

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2026-1	PULASKI	17	1
		ILLINOIS	CONTRACT NO. 78B50	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

F.A.I. ROUTE 57 SB (I-57)
SECTION D9 BRIDGE REPAIR 2026-1
PULASKI COUNTY
PROJECT STP-D4UA(048)
MAJOR BRIDGE PREVENTATIVE MAINTENANCE

D-99-060-25

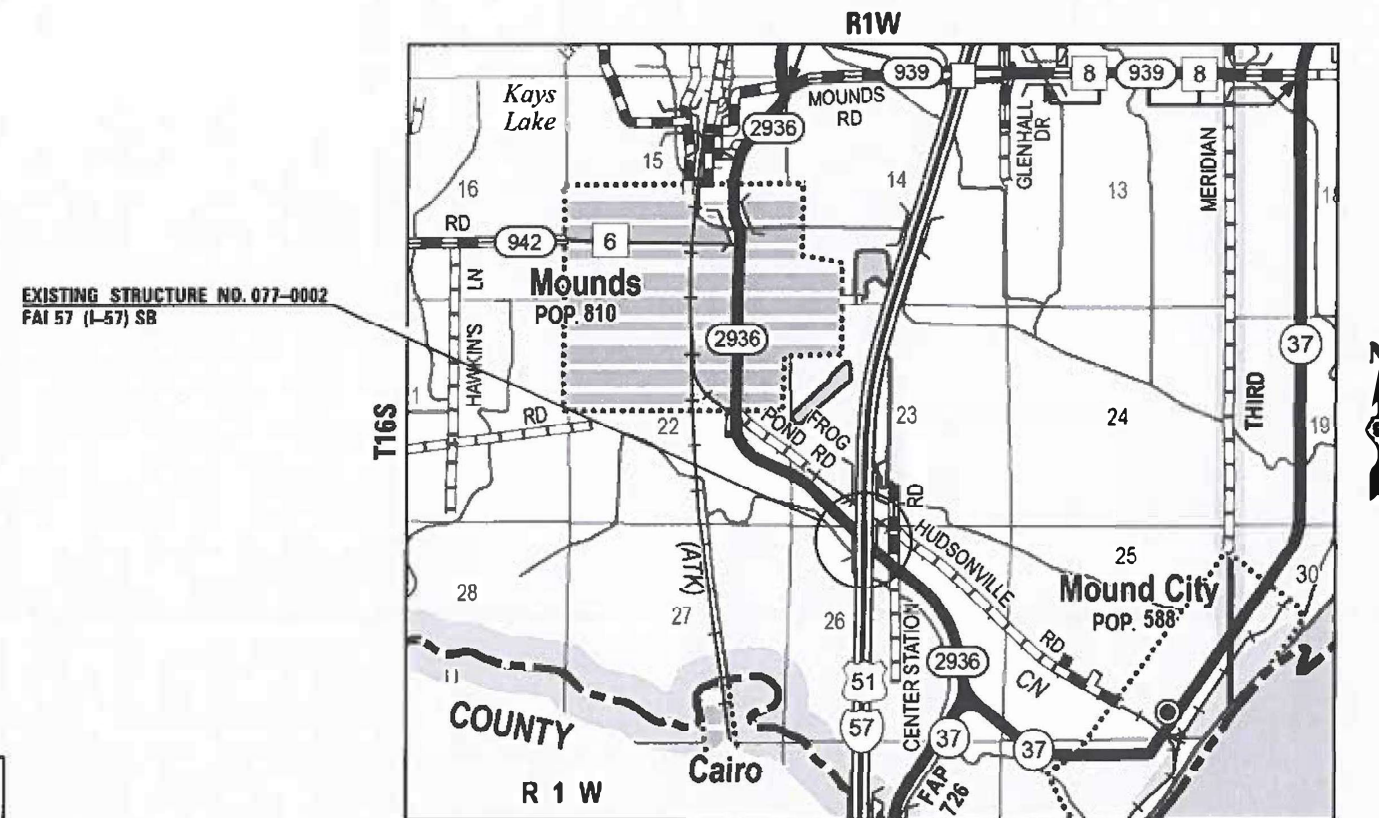


FOR INDEX OF SHEETS, SEE SHEET NO. 3
FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 4

TRAFFIC DATA
I-57 (SOUTHBOUND ONLY)
58% TRUCKS
ADT (2025; 2045) = 7,830; 9,550
P.V. = 42%
S.U. = 3%
M.U. = 55%

TOWNSHIPS:
COUNTY UNIT ROAD DISTRICT

C-99-094-25



EXISTING STRUCTURE NO. 077-0002
FAI 57 (I-57) SB

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

PROJECT ENGINEER: Brandy Maes, PE
DESIGNER: Moshe Cohen, S.E. (618) 233-5877

CONTRACT NO. 78B50

SN 077-0002 (SB)
BRIDGE LENGTH = 1085.48 FT
NET LENGTH = 1085.48 FT



Signed: *Moshe L. Cohen*

Dated: 2026-01-29
Illinois Structural Engineer
No. 081-008104
License Expires: 11-30-2026

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED Jan 30 20 26
Lora S. Benning
REGION FIVE ENGINEER

March 20 20 26
[Signature]
ENGINEER OF DESIGN AND ENVIRONMENT

March 20 20 26
[Signature]
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

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FILE NAME: C:\p\hsp\pcc\hsp\constr\pcc\Documents\DOT Projects\25-01187 I57 SB over Old US 51 0830 10.12.16.DOT\B-idge\0770002-0918508-001-Title_Sheet.dwg

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12/11/2025
 12/11/2025
 12/11/2025

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PLOT DATE = 12/11/2025	CHECKED - MLC	REVISED -
	DATE -	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

SIGNATURES

SCALE:	SHEET	OF	SHEETS	STA.	TO STA.
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2026-1	PULASKI	17	2
ILLINOIS FED. AID PROJECT			CONTRACT NO. 78B50	

Prepared By: Susan Poe
 DISTRICT STUDIES & PLANS ENGINEER

Examined By: Nanaytee
 DISTRICT LAND ACQUISITION ENGINEER

Examined By: Carl
 DISTRICT PROGRAM DEVELOPMENT ENGINEER

Examined By: R. Coon
 DISTRICT OPERATIONS ENGINEER

Examined By: _____
 DISTRICT PROJECT IMPLEMENTATION ENGINEER

Examined By: Beswill
 DISTRICT CONSTRUCTION ENGINEER

Examined By: Aan Hays
 DISTRICT MATERIALS ENGINEER

GENERAL NOTES

COMMITMENTS: NONE

INDEX OF SHEETS

- 1 COVER SHEET
- 2 SIGNATURES
- 3 GENERAL NOTES, INDEX OF SHEETS, AND HIGHWAY STANDARDS
- 4 SUMMARY OF QUANTITIES
- 5-17 STRUCTURE PLANS

INDEX OF HIGHWAY STANDARDS

- 000001-09 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 001001-02 AREAS OF REINFORCEMENT BARS
- 001006 DECIMAL OF AN INCH AND OF A FOOT
- 701001-02 OFF-ROAD OPERATIONS, 2L, 2W, MORE THAN 15' (4.5 m) AWAY
- 701006-05 OFF-ROAD OPERATIONS, 2L, 2W, 15' (4.5 m) TO 24" (600 mm) FROM PAVEMENT EDGE
- 701101-05 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
- 701201-05 LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS ≥ 45 MPH
- 701316-14 LANE CLOSURE, 2L, 2W, BRIDGE REPAIR
- 701400-12 APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY
- 701406-13 LANE CLOSURE, FREEWAY/EXPRESSWAY, DAY OPERATIONS ONLY
- 701901-11 TRAFFIC CONTROL DEVICES

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200 E. Main St., Suite 300
 P.O. Box 1000, Havana, IL 62423
 618.253.2877 (Phone)
 618.253.2877 (Fax)
 www.kaskaskiaengineering.com
 11/27/2016 10:41:00 AM
 Illinois Professional Design Firm
 Professional Engineering Group
 01-000013
 20-000004

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES, INDEX OF SHEETS, AND HIGHWAY STANDARDS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2026-1	PULASKI	17	3
CONTRACT NO. 78B50				
ILLINOIS FED. AID PROJECT				

SCALE: SHEET OF SHEETS STA. TO STA.

COUNTY: PULASKI
 ROUTE: FA1 57
 FUNDING: 80% FEDERAL ; 20% STATE
 LOCATION: SN 077-0002

CODE NO.	ITEM	UNIT	CONSTRUCTION CODE
			0013
50300225	CONCRETE STRUCTURES	CU YD	47.4
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	8,940
58700300	CONCRETE SEALER	SQ FT	3,166
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	6
67100100	MOBILIZATION	L SUM	1
70100100	TRAFFIC CONTROL AND PROTECTION, STANDARD 701316	EACH	1
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1
70100700	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	L SUM	1
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1
70106700	TEMPORARY RUMBLE STRIPS	EACH	6
70107025	CHANGEABLE MESSAGE SIGN	CAL DA	42
* 86200300	UNINTERRUPTABLE POWER SUPPLY, EXTENDED	EACH	1
X0321778	SEISMIC RESTRAINER	EACH	72

* SPECIALTY ITEM

CODE NO.	ITEM	UNIT	CONSTRUCTION CODE
			0013
53212754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	822
Z0073200	TEMPORARY SHORING AND CRIBBING	EACH	33

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 PROJECT: 25-1011.07...
 USER: mmc

REV - MS



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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2026-1	PULASKI	17	4
CONTRACT NO. 78B50				
ILLINOIS FED. AID PROJECT				

Existing Structure: SN 077-0002 was originally constructed in 1967 as one of two dual structures with simple span, P.P.C. I-Beam superstructures on open type abutments and combination of multi-column and hammerhead type piers on pile supported footings.

Structure to remain open to traffic during construction.

Salvage: None.

DESIGN STRESSES

Original Construction (1967)

Field Units
 $f_c = 1,400$ psi (Superstructure & Substructure)
 $f_s = 20,000$ psi (Reinforcement)
 $vc = 75$ psi (Footings)
 $n = 10$
 Precast Prestressed Units
 $f_c = 5,000$ psi
 $f_{ci} = 4,000$ psi
 $f_s = 248,000$ psi ($7/16"$ \emptyset Stress Relieved Strands)
 $f_{si} = 173,600$ psi ($7/16"$ \emptyset Stress Relieved Strands)

Existing Structure (1998 Rehab)

$f_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 36,000$ psi (M270 Gr. 36)

Existing Structure (2011 Rehab)

$f_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 36,000$ psi (M270 Gr. 36)

Existing Structure (2015 Rehab)

$f_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 36,000$ psi (M270 Gr. 36)

New Construction

$f_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 36,000$ psi (M270 Gr. 36)

DESIGN SPECIFICATIONS

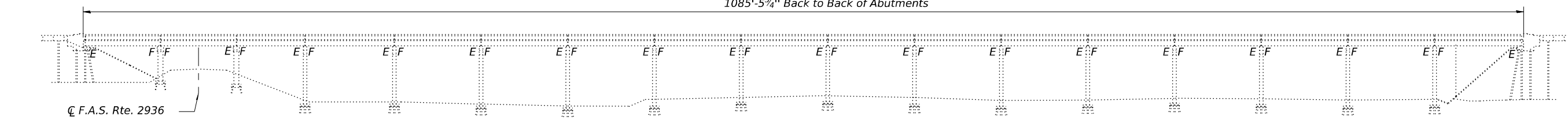
2002 AASHTO Standard Specifications for Highway Bridges, 17th Ed.

LOADING HS20-44

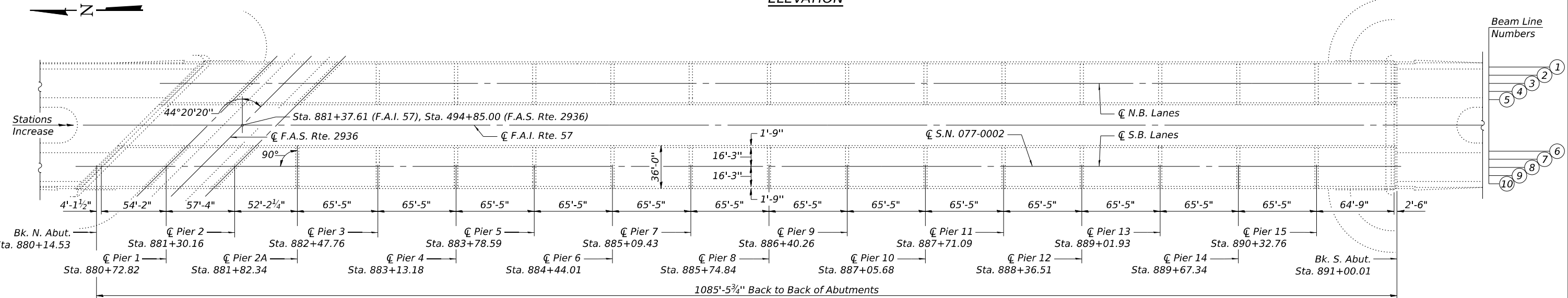
INDEX OF SHEETS

- 1 - General Plan & Elevation
- 2 - General Data
- 3 - Substructure Repair - Pier 1
- 4 - Substructure Repair - Pier 2
- 5 - Substructure Repair - Pier 2A
- 6 - Substructure Repair - Pier 3
- 7 - Substructure Repair - Pier 4
- 8 - Substructure Repair - Pier 5
- 9 - Substructure Repair - Pier 6
- 10 - Pier Encasement Details (Piers 1 & 2)
- 11 - Pier Encasement Details (Piers 2A Through 6)
- 12 - Seismic Restrainer Details (Piers 1 & 2)
- 13 - Seismic Restrainer Details (Piers 2A Through 6)

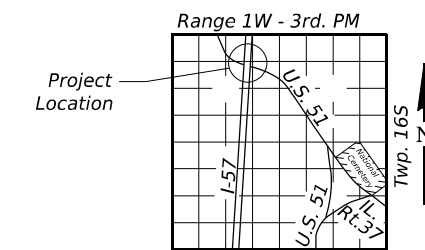
1085'-5 $\frac{3}{4}$ " Back to Back of Abutments



ELEVATION



PLAN



LOCATION SKETCH

GENERAL PLAN & ELEVATION
I-57 (SOUTHBOUND) OVER F.A.S. 2936
F.A.I. RTE. 57 - SEC. D9 BRIDGE REPAIR 2026-1
PULASKI COUNTY
STATION 881+37.61
STRUCTURE NO. 077-0002 (SB)

Signed: *Moshe L. Cohen*
 Dated: 2026-03-10
 Illinois Structural Engineer
 No. 081-008104
 License Expires: 11-30-2026



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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SHEET 1 OF 13 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2026-1	PULASKI	17	5
CONTRACT NO. 78B50				

ILLINOIS FED. AID PROJECT

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GENERAL NOTES

Reinforcement bars designated (E) shall be epoxy coated.
 All structural steel shall be AASHTO M 270 Grade 36 unless otherwise noted.
 Plan dimensions and details relative to the existing structure have been taken from existing plans and 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.
 All exposed concrete edges shall have a standard 3/4" chamfer unless otherwise noted.
 Concrete Sealer shall be placed over new pier cap encasement.

SCOPE OF WORK

1. Repair piers at designated locations or as directed by the Engineer, and construct concrete pier encasement.
2. Replace Seismic Restrainer cable assemblies.

(Repairs are limited to Piers 1 through 6. No work shall be done on Piers 7 through 15.)

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Structures	Cu. Yd.	47.4
Reinforcement Bars, Epoxy Coated	Pound	8,940
Concrete Sealer	Sq. Ft.	3,166
Seismic Restrainer	Each	72
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	822
Temporary Shoring and Cribbing	Each	33

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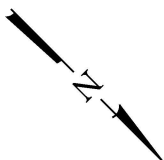
Kaskaskia
 Engineering Group, L.L.C.
 200 E. Main St., Suite 100
 Edwardsville, Illinois 62025
 618.215.5877 phone
 618.215.1977 fax
 www.kaskaskiaeng.com
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 25-598264

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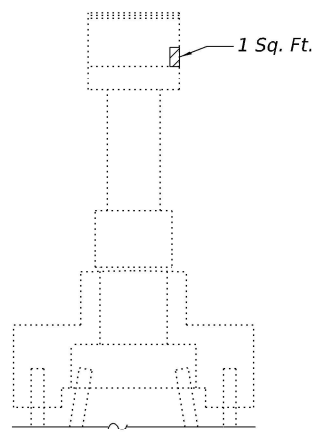
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL DATA
STRUCTURE NO. 077-0002
 SHEET 2 OF 13 SHEETS

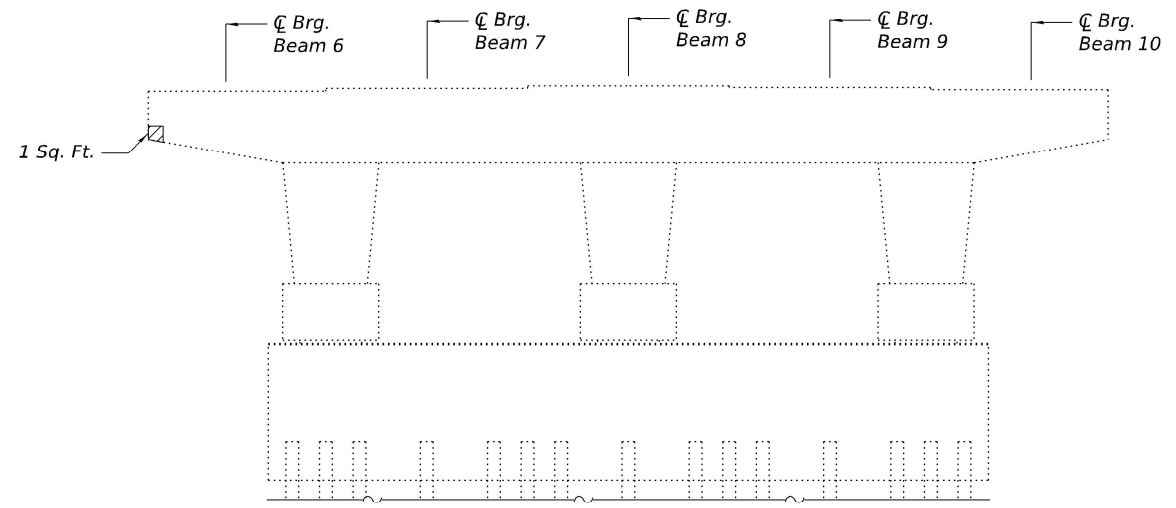
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2026-1	PULASKI	17	6
CONTRACT NO. 78B50				
ILLINOIS		FED. AID PROJECT		



PLAN



END ELEVATION
(Southeast Face - Looking Northwest)



ELEVATION
(Northeast Face - Looking Southwest)

BEAM REACTIONS

Reaction	Span 1	Span 2
R _P	(k) 49.8	52.4
R _L	(k) 40.9	41.2
R _{Imp.}	(k) 11.4	11.3
R (Total)	(k) 102.1	104.9

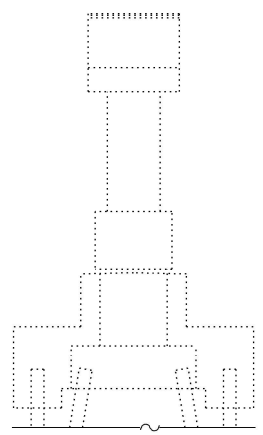
LEGEND

Indicates Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)

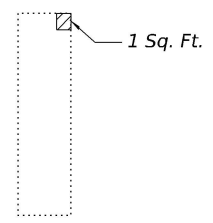
Notes:

See sheet 10 of 13 for pier encasement details.
See sheet 12 of 13 for seismic restrainer details.
All concrete necessary for the repairs to the pier cap shall be poured monolithically with the pier cap encasement concrete detailed on sheet 10 of 13.

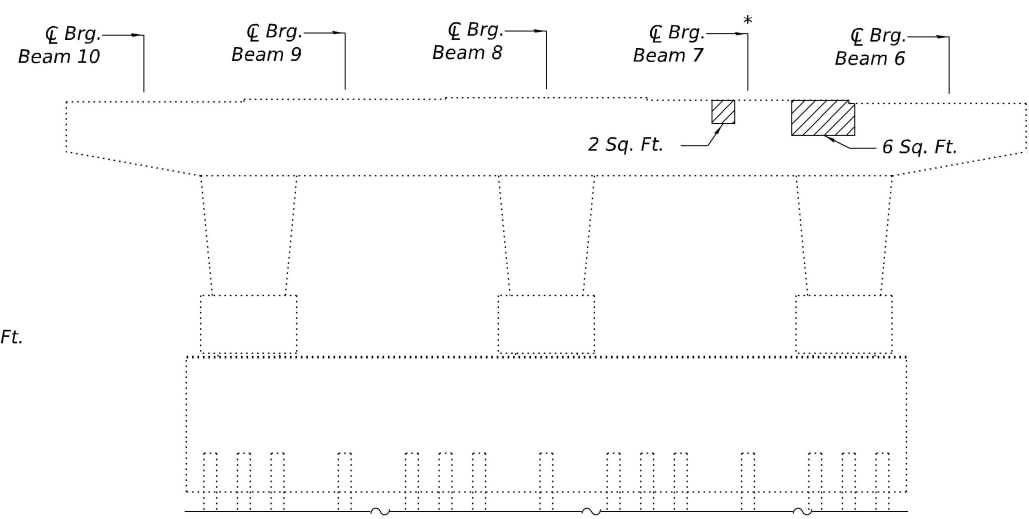
* Location of Temporary Shoring and Cribbing.



END ELEVATION
(Northwest Face - Looking Southeast)



UNDERSIDE OF CAP
(Northwest End - Looking Southeast)



ELEVATION
(Southwest Face - Looking Northeast)

BILL OF MATERIAL

Item	Unit	Total
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	11
Temporary Shoring and Cribbing	Each	1

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Kaskaskia
Engineering Group, L.L.C.
Professional Engineering Group

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PLOT DATE =	CHECKED - MLC	REVISED -

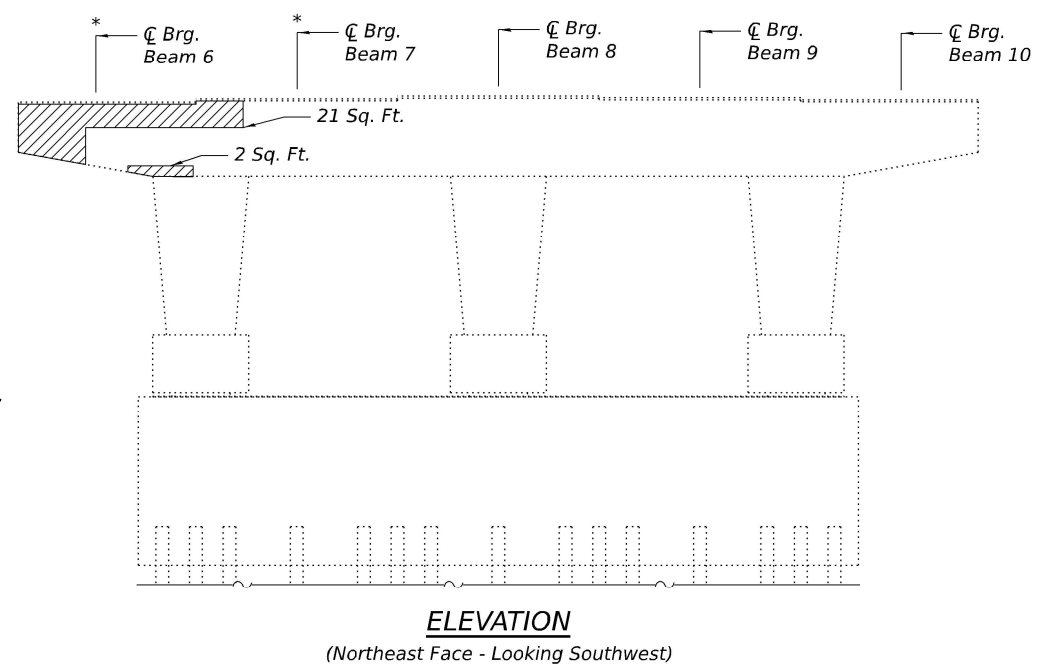
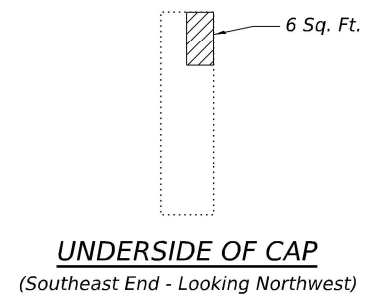
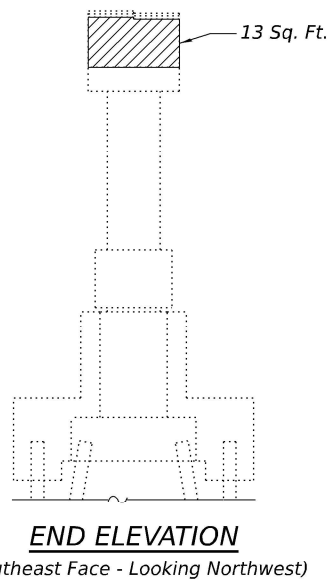
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSTRUCTURE REPAIR - PIER 1
STRUCTURE NO. 077-0002

SHEET 3 OF 13 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2026-1	PULASKI	17	7
CONTRACT NO. 78B50			ILLINOIS FED. AID PROJECT	

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BEAM REACTIONS

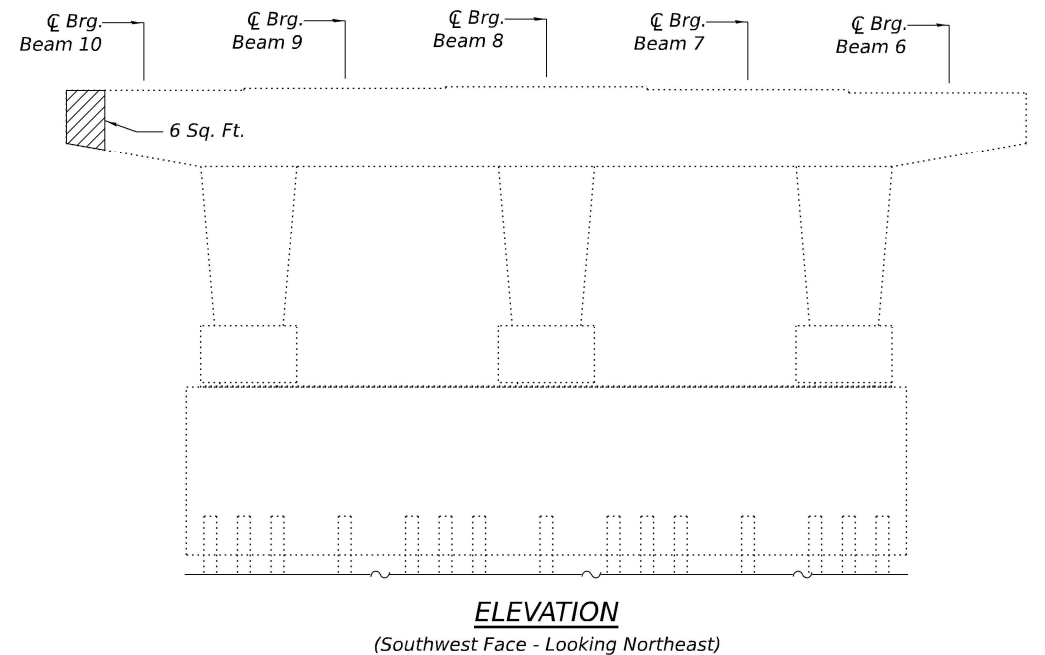
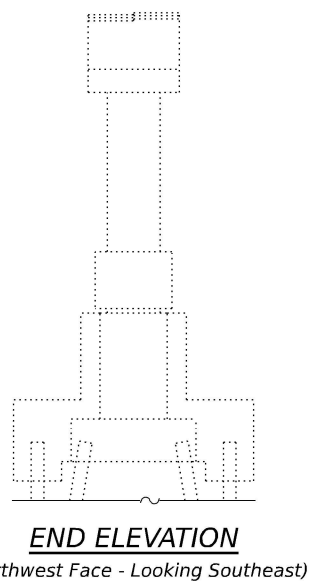
Reaction	Span 2	Span 3
R _P	(k) 52.4	48.1
R _L	(k) 41.2	40.6
R _{Imp.}	(k) 11.3	11.5
R (Total)	(k) 104.9	100.2

LEGEND

Indicates Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)

Notes:
 See sheet 10 of 13 for pier encasement details.
 See sheet 12 of 13 for seismic restrainer details.
 All concrete necessary for the repairs to the pier cap shall be poured monolithically with the pier cap encasement concrete detailed on sheet 10 of 13.

* Location of Temporary Shoring and Cribbing.



BILL OF MATERIAL

Item	Unit	Total
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	58
Temporary Shoring and Cribbing	Each	2

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 Moline, Illinois 61201
 617.233.5877 phone
 617.233.5877 fax
 www.kaskaskiaeng.com

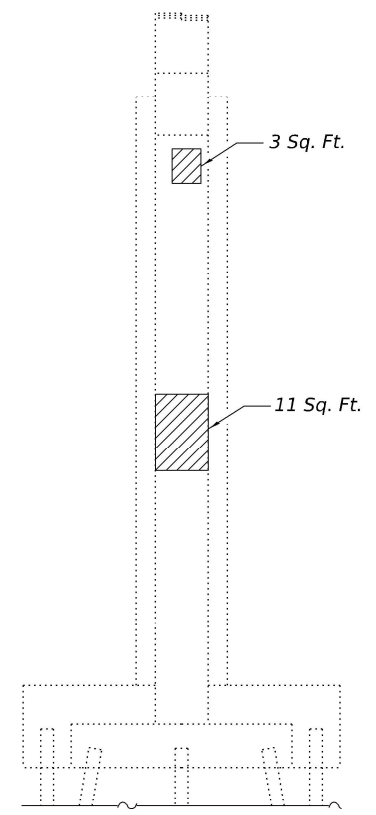
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DEPARTMENT OF TRANSPORTATION

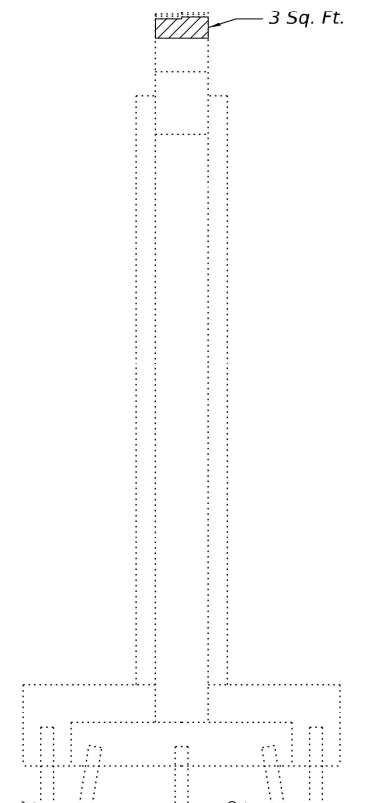
SUBSTRUCTURE REPAIR - PIER 2
STRUCTURE NO. 077-0002

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2026-1	PULASKI	17	8
CONTRACT NO. 78B50				

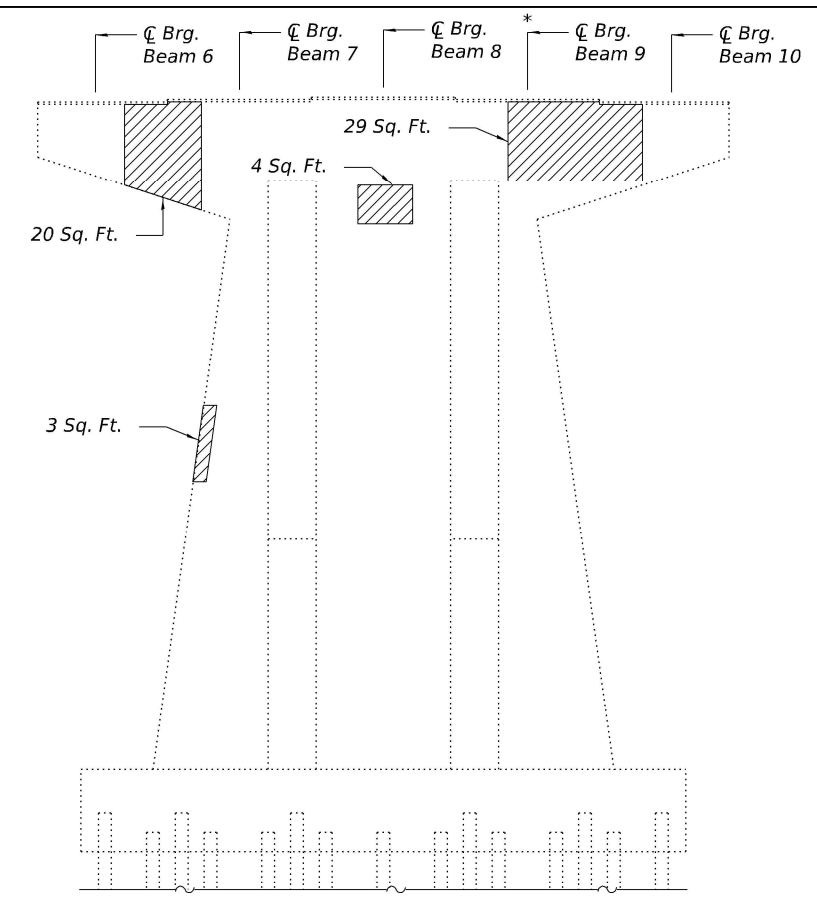
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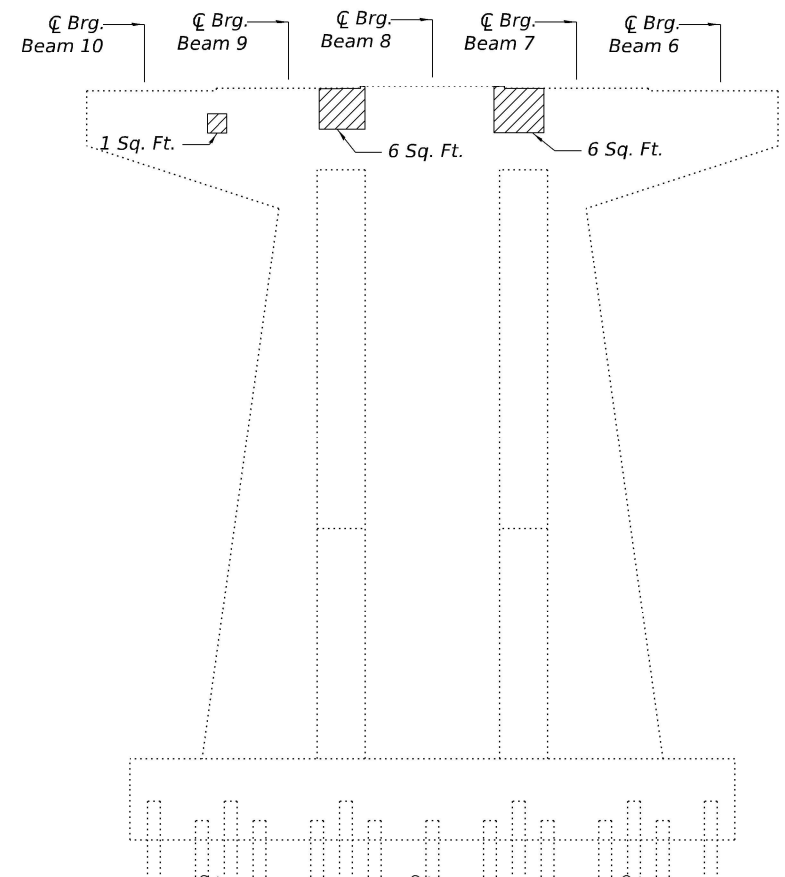
END ELEVATION
 (East Face - Looking West)



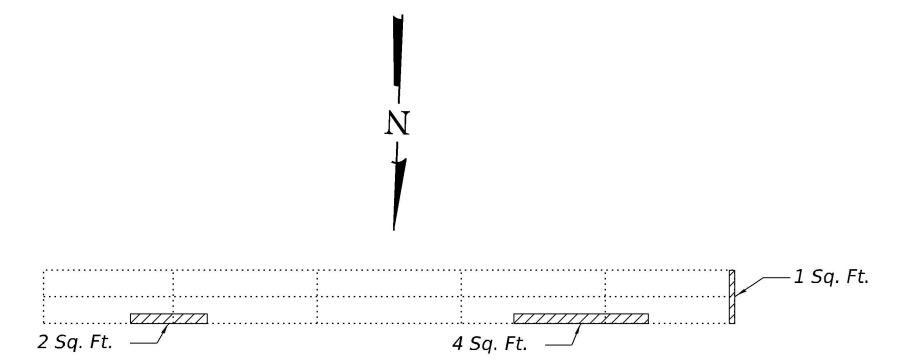
END ELEVATION
 (West Face - Looking East)



ELEVATION
 (North Face - Looking South)



ELEVATION
 (South Face - Looking North)



PLAN

BEAM REACTIONS

Reaction	Span 3	Span 4
R _P	(k) 47.0	59.3
R _L	(k) 40.6	42.2
R _{Imp.}	(k) 11.5	11.1
R (Total)	(k) 99.1	112.6

LEGEND

Indicates Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)

Notes:
 See sheet 11 of 13 for pier encasement details.
 See sheet 13 of 13 for seismic restrainer details.
 All concrete necessary for the repairs to the pier cap shall be poured monolithically with the pier cap encasement concrete detailed on sheet 11 of 13.

* Location of Temporary Shoring and Cribbing.

BILL OF MATERIAL

Item	Unit	Total
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	93
Temporary Shoring and Cribbing	Each	1

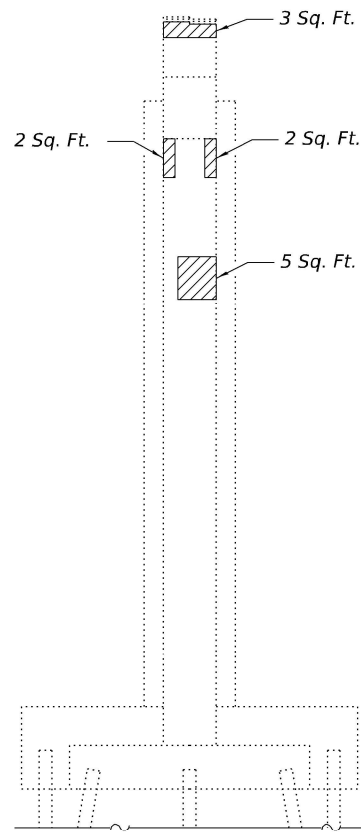
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 Edwardsville, Illinois 62025
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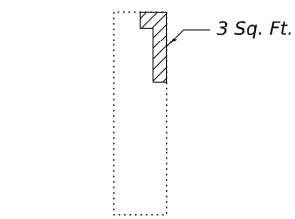
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSTRUCTURE REPAIR - PIER 2A
STRUCTURE NO. 077-0002

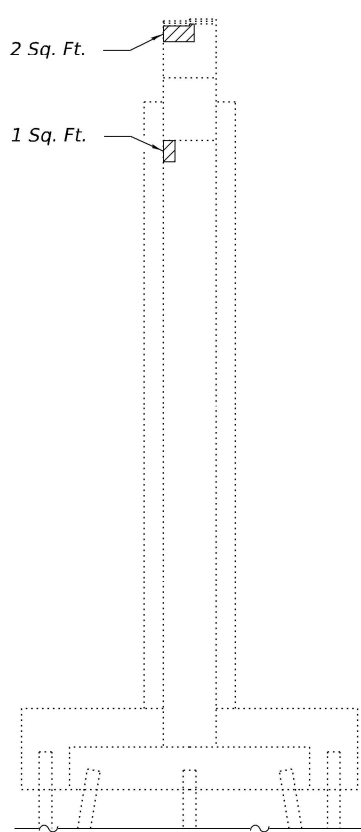
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2026-1	PULASKI	17	9
CONTRACT NO. 78B50				
ILLINOIS		FED. AID PROJECT		



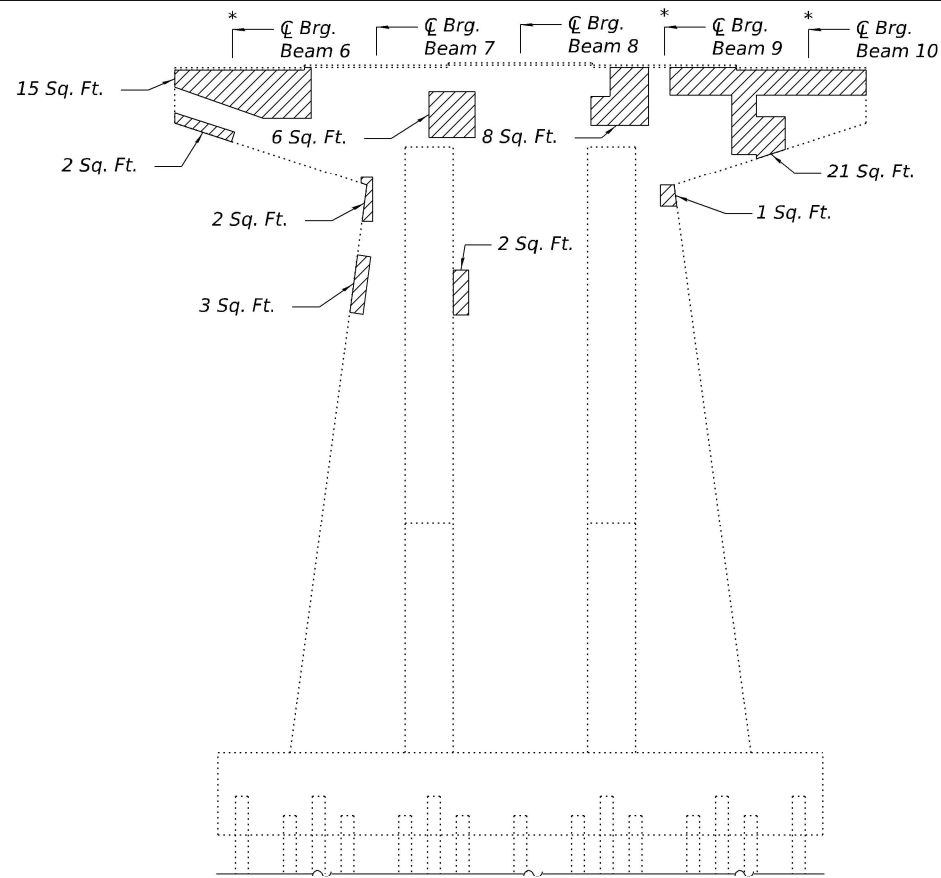
END ELEVATION
(East Face - Looking West)



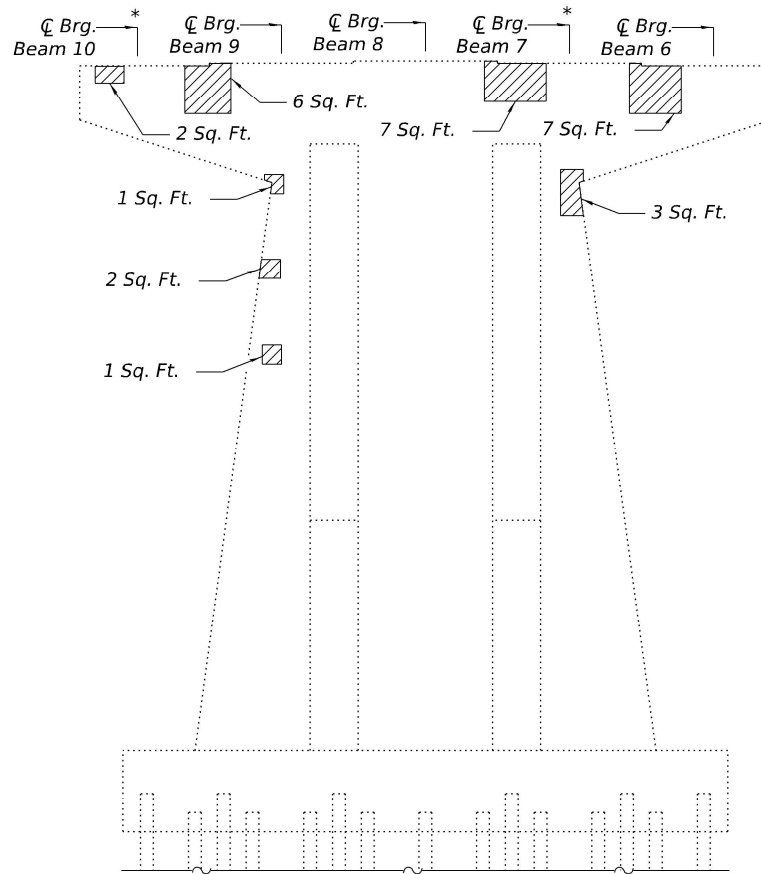
UNDERSIDE OF CAP
(East End - Looking West)



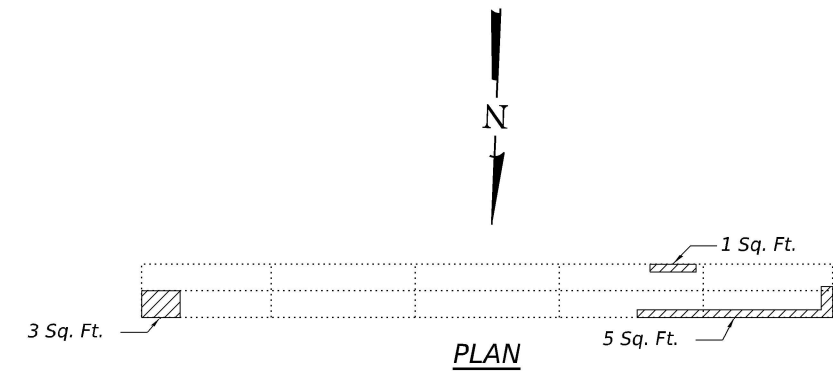
END ELEVATION
(West Face - Looking East)



ELEVATION
(North Face - Looking South)



ELEVATION
(South Face - Looking North)



PLAN

BEAM REACTIONS

Reaction	Span 4	Span 5
R _P	(k) 59.3	59.3
R _L	(k) 42.2	42.2
R _{Imp.}	(k) 11.1	11.1
R (Total)	(k) 112.6	112.6

LEGEND

Indicates Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)

Notes:

See sheet 11 of 13 for pier encasement details.
See sheet 13 of 13 for seismic restrainer details.
All concrete necessary for the repairs to the pier cap shall be poured monolithically with the pier cap encasement concrete detailed on sheet 11 of 13.

* Location of Temporary Shoring and Cribbing.

BILL OF MATERIAL

Item	Unit	Total
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	116
Temporary Shoring and Cribbing	Each	5

MODEL: Default
FILE NAME: j:\reg-pw\benley.com\reg-pw-01\Documents\DOT Projects\25-1011.07 157 SB over Old US 51 (ORD 10.12\0_IDOT\Bridg\0770002-D978B50-010-SubstructureRepair\Pier3.dgn

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Engineering Group, L.L.C.
Professional Engineering Group

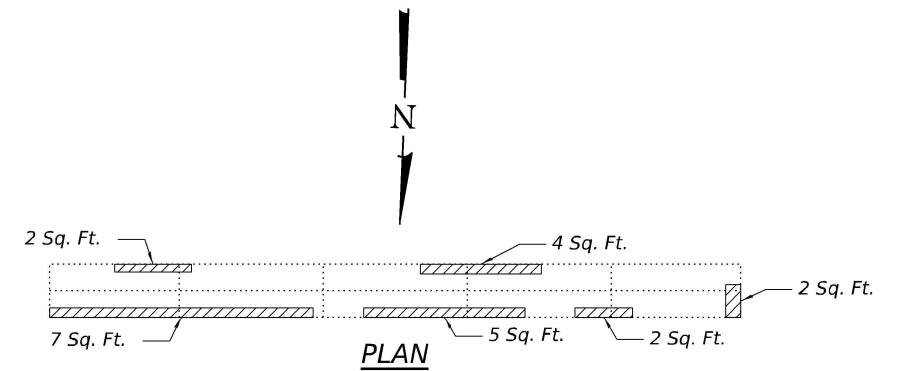
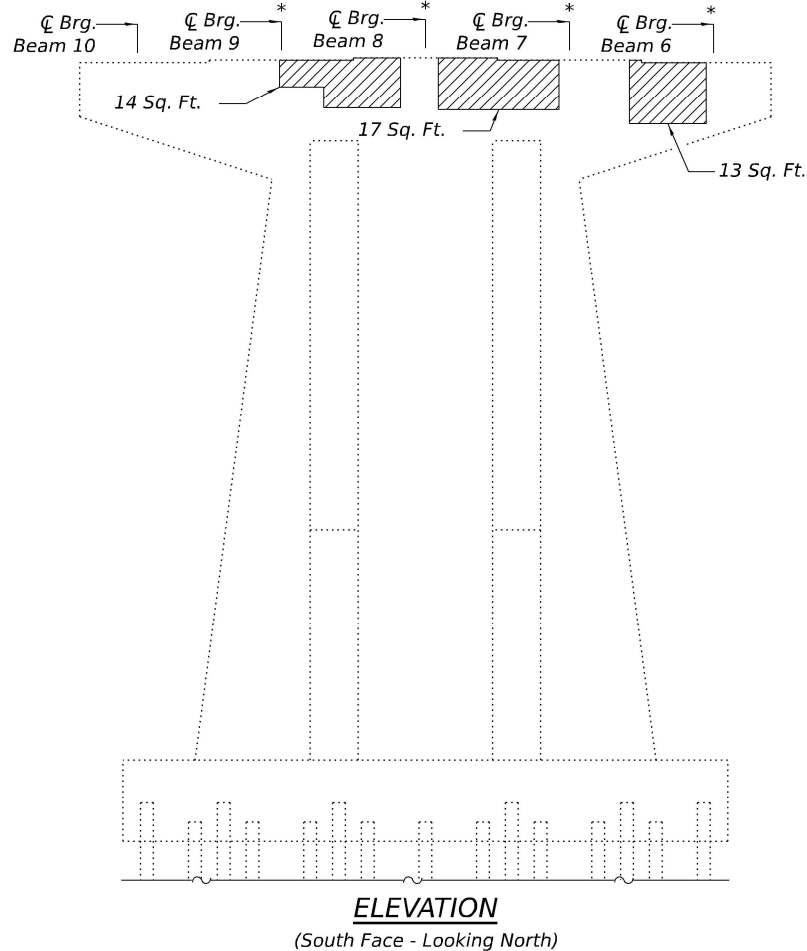
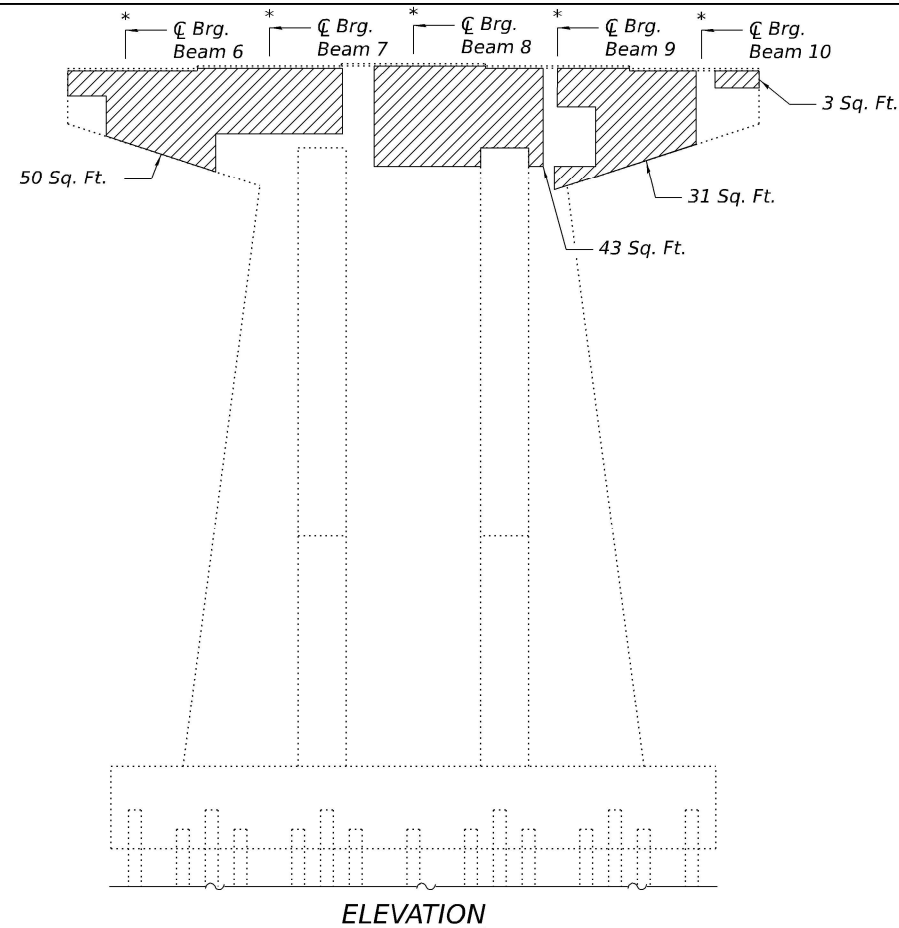
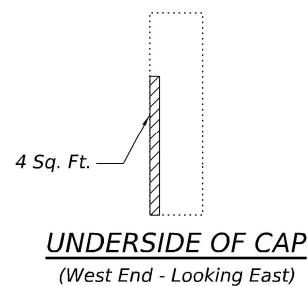
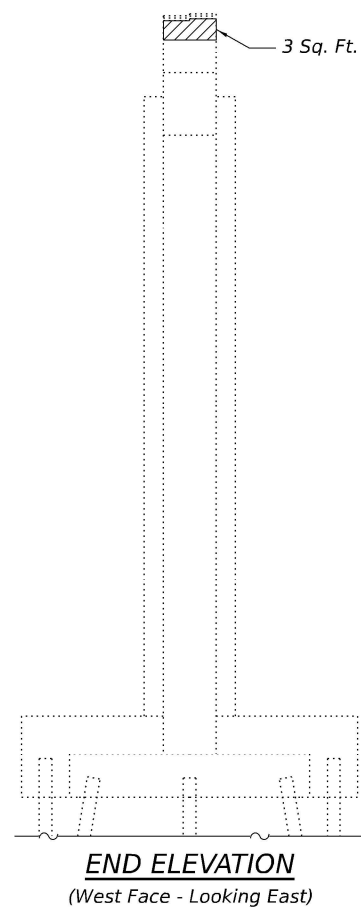
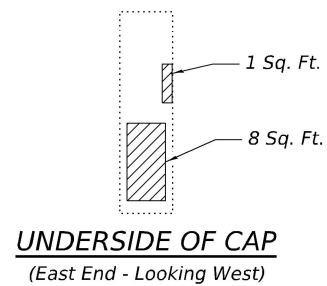
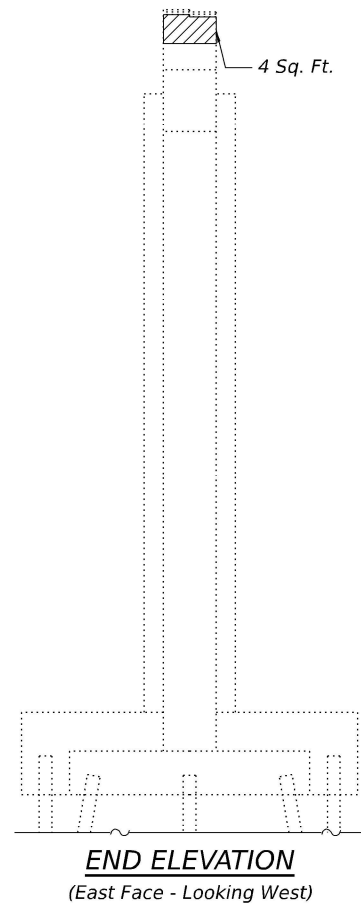
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PLOT SCALE =	CHECKED - MLC	REVISED -
PLOT DATE =	DRAWN - MMC	REVISED -
	CHECKED - MLC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSTRUCTURE REPAIR - PIER 3
STRUCTURE NO. 077-0002

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2026-1	PULASKI	17	10
ILLINOIS FED. AID PROJECT			CONTRACT NO. 78B50	

MODEL: Default
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BEAM REACTIONS

Reaction		Span 5	Span 6
R _P	(k)	59.3	59.3
R _L	(k)	42.2	42.2
R _{Imp.}	(k)	11.1	11.1
R (Total)	(k)	112.6	112.6

LEGEND

Indicates Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)

Notes:

See sheet 11 of 13 for pier encasement details.
 See sheet 13 of 13 for seismic restrainer details.
 All concrete necessary for the repairs to the pier cap shall be poured monolithically with the pier cap encasement concrete detailed on sheet 11 of 13.

* Location of Temporary Shoring and Cribbing.

BILL OF MATERIAL

Item	Unit	Total
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	213
Temporary Shoring and Cribbing	Each	9

USER NAME =	DESIGNED - MMC	REVISED -
	CHECKED - MLC	REVISED -
PLOT SCALE =	DRAWN - MMC	REVISED -
PLOT DATE =	CHECKED - MLC	REVISED -

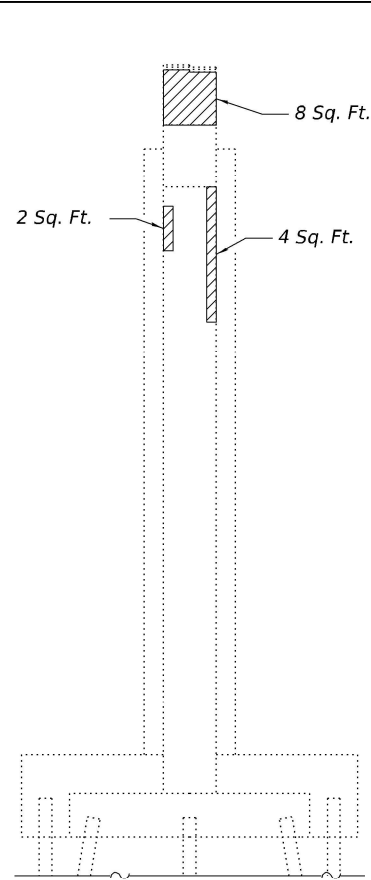
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSTRUCTURE REPAIR - PIER 4
STRUCTURE NO. 077-0002

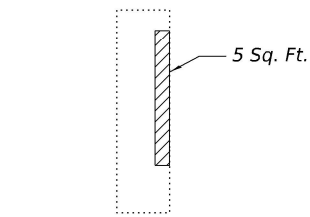
SHEET 7 OF 13 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2026-1	PULASKI	17	11
CONTRACT NO. 78B50			ILLINOIS FED. AID PROJECT	

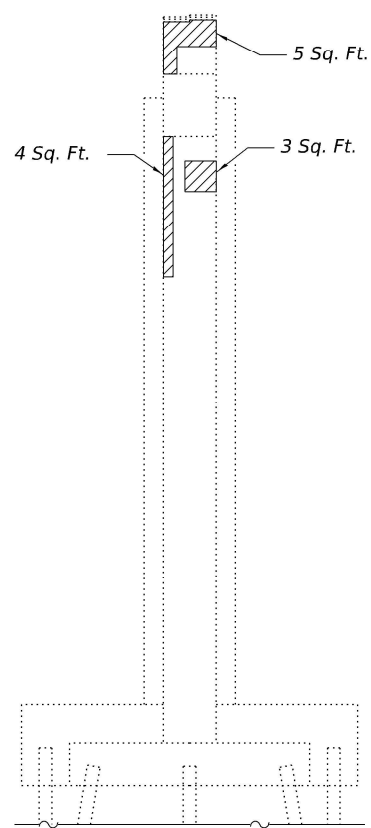
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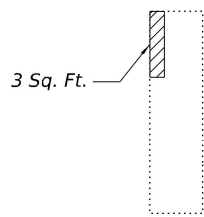
END ELEVATION
 (East Face - Looking West)



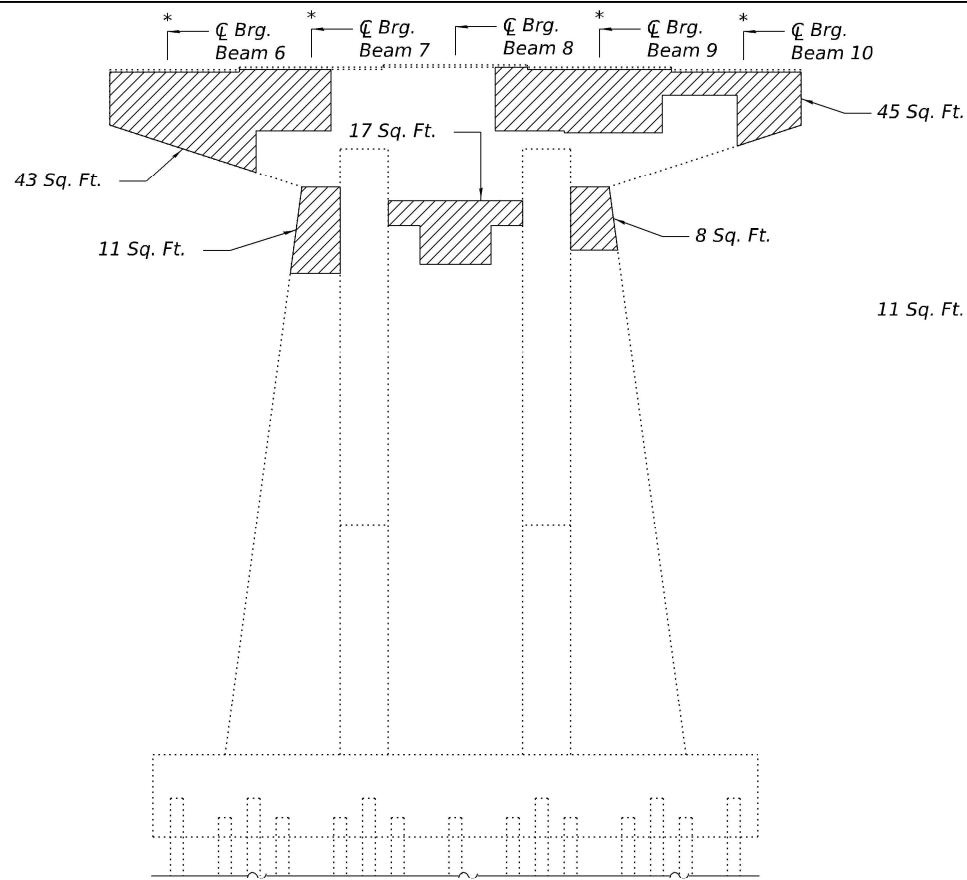
UNDERSIDE OF CAP
 (East End - Looking West)



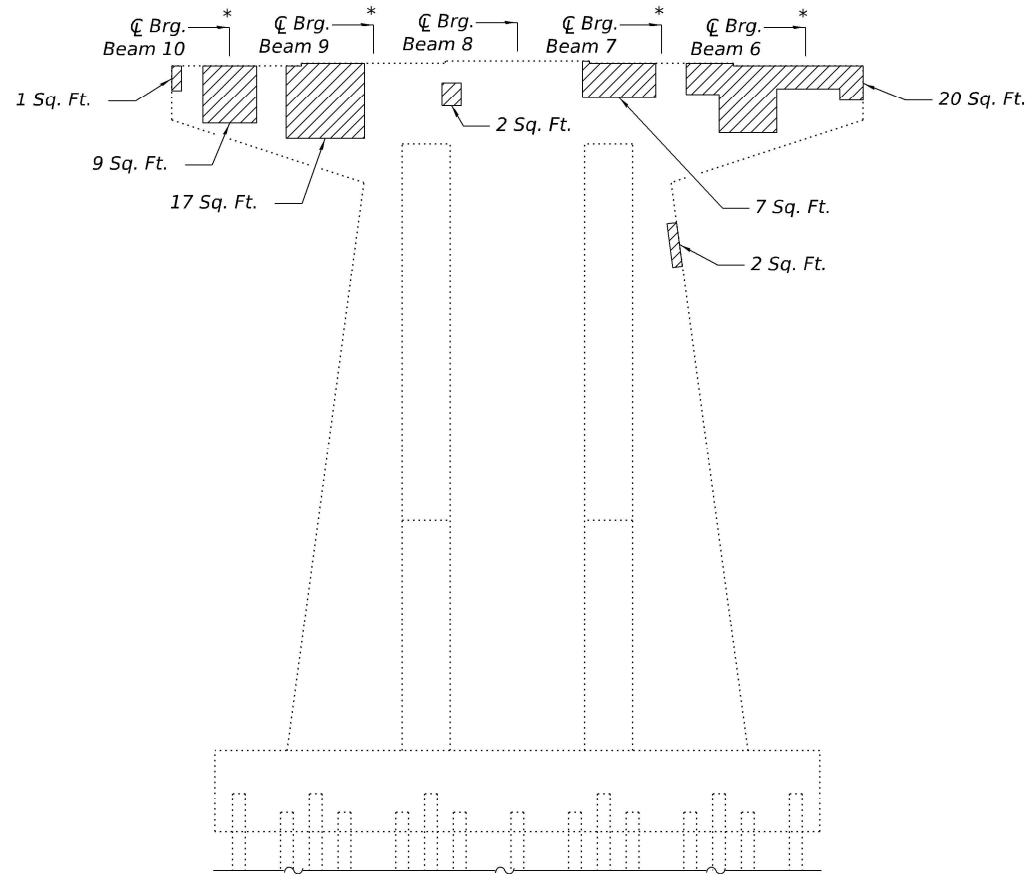
END ELEVATION
 (West Face - Looking East)



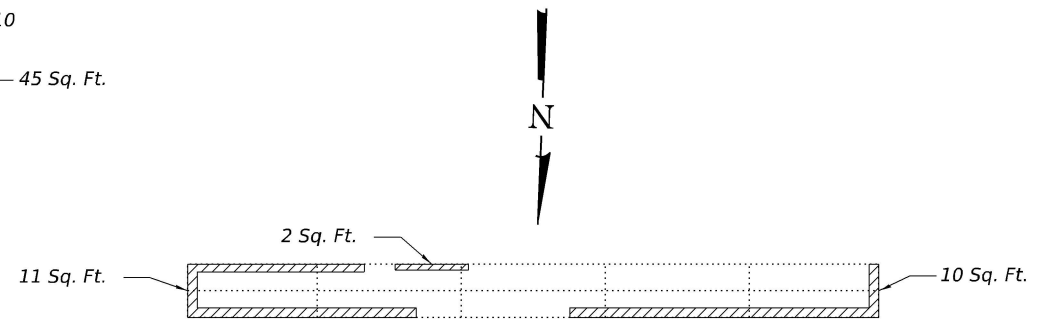
UNDERSIDE OF CAP
 (West End - Looking East)



ELEVATION
 (North Face - Looking South)



ELEVATION
 (South Face - Looking North)



PLAN

BEAM REACTIONS

Reaction	Span 6	Span 7
R _P	(k) 59.3	59.3
R _L	(k) 42.2	42.2
R _{Imp.}	(k) 11.1	11.1
R (Total)	(k) 112.6	112.6

LEGEND

Indicates Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)

Notes:

See sheet 11 of 13 for pier encasement details.
 See sheet 13 of 13 for seismic restrainer details.
 All concrete necessary for the repairs to the pier cap shall be poured monolithically with the pier cap encasement concrete detailed on sheet 11 of 13.

* Location of Temporary Shoring and Cribbing.

BILL OF MATERIAL

Item	Unit	Total
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	239
Temporary Shoring and Cribbing	Each	8

Kaskaskia
 Engineering Group, L.L.C.
 286 E. Main St., Suite 100
 Edwardsville, Illinois 62025
 618.215.5877 phone
 618.215.5877 fax
 www.kaskaskiaeng.com
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 25-598656

USER NAME =	DESIGNED - MMC	REVISED -
	CHECKED - MLC	REVISED -
PLOT SCALE =	DRAWN - MMC	REVISED -
PLOT DATE =	CHECKED - MLC	REVISED -

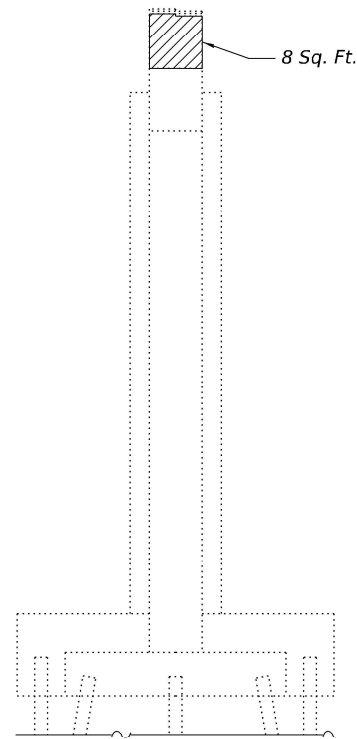
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSTRUCTURE REPAIR - PIER 5
STRUCTURE NO. 077-0002

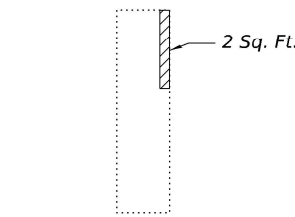
SHEET 8 OF 13 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 78B50				
ILLINOIS		FED. AID PROJECT		

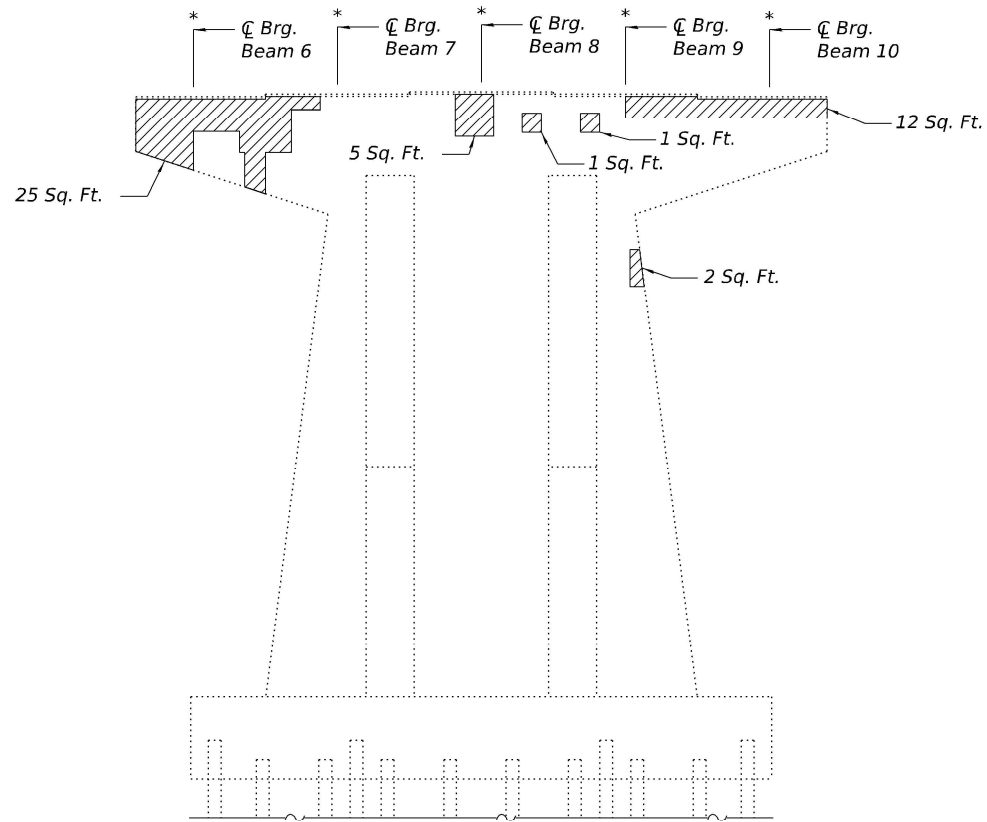
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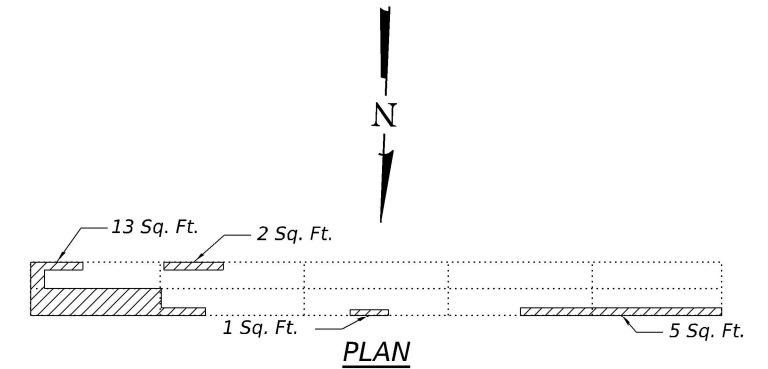
END ELEVATION
 (East Face - Looking West)



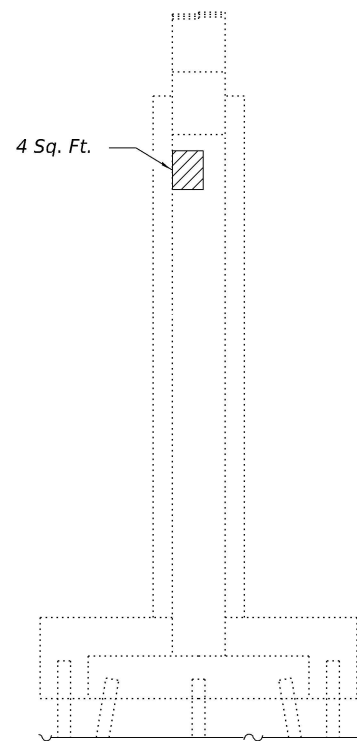
UNDERSIDE OF CAP
 (East End - Looking West)



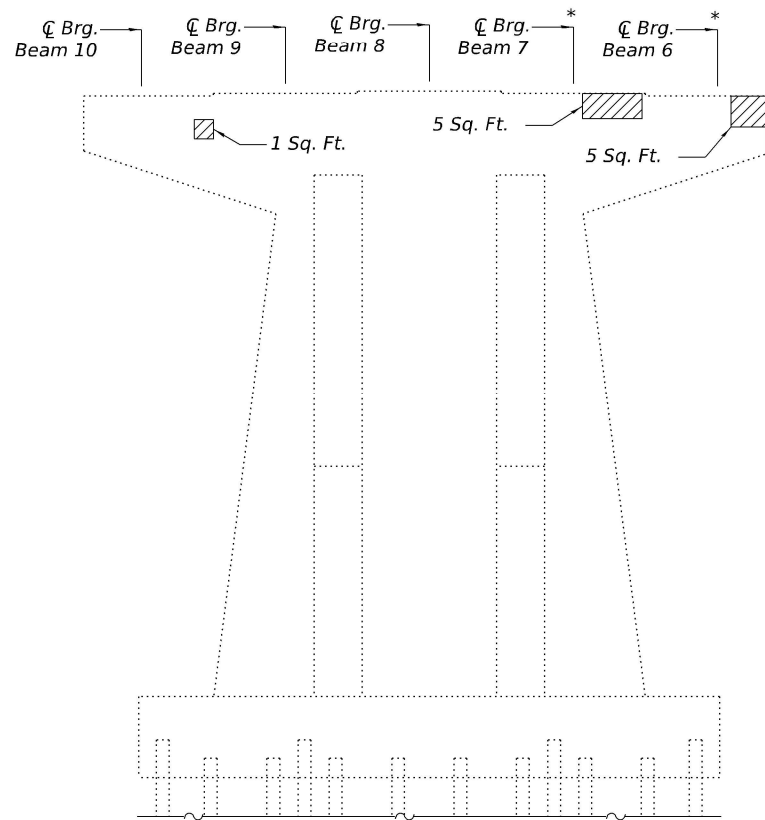
ELEVATION
 (North Face - Looking South)



PLAN



END ELEVATION
 (West Face - Looking East)



ELEVATION
 (South Face - Looking North)

BEAM REACTIONS

Reaction	Span 7	Span 8
R _P	(k) 59.3	59.3
R _L	(k) 42.2	42.2
R _{Imp.}	(k) 11.1	11.1
R (Total)	(k) 112.6	112.6

LEGEND

Indicates Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)

Notes:

See sheet 11 of 13 for pier encasement details.
 See sheet 13 of 13 for seismic restrainer details.
 All concrete necessary for the repairs to the pier cap shall be poured monolithically with the pier cap encasement concrete detailed on sheet 11 of 13.

* Location of Temporary Shoring and Cribbing.

BILL OF MATERIAL

Item	Unit	Total
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	92
Temporary Shoring and Cribbing	Each	7

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

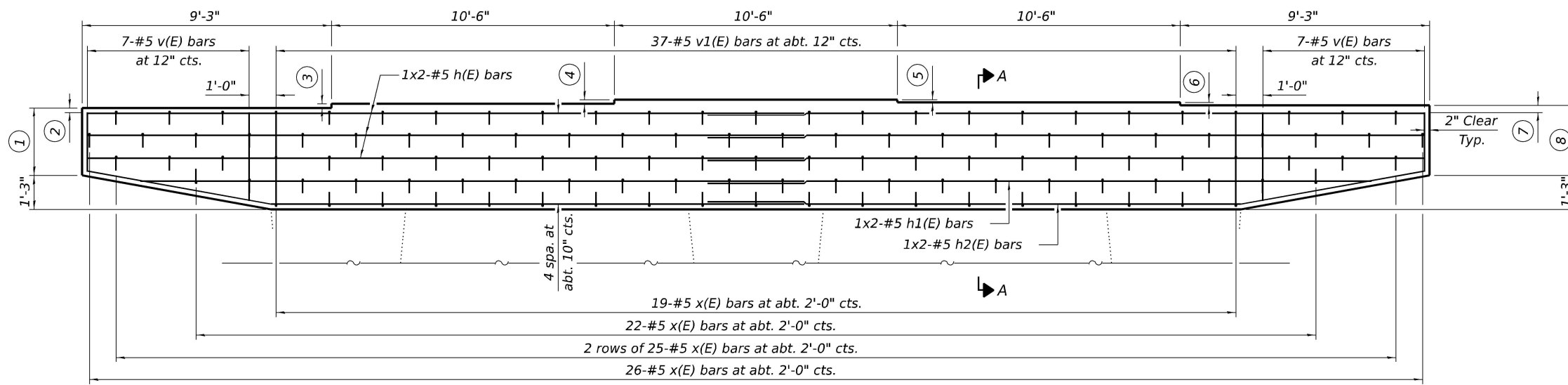
SUBSTRUCTURE REPAIR - PIER 6
STRUCTURE NO. 077-0002

SHEET 9 OF 13 SHEETS

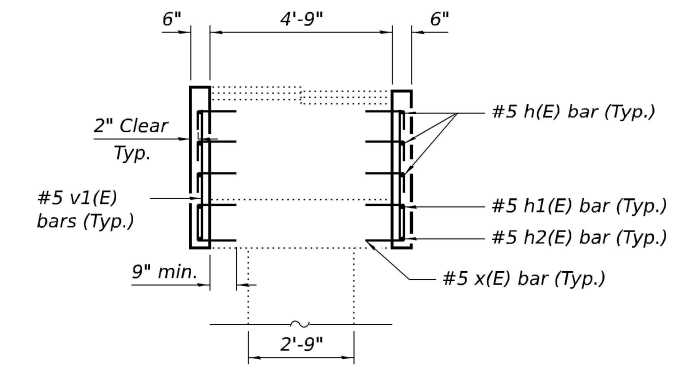
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2026-1	PULASKI	17	13
CONTRACT NO. 78B50				

ILLINOIS FED. AID PROJECT

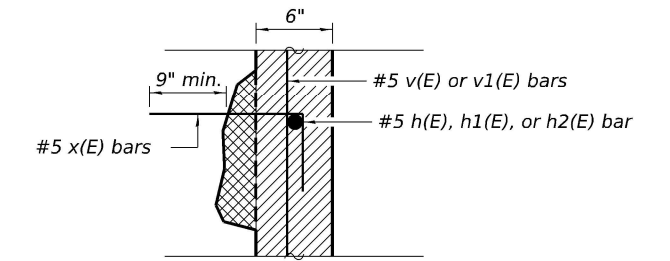
USER NAME =	DESIGNED - MMC	REVISED -
	CHECKED - MLC	REVISED -
PLOT SCALE =	DRAWN - MMC	REVISED -
PLOT DATE =	CHECKED - MLC	REVISED -



ELEVATION



SECTION A-A
(Pier 2 shown, Pier 1 similar)

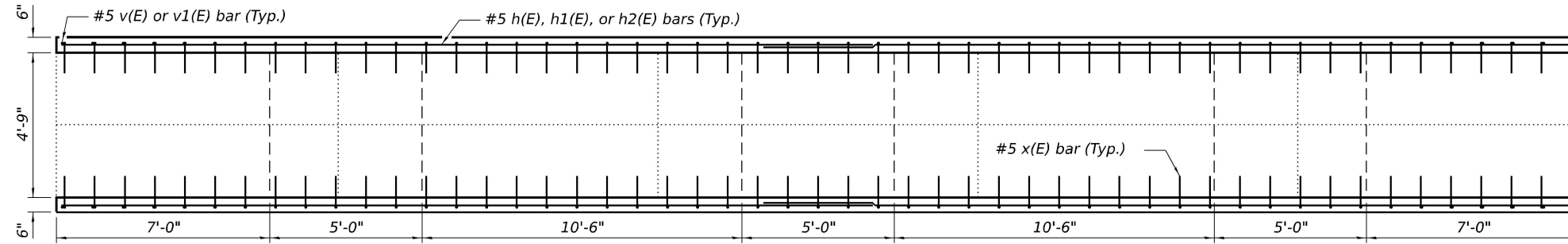


REPAIR DETAIL

- * - Concrete in this area to be paid as Concrete Structures
- * - Concrete in this area is included with Structural Repair of Concrete (Depth Less Than or Equal to 5 Inches)
- * Concrete in these areas to be poured monolithically

MINIMUM BAR LAP

#5 bar = 3'-7"



TOP OF CAP PLAN
(Pier 2 shown, Pier 1 similar)

NOTES:

Bars indicated thus 1x2-#5 etc., indicates 1 line of bars with 2 lengths per line.

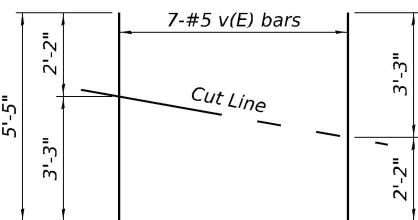
Epoxy Grout x(E) bars in 9" min. holes according to Article 584 of the Standard Specifications. Bars are detailed to account for up to 5" of concrete repair depth. The Contractor may cut the x(E) bars to achieve the 2" clear cover on the face of the pier and the required 9" embedment. Locate holes to miss existing reinforcement bars, typ. Cost included with Reinforcement Bars, Epoxy Coated.

- ① Pier 1 N. Face (2'-6"); Pier 1 S. Face ($\pm 2'-7\frac{3}{8}"$); Pier 2 N. Face (2'-6"); Pier 2 S. Face ($\pm 2'-8\frac{3}{4}"$)
- ② Pier 1 N. Face ($\pm 2"$); Pier 1 S. Face ($\pm 3\frac{3}{8}"$); Pier 2 N. Face ($\pm 2"$); Pier 2 S. Face ($\pm 4\frac{3}{4}"$) clear cover
- ③ Pier 1 N. Face ($\pm 1\frac{7}{8}"$); Pier 1 S. Face ($\pm 1\frac{3}{8}"$); Pier 2 N. Face ($\pm 2"$); Pier 2 S. Face ($\pm 1\frac{1}{4}"$)
- ④ Pier 1 N. Face ($\pm 1\frac{3}{4}"$); Pier 1 S. Face ($\pm 1\frac{3}{8}"$); Pier 2 N. Face ($\pm 1\frac{3}{4}"$); Pier 2 S. Face ($\pm 1"$)
- ⑤ Pier 1 N. Face ($\pm 1\frac{1}{8}"$); Pier 1 S. Face ($\pm 1\frac{3}{4}"$); Pier 2 N. Face ($\pm 1"$); Pier 2 S. Face ($\pm 1\frac{3}{4}"$)
- ⑥ Pier 1 N. Face ($\pm 1\frac{3}{8}"$); Pier 1 S. Face ($\pm 1\frac{7}{8}"$); Pier 2 N. Face ($\pm 1\frac{1}{4}"$); Pier 2 S. Face ($\pm 2"$)
- ⑦ Pier 1 N. Face ($\pm 3\frac{1}{8}"$); Pier 1 S. Face ($\pm 2"$); Pier 2 N. Face ($\pm 3\frac{1}{2}"$); Pier 2 S. Face ($\pm 3\frac{1}{4}"$) clear cover
- ⑧ Pier 1 N. Face ($\pm 2'-7\frac{3}{8}"$); Pier 1 S. Face (2'-6"); Pier 2 N. Face ($\pm 2'-7\frac{1}{2}"$); Pier 2 S. Face ($\pm 2'-7\frac{1}{4}"$)

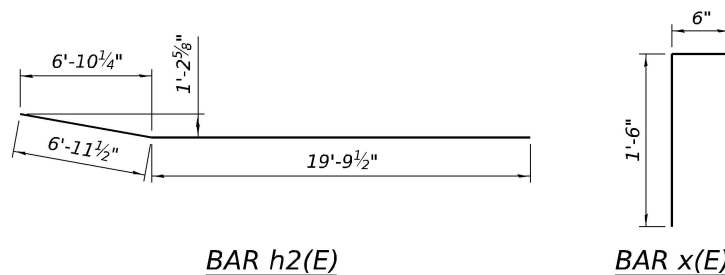
BILL OF MATERIAL

(PIERS 1 & 2)

Bar	No.	Size	Length	Shape
h(E)	24	#5	26'-8"	—
h1(E)	8	#5	24'-8"	—
h2(E)	8	#5	26'-9"	—
v(E)	28	#5	5'-5"	—
v1(E)	148	#5	3'-5"	—
x(E)	468	#5	2'-0"	└
Concrete Structures			Cu. Yd.	14.0
Reinforcement Bars, Epoxy Coated			Pound	2,760



FIELD CUTTING DIAGRAM
Order v(E) full length. Cut as shown and use remainder of bars in opposite end.



BAR h2(E)

BAR x(E)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER ENCASEMENT DETAILS (PIERS 1 & 2)
STRUCTURE NO. 077-0002

SHEET 10 OF 13 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2026-1	PULASKI	17	14
CONTRACT NO. 78B50				

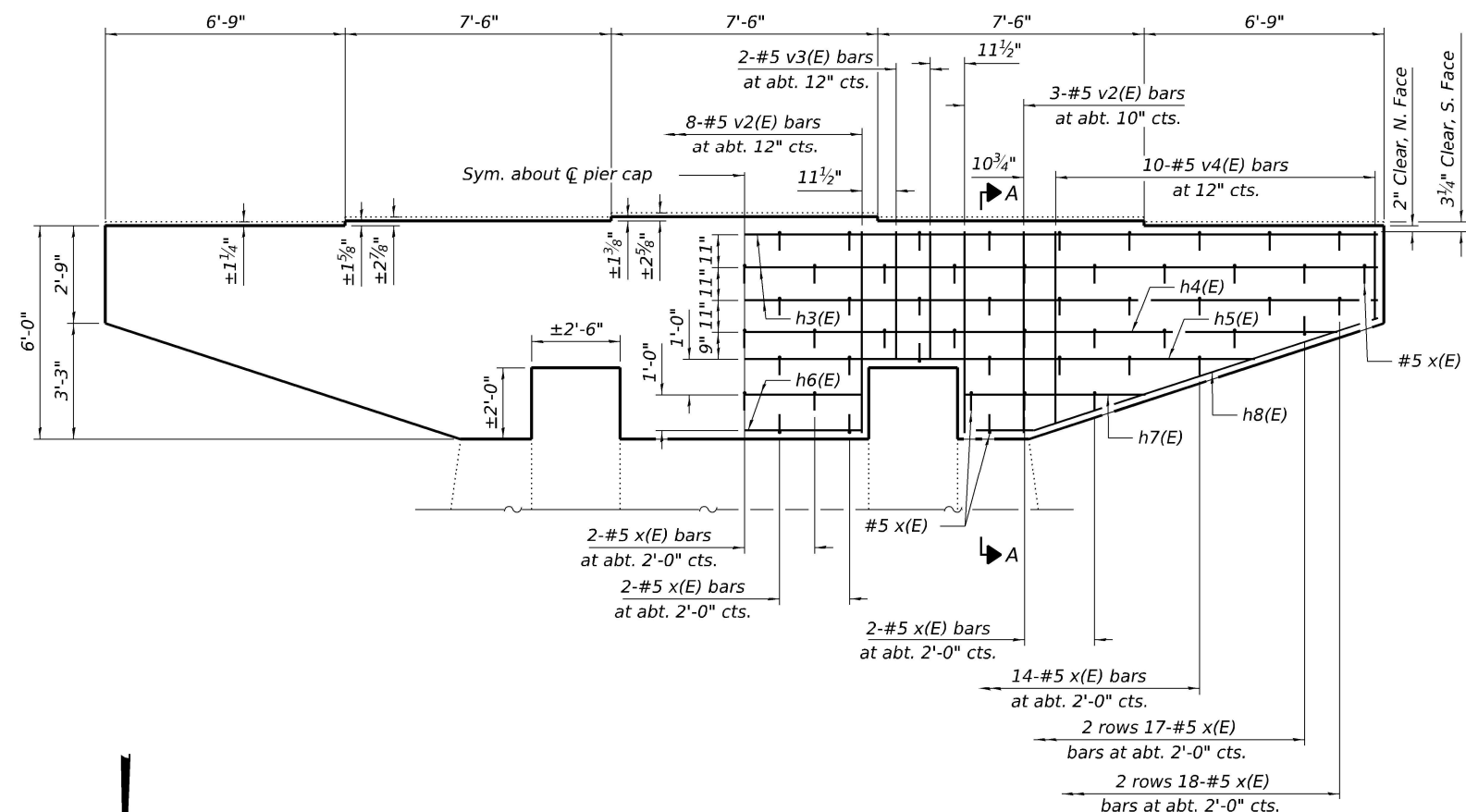
ILLINOIS FED. AID PROJECT

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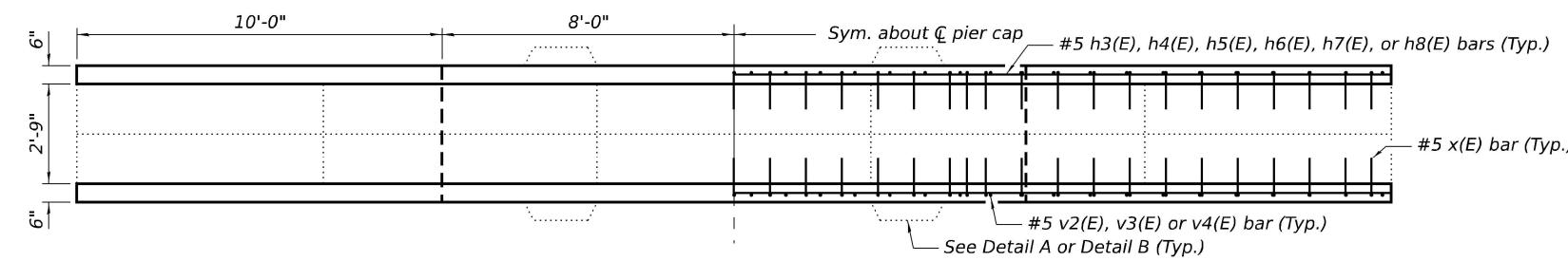
Kaskaskia
Engineering Group, L.L.C.
Professional Engineering Group

USER NAME =	DESIGNED - MMC	REVISED -
PLOT SCALE =	CHECKED - MLC	REVISED -
PLOT DATE =	DRAWN - MMC	REVISED -
	CHECKED - MLC	REVISED -

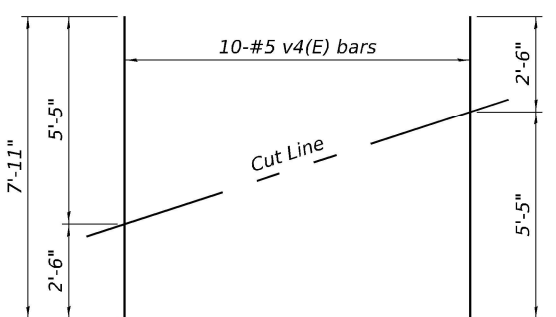
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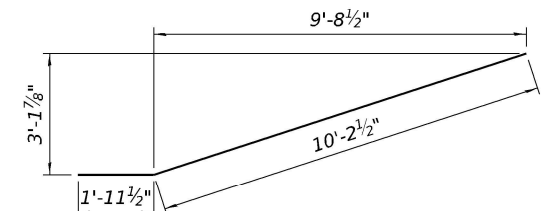
ELEVATION
 (North Face - Looking South Shown,
 South Face - Looking North Similar)



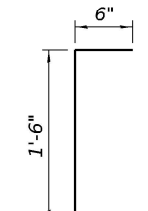
TOP OF CAP PLAN
 (Pier 2A Shown,
 Piers 3 through 6 Similar)



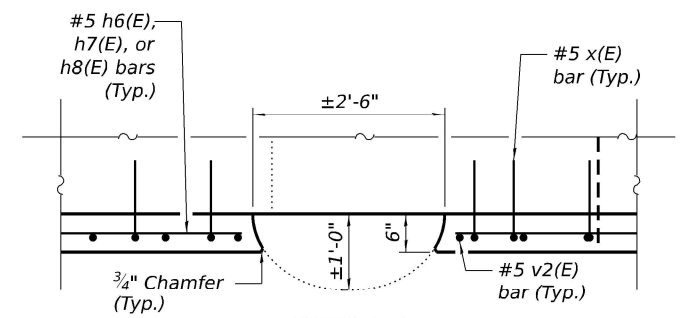
FIELD CUTTING DIAGRAM
 Order v4(E) full length. Cut as shown and
 use remainder of bars in opposite end.



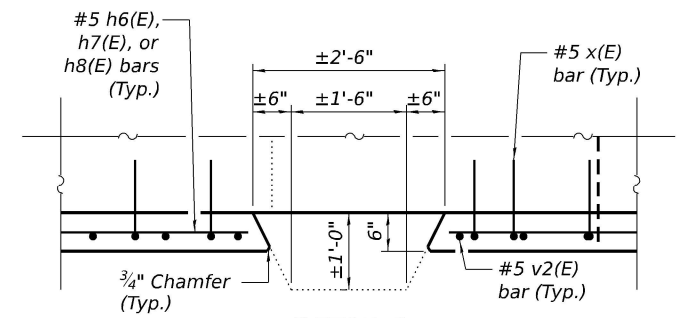
BAR h8(E)



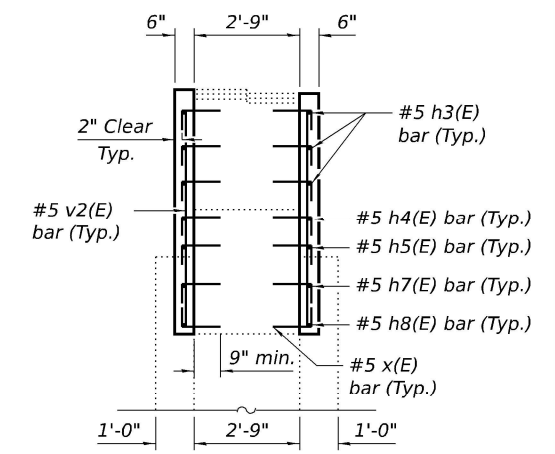
BAR x(E)



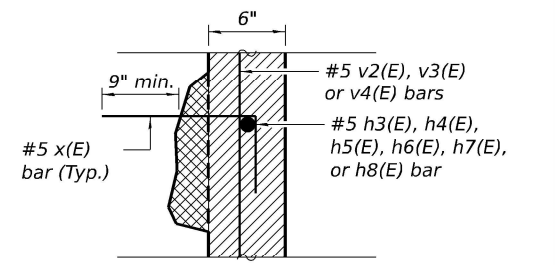
DETAIL A
 (Piers 3 Through 6)



DETAIL B
 (Pier 2A)



SECTION A-A



REPAIR DETAIL

- * - Concrete in this area to be paid as Concrete Structures
- * - Concrete in this area is included with Structural Repair of Concrete (Depth Less Than or Equal to 5 Inches)
- * Concrete in these areas to be poured monolithically

BILL OF MATERIAL
 (PIERS 2A THROUGH 6)

Bar	No.	Size	Length	Shape
h3(E)	30	#5	35'-8"	—
h4(E)	10	#5	33'-4"	—
h5(E)	10	#5	28'-9"	—
h6(E)	20	#5	6'-8"	—
h7(E)	20	#5	5'-1"	—
h8(E)	20	#5	12'-2"	—
v2(E)	140	#5	5'-8"	—
v3(E)	40	#5	3'-7"	—
v4(E)	100	#5	7'-11"	—
x(E)	1010	#5	2'-0"	┌
Concrete Structures			Cu. Yd.	33.4
Reinforcement Bars, Epoxy Coated			Pound	6,180

NOTES:

Epoxy Grout x(E) bars in 9" min. holes according to Article 584 of the Standard Specifications. Bars are detailed to account for up to 5" of concrete repair depth. The Contractor may cut the x(E) bars to achieve the 2" clear cover on the face of the pier and the required 9" embedment. Locate holes to miss existing reinforcement bars, typ. Cost included with Reinforcement Bars, Epoxy Coated.

STATE OF ILLINOIS
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PIER ENCASMENT DETAILS (PIERS 2A THROUGH 6)
STRUCTURE NO. 077-0002

SHEET 11 OF 13 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2026-1	PULASKI	17	15
CONTRACT NO. 78B50				

ILLINOIS FED. AID PROJECT

USER NAME =	DESIGNED - MMC	REVISED -
PLOT SCALE =	CHECKED - MLC	REVISED -
PLOT DATE =	DRAWN - MMC	REVISED -
	CHECKED - MLC	REVISED -

SEISMIC RESTRAINER NOTES

All steel parts except cables shall be galvanized according to AASHTO M 232. Restrainer cables shall be galvanized according to AASHTO M 120 Class C.

Cable shall be 3/4"Ø preformed, 6 x 19 wire rope, ultimate strength = 47,600 pounds in accordance with AASHTO M 277. The swagged fitting shall be machined from hot-rolled bars of steel conforming to AISI C 1035, and shall be annealed, suitable for cold swagging. The manufacturer's identifying mark shall be stamped on the body of the swagged fitting.

The 1 inch diameter stud shall conform to the requirements of AASHTO M 314.

Nuts shall conform to the requirements of AASHTO M 164 except they need not be Grade DH or Grade 2H nor is it necessary for the nuts to be lubricated. After galvanizing, the pitch diameter of the nut and the head of the swagged fitting may be tapped over ANSI B1.1 Class 2B tolerance by 3/16 inch oversize if the stud threads conform to Class 2A fit before galvanizing.

The swagged fitting, stud, and nut assembly shall develop 125 percent of the specified ultimate strength of the cable.

The Contractor shall be responsible for determining the required lengths of cable to account for the additional cap encasement. The restrainer cable shall be installed after concrete encasement has cured.

Each seismic restrainer consists of 3/4"Ø Restrainer Cable with 2 end anchorage assemblies, 1 bearing plate (including neoprene pad), and misc. hardware.

Cost of cables, cable end anchorages, plates, neoprene pads, washers, and nuts, including removal of the existing and installation of restrainers will be paid for at the unit bid price each for each "Seismic Restrainer."

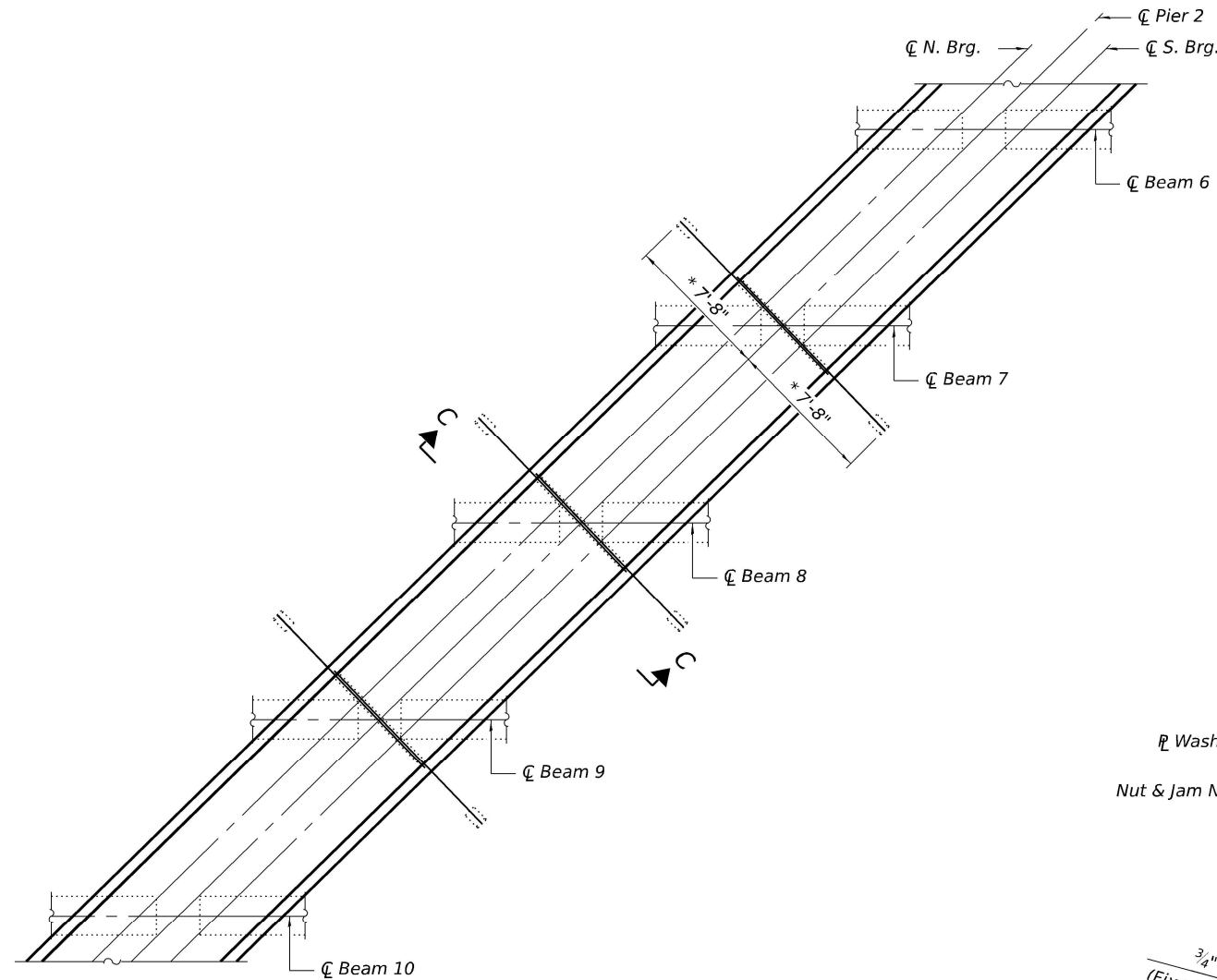
Cost of removal and disposal of existing cables and associated elements is included in the cost of "Seismic Restrainer."

Cored holes shall be sealed with sealant, subject to approval of the Engineer. Cost of the sealant is included with "Seismic Restrainer."

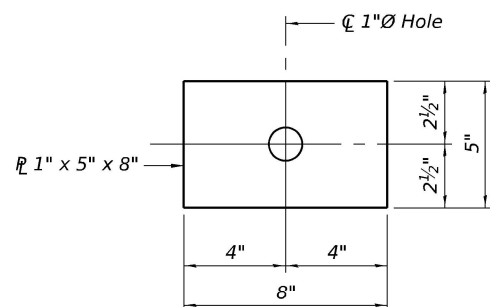
For details of the 3/4"Ø Restrainer Cable Ends, existing Beveled Spacer, and existing Brackets, see sheet 13 of 13.

SEISMIC RESTRAINER INSTALLATION PROCEDURES

- 1.) Locate and install cables snug tight.
- 2.) For Restrainers at fixed bearings, back off the nut at bracket end of cable by 3/4".
- 3.) For Restrainers at expansion bearings, back off the nut at bracket end of cable by "D" + 3/4".
 "D" = + 1/8" per 100' of expansion length for every 15°F temperature rise above 50°F Normal Temperature.
 "D" = - 1/8" per 100' of expansion length for every 15°F temperature drop below 50°F Normal Temperature.
- 4.) Tighten jam nuts.

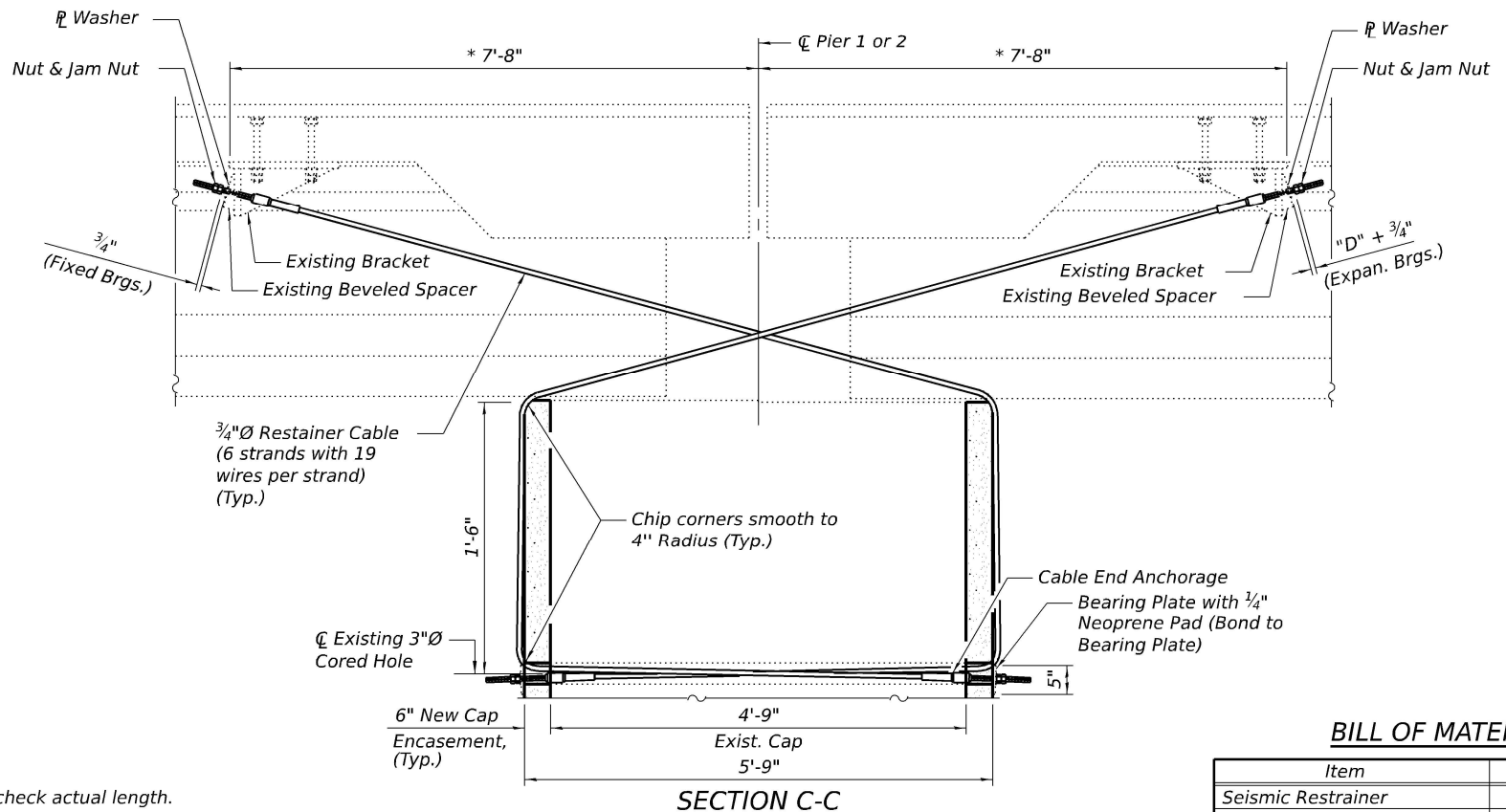


PIER PLAN
(Showing location of Seismic Restrainers; Pier 2 shown, Pier 1 similar)



BEARING PLATE

NOTES:
* Estimated. Contractor required to check actual length.



SECTION C-C

BILL OF MATERIAL

Item	Unit	Total
Seismic Restrainer	Each	12

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USER NAME =	DESIGNED - MMC	REVISED -
PLOT SCALE =	CHECKED - MLC	REVISED -
PLOT DATE =	DRAWN - MMC	REVISED -
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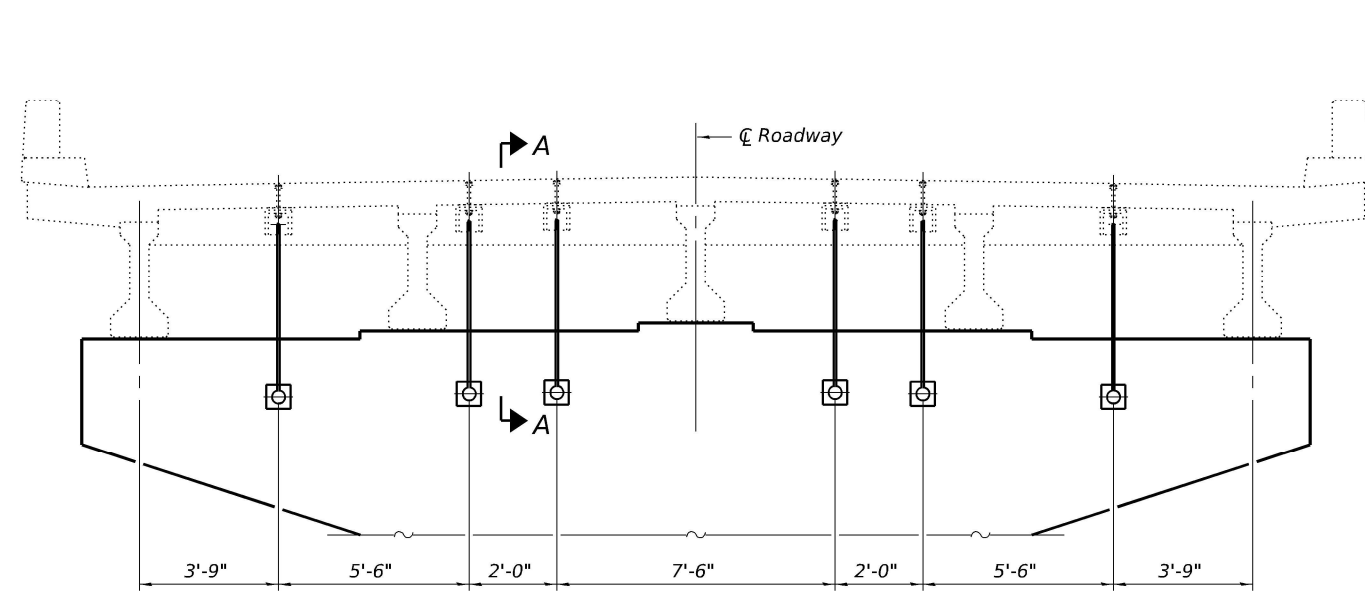
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SEISMIC RESTRAINER DETAILS (PIERS 1 & 2)
STRUCTURE NO. 077-0002**

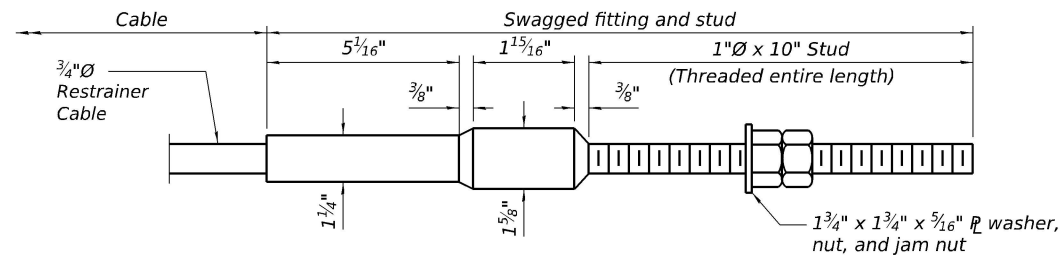
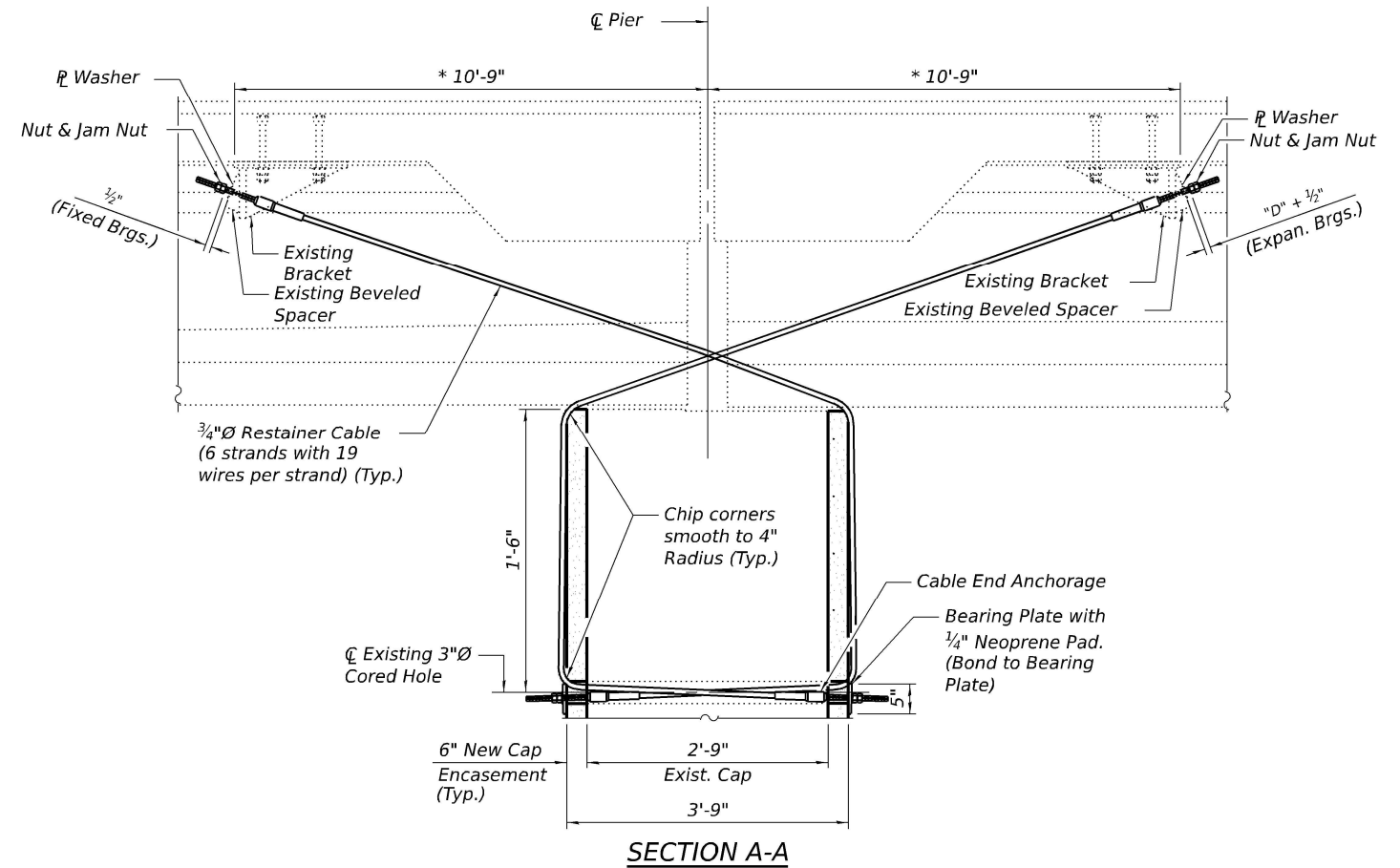
SHEET 12 OF 13 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2026-1	PULASKI	17	16
ILLINOIS FED. AID PROJECT			CONTRACT NO. 78B50	

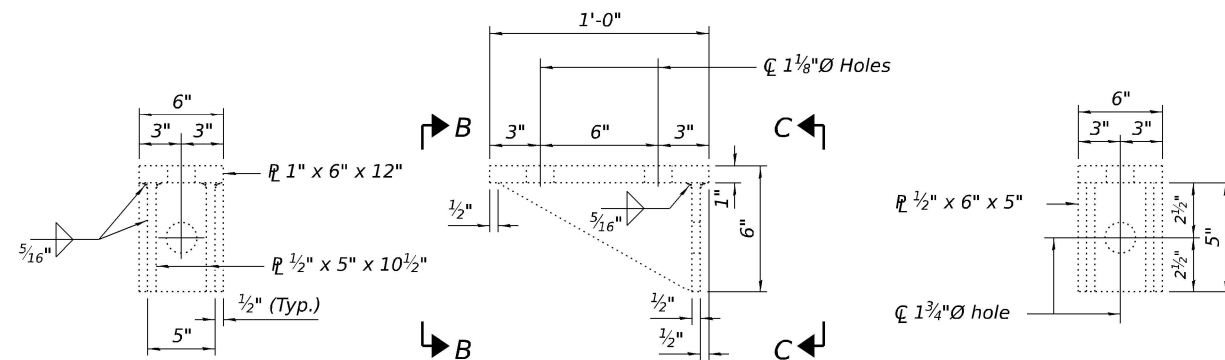
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RESTRAINER CABLES AT PIERS 2A THROUGH 6



CABLE END ANCHORAGE
(2 per Cable)

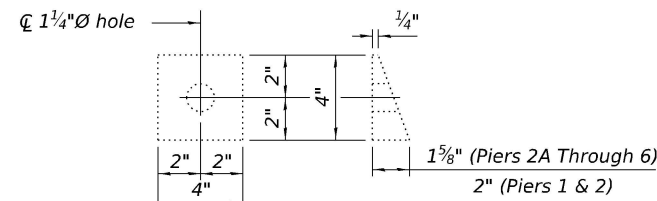


SECTION B-B

ELEVATION

SECTION C-C

EXISTING BRACKET DETAILS



EXISTING BEVELED SPACER

NOTES:

* Estimated. Contractor required to check actual length.
 For Seismic Restrainer notes and installation procedure, see sheet 12 of 13.
 Existing brackets to be re-used.

BILL OF MATERIAL

Item	Unit	Total
Seismic Restrainer	Each	60

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SEISMIC RESTRAINER DETAILS (PIERS 2A THROUGH 6)
STRUCTURE NO. 077-0002

SHEET 13 OF 13 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	D9 BRIDGE REPAIR 2026-1	PULASKI	17	17
CONTRACT NO. 78B50				
ILLINOIS FED. AID PROJECT				