

08-03-2018 LETTING ITEM 037

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1807	D7 BRIDGE REPAIRS 2018-5	LAWRENCE	14	1
ILLINOIS CONTRACT NO. 74834				

FOR INDEX OF SHEETS, SEE SHEET NO. 2

PROPOSED HIGHWAY PLANS

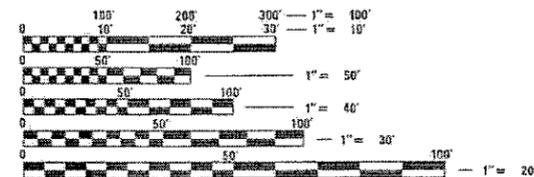
F.A.S. ROUTE 1807 (US BUSINESS 50)
SECTION: D7 BRIDGE REPAIRS 2018-5
PROJECT: STP-BTXZ(561)
BRIDGE REPAIR
LAWRENCE COUNTY

C-97-028-18

ADT = 5950 (2017)

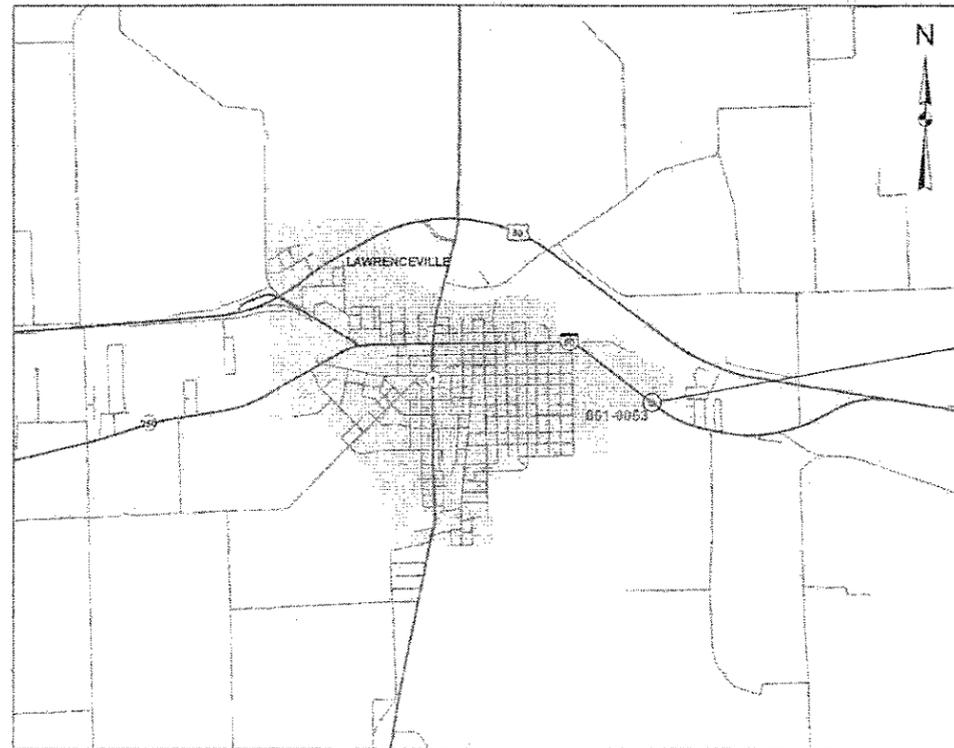


PROJECT LOCATION: S.N. 051-0053
SECTION D7 BRIDGE REPAIRS 2018-5



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
1-800-892-0123
OR 811



GROSS LENGTH = 1236.48 FT. = 0.234 MILES
NET LENGTH = 1236.48 FT. = 0.234 MILES

PROJECT ENGINEER: BRIAN LEWIS
PROJECT MANAGER: ANDREW DETERS

CONTRACT NO. 74834

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED March 23 2018
Jeffrey M South
REGIONAL ENGINEER

May 11 2018
Scott A. Etk
ENGINEER OF DESIGN AND ENVIRONMENT

May 11 2018
Paul P. [Signature]
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

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OF THE STATE OF ILLINOIS

INDEX OF SHEETS

SHEET NO.	ITEM
1	COVER SHEET
2	INDEX OF SHEETS AND GENERAL NOTES
3	SUMMARY OF QUANTITIES
4-5	STAGING PLAN
6-14	STRUCTURE PLANS

THE FOLLOWING STANDARDS ARE A PART OF THESE PLANS AND ARE INCLUDED FOLLOWING THE LAST NUMBERED SHEET OF THE PLANS.

000001-06	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001006	DECIMAL OF AN INCH AND OF A FOOT
701006-05	OFF-ROAD OPERATIONS, 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE
701301-04	LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
701316-12	LANE CLOSURE, 2L, 2W, BRIDGE REPAIR, FOR SPEEDS >= 45 MPH
701901-07	TRAFFIC CONTROL DEVICES

GENERAL NOTES

THE PROPOSED PROJECT IS LOCATED ON US BUSINESS ROUTE 50 IN LAWRENCE COUNTY OVER THE EMBARRAS RIVER, STRUCTURE NUMBER 051-0053.

THE WORK INCLUDED IN SECTION D7 BRIDGE REPAIRS 2018-5 CONSISTS OF DECK SLAB REPAIR, ELIMINATING EXISTING FLOOR DRAINS, INSTALLING NEW FLOOR DRAINS, STRUCTURAL PCC REPAIRS, AND OTHER NECESSARY WORK TO COMPLETE THE SECTION.

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PLOT DATE = 3/23/2018	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

INDEX OF SHEETS, GENERAL NOTES, AND SUMMARY OF QUANTITIES

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1807	D7 BRIDGE REPAIRS 2018-5	LAWRENCE	14	2
CONTRACT NO. 74834			ILLINOIS FED. AID PROJECT	

URBAN
80% FED
20% STATE

SUMMARY OF QUANTITIES

CODE NO	ITEM	UNIT	TOTAL QUANTITIES	CONSTRUCTION TYPE CODE		
				0013		
50300100	FLOOR DRAINS	EACH	151	151		
67100100	MOBILIZATION	LSUM	1	1		
70100100	TRAFFIC CONTROL AND PROTECTION, STANDARD 701316	EACH	1	1		
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	1		
70106700	TEMPORARY RUMBLE STRIPS	EACH	6	6		
70107005	PAVEMENT MARKING BLACKOUT TAPE, 5"	FOOT	308	308		
70300150	SHORT TERM PAVEMENT MARKING REMOVAL	SO FT	129	129		
X0325748	ACRYLIC COATING	SQ YD	83	83		
X0325749	FIBER WRAP	SO FT	746	746		
X7015005	CHANGEABLE MESSAGE SIGN	CAL DAY	28	28		
Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SO FT	16	16		
Z0016001	DECK SLAB REPAIR (FULL DEPTH, TYPE I)	SO YD	82.5	82.5		
Z0043800	PRECAST PRESTRESSED CONCRETE I-BEAM REPAIR	SQ FT	245	245		

13

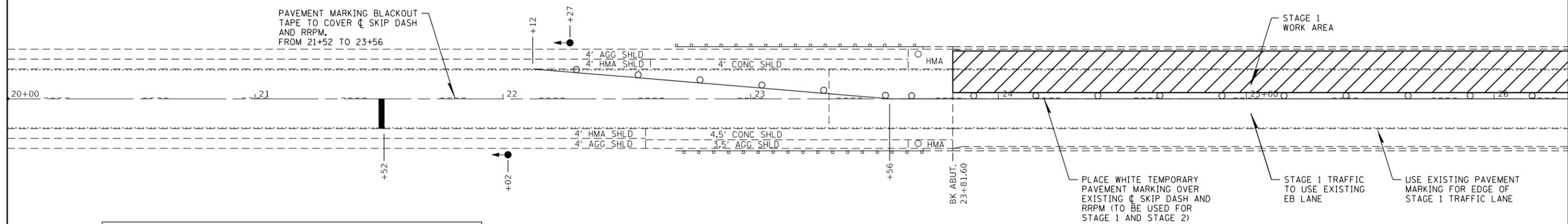
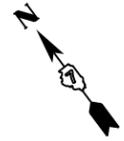
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PLOT DATE = 3/23/2018	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES
SCALE: SHEET OF SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1807	D7 BRIDGE REPAIRS 2018-5	LAWRENCE	14	3
CONTRACT NO. 74834				
ILLINOIS FED. AID PROJECT				



STAGE 1 CONSTRUCTION

1. STAGE 1 CONSTRUCTION SHALL INCLUDE THE DECK SLAB REPAIR, ELIMINATE EXISTING FLOOR DRAINS, INSTALL NEW FLOOR DRAINS, AND STRUCTURAL PCC REPAIRS OF THE NORTH (WB) SIDE OF SN 051-0053.
2. ANY OPEN HOLES, OBSTACLES, OR HAZARDS IN THE STAGE 1 WORK AREA SHALL BE DELINEATED BY TRAFFIC CONTROL DEVICES PER ART. 701.11.

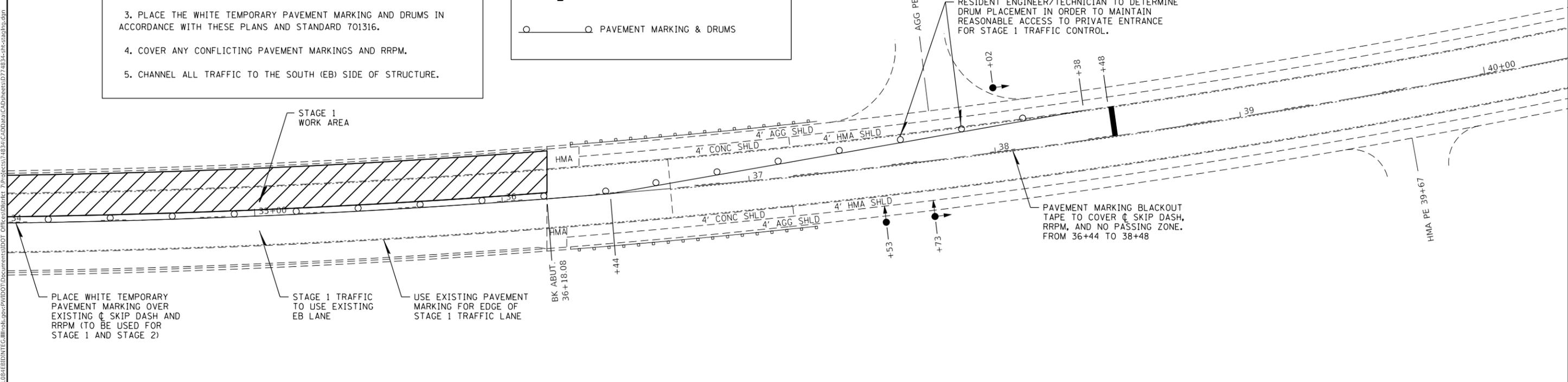
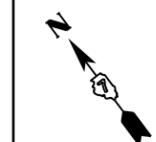
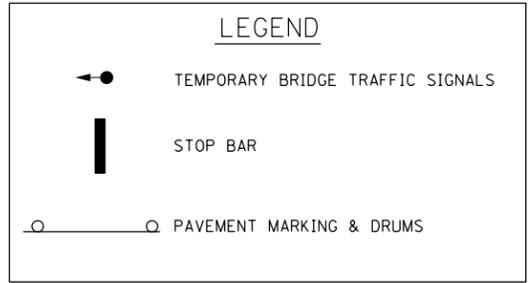
TEMPORARY RUMBLE STRIPS			
STA	TO	STA	EACH
4+27	TO	4+52	1
9+27	TO	9+52	1
14+27	TO	14+52	1
45+48	TO	45+73	1
50+48	TO	50+73	1
55+48	TO	55+73	1
TOTAL			6

PAVEMENT MARKING BLACKOUT TAPE INSTALLATION AND REMOVAL					
STA	TO	STA	LENGTH	PAVEMENT MARKING BLACKOUT TAPE, 5" (FOOT)	SHORT TERM PAVEMENT MARKING REMOVAL (SQ. FT)
21+52	TO	23+56	204	52	22
36+44	TO	38+48	204	52	22
36+44	TO	38+48	204	204	85
TOTAL				308	129

C SKIP DASH AND RRP
 C SKIP DASH AND RRP
 NO PASSING ZONE STRIPE

SUGGESTED STAGE 1 TRAFFIC

1. SET UP TEMPORARY TRAFFIC CONTROL UTILIZING THESE PLANS IN CONJUNCTION WITH TRAFFIC CONTROL AND PROTECTION, STANDARD 701316.
2. INSTALL TEMPORARY TRAFFIC SIGNALS AND LOOP DETECTORS AT LOCATIONS IN ACCORDANCE WITH THESE PLANS AND STANDARD 701316.
3. PLACE THE WHITE TEMPORARY PAVEMENT MARKING AND DRUMS IN ACCORDANCE WITH THESE PLANS AND STANDARD 701316.
4. COVER ANY CONFLICTING PAVEMENT MARKINGS AND RRP.
5. CHANNEL ALL TRAFFIC TO THE SOUTH (EB) SIDE OF STRUCTURE.



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PLOT DATE = 3/23/2018	CHECKED -	REVISED -
	DATE -	REVISED -

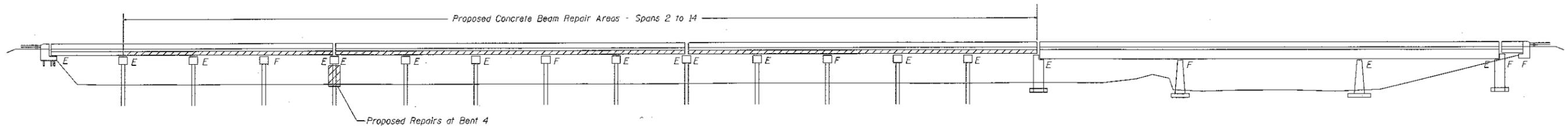
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SN 051-0053
STAGE 1 CONSTRUCTION**

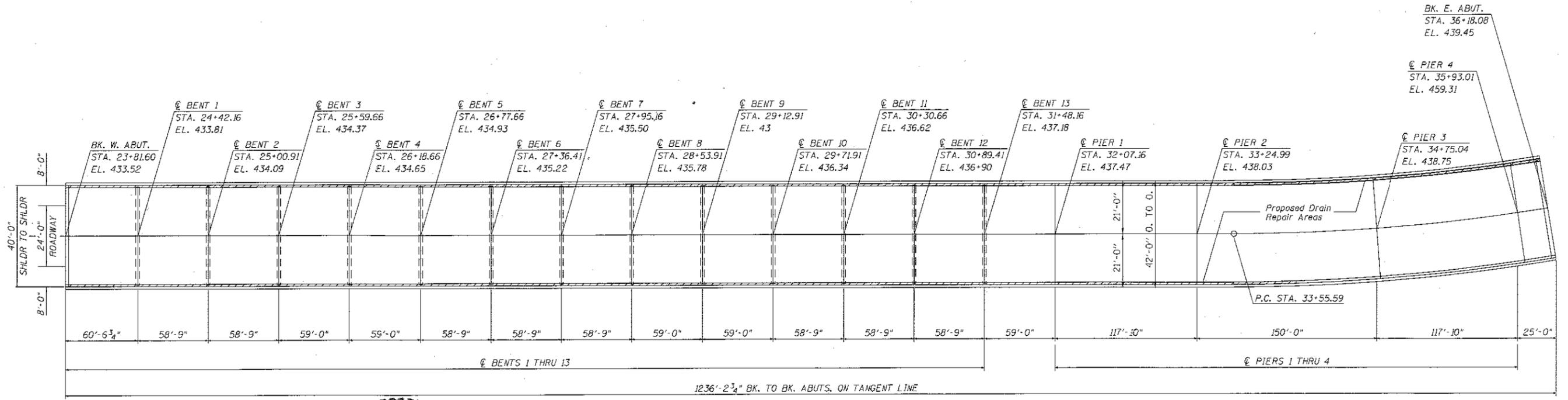
SCALE: SHEET OF SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1807	D7 BRIDGE REPAIRS 2018-5	LAWRENCE	14	4
ILLINOIS FED. AID PROJECT			CONTRACT NO. 74834	

The existing multi-span prestressed concrete beam and steel plate girder structure was constructed in 1975 as F.A. Route 1 Section 1B-1. SN. 051-0053 carries FAS Route 1807 (Business US-50) across the Embarras River. The proposed project consists of concrete and FRP repair on beams, concrete repair on Bent 4, eliminating existing floor drains and installing new floor drains with associated deck slab repairs.



ELEVATION VIEW



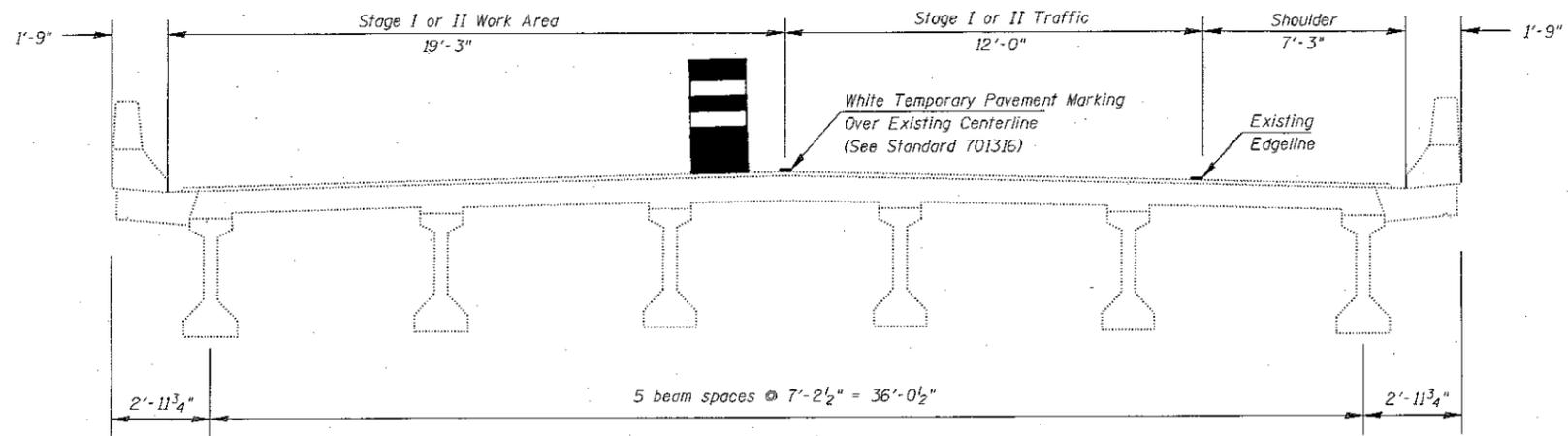
PLAN VIEW

WORK AREAS



David Carl Puzey 5/4/18
Expires 11/30/18

USER NAME = staffennk	DESIGNED - SK	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN & ELEVATION 051-0053			F.A.S. RTE. 1807	SECTION 07 Bridge Repairs 2018-5	COUNTY LAWRENCE	TOTAL SHEETS 14	SHEET NO. 6	
PLOT SCALE = 48,0000 1/4 in.	CHECKED - DPM	REVISED -		SCALE:	SHEET NO. 1 OF 9 SHEETS	STA. 23+81.60 TO STA. 36+18.08	CONTRACT NO. 74834					
PLOT DATE = 3/23/2018	DATE -	REVISED -		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT								



STAGE CONSTRUCTION DETAIL

(Stage I Looking East or Stage II Looking West)

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 work, however, the Contractor will be paid for the quantity actually furnished based upon the unit price bid for the work.

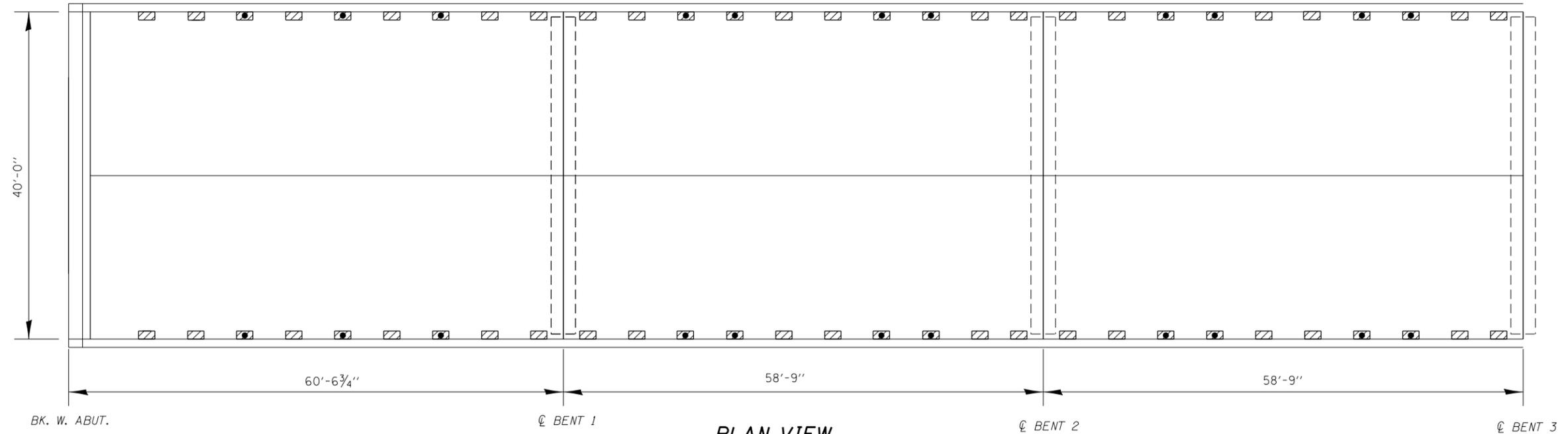
Areas of deck repairs shown are estimated. The Engineer shall show actual locations of deck repairs on as-built plans.

It is anticipated that full depth deck slab repair will be necessary at every location of deck drains to be eliminated. Removal and disposal of the existing deck drains shall be included in the contract unit price for DECK SLAB REPAIR (FULL DEPTH).

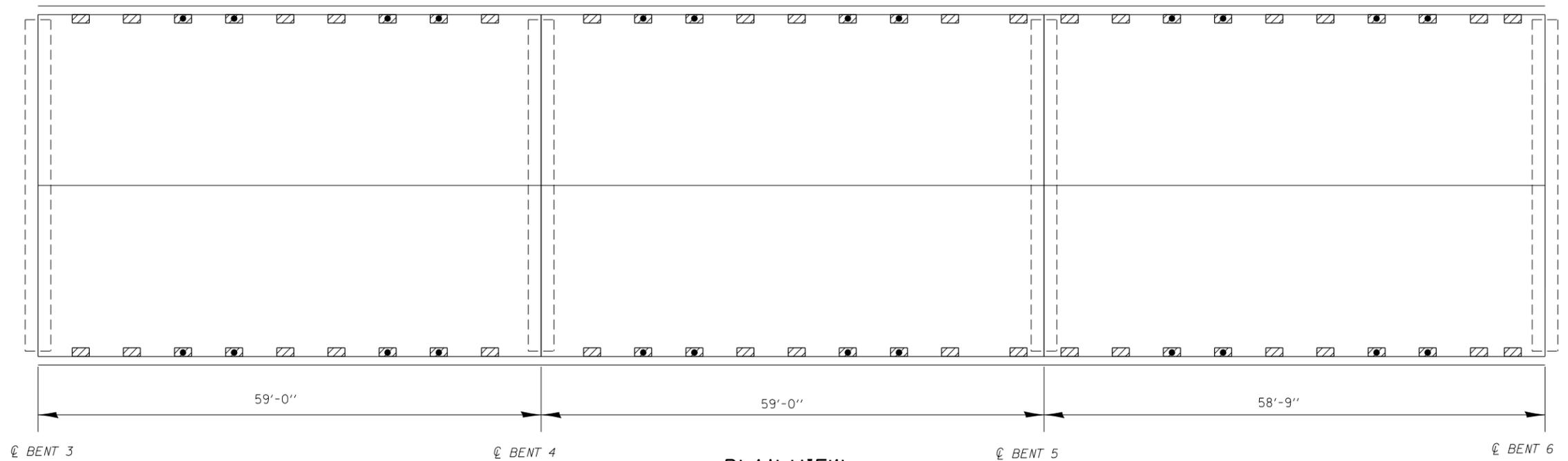
TOTAL BILL OF MATERIALS

ITEM	UNIT	QUANTITY
Deck Slab Repair (Full Depth, Type I)	Sq Yd	82.5
Floor Drains	Each	151
Fiber Wrap	Sq Ft	746
Acrylic Coating	Sq Yd	83
Structural Repair of Concrete, Depth < 5"	Sq Ft	16
Precast Prestressed I-Beam Repair	Sq Ft	245

USER NAME = kasselsa	DESIGNED - S. Kassel	REVISED - 05/03/2018	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL NOTES, STAGE DETAILS & BILL OF MATERIALS SN. 051-0053			F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
PLOT SCALE = 48,0000' / in.	DRAWN - S. Kassel	REVISED -		SCALE:	SHEET NO. 2 OF 9 SHEETS	STA. 23+81.60	TO STA. 36+18.08	1807	07 Bridge Repairs 2018-5	Lawrence	14	7
PLOT DATE = 5/3/2018	CHECKED - D. Mockltn	REVISED -								ILLINOIS FED. AID PROJECT		
	DATE - 07/20/2017	REVISED -								CONTRACT NO. 74834		



PLAN VIEW
(Spans 1-3 From West)



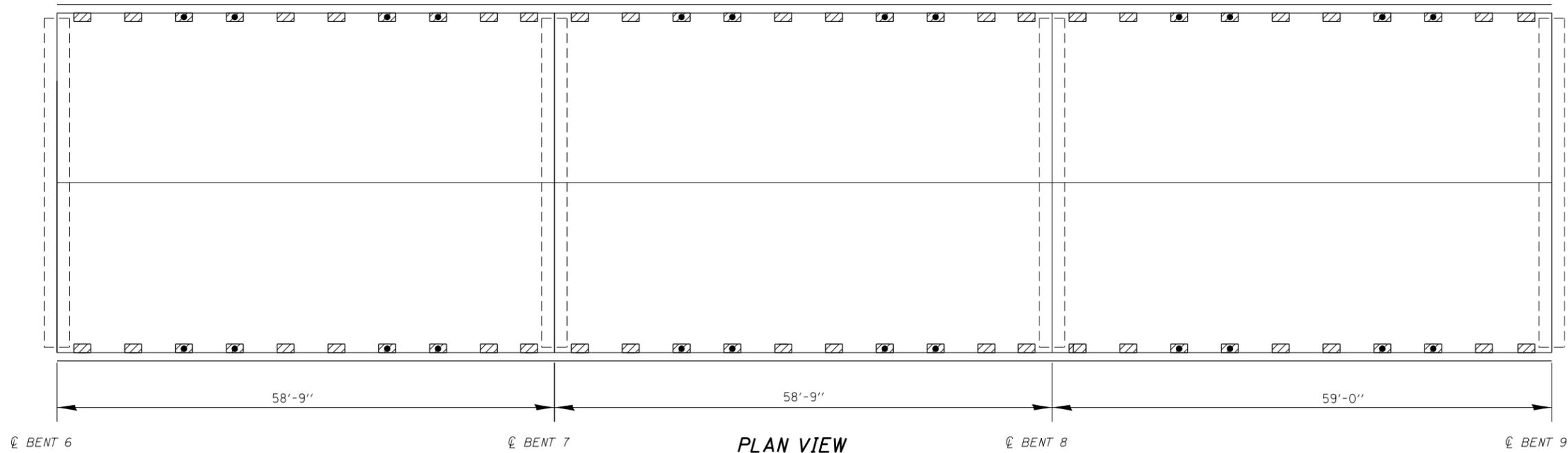
PLAN VIEW
(Spans 4-6 From West)

- DECK SLAB REPAIR - ELIMINATE FLOOR DRAIN
- DECK SLAB REPAIR - PROPOSED FLOOR DRAIN

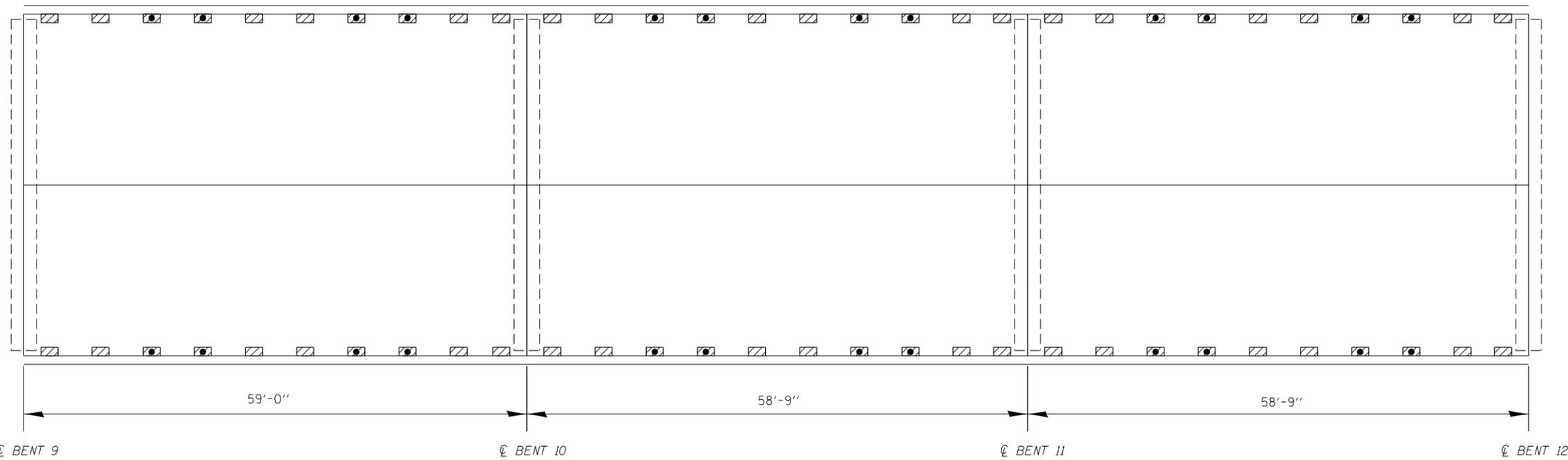
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Deck Slab Repair (Full Depth, Type I)	Sq Yd	25.3
Floor Drains	Each	46

USER NAME = *USER*	DESIGNED <i>S. Kassel</i>	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DRAIN REPAIR PLAN 051-0053	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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PLOT DATE = *DATE*	DATE <i>07/24/2017</i>	REVISED -			SCALE:	SHEET NO. 3 OF 9 SHEETS	STA. 23+81.60 TO STA. 27+36.41	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		



PLAN VIEW
(Spans 7-9 From West)



PLAN VIEW
(Spans 10-12 From West)

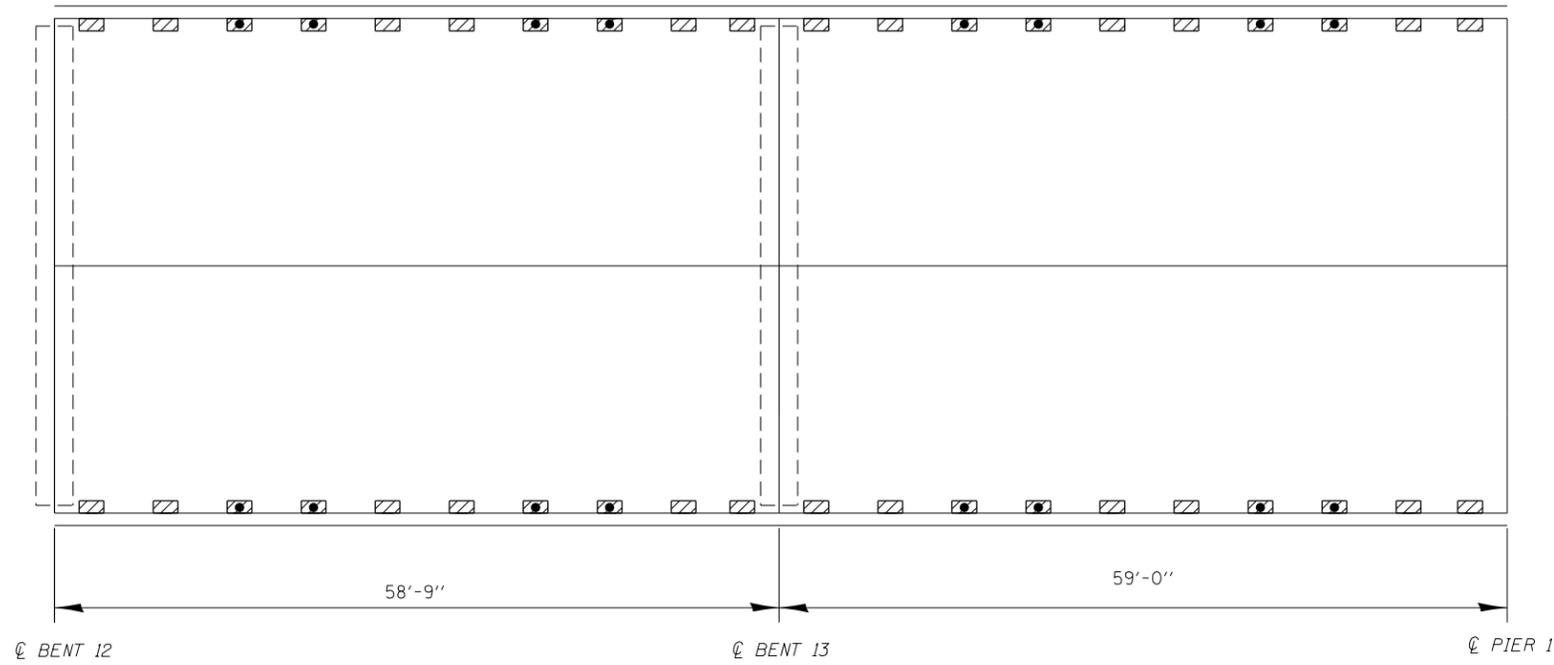


- DECK SLAB REPAIR - ELIMINATE FLOOR DRAIN
- DECK SLAB REPAIR - PROPOSED FLOOR DRAIN

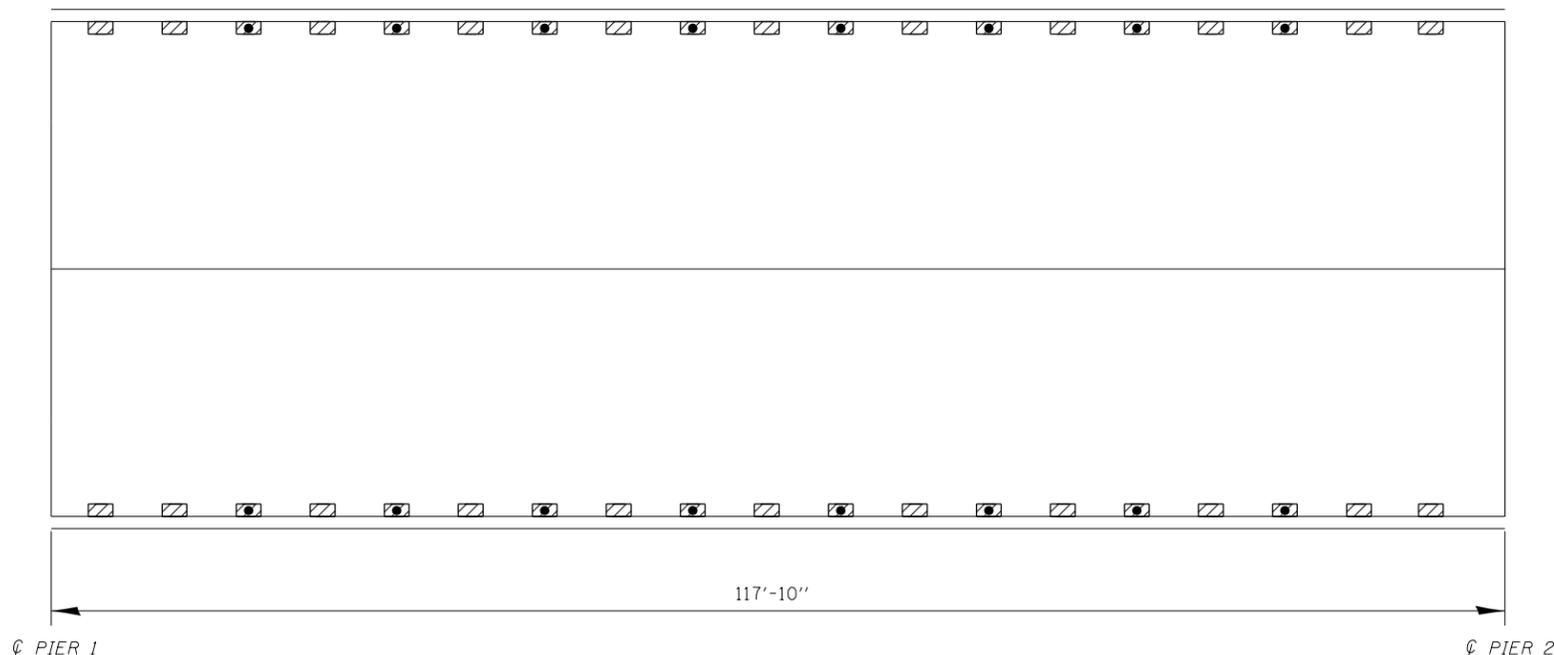
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Deck Slab Repair (Full Depth, Type I)	Sq Yd	26.6
Floor Drains	Each	48

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PLAN VIEW
(Spans 13-14 From West)

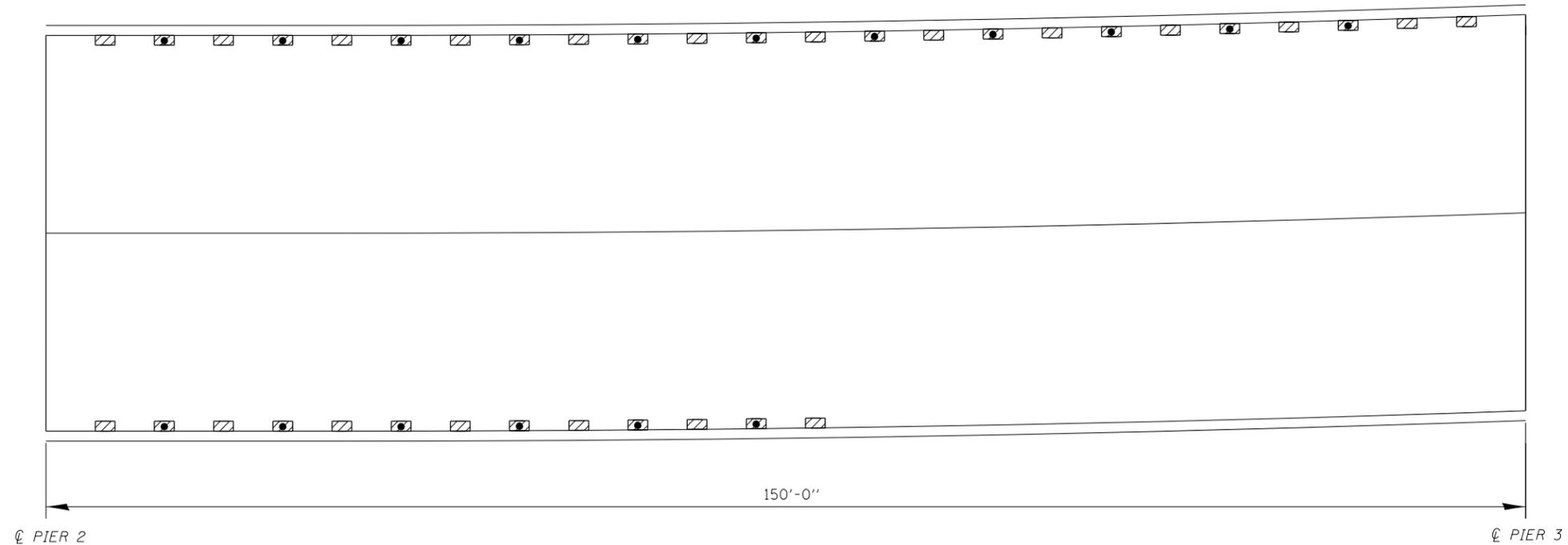


PLAN VIEW
(Span 15 From West)

- DECK SLAB REPAIR - ELIMINATE FLOOR DRAIN
- DECK SLAB REPAIR - PROPOSED FLOOR DRAIN

BILL OF MATERIAL

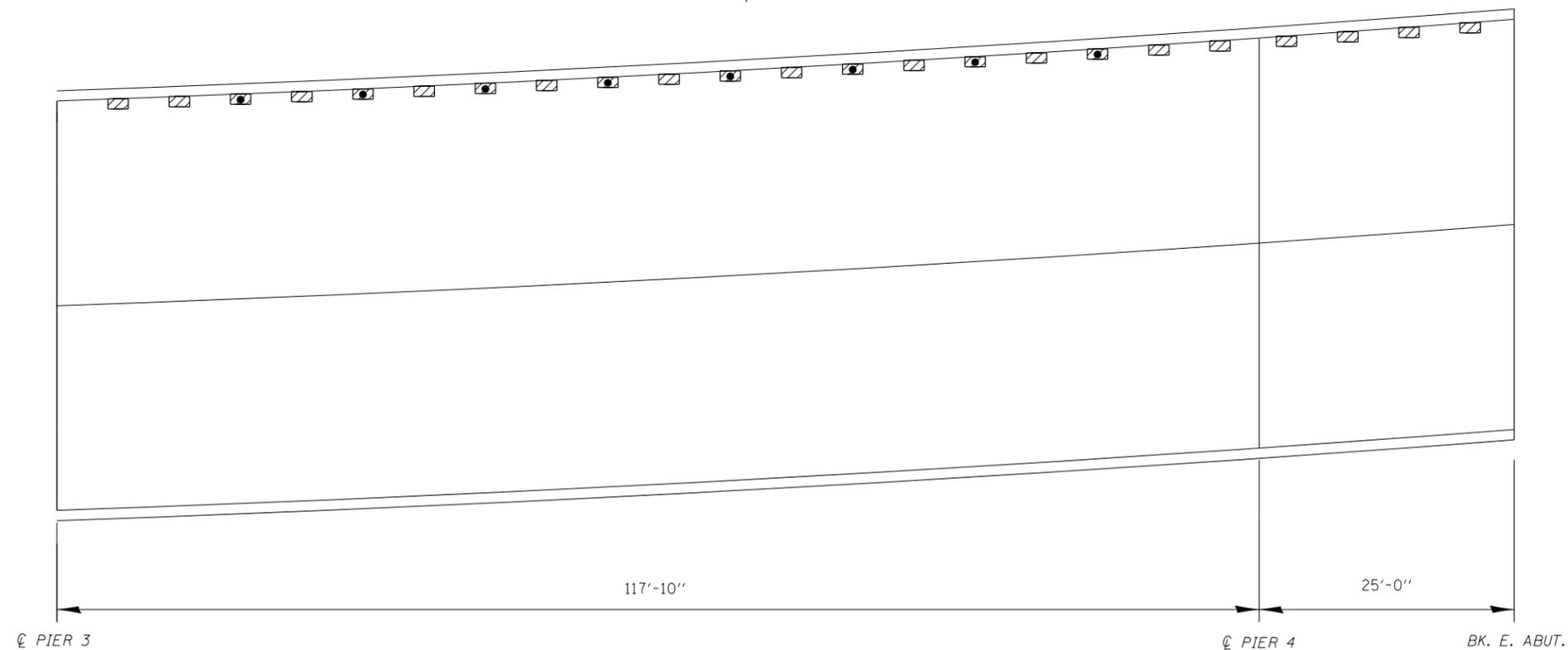
ITEM	UNIT	QUANTITY
Deck Slab Repair (Full Depth, Type I)	Sq Yd	17.3
Floor Drains	Each	32



PLAN VIEW
(Span 16 From West)

☉ PIER 2

☉ PIER 3



PLAN VIEW
(Spans 17-18 From West)

☉ PIER 3

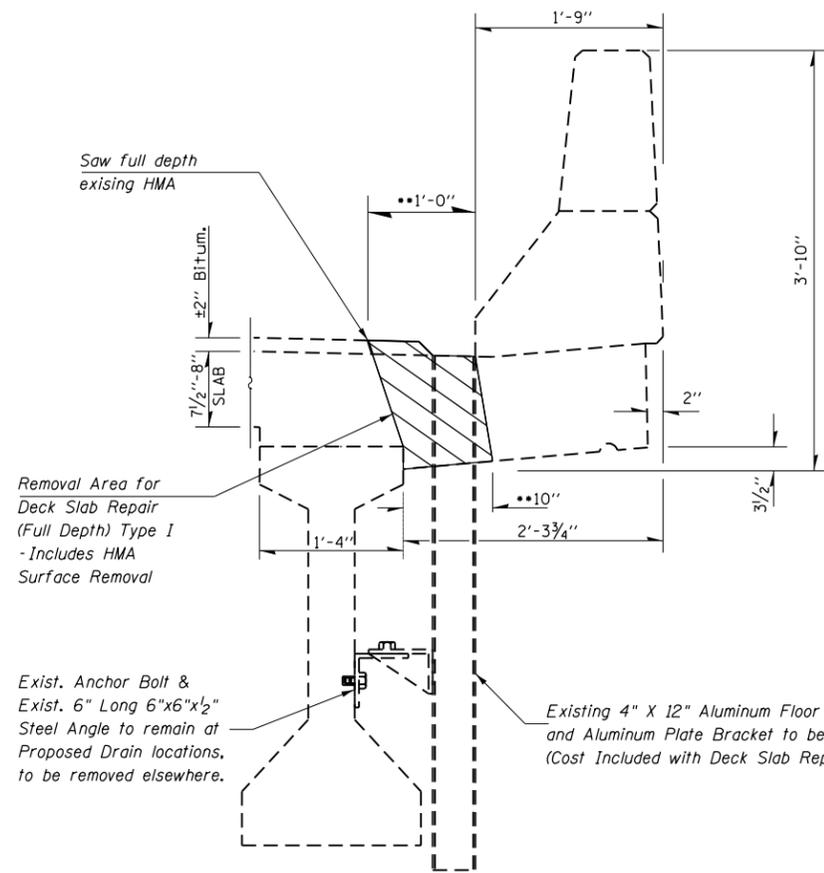
☉ PIER 4

BK. E. ABUT.

- DECK SLAB REPAIR - ELIMINATE FLOOR DRAIN
- DECK SLAB REPAIR - PROPOSED FLOOR DRAIN

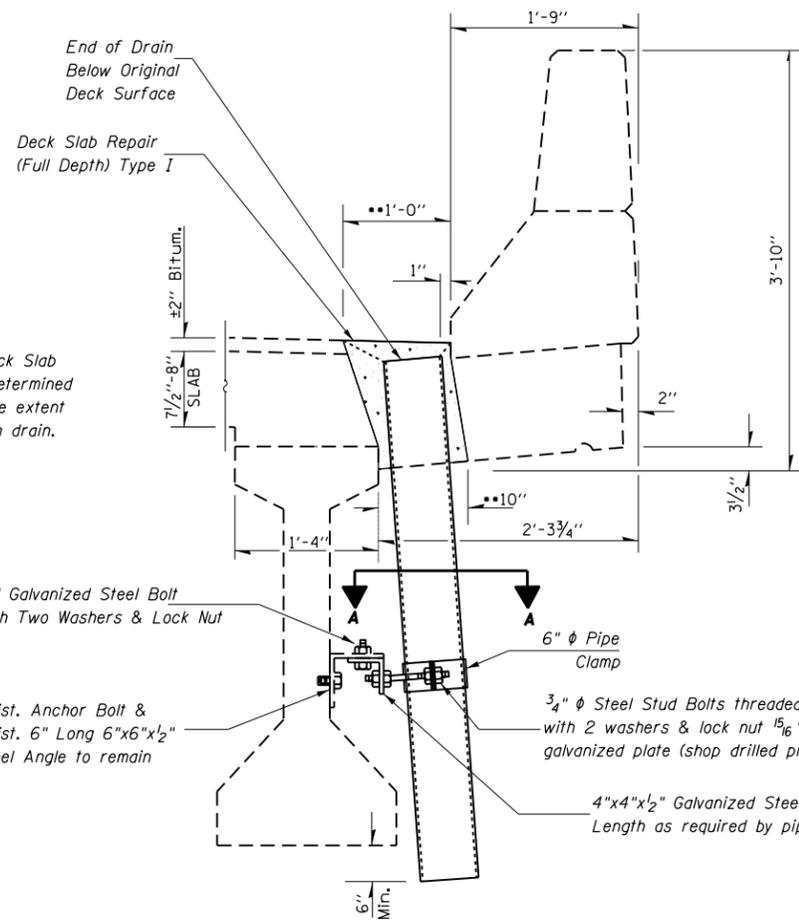
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Deck Slab Repair (Full Depth, Type I)	Sq Yd	13.3
Floor Drains	Each	25



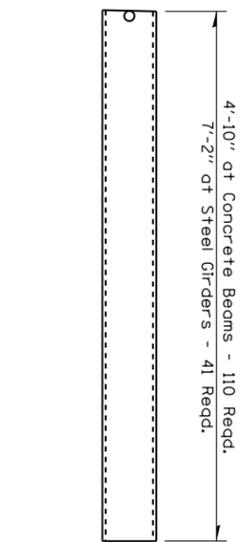
SECTION AT EXISTING FLOOR DRAIN

(Precast Concrete Beam Shown, Steel Plate Girder Similar)

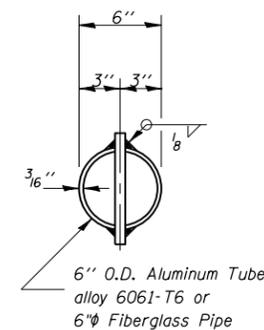


SECTION AT PROPOSED FLOOR DRAIN

(Precast Concrete Beam Shown, Steel Plate Girder Similar)



DRAIN DETAIL



TOP PLAN

(Showing Aluminum Tube)

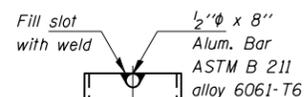
NOTES

Extreme care must be used when removing concrete near the top flange of the Precast Concrete I-Beams. The contractor is responsible for any damage to the beams.

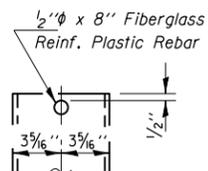
Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.

Galvanize clamping device according to AASHTO M232. Cost of clamping device, bolts and galvanizing is included with Floor Drains.

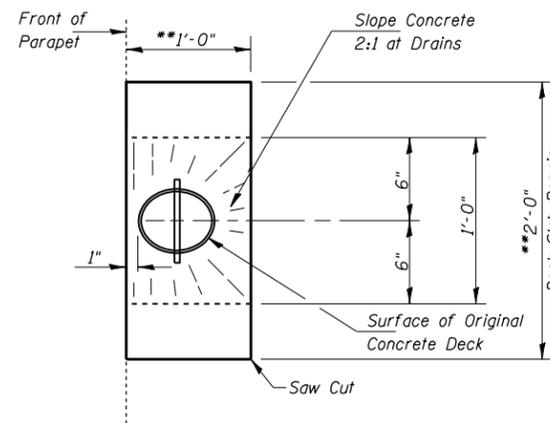
Concrete removal and replacement quantities and locations for drains are included in Deck Slab Repair (Full Depth, Type I) as shown on "Drain Repair Plan" sheets.



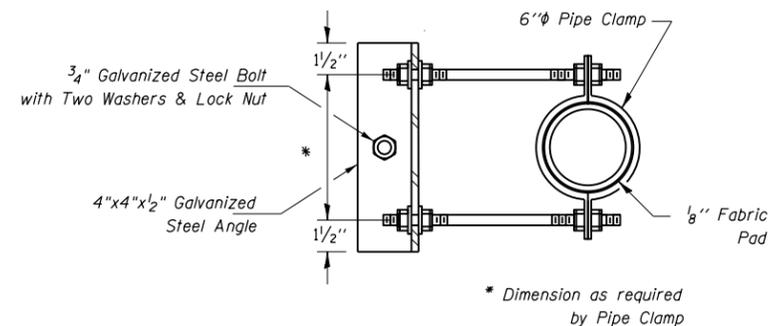
ALUMINUM TUBE



FIBERGLASS PIPE



TOP PLAN DECK REPAIR AT PROPOSED DRAINS



SECTION A-A

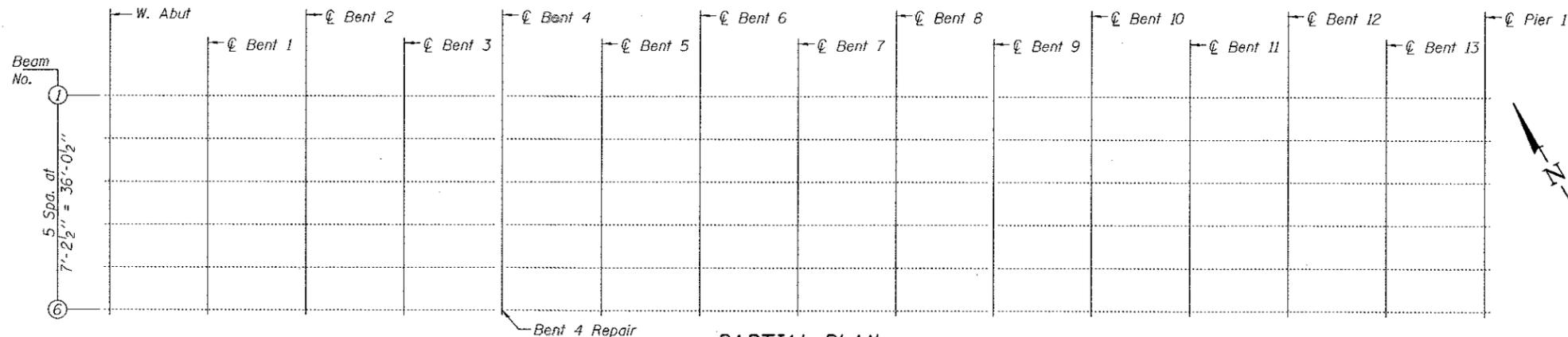
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PLOT SCALE = 48.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 3/23/2018	DATE - 7/11/2017	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**FLOOR DRAIN REPLACEMENT DETAILS
SN. 051-0053**

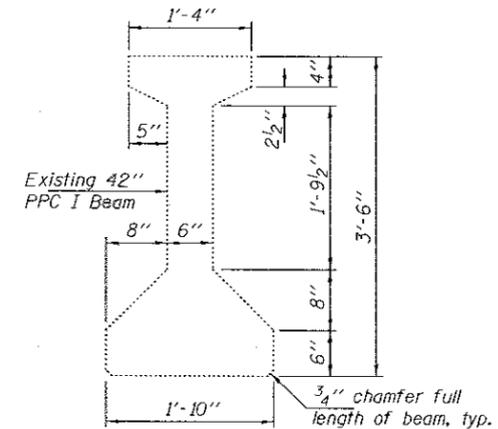
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F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1807	07 Bridge Repairs 2018-5	LAWRENCE	14	12
			CONTRACT NO. 74834	
ILLINOIS FED. AID PROJECT				

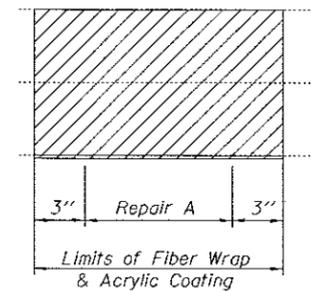


PARTIAL PLAN
See Table A for repair locations
See sheet 9 of 9 for Bent 4 Repair

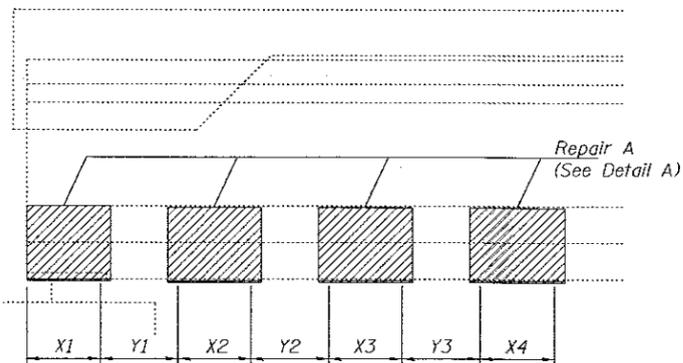
NOTES
Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations 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.
The Contractor shall use extreme care during concrete removal so as not to damage the PPC I-Beam strands. Only hand tools or light-duty scaling tools shall be used near prestressing strands.
The existing concrete surface shall be cleaned and prepared in accordance with the Special Provisions for Precast Prestressed Concrete I-Beam Repair. See Fiber Wrap Special Provisions.



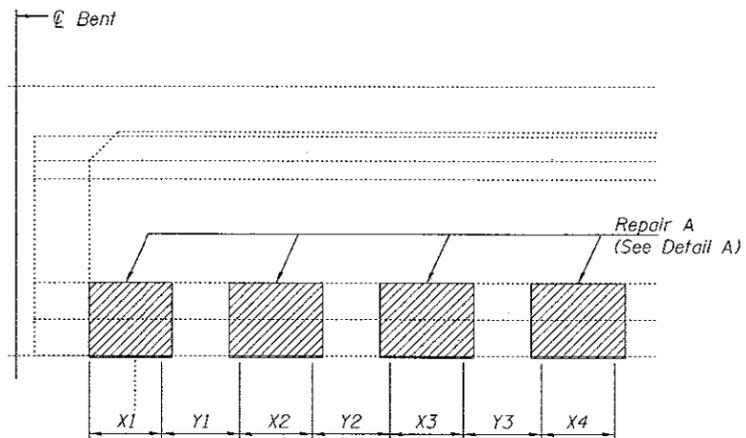
TYPICAL BEAM DIMENSIONS



DETAIL A



**TYPICAL ELEVATION AT
W. ABUT, PIER 1 & BENTS 4 & 9**



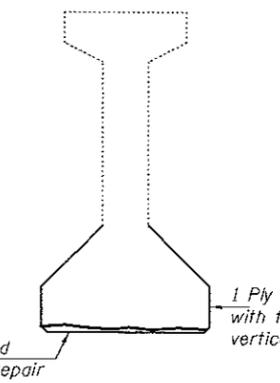
**TYPICAL ELEVATION AT
BENTS 1, 2, 3, 5, 6, 7, 8, 10, 11, 12 & 13**

**REPAIR A TABLE
(BEAM 1)**

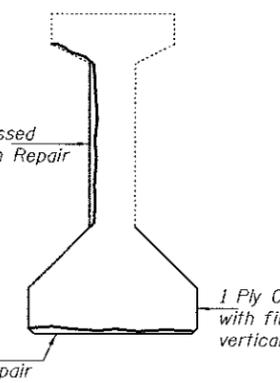
LOCATION	SPAN	X1	Y1	X2	Y2	X3	Y3	X4
Bent 4	4	0'	3'-6"	3'-0"	-	-	-	-
Bent 5	5	0'	2'-6"	1'-6"	-	-	-	-
Bent 7	8	0'	6'-0"	3'-0"	-	-	-	-
Bent 8	8	0'	3'-0"	2'-0"	-	-	-	-
Bent 9	9	0'	5'-0"	2'-0"	-	-	-	-
** Bent 9	10	5'-0"	-	-	-	-	-	-
Bent 10	10	0'	3'-0"	2'-6"	3'-0"	2'-0"	2'-0"	4'-0"
Bent 10	11	0'	2'-6"	1'-0"	-	-	-	-
Bent 11	12	0'	2'-6"	2'-0"	2'-6"	2'-0"	16'-0"	2'-6"
Bent 13	13	0'	2'-6"	2'-6"	3'-0"	2'-0"	-	-
Pier 1	14	0'	4'-0"	3'-0"	9'-0"	2'-0"	-	-

**REPAIR A TABLE
(BEAM 6)**

LOCATION	SPAN	X1	Y1	X2	Y2	X3	Y3	X4
Bent 1	2	8'-0"	6'-0"	2'-0"	-	-	-	-
Bent 2	3	0'	5'-0"	6'-0"	-	-	-	-
Bent 3	3	0'	2'-6"	2'-0"	-	-	-	-
Bent 4	4	0'	4'-0"	3'-0"	-	-	-	-
Bent 6	6	0'	14'-0"	4'-0"	-	-	-	-
Bent 6	7	0'	2'-0"	7'-0"	-	-	-	-
Bent 8	9	0'	1'-0"	6'-0"	2'-0"	1'-6"	3'-0"	6'-0"
Bent 9	9	8'-0"	2'-0"	10'-0"	-	-	-	-
Bent 9	10	0'	3'-0"	4'-0"	-	-	-	-
Bent 10	10	0'	7'-0"	2'-0"	-	-	-	-
Bent 10	11	0'	2'-0"	1'-6"	-	-	-	-
Bent 11	11	0'	2'-0"	3'-6"	2'-6"	1'-0"	-	-
Bent 11	12	0'	3'-0"	1'-6"	-	-	-	-
Bent 13	14	0'	2'-6"	2'-0"	2'-6"	2'-0"	-	-
Pier 1	14	0'	4'-0"	5'-0"	-	-	-	-



**SECTION THRU BEAM
AT REPAIR AREAS**
Typical except as noted



**SECTION THRU BEAM
AT REPAIR AREAS**
** (Beam 1, Bent 9, Span 10)

* Precast Prestressed Concrete I-Beam Repair
1 Ply Carbon Fiber with fibers oriented vertically.
1 Ply Carbon Fiber with fibers oriented vertically.

* Limits of Precast Prestressed Concrete I-Beam Repair shall be determined by the Engineer in the field, based on extents of unsound concrete.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Fiber Wrap	Sq. Ft.	700
Acrylic Coating	Sq. Yd.	78
Precast Prestressed Concrete I-Beam Repair	Sq. Ft.	245

DESIGNED: VAV
CHECKED: JSB
DRAWN: baliva
CHECKED: VAV JSB

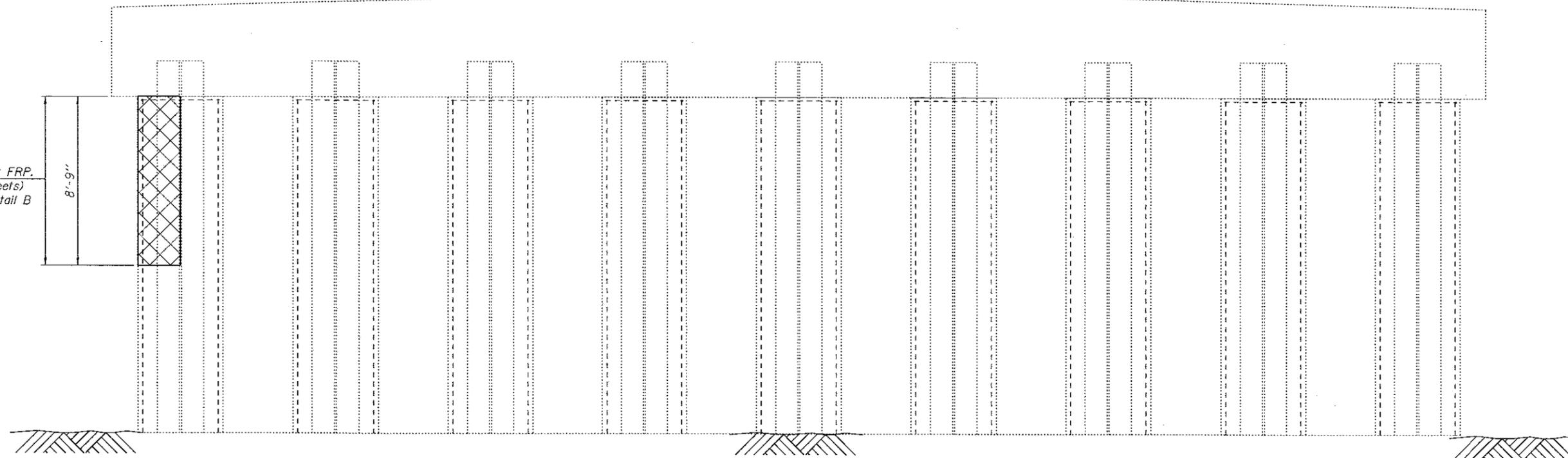
EXAMINED: Timothy A. ...
PASSED: ...
DATE: MAY 2, 2018
REVISOR: ...
REVISOR: ...

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEAM REPAIR DETAILS
SN 051-0053
SHEET NO. 8 OF 9 SHEETS

F.A.S. RTE. 1807
SECTION: D7 Bridge Repairs 2018-5
COUNTY: LAWRENCE
TOTAL SHEETS: 14
SHEET NO.: 13
CONTRACT NO. 74834
[ILLINOIS] FED. AID PROJECT

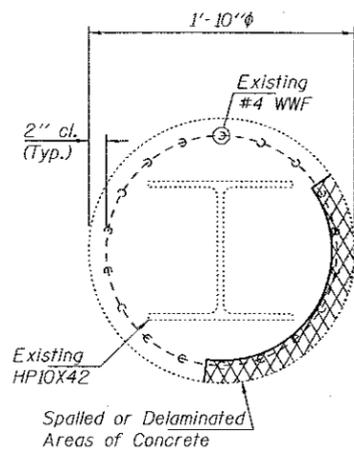
1 Layer FRP.
(4 Sheets)
See Detail B



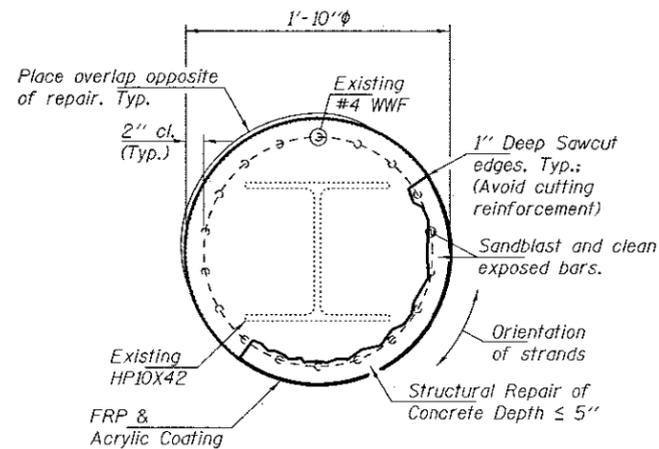
ELEVATION BENT 4

(Looking West)

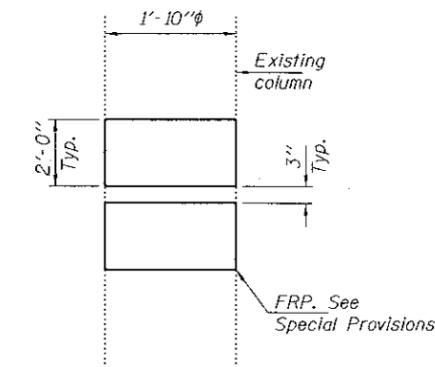
- Delaminated Concrete



**TYPICAL SECTION THRU
EXISTING PIER COLUMN**



**TYPICAL SECTION THRU
PIER COLUMN REPAIR**



DETAIL B

Note:
Minimum FRP overlap shall be 3'.
Subsequent layers may not lap at
the same location.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Fiber Wrap	Sq. Ft.	46
Structural Repair of Concrete Depth ≤ 5"	Sq. Ft.	16
Acrylic Coating	Sq. Yd.	5

DESIGNED *VHV*
CHECKED *JSB*
DRAWN *baliva*
CHECKED *VHV JSB*

EXAMINED *Timothy A. ...*
PASSED *Carl ...*
ENGINEER OF STRUCTURAL SERVICES
ENGINEER OF BRIDGES AND STRUCTURES

DATE MAY 2, 2018
REVISED
REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**BENT 4 REPAIR DETAILS
SN 051-0053**

SHEET NO. 9 OF 9 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1807	D7 Bridge Repairs 2018-5	LAWRENCE	14	14
CONTRACT NO. 74834			ILLINOIS FED. AID PROJECT	