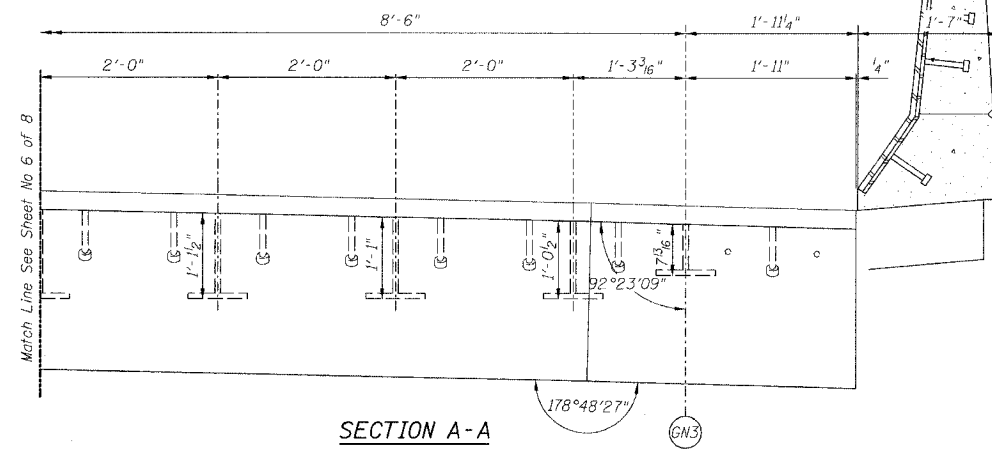


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

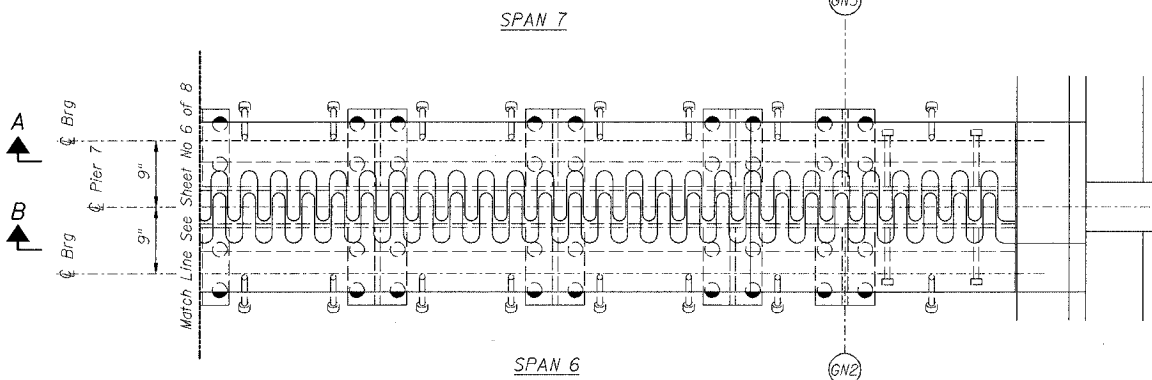
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	*	COOK	419	201
FEDERAL DIST. NO.		ILLINOIS	PROJECT	

Sheet No 7  
of 8 Sheets

\* 2005-008F  
CONTRACT #62580

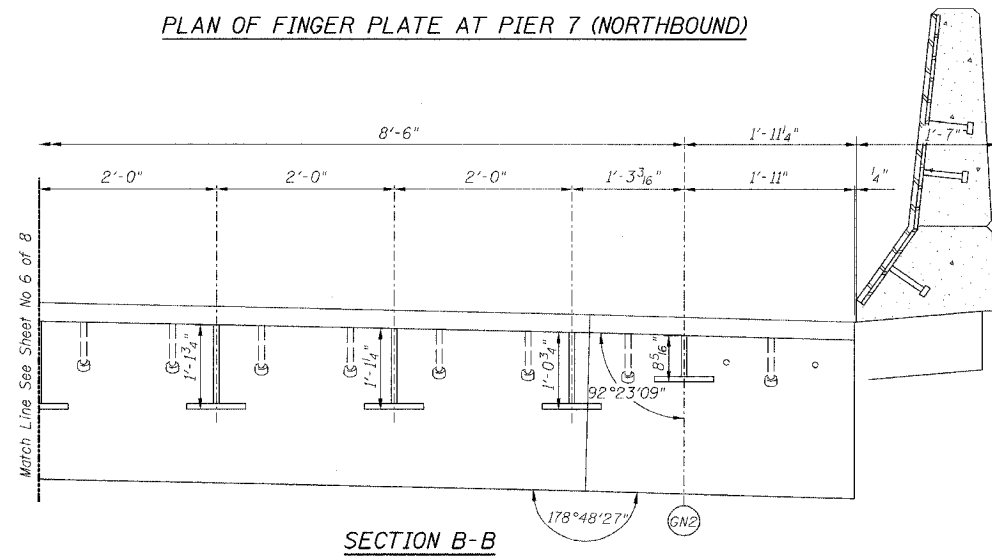


SECTION A-A



PLAN OF FINGER PLATE AT PIER 7 (NORTHBOUND)

For location of splice with respect to fingers see Flame Cutting Diagram.



SECTION B-B

PIER NO. 7

FINGER PLATE PLAN AND ELEVATION DETAILS

REVISIONS		STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS	DRAWN BY	DATE
No.	DATE		INITIALS	RLK
1			CHECKED BY	DATE
2			SDS	5/03
3			BOOK NUMBER	
4			PROJECT NO.	
5			4222-3	
6			SHEET NO.	
7				
8				
9				
10				

Note:  
For optional splice detail see  
Flame cutting diagram on Sheet No. 4

FAI RTE 90/94 DAN RYAN EXPRESSWAY  
SN 016-1111 (NORTHBOUND)  
SEC 2005-008F COOK COUNTY

HOMER L.  
CHASTAIN  
& ASSOCIATES  
CONSULTING ENGINEERS

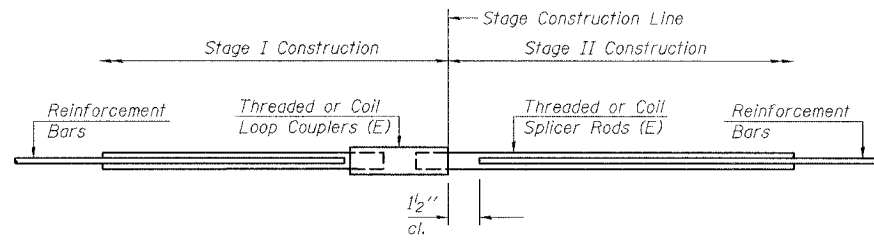
8000 W. BRYAN MAWR AVENUE  
SUITE 204  
CHICAGO, ILLINOIS 60631  
812-714-0000  
FAX 812-714-0055

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA1	90/94	COOK	419	202
FEDERAL DIST. NO.		ILLINOIS	PROJECT	

Sheet No 8  
of 8 Sheets

\* 2005-008F  
CONTRACT #62580



**SPLICER DETAIL**

Bar Size	No. Assemblies Required	Location
#5	24	At Stage Construction Line in N.B. Deck

The diameter of this part is equal or larger than the diameter of bar spliced.

**ROLLED THREAD DOWEL BAR**



\*\* ONE PIECE

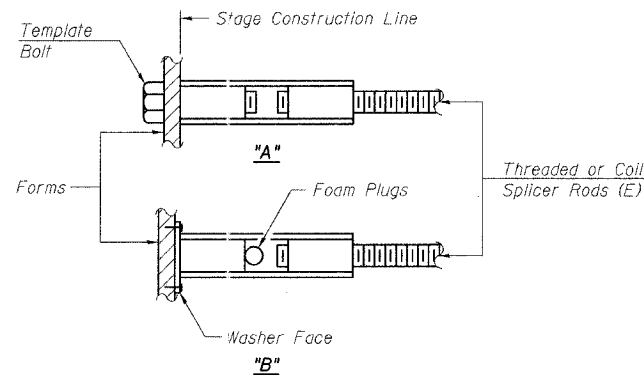
Wire Connector



**WELDED SECTIONS**

**BAR SPLICER ASSEMBLY ALTERNATIVES**

\*\* Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



**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.

**NOTES**

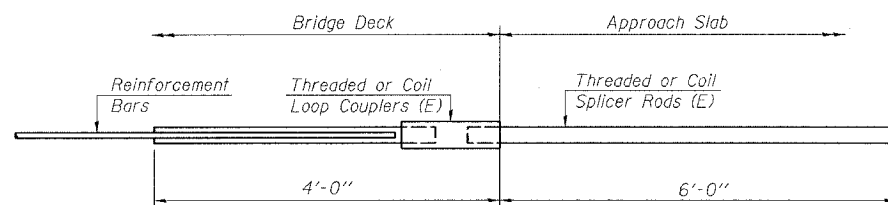
Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.  
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.  
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.  
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.  
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

- ① Minimum Capacity =  $1.25 \times f_y \times A_t$   
(Tension in kips)
- ② Minimum \*Pull-out Strength =  $1.25 \times f_{s_{allow}} \times A_t$   
(Tension in kips)

Where  $f_y$  = Yield strength of lapped reinforcement bars in ksi.  
 $f_{s_{allow}}$  = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)  
 $A_t$  = Tensile stress area of lapped reinforcement bars.  
\* = 28 day concrete

Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#5	2'-0"	23.0	9.2
#6	2'-7"	33.1	13.3
#7	3'-5"	45.1	18.0
#8	4'-6"	58.9	23.6

Bar splicer assemblies shall be according to Section 508 of the Standard Specifications, except as noted. The furnishing and installation of bar splicer assemblies will be measured and paid for at the contract unit price each for "BAR SPLICERS."



**INTEGRAL ABUTMENT  
BAR SPLICER ASSEMBLY DETAIL  
FOR #5 BAR**

Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required =

PIER NO. 7

**BAR SPLICER ASSEMBLY DETAILS**

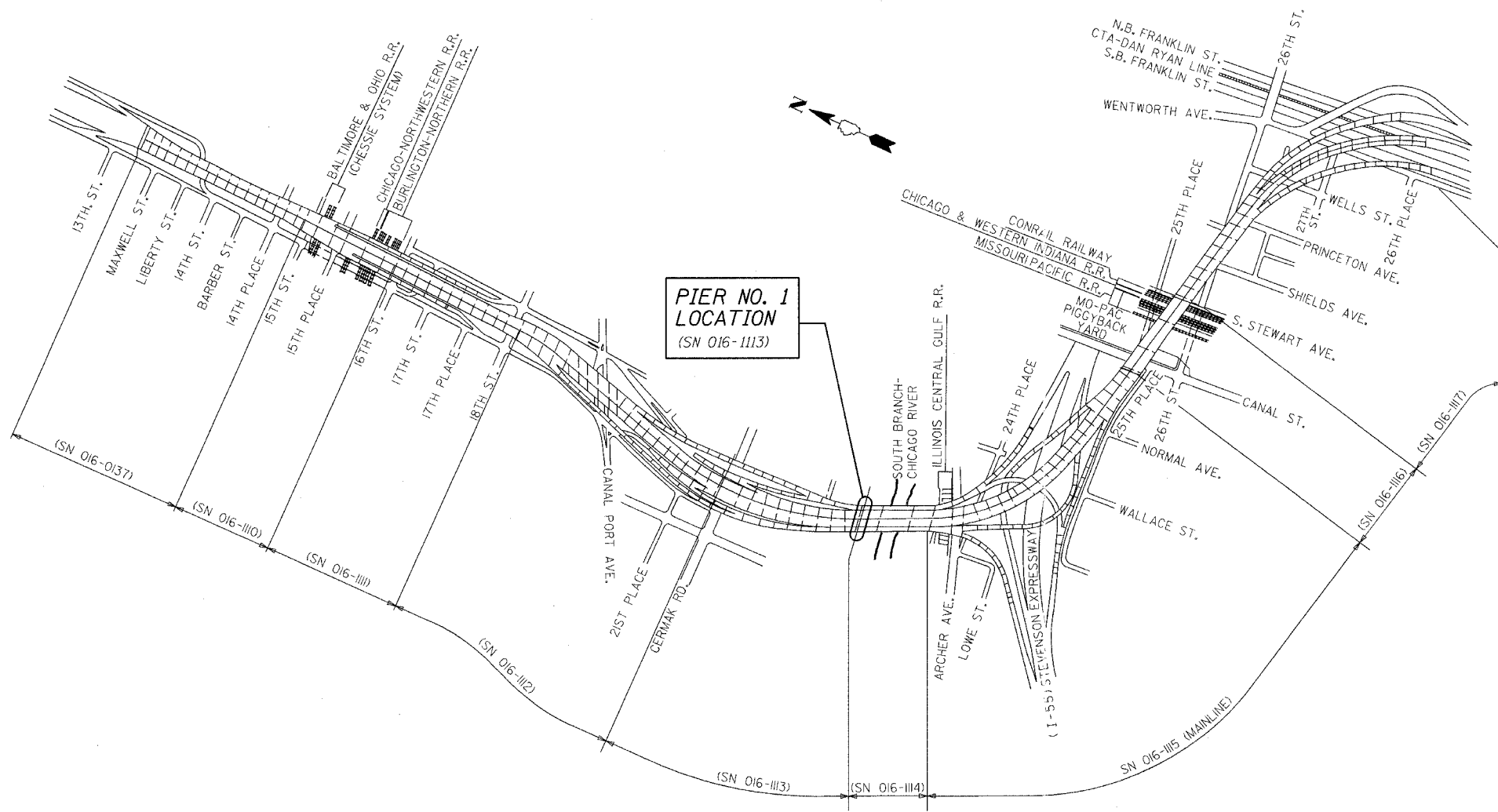
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FA1 RTE 90/94 DAN RYAN EXPRESSWAY SN 016-1111 (NORTHBOUND)		CHECKED BY: SDS DATE: 5/03
SEC 2005-008F COOK COUNTY		BOOK NUMBER
PROJECT No. 4222-3		SHEET No.

HOMER L. CHASTAIN & ASSOCIATES  
CONSULTING ENGINEERS  
8009 W. BERTH MAWR AVENUE  
SUITE 204  
CHICAGO, ILLINOIS 60631  
312-714-8000  
FAX 312-714-0025

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	DATE	SHEET NO.
FA1 90/94	*	COOK	4/17	203
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
* 2005-008F Contract #62580				

SHEET NO. 1  
9 SHEETS



**GENERAL NOTES**

Fasteners shall be high strength bolts. Bolts  $\frac{3}{4}$ "  $\phi$ , open holes  $\frac{1}{16}$ "  $\phi$ , unless otherwise noted.

Finger Plate Expansion Joints shall be assembled in the proper position with the ends in place and shall be left assembled for shop inspection.

The finger plates shall be flame cut as provided in Article 505.04(k) of the Standard Specifications.

Field welding of construction accessories will not be permitted to beams or girders.

Reinforcement bars shall conform to the requirements of AASHTO M 31 or M 322 Grade 60.

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field 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 the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price for the work.

Prior to pouring the new concrete deck, all loose rust, loose mill scale, and other loose potentially detrimental foreign material shall be removed from the surfaces of the beams or girders in contact with concrete. The cost of this work will be included in the pay item covering removal of the existing concrete.

All heavy rust and other tightly adhered potentially detrimental foreign matter shall also be removed from the surfaces of the beams or girders in contact with concrete. Tightly adhered paint may remain unless otherwise noted. This removal shall be accomplished by methods that will not damage the steel. The cost of this work will be paid for according to Article 109.04.

The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

All Construction joints shall be bonded.

Existing design and fabrication plans are available upon request.

All structural steel shall be AASHTO M270 Grade 50 unless noted otherwise. Calculated weight = 48,120 lbs.

Tapered shims shall be added under the stools as required by the Engineer to make a smooth finger joint.

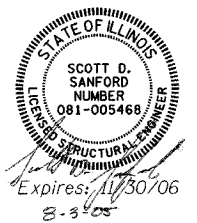
Joint openings shall be adjusted according to Article 503.10(c) of the standard specifications when the deck is poured at an ambient temperature other than 50°F.

Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

Traffic to be maintained during construction, see Roadway Plans for Stage Construction Details.

**KEY PLAN**

DAN RYAN EXPRESSWAY (I-90/I-94) VIADUCT  
COOK COUNTY, ILLINOIS



**DESIGN STRESSES**

$f'_c = 3500$  psi  
 $f_y = 60,000$  psi (Reinf)  
 $f_y = 50,000$  psi (M270 Grade 50)

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Concrete Removal	Cu Yd	22.1
Concrete Superstructure	Cu Yd	25.1
Erecting Structural Steel	L.S.	0.18
Reinforcement Bars, Epoxy Coated	Pound	3490
Mechanical Splice	Each	174
Bar Splicers	Each	48
Erecting Fabric Reinforced Elastomeric Trough	Foot	94

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

**KEY PLAN**

F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
OVER SOUTH BRANCH - CHICAGO RIVER  
COOK COUNTY  
S.N. 016-1113 - PIER 1

SCALE: VERT. \_\_\_\_\_  
HORIZ. \_\_\_\_\_  
DATE: 3/22/05

DRAWN BY: LANDREY  
DESIGNED BY: SANFORD  
CHECKED BY: \_\_\_\_\_

GREENE & BRADFORD, INC.  
(OF SPRINGFIELD)

REGISTERED PROFESSIONAL ENGINEERS  
STATE OF ILLINOIS LICENSE NO. 04286-001-NB-KEY  
REGISTERED PROFESSIONAL ENGINEERS  
STATE OF ILLINOIS LICENSE NO. 04286-001-NB-KEY  
REGISTERED PROFESSIONAL ENGINEERS  
STATE OF ILLINOIS LICENSE NO. 04286-001-NB-KEY

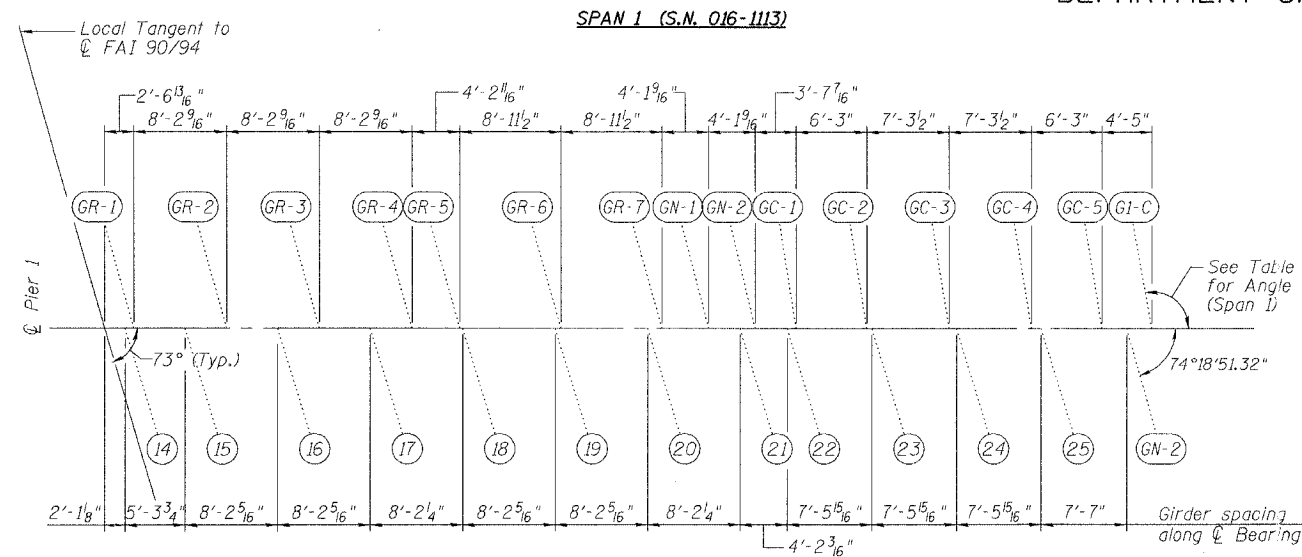
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8/3/05-MML

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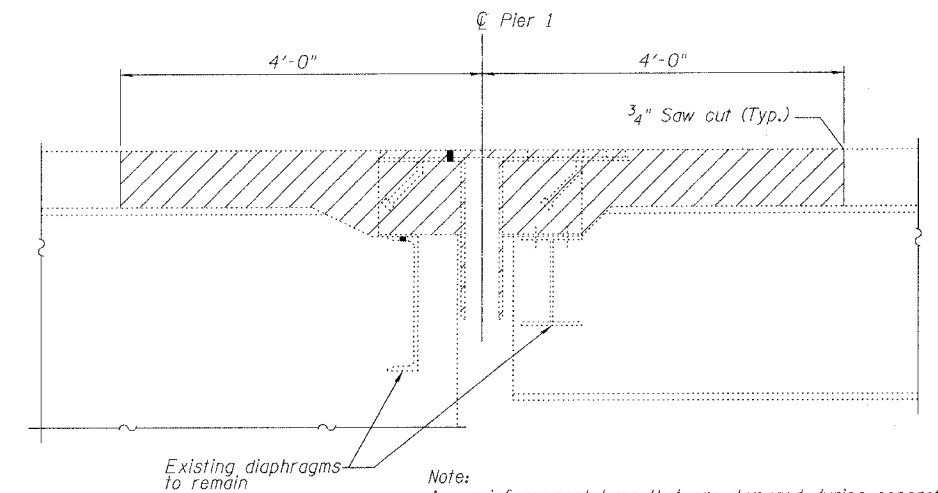
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DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO. 2
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FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		9 SHEETS

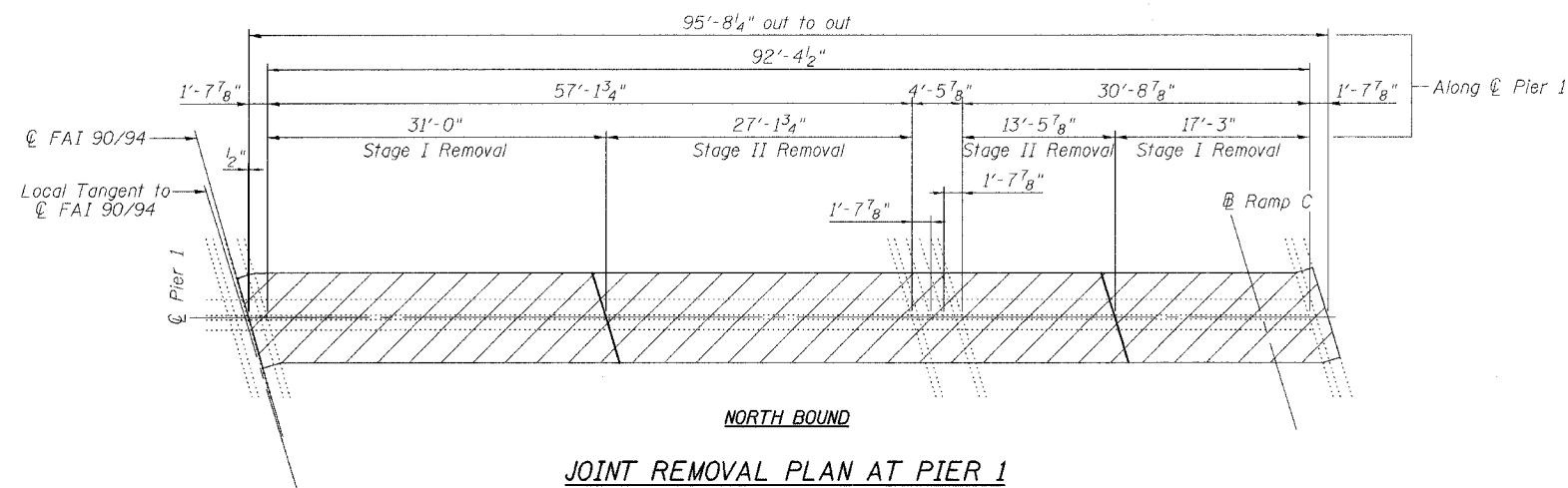
\* 2005-008F  
Contract #62580



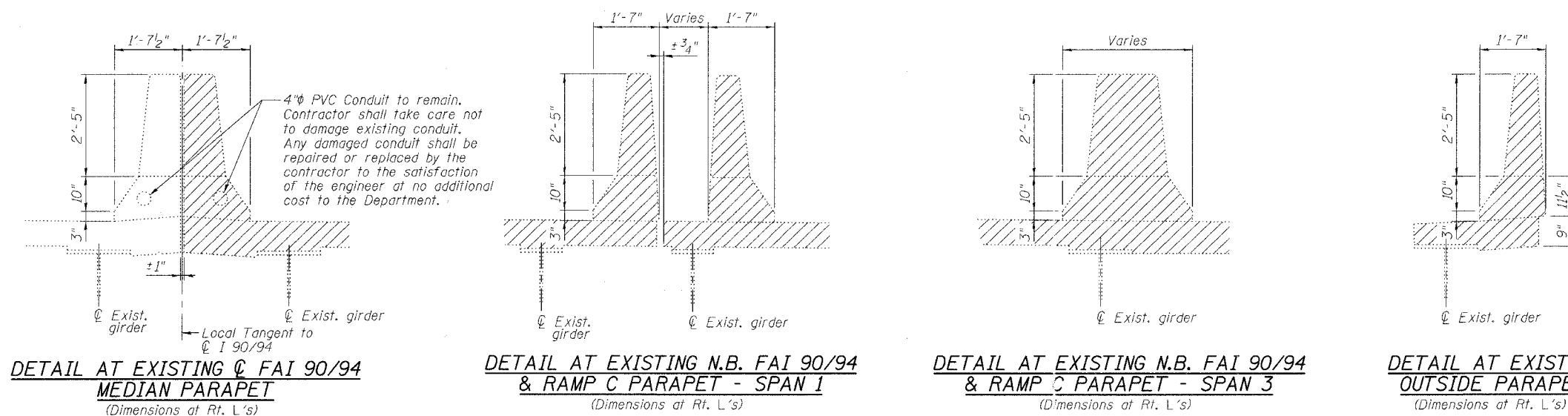
Girder	Angle
GR-1	105°33'08"
GR-2	105°33'09"
GR-3	105°33'09"
GR-4	105°33'09"
GR-5	105°35'13"
GR-6	105°39'27"
GR-7	105°43'31"
GN-1	104°31'37"
GN-2	103°26'38"
GC-1	98°54'18"
GC-2	98°58'51"
GC-3	99°04'13"
GC-4	99°09'41"
GC-5	99°14'25"
G1-C	100°11'18"



SPAN 3 (S.N. 016-1114)  
GIRDER LAYOUT AT PIER 1/1A



SECTION AT  
EXISTING FINGER PLATE  
(Dimensions at Rt. L's)



Notes:  
Hatched Area indicates "Concrete Removal".  
Existing transverse bars in the deck are placed at right angles to  $\text{\textcircled{C}}$  Roadway. Existing transverse bars extending into removal areas shall be cut to miss the new finger joint, cleaned and incorporated into the new construction.  
Longitudinal reinforcement extending into removal areas shall be cleaned, straightened and incorporated into the new construction except as noted on Section A-A on Sheet 4.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**FINGER PLATE EXPANSION JOINT  
REMOVAL DETAILS**  
F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
OVER SOUTH BRANCH - CHICAGO RIVER  
COOK COUNTY  
S.N. 016-1113 - PIER 1

SCALE: VERT. \_\_\_\_\_  
HORIZ. \_\_\_\_\_  
DATE: 3/22/05

DRAWN BY: LANDREY  
DESIGNED BY: SANFORD  
CHECKED BY: \_\_\_\_\_

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PROJECT 04286-W01  
8/3/05-MML

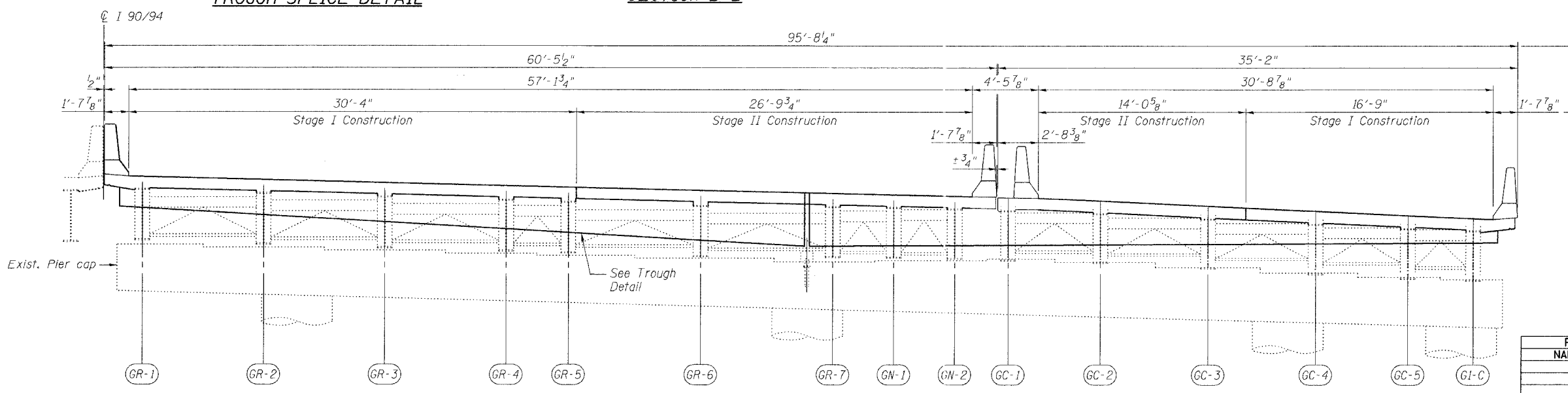
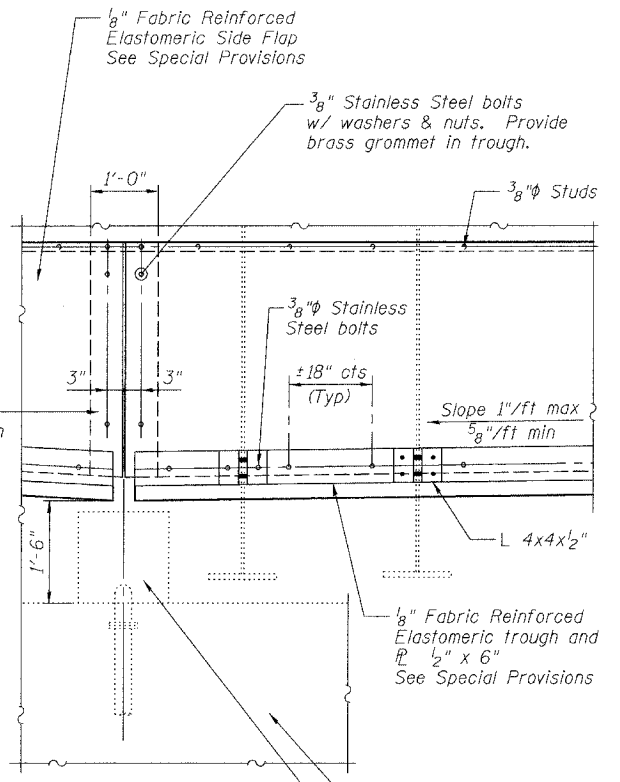
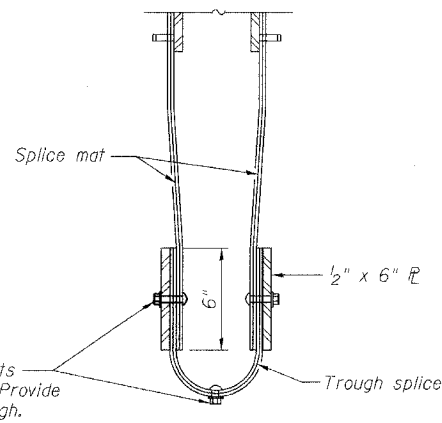
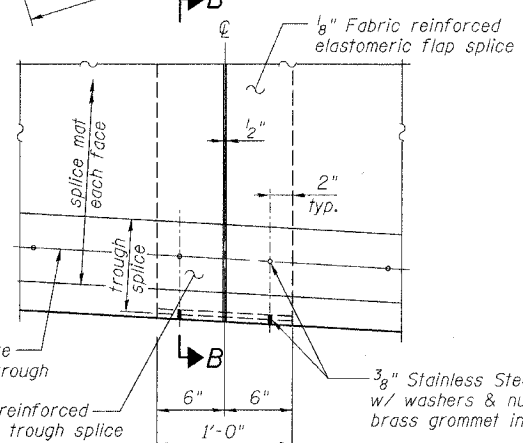
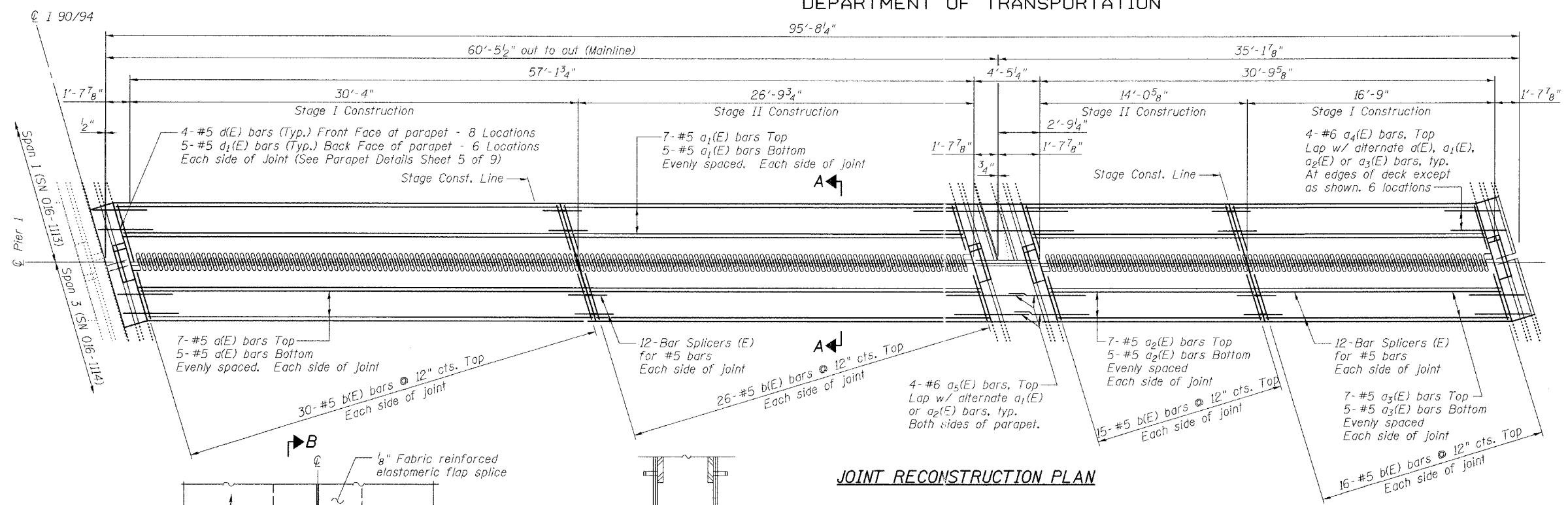
GREENR & BRADFORD, INC.  
OF SPRINGFIELD  
CONSULTING ENGINEERS  
INCORPORATED  
1001 N. WASHINGTON ST., SUITE 200  
SPRINGFIELD, ILLINOIS 62761  
TEL: 217-223-1111 FAX: 217-223-1112

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PLOT TIME = 10:00 AM  
OPERATOR = michelle



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 3 9 SHEETS
FAI 90/94	#	COOK	419	205	
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		
2005-008F		Contract #62580			



- Notes:
- For Parapet Details and Superstructure Bill of Material, see Sheet 5 of 9.
  - For Section A-A, see Sheet 4 of 9.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PIER 1 JOINT DETAILS**

F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
OVER SOUTH BRANCH - CHICAGO RIVER  
COOK COUNTY  
S.N. 016-1113 - PIER 1

SCALE: VERT. \_\_\_\_\_  
HORIZ. \_\_\_\_\_  
DATE: 3/22/05

DRAWN BY: LANDREY  
DESIGNED BY: SANFORD  
CHECKED BY: \_\_\_\_\_

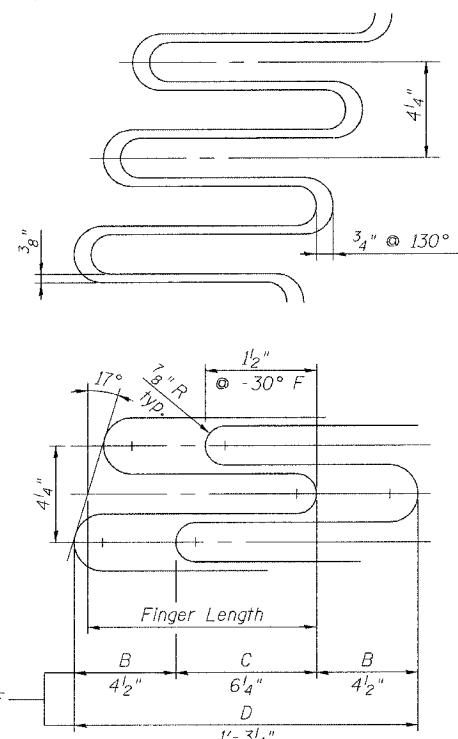
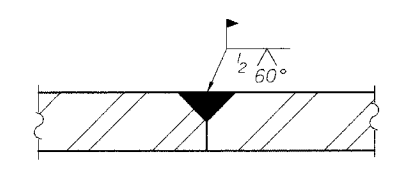
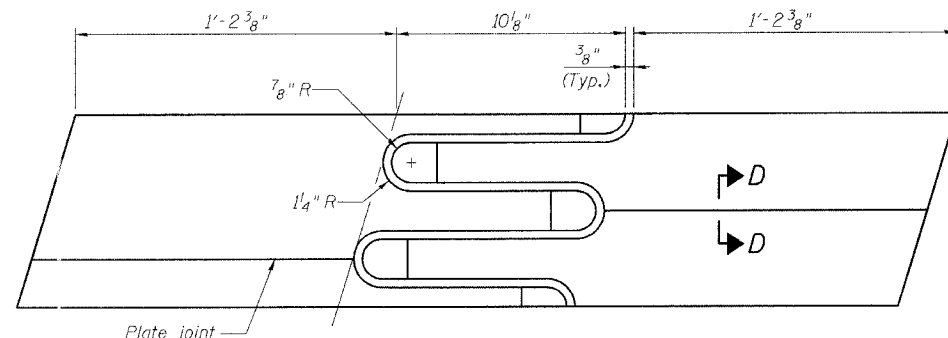
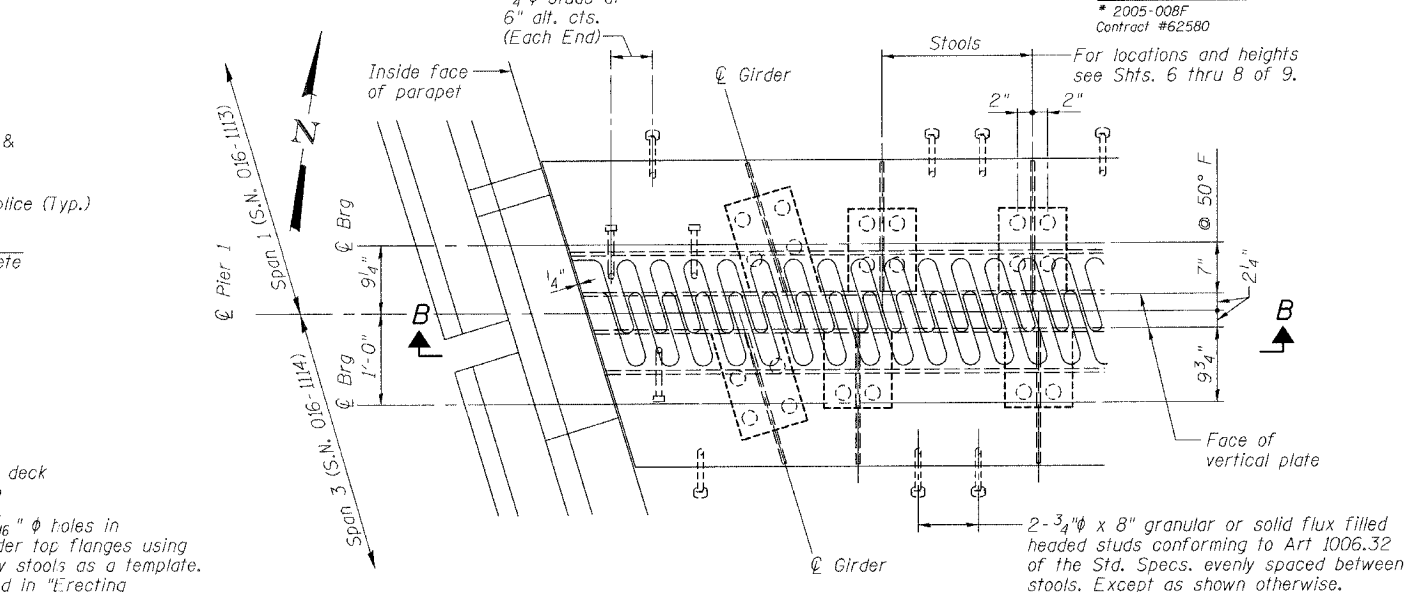
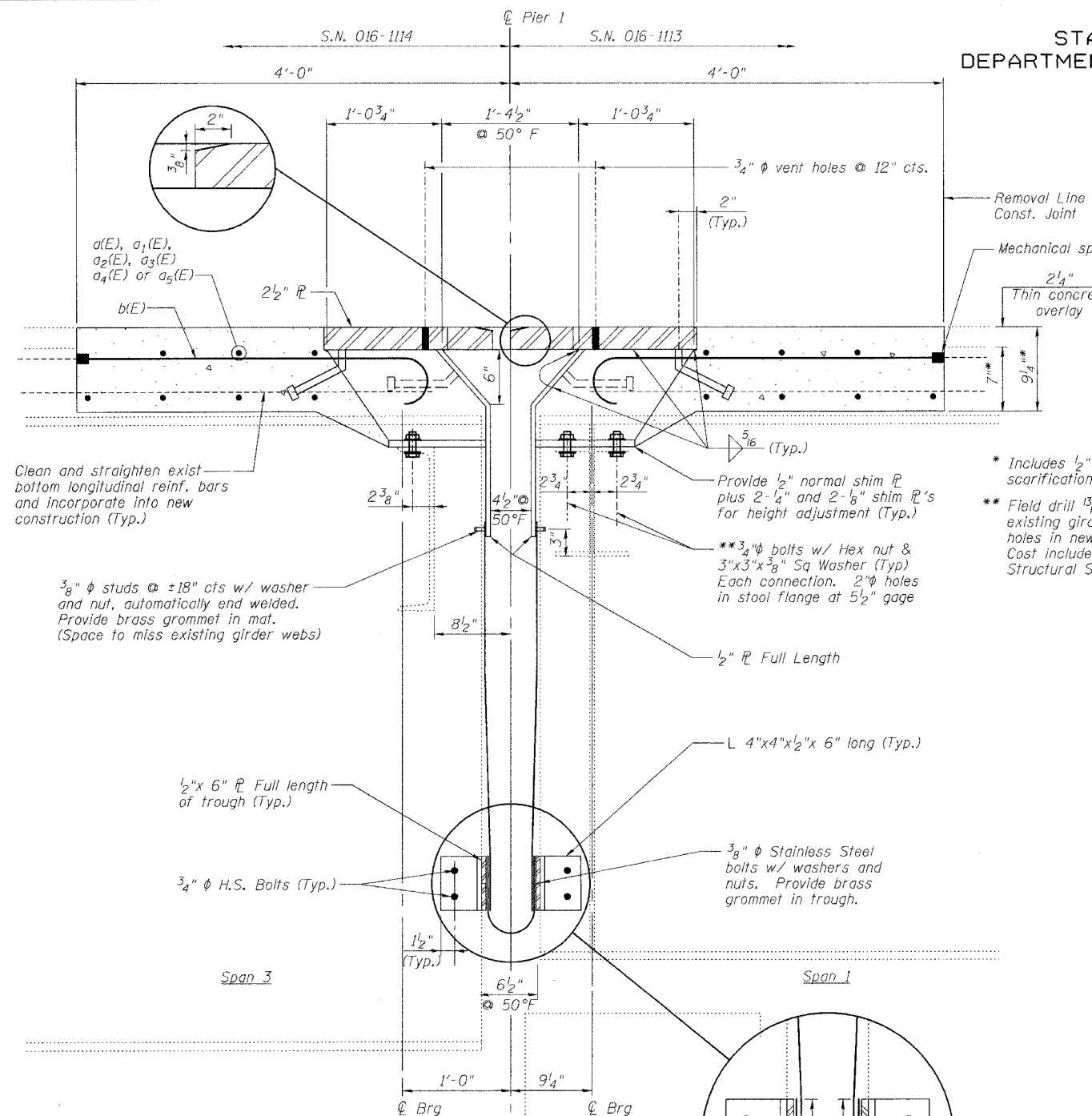
GREENE & BRADFORD, INC.  
OF SPRINGFIELD

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PROJECT 04286-W01  
8/3/05-MML

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO.
FAI 90/94	*	COOK	419	206	9 SHEETS
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT			
* 2005-008F Contract #62580					



- \* Includes 1/2" deck scarification
- \*\* Field drill 13/16" diameter holes in existing girder top flanges using holes in new stools as a template. Cost included in "Erecting Structural Steel."

NOTES

1. The Contractor shall bolt the Stools of the Fingerplate Joint Assembly to the top of existing girders, as shown in Section A-A of this drawing.
2. Stainless steel bolts, washers and nuts shall meet the requirements of ASTM A193.
3. The installation of all necessary hardware, stainless steel bolts, studs and washers, plates and angles shall be included with "Erecting Structural Steel".
4. For Section B-B, see Sheet 5 of 9.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PIER 1 JOINT DETAILS**  
F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
OVER SOUTH BRANCH - CHICAGO RIVER  
COOK COUNTY  
S.N. 016-1113 - PIER 1

SCALE: VERT. \_\_\_\_\_  
HORIZ. \_\_\_\_\_  
DATE: 3/22/05

DRAWN BY: LANDREY  
DESIGNED BY: SANFORD  
CHECKED BY: \_\_\_\_\_

COMPUTER FILE NO.  
04286-W01-NB-FPJ  
PROJECT 04286-W01  
8/3/05-MML

GREENE & BRADFORD, INC.  
OF SPRINGFIELD  
ENGINEERS AND ARCHITECTS  
1001 N. WASHINGTON ST., SUITE 200  
SPRINGFIELD, ILLINOIS 62761-1001  
TEL: 217-244-5100 FAX: 217-244-5101

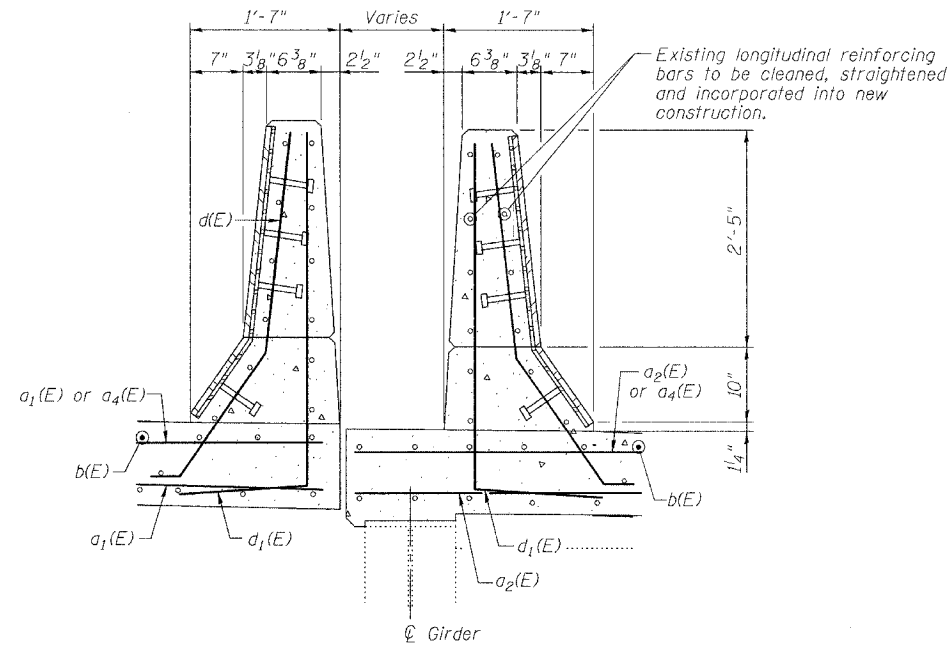
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

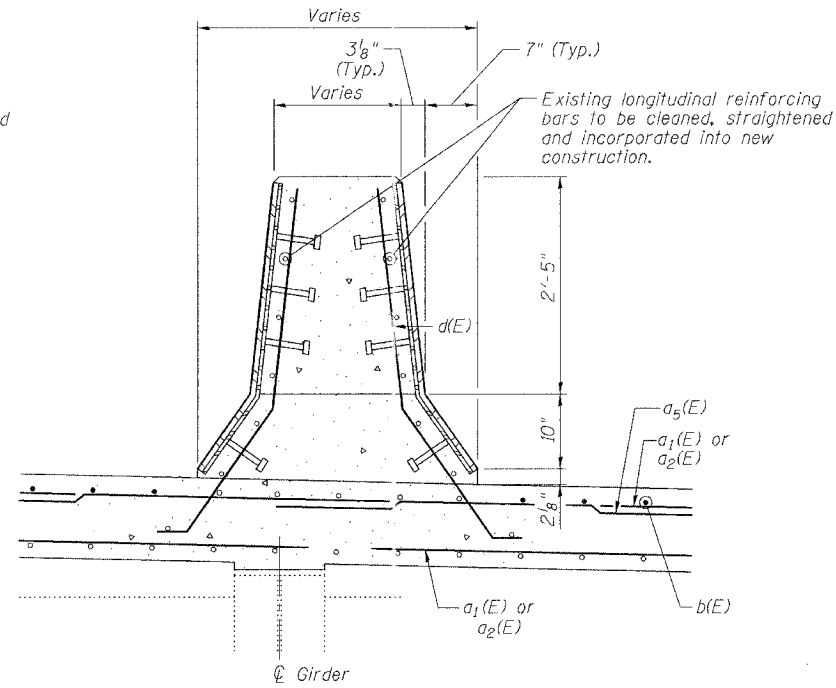
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SHEET NO. 5  
9 SHEETS

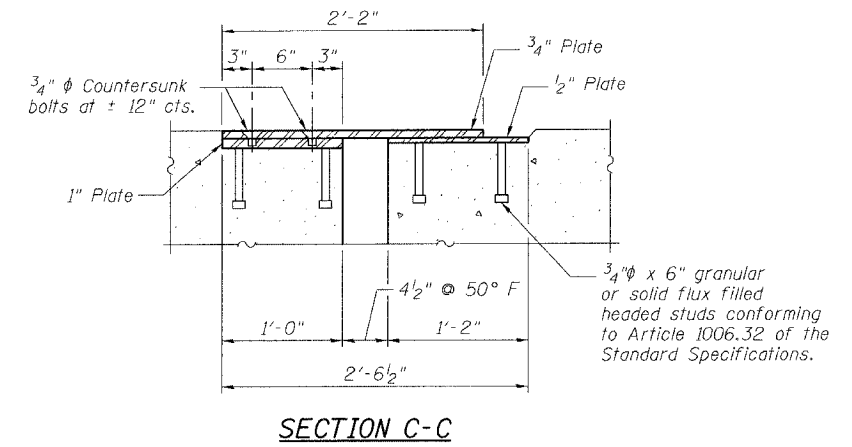
\* 2005-008F  
Contract #62580



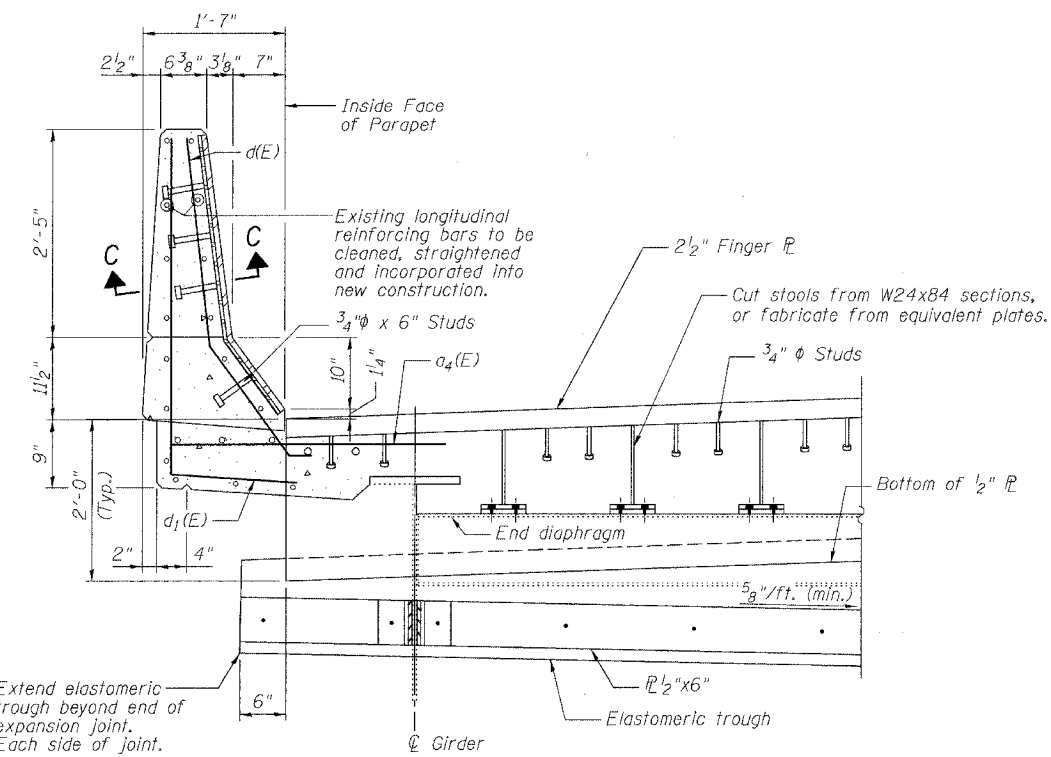
**DETAIL AT N.B. FAI 90/94 & RAMP C PARAPET - SPAN 1**  
(Dimensions at Rt. L's)



**DETAIL AT N.B. FAI 90/94 & RAMP E PARAPET - SPAN 3**  
(Dimensions at Rt. L's)

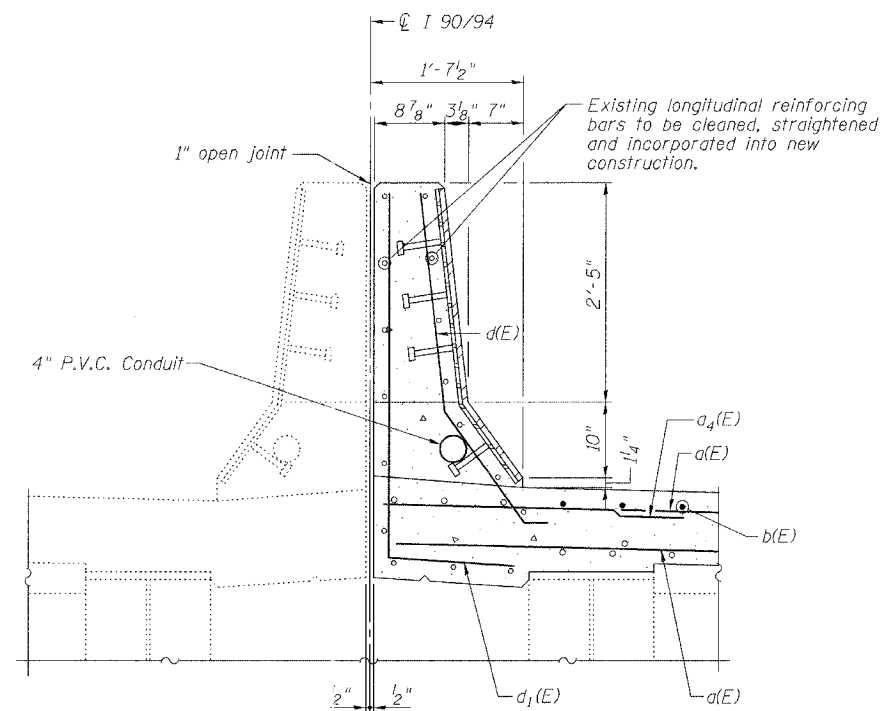


**SECTION C-C**



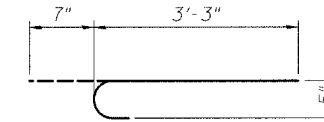
**SECTION B-B**

(For location of Section B-B, See Sheet 4 of 9)

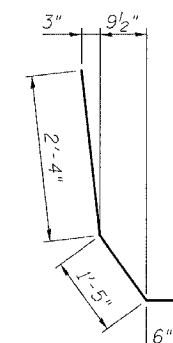


**DETAIL AT MEDIAN PARAPET**

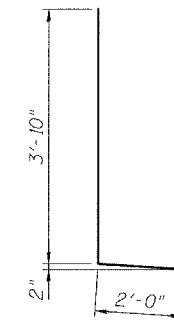
(Looking North)



**BAR b(E)**



**BAR d(E)**



**BAR d1(E)**

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	24	#5	30'-9"	—
a1(E)	24	#5	27'-3"	—
a2(E)	24	#5	14'-6"	—
a3(E)	24	#5	17'-3"	—
a4(E)	24	#6	4'-6"	—
a5(E)	8	#6	5'-6"	—
b(E)	174	#5	3'-10"	—
d(E)	32	#5	4'-3"	—
d1(E)	30	#5	5'-10"	—
Reinforcement Bars, Epoxy Coated			Pound	3490
Concrete Superstructure			Cu. Yd.	25.1
Concrete Removal			Cu. Yd.	22.1
Bar Splicers			Each	48
Mechanical Splice			Each	174

Reinforcing bars designated (E) shall be epoxy coated.

ILLINOIS DEPARTMENT OF TRANSPORTATION

**PARAPET DETAILS**

F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
OVER SOUTH BRANCH - CHICAGO RIVER  
COOK COUNTY  
S.N. 016-1113 - PIER 1

SCALE: VERT. 1"=4'-0"  
HORIZ. 1"=10'-0"  
DATE: 3/22/05

DRAWN BY: LANDREY  
DESIGNED BY: SANFORD  
CHECKED BY:

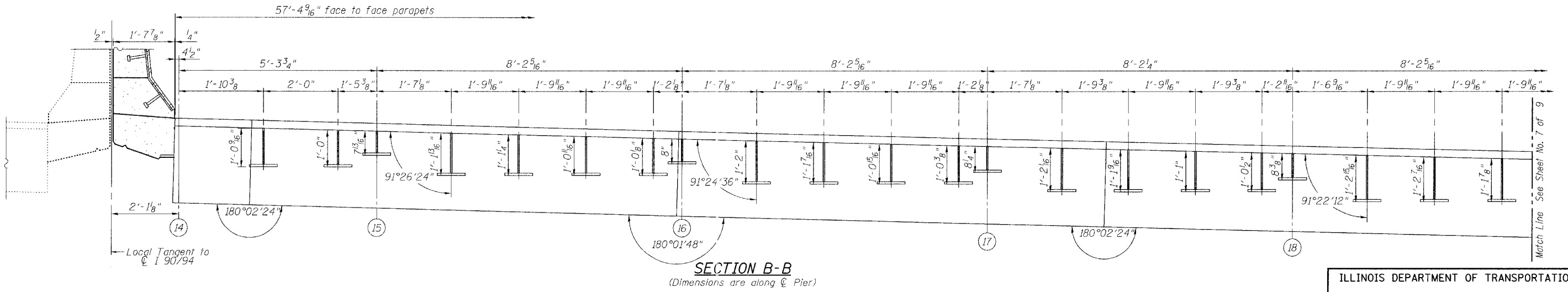
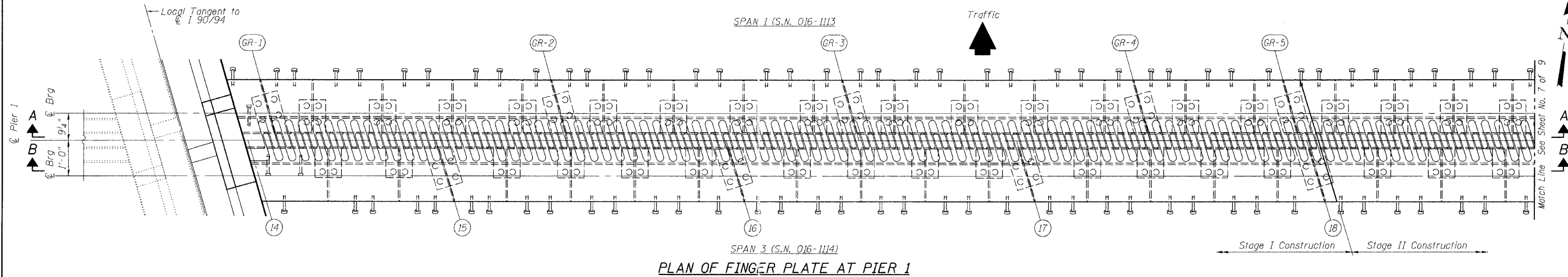
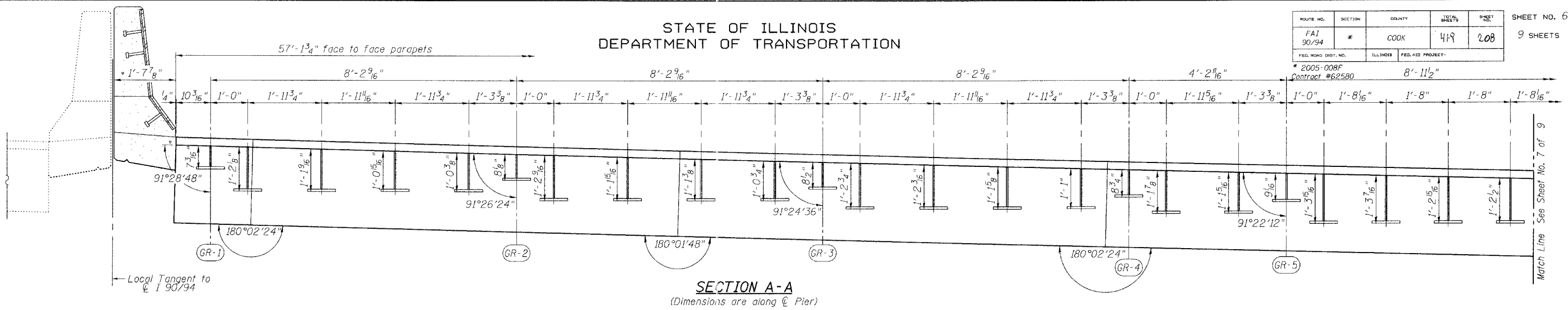
GREENE & BRADFORD, INC.  
OF SPRINGFIELD  
CONSULTING ENGINEERS  
PROFESSIONAL ENGINEERS  
ILLINOIS LICENSE NO. 021-000000000  
021-000000000

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PROJECT 04286-W01  
8/3/05-MML

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 6 9 SHEETS
FAI 90/94	#	COOK	419	208	
FED. ROAD DIST. NO.		ILL. PROJ. NO.	FED. AID PROJECT NO.		
2005-008F		Contract #62580	8'-11 1/2"		



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OPERATOR = michellef

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**FINGER PLATE PLAN AND ELEVATION**

F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
OVER SOUTH BRANCH - CHICAGO RIVER  
COOK COUNTY  
S.N. 016-1113 - PIER 1

SCALE: VERT. \_\_\_\_\_  
HORIZ. \_\_\_\_\_

DATE: 3/22/05

DRAWN BY: LANDREY  
DESIGNED BY: SANFORD  
CHECKED BY: \_\_\_\_\_

COMPUTER FILE NO.  
04286-W01-NB-PE1

PROJECT 04286-W01  
8/3/05-MML

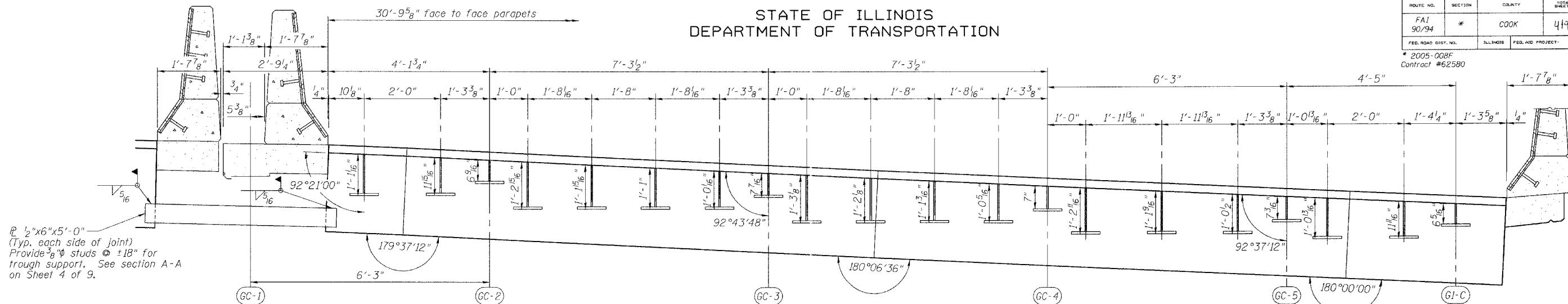
GREENE & BRADFORD, INC.  
OF SPRINGFIELD  
REGISTERED PROFESSIONAL ENGINEERS  
ILLINOIS LICENSE NO. 021-000001  
1001 NORTH MAIN STREET, SUITE 200, SPRINGFIELD, ILLINOIS 62761  
TEL: 217-223-8222 FAX: 217-223-8223 WWW: WWW.GRENE-AND-BRADFORD.COM



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

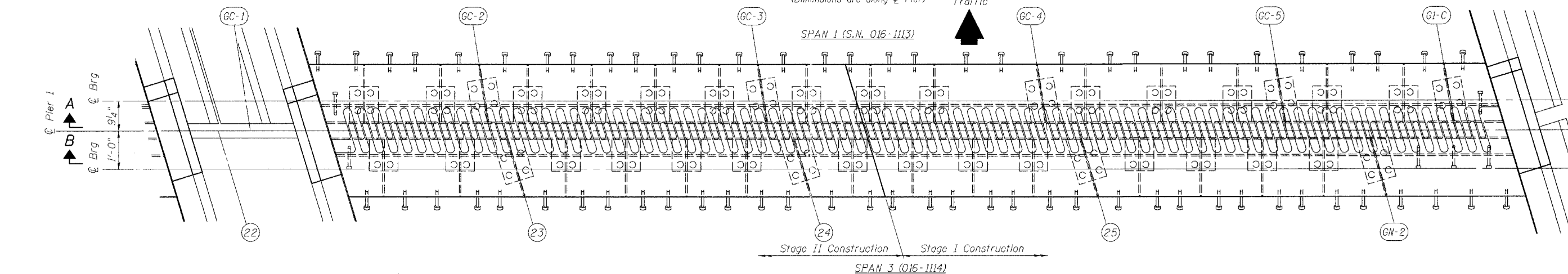
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FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
* 2005-008F Contract #62580				

SHEET NO. 8  
9 SHEETS

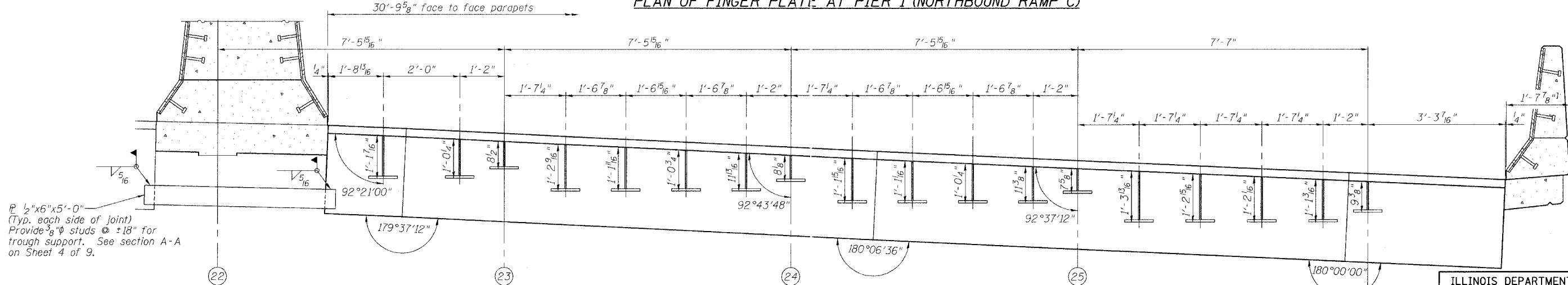


1/2"x6"x5'-0"  
(Typ. each side of joint)  
Provide 3/8" studs @ ±18" for  
trough support. See section A-A  
on Sheet 4 of 9.

**SECTION A-A**  
(Dimensions are along C/Pier)



**PLAN OF FINGER PLATE AT PIER 1 (NORTHBOUND RAMP C)**



1/2"x6"x5'-0"  
(Typ. each side of joint)  
Provide 3/8" studs @ ±18" for  
trough support. See section A-A  
on Sheet 4 of 9.

**SECTION B-B**  
(Dimensions are along C/Pier)

Note: Any structural steel prime coat removed for, or damaged by field welding shall be replaced in accordance with Section 506.05 of the Standard Specifications. Cost included with "Erecting Structural Steel".

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**FINGER PLATE PLAN AND ELEVATION**

F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
OVER SOUTH BRANCH - CHICAGO RIVER  
COOK COUNTY  
S.N. 016-1113 - PIER 1

SCALE: VERT. \_\_\_\_\_  
HORIZ. \_\_\_\_\_  
DATE: 3/22/05

DRAWN BY: LANDREY  
DESIGNED BY: SANFORD  
CHECKED BY: \_\_\_\_\_

COMPUTER FILE NO.  
04286-W01-NB-PE3  
PROJECT 04286-W01  
8/3/05-MML



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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	DATE	SHEET NO.
FAI 90/94	*	COOK	4/4	2/11
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
* 2005-008F Contract #62580				

SHEET NO. 9  
9 SHEETS

**NOTES**

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.  
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.  
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.  
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.  
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

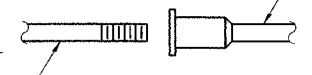
- ① Minimum Capacity =  $1.25 \times f_y \times A_t$   
(Tension in kips)
- ② Minimum \*Pull-out Strength =  $1.25 \times f_{s_{allow}} \times A_t$   
(Tension in kips)

Where  $f_y$  = Yield strength of lapped reinforcement bars in ksi.  
 $f_{s_{allow}}$  = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)  
 $A_t$  = Tensile stress area of lapped reinforcement bars.  
\* = 28 day concrete

BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	5.9
#5	2'-0"	23.0	9.2
#6	2'-7"	33.1	13.3
#7	3'-5"	45.1	18.0
#8	4'-6"	58.9	23.6
#9	5'-9"	75.0	30.0
#10	7'-3"	95.0	38.0
#11	9'-0"	117.4	46.8

Bar splicer assemblies shall be according to Section 508 of the Standard Specifications, except as noted. The furnishing and installation of bar splicer assemblies will be measured and paid for at the contract unit price each for "BAR SPLICERS."

The diameter of this part is equal or larger than the diameter of bar spliced.

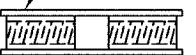


**ROLLED THREAD DOWEL BAR**



**\*\* ONE PIECE**

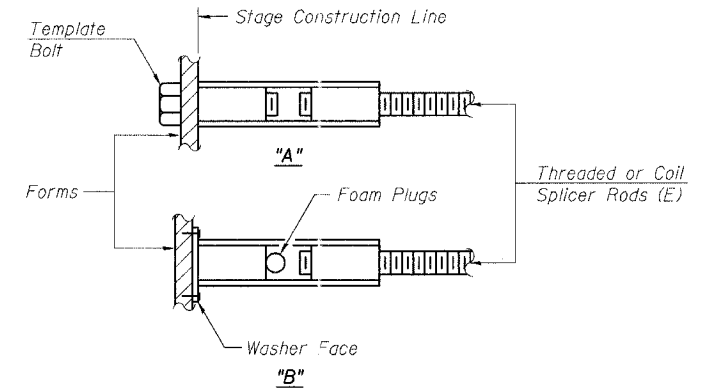
Wire Connector



**WELDED SECTIONS**

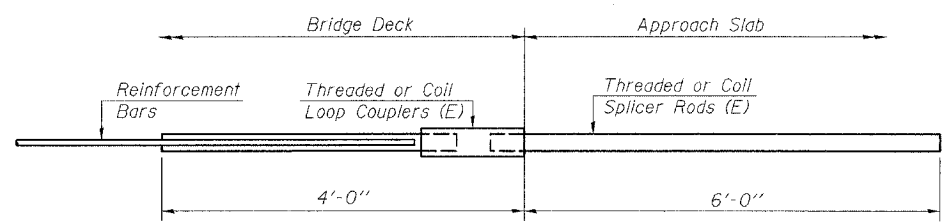
**BAR SPLICER ASSEMBLY ALTERNATIVES**

\*\* Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



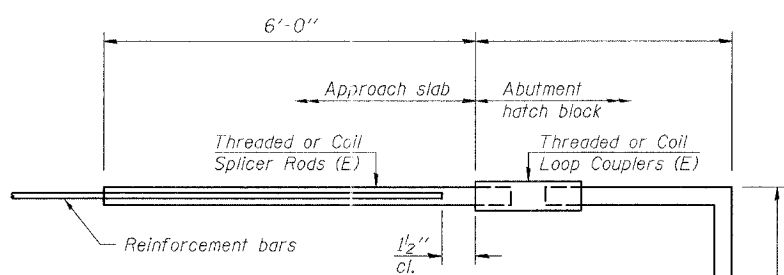
**INSTALLATION AND SETTING METHODS**

"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.



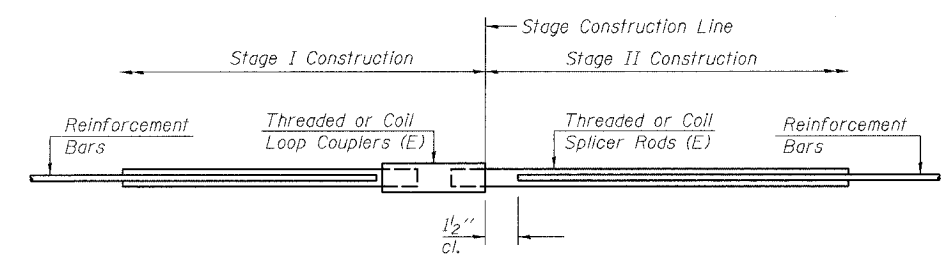
**FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS**

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required = N/A



**FOR PILE BENT ABUTMENTS**

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required = N/A



**STANDARD**

Bar Size	No. Assemblies Required	Location
#5	48	Deck

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**BAR SPLICER ASSEMBLY DETAILS**  
F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
OVER SOUTH BRANCH - CHICAGO RIVER  
COOK COUNTY  
S.N. 016-1113 - PIER 1

SCALE: VERT. \_\_\_\_\_  
HORIZ. \_\_\_\_\_  
DATE: 3/22/05

DRAWN BY: LANDREY  
DESIGNED BY: SANFORD  
CHECKED BY: \_\_\_\_\_

COMPUTER FILE NO.  
04286-W01-NB-BSO  
PROJECT 04286-W01  
8/3/05-MML

GREENE & BRADFORD, INC.  
CONSULTING ENGINEERS  
1100 N. LAKE ST. SUITE 100  
CHICAGO, IL 60610  
TEL: 773-844-1200 FAX: 773-844-1201  
WWW.GREENE-AND-BRADFORD.COM

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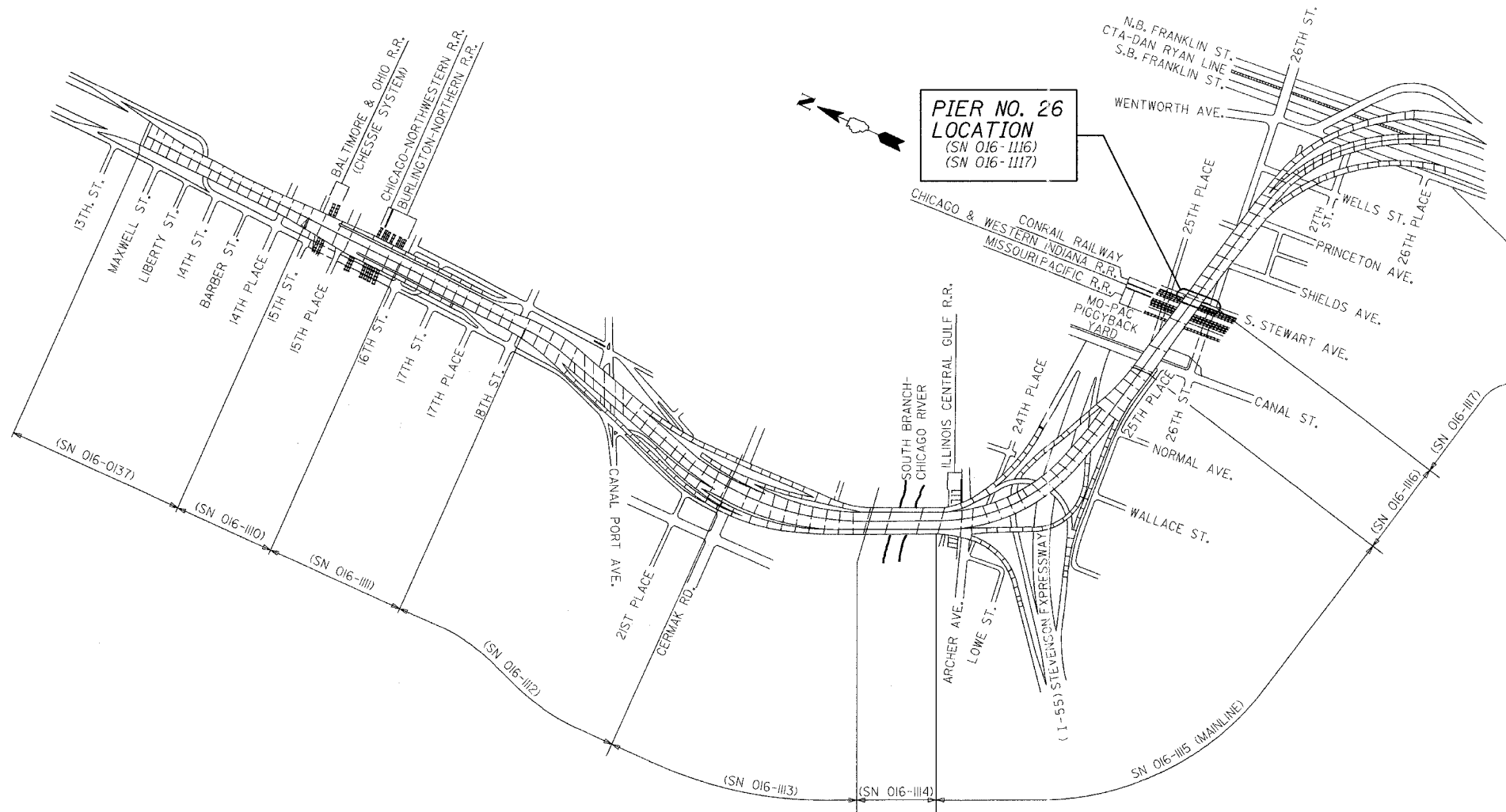


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET NO.
FA1 90/94	*	COOK	49	212
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SHEET NO. 1  
8 SHEETS

\* 2005 - 008F  
Contract #62580



**KEY PLAN**  
DAN RYAN EXPRESSWAY (I-90/I-94) VIADUCT  
COOK COUNTY, ILLINOIS

**GENERAL NOTES**

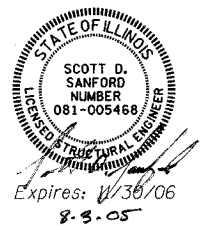
Fasteners shall be high strength bolts. Bolts  $\frac{3}{4}$ "  $\phi$ , open holes  $\frac{13}{16}$ "  $\phi$ , unless otherwise noted.  
Finger Plate Expansion Joints shall be assembled in the proper position with the ends in place and shall be left assembled for shop inspection.  
The finger plates shall be flame cut as provided in Article 505.04(k) of the Standard Specifications.  
Field welding of construction accessories will not be permitted to beams or girders.  
Reinforcement bars shall conform to the requirements of AASHTO M 31 or M 322 Grade 60.  
Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field 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 the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price for the work.  
Prior to pouring the new concrete deck, all loose rust, loose mill scale, and other loose potentially detrimental foreign material shall be removed from the surfaces of the beams or girders in contact with concrete. The cost of this work will be included in the pay item covering removal of the existing concrete. All heavy rust and other tightly adhered potentially detrimental foreign matter shall also be removed from the surfaces of the beams or girders in contact with concrete. Tightly adhered paint may remain unless otherwise noted. This removal shall be accomplished by methods that will not damage the steel. The cost of this work will be paid for according to Article 109.04.  
The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.  
All Construction joints shall be bonded.  
Existing design and fabrication plans are available upon request.  
All structural steel shall be AASHTO M270 Grade 50 unless noted otherwise. Calculated weight = 32,260 lbs.  
Tapered shims shall be added under the stools as required by the Engineer to make a smooth finger joint.  
Joint openings shall be adjusted according to Article 503.10(c) of the standard specifications when the deck is poured at an ambient temperature other than 50°F.  
Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".  
Traffic to be maintained during construction, see Roadway Plans for Stage Construction Details.

**DESIGN STRESSES**

$f'_c$  = 3500 psi  
 $f_y$  = 60,000 psi (Reinf)  
 $f_y$  = 50,000 psi (M270 Grade 50)

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Concrete Removal	Cu Yd	15.3
Concrete Superstructure	Cu Yd	18.3
Erecting Structural Steel	L.S.	0.12
Reinforcement Bars, Epoxy Coated	Pound	2500
Mechanical Splice	Each	130
Bar Splicers	Each	24
Erecting Fabric Reinforced Elastomeric Trough	Foot	68



Expires: 11/30/06  
8-3-05

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**KEY PLAN**  
F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
OVER 28th ST. TO S. STEWART ST.  
COOK COUNTY  
S.N. 016-1117 - PIER 26

SCALE: VERT.  
SCALE: HORIZ.  
DATE: 2/17/05

DRAWN BY: HEBERLING  
DESIGNED BY: SANFORD  
CHECKED BY: -

GREENE & BRADFORD, INC.  
OF SPRINGFIELD  
PROFESSIONAL ENGINEER  
ILLINOIS LICENSE NO. 04286-W03  
PROJECT 04286-W03  
8/3/05-MML

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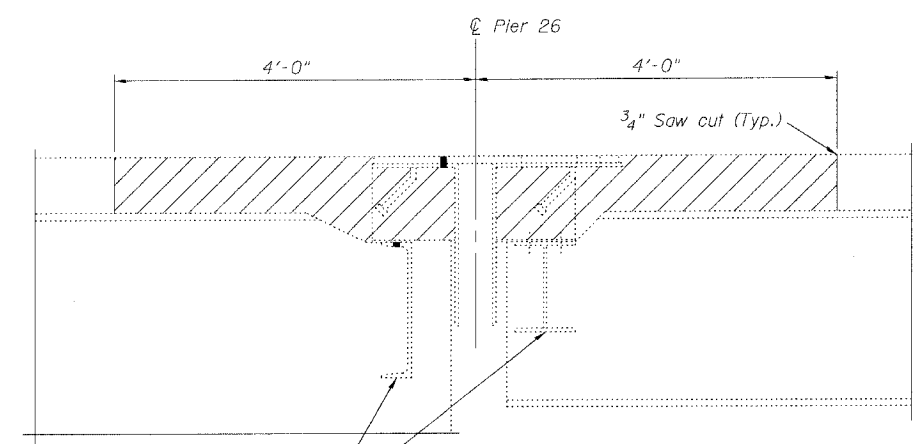
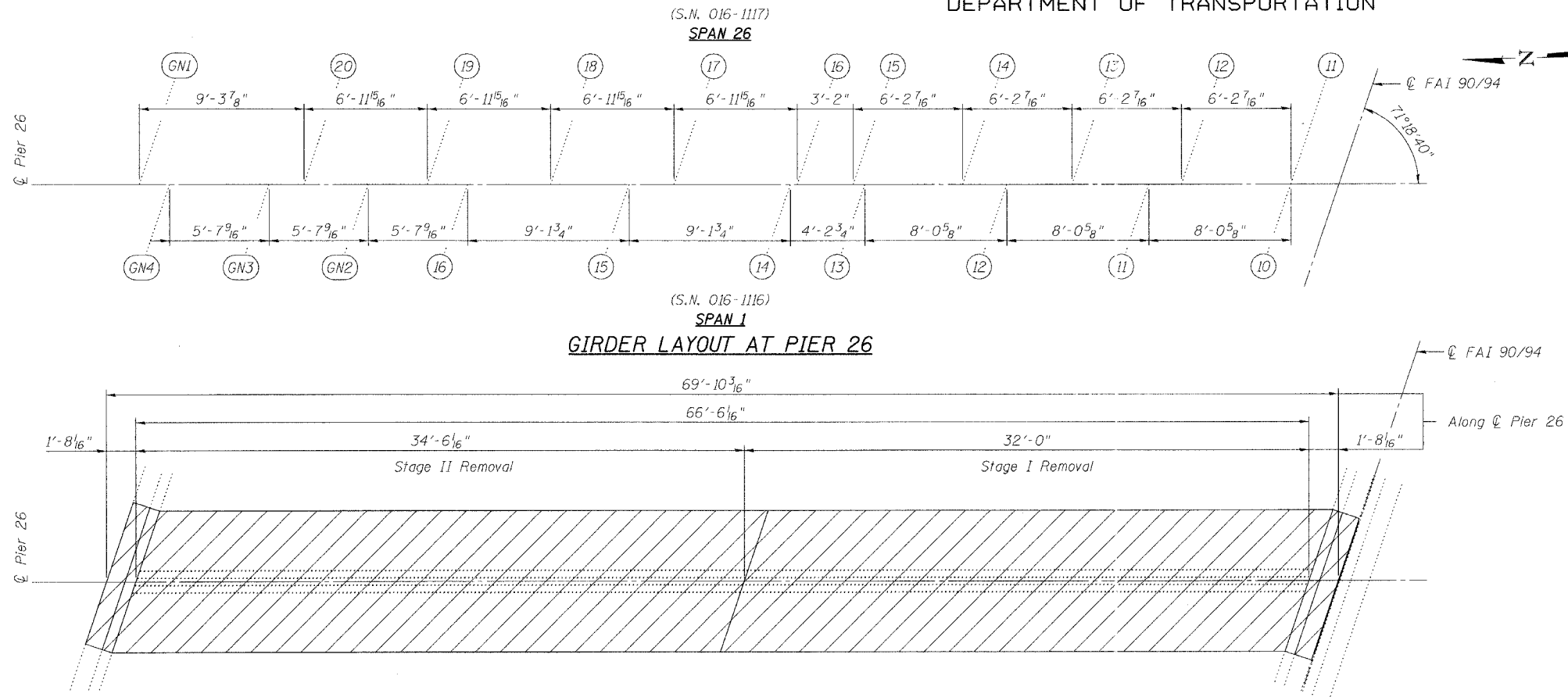


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET
FAI 90/94	*	COOK	419	213
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SHEET NO. 2  
8 SHEETS

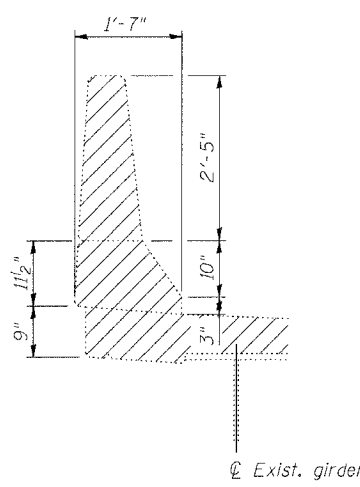
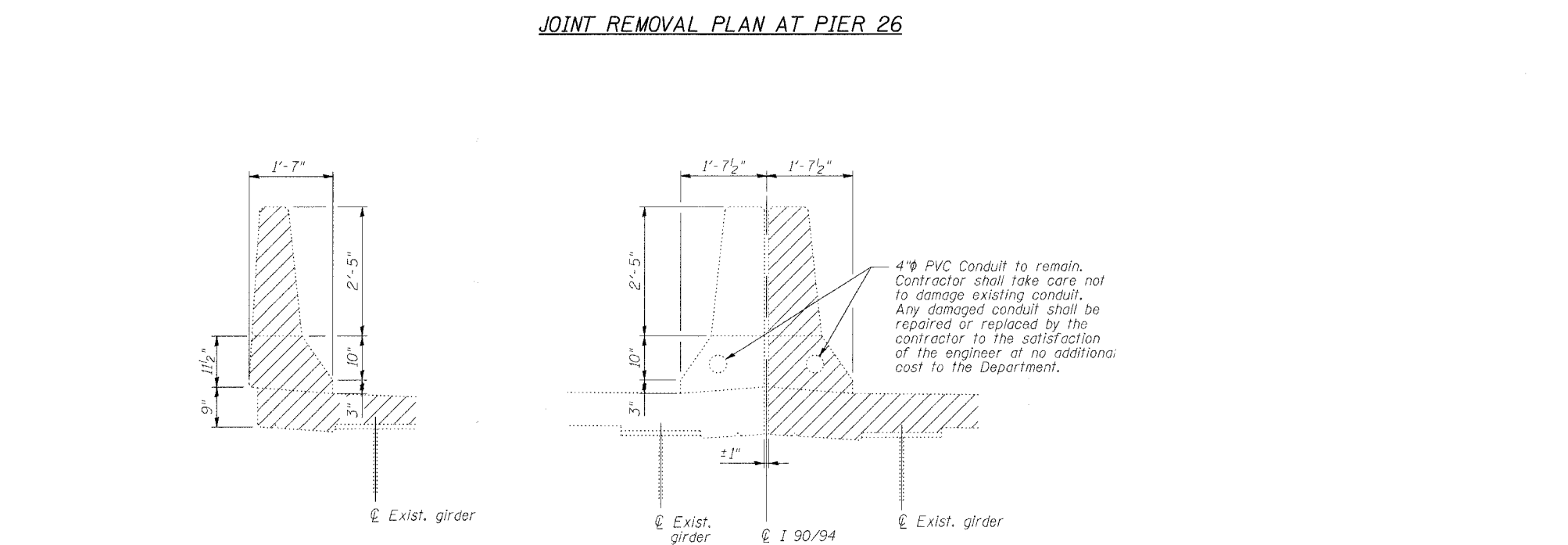
\* 2005 - 008F  
Contract #62580



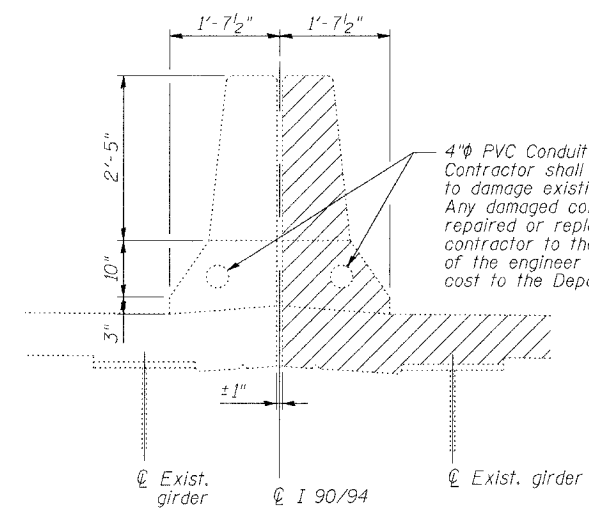
Note:  
Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost included with "Concrete Removal".  
Existing finger plates, stools, drainage trough and hardware shall be removed. Cost included with "Concrete Removal".

**SECTION AT EXISTING FINGER PLATE**  
(Dimensions at Rt. L's)

**JOINT REMOVAL PLAN AT PIER 26**



**DETAIL AT EXISTING OUTSIDE PARAPET**  
(Dimensions at Rt. L's)



**DETAIL AT EXISTING @ FAI 90/94 MEDIAN PARAPET**  
(Dimensions at Rt. L's)

4" PVC Conduit to remain. Contractor shall take care not to damage existing conduit. Any damaged conduit shall be repaired or replaced by the contractor to the satisfaction of the engineer at no additional cost to the Department.

Notes:  
Hatched Area indicates "Concrete Removal". Existing transverse bars in the deck are placed at right angles to the Roadway. Existing transverse bars extending into removal areas shall be cut to miss the new finger joint, cleaned and incorporated into the new construction. Longitudinal reinforcement extending into removal areas shall be cleaned, straightened and incorporated into the new construction except as noted on Section A-A on Sheet 5.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**FINGER PLATE EXPANSION JOINT REMOVAL DETAILS**  
F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
OVER 28th ST. TO S. STEWART ST.  
COOK COUNTY  
S.N. 016-1117 - PIER 26

SCALE: VERT. \_\_\_\_\_  
HORIZ. \_\_\_\_\_  
DATE: 2/17/05  
DRAWN BY: HEBERLING  
DESIGNED BY: SANFORD  
CHECKED BY: \_\_\_\_\_  
COMPUTER FILE NO. 04286-W03-REM  
PROJECT 04286-W03  
8/3/05-MML



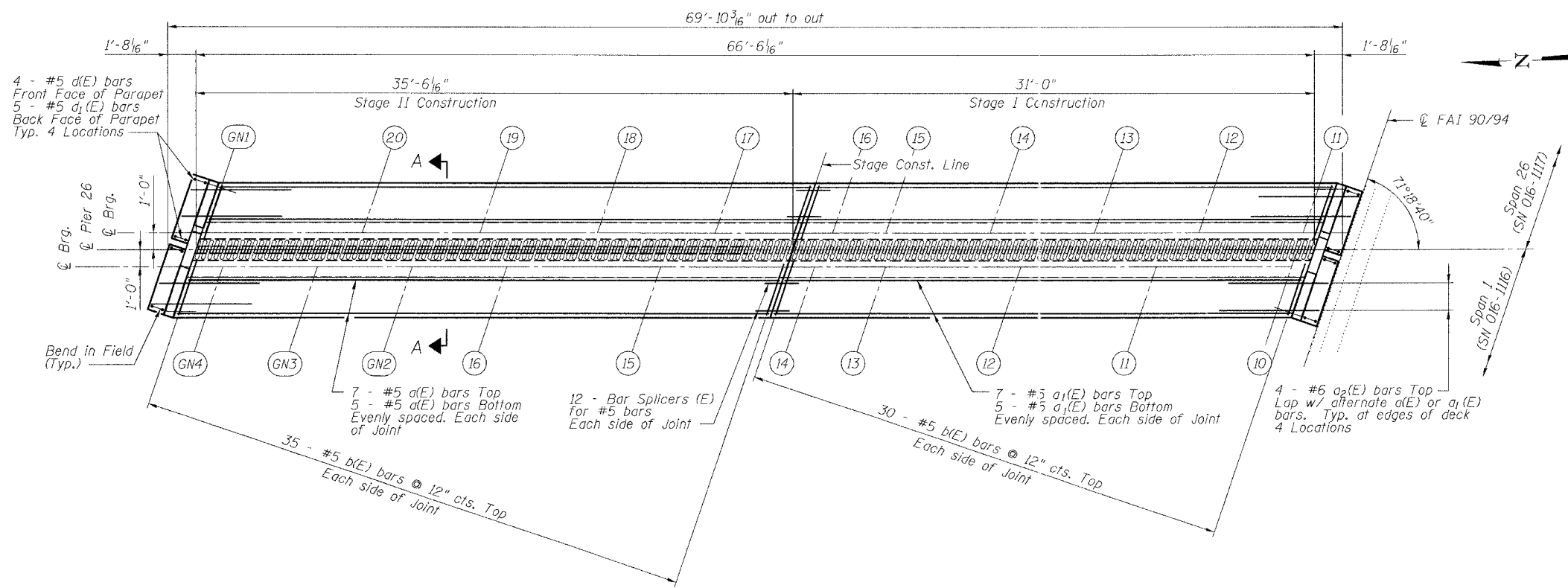
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

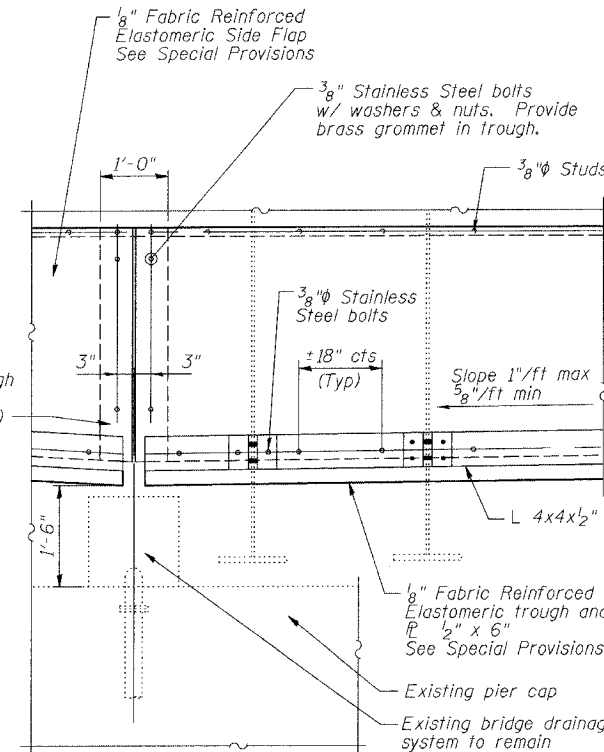
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FAI 90/94	*	COOK	419	214
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SHEET NO. 3  
8 SHEETS

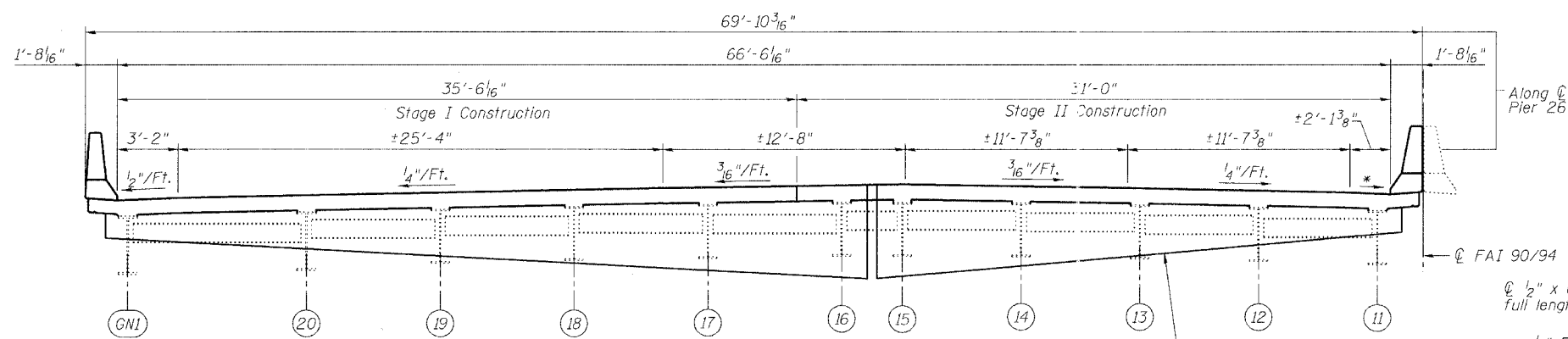
\* 2005 - 00BF  
Contract #62580



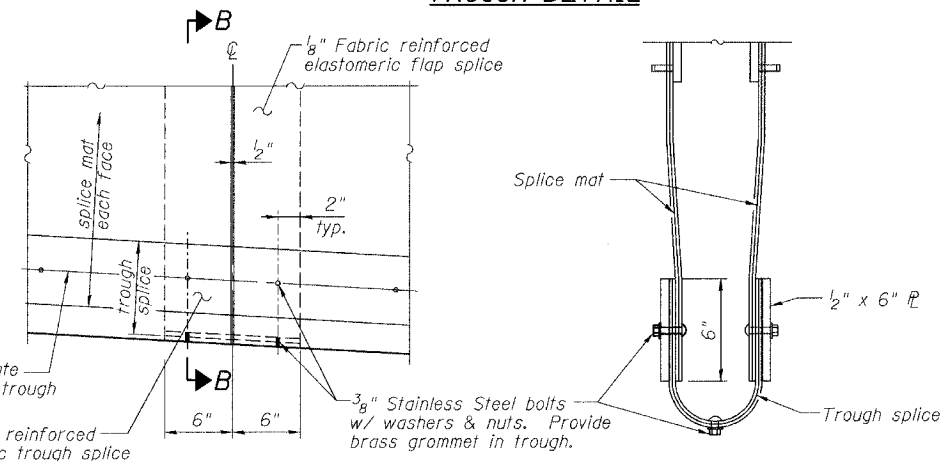
JOINT RECONSTRUCTION PLAN



TROUGH DETAIL



ELEVATION (LOOKING EAST)  
(Showing Span 26 Configuration)



TROUGH SPLICE DETAIL

SECTION B-B

Notes:

1. For Parapet Details and Superstructure Bill of Material, see Sheet 5 of 8.
2. For Section A-A, see Sheet 4 of 8.
3. Deck cross slopes shown are at right angles to  $\text{\textcircled{C}}$  Rdwy.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PIER 26 JOINT DETAILS**  
F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
OVER 28th ST. TO S. STEWART ST.  
COOK COUNTY  
S.N. 016-1117 - PIER 26

SCALE: VERT. \_\_\_\_\_  
HORIZ. \_\_\_\_\_  
DATE: 2/17/05

DRAWN BY: HEBERLING  
DESIGNED BY: SANFORD  
CHECKED BY: \_\_\_\_\_

COMPUTER FILE NO.  
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PROJECT 04286-W03  
8/3/05-MML



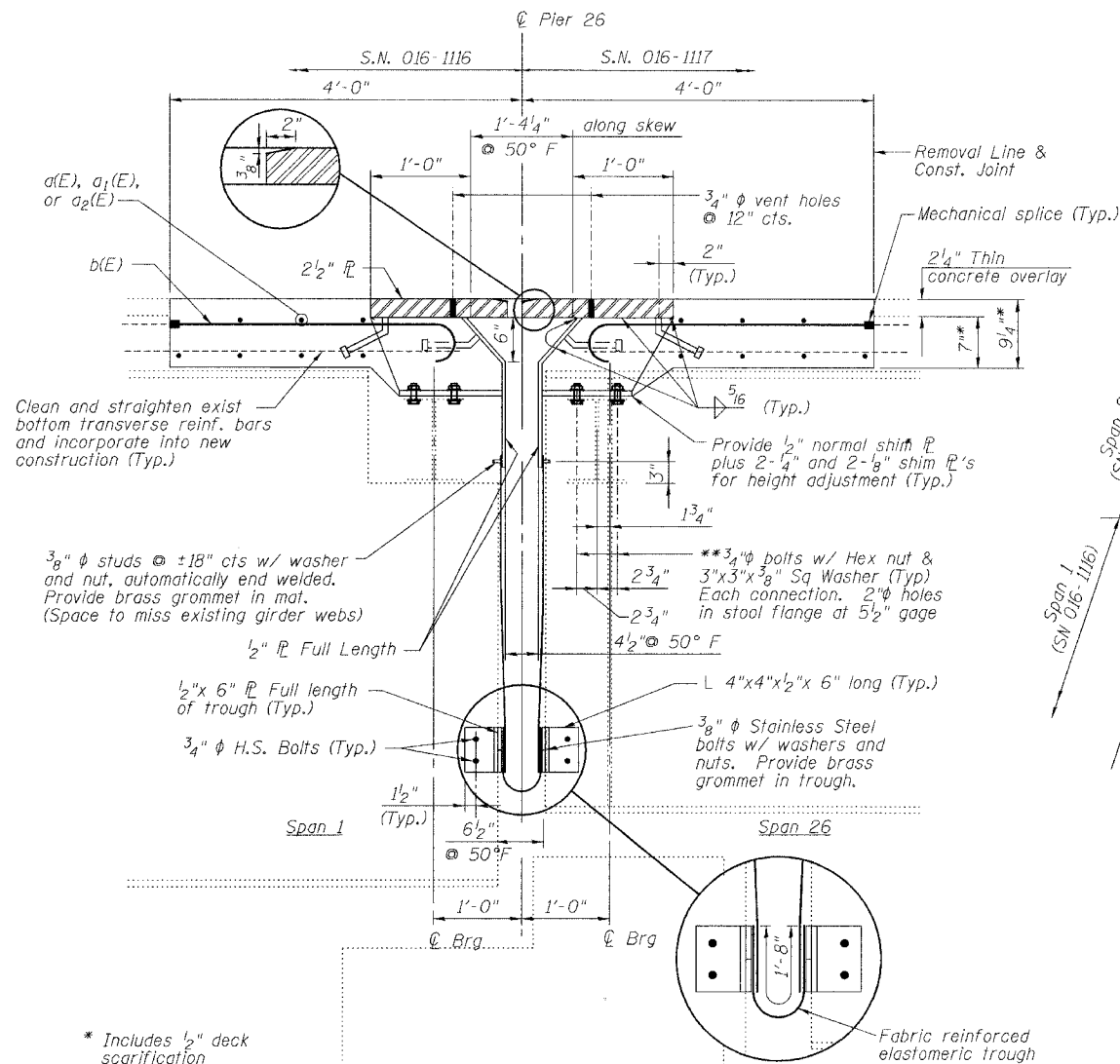
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OPERATOR = MICHELLE

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA1 90/94	#	COOK	419	215
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

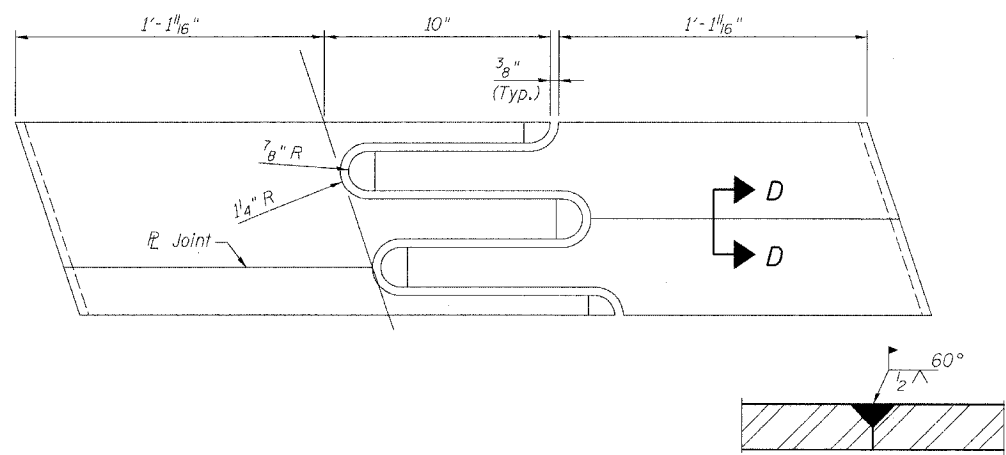
SHEET NO. 4  
8 SHEETS

\* 2005 - 008F  
Contract #62580

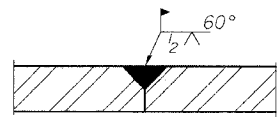


SECTION A-A

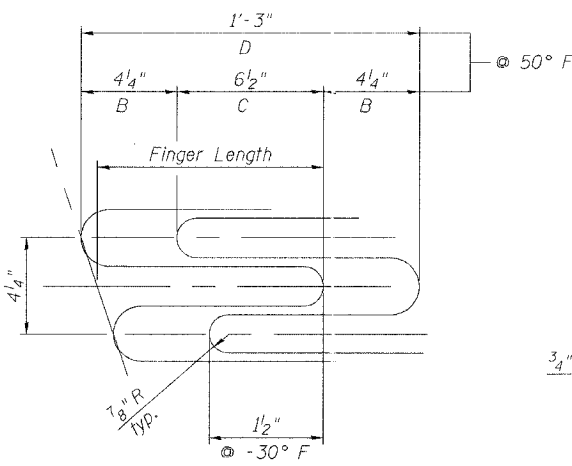
- \* Includes 1/2" deck scarification
- \*\* Field drill 13/16" diameter holes in existing girder top flanges using holes in new stools as a template. (Span 26 - S.N. 016-1117 Only) Cost included in "Erecting Structural Steel."



FLAME CUTTING DIAGRAM  
(Proposed Finger Plate - Cut from 2 1/2" x 2'-11 3/4" PL)

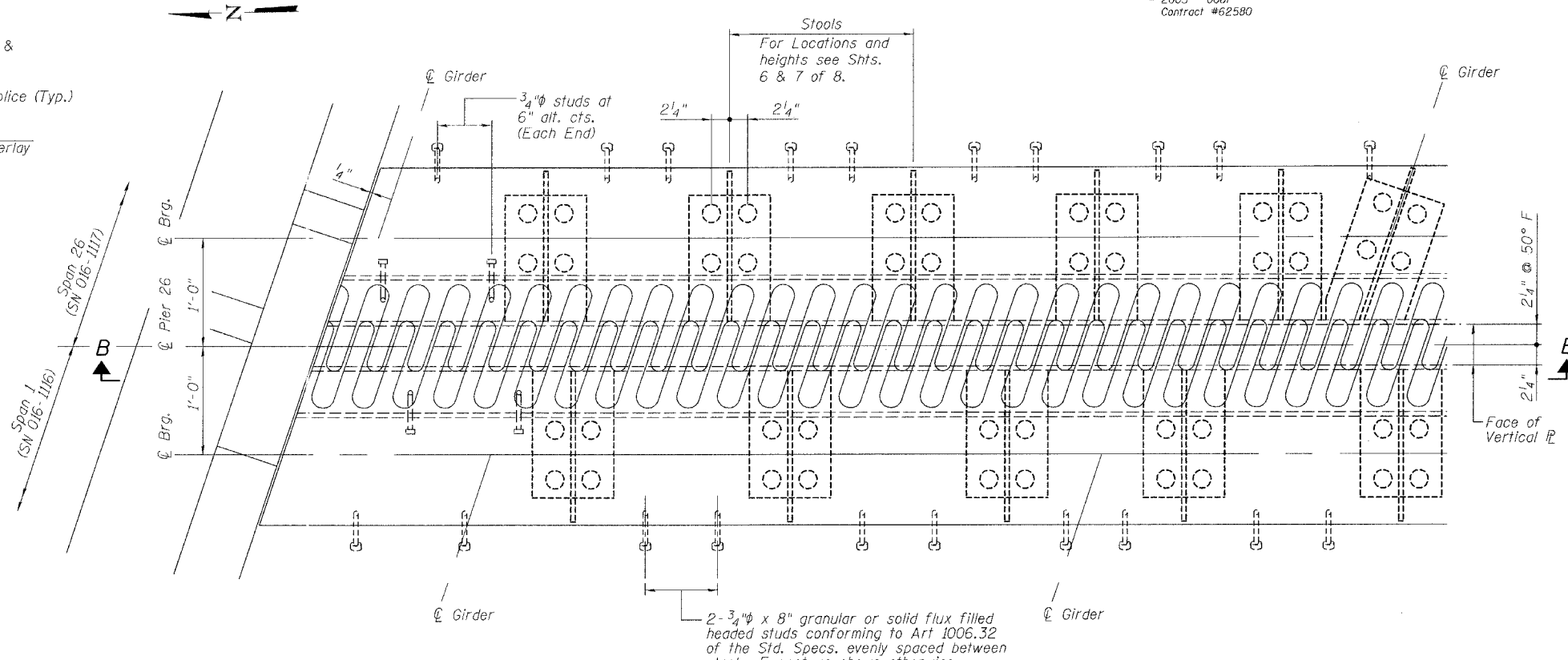


SECTION D-D



FINGER DETAIL

Finger Length = 10"  
Weld Length = 12"  
Weld Size = 5/16"  
Expansion Length = 567.1'



PLAN

NOTES

1. The Contractor shall bolt the Stools of the Fingerplate Joint Assembly to the top of existing girders on the Span 26 side only, as shown.
2. Stainless steel bolts, washers and nuts shall meet the requirements of ASTM A193.
3. The installation of all necessary hardware, stainless steel bolts, studs and washers, plates and angles shall be included with "Erecting Structural Steel".
4. For Section B-B, see Sheet 5 of 8.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
PIER 26 JOINT DETAILS

F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
OVER 28th ST. TO S. STEWART ST.  
COOK COUNTY  
S.N. 016-1117 - PIER 26

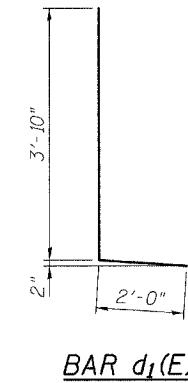
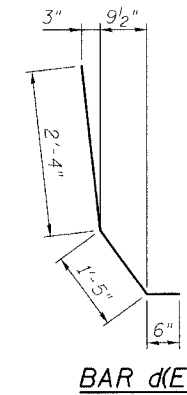
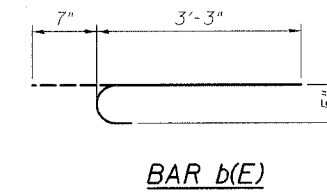
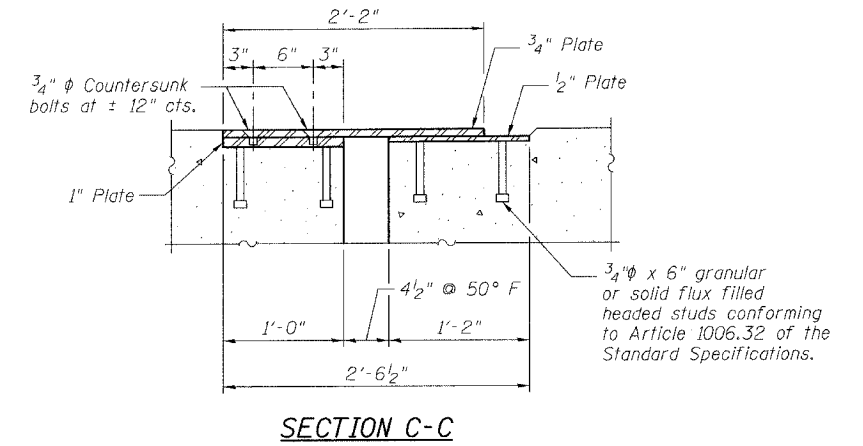
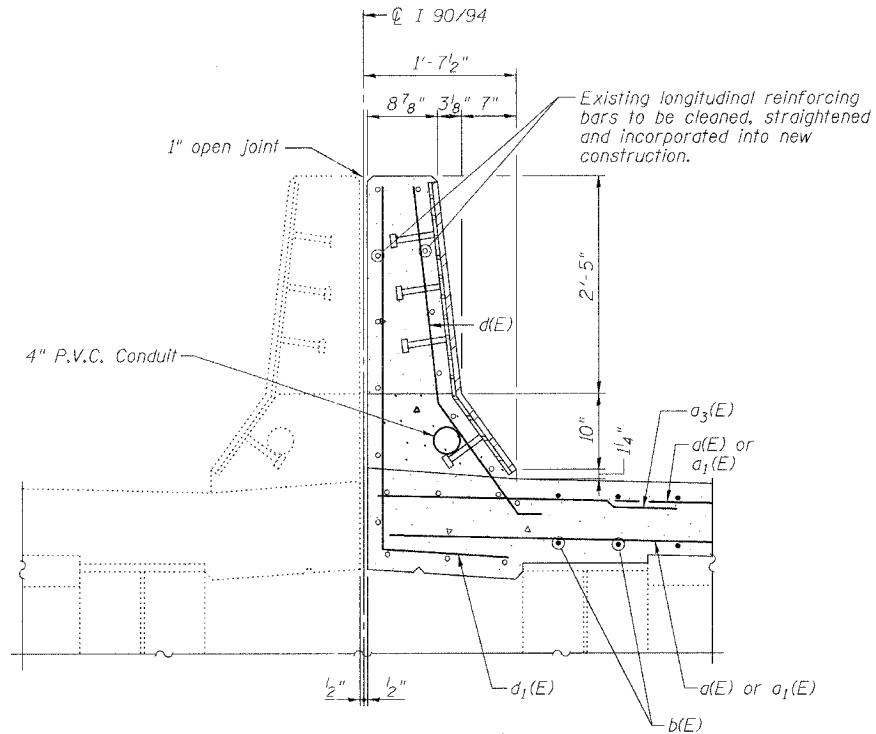
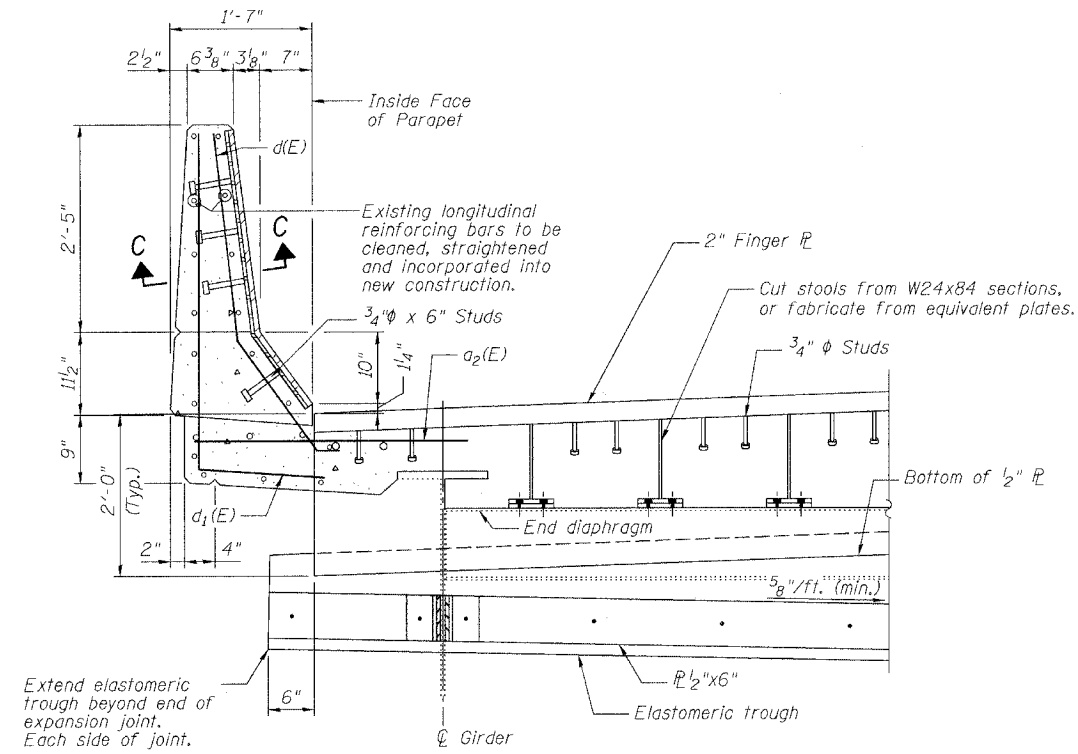
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GREENE & BRADFORD, INC. OF SPRINGFIELD		COMPUTER FILE NO. 04286-W03-FPJ		
PROJECT 04286-W03		8/3/05-MML		

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO. FAI 90/94	SECTION *	COUNTY COOK	JOB NO. 419	SHEET NO. 216	SHEET NO. 5 8 SHEETS
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

\* 2005 - 008F  
Contract #62580



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	24	#5	34'-10"	—
a1(E)	24	#5	32'-4"	—
a2(E)	16	#6	4'-6"	—
b(E)	130	#5	3'-10"	┌
d(E)	16	#5	4'-3"	└
d1(E)	20	#5	5'-10"	└
Reinforcement Bars, Epoxy Coated			Pound	2500
Concrete Superstructure			Cu. Yd.	18.3
Concrete Removal			Cu. Yd.	15.3
Bar Splicers			Each	24
Mechanical Splice			Each	130

Reinforcing bars designated (E) shall be epoxy coated.  
Bars indicated thus 1x2- #5 etc. indicates 1 line of bars with 2 lengths per line.

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PARAPET DETAILS**  
F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
OVER 28th ST. TO S. STEWART ST.  
COOK COUNTY  
S.N. 016-1117 - PIER 26

REVISIONS	
NAME	DATE

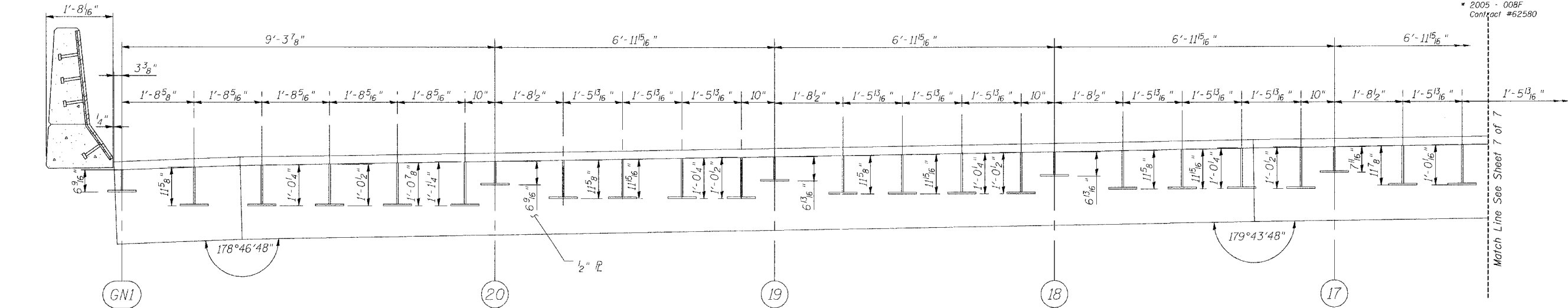
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OF SPRINGFIELD  
REGISTERED PROFESSIONAL ENGINEERS  
COMPUTER FILE NO.  
04286-W03-PD  
PROJECT 04286-W03  
8/3/05-MML

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

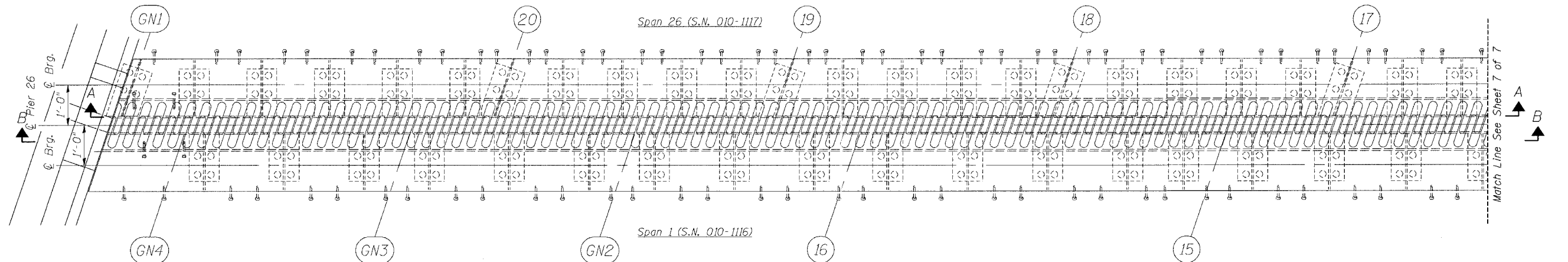
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FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SHEET NO. 6  
8 SHEETS

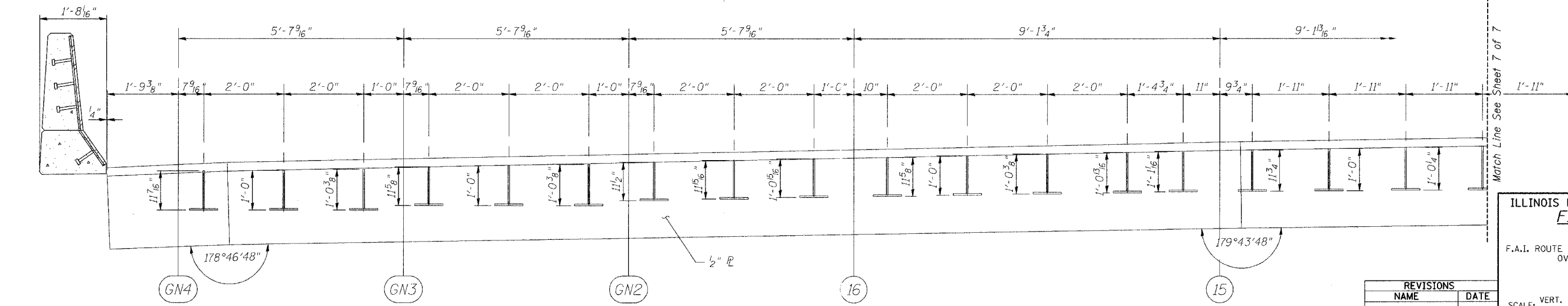
\* 2005 - 008F  
Contract #62580



**SECTION A-A**  
(Spacing along Face of 1/2" Vert. R)



**PLAN OF FINGER R AT PIER 26 (NORTHBOUND)**



**SECTION B-B**  
(Spacing along Face of 1/2" Vert. R)

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**FINGER PLATE PLAN  
AND ELEVATION**  
F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
OVER 28th ST. TO S. STEWART ST.  
COOK COUNTY  
S.N. 016-1117 - PIER 26

SCALE: VERT. \_\_\_\_\_  
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DATE: 2/17/05  
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CHECKED BY: \_\_\_\_\_

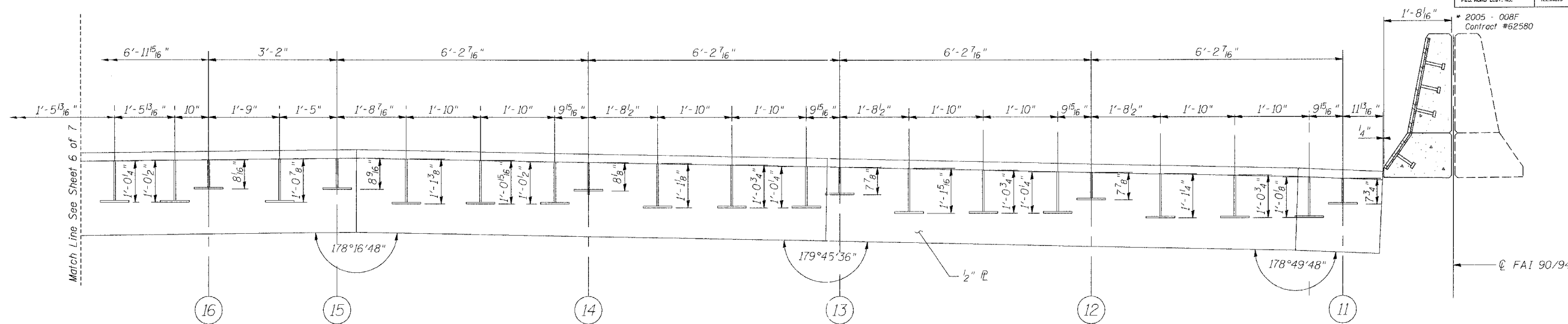
GREENE & BRADFORD, INC.  
OF GLENVIEW, ILL.  
REGISTERED PROFESSIONAL ENGINEERS  
PROFESSIONAL ENGINEERING COMPANY  
ILLINOIS LICENSE NO. 04286-W03-PE1  
COMPUTER FILE NO. 04286-W03  
PROJECT 04286-W03  
8/3/05-MML

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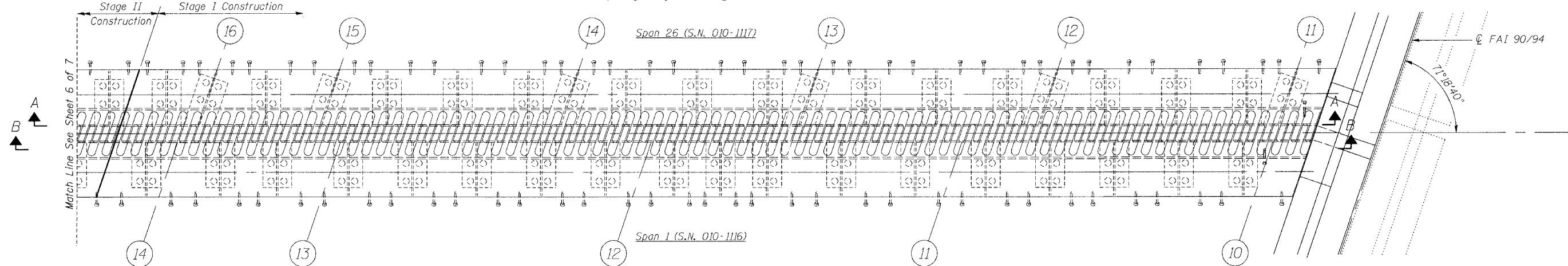
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	DATE	SHEET
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FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

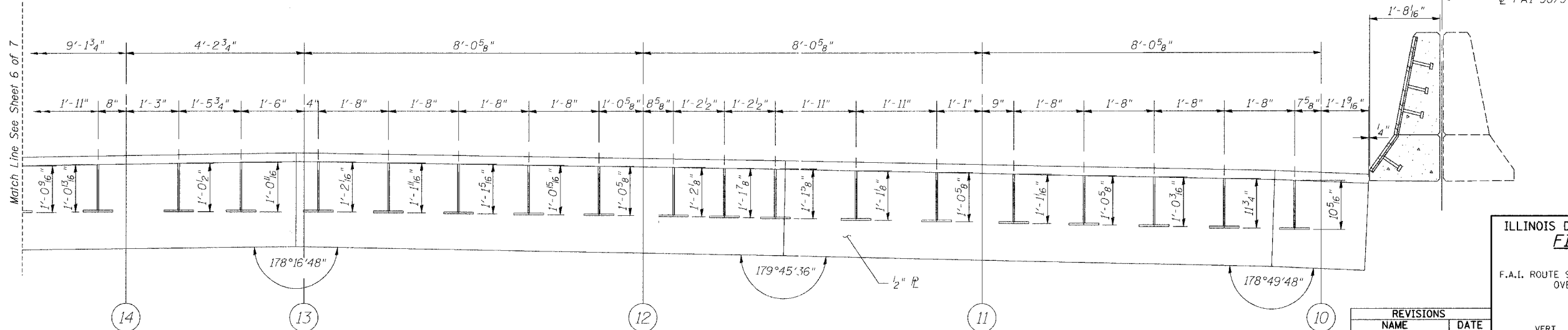
SHEET NO. 7  
8 SHEETS



**SECTION A-A**  
(Spacing along Face of 1/2" Vert. R)



**PLAN OF FINGER P AT PIER 26 (NORTHBOUND)**



**SECTION B-B**  
(Spacing along Face of 1/2" Vert. R)

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**FINGER PLATE PLAN AND ELEVATION**  
F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
OVER 28th ST. TO S. STEWART ST.  
COOK COUNTY  
S.N. 016-1117 - PIER 26

SCALE: VERT. \_\_\_\_\_  
HORIZ. \_\_\_\_\_  
DATE: 2/17/05

DRAWN BY: HEBERLING  
DESIGNED BY: SANFORD  
CHECKED BY: \_\_\_\_\_

COMPUTER FILE NO.  
04286-W03-PE1  
PROJECT 04286-W03  
8/3/05-MML

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OPERATOR = michellel

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO. FAJ 90/94	SECTION *	COUNTY COOK	SHEET NO. 419	SHEET 219
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SHEET NO. 8  
8 SHEETS

\* 2005 - 008F  
Contract #62580

**NOTES**

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.  
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.  
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.  
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.  
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

- ① Minimum Capacity =  $1.25 \times f_y \times A_t$   
(Tension in kips)
- ② Minimum \*Pull-out Strength =  $1.25 \times f_{s\text{allow}} \times A_t$   
(Tension in kips)

Where  $f_y$  = Yield strength of lapped reinforcement bars in ksi.  
 $f_{s\text{allow}}$  = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)  
 $A_t$  = Tensile stress area of lapped reinforcement bars.  
\* = 28 day concrete

Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	5.9
#5	2'-0"	23.0	9.2
#6	2'-7"	33.1	13.3
#7	3'-5"	45.1	18.0
#8	4'-6"	58.9	23.6
#9	5'-9"	75.0	30.0
#10	7'-3"	95.0	38.0
#11	9'-0"	117.4	46.8

Bar splicer assemblies shall be according to Section 508 of the Standard Specifications, except as noted. The furnishing and installation of bar splicer assemblies will be measured and paid for at the contract unit price each for "BAR SPLICERS."

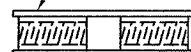
The diameter of this part is the same as the diameter of the bar spliced.

**ROLLED THREAD DOWEL BAR**



\*\* ONE PIECE

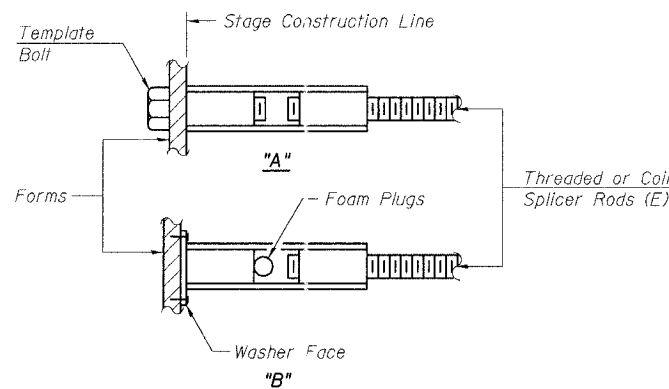
Wire Connector



**WELDED SECTIONS**

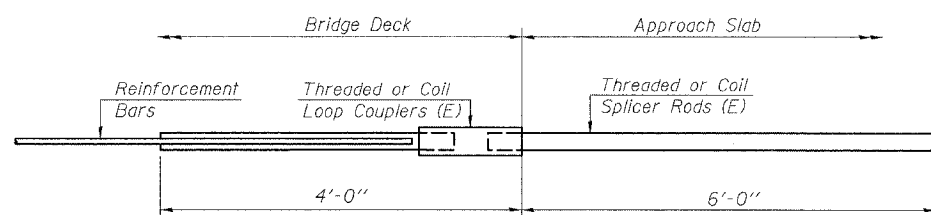
**BAR SPLICER ASSEMBLY ALTERNATIVES**

\*\* Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



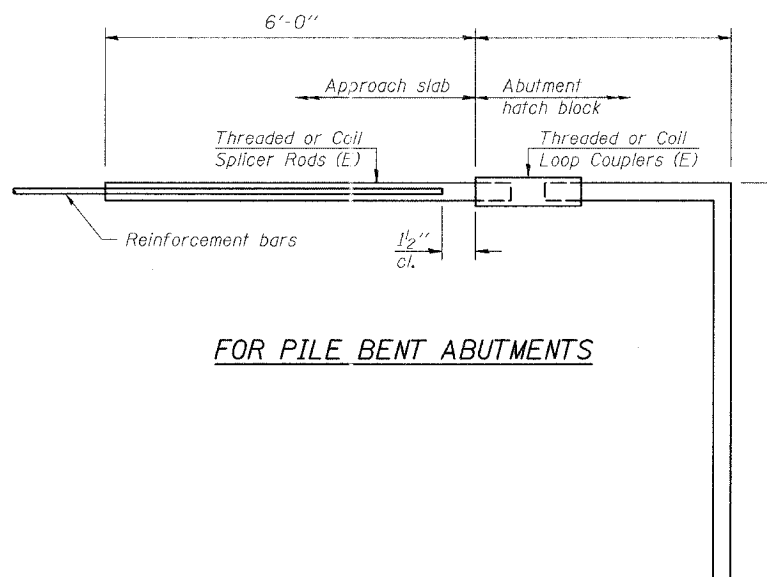
**INSTALLATION AND SETTING METHODS**

"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.



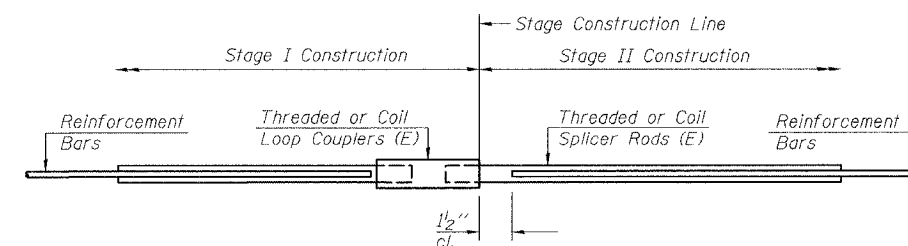
**FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS**

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required = N/A



**FOR PILE BENT ABUTMENTS**

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required = N/A



**STANDARD**

Bar Size	No. Assemblies Required	Location
#5	24	Deck

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**BAR SPLICER ASSEMBLY DETAILS**

F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
OVER 28th ST. TO S. STEWART ST.  
COOK COUNTY  
S.N. 016-1117 - PIER 26

SCALE: VERT. \_\_\_\_\_  
HORIZ. \_\_\_\_\_  
DATE: 2/17/05

DRAWN BY: HEBERLING  
DESIGNED BY: SANFORD  
CHECKED BY: \_\_\_\_\_

GREENE & BRADFORD, INC.  
(IF SPURPOSED)  
300 SOUTH LAKE STREET  
SUNDELL & LINDSAY, ILLINOIS  
PROFESSIONAL ENGINEER, ARCHITECT, PLUMBER, MECHANICAL  
2011 900-844, 219-753-6227, 911, Fax: 219-753-6227

COMPUTER FILE NO.  
04286-W03-BSD  
PROJECT 04286-W03  
8/3/05-MML

BSD-1

10-22-04

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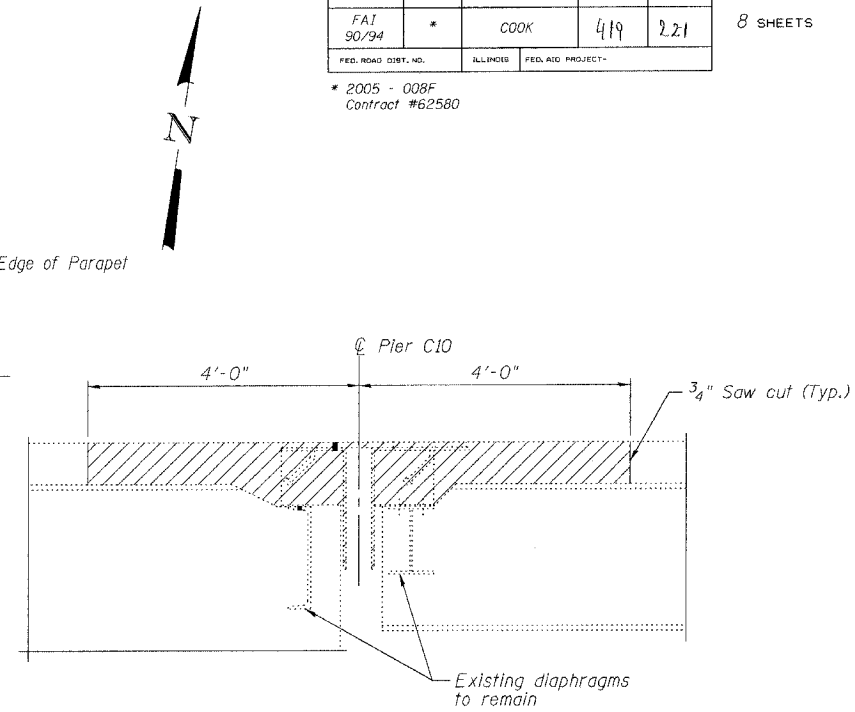
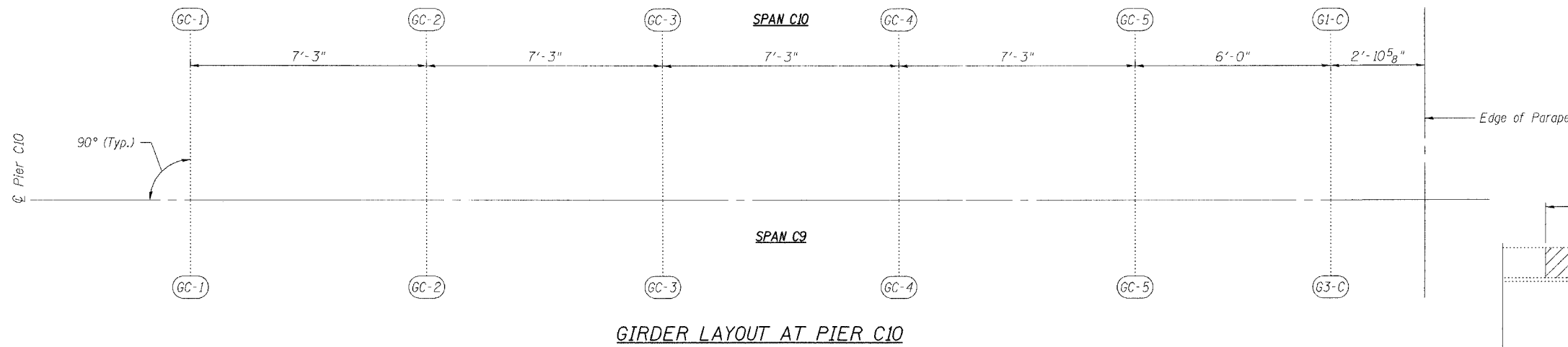


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 90/94	*	COOK	419	221
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

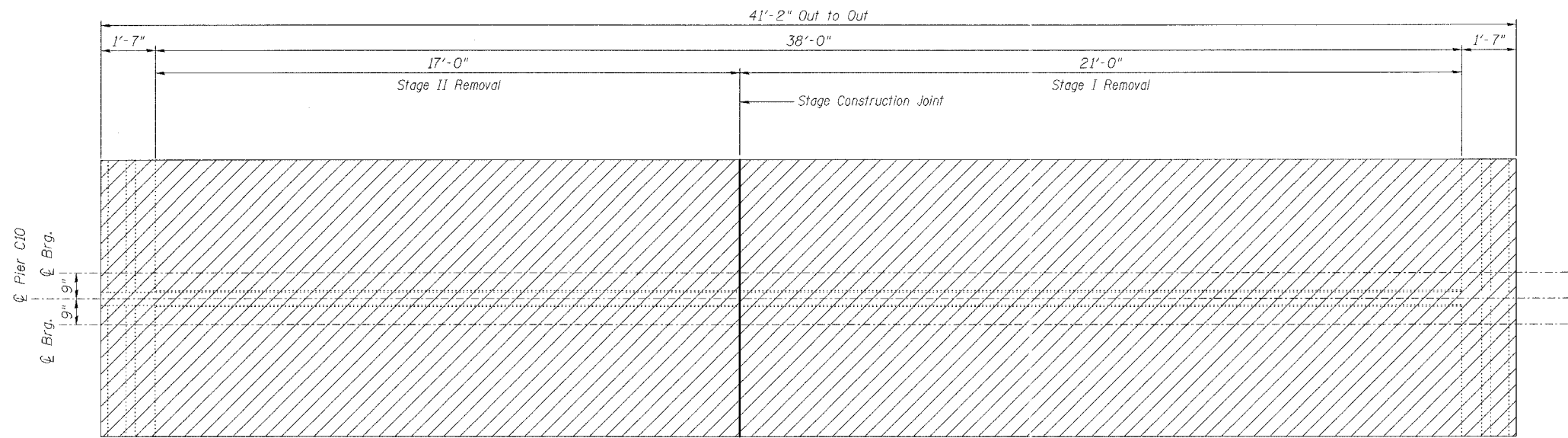
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8 SHEETS

\* 2005 - 008F  
Contract #62580

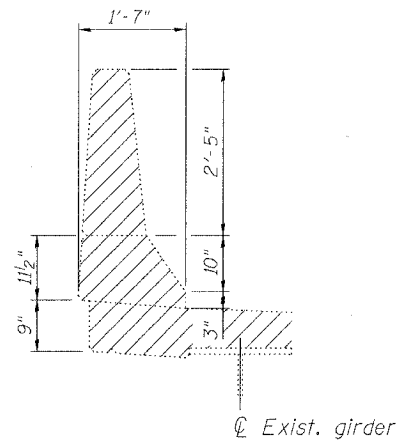


SECTION AT  
EXISTING FINGER PLATE

Notes:  
Hatched Area indicates "Concrete Removal".  
Longitudinal reinforcement extending into removal areas shall be cleaned, straightened and incorporated into the new construction except as noted on Section A-A on Sheet 4.



JOINT REMOVAL PLAN AT PIER C10



DETAIL AT EXISTING  
OUTSIDE PARAPET

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**FINGER PLATE EXPANSION JOINT  
REMOVAL DETAILS**  
F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
OVER SOUTH BRANCH - CHICAGO RIVER  
COOK COUNTY  
S.N. 016-1113 - PIER C10

SCALE: VERT. \_\_\_\_\_  
HORIZ. \_\_\_\_\_  
DATE: 2/17/05

DRAWN BY: HEBERLING  
DESIGNED BY: SANFORD  
CHECKED BY: \_\_\_\_\_

COMPUTER FILE NO.  
04286-W04-REM  
PROJECT 04286-W04  
8/3/05-MML

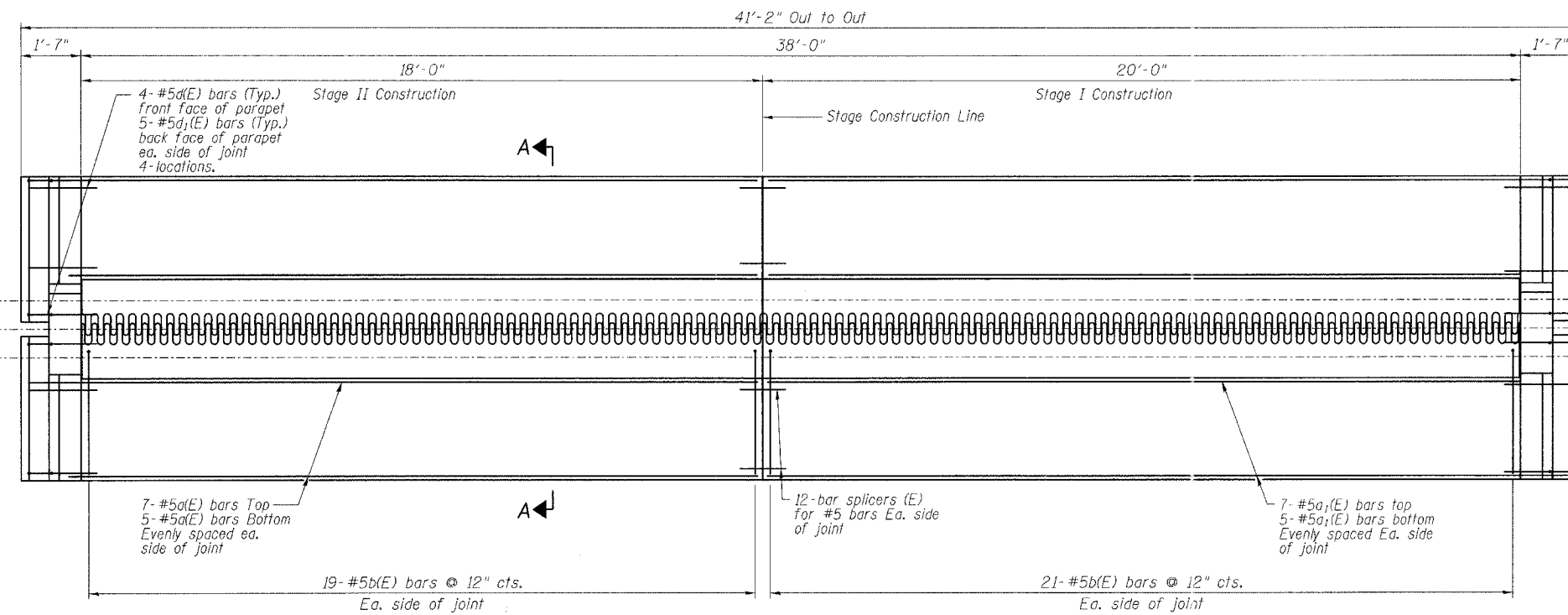
GREENE & BRADFORD, INC.  
OF SPRINGFIELD  
REGISTERED PROFESSIONAL ENGINEERS  
PROFESSIONAL DESIGN FIRM NO. 0428  
1201 785-8844, 618-785-8227 F.I.C.A. - 0028  
www.greenebro.com

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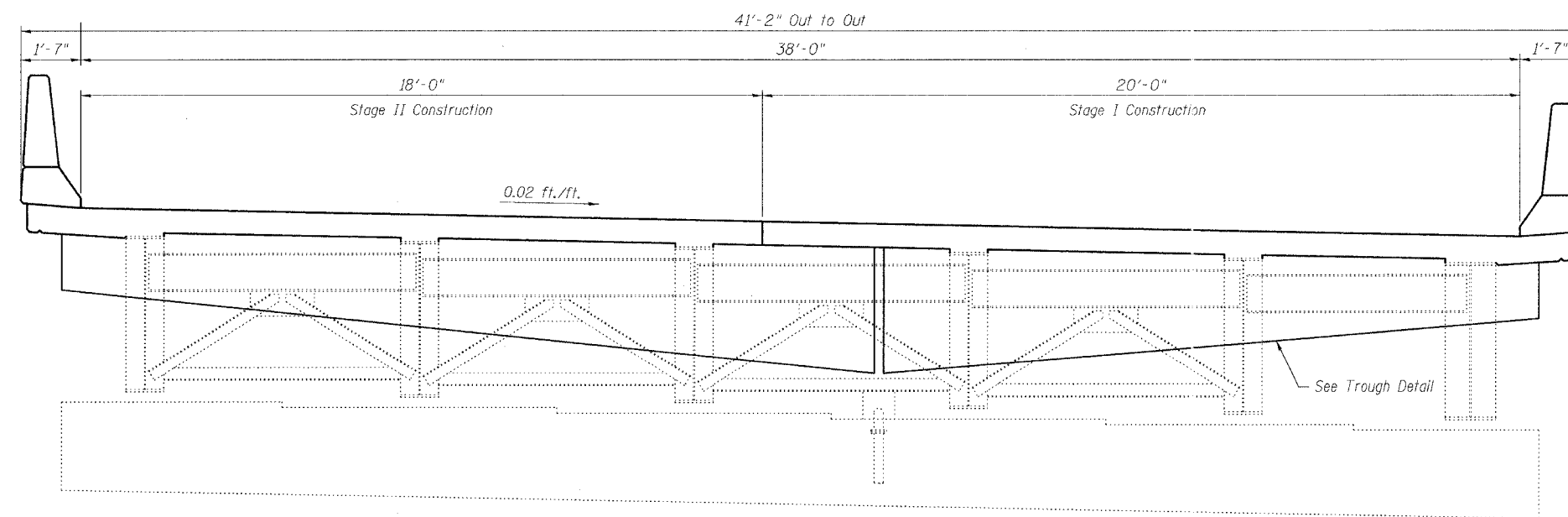
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
* 2005 - 008F Contract #62580				

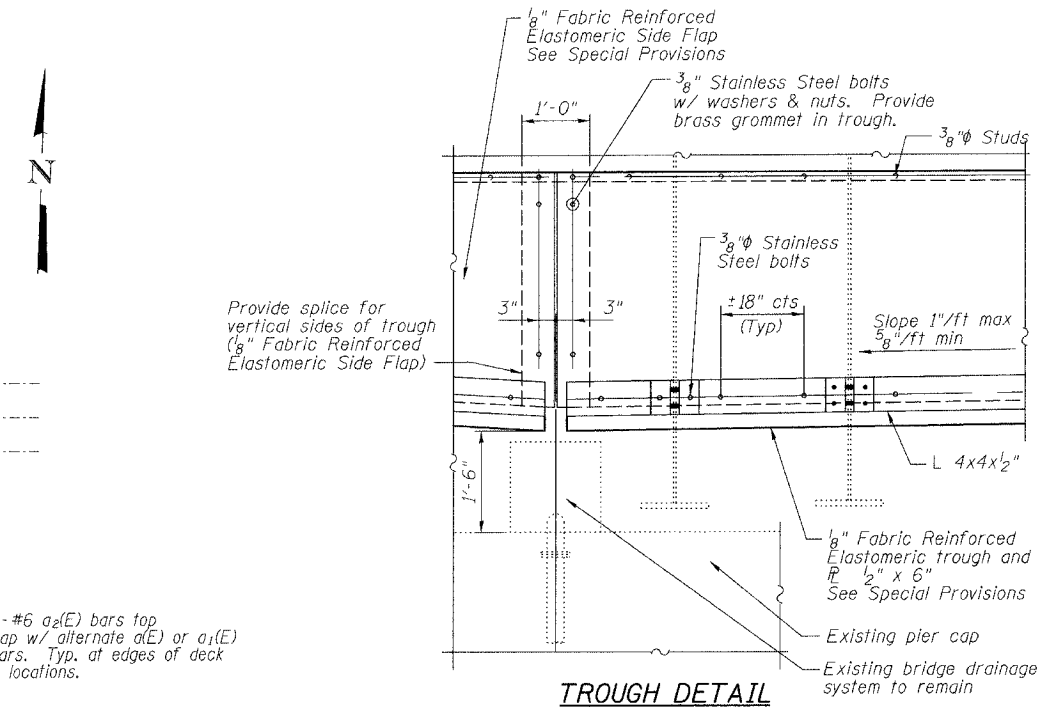
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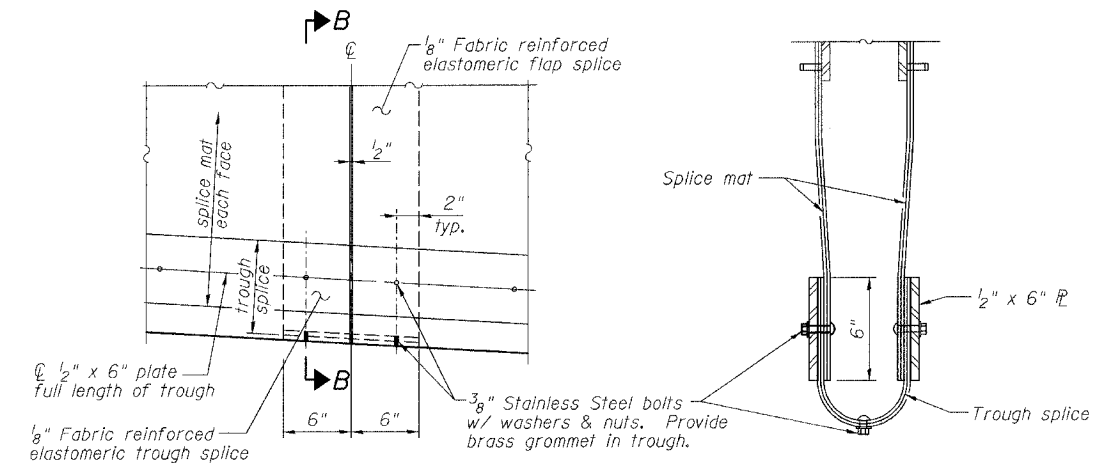
GIRDER LAYOUT AT PIER C10



ELEVATION AT PIER C10 (LOOKING NORTH)



TROUGH DETAIL



TROUGH SPLICE DETAIL

SECTION B-B

- Notes:
- For Parapet Details and Superstructure Bill of Material, see Sheet 5 of 8.
  - For Section A-A, see Sheet 4 of 8.

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PIER C10 JOINT DETAILS**  
F.A.L. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
OVER SOUTH BRANCH - CHICAGO RIVER  
COOK COUNTY  
S.N. 016-1113 - PIER C10

REVISIONS	
NAME	DATE

VERT. SCALE: HORIZ.  
DATE: 2/17/05  
DRAWN BY: HEBERLING  
DESIGNED BY: SANFORD  
CHECKED BY:  
GREENE & BRADFORD, INC.  
OF SPRINGFIELD  
REGISTERED PROFESSIONAL ENGINEERS  
ILLINOIS LICENSE NO. 021-00000000  
PROJECT 04286-W04-PJ1  
COMPUTER FILE NO. 04286-W04-PJ1  
8/3/05-MML

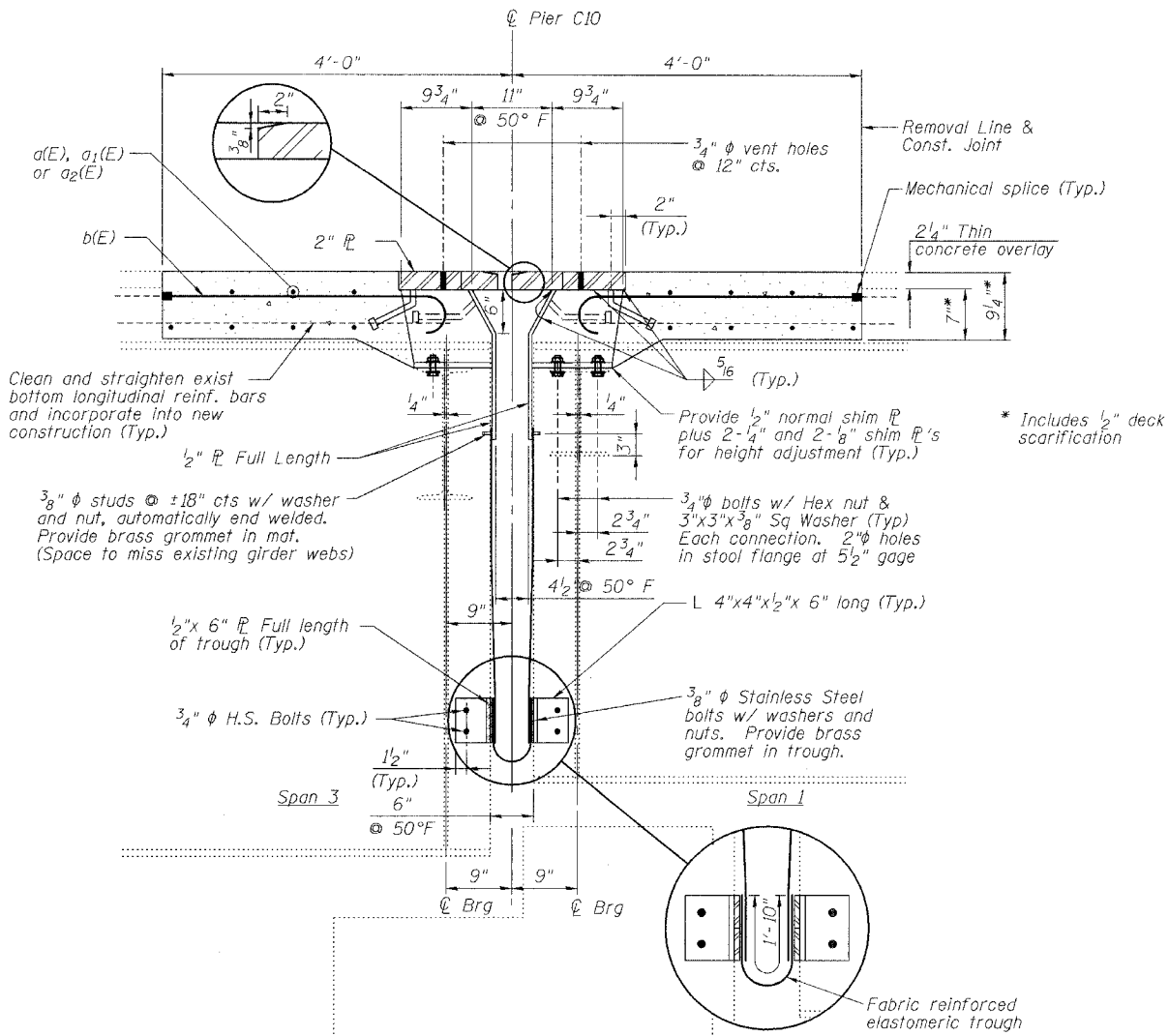
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

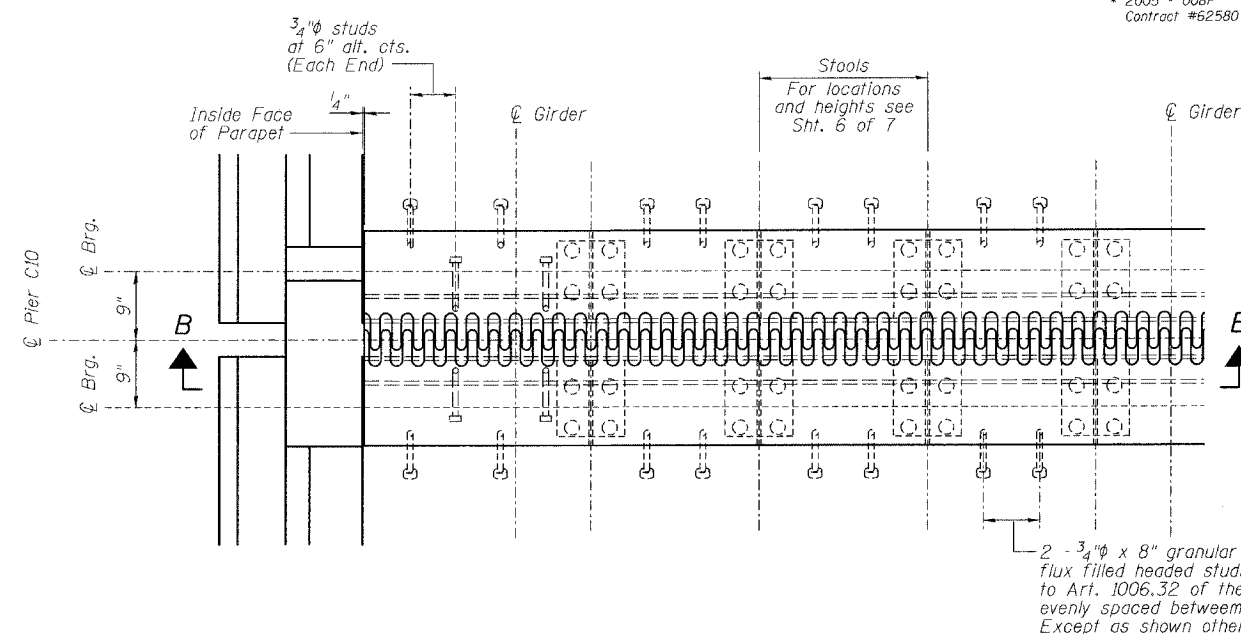
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SHEET NO. 4  
8 SHEETS

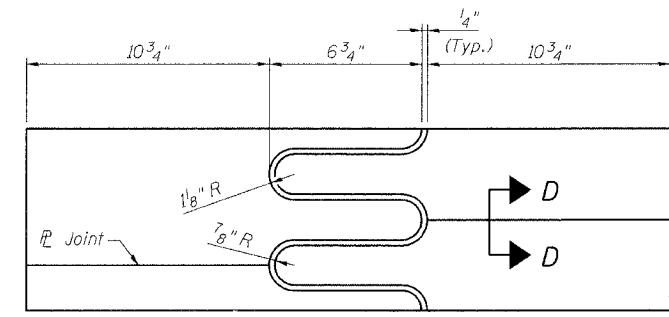
\* 2005 - 008F  
Contract #62580



SECTION A-A

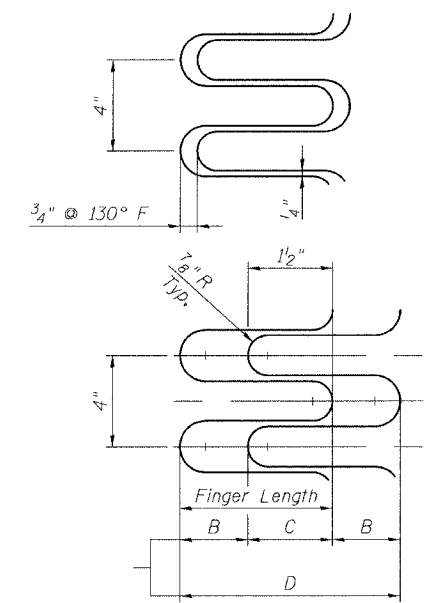


PLAN



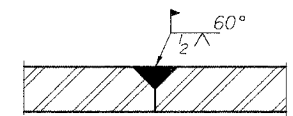
FLAME CUTTING DIAGRAM

(Proposed Finger R - Cut from 2" x 2'-4 1/2" R)



FINGER DETAIL

Finger Length = 6 3/4"  
Weld Length = 9 3/4"  
Weld Size = 5/16"  
Expansion length = 333.5'



SECTION D-D

NOTES

1. Stainless steel bolts, washers and nuts shall meet the requirements of ASTM A193.
2. The installation of all necessary hardware, stainless steel bolts, studs and washers, plates and angles shall be included with "Erecting Structural Steel".
3. For Section B-B, see Sheet 5 of 9.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PIER C10 JOINT DETAILS**  
F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
OVER SOUTH BRANCH - CHICAGO RIVER  
COOK COUNTY  
S.N. 016-1113 - PIER C10

SCALE: VERT. HORIZ. DATE: 2/17/05

DRAWN BY: HEBERLING  
DESIGNED BY: SANFORD  
CHECKED BY: -

GREENE & BRADFORD, INC.  
OF SPRINGFIELD  
CONSULTING ENGINEERS  
AND ARCHITECTS  
PROFESSIONAL SEAL, LICENSE NO. 00978  
1001 W. 10th St., Springfield, IL 62761-1001  
TEL: 217-224-1111 FAX: 217-224-1112

COMPUTER FILE NO.  
04286-W04-FPJ  
PROJECT 04286-W04  
8/3/05-MML

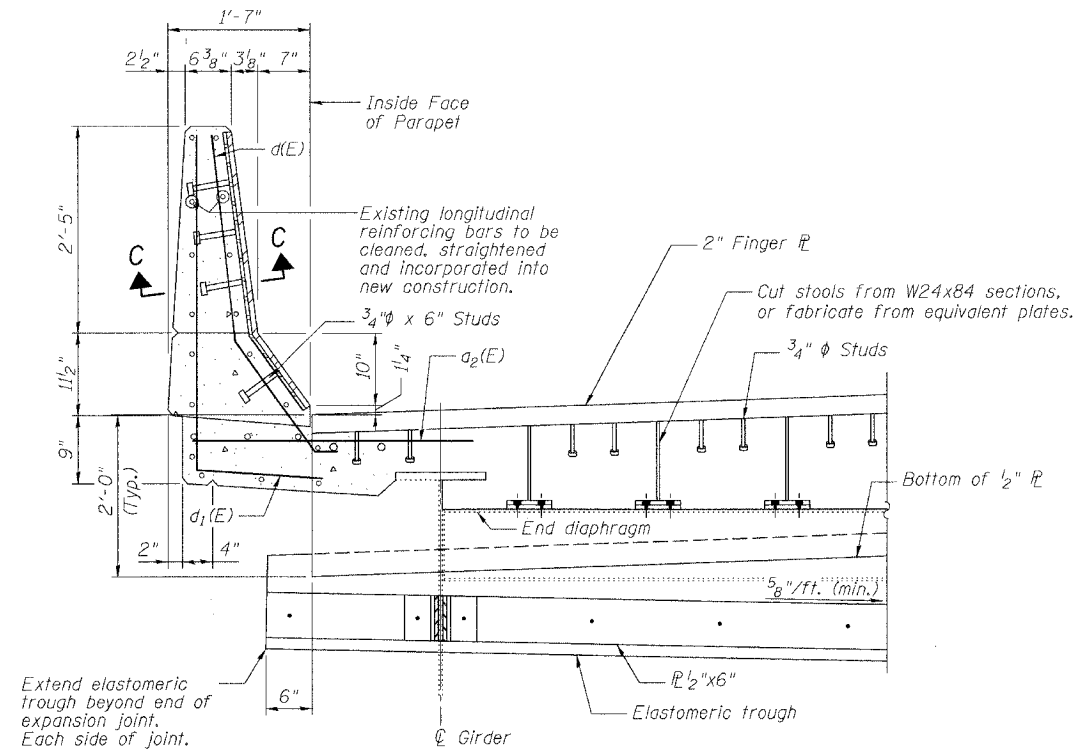
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OPERATOR = michellel

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 90/94	#	COOK	419	224
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT-		

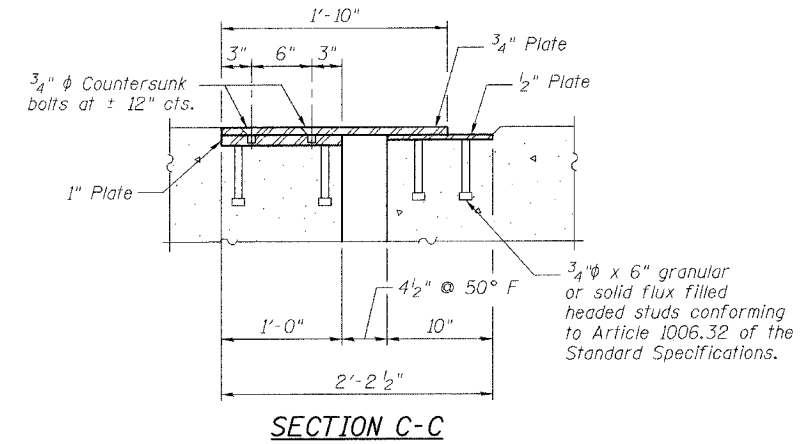
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8 SHEETS

\* 2005 - 008F  
Contract #62580

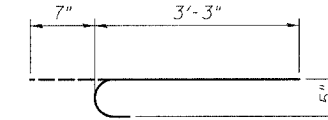


**SECTION B-B**

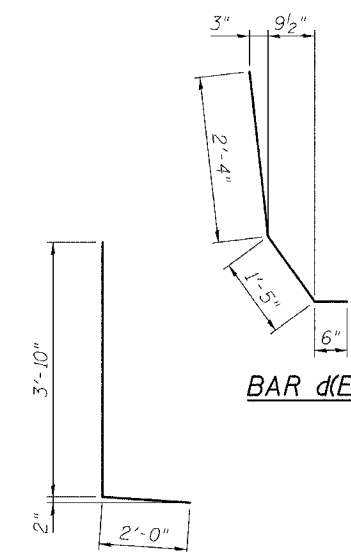
(For location of Section B-B, See Sheet 4 of 8)



**SECTION C-C**



**BAR b(E)**



**BAR d(E)**

**BAR d1(E)**

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
d(E)	24	#5	18'-6"	—
d1(E)	24	#5	20'-6"	—
a2(E)	16	#6	4'-6"	—
b(E)	80	#5	3'-10"	┌
d(E)	16	#5	4'-3"	└
d1(E)	20	#5	5'-10"	└
Reinforcement Bars, Epoxy Coated			Pound	1600
Concrete Superstructure			Cu. Yd.	11.2
Concrete Removal			Cu. Yd.	9.4
Bar Splicers			Each	24
Mechanical Splice			Each	80

Reinforcing bars designated (E) shall be epoxy coated.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PARAPET DETAILS**

F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
OVER SOUTH BRANCH - CHICAGO RIVER  
COOK COUNTY  
S.N. 016-1113 - PIER C10

SCALE: VERT. \_\_\_\_\_  
HORIZ. \_\_\_\_\_  
DATE: 2/17/05

DRAWN BY: HEBERLING  
DESIGNED BY: SANFORD  
CHECKED BY: \_\_\_\_\_

GREENE & BRADFORD, INC.  
OF SPRINGFIELD  
REGISTERED PROFESSIONAL ENGINEERS  
ILLINOIS LICENSE NO. 04286-W04-PD  
PROJECT 04286-W04  
8/3/05-MML

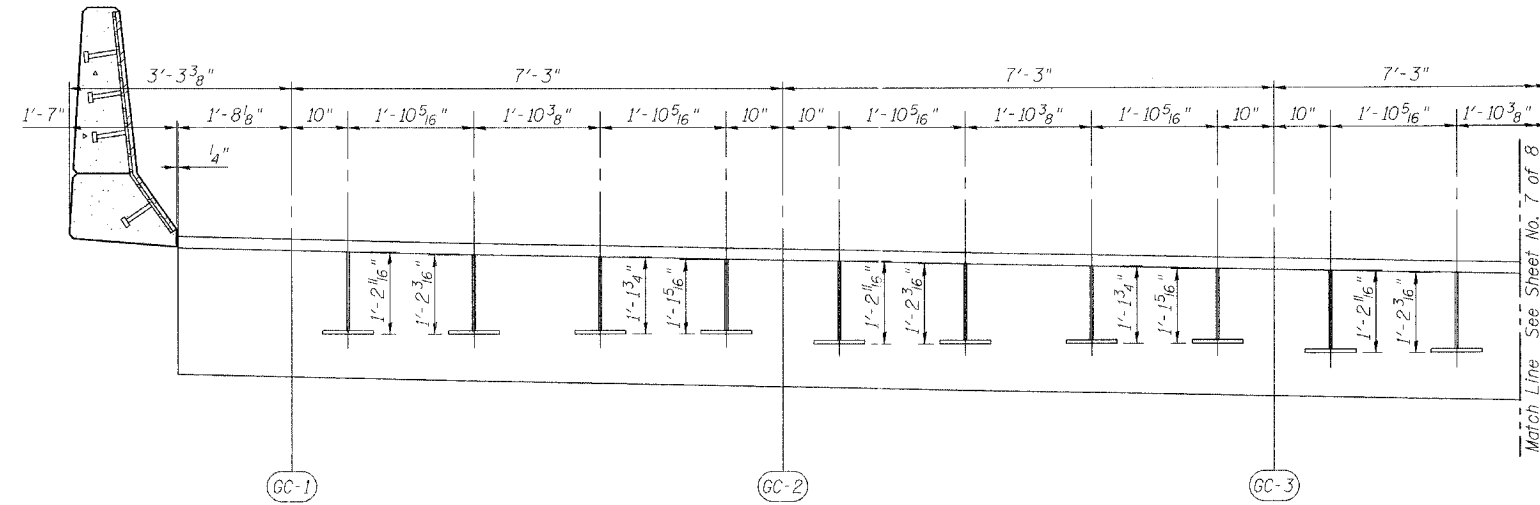
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

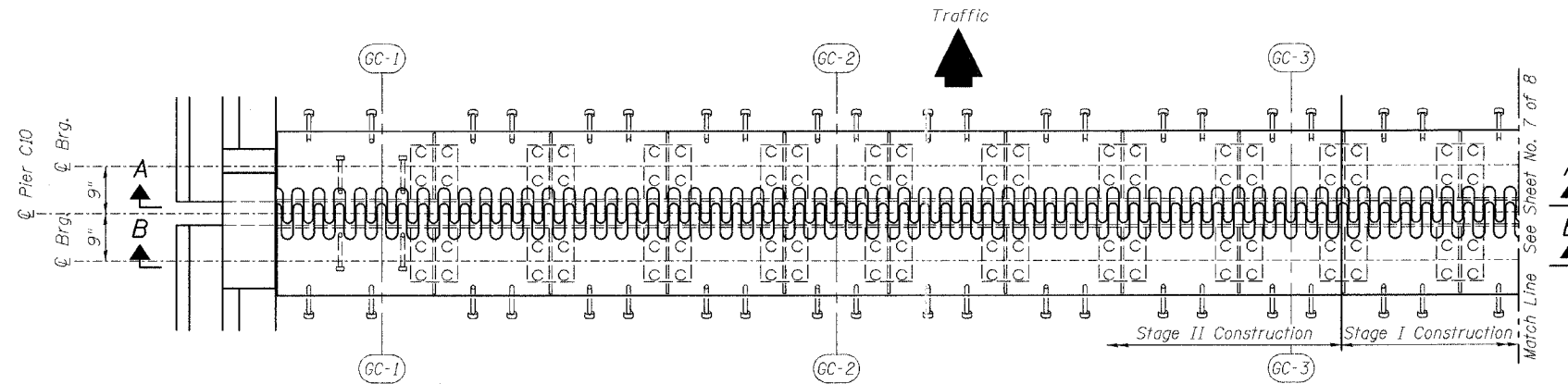
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 90/94	*	COOK	419	225
FED. ROAD DIST. NO.	BLINDS	FED. AID PROJECT		

SHEET NO. 6  
8 SHEETS

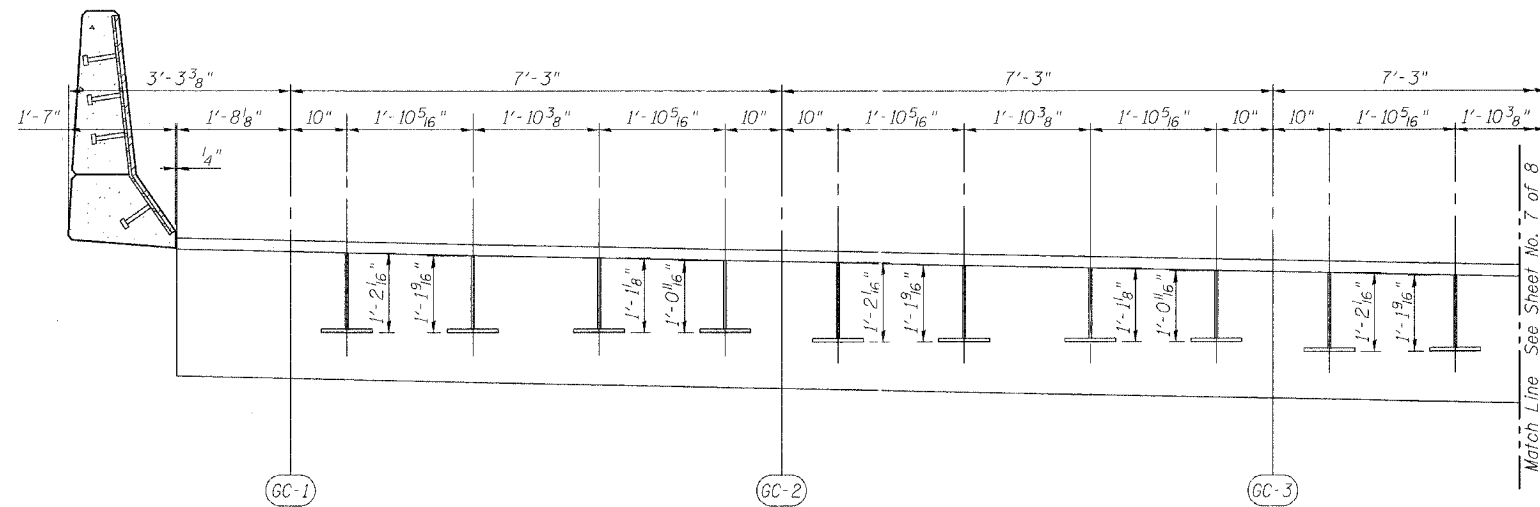
\* 2005 - 008F  
Contract #62580



**SECTION A-A**  
(Dimensions are along  $\bar{C}$  Pier)



**PLAN OF FINGER PLATE AT PIER 2**



**SECTION B-B**  
(Dimensions are along  $\bar{C}$  Pier)

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**FINGER PLATE PLAN AND ELEVATION**

F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
OVER SOUTH BRANCH - CHICAGO RIVER  
COOK COUNTY  
S.N. 016-1113 - PIER C10

SCALE: VERT. \_\_\_\_\_  
HORIZ. \_\_\_\_\_  
DATE: 2/17/05

DRAWN BY: HEBERLING  
DESIGNED BY: SANFORD  
CHECKED BY: \_\_\_\_\_

GREENE & BRADFORD, INC.  
OF SPRINGFIELD  
CONSULTING ENGINEERS  
PROFESSIONAL DESIGN FIRM NO. 0000000000  
200 WEST BRADLEY STREET, SPRINGFIELD, ILLINOIS 62761

COMPUTER FILE NO.  
04286-W04-PE1  
PROJECT 04286-W04  
8/3/05-MML

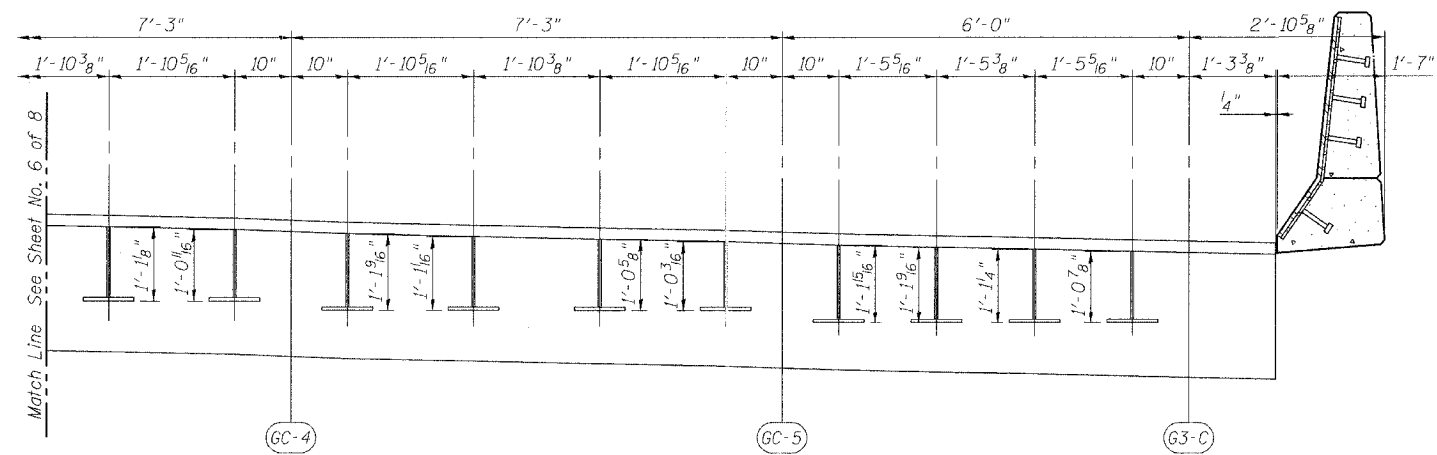
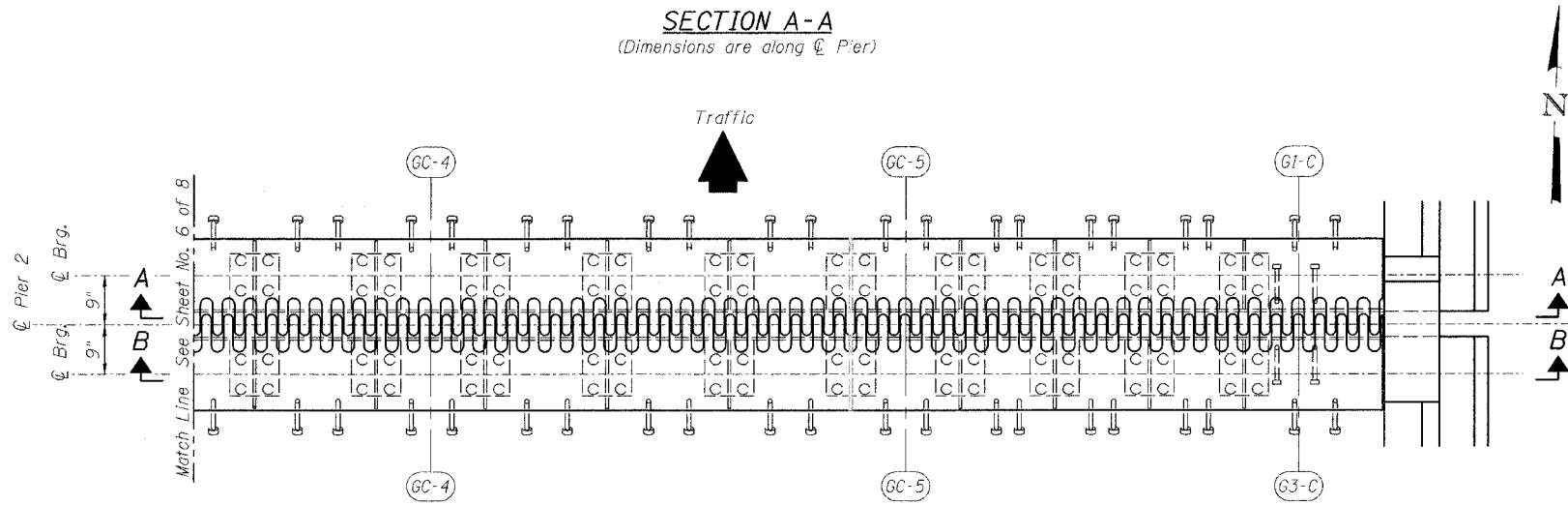
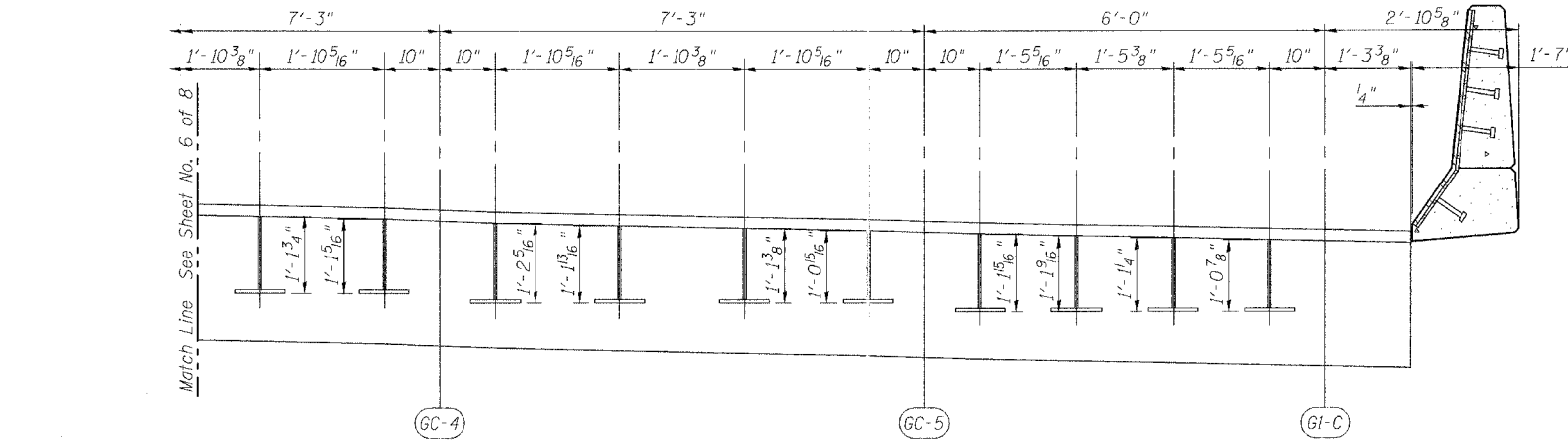
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO. FAI 90/94	SECTION *	COUNTY COOK	DATE 4/11	SHEET 266	
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

SHEET NO. 7  
8 SHEETS

\* 2005 - G08F  
Contract #62580



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**FINGER PLATE PLAN AND ELEVATION**

F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
OVER SOUTH BRANCH - CHICAGO RIVER  
COOK COUNTY  
S.N. 016-1113 - PIER C10

SCALE: VERT.  
HORIZ.  
DATE: 2/17/05

DRAWN BY: HEBERLING  
DESIGNED BY: SANFORD  
CHECKED BY: -

GRENE & BRADFORD, INC.  
OF SPRINGFIELD  
CONSULTING ENGINEERS  
PROFESSIONAL ENGINEERS  
REGISTERED IN ILLINOIS  
1001 N. STATE STREET, SUITE 200  
SPRINGFIELD, ILLINOIS 62762-1001  
TEL: 217-223-8844 FAX: 217-223-8227 E-MAIL: gbr@grenebradford.com

COMPUTER FILE NO.  
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PROJECT 04286-W04  
8/3/05-MML

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.
FAI 90/94	*	COOK	419	227
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

SHEET NO. 8  
8 SHEETS

2005 - 008F  
Contract #62580

**NOTES**

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.  
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.  
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.  
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.  
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

- ① Minimum Capacity (Tension in kips) =  $1.25 \times f_y \times A_t$
- ② Minimum \*Pull-out Strength (Tension in kips) =  $1.25 \times f_{s,allow} \times A_t$

Where  $f_y$  = Yield strength of lapped reinforcement bars in ksi.  
 $f_{s,allow}$  = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)  
 $A_t$  = Tensile stress area of lapped reinforcement bars.  
\* = 28 day concrete

Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	5.9
#5	2'-0"	23.0	9.2
#6	2'-7"	33.1	13.3
#7	3'-5"	45.1	18.0
#8	4'-6"	58.9	23.6
#9	5'-9"	75.0	30.0
#10	7'-3"	95.0	38.0
#11	9'-0"	117.4	46.8

Bar splicer assemblies shall be according to Section 508 of the Standard Specifications, except as noted. The furnishing and installation of bar splicer assemblies will be measured and paid for at the contract unit price each for "BAR SPLICERS."

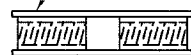
The diameter of this part is the same as the diameter of the bar spliced.

**ROLLED THREAD DOWEL BAR**



\*\* ONE PIECE

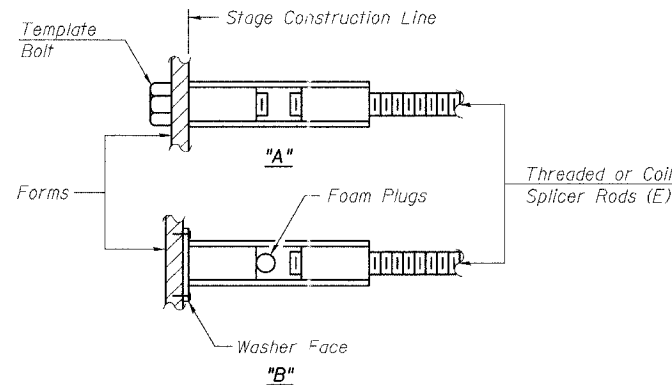
Wire Connector



**WELDED SECTIONS**

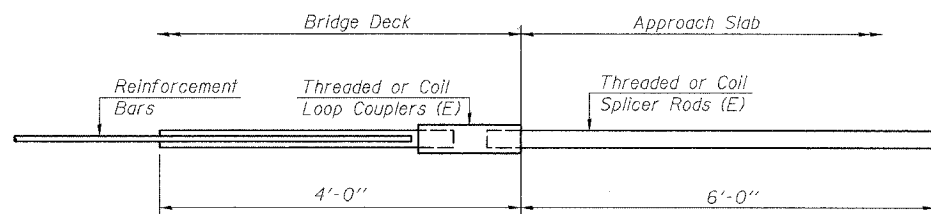
**BAR SPLICER ASSEMBLY ALTERNATIVES**

\*\* Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



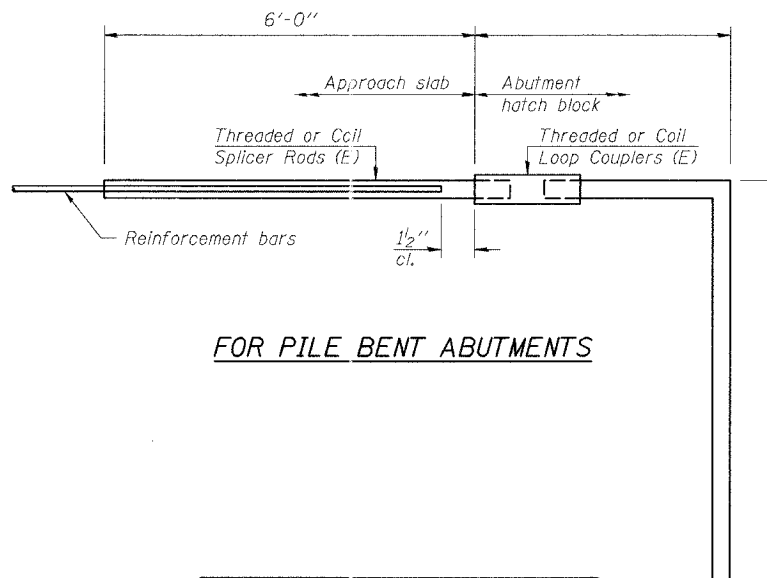
**INSTALLATION AND SETTING METHODS**

"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.



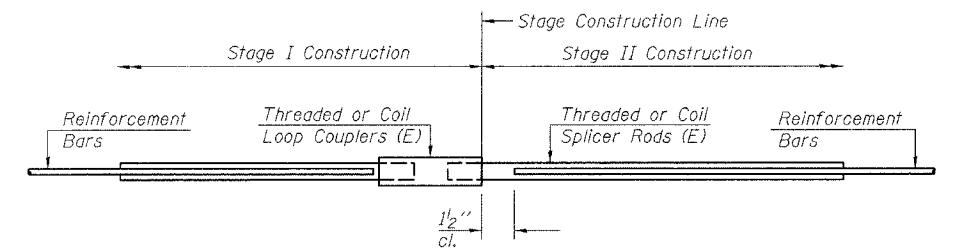
**FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS**

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required = N/A



**FOR PILE BENT ABUTMENTS**

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required = N/A



**STANDARD**

Bar Size	No. Assemblies Required	Location
#5	24	Deck

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**BAR SPLICER ASSEMBLY DETAILS**

F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
OVER SOUTH BRANCH - CHICAGO RIVER  
COOK COUNTY  
S.N. 016-1113 - PIER C10

SCALE: VERT. HORIZ. DATE: 2/17/05  
DRAWN BY: HEBERLING  
DESIGNED BY: SANFORD  
CHECKED BY:

COMPUTER FILE NO. 04286-W04-BSD  
PROJECT 04286-W04  
8/3/05-MML

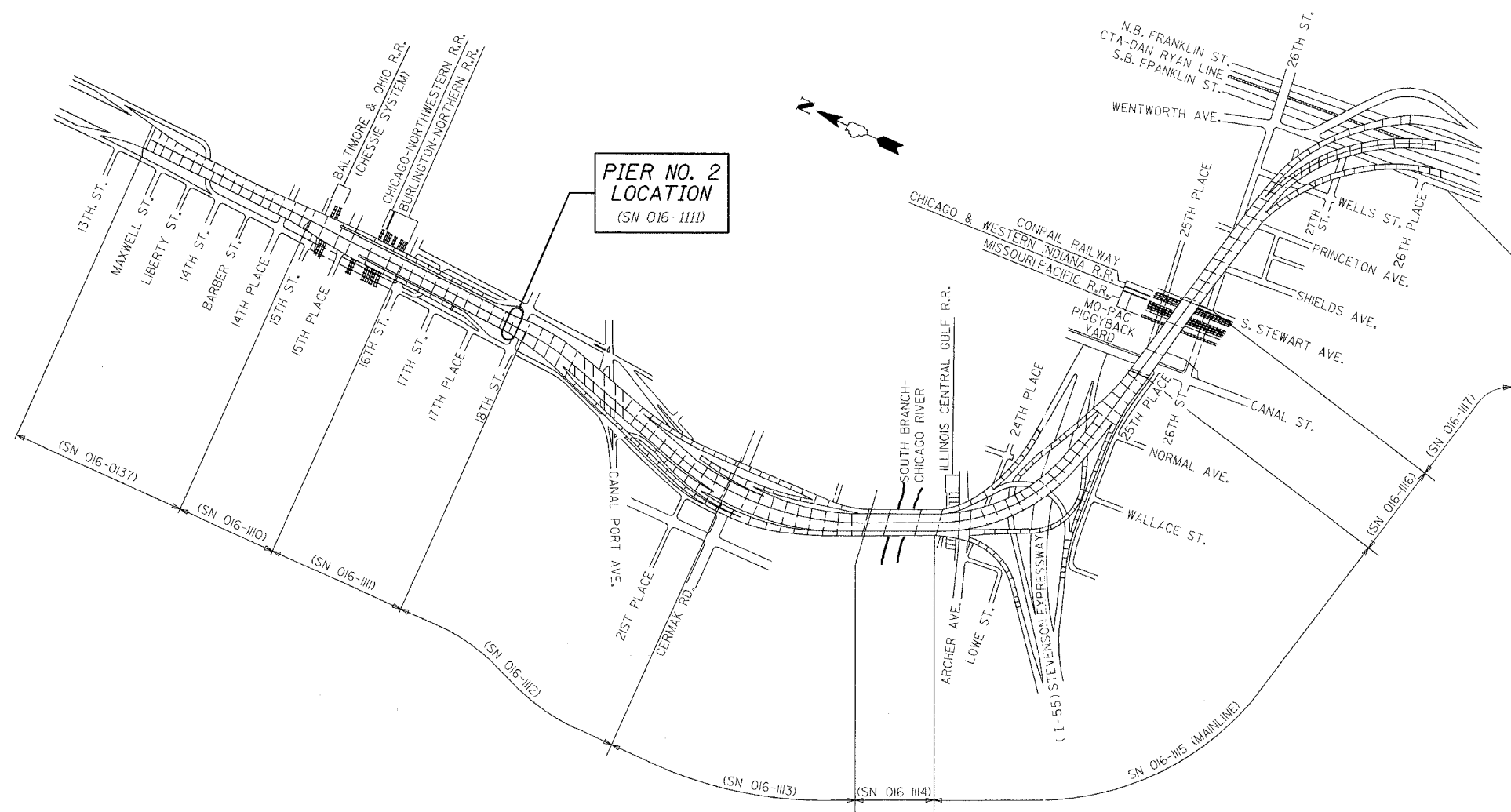


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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.
FAI 90/94	*	COOK	47	228
FED. AID DIST. NO.	ILL. IND. AID	FED. AID PROJECT		
* 2005-008F Contract #62580				

SHEET NO. 1  
8 SHEETS



**PIER NO. 2  
LOCATION**  
(SN 016-1111)

**KEY PLAN**  
DAN RYAN EXPRESSWAY (I-90/I-94) VIADUCT  
COOK COUNTY, ILLINOIS

**GENERAL NOTES**

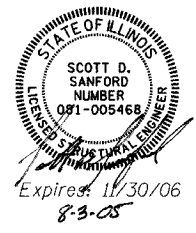
Fasteners shall be high strength bolts. Bolts  $\frac{3}{4}$ "  $\phi$ , open holes  $\frac{1}{16}$ "  $\phi$ , unless otherwise noted.  
Finger Plate Expansion Joints shall be assembled in the proper position with the ends in place and shall be left assembled for shop inspection.  
The finger plates shall be flame cut as provided in Article 505.04(k) of the Standard Specifications.  
Field welding of construction accessories will not be permitted to beams or girders.  
Reinforcement bars shall conform to the requirements of AASHTO M 31 or M 322 Grade 60.  
Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field 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 the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price for the work.  
Prior to pouring the new concrete deck, all loose rust, loose mill scale, and other loose potentially detrimental foreign material shall be removed from the surfaces of the beams or girders in contact with concrete. The cost of this work will be included in the pay item covering removal of the existing concrete. All heavy rust and other tightly adhered potentially detrimental foreign matter shall also be removed from the surfaces of the beams or girders in contact with concrete. Tightly adhered paint may remain unless otherwise noted. This removal shall be accomplished by methods that will not damage the steel. The cost of this work will be paid for according to Article 109.04.  
The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.  
All Construction joints shall be bonded.  
Existing design and fabrication plans are available upon request.  
All structural steel shall be AASHTO M270 Grade 50 unless noted otherwise. Calculated weight = 25,537 lbs.  
Tapered shims shall be added under the stools as required by the Engineer to make a smooth finger joint.  
Joint openings shall be adjusted according to Article 503.10(c) of the standard specifications when the deck is poured at an ambient temperature other than 50°F.  
Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".  
Traffic to be maintained during construction, see Roadway Plans for Stage Construction Details.

**DESIGN STRESSES**

$f'_c$  = 3500 psi  
 $f_y$  = 60,000 psi (Reinf)  
 $f_y$  = 50,000 psi (M270 Grade 50)

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Concrete Removal	Cu Yd	14.7
Concrete Superstructure	Cu Yd	17.6
Erecting Structural Steel	L.S.	0.09
Reinforcement Bars, Epoxy Coated	Pound	2490
Mechanical Splice	Each	134
Bar Splicers	Each	24
Erecting Fabric Reinforced Elastomeric Trough	Foot	66



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**KEY PLAN**  
F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
16TH STREET TO 18TH STREET  
COOK COUNTY  
S.N. 016-1111 - PIER 2

SCALE: VERT. \_\_\_\_\_  
HORIZ. \_\_\_\_\_  
DATE: 3/28/05

DRAWN BY: LANDREY  
DESIGNED BY: SANFORD  
CHECKED BY: \_\_\_\_\_

**COMPUTER FILE NO.**  
04286-W05-NB-KEY  
**PROJECT** 04286-W05  
8/3/05-NML

**GREENE & BRADFORD, INC.**  
OF SPRINGFIELD  
CONSULTING ENGINEERS  
ARCHITECTS  
PROFESSIONAL & CIVIL ENGINEERS  
1211 W. BROADWAY, SUITE 200, SPRINGFIELD, ILLINOIS 62760  
(618) 251-1111 FAX (618) 251-1112

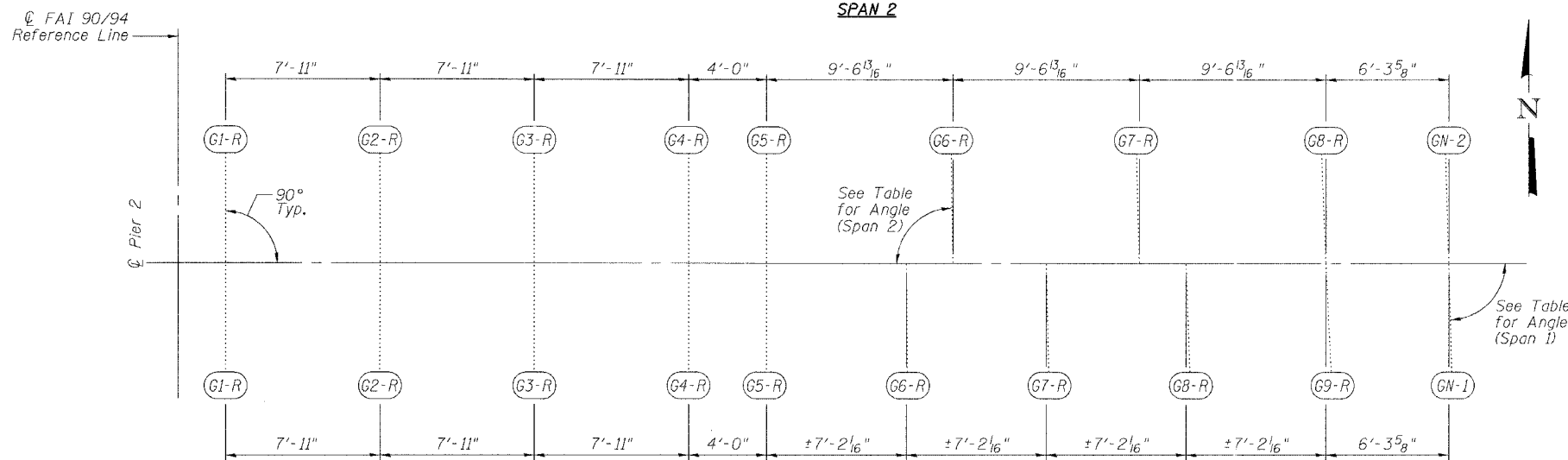
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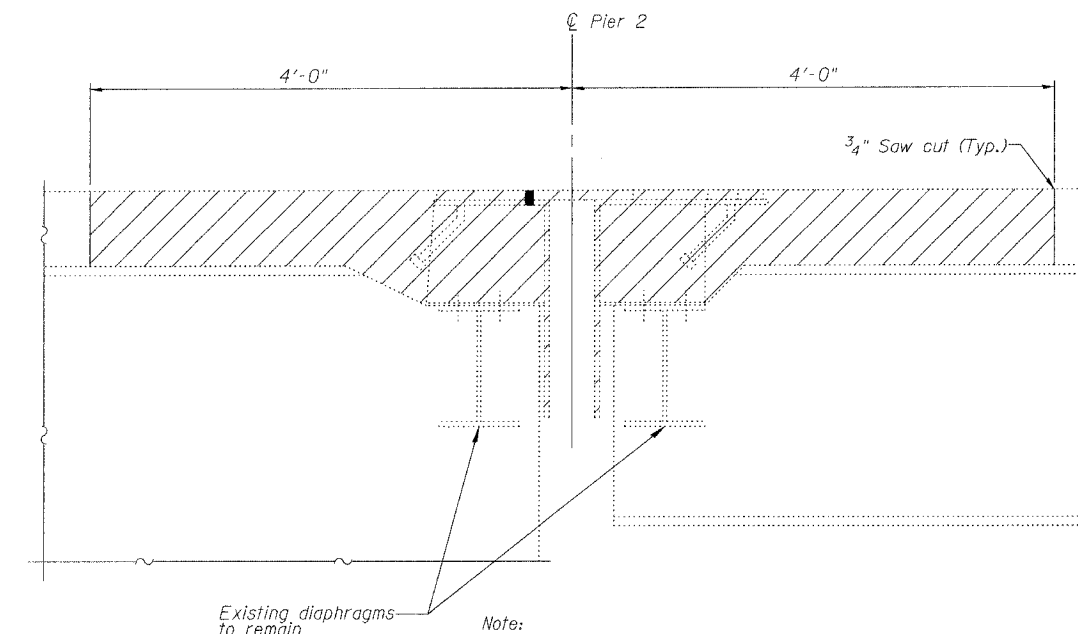
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	INVENTORY SHEETS	SHEET NO.	SHEET NO. 2 8 SHEETS
FAI 90/94	*	COOK	419	229	
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT			
* 2005-008F Contract #62580					

Girder	Angle	
	Span 1	Span 2
G6-R	89°17'55"	89°15'01"
G7-R	88°35'50"	88°30'03"
G8-R	87°53'47"	87°45'07"
G9-R	87°11'47"	-
GN-1	88°20'15"	-
GN-2	-	88°19'38"



SPAN 1  
SPAN 2  
GIRDER LAYOUT AT PIER 2

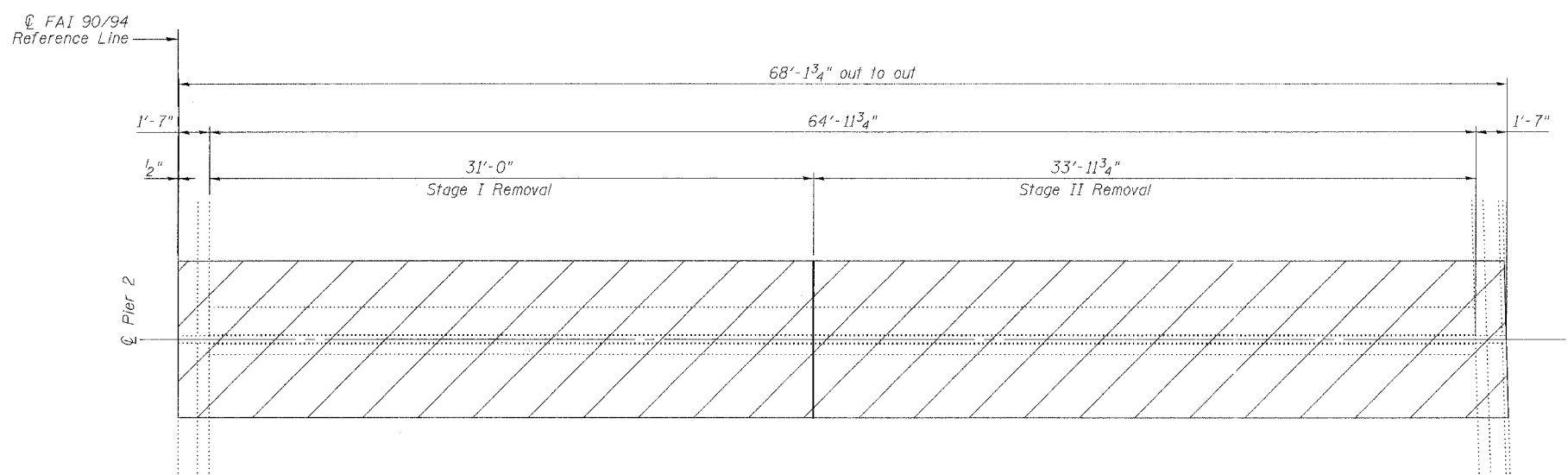


Existing diaphragms to remain

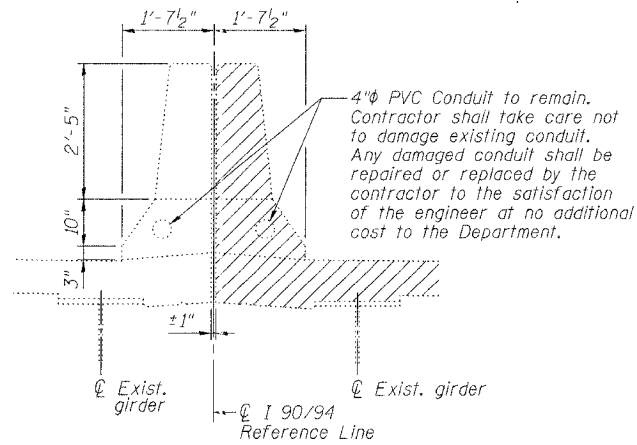
Note:  
Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost included with "Concrete Removal".

Existing finger plates, stools, drainage trough and hardware shall be removed. Cost included with "Concrete Removal".

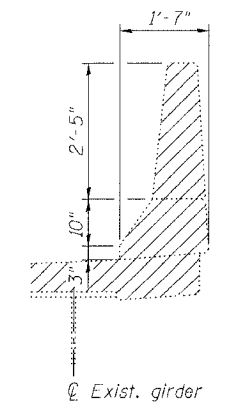
SECTION AT EXISTING FINGER PLATE



JOINT REMOVAL PLAN AT PIER 2



DETAIL AT EXISTING MEDIAN PARAPET



DETAIL AT EXISTING OUTSIDE PARAPET

Notes:  
Hatched Area indicates "Concrete Removal".  
Longitudinal reinforcement extending into removal areas shall be cleaned, straightened and incorporated into the new construction except as noted on Section A-A on Sheet 5.

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**FINGER PLATE EXPANSION JOINT REMOVAL DETAILS**  
F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
16TH STREET TO 18TH STREET  
COOK COUNTY  
S.N. 016-1111 - PIER 2

REVISIONS	
NAME	DATE

SCALE: VERT.      DRAWN BY: LANDREY  
HORIZ.            DESIGNED BY: SANFORD  
DATE: 3/28/05      CHECKED BY: -

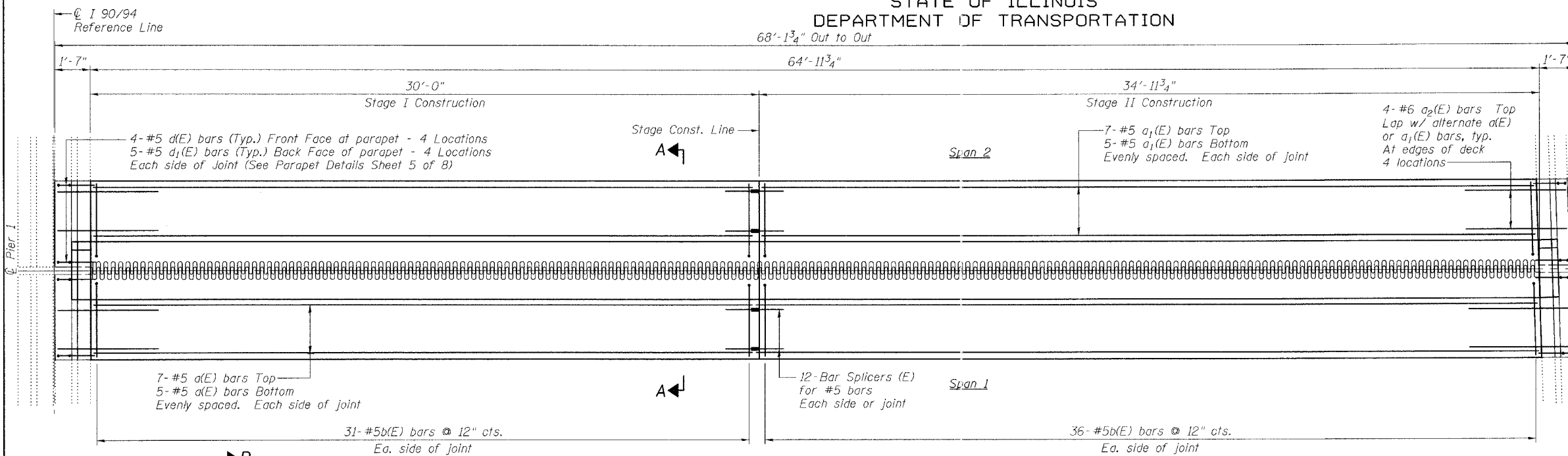
GREENE & BRADFORD, INC.  
OF SPRINGFIELD  
CONSULTING ENGINEERS  
1001 S. WASHINGTON ST., SUITE 200  
SPRINGFIELD, ILLINOIS 62761  
PHONE: 217-243-1111 FAX: 217-243-1112  
WWW.GREENE-AND-BRADFORD.COM

COMPUTER FILE NO.  
04286-W05-NB-REM  
PROJECT 04286-W05  
6/28/05-MML

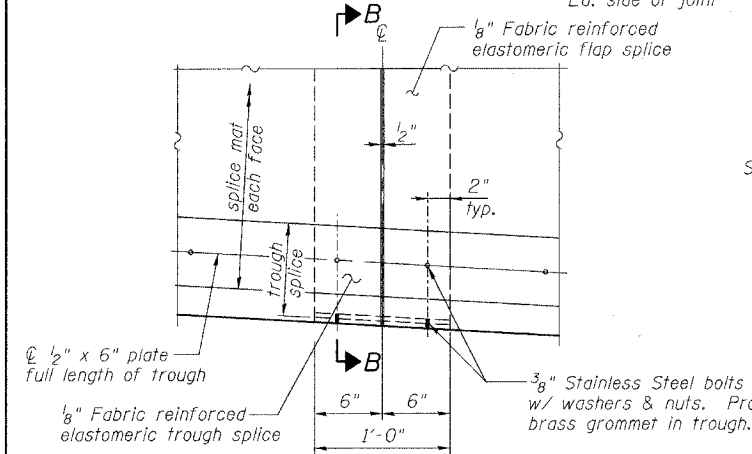
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

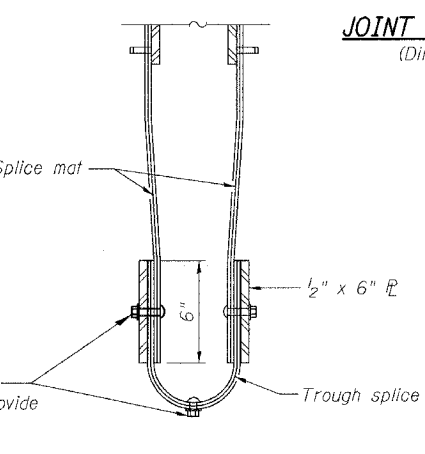
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FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT			
* 2005-008F Contract #62580					



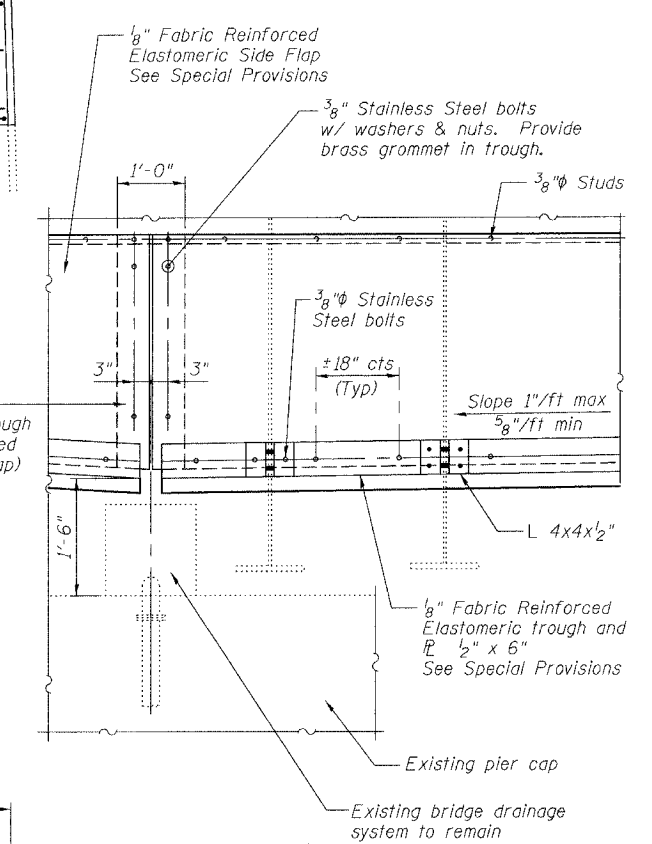
**JOINT RECONSTRUCTION PLAN**  
(Dimensions are along C Pier)



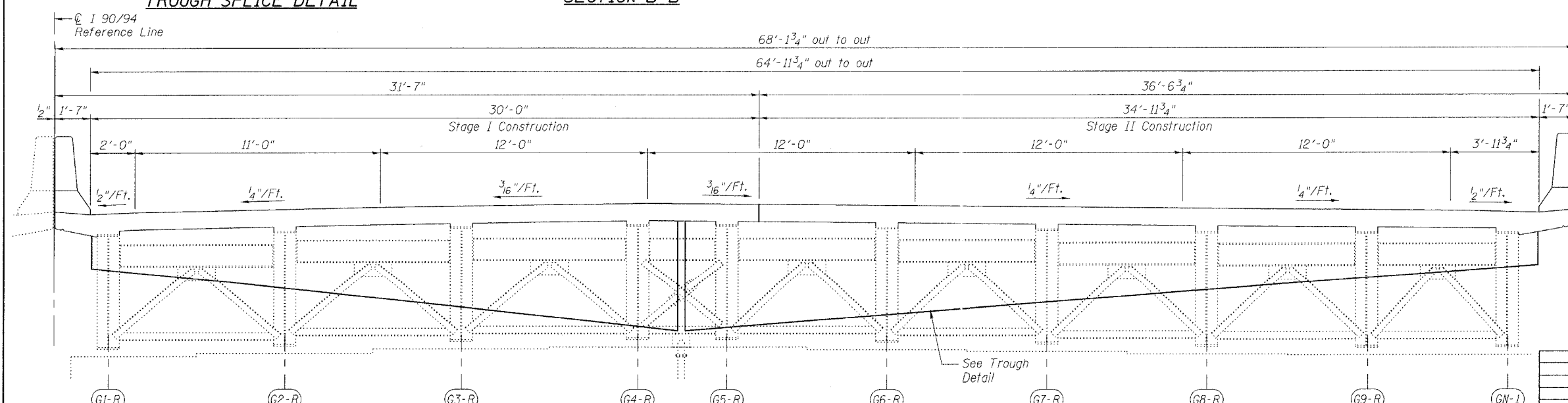
**TROUGH SPLICE DETAIL**



**SECTION B-B**



**TROUGH DETAIL**



**ELEVATION (LOOKING NORTH)**  
(Dimensions are along C Pier)

- Notes:
- For Parapet Details and Superstructure Bill of Material, see Sheet 5 of 8.
  - For Section A-A, see Sheet 4 of 8.

REVISIONS		
NAME	DATE	

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PIER 2 JOINT DETAILS**

F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
16TH STREET TO 18TH STREET  
COOK COUNTY  
S.N. 016-1111 - PIER 2

SCALE: VERT. 1"=4'-0"  
HORIZ. 1"=40'-0"  
DATE: 3/28/05

DRAWN BY: LANDREY  
DESIGNED BY: SANFORD  
CHECKED BY: [Signature]

GREENE & BRADFORD, INC.  
OF SPRINGFIELD

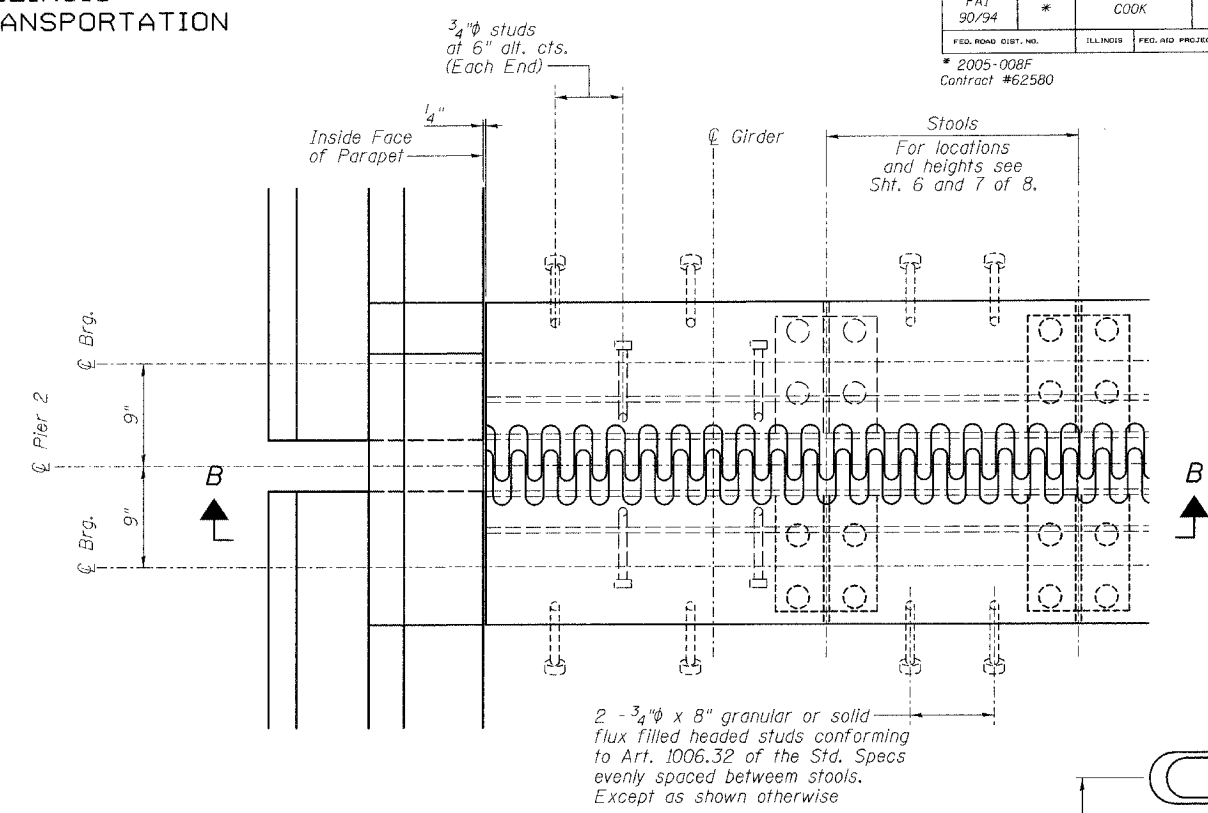
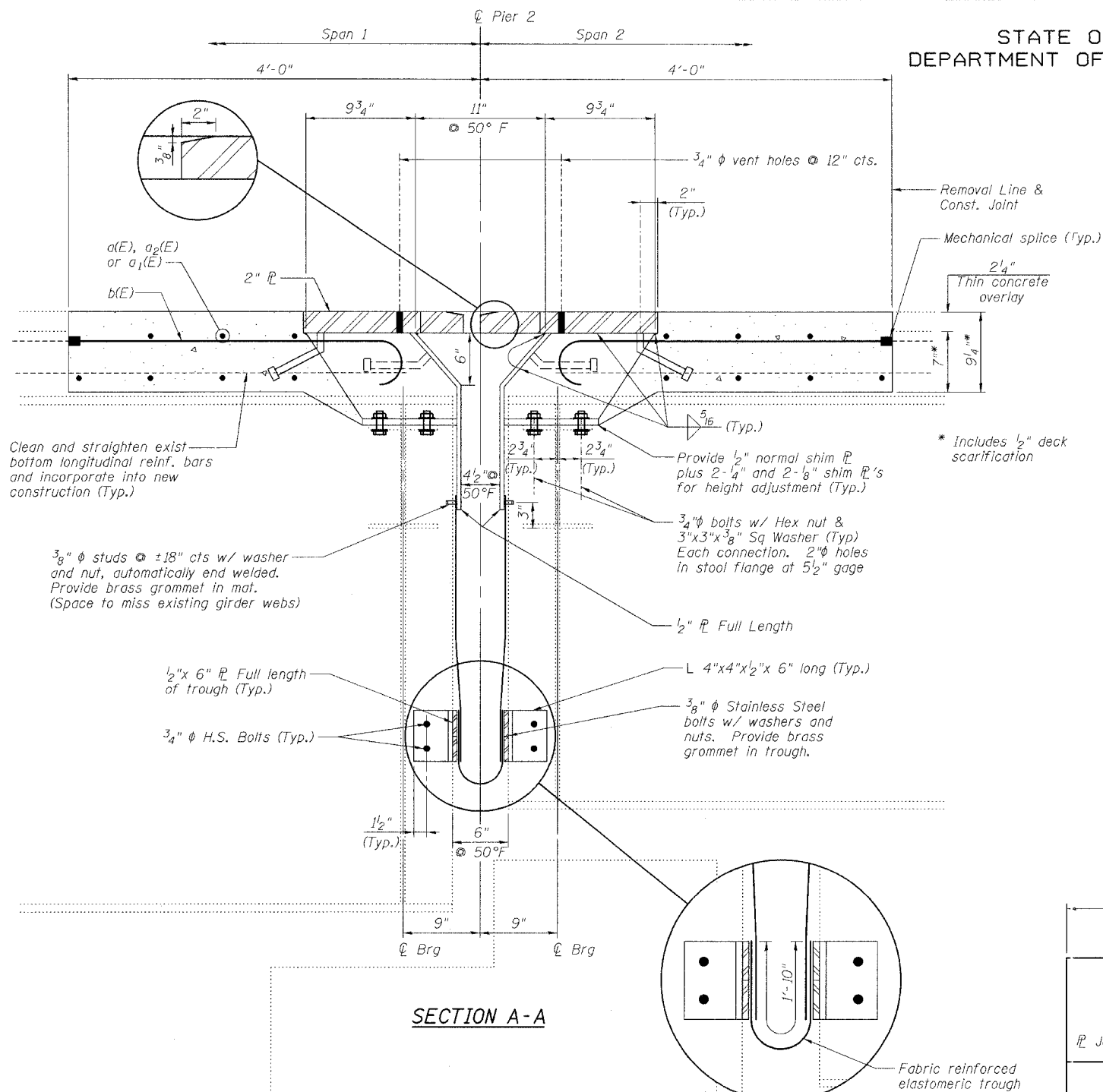
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PROJECT 04286-W05  
6/28/05-MML

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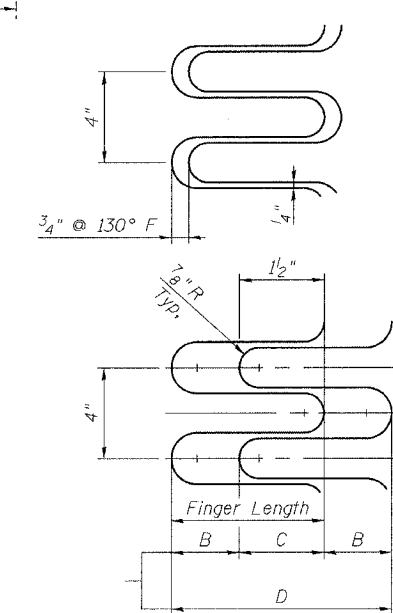
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 90/94	*	COOK	419	231
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
* 2005-008F Contract #62580				

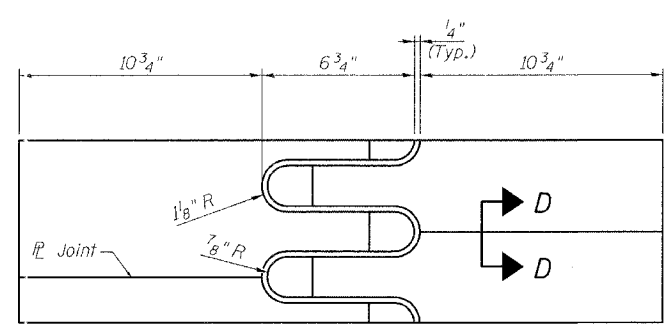
SHEET NO. 4  
8 SHEETS



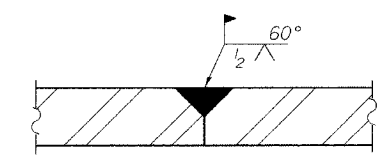
PLAN



FINGER DETAIL



FLAME CUTTING DIAGRAM  
(Proposed Finger φ - Cut from 2" x 2'-4 1/2" φ)



SECTION D-D

NOTES

1. Stainless steel bolts, washers and nuts shall meet the requirements of ASTM A193.
2. The installation of all necessary hardware, stainless steel bolts, studs and washers, plates and angles shall be included with "Erecting Structural Steel".
3. For Section B-B, see Sheet 5 of 8.

REVISIONS		
NAME	DATE	

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PIER 2 JOINT DETAILS**

F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
16TH STREET TO 18TH STREET  
COOK COUNTY  
S.N. 016-1111 - PIER 2

SCALE: VERT. \_\_\_\_\_  
HORIZ. \_\_\_\_\_  
DATE: 3/28/05

DRAWN BY: LANDREY  
DESIGNED BY: SANFORD  
CHECKED BY: \_\_\_\_\_

COMPUTER FILE NO.  
04286-W05-NB-FPJ  
PROJECT 04286-W05  
8/3/05-MML

GREENE & BRADFORD, INC.  
OF SPRINGFIELD  
300 SOUTH MAIN STREET  
SPRINGFIELD, ILLINOIS 62761  
PROFESSIONAL DESIGN FIRM NO. 00078  
REGISTERED PROFESSIONAL ENGINEER  
ILLINOIS LICENSE NO. 022-0000000-00000000

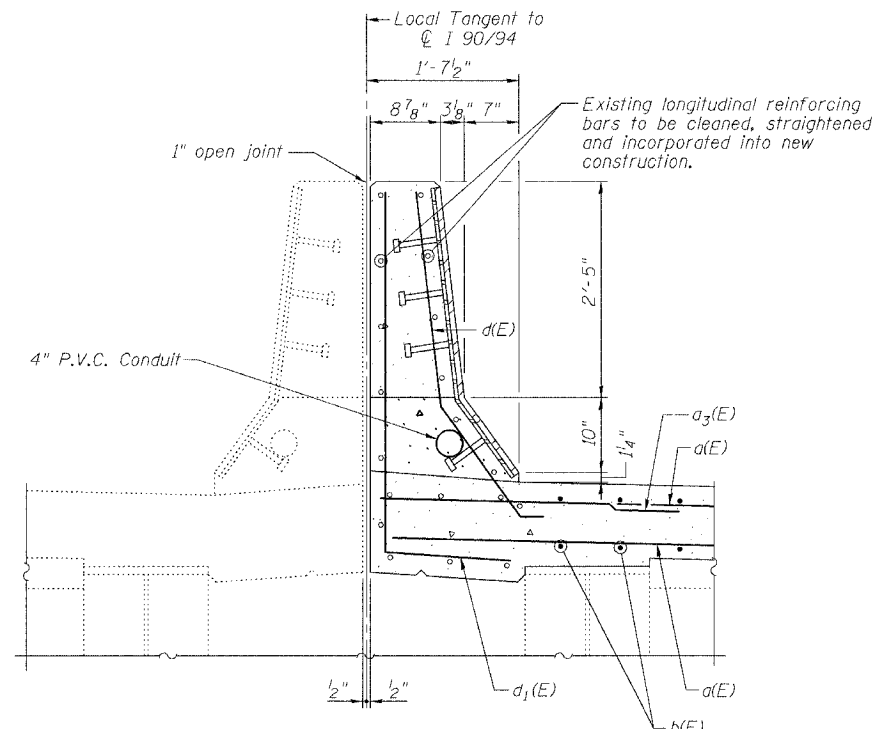
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

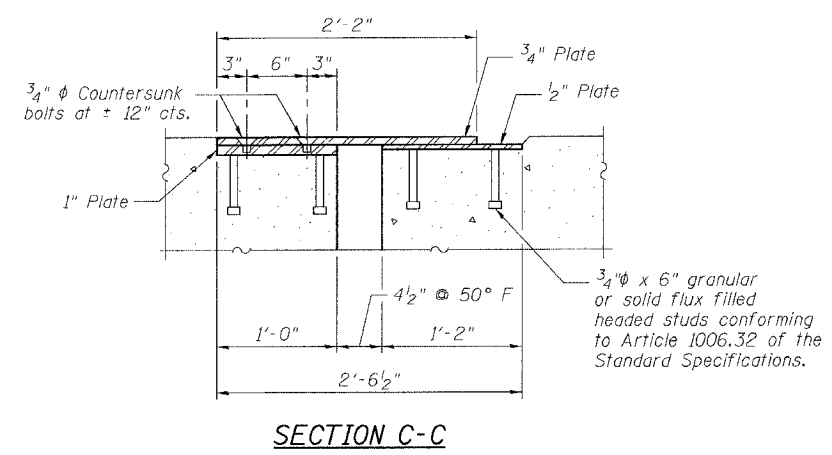
ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET NO.
FA1 90/94	*	COOK	48	232
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SHEET NO. 5  
8 SHEETS

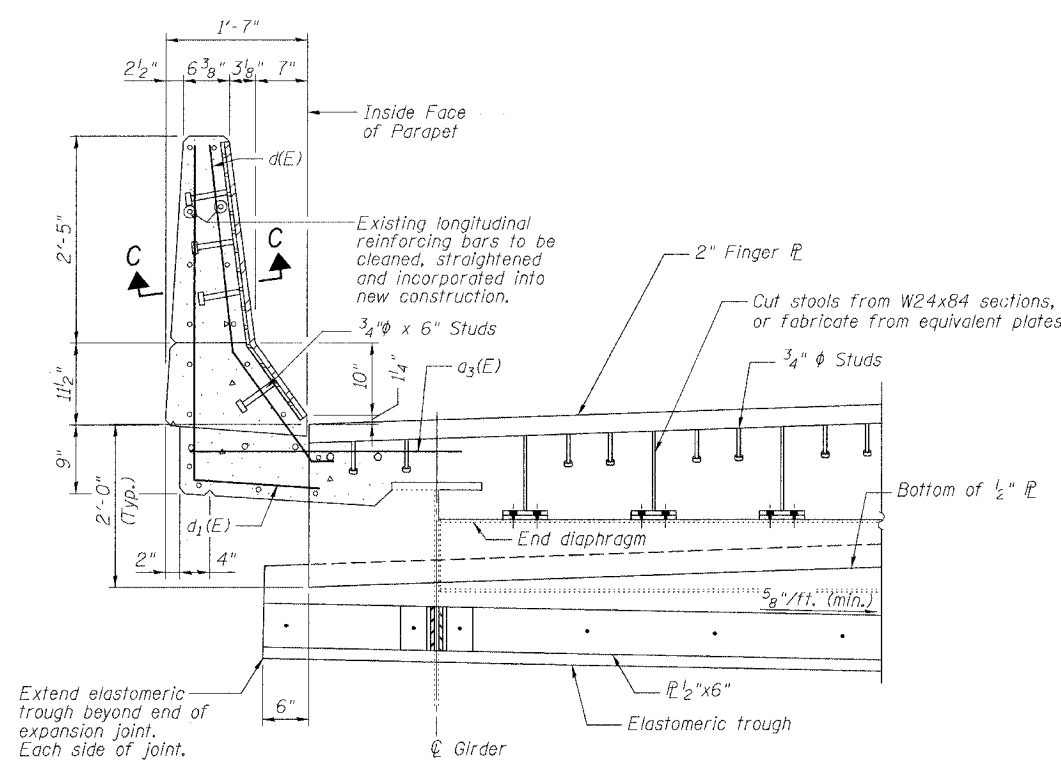
\* 2005-008F  
Contract #62580



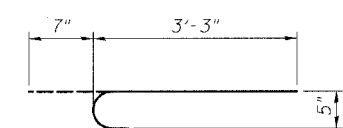
**DETAIL AT MEDIAN PARAPET**  
(Looking North)



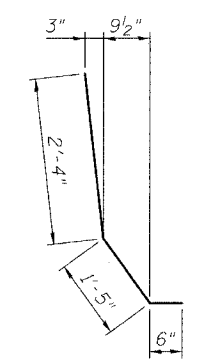
**SECTION C-C**



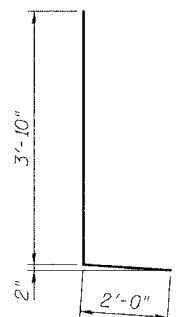
**SECTION B-B**  
(For location of Section B-B, See Sheet 4 of 8)



**BAR b(E)**



**BAR d(E)**



**BAR d1(E)**

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	24	#5	30'-6"	—
a1(E)	24	#5	35'-6"	—
a2(E)	16	#6	4'-6"	—
b(E)	134	#5	3'-10"	U
d(E)	16	#5	4'-3"	U
d1(E)	20	#5	5'-10"	U
Reinforcement Bars, Epoxy Coated		Pound	2490	
Concrete Superstructure		Cu. Yd.	17.6	
Concrete Removal		Cu. Yd.	14.7	
Bar Splicers		Each	24	
Mechanical Splice		Each	134	

Reinforcing bars designated (E) shall be epoxy coated.

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PARAPET DETAILS**  
F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
16TH STREET TO 18TH STREET  
COOK COUNTY  
S.N. 016-1111 - PIER 2

REVISIONS	
NAME	DATE

SCALE: VERT.      DRAWN BY: LANDREY  
DATE: 3/28/05      DESIGNED BY: SANFORD  
CHECKED BY:      -

**GREENE & BRADFORD, INC.**  
CONSULTING ENGINEERS  
300 WEST WASHINGTON STREET  
CHICAGO, ILLINOIS 60601  
TEL: 312.467.1100 FAX: 312.467.1101  
WWW.GREENE-AND-BRADFORD.COM

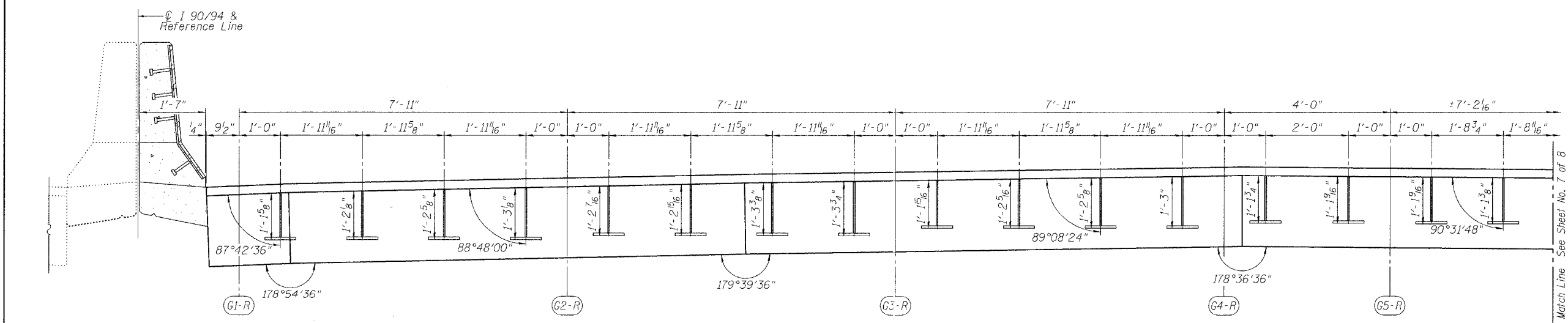
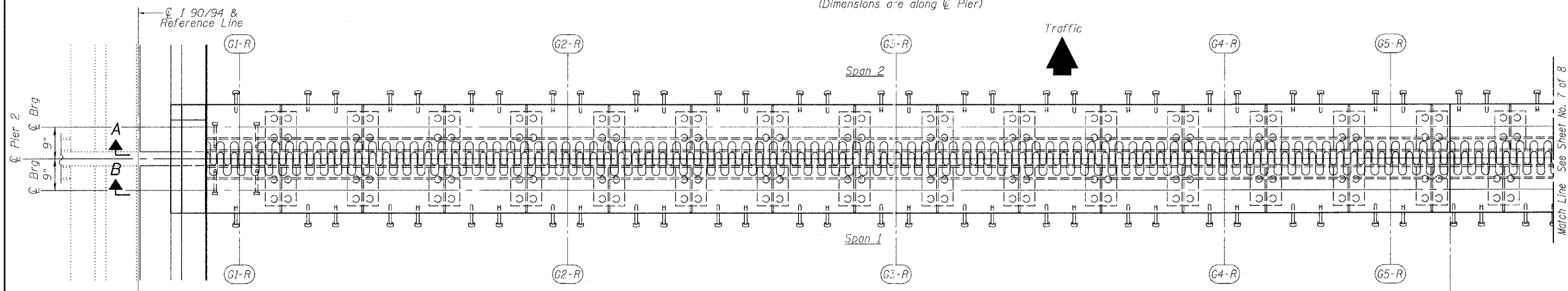
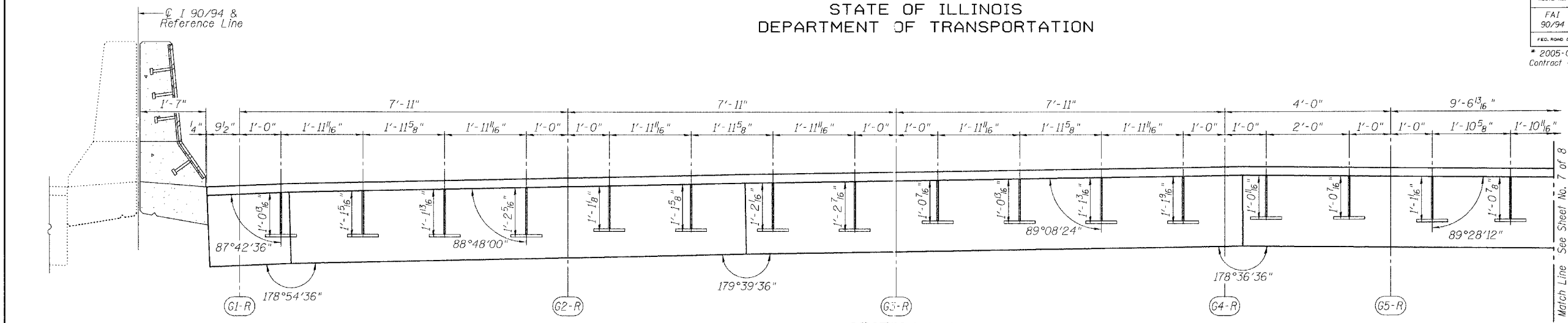
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6/28/05-MML

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO. FAI 90/94	SECTION *	COUNTY COOK	TOTAL SHEETS 419	SHEET NO. 233	SHEET NO. 6 8 SHEETS
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

\* 2005-008F  
Contract #62580



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**FINGER PLATE PLAN AND ELEVATION**

F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
16TH STREET TO 18TH STREET  
COOK COUNTY  
S.N. 016-1111 - PIER 2

SCALE: VERT. \_\_\_\_\_  
HORIZ. \_\_\_\_\_  
DATE: 3/28/05

DRAWN BY: LANDREY  
DESIGNED BY: SANFORD  
CHECKED BY: \_\_\_\_\_

GREENE & BRADFORD, INC.  
OF SPRINGFIELD  
CONSULTING ENGINEERS  
PROFESSIONAL ENGINEERS  
PROFESSIONAL DESIGNERS  
PROFESSIONAL SURVEYORS  
1015 N. 18TH ST., SUITE 100  
SPRINGFIELD, ILL. 62761-1000  
TEL: 217-223-8800 FAX: 217-223-8801

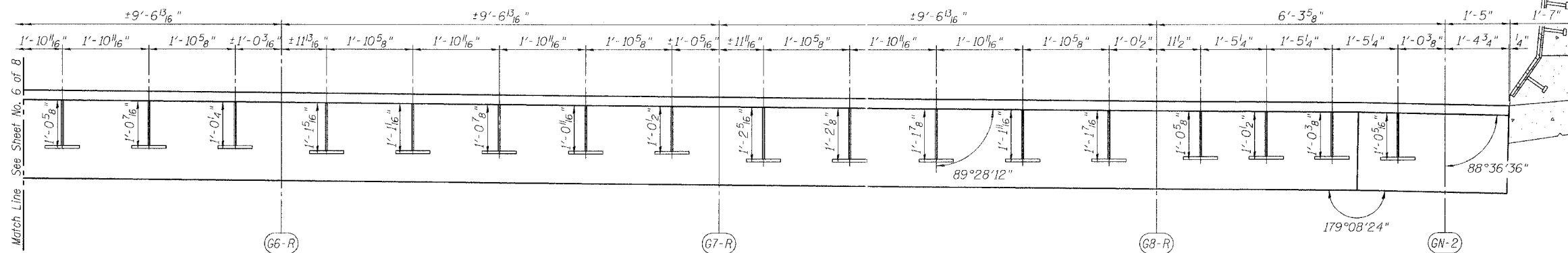
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6/28/05-MML

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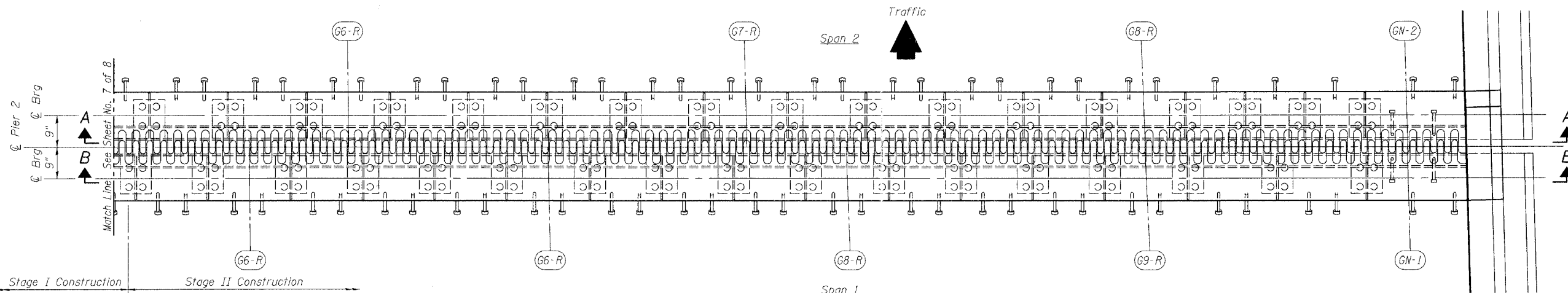
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO. FAI 90/94	SECTION *	COUNTY COOK	TOTAL SHEETS 419	SHEET NO. 234
FED. ROAD DIST. NO.		ILL. DIST.	FED. AID PROJECT	
* 2005-008F Contract #62580				

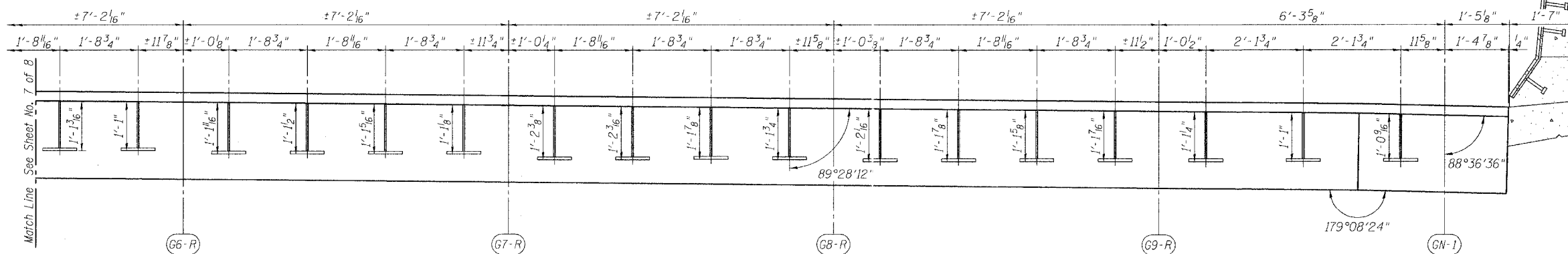
SHEET NO. 7  
8 SHEETS



**SECTION A-A**  
(Dimensions are along  $\bar{Q}$  Pier)



**PLAN OF FINGER PLATE AT PIER 2**



**SECTION B-B**  
(Dimensions are along  $\bar{Q}$  Pier)

REVISIONS		
NAME	DATE	

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**FINGER PLATE PLAN AND ELEVATION**

F.A.J. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
16TH STREET TO 18TH STREET  
COOK COUNTY  
S.N. 016-1111 - PIER 2

SCALE: VERT. \_\_\_\_\_  
HORIZ. \_\_\_\_\_  
DATE: 3/28/05

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DESIGNED BY: SANFORD  
CHECKED BY: \_\_\_\_\_  
COMPUTER FILE NO.  
04286-W05-NB-PE2  
PROJECT 04286-W05  
6/28/05-MML



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OPERATOR = \$OPERATOR\$

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 8
FAI 90/94	*	COOK	419	235	8 SHEETS
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT			

\* 2005-008F  
Contract #62580

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.  
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.  
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.  
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.  
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

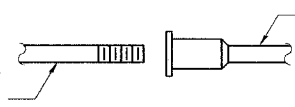
- Minimum Capacity =  $1.25 \times f_y \times A_t$   
(Tension in kips)
- Minimum \*Pull-out Strength =  $1.25 \times f_{s,allow} \times A_t$   
(Tension in kips)

Where  $f_y$  = Yield strength of lapped reinforcement bars in ksi.  
 $f_{s,allow}$  = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)  
 $A_t$  = Tensile stress area of lapped reinforcement bars.  
\* = 28 day concrete

BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	5.9
#5	2'-0"	23.0	9.2
#6	2'-7"	33.1	13.3
#7	3'-5"	45.1	18.0
#8	4'-6"	58.9	23.6
#9	5'-9"	75.0	30.0
#10	7'-3"	95.0	38.0
#11	9'-0"	117.4	46.8

Bar splicer assemblies shall be according to Section 508 of the Standard Specifications, except as noted. The furnishing and installation of bar splicer assemblies will be measured and paid for at the contract unit price each for "BAR SPLICERS."

The diameter of this part is equal or larger than the diameter of bar spliced.



ROLLED THREAD DOWEL BAR



\*\* ONE PIECE

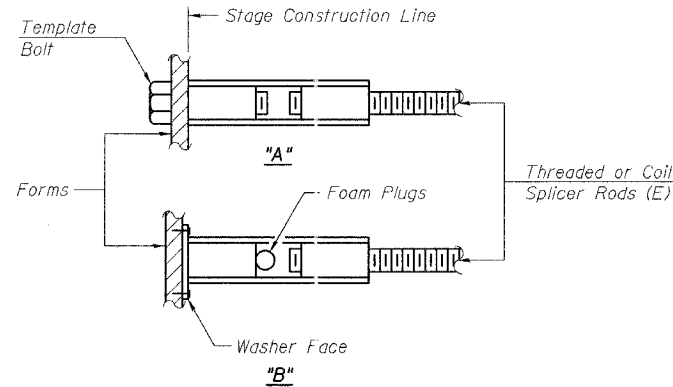
Wire Connector



WELDED SECTIONS

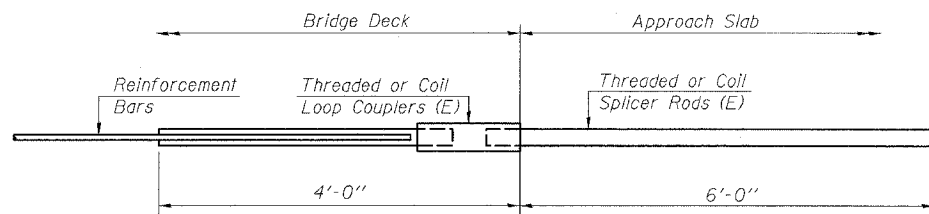
BAR SPLICER ASSEMBLY ALTERNATIVES

\*\* Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



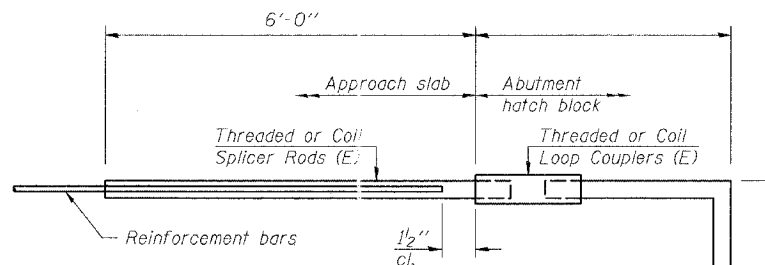
INSTALLATION AND SETTING METHODS

"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.



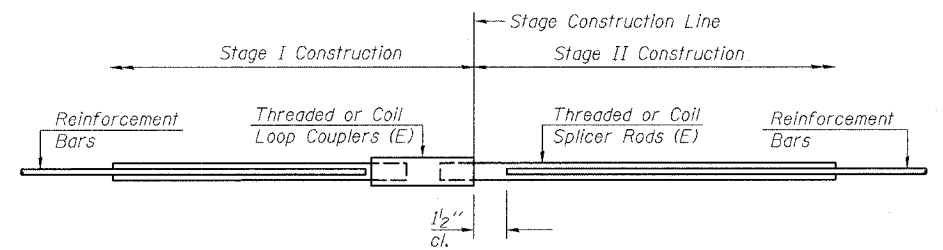
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required = N/A



FOR PILE BENT ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required = N/A



STANDARD

Bar Size	No. Assemblies Required	Location
#5	24	Deck

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
BAR SPLICER ASSEMBLY DETAILS

F.A.I. ROUTE 90/94 NORTHBOUND (DAN RYAN EXPRESSWAY)  
16TH STREET TO 18TH STREET  
COOK COUNTY  
S.N. 016-1111 - PIER 2

SCALE: VERT. \_\_\_\_\_  
HORIZ. \_\_\_\_\_  
DATE: 3/28/05

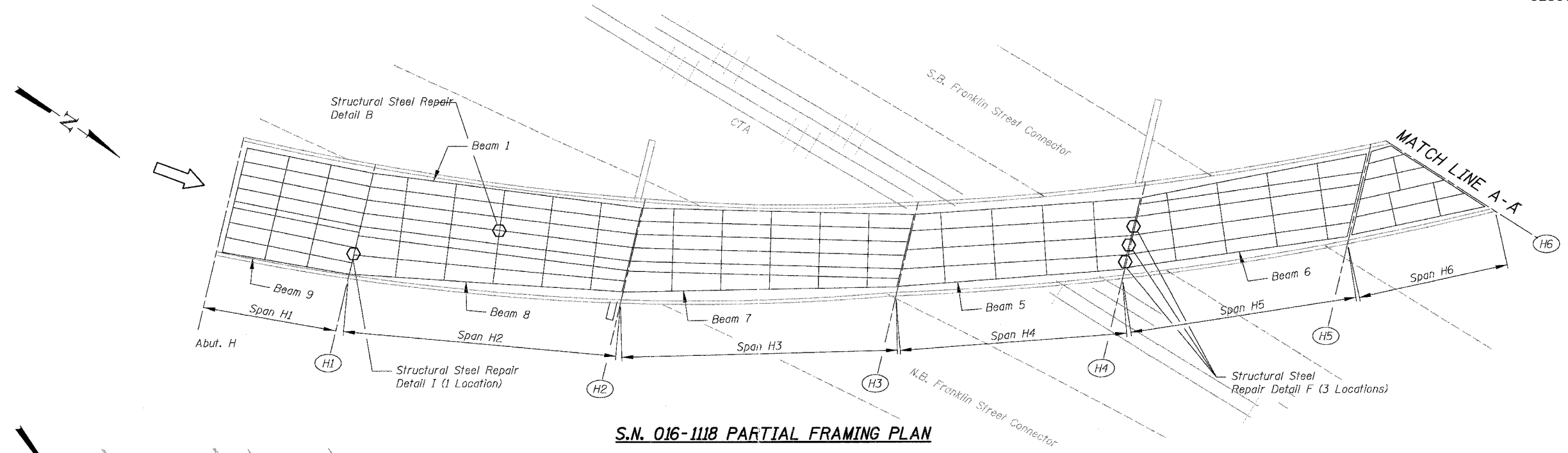
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DESIGNED BY: SANFORD  
CHECKED BY: \_\_\_\_\_

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PROJECT 04286-W05  
6/28/05-MML

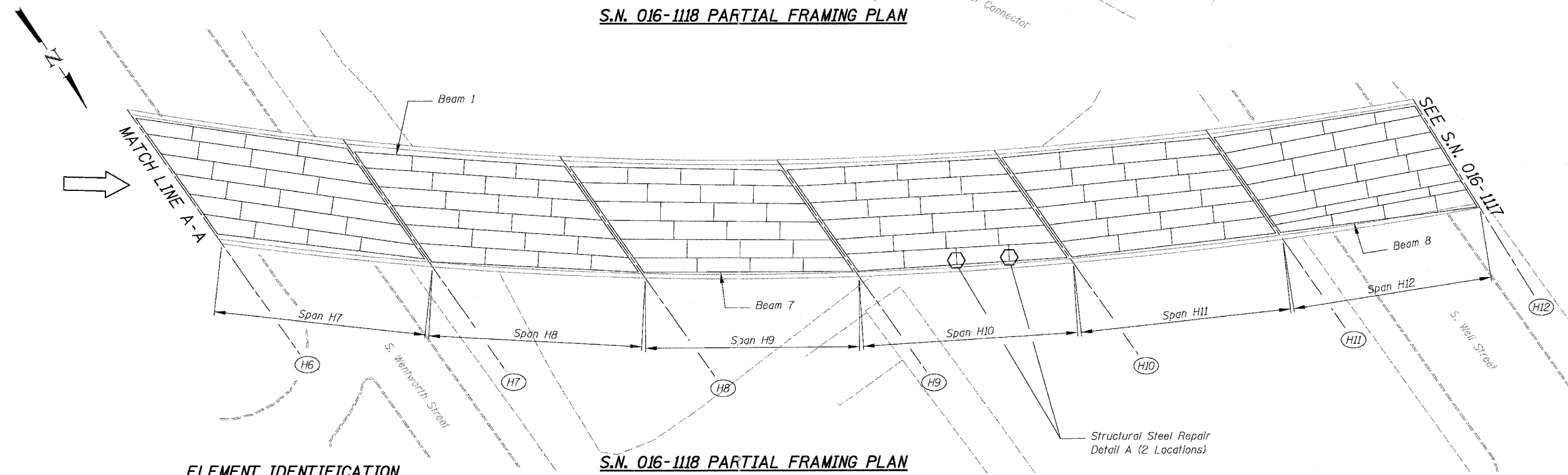


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F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	236
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62580				



**S.N. 016-1118 PARTIAL FRAMING PLAN**



**S.N. 016-1118 PARTIAL FRAMING PLAN**

**ELEMENT IDENTIFICATION**

Elements on the Ramp Structures are identified 1, 2, 3 etc. from left to right looking on the direction of ramp traffic.

- ① = Pier No.
- ⬡ = Location of Structural Steel Repair

**BOWMAN, BARRETT & ASSOCIATES INC.**  
CONSULTING ENGINEERS  
Chicago, Illinois  
312.228.0100  
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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
PARTIAL FRAMING PLAN  
S.N. 016-1118

SCALE: NTS  
DATE: 7/22/2005

DRAWN BY: BDC  
CHECKED BY: BLU

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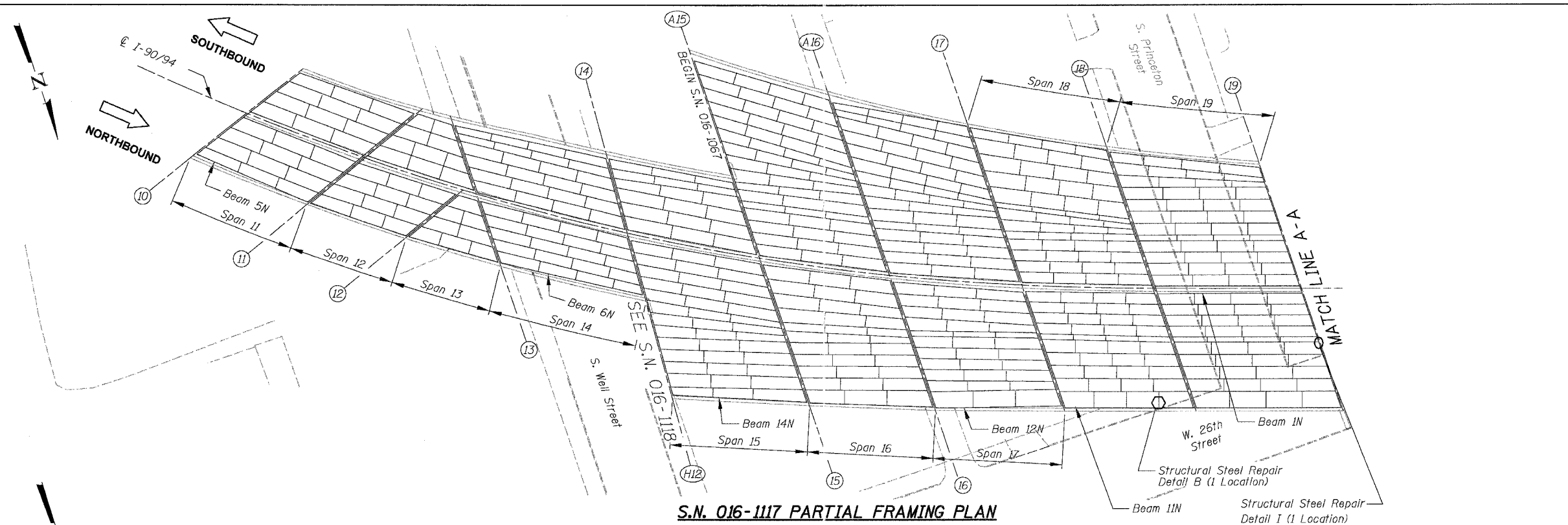


F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62580				

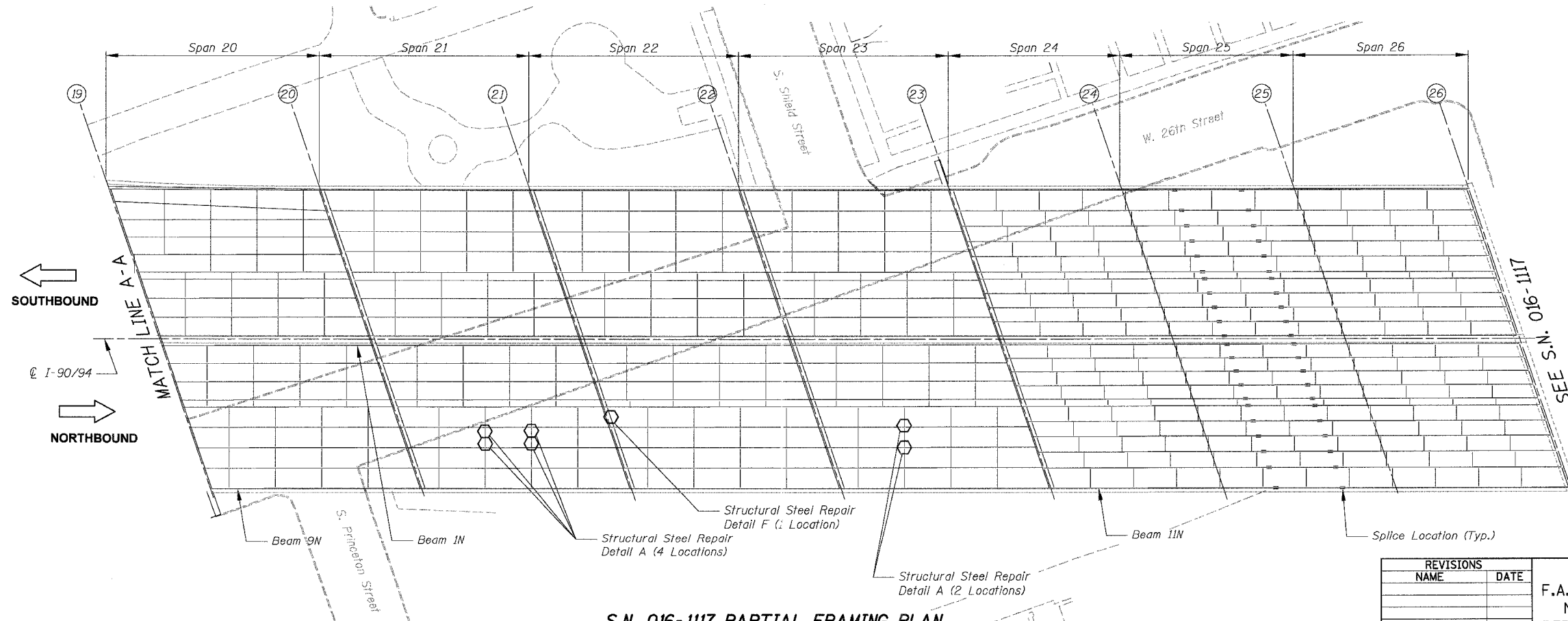
**ELEMENT IDENTIFICATION**

Elements on the Northbound Structure are identified 1N, 2N, 3N etc. starting from the centerline of I-90/94.

- ① = Pier No.
- ⬡ Location of Structural Steel Repair



**S.N. 016-1117 PARTIAL FRAMING PLAN**



**S.N. 016-1117 PARTIAL FRAMING PLAN**

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 PARTIAL FRAMING PLAN  
 S.N. 016-1117

SCALE: NTS  
 DATE: 7/22/2005

DRAWN BY: BDC  
 CHECKED BY: BLU

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 CONSULTING ENGINEERS  
 Chicago, Illinois  
 312.228.0100  
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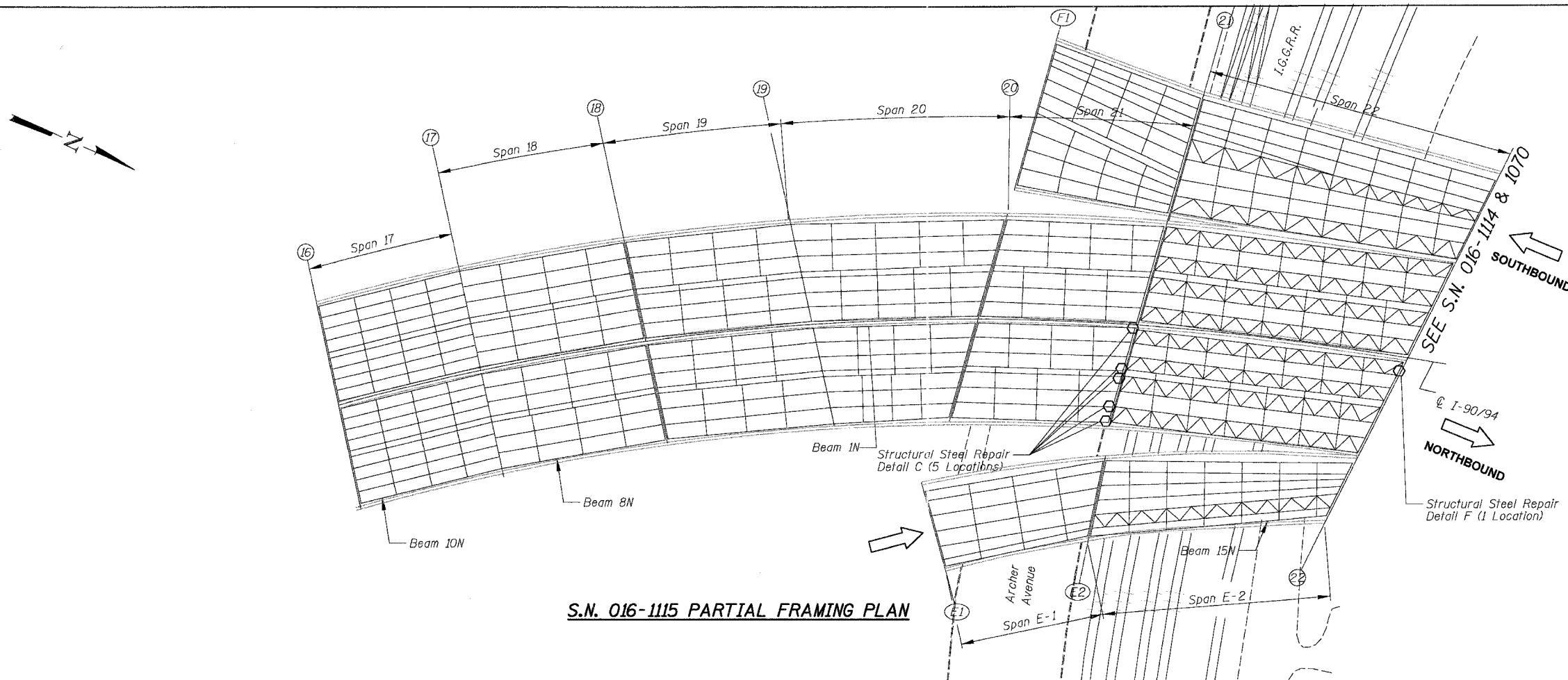
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STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62580				

**ELEMENT IDENTIFICATION**

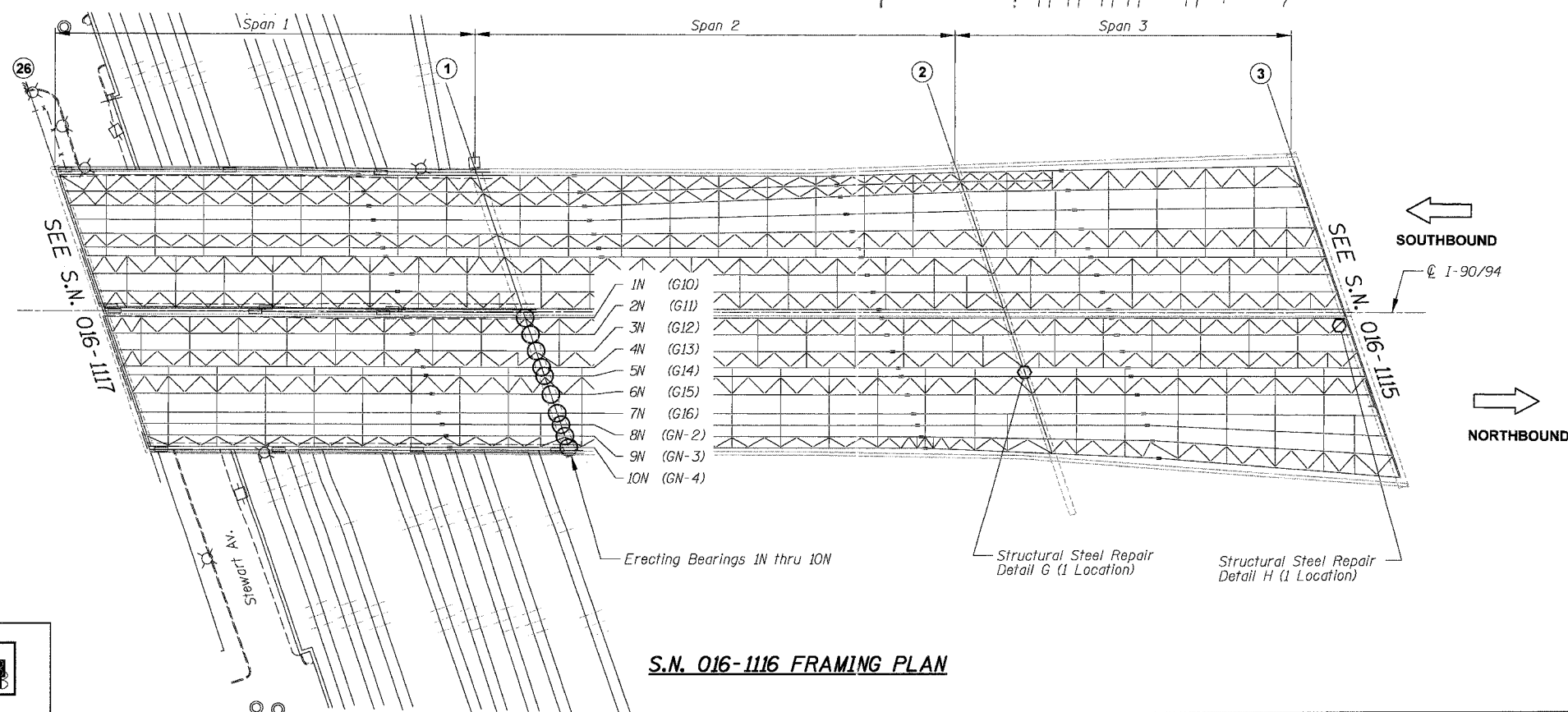
Elements on the Northbound Structure are identified 1N, 2N, 3N etc. starting from the centerline of I-90/94. Numbers within ( ) refer to as-built beam designations.

- ① = Pier No.
- = Location of bearing replacement
- ⬡ = Location of Structural Steel Repair

\* Considered part of adjacent Structure Number 016-1113.



**S.N. 016-1115 PARTIAL FRAMING PLAN**



**S.N. 016-1116 FRAMING PLAN**

REVISIONS	
NAME	DATE

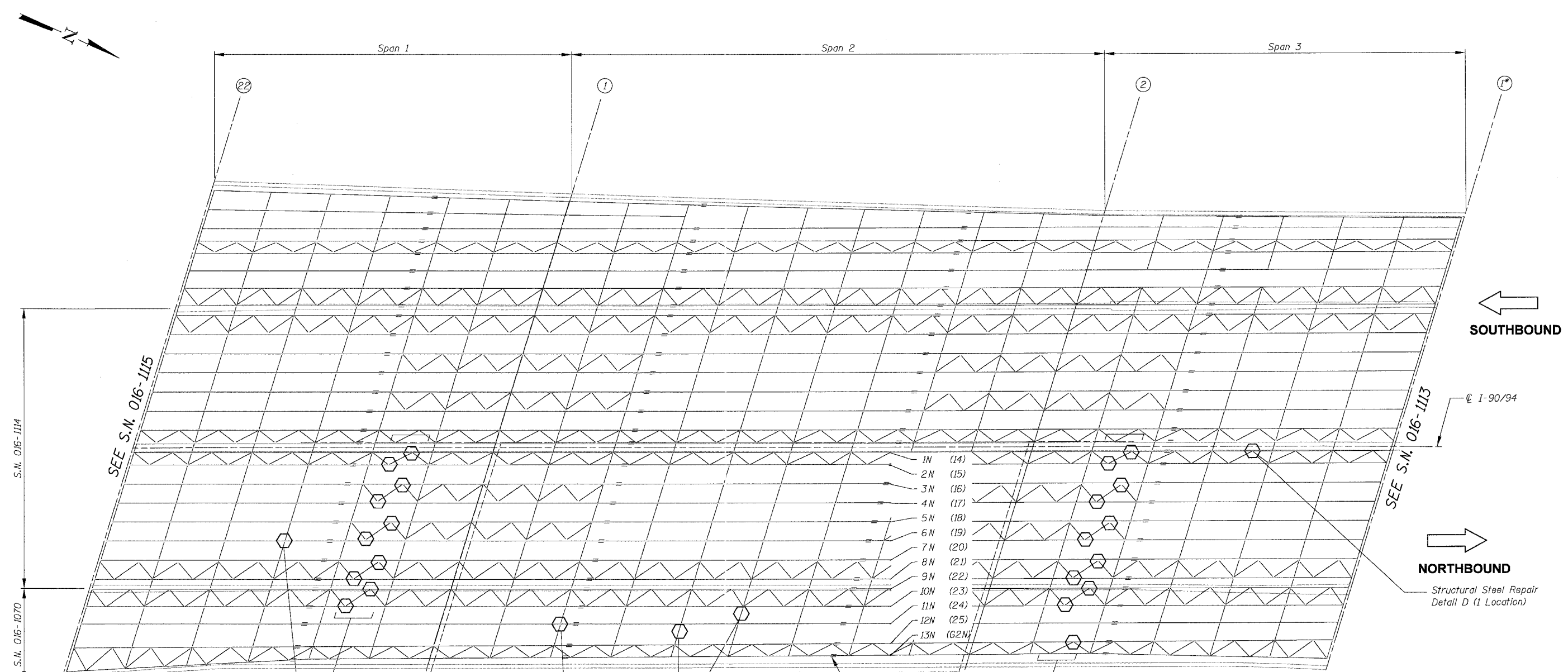
ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 PARTIAL FRAMING PLAN  
 S.N. 016-1115 & 016-1116  
 SCALE: NTS DRAWN BY: BDC  
 DATE: 7/22/2005 CHECKED BY: BLU

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F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-02BF	COOK	419	239
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62580				



**ELEMENT IDENTIFICATION**

Elements on the Northbound Structure are identified 1N, 2N, 3N etc. starting from the centerline of I-90/94. Numbers within ( ) refer to as-built beam designations.

- ① = Pier No.
- ⬡ Location of Structural Steel Repair
- Location of Protective Shield

**SN 016-1114 & 016-1070 FRAMING PLAN**

Note:  
1. Contractor shall coordinate structural steel repairs with Protective Shielding requirements of the hydroscarification as required.

\* Considered part of adjacent Structure Number 016-1113.

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NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
PARTIAL FRAMING PLAN  
S.N. 016-1114 & 016-1070  
SCALE: NTS  
DATE: 7/22/2005  
DRAWN BY: BDC  
CHECKED BY: BLU

7/21/2005 3.3564 FH

F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

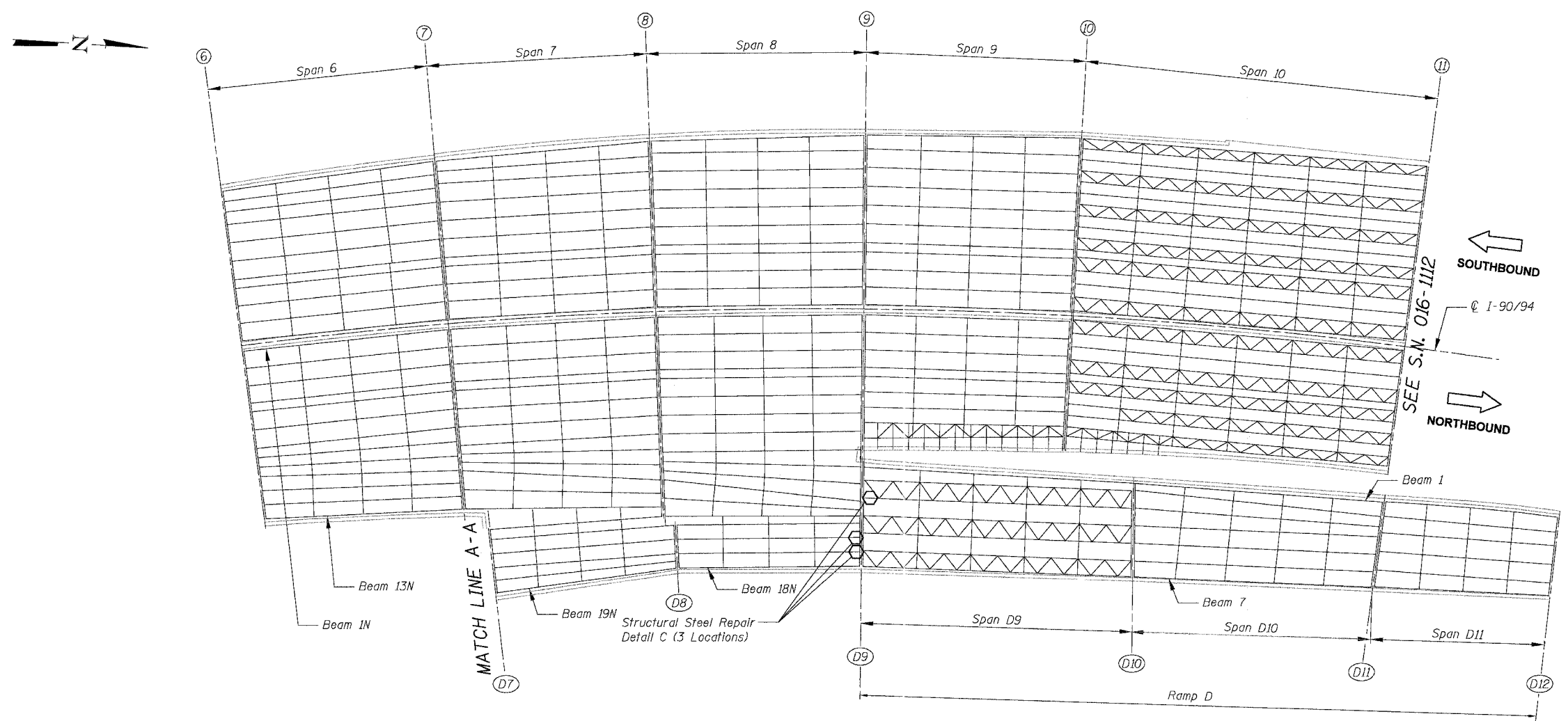
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**ELEMENT IDENTIFICATION**

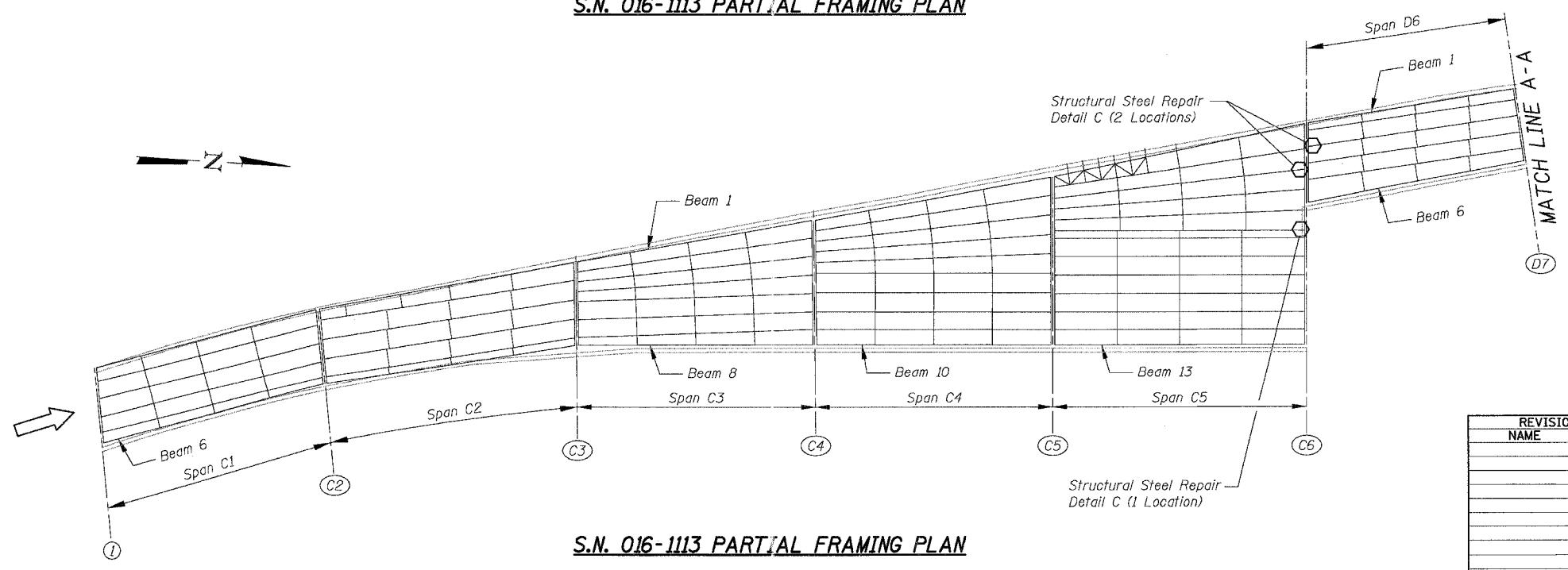
Elements on the Northbound Structure are identified 1N, 2N, 3N etc. starting from the centerline of I-90/94.

Elements on the Ramp Structures are identified 1, 2, 3 etc. from left to right looking on the direction of ramp traffic.

- ① = Pier No.
- ⬡ = Location of Structural Steel Repair



**S.N. 016-1113 PARTIAL FRAMING PLAN**



**S.N. 016-1113 PARTIAL FRAMING PLAN**

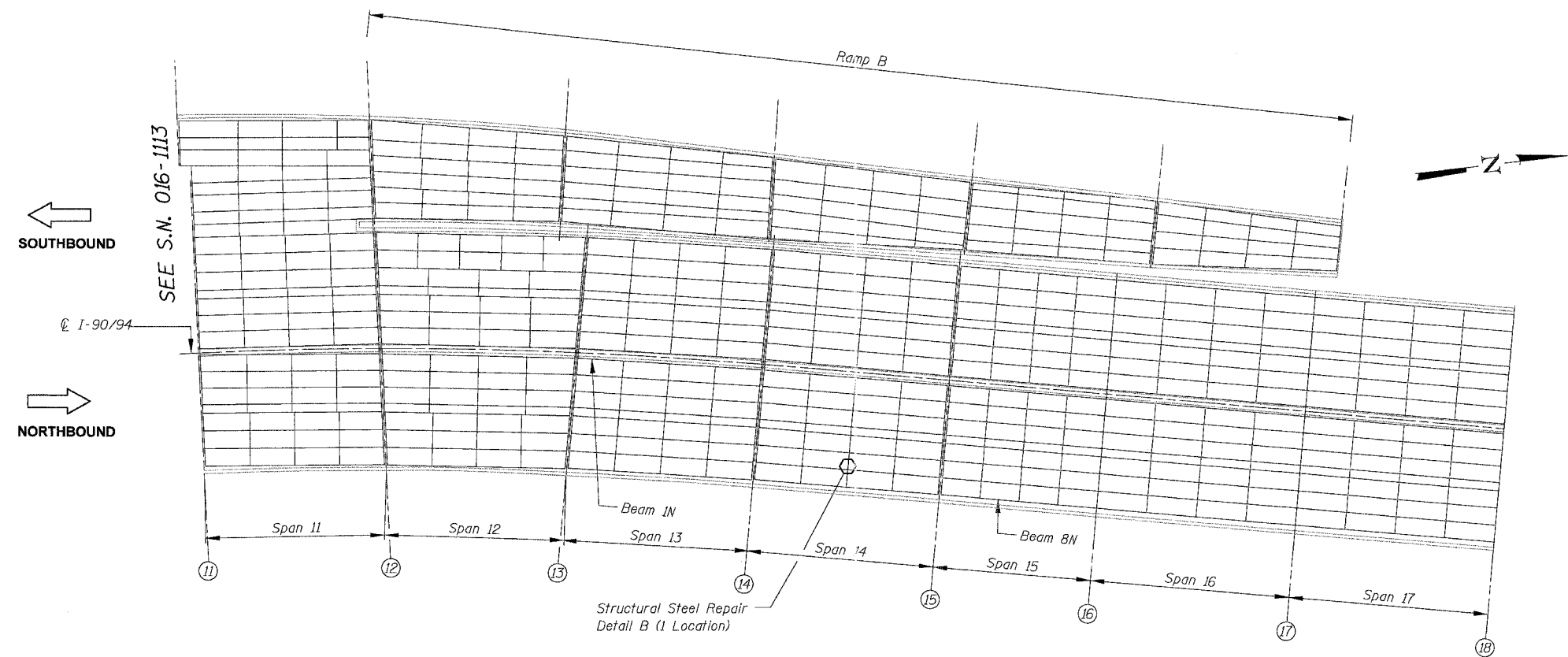
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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 PARTIAL FRAMING PLAN  
 S.N. 016-1113  
 SCALE: NTS  
 DATE: 7/22/2005  
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 CHECKED BY: BLU

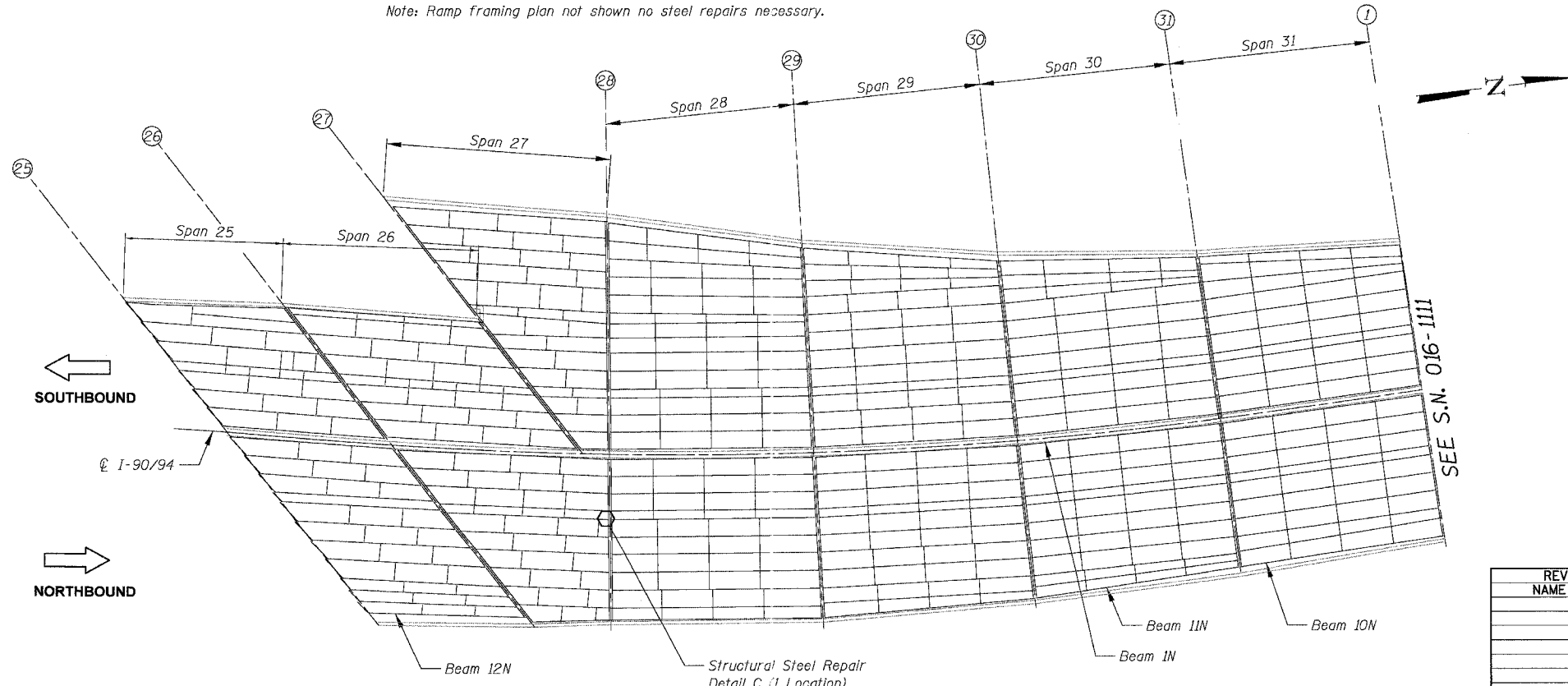
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F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	241
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62580				



**S.N. 016-1112 PARTIAL FRAMING PLAN**

Note: Ramp framing plan not shown no steel repairs necessary.



**S.N. 016-1112 PARTIAL FRAMING PLAN**

**ELEMENT IDENTIFICATION**

Elements on the Northbound Structure are identified 1N, 2N, 3N etc. starting from the centerline of I-90/94.

Elements on the Ramp Structures are identified 1, 2, 3 etc. from left to right looking on the direction of ramp traffic.

- ⊙ = Pier No.
- ⬡ = Location of Structural Steel Repair

REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 PARTIAL FRAMING PLAN  
 S.N. 016-1112

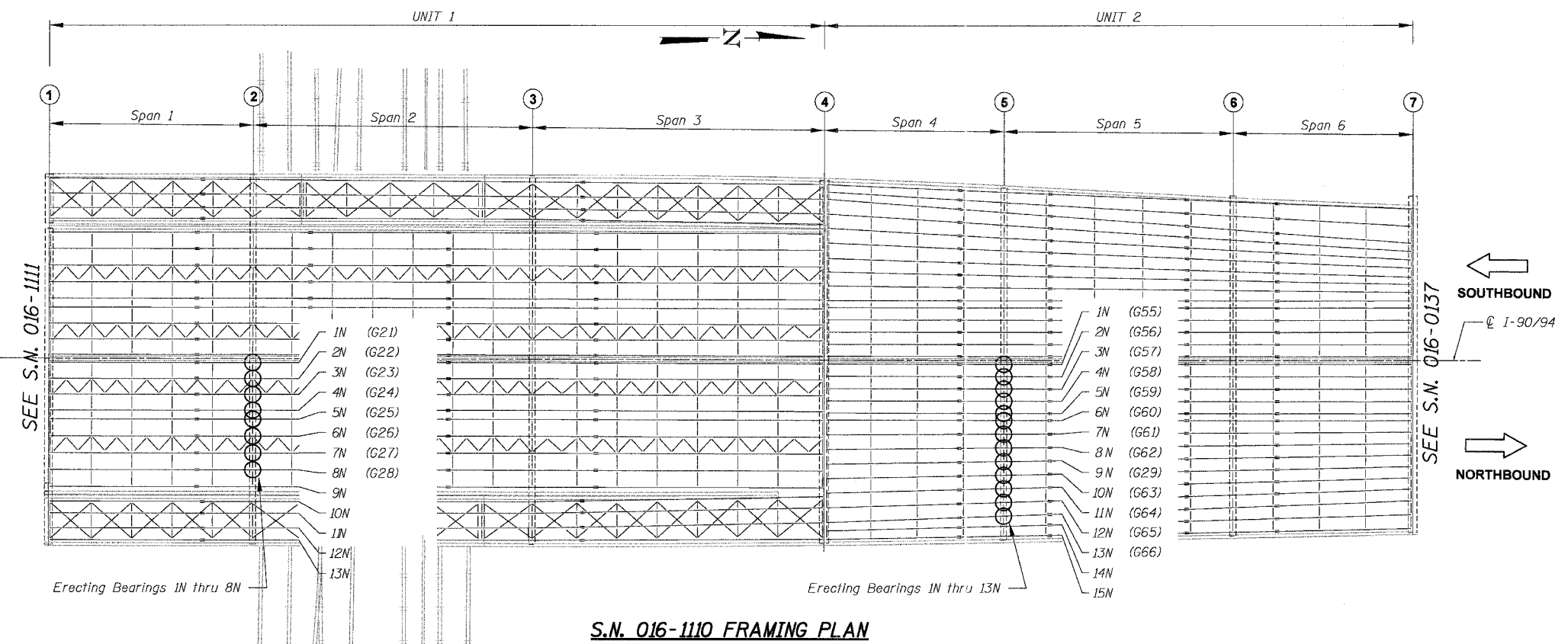
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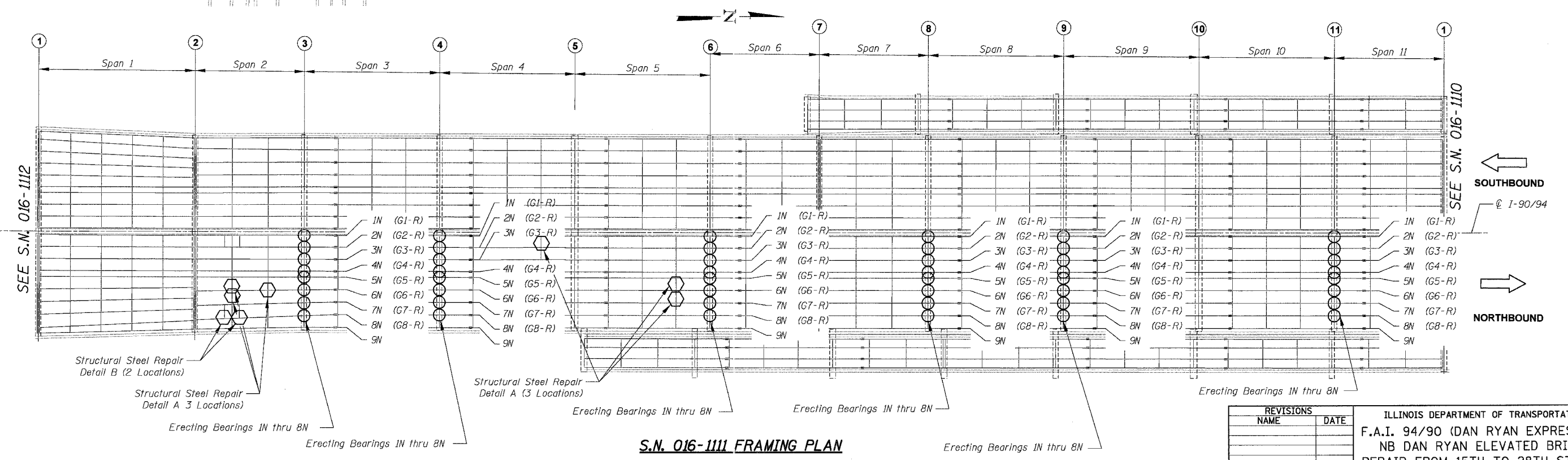
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94/90	2003-028F	COOK	419	242
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
62580				



**ELEMENT IDENTIFICATION**  
 Elements on the Northbound Structure are identified 1N, 2N, 3N etc. starting from the centerline of I-90/94. Numbers within ( ) refer to as-built beam designations.

- ① = Pier No.
- = Location of Bearing Replacement
- ⬡ = Location of Structural Steel Repair

**S.N. 016-1110 FRAMING PLAN**



**S.N. 016-1111 FRAMING PLAN**

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 PARTIAL FRAMING PLAN  
 S.N. 016-1110 & 1111

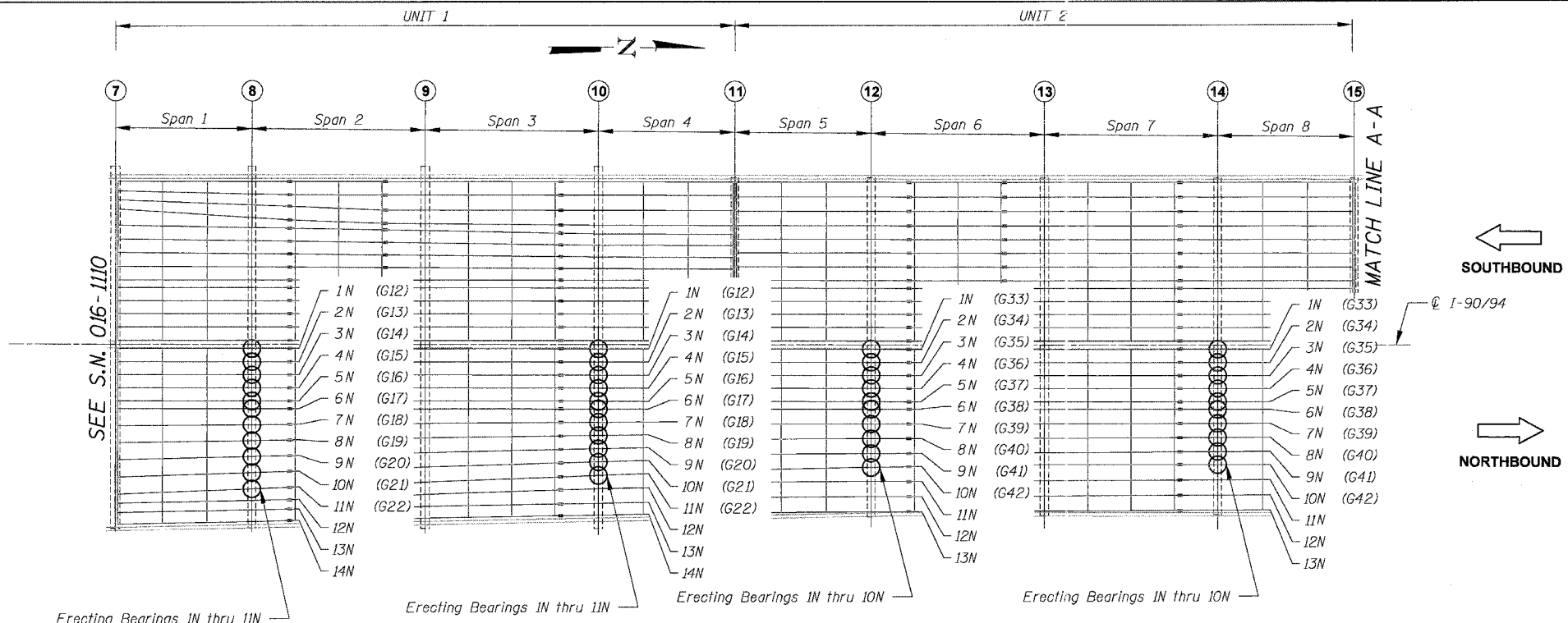
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DRAWN BY: BDC  
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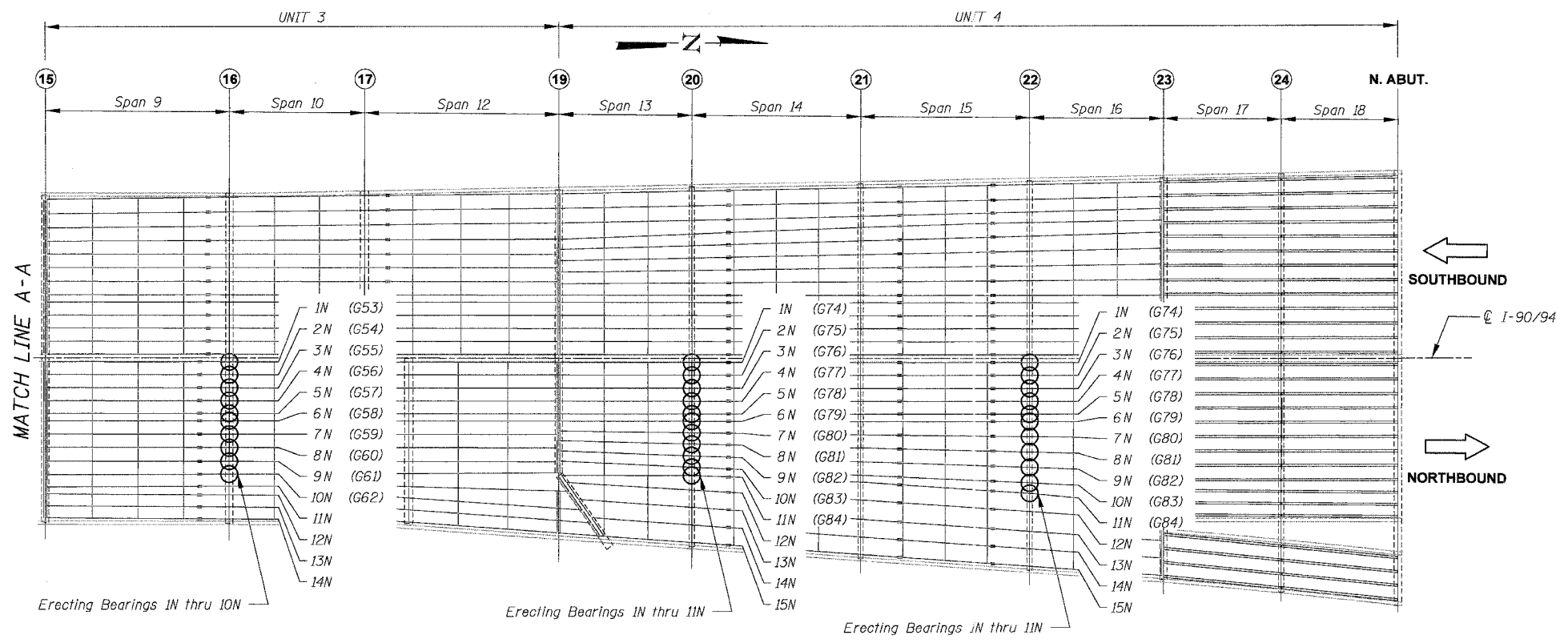
BOWMAN, BARRETT & ASSOCIATES INC.  
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3-5844 PM 7/21/2005

F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	243
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62580				



**S.N. 016-0137 PARTIAL FRAMING PLAN**



**S.N. 016-0137 PARTIAL FRAMING PLAN**

**ELEMENT IDENTIFICATION**

Elements on the Northbound Structure are identified 1N, 2N, 3N etc. starting from the centerline of I-90/94. Numbers within ( ) refer to as-built beam designations.

- ① = Pier No.
- = Location of Brg. Replacement

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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
PARTIAL FRAMING PLAN  
S.N. 016-0137

SCALE: NTS  
DATE: 7/22/2005

DRAWN BY: BDC  
CHECKED BY: BLU

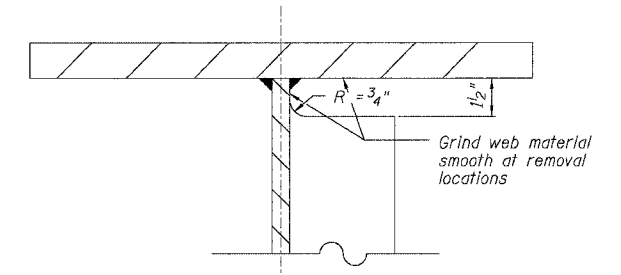
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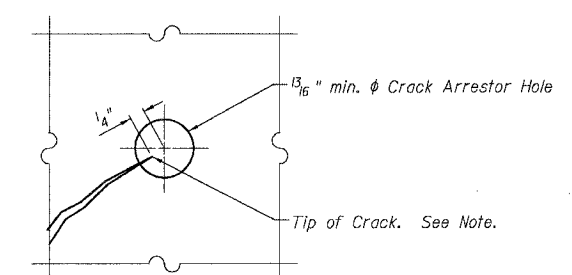
**STRUCTURAL STEEL REPAIR GENERAL NOTES**

- Existing structural steel shall be painted in accordance with Guide Bridge Special Provisions for Cleaning and Painting Contact Surface Areas of Existing Steel Structures.
- New structural steel shall conform to AASHTO M-270 Gr. 36, and be shop painted with inorganic zinc rich primer per AASHTO M300 Type I. Spot paint with zinc silicate primer applied on heads of field welds and all areas where paint has been removed or damaged shall be required. Cost included in Structural Steel Repair.
- All new fasteners shall be  $\frac{3}{4}$ "  $\phi$  H.S. bolts unless otherwise noted. Minimum edge distance for bolts shall be  $1\frac{1}{2}$ ".
- Grinding shall be done parallel to the beam direction. Cost of grinding and field drill shall be included with Structural Steel Repair.
- All structural steel repairs shall be coordinated with deck MOT to assure live load is not directly transmitted through members being repaired.
- Costs of furnishing, erecting and removal of required Traffic Control and Protection Standards for steel repairs shall be included in the cost of "Structural Steel Repair" unless otherwise noted.
- Cost of removal and disposal of existing steel plates shall be included in the cost of "Structural Steel Repair".



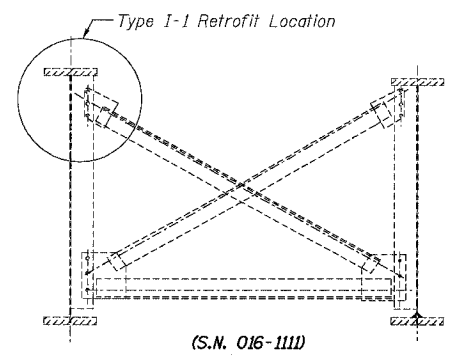
**CUT WEB STIFFENER DETAIL**

- Note: 1. Field cut web stiffener using saw, drill and / or grinding. Flame cutting will not be permitted within 2" of girder web or flange. Grind surfaces after cutting to a surface roughness of (Ra) 250u in. or less.
2. Contractor shall fabricate retrofit hardware providing holes subpunched for attachment to girder flange. Holes shall be reamed full size for attachment to the flange and drilled for attachment in the field.

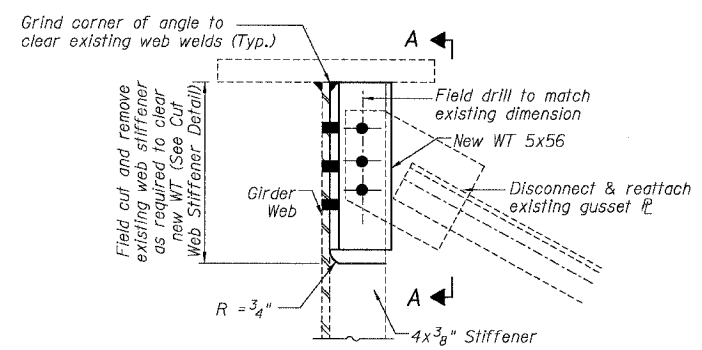


**CRACK ARRESTOR HOLE DETAIL**

- Note: Locate crack tip using liquid dye penetrant or magnetic particle testing. Drill  $1\frac{3}{16}$ " min.  $\phi$  Crack Arrestor hole at the crack tip. After crack arrestor hole has been drilled, dye penetrant or magnetic particle testing shall be used to verify that the drilled hole has captured the crack tip. Cost shall be included in the cost of "Structural Steel Repair".

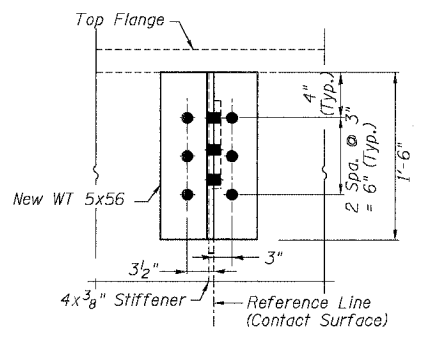


(S.N. 016-1111)

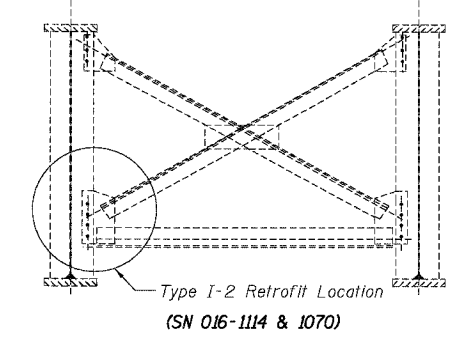


**PARTIAL ELEVATION**

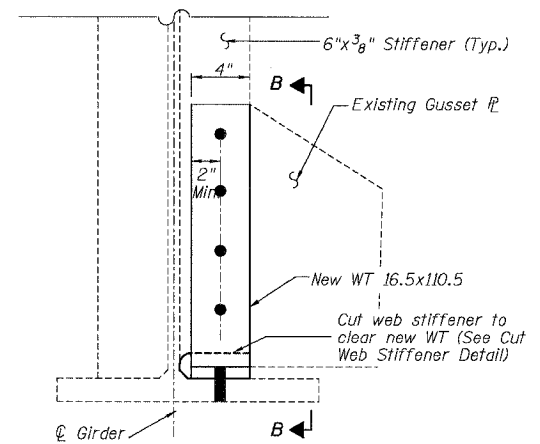
**TYPE I-1**



**SECTION A-A**

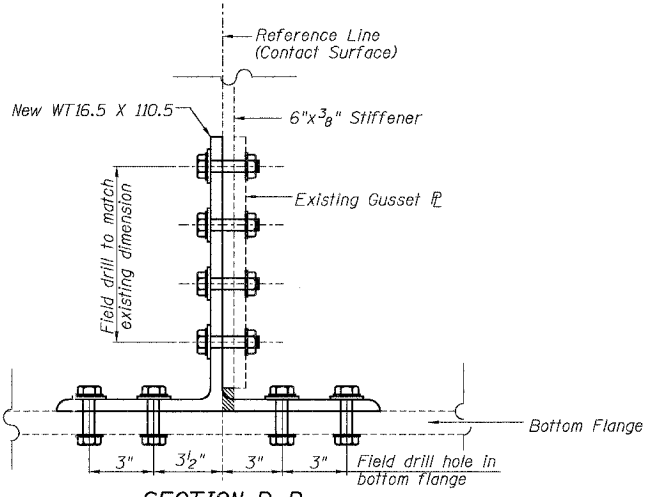


(SN 016-1114 & 1070)

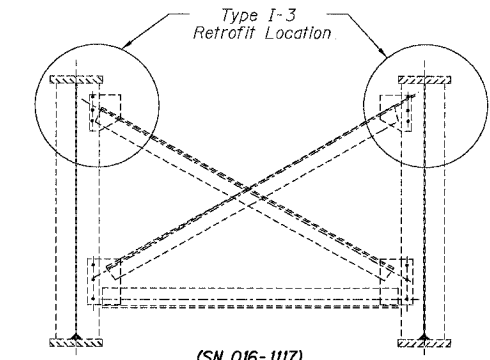


**PARTIAL ELEVATION**

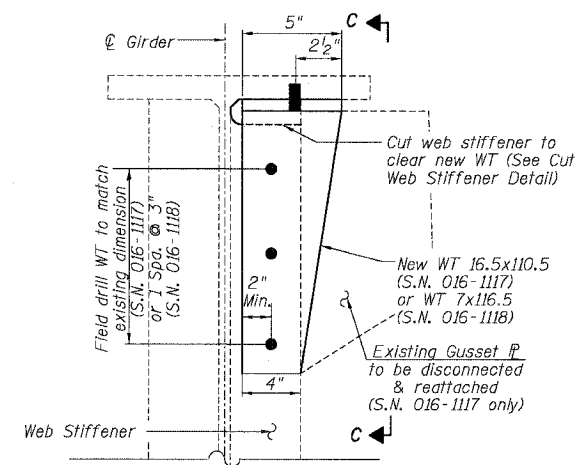
**TYPE I-2**



**SECTION B-B**

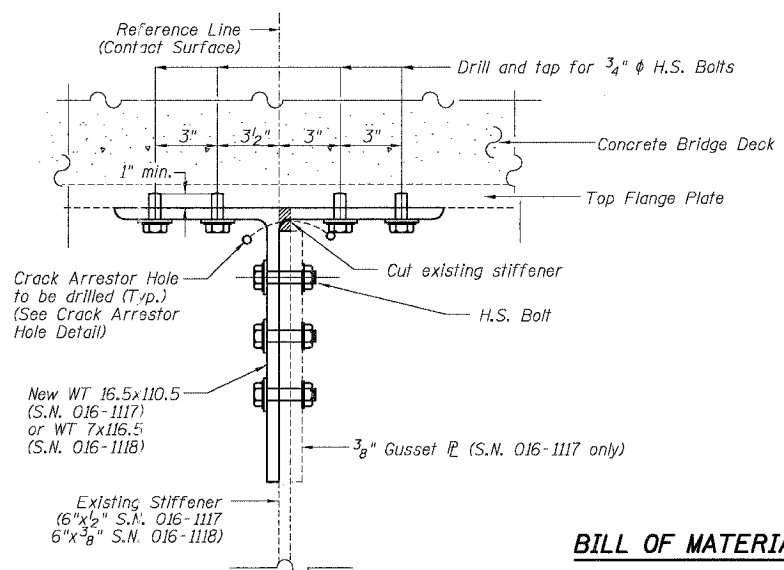


(SN 016-1117)



**PARTIAL ELEVATION**

**TYPE I-3**

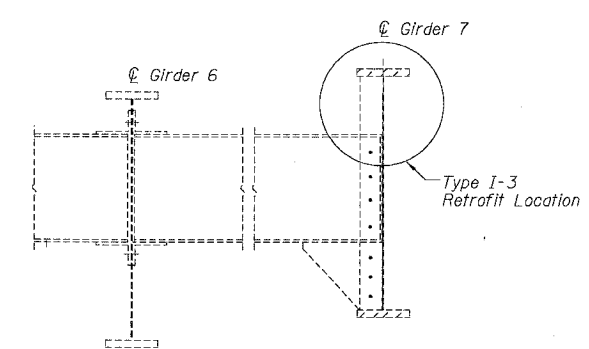


**SECTION C-C**

**BILL OF MATERIAL**

Item	Unit	Quantity
Structural Steel Repair	Pound	1,085

**EXISTING TYPICAL INTERIOR CROSS FRAME**



**EXISTING TYPICAL INTERIOR DIAPHRAGM**  
(SN 016-1118)

Notes: This repair work at S.N. 016-1117 shall require temporary lane closure of West 26th Street in accordance with Highway Standard 701501.

**DETAIL A FATIGUE RETROFIT TYPE I REPAIR**

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NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
STRUCTURAL STEEL REPAIR  
DETAIL A

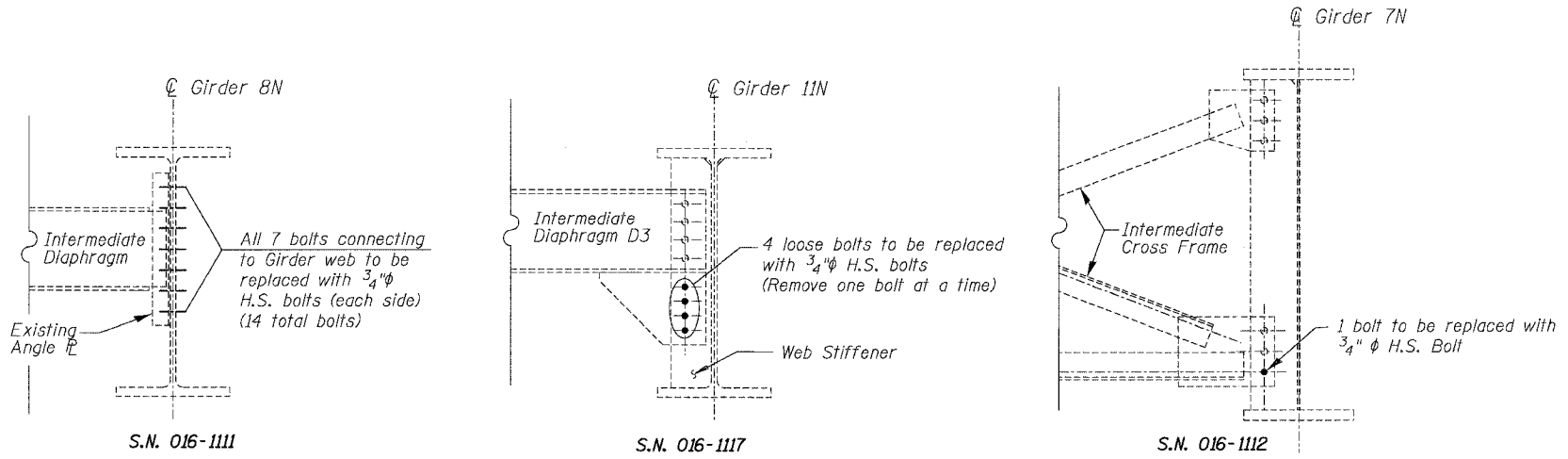
SCALE: NTS  
DATE: 7/22/2005

DRAWN BY: BDC  
CHECKED BY: BLU

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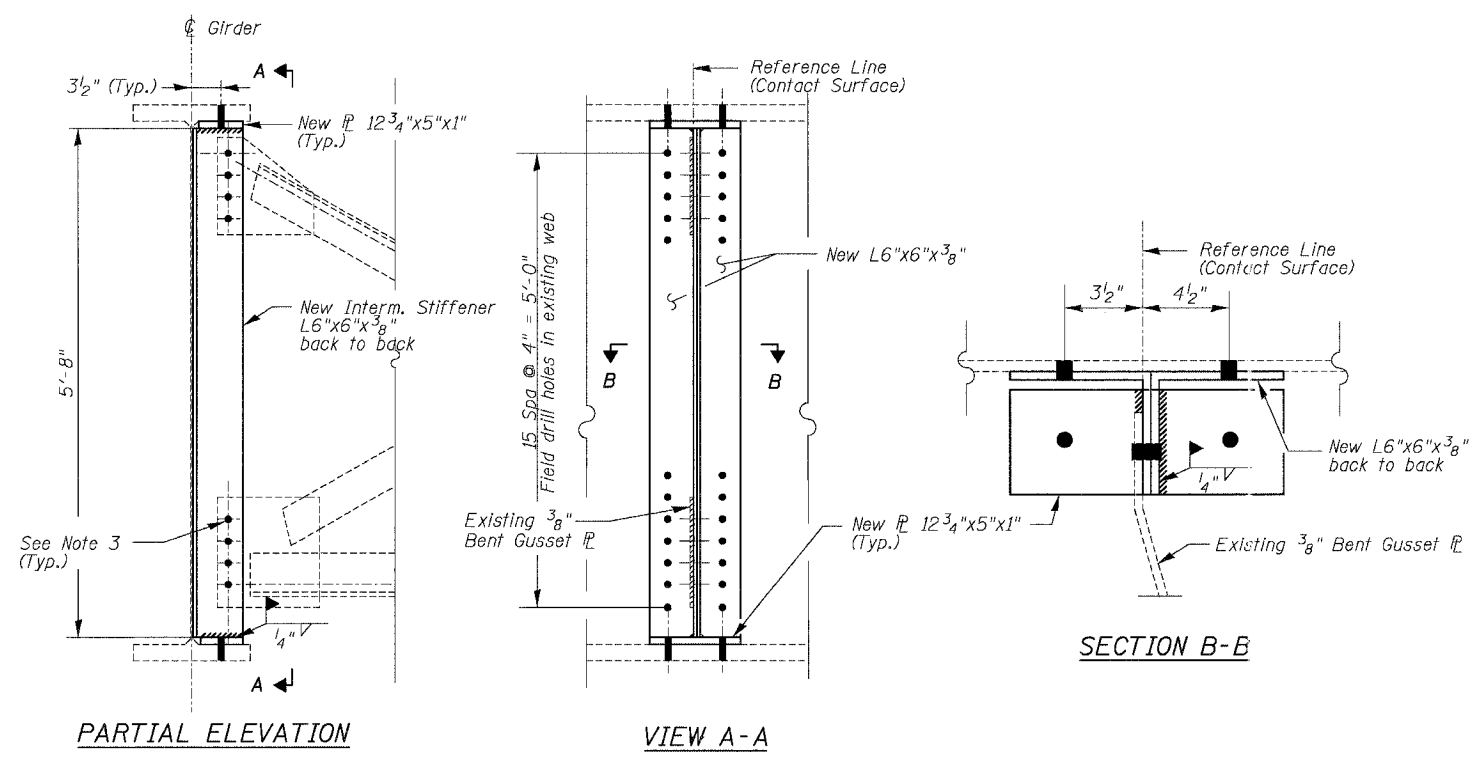
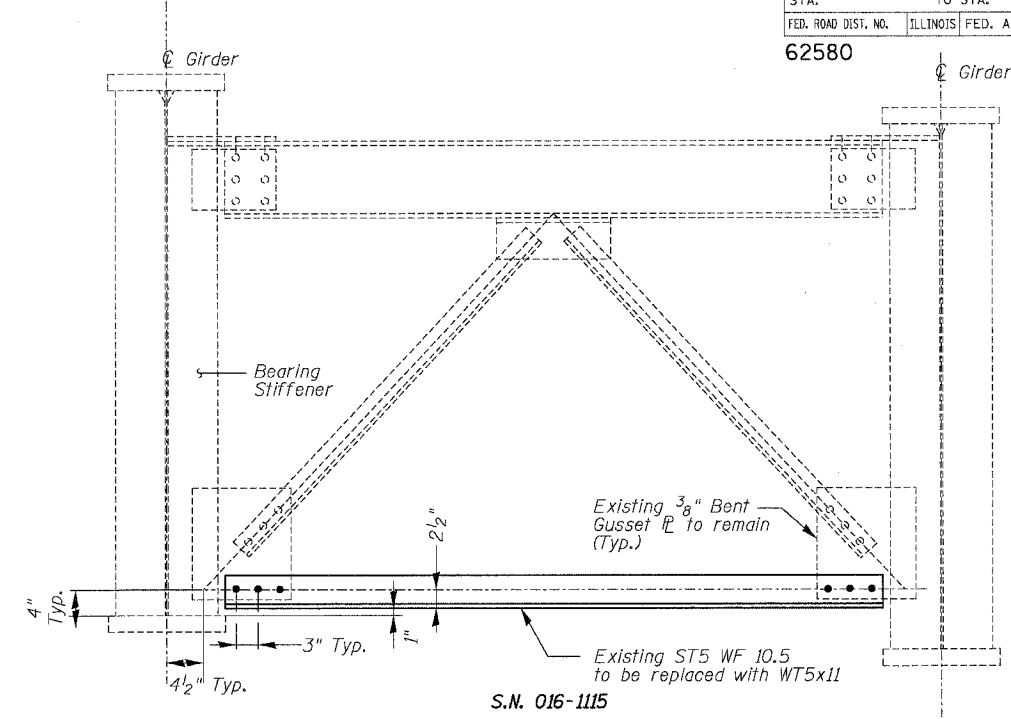


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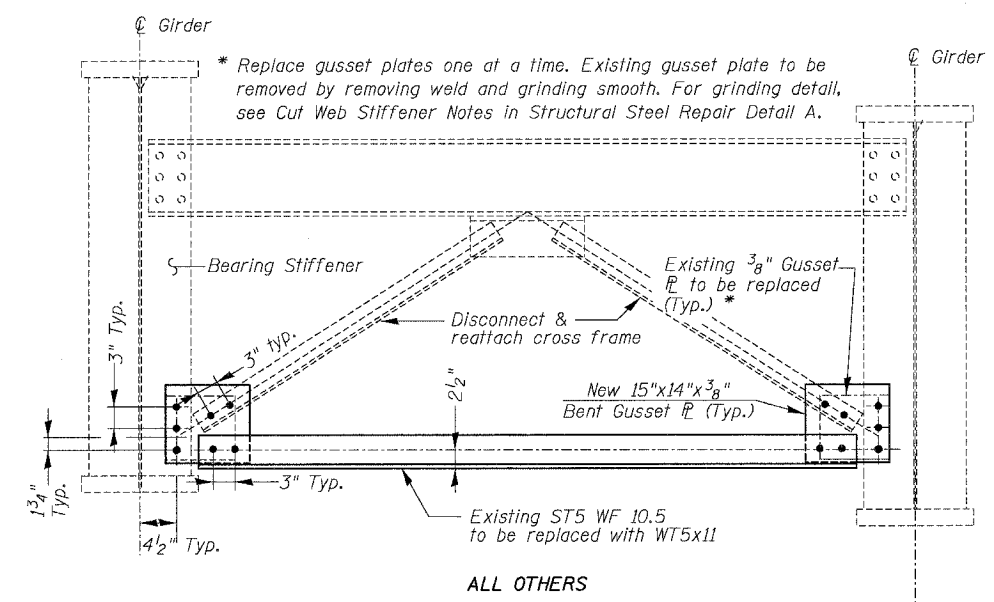
Notes: This work at S.N. 016-1117 shall require temporary sidewalk closure in accordance with Highway Standard 701801.

**DETAIL B BOLT REPLACEMENT**  
(Looking North)



**DETAIL D STIFFENER REPLACEMENT**

- Notes:
1. Remove existing stiffener prior to install new bolted stiffener. See Structural Steel Repair Detail A for Cut Web Stiffener Detail.
  2. New stiffener to be vertical & 90 degrees to web.
  3. For gusset plate connections, bolt holes shall be field drilled to match existing locations or as directed by Engineer. For location where gusset plate is not present (S.N. 016-1114, Girder 1N of Span 3), no connection bolt and hole is required.



**DETAIL F BRACING MEMBER REPLACEMENT**

Notes: This replacement work shall require temporary lane closure of South Canal Street in accordance with Highway Standard 701501.

**BILL OF MATERIAL**

Item	Unit	Quantity
Structural Steel Repair	Pound	1,380

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 STRUCTURAL STEEL REPAIR  
 DETAILS B, D & F

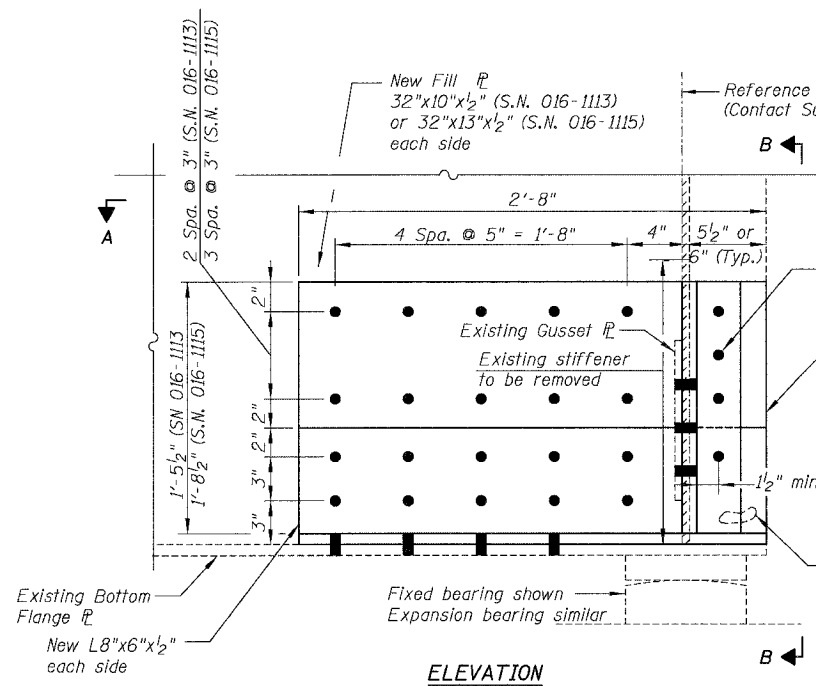
SCALE: NTS  
 DATE: 7/22/2005

DRAWN BY: BDC  
 CHECKED BY: BLU

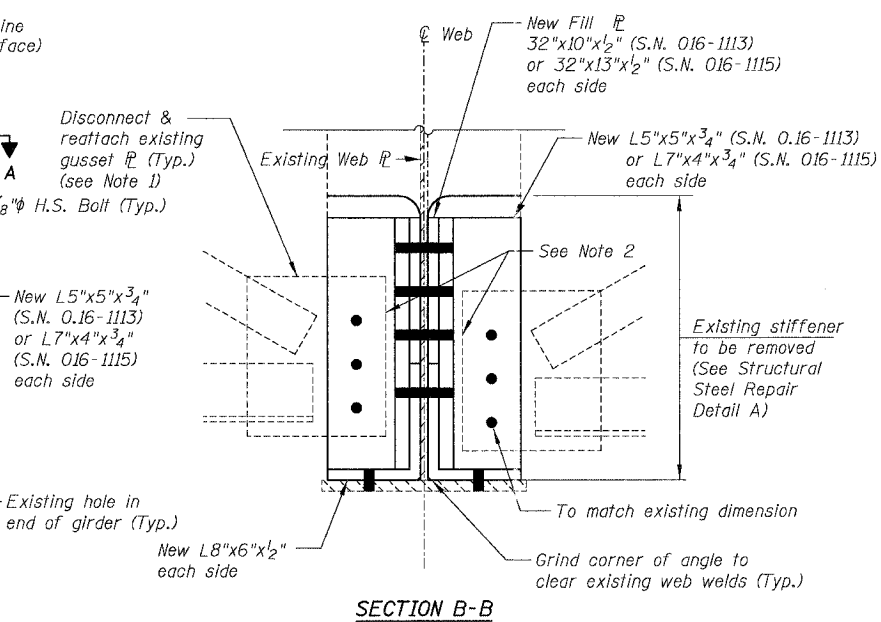
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F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-02BF	COOK	419	246
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

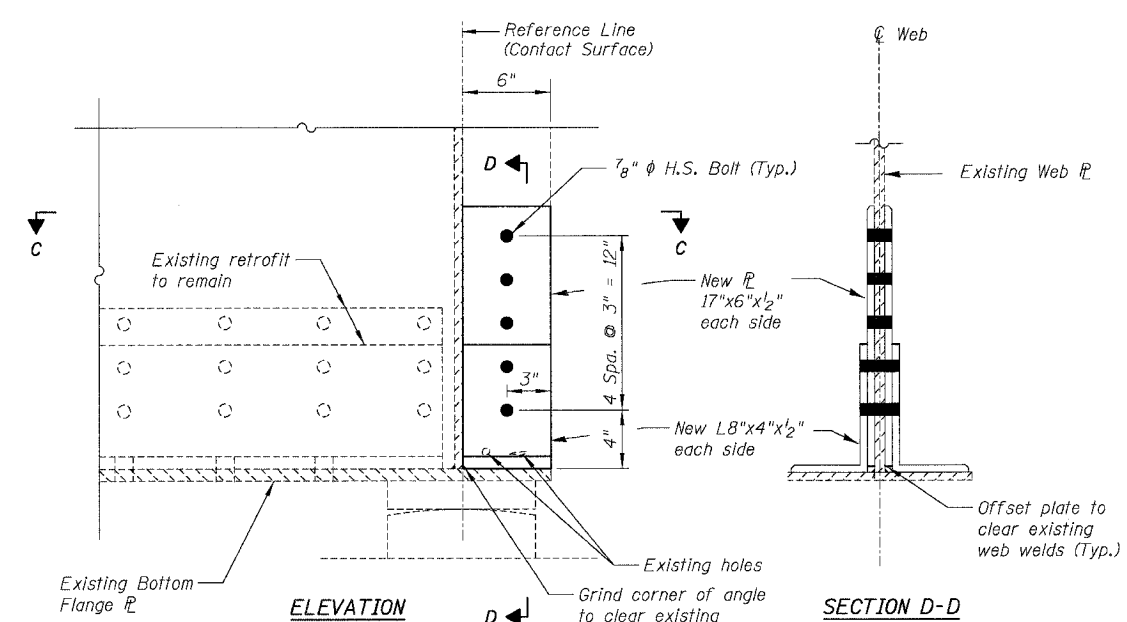
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ELEVATION

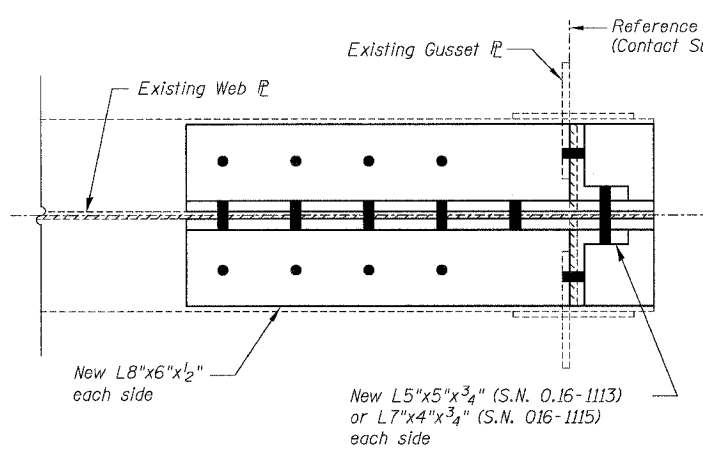


SECTION B-B  
(SN 016-1113)

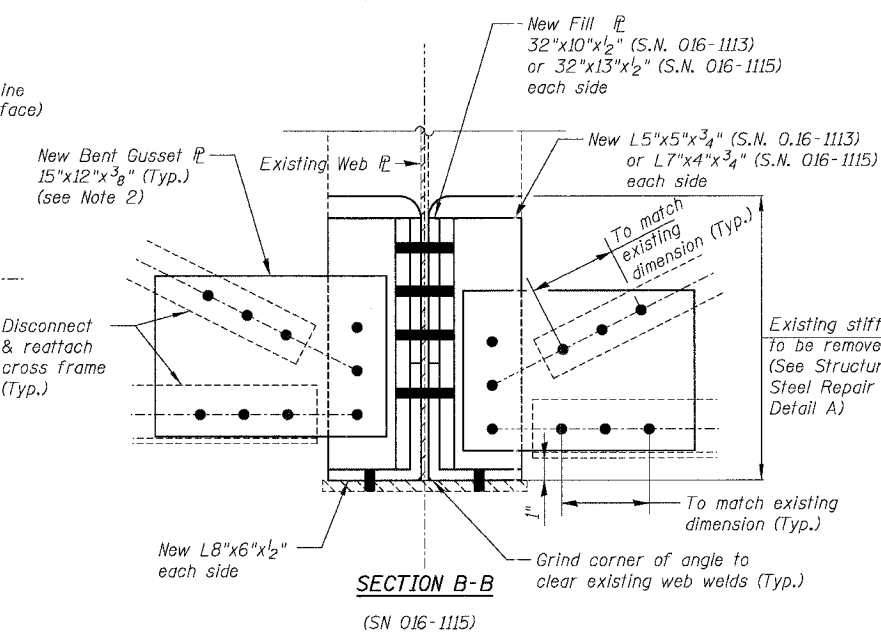


ELEVATION

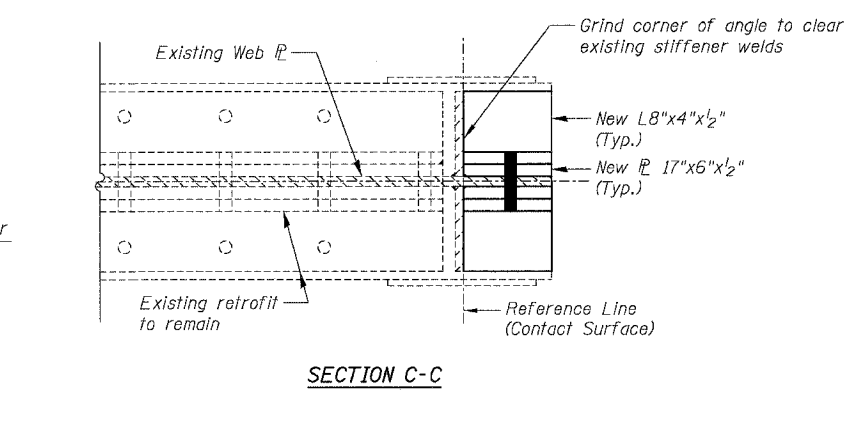
SECTION D-D



SECTION A-A



SECTION B-B  
(SN 016-1115)



SECTION C-C

Notes:

- All new bolts for this repair work shall be 7/8" phi H.S. bolts.
- Shorten existing gusset plate to clear near L leg as needed.
- For locations where end cross frame is present on one side only (S.N. 1115, Span 21, Pier 21, Girder 1N, 4N, 5N & 8N), no new gusset plate shall be replaced on that side.
- This repair work at S.N. 016-1115 shall require temporary closure of Union and Archer Avenues in accordance with Highway Standard 701501.

**TYPE C-1**  
(All Others)

**TYPE C-2**  
(SN 016-1112)

**DETAIL C END OF GIRDER REPAIR**

**BILL OF MATERIAL**

Item	Unit	Quantity
Structural Steel Repair	Pound	3,755

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
STRUCTURAL STEEL REPAIRS  
DETAIL C

SCALE: NTS  
DATE: 7/22/2005

DRAWN BY: BDC  
CHECKED BY: BLU

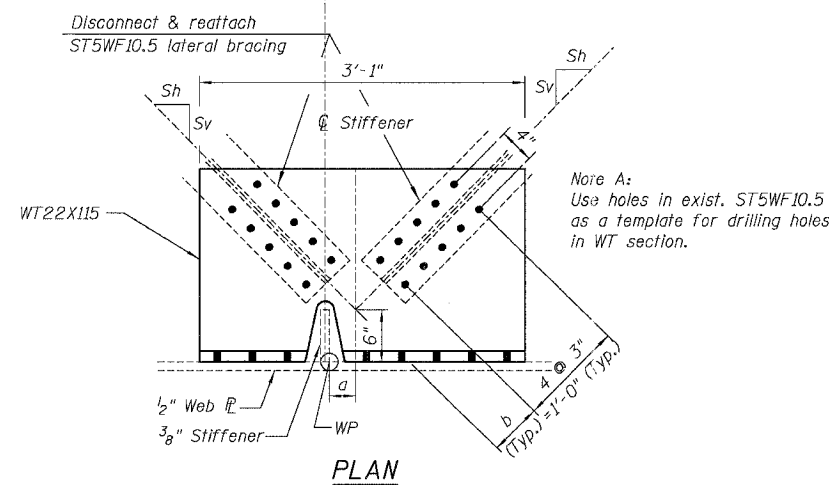
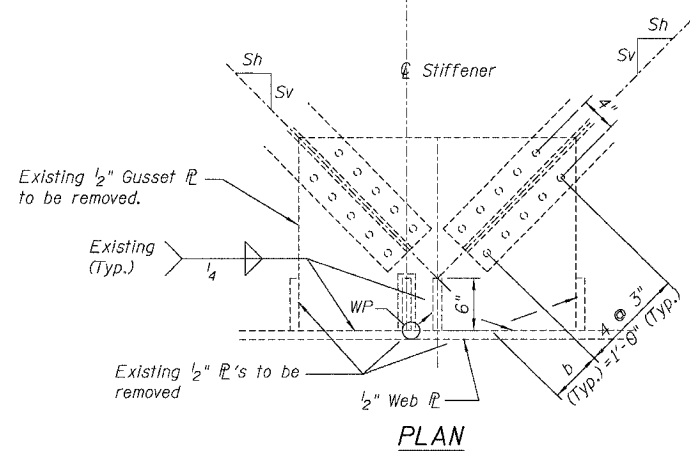
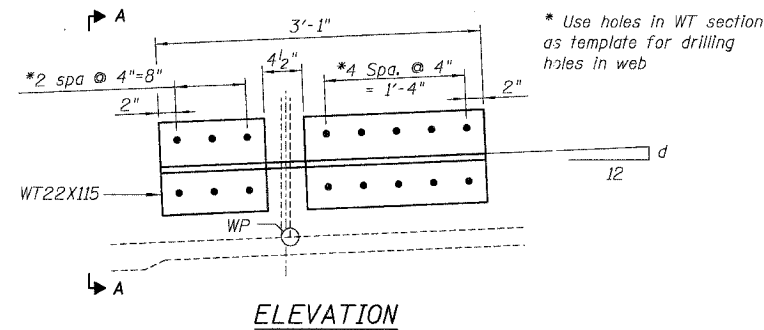
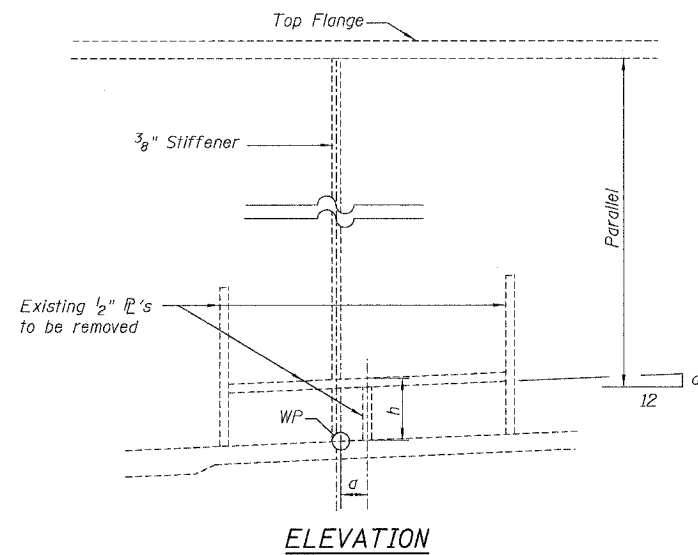
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**HOAN-TYPE CONNECTION DETAIL DIMENSIONS**

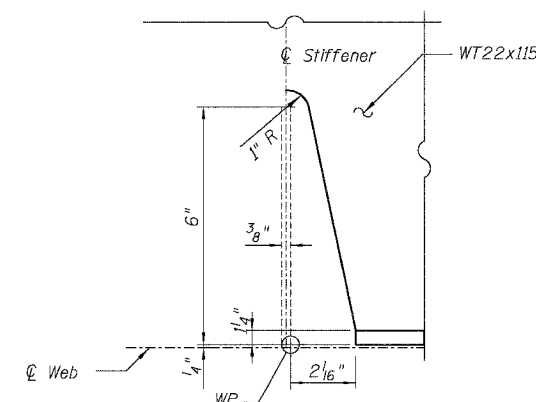
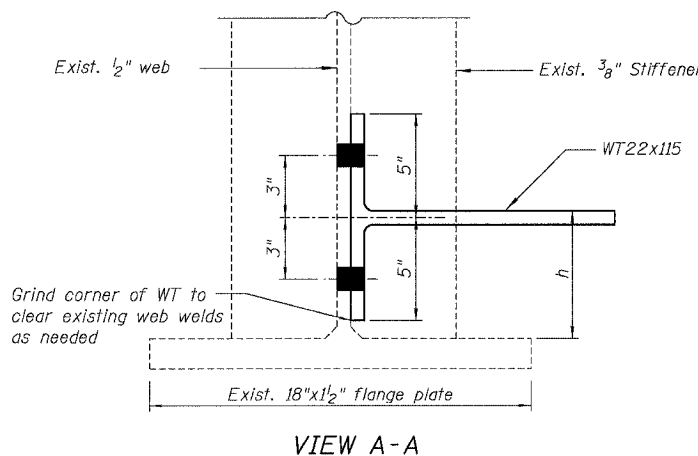
Structure Number	Span	Girder No	a**	b	Sh	Sv	h	d
016-1114	1	14	3"	6 1/16"	12	7	6 7/8"	5/8
		15	-3 1/2"	6 1/2"	12	7	9 3/16"	5/8
		16	-3 3/4"	6"	11 13/16"	12	6 3/8"	1/16
		17	3 1/4"	6"	11 13/16"	12	10 1/8"	1/16
		18	-3 9/16"	6"	11 13/16"	12	7 1/2"	1/16
		19	3 1/4"	6"	11 13/16"	12	11 9/16"	5/8
016-1070	1	20	-3 13/16"	6"	11 13/16"	12	6 3/8"	5/8
		21	3 1/4"	6"	11 13/16"	12	10 3/16"	5/8
016-1070	1	22	-2 3/16"	6"	12	10 7/8"	6 3/8"	5/8
		23	3 1/6"	5 5/16"	12	10 7/8"	10 5/16"	5/8
016-1114	3	14	3 1/6"	5 9/16"	12	7	6 1/2"	9/16
		15	-3 7/16"	5 9/16"	12	7	6 3/8"	9/16
		16	-3 1/4"	6"	11 13/16"	12	6 3/8"	1/2
		17	3 5/16"	6"	11 13/16"	12	6 1/2"	1/2
		18	-3 3/4"	6"	11 13/16"	12	7 1/16"	9/16
		19	3 5/16"	6"	11 13/16"	12	6 5/16"	9/16
016-1070	3	20	-3 1/4"	6"	11 13/16"	12	7 1/2"	1/2
		21	3 1/4"	6"	11 13/16"	12	7 3/8"	1/2
		22	-4 1/8"	6"	12	10 7/8"	6 3/8"	1/2
		23	3 1/4"	5 5/16"	12	10 7/8"	6 1/16"	1/2
		24	3 1/4"	5 5/16"	12	10 7/8"	6 1/16"	1/2
		25	3 5/16"	6"	12	6 13/16"	6 7/16"	1/2

\*\* "+" for north offset from WP, and "-" for south offset from WP.



**EXISTING CONNECTION DETAIL**

**PROPOSED CONNECTION DETAIL**



**PROCEDURE FOR REPAIR DETAIL**

1. Remove existing horizontal gusset plate as shown. The minimum distance from cut to face of web shall be the larger of 1/4" or web to gusset P weld size, with removal of remaining material by grinding as described below. The cut shall be made vertically through the gusset without angling the cut towards the web. Equipment and method of cutting shall be approved by the Engineer. Any method of removal to be used shall ensure that no damage is done to the existing web, vertical stiffener or welds connecting these elements. Cutting shall be done in a manner such that the paint on the opposite face of the web is not damaged. If damage occurs, the damaged area shall be repainted at the contractor's expense and procedures shall be modified to prevent damage at subsequent removal locations.
2. Remove material between cut and web by grinding and grind smooth at web surface. Web plate surfaces shall have a roughness average (Ra) of 250u in. or less. Grinding equipment shall be approved by the Engineer. The grinding operation should not gouge the girder web P.
3. The web surface at the modification shall be inspected using dye penetrant or magnetic particle methods. Any cracks found shall be identified and reported to the Bureau of Bridges and Structures for further disposition.

**BILL OF MATERIAL**

Item	Unit	Quantity
Structural Steel Repair	Pound	8,240

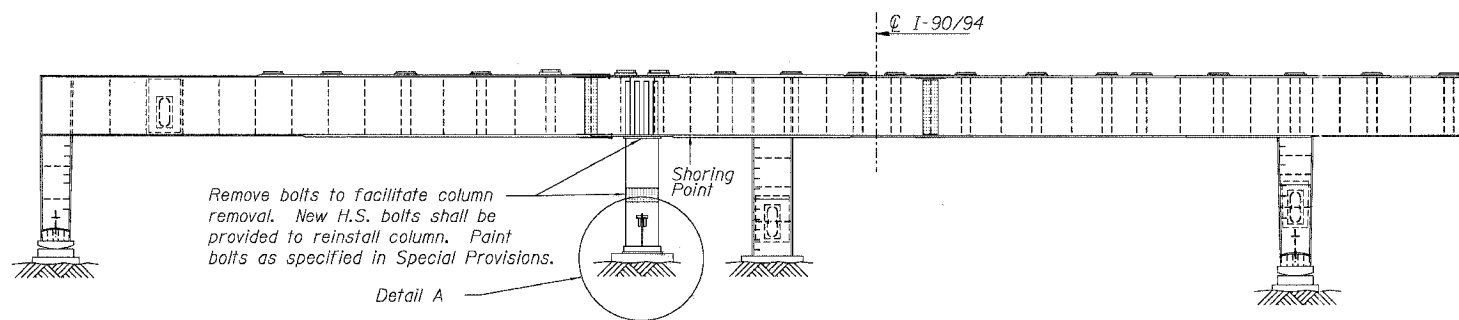
REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION F.A.I. 94/90 (DAN RYAN EXPRESSWAY) NB DAN RYAN ELEVATED BRIDGE REPAIR FROM 15TH TO 28TH STREETS STRUCTURAL STEEL REPAIR DETAIL E
NAME	DATE	

SCALE: NTS  
DATE: 7/22/2005  
DRAWN BY: BDC  
CHECKED BY: BLU

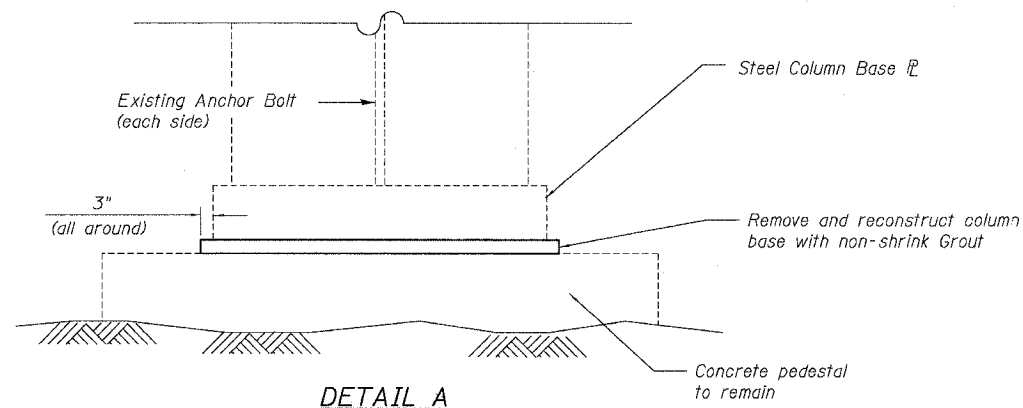
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F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	248
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

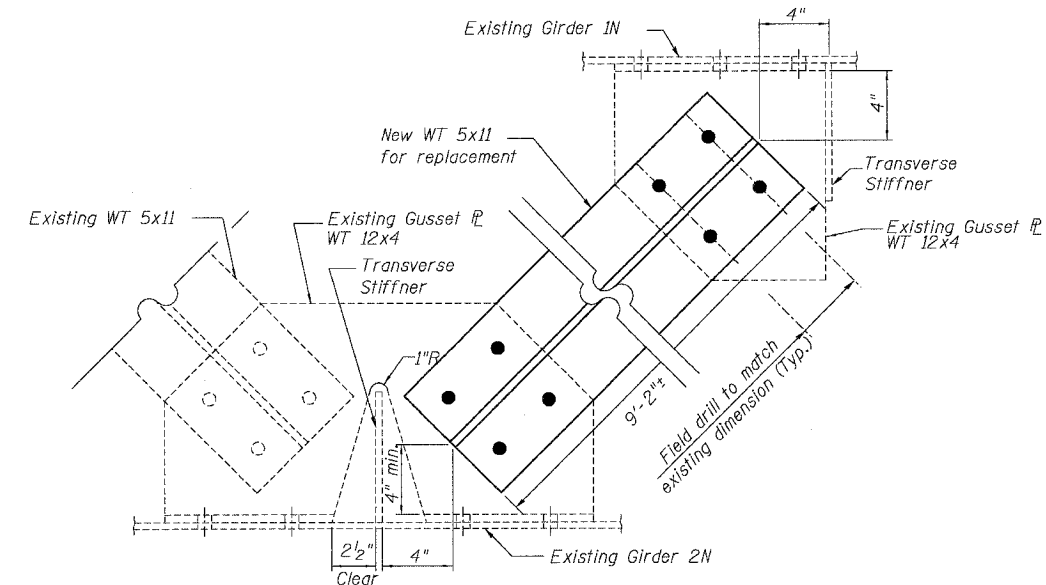
62580



**PIER 2 - WEST ELEVATION**  
(Looking East)



**DETAIL A**



**DETAIL H BRACING MEMBER REPLACEMENT**

(S.N. 016-1116, Span 3)

Notes: This work shall require temporary sidewalk and lane closure of South Canal Street in accordance with Highway Standards 701801 & 701501.

**SUGGESTED PROCEDURE FOR REPAIR DETAIL**

- Shore steel cap beam to provide temporary support for live load and impact only. A minimum of two support points shall be located at intermediate stiffener locations under cap beam webs as shown in the plan. See Special Provisions for Temporary Shoring and Cribbing and Table for Min. Jacking Capacity. Shoring and cribbing cap should provide gap at column base to facilitate removal.
- Unbolt column at cap connection and mid-height splice and remove. Unbolt anchor bolts and lift bottom portion of column to facilitate existing grout pad removal.
- Remove existing grout and roughen existing pedestal over area of new grout base. Care shall be used not to damage anchor bolts.
- Once removal and preparation have been completed to the satisfaction of the Engineer, reinstall column parts. Provide new H.S. bolts for all removed or loosened bolts. Re-use of existing bolts will not be allowed. Leave anchor bolts unfastened.
- Form and pour new non-shrink grout base. Ensure full contact with column base and allow grout to properly cure.
- Remove shoring and cribbing when directed by the Engineer. Re-install anchor nuts and tighten as directed by the Engineer. Paint new bolts and nuts as necessary.

**NOTES**

- This repair work shall be completed during Stage I of the mainline deck rehabilitation and prior to any deck work in Spans 2 & 3 of S.N. 016-1116. Adjacent railroad yard truck ramp shall be maintained. Contractor shall coordinate with Railroad and Rard for partial ramp closure.
- Contractor can provide alternative scheme to remove existing grout without complete removal of column. The alternative scheme shall be approved by Engineer prior to construction.
- Costs of furnishing, erecting and removal of structural members, traffic control, and materials required in this work shall be included in the cost of "Column Repair". Temporary Shoring and Cribbing shall be paid separately.

**SUPPORTING REACTIONS & MINIMUM JACKING CAPACITY**

S/N	Pier	(LL+I) (k)	Min. Jack. Capacity (k) (Each)
016-1116	2	640	480

**BILL OF MATERIAL**

Item	Unit	Quantity
Structural Steel Repair	Pound	115
Column Repair	Lump Sum	1
Temporary Shoring and Cribbing	Each	1

**DETAIL G COLUMN BASE REPAIR**

SN 016-1116, Pier 2

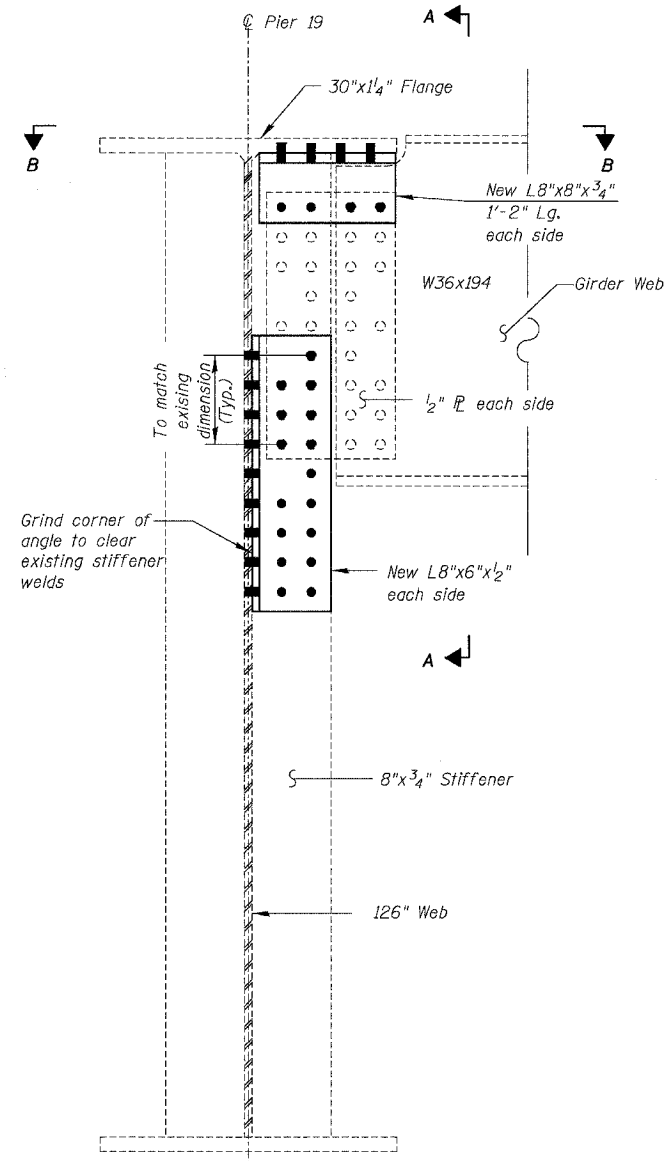
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REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
STRUCTURAL STEEL REPAIR  
DETAIL G & H

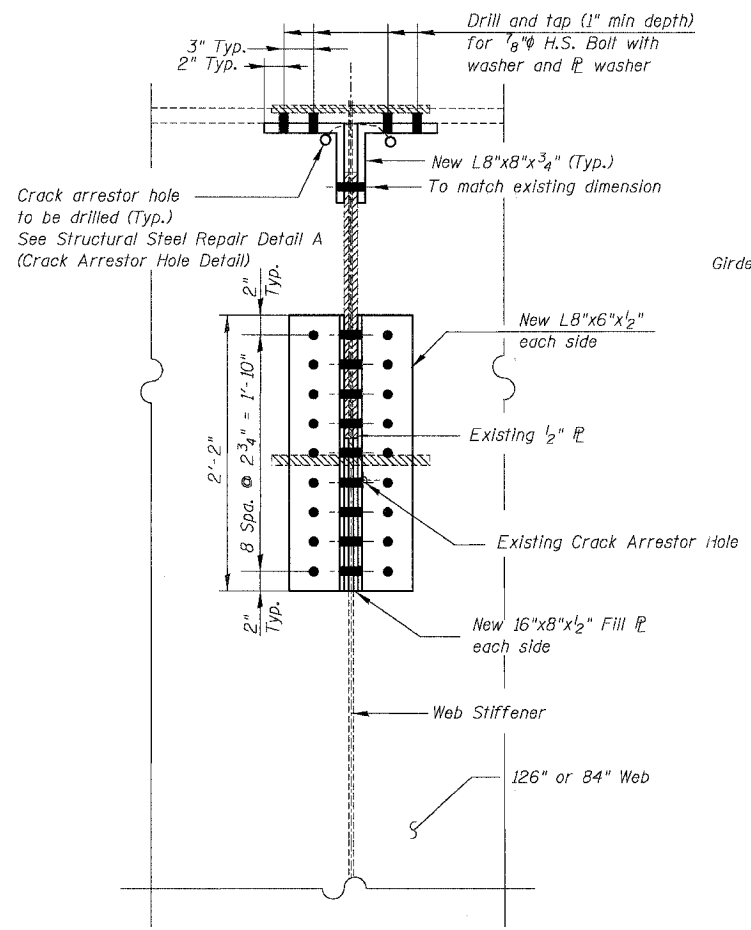
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DATE: 8/12/2005  
DRAWN BY: BDC  
CHECKED BY: BLU

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**PARTIAL ELEVATION**  
(S.N. 016-1117)

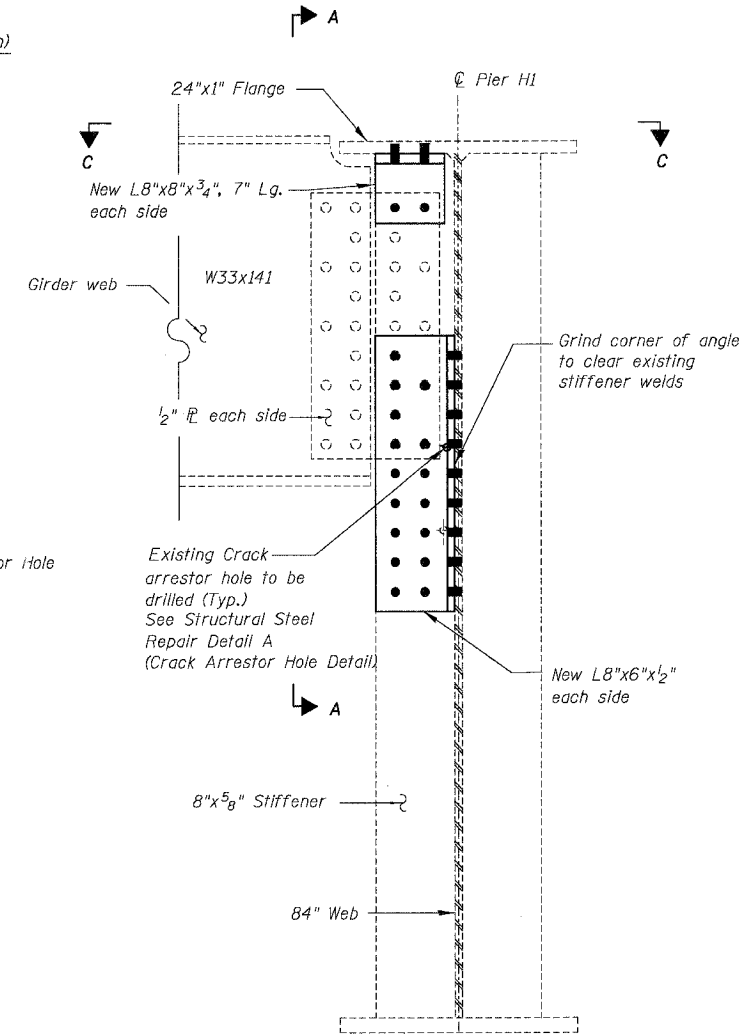
- Notes:
1. All H.S. bolts for this repair work shall be  $\frac{7}{8}$ "  $\phi$ .
  2. Prior to removal of any existing bolts, girder to be repaired shall be temporarily supported (see Table for Support Reactions & min. Jacking Capacity, and see Special Provision for Temporary Shoring and Cribbing).
  3. Drill a crack arrestor hole where a crack is present without a arrestor hole at crack tip (see Detail A for Crack Arrestor Hole Detail). Cost shall be included in "Structural Steel Repair".
  4. This work at S.N. 016-1117 shall require temporary sidewalk closure on the corner of Princeton Avenue and 26th Street, in accordance with Highway Standard 701801.



**SECTION A-A**

**SUPPORTING REACTIONS & MINIMUM JACKING CAPACITY**

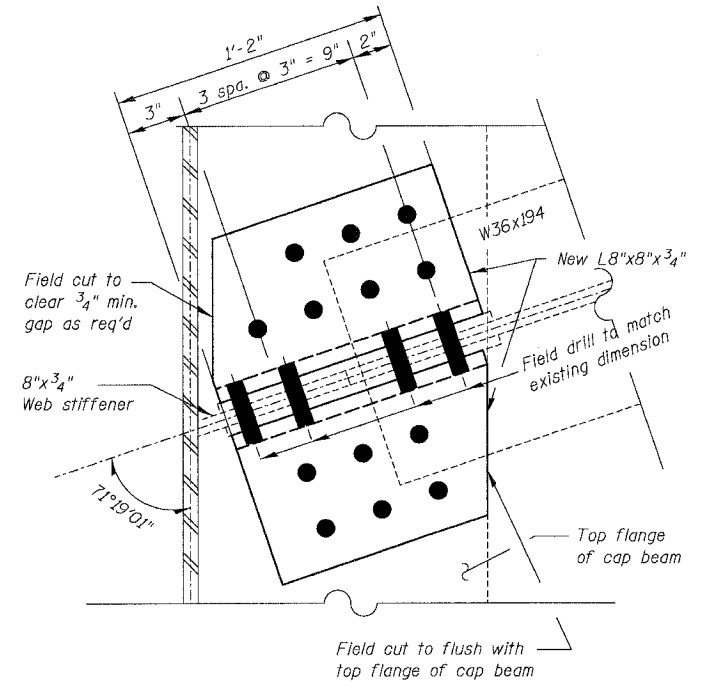
S/N	Pier	$DL + \frac{1}{2}(LL+I)$ (k)	Min. Jack. Capacity (k)
016-1117	19	74	115
016-1118	H1	124	190



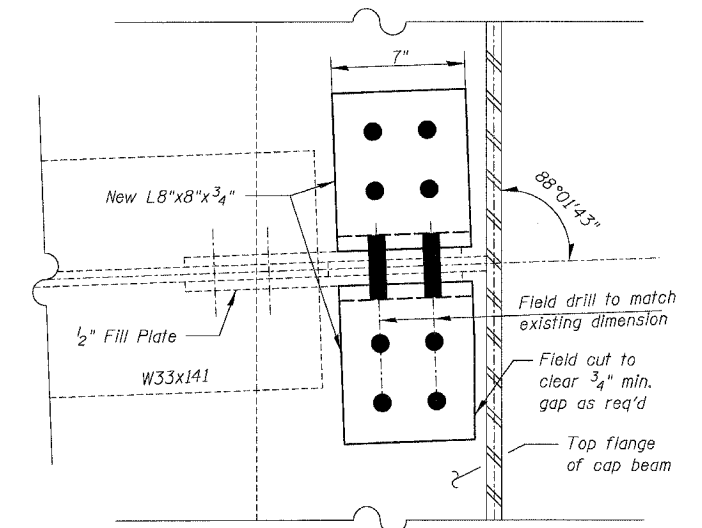
**PARTIAL ELEVATION**  
(S.N. 016-1118)

**BILL OF MATERIAL**

Item	Unit	Quantity
Structural Steel Repair	Pound	895
Temporary Shoring & Cribbing	Each	2



**VIEW B-B**  
(Looking through top flange)



**VIEW C-C**  
(Looking through top flange)

**DETAIL I FATIGUE RETROFIT TYPE II REPAIR**

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REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
STRUCTURAL STEEL REPAIR  
DETAIL I

SCALE: NTS  
DATE: 8/12/2005

DRAWN BY: BDC  
CHECKED BY: BLU

11/5/05

**ELASTOMERIC BEARING SCHEDULE (TYPE I AND II)**

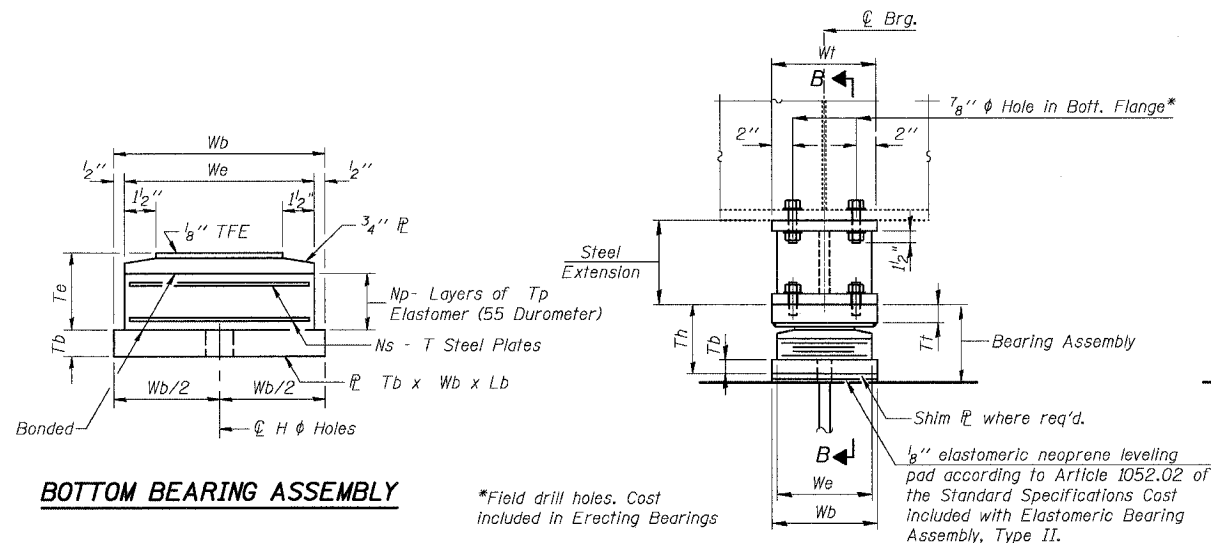
F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	250
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

62580

**SUPPORTING REACTIONS AND MINIMUM JACKING CAPACITY**

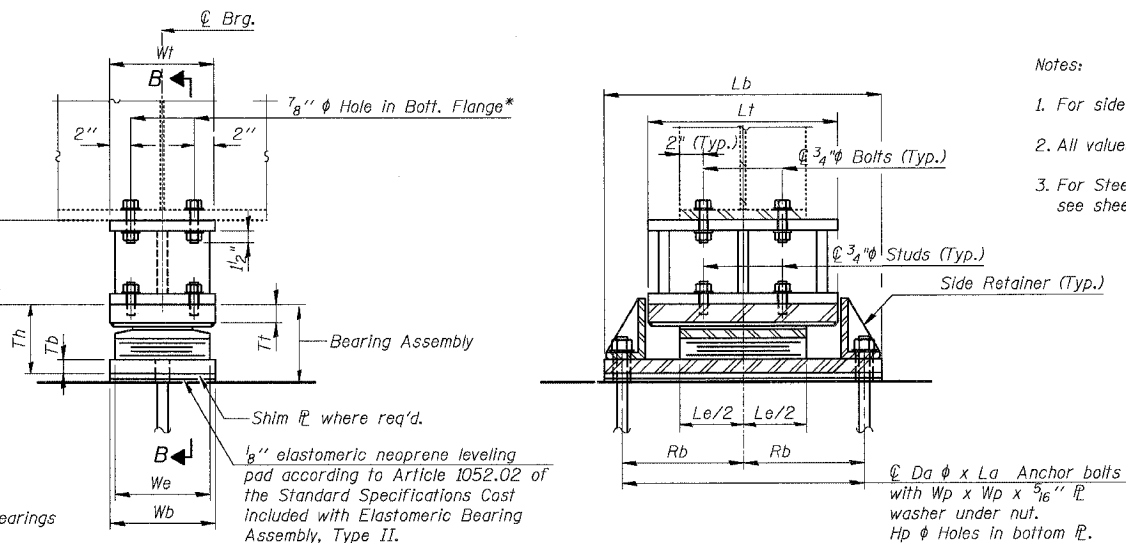
S/N	Pier	DL + 1/2(LL+I)	Min. Jack. Capacity (k)
016-0137	8	130	195
	10	113	170
	12	126	190
	14	126	190
	16	113	170
	20	130	195
016-1110	2	231	350
	5	173	260
	22	136	205
016-1111	3	161	245
	4	161	245
	6	161	245
	8	161	245
	9	161	245
	11	161	245
016-1116	1	480	720
	(IGN2-4)	365	550

Bearing Location	Pier	Type	Bearing Designation	No. Req.'d	Th	Elastomeric Bearing						Top Plate				Bottom Plate			Anchor Bolts					Side Retainer						
						Wb	Le	Te	Tp	Np	Ts	Ns	Wt	Lt	Ttn	Tts	Rt	Wb	Lb	Tb	Da	La	Rb	H	Wp	y	z	t	Hp	v
016-0137	8	I	12-b	11	5 1/16	12	18	2 13/16	9/16	4	3/16	3	13	20	3	3	9	-	-	-	1 1/2	18	12 7/8	-	3	2 3/4	5 1/2	5/8	1 3/4	5 3/4
	10	I	11-a	11	5	11	16	2 3/8	1/2	4	1/8	3	12	18	2 7/16	2 13/16	8	-	-	-	1 1/4	15	11 1/2	-	2 3/4	2 3/8	4 3/4	1/2	1 1/2	5 1/4
	12	I	12-b	10	5 7/16	12	18	2 13/16	9/16	4	3/16	3	13	20	2 7/16	2 13/16	9	-	-	-	1 1/2	18	12 7/8	-	3	2 3/4	5 1/2	5/8	1 3/4	5 3/4
	14	I	12-b	10	5 7/16	12	18	2 13/16	9/16	4	3/16	3	13	20	2 7/16	2 13/16	9	-	-	-	1 1/2	18	12 7/8	-	3	2 3/4	5 1/2	5/8	1 3/4	5 3/4
	16	I	12-b	10	5 7/16	12	18	2 13/16	9/16	4	3/16	3	13	20	2 7/16	2 13/16	9	-	-	-	1 1/2	18	12 7/8	-	3	2 3/4	5 1/2	5/8	1 3/4	5 3/4
	20	I	11-a	11	5	11	16	2 3/8	1/2	4	1/8	3	12	18	2 7/16	2 13/16	8	-	-	-	1 1/4	15	11 1/2	-	2 3/4	2 3/8	4 3/4	1/2	1 1/2	5 1/4
22	I	12-b	11	5 7/16	12	18	2 13/16	9/16	4	3/16	3	13	20	2 7/16	2 13/16	9	-	-	-	1 1/2	18	12 7/8	-	3	2 3/4	5 1/2	5/8	1 3/4	5 3/4	
016-1110	2	I	15-c	8	7 1/2	15	24	4 1/2	3/4	5	3/16	4	16	26	3	3	12	-	-	-	1 1/2	18	15 7/8	-	3	2 3/4	5 1/2	5/8	1 3/4	7 3/8
	5	I	14-c	13	7 5/16	14	22	4 3/16	11/16	5	3/16	4	15	24	3	3	11	-	-	-	1 1/2	18	14 7/8	-	3	2 3/4	5 1/2	5/8	1 3/4	7 1/4
016-1111	3	II	13-b	8	8 1/2	13	20	3 15/16	5/8	4	3/16	3	14	22	3	3	10	14	33 1/4	1 1/2	1 1/2	18	13 7/8	2	3	2 3/4	5 1/2	5/8	1 3/4	6 1/8
	4	I	13-b	8	6 1/2	13	20	3 1/16	5/8	4	3/16	3	14	22	3	3	10	-	-	-	1 1/2	18	13 7/8	-	3	2 3/4	5 1/2	5/8	1 3/4	6
	6	I	13-b	8	6 1/2	13	20	3 1/16	5/8	4	3/16	3	14	22	3	3	10	-	-	-	1 1/2	18	13 7/8	-	3	2 3/4	5 1/2	5/8	1 3/4	6
	8	II	13-b	8	8 1/2	13	20	3 15/16	5/8	4	3/16	3	14	22	3	3	10	14	33 1/4	1 1/2	1 1/2	18	13 7/8	2	3	2 3/4	5 1/2	5/8	1 3/4	6 1/8
	9	I	13-b	8	6 1/2	13	20	3 1/16	5/8	4	3/16	3	14	22	3	3	10	-	-	-	1 1/2	18	13 7/8	-	3	2 3/4	5 1/2	5/8	1 3/4	6
11	I	13-b	8	6 1/2	13	20	3 1/16	5/8	4	3/16	3	14	22	3	3	10	-	-	-	1 1/2	18	13 7/8	-	3	2 3/4	5 1/2	5/8	1 3/4	6	



\*Field drill holes. Cost included in Erecting Bearings

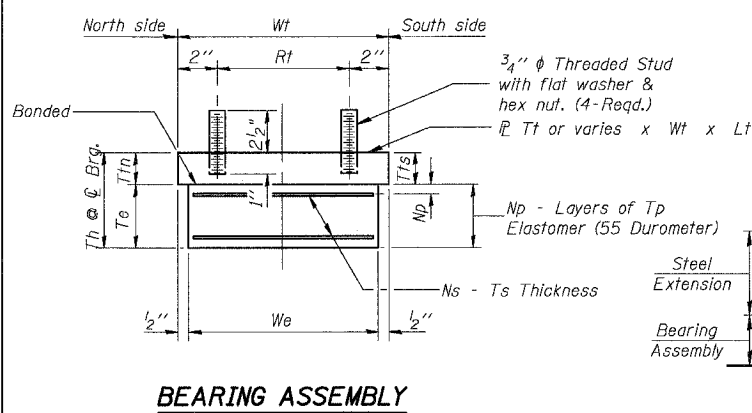
**ELEVATION AT PIER SECTION B-B TYPE II ELASTOMERIC EXP. BRG.**



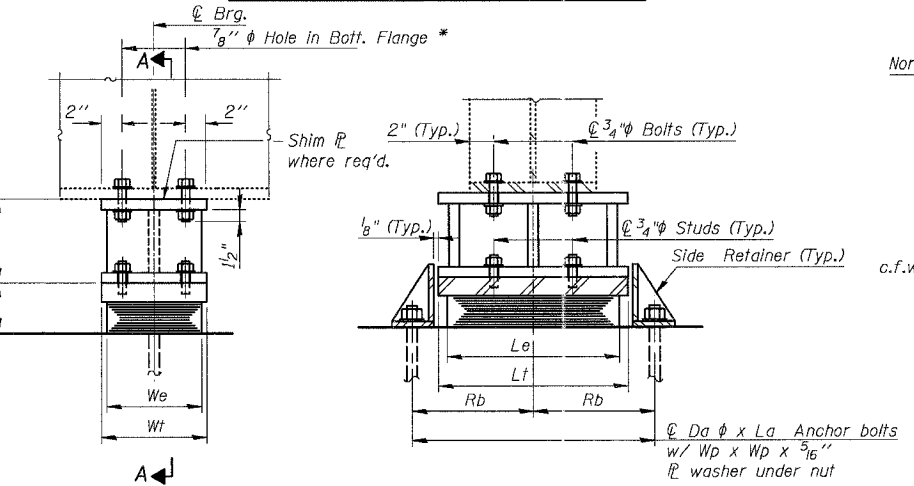
- Notes:
- For side retainer detail see sheet no 251
  - All values in Elastomeric Bearing Table are inches.
  - For Steel Extension details and dimensions see sheet no 251

**PROCEDURE TO JACK AND REMOVE EXISTING BEARINGS**

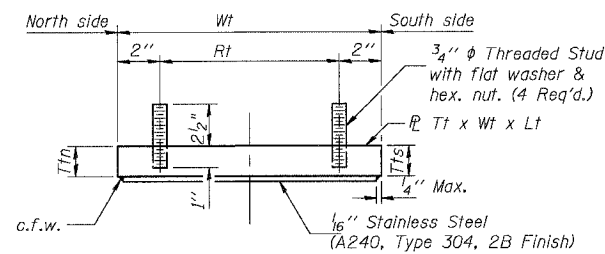
- See Special Provision "Jack and Remove Existing Bearings"
- Jacking and removing existing bearings, including top and bottom plates and lead plates, shall be done after deck scarification is completed and before the new overlay is poured.
- See table for support reactions and min. jacking capacities.
- For jacking capacity see table above.
- Burn existing anchor bolts flush with the top of existing concrete surface. Grind existing anchor bolts smooth and seal with epoxy. Cost is included with "Jack and Remove Existing Bearings".
- Top plates welded to the bottom flange of beams shall be removed using air arc-methods. Grind smooth all weld material remaining on the bottom flange.
- The new bearings shall be in place and jacks shall be lowered before the overlay is poured.
- Notes applicable to bearing manufacturer are provided for information only. Erection contractor shall only refer to notes and details applicable for existing bearing removal and installation of provided bearings and extensions.
- If the analysis submitted by the contractor for the jacking / temporary support system to be used shows temporary stiffeners are required to prevent web crippling or buckling the stiffeners shall be steel and bolted to the web. If the stiffeners are not required, hardwood timbers shall be installed tightly between the top and bottom flange to prevent flange rotation.



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



**TOP BEARING ASSEMBLY FOR TYPE II BEARINGS**



REVISIONS	DATE
NAME	

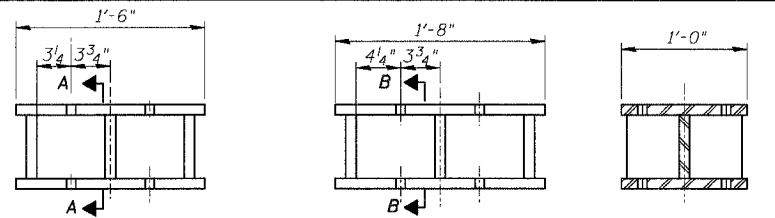
ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 ELASTOMERIC BEARING DETAILS

SCALE: NTS  
 DATE: 7/22/2005

DRAWN BY: LM  
 CHECKED BY: BLU

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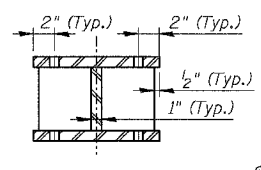
F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	251
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
62580				



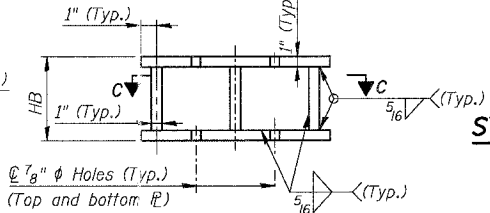
**TYPE A**  
20 REQ'D

**TYPE B**  
38 REQ'D

**SECTION A-A**  
TYPE A, D, E



**TYPICAL SIDE VIEW**



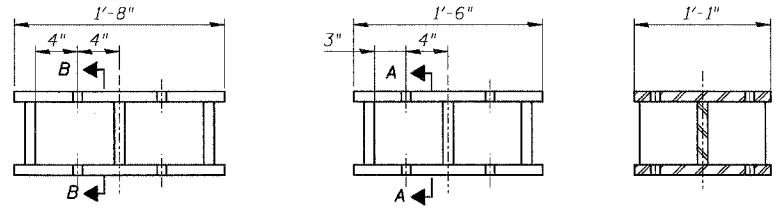
**TYPICAL ELEVATION**

**STEEL EXTENSION TYPE SCHEDULE S/N 016-0137**

PIER NO.	BEAM NO.											
22	21	20	19	18	17	16	15	14	13	12		
8	C	B	B	B	B	B	B	B	B	B	A	A
10	D	A	A	A	A	A	A	A	A	A		
	42	41	40	39	38	37	36	35	34	33		
12	C	B	B	B	B	B	B	B	B	B		
14	C	B	B	B	B	B	B	B	B	B		
	62	61	60	59	58	57	56	55	54	53		
16	E	C	C	C	C	C	C	C	C	C		
	84	83	82	81	80	79	78	77	76	75	74	
20	D	A	A	A	A	A	A	A	A	A		
22	C	B	B	B	B	B	B	B	B	B		

**HB SCHEDULE S/N 016-0137**

PIER NO.	BEAM NO.											
22	21	20	19	18	17	16	15	14	13	12		
8	9 1/16	9 1/16	9 1/16	9 1/16	9 1/16	9 7/8	9 13/16	9 1/16	9 1/16	9 1/16	9 1/16	9 1/16
10	10 1/2	10 1/2	10 1/2	10 1/2	10 1/2	10 1/2	11 1/2	10 1/16	10 1/2	10 1/2		
	42	41	40	39	38	37	36	35	34	33		
12	10 1/16	10 1/16	10 1/16	10 1/16	10 1/16	10 7/16	10 1/4	10 1/16	10 1/16	10 1/16		
14	10 1/16	10 1/16	10 1/16	10 1/16	10 1/16	10 7/16	10 1/4	10 1/16	10 1/16	10 1/16		
	62	61	60	59	58	57	56	55	54	53		
16	10 1/16	10 1/16	10 1/16	10 1/16	10 1/16	10 1/16	10 1/16	10 1/16	10 1/16	10 1/16		
	84	83	82	81	80	79	78	77	76	75	74	
20	10 1/2	10 1/2	10 1/2	10 1/2	10 1/2	11	10 1/2	10 1/2	10 1/2	10 1/2		
22	10 1/16	10 1/16	10 1/16	10 1/16	10 1/16	10 3/16	10 5/16	10 1/16	10 1/16	10 1/16	10 1/16	

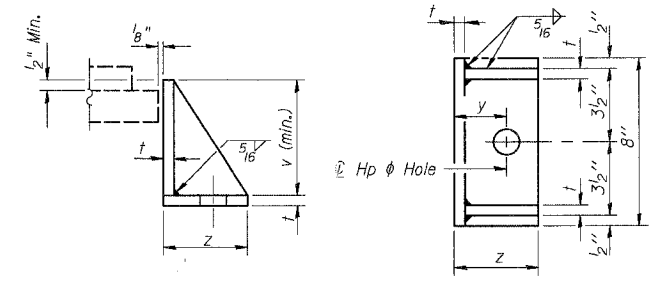


**TYPE C**  
13 REQ'D

**TYPE D**  
2 REQ'D

**SECTION B-B**  
TYPE B, C

**FABRICATED STEEL EXTENSION DETAILS**



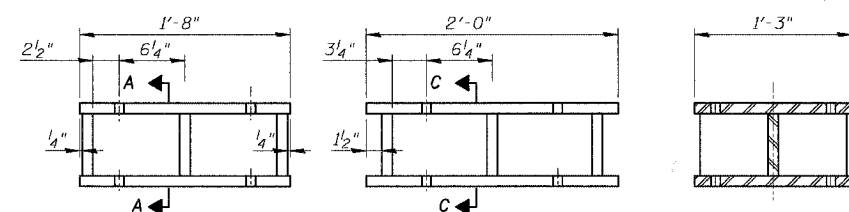
**SIDE RETAINER**  
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.

**STEEL EXTENSION TYPE SCHEDULE S/N 016-1110**

PIER NO.	BEAM NO.											
28	27	26	25	24	23	22	21					
2	I	I	I	I	I	I	I					
	67	66	65	64	63	62	61	60	59	58	57	56
5	F	F	F	F	F	F	F	F	F	F	F	F

**HB SCHEDULE S/N 016-1110**

PIER NO.	BEAM NO.											
28	27	26	25	24	23	22	21					
2	11 7/8	11 7/8	11 7/8	11 7/8	11 7/8	11 7/8	11 7/8					
	67	66	65	64	63	62	61	60	59	58	57	56
5	9 1/16	9 1/16	9 1/16	9 1/16	9 1/16	9 1/16	9 1/16	9 1/16	9 1/16	9 1/16	9 1/16	9 1/16



**TYPE E**  
1 REQ'D

**TYPE F**  
13 REQ'D

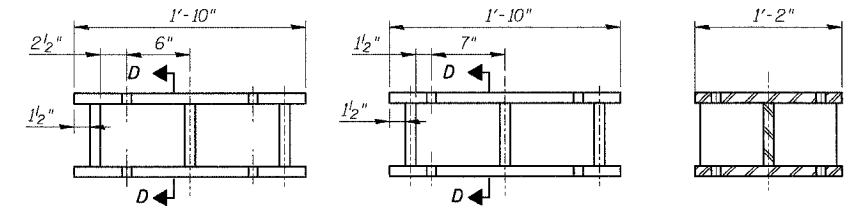
**SECTION C-C**  
TYPE F

**STEEL EXTENSION TYPE SCHEDULE S/N 016-1111**

PIER NO.	BEAM NO.							
3	GR1	GR2	GR3	GR4	GR5	GR6	GR7	GR8
4	G	G	G	G	G	G	G	G
6	G	G	G	G	G	G	G	G
8	G	G	G	G	G	G	G	G
9	G	G	G	G	G	G	G	G
11	G	G	G	G	G	G	G	G

**HB SCHEDULE S/N 016-1111**

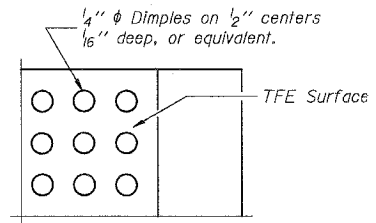
PIER NO.	BEAM NO.							
	GR1	GR2	GR3	GR4	GR5	GR6	GR7	GR8
3	9 7/16	9 7/16	9 7/16	9 7/16	9 7/16	9 9/16	9 9/16	9 9/16
4	11 13/16	11 13/16	11 13/16	11 13/16	11 13/16	11 13/16	11 13/16	11 13/16
6	11 13/16	11 13/16	11 13/16	11 13/16	11 13/16	11 13/16	11 13/16	11 13/16
8	9 7/16	9 7/16	9 7/16	9 7/16	9 7/16	9 9/16	9 9/16	9 9/16
9	11 13/16	11 13/16	11 13/16	11 13/16	11 13/16	11 13/16	11 13/16	11 13/16
11	11 13/16	11 13/16	11 13/16	11 13/16	11 13/16	11 13/16	11 13/16	11 13/16



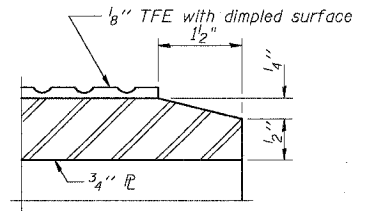
**TYPE G**  
45 REQ'D

**TYPE H**  
3 REQ'D

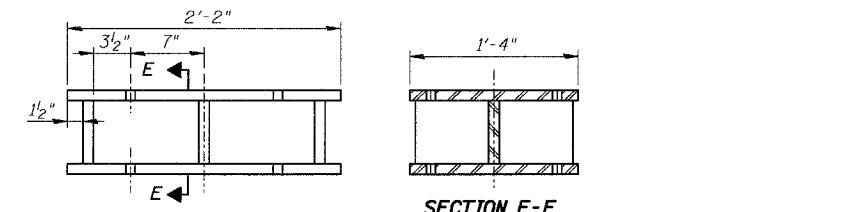
**SECTION D-D**  
TYPE G, H



**PLAN-TFE SURFACE**



**SECTION THRU TFE**



**TYPE I**  
8 REQ'D

**SECTION E-E**  
TYPE I

**FABRICATED STEEL EXTENSION DETAILS**

**Notes:**

- Prior to ordering any material, the contractor shall verify in the field all bearing height and shim thickness dimensions.
- Use holes in new bearings as template to field drill holes in existing girders.
- The orientation of the bearing in the field shall be coordinated with the slope of the steel beam.
- The 1/8" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.
- Bonding of 1/8" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

**BILL OF MATERIAL**

Item	Unif	Quantity
Erecting Elastomeric Bearing Assembly, Type I	Each	127
Erecting Elastomeric Bearing Assembly, Type II	Each	16
Anchor Bolts	Each	286
Jack and Remove Existing Bearings	Each	143

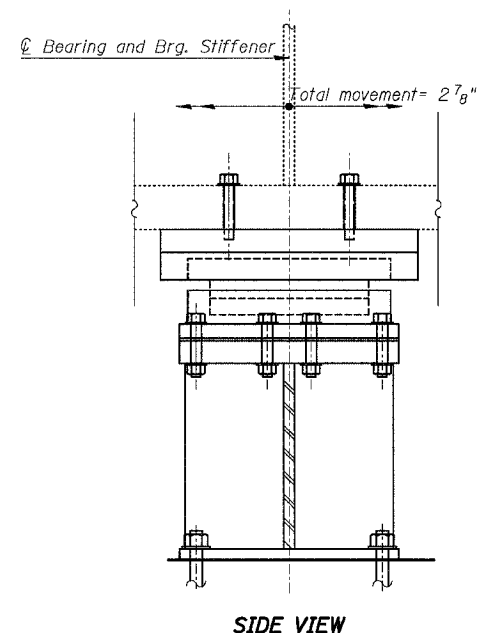
REVISIONS	DATE
NAME	

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**F.A.I. 94/90 (DAN RYAN EXPRESSWAY)**  
**NB DAN RYAN ELEVATED BRIDGE**  
**REPAIR FROM 15TH TO 28TH STREETS**  
**STEEL EXTENSION**  
**DETAILS**

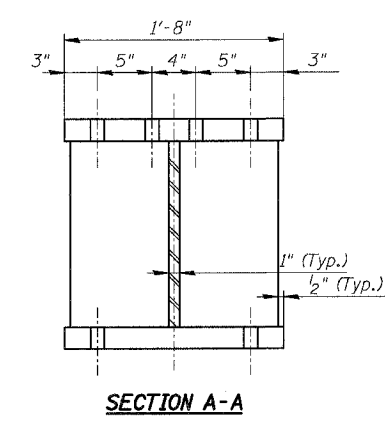
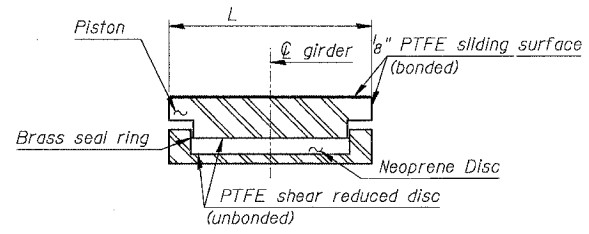
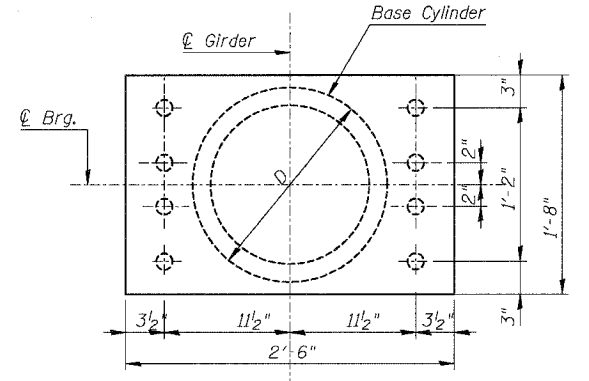
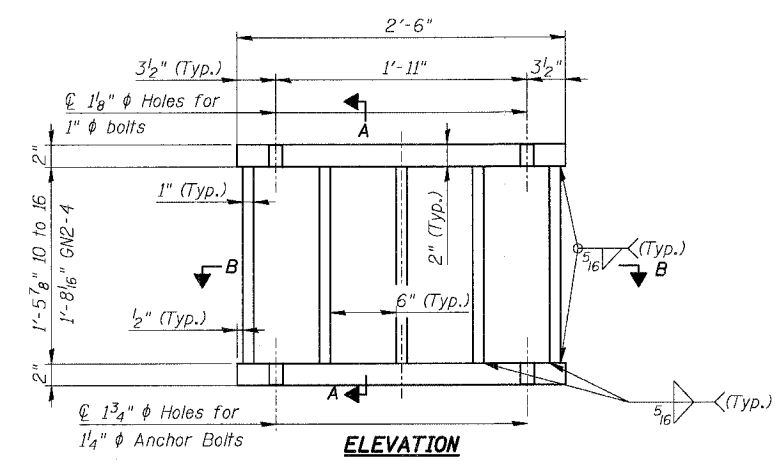
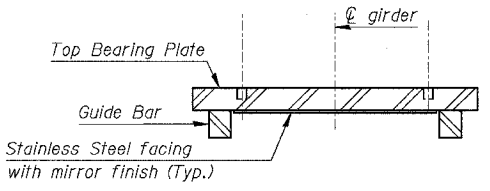
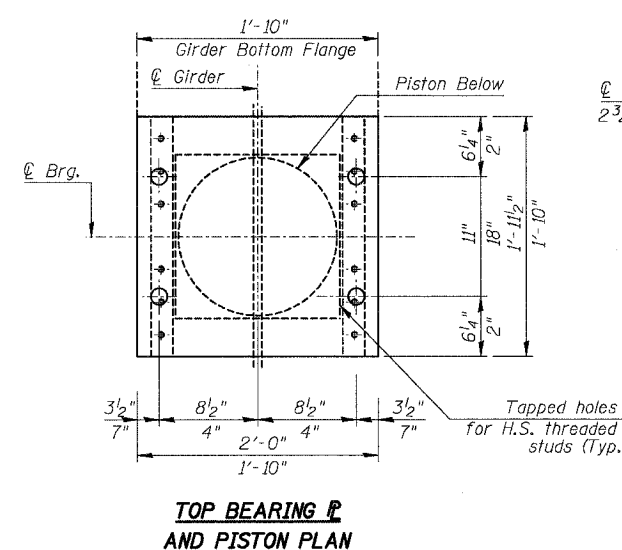
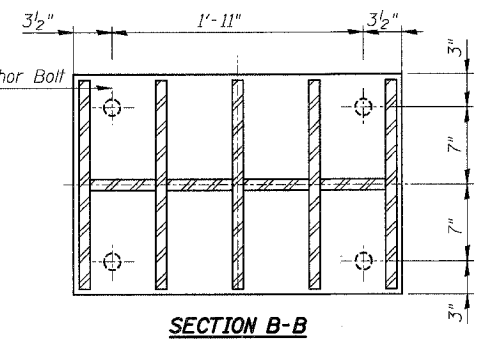
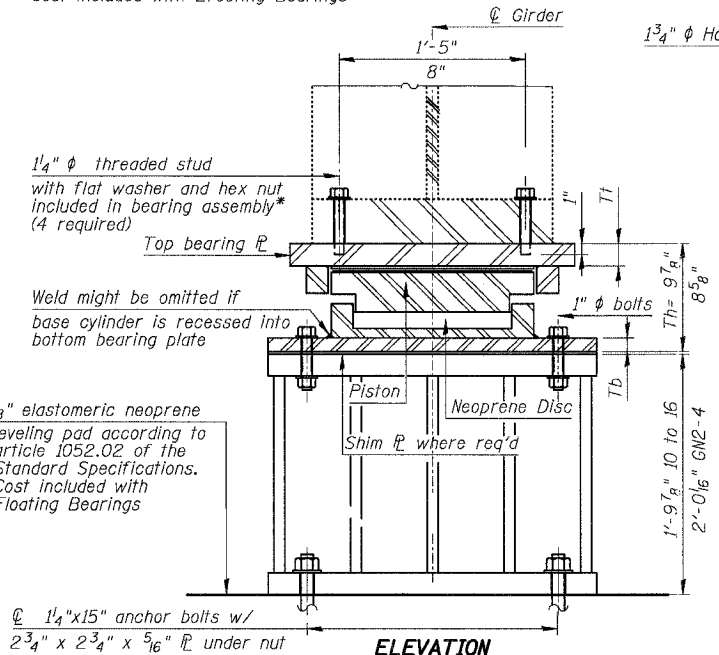
SCALE: NTS  
DATE: 7/22/2005

DRAWN BY: LM  
CHECKED BY: BLU

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\*Ream existing holes to 1 3/8"  
Cost included with Erecting Bearings



- Notes:
- The 1/8" TFE sheet shall be bonded directly to the piston with a two component medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MM-A-134, Type 1. The bond agent shall be applied to the full area of the contact surfaces.
  - Total Bearing Heights (Th) are based on values taken from a specific manufacturer's design tables. Actual bearing heights may differ from contract plans. Contractor to verify bearing heights and adjust steel extension height if required.
  - The Vertical Design Load in table is the actual controlling vertical service load.
  - Floating Bearings dimensions and details are based on the DS Brown Versiflex HLMR Uni Directional PMG series. Contractor shall make necessary modifications based on the actual bearings provided.
  - As alternates to the bolted connection shown, the guide bars may be connected to the top bearing plate by groove welds or the guide bar and top bearing may be fabricated as a single piece.
  - Bearing manufacturer shall coordinate with steel extension manufacturer in order to provide required height from top of pier to bottom of beam flange.
  - Notes applicable to bearing manufacturer are provided for information only. Erection contractor shall only refer to notes and details applicable for existing bearing removal and installation of provided bearings and extensions.
  - For Jacking procedure see sheet 250.

**SN 016-1116 - BILL OF MATERIAL**

Item	Unit	Quantity
Erecting Floating Bearing, Guided Exp., 550 Kips	Each	7
Erecting Floating Bearing, Guided Exp., 400 Kips	Each	3
Anchor Bolts	Each	40
Jack and Remove Existing Bearings	Each	10

**SN 016-1116 - FLOATING BEARING SCHEDULE**

Beam No.	Vertical Design Load, k	Lateral Design Load, k	Total Req'd Movement (in.)	Tt	Tb	Th	L	D
10-16	550	110	2 7/8	2 3/4	2	9 7/8	18 1/2	17 3/4
GN2-4	400	80	2 7/8	2	2	8 5/8	15	15

Dimensions are in inches.  
Beam numbers reference as-built drawings, see Framing Plans for cross reference.

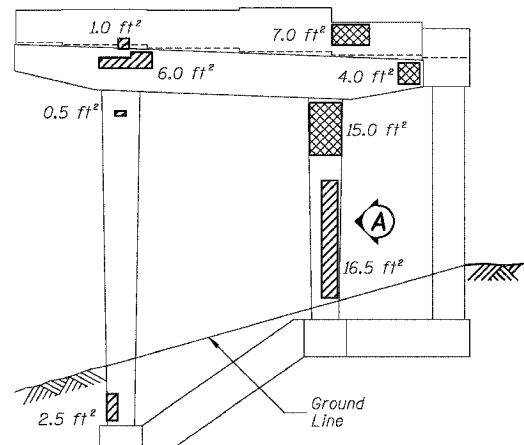
**FABRICATED STEEL EXTENSION DETAIL**  
TOTAL OF 10 REQ'D.

REVISIONS NAME	DATE	ILLINOIS DEPARTMENT OF TRANSPORTATION
		F.A.I. 94/90 (DAN RYAN EXPRESSWAY) NB DAN RYAN ELEVATED BRIDGE REPAIR FROM 15TH TO 28TH STREETS FLOATING BEARING DETAILS
		SCALE: NTS DRAWN BY: L.M. CHECKED BY: B.L.U.
		DATE: 8/12/2005

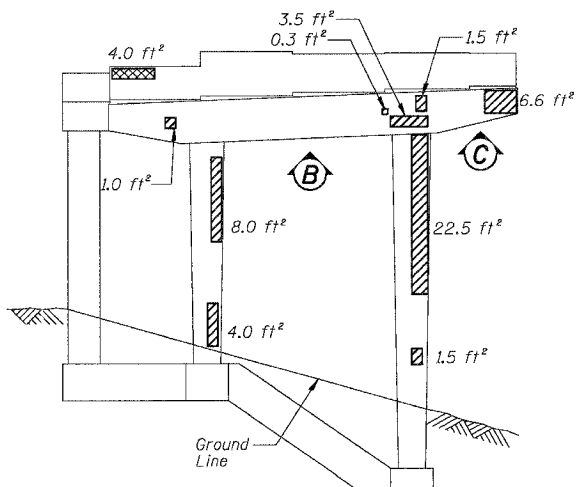
11/5/99 AM 8/11/2005



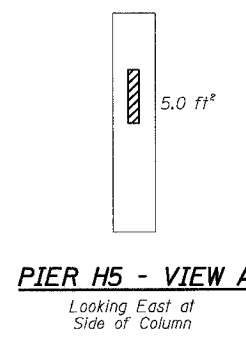
F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	253
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62580				



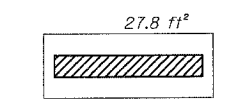
**PIER H5 - NORTH ELEVATION**  
(Looking South)



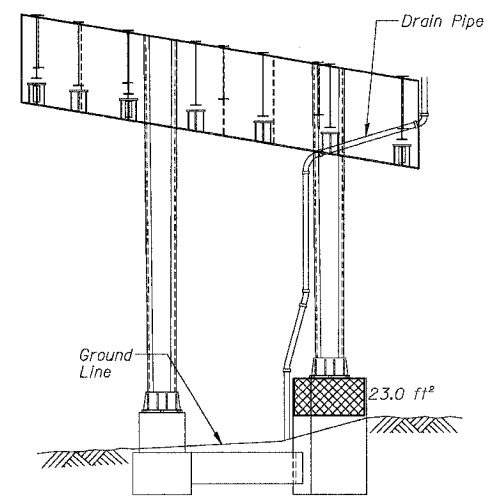
**PIER H5 - SOUTH ELEVATION**  
(Looking North)



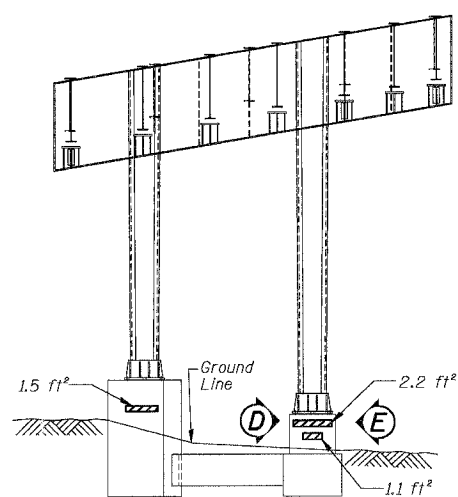
**PIER H5 - VIEW A**  
Looking East at Side of Column



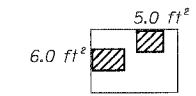
**PIER H5 - VIEW B**  
Looking up at Bottom of Cap



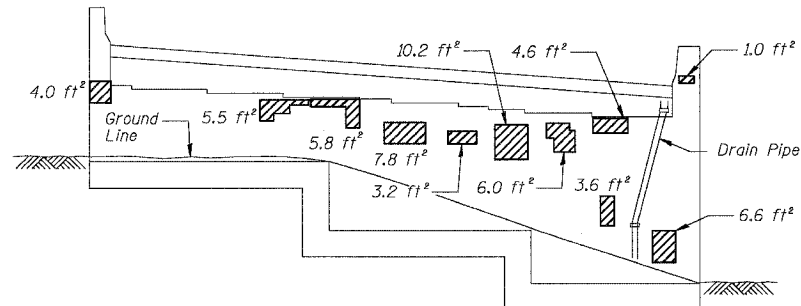
**PIER H3 - NORTH ELEVATION**  
(Looking South)



**PIER H3 - SOUTH ELEVATION**  
(Looking North)



**PIER H5 - VIEW C**  
Looking up at Bottom of Cap



**ABUTMENT H - NORTH ELEVATION**  
(Looking South)

**LEGEND**

- High Performance Enhanced Shotcrete
- Formed Concrete Repair (Depth Greater than 5")
- Cracks to be Epoxy Sealed
- View Indicator

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**Notes:**

- If top of pier cap concrete repairs extend under the bearings the Engineer shall determine if bearing removal is required to accomplish the repair. If directed to remove bearings, the Contractor shall jack and remove bearings according to the procedures outlined on sheet and the Special Provisions. The bearing removal and resetting will be paid at the contract unit price for "Jack and Remove Existing Bearings". New anchor bolts, if required, shall be provided as directed by the Engineer and will be paid at the contract unit price for "Anchor Bolts".
- For concrete repairs greater than 5 inches in depth at cantilevered pier caps, temporary support shall be provided by the Contractor. Details for the temporary support system shall be submitted for review and approval. Concrete repairs at these locations shall be done one side at a time and coordinated with the MOT to assure no live load is directly above. The cost of shoring shall be included in the cost for "Temporary Shoring & Cribbing".
- Defect Locations and Areas based on inspections during Summer 2003. Total repair quantities have been increased by 15% to account for defect growth. Actual locations and areas of repair shall be determined in field by the Engineer.
- Extra care shall be taken by the Contractor during the Concrete Repairs not to damage any conduits, junction boxes or drainage down spouts attached to the columns or pier caps. The Contractor shall repair any such damages caused by this operation as directed by the Engineer at no additional cost to the department. The Contractor shall remove and re-install any conduits, junction boxes or drainage down spouts that interfere with the concrete repairs at no additional cost to the department.
- Repair one face of column at a time.
- Views shown for piers with Found Defects only.
- For Drainage Repairs, See Drainage Repair Detail Sheets.

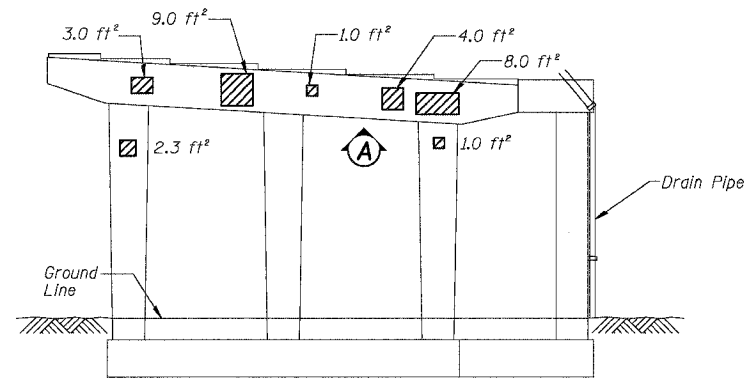
**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	247.1
Formed Concrete Repair (Depth Greater than 5")	SQ. FT.	61.0

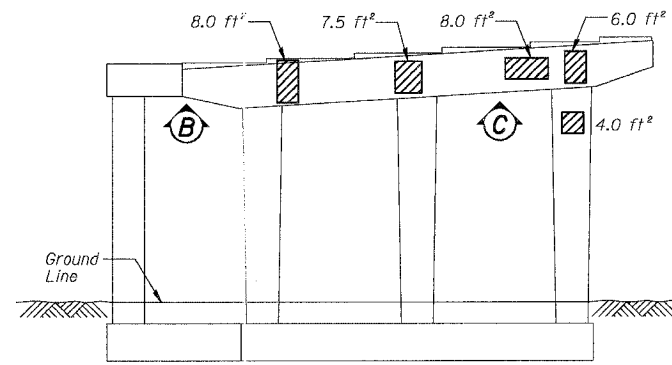
REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
CONCRETE PIER REPAIRS  
SN 016-1118, PIERS H-3,H-5, S. ABUTMENT  
SCALE: NTS  
DATE: 7/22/2005  
DRAWN BY: BDC  
CHECKED BY: BLU

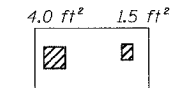
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STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
62580				



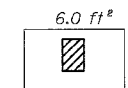
**PIER H8 - ELEVATION**  
(Looking East)



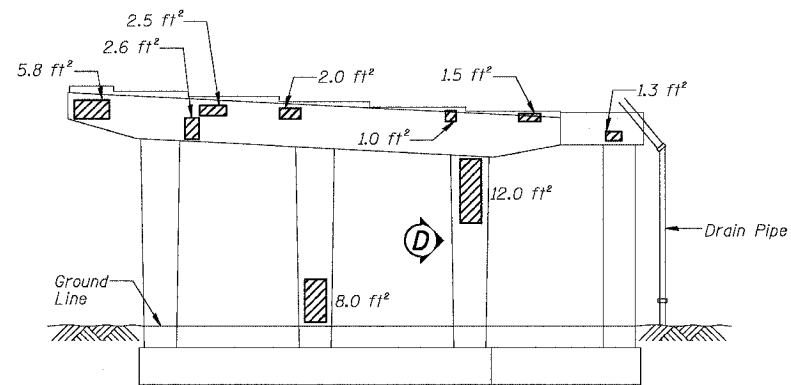
**PIER H8 - ELEVATION**  
(Looking West)



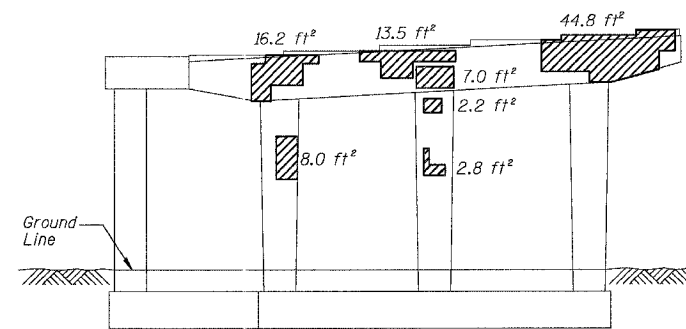
**PIER H8 - VIEW A**  
Looking up at Bottom of Cap



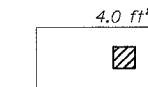
**PIER H8 - VIEW B**  
Looking up at Bottom of Cap



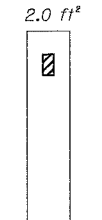
**PIER H7 - ELEVATION**  
(Looking East)



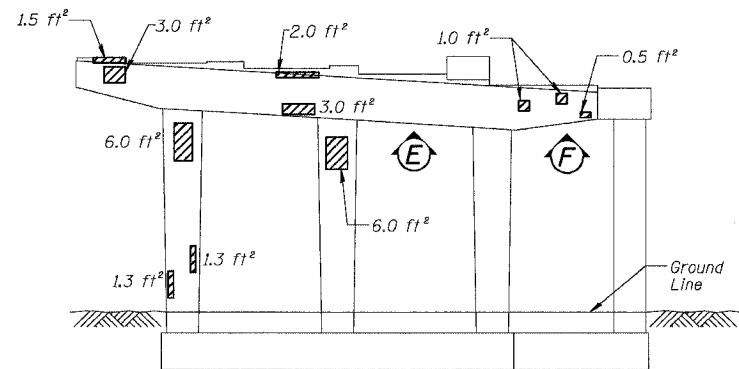
**PIER H7 - ELEVATION**  
(Looking West)



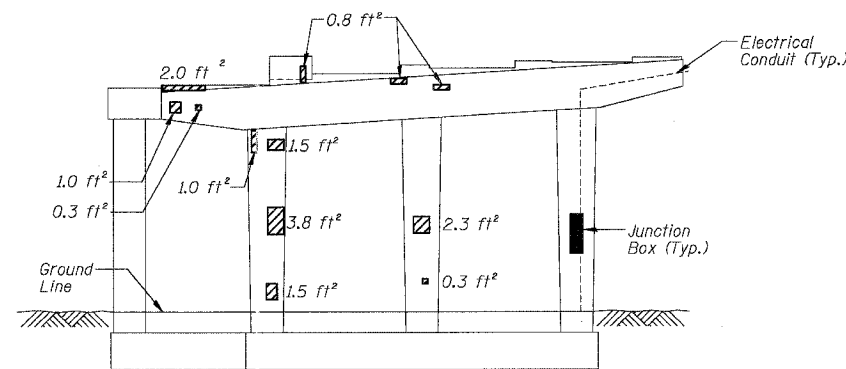
**PIER H8 - VIEW C**  
Looking up at Bottom of Cap



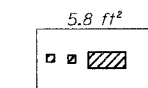
**PIER H7 - VIEW D**  
Looking South at Side of Column



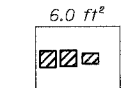
**PIER H6 - ELEVATION**  
(Looking East)



**PIER H6 - ELEVATION**  
(Looking West)



**PIER H6 - VIEW E**  
Looking up at Bottom of Cap



**PIER H6 - VIEW F**  
Looking up at Bottom of Cap

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance	SQ. FT.	304.8
Enhanced Shotcrete		

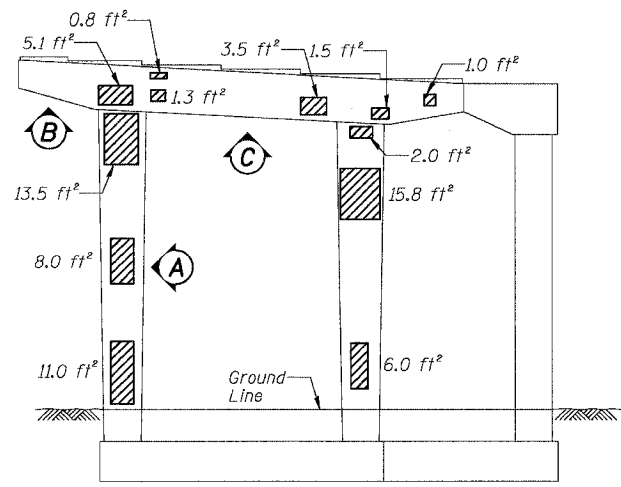
REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 CONCRETE PIER REPAIRS  
 SN 016-1118, PIERS H6,H7,H8  
 SCALE: NTS  
 DATE: 7/22/2005  
 DRAWN BY: BDC  
 CHECKED BY: BLU

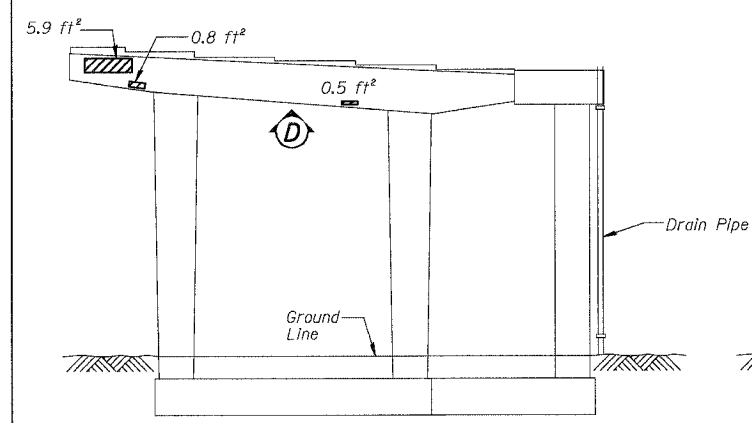
BOWMAN, BARRETT & ASSOCIATES INC  
 CONSULTING ENGINEERS  
 Chicago, Illinois  
 312.228.0100  
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For Notes and Legend See Sheet 253

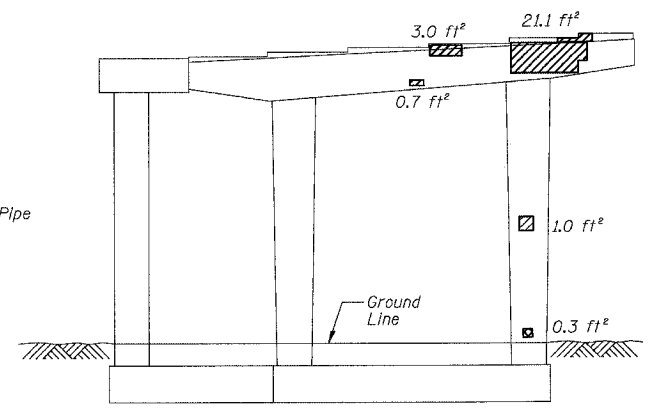
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STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
62580				



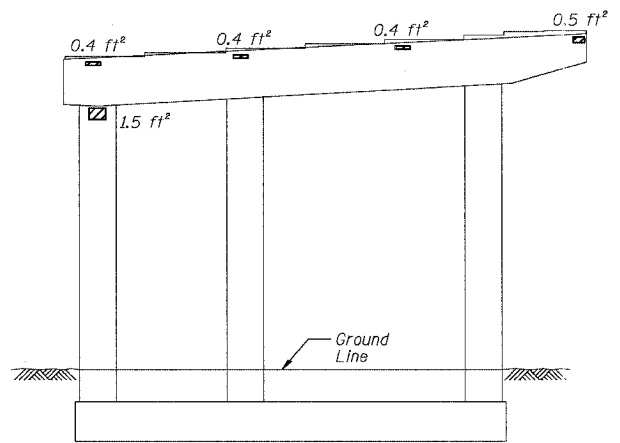
**PIER H12 - ELEVATION**  
(Looking East)



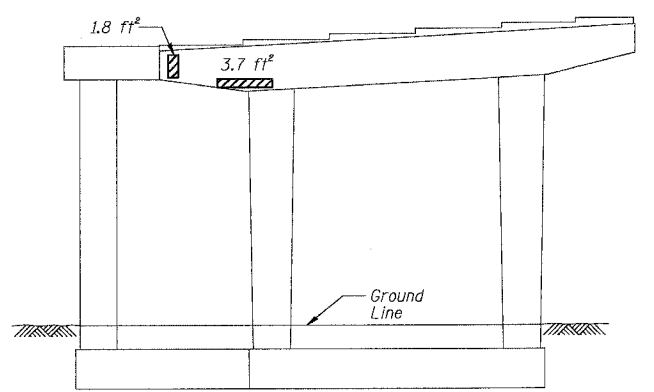
**PIER H10 - ELEVATION**  
(Looking East)



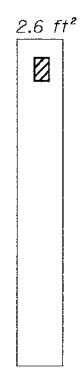
**PIER H10 - ELEVATION**  
(Looking West)



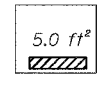
**PIER H11 - ELEVATION**  
(Looking West)



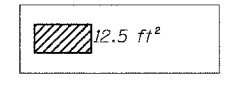
**PIER H9 - ELEVATION**  
(Looking West)



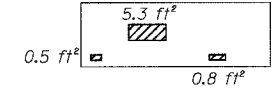
**PIER H12 - VIEW A**  
Looking North at Side of Column



**PIER H12 - VIEW B**  
Looking up at Bottom of Cap



**PIER H12 - VIEW C**  
Looking up at Bottom of Cap



**PIER H10 - VIEW D**  
Looking up at Bottom of Cap

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	158.9

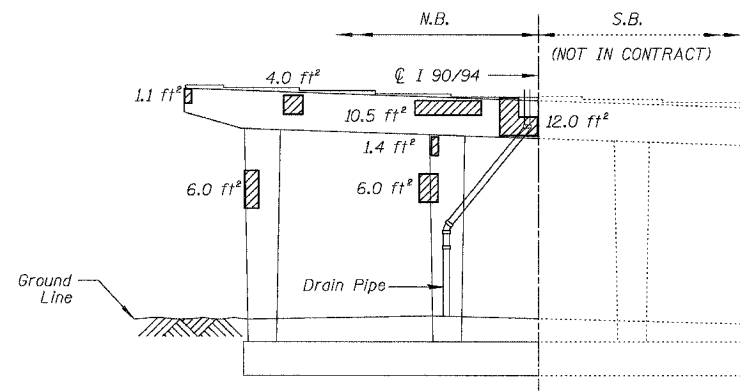
REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
CONCRETE PIER REPAIRS  
SN 016-1118, PIERS H9,H10,H11,H12  
SCALE: NTS  
DATE: 7/22/2005  
DRAWN BY: BDC  
CHECKED BY: BLU

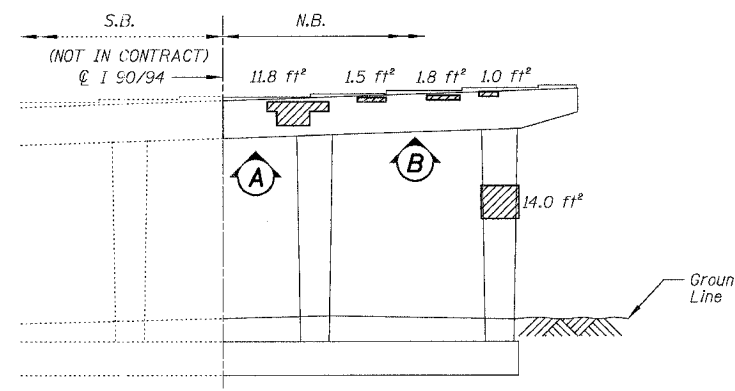
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CONSULTING ENGINEERS  
Chicago, Illinois  
312.228.0100  
www.bbainc.com

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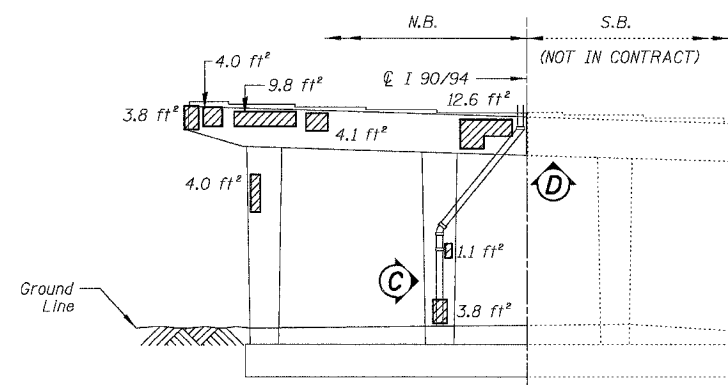
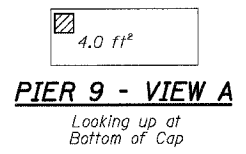
F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
62580				



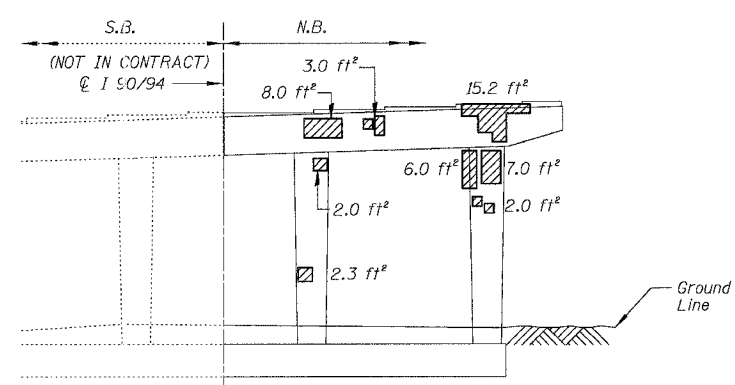
**PIER 9 - NORTH ELEVATION**  
(Looking South)



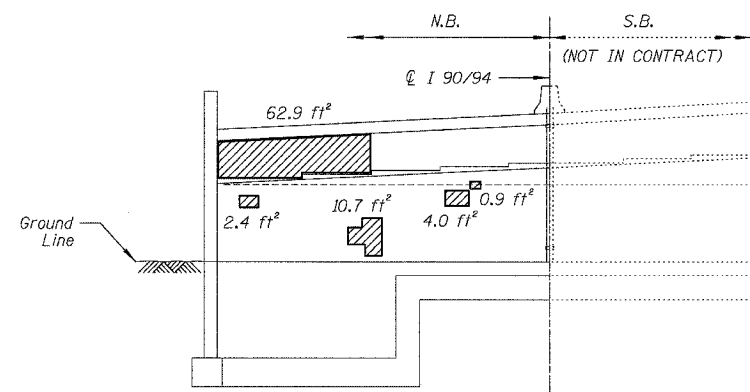
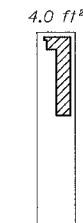
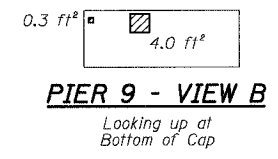
**PIER 9 - SOUTH ELEVATION**  
(Looking North)



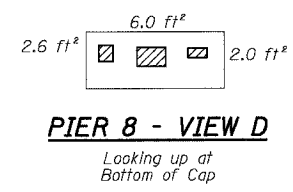
**PIER 8 - NORTH ELEVATION**  
(Looking South)



**PIER 8 - SOUTH ELEVATION**  
(Looking North)



**SOUTH ABUTMENT - NORTH ELEVATION**  
(Looking South)



**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance	SQ. FT.	303.1
Enhanced Shotcrete		

REVISIONS	DATE
NAME	

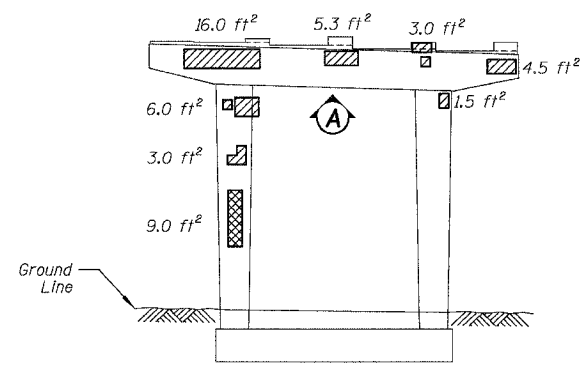
ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 CONCRETE PIER REPAIRS  
 SN 016-1117, PIERS 8,9, S ABUT.  
 SCALE: NTS  
 DATE: 7/22/2005  
 DRAWN BY: BDC  
 CHECKED BY: BLU

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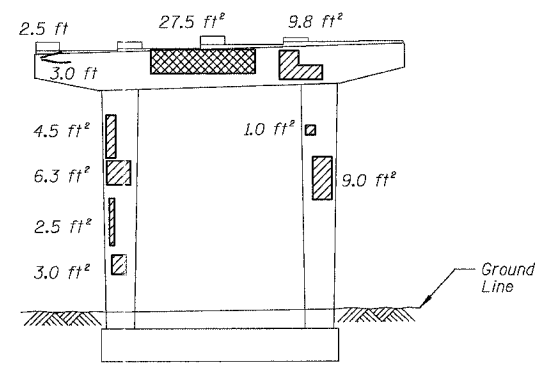
For Notes and Legend See Sheet 2.53

F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

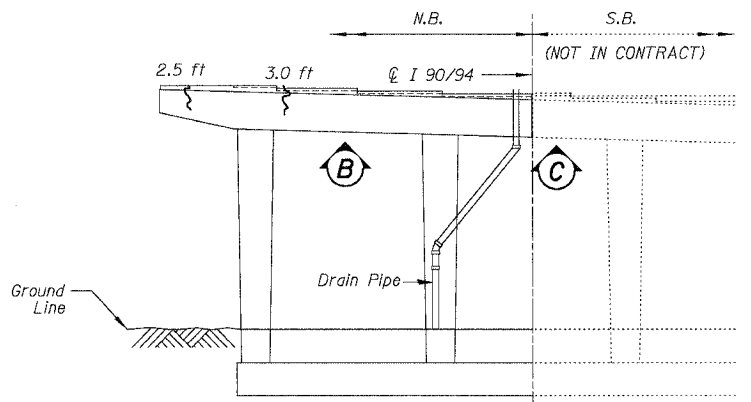
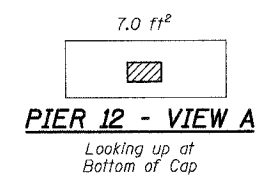
62580



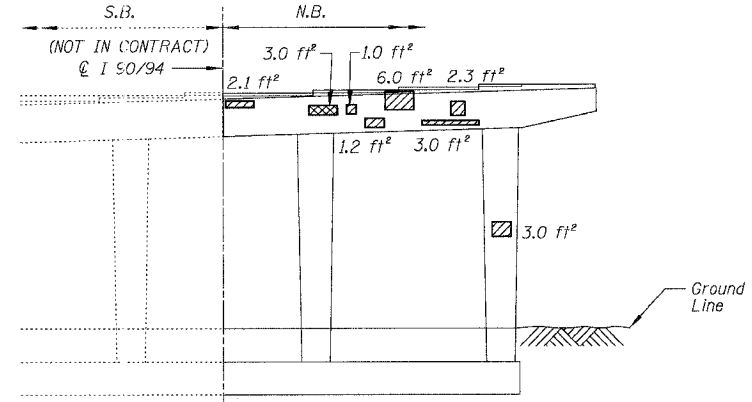
**PIER 12 - NORTH ELEVATION**  
(Looking South)



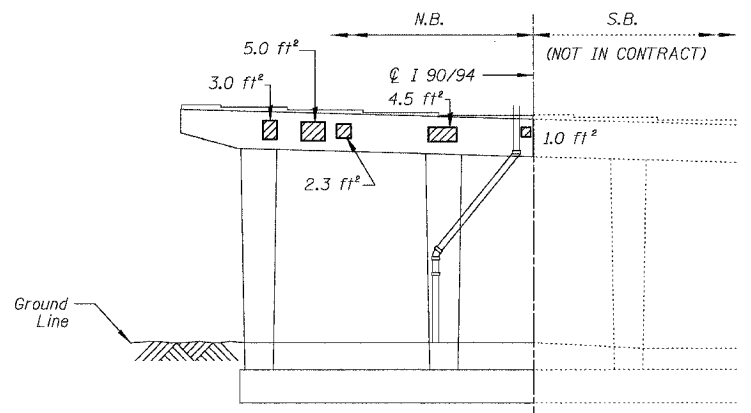
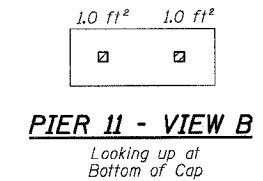
**PIER 12 - SOUTH ELEVATION**  
(Looking North)



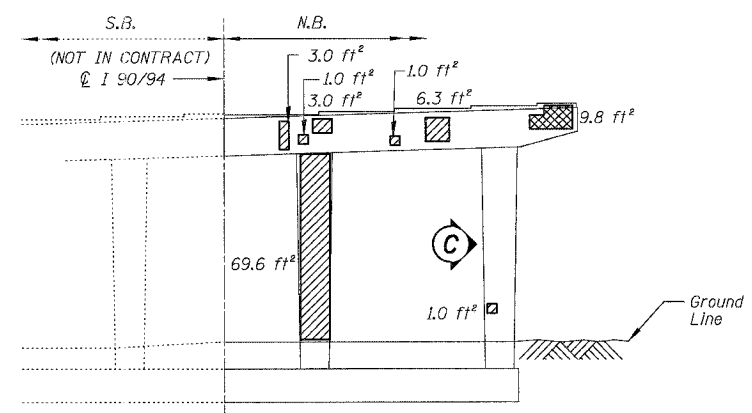
**PIER 11 - NORTH ELEVATION**  
(Looking South)



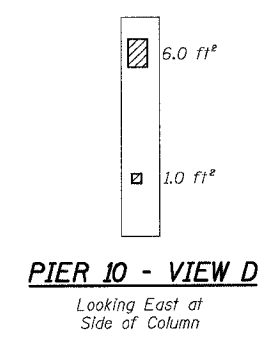
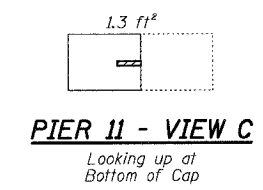
**PIER 11 - SOUTH ELEVATION**  
(Looking North)



**PIER 10 - NORTH ELEVATION**  
(Looking South)



**PIER 10 - SOUTH ELEVATION**  
(Looking North)



**BILL OF MATERIAL**

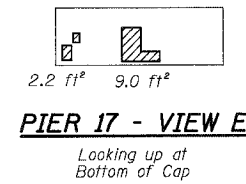
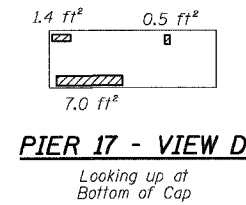
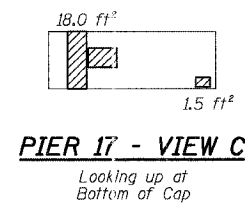
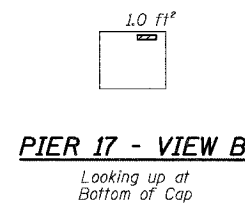
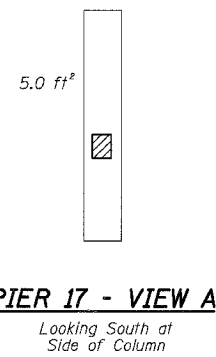
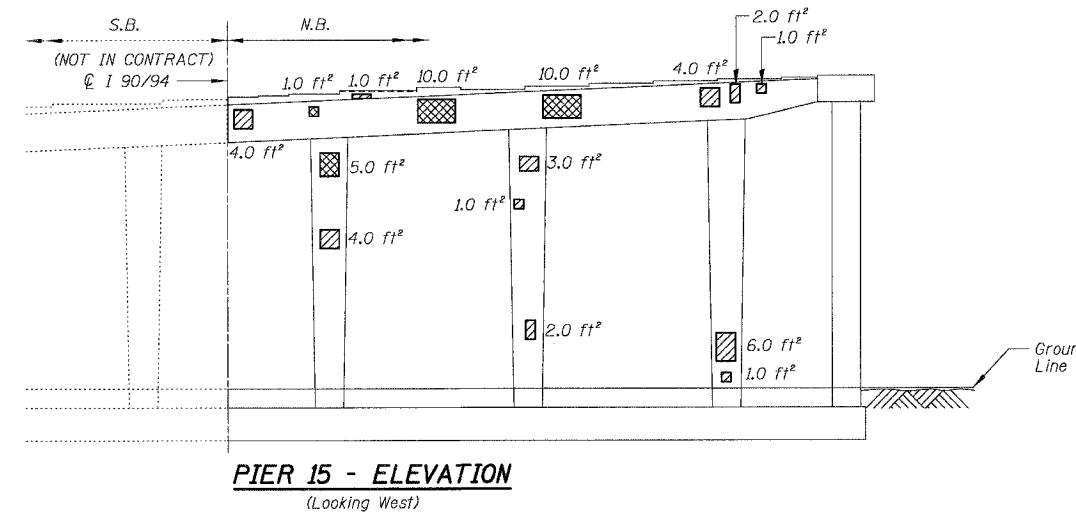
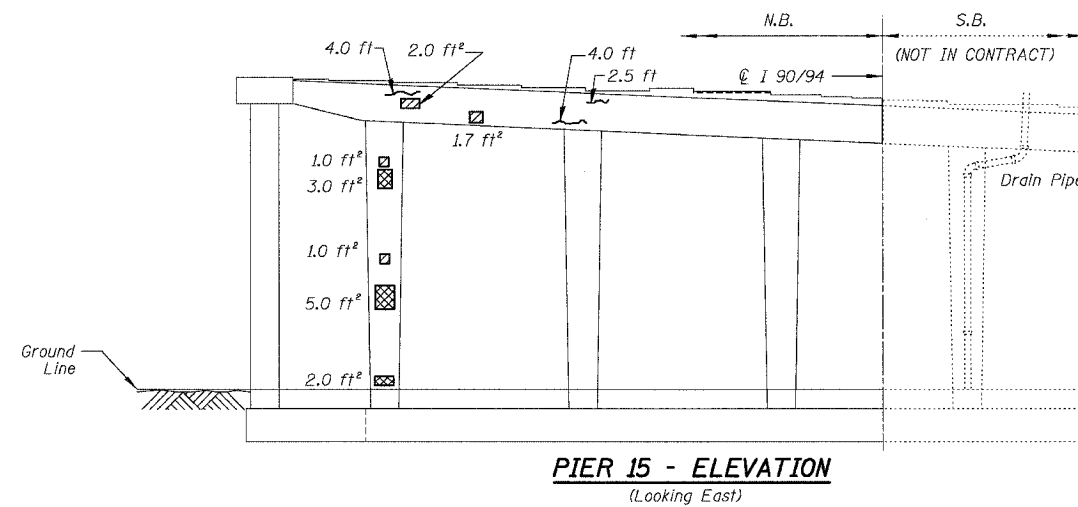
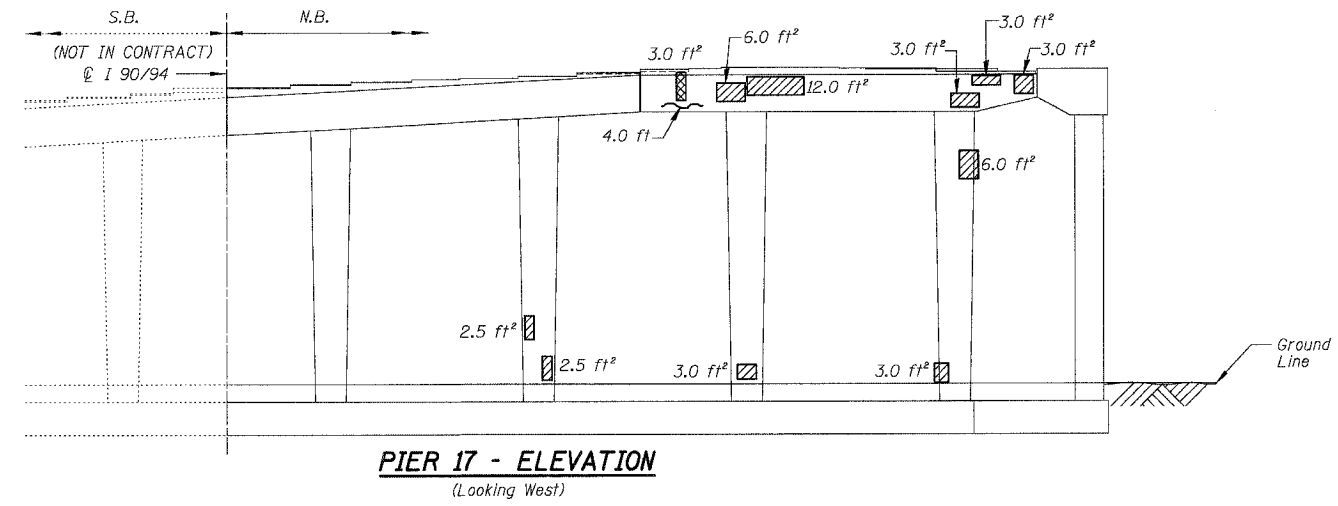
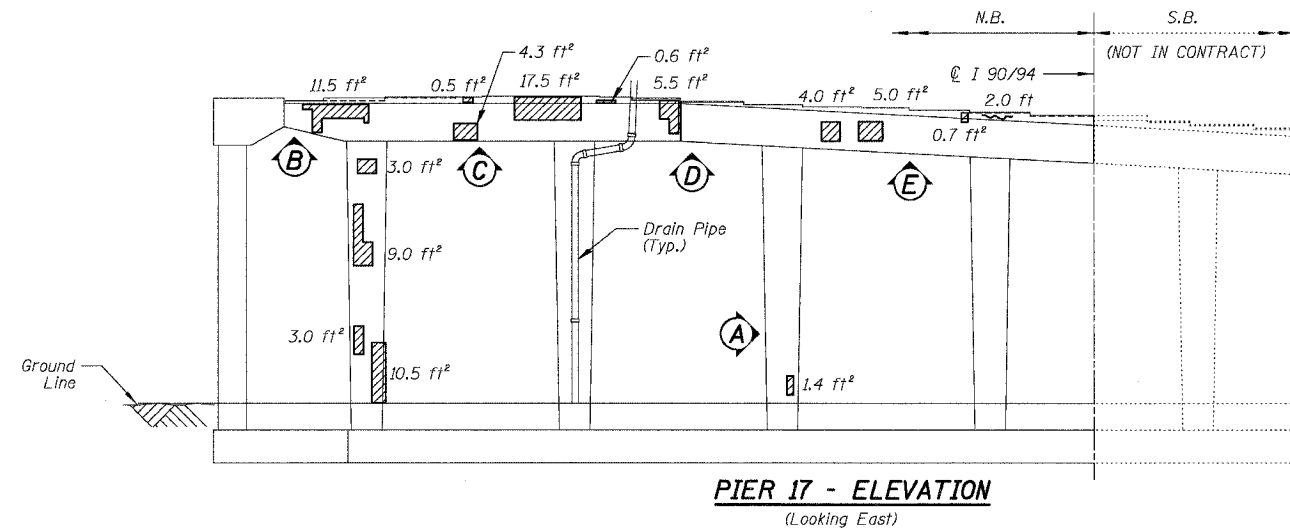
ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	243.8
Formed Concrete Repair (Depth Greater than 5")	SQ. FT.	56.7
Epoxy Crack Sealing	FOOT	12.7

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 CONCRETE PIER REPAIRS  
 SN 016-1117, PIERS 10,11,12  
 SCALE: NTS  
 DATE: 7/22/2005  
 DRAWN BY: BDC  
 CHECKED BY: BLU

BOWMAN, BARRETT & ASSOCIATES INC.  
 CONSULTING ENGINEERS  
 Chicago, Illinois  
 312.228.0100  
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For Notes and Legend See Sheet 253



**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	230.9
Formed Concrete Repair (Depth Greater than 5")	SQ. FT.	44.9
Epoxy Crack Sealing	FOOT	19.0

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
CONCRETE PIER REPAIRS  
SN 016-1117, PIERS 15,17

SCALE: NTS  
DATE: 7/22/2005

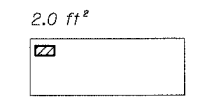
DRAWN BY: BDC  
CHECKED BY: BLU

BOWMAN, BARRETT & ASSOCIATES INC.  
CONSULTING ENGINEERS  
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312.228.0100  
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For Notes and Legend See Sheet 253

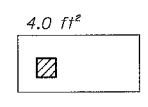
F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	259
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

62580



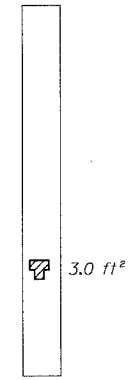
**PIER 25 - VIEW A**

Looking up at Bottom of Cap



**PIER 24 - VIEW B**

Looking up at Bottom of Cap



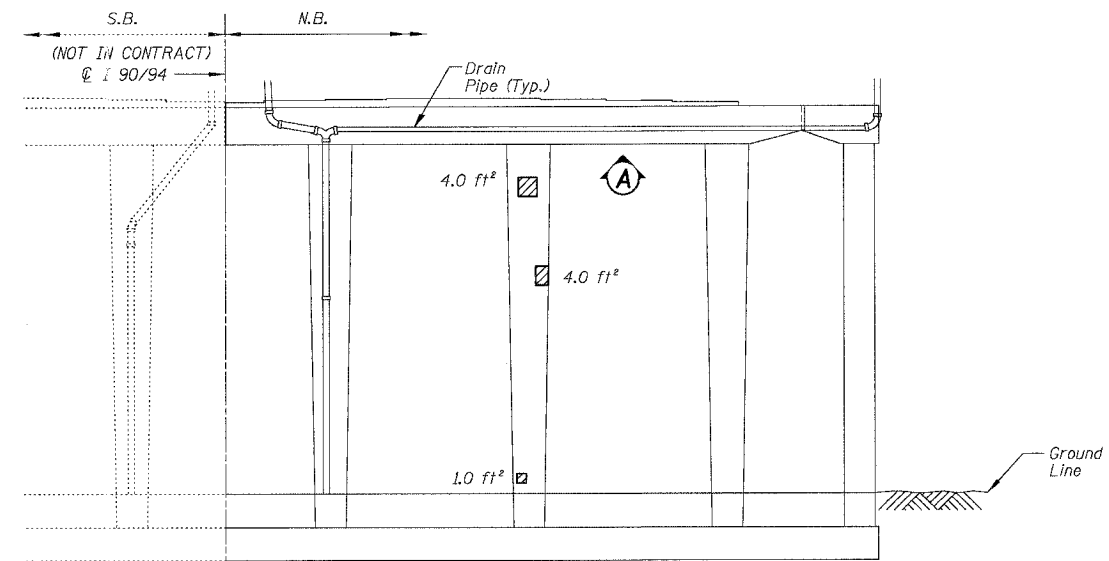
**PIER 24 - VIEW C**

Looking South at Side of Column

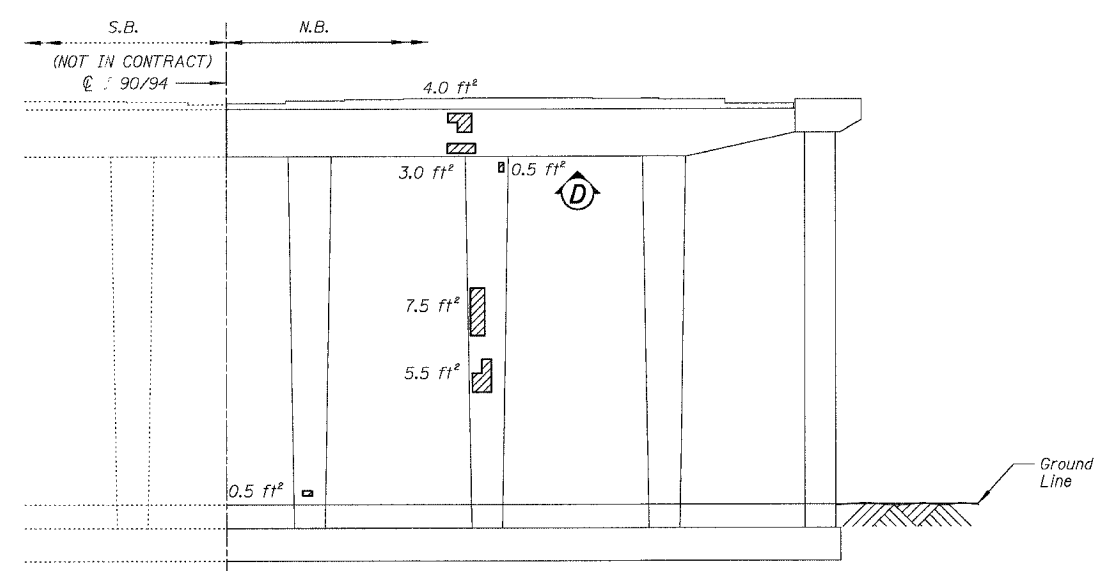


**PIER 24 - VIEW D**

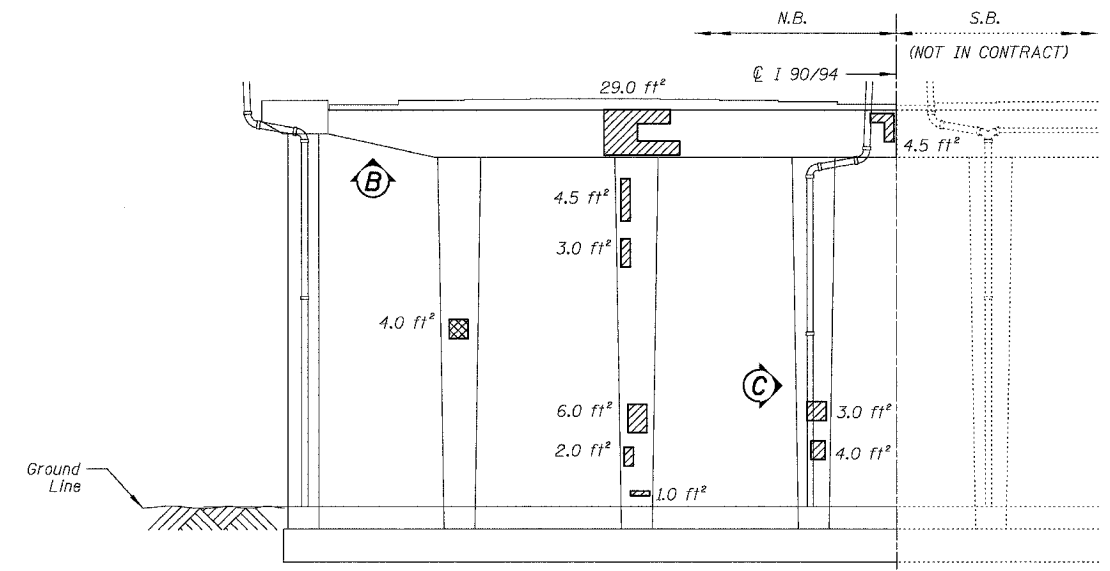
Looking up at Bottom of Cap



**PIER 25 - NORTH ELEVATION**  
(Looking South)



**PIER 24 - ELEVATION**  
(Looking West)



**PIER 24 - ELEVATION**  
(Looking East)

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	113.9
Formed Concrete Repair (Depth Greater Than 5')	SQ. FT.	4.6

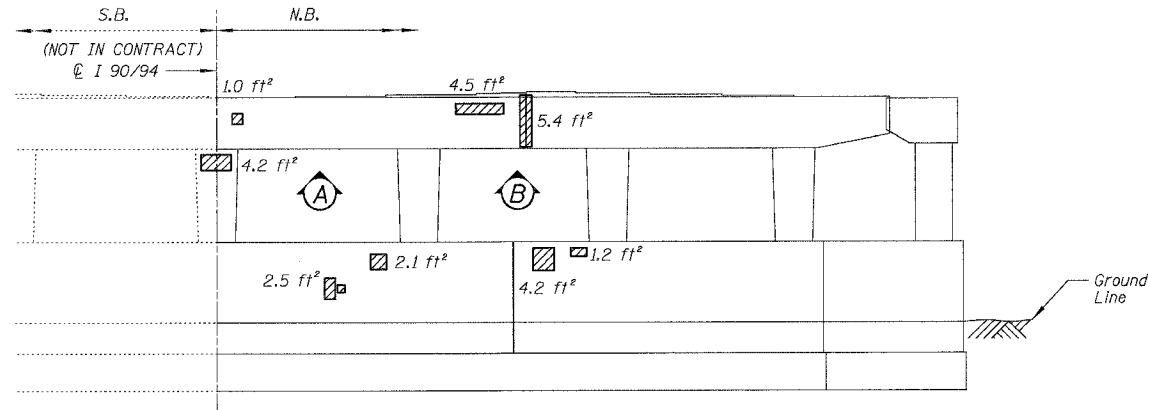
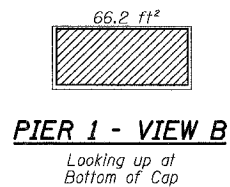
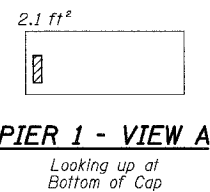
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 CONCRETE PIER REPAIRS  
 SN 016-1117, PIERS 24,25  
 SCALE: NTS  
 DATE: 7/22/2005  
 DRAWN BY: BDC  
 CHECKED BY: BLU

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 312.228.0100  
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For Notes and Legend See Sheet 253.

F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	260
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62580				



**PIER 1 - WEST ELEVATION**  
(Looking East)

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SO. FT.	107.5

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 CONCRETE PIER REPAIRS  
 SN 016-1116, PIER 1

SCALE: NTS  
 DATE: 7/22/2005

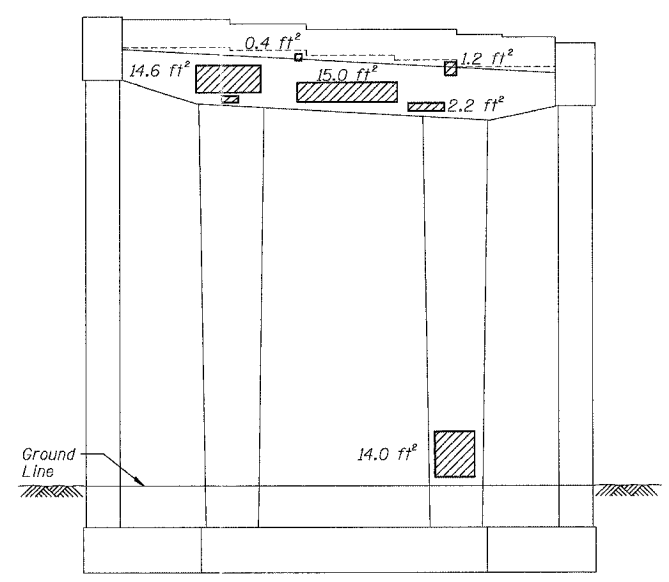
DRAWN BY: BDC  
 CHECKED BY: BLU

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 312.228.0100  
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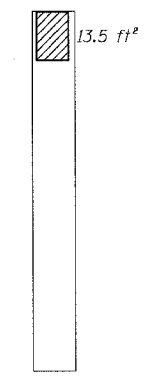
For Notes and Legend See Sheet 253



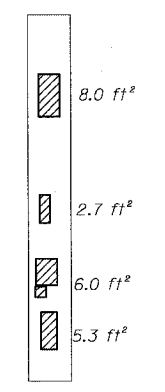
F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-026F	COOK	419	261
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62580				



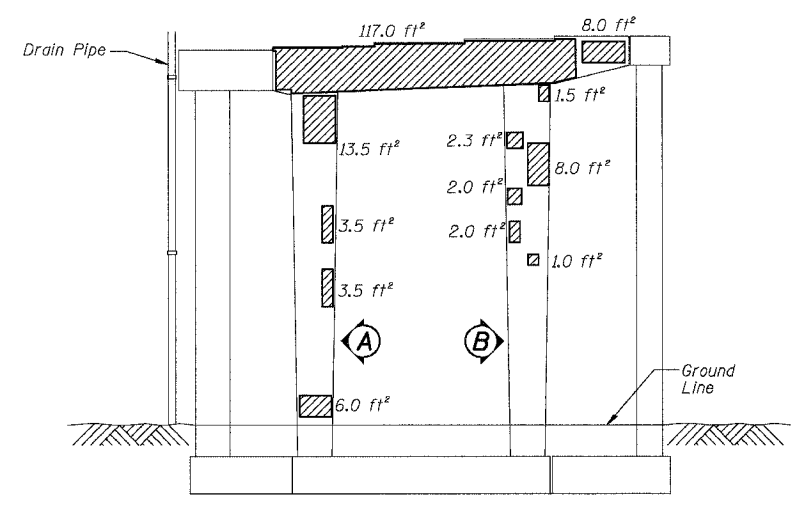
**PIER E-2 - SOUTH ELEVATION**  
(Looking North)



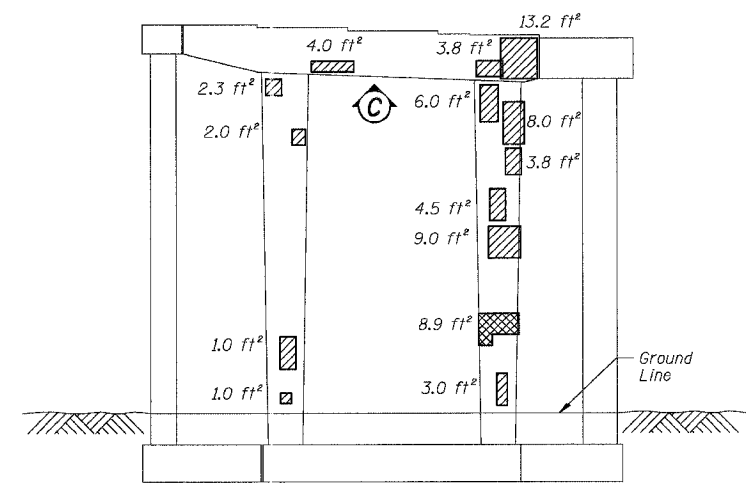
**PIER E-1 - VIEW A**  
Looking East at Side of Column



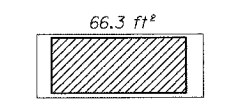
**PIER E-1 - VIEW B**  
Looking West at Side of Column



**PIER E-1 - NORTH ELEVATION**  
(Looking South)



**PIER E-1 - SOUTH ELEVATION**  
(Looking North)



**PIER E-1 - VIEW C**  
Looking up at Bottom of Cap

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	436.0
Formed Concrete Repair (Depth Greater than 5")	SQ. FT.	10.2

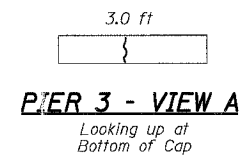
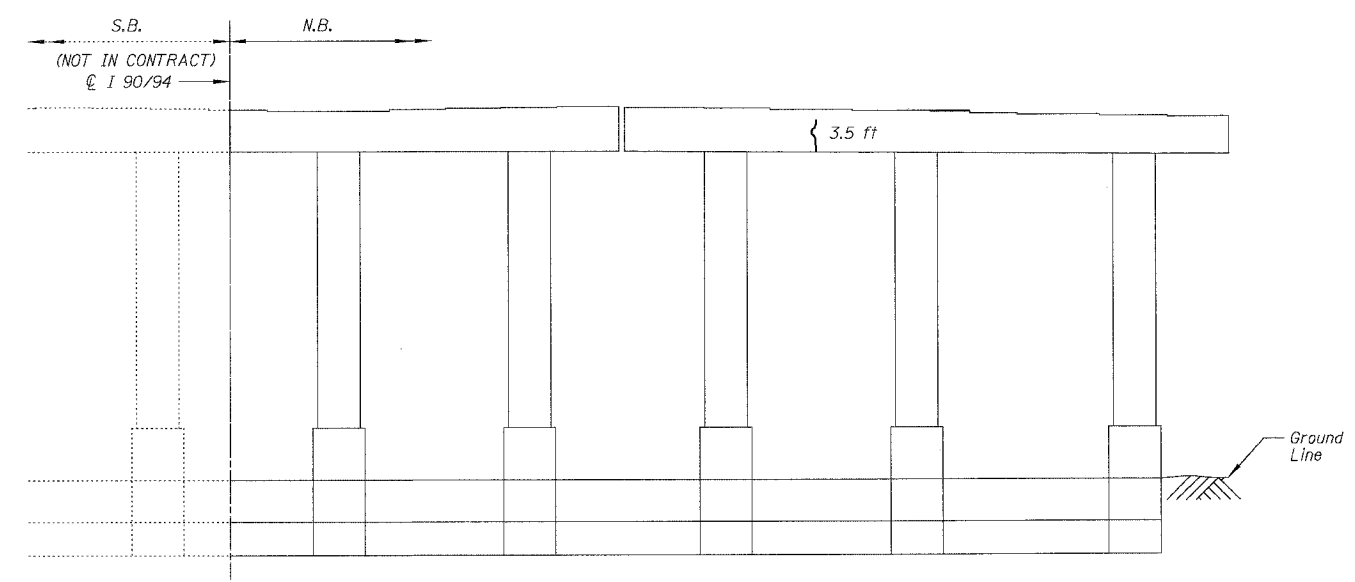
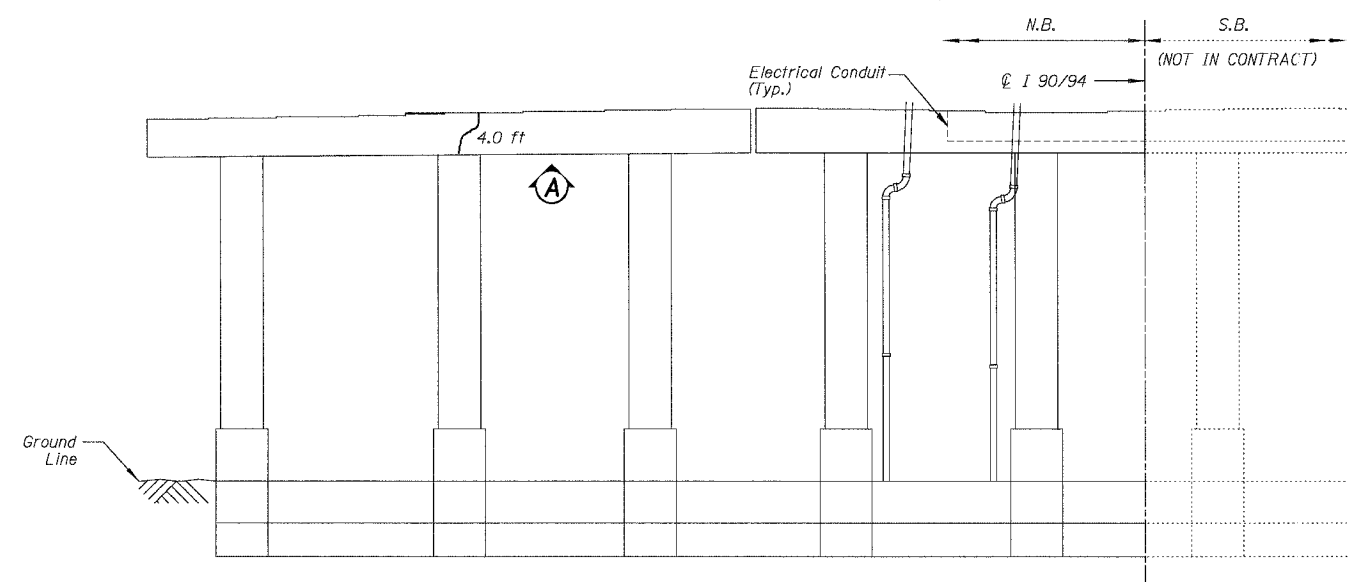
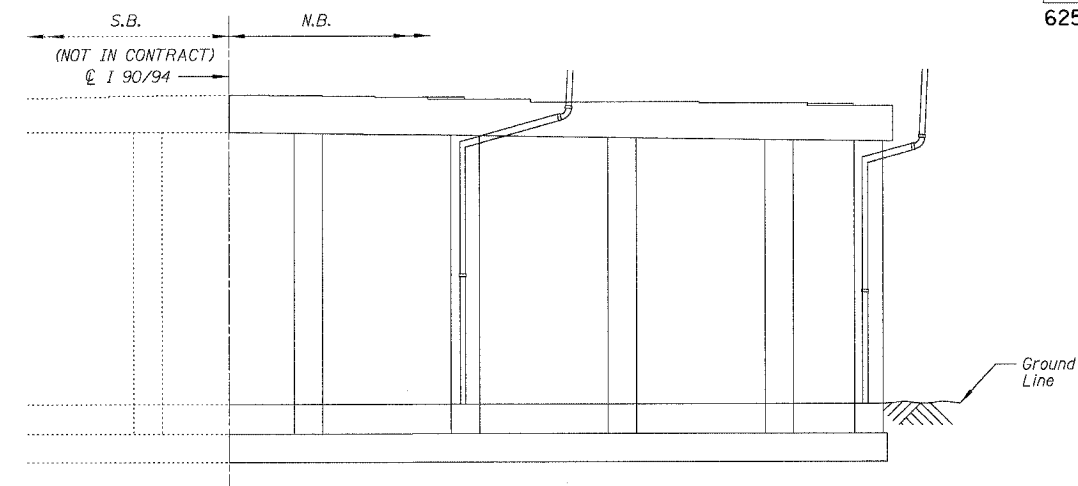
REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
CONCRETE PIER REPAIRS  
SN 016-1115, PIERS E-1,E-2  
SCALE: NTS  
DATE: 7/22/2005  
DRAWN BY: BDC  
CHECKED BY: BLU

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For Notes and Legend See Sheet 253

F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	262
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62580				



**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Epoxy Crack Sealing	FOOT	12.1

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 CONCRETE PIER REPAIRS  
 SN 016-1115, PIERS 3,5

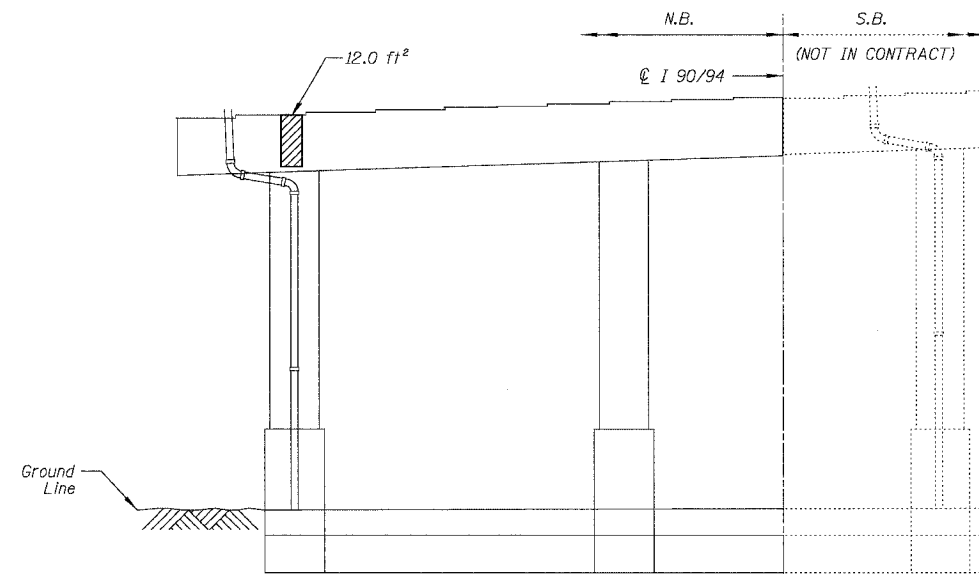
SCALE: NTS  
 DATE: 7/22/2005

DRAWN BY: BDC  
 CHECKED BY: BLU

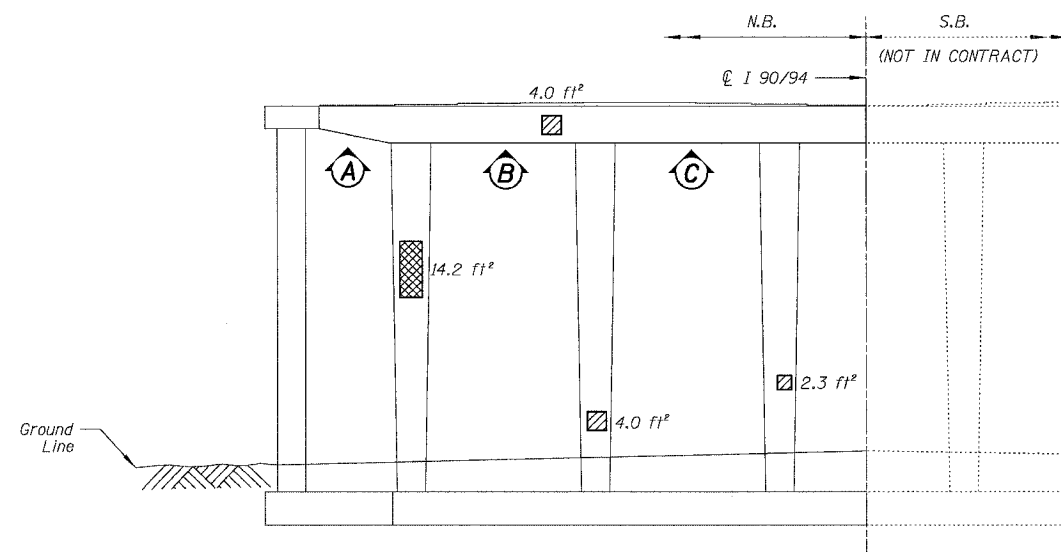
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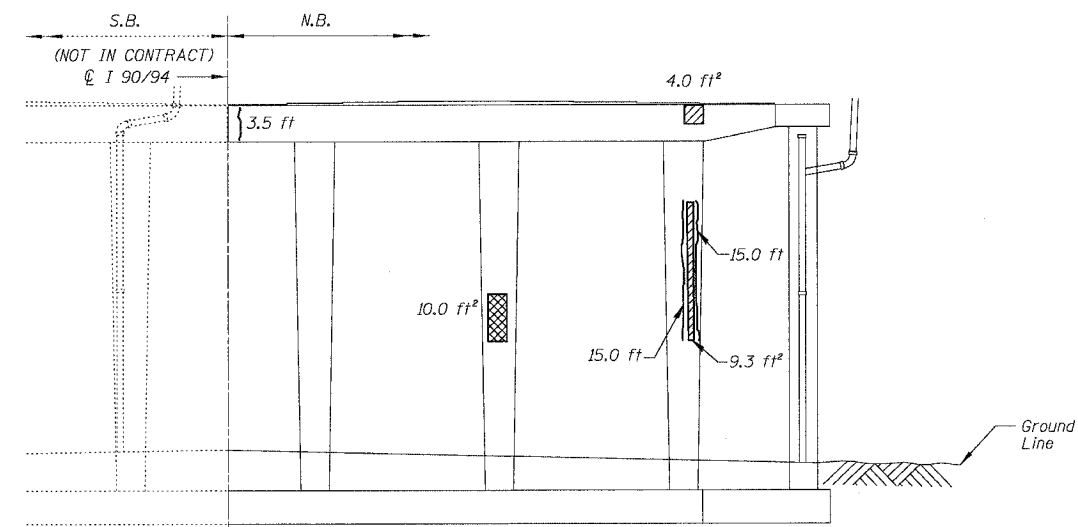
F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	263
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
62580				



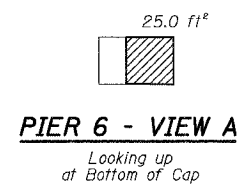
**PIER 9 - ELEVATION**  
(Looking East)



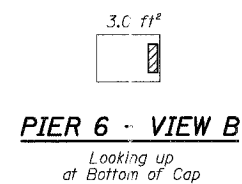
**PIER 6 - ELEVATION**  
(Looking East)



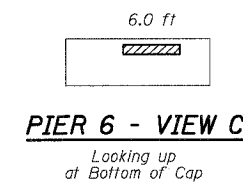
**PIER 6 - ELEVATION**  
(Looking West)



**PIER 6 - VIEW A**  
Looking up at Bottom of Cap



**PIER 6 - VIEW B**  
Looking up at Bottom of Cap



**PIER 6 - VIEW C**  
Looking up at Bottom of Cap

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	80.0
Formed Concrete Repair (Depth Greater than 5")	SQ. FT.	27.9
Epoxy Crack Sealing	FOOT	38.6

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
CONCRETE PIER REPAIRS  
SN 016-1115, PIERS 6,9

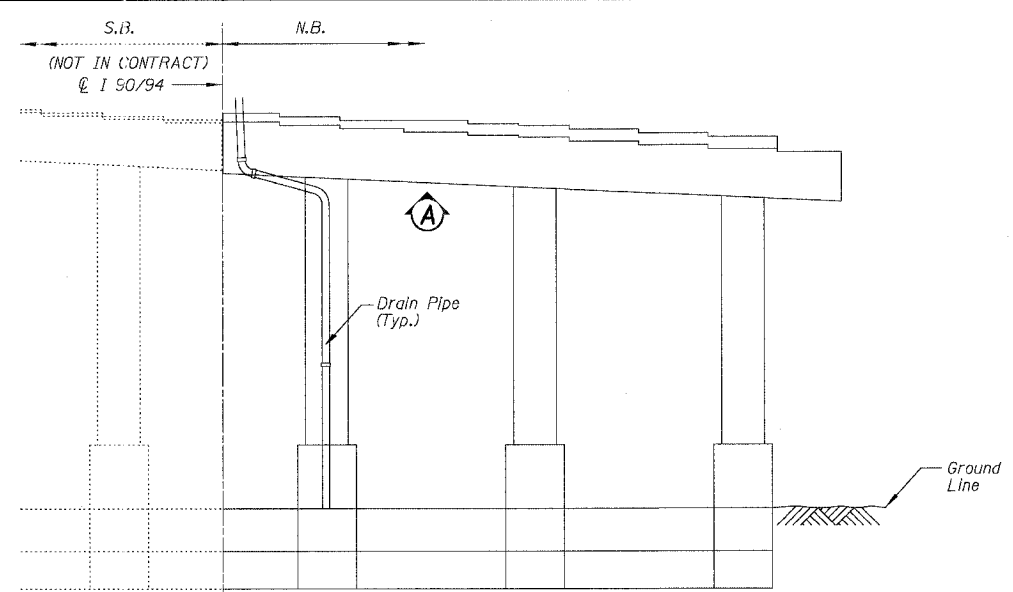
SCALE: NTS  
DATE: 7/22/2005

DRAWN BY: BDC  
CHECKED BY: BLU

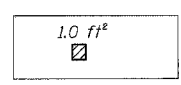
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Chicago, Illinois  
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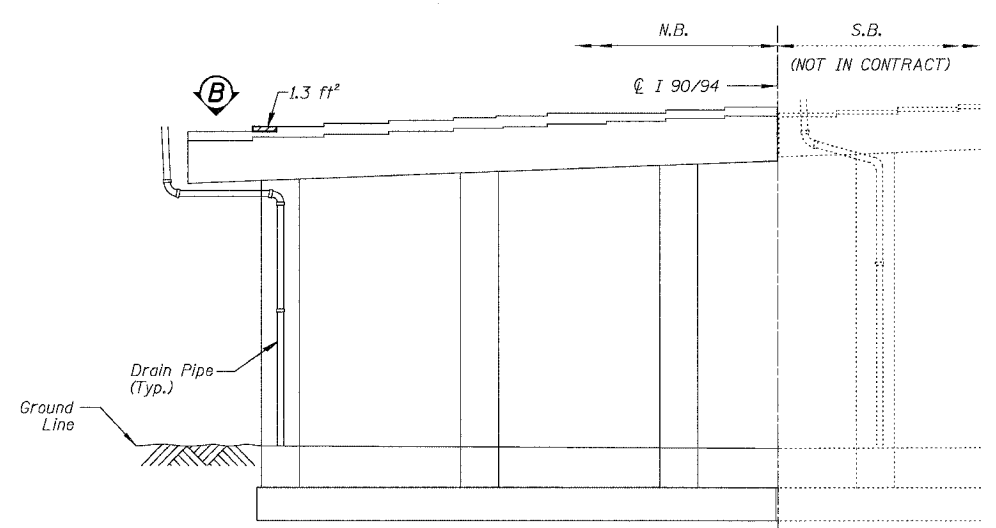
F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	264
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
62580				



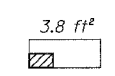
**PIER 16 - SOUTH ELEVATION**  
(Looking North)



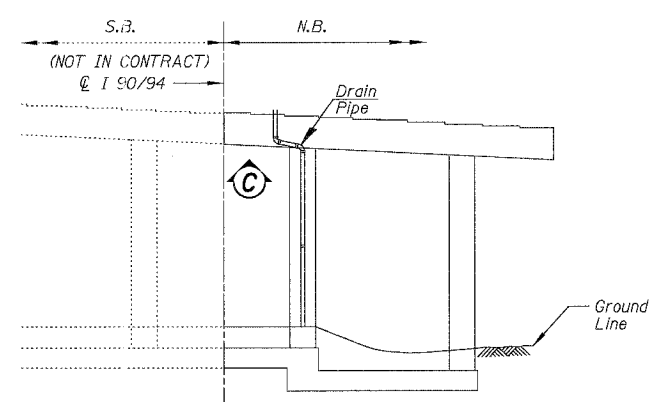
**PIER 16 - VIEW A**  
Looking up at Bottom of Cap



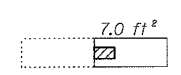
**PIER 15 - NORTH ELEVATION**  
(Looking South)



**PIER 15 - VIEW B**  
Looking down at Top of Seat



**PIER 10 - ELEVATION**  
(Looking West)



**PIER 10 - VIEW C**  
Looking up at bottom of cap

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	15.1

REVISIONS	
NAME	DATE

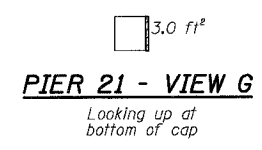
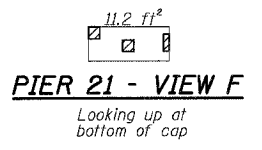
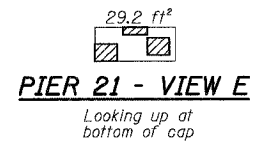
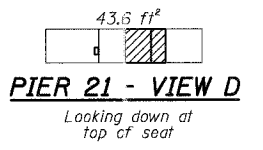
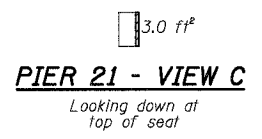
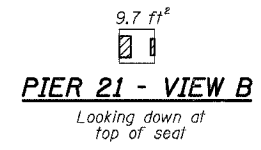
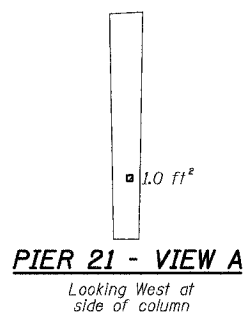
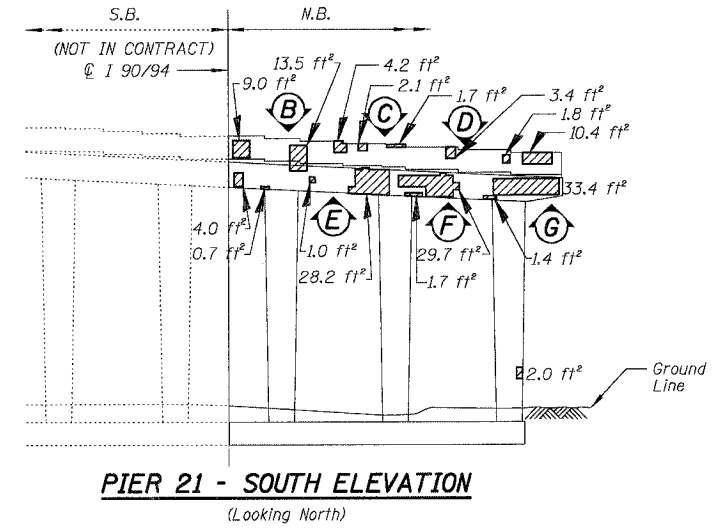
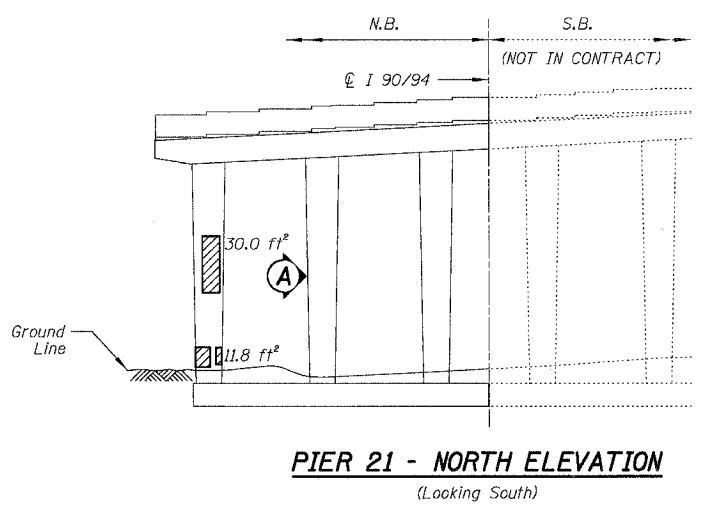
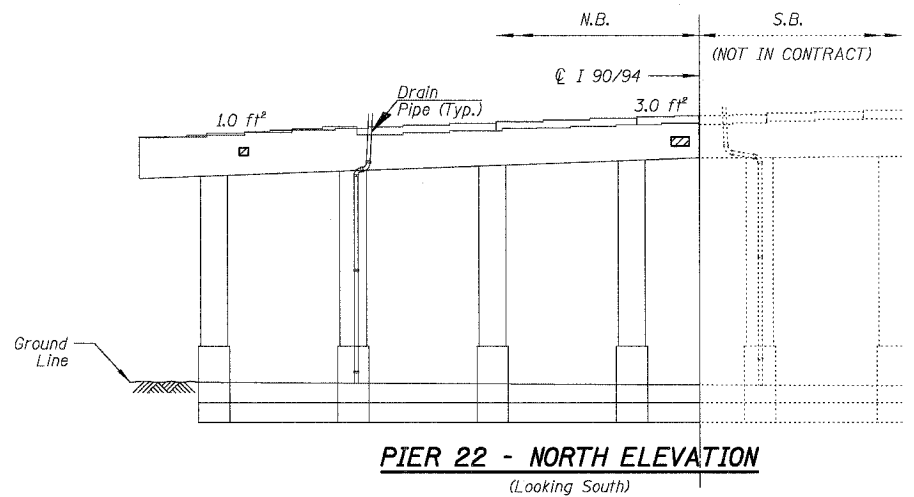
ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
CONCRETE PIER REPAIRS  
SN 016-1115, PIERS 10,15,16  
SCALE: NTS  
DATE: 7/22/2005  
DRAWN BY: BDC  
CHECKED BY: BLU

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CONSULTING ENGINEERS  
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F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	265
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

62580



**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SG. FT.	339.0

REVISIONS NAME	DATE

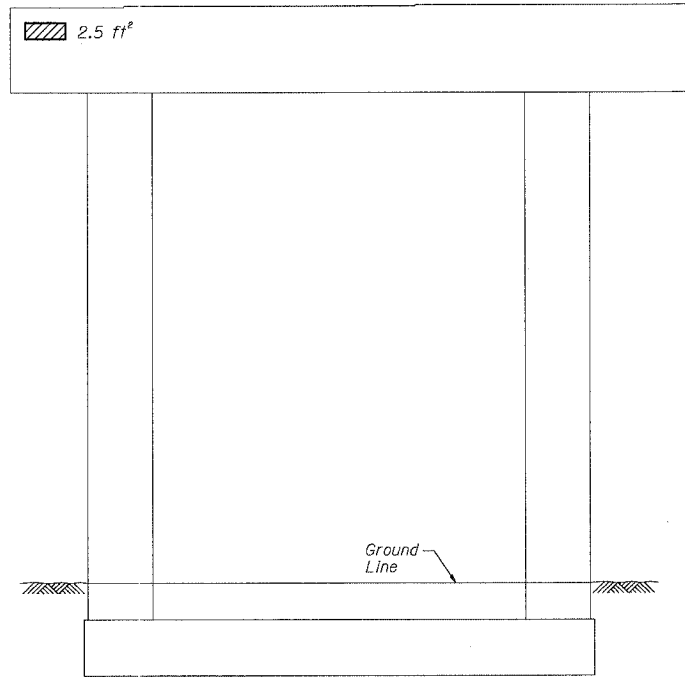
ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 CONCRETE PIER REPAIRS  
 SN 016-1115, PIERS 21,22  
 SCALE: NTS  
 DATE: 7/22/2005  
 DRAWN BY: BDC  
 CHECKED BY: BLU

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For Notes and Legend See Sheet 253

F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	266
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

62580



**PIER 11 - SOUTH ELEVATION**  
(Looking North)

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	2.9

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 CONCRETE PIER REPAIRS  
 SN 016-1140, PIER 11

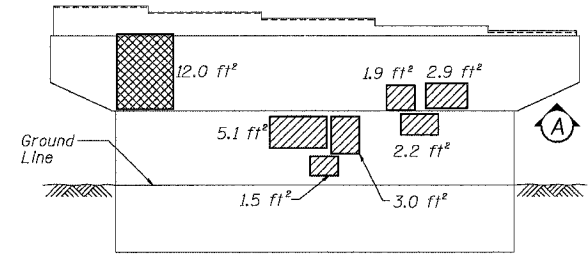
SCALE: NTS  
 DATE: 7/22/2005

DRAWN BY: BDC  
 CHECKED BY: BLU

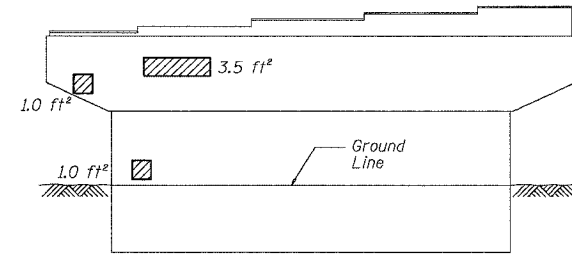
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 CONSULTING ENGINEERS  
 Chicago, Illinois  
 312.228.0100  
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For Notes and Legend See Sheet 253

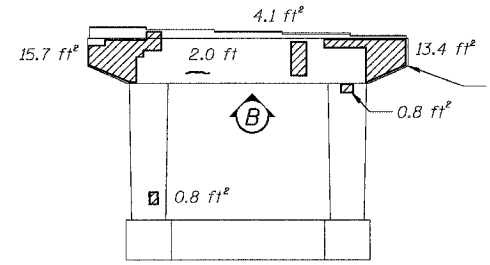
F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	267
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
62580				



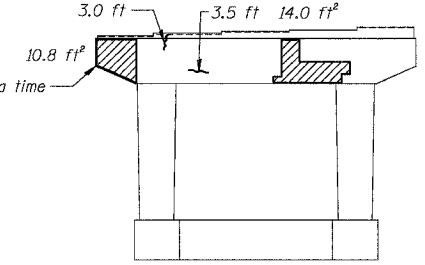
**PIER 17 - NORTH ELEVATION**  
(Looking South)



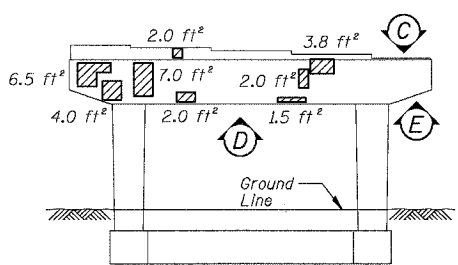
**PIER 17 - SOUTH ELEVATION**  
(Looking North)



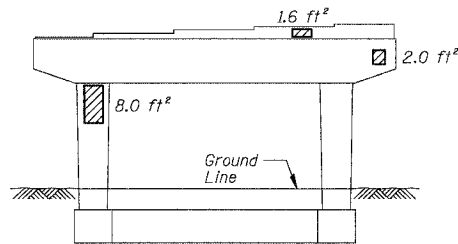
**PIER 16 - NORTH ELEVATION**  
(Looking South)



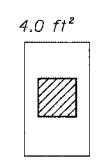
**PIER 16 - SOUTH ELEVATION**  
(Looking North)



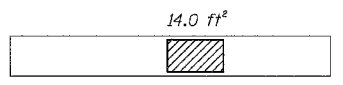
**PIER 15 - NORTH ELEVATION**  
(Looking South)



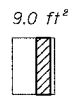
**PIER 15 - SOUTH ELEVATION**  
(Looking North)



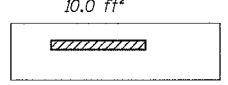
**PIER 17 - VIEW A**  
Looking up at bottom of cap



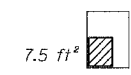
**PIER 16 - VIEW B**  
Looking up at bottom of cap



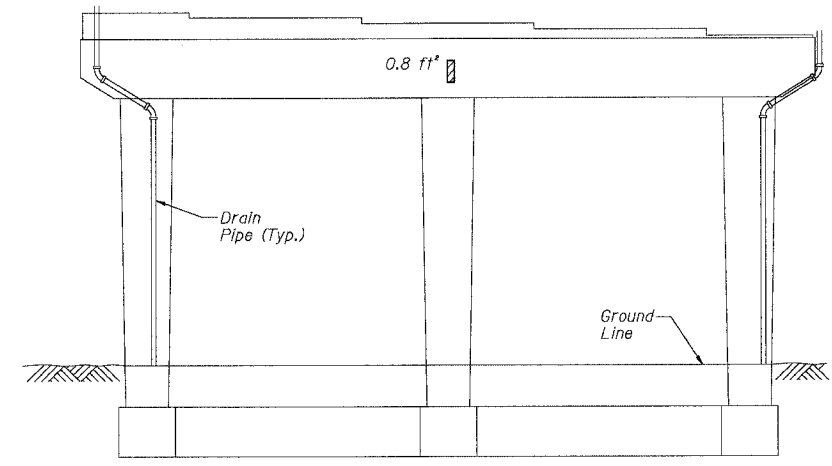
**PIER 15 - VIEW C**  
Looking down at top of seat



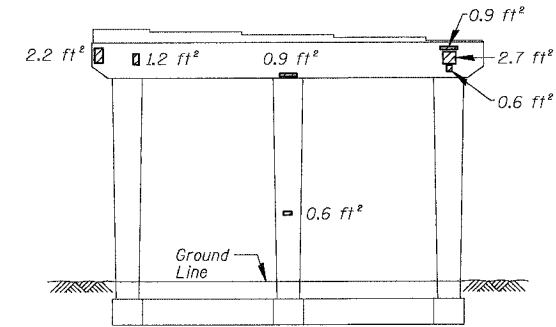
**PIER 15 - VIEW D**  
Looking up at bottom of cap



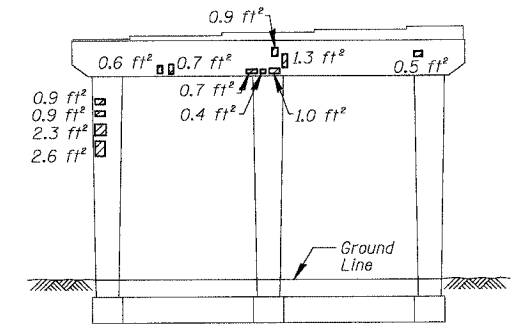
**PIER 15 - VIEW E**  
Looking up at bottom of cap



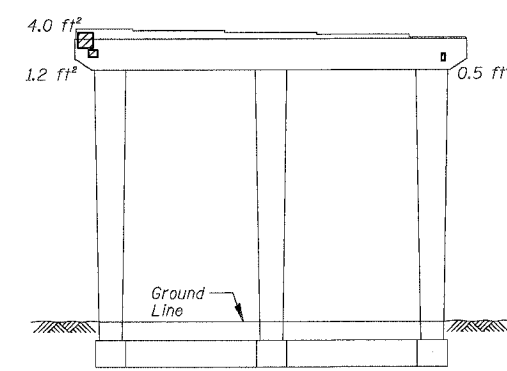
**PIER 14 - NORTH ELEVATION**  
(Looking South)



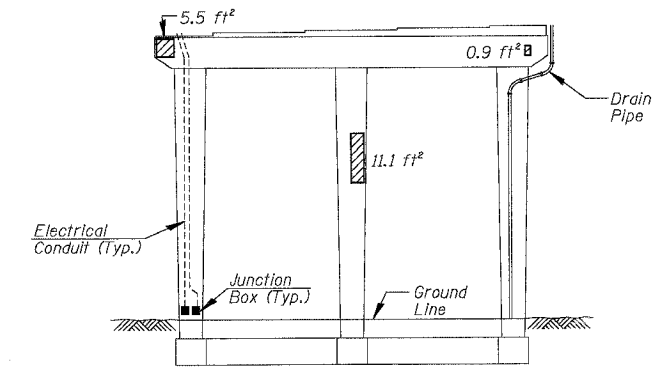
**PIER 13 - NORTH ELEVATION**  
(Looking South)



**PIER 13 - SOUTH ELEVATION**  
(Looking North)



**PIER 12 - NORTH ELEVATION**  
(Looking South)



**PIER 12 - SOUTH ELEVATION**  
(Looking North)

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	244.4
Formed Concrete Repair (Depth Greater than 5")	SQ. FT.	13.8
Epoxy Crack Sealing	FOOT	9.8

REVISIONS	
NAME	DATE

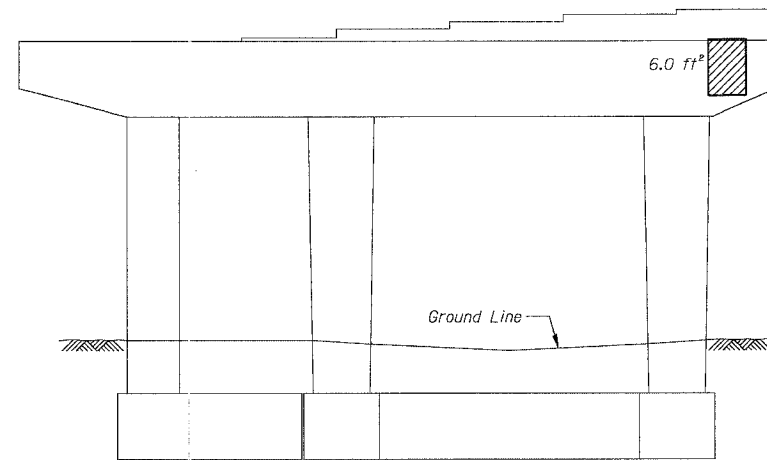
ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
CONCRETE PIER REPAIRS  
SN 016-1140, PIERS 12,13,14,15,16,17  
SCALE: NTS  
DATE: 7/22/2005  
DRAWN BY: BDC  
CHECKED BY: BLU

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CONSULTING ENGINEERS  
Chicago, Illinois  
312.228.0100  
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For Notes and Legend See Sheet 253

F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	268
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

62580



**PIER 40 - SOUTH ELEVATION**  
(Looking North)

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	6.9

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
CONCRETE PIER REPAIRS  
SN 016-1059, PIER 40

SCALE: NTS  
DATE: 7/22/2005

DRAWN BY: BDC  
CHECKED BY: BLU

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CONSULTING ENGINEERS  
Chicago, Illinois  
312.228.0100  
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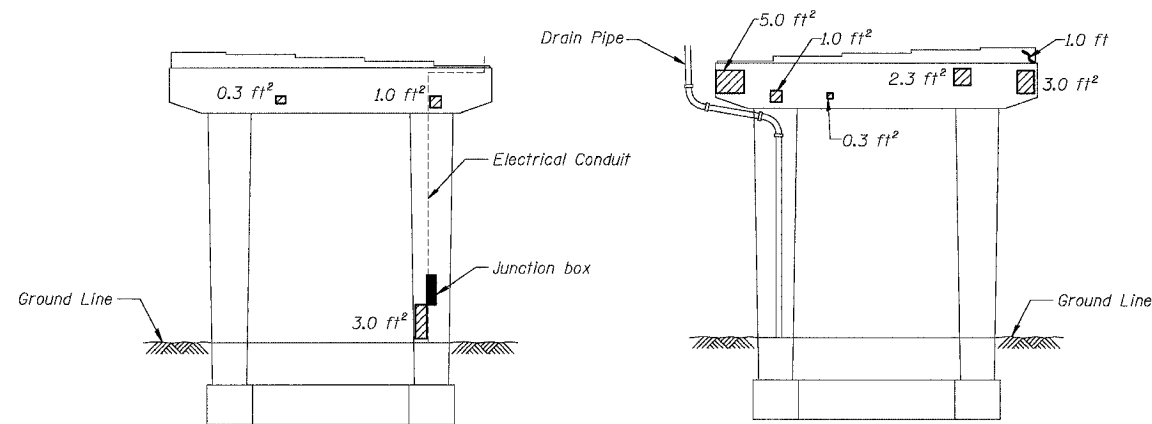
For Notes and Legend See Sheet 253

5/18/22 PM  
7/20/2005

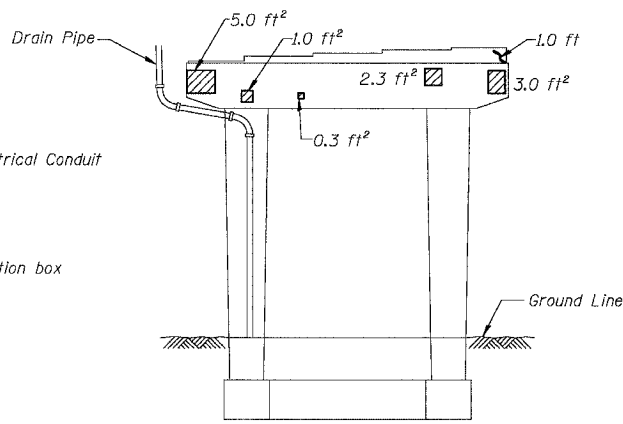


F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	269
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

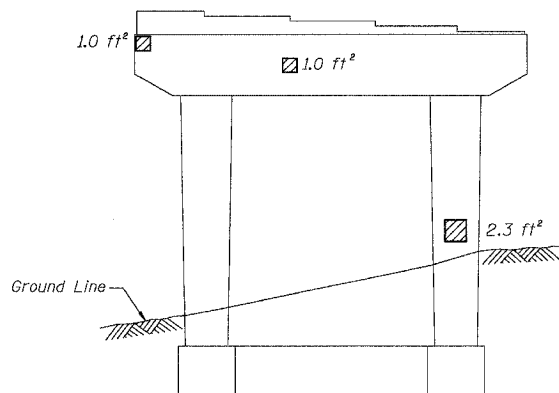
62580



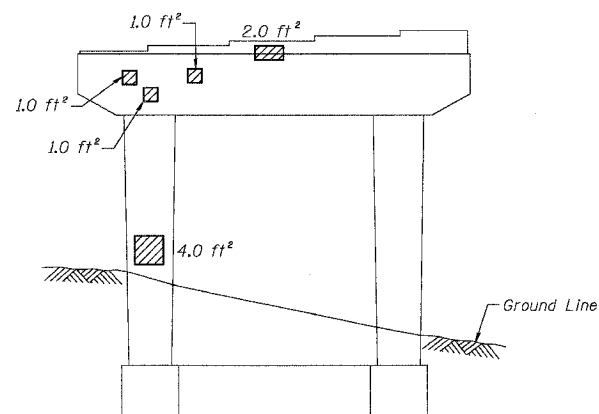
**PIER 33 - NORTH ELEVATION**  
(Looking South)



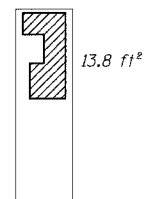
**PIER 33 - SOUTH ELEVATION**  
(Looking North)



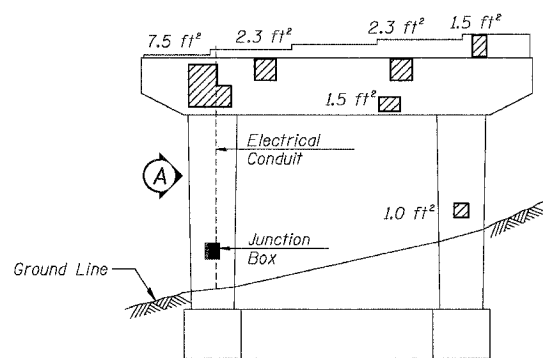
**PIER 34 - NORTH ELEVATION**  
(Looking South)



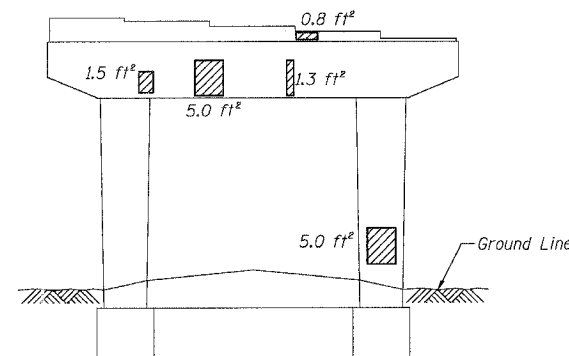
**PIER 34 - SOUTH ELEVATION**  
(Looking North)



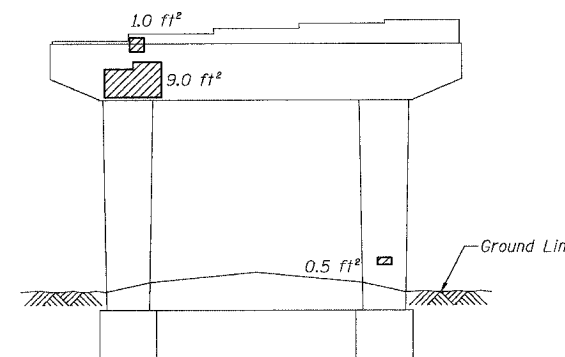
**PIER 35 - VIEW A**  
Looking East at side of column



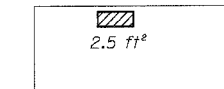
**PIER 35 - SOUTH ELEVATION**  
(Looking North)



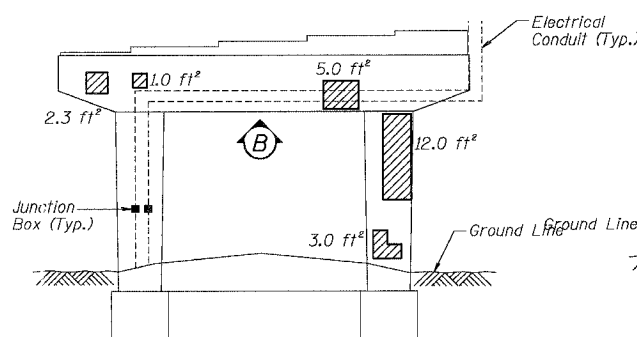
**PIER 36 - NORTH ELEVATION**  
(Looking South)



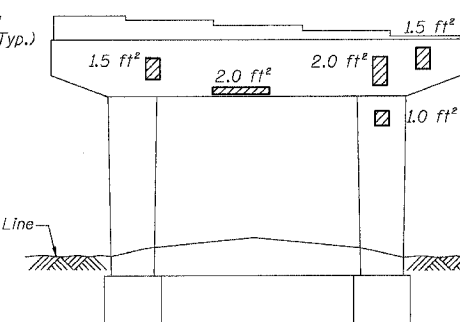
**PIER 36 - SOUTH ELEVATION**  
(Looking North)



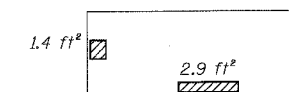
**PIER 37 - VIEW B**  
Looking up at bottom of cap



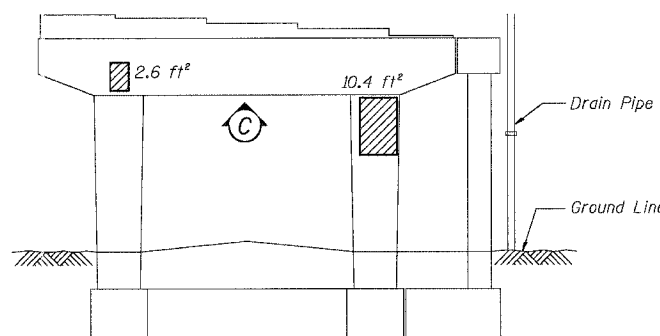
**PIER 37 - NORTH ELEVATION**  
(Looking South)



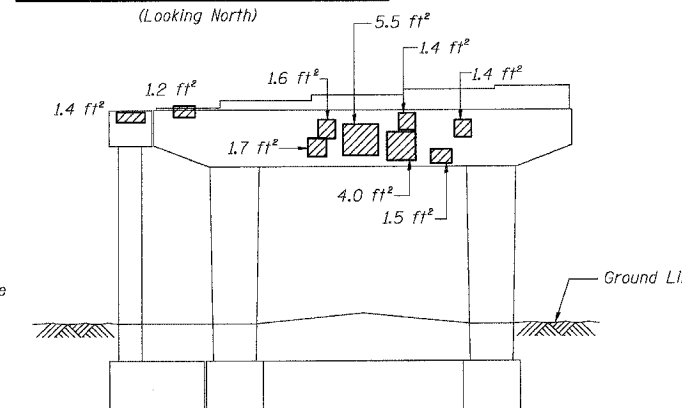
**PIER 37 - SOUTH ELEVATION**  
(Looking North)



**PIER 38 - VIEW C**  
Looking up at bottom of cap



**PIER 38 - NORTH ELEVATION**  
(Looking South)



**PIER 38 - SOUTH ELEVATION**  
(Looking North)

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	177.1
Epoxy Crack Sealing	FOOT	1.2

REVISIONS	DATE
NAME	

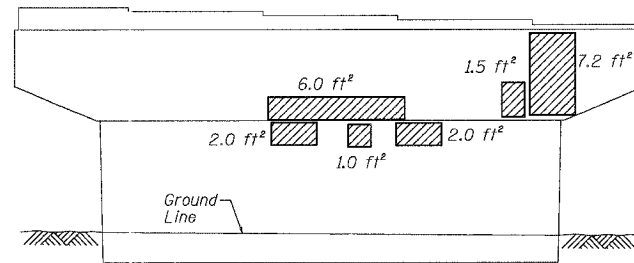
ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
CONCRETE PIER REPAIRS  
SN 016-1059, PIERS 33,34,35,36,37,38  
SCALE: NTS  
DATE: 7/22/2005  
DRAWN BY: BDC  
CHECKED BY: BLU

BOWMAN, BARRETT & ASSOCIATES INC.  
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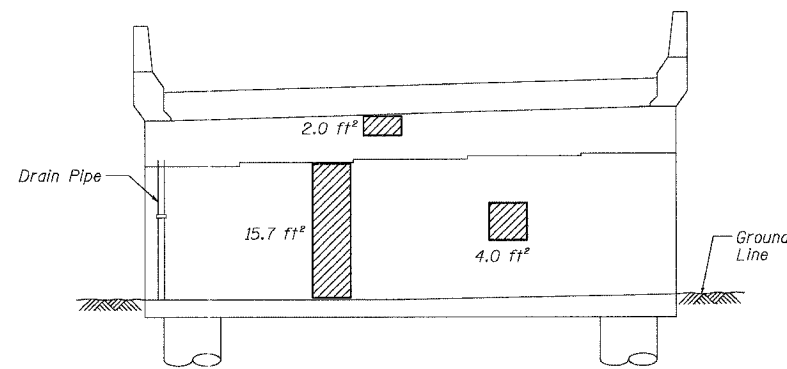
For Notes and Legend See Sheet 253

F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	270
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

62580



**PIER 29 - SOUTH ELEVATION**  
(Looking North)



**ABUTMENT 30 - NORTH ELEVATION**  
(Looking South)

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SO. FT.	48.0

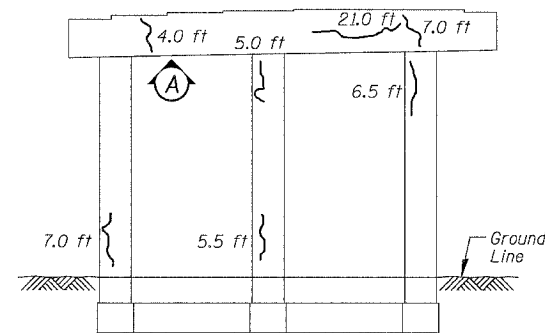
REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION F.A.I. 94/90 (DAN RYAN EXPRESSWAY) NB DAN RYAN ELEVATED BRIDGE REPAIR FROM 15TH TO 28TH STREETS CONCRETE PIER REPAIRS SN 016-1047, PIER 29, ABUTMENT 30 SCALE: NTS DATE: 7/22/2005
NAME	DATE	
		DRAWN BY: BDC CHECKED BY: BLU

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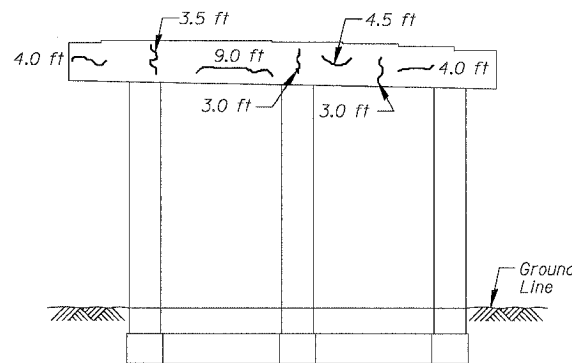
For Notes and Legend See Sheet 253

F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	271
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

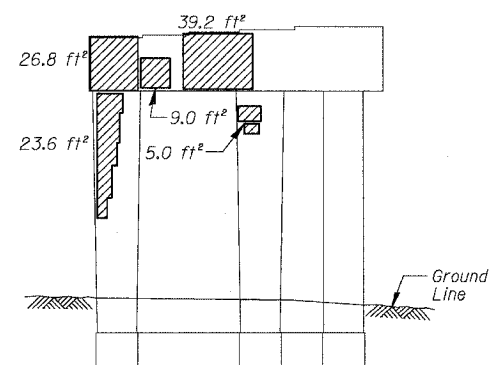
62580



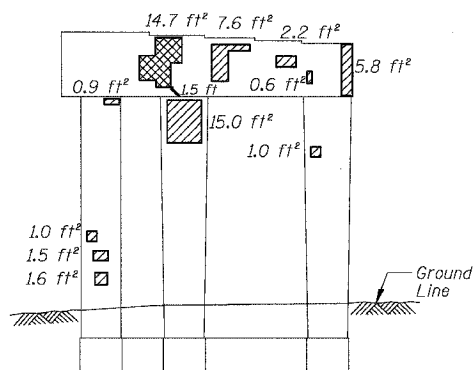
**PIER 22 - NORTH ELEVATION**  
(Looking South)



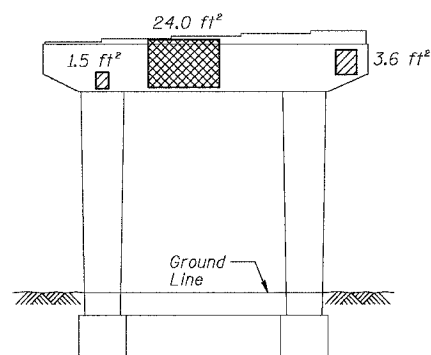
**PIER 22 - SOUTH ELEVATION**  
(Looking North)



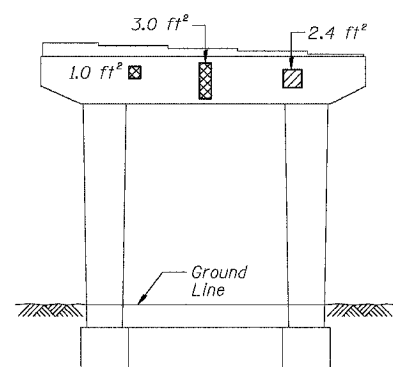
**PIER 23 - NORTH ELEVATION**  
(Looking South)



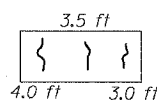
**PIER 23 - SOUTH ELEVATION**  
(Looking North)



**PIER 25 - NORTH ELEVATION**  
(Looking South)

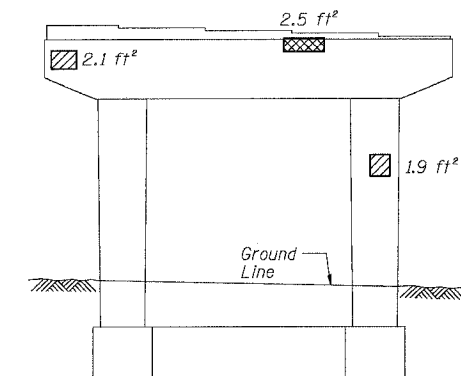


**PIER 25 - SOUTH ELEVATION**  
(Looking North)

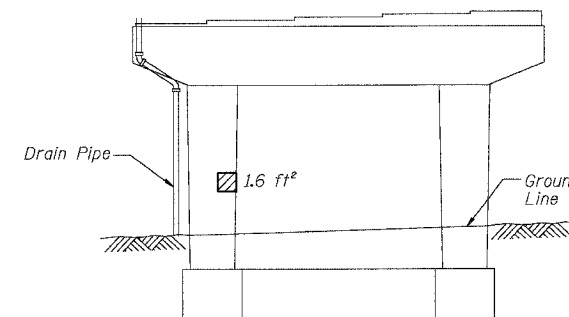


**PIER 22 - VIEW A**

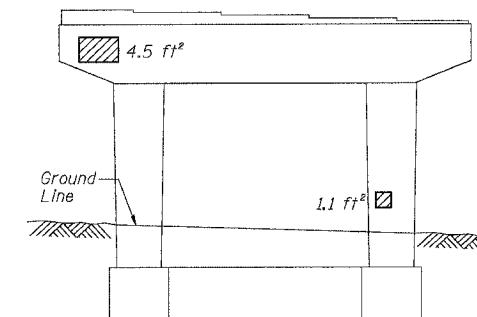
Looking up at bottom of cap



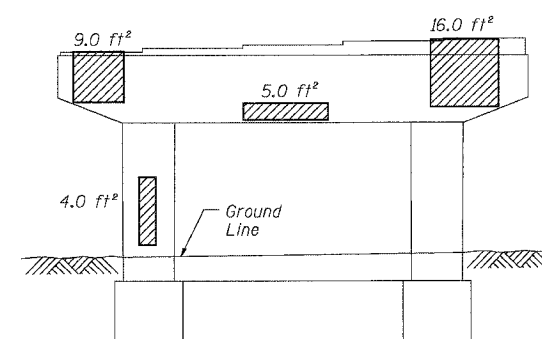
**PIER 26 - SOUTH ELEVATION**  
(Looking North)



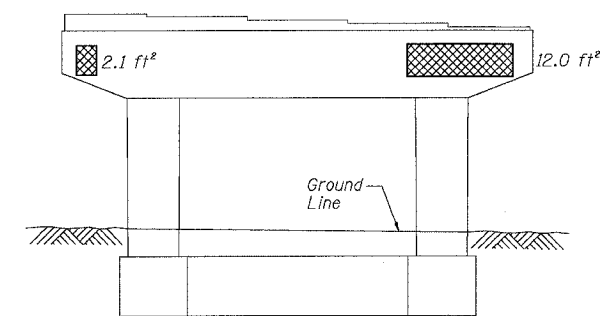
**PIER 27 - NORTH ELEVATION**  
(Looking South)



**PIER 27 - SOUTH ELEVATION**  
(Looking North)



**PIER 28 - NORTH ELEVATION**  
(Looking South)



**PIER 28 - SOUTH ELEVATION**  
(Looking North)

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	222.6
Formed Concrete Repair (Depth greater than 5")	SQ. FT.	68.2
Epoxy Crack Sealing	FOOT	113.9

REVISIONS NAME	DATE

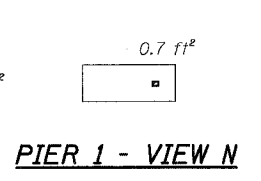
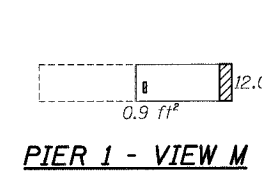
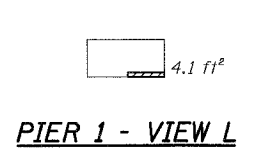
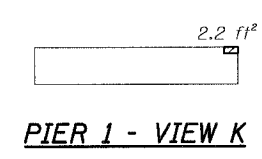
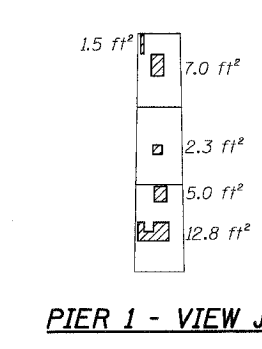
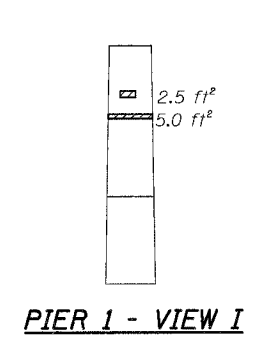
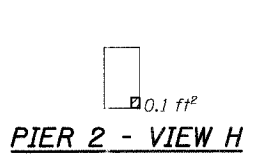
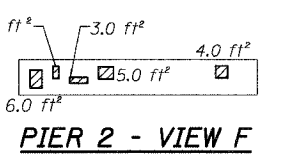
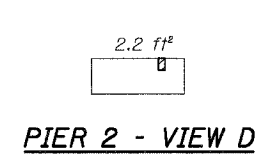
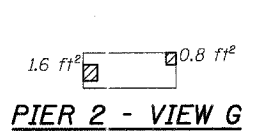
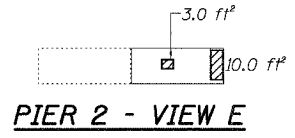
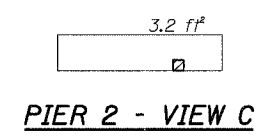
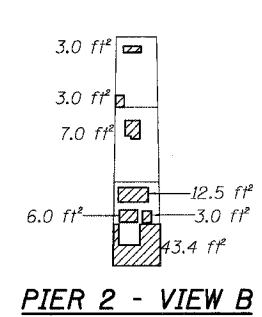
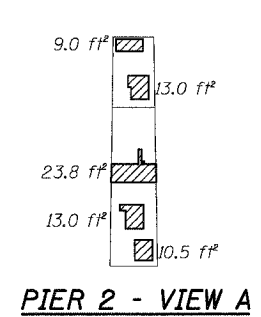
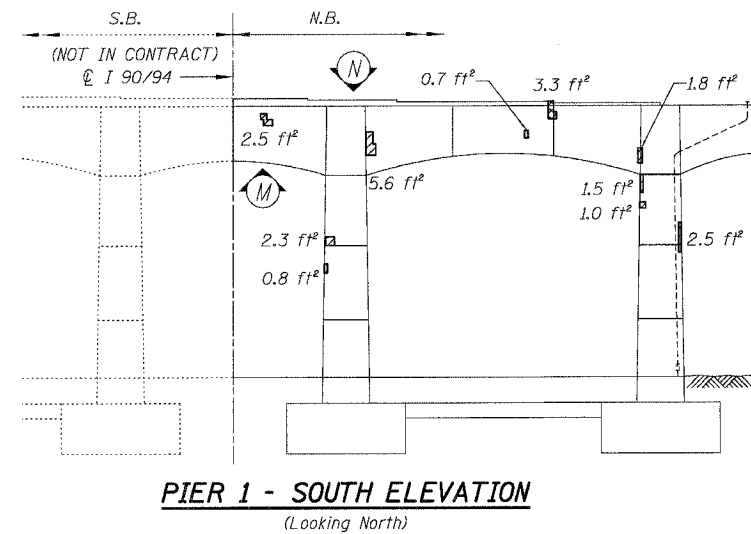
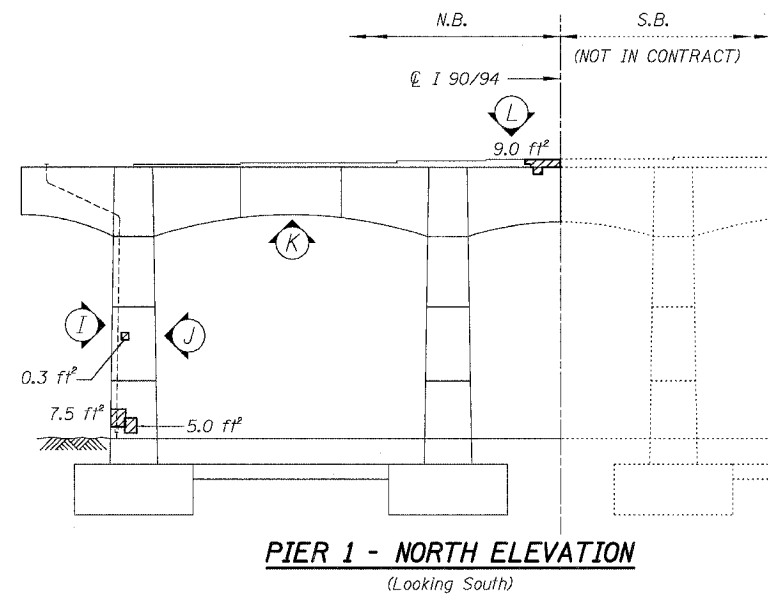
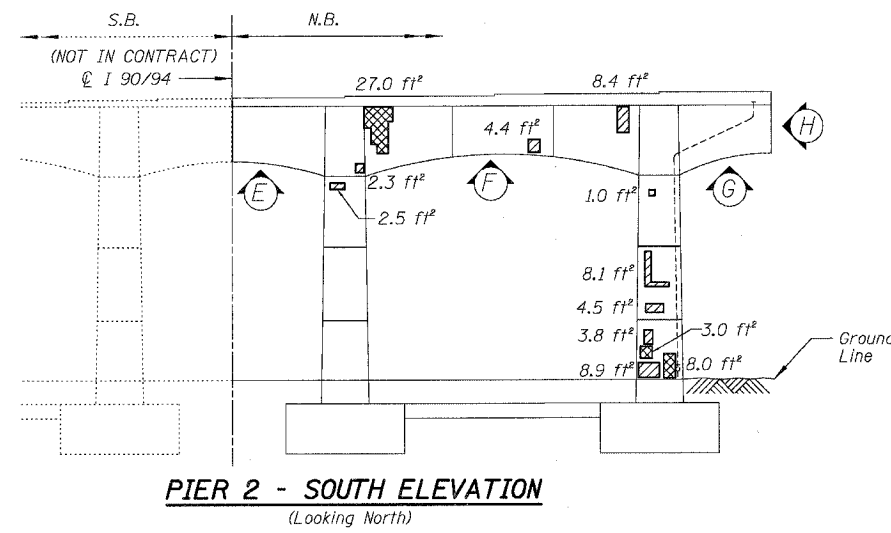
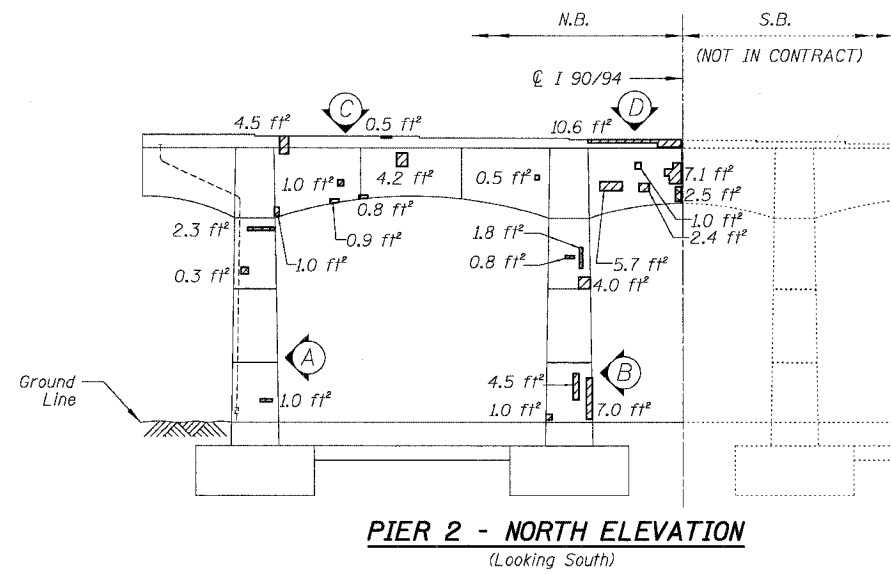
ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
CONCRETE PIER REPAIRS  
SN 016-1047, PIERS 22,23,25,26,27,28  
SCALE: NTS  
DATE: 8/12/2005  
DRAWN BY: BDC  
CHECKED BY: BLU

BOWMAN, BARRETT & ASSOCIATES INC.  
CONSULTING ENGINEERS  
Chicago, Illinois  
312.228.0100  
www.bbainc.com

For Notes and Legend See Sheet 253

9/30/05 9:36:48 AM

F.A.I.	SECTION	COUNTY	TOTAL SHEET
94/90	2003-028F	COOK	419
NO.			272
STA.	TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	
62580			



**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	450.1
Formed Concrete Repair (Depth Greater than 5")	SQ. FT.	50.4

REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 CONCRETE PIER REPAIRS  
 SN 016-1114, PIERS 1,2  
 SCALE: NTS  
 DATE: 8/12/2005  
 DRAWN BY: BDC  
 CHECKED BY: BLU

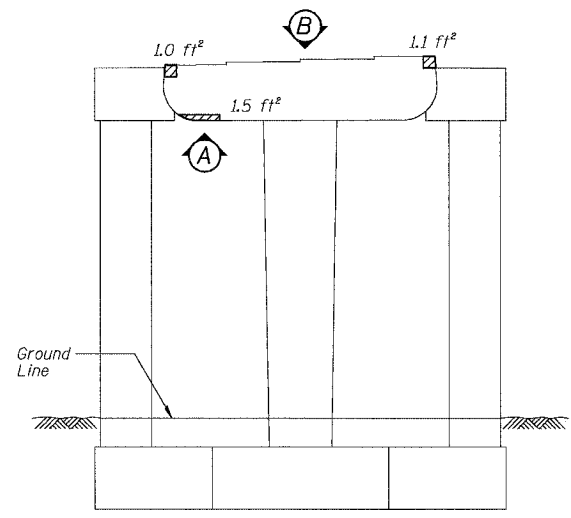
BOWMAN, BARRETT & ASSOCIATES INC.  
 CONSULTING ENGINEERS  
 Chicago, Illinois  
 312.228.0100  
 www.bbainc.com

For Notes and Legend See Sheet 253

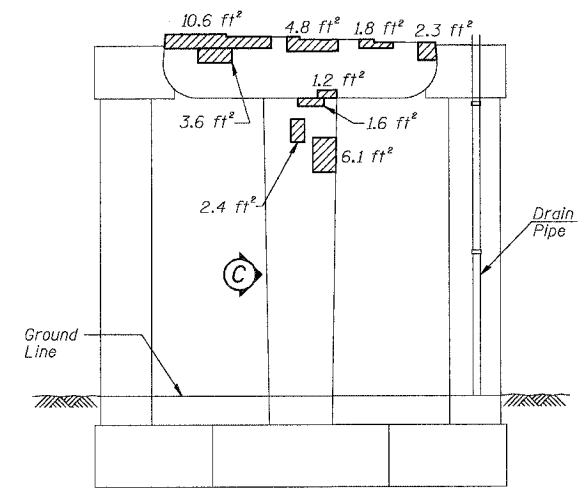
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F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	273
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

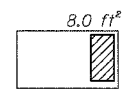
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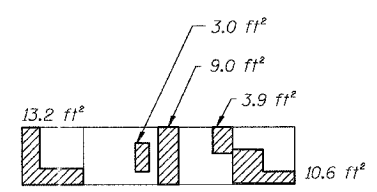
**PIER D-7 - NORTH ELEVATION**  
(Looking South)



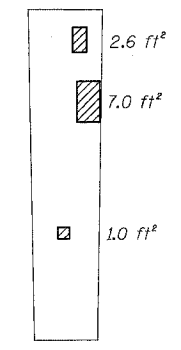
**PIER D-7 - SOUTH ELEVATION**  
(Looking North)



**PIER D-7 - VIEW A**  
Looking up at bottom of cap



**PIER D-7 - VIEW B**  
Looking down at top of seat



**PIER D-7 - VIEW C**  
Looking East at side of column

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	110.7

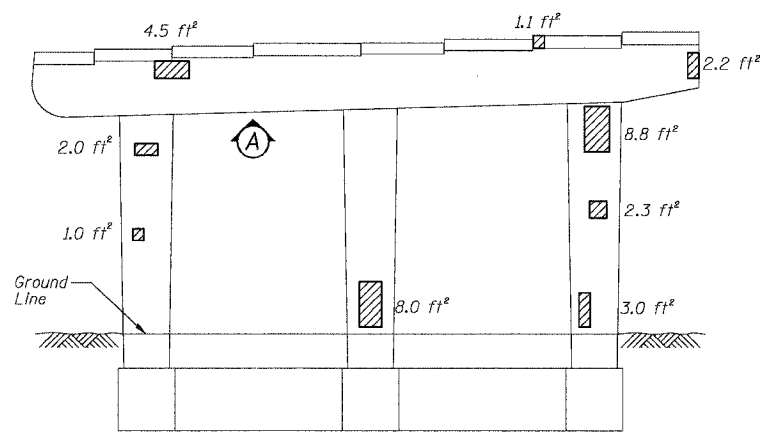
REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 CONCRETE PIER REPAIRS  
 SN 016-1113, PIER D-7  
 SCALE: NTS  
 DATE: 7/22/2005  
 DRAWN BY: BDC  
 CHECKED BY: BLU

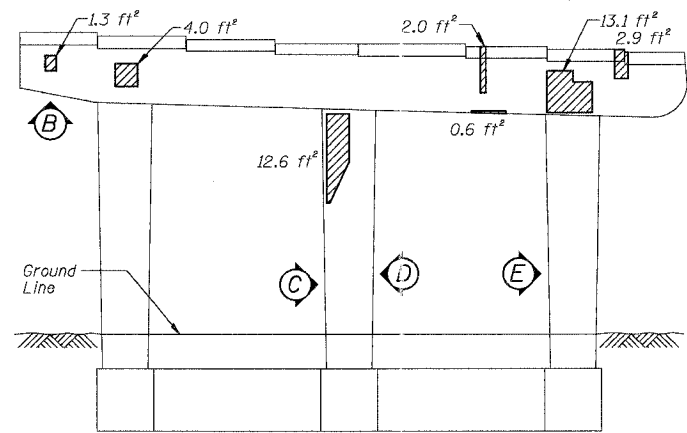
BOWMAN, BARRETT & ASSOCIATES INC.  
 CONSULTING ENGINEERS  
 Chicago, Illinois  
 312.228.0100  
 www.bbainc.com

For Notes and Legend See Sheet 2-53

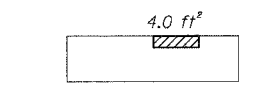
F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	274
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	62580	



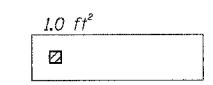
**PIER D-9 - NORTH ELEVATION**  
(Looking South)



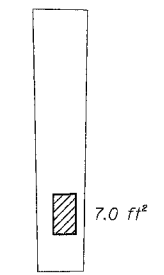
**PIER D-9 - SOUTH ELEVATION**  
(Looking North)



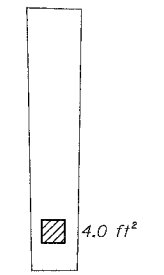
**PIER D-9 - VIEW A**  
Looking up at bottom of cap



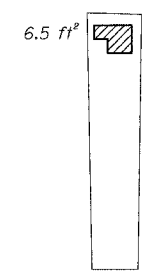
**PIER D-9 - VIEW B**  
Looking up at bottom of cap



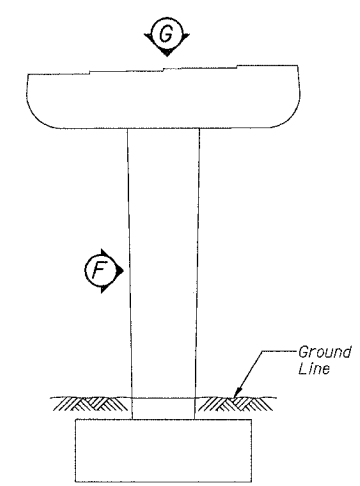
**PIER D-9 - VIEW C**  
Looking East at side of column



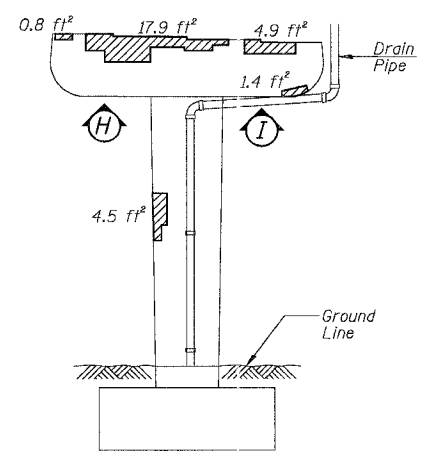
**PIER D-9 - VIEW D**  
Looking West at side of column



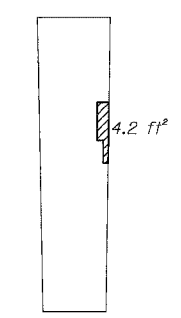
**PIER D-9 - VIEW E**  
Looking East at side of column



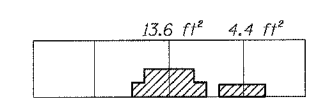
**PIER D-8 - NORTH ELEVATION**  
(Looking South)



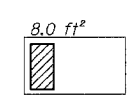
**PIER D-8 - SOUTH ELEVATION**  
(Looking North)



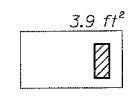
**PIER D-8 - VIEW F**  
Looking West at side of column



**PIER D-8 - VIEW G**  
Looking down at top of seat



**PIER D-8 - VIEW H**  
Looking up at bottom of cap



**PIER D-8 - VIEW I**  
Looking up at bottom of cap

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	178.9

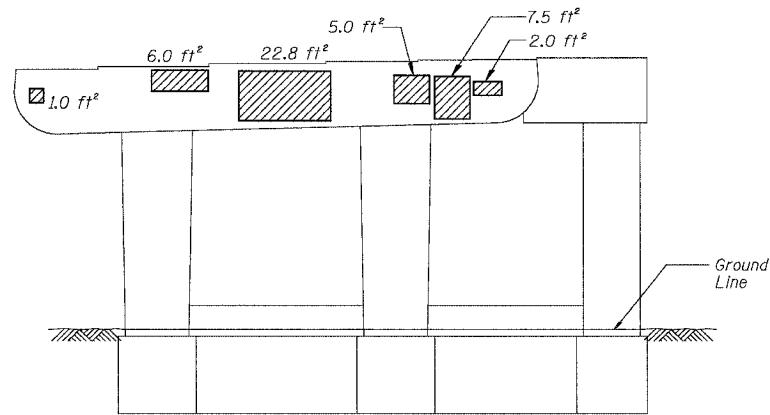
REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
CONCRETE PIER REPAIRS  
SN 016-1113, PIERS D-8,D-9  
SCALE: NTS  
DATE: 7/22/2005  
DRAWN BY: BDC  
CHECKED BY: BLU

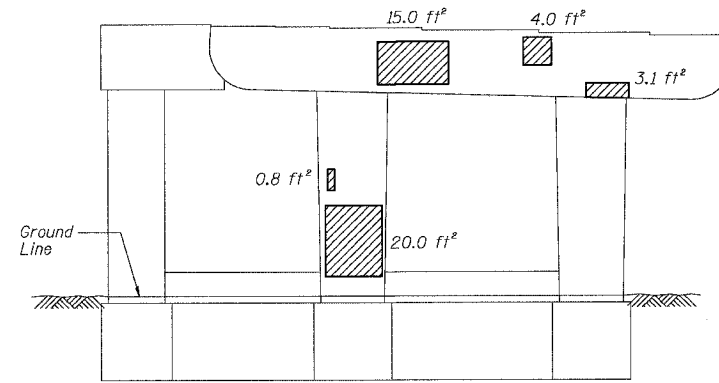
BOWMAN, BARRETT & ASSOCIATES INC.  
CONSULTING ENGINEERS  
Chicago, Illinois  
312.228.0100  
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For Notes and Legend See Sheet 253

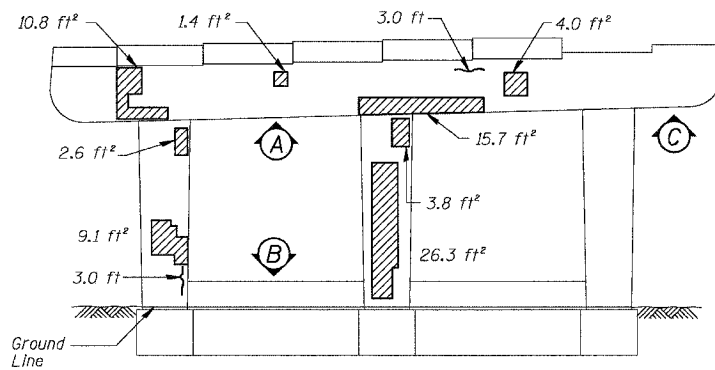
F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	275
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
62580				



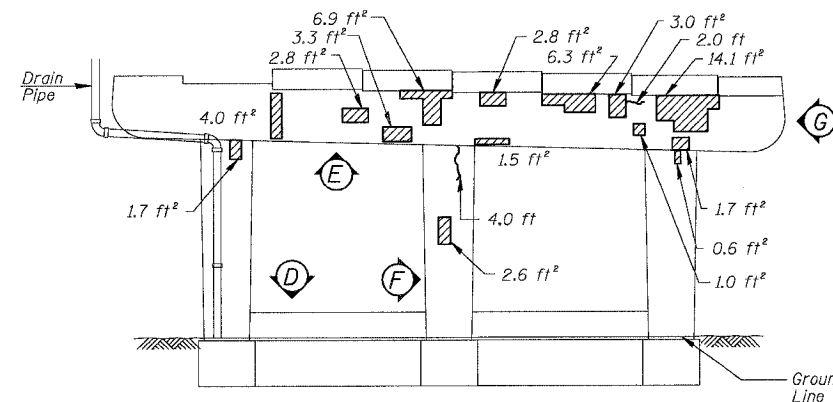
**PIER D-11 - NORTH ELEVATION**  
(Looking South)



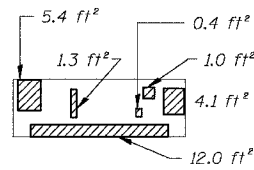
**PIER D-11 - SOUTH ELEVATION**  
(Looking North)



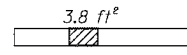
**PIER D-10 - NORTH ELEVATION**  
(Looking South)



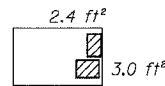
**PIER D-10 - SOUTH ELEVATION**  
(Looking North)



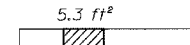
**PIER D-10 - VIEW A**  
Looking up at bottom of cap



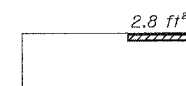
**PIER D-10 - VIEW B**  
Looking down at top of grade beam



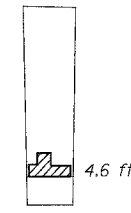
**PIER D-10 - VIEW C**  
Looking up at bottom of cap



**PIER D-10 - VIEW D**  
Looking down at top of grade beam



**PIER D-10 - VIEW E**  
Looking up at bottom of cap



**PIER D-10 - VIEW F**  
Looking East at side of column



**PIER D-10 - VIEW G**  
Looking West at end of cap

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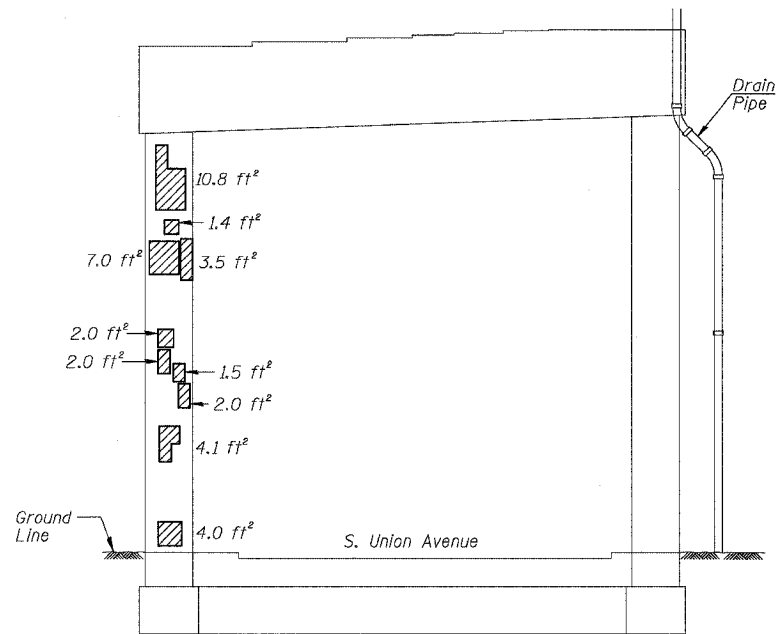
**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	301.6
Epoxy Crack Sealing	FOOT	13.8

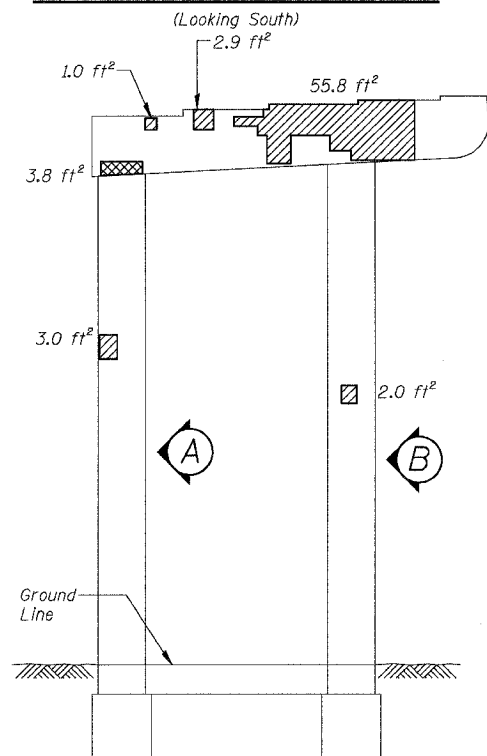
REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
CONCRETE PIER REPAIRS  
SN 016-1113, PIERS D-10,D-11  
SCALE: NTS  
DATE: 7/22/2005  
DRAWN BY: BDC  
CHECKED BY: BLU

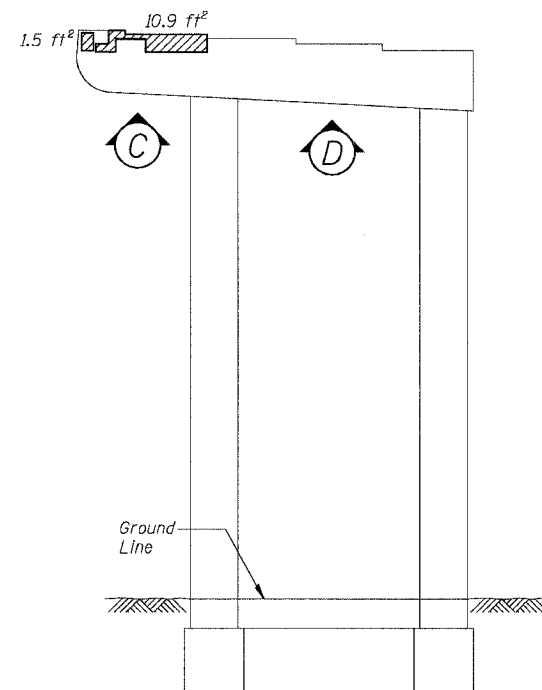
F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	276
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
62580				



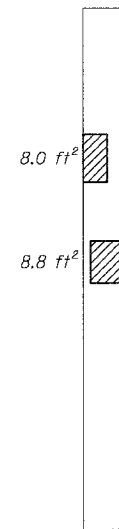
**PIER C-3 - NORTH ELEVATION**



**PIER C-2 - NORTH ELEVATION**  
(Looking South)

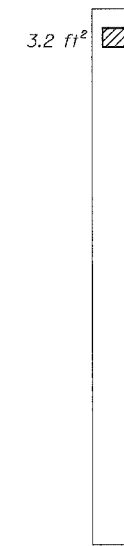


**PIER C-2 - SOUTH ELEVATION**  
(Looking North)



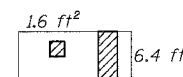
**PIER C-2 - VIEW A**

Looking East at side of column



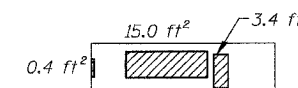
**PIER C-2 - VIEW B**

Looking East at side of column



**PIER C-2 - VIEW C**

Looking up at bottom of cap



**PIER C-2 - VIEW D**

Looking up at bottom of cap

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	186.5
Formed Concrete Repair (Depth Greater than 5")	SQ. FT.	4.4

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 CONCRETE PIER REPAIRS  
 SN 016-1113, PIERS C-2,C-3  
 SCALE: NTS  
 DATE: 8/12/2005  
 DRAWN BY: BDC  
 CHECKED BY: BLU

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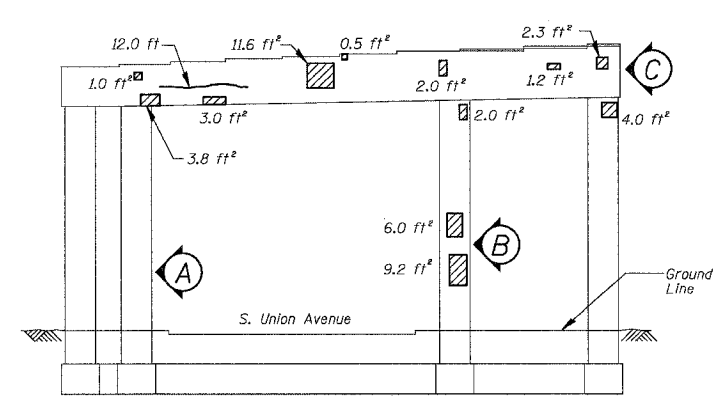
For Notes and Legend See Sheet 2'53

8/11/2005 9:36:03 AM  
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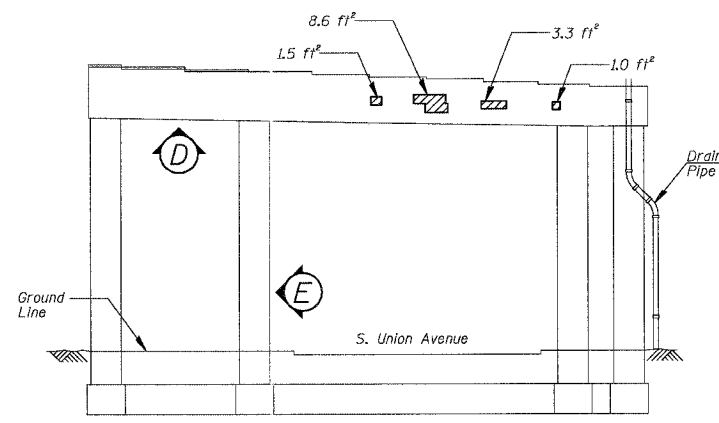


F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	277
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

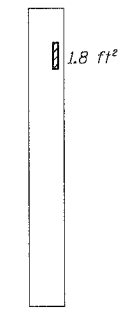
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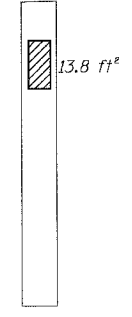
**PIER C-5 - NORTH ELEVATION**  
(Looking South)



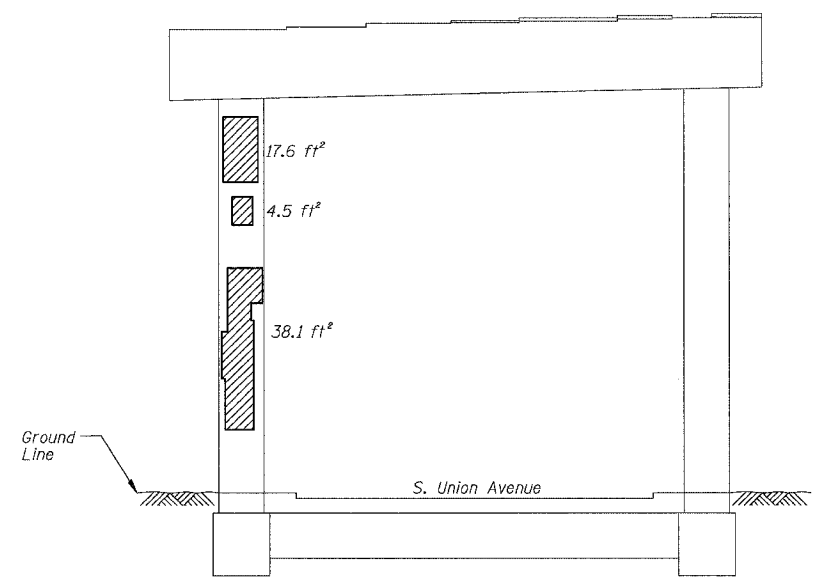
**PIER C-5 - SOUTH ELEVATION**  
(Looking North)



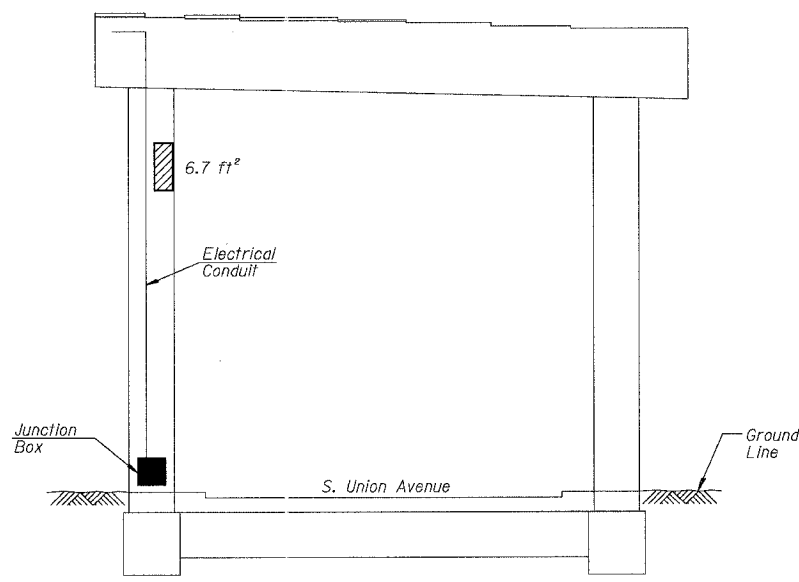
**PIER C-5 - VIEW A**  
Looking East at side of column



**PIER C-5 - VIEW B**  
Looking East at side of column



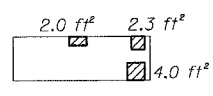
**PIER C-4 - NORTH ELEVATION**  
(Looking South)



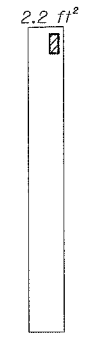
**PIER C-4 - SOUTH ELEVATION**  
(Looking North)



**PIER C-5 - VIEW C**  
Looking East at end of cap



**PIER C-5 - VIEW D**  
Looking up at bottom of cap



**PIER C-5 - VIEW E**  
Looking West at side of column

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	195.5
Epoxy Crack Sealing	FOOT	13.8

REVISIONS	
NAME	DATE

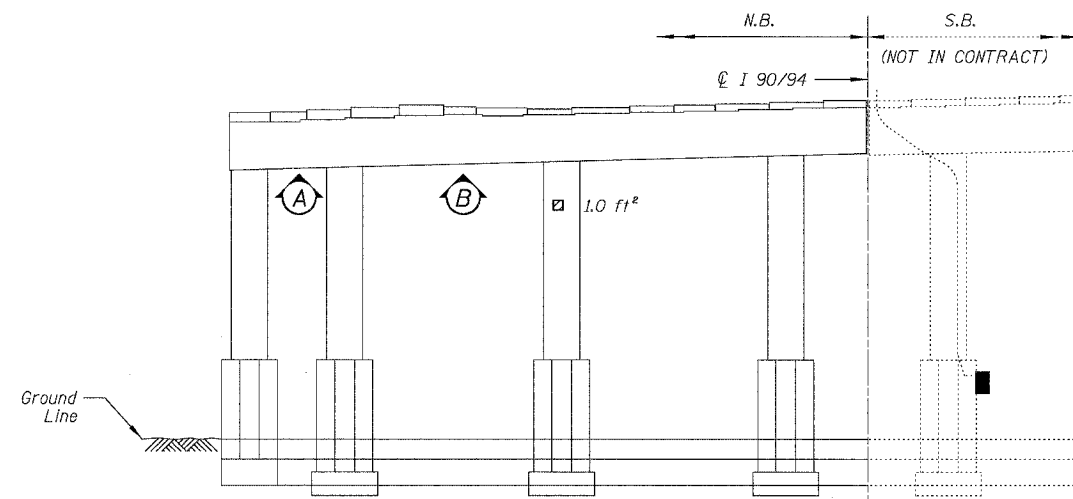
ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
CONCRETE PIER REPAIRS  
SN 016-1113, PIERS C-4,C-5  
SCALE: NTS  
DATE: 7/22/2005  
DRAWN BY: BDC  
CHECKED BY: BLU

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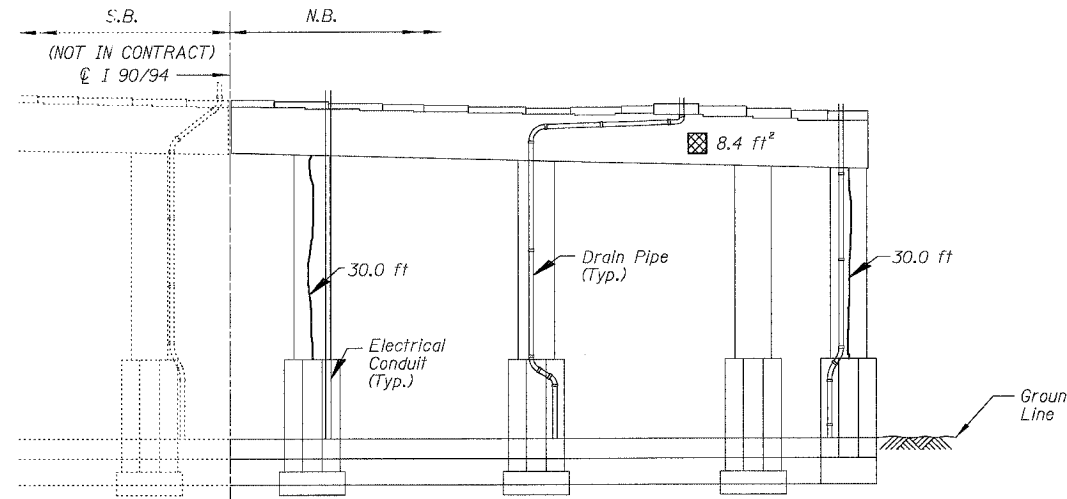
For Notes and Legend See Sheet 253

F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	278
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

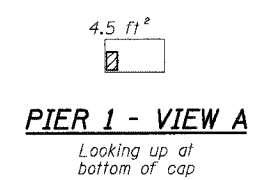
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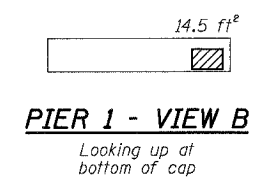
**PIER 1 - NORTH ELEVATION**  
(Looking South)



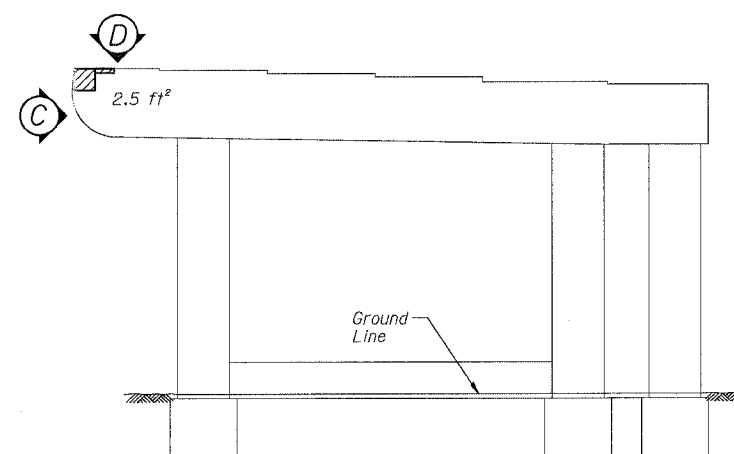
**PIER 1 - SOUTH ELEVATION**  
(Looking North)



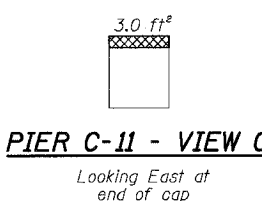
**PIER 1 - VIEW A**  
Looking up at bottom of cap



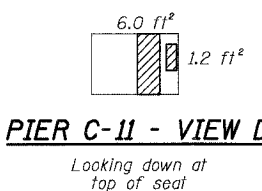
**PIER 1 - VIEW B**  
Looking up at bottom of cap



**PIER C-11 - SOUTH ELEVATION**  
(Looking North)



**PIER C-11 - VIEW C**  
Looking East at end of cap



**PIER C-11 - VIEW D**  
Looking down at top of seal

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	34.2
Formed Concrete Repair (Depth Greater than 5")	SQ. FT.	13.1
Epoxy Crack Sealing	FOOT	69.0

REVISIONS NAME	DATE

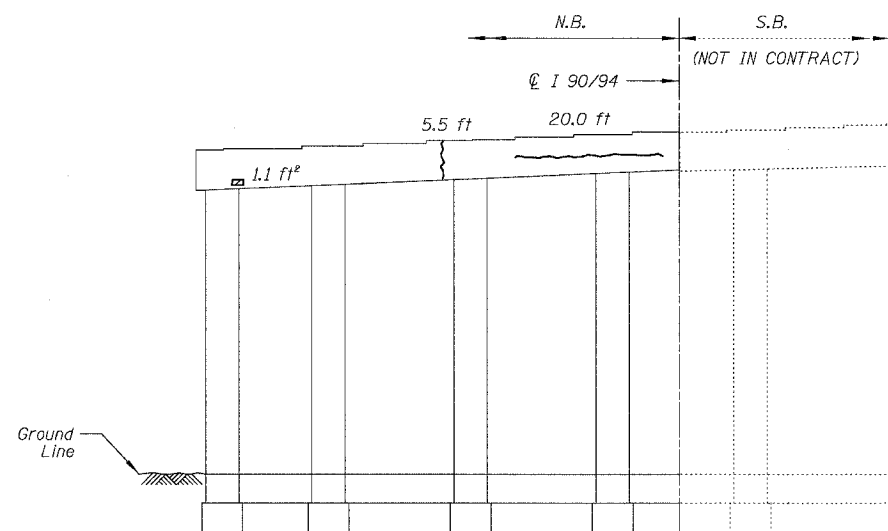
ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 CONCRETE PIER REPAIRS  
 SN O16-1113, PIERS 1, C-11  
 SCALE: NTS  
 DATE: 8/12/2005  
 DRAWN BY: BDC  
 CHECKED BY: BLU

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 CONSULTING ENGINEERS  
 Chicago, Illinois  
 312.228.0100  
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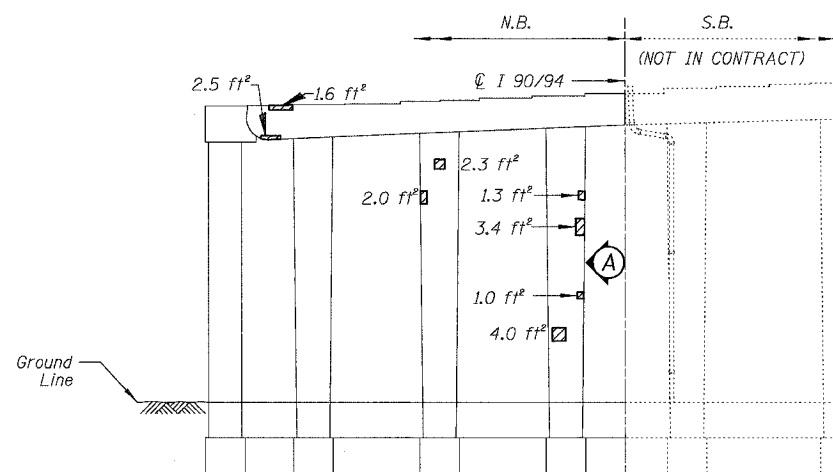
For Notes and Legend See Sheet 2.53

9-33620 AM 8/17/2005

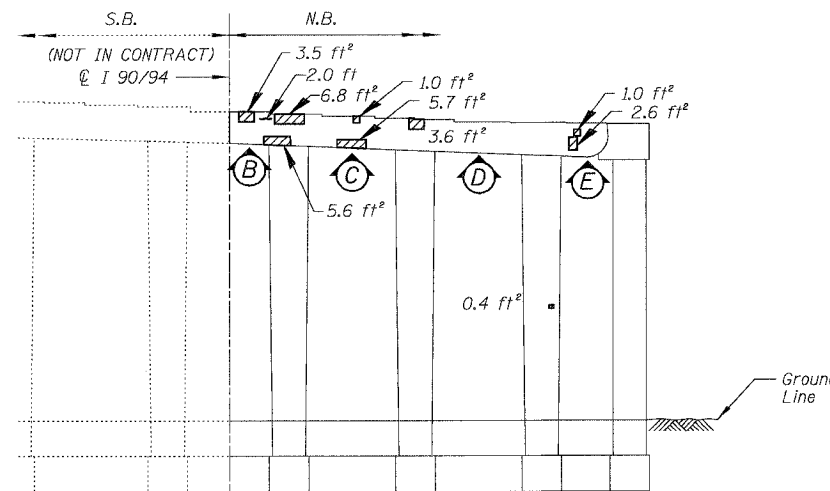
F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	279
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62580				



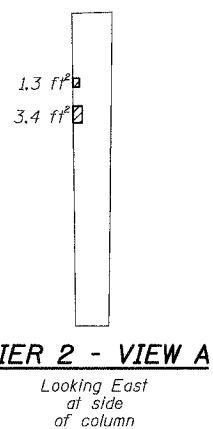
**PIER 3 - NORTH ELEVATION**  
(Looking South)



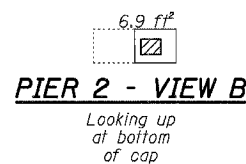
**PIER 2 - NORTH ELEVATION**  
(Looking South)



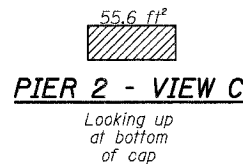
**PIER 2 - SOUTH ELEVATION**  
(Looking North)



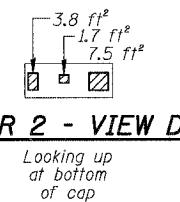
**PIER 2 - VIEW A**  
Looking East  
at side  
of column



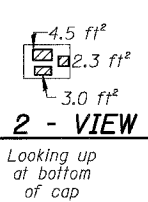
**PIER 2 - VIEW B**  
Looking up  
at bottom  
of cap



**PIER 2 - VIEW C**  
Looking up  
at bottom  
of cap



**PIER 2 - VIEW D**  
Looking up  
at bottom  
of cap



**PIER 2 - VIEW E**  
Looking up  
at bottom  
of cap

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	160.3
Epoxy Crack Sealing	FOOT	31.6

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
CONCRETE PIER REPAIRS  
SN 016-1113, PIERS 2,3

SCALE: NTS  
DATE: 8/12/2005

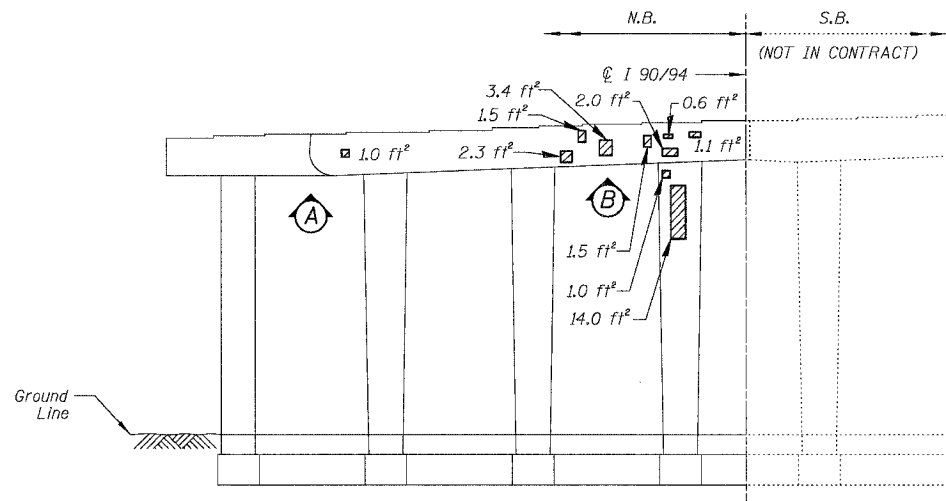
DRAWN BY: BDC  
CHECKED BY: BLU

BOWMAN, BARRETT & ASSOCIATES INC.  
CONSULTING ENGINEERS  
Chicago, Illinois  
312.228.0100  
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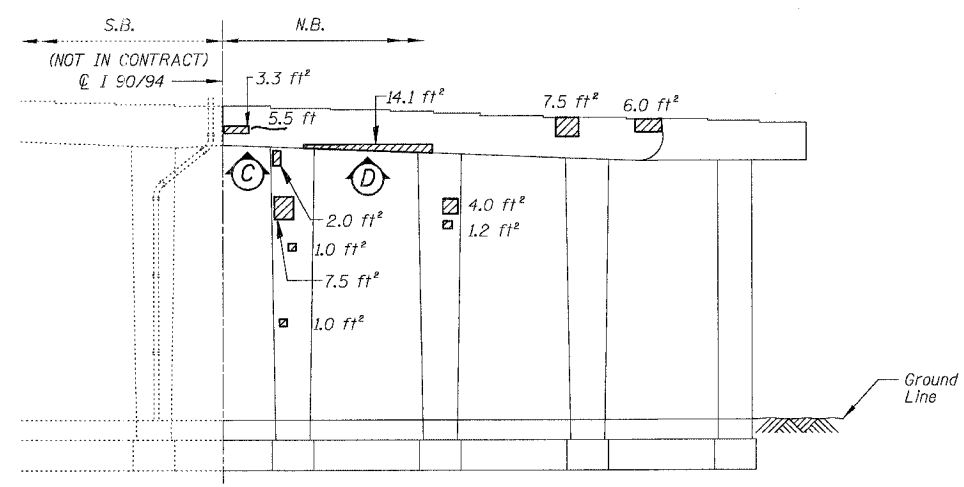
For Notes and Legend See Sheet 253

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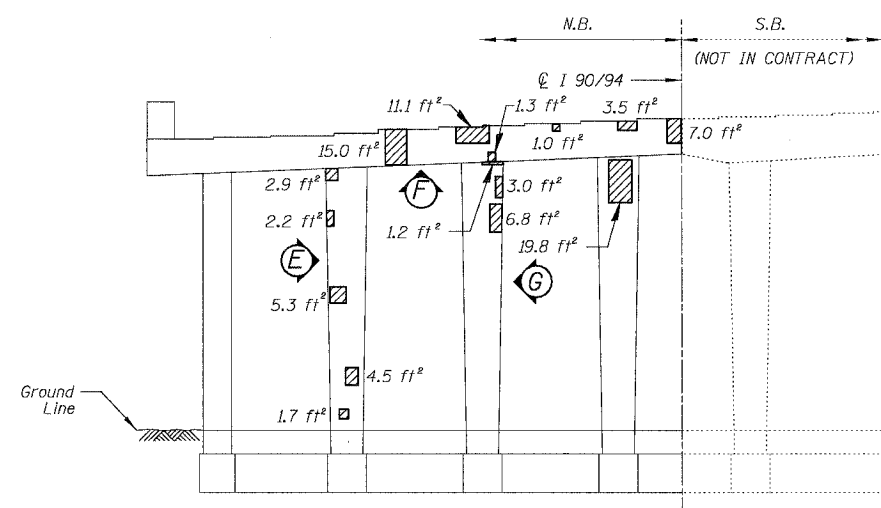
F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	280
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62580				



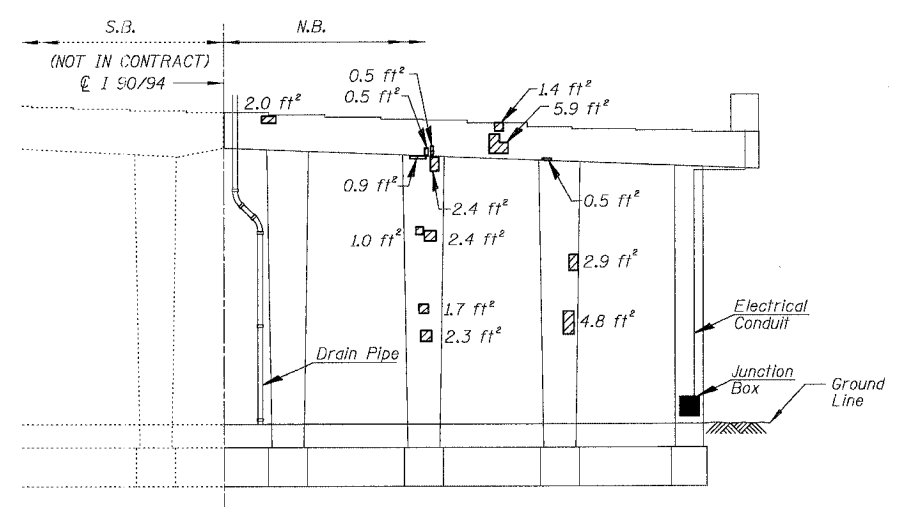
**PIER 5 - NORTH ELEVATION**  
(Looking South)



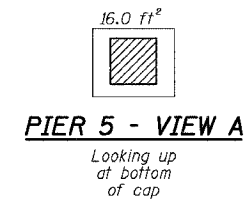
**PIER 5 - SOUTH ELEVATION**  
(Looking North)



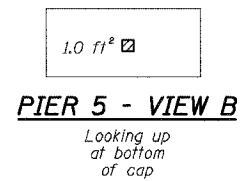
**PIER 4 - NORTH ELEVATION**  
(Looking South)



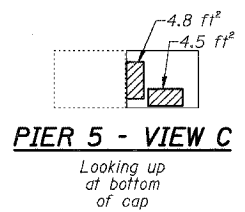
**PIER 4 - SOUTH ELEVATION**  
(Looking North)



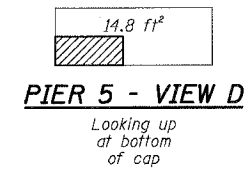
**PIER 5 - VIEW A**  
Looking up at bottom of cap



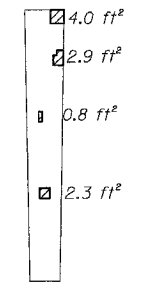
**PIER 5 - VIEW B**  
Looking up at bottom of cap



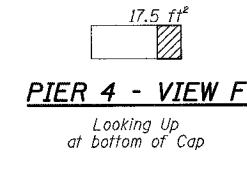
**PIER 5 - VIEW C**  
Looking up at bottom of cap



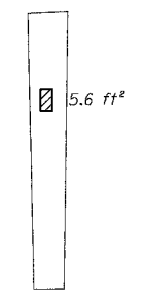
**PIER 5 - VIEW D**  
Looking up at bottom of cap



**PIER 4 - VIEW E**  
Looking West at side of column



**PIER 4 - VIEW F**  
Looking up at bottom of cap



**PIER 4 - VIEW G**  
Looking East at side of column

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	305.4
Epoxy Crack Sealing	FOOT	6.3

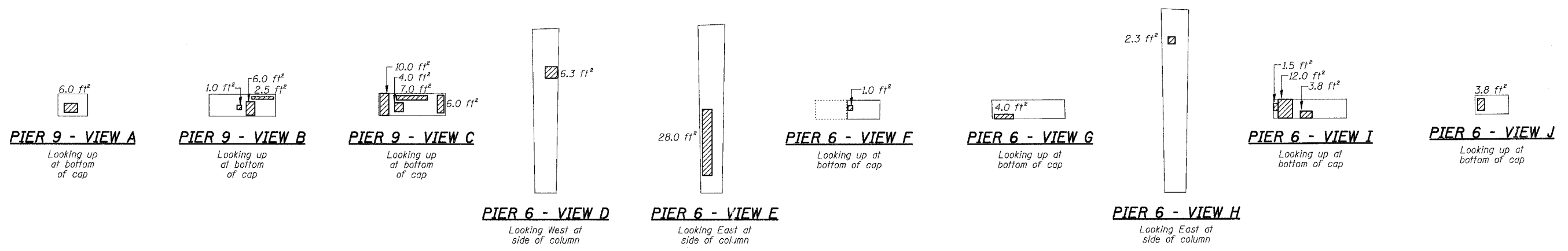
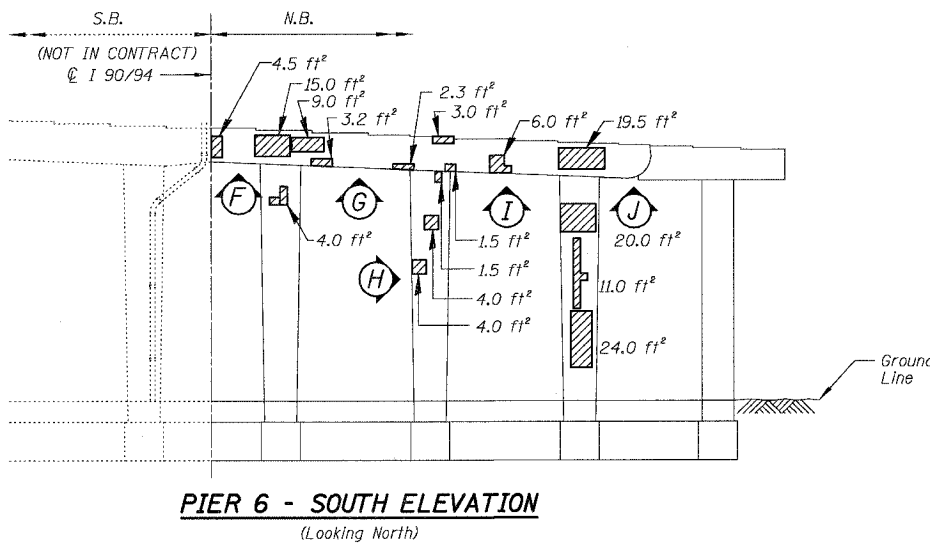
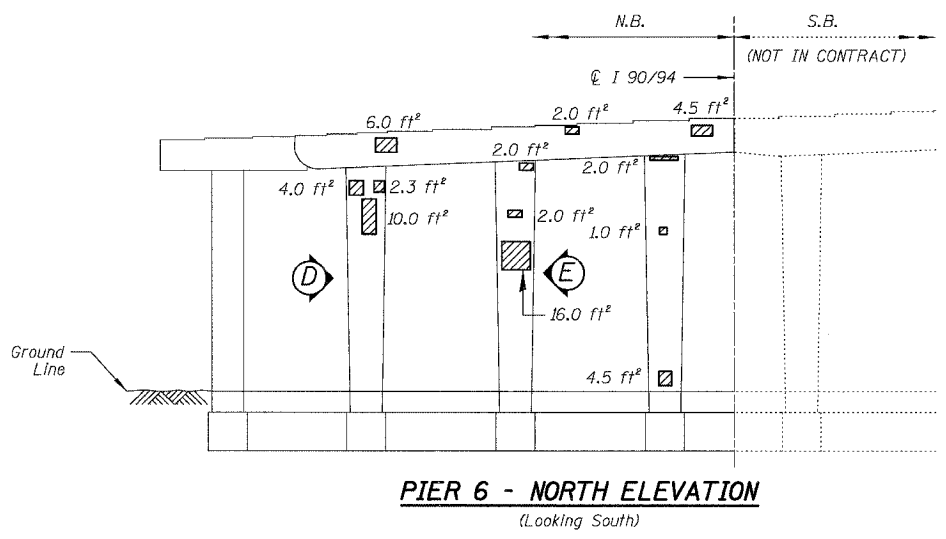
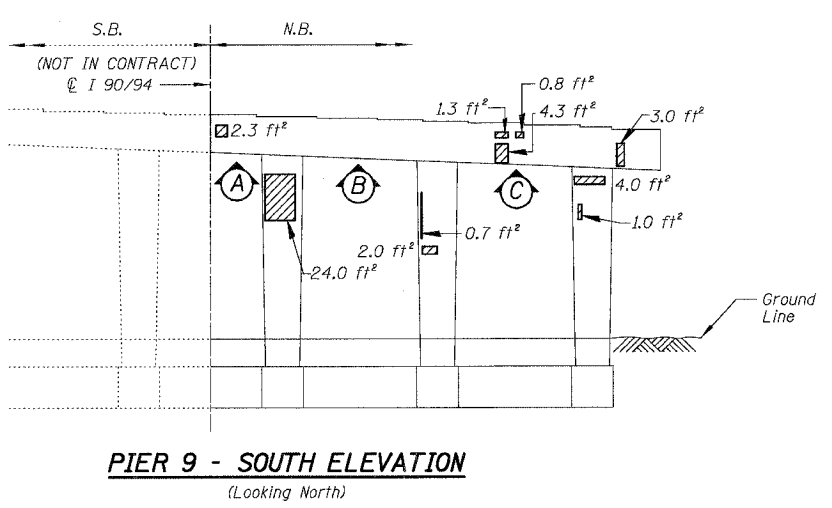
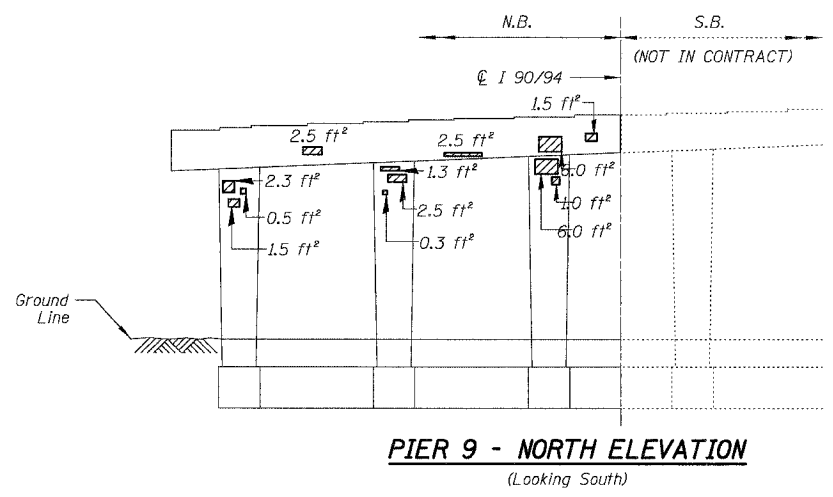
REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 CONCRETE PIER REPAIRS  
 SN 016-1113, PIERS 4,5  
 SCALE: NTS  
 DATE: 7/22/2005  
 DRAWN BY: BDC  
 CHECKED BY: BLU

BOWMAN, BARRETT & ASSOCIATES INC.  
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 Chicago, Illinois  
 312.228.0100  
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For Notes and Legend See Sheet 2.53

F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	261
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
62580				



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Chicago, Illinois  
312.228.0100  
www.bbainc.com

For Notes and Legend See Sheet 2.53

**BILL OF MATERIAL**

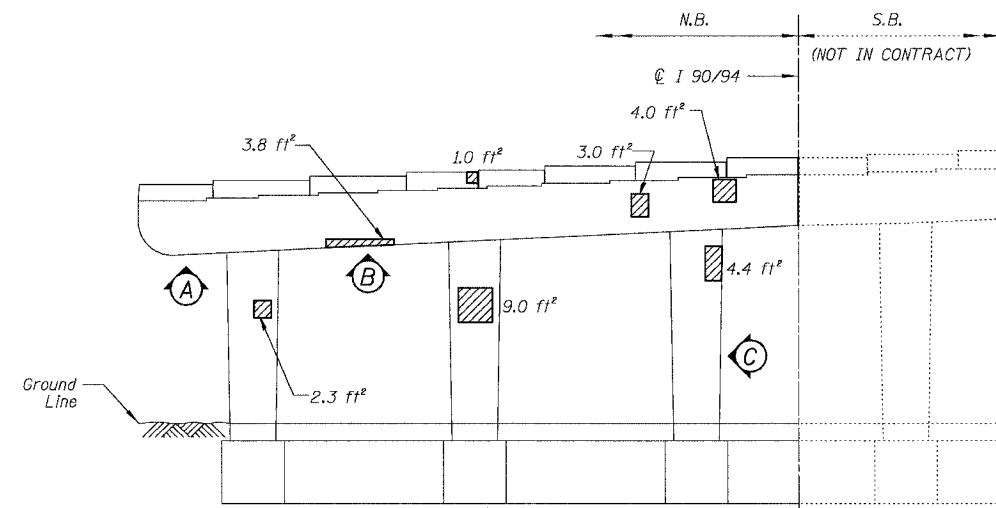
ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	420.1

REVISIONS	DATE
NAME	

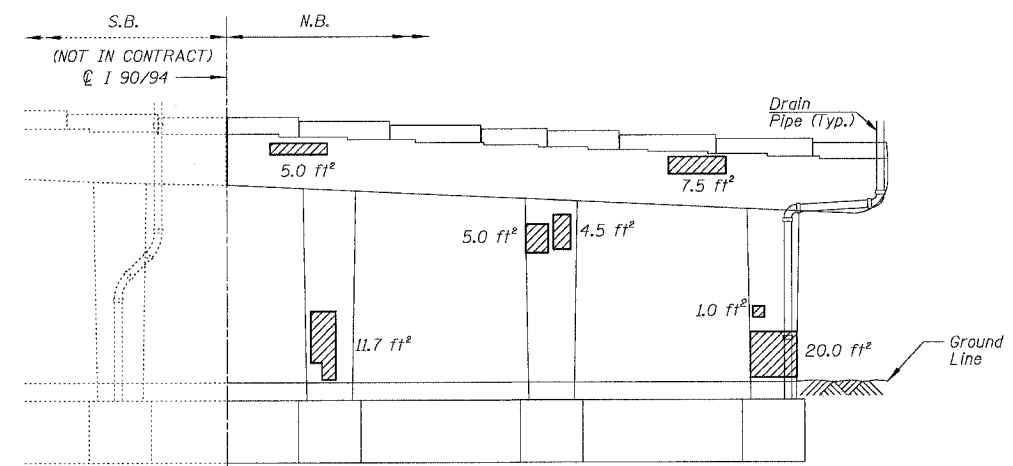
ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
CONCRETE PIER REPAIRS  
SN 016-1113, PIERS 6,9  
SCALE: NTS  
DATE: 7/22/2005  
DRAWN BY: BDC  
CHECKED BY: BLU

F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	282
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

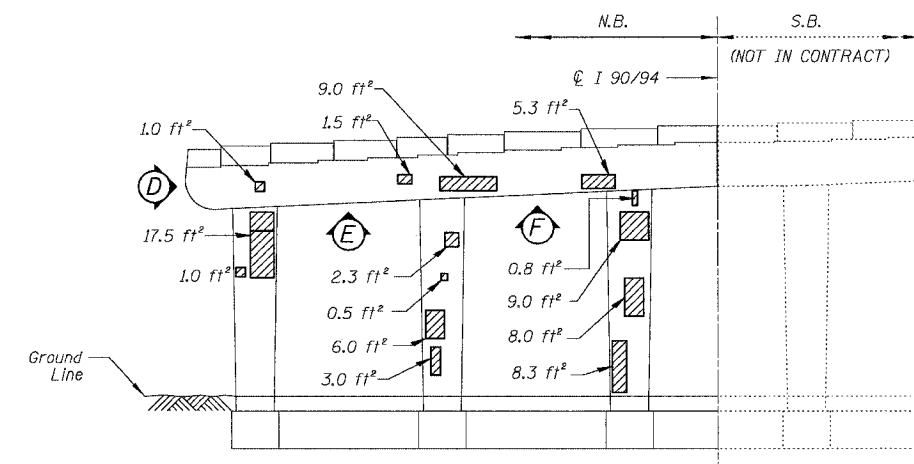
62580



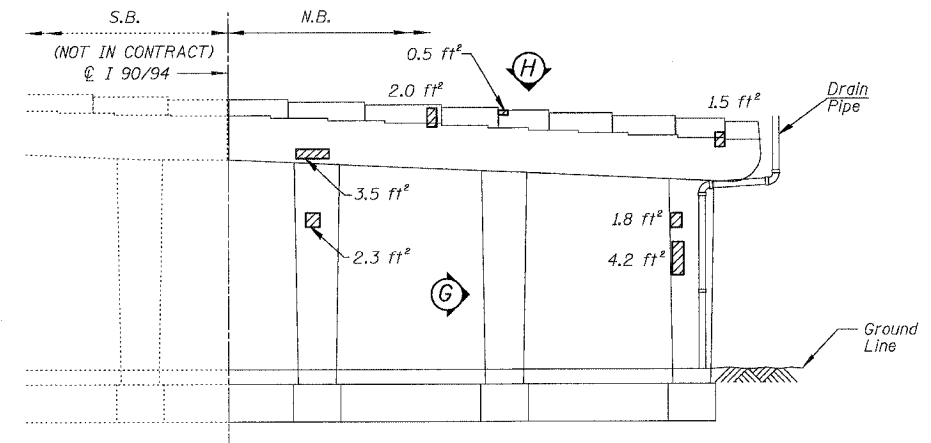
**PIER 11 - NORTH ELEVATION**  
(Looking South)



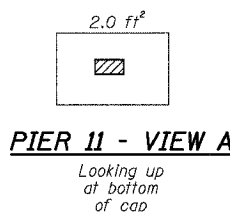
**PIER 11 - SOUTH ELEVATION**  
(Looking North)



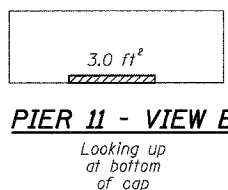
**PIER 10 - NORTH ELEVATION**  
(Looking South)



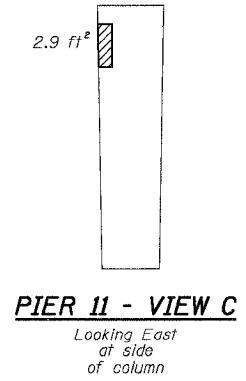
**PIER 10 - SOUTH ELEVATION**  
(Looking North)



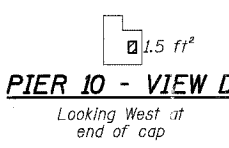
**PIER 11 - VIEW A**  
Looking up at bottom of cap



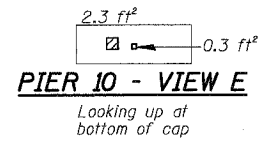
**PIER 11 - VIEW B**  
Looking up at bottom of cap



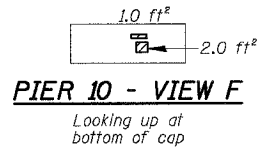
**PIER 11 - VIEW C**  
Looking East at side of column



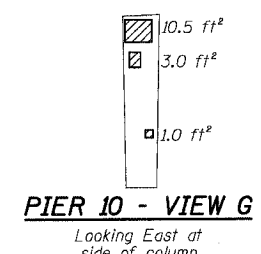
**PIER 10 - VIEW D**  
Looking West at end of cap



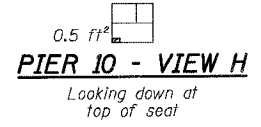
**PIER 10 - VIEW E**  
Looking up at bottom of cap



**PIER 10 - VIEW F**  
Looking up at bottom of cap



**PIER 10 - VIEW G**  
Looking East at side of column



**PIER 10 - VIEW H**  
Looking down at top of seat

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	231.4

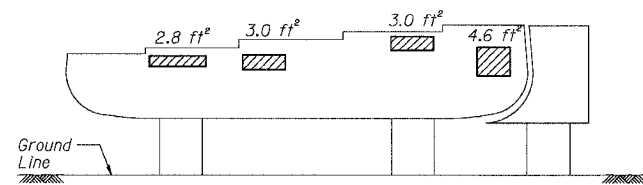
REVISIONS	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
CONCRETE PIER REPAIRS  
SN 016-1113, PIERS 10,11  
SCALE: NTS  
DATE: 7/22/2005  
DRAWN BY: BDC  
CHECKED BY: BLU

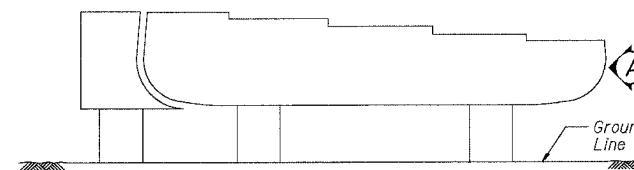
BOWMAN, BARRETT & ASSOCIATES INC.  
CONSULTING ENGINEERS  
Chicago, Illinois  
312.228.0100  
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For Notes and Legend See Sheet 253

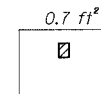
F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	283
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	62580	



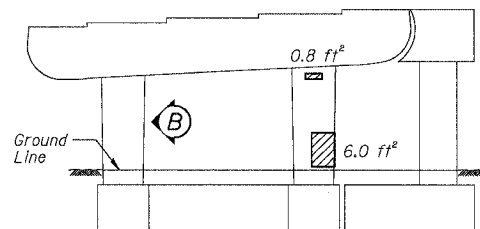
**PIER D-13 - NORTH ELEVATION**  
(Looking South)



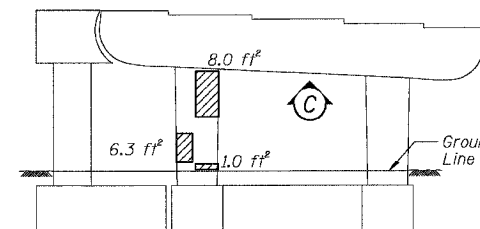
**PIER D-13 - SOUTH ELEVATION**  
(Looking North)



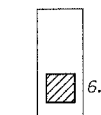
**PIER D-13 - VIEW A**  
Looking West at end of cap



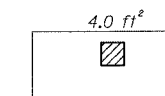
**PIER D-12 - NORTH ELEVATION**  
(Looking South)  
Repairs are required on side of column also.



**PIER D-12 - SOUTH ELEVATION**  
(Looking North)  
Repairs are required on side of column also.



**PIER D-12 - VIEW B**  
Looking East at side of column



**PIER D-12 - VIEW C**  
Looking up at bottom of cap

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**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance	SQ. FT.	53.5
Enhanced Shotcrete		

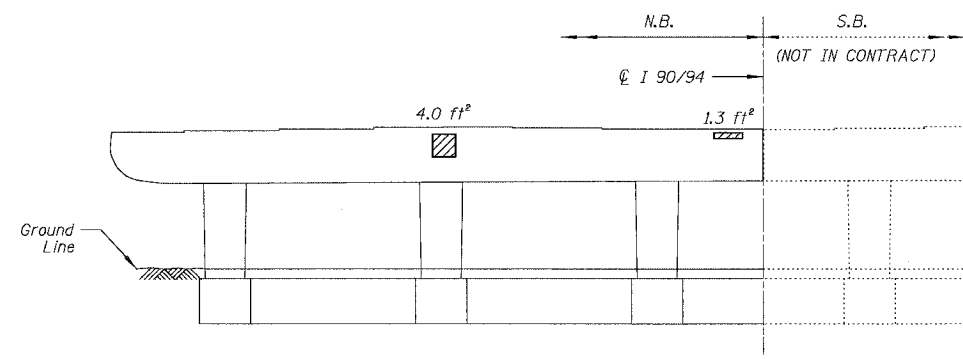
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
CONCRETE PIER REPAIRS  
SN 016-1112, PIERS D-12, D-13  
SCALE: NTS  
DATE: 7/22/2005  
DRAWN BY: BDC  
CHECKED BY: BLU

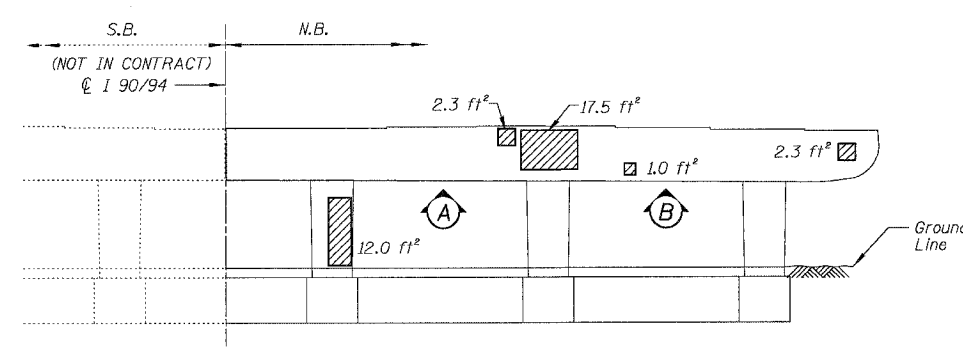
5/8/28 PM 7/20/2005

F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	284
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

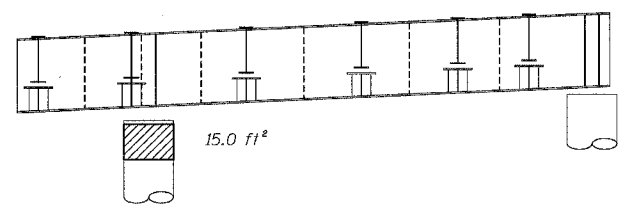
62580



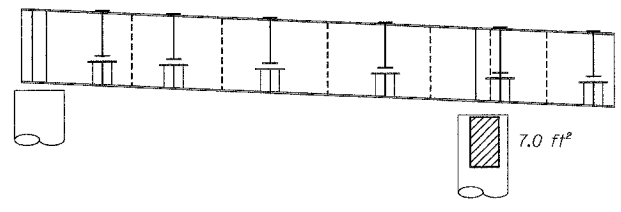
**PIER 16 - NORTH ELEVATION**  
(Looking South)



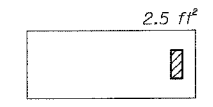
**PIER 16 - SOUTH ELEVATION**  
(Looking North)



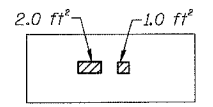
**PIER C-18 - NORTH ELEVATION**  
(Looking South)  
Repairs are around the column.



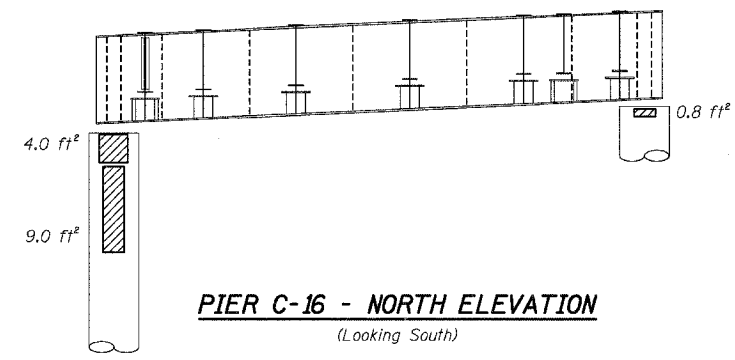
**PIER C-18 - SOUTH ELEVATION**  
(Looking North)



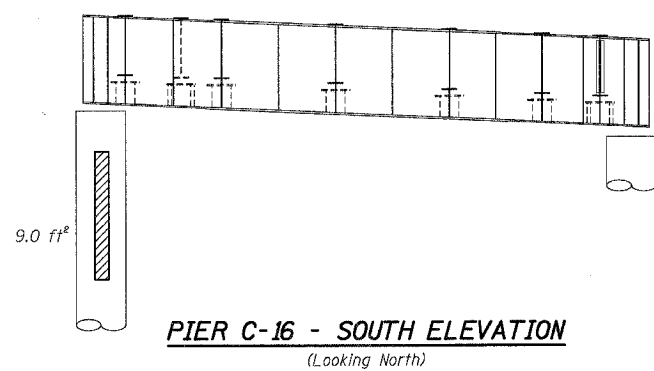
**PIER 16 - VIEW A**  
Looking up at bottom of cap



**PIER 16 - VIEW B**  
Looking up at bottom of cap



**PIER C-16 - NORTH ELEVATION**  
(Looking South)



**PIER C-16 - SOUTH ELEVATION**  
(Looking North)

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance	SQ. FT.	104.4
Enhanced Shotcrete		

REVISIONS	DATE
NAME	

ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
CONCRETE PIER REPAIRS  
SN 016-1112, PIERS 16, C-18, C-16  
SCALE: NTS  
DATE: 7/22/2005  
DRAWN BY: BDC  
CHECKED BY: BLU

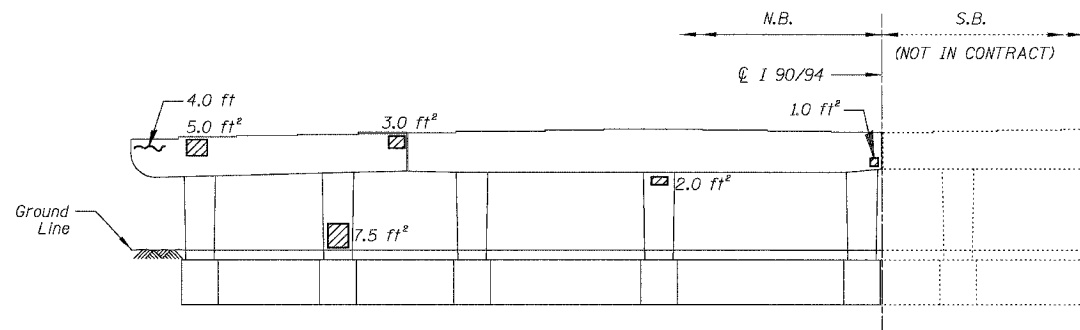
BOWMAN, BARRETT & ASSOCIATES INC.  
CONSULTING ENGINEERS  
Chicago, Illinois  
312.228.0100  
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For Notes and Legend See Sheet 253

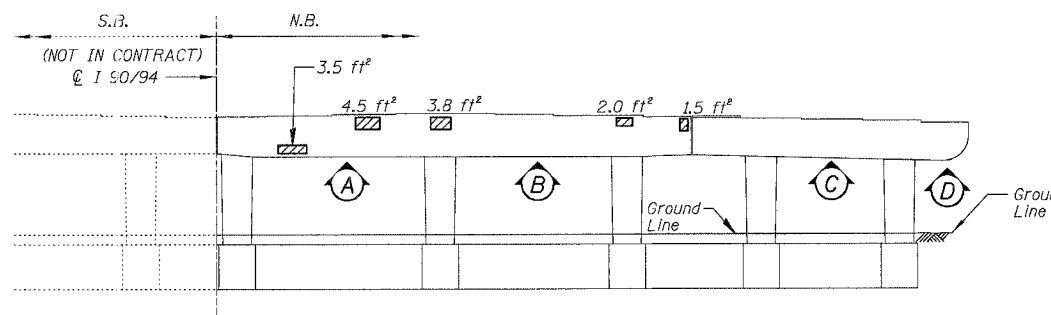


F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

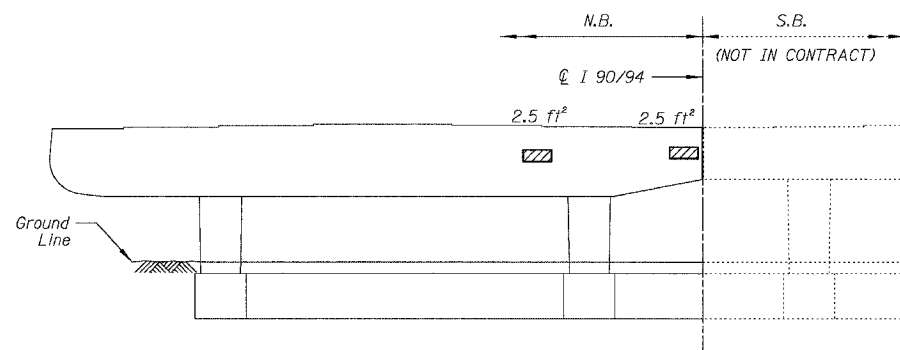
62580



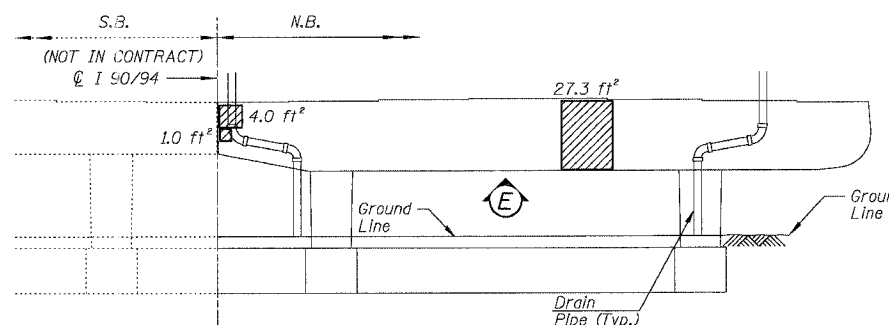
**PIER 20 - NORTH ELEVATION**  
(Looking South)



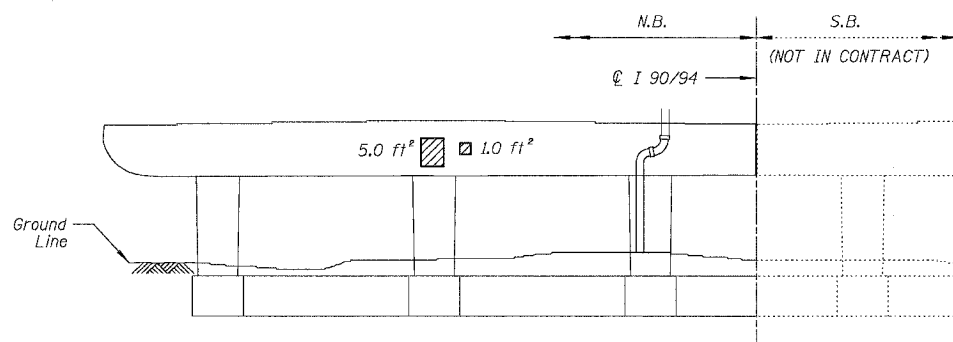
**PIER 20 - SOUTH ELEVATION**  
(Looking North)



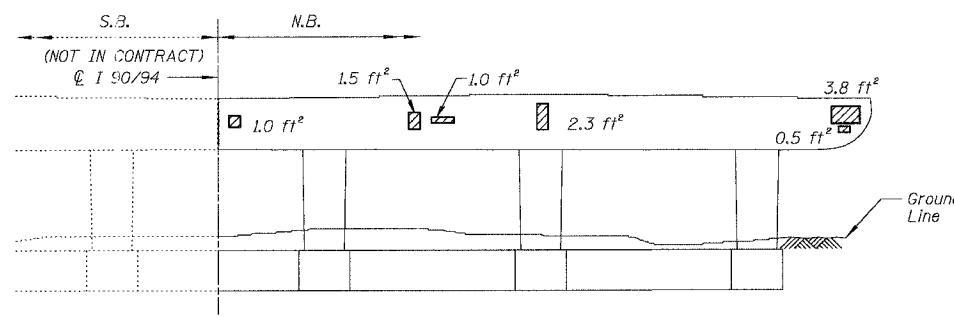
**PIER 18 - NORTH ELEVATION**  
(Looking South)



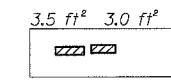
**PIER 18 - SOUTH ELEVATION**  
(Looking North)



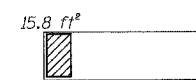
**PIER 17 - NORTH ELEVATION**  
(Looking South)



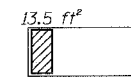
**PIER 17 - SOUTH ELEVATION**  
(Looking North)



**PIER 20 - VIEW A**  
Looking up at bottom of cap



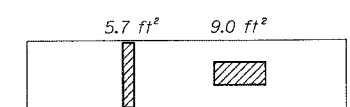
**PIER 20 - VIEW B**  
Looking up at bottom of cap



**PIER 20 - VIEW C**  
Looking up at bottom of cap



**PIER 20 - VIEW D**  
Looking up at bottom of cap



**PIER 18 - VIEW E**  
Looking up at bottom of cap

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	157.2
Epoxy Crack Sealing	FOOT	4.6

REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
CONCRETE PIER REPAIRS  
SN 016-1112, PIERS 17,18,20  
SCALE: NTS  
DATE: 7/22/2005  
DRAWN BY: BDC  
CHECKED BY: BLU

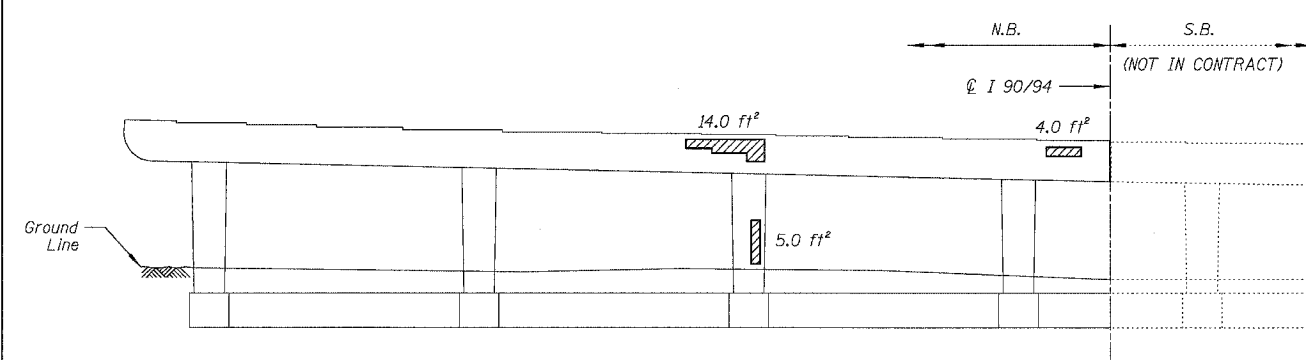
BOWMAN, BARRETT & ASSOCIATES INC.  
CONSULTING ENGINEERS  
Chicago, Illinois  
312.228.0100  
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For Notes and Legend See Sheet 253

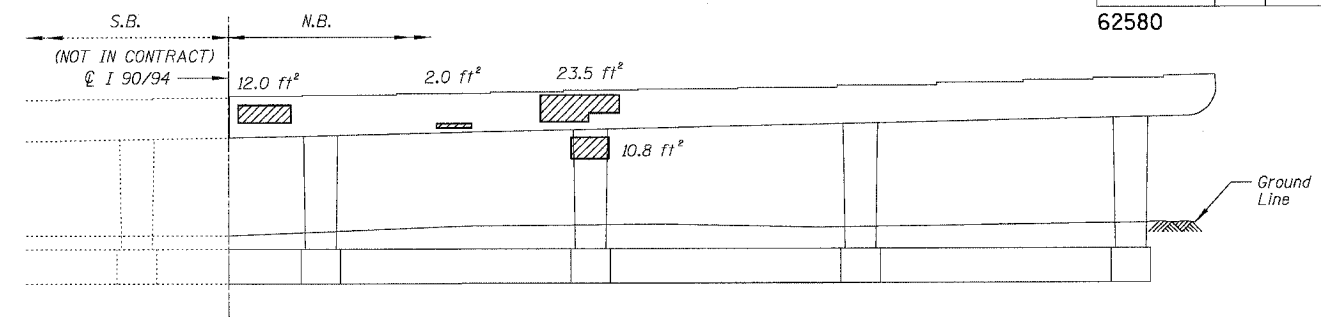
F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	286
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62580				

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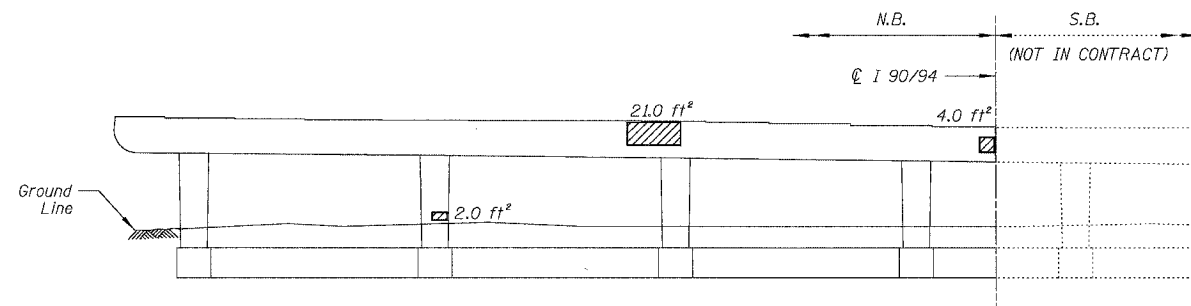
58829 PW  
7/20/2005



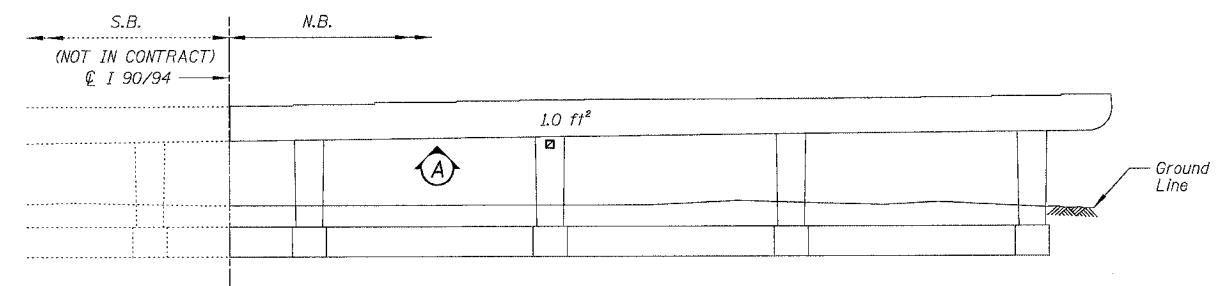
**PIER 24 - NORTH ELEVATION**  
(Looking South)



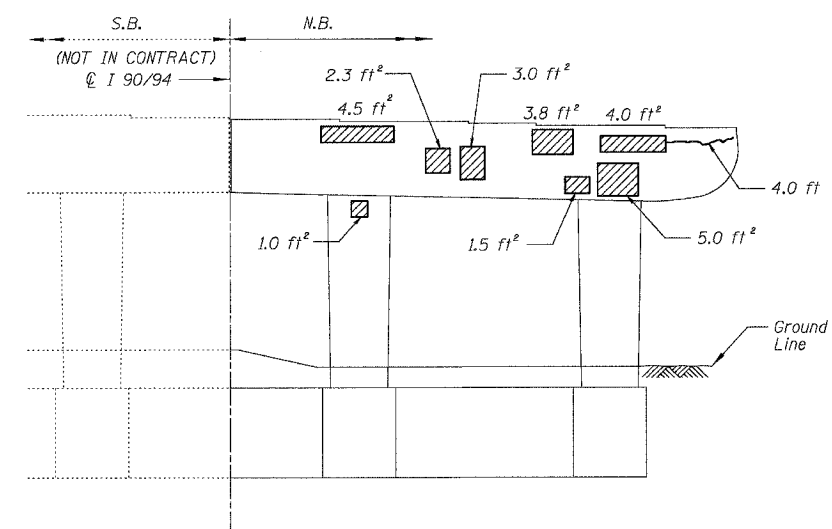
**PIER 24 - SOUTH ELEVATION**  
(Looking North)



**PIER 23 - NORTH ELEVATION**  
(Looking South)



**PIER 23 - SOUTH ELEVATION**  
(Looking North)



**PIER 21 - SOUTH ELEVATION**  
(Looking North)

**PIER 23 - VIEW A**  
Looking up at bottom of cap

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	152.6
Epoxy Crack Sealing	FOOT	4.6

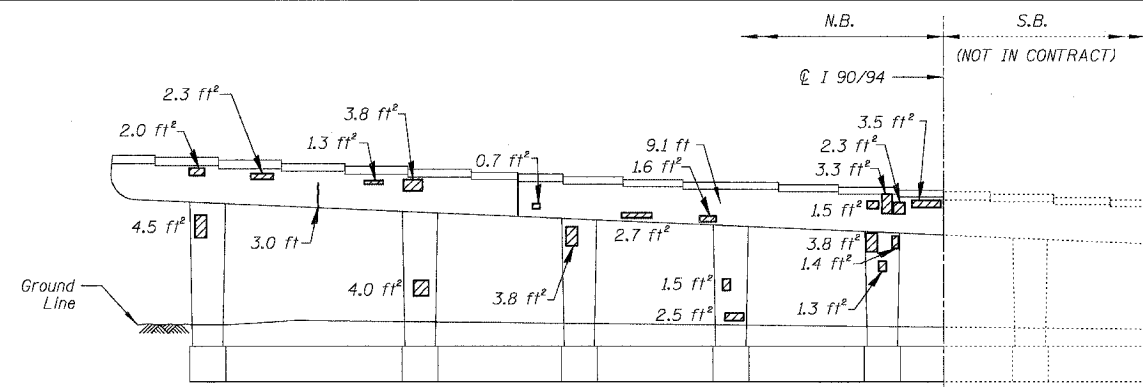
REVISIONS	DATE
NAME	

ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
CONCRETE PIER REPAIRS  
SN 016-1112, PIERS 21,23,24  
SCALE: NTS  
DATE: 7/22/2005  
DRAWN BY: BDC  
CHECKED BY: BLU

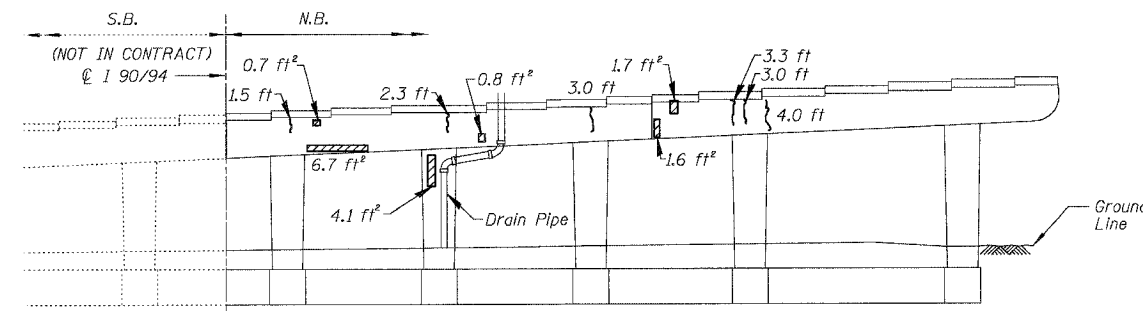
BOWMAN, BARRETT & ASSOCIATES INC.  
CONSULTING ENGINEERS  
Chicago, Illinois  
312.228.0100  
www.bbainc.com

For Notes and Legend See Sheet 253

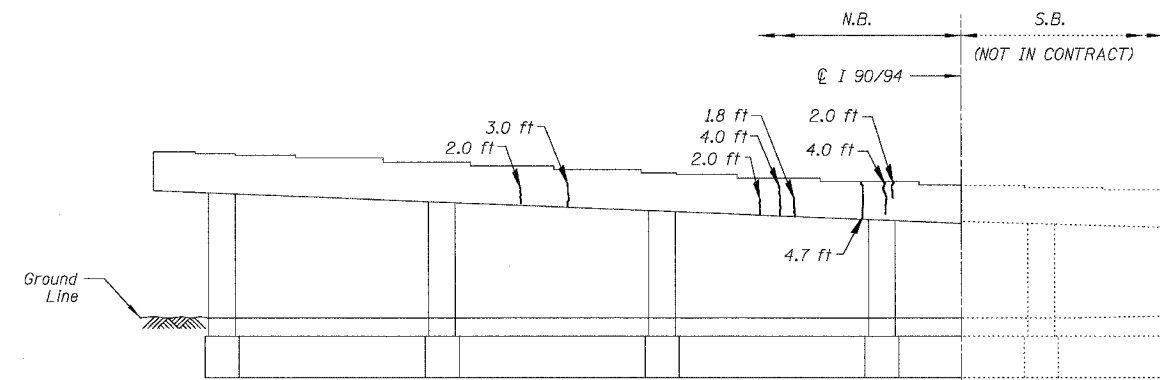
F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	287
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62580				



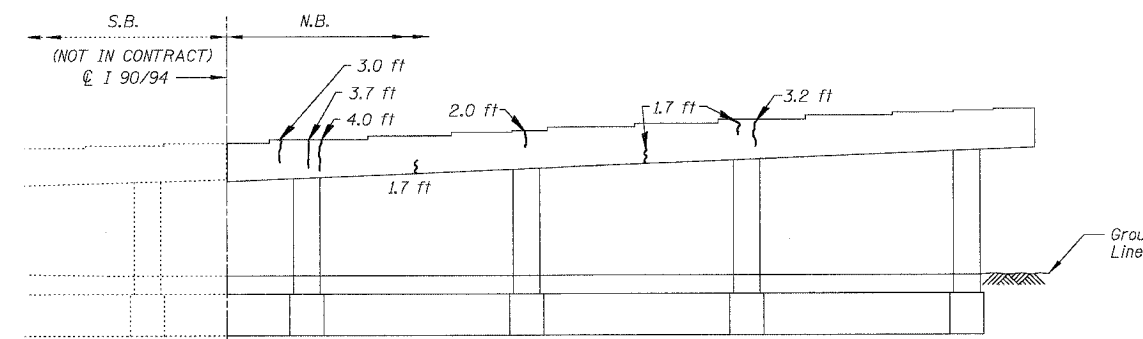
**PIER 28 - NORTH ELEVATION**  
(Looking South)



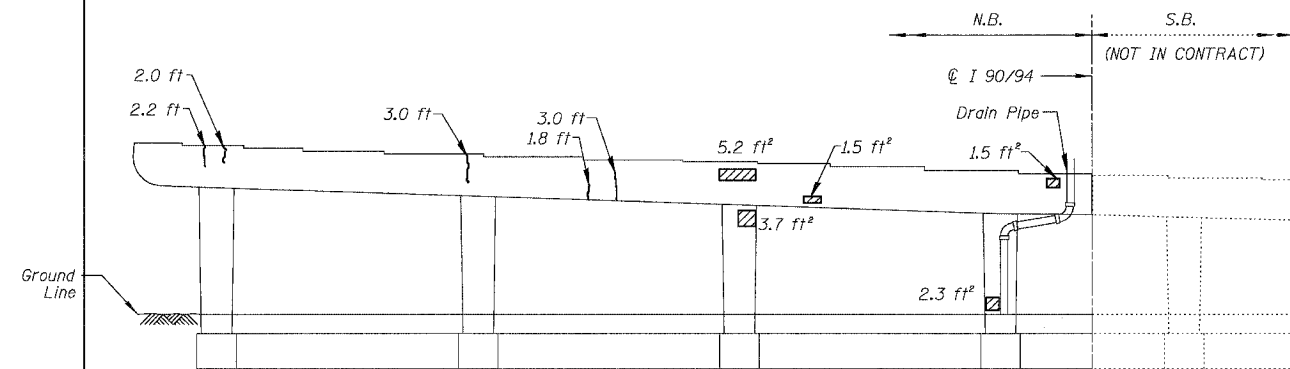
**PIER 28 - SOUTH ELEVATION**  
(Looking North)



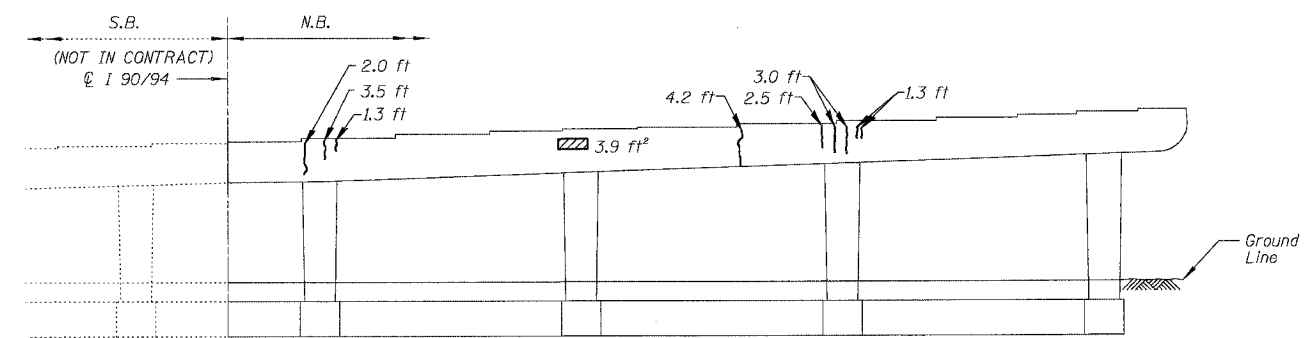
**PIER 26 - NORTH ELEVATION**  
(Looking South)



**PIER 26 - SOUTH ELEVATION**  
(Looking North)



**PIER 25 - NORTH ELEVATION**  
(Looking South)



**PIER 25 - SOUTH ELEVATION**  
(Looking North)

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SG. FT.	93.7
Epoxy Crack Sealing	FOOT	100.7

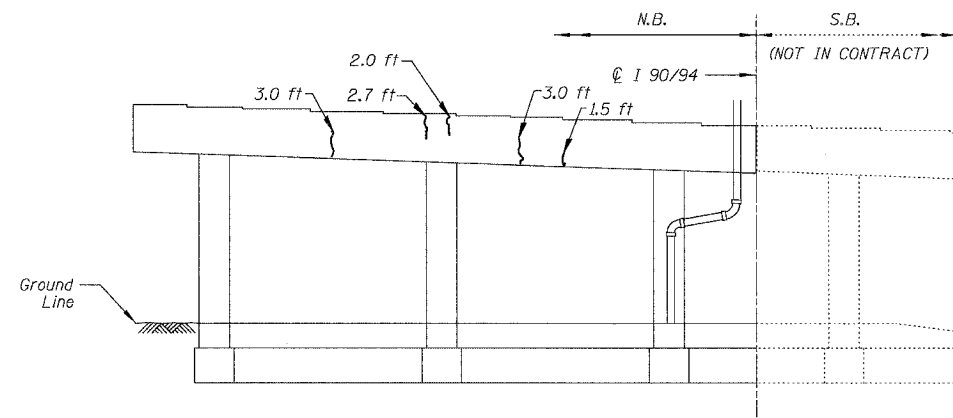
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 CONCRETE PIER REPAIRS  
 SN 016-1112, PIERS 25,26,28  
 SCALE: NTS  
 DATE: 7/22/2005  
 DRAWN BY: BDC  
 CHECKED BY: BLU

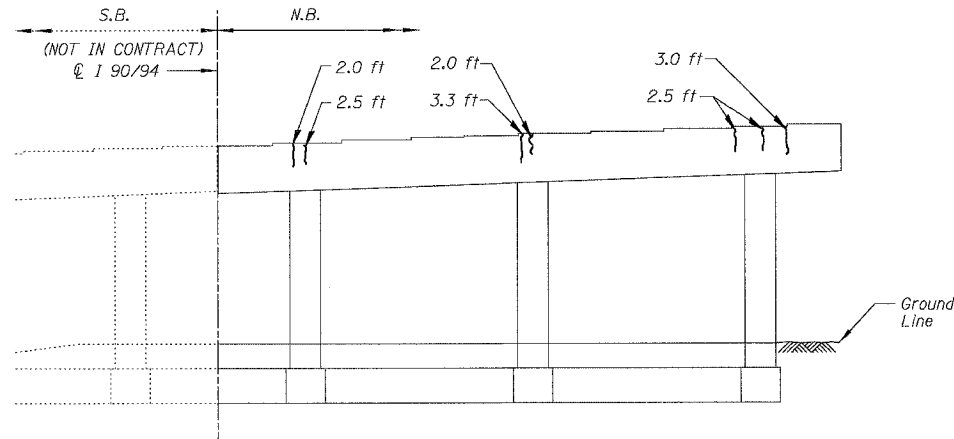
BOWMAN, BARRETT & ASSOCIATES INC.  
 CONSULTING ENGINEERS  
 Chicago, Illinois  
 312.228.0100  
 www.bbainc.com

For Notes and Legend See Sheet 253

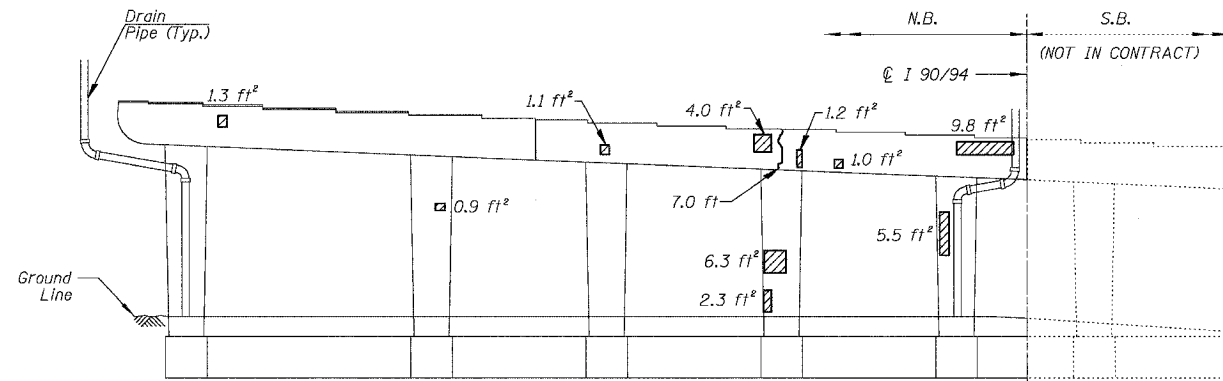
F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	288
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
62580				



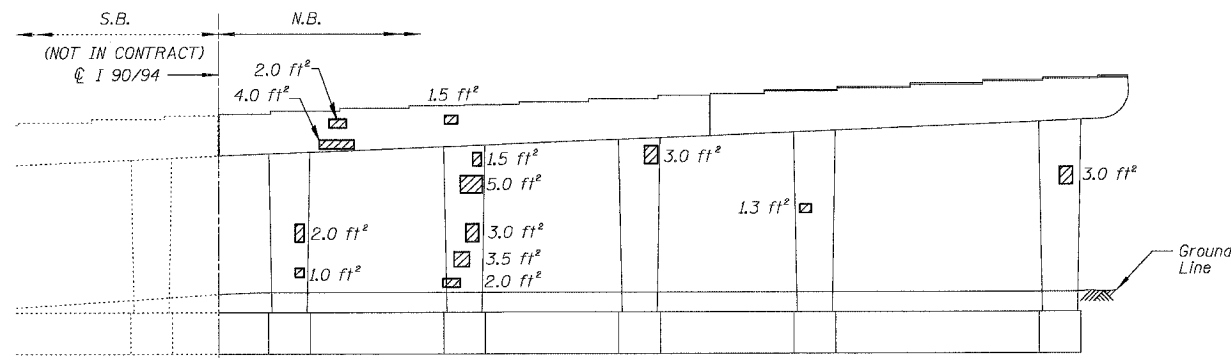
**PIER 31 - NORTH ELEVATION**  
(Looking South)



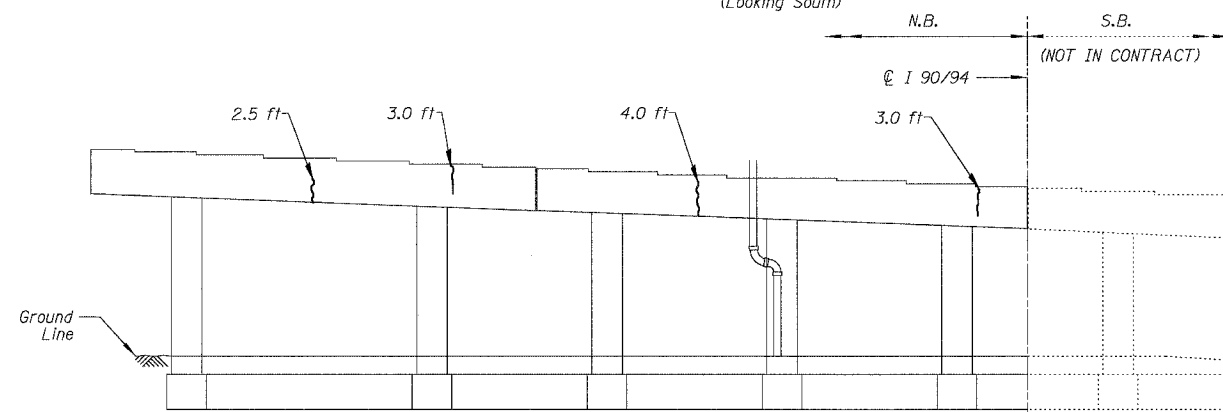
**PIER 31 - SOUTH ELEVATION**  
(Looking North)



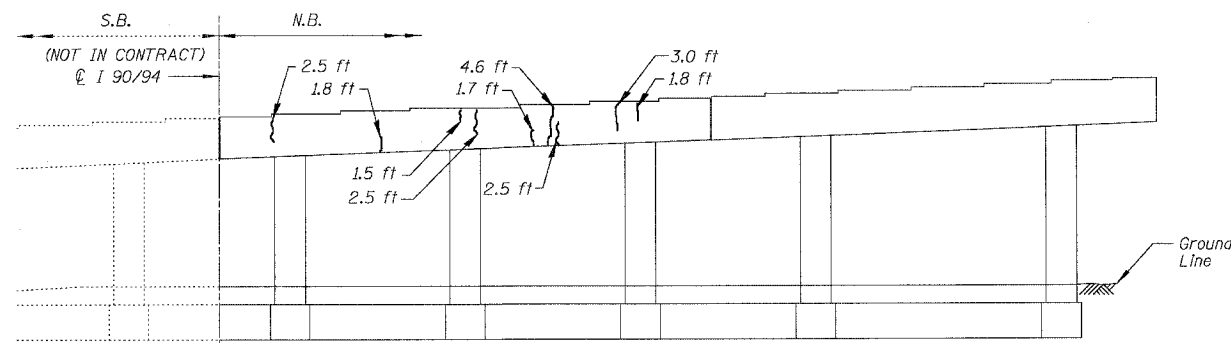
**PIER 30 - NORTH ELEVATION**  
(Looking South)



**PIER 30 - SOUTH ELEVATION**  
(Looking North)



**PIER 29 - NORTH ELEVATION**  
(Looking South)



**PIER 29 - SOUTH ELEVATION**  
(Looking North)

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	84.2
Epoxy Crack Sealing	FOOT	82.1

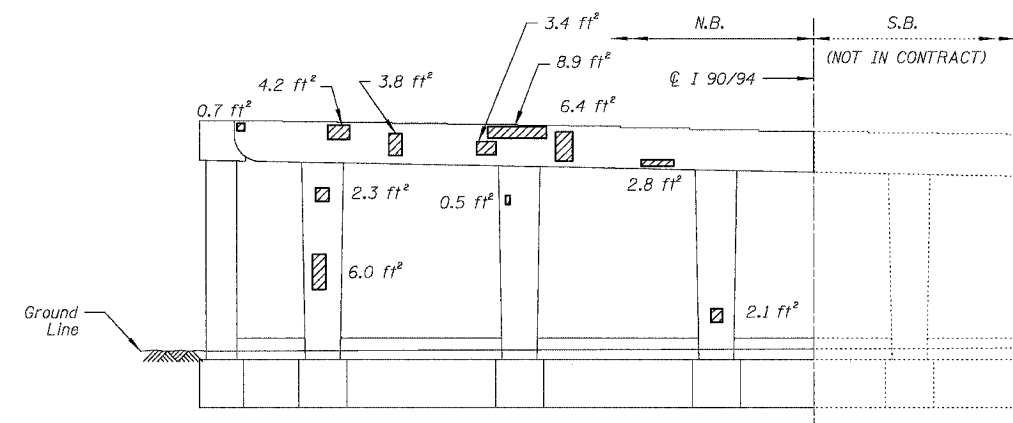
REVISIONS	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 CONCRETE PIER REPAIRS  
 SN 016-1112, PIERS 29,30,31  
 SCALE: NTS  
 DATE: 7/22/2005  
 DRAWN BY: BDC  
 CHECKED BY: BLU

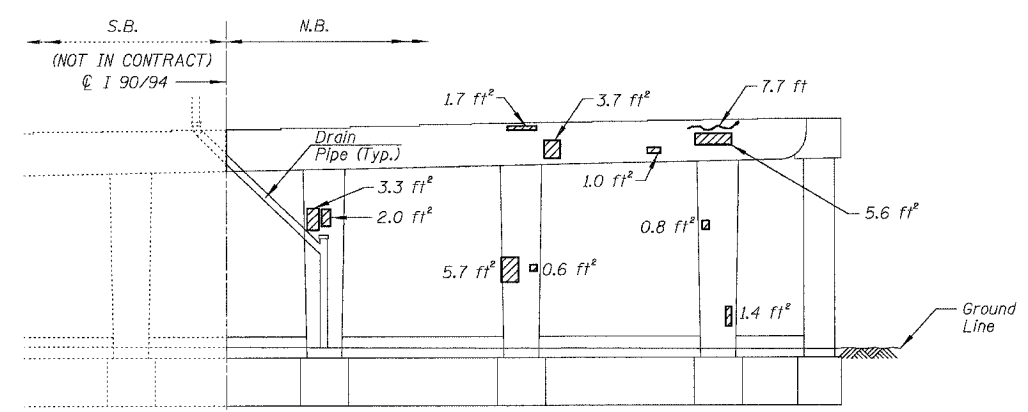
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For Notes and Legend See Sheet 253

F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	289
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62580				



**PIER 1 - NORTH ELEVATION**  
(Looking South)



**PIER 1 - SOUTH ELEVATION**  
(Looking North)

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	77.0
Epoxy Crack Sealing	FOOT	8.9

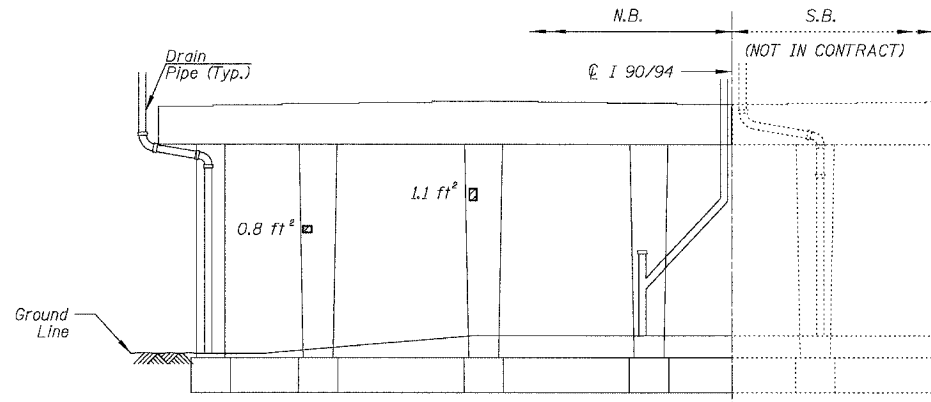
REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 CONCRETE PIER REPAIRS  
 SN 016-1111, PIER 1  
 SCALE: NTS  
 DATE: 7/22/2005  
 DRAWN BY: BDC  
 CHECKED BY: BLU

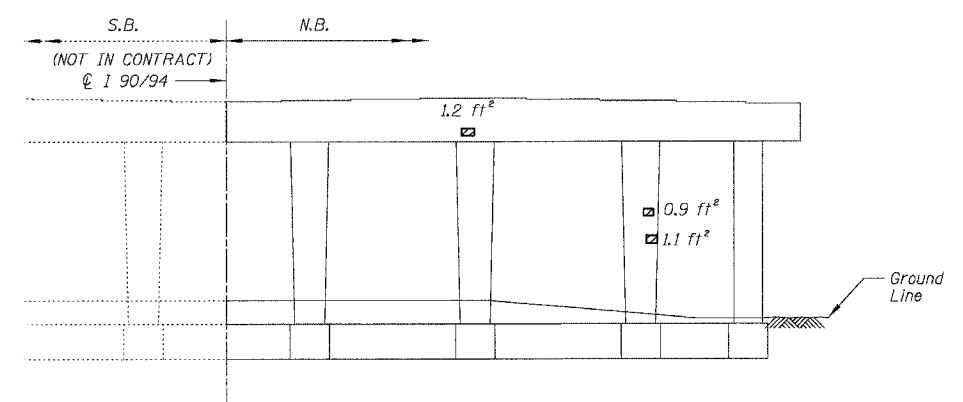
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For Notes and Legend See Sheet 253

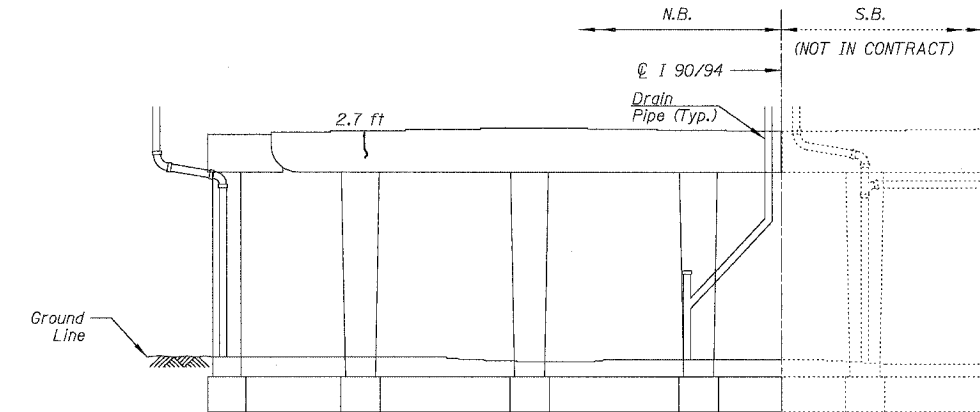
F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	290
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62580				



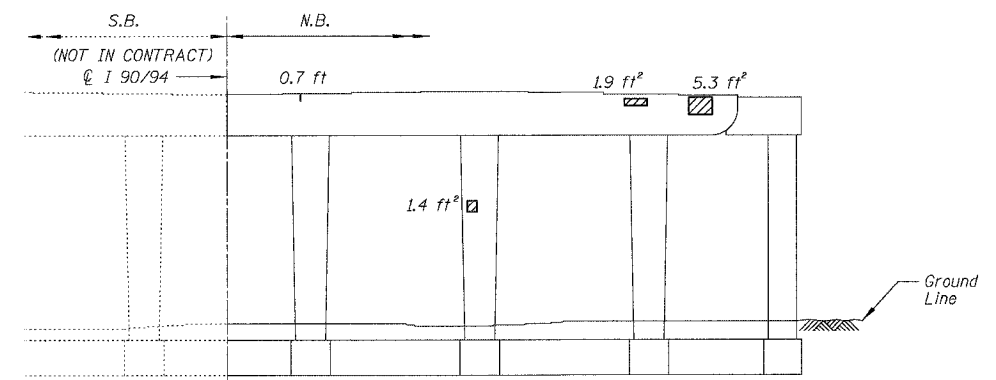
**PIER 4 - NORTH ELEVATION**  
(Looking South)



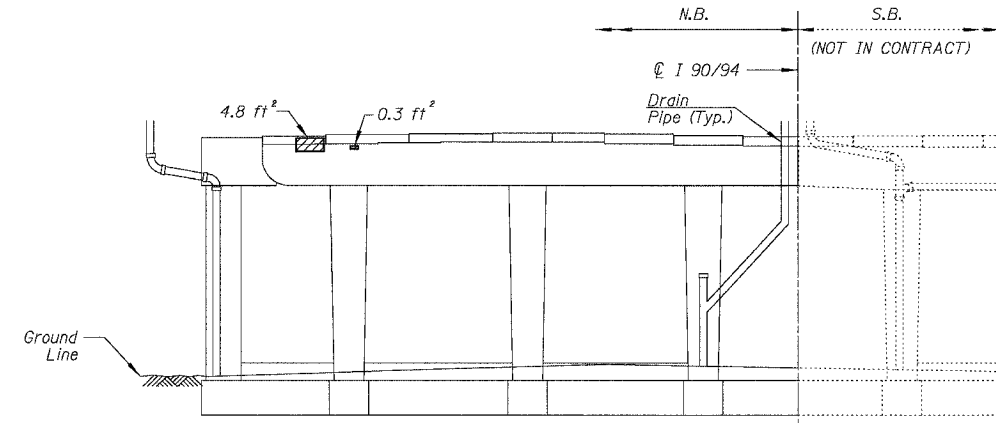
**PIER 4 - SOUTH ELEVATION**  
(Looking North)



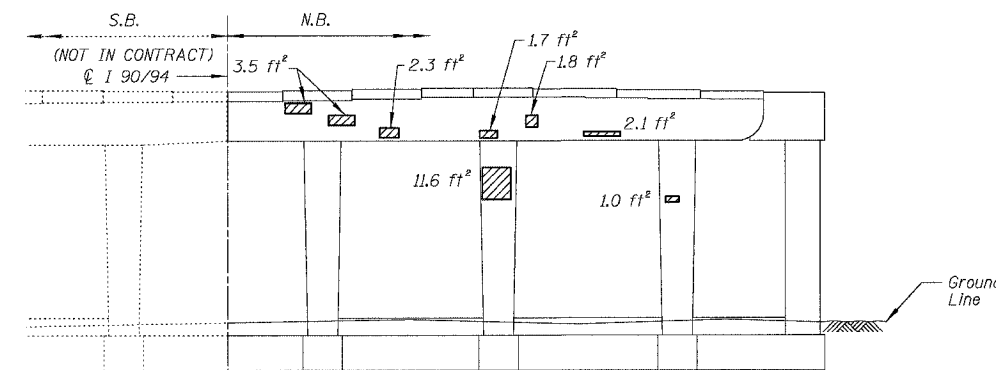
**PIER 3 - NORTH ELEVATION**  
(Looking South)



**PIER 3 - SOUTH ELEVATION**  
(Looking North)



**PIER 2 - NORTH ELEVATION**  
(Looking South)



**PIER 2 - SOUTH ELEVATION**  
(Looking North)

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	53.3
Epoxy Crack Sealing	FOOT	4.0

REVISIONS	NAME	DATE

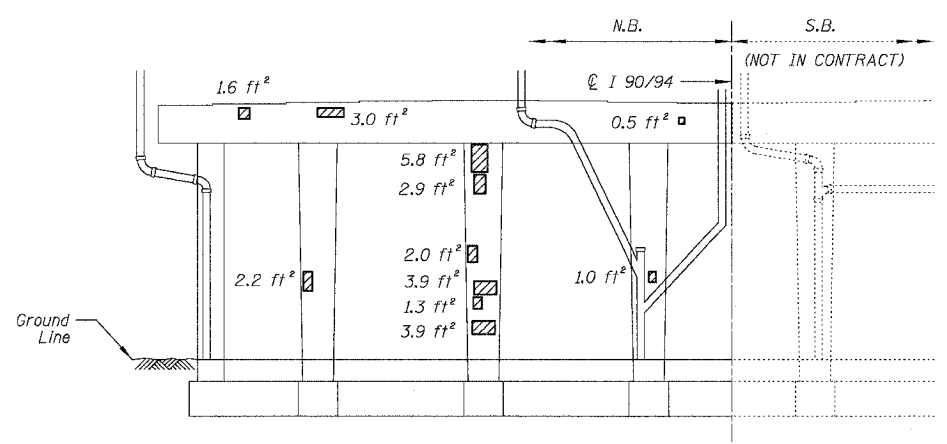
ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 CONCRETE PIER REPAIRS  
 SN 016-1111, PIERS 2,3,4  
 SCALE: NTS  
 DATE: 7/22/2005  
 DRAWN BY: BDC  
 CHECKED BY: BLU

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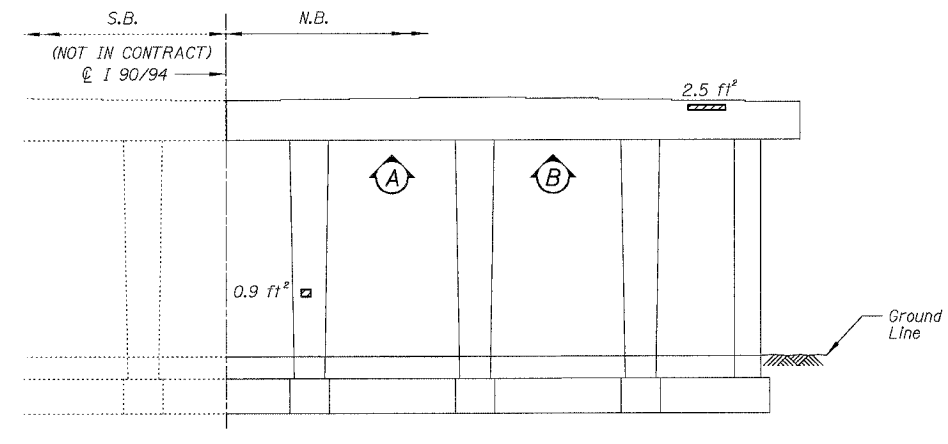
For Notes and Legend See Sheet 2.53

F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

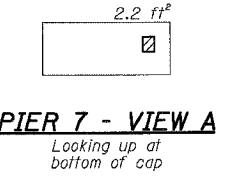
62580



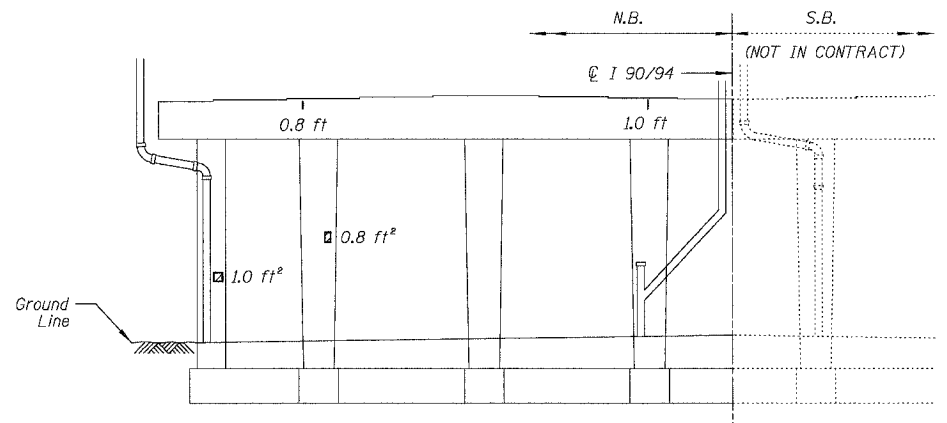
**PIER 7 - NORTH ELEVATION**  
(Looking South)



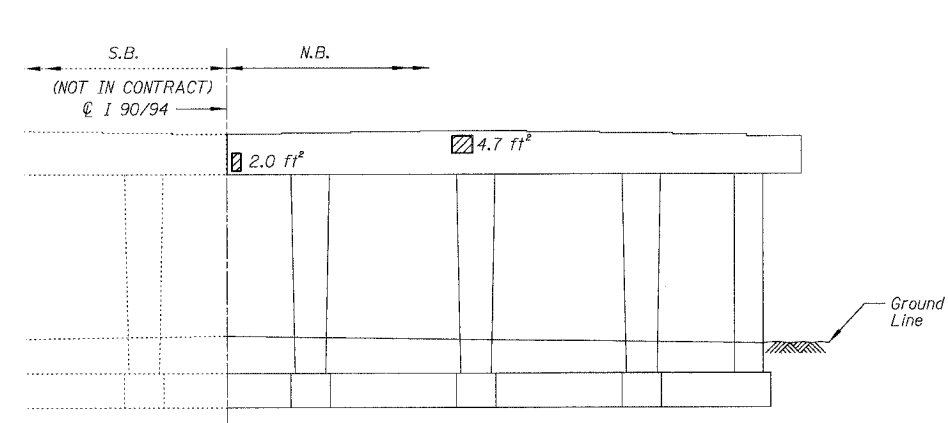
**PIER 7 - SOUTH ELEVATION**  
(Looking North)



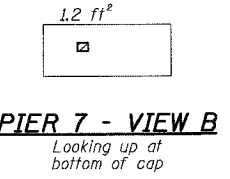
**PIER 7 - VIEW A**  
Looking up at bottom of cap



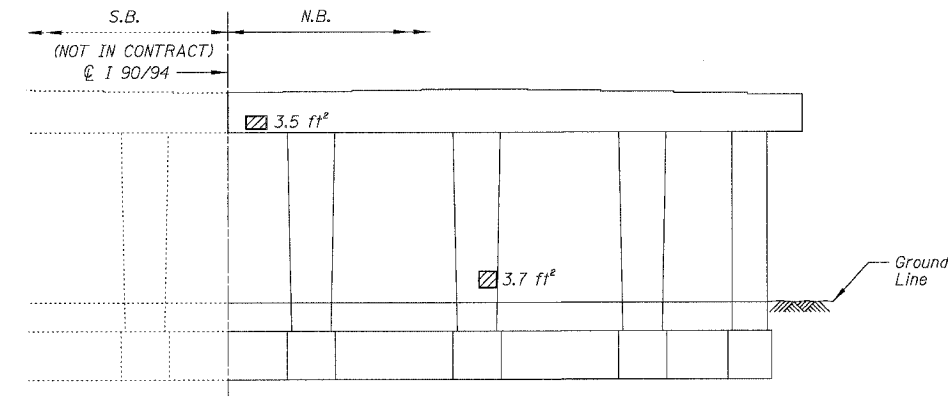
**PIER 6 - NORTH ELEVATION**  
(Looking South)



**PIER 6 - SOUTH ELEVATION**  
(Looking North)



**PIER 7 - VIEW B**  
Looking up at bottom of cap



**PIER 5 - SOUTH ELEVATION**  
(Looking North)

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	58.2
Epoxy Crack Sealing	FOOT	2.1

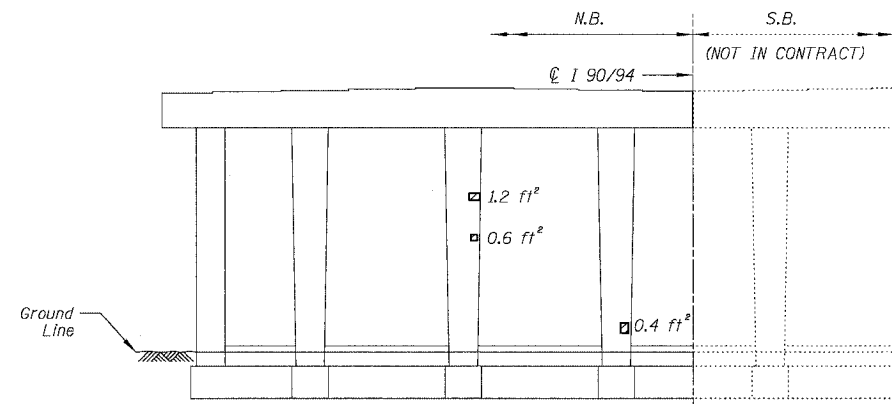
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
CONCRETE PIER REPAIRS  
SN 016-1111, PIERS 5,6,7  
SCALE: NTS  
DATE: 7/22/2005  
DRAWN BY: BDC  
CHECKED BY: BLU

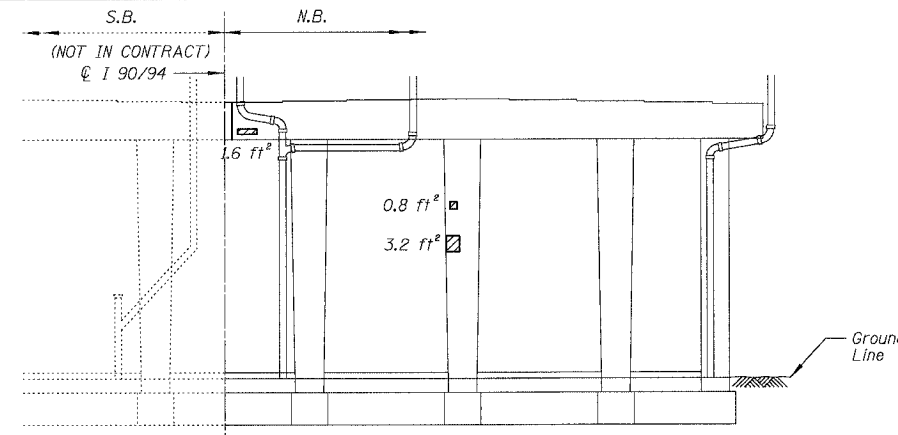
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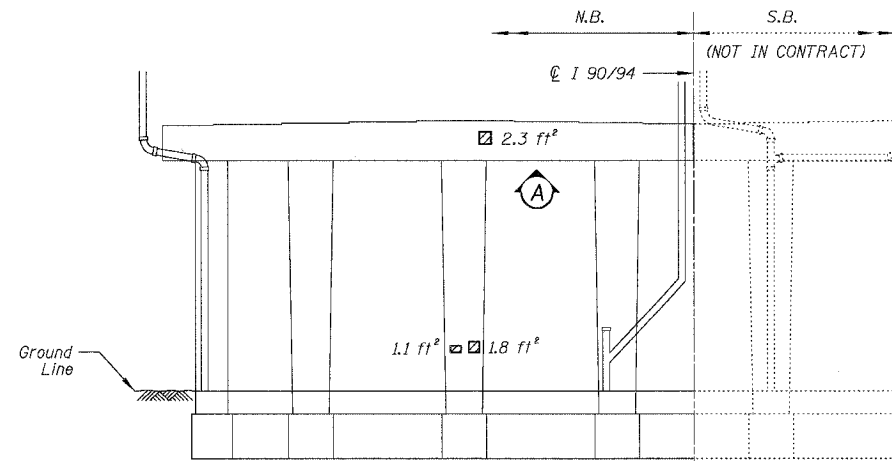
F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	292
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62580				



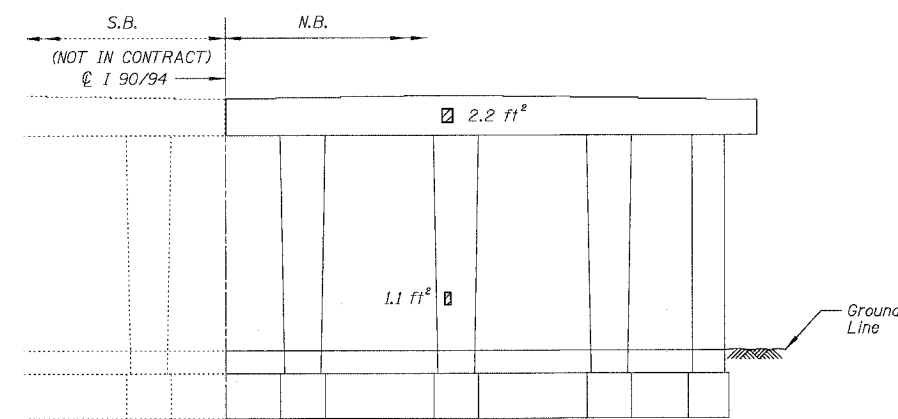
**PIER 11 - NORTH ELEVATION**  
(Looking South)



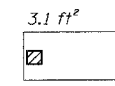
**PIER 11 - SOUTH ELEVATION**  
(Looking North)



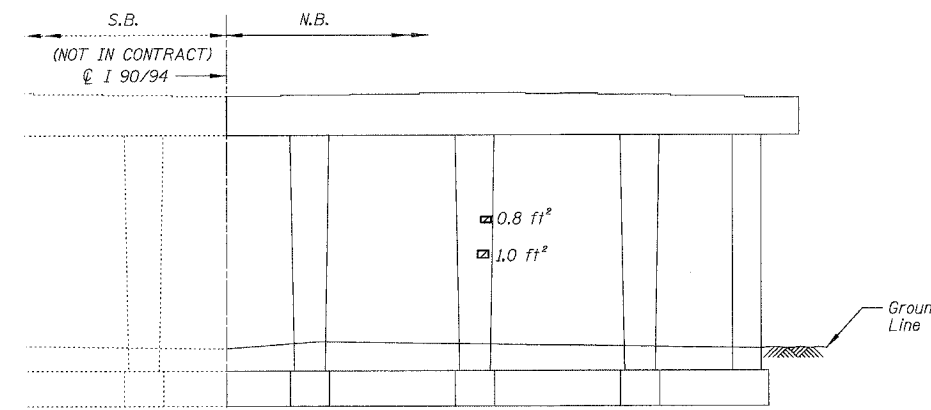
**PIER 10 - NORTH ELEVATION**  
(Looking South)



**PIER 10 - SOUTH ELEVATION**  
(Looking North)



**PIER 10 - VIEW A**  
Looking up at bottom of cap



**PIER 8 - SOUTH ELEVATION**  
(Looking North)

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	24.4

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
CONCRETE PIER REPAIRS  
SN 016-1111, PIERS 8,10,11

SCALE: NTS  
DATE: 7/22/2005  
DRAWN BY: BDC  
CHECKED BY: BLU

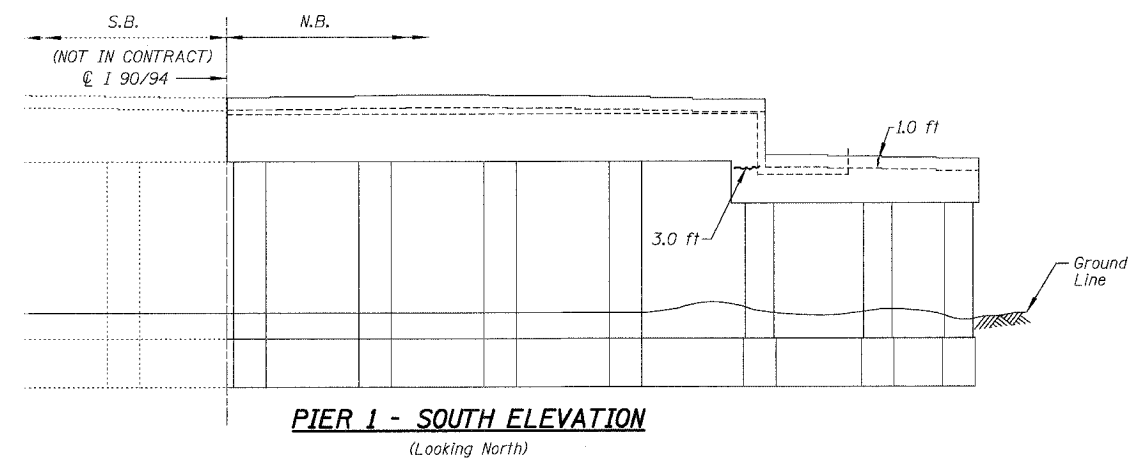
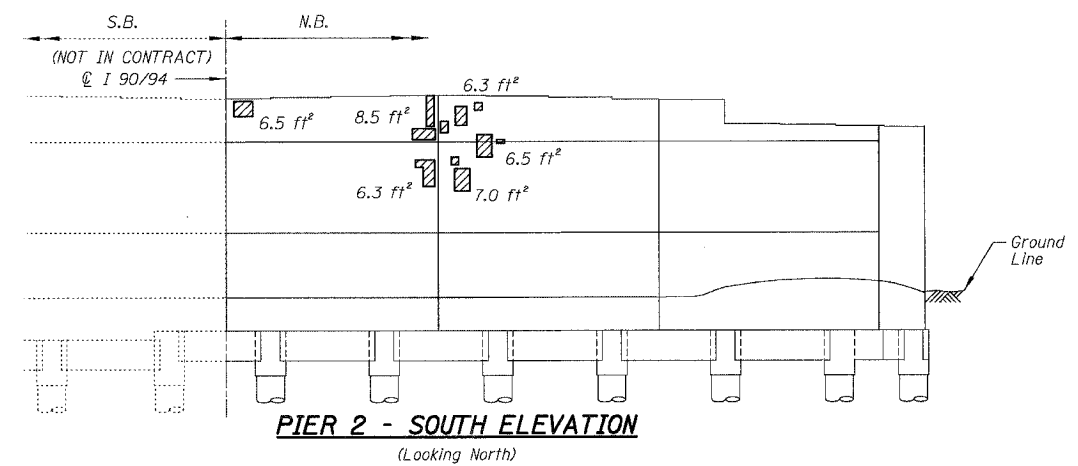
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F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	293
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

62580



**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	47.3
Epoxy Crack Sealing	FOOT	4.6

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 CONCRETE PIER REPAIRS  
 SN 016-1110, PIERS 1,2

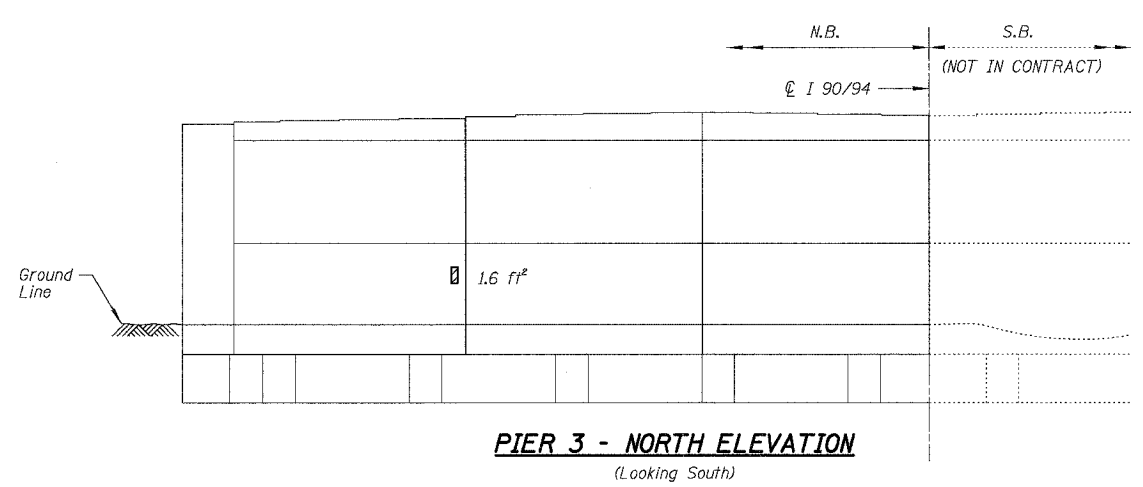
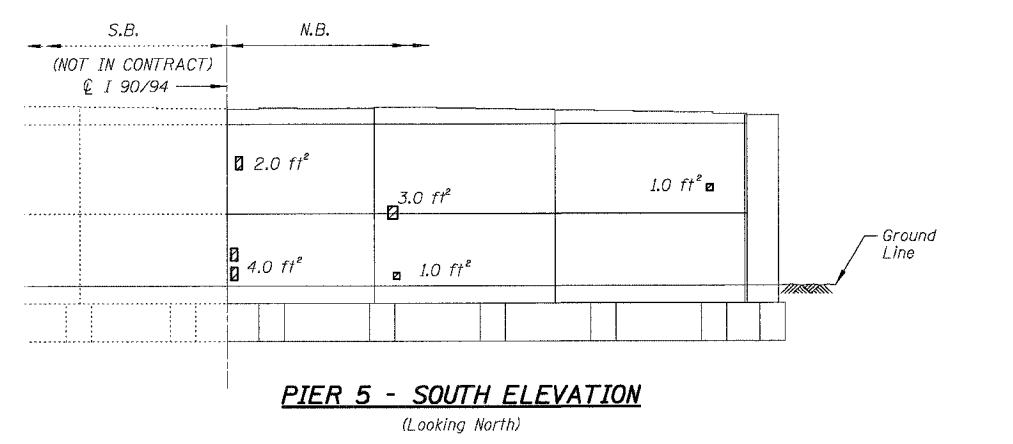
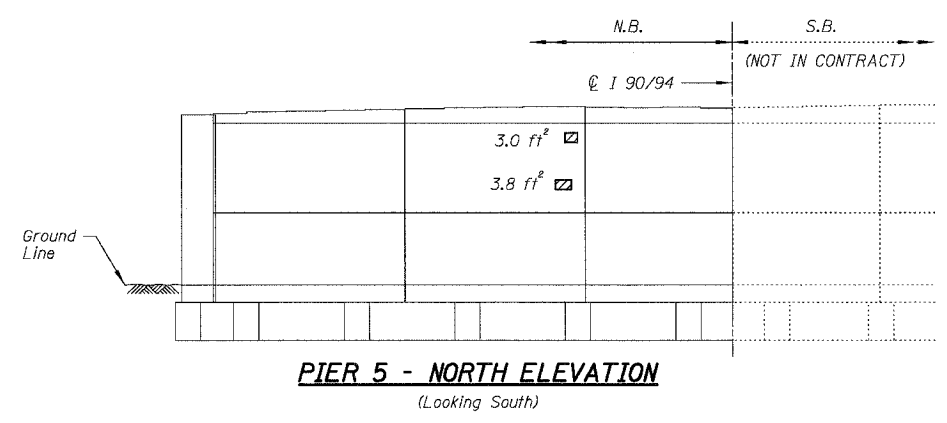
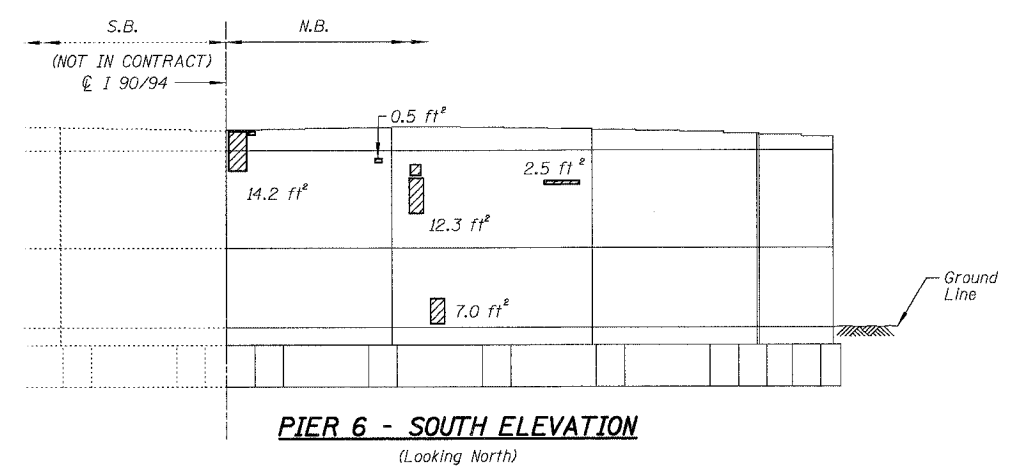
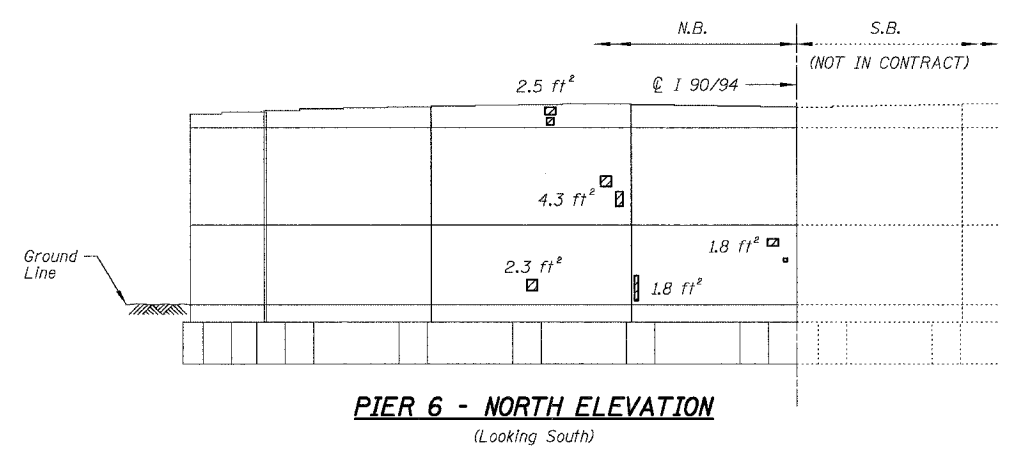
SCALE: NTS  
 DATE: 7/22/2005

DRAWN BY: BDC  
 CHECKED BY: BLU

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For Notes and Legend See Sheet 253

F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	294
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	62580	



**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance	SQ. FT.	78.9
Enhanced Shotcrete		

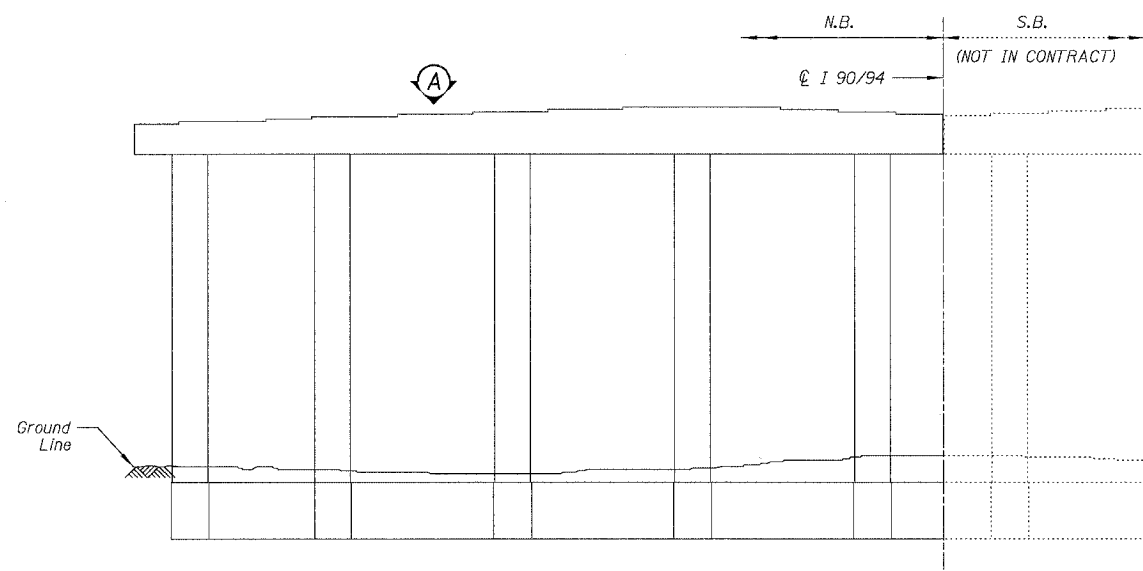
REVISIONS	DATE
NAME	

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 CONCRETE PIER REPAIRS  
 SN 016-1110, PIERS 3,5,6  
 SCALE: NTS  
 DATE: 7/22/2005  
 DRAWN BY: BDC  
 CHECKED BY: BLU

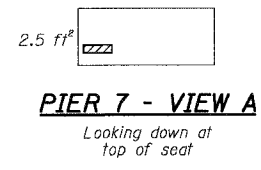
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 CONSULTING ENGINEERS  
 Chicago, Illinois  
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For Notes and Legend See Sheet 253

F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	295
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
62580				



**PIER 7 - NORTH ELEVATION**  
(Looking South)



**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	2.9

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 CONCRETE PIER REPAIRS  
 SN 016-0137, PIER 7

SCALE: NTS  
 DATE: 7/22/2005

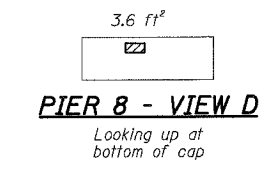
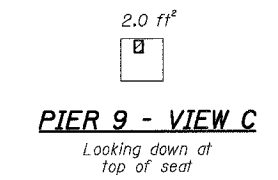
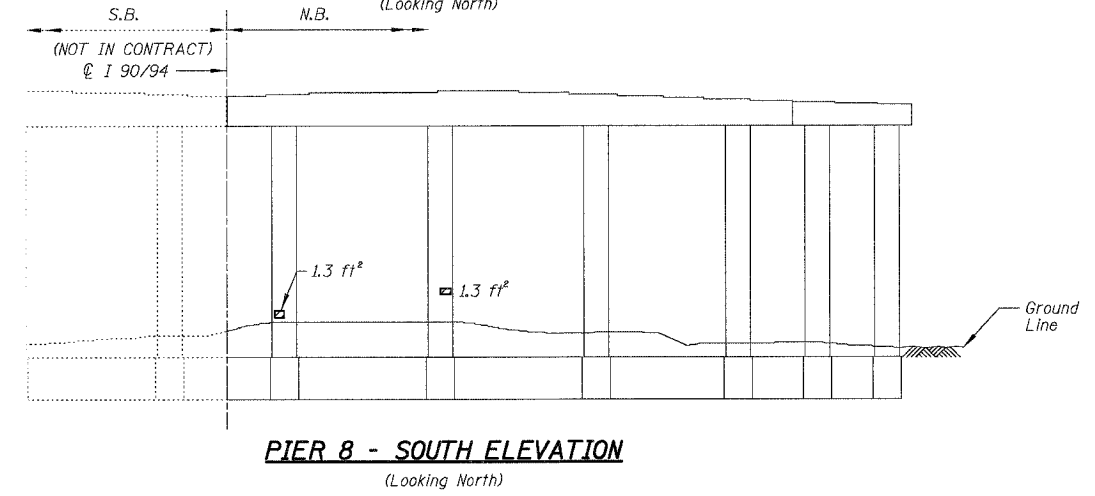
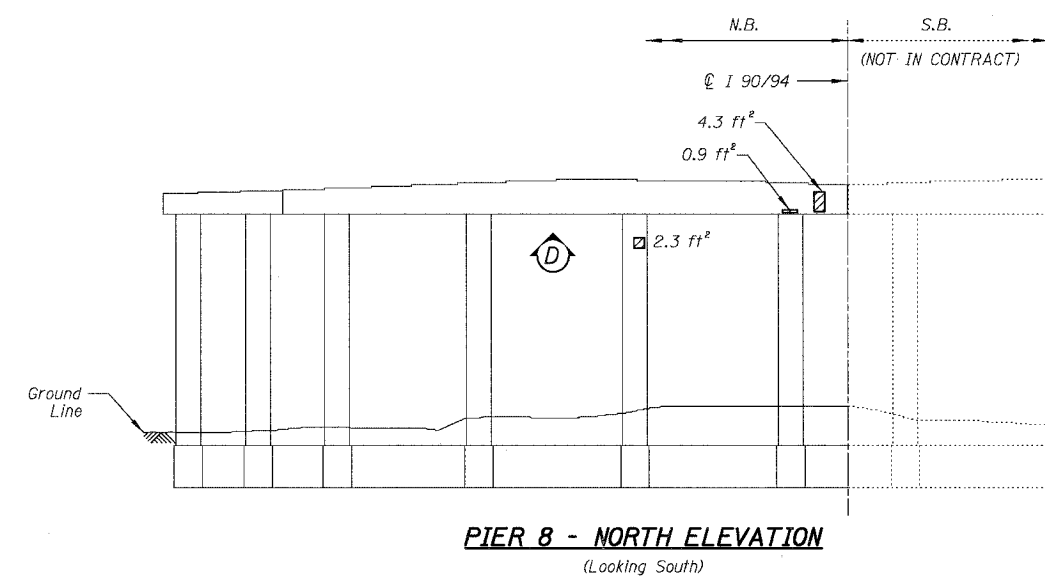
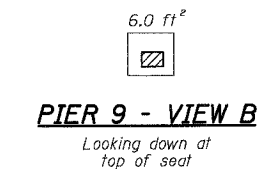
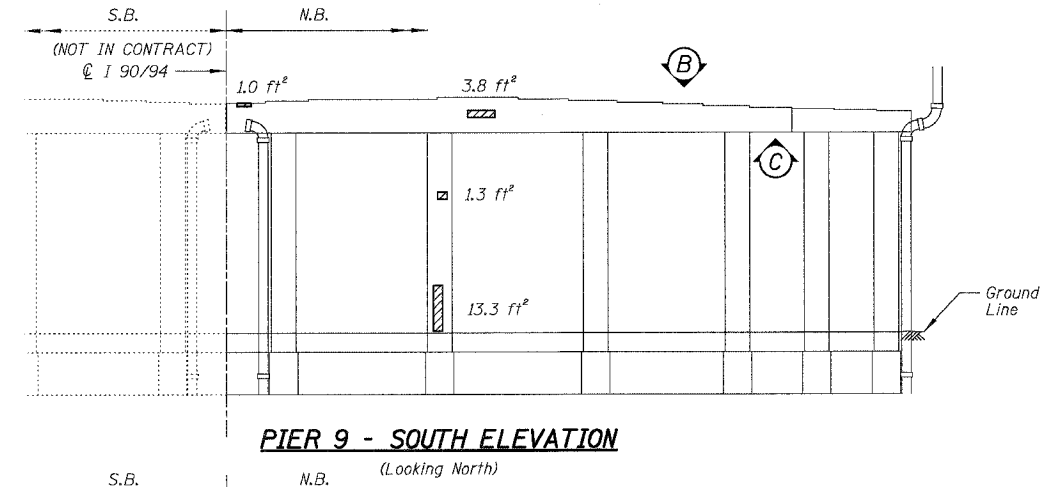
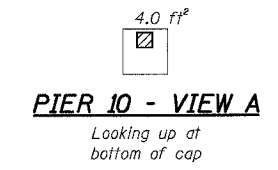
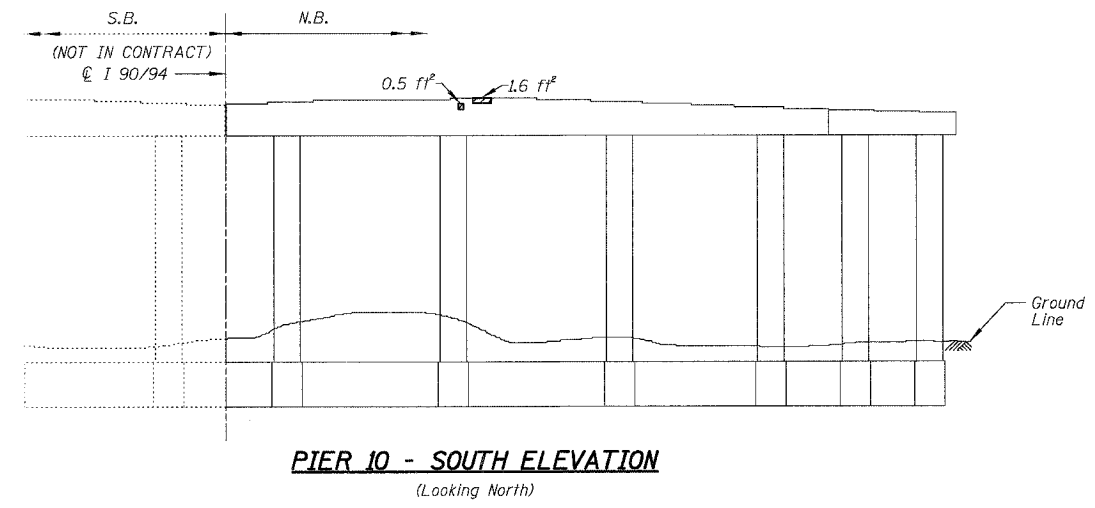
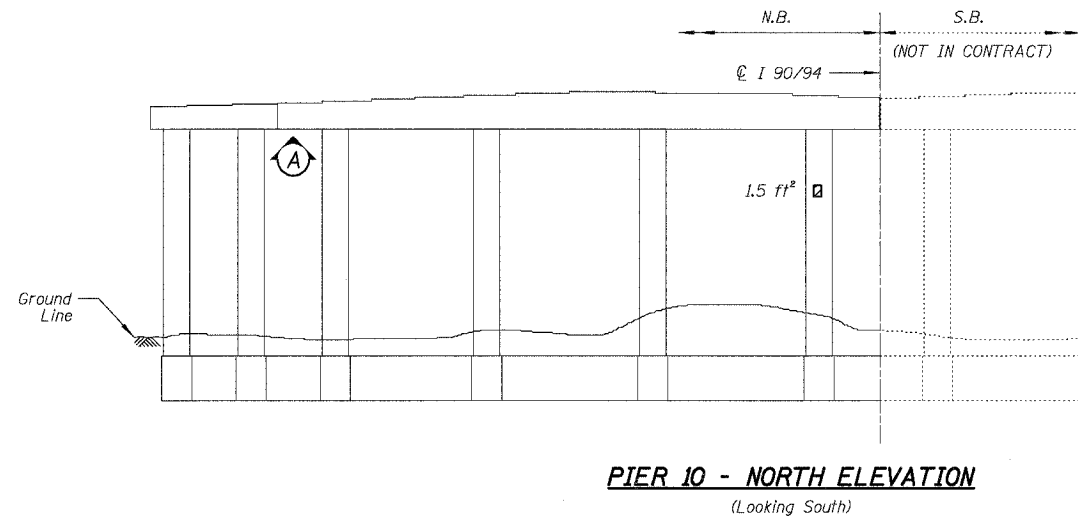
DRAWN BY: BDC  
 CHECKED BY: BLU

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7/20/2005 5:46:33 PM  
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F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	296
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
62580				



**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	56.1

REVISIONS	
NAME	DATE

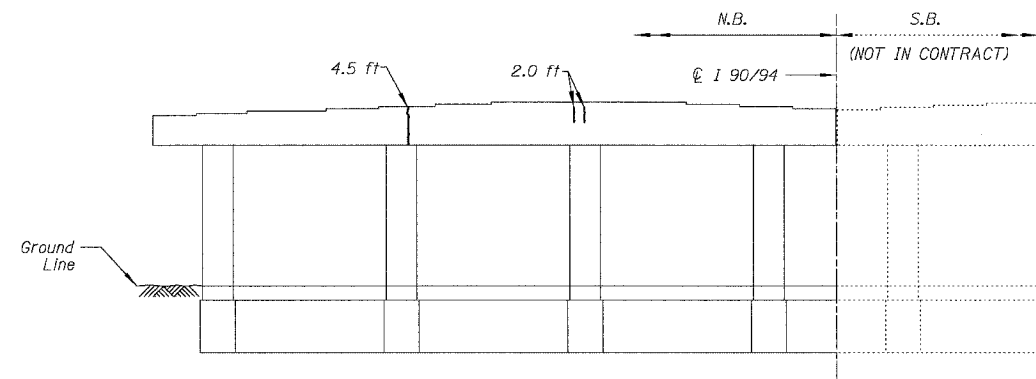
ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 CONCRETE PIER REPAIRS  
 SN 016-0137, PIERS 8,9,10  
 SCALE: NTS  
 DATE: 7/22/2005  
 DRAWN BY: BDC  
 CHECKED BY: BLU

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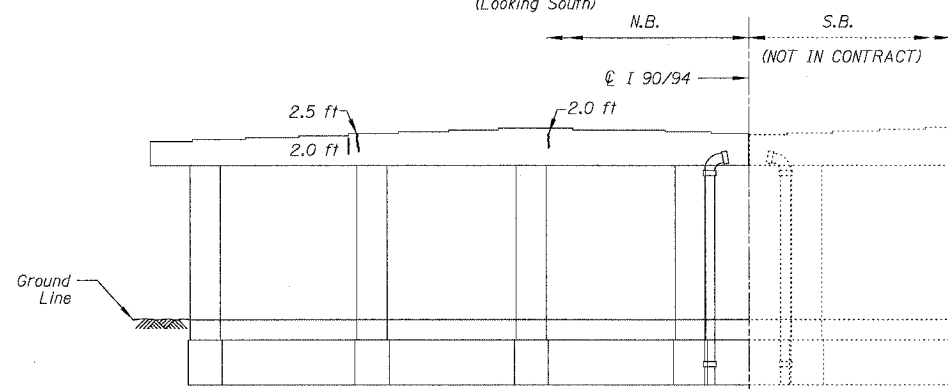
For Notes and Legend See Sheet 253

F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	297
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

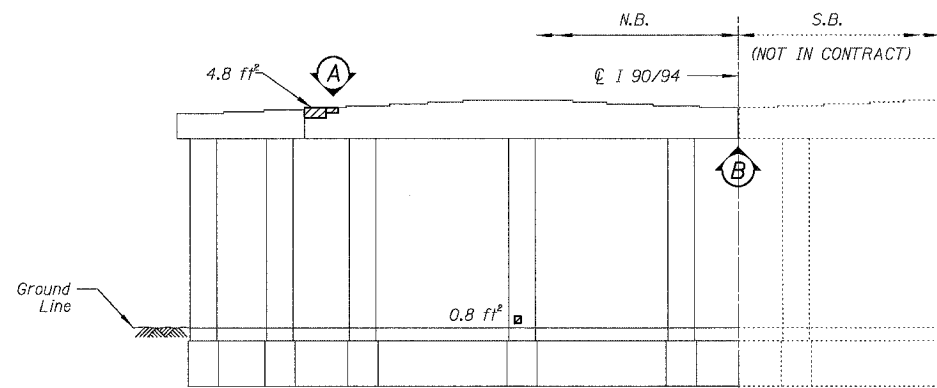
62580



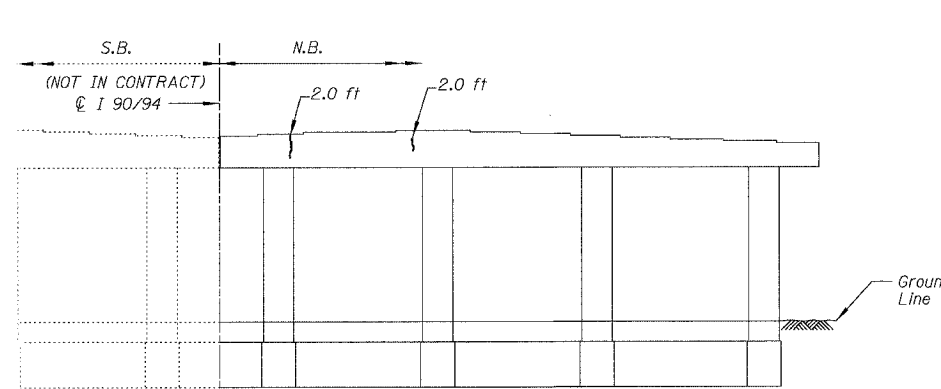
**PIER 15 - NORTH ELEVATION**  
(Looking South)



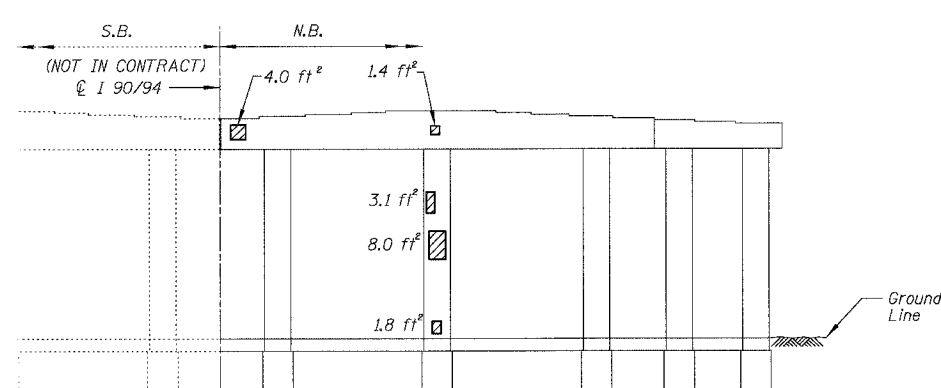
**PIER 13 - NORTH ELEVATION**  
(Looking South)



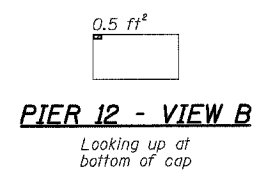
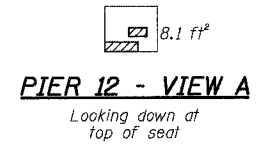
**PIER 12 - NORTH ELEVATION**  
(Looking South)



**PIER 13 - SOUTH ELEVATION**  
(Looking North)



**PIER 12 - SOUTH ELEVATION**  
(Looking North)



**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	37.4
Epoxy Crack Sealing	FOOT	21.9

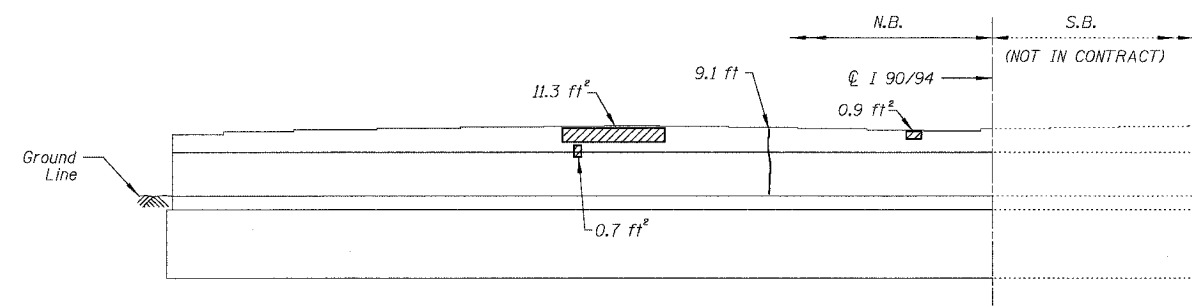
REVISIONS	DATE
NAME	

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 CONCRETE PIER REPAIRS  
 SN 016-0137, PIERS 12,13,15  
 SCALE: NTS  
 DATE: 7/22/2005  
 DRAWN BY: BDC  
 CHECKED BY: BLU

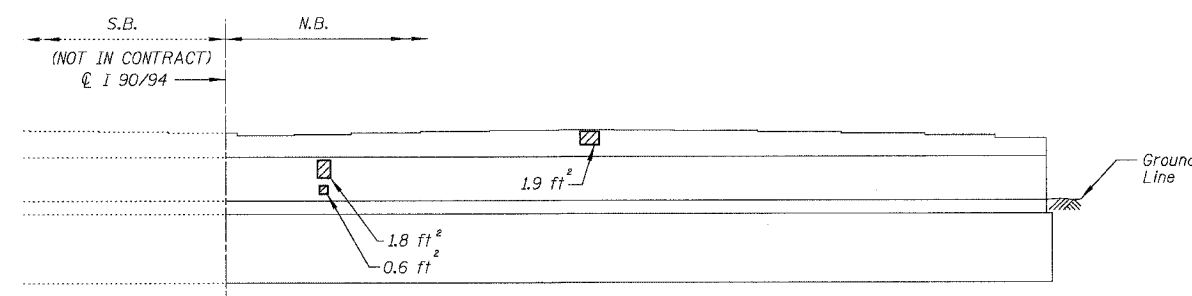
BOWMAN, BARRETT & ASSOCIATES INC.  
 CONSULTING ENGINEERS  
 Chicago, Illinois  
 312.228.0100  
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For Notes and Legend See Sheet 253

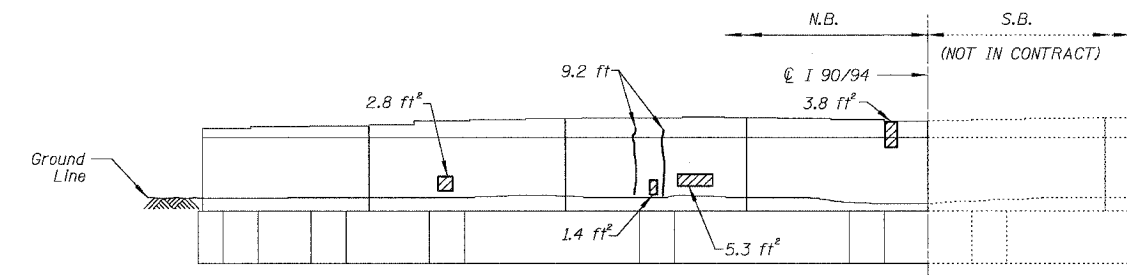
F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	298
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
62580				



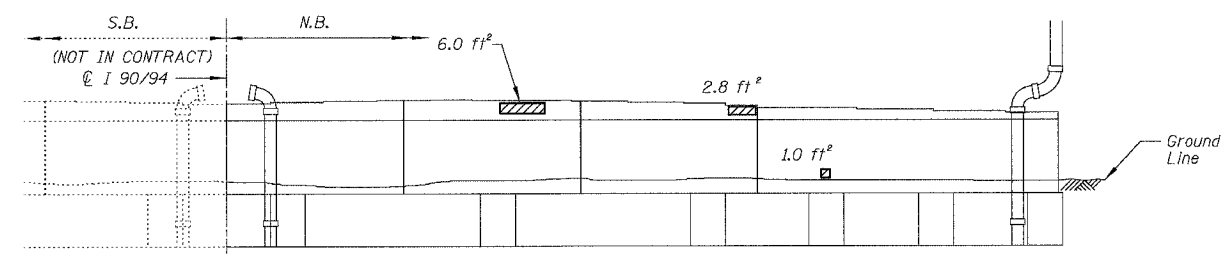
**PIER 22 - NORTH ELEVATION**  
(Looking South)



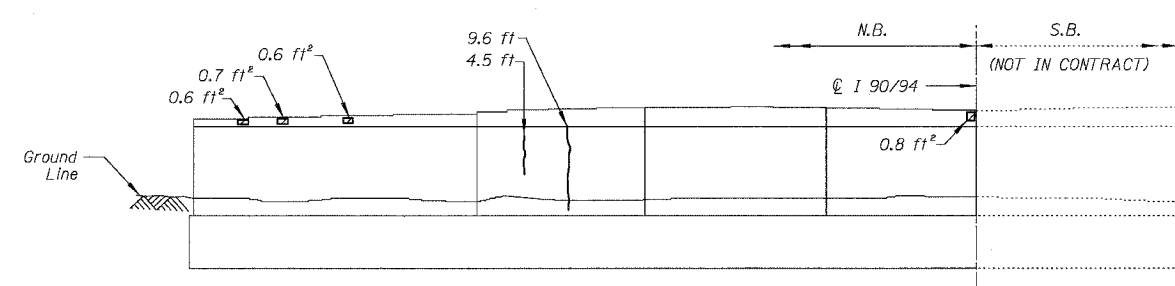
**PIER 22 - SOUTH ELEVATION**  
(Looking North)



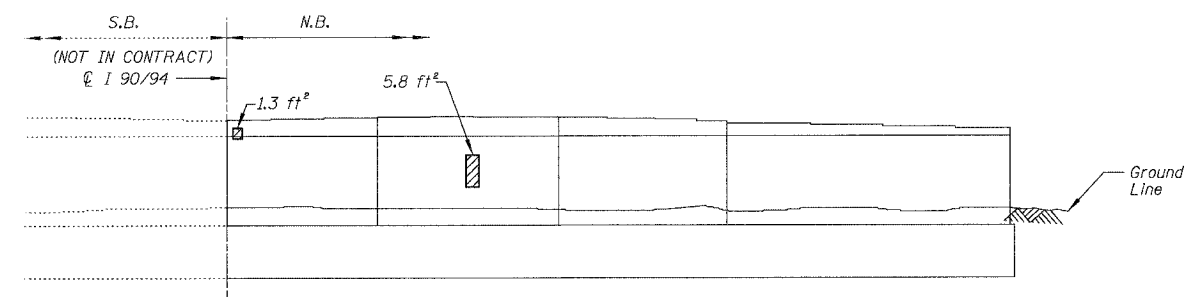
**PIER 21 - NORTH ELEVATION**  
(Looking South)



**PIER 21 - SOUTH ELEVATION**  
(Looking North)



**PIER 20 - NORTH ELEVATION**  
(Looking South)



**PIER 20 - SOUTH ELEVATION**  
(Looking North)

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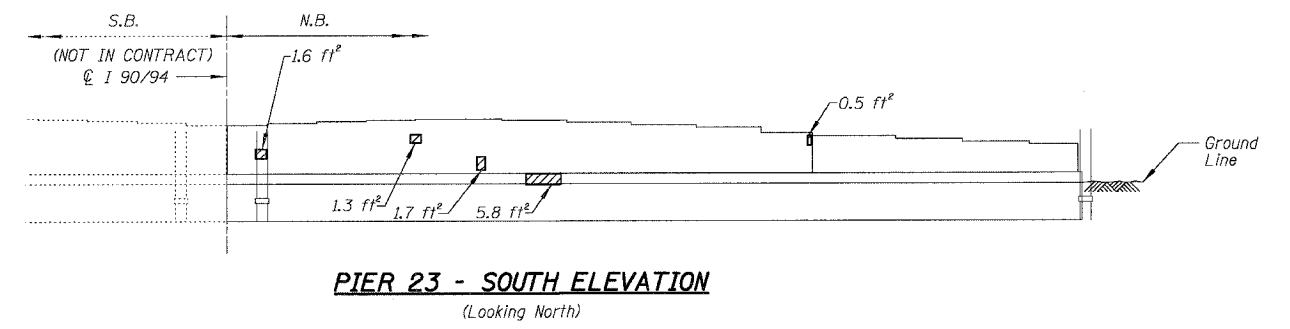
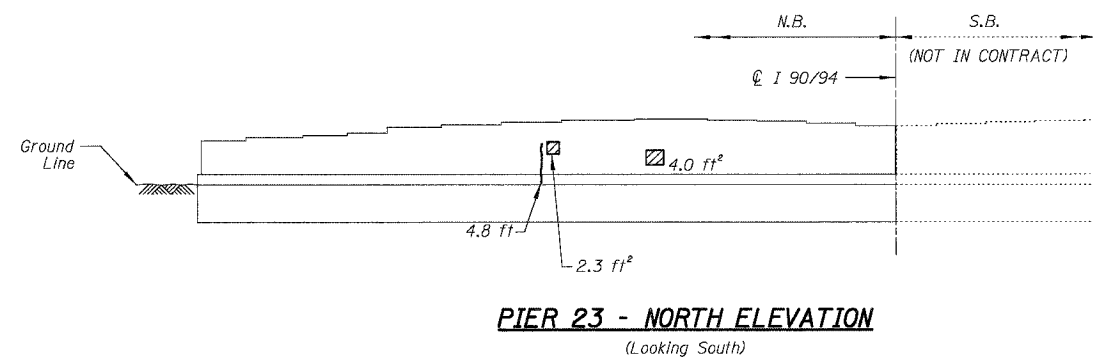
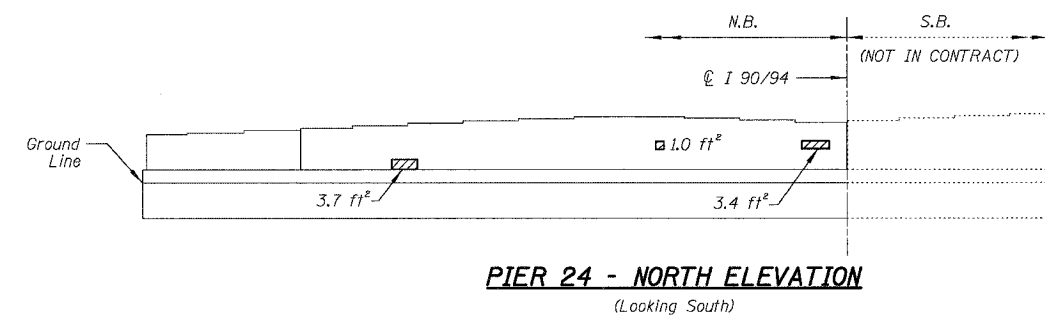
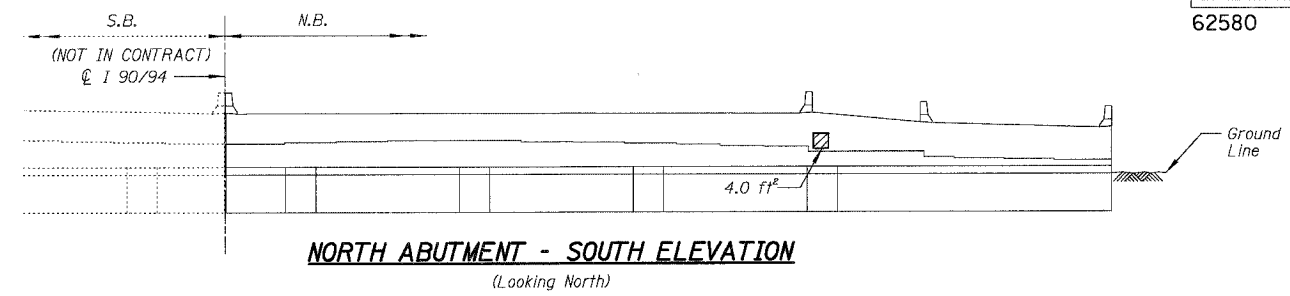
**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	57.7
Epoxy Crack Sealing	FOOT	47.9

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
NB DAN RYAN ELEVATED BRIDGE  
REPAIR FROM 15TH TO 28TH STREETS  
CONCRETE PIER REPAIRS  
SN 016-0137, PIERS 20, 21 & 22  
SCALE: NTS  
DATE: 7/22/2005  
DRAWN BY: BDC  
CHECKED BY: BLU

F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	299
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62580				



**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
High Performance Enhanced Shotcrete	SQ. FT.	33.7
Epoxy Crack Sealing	FOOT	5.6

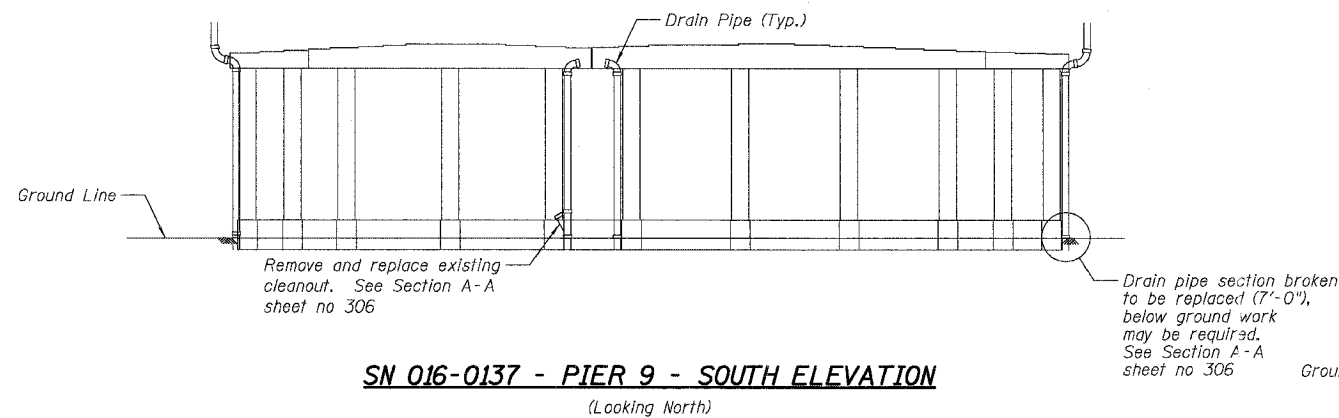
REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 94/90 (DAN RYAN EXPRESSWAY)  
 NB DAN RYAN ELEVATED BRIDGE  
 REPAIR FROM 15TH TO 28TH STREETS  
 CONCRETE PIER REPAIRS  
 SN 016-0137, N. ABUT., PIERS 23,24  
 SCALE: NTS  
 DATE: 7/22/2005  
 DRAWN BY: BDC  
 CHECKED BY: BLU

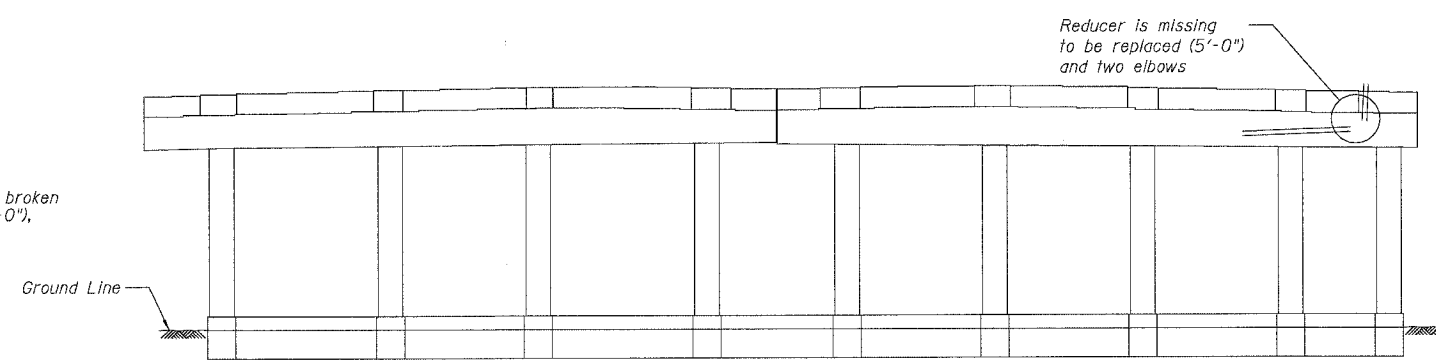
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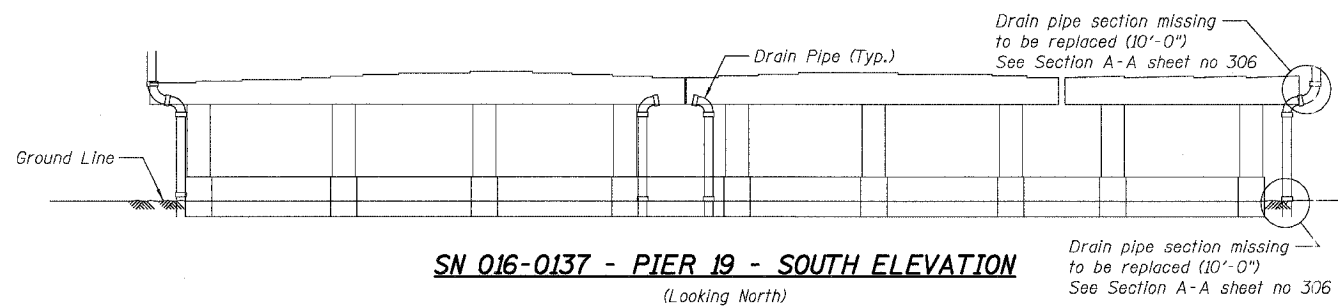
F.A.I.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94/90	2003-028F	COOK	419	300
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
62580				



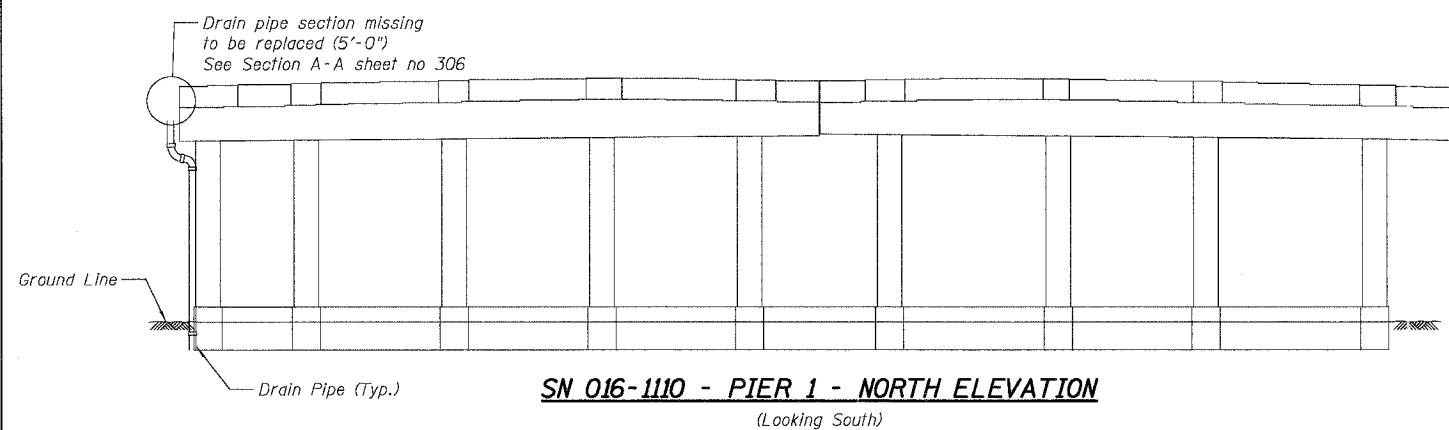
**SN 016-0137 - PIER 9 - SOUTH ELEVATION**  
(Looking North)



**SN 016-1110 - PIER 4 - SOUTH ELEVATION**  
(Looking North)



**SN 016-0137 - PIER 19 - SOUTH ELEVATION**  
(Looking North)



**SN 016-1110 - PIER 1 - NORTH ELEVATION**  
(Looking South)

**DRAINAGE REPAIR NOTES**

- The locations shown as requiring drainage repairs identify the general deficiency and provide an estimated length of new pipe required. It shall be the Contractors responsibility to verify the locations, dimensions and details prior to ordering the material. Such variations shall not be cause for additional compensation for a change in the scope of work, however the contractor will be paid for the Quantity actually furnished at the unit price bid for the work.
- The Contractor shall provide all piping, brackets, hangers, fittings and accessories required to return the existing drainage system to a fully functional leak free system. See Special Provisions.
- When existing drain pipes are wrapped with duct tape, the tape shall be removed if pipe is broken or miss connected. The pipe shall be replaced or otherwise new tape shall be provided. The type of the tape shall be approved by the Engineer. The cost shall be included in "Bridge Drainage System Repairs".
- The Contractor shall wrap any joints that are leaking as directed by the Engineer. The cost shall be included in "Bridge Drainage System Repairs".
- Contractor shall reconnect drainage troughs for finger plate expansion joints to drainage system as directed by the Engineer. It is estimated that 5'-0" of the existing drain pipe will need to be replaced to connect to the new troughs at each specified joint.
- For locations see framing plan
- SN 016-0137, Span 1  
Drain pipe section between beams 9S & 10S broken to be replaced (10'-0")

**BILL OF MATERIAL**

ITEM DESCRIPTION	UNIT	QUANTITY	
		SN 016-0137	SN 016-1110
Bridge Drainage System Repairs	FOOT	37	15

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION	
NAME	DATE	F.A.I. 94/90 (DAN RYAN EXPRESSWAY)	
		NB DAN RYAN ELEVATED BRIDGE	
		REPAIR FROM 15TH TO 28TH STREETS	
		DRAINAGE REPAIRS	
		SN 016-0137 & 016-1110	
		SCALE: NTS	DRAWN BY: BDC
		DATE: 8/12/2005	CHECKED BY: BLU

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