.
Rockford, IL 61108

Natural Gas:
Nicor Gas Company
Attn: Connie Lane 630-983-8676
1844 Ferry Road
Naperville, IL 60563

- Nonmembers of Julie known to be within or immediately adjacent to the limits of the improvement are:

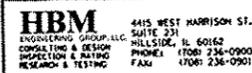
Government:
IDOT-District 2
Attn: Kyle Lorenz 815-284-5469
819 Depot Avenue
Dixon, IL 61021

- All electric lines will remain energized during construction unless otherwise coordinated with the utility company.

HOT-MIX ASPHALT MIXTURE TABLES

Mixture Uses:	Resurfacing	
	Surface	Level Binder (Machine Method)
PG:	PG 64-22	PG 64-22
Design Air Voids:	4.0 @ N70	4.0 @ N70
Mixture Composition: (Gradation Mixture)	IL 9.5 or 12.5	IL 9.5
Friction Aggregate	D	
20 Year ESAL	4.2	
Mix Unit Weight	112 lbs/sy/in	

* On projects with less than 2000 tons Level Binder, Growth Curve will be used for Density and IL 9.5 may be used



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CHECKED - MI	REVISED -
DRAWN - LAK	REVISED -
CHECKED - JMG, MAI	REVISED -

DATE - 03/13/2013

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS, HIGHWAY STANDARDS, GENERAL NOTES, UTILITY NOTES
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042

SHEET NO. 1 OF 1 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0301	(177-4B-11M)	STEPHENSON	43	2
CONTRACT NO. 64J24				

ILLINOIS FED. AID PROJECT

CONST.
CODE
100%
STATE
0014

SUMMARY OF QUANTITIES

PAY ITEM NO.	DESCRIPTION	UNIT	QUANTITY
30300104	AGGREGATE SUBGRADE IMPROVEMENT, 4"	SQ YD	170
40600635	LEVELING BINDER (MACHINE METHOD), N70	TON	24
40600990	TEMPORARY RAMP	SQ YD	24
40603340	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70	TON	97
42001500	P.C. CONCRETE BRIDGE APPROACH SHOULDER PAVEMENT	SQ YD	147
44000157	HOT-MIX ASPHALT SURFACE REMOVAL, 2"	SQ YD	89
44004250	PAVED SHOULDER REMOVAL	SQ YD	161
44213200	SAW CUTS	FOOT	137
48300500	PORTLAND CEMENT CONCRETE SHOULDERS 10"	SQ YD	22
50102400	CONCRETE REMOVAL	CU YD	23
50300100	FLOOR DRAINS	EACH	116
50300255	CONCRETE SUPERSTRUCTURE	CU YD	27.1
50300260	BRIDGE DECK GROOVING	SQ YD	4382
50300300	PROTECTIVE COAT	SQ YD	915
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	9830
50606701	CLEANING AND PAINTING STRUCTURAL STEEL, LOCATION 1	L SUM	1
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	18,774
50800515	BAR SPLICERS	EACH	68
52000110	PREFORMED JOINT STRIP SEAL	FOOT	189
52100010	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	6
52100020	ELASTOMERIC BEARING ASSEMBLY, TYPE II	EACH	18
52100030	ELASTOMERIC BEARING ASSEMBLY, TYPE III	EACH	6

• SPECIALTY ITEMS

CONST.
CODE
100%
STATE
0014

SUMMARY OF QUANTITIES

PAY ITEM NO.	DESCRIPTION	UNIT	QUANTITY
52100520	ANCHOR BOLTS, 1"	EACH	72
52100530	ANCHOR BOLTS, 1/4"	EACH	48
52100540	ANCHOR BOLTS, 1/2"	EACH	24
58700300	CONCRETE SEALER	SQ FT	2940
59000200	EPOXY CRACK INJECTION	FOOT	49
60260100	INLETS TO BE ADJUSTED	EACH	4
63300575	REMOVE AND REERECT RAIL ELEMENT OF EXISTING GUARDRAIL	FOOT	75
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	7
67100100	MOBILIZATION	L SUM	1
70100207	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402	EACH	1
70100800	TRAFFIC CONTROL AND PROTECTION, STANDARD 701401	L SUM	1
70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	5
70300100	SHORT TERM PAVEMENT MARKING	FOOT	336
70300220	TEMPORARY PAVEMENT MARKING - LINE 4"	FOOT	9460
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	2384
70400100	TEMPORARY CONCRETE BARRIER	FOOT	1356
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	1305
70600250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	1
70600350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	1
78009004	MODIFIED URETHANE PAVEMENT MARKING - LINE 4"	FOOT	3450

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DATE - 03/13/2013

REVISIED -
REVISIED -
REVISIED -
CHECKED - JMG, MAI

REVISIED -
REVISIED -
REVISIED -
REVISIED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES (SHEET 1 OF 2)
EB US ROUTE 20 OVER PEGATONICA RIVER STRUCTURE NO.089-0042

SHEET NO. 1 OF 2 SHEETS

F.A.P. RTE. 0301	SECTION 1177-4B-1M	COUNTY STEPHENSON	TOTAL SHEETS 43	SHEET NO. 3
CONTRACT NO. 64J24			ILLINOIS FED. AID PROJECT	

CONST.
CODE
100%
STATE
0014

SUMMARY OF QUANTITIES

	DESCRIPTION	UNIT	QUANTITY
• 78009006	MODIFIED URETHANE PAVEMENT MARKING - LINE 6"	FOOT	300
• 78100100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	4
78300100	PAVEMENT MARKING REMOVAL	SQ FT	750
78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	4
X4400100	PORTLAND CEMENT CONCRETE SURFACE REMOVAL (VARIABLE DEPTH)	SQ YD	334
Z0001899	JACK AND REMOVE EXISTING BEARINGS	EACH	11
Z0001903	STRUCTURAL STEEL REMOVAL	POUND	9170
Z0001905	STRUCTURAL STEEL REPAIR	POUND	12330
Z0003802	REMOVAL OF EXISTING BEARINGS	EACH	25
Z0006012	BRIDGE DECK LATEX CONCRETE OVERLAY, 2 1/4 INCHES	SQ YD	4533
Z0007112	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES	L SUM	1
Z0010400	CLEANING BRIDGE SEATS	SQ FT	532
Z0012130	BRIDGE DECK SCARIFICATION, 3/4"	SQ YD	4533
Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	459
Z0012755	STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 INCHES)	SQ FT	83
Z0015802	PLUG EXISTING DECK DRAINS	EACH	68
Z0016001	DECK SLAB REPAIR (FULL DEPTH, TYPE I)	SQ YD	51
Z0016002	DECK SLAB REPAIR (FULL DEPTH, TYPE II)	SQ YD	165
Z0038117	PORTLAND CEMENT CONCRETE SURFACE REMOVAL 1"	SQ YD	734
Z0073200	TEMPORARY SHORING AND CRIBBING	EACH	25

20
• SPECIALTY ITEMS

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DRAWN - HH	REVISED -
DATE - 03/13/2013	CHECKED - JMG, MAI
	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES (SHEET 2 OF 2)
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042
SHEET NO. 2 OF 2 SHEETS

F.A.P. RTE. 0301	SECTION (177-4B-11M)	COUNTY STEPHENSON	TOTAL SHEETS 43	SHEET NO. 4
CONTRACT NO. 64J24			ILLINOIS FED. AID PROJECT	

HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70						40603340	STAGE
STATION	STATION	WIDTH FOOT	AREA SQ-YD	THICKNESS INCH	WEIGHT TON		
904+87.50	905+27.50	10	48.9	2	5		Prestage 1
914+69.50	915+09.50	10	48.9	2	5		Stage 1
904+27.50	904+52.50	34	94.5	1.5	8		
904+52.50	904+77.50	34	94.5	1.75	9.3		
904+77.50	905+02.50	34	94.5	1.5	8		
905+02.50	905+27.50	34	94.5	1.5	8		
914+69.50	914+94.50	34	94.5	1.5	8		
914+94.50	915+19.50	34	94.5	1.5	8		
915+19.50	915+44.50	34	94.5	1.75	9.3		
915+44.50	915+69.50	34	94.5	1.5	8		Stage 2
904+27.50	904+52.50	10	27.8	1.5	2.4		
904+52.50	904+77.50	10	27.8	1.75	3.0		
904+77.50	905+02.50	10	27.8	1.5	2.4		
905+02.50	905+27.50	10	27.8	1.5	2.4		
914+69.50	914+94.50	10	27.8	1.5	2.4		
914+94.50	915+19.50	10	27.8	1.5	2.4		
915+19.50	915+44.50	10	27.8	1.75	3.0		
915+44.50	915+69.50	10	27.8	1.5	2.4		
TOTAL						97	

HOT-MIX ASPHALT SURFACE REMOVAL, 2"				44000157	COMMENT
STATION	STATION	WIDTH FOOT	AREA SQ-YD		
904+87.50	905+27.50	10	44.5		Left Shoulder
914+69.50	915+09.50	10	44.5		Left Shoulder
TOTAL				89	

PAVED SHOULDER REMOVAL			44004250
STATION	STATION	AREA SQ-YD	
904+91.50	905+27.50	42.3	
914+69.50	915+06.50	43.5	
904+95.50	05+27.50	37.6	
914+69.50	915+01.50	37.6	
TOTAL			161

SAW CUTS			44213200	COMMENT
STATION	STATION	LENGTH FOOT		
904+91.50	905+27.50	36.00		Right EOP
914+69.50	915+06.50	37.00		Right EOP
904+95.50	905+27.50	32.00		Left EOP
914+69.50	915+01.50	32.00		Left EOP
TOTAL			137.00	

PORTLAND CEMENT CONCRETE SHOULDER 10"				48300500
STATION	STATION	WIDTH FOOT	AREA SQ-YD	
904+91.50	904+97.50	13	8.7	
914+99.50	915+06.50	10	7.8	
904+95.50	904+97.50	13	2.9	
914+99.50	915+01.50	10	2.3	
TOTAL				22

INLETS TO BE ADJUSTED		60260100	COMMENT
STATION	EACH		
905+13.50	1		Left Shoulder
914+83.50	1		Left Shoulder
905+13.50	1		Right Shoulder
914+83.50	1		Right Shoulder
TOTAL		4	

WORKZONE PAVEMENT MARKING REMOVAL				70301000	STAGE
STATION	STATION	WIDTH INCH	AREA SQ-FT		
885+50.00	904+27.50	4	625.80		Stage 1
900+52.50	904+27.50	4	125.00		
915+81.00	918+81.00	4	100.00		
885+50.00	915+80.81	4	1010.30		Stage 2
901+82.50	917+51.00	4	522.80		
TOTAL				2384	

TEMPORARY CONCRETE BARRIER			70400100	STAGE
STATION	STATION	LENGTH FOOT		
902+25.12	915+80.81	1356		Stage 1
TOTAL			1356	

RELOCATE CONCRETE BARRIER			70400200	STAGE
STATION	STATION	LENGTH FOOT		
902+75.80	915+80.80	1305		Stage 2
TOTAL			1305	

RAISED REFLECTIVE PAVEMENT MARKER				78100100
LOCATION				EACH
North Bridge approach				2
South Bridge approach				2
TOTAL				4

MODIFIED URETHANE PAVEMENT MARKING - LINE 4"			78009004	COMMENT
STATION	STATION	LENGTH FOOT		
900+52.50	918+81.00	1829		Left EOP
901+82.50	917+51.00	1569		Right EOP
			52	Nominal quantity as needed and directed by RE
TOTAL			3450	

MODIFIED URETHANE PAVEMENT MARKING - LINE 6"				78009006 (FOOT)	COMMENT
STATION	STATION	GROSS LENGTH FOOT	NET LENGTH 10' PER 40'		
904+27.50	915+69.50	1142.00	286		30 skip - 10 dash
			14		Nominal quantity as need and directed by RE
TOTAL			300		

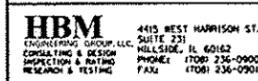
RAISED REFLECTIVE PAVEMENT MARKER REMOVAL		78300200
LOCATION		EACH
North Bridge approach		2
South Bridge approach		2
TOTAL		4

PAVEMENT MARKING REMOVAL					78300100	COMMENT
STATION	STATION	LENGTH FOOT	WIDTH INCH	AREA SQ-FT		
900+52.50	918+81.00	1828.50	4	610		Stage I Left edge line
901+82.50	904+27.50	245.00	4	80		Stage II Right edge line
915+69.50	917+51.00	181.50	4	60		Stage II Right edge line
TOTAL					750	

PORTLAND CEMENT CONCRETE SURFACE REMOVAL (VARIABLE DEPTH)					x4400100
STATION	STATION	LENGTH FOOT	WIDTH FOOT	AREA SQ-YD	
904+27.50	904+52.50	25	44	122.3	
915+69.50	915+44.50	25	44	122.3	
904+87.50	905+27.50	40	10	44.5 *	
914+69.50	915+09.50	40	10	44.5 *	
TOTAL					334

* Nominal Quantity for PreStage 1 North and South Left Shoulder Improvements Field Verify

PORTLAND CEMENT CONCRETE SURFACE REMOVAL 1"					Z0038117
STATION	STATION	LENGTH FOOT	WIDTH FOOT	AREA SQ-YD	
904+52.50	905+27.50	75	44	367	
915+44.50	914+69.50	75	44	367	
TOTAL					734



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CHECKED - MI	REVISED -
DRAWN - HH	REVISED -
CHECKED - JMG, MAI	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCHEDULE OF QUANTITIES
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042
SHEET NO. 1 OF 2 SHEETS

F.A.P. RTE. 0301	SECTION (177-48-11M)	COUNTY STEPHENSON	TOTAL SHEETS 43	SHEET NO. 5
CONTRACT NO. 64J24				ILLINOIS FED. AID PROJECT

DATE - 03/13/2013

TEMPORARY RAMP				40600990	COMMENT
LOCATION	LENGTH FOOT	WIDTH FOOT	AREA SQ-YD		
Northeast shoulder	10	10	12	Pre-Stage I Shoulder Work	
Southeast shoulder	10	10	12	Pre-Stage I Shoulder Work	
TOTAL			24		

TEMPORARY PAVEMENT MARKING LINE - 4"			70300220	COMMENT
STATION	STATION	LENGTH FOOT		
885+50.00	915+81.00	3031.00	Stage I Edge Line - White	
900+52.50	918+81.00	1829.00	Stage I Edge Line - Yellow	
885+50.00	915+81.00	3031.00	Stage II Edge Line - Yellow	
901+82.50	917+51.00	1569.00	Stage II Edge Line - White	
TOTAL		9460.00		

LEVELING BINDER (MACHINE METHOD), N70				40600635		COMMENT
STATION	STATION	LENGTH FOOT	AVE WIDTH FOOT	AVE. DEPTH INCH	VOLUME SQ-YD-INCH	
904+77.50	905+02.50	25	44	0.75	91.7	South Approach (Left Shoulder)
905+02.50	905+27.50	25	44	1	122.2	South Approach (Right Shoulder)
914+69.50	914+94.50	25	44	1	122.2	North Approach (Left Shoulder)
914+94.50	915+19.50	25	44	0.75	91.7	North Approach (Right Shoulder)
TOTAL					428.00	

TOTAL 24.00 Tons 112 lbs/sq-yd/in & 2000lbs/ton

IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3			70600250	COMMENT
STATION	OFFSET	EACH		
902+25.12	6.78 RT	1	Stage I	
TOTAL		1		

AGGREGATE SUBGRADE IMPROVEMENT 4"				30300104	COMMENT
STATION	STATION	LENGTH FOOT	AVE WIDTH* FOOT	AREA SQ-YD	
914+69.50	915+01.50	32.00	10.60	37.7	South Approach (Left Shoulder)
914+69.50	915+06.50	37.00	10.60	43.6	South Approach (Right Shoulder)
905+27.50	904+95.50	32.00	11.70	41.6	North Approach (Left Shoulder)
905+27.50	904+91.50	36.00	11.70	46.8	North Approach (Right Shoulder)
TOTAL				170.00	

*Width varies 10 to 13 ft

IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3			70600350	COMMENT
STATION	OFFSET	EACH		
902+75.80	7.56' Left	1	Stage II	
TOTAL		1		

SHORT TERM PAVEMENT MARKING				70300100	COMMENT
STATION	STATION	GROSS LENGTH FOOT	NET LENGTH FOOT		
900+52.50	918+81.00	1828.50	76	4' every 100' Right Edge	
900+52.50	918+81.00	1828.50	76	4' every 100' Left Edge	
900+52.50	918+81.00	1828.50	184	4' every 40' Centerline dash	
TOTAL			336		

REMOVE AND REERECT RAIL ELEMENT OF EXISTING GUARDRAIL			63300575	COMMENT
STATION	STATION	LENGTH FOOT		
904+76.00	905+13.50	37.50	Left Shoulder	
904+76.00	905+13.50	37.50	Right Shoulder	
TOTAL		75.00		

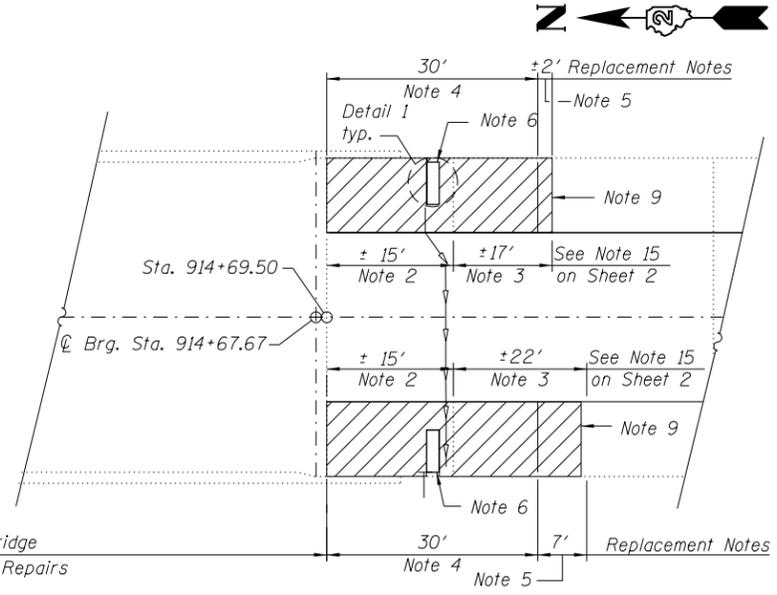
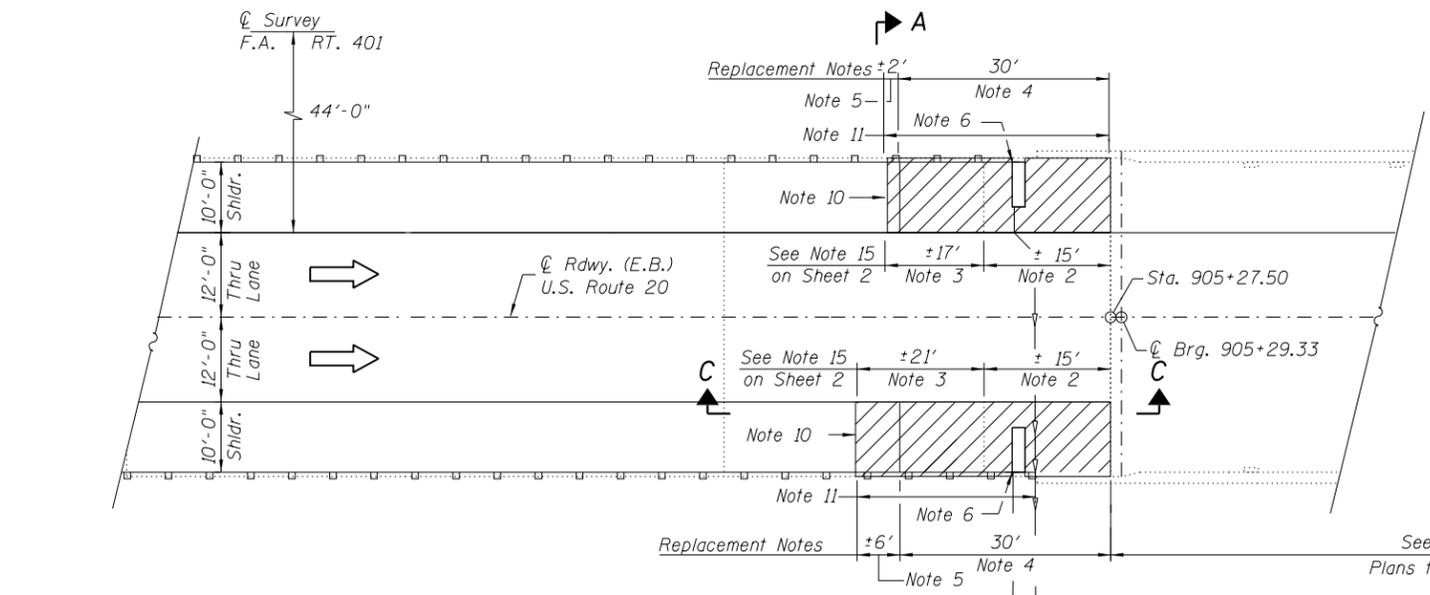
* Exact limits of remove and reerect rail element of existing guardrail shall be determined by resident engineer. Lengths shall be limited to that required to perform shoulder work.

NOTES:

- The existing bridge approach shoulder has settled approximately 2" (and varies) measured at the abutments (4 locations typical). The contractor shall restore the top elevation of the concrete approach shoulder pavement at the bridge abutment to be 2 1/2" and varies lower than the proposed bridge deck and restore the shoulder cross slope of 1/2"/ft. (The shoulder will receive 2 1/2" HMA and varies overlay to make top of shoulder level with top of bridge overlay - see Section A-A on sheet 6 for HMA thickness variation.) Remove the existing bridge approach shoulder and roadway shoulder to the limits noted on plan. Restore and compact sub base and install new shoulder. Prior to constructing the new shoulder all proposed grade elevations shall be approved by the resident engineer.
- Remove bridge approach shoulder. This work is to be paid for as Paved Shoulder Removal. Per original design plan, the existing approach shoulder pavement is shown to be 10 inches thick concrete and reinforced with welded wire fabric (IDOT historical Highway Standard 2324)
- Remove roadway shoulder pavement. This work is to be paid for as Paved Shoulder Removal. Per original design plan depth varies from 10 to 6 inches. Remove shoulder to nearest construction joint.
- At the limits of work noted, replace removed shoulder with P.C Concrete Bridge Approach Shoulder Pavement IDOT Highway Standard 609006
- At limits of work noted, replaced removed shoulder with Portland cement shoulders, vary shoulder thickness to match existing shoulder thicknesses as shown in section A-A. This work is to be paid for as Portland Cement Concrete Shoulders 10".
- Inlet to be Adjusted. Adjust elevation for HMA overlay. See Section B on this sheet.
- Provide Aggregate Subgrade Improvement 4" as required to replace material disturbed by removal activity and as needed to install new shoulder at required grade.
- Protect existing under drain system from damage.
- Remove shoulder to nearest construction joint. Location of joint shown is approximate - verify in field.
- See Sheet No. 6 for Shoulder Replacement Bill of Material.
- Remove and Reerect Rail Element of Existing Guardrail

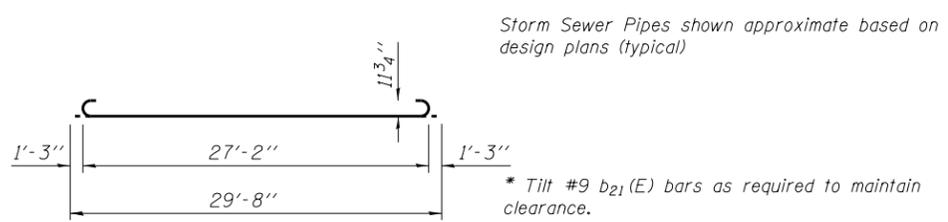
LEGEND

-  Paved Shoulder Removal
-  1 1/2" Hot-Mix Asphalt Surface Course, Mix "D", N70 & 1" Leveling Binder (Machine Method), N70
-  Traffic Direction
-  Guardrail

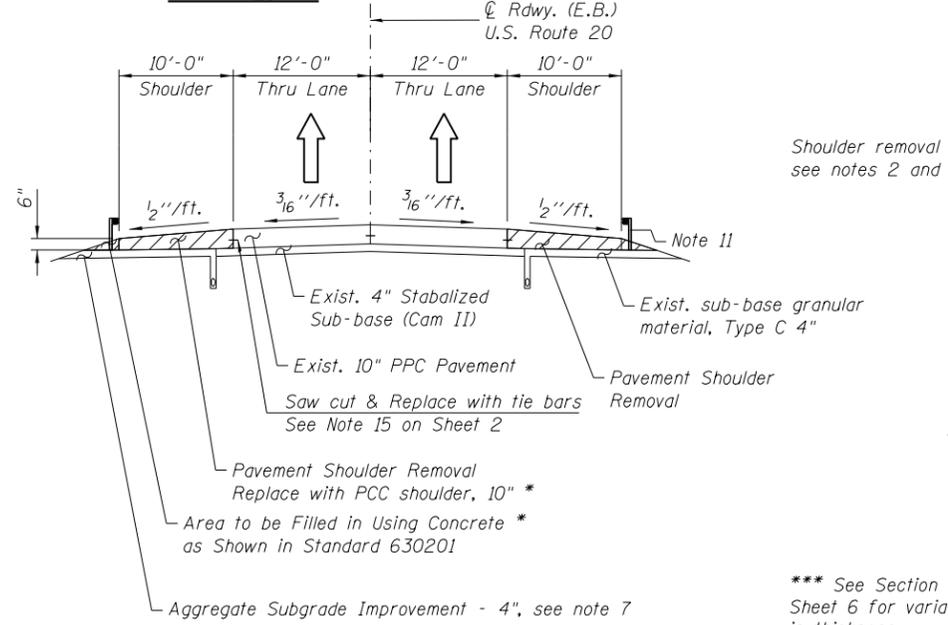


SHOULDER REMOVAL AND REPLACEMENT PLAN

US RTE. 20 (EASTBOUND)
NTS

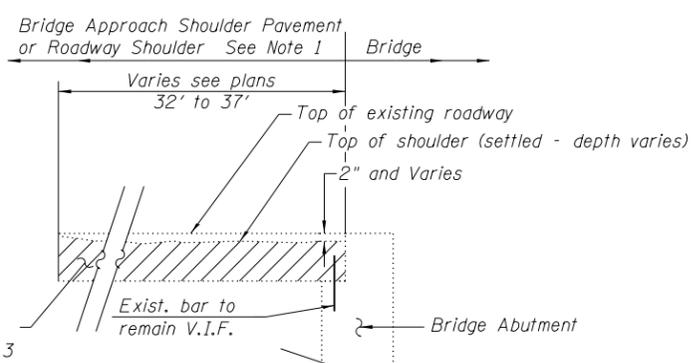


BAR b₂₁(E)



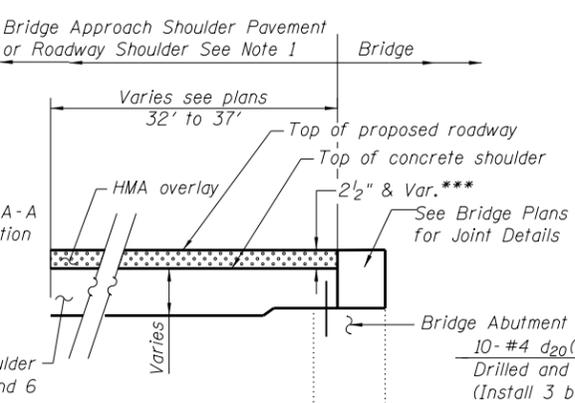
TYPICAL REMOVAL SECTION A-A

(Looking South)



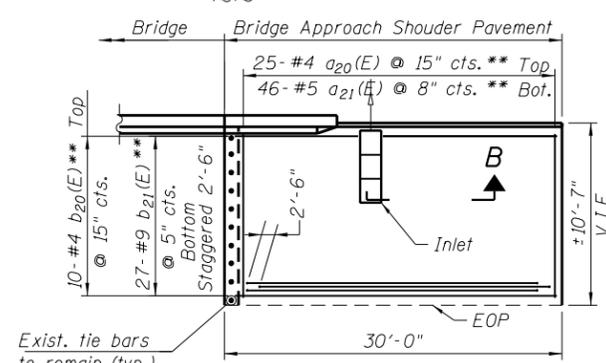
EXISTING SECTION C-C

(Section at Northwest corner shown other locations similar)



PROPOSED SECTION C-C

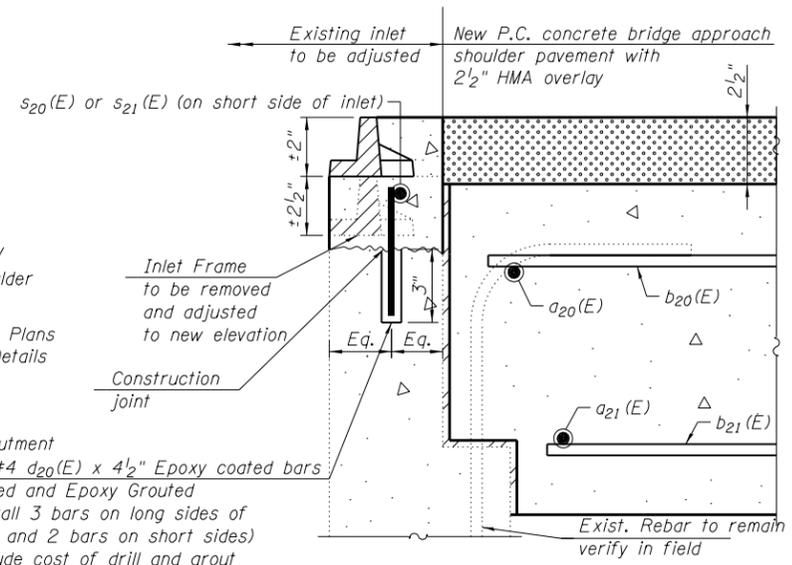
(Section at Northwest corner shown other locations similar)



DETAIL 1 PLAN

NTS

**Cut in field to clear inlet (Southeast corner shown other location similar)



SECTION B

INLET TO BE ADJUSTED
NTS

* Paid for as Portland Cement Concrete Shoulder, 10". Vary shoulder thickness from 10" to 6" as shown. Not shown but similar bridge approach shoulder (see plan) paid for as PCC Bridge Approach Shoulder Pavement. Maintain shoulder thickness as shown in standard 609006.

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DRAWN - HH	REVISED -
CHECKED - JMG, MAI	REVISED -

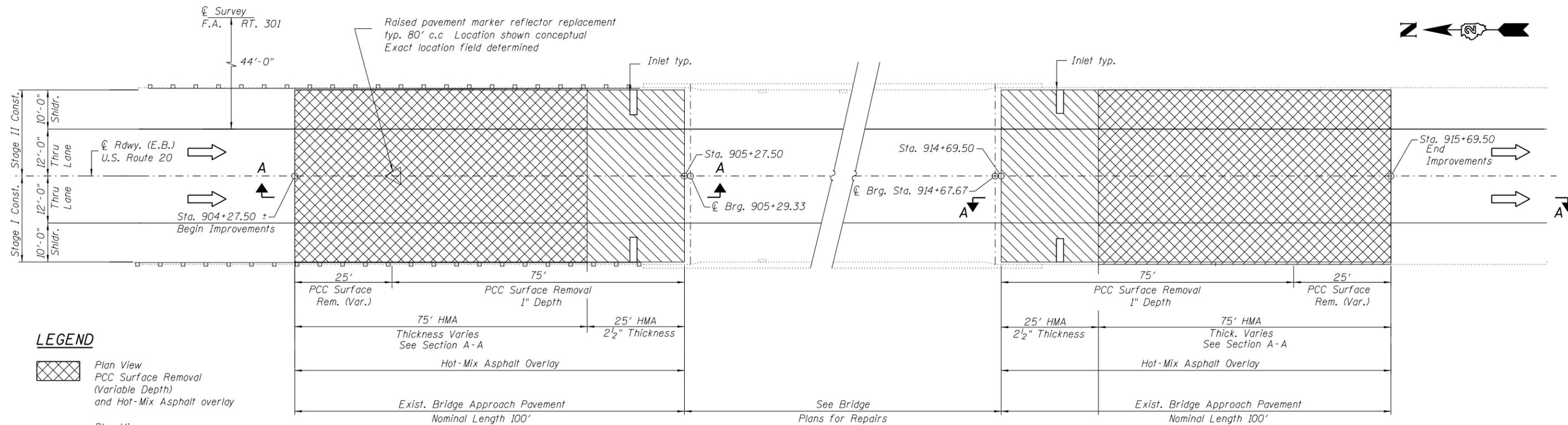
DATE - 03/13/2013	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHOULDER REMOVAL AND REPLACEMENT PLAN AND SECTIONS
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042

SHEET NO. 1 OF 1 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0301	(177-4B-1M)	STEPHENSON	43	7
CONTRACT NO. 64J24				
ILLINOIS FED. AID PROJECT				



LEGEND

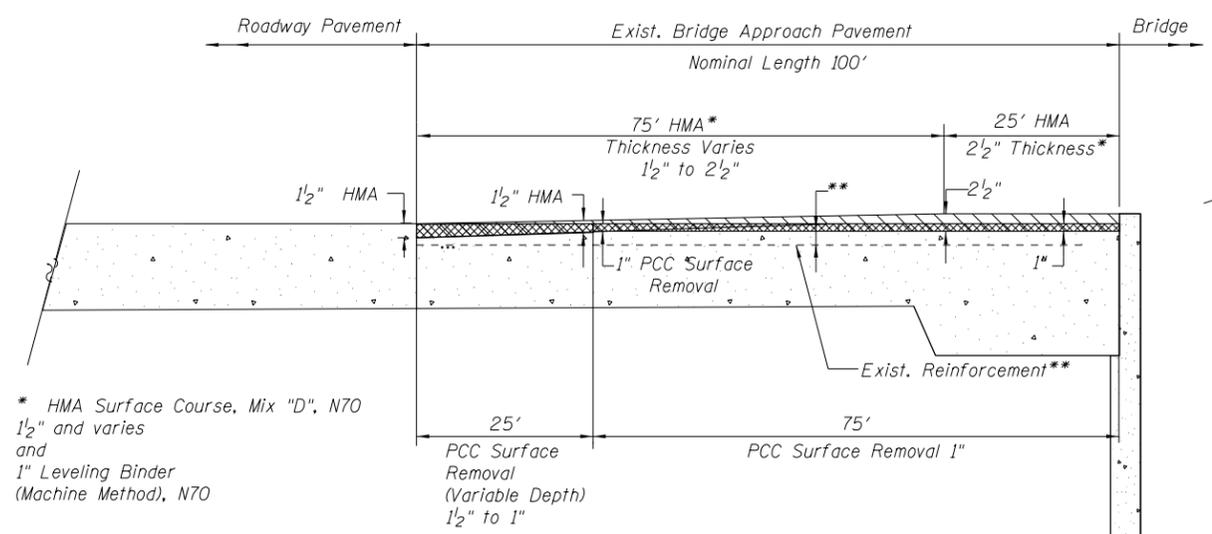
- Plan View
PCC Surface Removal
(Variable Depth)
and Hot-Mix Asphalt overlay
- Plan View
PCC Surface Removal
1" Depth /HMA Surface
Removal, 2"
Plan and Section View
Hot-Mix Asphalt Overlay
- Section Views
Concrete Pavement Surface
Removal

BRIDGE APPROACH PAVEMENT AND SHOULDERS RESURFACING PLAN

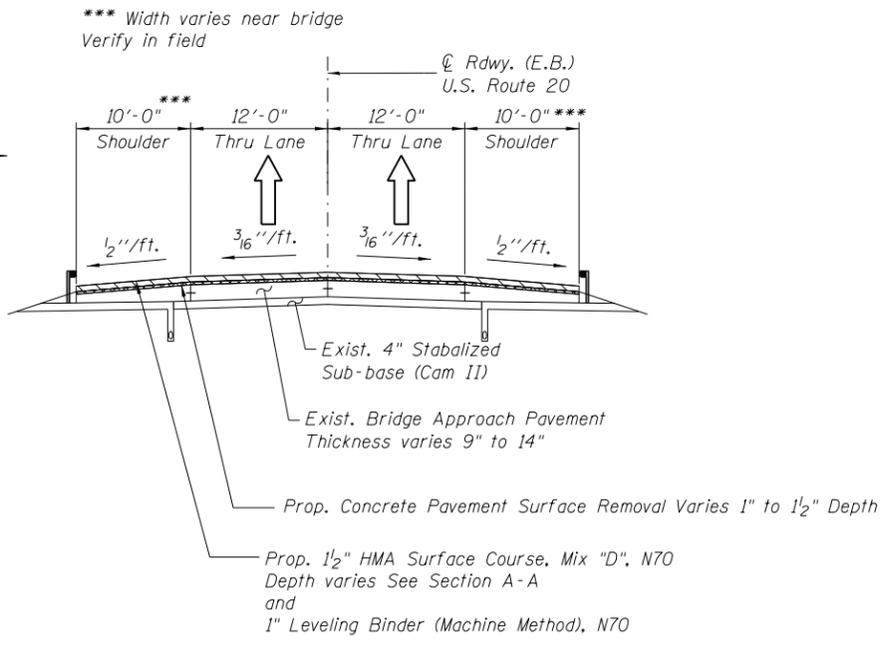
US RTE. 20 (EASTBOUND)
NTS

SHOULDER REPLACEMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a ₂₀ (E)	100	#4	10'-1"	—
a ₂₁ (E)	184	#5	10'-1"	—
b ₂₀ (E)	40	#4	29'-8"	—
b ₂₁ (E)	108	#9	29'-8"	—
d ₂₀ (E)	40	#4	0'-4 1/2"	—
s ₂₀ (E)	8	#4	7'-5"	—
s ₂₁ (E)	8	#4	2'-6"	—
P.C. Concrete Bridge Approach Shoulder Pavement			Sq. Yd.	147
Reinforcement Bars, Epoxy Coated			Pound	14,360



**SECTION A-A
LONGITUDINAL SECTION**



TYPICAL SECTION RESURFACING

(Looking South) Eastbound

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DRAWN - HH	REVISED -
CHECKED - JMG, MAI	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**BRIDGE APPROACH PAVEMENT RESURFACING PLAN AND SECTIONS
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042**

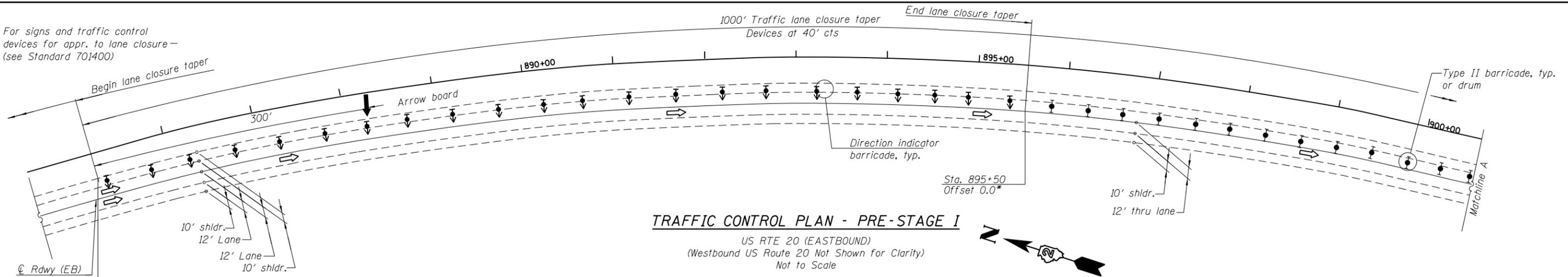
SHEET NO. 1 OF 1 SHEETS

F.A.P. RT. 0301	SECTION (177-4B-1M)	COUNTY STEPHENSON	TOTAL SHEETS 43	SHEET NO. 8
				CONTRACT NO. 64J24

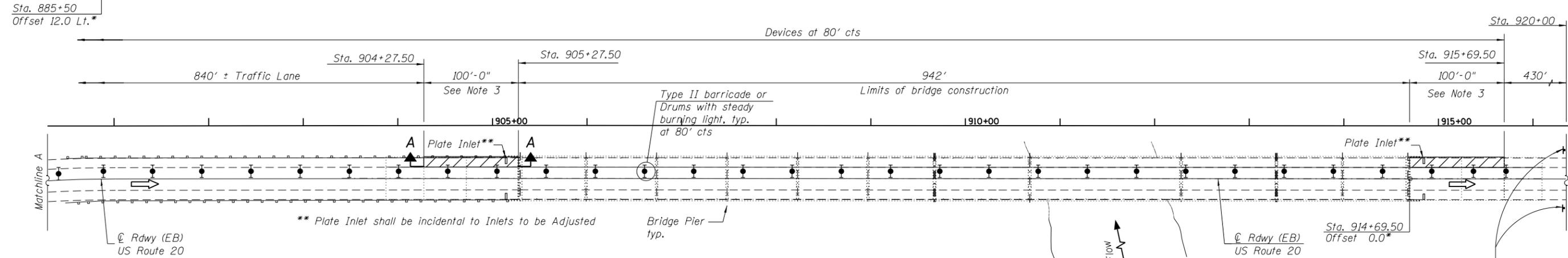
ILLINOIS FED. AID PROJECT

DATE - 03/13/2013

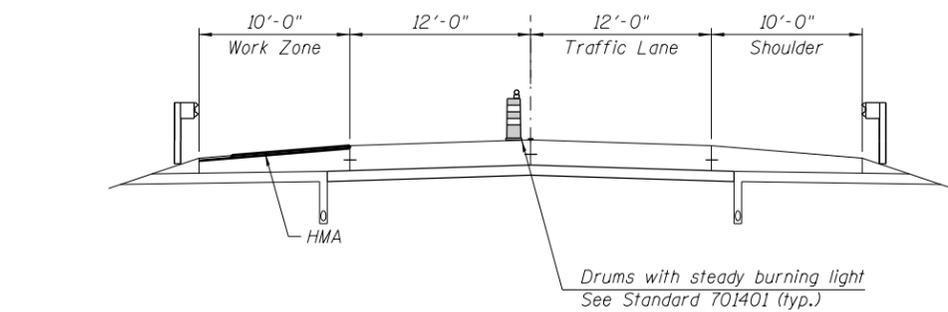
For signs and traffic control devices for appr. to lane closure— (see Standard 701400)



TRAFFIC CONTROL PLAN - PRE-STAGE I
US RTE 20 (EASTBOUND)
(Westbound US Route 20 Not Shown for Clarity)
Not to Scale

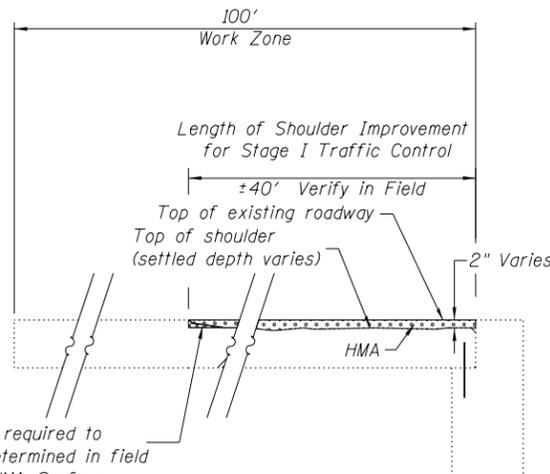


TRAFFIC CONTROL PLAN - PRE-STAGE I
US RTE 20 (EASTBOUND)
(Westbound US Route 20 Not Shown for Clarity)
Not to Scale



PRE-STAGE I CONST. ROADWAY SECTION
(Looking south)
Not To Scale

PCC Concrete Surface Removal (Variable Depth) as required to maintain 2" thick HMA. Limits of work is to be determined in field by the Resident Engineer. A nominal quantity of HMA Surface Course, Mix "D" N70 has been included in the Summary of Quantities for this work.



SECTION A-A
Shoulder Improvement Prior to Stage I Traffic Control
(Northeast corner shown - Southeast similar)

LEGEND

- Hot-Mix Asphalt Overlay
- Traffic direction
- Arrow board
- Sign
- Work area
- Direction indicator barricade with steady burn monodirectional light
- Type II barricade or drum with steady burn monodirectional light

* Offset are given with respect to centerline of east bound traffic lanes

NOTES:

1. For Pre-Stage I Bridge Construction dimensions and details see structural Sheet S03.
2. For details not shown see IDOT Standards 701400 and 701401. For traffic control devices see IDOT Standard 701901.
3. The existing +/-40' of the north and south bridge approach shoulders have settled and prior to routing traffic on the east (left) shoulder as shown in Stage I, the contractor shall repair the shoulder as directed by the Engineer with temporary overlay of HMA. A nominal quantity of HMA has been included in the Schedule of Quantities to provide 2" of HMA for 40' of shoulders north and south of the bridge, the actual thickness and length may vary and quantities shall be field measured. The existing bridge approach shoulder inlets shall be plated north and south of bridge, and the existing curb shall be broken off so water can free drain off pavement without ponding water - this shall be incidental to Paved Shoulder Removal. Prior to repair, replacement and final overlay of left shoulders during Stage II, the temporary overlay shall be removed. On that portion of shoulders that are noted not to be removed and replaced, the removal of the temporary HMA will be paid for as Hot-Mix Asphalt Removal 2".
4. Traffic Control elements are included in the cost of Traffic Control and Protection Standard 701401 - See Special Provisions.

END
WORK ZONE
SPEED LIMIT

G20-1103(0)-3660
Sta 920+00

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CHECKED - JMG, MAI	REVISED -

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DEPARTMENT OF TRANSPORTATION

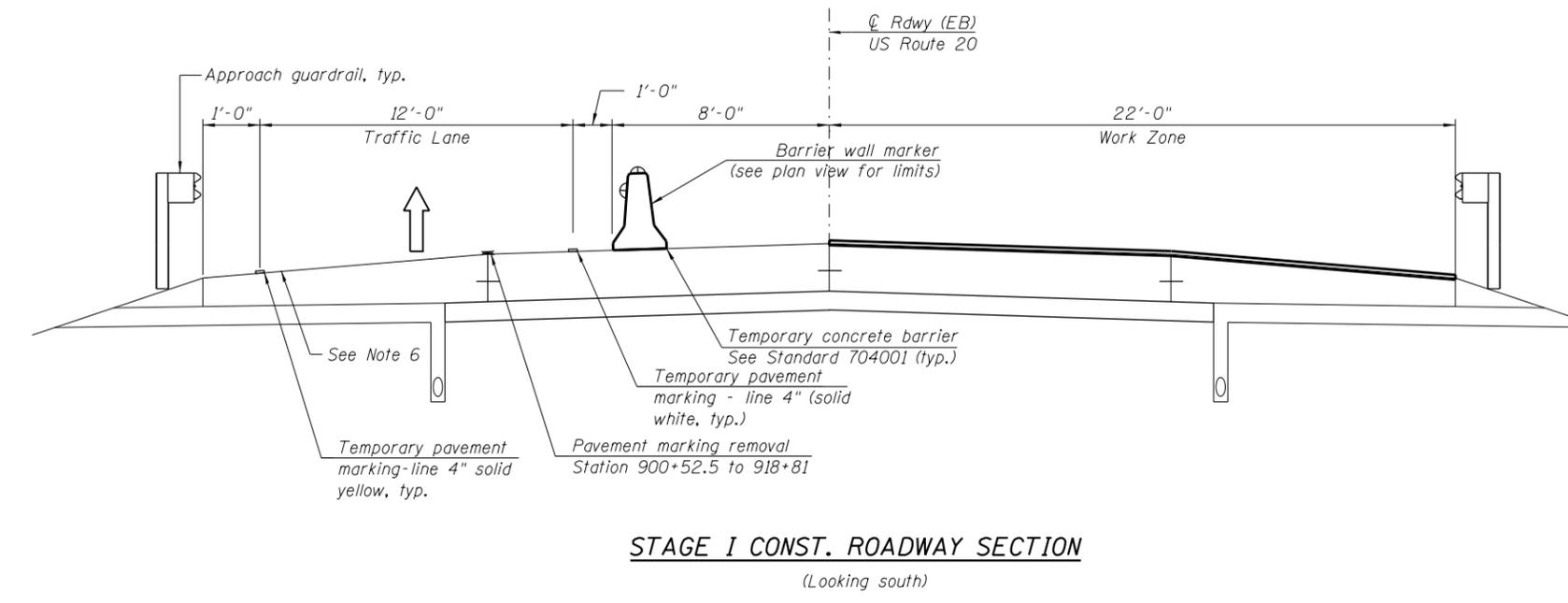
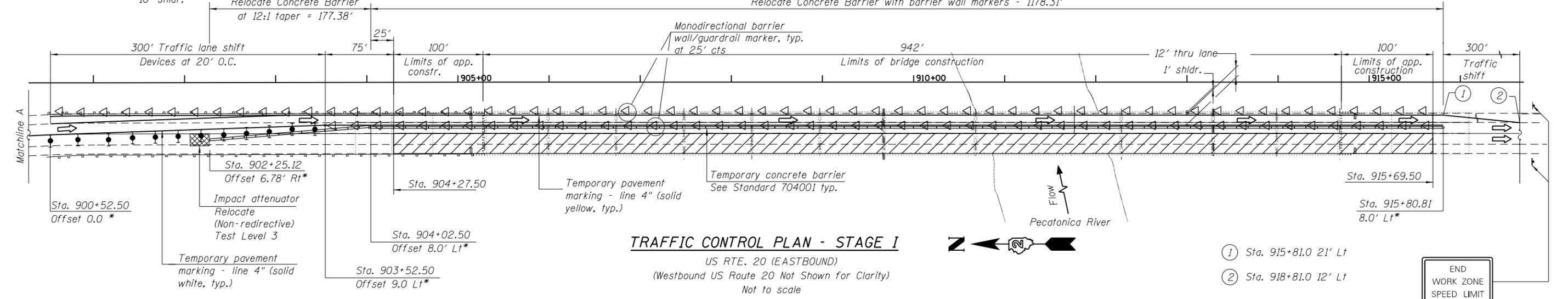
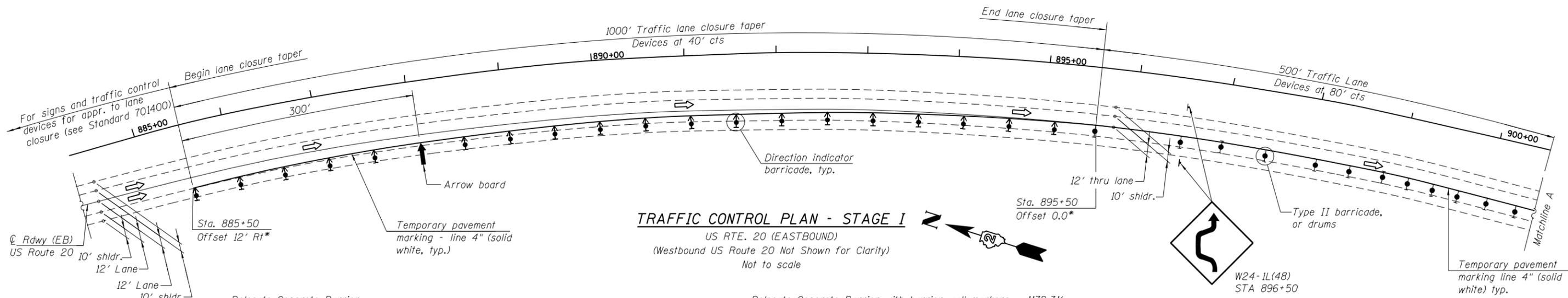
TRAFFIC CONTROL PLAN AND SECTIONS - PRE-STAGE I
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042

SHEET NO. 1 OF 1 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0301	(177-4B-1M)	STEPHENSON	43	9
CONTRACT NO. 64J24				

ILLINOIS FED. AID PROJECT

DATE - 03/13/2013



LEGEND

- Traffic direction
- Arrow board
- Sign
- Work area
- Direction indicator barricade with steady burn monodirectional light
- Type II barricade or drum with steady burn monodirectional light
- Temporary concrete barrier
- Monodirectional barrier wall/guardrail marker
- Temporary pavement marking-Line 4"
- Impact attenuator

NOTES:

- Temporary pavement marking line-4" shall be placed throughout the taper and along-side the work area. The right edge line shall be white and the left edge line shall be yellow.
- Barrier wall/guardrail markers at 25' cts. shall be crystal on the right and markers on the left shall be amber.
- For approach lane closure signage and details see Std. 701400.
- For Stage I Bridge Construction dimensions and details see structural sheet S03.
- For details not shown see IDOT Highway Standards 701400 and 701402. For traffic control devices see IDOT Standard 701901.
- See Traffic Control Plan - Pre-Stage I for improvements to shoulders prior to routing traffic on shoulders during Stage I.

* Offsets are given with respect to centerline of eastbound traffic lanes. Offsets to temporary concrete barrier wall are to face of barrier, traffic side.

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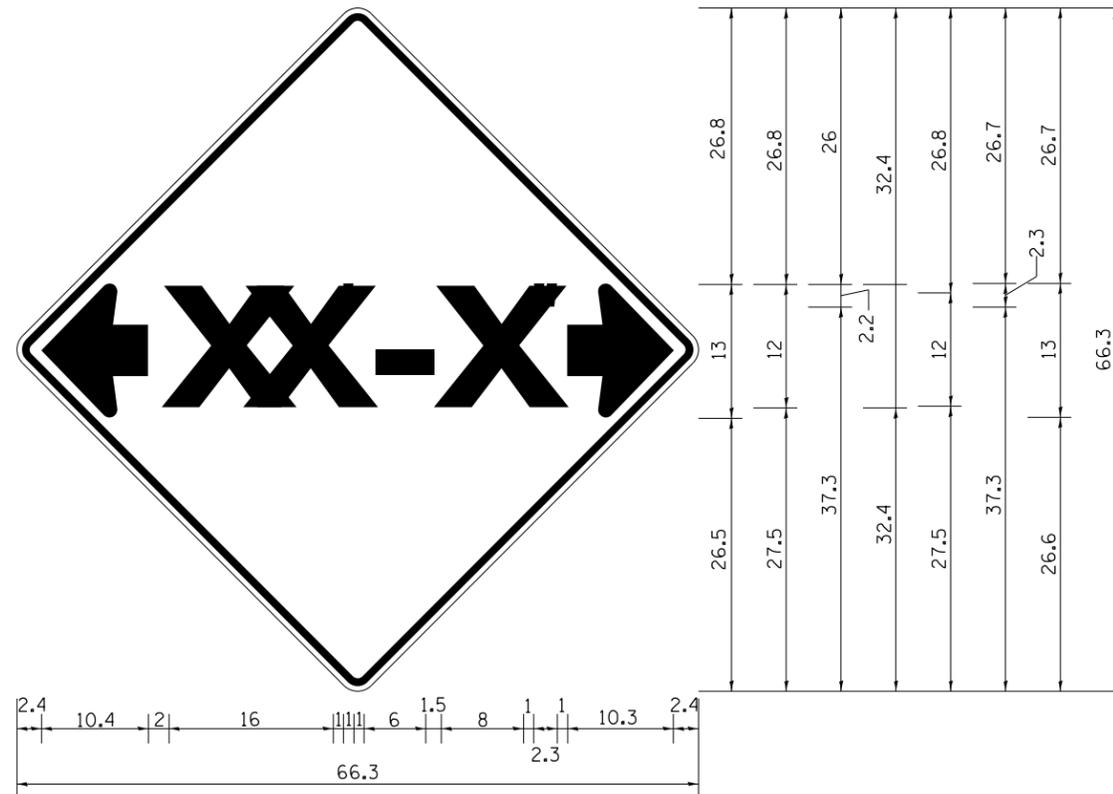
DESIGNED - JMG, WM	REVISED -
CHECKED - MI	REVISED -
DRAWN - WM	REVISED -
CHECKED - JMG, MAI	REVISED -

STATE OF ILLINOIS
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TRAFFIC CONTROL PLAN AND SECTION - STAGE I
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042

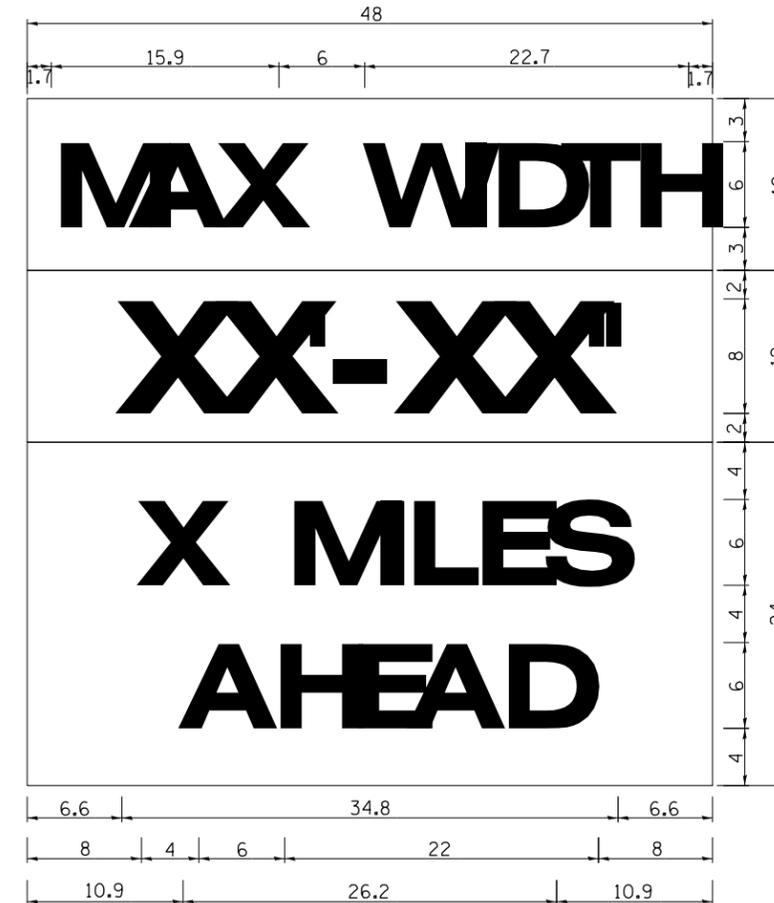
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0301	(177-4B-11M)	STEPHENSON	43	10
CONTRACT NO. 64J24			ILLINOIS FED. AID PROJECT	

INFORMATIONAL WARNING SIGN (FOR NARROW TRAVEL LANES) 39.2



NOTES

W12-2 - Horizontal Clearance Sign
 48.0" across sides, 1.9" Radius,
 0.8" Border, 0.5" Indent, Black on
 Orange; Standard Arrow Custom
 10.4" X 8.1" 180° Black 11 Inch
 D Series Lettering; Standard Arrow
 Custom 10.4" X 8.1" 0°



W12-I103 (Width is 8D);
 No border, Black on White;
 [MAX WIDTH] D;

No border, Black on Orange;
 [XX'-XX'''] D;

No border, Black on White;
 [X MILES] D; [AHEAD] D;

All work to furnish and install these signs shall be included in the cost of the Traffic Control Standards and shall not be paid for separately.

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

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DESIGNED - DISTRICT 2	REVISED -
CHECKED - MI	REVISED -
DRAWN - DISTRICT 2	REVISED -
CHECKED - JMG, MAI	REVISED -

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 DEPARTMENT OF TRANSPORTATION

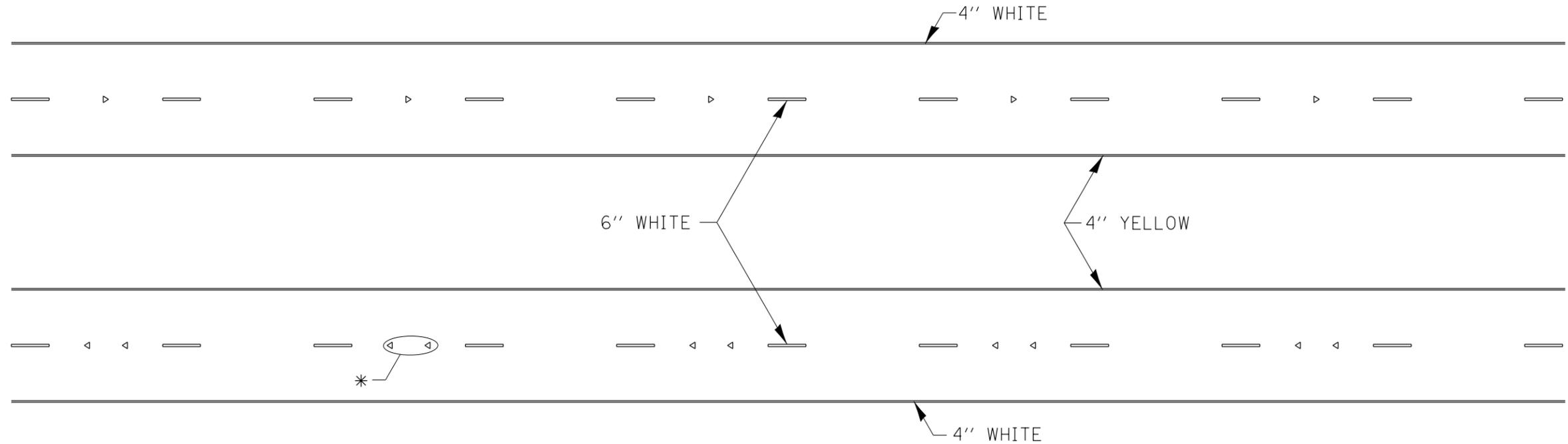
DISTRICT 2 STANDARD - INFORMATIONAL WARNINGS SIGN - 39.1
 EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0301	(177-4B-1)M	STEPHENSON	43	12
				CONTRACT NO. 64J24

SHEET NO. 2 OF 2 SHEETS

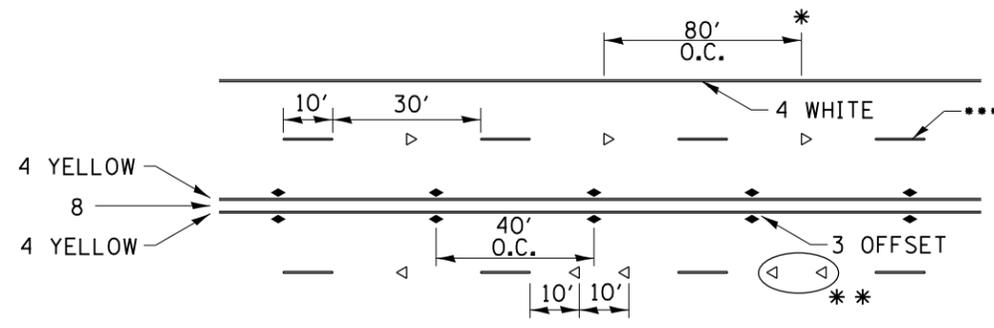
ILLINOIS FED. AID PROJECT

TYPICAL PAVEMENT MARKINGS



* SEE HIGHWAY STANDARD 781001 FOR SPACING DETAILS.
USE DOUBLE MARKERS WHEN ADT \geq 25,000.

MULTI-LANE / DIVIDED



SYMBOLS

* REDUCE TO 40' O.C. ON CURVES WHERE ADVISORY SPEEDS ARE 10 MPH LOWER THAN POSTED SPEEDS.

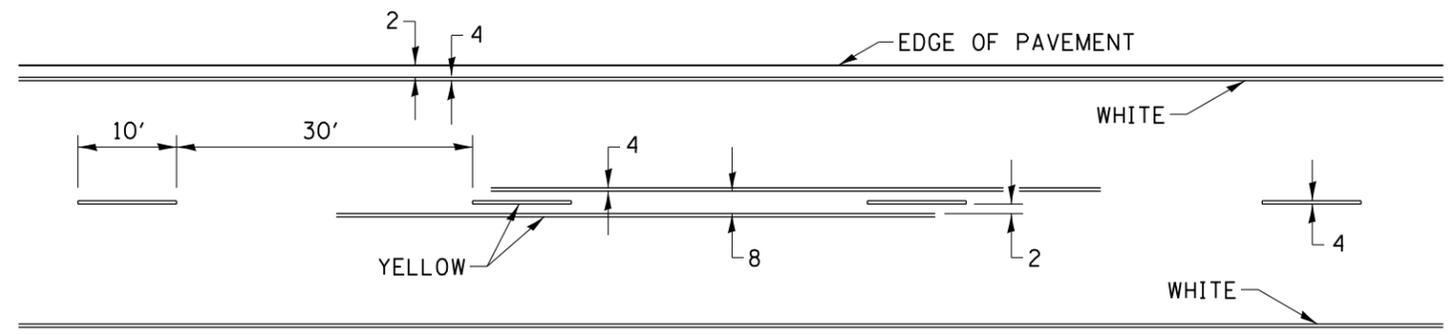
** USE DOUBLE MARKERS WHEN ADT \geq 25,000

*** CENTERLINE SKIP DASH PAVEMENT MARKING SPEED LIMIT LESS THAN 40 MPH USE 4" LINE SPEED LIMIT 40 MPH AND OVER USE 6" LINE

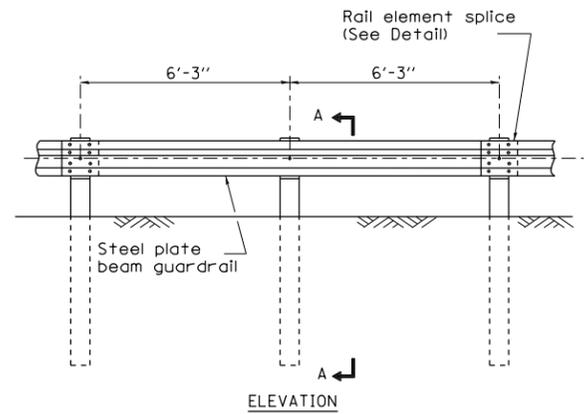
MULTI-LANE / UNDIVIDED & ONE WAY

(FOR MULTI-LANE UNDIVIDED HIGHWAYS USE THIS DETAIL NOT HIGHWAY STANDARD 781001)

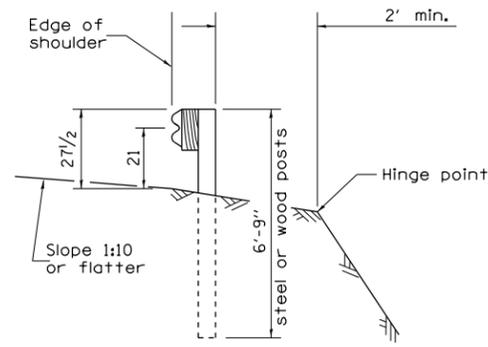
TYPICAL PAVEMENT MARKING FOR TWO LANE SECTION - NO PASSING ZONES



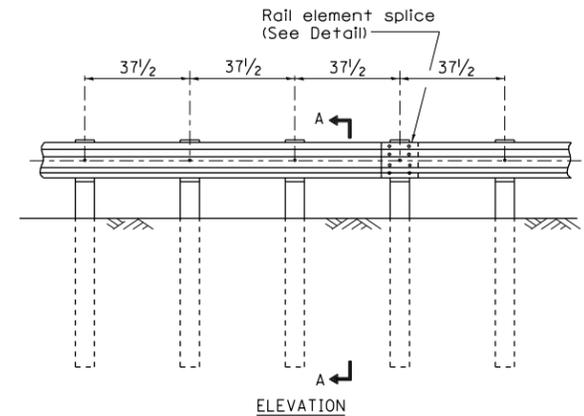
REMOVE AND REERECT STEEL PLATE BEAM GUARDRAIL



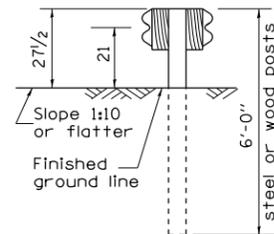
TYPE A
6'-3" Typical post spacing



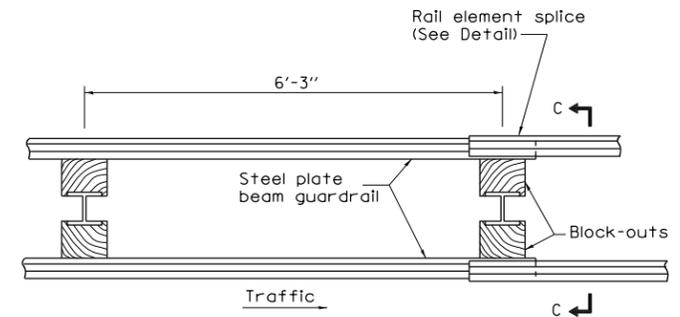
SECTION A-A



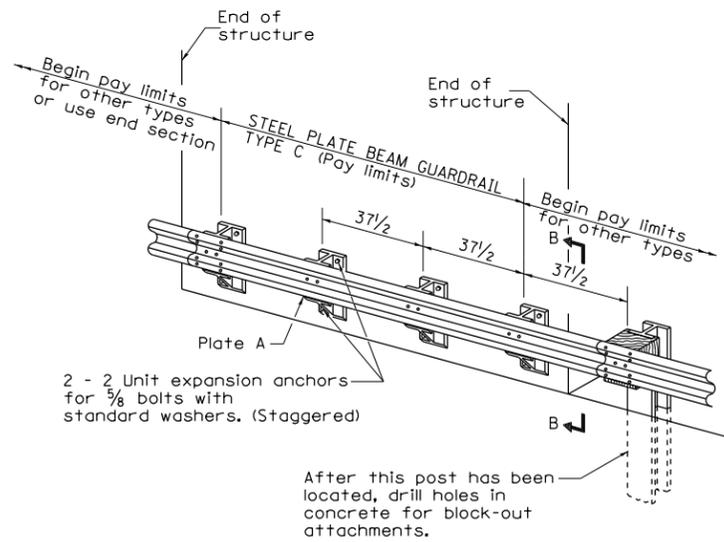
TYPE B
37 1/2 Closed post spacing



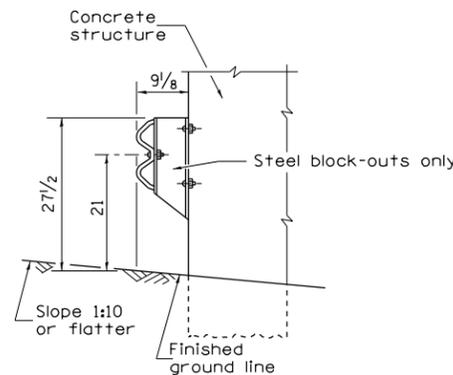
SECTION C-C



TYPE D
Double steel plate beam guardrail
6'-3" typical post spacing



TYPE C
37 1/2 Block-out spacing



SECTION B-B

GENERAL NOTES

All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

All dimensions are in inches unless otherwise shown.

The existing steel posts may be drilled to match the bolt pattern shown herein for the wood block-out, or a new steel post shall be provided.

This detail is applicable to the guardrail system used prior to January 1, 2007. For details on the Midwest Guardrail System, see Standard 630001.

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DRAWN - DISTRICT 2
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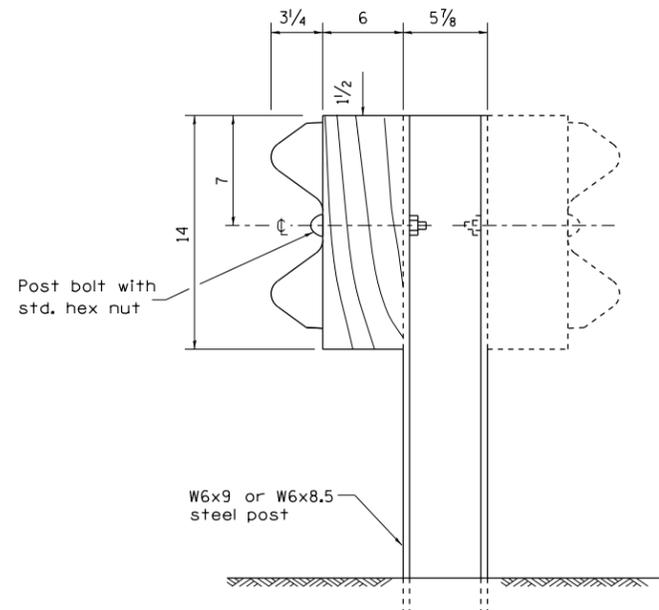
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT 2 STANDARD - 53.1
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042

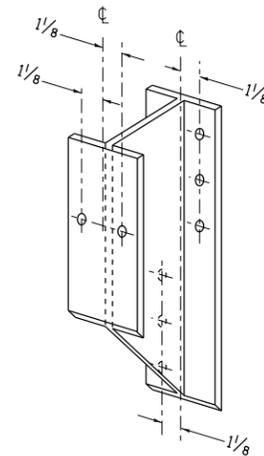
SHEET NO. 1 OF 4 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0301	(177-4B-1)M	STEPHENSON	43	14
CONTRACT NO. 64J24			ILLINOIS FED. AID PROJECT	

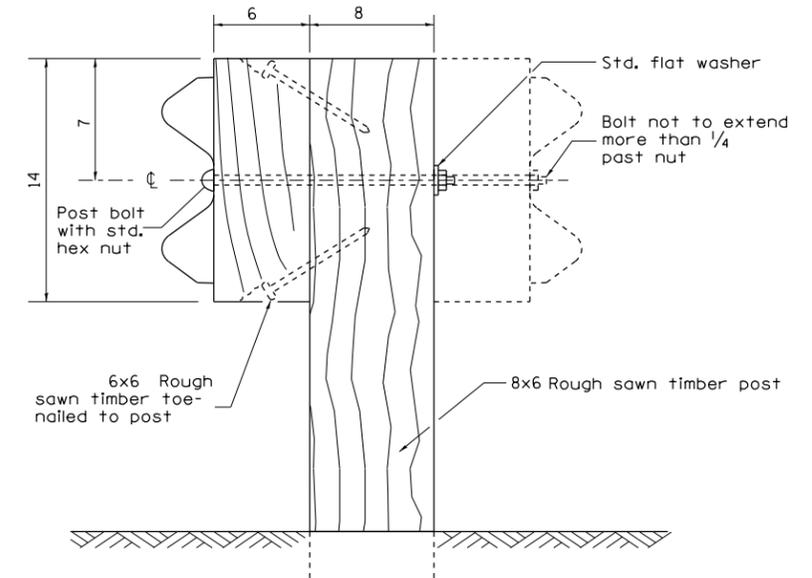
REMOVE AND REERECT STEEL PLATE BEAM GUARDRAIL



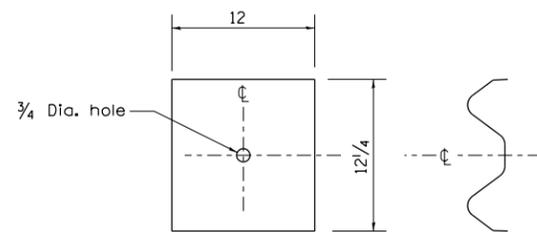
STEEL POST CONSTRUCTION



STEEL BLOCK-OUT DETAIL



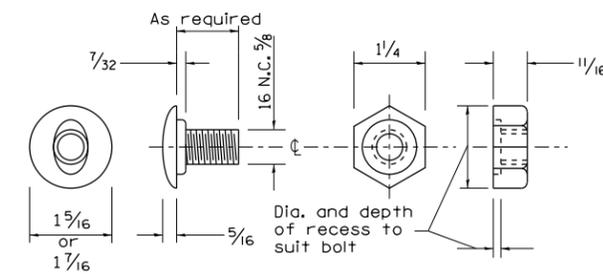
WOOD POST CONSTRUCTION



NOTE

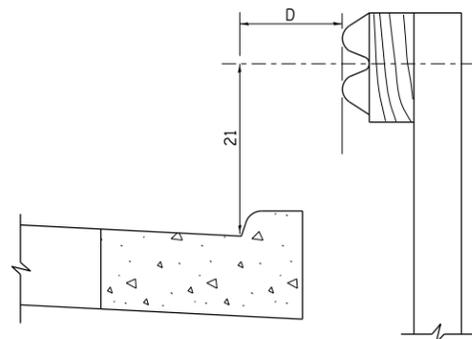
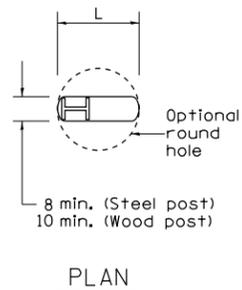
Plate A shall be placed between rail element and block-out at non-splice mounting points only when steel block-outs are used.

PLATE A



POST OR SPLICE BOLT & NUT

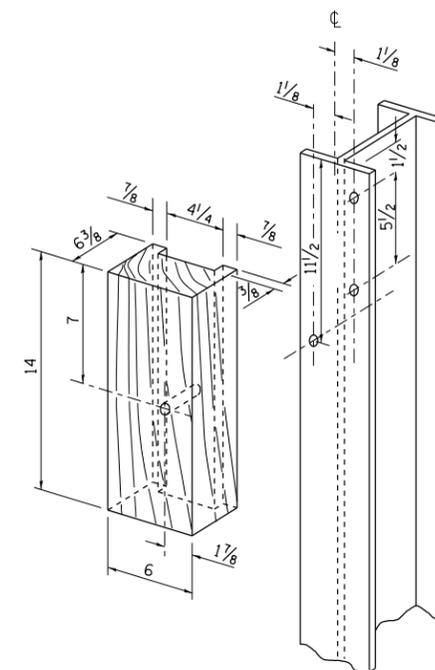
REMOVE AND REERECT STEEL PLATE BEAM GUARDRAIL



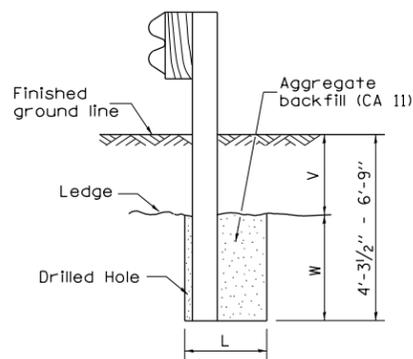
Note:
If it is necessary for D to be more than 12 and less than 10'-0" type M-2 curb and gutter (Std. 606001) shall be used in front of and in advance of the guardrail.

GUARDRAIL PLACED BEHIND CURB

(D = 0 desirable to 12 maximum)



WOOD BLOCK-OUT AND STEEL POST DETAILS

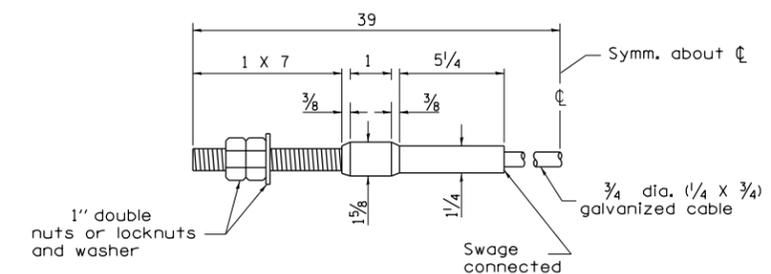


Note:
Ledge line is top of rock ledge or hard slag fill.

ELEVATION

FOOTING FOR POST WHEN IMPERVIOUS MATERIAL IS ENCOUNTERED

V	W	L	
		Steel Post	Wood Post
0 - 18	24	21	23
>18 - 41.5	12	8	10
>41.5 - 53.5	12 - 0	8	10



CABLE ASSEMBLY
(40,000 lbs. min. breaking strength)
Tighten to fault tension.

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DISTRICT 2 STANDARD - 53.1
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042

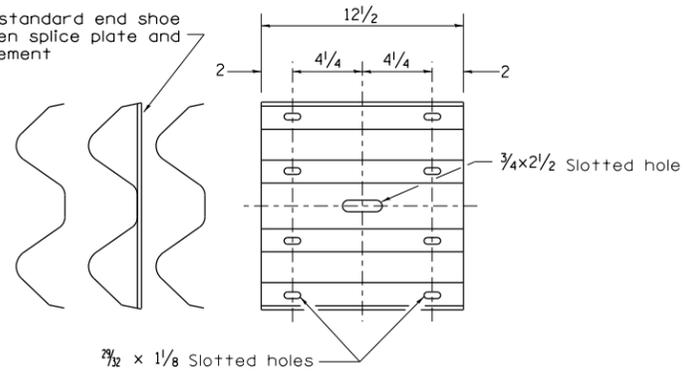
SHEET NO. 3 OF 4 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0301	(177-4B-1M)	STEPHENSON	43	16
CONTRACT NO. 64J24				

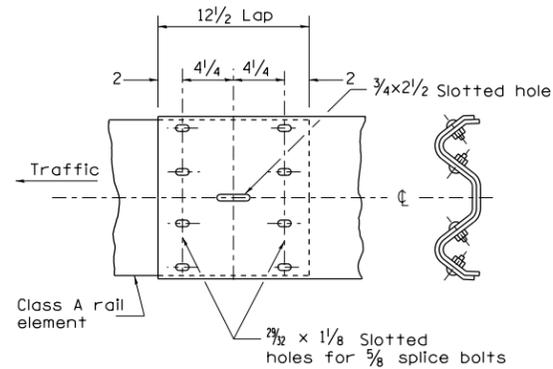
ILLINOIS FED. AID PROJECT

REMOVE AND REERECT STEEL PLATE BEAM GUARDRAIL

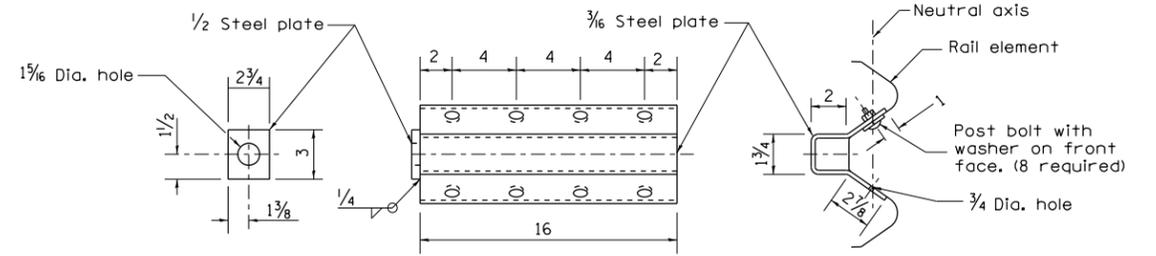
Place standard end shoe between splice plate and rail element



SPLICE PLATE



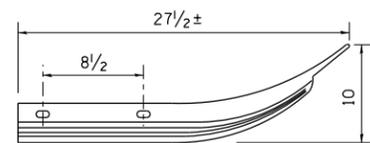
RAIL ELEMENT SPLICE



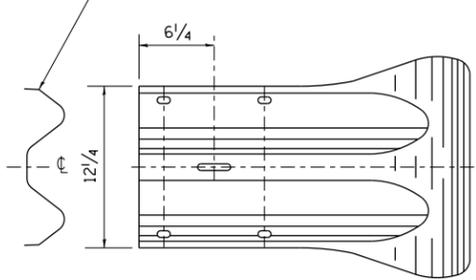
NOTE

Anchor plate T shall be used to attach cable assembly to guardrail when required on traffic barrier terminals.

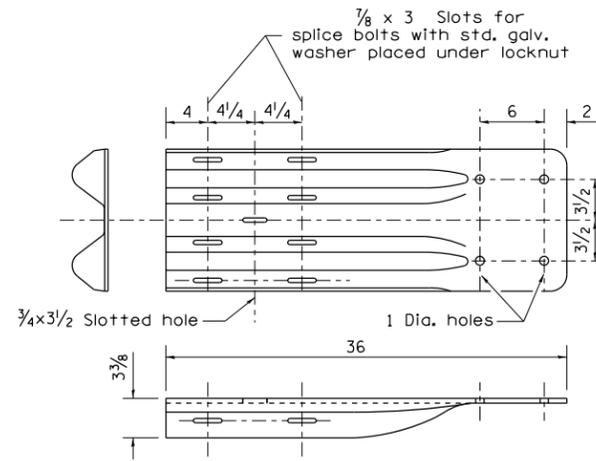
ANCHOR PLATE T DETAILS



Class A rail element



END SECTION



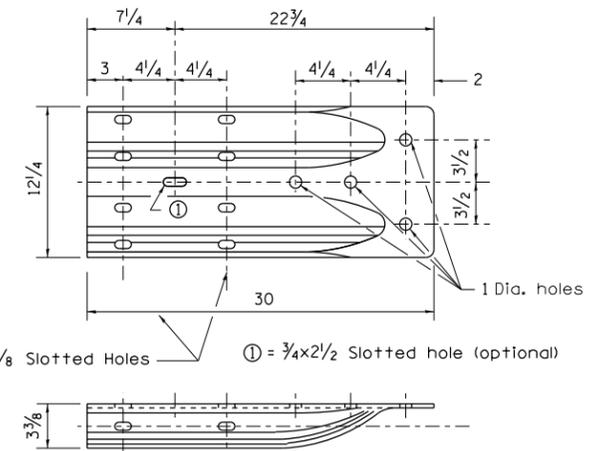
NOTE

When end shoe is attached to a bridge parapet which has an expansion joint, the bolts shall be provided with a locknut or double nut and shall be tightened only to a point that will allow guardrail movement.

The standard end shoe shall be attached to the concrete with pre-drilled or self-drilling anchor bolts. The anchor cone shall be set flush with the surface of the concrete.

Externally threaded studs protruding from the surface of the concrete will not be permitted.

END SHOE



ALTERNATE END SHOE

Existing Structure: The existing structure was built in 1982. The structure is an 11-span steel beam and plate girder bridge that measures 47'-2" Out-to-Out Deck and 943'-0" Bk.-to-Bk. Abutments (along E. Rt. 20). Spans 1 thru 6 are continuous and consist of W36x230 beams. Spans 7 thru 9 are continuous and consist of 48" deep web plate girders. Spans 10 and 11 are continuous and consist of W36x230 beams. The substructure consists of reinforced concrete abutments and reinforced concrete piers supported on concrete piles and/or steel H-piles.

Traffic is to be maintained utilizing stage construction.

No Salvage.

LOADING

HS20-44 & ALTERNATE ORIGINAL CONSTRUCTION (1982)
Allow 25 #/sq. ft. for future wearing surface

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges
ORIGINAL CONSTRUCTION (1982)
1977 AASHTO, 1978 and 1979 AASHTO Interim Specifications

DESIGN STRESSES

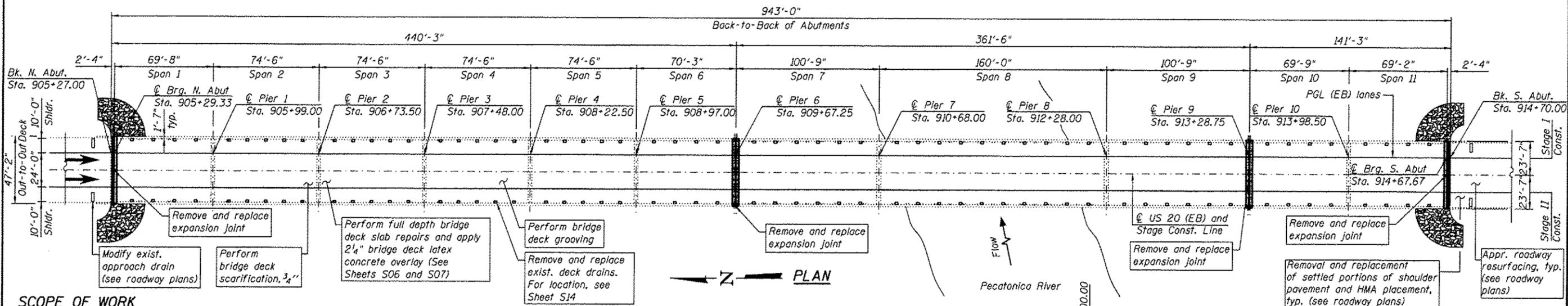
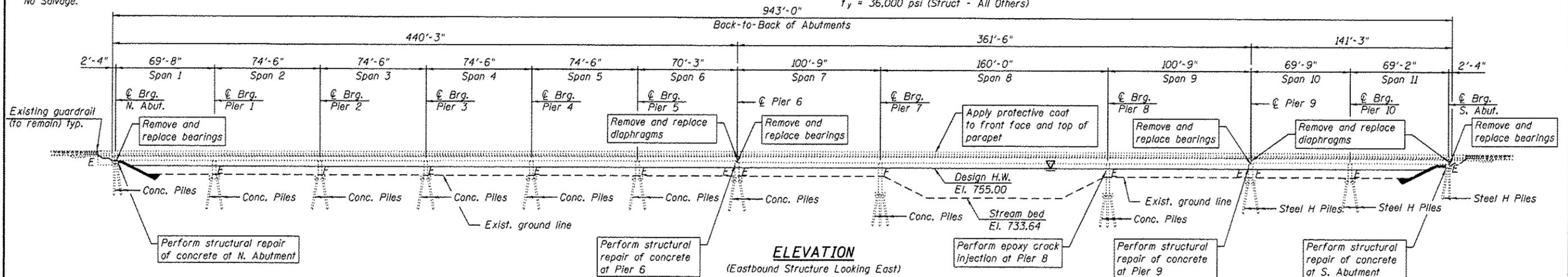
FIELD UNITS
f_c = 3,500 psi (Concrete)
f_y = 60,000 psi (Reinforcement)
f_y = 50,000 psi (Struct - Spans 7 thru 9)
f_y = 36,000 psi (Struct - All Others)
ORIGINAL CONSTRUCTION (1982)
f_c = 3,500 psi (Concrete)
f_y = 60,000 psi (Reinforcement)
f_y = 50,000 psi (Struct - Spans 7 thru 9)
f_y = 36,000 psi (Struct - All Others)

WATERWAY INFORMATION

ORIGINAL CONSTRUCTION (1982)
Drainage Area = 1540 sq. Miles
Design Discharge (50yr) = 20,520 c.f.s
None
Exist. Opening (Below 50 yr. H.W.E) = 6,550 sq. ft.
Req'd Opening (Below 50 yr. H.W.E) = 6,550 sq. ft.
Opening (Below 50 yr. H.W.E) = 0.52 ft.
Created Head for Design Flood = 23,815 c.f.s
100-Year Discharge = 0.55 ft.
Created Head for 100-Year Flood = 0.55 ft.

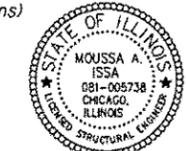
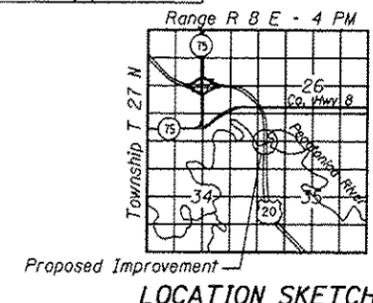
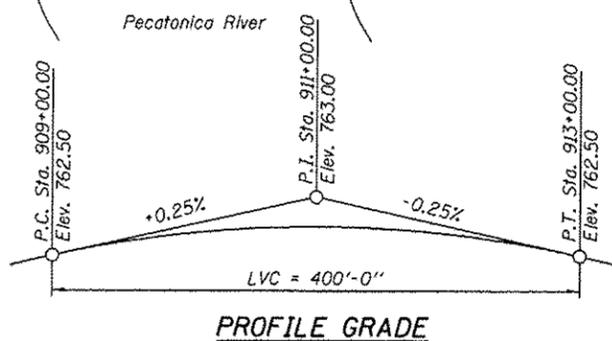
LEGEND

- Concrete Removal
- Limits of protective shielding
- Traffic Direction



SCOPE OF WORK

1. Scarify 3/4" from the bridge deck slab.
2. Perform full-depth deck slab repairs.
3. Remove existing deck drains and install new drains based on drainage study.
4. Remove and replace transverse expansion joints at the South and North Abutments and Piers 6 and 9 with preformed joint strip seals.
5. Apply a 2 1/4" bridge deck latex concrete overlay to the bridge deck slab.
6. Apply bridge deck grooving for the 2 1/4" bridge deck latex concrete overlay and reconstructed transverse expansion joint areas.
7. Install temporary shoring for beams 1 thru 6 at the north and south sides of Piers 6 and 9 and for Beam 1 at the North Abutment.
8. Perform structural steel repairs for steel members and paint steel as shown on Sheet S16.
9. Perform structural concrete repairs for the Abutments, Piers 6 and 9 and the parapets.
10. Perform epoxy crack injection for Pier 8.
11. Jack and remove existing bearings at the South Abutment (total 6) and at the North Abutment (total 5).
12. Install appropriate bearing type (as indicated in the plans) at Pier 6 (total 12), Pier 9 (total 12), South Abutment (total 6) and North Abutment (total 6).
13. Remove temporary shoring at Pier 6, Pier 9 and Beam 1 at the North Abutment.
14. Remove existing diaphragms at the South Abutment (total 5), Pier 6 (total 10) and Pier 9 (total 10) and replace in kind.
15. Apply protective coat for the parapets and reconstructed transverse expansion joint areas.
16. Repaint pavement markings on the top of deck.
17. For bridge approach pavement resurfacing and bridge approach shoulder pavement replacement and resurfacing, see roadway plans.



Signed **Moussa A. Issa**
Dr. Moussa A. Issa, S.E.
Il. Lic. No. 081-005738 Expires 11-30-2014
Date **March 18, 2013**
For Sheets S01 Thru S26

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DRAWN - WM	REVISIONS
CHECKED - MAI, MI	REVISIONS
DATE - 03/13/2013	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042
SHEET NO. 501 OF 526 SHEETS

F.A.P. RTE. 0301	SECTION (177-4B-11M)	COUNTY STEPHENSON	TOTAL SHEETS 43	SHEET NO. 18
			CONTRACT NO. 64J24	
ILLINOIS FED. AID PROJECT				

GENERAL NOTES

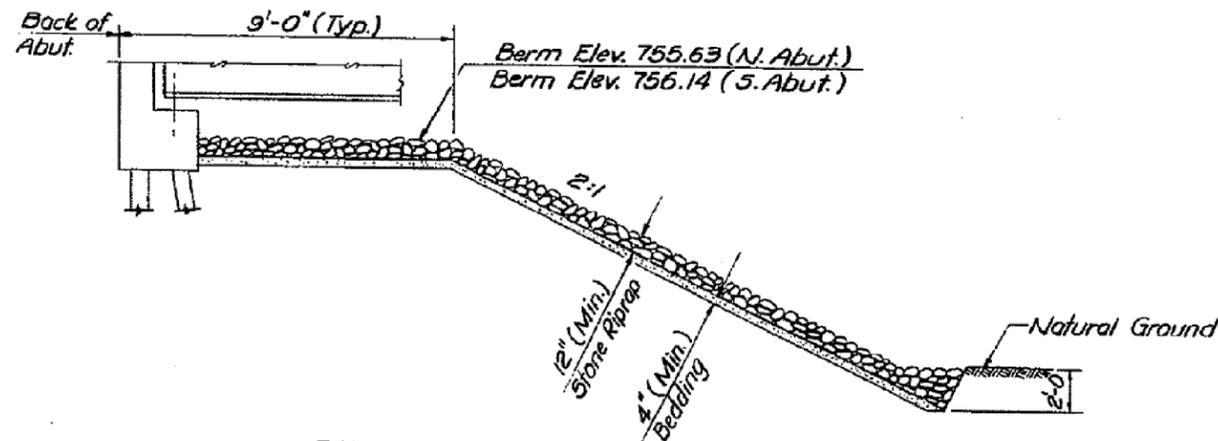
- Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
- Reinforcement bars designated (E) shall be epoxy coated.
- Bars noted thus, 3 x 2-#5 indicates 3 lines of bars with 2 lengths of bars per line.
- All structural steel shall conform to AASHTO Classification M-270 Gr 36 (Spans 1 thru 6, 10 and 11) and Gr 50 (Spans 7 thru 9), unless otherwise noted.
- All exposed concrete edges shall have a 3/4" x 45° chamfer, except where shown otherwise.
- If the analysis submitted to the Contractor for the jacking/temporary support system to be used shows temporary stiffeners are required to prevent web crippling or buckling, the stiffeners shall be steel and bolted to the web. If stiffeners are not required, hardwood timbers shall be installed tightly between the top and bottom flange to prevent flange rotation.
- The Contractor shall take all necessary precautions for the protection of passing vehicles from falling objects and/or materials until completion of the work.
- Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by method that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
- Areas of deck repairs shown are estimated. The Engineer shall show actual locations of deck repairs on As-built Plans.
- Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50 °F.
- The Inorganic Zinc Rich Primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat for all interior steel surfaces shall be gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be interstate green.

INDEX OF SHEETS

- S01. General Plan and Elevation
- S02. General Notes, Index of Sheets & Total Bill of Material
- S03. Preliminary Stage & Stage I Construction
- S04. Stage II Construction & Final Deck Cross Section
- S05. Temporary Concrete Barrier
- S06. Bridge Deck Repair Plan (Spans 1 thru 6)
- S07. Bridge Deck Repair Plan (Spans 7 thru 11)
- S08. Bridge Deck Final Cross Sections
- S09. North Abutment Joint Removal and Replacement
- S10. South Abutment Joint Removal and Replacement
- S11. Pier 6 Joint Removal and Replacement
- S12. Pier 9 Joint Removal and Replacement
- S13. Preformed Joint Strip Seal
- S14. Drainage Plan & Details
- S15. Framing Plan
- S16. Structural Steel Repair Sections & Details (Sheet I of II)
- S17. Structural Steel Repair Sections & Details (Sheet II of II)
- S18. Type I Elastomeric and Fixed Bearings Details
- S19. Type II Elastomeric Bearings Details
- S20. Type III Elastomeric Bearings Details
- S21. North Abutment Repairs
- S22. South Abutment Repairs
- S23. Pier 6 Repairs
- S24. Pier 8 Repairs
- S25. Pier 9 Repairs
- S26. Bar Splicer Assembly Details

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.	23.0	-	23.0
Floor Drains	Each	116	-	116
Concrete Superstructure	Cu. Yd.	27.1	-	27.1
Bridge Deck Grooving	Sq. Yd.	4,382	-	4,382
Protective Coat	Sq. Yd.	915	-	915
Furnishing and Erecting Structural Steel	Pound	9,830	-	9,830
Cleaning and Painting Structural Steel, Location 1	L Sum	1	-	1
Reinforcement Bars, Epoxy Coated	Pound	4,414	-	4,414
Bar Splicers	Each	68	-	68
Preformed Joint Strip Seal	Foot	189	-	189
Elastomeric Bearing Assembly, Type I	Each	6	-	6
Elastomeric Bearing Assembly, Type II	Each	18	-	18
Elastomeric Bearing Assembly, Type III	Each	6	-	6
Anchor Bolts, 1"	Each	-	72	72
Anchor Bolts, 1 1/4"	Each	-	48	48
Anchor Bolts, 1 1/2"	Each	-	24	24
Concrete Sealer	Sq. Ft.	-	2,940	2,940
Epoxy Crack Injection	Foot	-	49	49
Jack and Remove Existing Bearings	Each	11	-	11
Structural Steel Removal	Pound	9,170	-	9,170
Structural Steel Repair	Pound	12,330	-	12,330
Removal of Existing Bearings	Each	25	-	25
Bridge Deck Latex Concrete Overlay, 2 1/4 Inches	Sq. Yd.	4,533	-	4,533
Containment and Disposal of Lead Paint Cleaning Residues	L Sum	1	-	1
Cleaning Bridge Seats	Sq. Ft.	-	532	532
Bridge Deck Scarification, 3/4"	Sq. Yd.	4,533	-	4,533
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	-	459	459
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq. Ft.	23	60	83
Plug Existing Deck Drains	Each	68	-	68
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	51	-	51
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	165	-	165
Temporary Shoring and Cribbing	Each	-	25	25



SECTION THRU EXISTING STONE RIPWRAP SLOPEWALL

(For information only, taken from existing plans)

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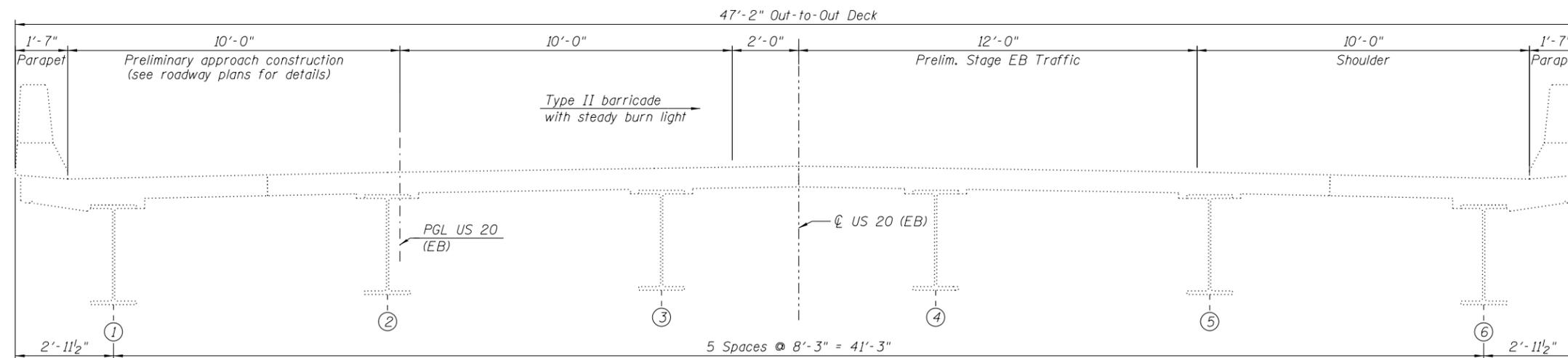
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GENERAL NOTES, INDEX OF SHEETS & TOTAL BILL OF MATERIAL
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042**

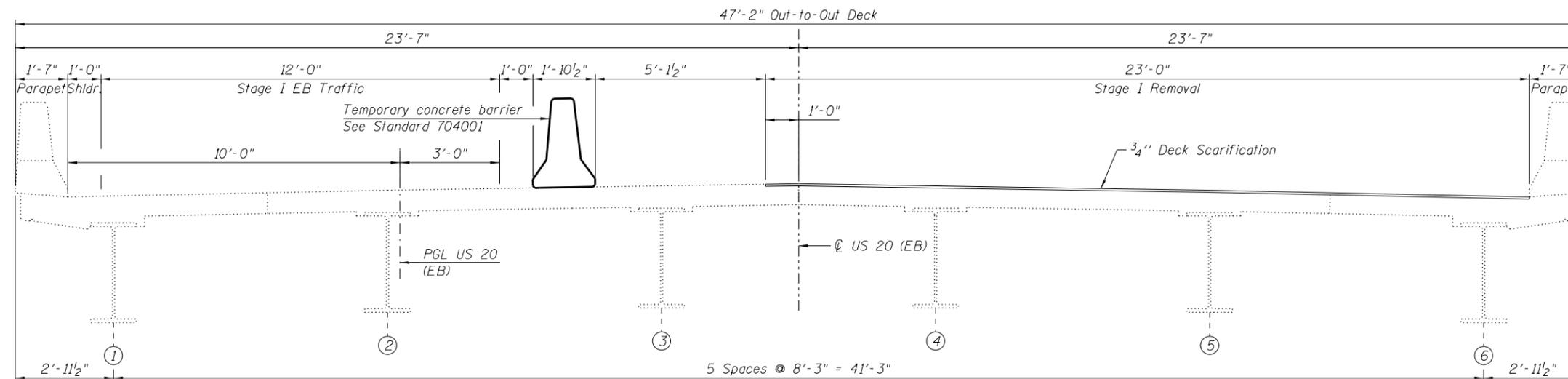
SHEET NO. S02 OF S26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 64J24				
ILLINOIS FED. AID PROJECT				



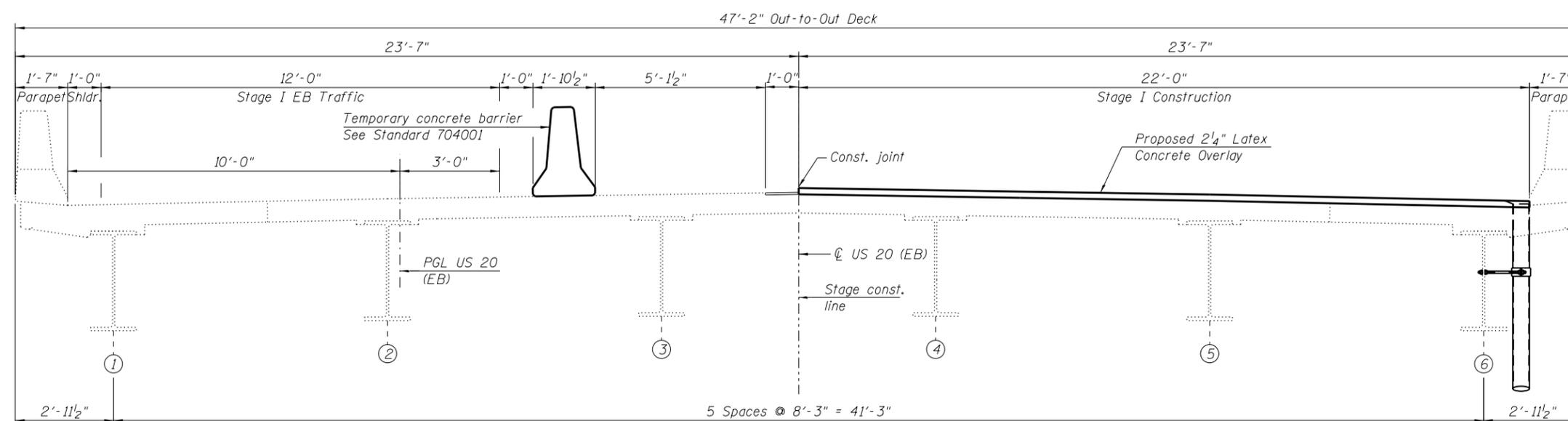
PRELIMINARY APPROACH CONSTRUCTION

(North and South Approach Shoulders Temporary Construction Looking South)



STAGE I REMOVAL

(Span 1 Shown Others Similar, Looking South)



STAGE I CONSTRUCTION

(Span 1 Shown Others Similar, Looking South)

PRELIMINARY APPROACH CONSTRUCTION

1. Install Type II barricade with steady burn light as shown to locate traffic lane on the west side of the existing structure.
2. Modify existing approach inlets by plating inlets and place temporary overlay on the approach pavement shoulders. See roadway plans for details.

STAGE I REMOVAL

1. Install temporary concrete barrier as shown and locate traffic lane on the east side of the existing structure.
2. Remove 3/4" from the deck slab using scarification.
3. Remove areas of existing deck for full depth deck slab repairs.
4. Remove the concrete deck adjacent to expansion joints at the North and South Abutments, and Piers 6 and 9.
5. Remove existing deck drains, downspouts and connections to existing steel beams and girders.
6. Remove existing diaphragms at South Abutment and Piers 6 and 9.
7. Remove angles supporting the existing diaphragms at their ends.
8. Cut and remove the stiffeners interfering with end of beam repairs.

STAGE I CONSTRUCTION

The following construction items will be performed within the limits of Stage I Construction:

1. Perform full depth deck slab repairs.
2. Replace deteriorated concrete deck for areas where the existing deck drains were removed.
3. Plug the existing deck drains and install new deck drains.
4. Perform end of beams/girders 4 thru 6 repairs and replace diaphragms between beams 3 and 6 at South Abutment and Piers 6 and 9.
5. Temporarily shore beams 4 thru 6 at Piers 6 (spans 6 and 7) and 9 (spans 9 and 10).
6. Perform structural concrete repairs for the abutments and Piers 6 and 9.
7. Jack and remove existing bearings 4 thru 6 at North and South Abutments and replace with Type II Elastomeric Expansion Bearings.
8. Prior to removal of temporary shoring in item 5, remove and replace existing bearings for beams 4 thru 6 at Piers 6 and 9.
9. Replace concrete deck adjacent to expansion joints at North and South Abutments and Piers 6 and 9, perform grooving and install new preformed joint strip seal expansion joints.
10. Paint the bottom face of bottom flange, exterior web face, and exterior bottom face of top flange on fascia beams/girders.
11. Paint 10 feet of beams 4 thru 6 on both sides of Piers 6 and 9, on south side of North Abutment, and on north side of South Abutment.
12. Perform epoxy crack injection for Pier 8.
13. Clean bridge seats and apply concrete sealer at North and South Abutments and Piers 6 and 9.
14. Apply 2 1/4" bridge deck latex concrete overlay to bridge deck slab.
15. Perform bridge deck grooving for the 2 1/4" bridge deck latex concrete overlay area.
16. Apply protective coat for the top and inside faces of existing parapets, and reconstructed transverse expansion joint areas.
17. Repaint pavement markings on the top of deck.

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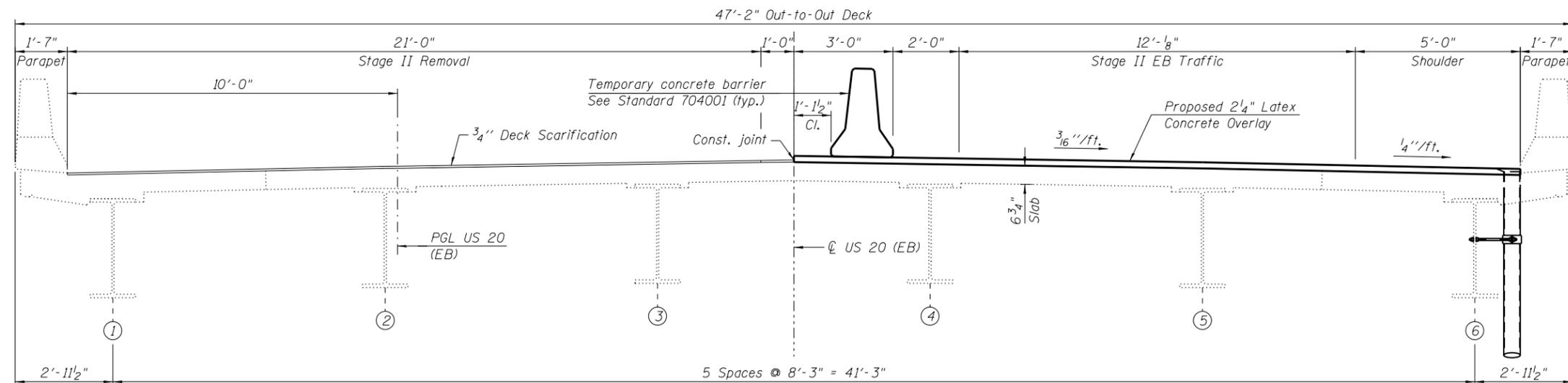
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PRELIMINARY STAGE & STAGE I CONSTRUCTION
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042**

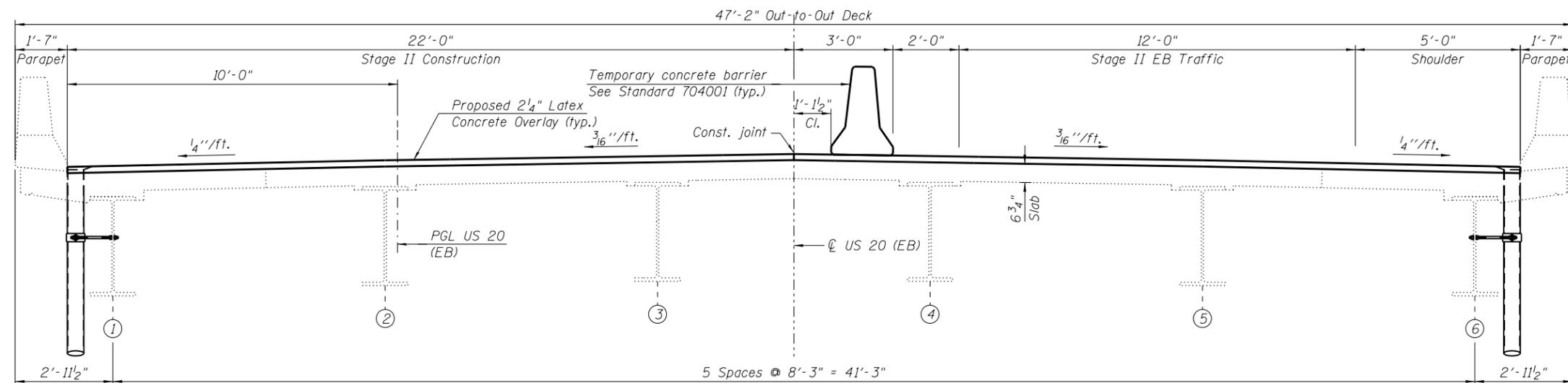
SHEET NO. S03 OF S26 SHEETS

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CONTRACT NO. 64J24			ILLINOIS FED. AID PROJECT	

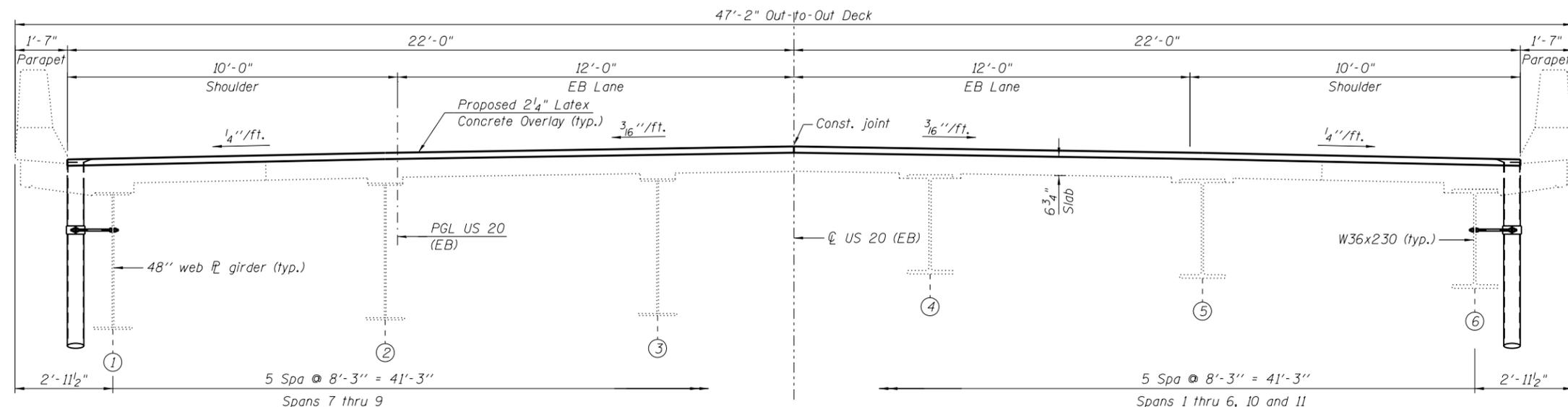
DATE - 03/13/2013



STAGE II REMOVAL
(Span 1 Shown Others Similar, Looking South)



STAGE II CONSTRUCTION
(Span 1 Shown Others Similar, Looking South)



FINAL CROSS SECTION
(Looking South)

STAGE II REMOVAL

1. Install temporary concrete barrier as shown to locate traffic lane on the east side of the existing structure.
2. Remove 3/4" from the deck slab using scarification.
3. Remove areas of existing deck for full depth deck slab repairs.
4. Remove the concrete deck adjacent to expansion joints at the North and South Abutments, and Piers 6 and 9.
5. Remove existing deck drains, downspouts and connections to existing steel beams and girders.
6. Remove existing diaphragms at South Abutment and Piers 6 and 9.
7. Remove angles supporting the existing diaphragms at their ends.
8. Cut and remove the stiffeners interfering with end of beam repairs.

STAGE II CONSTRUCTION

The following construction items will be performed within the limits of Stage II Construction:

1. Perform full depth deck slab repairs.
2. Replace deteriorated concrete deck for areas where the existing deck drains were removed.
3. Plug the existing deck drains and install new deck drains.
4. Perform end of beams/girders 1 thru 3 repairs and replace diaphragms between beams 1 and 3 at South Abutment and Piers 6 and 9.
5. Temporarily shore beams 1 thru 3 at Piers 6 (spans 6 and 7) and 9 (spans 9 and 10) and at beam 1 at the North Abutment.
6. Perform structural concrete repairs for the abutments and Piers 6 and 9.
7. Jack and remove existing bearings 1 thru 3 at South Abutment, and bearings 2 and 3 at North Abutment, and replace with Type II Elastomeric Expansion Bearings.
8. Prior to removal of temporary shoring in item 5, remove and replace existing bearings for beams 1 thru 3 at Piers 6 and 9 and for beam 1 at North Abutment.
9. Replace concrete deck adjacent to expansion joints at North and South Abutments and Piers 6 and 9, perform grooving and install new preformed joint strip seal expansion joints.
10. Paint the bottom face of bottom flange, exterior web face, and exterior bottom face of top flange on fascia beams/girders.
11. Paint 10 feet of beams 1 thru 3 on both sides of Piers 6 and 9, on south side of North Abutment, and on north side of South Abutment.
12. Perform epoxy crack injection for Pier 8.
13. Clean bridge seats and apply concrete sealer at North and South Abutments and Piers 6 and 9.
14. Apply 2 1/4" bridge deck latex concrete overlay to bridge deck slab.
15. Perform bridge deck grooving for the 2 1/4" bridge deck latex concrete overlay area.
16. Apply protective coat for the top and inside faces of existing parapets, and reconstructed transverse expansion joint areas.
17. Repaint pavement markings on the top of deck.

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DEPARTMENT OF TRANSPORTATION

STAGE II CONSTRUCTION & FINAL DECK CROSS SECTION
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042

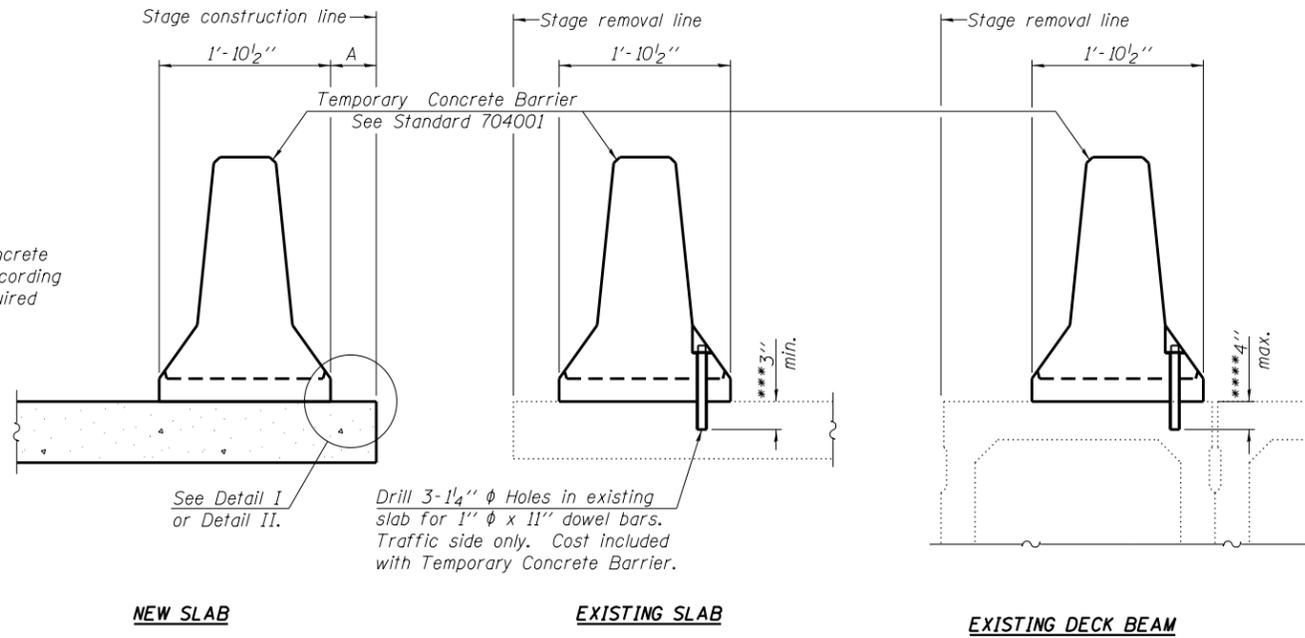
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0301	(177-4B-11M)	STEPHENSON	43	21
CONTRACT NO. 64J24				

DATE - 03/13/2013

SHEET NO. S04 OF S26 SHEETS

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When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".



SECTIONS THRU SLAB OR DECK BEAM

NOTES

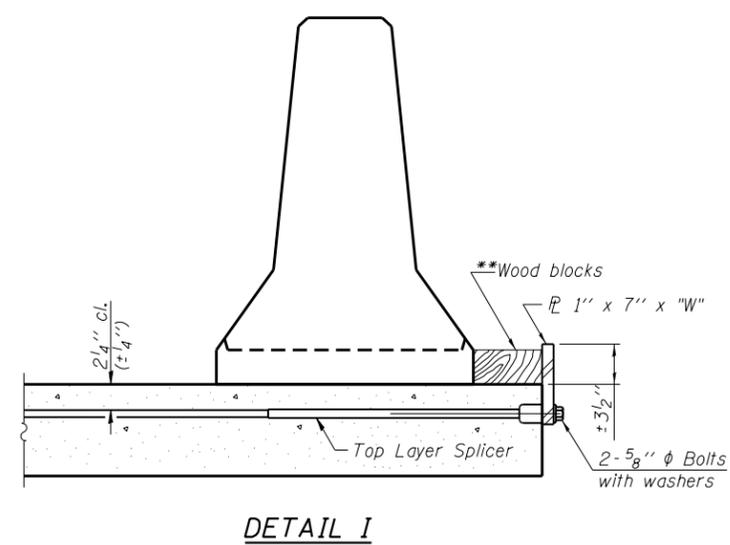
Detail I - With Bar Splicer or Couplers:
Connect one (1) 1" x 7" x "W" steel \bar{L} to the top layer of couplers with 2-5/8" ϕ bolts screwed to coupler at approximate \bar{C} of each barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1" x 7" x "W" steel \bar{L} to the concrete slab or concrete wearing surface with 2-5/8" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate \bar{C} of each barrier panel.

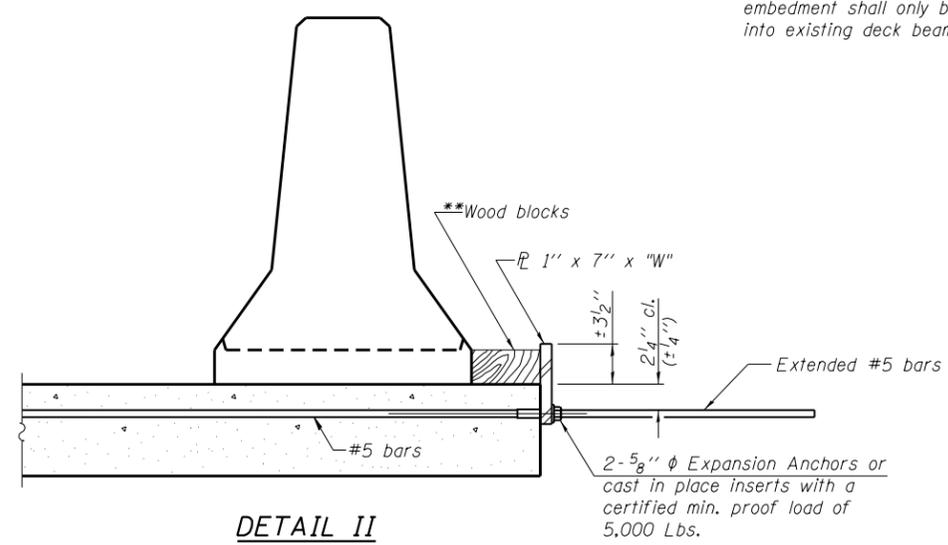
Cost of anchorage is included with Temporary Concrete Barrier.
The 1" x 7" x "W" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

*** Dimension shown is minimum required embedment into concrete.
If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

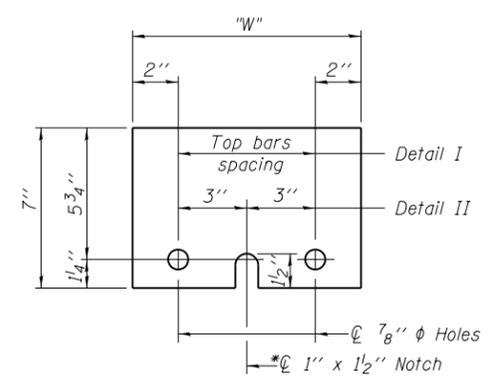
**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



DETAIL I



DETAIL II



STEEL RETAINER \bar{L} 1" x 7" x "W"
* Required only with Detail II

** Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.

"W" = Top bars spacing + 4"

R-27

7-1-10

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REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

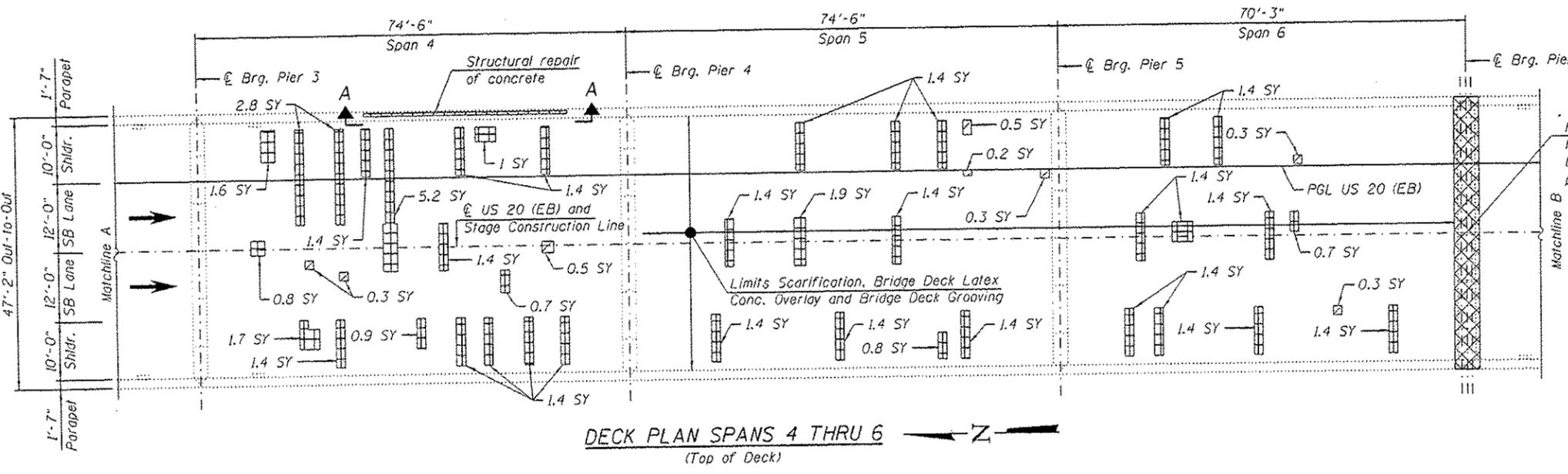
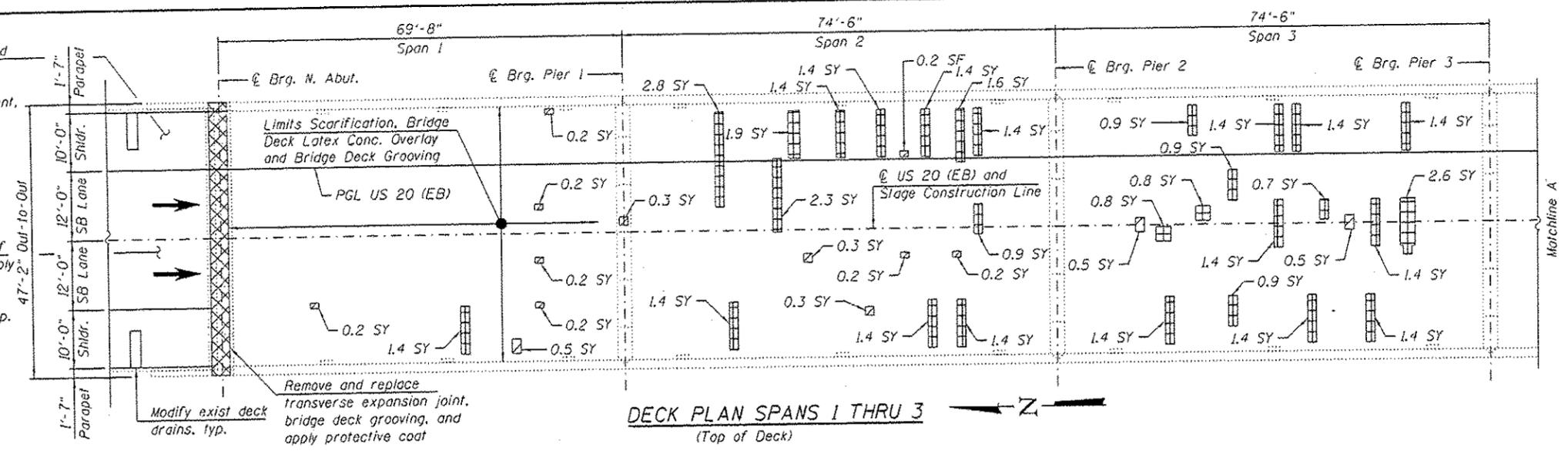
**TEMPORARY CONCRETE BARRIER
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042**

SHEET NO. S05 OF S26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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			CONTRACT NO. 64J24	
ILLINOIS FED. AID PROJECT				

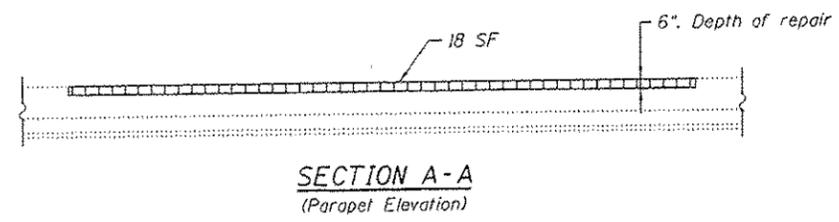
Remove and replace settled shoulder pavement, PCC surface removal 1" of remaining shoulder pavement, modify approach drain, and apply 2 1/2" of Hot-mix asphalt overlay. See roadway plans for details and quantities. (Typ. at all 4 corners.)

PCC surface removal 1" of existing approach and apply 2 1/2" of Hot-mix asphalt. See Roadway plans for details and quantities. (Typ. at both approaches)



NOTES

1. Areas of deck repair shown are estimated. The Engineer shall show actual locations of deck repairs at the time of construction.
2. For General Notes and Total Bill of Material, see Sheet S02.
3. For Bill of Material see Sheet S07.
4. For transverse joints at South and North abutments, Piers 6 and 9, removal and reconstruction, see Sheets S09 thru S12.
5. For bridge deck final cross sections, see Sheet S08.
6. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost included with Concrete Superstructure.
7. Perform bridge deck grooving for the bridge deck latex concrete overlay and the deck portion of the reconstructed transverse expansion joints.
8. Protective coat shall be applied to top and inside faces of existing and reconstructed parapets and the transverse joints reconstructed areas.
9. The minimum thickness of the bridge deck latex concrete overlay shall be 2 1/4" and varies as required to adjust for the existing profile grade and beam camber.



LEGEND

- Concrete Removal
- Deck Slab Repair (Partial)
- Deck Slab Repair (Full Depth, Type I)
- Deck Slab Repair (Full Depth, Type II)
- Structural Repair of Concrete (depth greater than 5')
- Traffic direction
- SF - Square Foot
- SY - Square Yard

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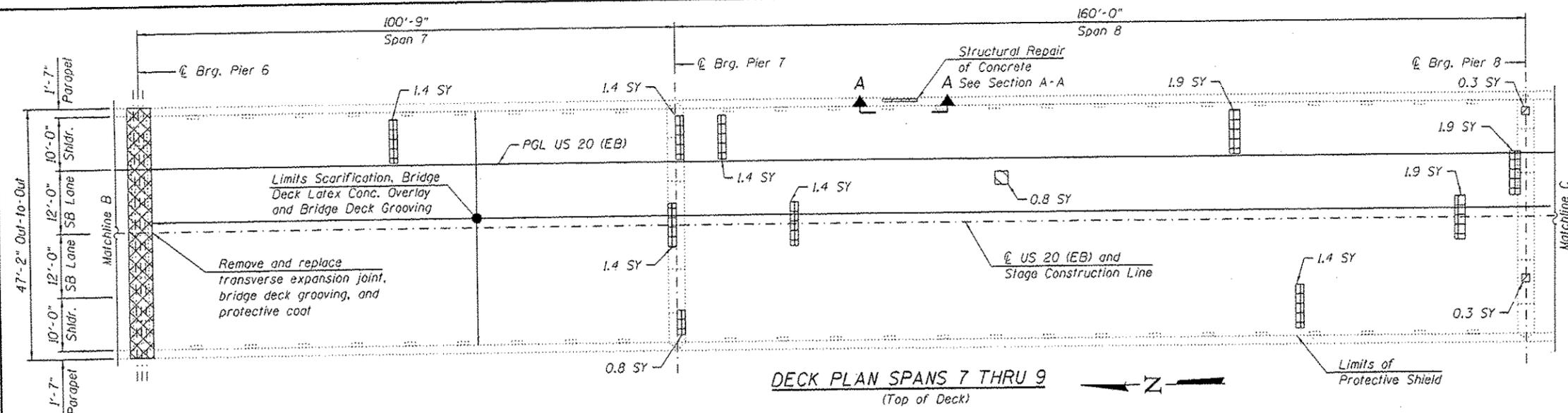
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DATE - 03/13/2013	

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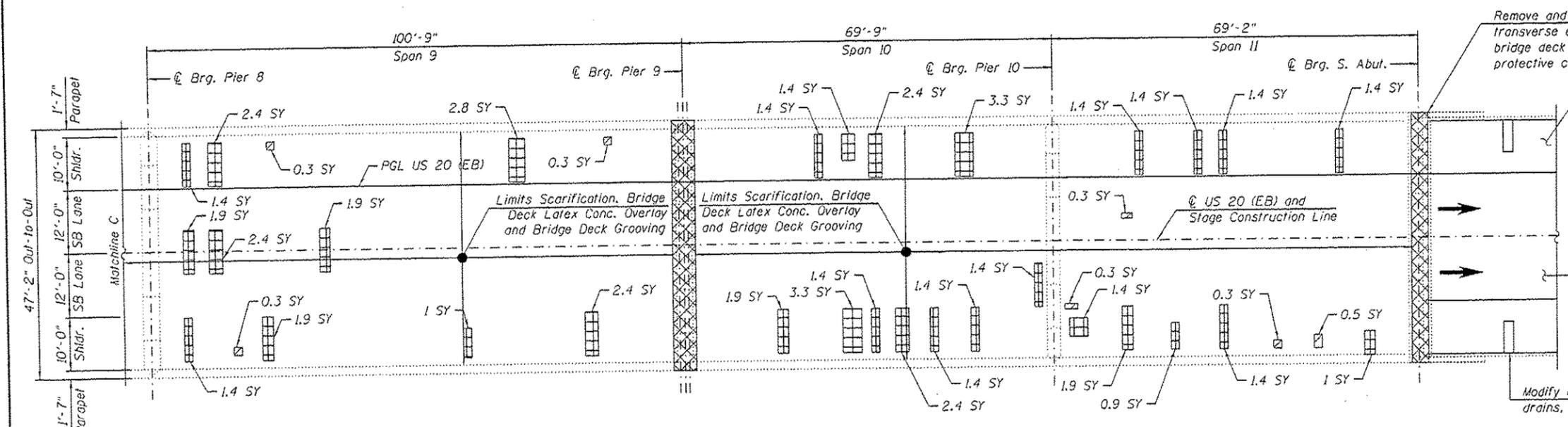
BRIDGE DECK REPAIR PLAN (SPANS 1 THRU 6)
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042

SHEET NO. S06 OF S26 SHEETS

F.A.P. RTE. 0301	SECTION (177-4B-11M)	COUNTY STEPHENSON	TOTAL SHEETS 43	SHEET NO. 23
				CONTRACT NO. 64J24
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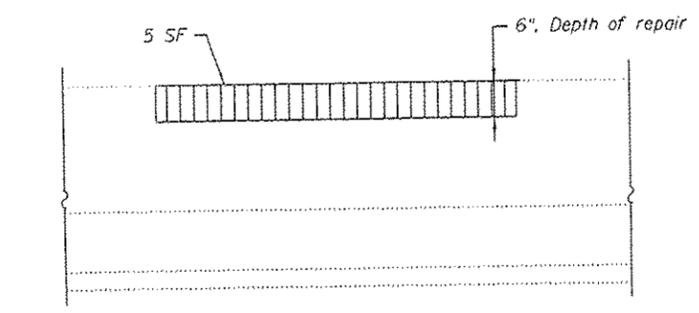
DECK PLAN SPANS 7 THRU 9
(Top of Deck)



DECK PLAN SPANS 10 THRU 11
(Top of Deck)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Bridge Deck Grooving	Sq. Yd.	4328
Protective Coat	Sq. Yd.	822
Bridge Deck Latex Concrete Overlay, 2 1/4 Inches	Sq. Yd.	4533
Bridge Deck Scarification, 3/4"	Sq. Yd.	4533
Structural Repair of Concrete (Depth Great Than 5")	Sq. Ft.	23
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	10
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	165



SECTION A-A
(Parapet Elevation)

Remove and replace transverse expansion joint, bridge deck grooving, and protective coat

Remove and replace settled shoulder pavement, PCC surface removal 1" of remaining shoulder pavement, modify approach drain, and apply 2 1/2" of Hot-mix asphalt overlay. See roadway plans for details and quantities. Typ. at all 4 corners.

PCC surface removal 1" of existing approach and apply 2 1/2" of Hot-mix asphalt. See Roadway plans for details and quantities. (Typ. at both approaches)

NOTES
1. For Notes, see Sheet S06.

- LEGEND**
- Concrete Removal
 - Deck Slab Repair (Partial) *
 - Deck Slab Repair (Full Depth, Type I)
 - Deck Slab Repair (Full Depth, Type II)
 - Structural Repair of Concrete (depth greater than 5")

Traffic direction

* Approximately an additional 1 Sq. Yd. in roadway area for estimating purposes only (For Information Only)

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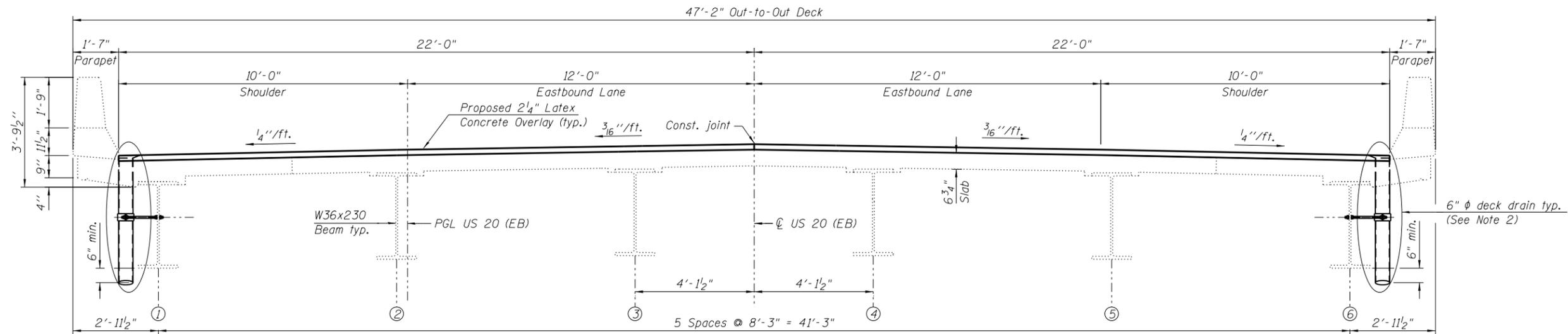
DATE - 03/13/2013

STATE OF ILLINOIS
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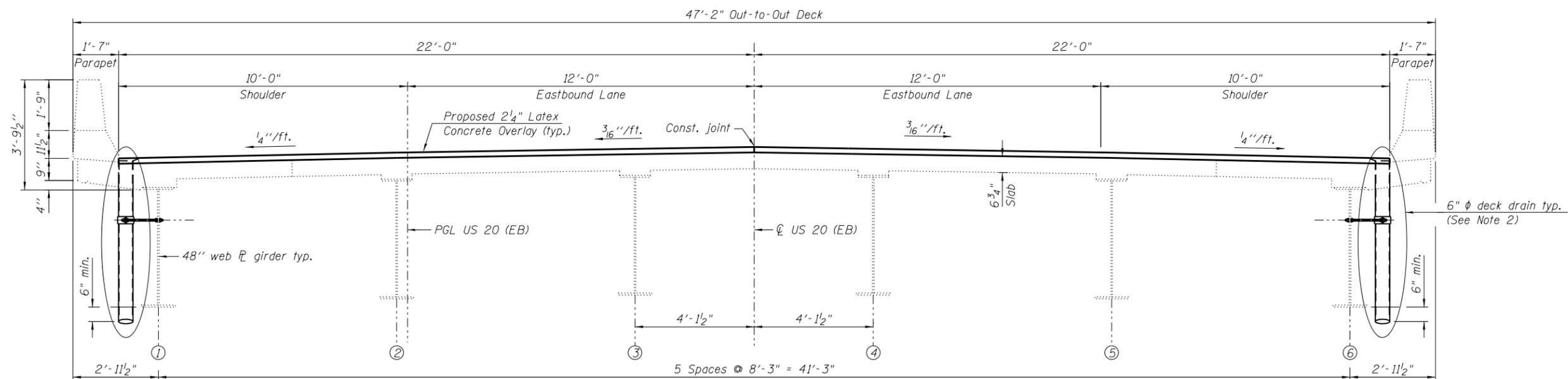
BRIDGE DECK REPAIR PLAN (SPANS 7 THRU 11)
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042

F.A.P. RTE. 0301	SECTION (177-4B-11M)	COUNTY STEPHENSON	TOTAL SHEETS 43	SHEET NO. 24
CONTRACT NO. 64J24				
ILLINOIS FED. AID PROJECT				

SHEET NO. 507 OF 526 SHEETS



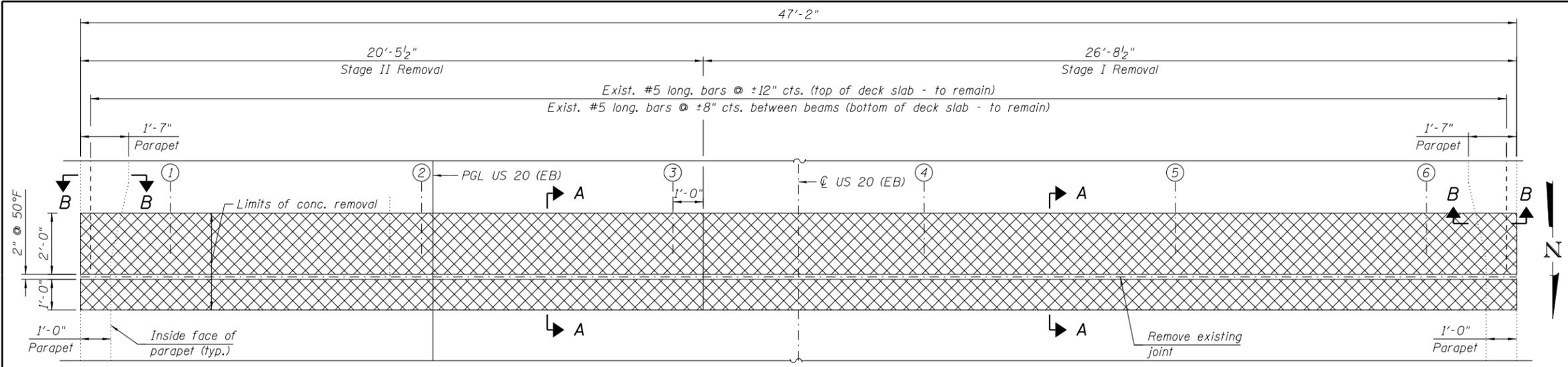
DECK CROSS SECTION (SPANS 1 THRU 6, 10 AND 11)
(Looking South)



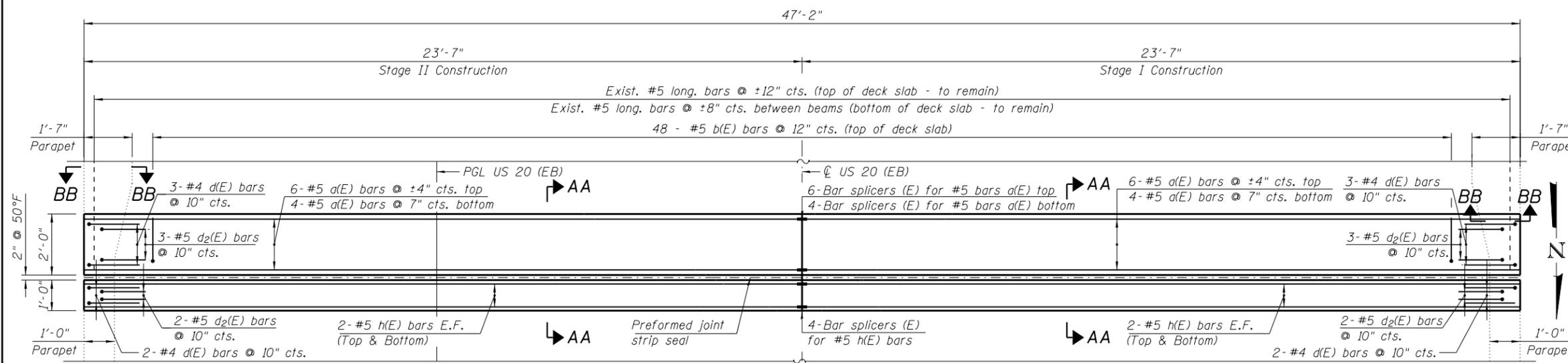
DECK CROSS SECTION (SPANS 7 THRU 9)
(Looking South)

NOTES

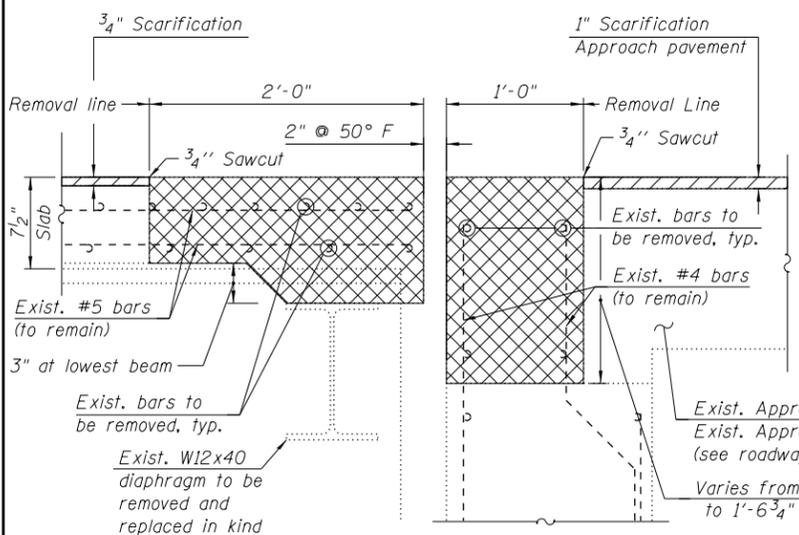
1. For Notes, see Sheet S06.
2. For deck drain locations, sections and details, see Sheet S14.



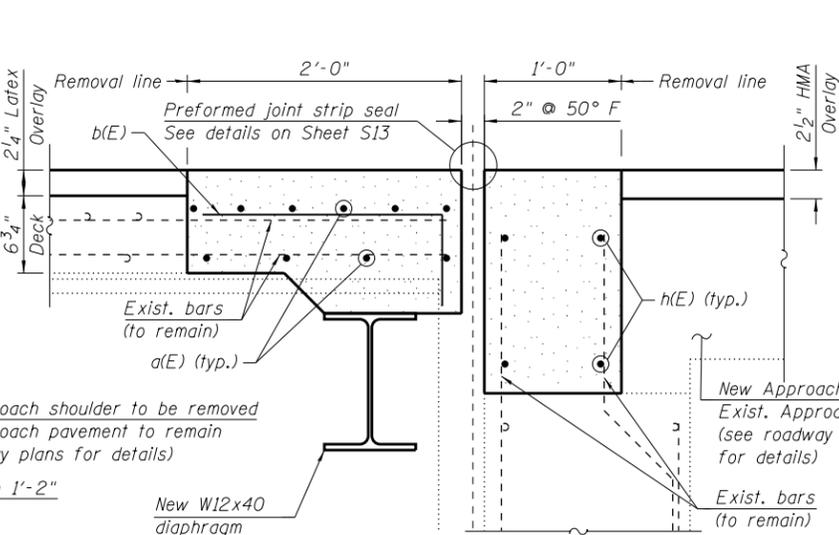
NORTH ABUTMENT JOINT REMOVAL PLAN



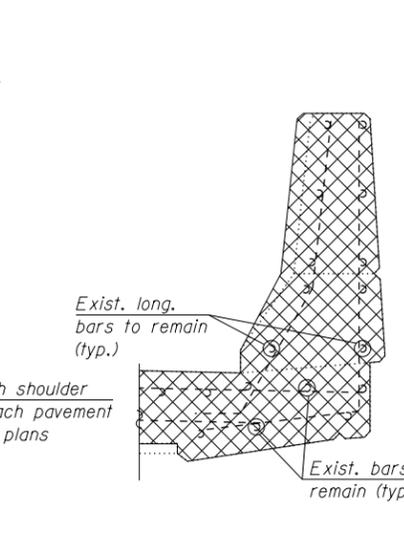
NORTH ABUTMENT JOINT REPLACEMENT PLAN



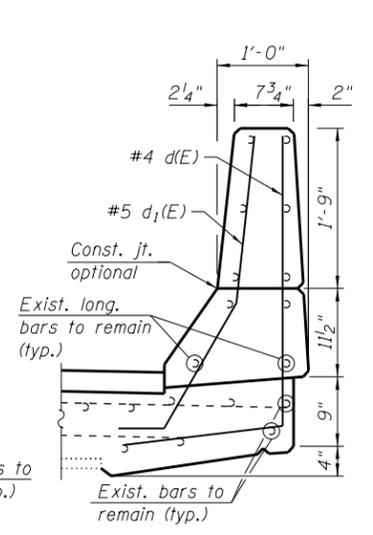
SECTION A-A



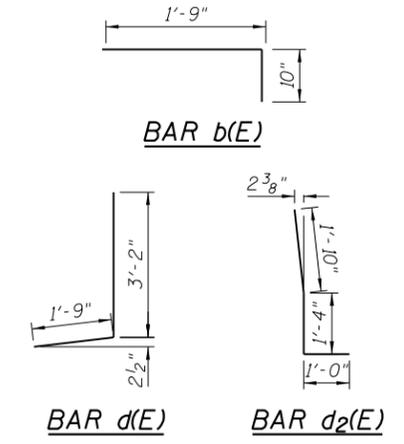
SECTION AA-AA
(End of beam repairs are not shown for clarity)



SECTION B-B
(Parapet Removal)



SECTION BB-BB
(Parapet Replacement)



LEGEND

	Concrete Removal
	Scarification
E.F.	Each Face

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	20	#5	23'-4"	—
b(E)	48	#5	2'-7"	┌
d(E)	10	#4	4'-11"	J
d2(E)	10	#5	4'-2"	L
h(E)	8	#5	23'-4"	—
Concrete Removal		Cu. Yd.	5.6	
Concrete Superstructure		Cu. Yd.	6.5	
Bridge Deck Grooving		Sq. Yd.	9	
Protective Coat		Sq. Yd.	15	
Reinforcement Bars, Epoxy Coated		Pound	887	
Bar Splicers		Each	14	

Reinforcement bars designated (E) shall be epoxy coated.

NOTES:

- For General Notes and Total Bill of Material, see Sheet S02.
- For preformed joint strip seal details, see Sheet S13.
- For bar splicer details, see Sheet S26.
- Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.

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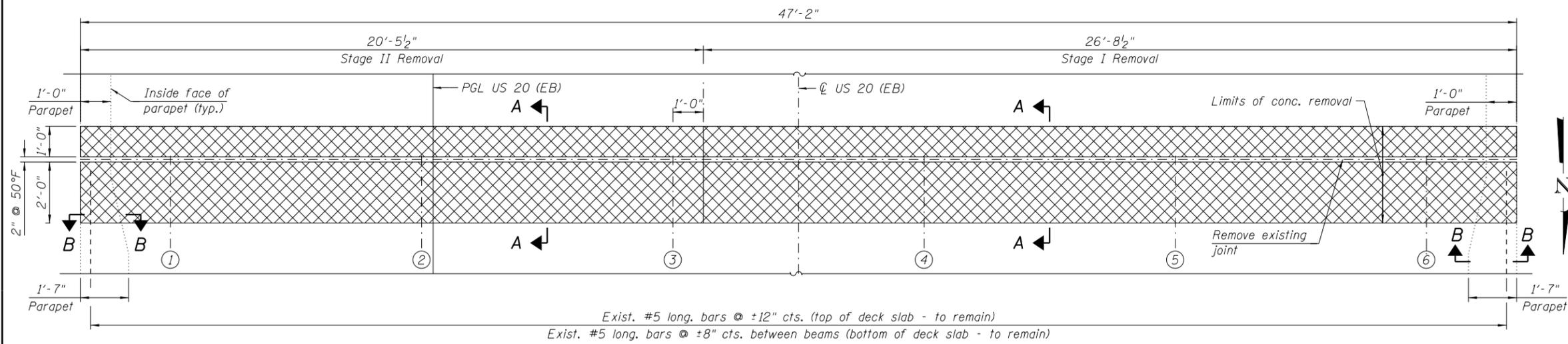
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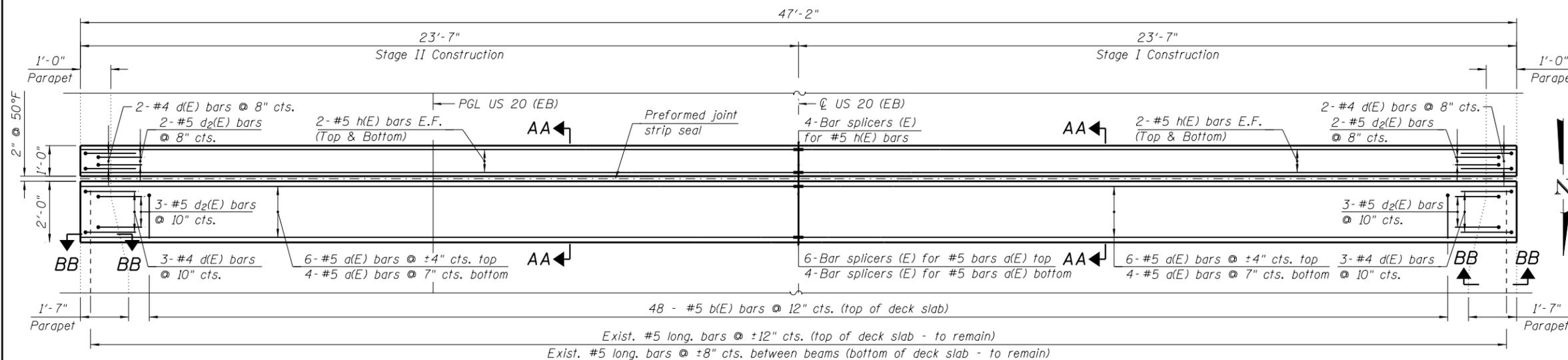
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT JOINT REMOVAL AND REPLACEMENT
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042

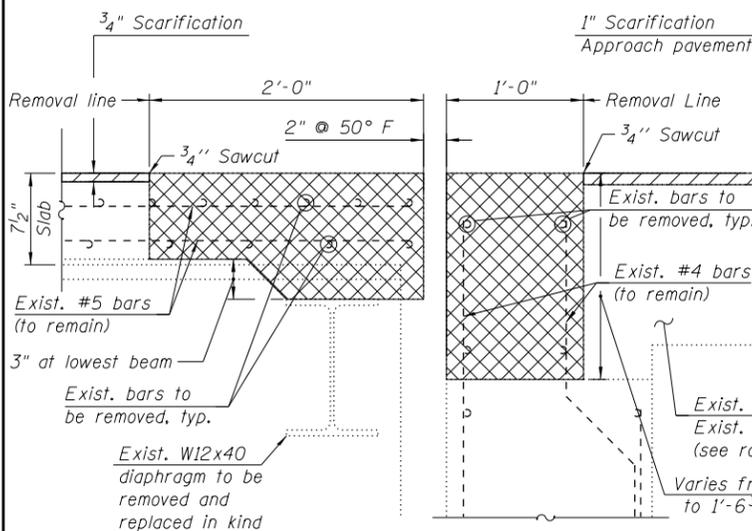
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0301	(177-4B-1M)	STEPHENSON	43	26
CONTRACT NO. 64J24			ILLINOIS FED. AID PROJECT	



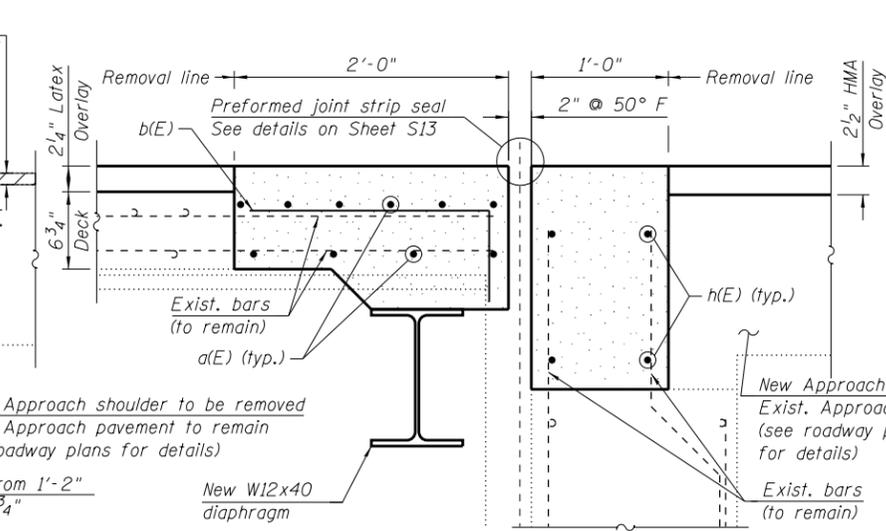
SOUTH ABUTMENT JOINT REMOVAL PLAN



SOUTH ABUTMENT JOINT REPLACEMENT PLAN

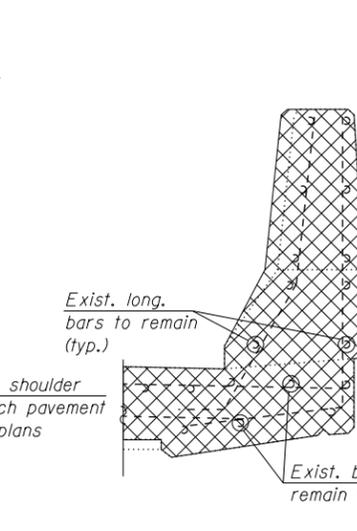


SECTION A-A



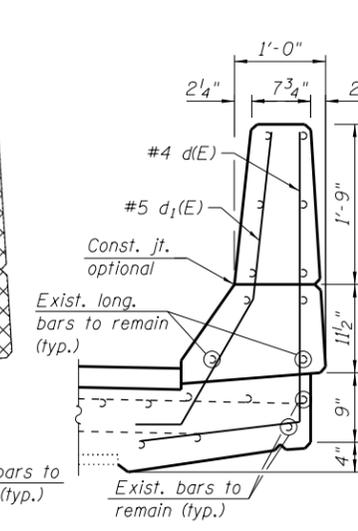
SECTION AA-AA

(End of beam repairs are not shown for clarity)



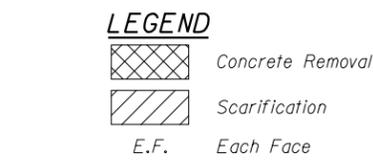
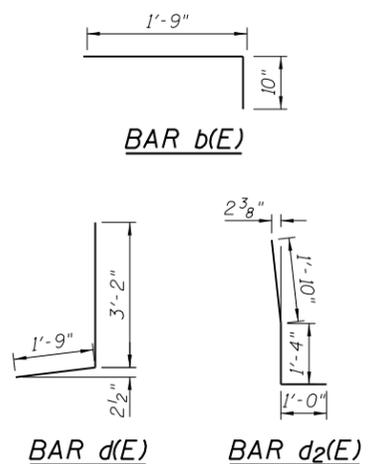
SECTION B-B

(Parapet Removal)



SECTION BB-BB

(Parapet Replacement)



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	20	#5	23'-4"	—
b(E)	48	#5	2'-7"	└
d(E)	10	#4	4'-11"	J
d2(E)	10	#5	4'-2"	L
h(E)	8	#5	23'-4"	—
Concrete Removal		Cu. Yd.	5.6	
Concrete Superstructure		Cu. Yd.	6.5	
Bridge Deck Grooving		Sq. Yd.	9	
Protective Coat		Sq. Yd.	15	
Reinforcement Bars, Epoxy Coated		Pound	887	
Bar Splicers		Each	14	

Reinforcement bars designated (E) shall be epoxy coated.

NOTES:

- For General Notes and Total Bill of Material, see Sheet S02.
- For preformed joint strip seal details, see Sheet S13.
- For bar splicer details, see Sheet S26.
- Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.

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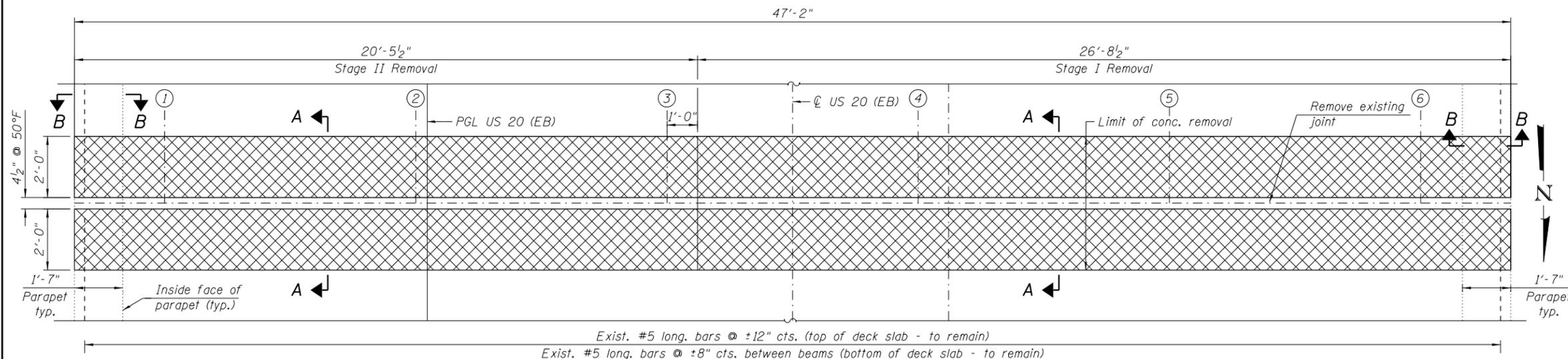
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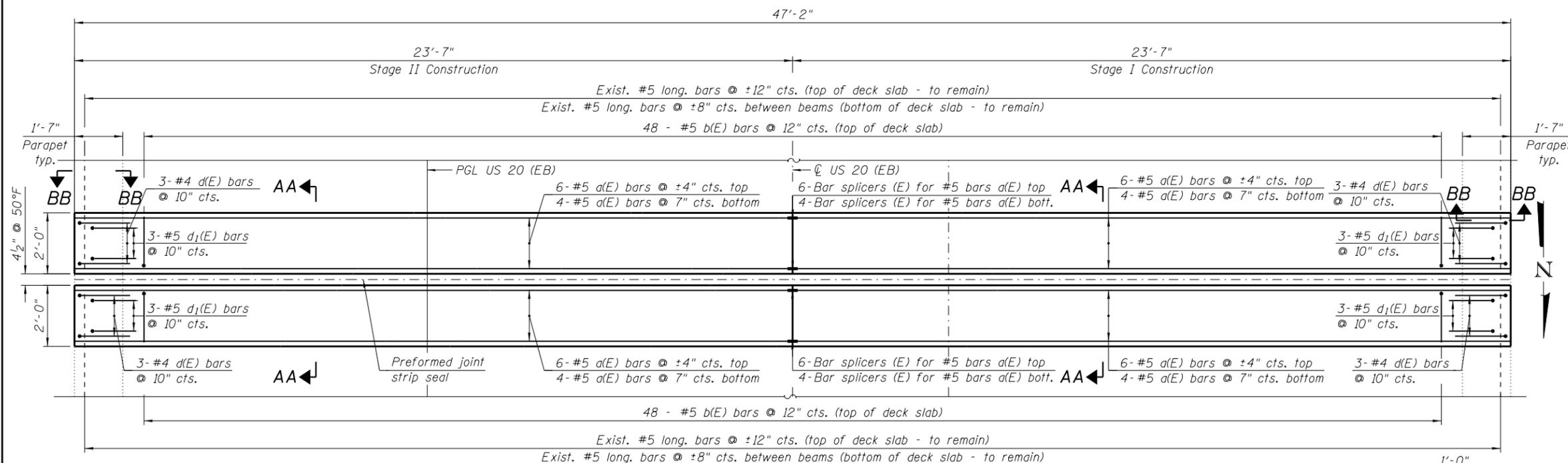
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT JOINT REMOVAL AND REPLACEMENT
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042

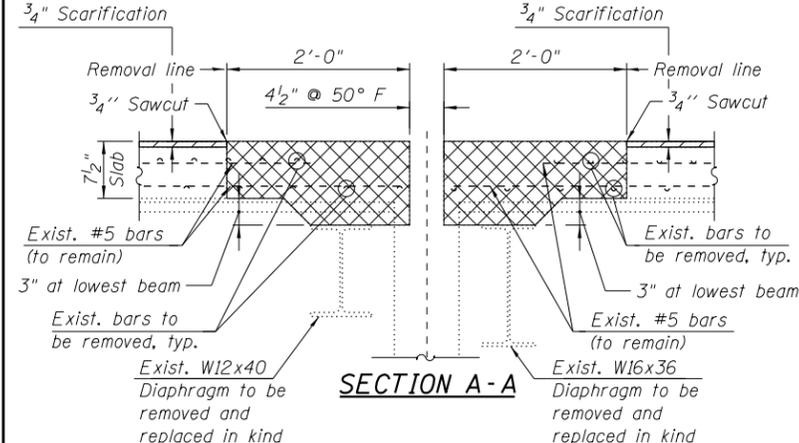
F.A.P. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.
0301 (177-4B-11M) STEPHENSON 43 27
CONTRACT NO. 64J24
ILLINOIS FED. AID PROJECT



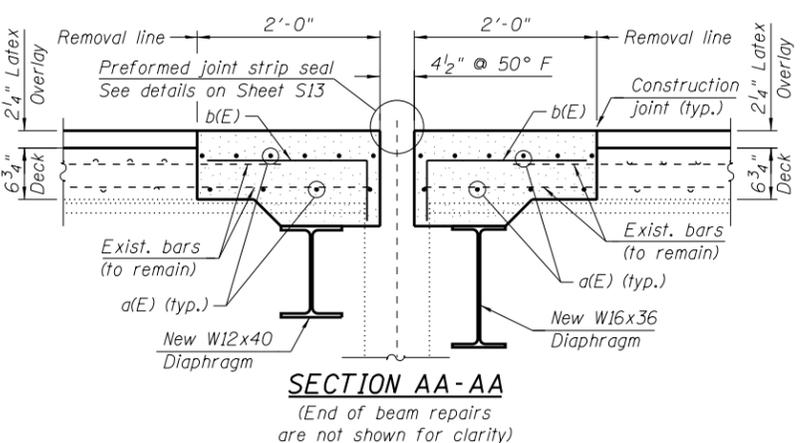
PIER 6 JOINT REMOVAL PLAN



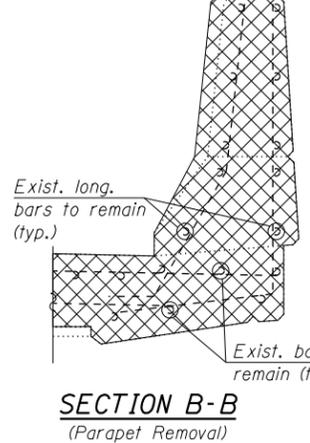
PIER 6 JOINT REPLACEMENT PLAN



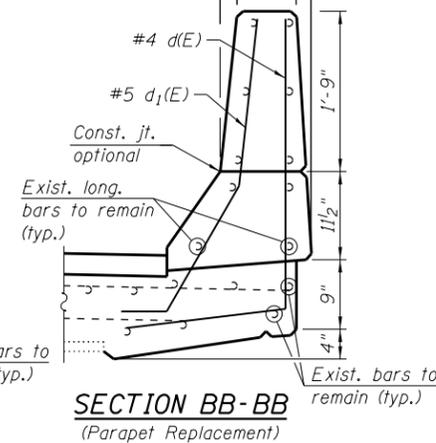
SECTION A-A



SECTION AA-AA



SECTION B-B



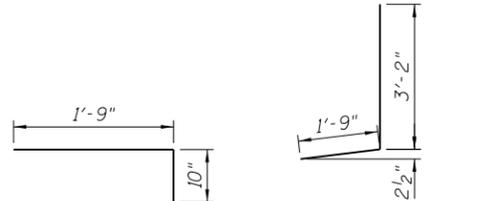
SECTION BB-BB

Bar	No.	Size	Length	Shape
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b(E)	96	#5	2'-7"	└
d(E)	12	#4	4'-11"	J
d ₁ (E)	12	#5	3'-11"	J
Concrete Removal		Cu. Yd.	5.9	
Concrete Superstructure		Cu. Yd.	7.0	
Bridge Deck Grooving		Sq. Yd.	18	
Protective Coat		Sq. Yd.	20	
Reinforcement Bars,		Pound	1,320	
Epoxy Coated				
Bar Splicers		Each	20	

Reinforcement bars designated (E) shall be epoxy coated.

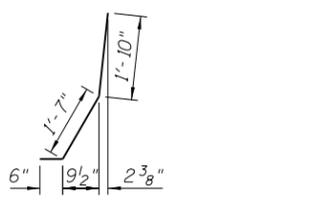
NOTES:

- For General Notes and Total Bill of Material, see Sheet S02.
- For preformed joint strip seal details, see Sheet S13.
- For bar splicer details, see Sheet S26.
- Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.



BAR b(E)

BAR d(E)



BAR d₁(E)

	Concrete Removal
	Scarification

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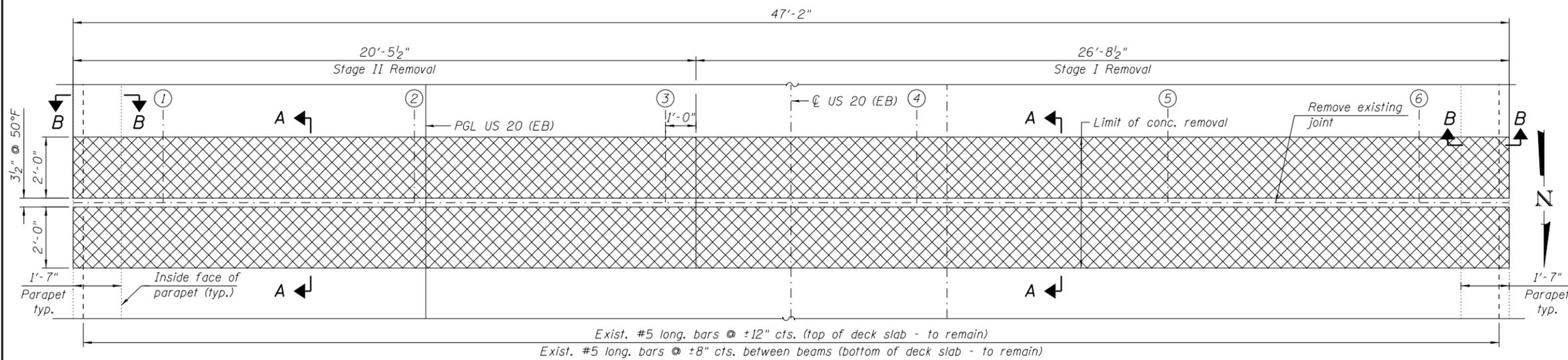
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CHECKED - MAI, MI	REVISIONS -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 6 JOINT REMOVAL AND REPLACEMENT
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0301	(177-4B-11M)	STEPHENSON	43	28

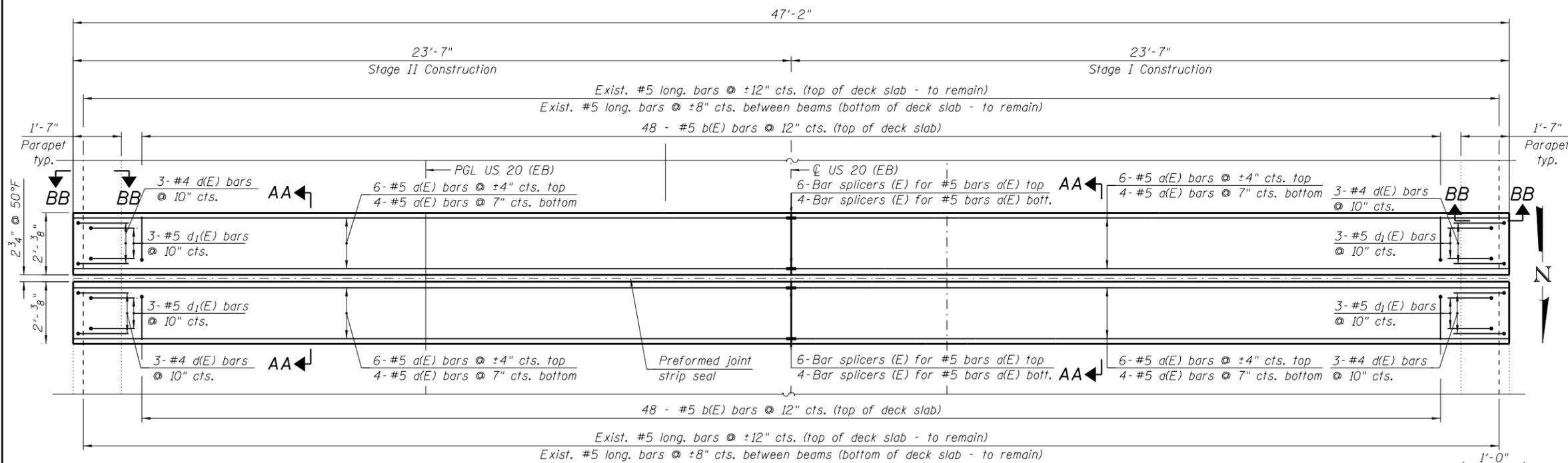
CONTRACT NO. 64J24
ILLINOIS FED. AID PROJECT



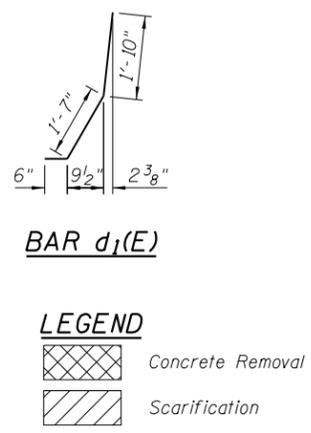
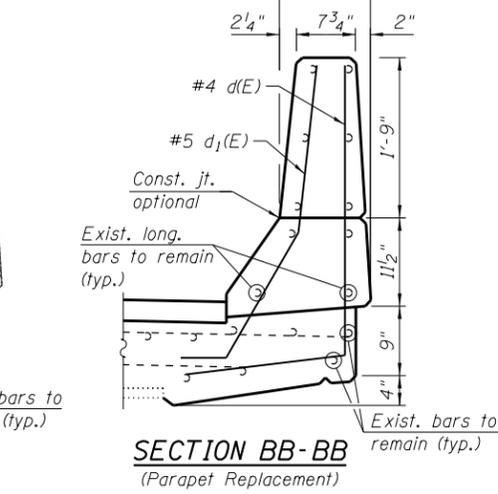
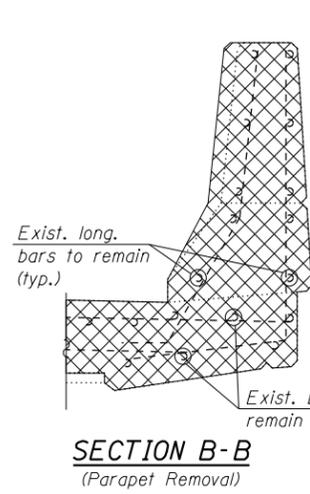
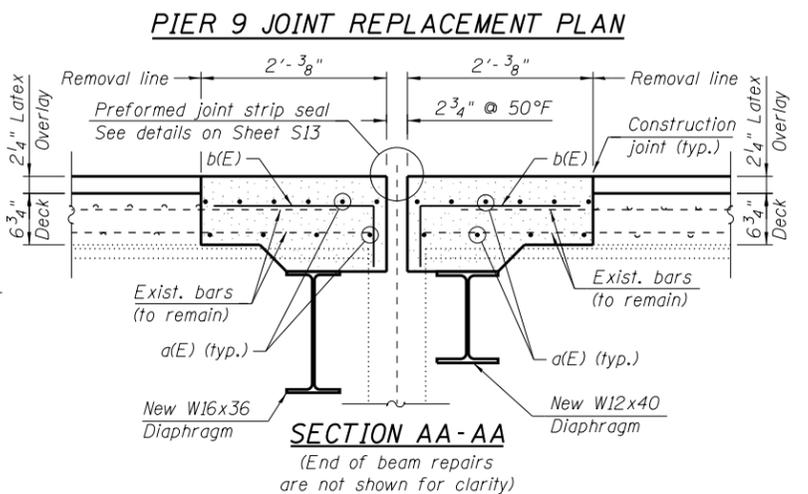
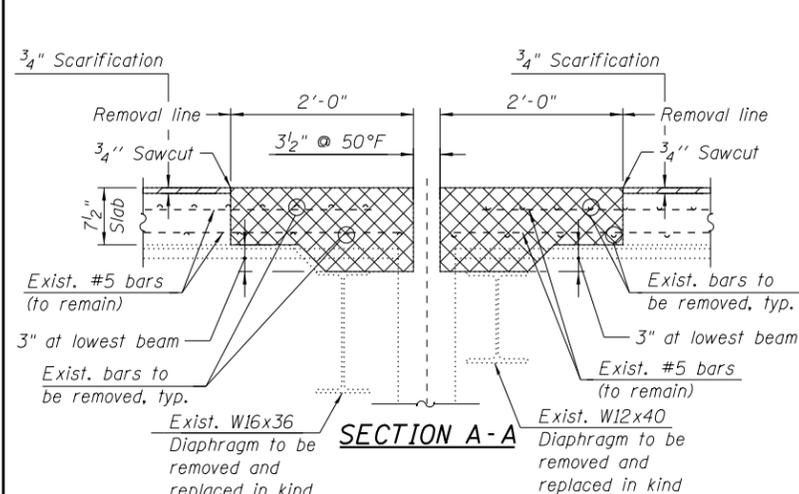
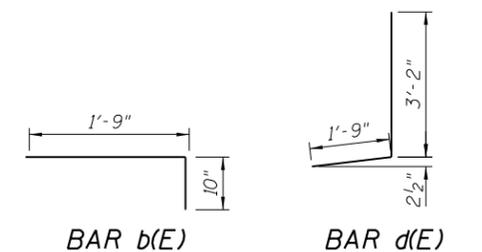
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	40	#5	23'-4"	—
b(E)	96	#5	2'-7"	└
d(E)	12	#4	4'-11"	J
d ₁ (E)	12	#5	3'-11"	J
Concrete Removal		Cu. Yd.	5.9	
Concrete Superstructure		Cu. Yd.	7.1	
Bridge Deck Grooving		Sq. Yd.	18	
Protective Coat		Sq. Yd.	20	
Reinforcement Bars,		Pound	1,320	
Epoxy Coated				
Bar Splicers		Each	20	

Reinforcement bars designated (E) shall be epoxy coated.



- NOTES:**
- For General Notes and Total Bill of Material, see Sheet S02.
 - For preformed joint strip seal details, see Sheet S13.
 - For bar splicer details, see Sheet S26.
 - Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.



LEGEND

	Concrete Removal
	Scarification

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CHECKED - MAI, MI

DATE - 03/13/2013

REVISIONS

REVISIONS	REVISIONS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

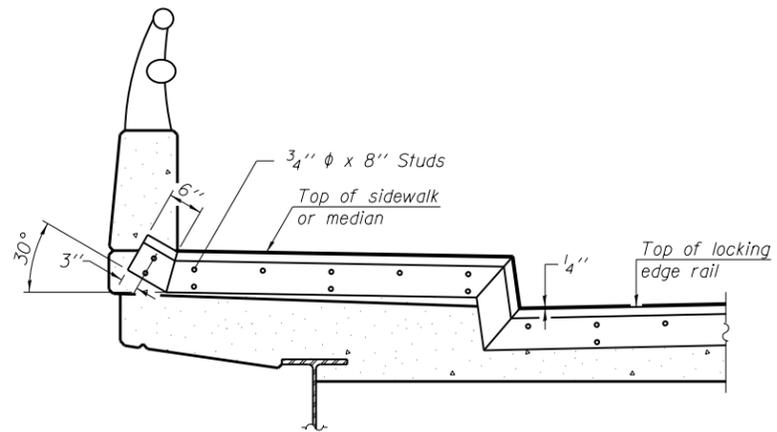
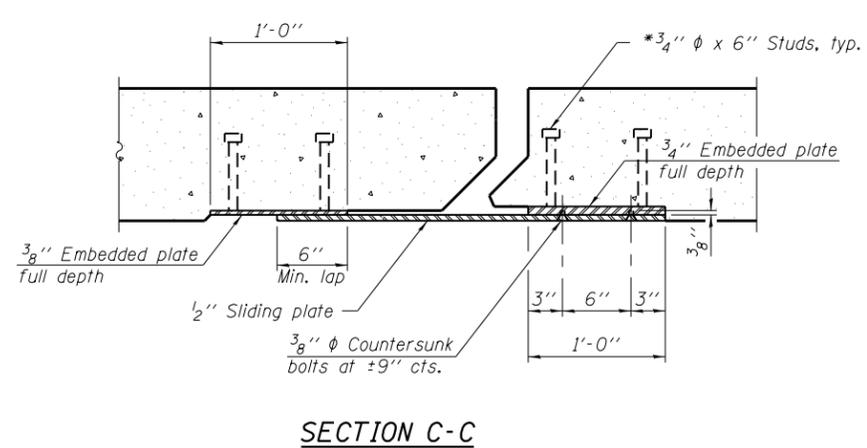
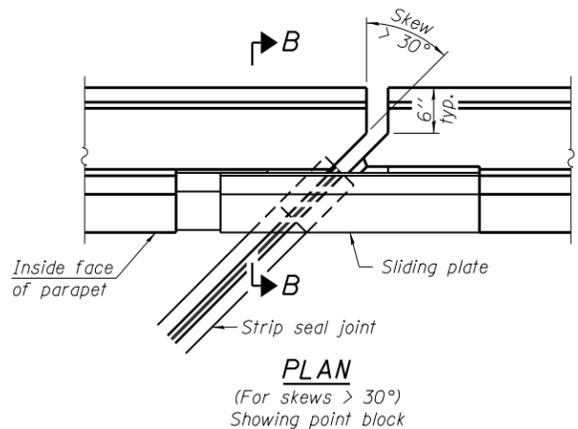
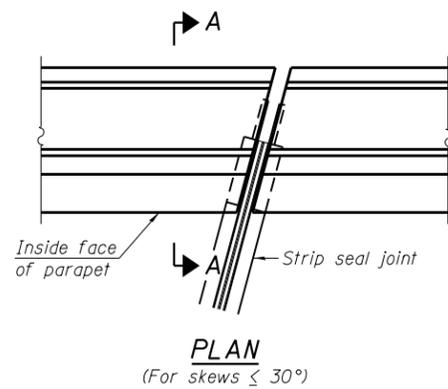
PIER 9 JOINT REMOVAL AND REPLACEMENT
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042

SHEET NO. S12 OF S26 SHEETS

F.A.P. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.
0301 (177-4B-11M) STEPHENSON 43 29

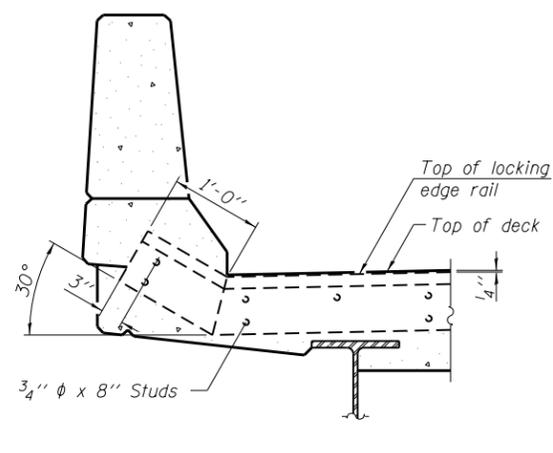
CONTRACT NO. 64J24

ILLINOIS FED. AID PROJECT

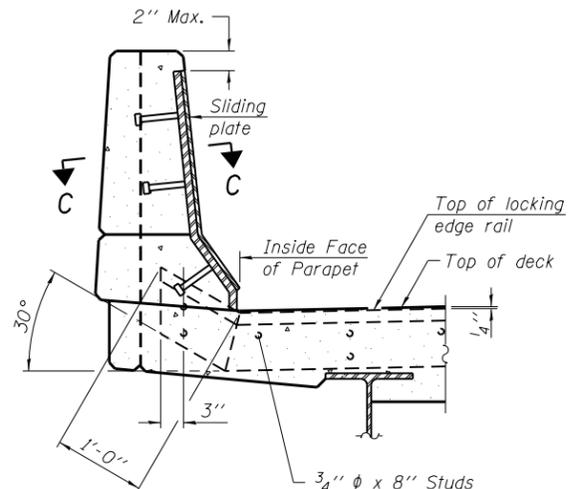


TYPICAL END TREATMENT AT SIDEWALK OR MEDIAN

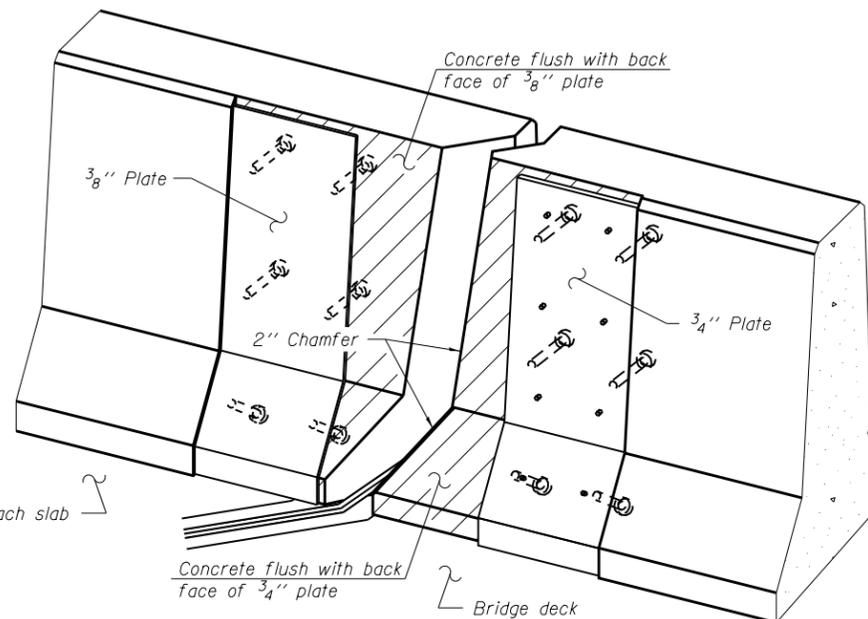
Shorter plates with a single row of studs at 12 inch cts. may be necessary on medians which are shallower than 9 inch. See manufacturer's recommendation.



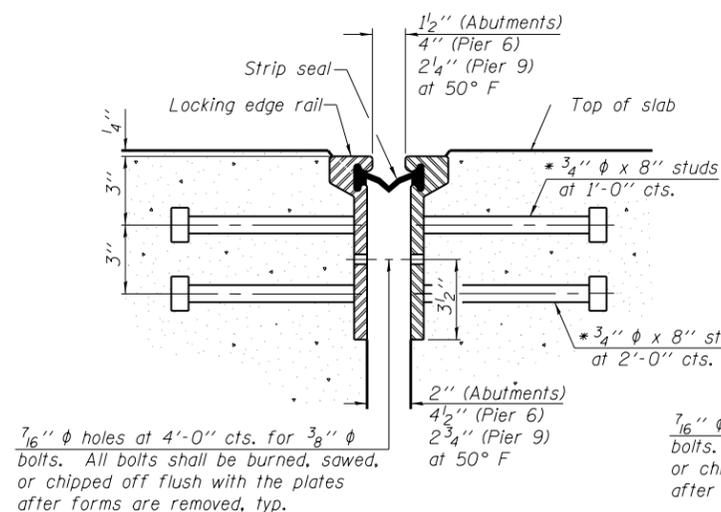
SECTION A-A



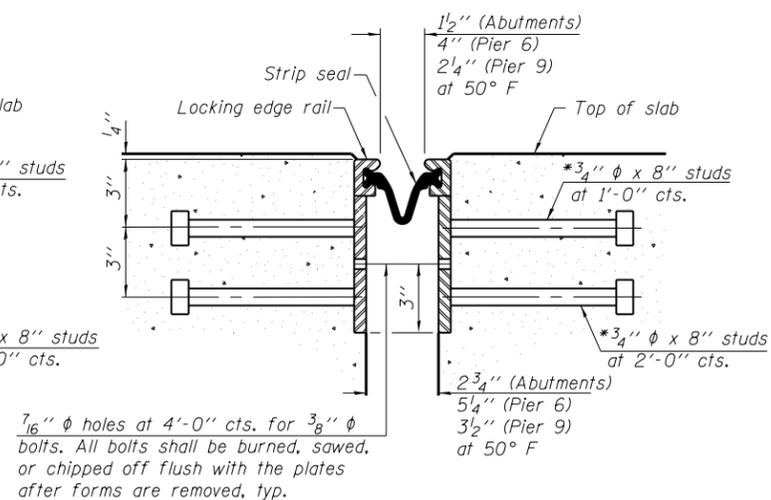
SECTION B-B



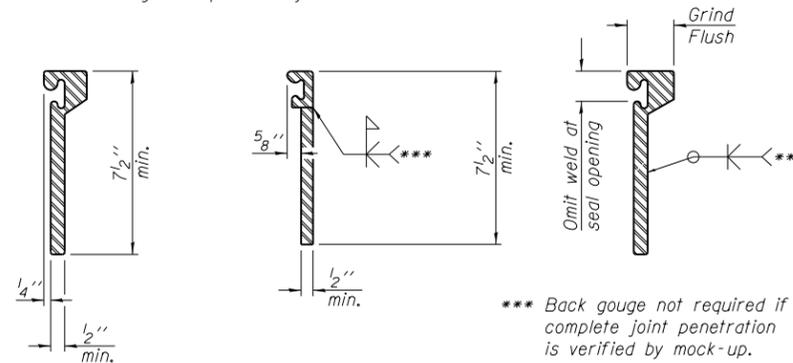
TRIMETRIC VIEW (Showing back plates only)



SECTION THRU ROLLED RAIL JOINT



SECTION THRU WELDED RAIL JOINT



ROULDED EXTRUDED RAIL WELDED RAIL

LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue. Rolled rail shown, welded rail similar.

*** Back gouge not required if complete joint penetration is verified by mock-up.

NOTES:

The strip seal shall be made continuous and shall have a minimum thickness of 1/4 inch. The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

The Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities.

The manufacturer's recommended installation methods shall be followed.

The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.

All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications. Maximum space between rail segments shall be 3/16 inch, sealed with a suitable sealant. Joints in rails within 10 ft. of curbs shall be welded.

Parapet plates and anchorage studs for skews > 30° included in the cost of Preformed Joint Strip Seal.

If the Contractor elects to use welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	189

* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

EJ-SSJ

1-27-12

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DRAWN - WM	REVISED -
CHECKED - MAI, MI	REVISED -

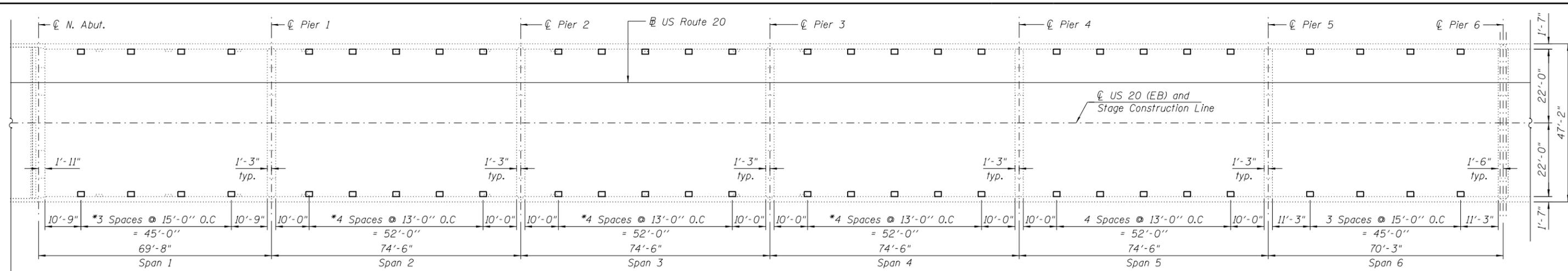
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042

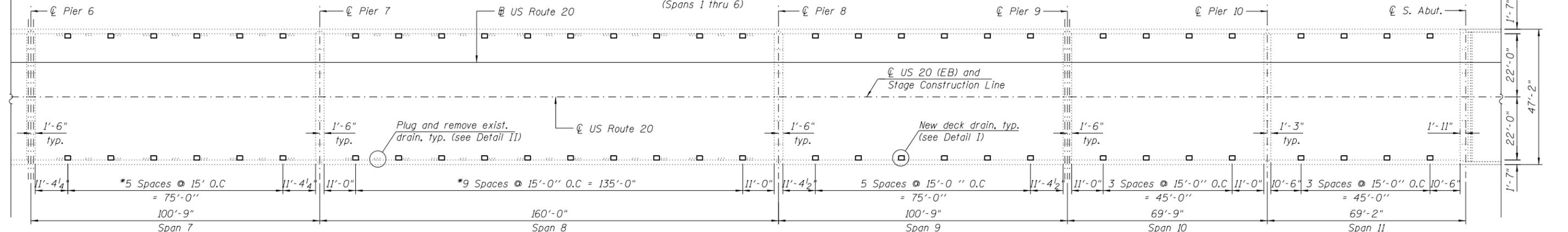
SHEET NO. S13 OF S26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0301	(177-4B-11M)	STEPHENSON	43	30
CONTRACT NO. 64J24				
ILLINOIS FED. AID PROJECT				

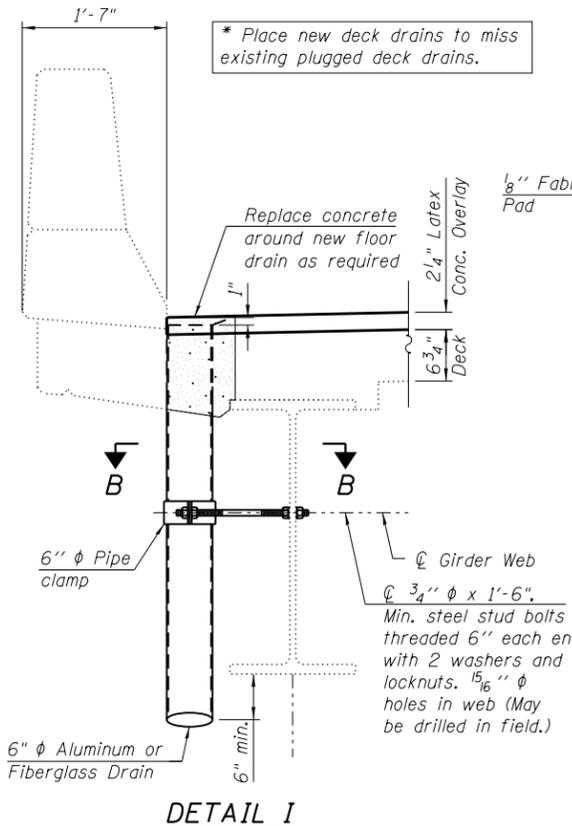
DATE - 03/13/2013



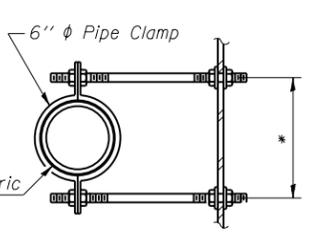
PARTIAL DRAINAGE PLAN
(Spans 1 thru 6)



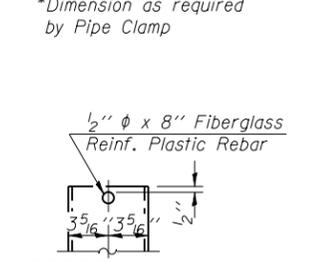
PARTIAL DRAINAGE PLAN
(Spans 7 thru 11)



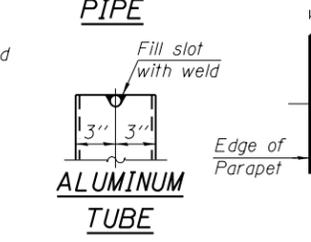
DETAIL I



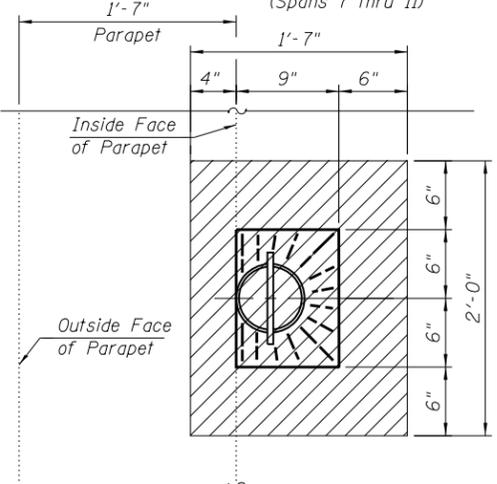
SECTION B-B
* Dimension as required by Pipe Clamp



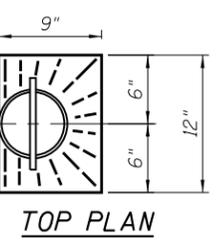
FIBERGLASS PIPE



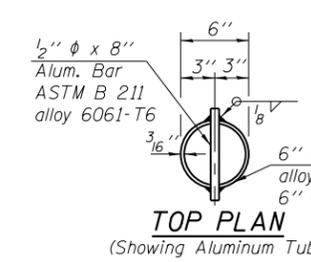
ALUMINUM TUBE



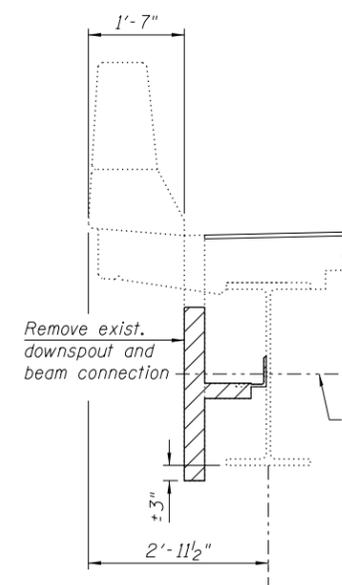
CONCRETE REMOVAL PLAN



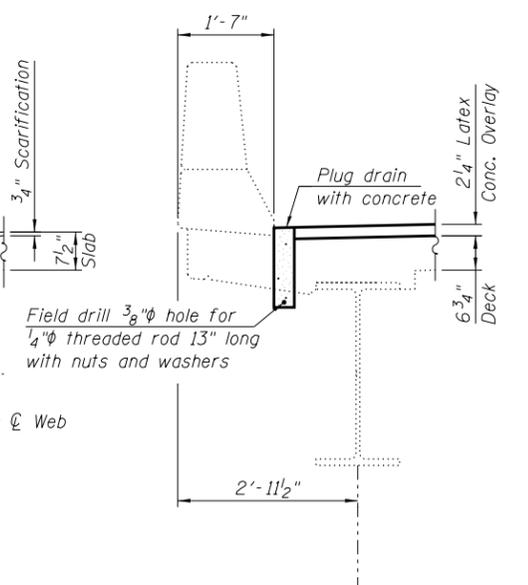
TOP PLAN



TOP PLAN
(Showing Aluminum Tube)



DETAIL II
(Removal)



DETAIL II
(Plug Existing Drain)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Floor Drains	Each	116
Protective Coat	Sq. Yd.	23
Plug Existing Deck Drains	Each	68
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	41

NOTES:

- The exterior surfaces of the floor drains shall be painted with the finish coat as specified in the special provisions for Cleaning and Painting New Metal Structures. The exterior surfaces of the drains shall be cleaned according to Society of Protective Coatings Spec. SSPC-SPI prior to painting.
- Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.
- Galvanize clamping device according to AASHTO M232. Cost of clamping device and inserts is included with Floor Drains.
- For approach drain details see Roadway Plans.

LEGEND



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REVISIONS:
REVISOR
DATE

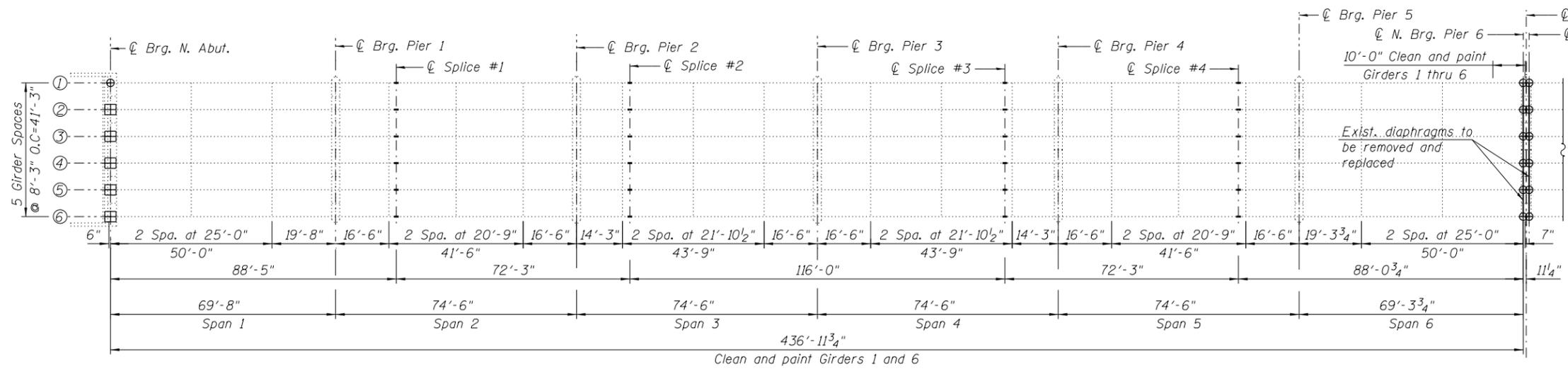
REVISOR
DATE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRAINAGE PLAN & DETAILS
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042

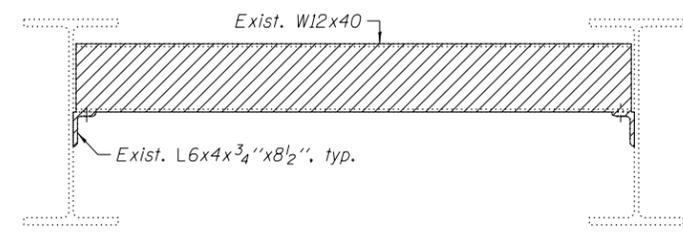
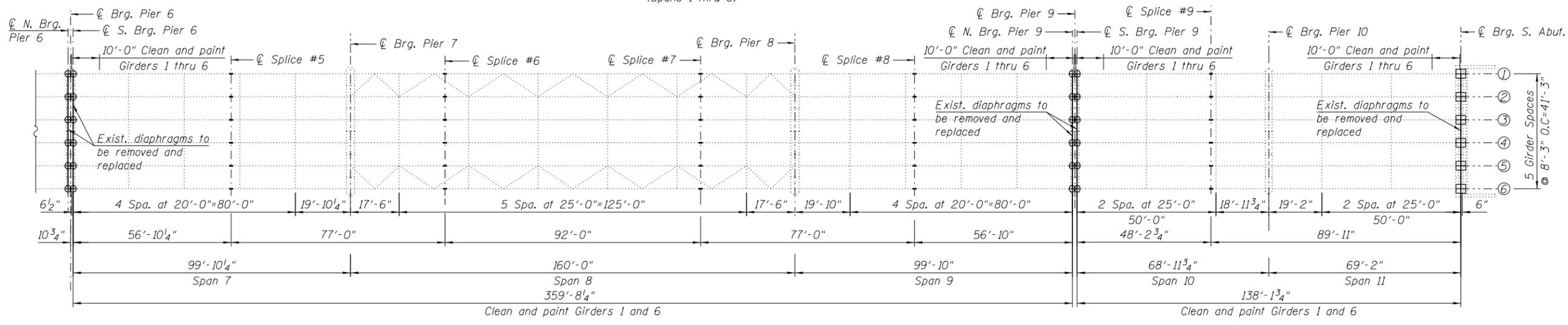
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0301	(177-4B-11M)	STEPHENSON	43	31

CONTRACT NO. 64J24
ILLINOIS FED. AID PROJECT

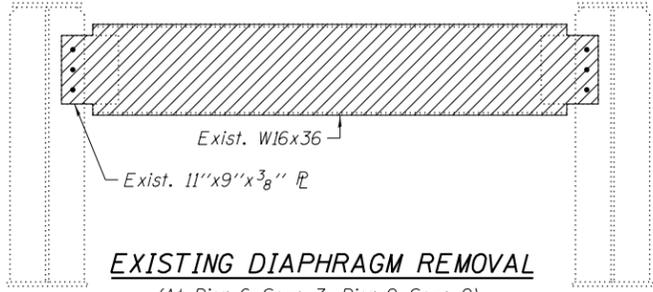


BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Cleaning and Painting Structural Steel, Location 1	L Sum	1
Containment and Disposal of Lead Paint Cleaning Residues	L Sum	1



EXISTING DIAPHRAGM REMOVAL
(At Pier 6-Span 6, Pier 9-Span 10 & S. Abut.)



EXISTING DIAPHRAGM REMOVAL
(At Pier 6-Span 7, Pier 9-Span 9)

NOTES:

- Jacking and Removing Existing Bearings shall be done after scarification is completed and before the new deck overlay is poured.
- All work is to be performed under staged construction. See Stage Construction Sheets S03 and S04 for details.
- The new bearings shall be in place and the jacks shall be lowered before the new deck overlay is poured.
- Jacking of existing bearing for Girder 1 at North Abutment, Girders 1 thru 6 at Pier 6 (Spans 6 & 7) and Pier 9 (Spans 9 & 10) will be paid under Temporary Shoring and Cribbing.
- For diaphragm replacement details see Sheet S16 and S17.

SUMMARY OF REACTIONS - PIERS 6, 9 & NORTH AND SOUTH ABUTS.

Loads	North Abut Pier 6-Span 6	Pier 6-Span 7 Pier 9-Span 9	South Abut Pier 9-Span 10
R _∅ (k)	36.7	40.0	35.0
R _L (k)	45.0	47.8	45.0
R _{1M} (k)	11.6	10.6	11.6
R _{Total} (k)	93.3	98.4	91.6

LEGEND

- Bearing Removal
- Jack and Remove Existing Bearings
- Remove Existing Bearing and Perform Temporary Shoring and Cribbing
- Remove and replace existing diaphragms

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DATE - 03/13/2013

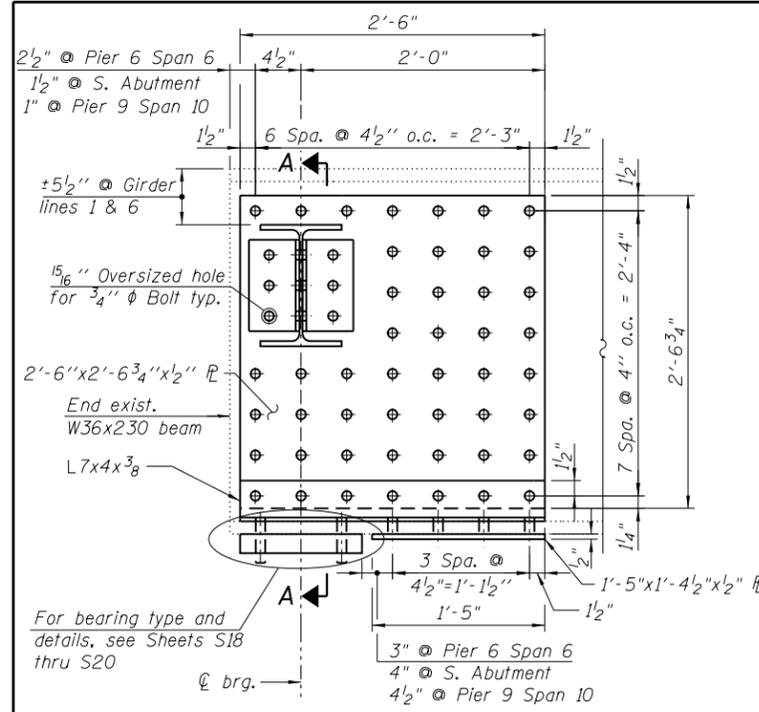
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

FRAMING PLAN
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042

SHEET NO. S15 OF S26 SHEETS

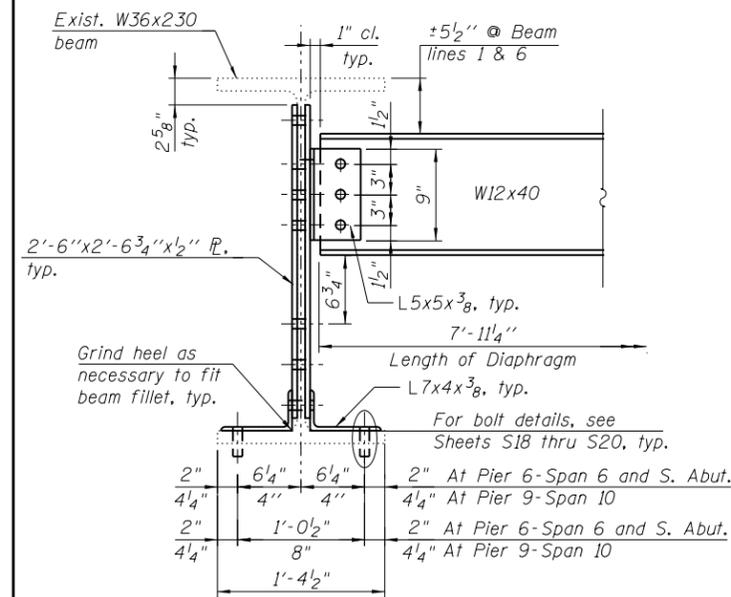
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0301	(177-4B-11M)	STEPHENSON	43	32

CONTRACT NO. 64J24
ILLINOIS FED. AID PROJECT



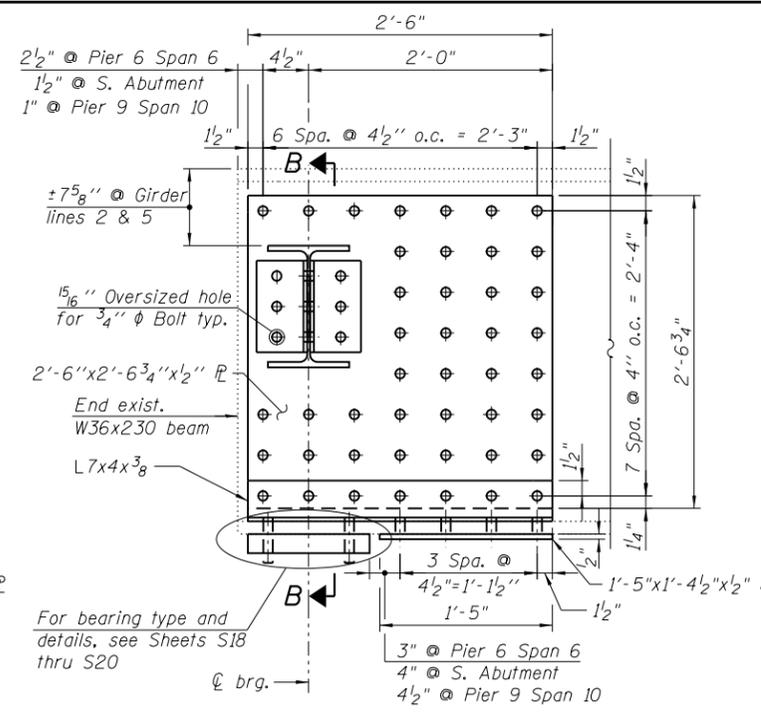
DIAPHRAGM AND GIRDER REPAIR DETAIL
(GIRDER LINES 1 & 6)

At Pier 6 - Span 6
Pier 9 - Span 10
and South Abutment



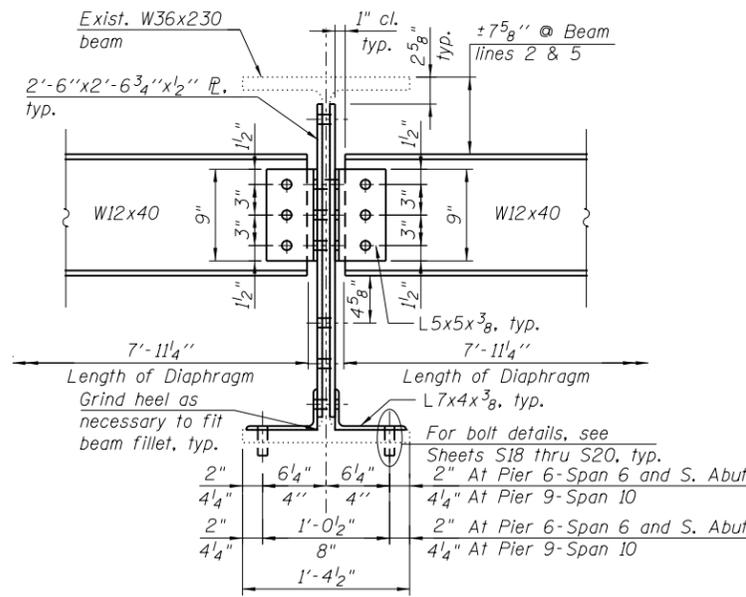
SECTION A-A

(Typ. for girder lines 1 and 6)



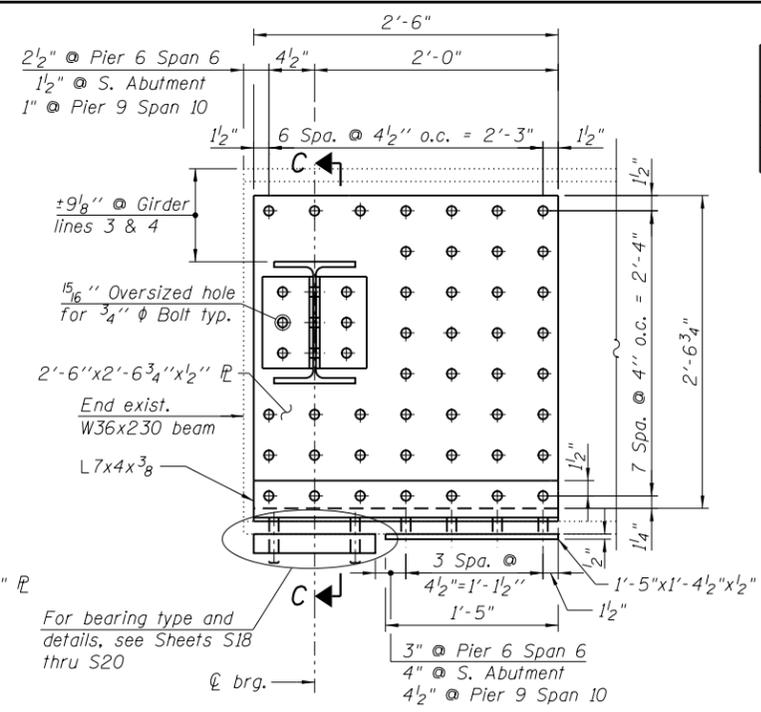
DIAPHRAGM AND GIRDER REPAIR DETAIL
(GIRDER LINES 2 & 5)

At Pier 6 - Span 6
Pier 9 - Span 10
and South Abutment



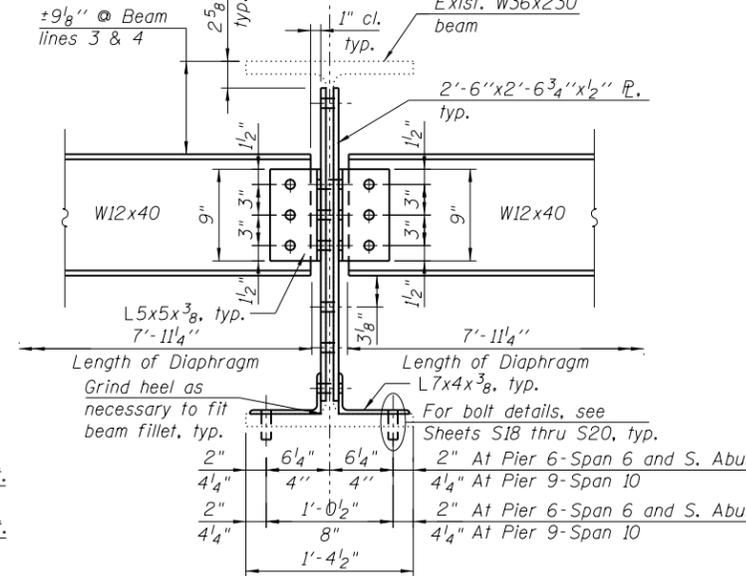
SECTION B-B

(Typ. for girder lines 2 and 5)



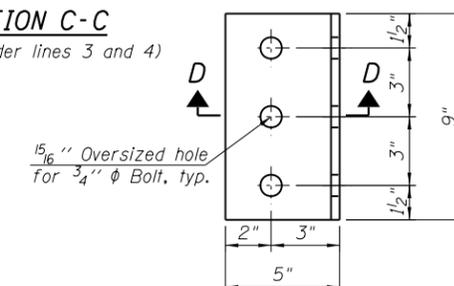
DIAPHRAGM AND GIRDER REPAIR DETAIL
(GIRDER LINES 3 & 4)

At Pier 6 - Span 6
Pier 9 - Span 10
and South Abutment



SECTION C-C

(Typ. for girder lines 3 and 4)



DIAPHRAGM CONNECTION ANGLE, TYP.

(L5x5x3/8, typ. angle connection)

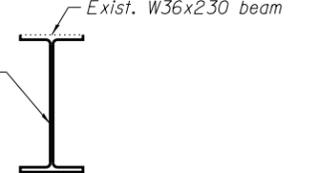
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing and Erecting Structural Steel	Pound	5,850
Structural Steel Removal	Pound	6,190
Structural Steel Repair	Pound	7,320

NOTES:

- For locations of Diaphragm Repairs, see framing plan Sheet S15.
- All contact surfaces of joints for the diaphragms shall be free of paint or lacquer.
- All repair plates and angles, diaphragms and their connection plates shall conform to AASHTO Classification M-270 Gr 36.
- Diaphragm connection holes shall be 1 5/16" φ for 3/4" φ bolts. Two hardened washers shall be required at diaphragm connection.
- Hardened washers shall be required over all oversized holes.
- Cost of field drilling 1 5/16" φ holes is included with Furnishing and Erecting Structural Steel.
- Unless otherwise noted in the plans or specifications, field bolted connections shall use 3/4" φ high strength bolts with 1 5/16" φ holes.
- All connection bolts and fasteners shall be incidental to Furnish and Structural Steel Erect and Structural Steel Repair areas.
- Existing diaphragm and clip angle removal shall be paid for as Structural Steel Removal.
- New diaphragm and clip angles shall be paid for as Furnishing and Erecting Structural Steel.
- For cleaning and painting limits, see Sheet S15.

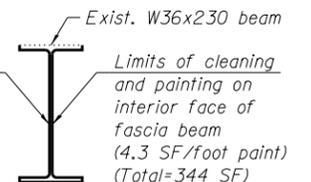
Limits of cleaning and painting on Beams 2 thru 5 (9.8 SF/foot paint) (Total=1572 SF)



TYP. INTERIOR W36x230 GIRDER

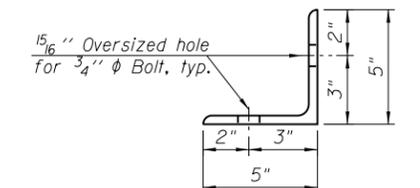
(Pier 6 - Span 6, Pier 9 - Span 10, Span 1 at N. Abut. & Span 11 at S. Abut.)

Limits of cleaning and painting on exterior face of fascia beam (5.6 SF/foot paint) (Total=6465 SF)

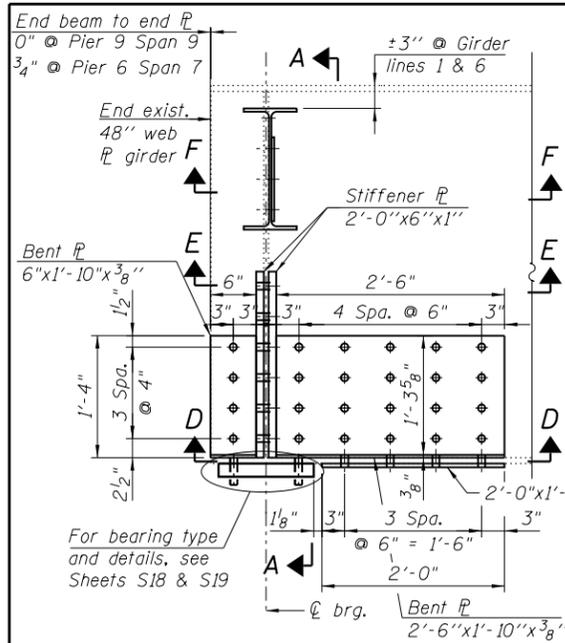


TYP. EXTERIOR W36x230 GIRDER

(Spans 1 thru 6 & Spans 10 and 11)

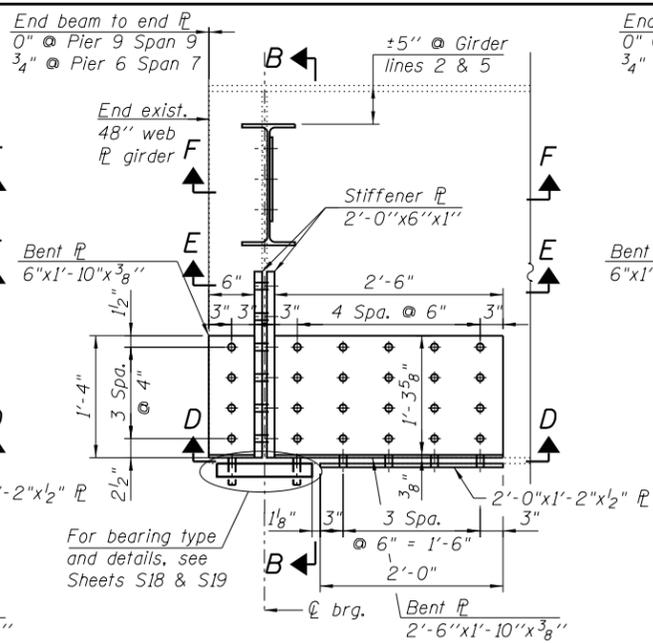


SECTION D-D



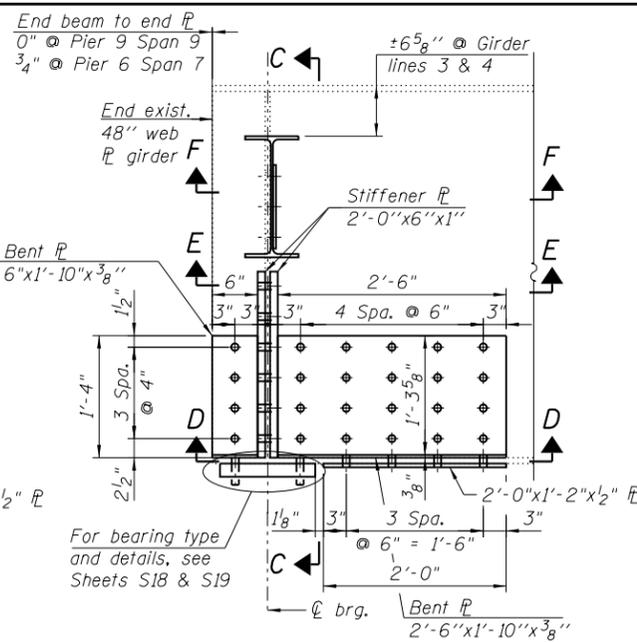
**DIAPHRAGM AND GIRDER REPAIR
DETAIL (GIRDER LINES 1 & 6)**

At Pier 6 - Span 7
and Pier 9 - Span 9



**DIAPHRAGM AND GIRDER REPAIR
DETAIL (GIRDER LINES 2 & 5)**

At Pier 6 - Span 7
and Pier 9 - Span 9



**DIAPHRAGM AND GIRDER REPAIR
DETAIL (GIRDER LINES 3 & 4)**

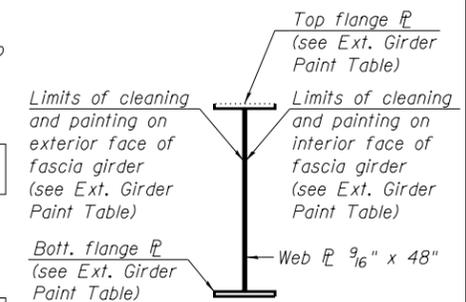
At Pier 6 - Span 7
and Pier 9 - Span 9

NOTES:

- For locations of Diaphragm Repairs, see framing plan Sheet S15.
- All contact surfaces of joints for the diaphragms shall be free of paint or lacquer.
- All diaphragms shall conform to AASHTO Classification M-270 Gr 36. All repair plates, fill plates, stiffener angles, connection plates and connection angles shall conform to AASHTO Classification M-270 Gr 50.
- Diaphragm connection holes shall be 1 5/16" φ for 3/4" φ bolts. Two hardened washers shall be required at diaphragm connection.
- Hardened washers shall be required over all oversized holes.
- Cost of field drilling is included with Furnishing and Erecting Structural Steel.
- Unless otherwise noted in the plans or specifications, field bolted connections shall use 3/4" φ high strength bolts with 1 3/16" φ holes.
- All connection bolts and fasteners shall be incidental to Furnish and Erect Structural Steel and Structural Steel Repair areas.
- Existing diaphragm and clip angle removal shall be paid for as Structural Steel Removal.
- New diaphragm and clip angles shall be paid for as Furnishing and Erecting Structural Steel.
- For cleaning and painting limits, see Sheet S15.

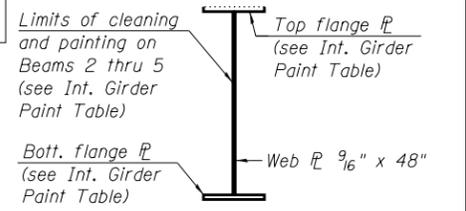
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing and Erecting Structural Steel	Pound	3,020
Structural Steel Removal	Pound	2,980
Structural Steel Repair	Pound	5,010



EXTERIOR GIRDER

Spans 7 thru 9
(Total=5544.66 SF)



TYP. INTERIOR GIRDER

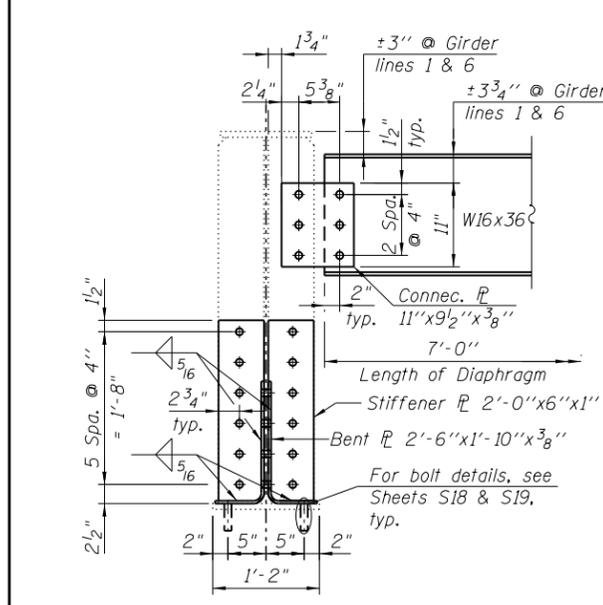
Spans 7 thru 9
(Total=6056.00 SF)

INTERIOR GIRDER PAINT TABLE

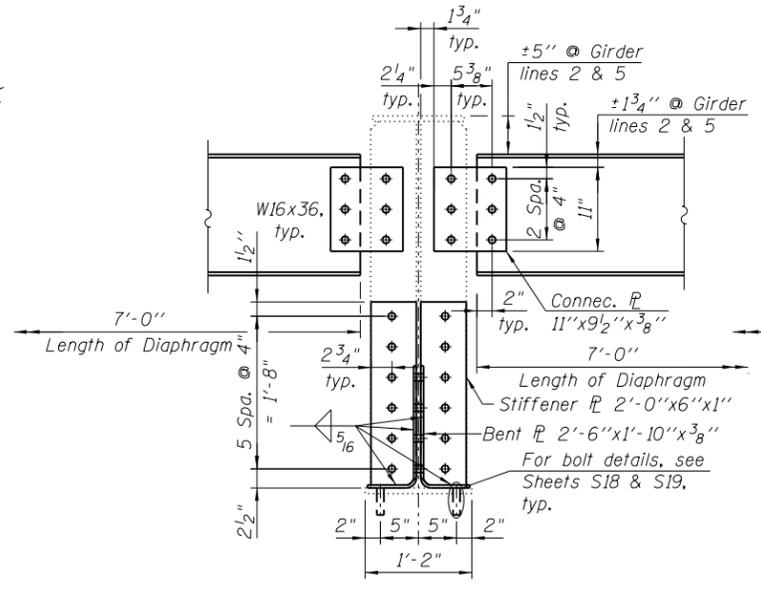
Flange Transition Limits	Plate Size		Surface Area (SF/foot)	Quantity (SF)
	Top Flange	Bottom Flange		
Sta. 909+67.60 to Sta. 910+25.00 Sta. 912+71.00 to Sta. 913+28.44	3/4"x12"	3/4"x14"	11.59	463.60
Sta. 910+50.00 to Sta. 910+82.50 Sta. 912+13.50 to Sta. 912+46.00	1 7/8"x18"	1 7/8"x18"	13.13	1050.40

EXTERIOR GIRDER PAINT TABLE

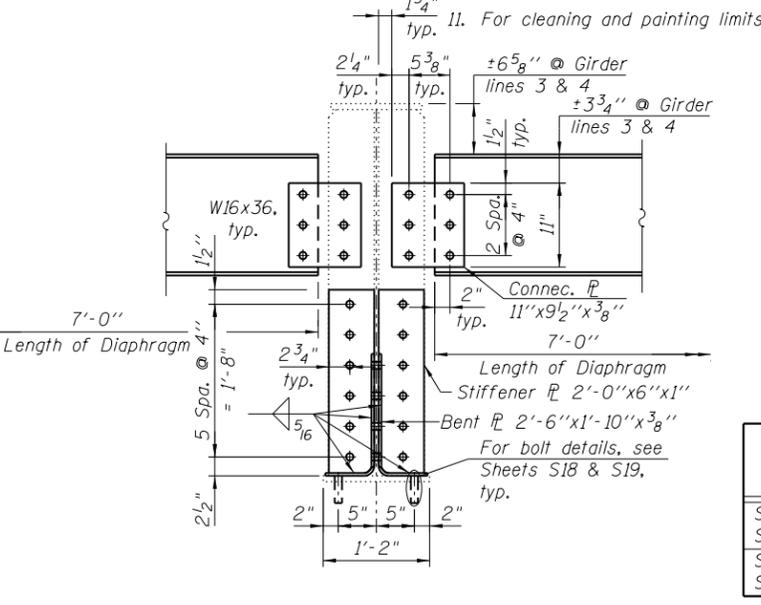
Flange Transition Limits	Plate Size		Exterior Face		Interior Face	
	Top Flange	Bottom Flange	Surface Area (SF/foot)	Quantity (SF)	Surface Area (SF/foot)	Quantity (SF)
Sta. 909+67.60 to Sta. 910+25.00 Sta. 912+71.00 to Sta. 913+28.44	3/4"x12"	3/4"x14"	6.38	732.68	5.21	104.20
Sta. 910+25.00 to Sta. 910+50.00 Sta. 910+82.50 to Sta. 911+02.00 Sta. 911+94.00 to Sta. 912+13.50 Sta. 912+46.00 to Sta. 912+71.00	1 1/4"x16"	1 1/4"x16"	6.89	613.21	5.55	N/A
Sta. 910+50.00 to Sta. 910+82.50 Sta. 912+13.50 to Sta. 912+46.00	1 7/8"x18"	1 7/8"x18"	7.32	475.80	5.82	232.80
Sta. 911+02.00 to Sta. 911+94.00	3/4"x12"	1 1/4"x16"	6.67	613.64	5.34	N/A



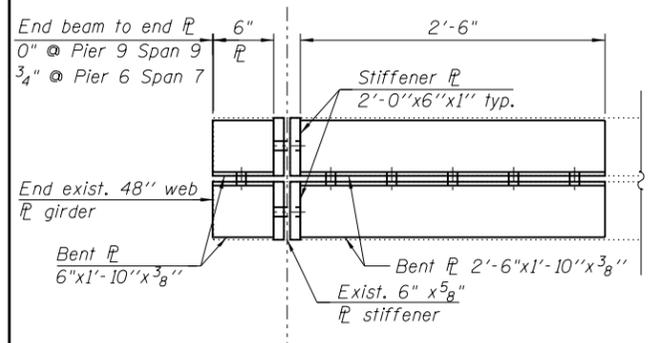
SECTION A-A



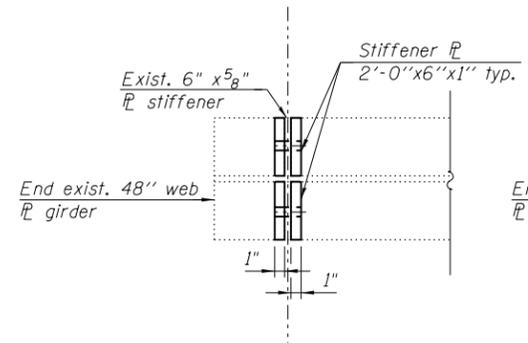
SECTION B-B



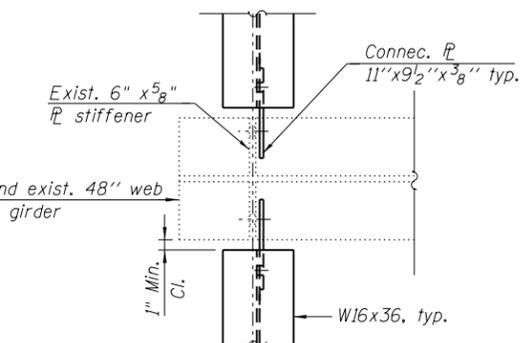
SECTION C-C



SECTION D-D



SECTION E-E



SECTION F-F

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REVISED -
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DEPARTMENT OF TRANSPORTATION**

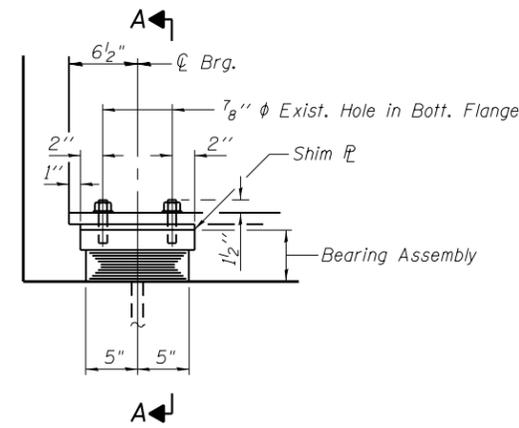
**STRUCTURAL STEEL REPAIR SECTIONS & DETAILS (SHEET II OF II)
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042**

SHEET NO. S17 OF S26 SHEETS

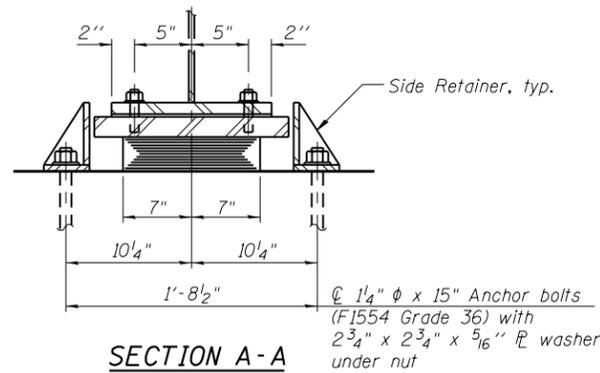
F.A.P. R.T.E. SECTION COUNTY TOTAL SHEETS SHEET NO.
0301 (177-4B-11M) STEPHENSON 43 34
CONTRACT NO. 64J24

ILLINOIS FED. AID PROJECT

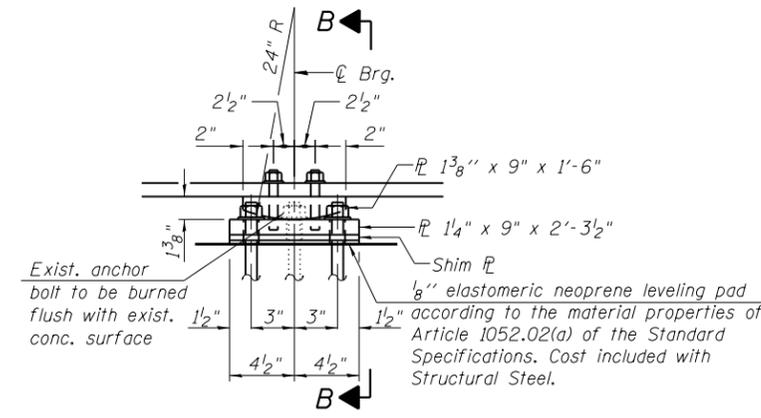
DATE - 03/13/2013



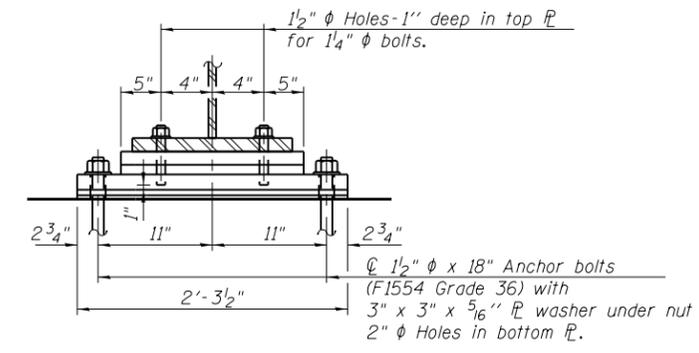
ELEVATION AT PIER



SECTION A-A



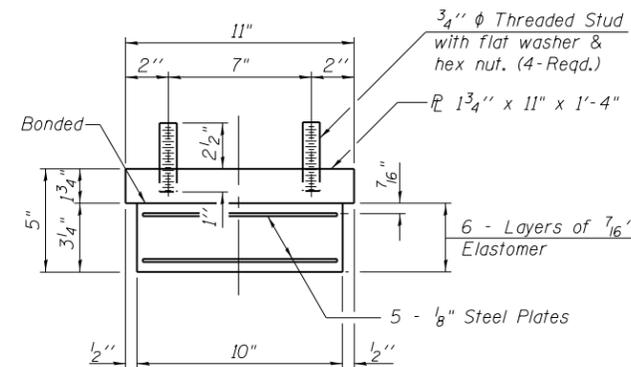
ELEVATION AT PIER



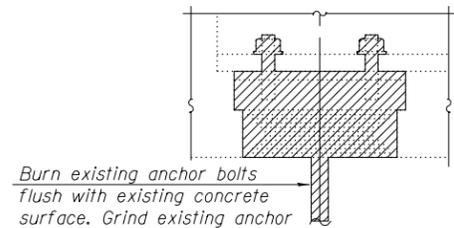
SECTION B-B

TYPE I ELASTOMERIC EXP. BRG. AT PIER 6 - SPAN 7

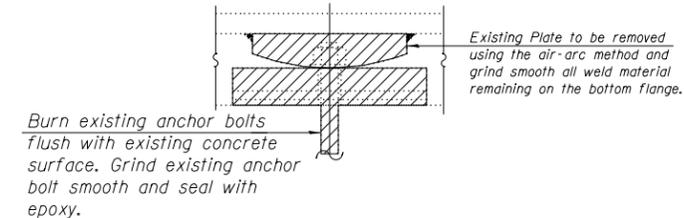
FIXED BEARING AT PIER 9 - SPAN 10



BEARING ASSEMBLY



EXISTING TYPE I BEARING (Pier 6 - Span 7)

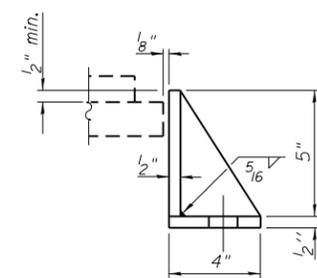


EXISTING FIXED BEARING (Pier 9 - Span 10)

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

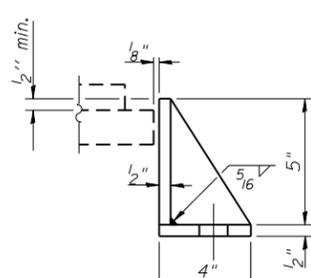
NOTES:

- Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
- Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
- Side retainers, shim plates, connection bolts and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.
- Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.
- Two 1/8 inch adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
- See special provisions for Jacking and Removing procedures for existing bearings.
- Cost of removal and re-installation of all members necessary to complete the work as detailed on the plans and as specified in the Special Provisions shall be included with Elastomeric Bearing Assembly, Type I or Furnish and Erect Structural Steel.
- Removal of Existing Bearings shall be performed after Temporary Shoring and Cribbing of existing beams/girders.
- Minimum jack capacity = 60 tons.



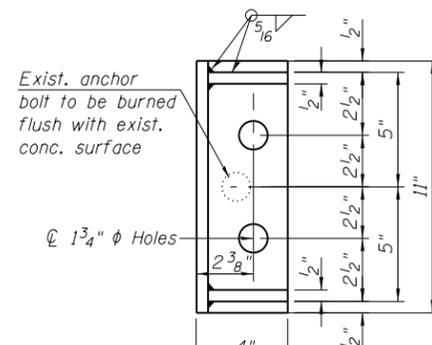
SIDE RETAINER*
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

* For interior beams and exterior face of exterior girders



SIDE RETAINER**
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

** For interior face of exterior girders



BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Structural Steel	Pound	960
Elastomeric Bearing Assembly Type I	Each	6
Anchor Bolts, 1/4"	Each	24
Anchor Bolts, 1/2"	Each	24
Removal of Existing Bearings	Each	12

I-2E-1

1-27-12

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CHECKED - MAI, MI

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REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPE I ELASTOMERIC AND FIXED BEARING DETAILS
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042

SHEET NO. S18 OF S26 SHEETS

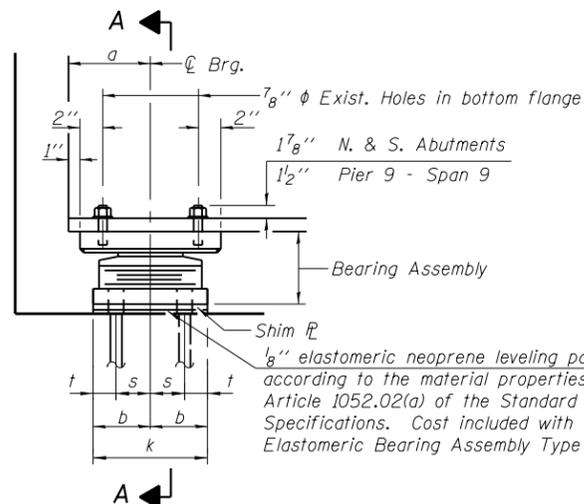
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0301	(177-4B-11M)	STEPHENSON	43	35
				CONTRACT NO. 64J24
ILLINOIS FED. AID PROJECT				

TABLE OF TYPE II DIMENSIONS

LOCATION	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t
N. Abut. & S. Abut.	6"	5"	2 7/8"	10"	1'-4 1/2"	6"	3"	9"	3 7/8"	1 7/8"	10"	2'-0 3/4"	5	3 7/8"	3 3/32"	5 3/8"	6"	10 3/8"	2 1/4"	2 3/4"
Pier 9 - Span 9	7 1/4"	5 1/2"	1 3/4"	12 1/2"	1'-4"	8 1/2"	2 1/2"	10"	5 1/4"	1 1/4"	11"	2'-1"	8	7 1/16"	1 7/8"	7 7/8"	7"	10 1/2"	2 1/2"	3"

NOTES:

- Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
- Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
- Side retainers, shim plates, connection bolts, and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II.
- Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.
- Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
- See special provisions for Jacking and Removing procedures for existing bearings.
- The 1/8" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.
- Bonding of 1/8" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.
- Removal of Existing Bearings shall be performed after Temporary Shoring and Cribbing of existing beams/girders.
- Minimum jack capacity = 60 tons.

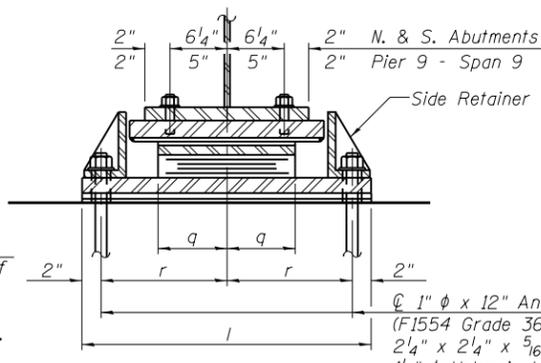


ELEVATION AT ABUT. OR PIER

TYPE II ELASTOMERIC EXP. BRG.

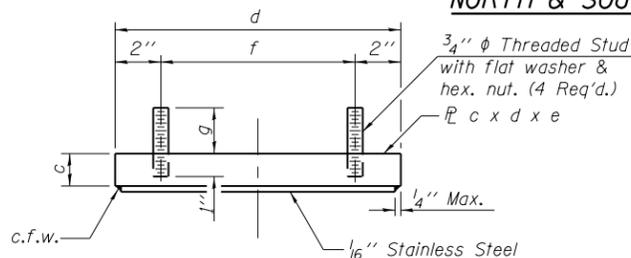
PIER 9 - SPAN 9

NORTH & SOUTH ABUTMENTS

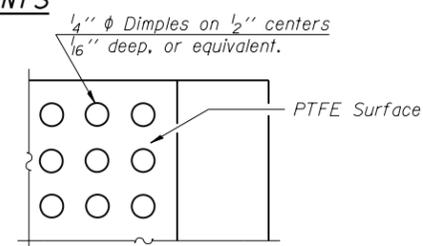


SECTION A-A

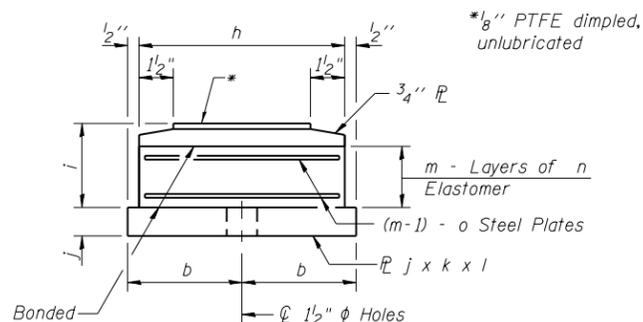
North and South Abutments
 Pier 9 - Span 9



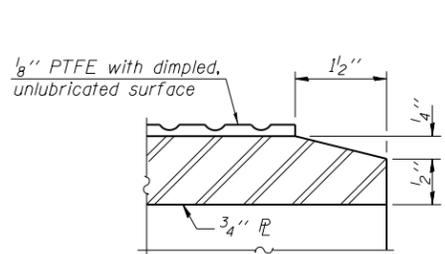
TOP BEARING ASSEMBLY



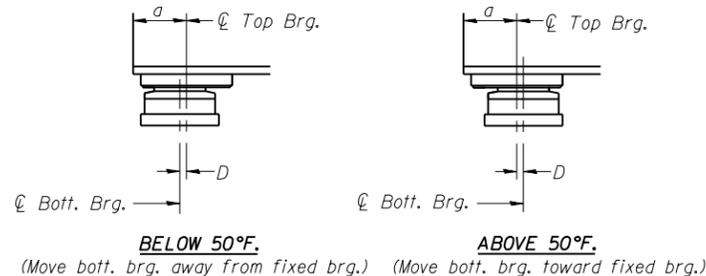
PLAN-PTFE SURFACE



BOTTOM BEARING ASSEMBLY

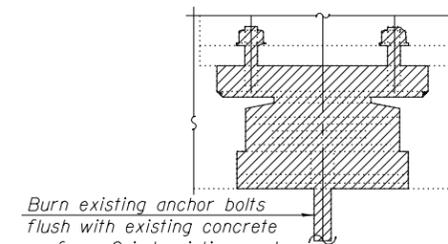


SECTION THRU PTFE

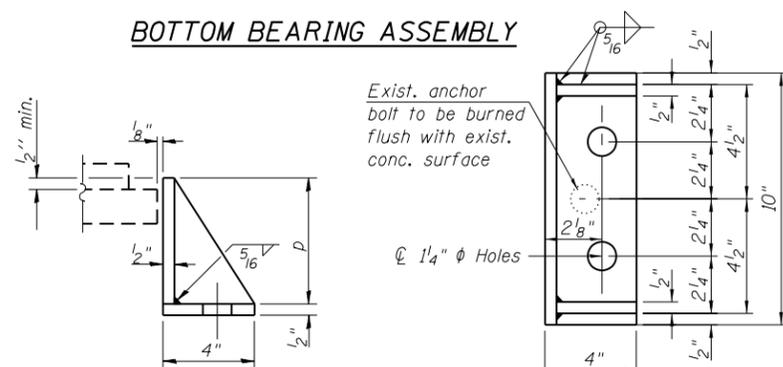


SETTING ANCHOR BOLTS AT EXP. BRG.

D = 1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

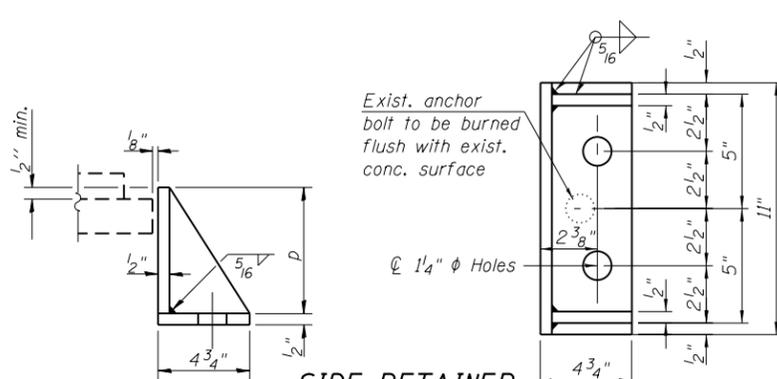


EXISTING TYPE II BEARING
 (N. Abutment, Pier 9 Span 9, and S. Abutment)



SIDE RETAINER
NORTH AND SOUTH ABUTMENTS

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

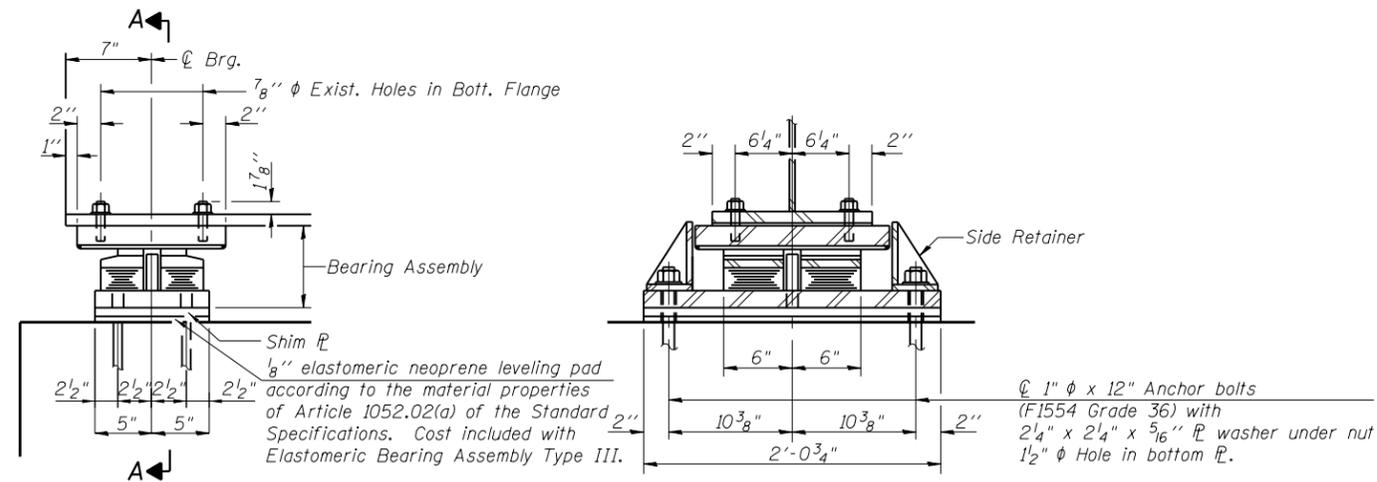


SIDE RETAINER
PIER 9 - SPAN 9

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

BILL OF MATERIAL

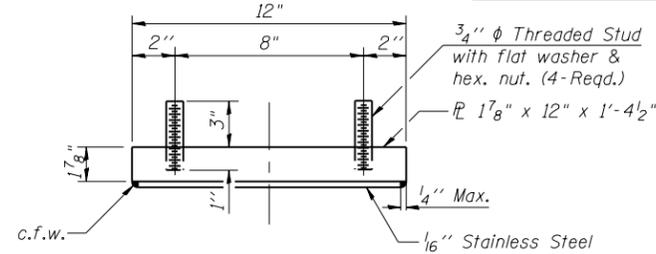
Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	18
Anchor Bolts, 1"	Each	48
Anchor Bolts, 1 1/4"	Each	24
Jack and Remove Existing Bearings	Each	11
Removal of Existing Bearings	Each	7



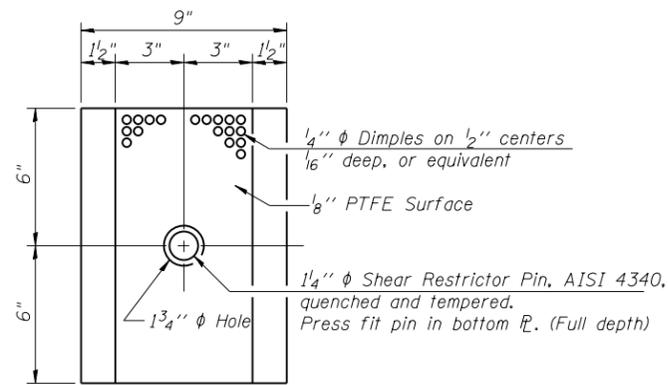
ELEVATION AT PIER
SECTION A-A
TYPE III ELASTOMERIC EXP. BRG.
AT PIER 6 - SPAN 6

NOTES:

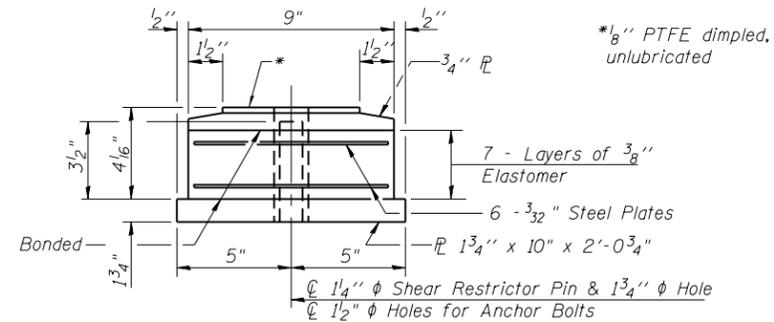
- Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
- Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
- Side retainers, shim plates, connection bolts, and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type III.
- Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.
- Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
- See special provisions for Jacking and Removing procedures for existing bearings.
- The 1/8" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.
- Bonding of 1/8" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.
- Removal of Existing Bearings shall be performed after Temporary Shoring and Cribbing of existing beams/girders.
- Minimum jack capacity = 60 tons.



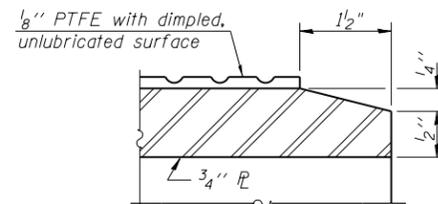
TOP BEARING ASSEMBLY



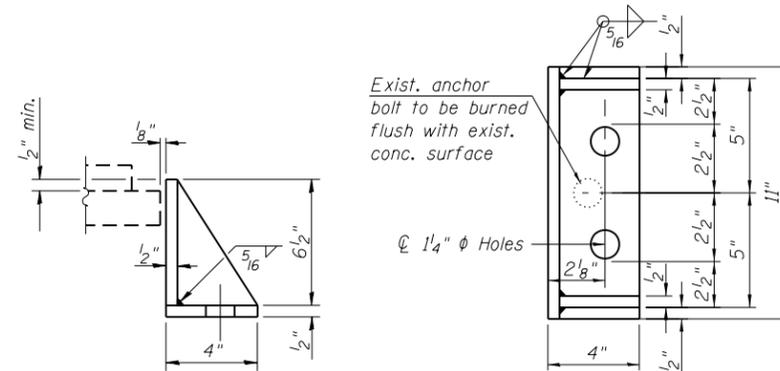
PLAN-PTFE ELASTOMERIC BRG.



BOTTOM BEARING ASSEMBLY

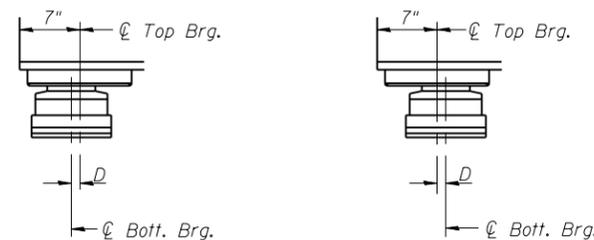


SECTION THRU PTFE

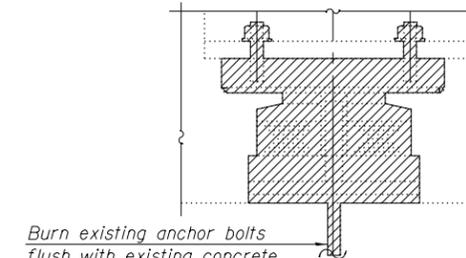


SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



SETTING ANCHOR BOLTS AT EXP. BRG.
 D=1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50° F.



Burn existing anchor bolts flush with existing concrete surface. Grind existing anchor bolt smooth and seal with epoxy.
EXISTING TYPE III BEARING
 (Pier 6-Span 6)

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type III	Each	6
Anchor Bolts, 1"	Each	24
Removal of Existing Bearings	Each	6

I-2E-3

1-27-12

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CHECKED - MAI, MI	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPE III ELASTOMERIC BEARING DETAILS
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042

SHEET NO. S20 OF S26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0301	(177-4B-11M)	STEPHENSON	43	37
ILLINOIS FED. AID PROJECT			CONTRACT NO. 64J24	

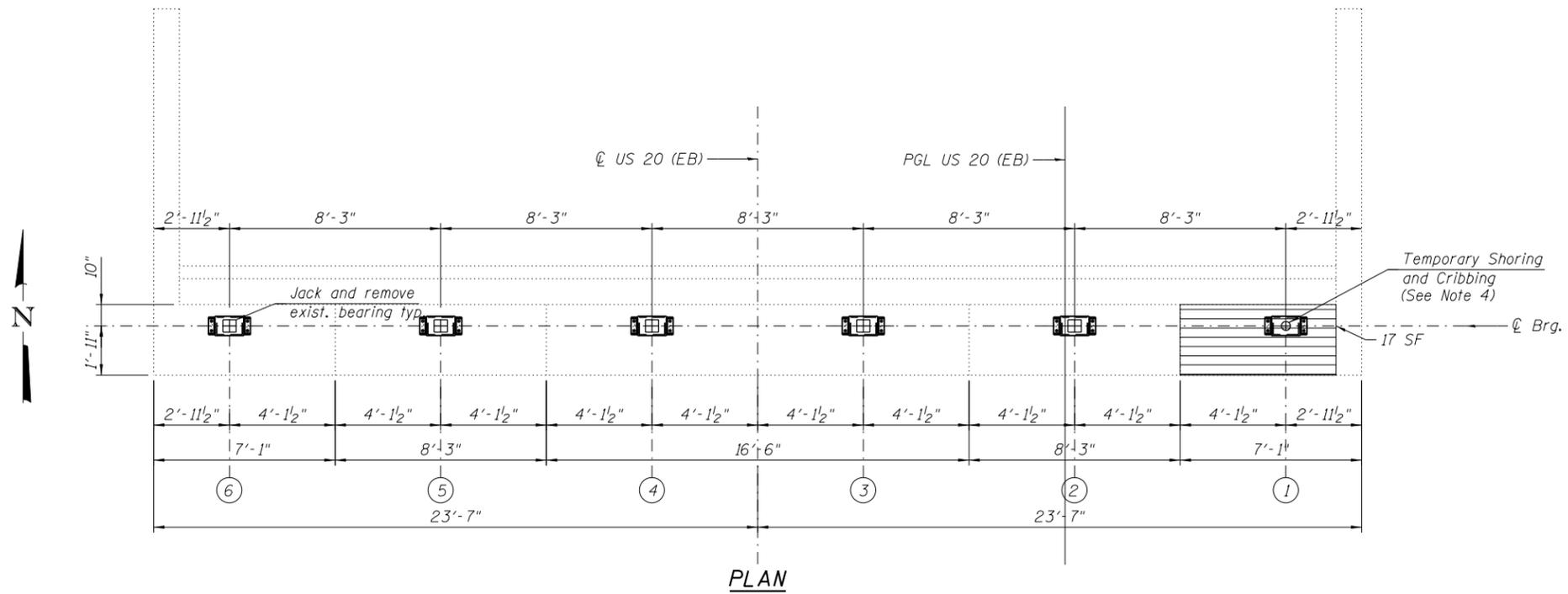
DATE - 03/13/2013

BILL OF MATERIAL

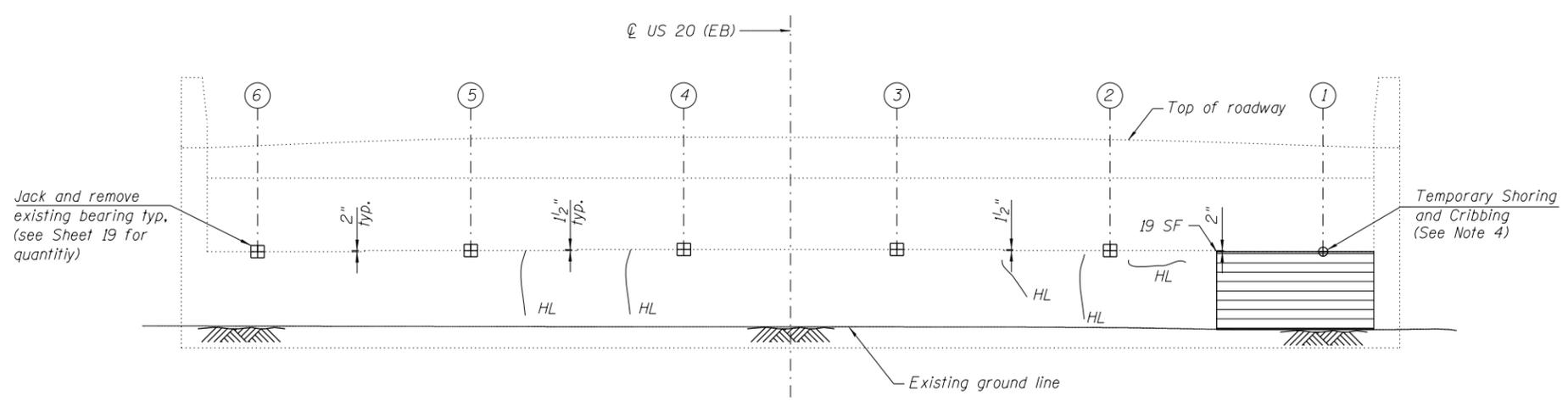
ITEM	UNIT	QUANTITY
Concrete Sealer	Sq. Ft.	276
Cleaning Bridge Seats	Sq. Ft.	130
Structural Repair of Concrete (Depth Equal to or Less Than 5")	Sq. Ft.	36
Temporary Shoring and Cribbing	Each	1

NOTES:

- For General Notes and Total Bill of Material, see Sheet S02.
- Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired and the type(s) of repairs to be used will be determined by the engineer in the field at the time of construction.
- The contractor is responsible to remove, support and reinstall all existing utilities interfering with the work. Cost shall be included with Structural Repair of Concrete (Depth Equal to or Less Than 5").
- Temporary shoring and cribbing shall be installed prior to the start of the structural repair of concrete and shall be removed after completing the end repairs of the beam and installing the new bearing.
- For bearing replacement type and details, see Sheet S19.
- Concrete Sealer shall be applied to the top bearing area and all exposed south face and ends of abutment.



PLAN



ELEVATION
(Looking North)

LEGEND

- Structural Repair of Concrete (depth equal to or less than 5")
- Jack and Remove Existing Bearings
- Temporary Shoring and Cribbing
- Jack and remove existing bearing and replace with elastomeric bearing Type II
- Temporary shoring and cribbing, remove existing bearing and replace with elastomeric bearing Type II
- Hairline Cracks (HL) (Width <0.06")
- HL - Hair Line
- SF - Square Foot

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CHECKED - MI	REVISED -
DRAWN - HH	REVISED -
DATE - 03/13/2013	REVISED -
CHECKED - MAI, MI	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT REPAIRS
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0301	(177-4B-11M)	STEPHENSON	43	38
CONTRACT NO. 64J24				

SHEET NO. S21 OF S26 SHEETS

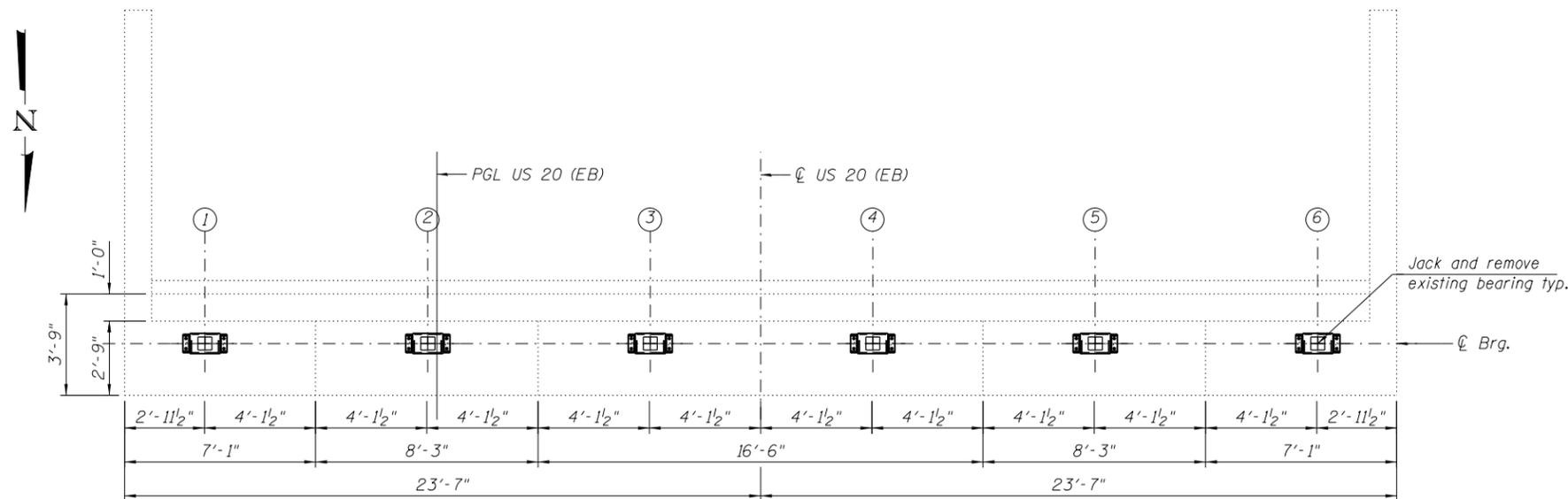
ILLINOIS FED. AID PROJECT

BILL OF MATERIAL

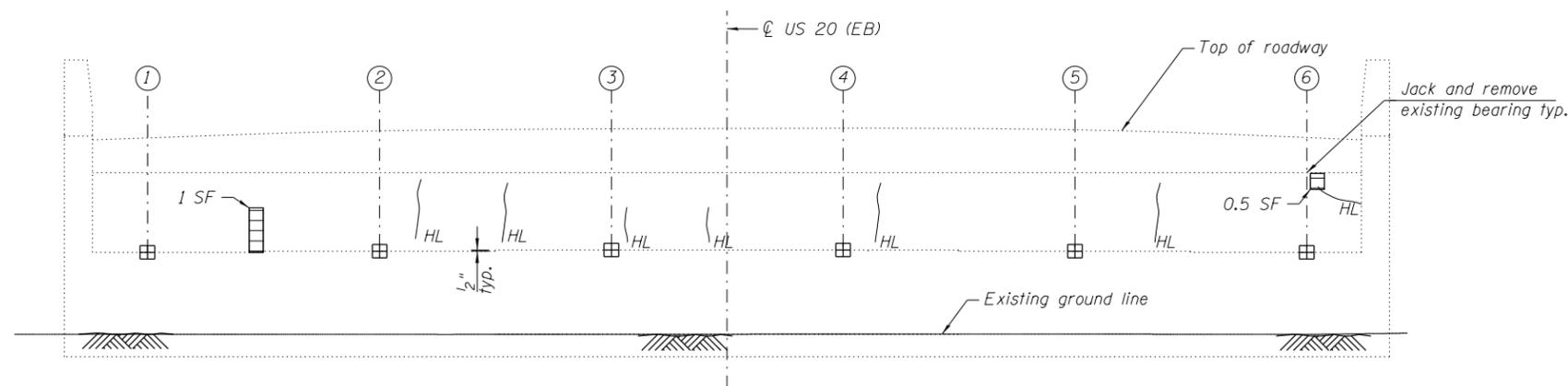
ITEM	UNIT	QUANTITY
Concrete Sealer	Sq. Ft.	276
Cleaning Bridge Seats	Sq. Ft.	130
Structural Repair of Concrete (Depth Equal to or Less Than 5")	Sq. Ft.	2

NOTES:

- For General Notes and Total Bill of Material, see Sheet S02.
- Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired and the type(s) of repairs to be used will be determined by the engineer in the field at the time of construction.
- The contractor is responsible to remove, support and reinstall all existing utilities interfering with the work. Cost shall be included with Structural Repair of Concrete (Depth Equal to or Less Than 5").
- For bearing replacement type and details, see Sheet S19.
- Concrete Sealer shall be applied to the top bearing area and all exposed north face and ends of abutment.



PLAN



ELEVATION

(Looking South)

LEGEND

- Structural Repair of Concrete (depth equal to or less than 5")
- Hairline Cracks (HL) (Width <0.06")
- Jack and Remove Existing Bearings
- Jack and remove existing bearing and replace with elastomeric bearing Type II
- SF - Square Foot
- HL - Hair Line

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CHECKED - MI
DRAWN - HH
CHECKED - MAI, MI

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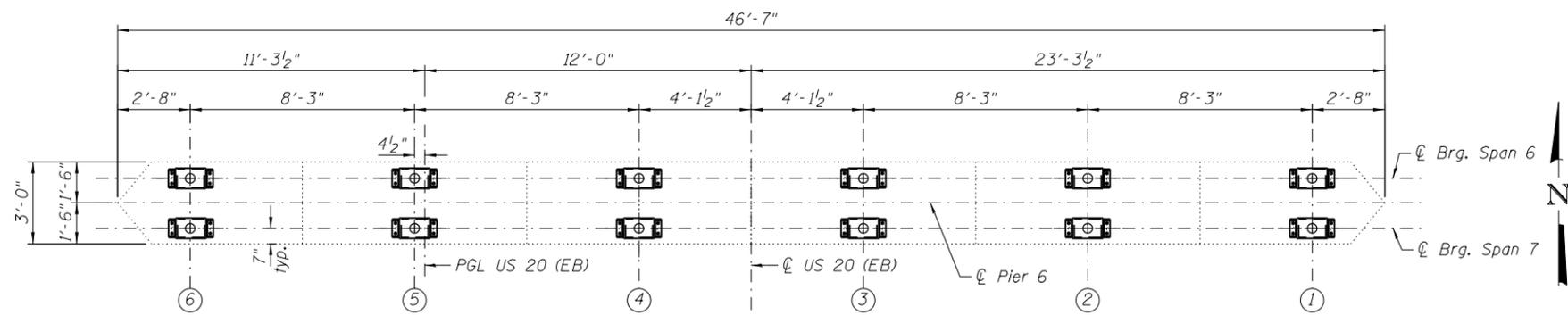
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SOUTH ABUTMENT REPAIRS
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042**

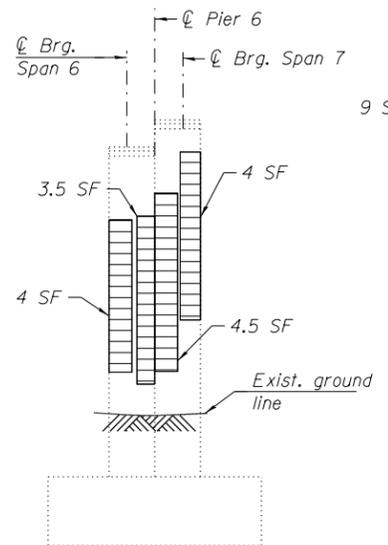
SHEET NO. S22 OF S26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0301	(177-4B-1)M	STEPHENSON	43	39
				CONTRACT NO. 64J24

ILLINOIS FED. AID PROJECT

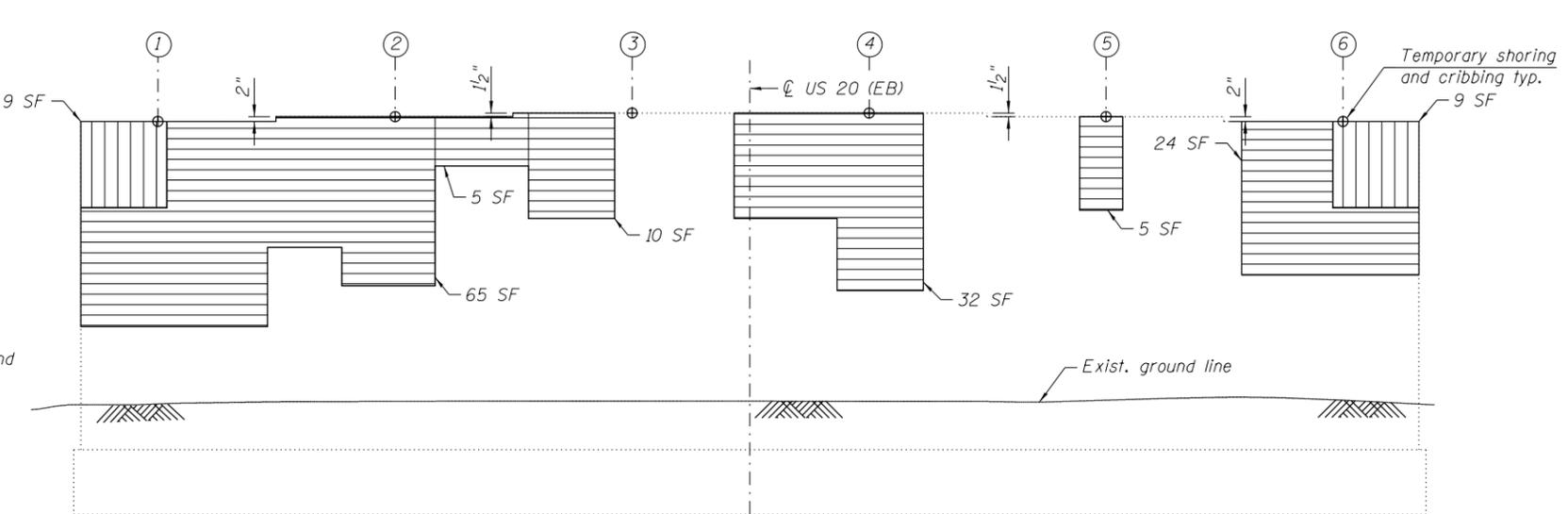


PLAN



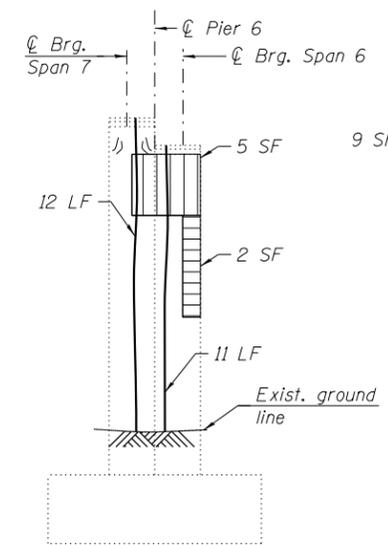
EAST END ELEV.

(Looking West)



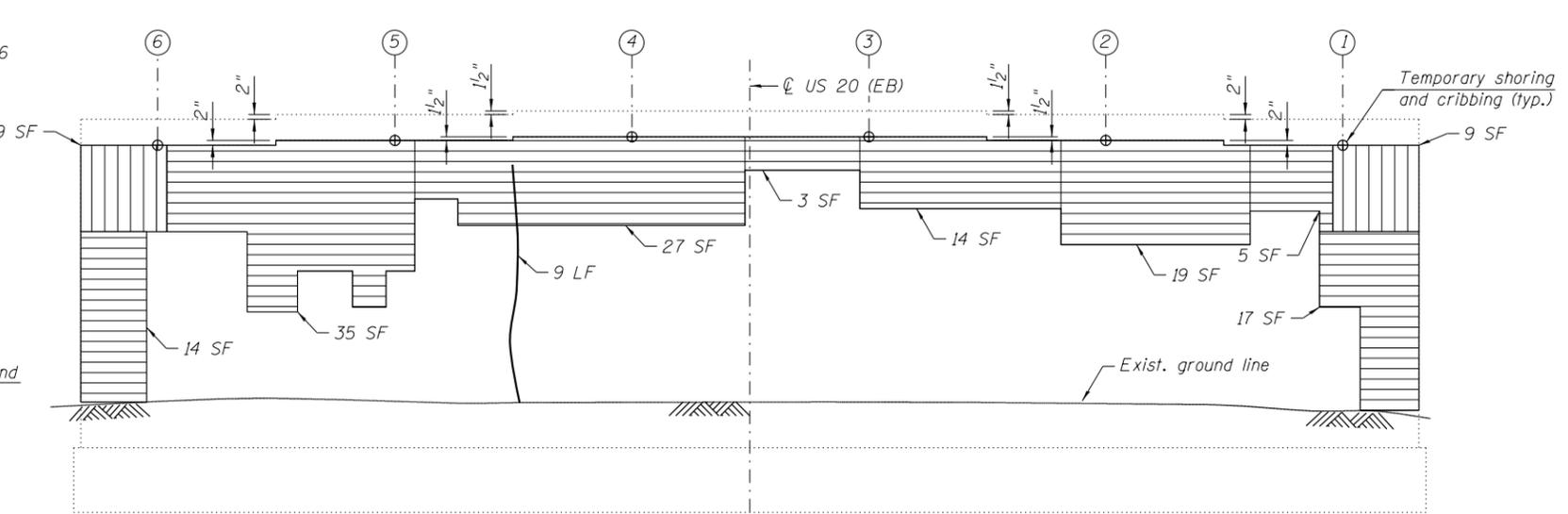
ELEVATION

(Looking South)



WEST END ELEV.

(Looking East)



ELEVATION

(Looking North)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Sealer	Sq. Ft.	1194
Epoxy Crack Injection	Foot	32
Cleaning Bridge Seats	Sq. Ft.	136
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	293
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq. Ft.	41
Temporary Shoring and Cribbing	Each	12

NOTES:

- For General Notes and Total Bill of Material, see Sheet S02.
- Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired and the type(s) of repairs to be used will be determined by the Engineer in the field at the time of construction.
- The Contractor is responsible to remove, support and reinstall all existing utilities interfering with the work. Cost shall be included with Structural Repair of Concrete (Depth Equal to or Less Than 5").
- For bearing replacement type and details, see Sheets S18 and S20.
- Temporary shoring and cribbing shall be installed prior to the start of the structural repair of concrete and shall be removed after the removal and replacement of the bearings.
- Concrete Sealer shall be applied to the top bearing area and all exposed faces of pier.

LEGEND

- Structural Repair of Concrete (Depth Equal to or Less Than 5")
- Structural Repair of Concrete (Depth Greater Than 5")
- Temporary shoring and cribbing and existing bearing removal and replacement with elastomeric bearing Type III at Span 6 and Type I at Span 7
- Low Pressure Epoxy Injection (Width > 0.06")
- Hairline Cracks (HL) (Width < 0.06")
- SF - Square Foot
- LF - Linear Foot
- ⊕ - Temporary Shoring and Cribbing

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CHECKED - MI	REVISED -
DRAWN - HH	REVISED -
CHECKED - MAI, MI	REVISED -

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DEPARTMENT OF TRANSPORTATION

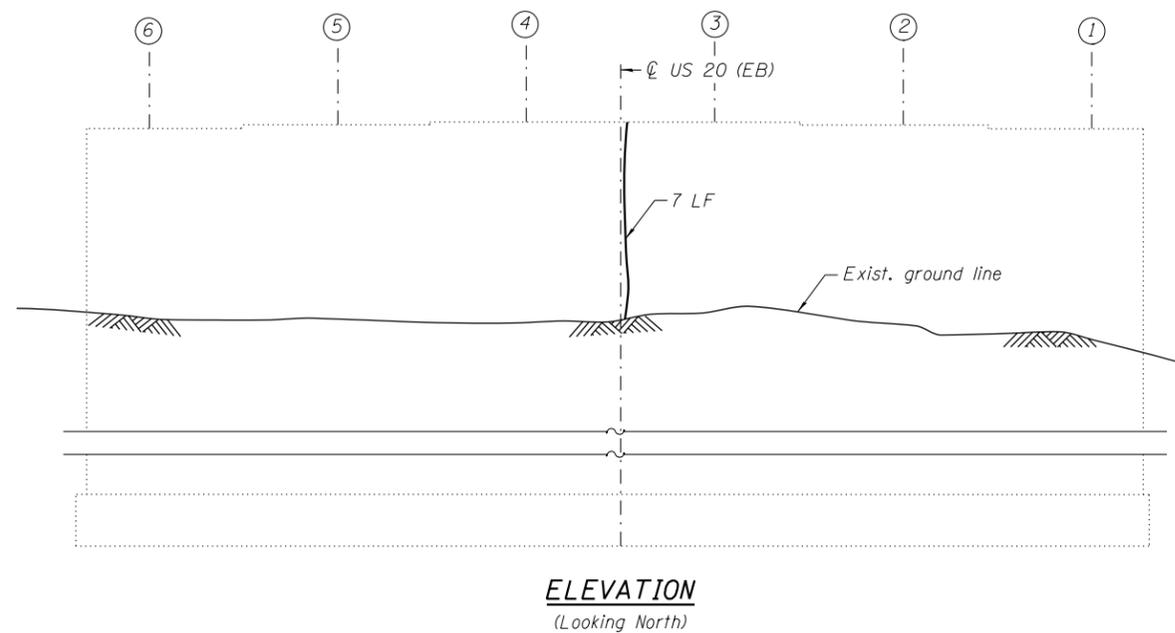
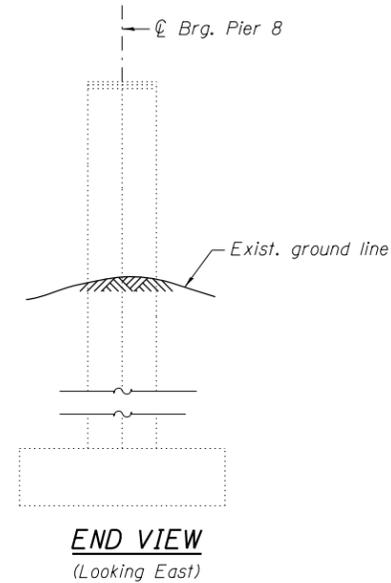
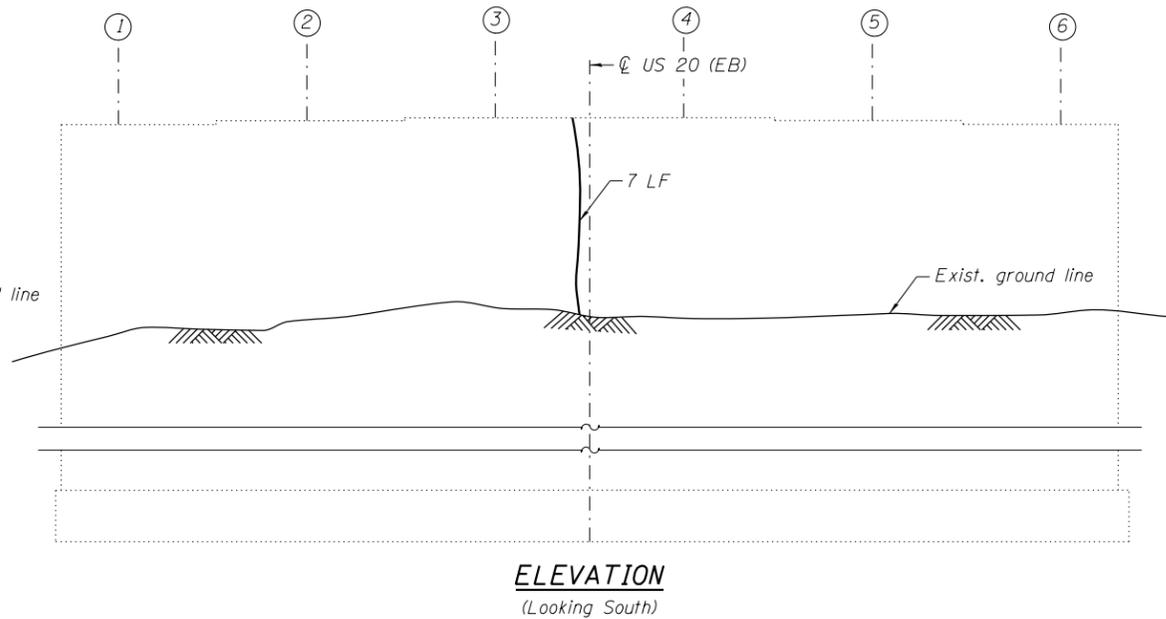
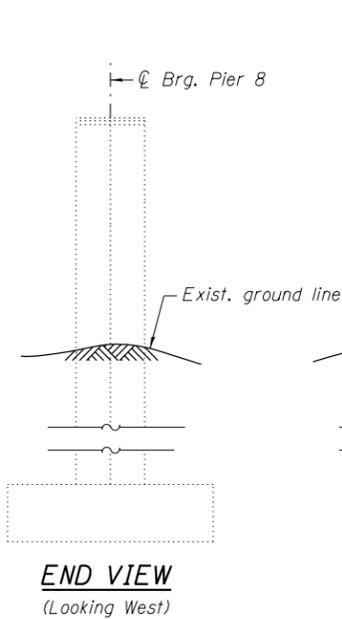
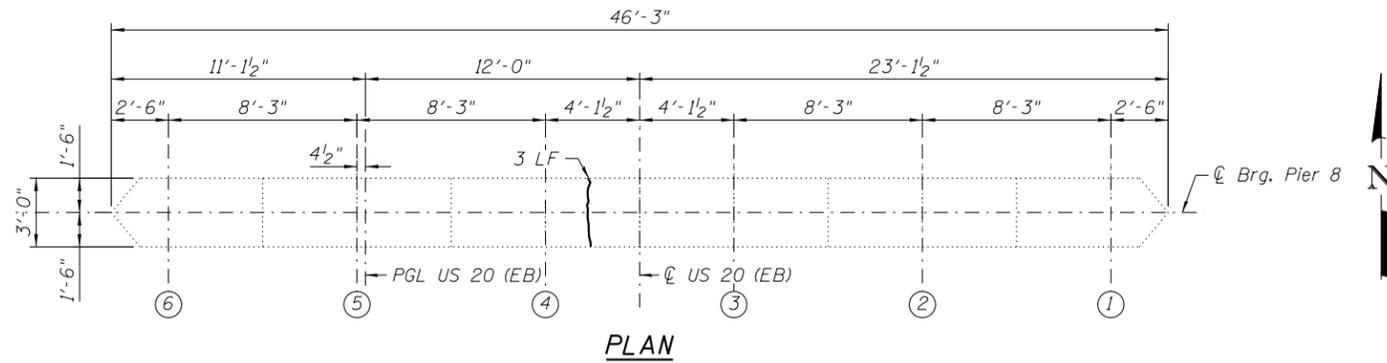
PIER 6 REPAIRS
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042

SHEET NO. S23 OF S26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0301	(177-4B-11M)	STEPHENSON	43	40
CONTRACT NO. 64J24				

ILLINOIS FED. AID PROJECT

DATE - 03/13/2013



BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Epoxy Crack Injection	Foot	17

NOTES:

1. For General Notes and Total Bill of Material, see Sheet S02.
2. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired and the type(s) of repairs to be used will be determined by the Engineer in the field at the time of construction.
3. The Contractor is responsible to remove, support and reinstall all existing utilities interfering with the work. Cost shall be included with Structural Repair of Concrete (Depth Equal to or Less Than 5").

LEGEND

- Low Pressure Epoxy Injection (Width > 0.06")
- Linear Foot

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REVISED -
REVISED -
REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PIER 8 REPAIRS
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0301	(177-4B-1)M	STEPHENSON	43	41
CONTRACT NO. 64J24				

DATE - 03/13/2013

CHECKED - MAI, MI
REVISED -

SHEET NO. S24 OF S26 SHEETS

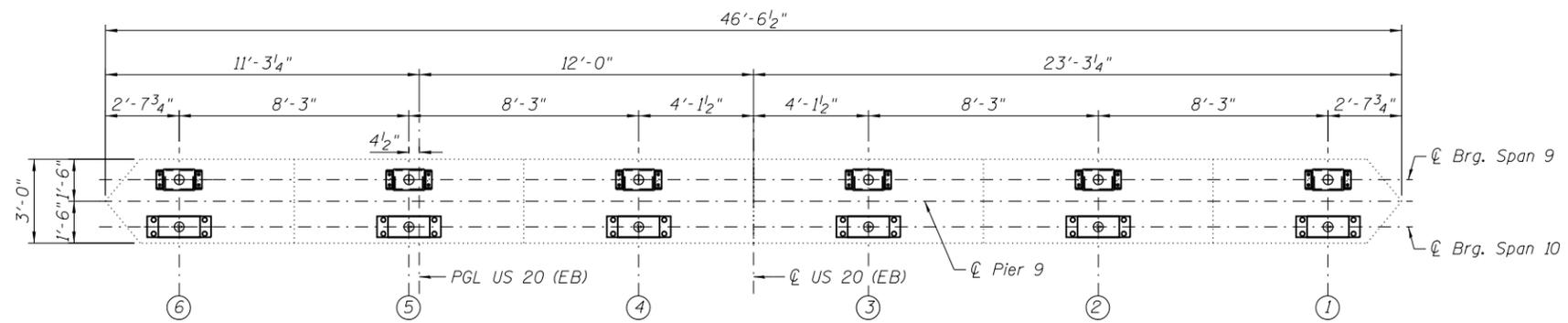
ILLINOIS FED. AID PROJECT

BILL OF MATERIAL

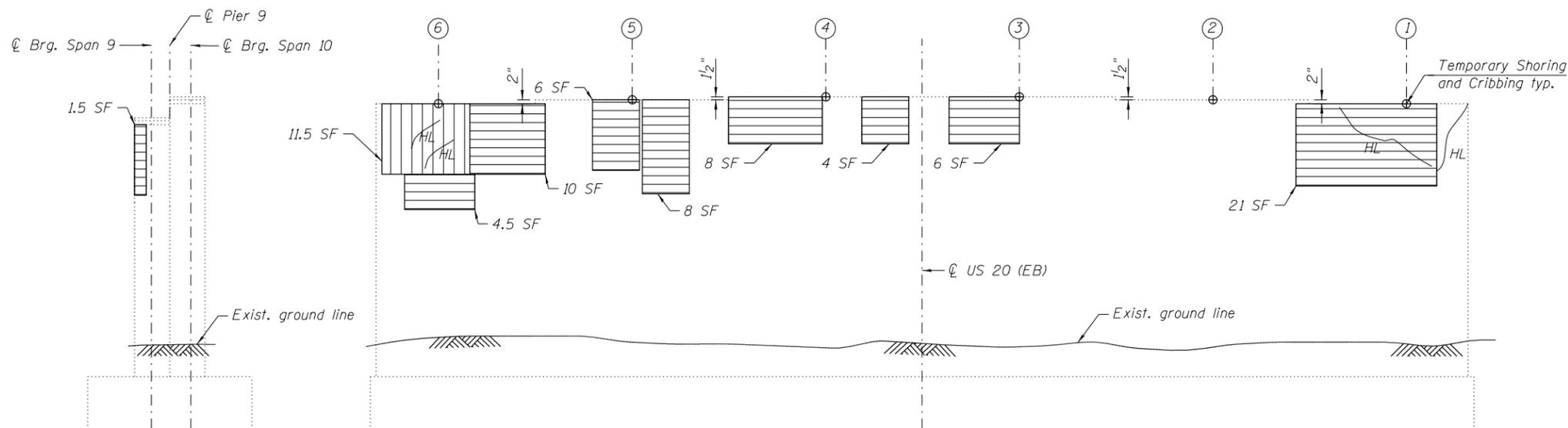
ITEM	UNIT	QUANTITY
Concrete Sealer	Sq. Ft.	1194
Cleaning Bridge Seats	Sq. Ft.	136
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	128
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq. Ft.	19
Temporary Shoring and Cribbing	Each	12

NOTES:

- For General Notes and Total Bill of Material, see Sheet S02.
- Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired and the type(s) of repairs to be used will be determined by the Engineer in the field at the time of construction.
- The Contractor is responsible to remove, support and reinstall all existing utilities interfering with the work. Cost shall be included with Structural Repair of Concrete (depth equal to or less than 5").
- For bearing replacement type and details, see Sheets S18 and S19.
- Temporary Shoring and Cribbing shall be installed prior to the start of the structural repair of concrete and shall be removed after the removal and replacement of the bearings.
- Concrete Sealer shall be applied to the top bearing area and all exposed faces of pier.



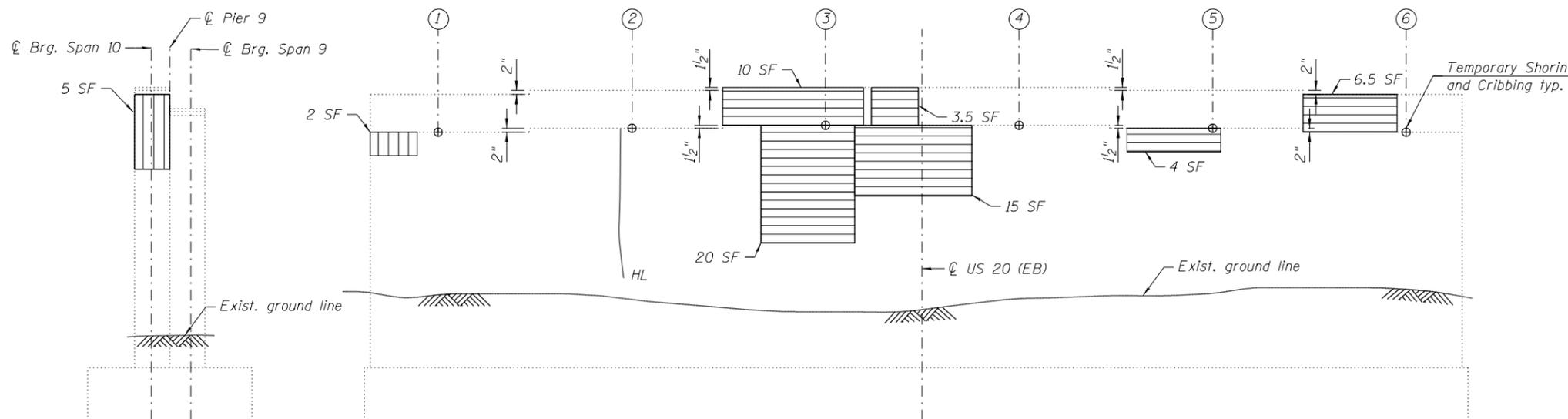
PLAN



WEST END ELEVATION
(Looking East)



ELEVATION
(Looking North)



EAST END ELEVATION
(Looking West)



ELEVATION
(Looking South)

LEGEND

- Structural Repair of Concrete (Depth Equal to or Less Than 5")
- Structural Repair of Concrete (Depth Greater Than 5")
- Temporary Shoring and Cribbing, existing bearing removal and replacement with fixed bearing
- Temporary Shoring and Cribbing, existing bearing removal and replacement with elastomeric bearing Type II
- Hairline Cracks (HL) (Width <0.06")
- SF - Square Foot
- HL - Hair Line
- ⊕ - Temporary Shoring and Cribbing

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CHECKED - MAI, MI	REVISED -

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DEPARTMENT OF TRANSPORTATION

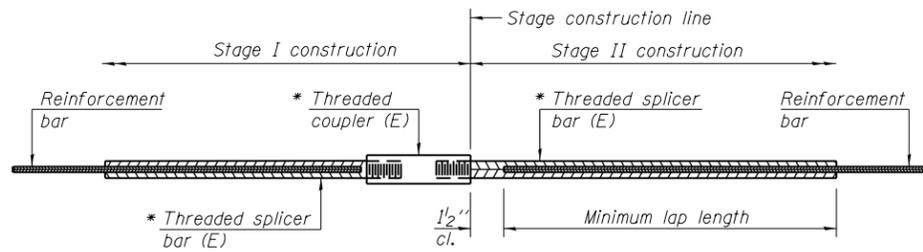
PIER 9 REPAIRS
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0301	(177-4B-11M)	STEPHENSON	43	42
			CONTRACT NO. 64J24	

SHEET NO. S25 OF S26 SHEETS

ILLINOIS FED. AID PROJECT

DATE - 03/13/2013



STANDARD BAR SPLICER ASSEMBLY

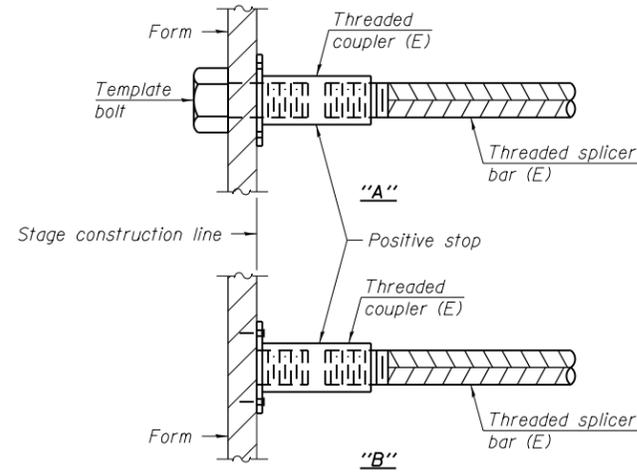
Minimum Lap Lengths					
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-3"
5	1'-9"	2'-5"	2'-7"	2'-11"	2'-10"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-4"
7	2'-9"	3'-10"	4'-2"	4'-8"	4'-6"
8	3'-8"	5'-1"	5'-5"	6'-2"	5'-10"
9	4'-7"	6'-5"	6'-10"	7'-9"	7'-5"

- Table 1: Black bar, 0.8 Class C
- Table 2: Black bar, Top bar lap, 0.8 Class C
- Table 3: Epoxy bar, 0.8 Class C
- Table 4: Epoxy bar, Top bar lap, 0.8 Class C
- Table 5: Epoxy bar, Top bar lap, Class B

Threaded splicer bar length = min. lap length + 1/2" + thread length

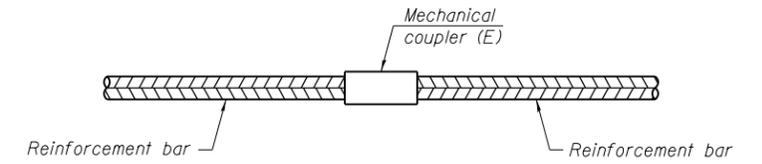
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Exp. Jt. - N. Abut.	#5	14	Table 3
Exp. Jt. - Pier 6	#5	20	Table 3
Exp. Jt. - Pier 9	#5	20	Table 3
Exp. Jt. - S. Abut.	#5	14	Table 3

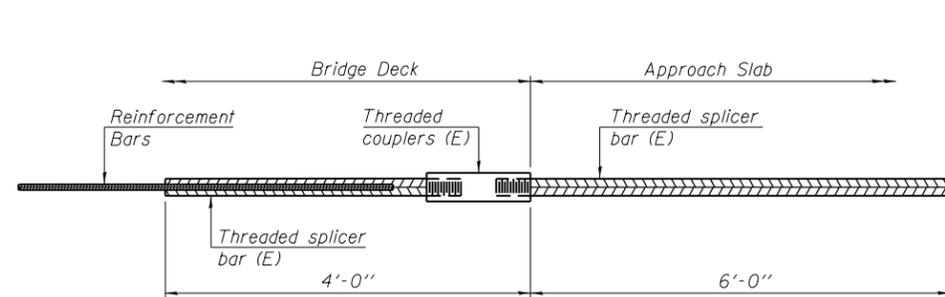


INSTALLATION AND SETTING METHODS

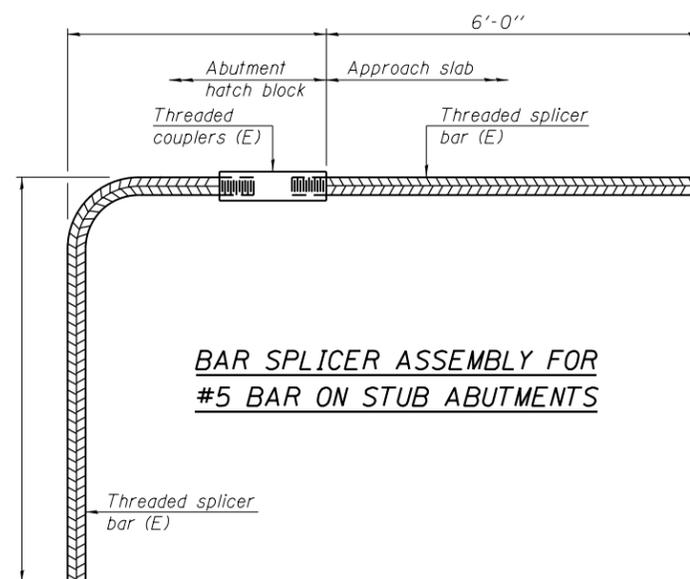
- "A": Set bar splicer assembly by means of a template bolt.
- "B": Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
- (E): Indicates epoxy coating.



STANDARD MECHANICAL SPLICER



BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

NOTES

- Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
- All reinforcement shall be lapped and tied to the splicer bars.
- Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
- See special provision for Mechanical Splicers.
- See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1

7-1-10

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BAR SPLICER ASSEMBLY DETAILS
EB US ROUTE 20 OVER PECATONICA RIVER STRUCTURE NO. 089-0042

SHEET NO. S26 OF S26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0301	(177-4B-1)M	STEPHENSON	43	43
				CONTRACT NO. 64J24

ILLINOIS FED. AID PROJECT