F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	D3 PIER CAP REPAIR 2014-1	LASALLE	25	1
	ILLINOIS	CONTRACT NO. 66C71		

INDEX OF SHEETS

06-14-13 LETTING ITEM 152

STANDARDS

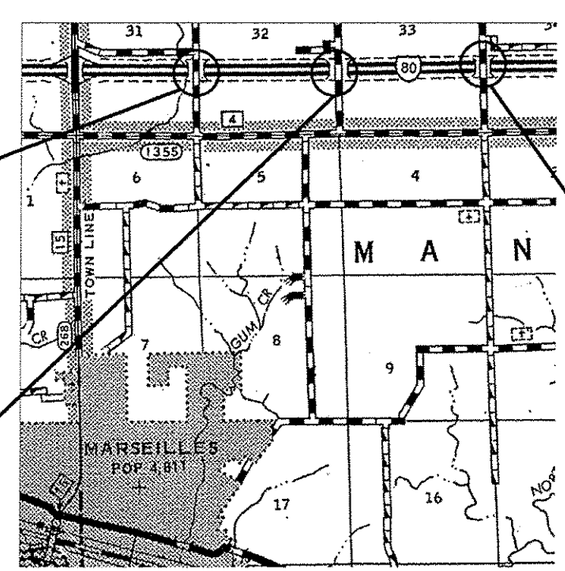
000001-06	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
701101-03	OFF-ROAD OPERATIONS MULTILANE, 15' (4.5 m) TO 24" (600 mm) FROM PAVEMENT EDGE
701106-02	OFF-ROAD OPERATIONS, MULTILANE, MORE THAN 15' (4.5 m) AWAY
701201-04	LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS >=45 MPH
701400-06	APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY
701406-07	LANE CLOSURE, FREEWAY/EXPRESSWAY, DAY OPERATIONS ONLY
701901-02	TRAFFIC CONTROL DEVICES
704001-07	TEMPORARY CONCRETE BARRIER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROPOSED
HIGHWAY PLANS

FAI ROUTE 80 (I-80)
SECTION D3 PIER CAP REPAIR 2014-1

PIER CAP REPAIRS
LASALLE COUNTY

C-93-034-13



PROJECT LOCATION
S.N. 050-0132
TOWNSHIP ROAD OVER I-80
0.8 MI. EAST OF
THE MARSEILLES INTERCHANGE

PROJECT LOCATION
S.N. 050-0133
TOWNSHIP ROAD OVER I-80
1.8 MI. EAST OF
THE MARSEILLES INTERCHANGE

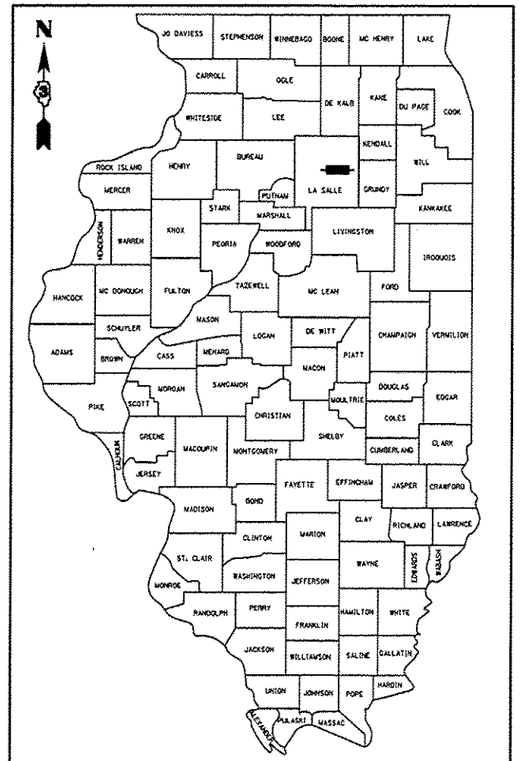
PROJECT LOCATION
S.N. 050-0134
TOWNSHIP ROAD OVER I-80
2.8 MI. EAST OF
THE MARSEILLES INTERCHANGE

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

DISTRICT 3 NO. (815) 434-6131
PROJECT ENGINEER: JOE KANNEL, P.E.
UNIT CHIEF: RON WOODSHANK
TOWNSHIP: MILLER

CONTRACT NO. 66C71

D-93-002-13



LOCATION OF SECTION INDICATED THUS:- ■

FUNCTIONAL CLASSIFICATION
RURAL - INTERSTATE
FAI ROUTE 80
2011 ADT = 38500
P.V. = 75.71%
M.U. = 18.18%
S.U. = 6.10%

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED 4-3 20 13
Paul A. Wallace
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
May 10 20 13
John D. Baranzelli, P.E. for
ENGINEER OF DESIGN AND ENVIRONMENT
May 10 20 13
Omer Osman, P.E. for
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

GENERAL NOTES

ANY REFERENCE TO A STANDARD IN THESE PLANS SHALL BE INTERPRETED TO MEAN THE EDITION AS INDICATED BY THE SUBNUMBER SHOWN IN THE LIST OF STANDARDS OR THE COPY INCLUDED IN THESE PLANS.

COMMITMENTS

DISPOSAL OF EXCAVATED MATERIALS. ALL UNSUITABLE OR UNSTABLE MATERIALS, DEFINED AS SOILS, EMBANKMENTS, SUB-BASE GRANULAR MATERIALS, AND/OR AGGREGATE MATERIALS MATERIALS THAT ARE EXCAVATED DUE TO CONSTRUCTION OPERATIONS SHALL BE DISPOSED OF WITHIN THE LIMITS OF THE EXISTING RIGHT OF WAY. DISPOSAL OF EXCAVATED MATERIALS, AS DEFINED ABOVE, OFF THE EXISTING RIGHT OS WAY SHALL NOT BE PERMITTED.

EXCAVATED MATERIALS SHALL BE DISPOSED OF AT LOCATIONS DIRECTED BY THE ENGINEER. ANY SUCH DISPOSAL SHALL NOT CREATE AND UNSIGHTLY OR OBJECTIONABLE APPEARANCE OR DETRACT FROM THE NATURAL TOPOGRAPHIC FEATURES WITHOUT WRITTEN PERMISSION FROM THE ENGINEER.

DATE: 4-3-2013

PREPARED BY: Dan Brainard
DISTRICT STUDIES & PLANS ENGINEER

EXAMINED BY: Herbert
DISTRICT CONSTRUCTION ENGINEER

Wayne L. Phillips
DISTRICT MATERIALS ENGINEER

Bruce A. Huckstadt
DISTRICT OPERATIONS ENGINEER

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	PLOT DATE = 4/2/2013	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

SCALE: | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	D3 PIER CAP REPAIR 2014-1	LASALLE	25	2
		CONTRACT NO. 66C71		
	ILLINOIS			

CODE NO.	ITEM	UNIT	CONSTR. CODE STATE FUNDS 100% STATE STRUCTURE 0014 RURAL
50102400	CONCRETE REMOVAL	CU YD	7.6
50300225	CONCRETE STRUCTURES	CU YD	7.6
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	266
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	1516
50800530	MECHANICAL SPLICERS	EACH	40
52100520	ANCHOR BOLTS, 1"	EACH	16
67100100	MOBILIZATION	L SUM	1
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1
70400100	TEMPORARY CONCRETE BARRIER	FOOT	1070
70600280	IMPACT ATTENUATORS, TEMPORARY (SEVERE USE,NARROW), TEST LEVEL 3	EACH	6
X5210025	ELASTOMERIC BEARING ASSEMBLY, TYPE II (SPECIAL)	EACH	4
X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1
X7010600	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406, SPECIAL	L SUM	1
Z0001899	JACK AND REMOVE EXISTING BEARINGS	EACH	4
Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	17
Z0073200	TEMPORARY SHORING AND CRIBBING	EACH	8

No

Rev.

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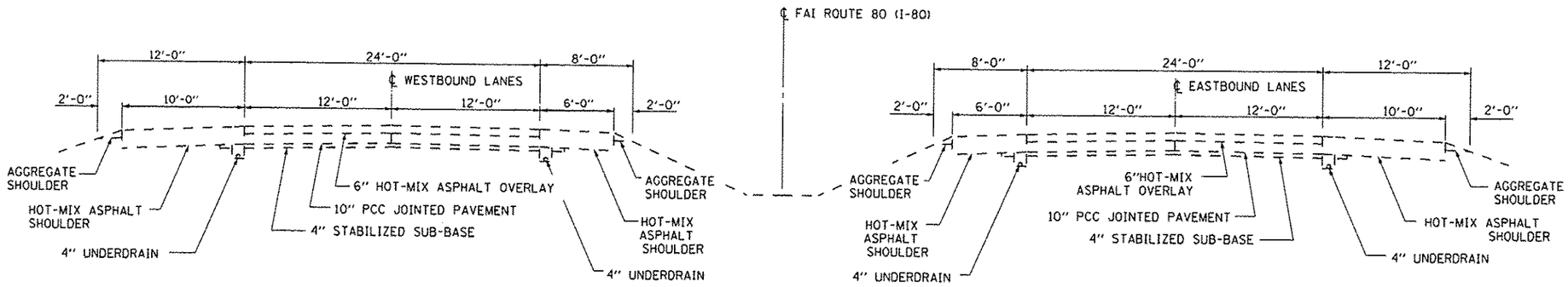
	PLOT DATE = 4/3/2013	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	03 PIER CAP REPAIR 2014-1	LASALLE	25	3
		CONTRACT NO. 66C71		
	ILLINOIS			



TYPICAL SECTION

FAI ROUTE 80 (I-80)

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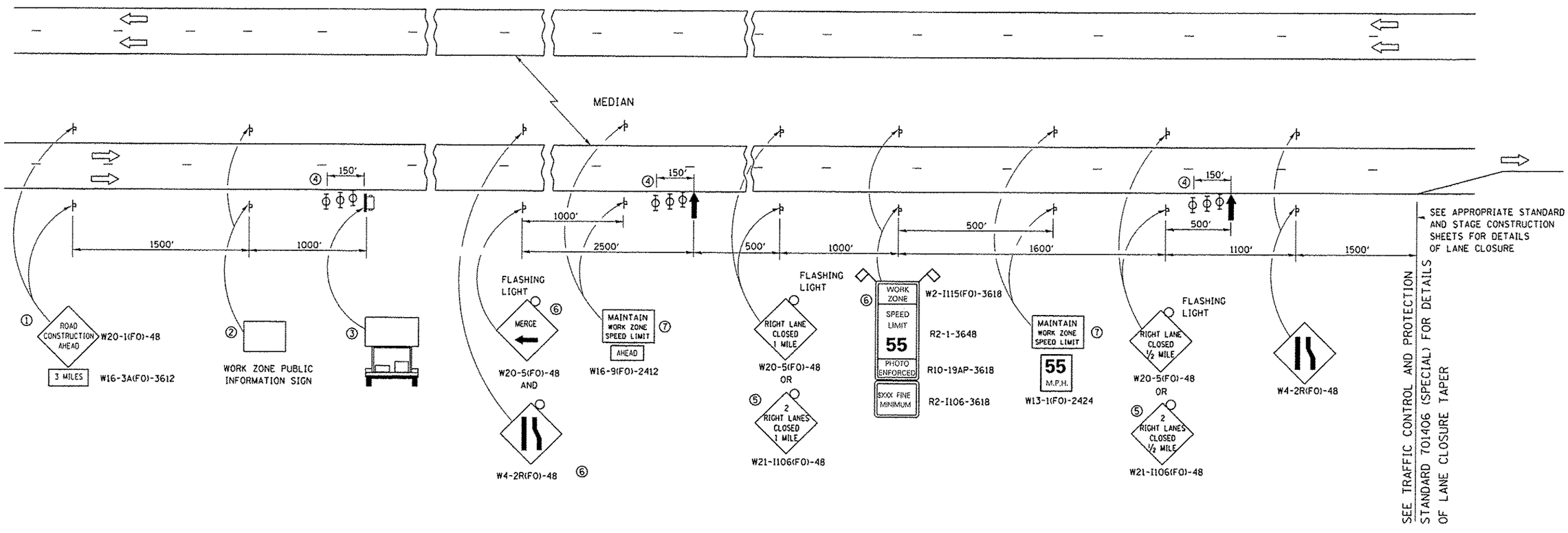
PLOT DATE = 4/3/2013	DATE -	REVISED -	

TYPICAL SECTIONS

SCALE: | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	03 PIER CAP REPAIR 2014-1	LASALLE	25	4
		CONTRACT NO. 66C71		
	ILLINOIS			



① THE ROAD CONSTRUCTION AHEAD SIGN SHALL BE LOCATED 3 MILES IN ADVANCE OF THE PROJECT LIMITS.

② THE MESSAGE AND SIZE OF THE WORK ZONE PUBLIC INFORMATION SIGN SHALL BE AS SPECIFIED BY THE DEPARTMENT.

③ TO BE PLACED IN THE MEDIAN WHEN FEASABLE. THE MESSAGE BOARD SHALL BE USED TO DISPLAY STATUS OF LANES WITHIN THE PROJECT. THE PRIMARY MESSAGES SHALL BE:
"RIGHT LANE CLOSED" / " x MILES AHEAD"
"LEFT LANE CLOSED" / " x MILES AHEAD"
"ALL LANES OPEN"

④ THREE, TYPE II BARRICADES, DRUMS, OR VERTICAL BARRICADES AT 50' CENTERS.

⑤ THIS SIGN SHALL BE USED WHEN 2 LANES ARE CLOSED.

⑥ WHEN THE LEFT LANE IS CLOSED, SWITCH THESE TWO SIGNS AND THE DIRECTION OF THE MERGE ARROW.

⑦ 48"x36" FLUORESCENT ORANGE SIGN WITH BLACK LETTERS.

48"

36"	MAINTAIN	8"
	WORK ZONE	6"
	SPEED LIMIT	6"

ARROW BOARD

PORTABLE CHANGEABLE MESSAGE SIGN

SIGN

TYPE II BARRICADE, DRUM, OR VERTICAL BARRICADE WITH MONODIRECTIONAL FLASHING LIGHT

GENERAL NOTE:

THIS STANDARD IS USED WHERE AT ANY TIME A LANE IS CLOSED ON A FREEWAY/EXPRESSWAY.

WHEN THE LEFT LANE IS CLOSED, LEFT LANE CLOSED SIGNS SHALL BE SUBSTITUTED FOR THE RIGHT LANE CLOSED SIGNS.

THE FIRST TWO SIGNS AND THE MESSAGE BOARD ARE STATIONARY. THE OTHER SIGNS AND ARROWBOARDS SHALL BE MOVED AS NECESSARY TO MAINTAIN THE REQUIRED DISTANCE FROM THE START OF THE LANE CLOSURE TAPER(S).

WHEN WORK OPERATIONS ARE NEAR MAJOR INTERCHANGES THE CONTRACTOR SHALL FURNISH ADDITIONAL MESSAGE BOARDS AND UTILIZED AT THE DIRECTION OF THE ENGINEER.

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	DRAWN - YOGESH PATEL	REVISED -	
PLOT SCALE = 99.9999 ' / in.	CHECKED - RON WOODSHANK	REVISED -	
PLOT DATE = 4/3/2013	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL AND PROTECTION STANDARD 701400 (SPECIAL)

SCALE: | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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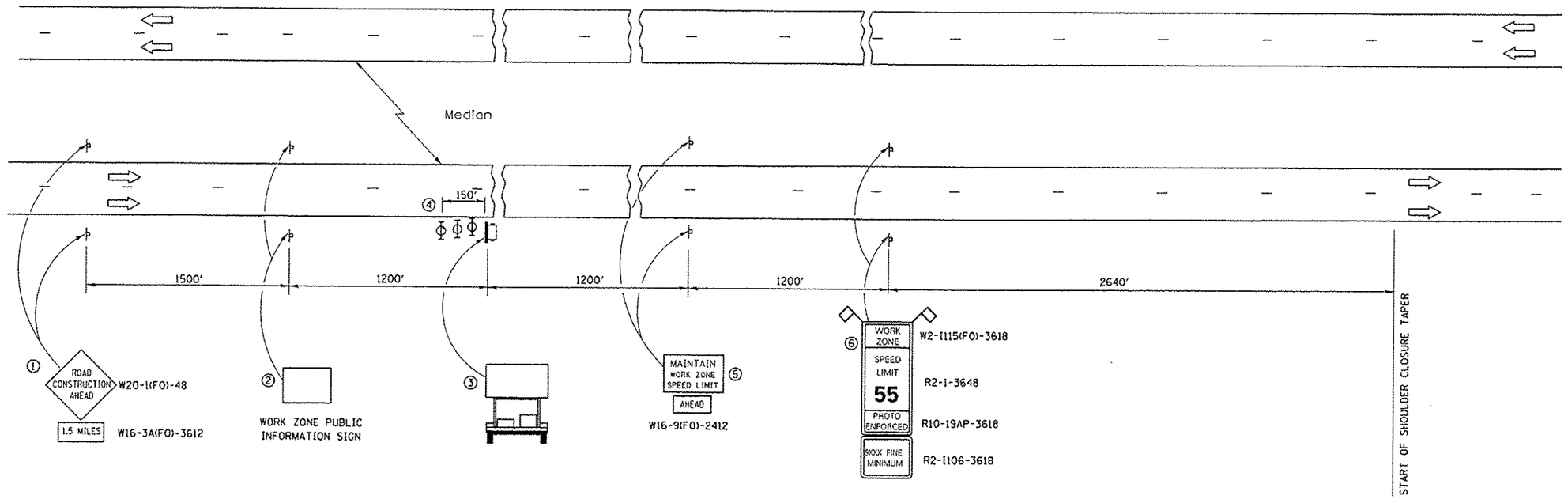
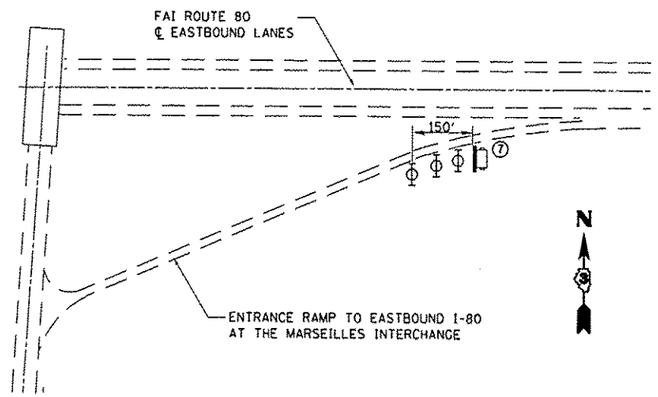
		CONTRACT NO. 66G71		
	ILLINOIS			





MESSAGE BOARD PLACEMENT AT ENTRANCE RAMP

① THE ROAD CONSTRUCTION AHEAD SIGN SHALL BE LOCATED 3 MILES IN ADVANCE OF THE PROJECT LIMITS.

② THE MESSAGE AND SIZE OF THE WORK ZONE PUBLIC INFORMATION SIGN SHALL BE AS SPECIFIED BY THE DEPARTMENT.

③ TO BE PLACED IN THE MEDIAN WHEN FEASIBLE. THE MESSAGE BOARD SHALL BE USED TO DISPLAY STATUS OF LANES WITHIN THE PROJECT. THE PRIMARY MESSAGES SHALL BE OR AS INSTRUCTED BY THE ENGINEER: "SHOULDER CLOSED" / "AHEAD ½ MILE" / "USE CAUTION"

④ THREE, TYPE II BARRICADES, DRUMS, OR VERTICAL BARRICADES AT 50' CENTERS.

⑤ 48"x36" FLUORESCENT ORANGE SIGN WITH BLACK LETTERS.

48"

36"	MAINTAIN	8"
	WORK ZONE	6"
	SPEED LIMIT	6"

⑥ SIGNS TO BE PLACED AS SHOWN & EVERY ONE HALF MILE THROUGH THE WORK ZONE BEGINNING ONE HALF MILE IN ADVANCE OF THE FIRST STRUCTURE IN EACH DIRECTION OR AS INSTRUCTED BY THE ENGINEER.

⑦ TO BE PLACED IN ADVANCE OF ENTERING THE INTERSTATE OR AS INSTRUCTED BY THE ENGINEER. THE PRIMARY MESSAGE SHALL BE OR AS INSTRUCTED BY THE ENGINEER: "CAUTION" / "ENTERING WORK ZONE" / "REDUCE SPEED AHEAD"

SYMBOLS

- PORTABLE CHANGEABLE MESSAGE SIGN
- SIGN
- TYPE II BARRICADE, DRUM, OR VERTICAL BARRICADE WITH MONODIRECTIONAL FLASHING LIGHT

USER NAME = patelyj	DESIGNED - YOGESH PATEL	REVISED -	
	DRAWN - YOGESH PATEL	REVISED -	
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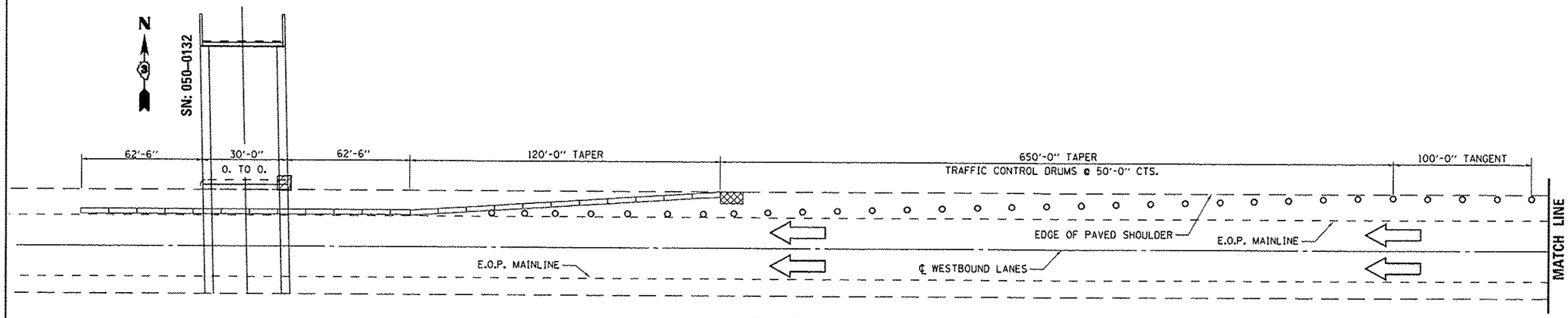
PLOT DATE = 4/3/2013	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL AND PROTECTION (SPECIAL)

SCALE: | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

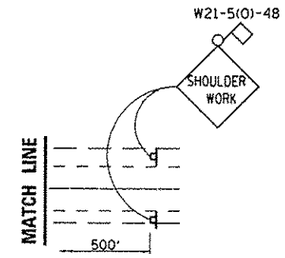
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	03 PIER CAP REPAIR 2014-1	LASALLE	25	6
		CONTRACT NO. 66C71		
	ILLINOIS			

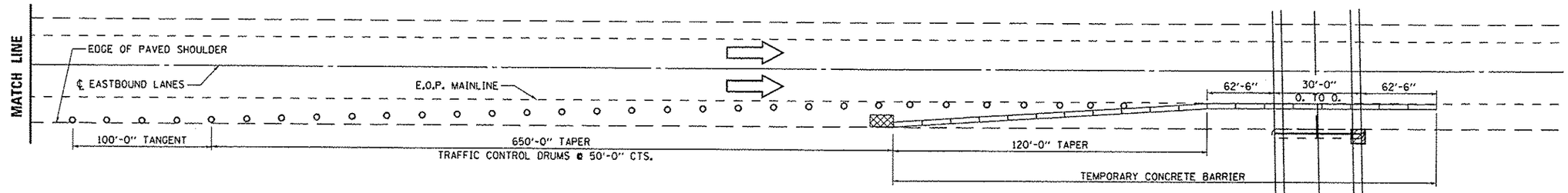


PARTIAL PLAN – NORTH PIER

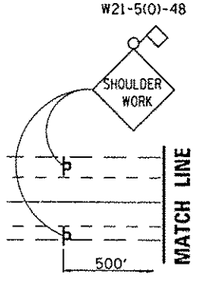
NOTE: SIGNS, AND SIGN PLACEMENT TO BE USED IN CONJUCTION WITH TRAFFIC CONTROL AND PROTECTION SPECIAL. (TYP).

THE ENGINEER MAY REQUIRE ADDITIONAL TRAFFIC CONTROL DRUMS TO CLOSE THE SHOULDER BETWEEN WORKSITES. COST INCLUDED WITH TRAFFIC CONTROL AND PROTECTION SPECIAL. (TYP)





PARTIAL PLAN – SOUTH PIER



SYMBOLS

- SIGN
- DRUM WITH STEADY BURNING LIGHT
- IMPACT ATTENUATOR
- TEMPORARY CONCRETE BARRIER
- PIER CAP REPAIR

NOTES

TRAFFIC CONTROL AND PROTECTION STANDARD 701201 SHALL BE USED ON ALL OVERHEAD STRUCTURES WHEN THE CONTRACTOR IS TO JACK AND REMOVE BEARINGS, AND SHALL REMAIN IN PLACE UNTIL THE APPROVED TEMPORARY SHORING AND CRIBBING HAS BEEN INSTALLED. DURING THE JACKING PERIOD, TRAFFIC SHALL BE LIMITED TO THE OPPOSITE SIDE OF THE JACKING AREA UNTIL THE APPROVED TEMPORARY SHORING AND CRIBBING IS IN PLACE.

ALL TANGENT PORTIONS OF CONCRETE BARRIER WALL SHALL BE PINNED TO THE PAVEMENT TO THE SATISFICATION OF THE ENGINEER.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
TEMPORARY CONCRETE BARRIER	FOOT	550
IMP ATTN TEMP SUN TL3	EACH	1

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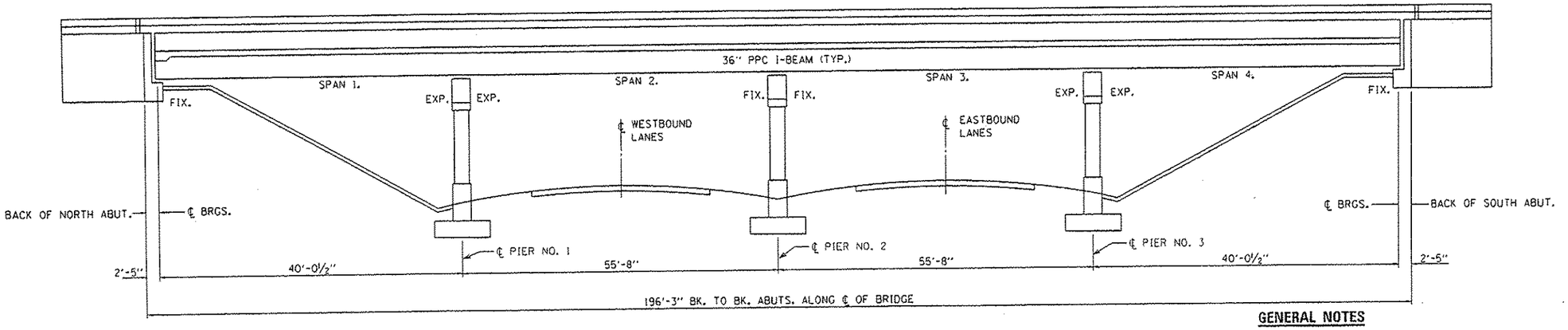
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL DETAILS
SN: 050-0132

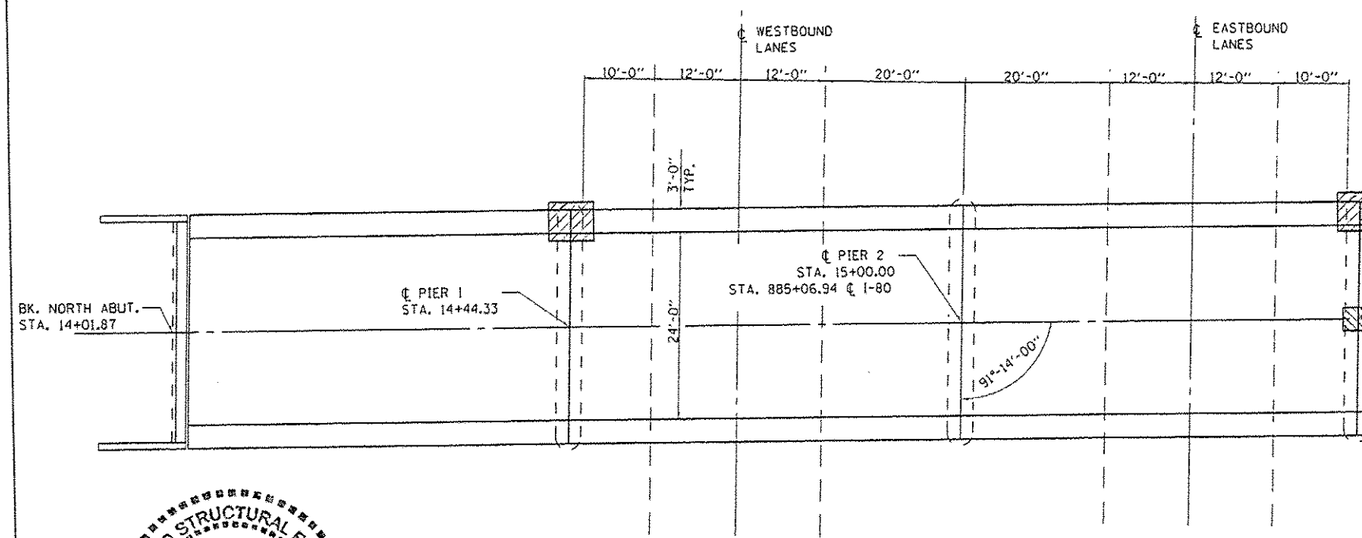
SCALE: | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	03 PIER CAP REPAIR 2014-1	LASALLE	25	7
		CONTRACT NO. 66C71		
	ILLINOIS			



ELEVATION

LOOKING EAST



PLAN

PIER CAP REPAIR

PIER COLUMN REPAIR

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.

THE CONTRACTOR SHALL PROVIDE SUPPORT AND/OR SHORING SYSTEMS FOR THE BEAMS IN THE AREA OF CONCRETE REMOVAL AND REPLACEMENT. SEE THE SPECIAL PROVISION "TEMPORARY SHORING AND CRIBBING".

TWO ⅛ IN. ADJUSTING SHIMS SHALL BE PROVIDED FOR EACH BEARING IN ADDITION TO ALL OTHER PLATES OR SHIMS AND PLACED AS SHOWN ON BEARING DETAILS OR AS INSTRUCTED BY THE ENGINEER.

REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.

EXISTING REINFORCEMENT BARS EXTENDING INTO CONCRETE 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.

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	3.8
Concrete Structure	Cu. Yd.	3.8
Reinforcement Bars, Epoxy Coated	Pound	696
Temporary Shoring and Cribbing	Each	4
Jack & Remove Existing Bearing	Each	4
Elastomeric Bearing Assembly Type II (Special)	Each	4
Anchor Bolts, 1" Dia.	Each	8
Mechanical Splicer	Each	16
Structural Repair of Concrete (4.5")	Sq. Ft.	17

LICENSED STRUCTURAL ENGINEER
DAVID CARL PUZEY
081-005470
SPRINGFIELD ILLINOIS
STATE OF ILLINOIS

5/9/13
Expires 11/30/14

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
SN: 050-0132

SCALE: | SHEET NO. 1 OF 8 SHEETS | STA. | TO STA.

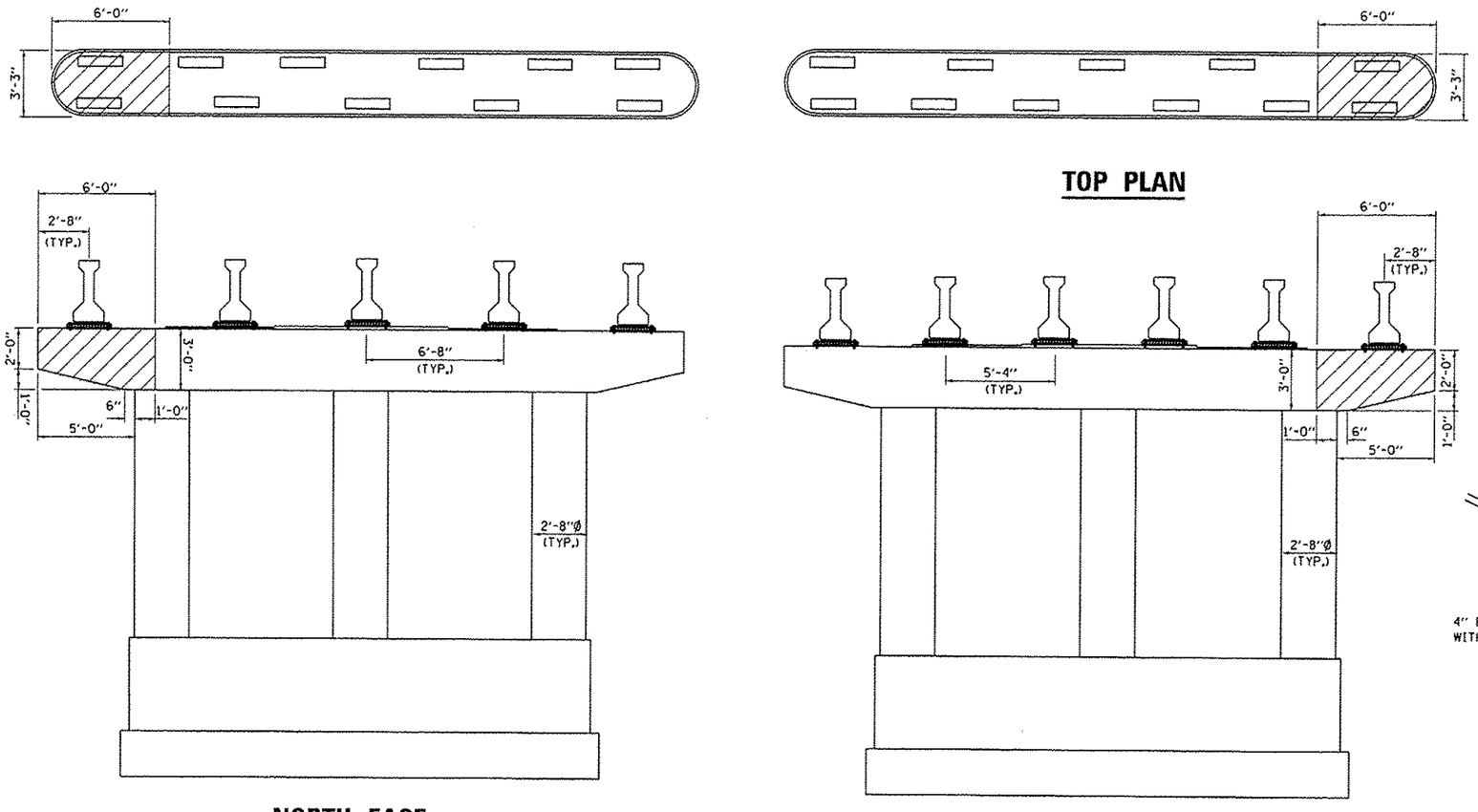
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	03 PIER CAP REPAIR 2014-I	LASALLE	25	8
		CONTRACT NO. 66C71		
	ILLINOIS			

PIER 1 BEAM REACTION TABLE

		SPAN 1	SPAN 2
R℄	(K)	27.4	35.6
R∠	(K)	27.3	29.1
Imp.	(K)	8.0	8.0
R (Total)	(K)	62.7	72.7

NOTES:

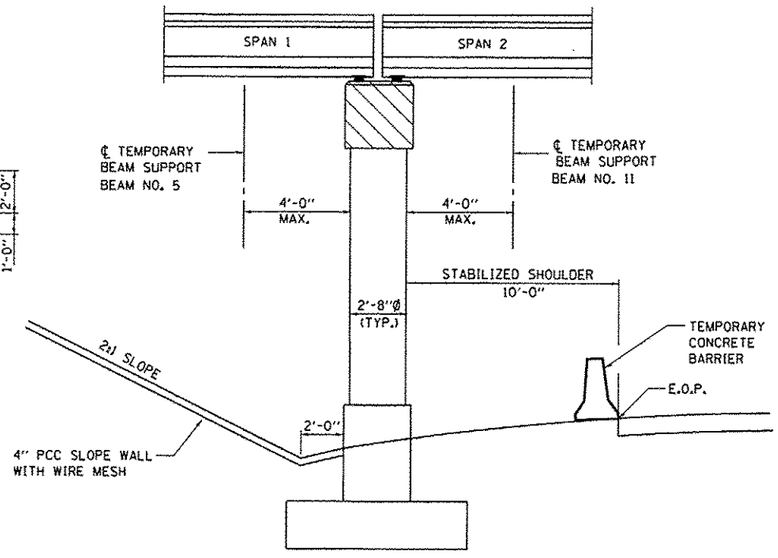
1. TEMPORARY BEAM SUPPORTS SHALL BE FURNISHED AND INSTALLED PRIOR TO BEGINNING CONCRETE REMOVAL OPERATIONS.
2. THE CONTRACTOR SHALL EXERCISE EXTREME CARE DURING CONCRETE REMOVAL OPERATIONS SO THE PPC-I BEAMS ARE NOT DAMAGED. IF THE EXISTING BEAMS ARE DAMAGED DUE TO THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS, THE CONTRACTOR SHALL REPAIR THE BEAMS TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
3. REMOVE EXISTING BEARINGS AND REPLACE WITH NEW ELASTOMERIC BEARING ASSEMBLY, TYPE II (SPECIAL) AS DETAILED ON SHEET 10 OF 24.
4. ALL STRUCTURAL STEEL SHALL CONFORM TO AASHTO CLASSIFICATION M-270 GR. 36, UNLESS OTHERWISE NOTED



NORTH FACE
PIER 1

TOP PLAN

SOUTH FACE
PIER 1



EAST END ELEVATION
PIER 1

CONCRETE REMOVAL LIMITS

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Temporary Shoring and Cribbing	Each.	2

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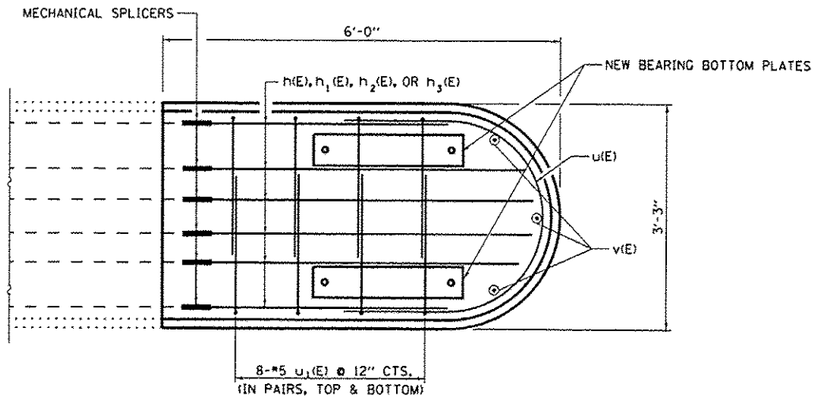
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

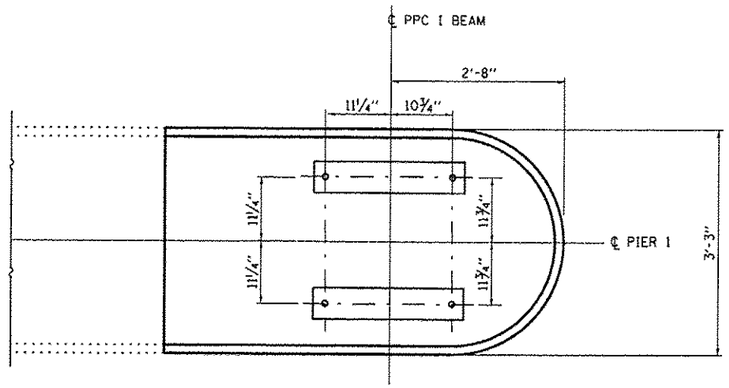
PIER 1 REPAIR DETAILS
SN: 050-0132

SCALE: | SHEET NO. 2 OF 8 SHEETS | STA. | TO STA.

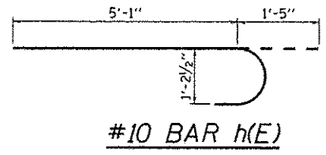
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	03 PIER CAP REPAIR 2014-1	LASALLE	25	9
		CONTRACT NO. 66C71		
	ILLINOIS			



TOP PLAN



ANCHOR BOLTS LAYOUT



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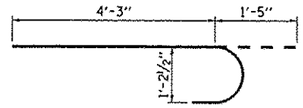
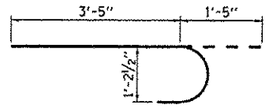


#10 BAR $h_1(E)$



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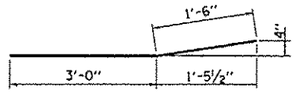

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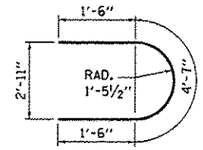
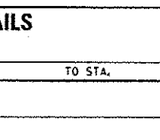
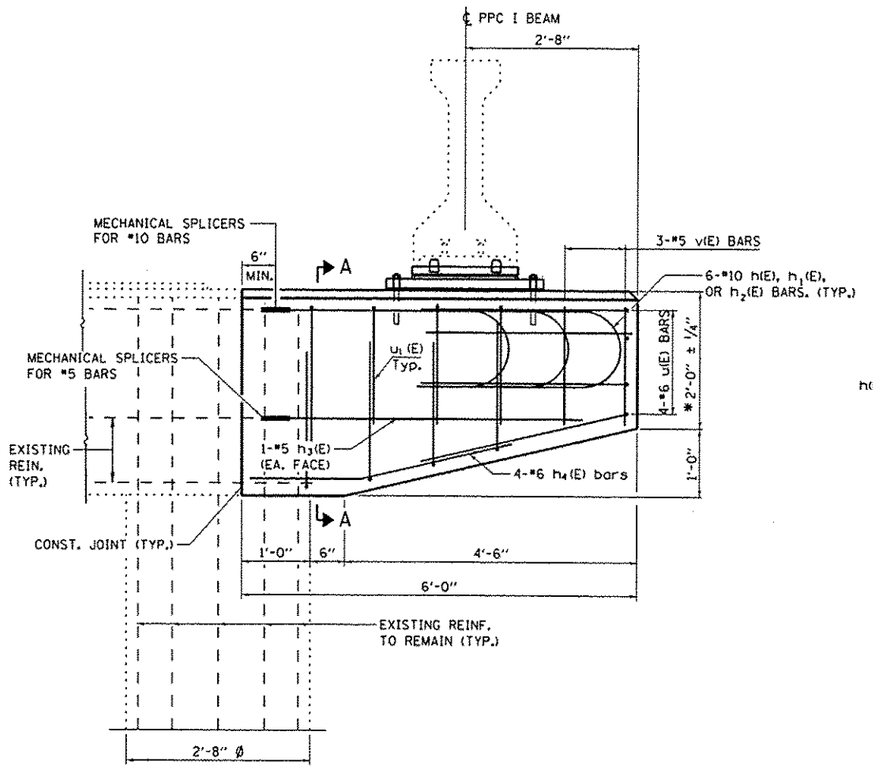


#6 BAR u(E)

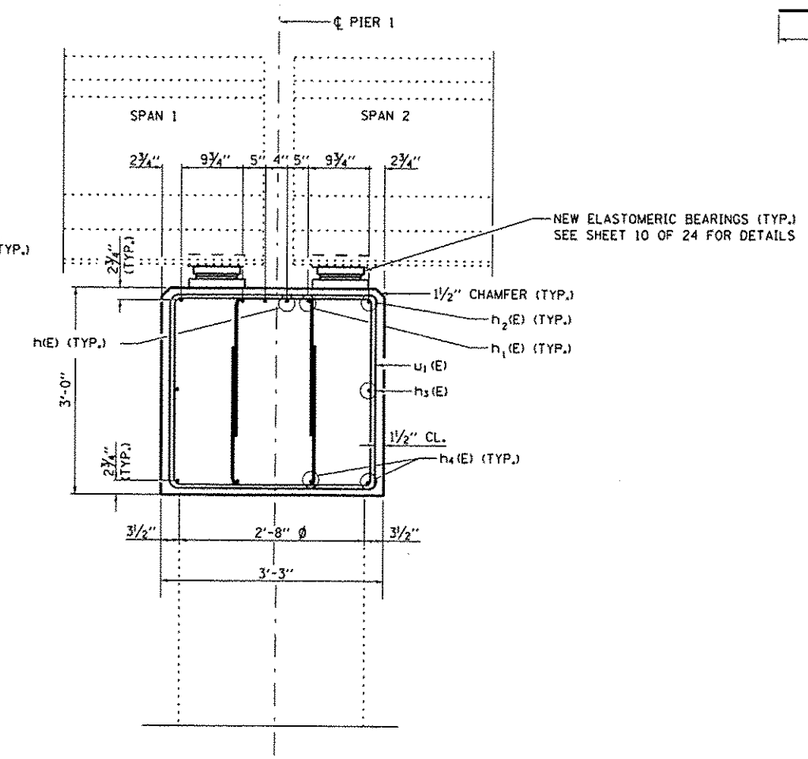


#5 BAR $u_1(E)$



ELEVATION

EAST END NORTH PIER
LOOKING NORTH



SECTION A–A

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	2	#10	6'-6"	
$h_1(E)$	2	#10	5'-8"	
$h_2(E)$	2	#10	4'-10"	
$h_3(E)$	2	#5	5'-7"	
$h_4(E)$	4	#6	4'-6"	
u(E)	4	#6	7'-7"	
$u_1(E)$	16	#5	6'-2"	
v(E)	3	#5	1'-9"	
CONCRETE REMOVAL			CU. YD.	1.9
CONCRETE STRUCTURES			CU. YD.	1.9
REINFORCEMENT BARS EPOXY COATED			POUND	348
MECHANICAL SPLICER			EACH	8

* FIELD VERIFY PRIOR TO CONCRETE PLACEMENT THAT TOP OF NEW CONCRETE WILL BE ABLE TO ACCOMMODATE THE NEW DESIGNED BEARING. ± ¼" TOLERANCE WILL BE ALLOWED IN ORDER TO INSURE FIT OR AS APPROVED BY THE ENGINEER.

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		DRAWN - YOGESH PATEL	REVISED -
	PLOT SCALE = 99.7550 ' / in.	CHECKED - RON WOODSHANK	REVISED -
	PLOT DATE = 4/3/2013	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

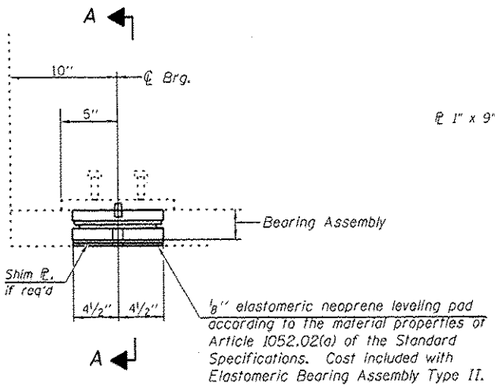
PIER 1 REPAIR DETAILS
SN: 050–0132

SCALE: | SHEET NO. 3 OF 8 SHEETS | STA. | TO STA.

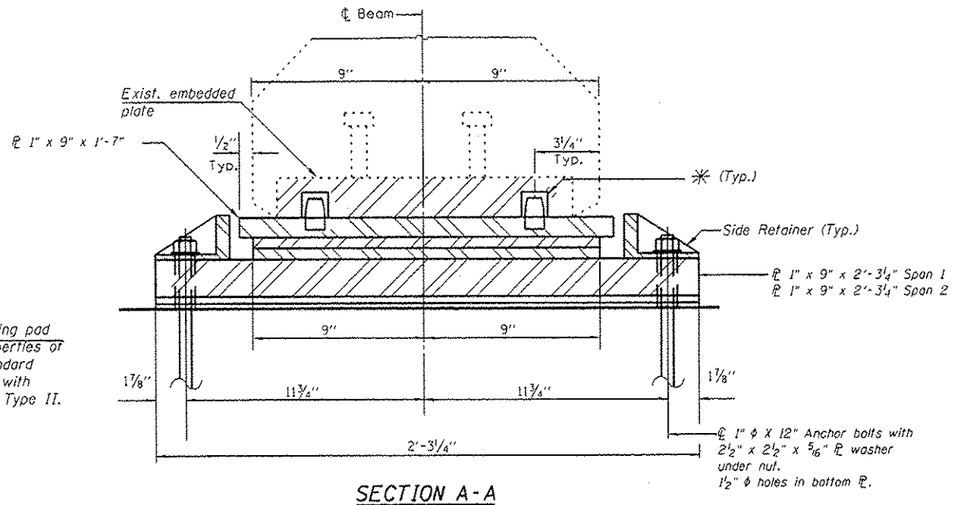
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	03 PIER CAP REPAIR 2014-1	LASALLE	25	10
		CONTRACT NO. 66C71		
	ILLINOIS			

PIER 1 BEAM REACTION TABLE

		SPAN 1	SPAN 2
RP	(K)	27.4	35.6
R4	(K)	27.3	29.1
Imp.	(K)	8.0	8.0
R (Total)	(K)	62.7	72.7

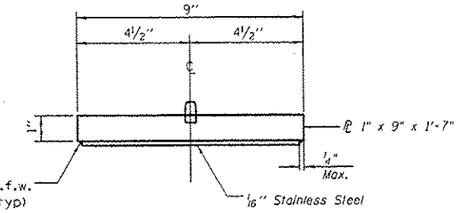


ELEVATION AT BEARING.

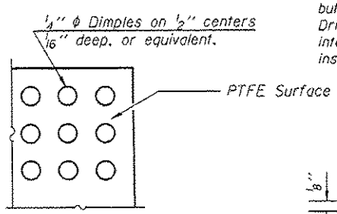


SECTION A-A

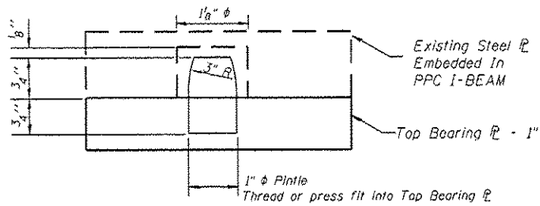
✳ *Prior to pier cap reconstruction, but after concrete removal, Drill 1⅛" ϕ holes ¾" deep into embedded top ℙ to properly install new bearings.*



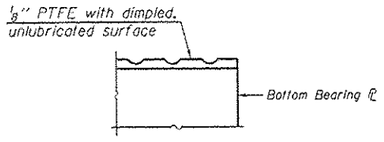
TOP BEARING ASSEMBLY



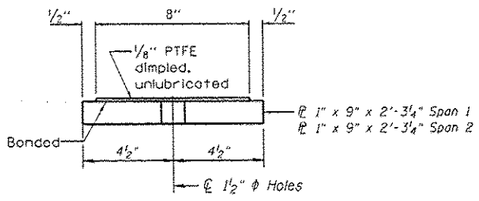
PLAN-TFE SURFACE



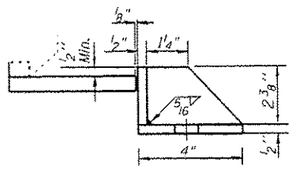
PINTLE

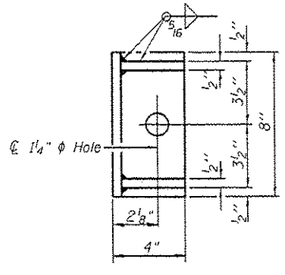


SECTION THRU TFE



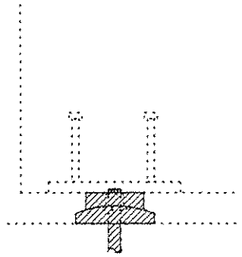
BOTTOM BEARING ASSEMBLY





SIDE RETAINER

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



EXISTING BEARING REMOVAL DETAIL

Note: Hatched area indicates removal of existing bearings. Cost included with Jack and Remove Existing Bearing Assembly.

Notes:

Prior to ordering any materials, the Contractor shall verify in the field all bearing height and shim thickness dimensions.

Min. Jack capacity = 45 Tons.

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.

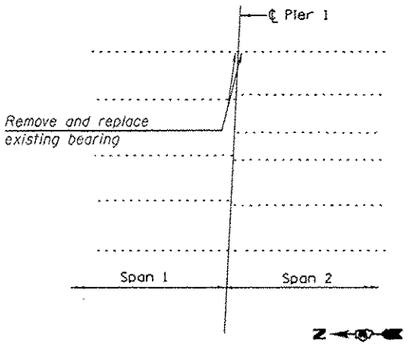
Anchor bolts for Type II bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed.

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

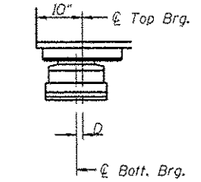
Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II (Special).

The ⅛" 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.

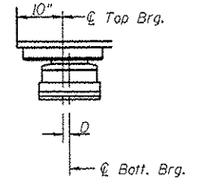
Bonding of ⅛" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



REPAIR LOCATION PLAN



BELOW 50° F.
(Move bottom brg. away from fixed brg.)



ABOVE 50° F.
(Move bottom brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

D=⅛" per each 100' of expansion for every 15° temp. change from the normal temp. of 50° F.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II (Special)	Each	2
Jack Remove Existing Bearing	Each	2
Anchor Bolts 1" ϕ	Each	4

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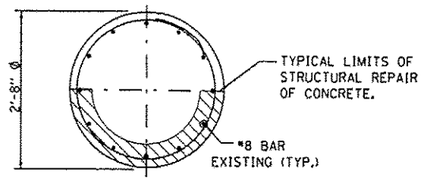
	PLOT DATE = 4/3/2013	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 1 REPAIR DETAILS
SN: 050-0132

SCALE: | SHEET NO. 4 OF 8 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	03 PIER CAP REPAIR 2014-1	LASALLE	25	11
		CONTRACT NO. 66C71		
	ILLINOIS			



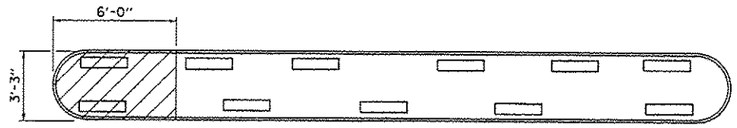
SECTION A – A

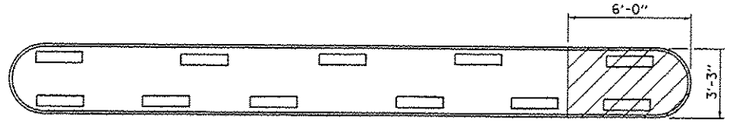
PIER 3 BEAM REACTION TABLE

		SPAN 3	SPAN 4
R℄	(K)	27.4	35.6
R℄	(K)	27.3	29.1
Imp.	(K)	8.0	8.0
R (Total)	(K)	62.7	72.7

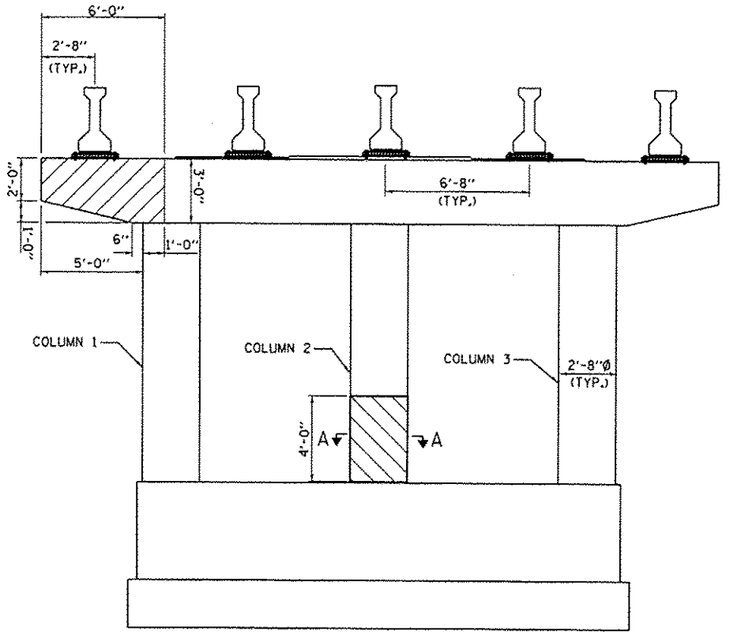
NOTES:

1. TEMPORARY BEAM SUPPORTS SHALL BE FURNISHED AND INSTALLED PRIOR TO BEGINNING CONCRETE REMOVAL OPERATIONS.
2. THE CONTRACTOR SHALL EXERCISE EXTREME CARE DURING CONCRETE REMOVAL OPERATIONS SO THE PPC-I BEAMS ARE NOT DAMAGED. IF THE EXISTING BEAMS ARE DAMAGED DUE TO THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS, THE CONTRACTOR SHALL REPAIR THE BEAMS TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
3. REMOVE EXISTING BEARINGS AND REPLACE WITH NEW ELASTOMERIC BEARING ASSEMBLY, TYPE II SPECIAL AS DETAILED ON SHEET 13 OF 26.
4. QUANTITES AND REPAIR AREAS SHOWN ARE ESTIMATES. THE ENGINEER SHALL DETERMINE EXACT LOCATIONS AND EXTENT OF REPAIRS.
5. ALL STRUCTURAL STEEL SHALL CONFORM TO AASHTO CLASSIFICATION M-270 GR. 36, UNLESS OTHERWISE NOTED

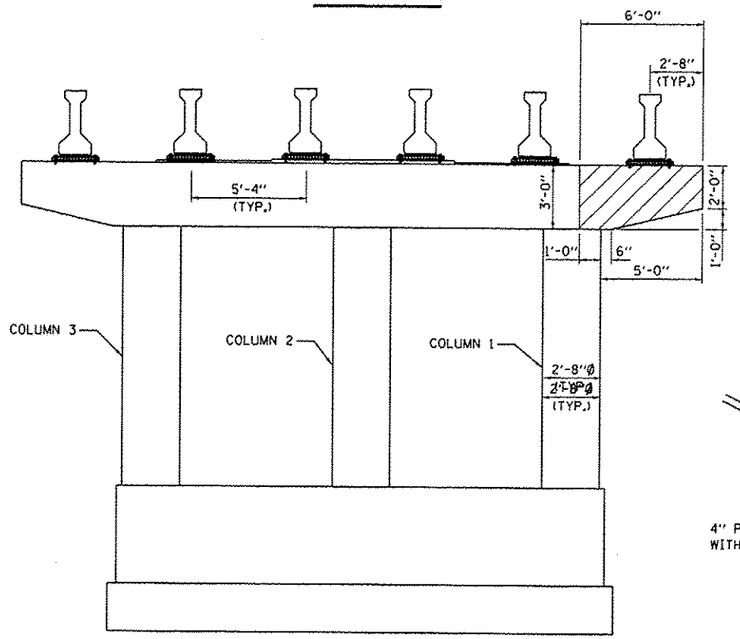




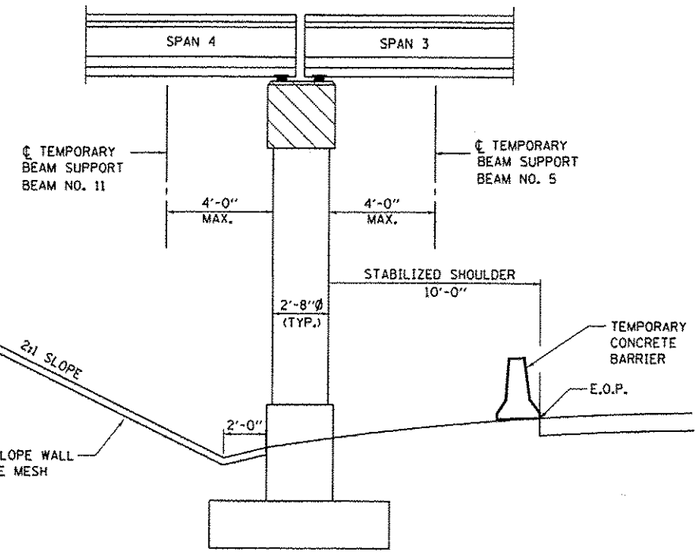
TOP PLAN



NORTH FACE
PIER 3



SOUTH FACE
PIER 3



EAST ELEVATION
PIER 3

CONCRETE REMOVAL LIMITS

STRUCTURAL REPAIR OF CONCRETE. DEPTH LESS THAN OR EQUAL TO 5 INCHES.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Str Rep Con DP = < 5	Sq. Ft.	17
Temporary Shoring and Cribbing	Each.	2

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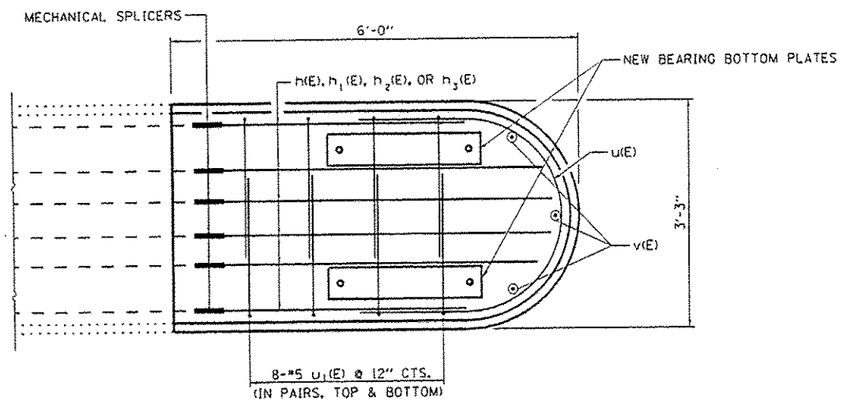
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

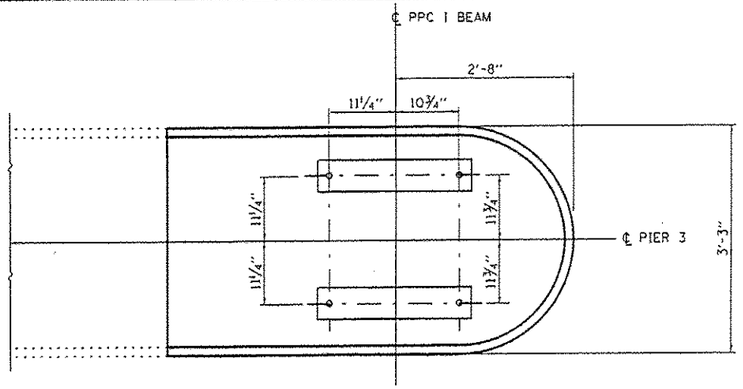
PIER 3 REPAIR DETAILS
SN: 050-0132

SCALE: | SHEET NO. 5 OF 8 SHEETS | STA. | TO STA.

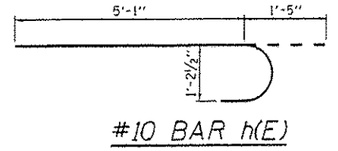
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	D3 PIER CAP REPAIR 2014-1	LASALLE	25	12
		CONTRACT NO. 66C71		
	ILLINOIS			



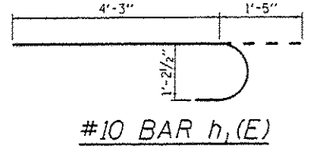
TOP PLAN



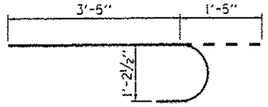
ANCHOR BOLTS LAYOUT



#10 BAR h(E)



#10 BAR $h_1(E)$



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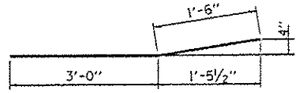

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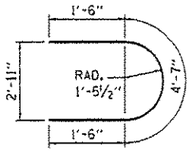
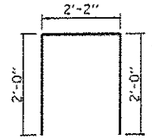
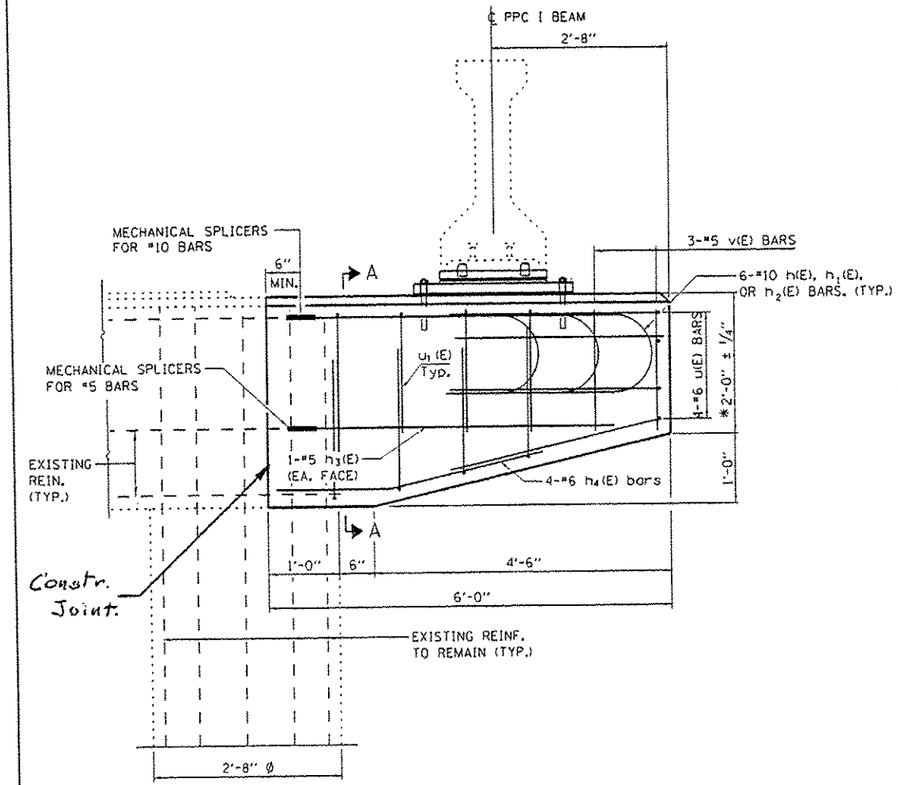


#6 BAR u(E)

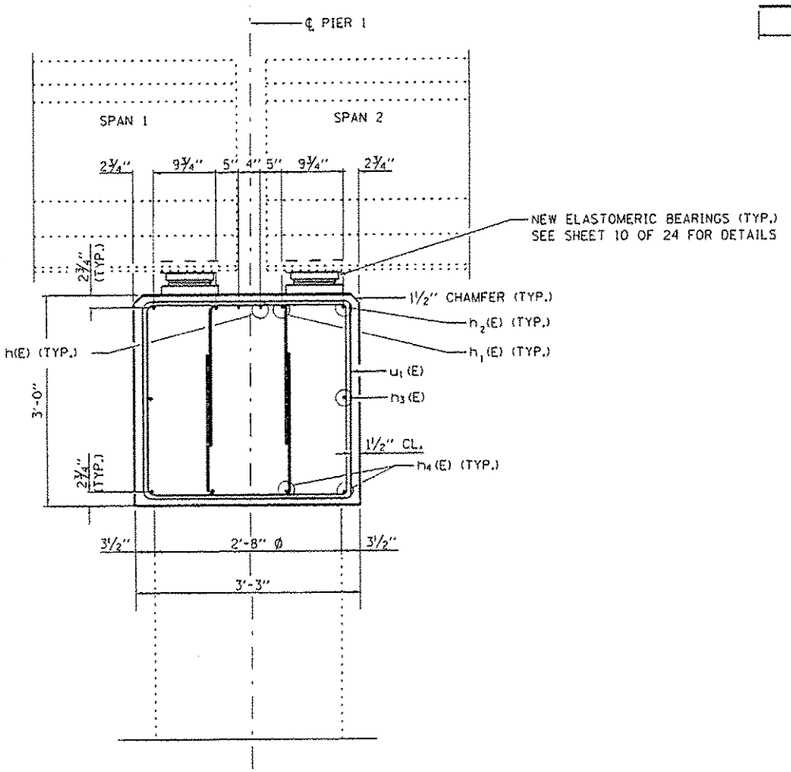


#5 BAR $u_1(E)$



ELEVATION

EAST END SOUTH PIER
LOOKING NORTH



SECTION A–A

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	2	#10	6'-6"	
$h_1(E)$	2	#10	5'-8"	
$h_2(E)$	2	#10	4'-10"	
$h_3(E)$	2	#5	5'-7"	
$h_4(E)$	4	#6	4'-6"	
u(E)	4	#6	7'-7"	
$u_1(E)$	16	#5	6'-2"	
v(E)	3	#5	1'-9"	
CONCRETE REMOVAL			CU. YD.	1.9
CONCRETE STRUCTURES			CU. YD.	1.9
REINFORCEMENT BARS EPOXY COATED			POUND	348
MECHANICAL SPLICER			EACH	8

* FIELD VERIFY PRIOR TO CONCRETE PLACEMENT THAT TOP OF NEW CONCRETE WILL BE ABLE TO ACCOMMODATE THE NEW DESIGNED BEARING. ± ¼" TOLERANCE WILL BE ALLOWED IN ORDER TO INSURE FIT OR AS APPROVED BY THE ENGINEER.

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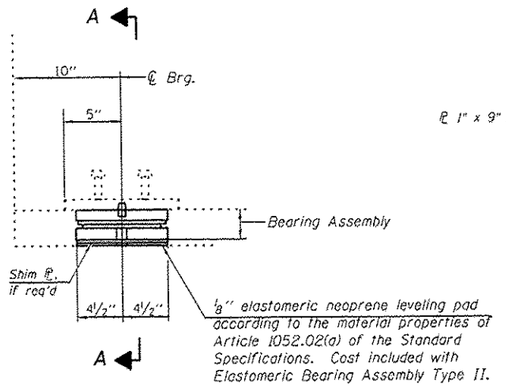
	PLOT DATE : 4/3/2013	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

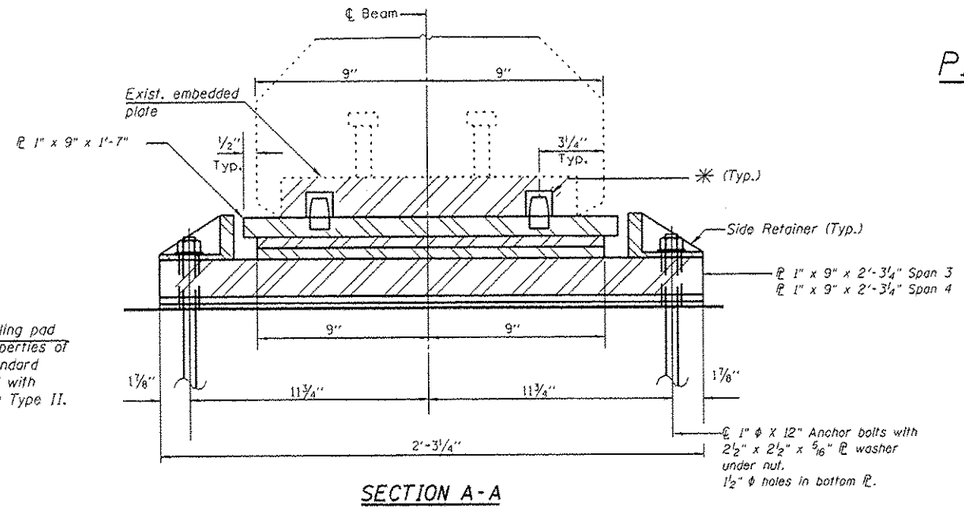
PIER 3 REPAIR DETAILS
SN: 050-0132

SCALE: | SHEET NO. 6 OF 8 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	03 PIER CAP REPAIR 2014-1	LASALLE	25	13
		CONTRACT NO. 66C71		
	ILLINOIS			



ELEVATION AT BEARING.

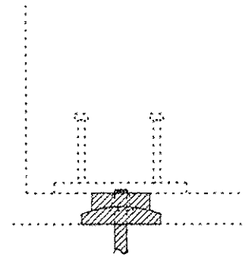


SECTION A-A

✳ Prior to pier cap reconstruction, but after concrete removal, Drill 1⅛" ϕ holes ¾" deep into embedded top ℙ to properly install new bearings.

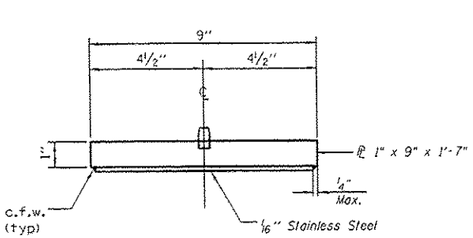
PIER 3 BEAM REACTION TABLE

		SPAN 3	SPAN 4
R℄	(K)	23.9	18.4
R℄	(K)	29.1	27.3
Imp.	(K)	8.0	8.0
R (Total)	(K)	61.0	53.7

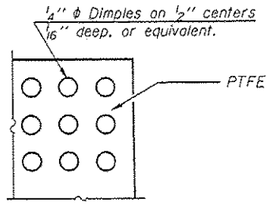


EXISTING BEARING REMOVAL DETAIL

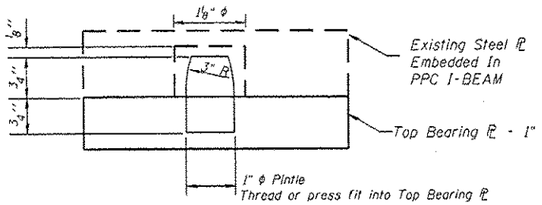
Note: Hatched area indicates removal of existing bearings. Cost included with Jack and Remove Existing Bearing Assembly.



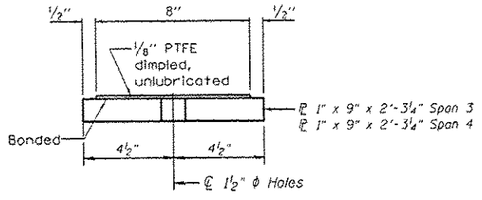
TOP BEARING ASSEMBLY



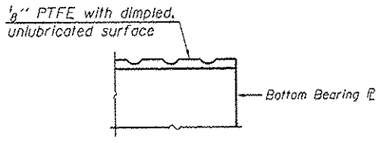
PLAN-TFE SURFACE



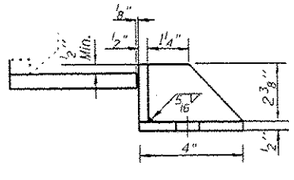
PINTLE

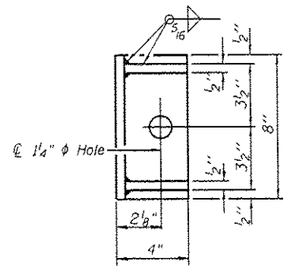


BOTTOM BEARING ASSEMBLY



SECTION THRU TFE





SIDE RETAINER

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

Notes:

Prior to ordering any materials, the Contractor shall verify in the field all bearing height and shim thickness dimensions. Min. Jack capacity = 45 Tons.

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.

Anchor bolts for Type II bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed.

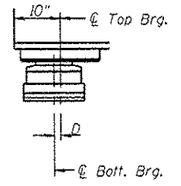
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II (Special).

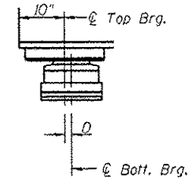
The ⅛" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of ⅛" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

REPAIR LOCATION PLAN



BELOW 50° F.
(Move bottom brg. away from fixed brg.)



ABOVE 50° F.
(Move bottom brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

D=⅛" per each 100' of expansion for every 15° temp. change from the normal temp. of 50° F.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II (Special)	Each	2
Jack Remove Existing Bearing	Each	2
Anchor Bolts 1" ϕ	Each	4

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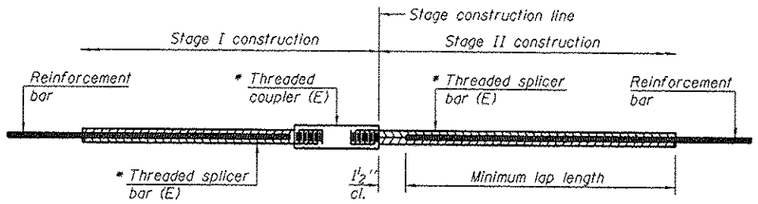
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 3 REPAIR DETAILS
SN: 050-0132

SCALE: | SHEET NO. 7 OF 8 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	D3 PIER CAP REPAIR 2014-I	LASALLE	25	14
		CONTRACT NO. 66C71		
	ILLINOIS			



STANDARD BAR SPLICER ASSEMBLY

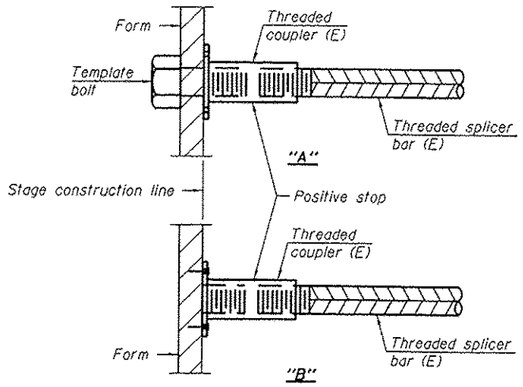
Minimum Lap Lengths					
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-3"
5	1'-9"	2'-5"	2'-7"	2'-11"	2'-10"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-4"
7	2'-9"	3'-10"	4'-2"	4'-8"	4'-6"
8	3'-8"	5'-1"	5'-5"	6'-2"	5'-10"
9	4'-7"	6'-5"	6'-10"	7'-9"	7'-5"

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 + 1½" + thread length

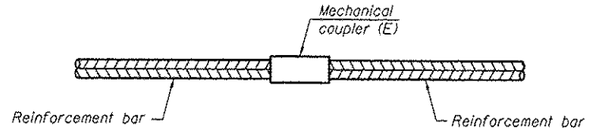
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length



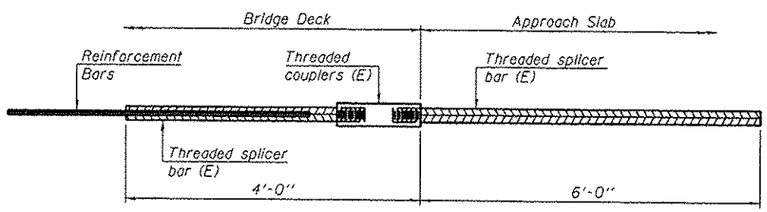
INSTALLATION AND SETTING METHODS

"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.



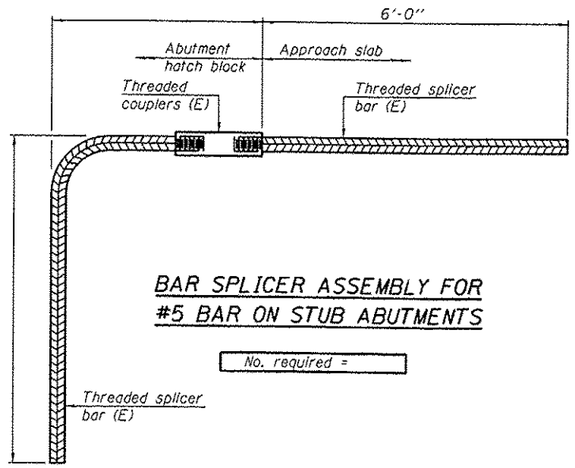
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required
PIER 1-EAST END	#10	6
PIER 1-EAST END	#5	2
PIER 3-EAST END	#10	6
PIER 3-EAST END	#5	2



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

No. required =



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

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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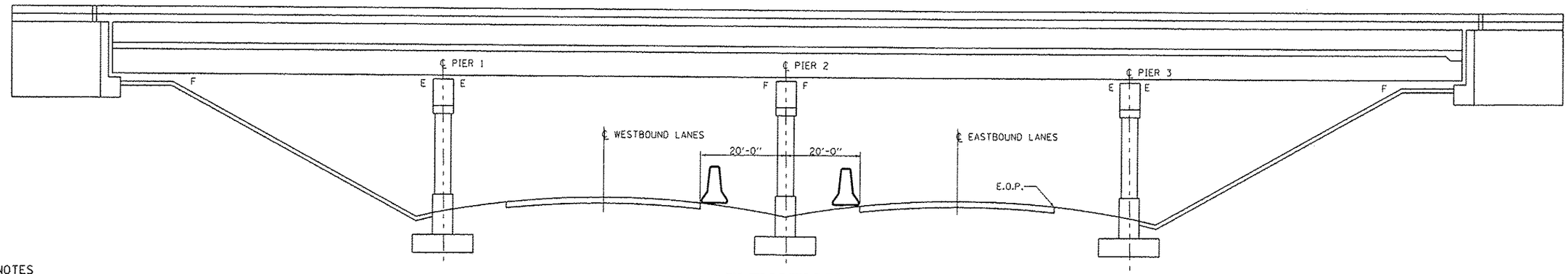
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS – S.N. 050-0132

SCALE: | SHEET NO. 8 OF 8 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	03 PIER CAP REPAIR 2014-1	LASALLE	25	15
		CONTRACT NO. 66C71		
	ILLINOIS			



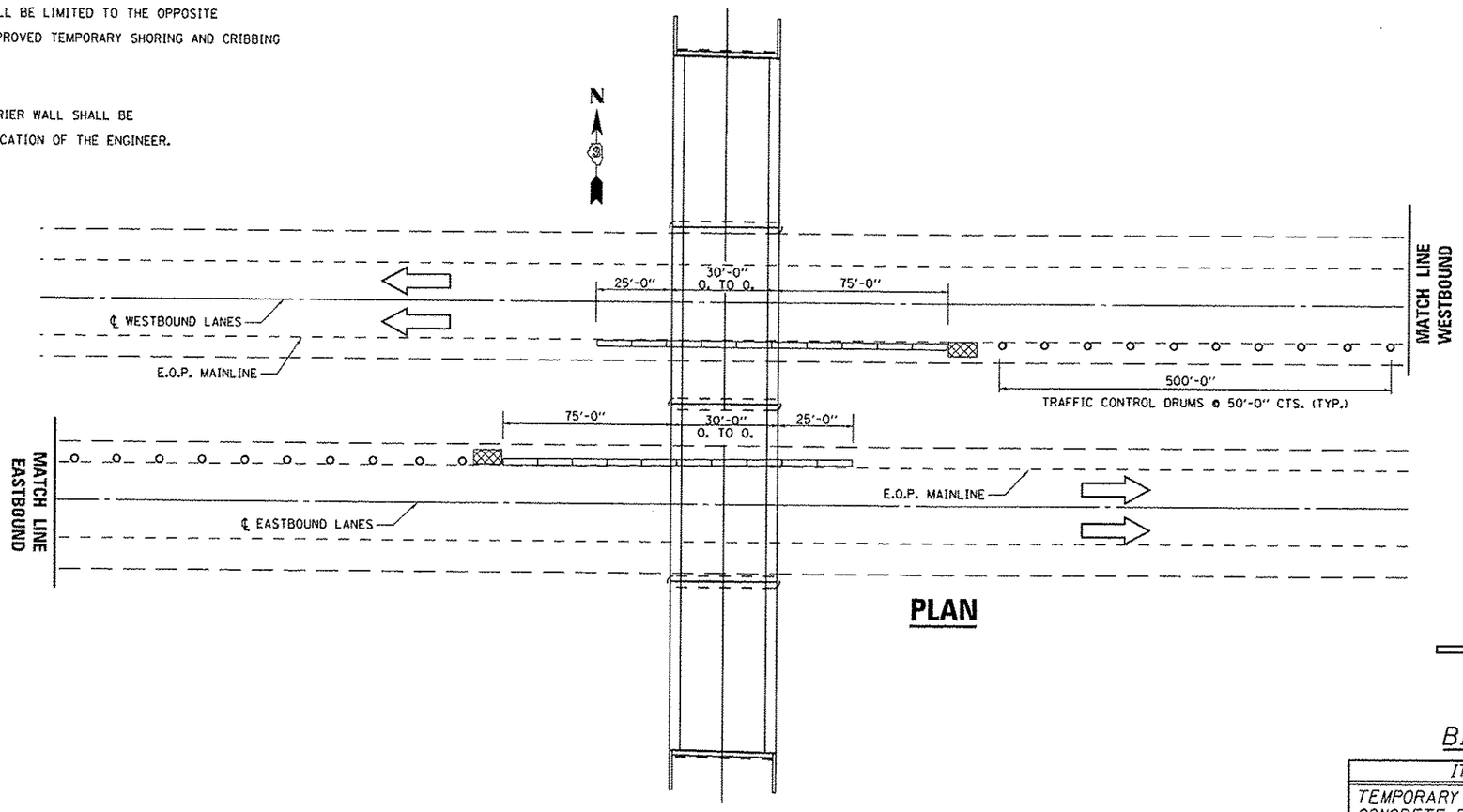
ELEVATION

LOOKING EAST

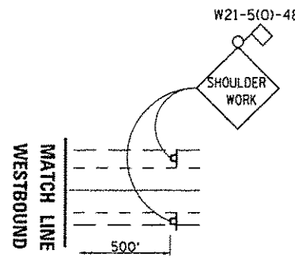
NOTES

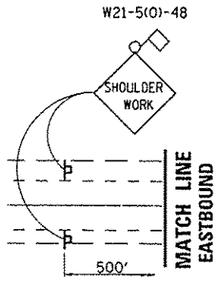
TRAFFIC CONTROL AND PROTECTION STANDARD 701201 SHALL BE USED ON ALL OVERHEAD STRUCTURES WHEN THE CONTRACTOR IS TO JACK AND REMOVE BEARINGS, AND SHALL REMAIN IN PLACE UNTIL THE APPROVED TEMPORARY SHORING AND CRIBBING HAS BEEN INSTALLED. DURING THE JACKING PERIOD, TRAFFIC SHALL BE LIMITED TO THE OPPOSITE SIDE OF THE JACKING AREA UNTIL THE APPROVED TEMPORARY SHORING AND CRIBBING IS IN PLACE.

ALL TANGENT PORTIONS OF CONCRETE BARRIER WALL SHALL BE PINNED TO THE PAVEMENT TO THE SATISFICATION OF THE ENGINEER.



PLAN





NOTE: SIGNS, AND SIGN PLACEMENT TO BE USED IN CONJUCTION WITH TRAFFIC CONTROL AND PROTECTION SPECIAL.

SYMBOLS

- SIGN
- DRUM WITH STEADY BURNING LIGHT
- IMPACT ATTENUATOR TEMP SUN TL3
- TEMPORARY CONCRETE BARRIER

BILL OF MATERIAL

ITEM	UNIT	TOTAL
TEMPORARY CONCRETE BARRIER	FOOT	260
IMP ATTN TEMP SUN TL3	EACH	2

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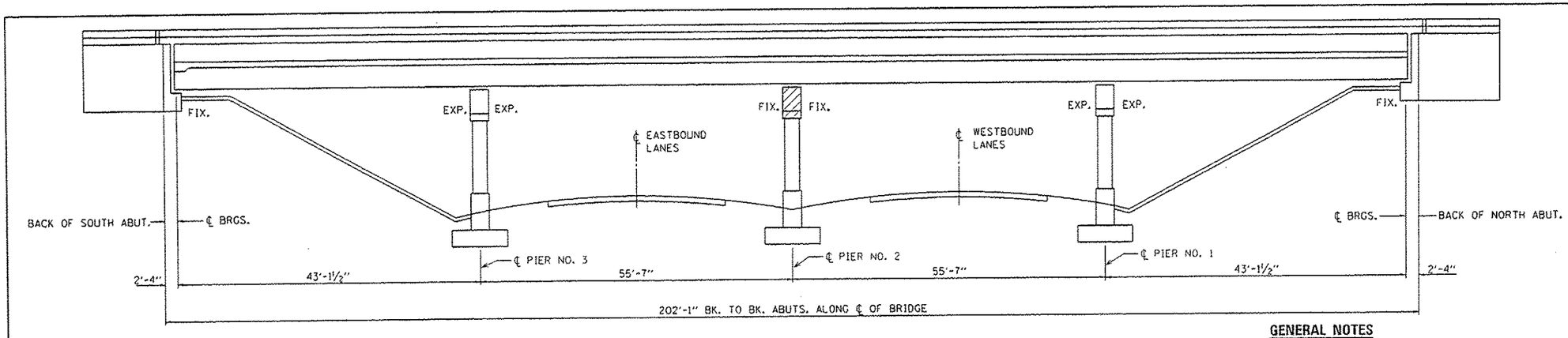
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL DETAILS
SN: 050-0133

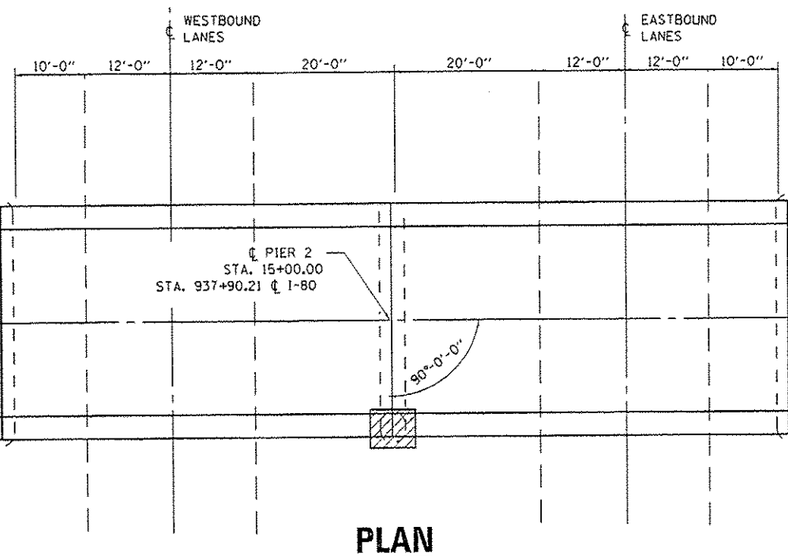
SCALE: | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	03 PIER CAP REPAIR 2014-E	LASALLE	25	16
		CONTRACT NO. 66C71		
	ILLINOIS			



ELEVATION

LOOKING WEST



PLAN

LICENSED STRUCTURAL ENGINEER
DAVID CARL PUZEY
081-005470
SPRINGFIELD ILLINOIS
STATE OF ILLINOIS

D. Carl Puzey 5/9/13
Expires 11/30/14

PIER CAP REPAIR

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.

THE CONTRACTOR SHALL PROVIDE SUPPORT AND/OR SHORING SYSTEMS FOR THE BEAMS IN THE AREA OF CONCRETE REMOVAL AND REPLACEMENT. SEE THE SPECIAL PROVISION "TEMPORARY SHORING AND CRIBBING".

TWO ⅛ IN. ADJUSTING SHIMS SHALL BE PROVIDED FOR EACH BEARING IN ADDITION TO ALL OTHER PLATES OR SHIMS AND PLACED AS SHOWN ON BEARING DETAILS OR AS INSTRUCTED BY THE ENGINEER.

REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.

EXISTING REINFORCEMENT BARS EXTENDING INTO CONCRETE 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.

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	1.9
Concrete Structure	Cu. Yd.	1.9
Reinforcement Bars, Epoxy Coated	Pound	410
Temporary Shoring and Cribbing	Each	2
Furnish and Erect Structural Steel	Pound	133
Anchor Bolts, 1" Dia.	Each	4
Mechanical Splicer	Each	12

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
SN: 050-0133

SCALE: | SHEET NO. 1 OF 4 SHEETS | STA. | TO STA.

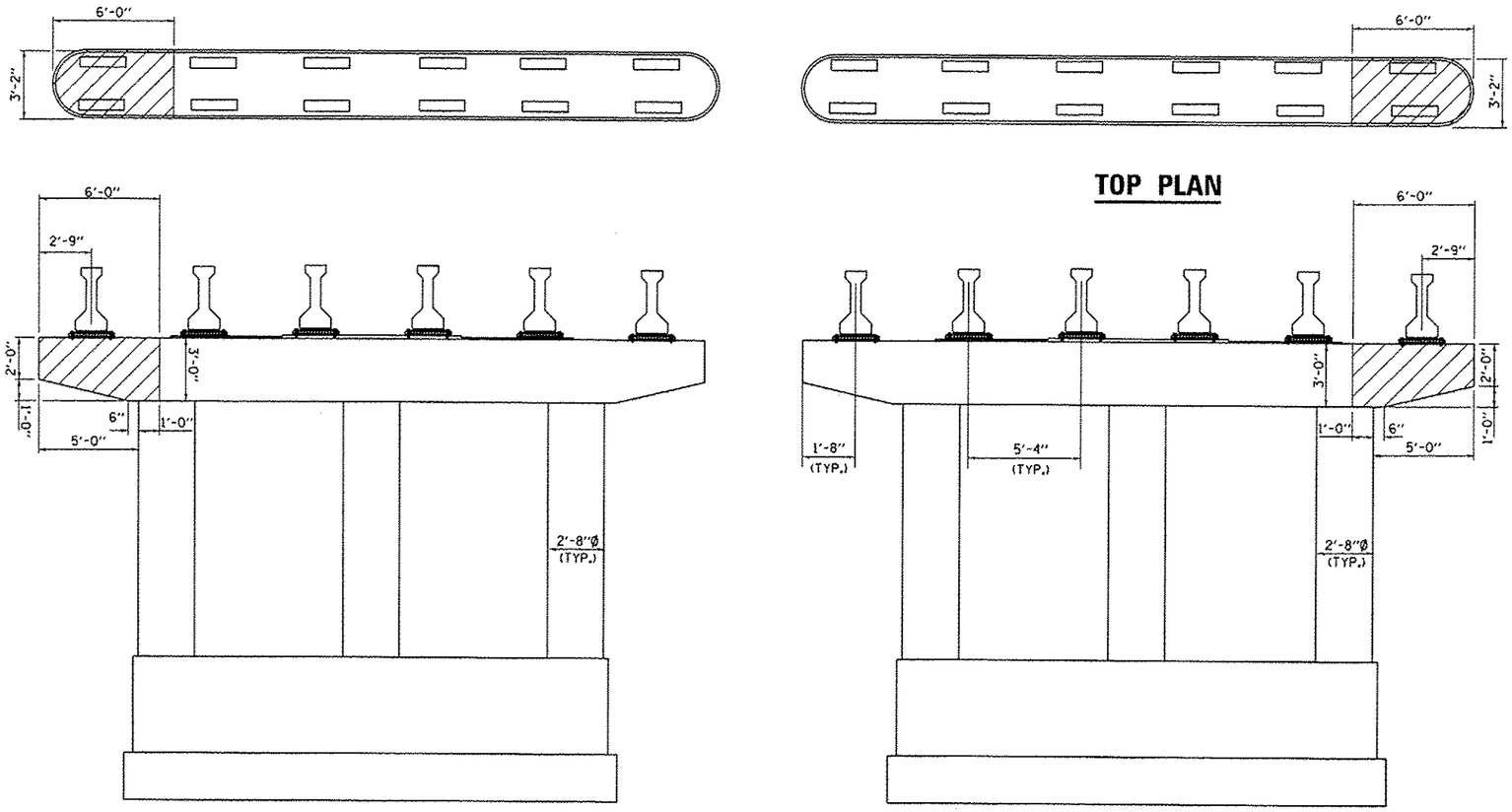
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	D3 PIER CAP REPAIR 2014-1	LASALLE	25	17
		CONTRACT NO. 66C71		
	ILLINOIS			

PIER 2 BEAM REACTION TABLE

		SPAN 2	SPAN 3
RE	(K)	35.6	35.6
RL	(K)	29.1	29.1
Imp.	(K)	8.0	8.0
R (Total)	(K)	72.7	72.7

NOTES:

1. TEMPORARY BEAM SUPPORTS SHALL BE FURNISHED AND INSTALLED PRIOR TO BEGINNING CONCRETE REMOVAL OPERATIONS.
2. THE CONTRACTOR SHALL EXERCISE EXTREME CARE DURING CONCRETE REMOVAL OPERATIONS SO THE PPC-I BEAMS ARE NOT DAMAGED. IF THE EXISTING BEAMS ARE DAMAGED DUE TO THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS, THE CONTRACTOR SHALL REPAIR THE BEAMS TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
3. REMOVE EXISTING BEARINGS AND REPLACE WITH NEW FIXED BEARING AS DETAILED ON SHEET 18 OF 24 .
4. ALL STRUCTURAL STEEL SHALL CONFORM TO AASHTO CLASSIFICATION M-270 GR. 36, UNLESS OTHERWISE NOTED.



PIER2–CENTER PIER

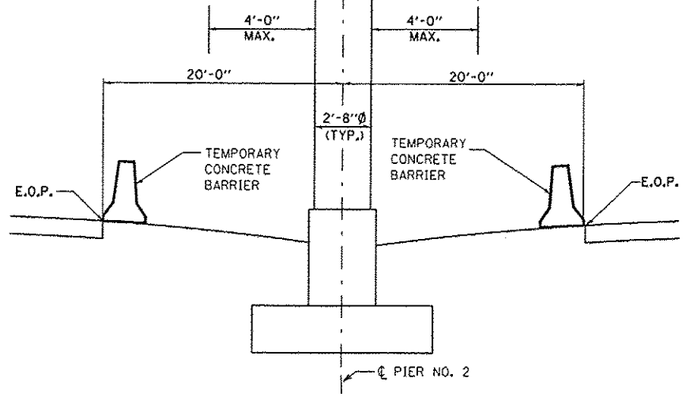
LOOKING SOUTH

NORTH FACE

PIER2–CENTER PIER

LOOKING NORTH

SOUTH FACE



PIER2–CENTER PIER

LOOKING WEST

HATCHED AREA INDICATES CONCRETE REMOVAL

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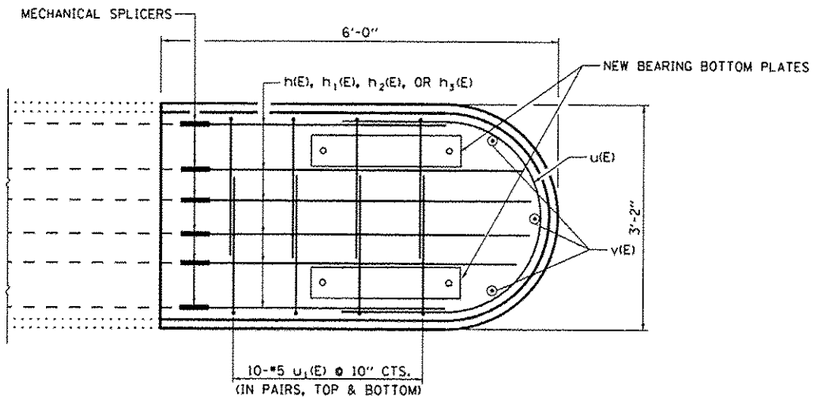
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 REPAIR DETAILS
SN: 050–0133

SCALE: | SHEET NO. 2 OF 4 SHEETS | STA. | TO STA.

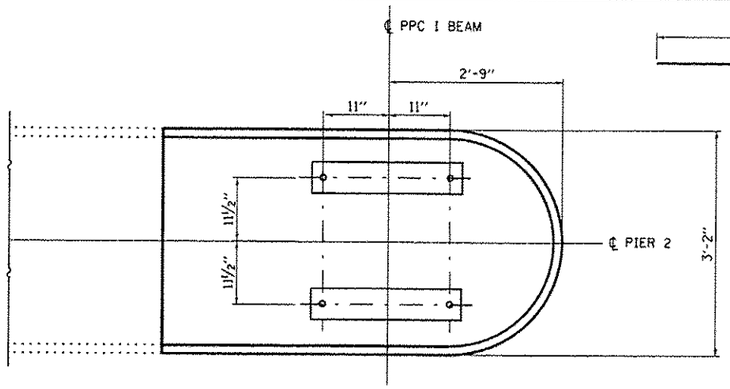
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	03 PIER CAP REPAIR 2014-1	LASALLE	25	18
		CONTRACT NO. 66C71		
	ILLINOIS			



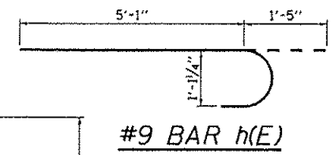
TOP PLAN

SUGGESTED SEQUENCE FOR NEW BEARING INSTALLATION

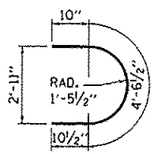
1. ALLOW CONCRETE PIER REPAIRS TO CURE.
2. INSTALL PL A WITH PINTLE UNDER PPC I-BEAM.
3. SLIDE PL B BETWEEN PL A AND BEARING SEAT.
4. INSTALL ANCHOR BOLTS.



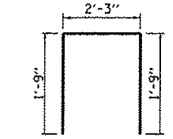
ANCHOR BOLTS LAYOUT



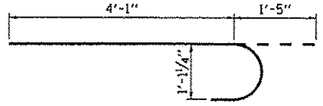
#9 BAR h(E)



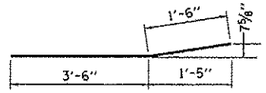
#6 BAR u(E)



#5 BAR u1(E)



#9 BAR h1(E)



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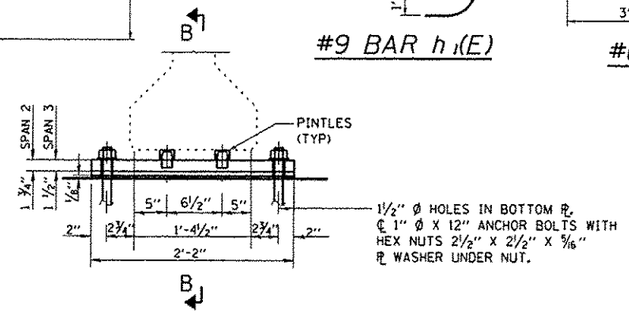
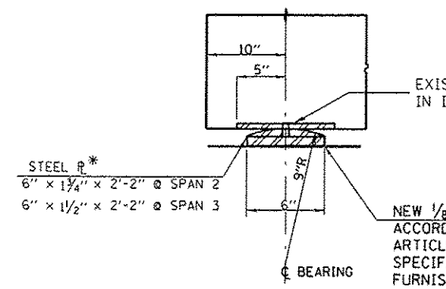
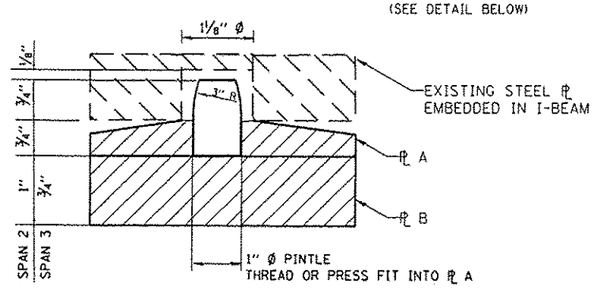


EXISTING FIXED BEARING TO BE REMOVED AND REPLACED

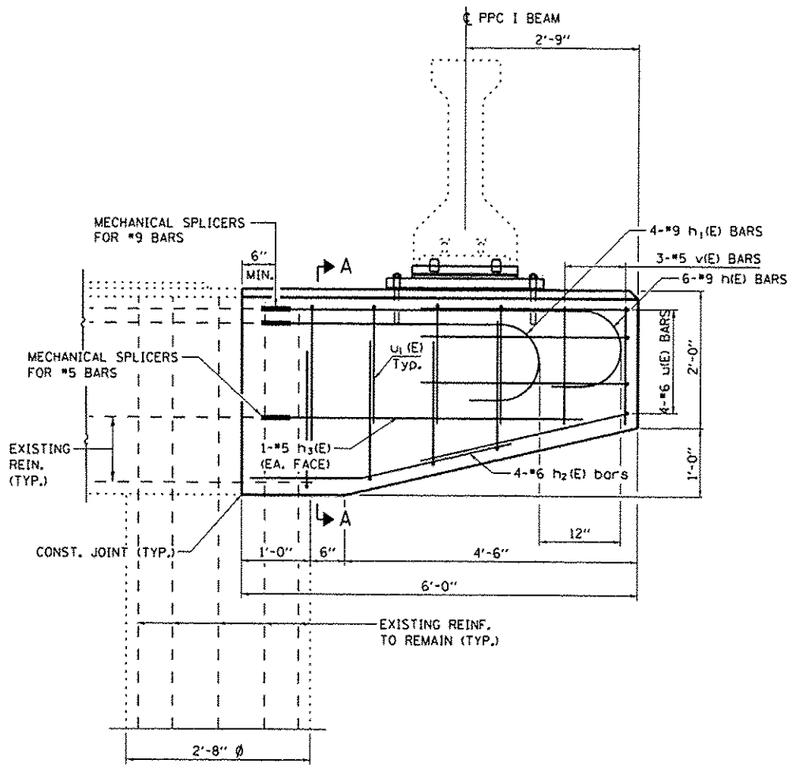


SECTION B–B

* PLATES INSTALLED IN TWO PIECES (SEE DETAIL BELOW)

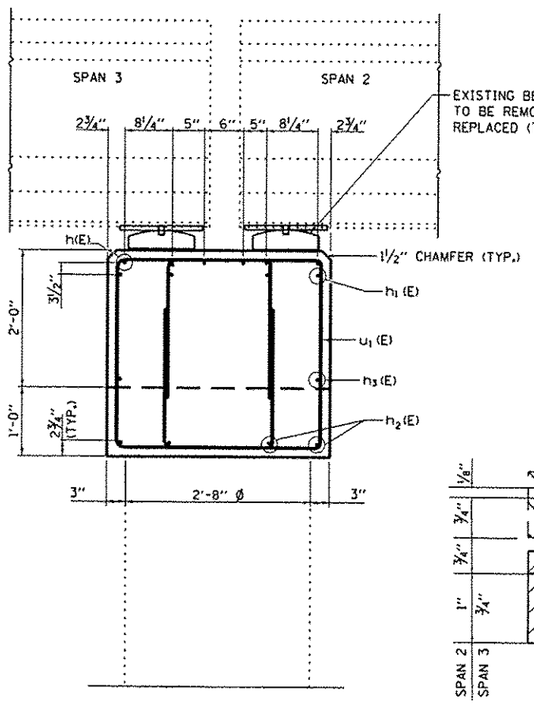


PROPOSED BEARING DETAIL



ELEVATION

PIER 2 EAST END – LOOKING NORTH



SECTION A–A

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	6	#9	6'-6"	
h1(E)	4	#9	5'-6"	
h2(E)	4	#6	5'-0"	
h3(E)	2	#5	4'-5"	
u(E)	4	#6	6'-3"	
u1(E)	20	#5	5'-9"	
v(E)	3	#5	1'-9"	
CONCRETE REMOVAL			CU. YD.	1.9
CONCRETE STRUCTURES			CU. YD.	1.9
REINFORCEMENT BARS EPOXY COATED			POUND	410
MECHANICAL SPLICER			EACH	12
FURNISH AND ERECT STRUTURAL STEEL			POUND	133
TEMPORARY SHORING AND CRIBBING			EACH	2

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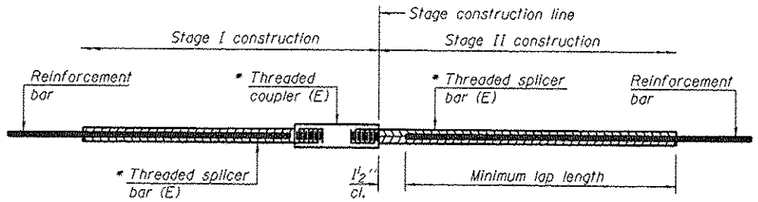
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 REPAIR DETAILS
SN: 050–0133

SCALE: | SHEET NO. 3 OF 4 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	03 PIER CAP REPAIR 2014-1	LASALLE	25	19
		CONTRACT NO. 66C71		
	ILLINOIS			



STANDARD BAR SPLICER ASSEMBLY

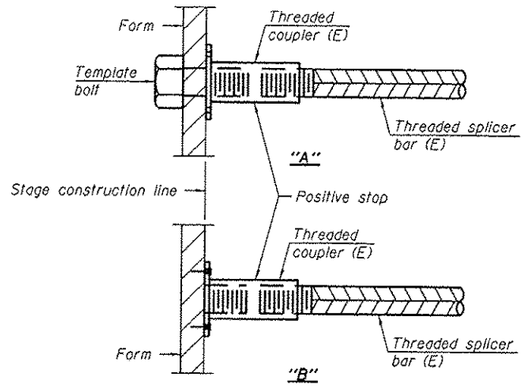
Minimum Lap Lengths					
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-3"
5	1'-9"	2'-5"	2'-7"	2'-11"	2'-10"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-4"
7	2'-9"	3'-10"	4'-2"	4'-8"	4'-6"
8	3'-8"	5'-1"	5'-5"	6'-2"	5'-10"
9	4'-7"	6'-5"	6'-10"	7'-9"	7'-5"

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 + 1½" + thread length

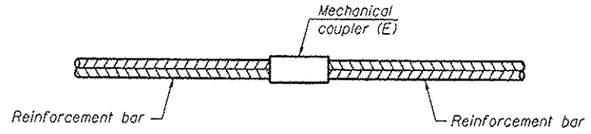
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length



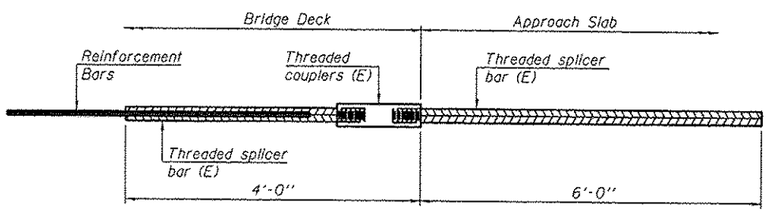
INSTALLATION AND SETTING METHODS

"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.



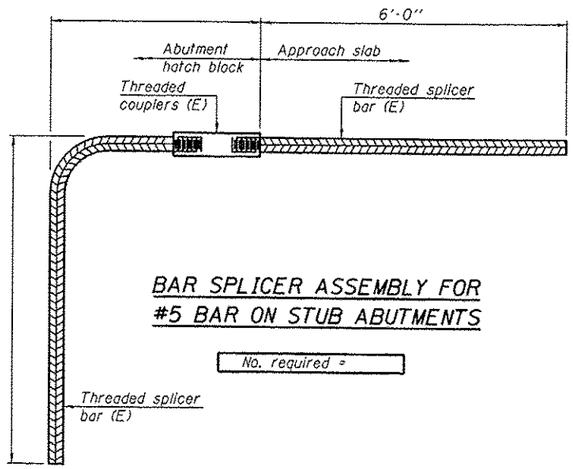
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required
PIER 2-EAST END	#9	10
PIER 2-EAST END	#5	2



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

No. required =



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

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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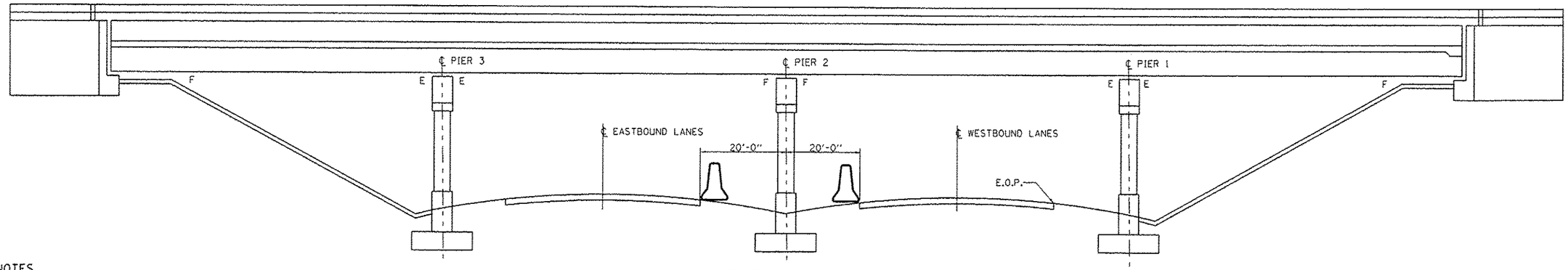
		DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS – S.N. 050-0133

SCALE: | SHEET NO. 4 OF 4 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	03 PIER CAP REPAIR 2014-1	LASALLE	25	20
		CONTRACT NO. 66C71		
	ILLINOIS			



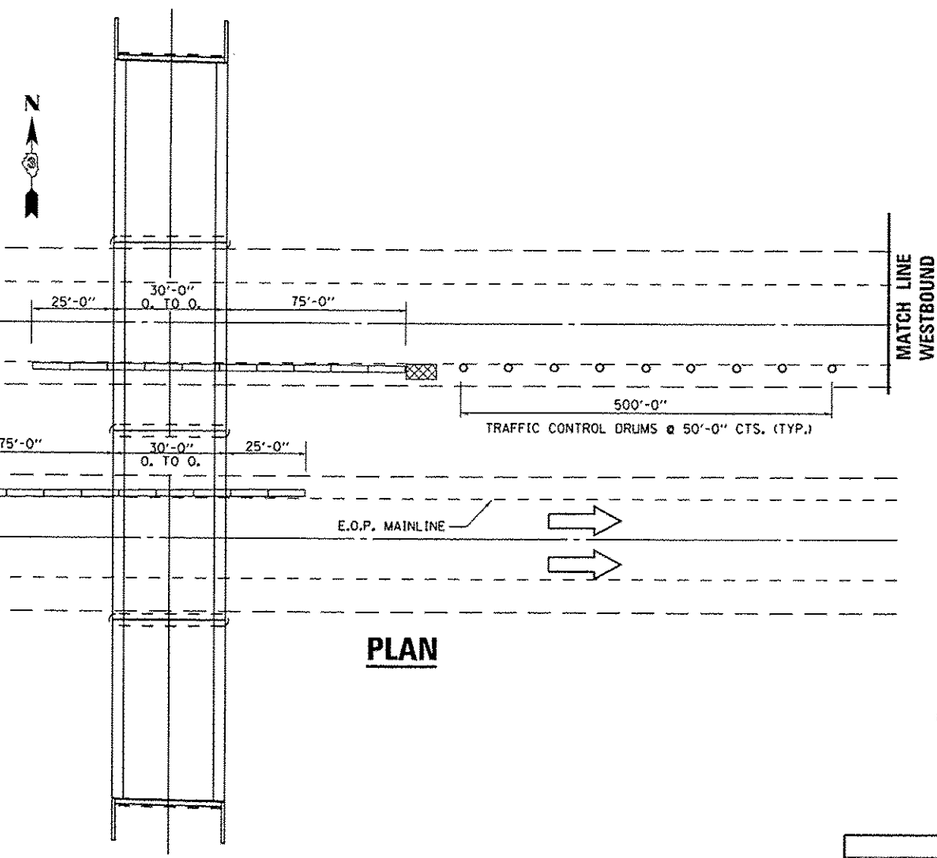
ELEVATION

LOOKING WEST

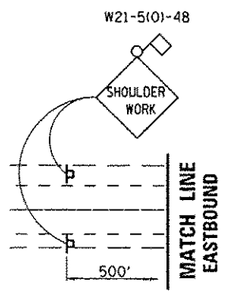
NOTES

TRAFFIC CONTROL AND PROTECTION STANDARD 701201 SHALL BE USED ON ALL OVERHEAD STRUCTURES WHEN THE CONTRACTOR IS TO JACK AND REMOVE BEARINGS, AND SHALL REMAIN IN PLACE UNTIL THE APPROVED TEMPORARY SHORING AND CRIBBING HAS BEEN INSTALLED. DURING THE JACKING PERIOD, TRAFFIC SHALL BE LIMITED TO THE OPPOSITE SIDE OF THE JACKING AREA UNTIL THE APPROVED TEMPORARY SHORING AND CRIBBING IS IN PLACE.

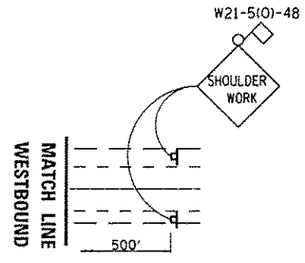
ALL TANGENT PORTIONS OF CONCRETE BARRIER WALL SHALL BE PINNED TO THE PAVEMENT TO THE SATISFICATION OF THE ENGINEER.



PLAN



NOTE: SIGNS, AND SIGN PLACEMENT TO BE USED IN CONJUCTION WITH TRAFFIC CONTROL AND PROTECTION SPECIAL.



SYMBOLS

- SIGN
- DRUM WITH STEADY BURNING LIGHT
- IMPACT ATTENUATOR TEMP SUN TL3
- TEMPORARY CONCRETE BARRIER

BILL OF MATERIAL

ITEM	UNIT	TOTAL
TEMPORARY CONCRETE BARRIER	FOOT	260
IMP ATTN TEMP SUN TL3	EACH	2

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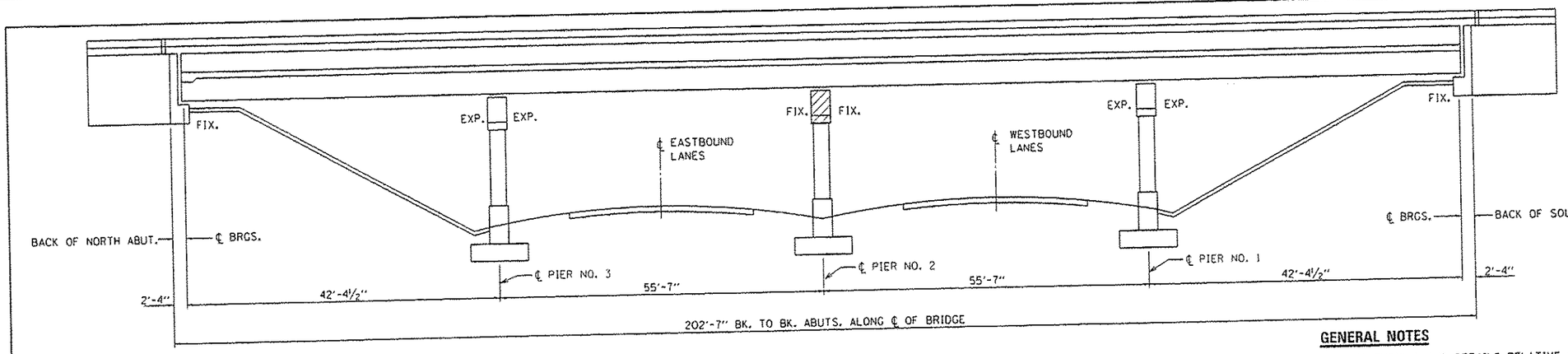
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL DETAILS
SN: 050-0134

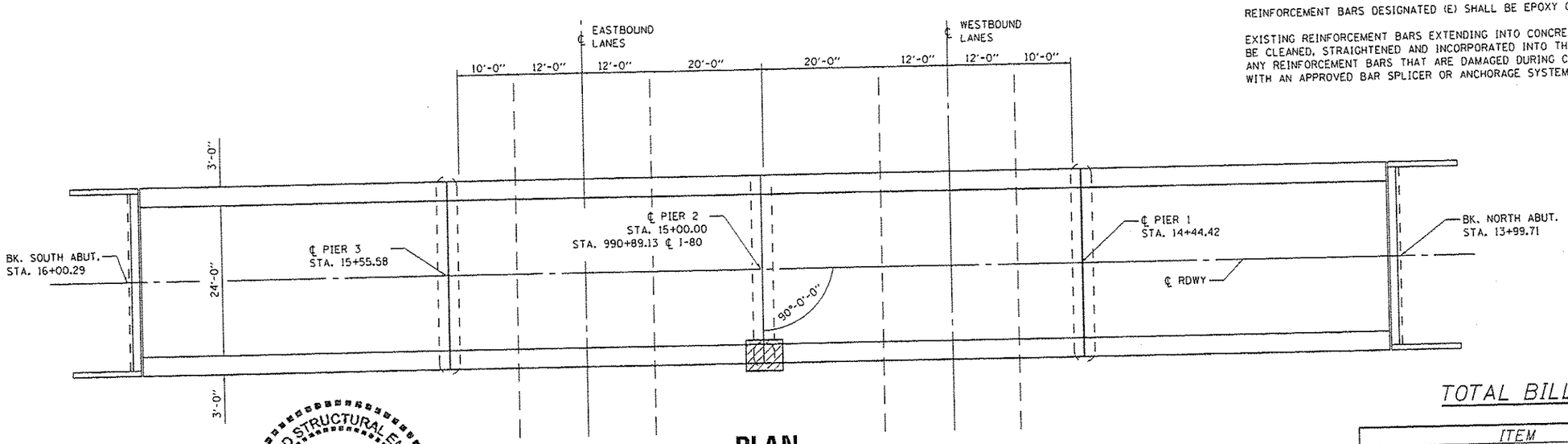
SCALE: | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	03 PIER CAP REPAIR 2014-1	LASALLE	25	21
		CONTRACT NO. 66C71		
	ILLINOIS			



ELEVATION

LOOKING WEST



PLAN

PIER CAP REPAIR

LICENSED STRUCTURAL ENGINEER
DAVID CARL PUZEY
081-005470
SPRINGFIELD ILLINOIS
STATE OF ILLINOIS

D Carl Puzey 5/9/13
Expires 11/30/14

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.

THE CONTRACTOR SHALL PROVIDE SUPPORT AND/OR SHORING SYSTEMS FOR THE BEAMS IN THE AREA OF CONCRETE REMOVAL AND REPLACEMENT. SEE THE SPECIAL PROVISION "TEMPORARY SHORING AND CRIBBING".

TWO ⅛ IN. ADJUSTING SHIMS SHALL BE PROVIDED FOR EACH BEARING IN ADDITION TO ALL OTHER PLATES OR SHIMS AND PLACED AS SHOWN ON BEARING DETAILS OR AS INSTRUCTED BY THE ENGINEER.

REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.

EXISTING REINFORCEMENT BARS EXTENDING INTO CONCRETE 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.

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	1.9
Concrete Structure	Cu. Yd.	1.9
Reinforcement Bars, Epoxy Coated	Pound	410
Temporary Shoring and Cribbing	Each	2
Furnish and Erect Structural Steel	Pound	133
Anchor Bolts, 1" Dia.	Each	4
Mechanical Splicer	Each	12

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
SN: 050-0134

SCALE: | SHEET NO. 1 OF 5 SHEETS | STA. | TO STA.

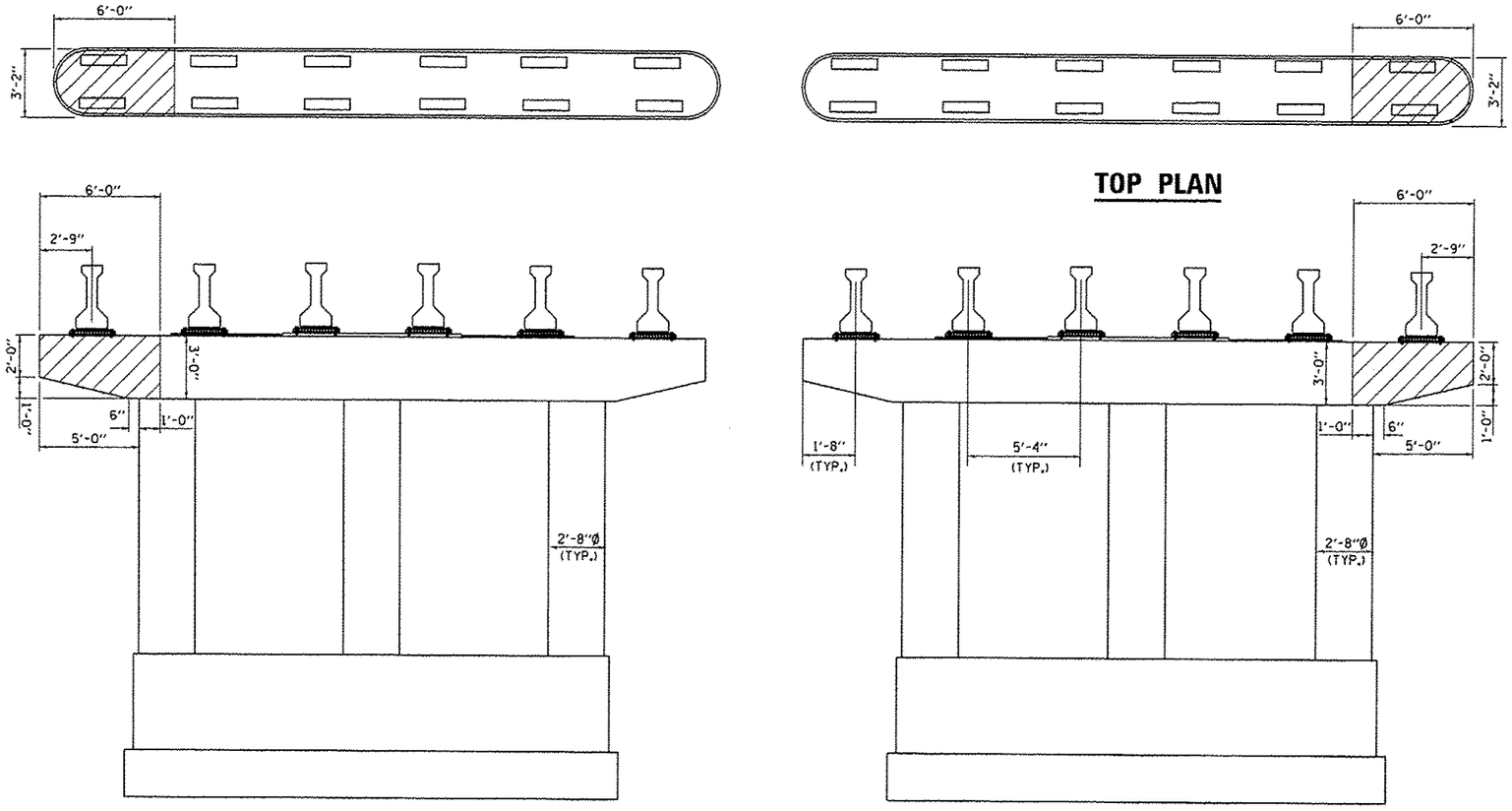
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	03 PIER CAP REPAIR 2014-1	LASALLE	25	22
	ILLINOIS	CONTRACT NO. 66C71		

PIER 2 BEAM REACTION TABLE

		SPAN 2	SPAN 3
R℄	(K)	35.6	35.6
R↳	(K)	29.1	29.1
Imp.	(K)	8.0	8.0
R (Total)	(K)	72.7	72.7

NOTES:

1. TEMPORARY BEAM SUPPORTS SHALL BE FURNISHED AND INSTALLED PRIOR TO BEGINNING CONCRETE REMOVAL OPERATIONS.
2. THE CONTRACTOR SHALL EXERCISE EXTREME CARE DURING CONCRETE REMOVAL OPERATIONS SO THE PPC-I BEAMS ARE NOT DAMAGED. IF THE EXISTING BEAMS ARE DAMAGED DUE TO THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS, THE CONTRACTOR SHALL REPAIR THE BEAMS TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
3. REMOVE EXISTING BEARINGS AND REPLACE WITH NEW FIXED BEARING AS DETAILED ON SHEET 23 OF 24.
4. ALL STRUCTURAL STEEL SHALL CONFORM TO AASHTO CLASSIFICATION M-270 GR. 36, UNLESS OTHERWISE NOTED.



PIER2–CENTER PIER

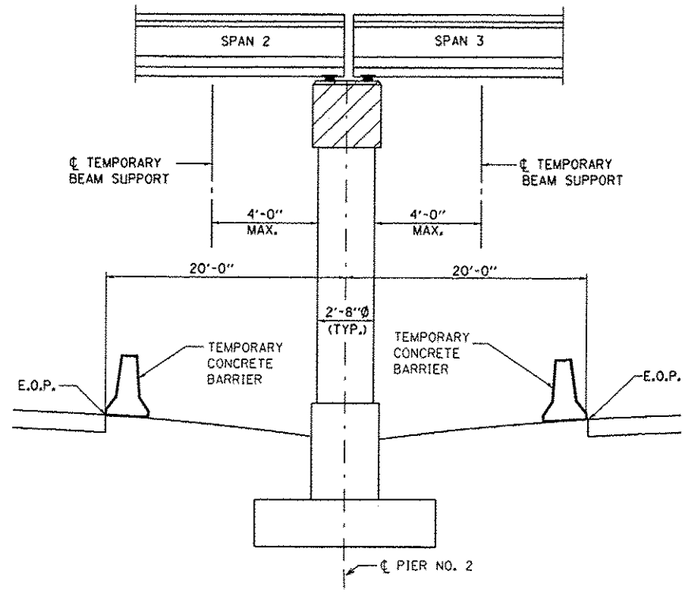
LOOKING SOUTH

NORTH FACE

PIER2–CENTER PIER

LOOKING NORTH

SOUTH FACE



PIER2–CENTER PIER

LOOKING WEST

HATCHED AREA INDICATES CONCRETE REMOVAL

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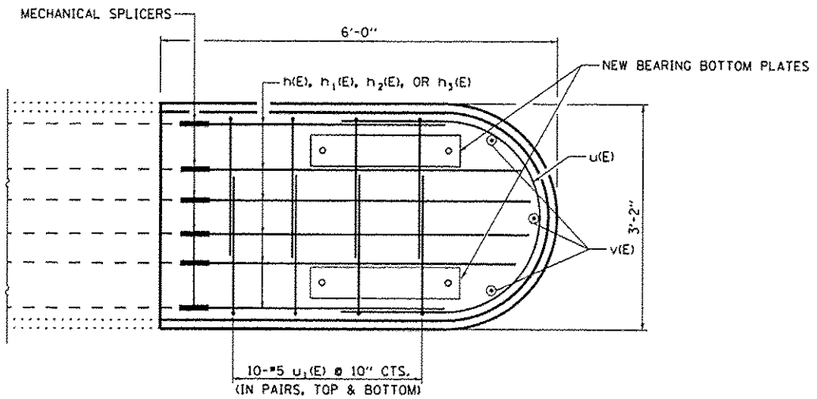
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 REPAIR DETAILS
SN: 050–0134

SCALE: | SHEET NO. 4 OF 5 SHEETS | STA. | TO STA.

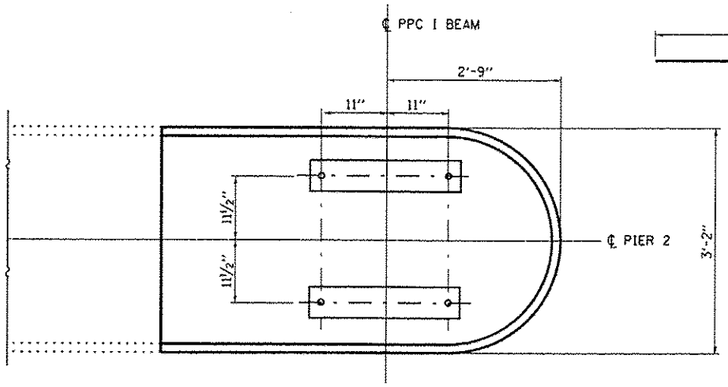
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	03 PIER CAP REPAIR 2014-1	LASALLE	25	23
		CONTRACT NO. 66C71		
	ILLINOIS			



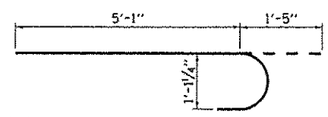
TOP PLAN

SUGGESTED SEQUENCE FOR NEW BEARING INSTALLATION

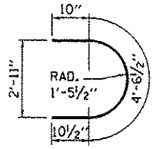
1. ALLOW CONCRETE PIER REPAIRS TO CURE.
2. INSTALL PL A WITH PINTLE UNDER PPC I-BEAM.
3. SLIDE PL B BETWEEN PL A AND BEARING SEAT.
4. INSTALL ANCHOR BOLTS.



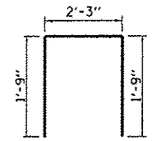
ANCHOR BOLTS LAYOUT



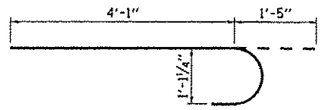
#9 BAR h(E)



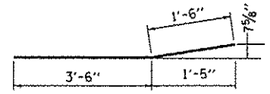
#6 BAR u(E)



#5 BAR u1(E)



#9 BAR h1(E)



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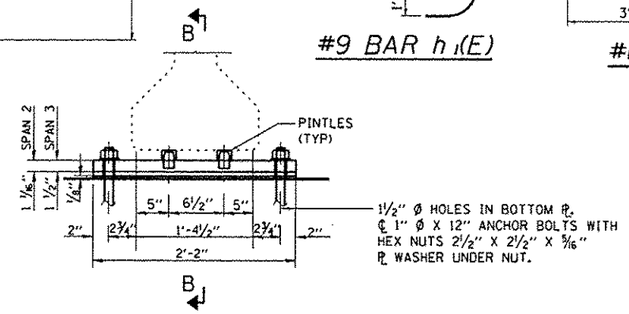
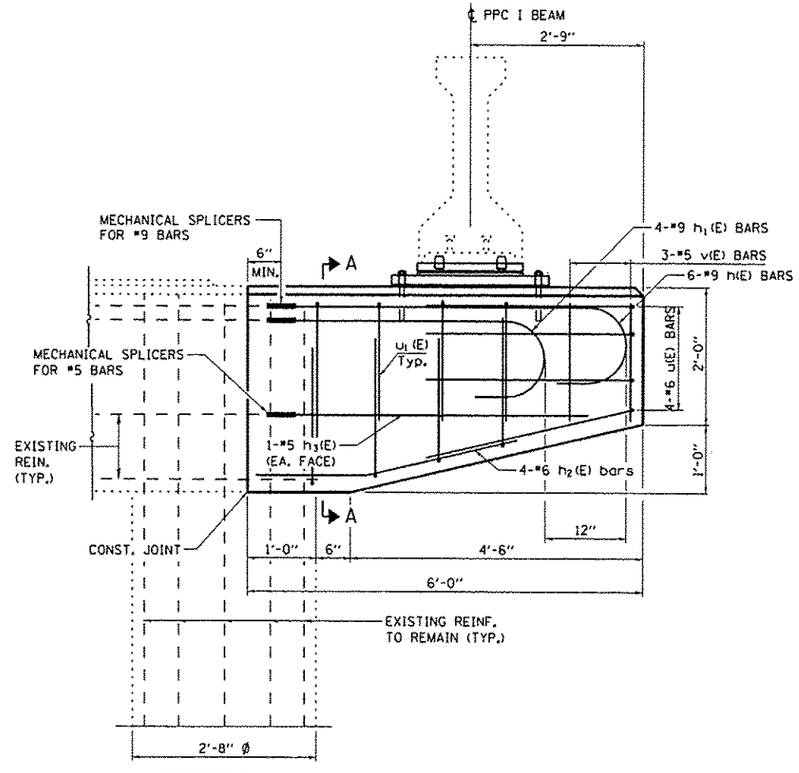
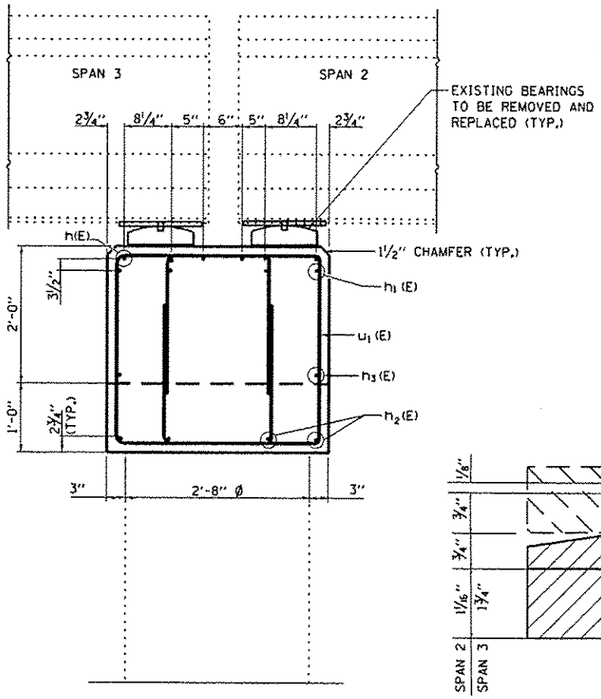


EXISTING FIXED BEARING TO BE REMOVED AND REPLACED

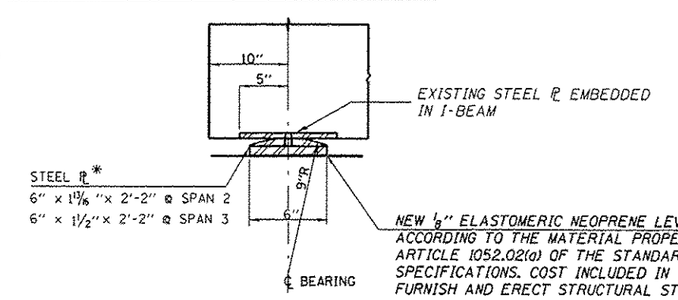


ELEVATION

PIER 2 EAST END – LOOKING NORTH

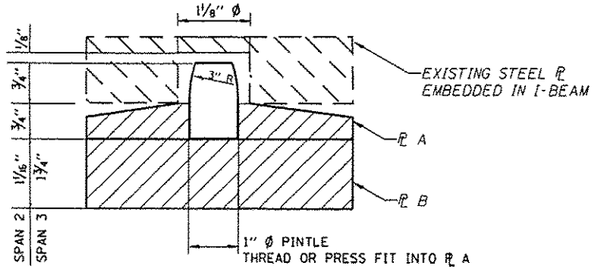


SECTION A–A



SECTION B–B

* PLATES INSTALLED IN TWO PIECES (SEE DETAIL BELOW)



PROPOSED BEARING DETAIL

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	6	#9	6'-6"	
h1(E)	4	#9	5'-6"	
h2(E)	4	#6	5'-0"	
h3(E)	2	#5	4'-5"	
u(E)	4	#6	6'-3"	
u1(E)	20	#5	5'-9"	
v(E)	3	#5	1'-9"	
CONCRETE REMOVAL			CU. YD.	1.9
CONCRETE STRUCTURES			CU. YD.	1.9
REINFORCEMENT BARS EPOXY COATED			POUND	410
MECHANICAL SPLICER			EACH	12
FURNISH AND ERECT STRUTURIAL STEEL			POUND	133
TEMPORARY SHORING AND CRIBBING			EACH	2

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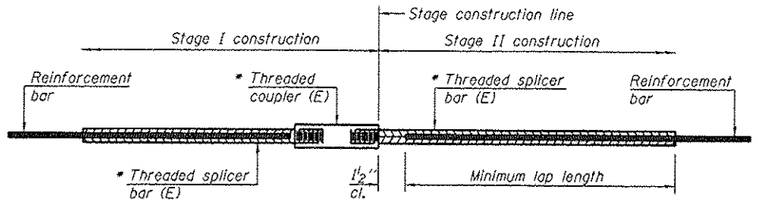
	PLOT DATE = 4/3/2013	CHECKED - RON WOODSHANK	REVISED -
		DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 REPAIR DETAILS
SN: 050–0134

SCALE: | SHEET NO. 5 OF 5 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	03 PIER CAP REPAIR 2014-1	LASALLE	25	24
		CONTRACT NO. 66C71		
	ILLINOIS			



STANDARD BAR SPLICER ASSEMBLY

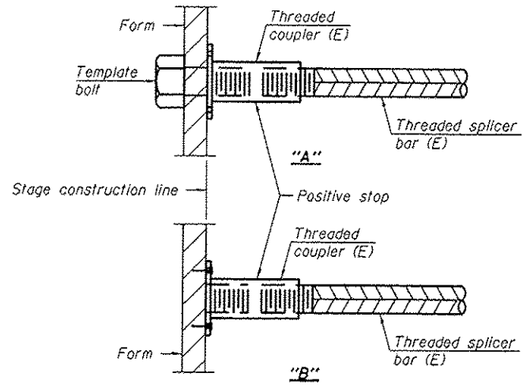
Minimum Lap Lengths					
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-3"
5	1'-9"	2'-5"	2'-7"	2'-11"	2'-10"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-4"
7	2'-9"	3'-10"	4'-2"	4'-8"	4'-6"
8	3'-8"	5'-1"	5'-5"	6'-2"	5'-10"
9	4'-7"	6'-5"	6'-10"	7'-9"	7'-5"

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 + 1½" + thread length

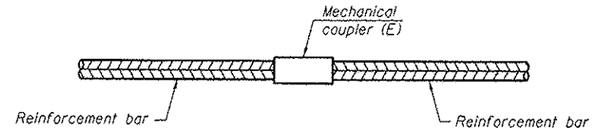
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length



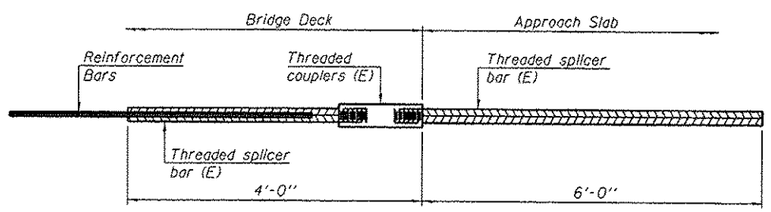
INSTALLATION AND SETTING METHODS

"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.



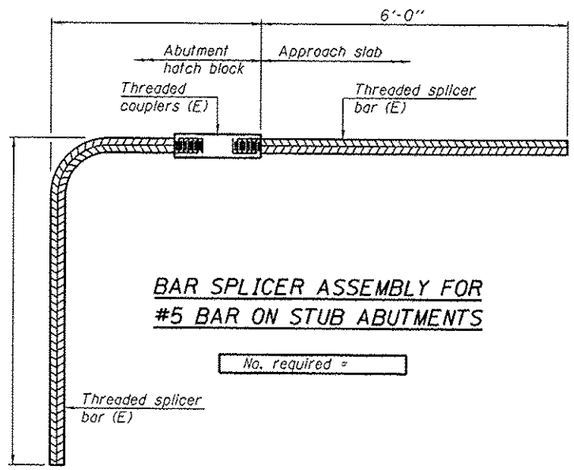
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required
PIER 2-EAST END	#9	10
PIER 2-EAST END	#5	2



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

No. required =



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

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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	PLOT DATE = 4/3/2013	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS – S.N. 050-0134

SCALE: | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	03 PIER CAP REPAIR 2014-1	LASALLE	25	25
		CONTRACT NO. 66C71		
	ILLINOIS			