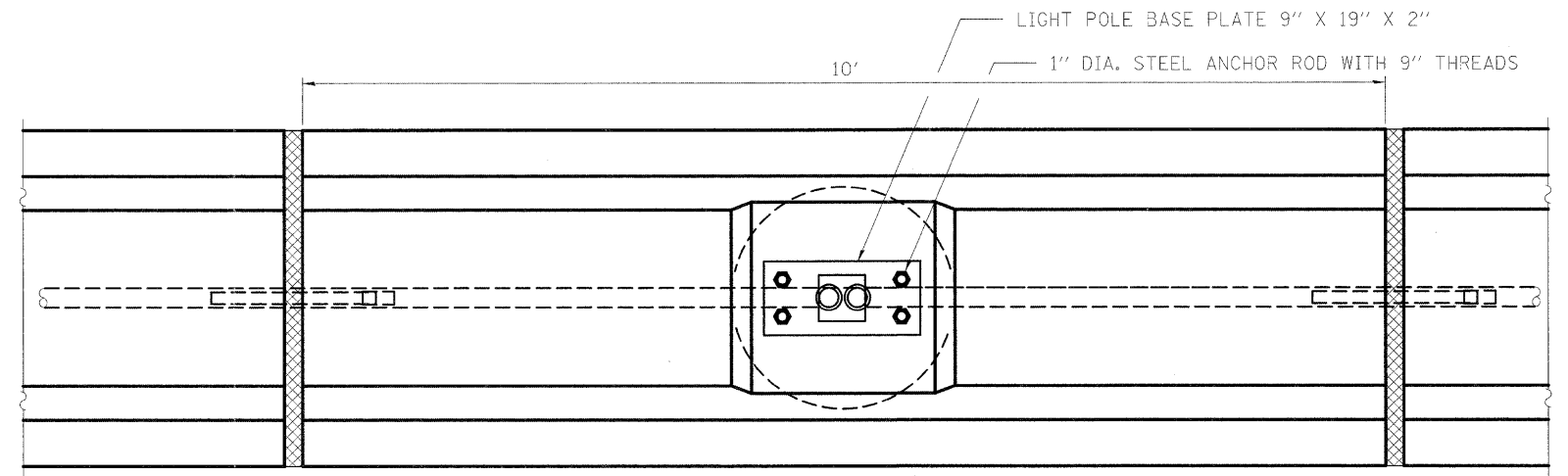
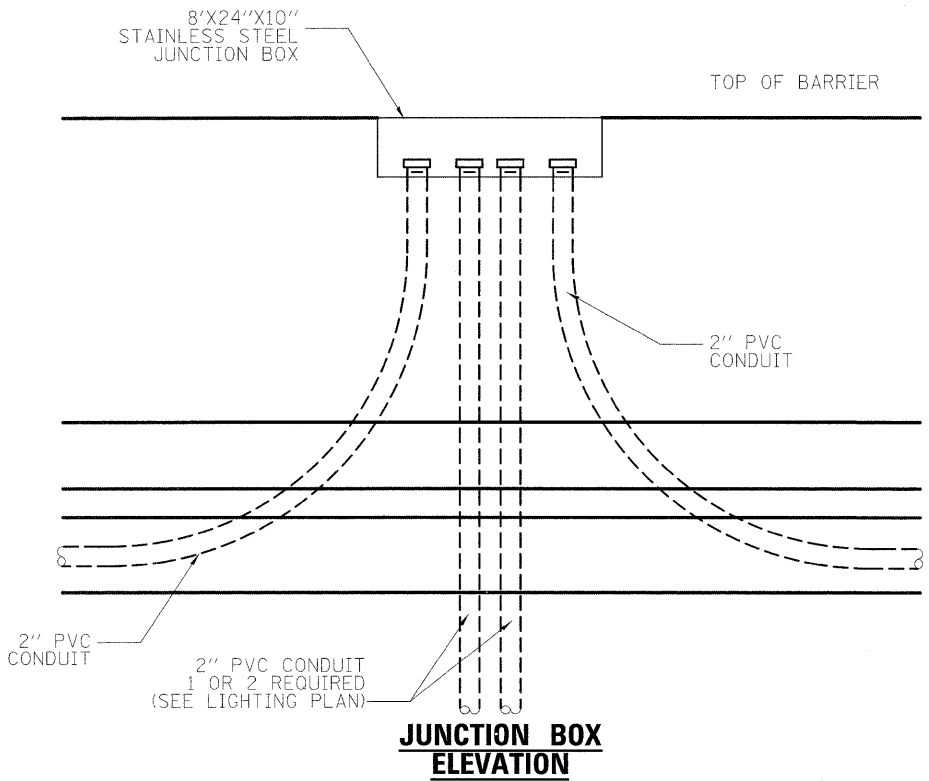


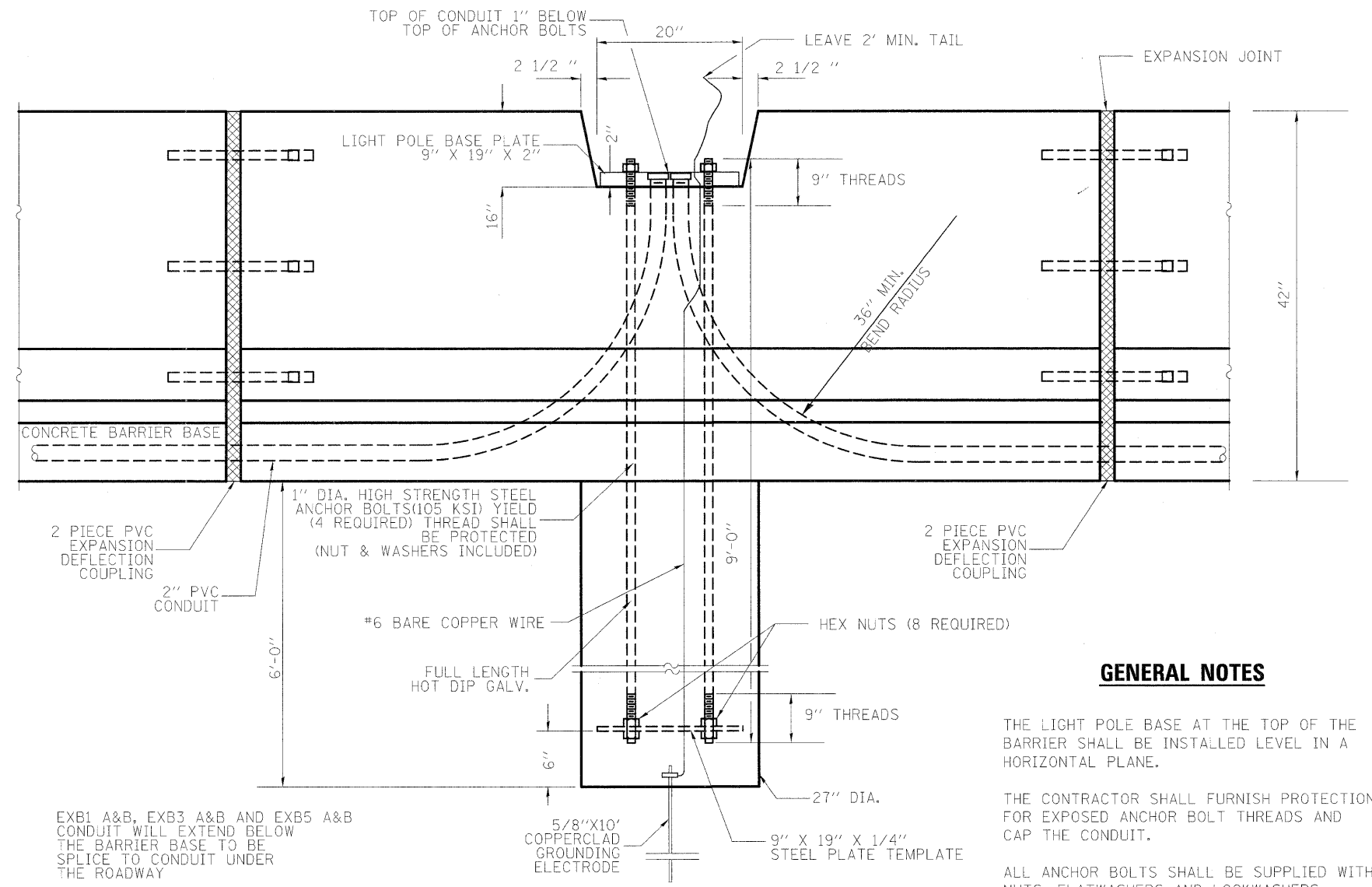
**LIGHT POLE BASE PLATE**



**PLAN AT LIGHTING FOUNDATION**



**JUNCTION BOX ELEVATION**



**ELEVATION AT LIGHTING FOUNDATION**

**GENERAL NOTES**

- THE LIGHT POLE BASE AT THE TOP OF THE BARRIER SHALL BE INSTALLED LEVEL IN A HORIZONTAL PLANE.
- THE CONTRACTOR SHALL FURNISH PROTECTION FOR EXPOSED ANCHOR BOLT THREADS AND CAP THE CONDUIT.
- ALL ANCHOR BOLTS SHALL BE SUPPLIED WITH NUTS, FLATWASHERS AND LOCKWASHERS.
- FOR 42" HIGH CONCRETE BARRIER DETAILS SEE HIGHWAY STANDARD 637006.

EXB1 A&B, EXB3 A&B AND EXB5 A&B CONDUIT WILL EXTEND BELOW THE BARRIER BASE TO BE SPLICE TO CONDUIT UNDER THE ROADWAY

EXB1 A&B AND EXB5 A&B HAVE A 3" CONDUIT EMBEDDED IN THE FOUNDATION

FILE NAME =	USER NAME = burnsideem	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>POLE MOUNTING ON CONCRETE BARRIER</b>	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
c:\pwork\pwork\burnsideem\d8189244\876415-sht-light.dgn		DRAWN -	REVISED -			64	82-(3,4)RS	ST. CLAIR	167	100	
PLOT SCALE = 49.9952' / in.		CHECKED -	REVISED -			CONTRACT NO. 76415					
PLOT DATE = 12/6/2011		DATE -	REVISED -			FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT					

Existing Structure: Structure No. 082-0167 (E.B.) and 082-0168 (W.B.), built in 1968 as Section 82-3VB and widened in 1980 as Section 82-3VBY. The dual superstructures consist of continuous three span composite rolled beam bridges with 7 1/2" concrete slabs and 1 1/2" bituminous overlay. The dual substructures consist of concrete stub abutments supported by concrete piles and multiple column piers supported by timber piles. The back-to-back of abutment dimension measures 259'-2 3/8" (E.B.) and 249'-4 3/4" (W.B.) and the out-to-out of deck measures 71'-4" to 79'-0 1/4" (E.B.) and 71'-2" (remainder varies) (W.B.). The span lengths (C bearing to C bearing) are 89'-3 3/8", 86'-10 7/8" and 77'-3 3/8" (E.B.) and 85'-11 1/4", 84'-4 1/2" and 85'-11 1/4" (W.B.). The skew angles are 27°10'0" left forward (E.B.) and 22°18'0" left forward (W.B.). Two lanes of traffic will be maintained on each bridge utilizing stage construction.

SEE SHEET A2 FOR INDEX TO SHEETS

**LOADING HS20-44**

Original and 1980 Construction  
Allow 25#/sq. ft. for future wearing surface.

**DESIGN SPECIFICATIONS**

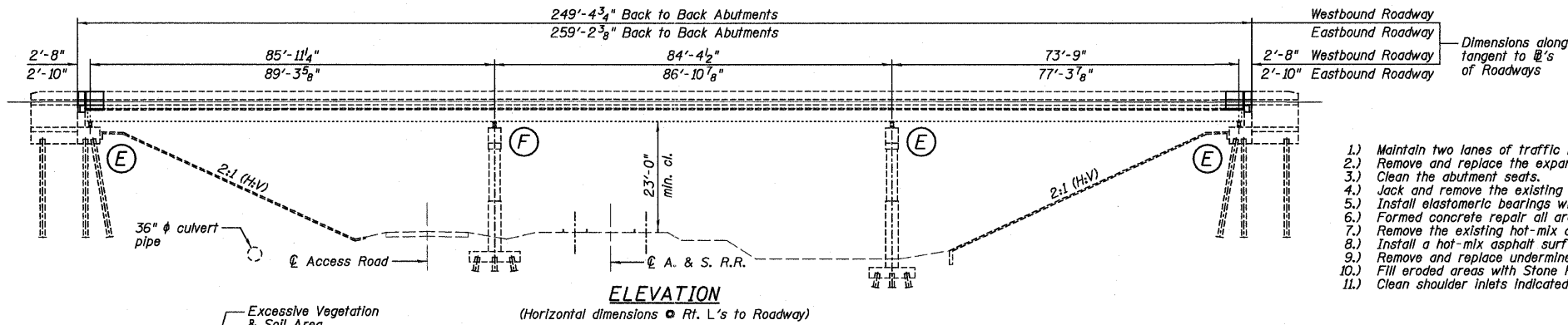
1980 Construction  
1977 AASHTO and 1978 Interim Specifications

**DESIGN STRESSES**

Original Construction  
f<sub>c</sub> = 1,400 psi (Super & Sub)  
f<sub>s</sub> = 20,000 psi (Reinforcement)  
f<sub>s</sub> = 20,000 psi (Structural Steel)  
v<sub>c</sub> = 75 psi (Footings)  
n = 10

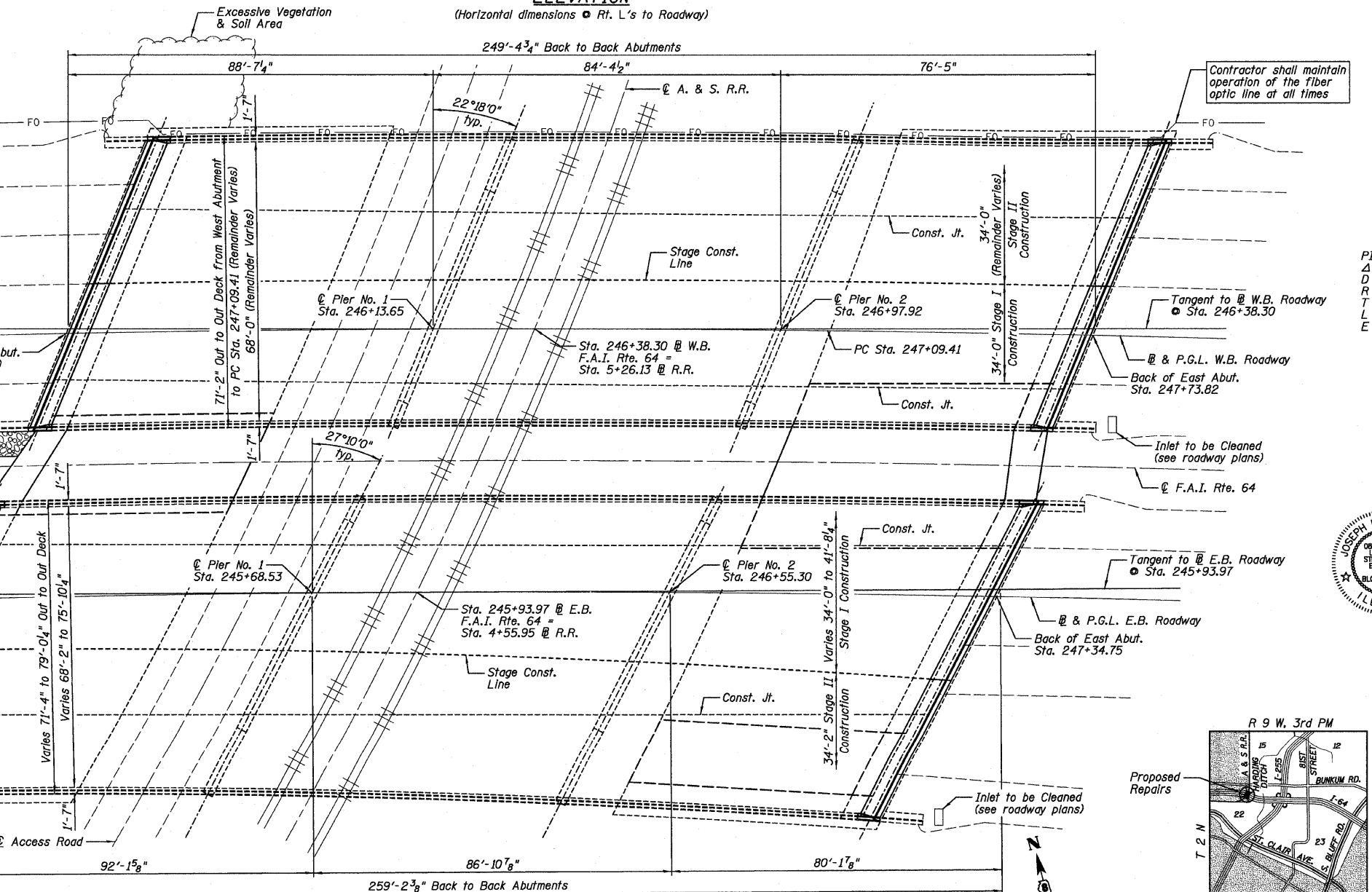
1980 Construction  
f<sub>c</sub> = 3,500 psi  
f<sub>y</sub> = 60,000 psi (Reinforcement)  
f<sub>y</sub> = 36,000 psi (Structural Steel M183)  
f<sub>y</sub> = 50,000 psi (Structural Steel M223)  
n = 8.3

Field Units  
f<sub>c</sub> = 3,500 psi  
f<sub>y</sub> = 60,000 psi (Reinforcement)  
f<sub>y</sub> = 36,000 psi (Structural Steel)



**SCOPE OF WORK**

- 1.) Maintain two lanes of traffic in each direction according to Stage Construction cross sections.
- 2.) Remove and replace the expansion joints with Preformed Joint Strip Seal.
- 3.) Clean the abutment seats.
- 4.) Jack and remove the existing bearings at the abutments.
- 5.) Install elastomeric bearings with steel extensions at the abutments.
- 6.) Formed concrete repair all areas indicated on the plans.
- 7.) Remove the existing hot-mix asphalt overlay.
- 8.) Install a hot-mix asphalt surface course with a waterproofing membrane to the deck.
- 9.) Remove and replace undermined sections of the slope wall indicated on the plans.
- 10.) Fill eroded areas with Stone Riprap, Class A3 as Indicated on the plans.
- 11.) Clean shoulder inlets indicated on the plans.



**CURVE DATA:**

(E.B. F.A.I. 64)  
PI STA. = 240+74.86  
Δ = 16° 58' 14"  
D = 1° 00' 20"  
R = 5697.58'  
T = 850.01'  
L = 1687.58'  
S.E. RUN = 0.028%  
P.C. STA = 232+24.84  
P.T. STA = 249+12.42

**CURVE DATA:**

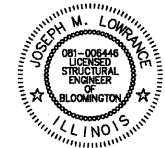
(W.B. F.A.I. 64)  
PI STA. = 240+84.40  
Δ = 16° 58' 14"  
D = 0° 59' 40"  
R = 5761.58'  
T = 859.56'  
L = 1706.53'  
S.E. RUN = 0.028%  
P.C. STA = 232+24.84  
P.T. STA = 249+31.38

**CURVE DATA:**

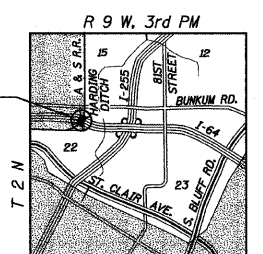
(Curve No. 12)  
PI STA. = 247+09.41, 68' LT.  
Δ = 01° 04' 39"  
D = 0° 14' 04"  
R = 24432.20'  
T = 229.72'  
L = 459.43'  
E = 1.08'

**CURVE DATA:**

(Curve No. 10)  
PI STA. = 244+07.33, 68' RT.  
Δ = 06° 05' 21"  
D = 02° 01' 46"  
R = 2823.40'  
T = 150.17'  
L = 300.06'  
E = 3.99'



JOSEPH M. LOWRANCE  
ILLINOIS STRUCTURAL ENGINEER  
NO. 081-006446  
Exp. Date 11/30/12



**GENERAL PLAN AND ELEVATION  
INTERSTATE 64 OVER  
ALTON & SOUTHERN RAILROAD  
F.A.I. ROUTE 64 - SEC 82-(3,4)RS  
ST. CLAIR COUNTY  
STATION 245+93.97 (E.B.)  
STATION 246+38.30 (W.B.)  
STRUCTURE NO. 082-0167 (E.B.)  
STRUCTURE NO. 082-0168 (W.B.)**

**Farnsworth GROUP, INC.**  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/963-8435, 309/963-1571 fax

DESIGNED - JCZ  
CHECKED - JML  
DRAWN - DJM/JWK  
CHECKED - MSW

REVISED  
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REVISED  
REVISED

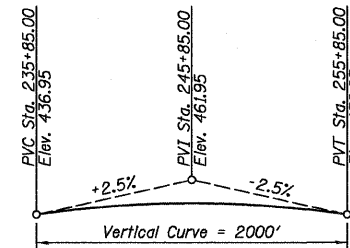
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

SHEET NO. A1 OF 21 SHEETS

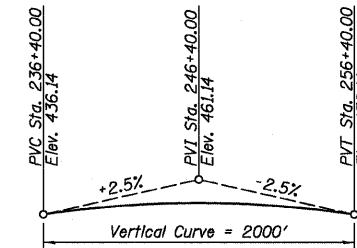
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	101
				CONTRACT NO. 76415
ILLINOIS FED. AID PROJECT				

**INDEX TO SHEETS**

SHEET NO.	TITLE
A1	GENERAL PLAN AND ELEVATION
A2	GENERAL DATA
A3	STAGE CONSTRUCTION, EASTBOUND ROADWAY
A4	STAGE CONSTRUCTION, WESTBOUND ROADWAY
A5	TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
A6	PARAPET REPAIR
A7-A8	JOINT REPLACEMENT DETAILS, EASTBOUND ROADWAY
A9-A10	JOINT REPLACEMENT DETAILS, WESTBOUND ROADWAY
A11	PREFORMED JOINT STRIP SEAL
A12	BEARING DETAILS AND NOTES
A13	TYPE I BEARING DETAILS, WEST ABUTMENT
A14	TYPE II BEARING DETAILS, EAST ABUTMENT
A15	WEST ABUTMENT, EASTBOUND ROADWAY
A16	EAST ABUTMENT, EASTBOUND ROADWAY
A17	WEST ABUTMENT, WESTBOUND ROADWAY
A18	EAST ABUTMENT, WESTBOUND ROADWAY
A19	PIER REPAIR
A20	SLOPEWALL REPAIR AND RIPRAP PLACEMENT
A21	BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS



**PROFILE GRADE**  
(Along P.G.L. E.B. F.A.I. 64)



**PROFILE GRADE**  
(Along P.G.L. W.B. F.A.I. 64)

**TOTAL BILL OF MATERIAL**

ITEMS	UNITS	SUPER		SUB		TOTAL
		082-0167	082-0168	082-0167	082-0168	
Porous Granular Embankment	Cu. Yd.			314	195	509
Stone Riprap, Class A3	Sq. Yd.			22	11	33
Polymerized Hot-Mix Asphalt Surface Course, Mix "E", N90	Ton	219	202			421
Concrete Removal	Cu. Yd.	27.3	25.0			52.3
Slope Wall Removal	Sq. Yd.			377	234	611
Concrete Superstructure	Cu. Yd.	32.1	29.4			61.5
Protective Coat	Sq. Yd.	236	229			465
Furnishing and Erecting Structural Steel	Pound	4,890	4,890			9,780
Reinforcement Bars, Epoxy Coated	Pound	4,140	3,760			7,900
Bar Splacers	Each	32	32			64
Slope Wall 4 Inch	Sq. Yd.			377	234	611
Prefomed Joint Strip Seal	Foot	169	154			323
Elastomeric Bearing Assembly, Type I	Each	12	12			24
Elastomeric Bearing Assembly, Type II	Each	12	12			24
Anchor Bolts, 1"	Each	48	48			96
Waterproofing Membrane System	Sq. Yd.	1,956	1,800			3,756
Jack and Remove Existing Bearings	Each	24	24			48
Hot-Mix Asphalt Surface Removal (Deck)	Sq. Yd.	2,040	1,877			3,917
Cleaning Bridge Seats	Sq. Ft.			487	446	933
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	12	9	13	35	69
Structural Repair of Concrete (Depth Greater than 5 Inches)	Sq. Ft.			8	5	13
Joint Sealer	Foot	125	125			250
Railroad Protective Liability Insurance	L. Sum	0.5	0.5			1
Temporary Ramp, Special	Sq. Yd.	33	32			65

**GENERAL NOTES**

- Fasteners shall be high strength bolts. Bolts  $\frac{3}{4}$ "  $\phi$ , open holes  $\frac{5}{16}$ "  $\phi$ , unless otherwise noted.
- All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.
- No field welding is permitted except as specified in the contract documents.
- Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60.
- Reinforcement bars designated (E) shall be epoxy coated.
- Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.
- Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
- Protective coat shall not be applied to surfaces to which Waterproofing Membrane System is applied.
- The area along the slope walls as determined by the Engineer should be cleared of vegetation, bushes, saplings, etc. according to Section 201 of the Standard Specifications. This work shall be included with Stone Riprap, Class A3.
- The abutment seats cover an area of 487 sq. ft. (E.B.) and 446 sq. ft. (W.B.). These areas shall be cleaned according to Special Provisions and paid for at the contract unit price for "Cleaning Bridge Seats".
- All areas of erosion are to be repaired by placing Class A3 Stone Riprap in a manner to match the existing ground profile or to improve the ground profile.
- All structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1. Cost included with "Furnishing and Erecting Structural Steel."
- Joint openings shall be adjusted according to Article 520.04 of the Standard Specifications when the deck is poured at an ambient temperature other than 50°F.
- Existing structural steel shall only be cleaned and painted as required by the Guide Bridge Special Provision for "Cleaning and Painting Contact Surface Areas of Existing Steel Structures."
- The hot-mix asphalt mixture requirements are included in the roadway plans.
- See "Railroad Protective Liability Insurance" Special Provision for any work within 25' of the Alton & Southern Railroad.
- Cost of removal and re-installation of all members necessary to complete the work as detailed on the plans and as specified in the Special Provisions shall be included with "Furnishing and Erecting Structural Steel."
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with "Concrete Removal."
- If the analysis submitted to the Contractor for the jacking/repair support system to be used shows temporary stiffeners are required to prevent web crippling or buckling, the stiffeners shall be steel and bolted to the web. If stiffeners are not required, hardwood timbers shall be installed tightly between the top and bottom flange to prevent flange rotation.



2709 McGraw Drive  
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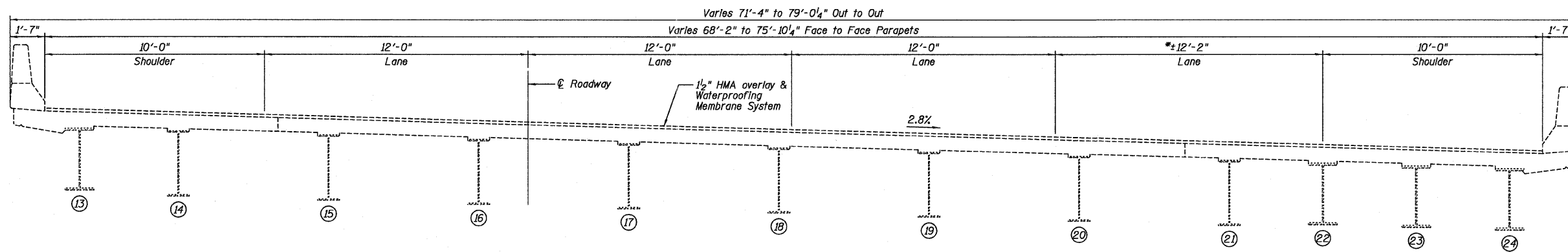
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CHECKED - JML	REVISED
DRAWN - DJM/JWK	REVISED
CHECKED - MSW	REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

GENERAL DATA  
STRUCTURE NO. 082-0167 (E.B.)  
STRUCTURE NO. 082-0168 (W.B.)

F.A.I. RTE. 64	SECTION 82-(3,4)RS	COUNTY ST. CLAIR	TOTAL SHEETS 167	SHEET NO. 102
CONTRACT NO. 76415				
ILLINOIS FED. AID PROJECT				

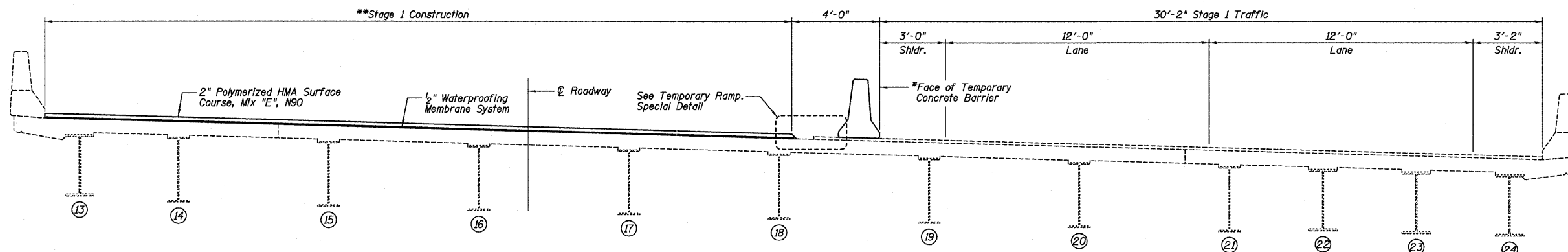
SHEET NO. A2 OF 21 SHEETS



**EXISTING CROSS SECTION**

(Looking East @  $\odot$  of Bridge)  
(All dimensions are given radially)

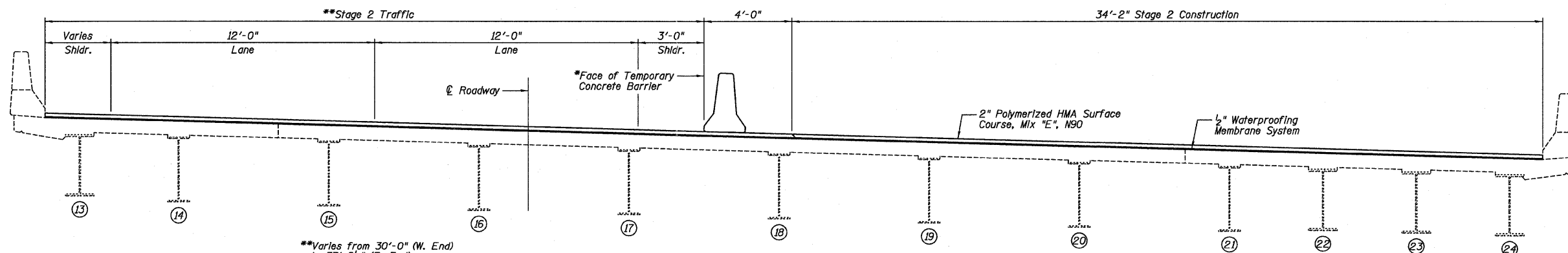
\*Minimum dimensions given. Will increase to follow Curve No. 10.



**STAGE 1 CONSTRUCTION**

(Looking East @  $\odot$  of Bridge)  
(All dimensions are given radially)

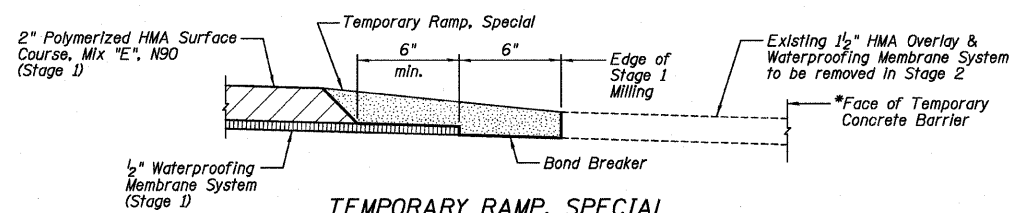
\*Temporary Concrete Barrier, See Std. 704001



**STAGE 2 CONSTRUCTION**

(Looking East @  $\odot$  of Bridge)  
(All dimensions are given radially)

\*Temporary Concrete Barrier, See Std. 704001



**TEMPORARY RAMP, SPECIAL**

**NOTE:**

See Roadway Plans for Temporary Concrete Barrier quantities.

**Farnsworth**  
GROUP, INC.  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/663-8435, 309/663-1571 fax

DATE - 12/05/11

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DRAWN - DJM/JWK	REVISED
CHECKED - MSW	REVISED

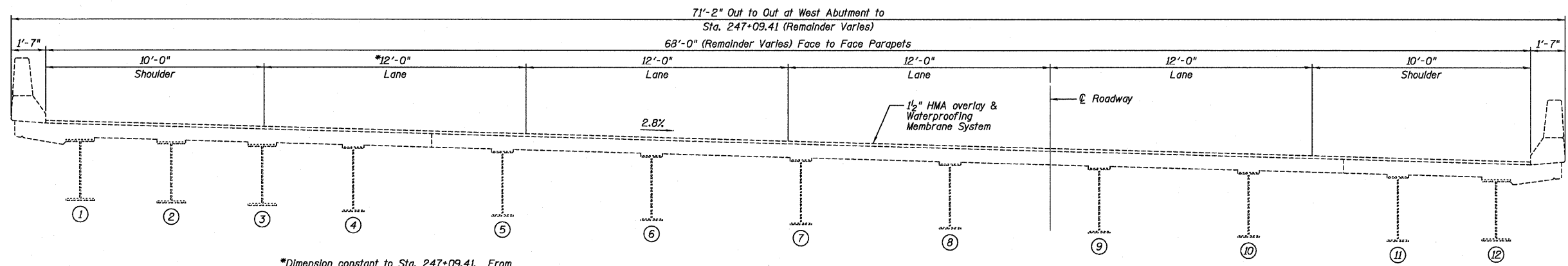
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**STAGE CONSTRUCTION, EASTBOUND ROADWAY**  
**STRUCTURE NO. 082-0167 (E.B.)**  
**STRUCTURE NO. 082-0168 (W.B.)**

SHEET NO. A3 OF 21 SHEETS

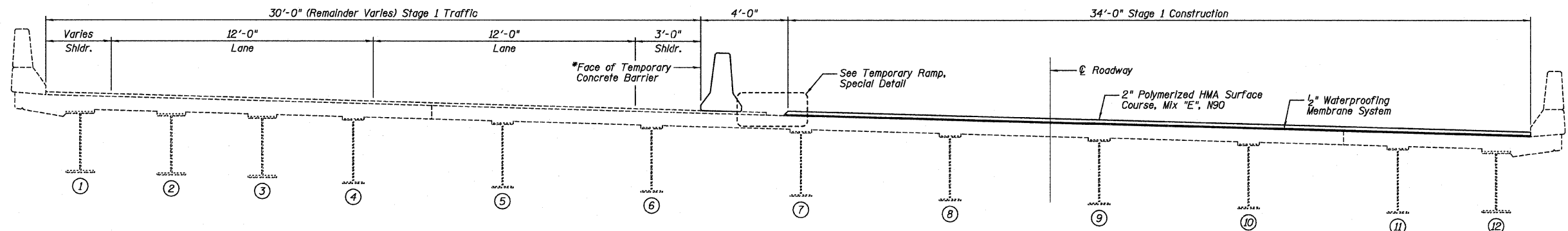
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	103
CONTRACT NO. 76415				
ILLINOIS FED. AID PROJECT				



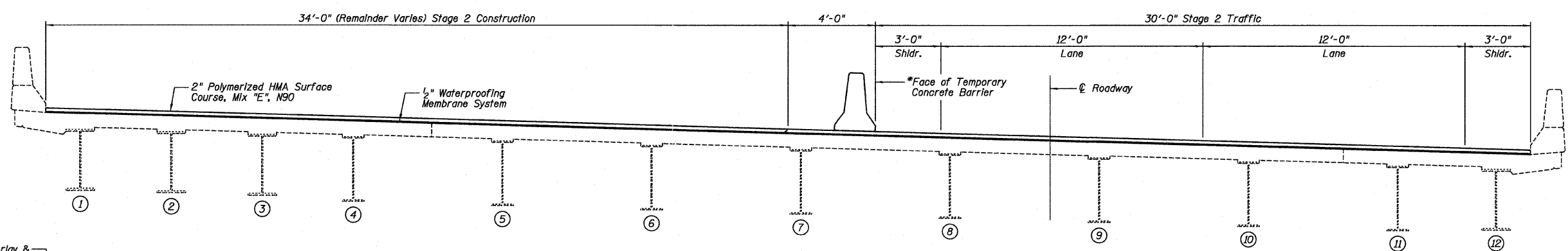


\*Dimension constant to Sta. 247+09.41. From there on, Increase to follow Curve No. 12.

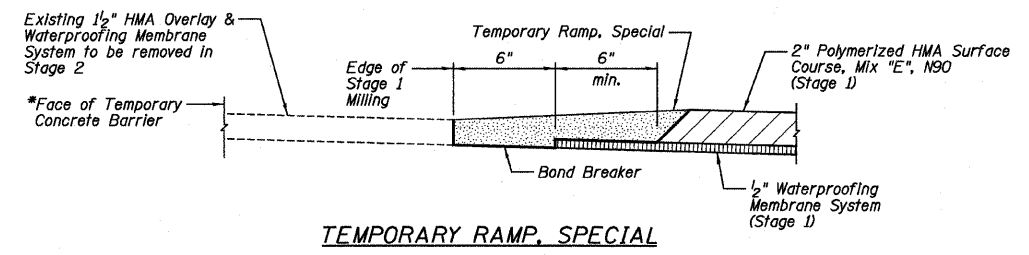
**EXISTING CROSS SECTION**  
(Looking East of Centerline of Bridge)  
(All dimensions are given radially)



**STAGE 1 CONSTRUCTION**  
(Looking East of Centerline of Bridge)  
(All dimensions are given radially)  
\*Temporary Concrete Barrier, See Std. 704001



**STAGE 2 CONSTRUCTION**  
(Looking East of Centerline of Bridge)  
(All dimensions are given radially)  
\*Temporary Concrete Barrier, See Std. 704001

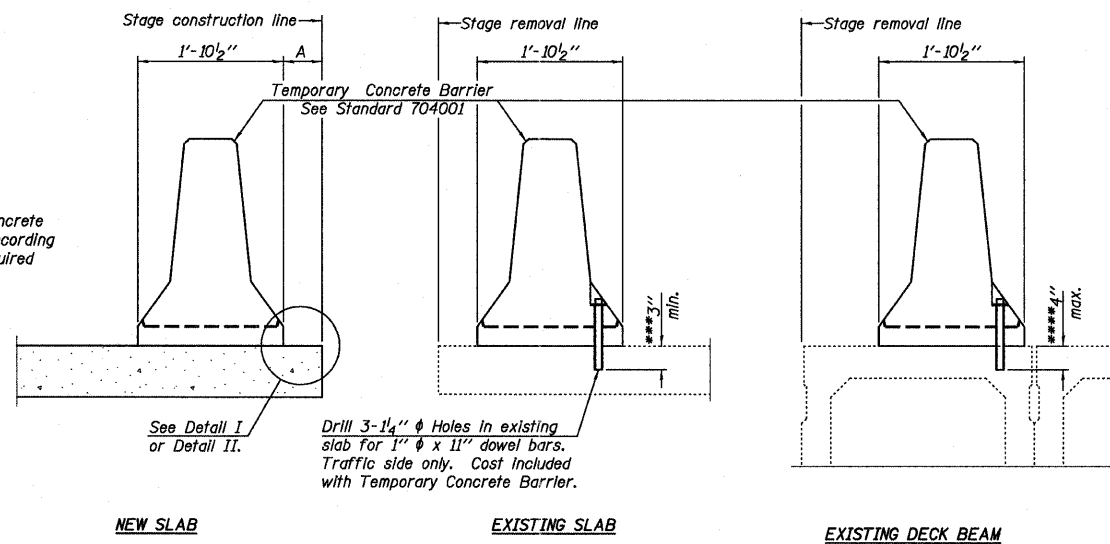


**TEMPORARY RAMP, SPECIAL**

**NOTE:**  
See Roadway Plans for Temporary Concrete Barrier quantities.

<b>Farnsworth GROUP, INC.</b> 2709 McGraw Drive Bloomington, Illinois 61704 309963-8435, 309963-1571 fax	DESIGNED - JCZ	REVISED	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>STAGE CONSTRUCTION, WESTBOUND ROADWAY</b> <b>STRUCTURE NO. 082-0167 (E.B.)</b> <b>STRUCTURE NO. 082-0168 (W.B.)</b>	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	CHECKED - JML	REVISED			64	82-(3,4)RS	ST. CLAIR	167	104
	DRAWN - DJM/JWK	REVISED			CONTRACT NO. 76415				
	DATE - 12/05/11	CHECKED - MSW			REVISED	ILLINOIS FED. AID PROJECT			

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



**SECTIONS THRU SLAB OR DECK BEAM**

**NOTES**

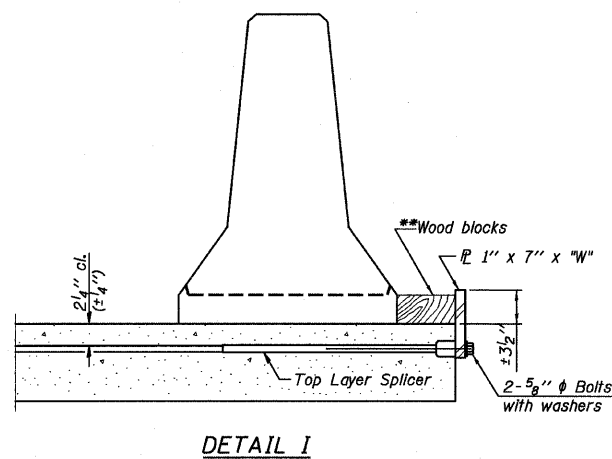
Detail I - With Bar Splicer or Couplers:  
Connect one (1) 1" x 7" x "W" steel  $\bar{L}$  to the top layer of couplers with 2- $\frac{5}{8}$ "  $\phi$  bolts screwed to coupler at approximate  $\bar{C}$  of each barrier panel.

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

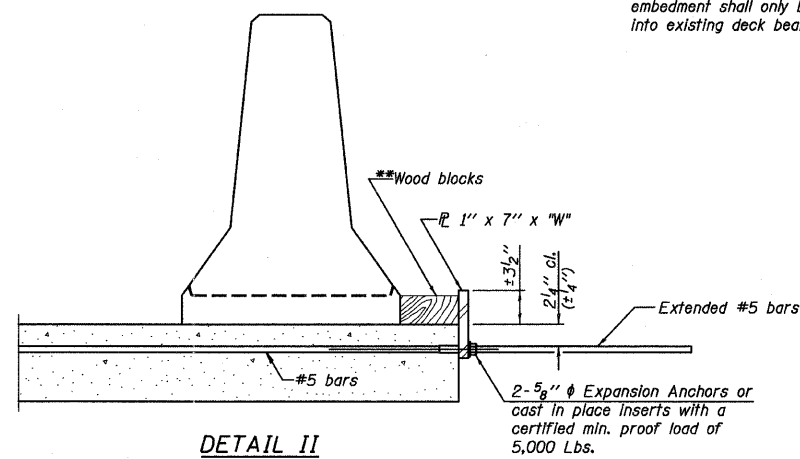
Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x "W" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

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

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



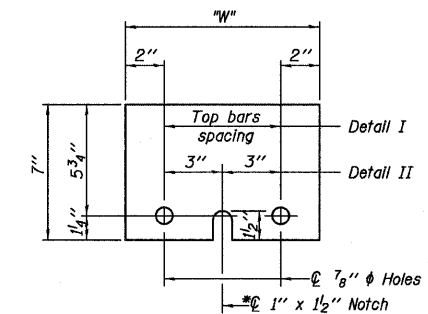
**DETAIL I**



**DETAIL II**

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

"W" = Top bars spacing + 4"



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

R-27

7-1-10

**Farnsworth GROUP, INC.**  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/653-5435, 309/653-1571 fax

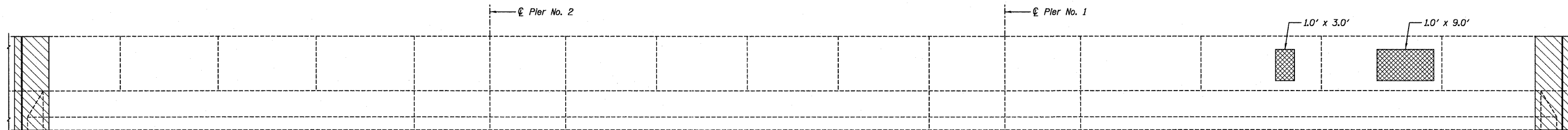
DESIGNED - JCZ	REVISOR
CHECKED - JML	REVISOR
DRAWN - DJM/JWK	REVISOR
DATE - 12/05/11	CHECKED - MSW
	REVISOR

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

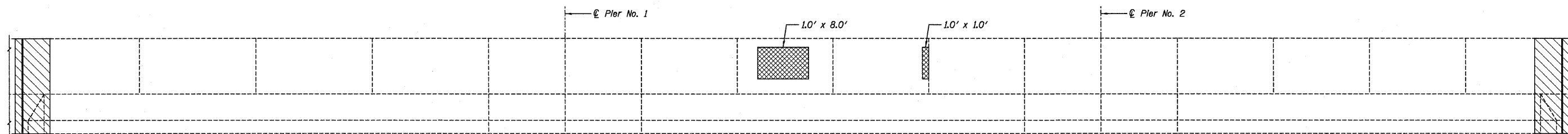
**TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION  
STRUCTURE NO. 082-0167 (E.B.)  
STRUCTURE NO. 082-0168 (W.B.)**

SHEET NO. A5 OF 21 SHEETS

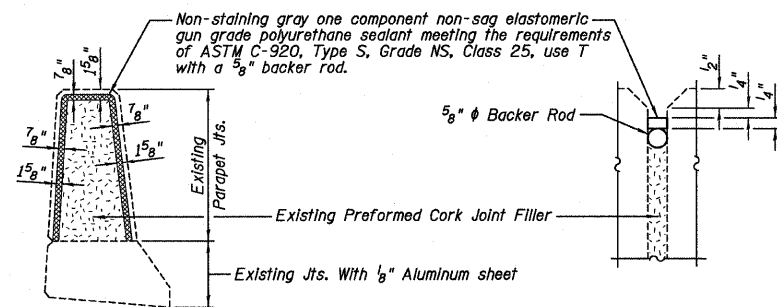
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	105
				CONTRACT NO. 76415
ILLINOIS FED. AID PROJECT				



EASTBOUND ROADWAY, INSIDE ELEVATION OF SOUTH PARAPET



WESTBOUND ROADWAY, INSIDE ELEVATION OF NORTH PARAPET



PARAPET JOINT DETAILS  
(15 joints per parapet)

LEGEND

- Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)
- Concrete Removal for Expansion Joint Replacement, see Sheets A7 thru A10

BILL OF MATERIAL

ITEM	UNIT	082-0167	082-0168	TOTAL
Protective Coat	Sq. Yd.	236	229	465
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	12	9	21
Joint Sealer	Foot	125	125	250

NOTE:

Elevations of Parapet Views are exaggerated vertically.

**Farnsworth**  
GROUP, INC.  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/663-8435, 309/663-1571 fax

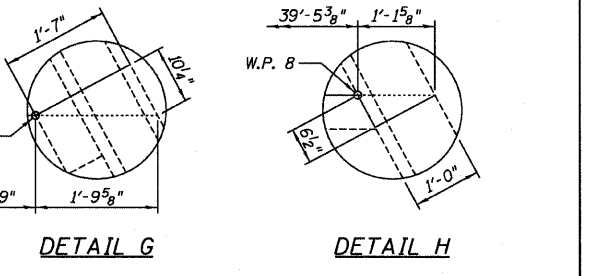
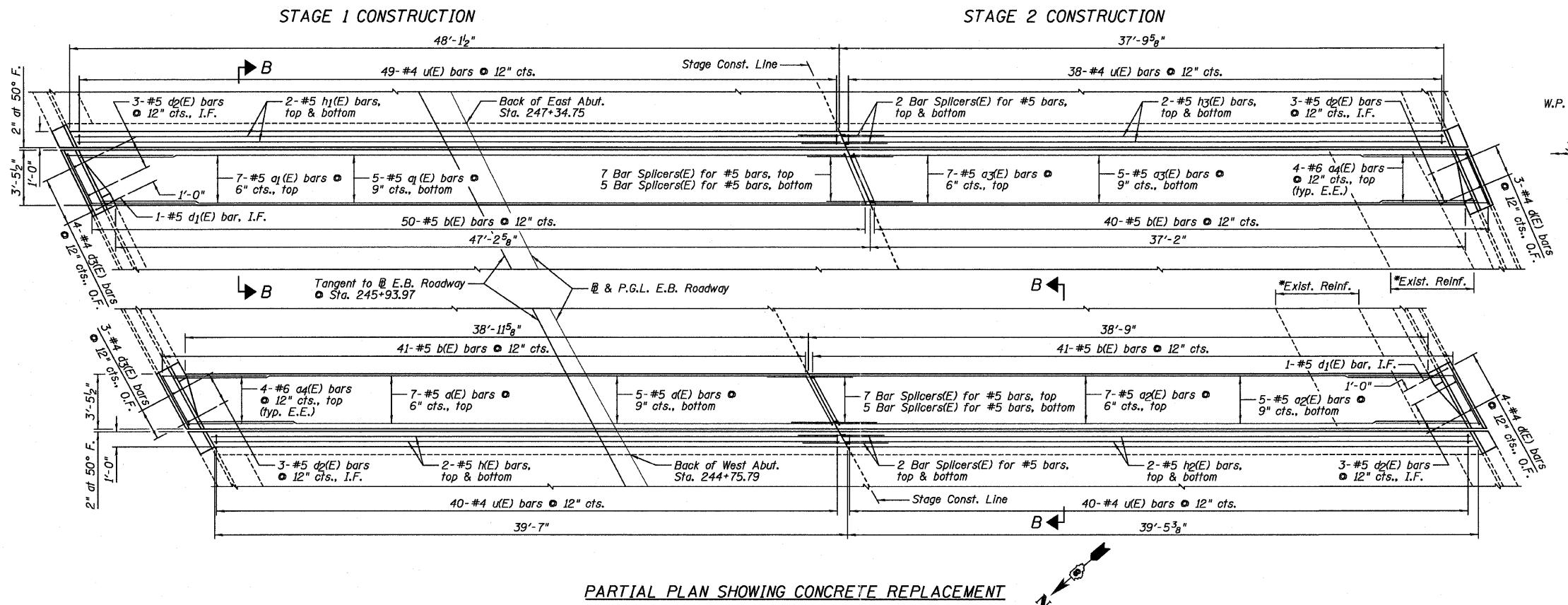
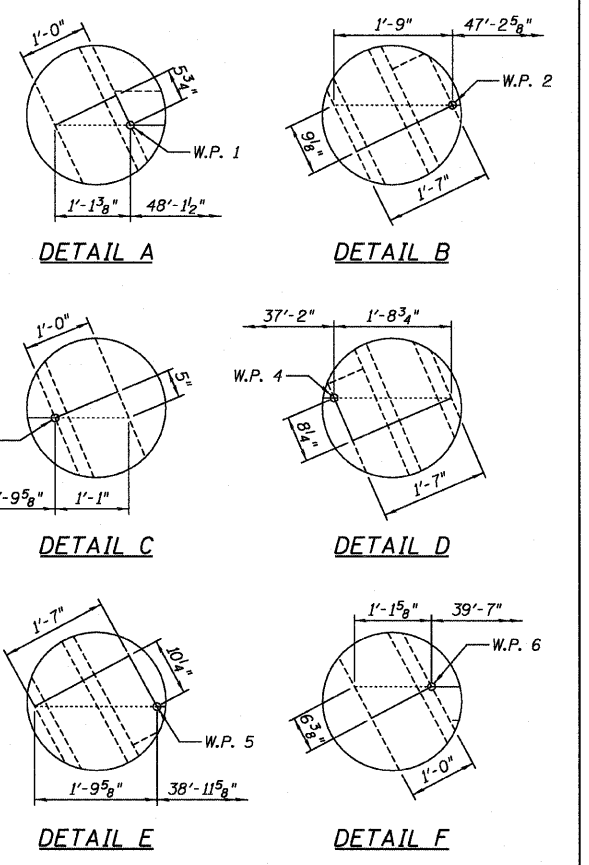
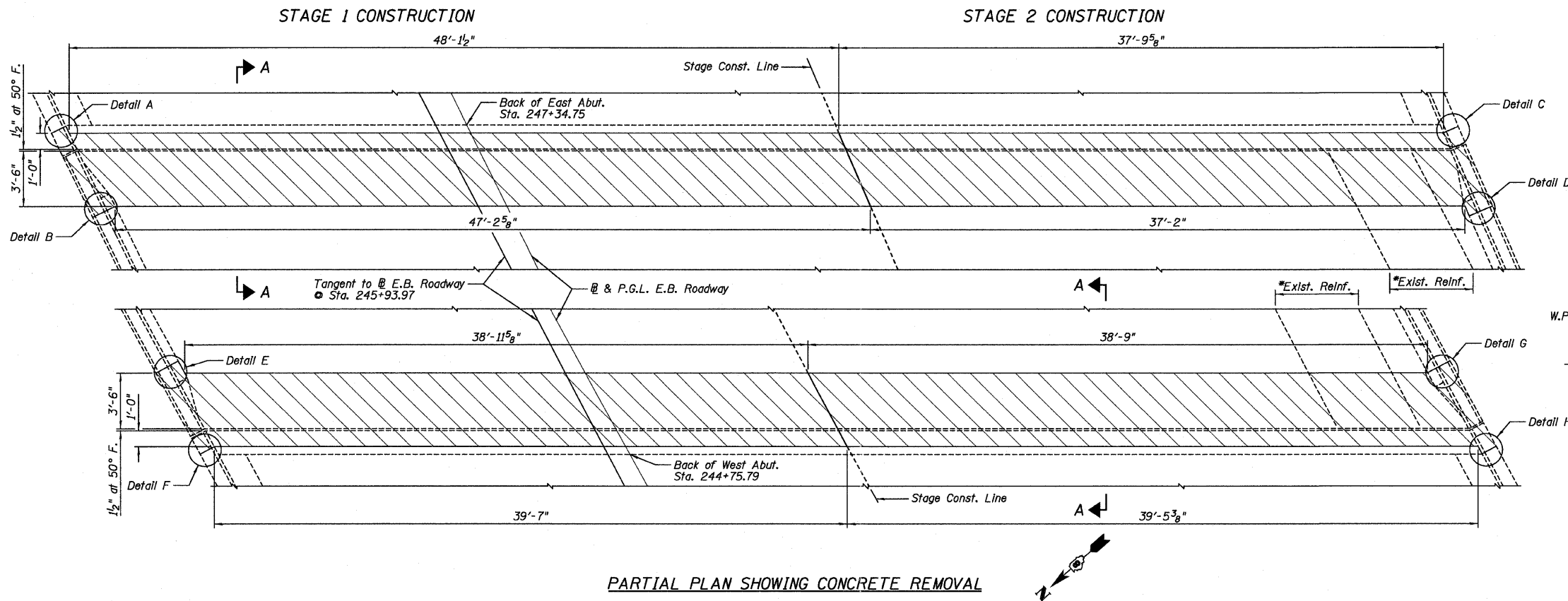
DESIGNED - JCZ	REVISED
CHECKED - JML	REVISED
DRAWN - DJM/JWK	REVISED
CHECKED - MSW	REVISED
DATE - 12/05/11	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PARAPET REPAIR  
STRUCTURE NO. 082-0167 (E.B.)  
STRUCTURE NO. 082-0168 (W.B.)

SHEET NO. A6 OF 21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	106
				CONTRACT NO. 76415
ILLINOIS FED. AID PROJECT				



**NOTE:**  
Dimensions for Detail A thru Detail H are similar for the concrete replacement.

- NOTES:**
- 1.) \*Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
  - 2.) For Section A-A and B-B, see Sheet A8.
  - 3.) E.E. denotes Each End, I.F. denotes Inside Face and O.F. denotes Outside Face.

**Farnsworth GROUP, INC.**  
2709 McCraw Drive  
Bloomington, Illinois 61704  
309/663-3435, 309/663-1574 fax

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DRAWN - DJM/JWK	REVISED
CHECKED - MSW	REVISED

DATE - 12/05/11

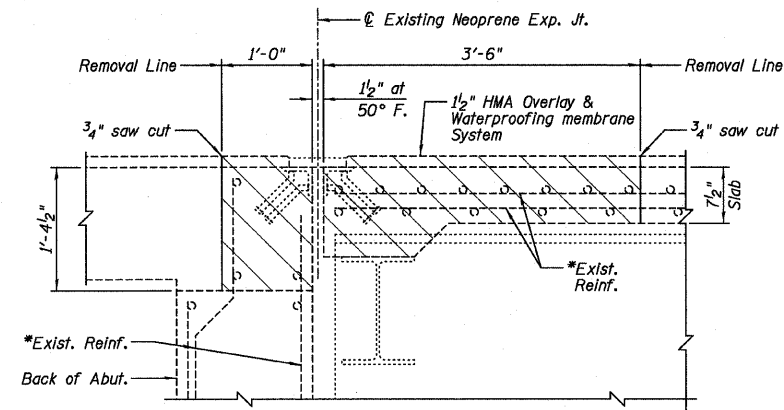
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**JOINT REPLACEMENT DETAILS, EASTBOUND ROADWAY**  
**STRUCTURE NO. 082-0167 (E.B.)**  
**STRUCTURE NO. 082-0168 (W.B.)**  
SHEET NO. A7 OF 21 SHEETS

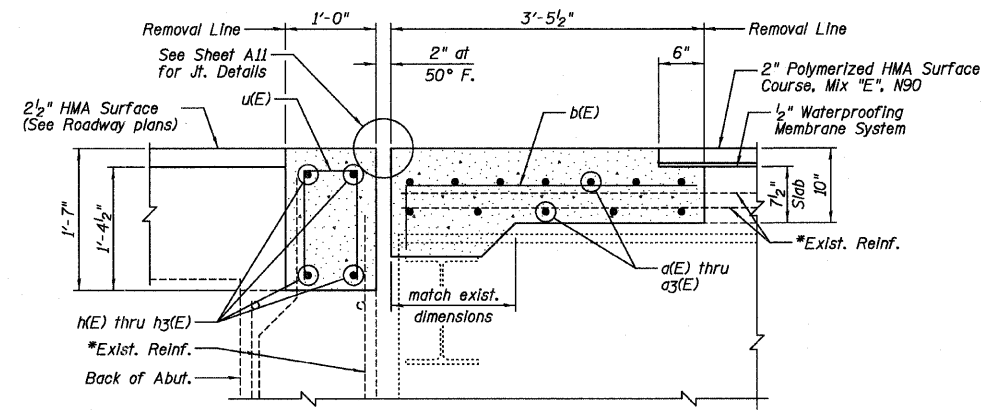
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	107
				CONTRACT NO. 76415
ILLINOIS FED. AID PROJECT				

**BILL OF MATERIAL**

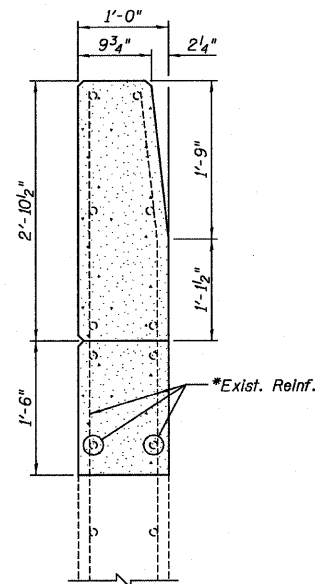
Bar	No.	Size	Length	Shape
a(E)	12	#5	39'-7"	—
a1(E)	12	#5	47'-10"	—
a2(E)	12	#5	39'-5"	—
a3(E)	12	#5	37'-10"	—
a4(E)	16	#6	6'-6"	—
b(E)	172	#5	4'-4"	—
d(E)	7	#4	5'-2"	L
d1(E)	2	#5	3'-11"	L
d2(E)	12	#5	4'-4"	L
d3(E)	7	#4	5'-2"	L
h(E)	4	#5	39'-3"	—
h1(E)	4	#5	47'-9"	—
h2(E)	4	#5	39'-1"	—
h3(E)	4	#5	37'-5"	—
u(E)	167	#4	3'-2"	—
Item	Unit	Quantity		
Concrete Removal	Cu. Yd.	27.3		
Concrete Superstructure	Cu. Yd.	32.1		
Reinforcement Bars, Epoxy Coated	Pound	4,140		
Bar Splicers	Each	32		



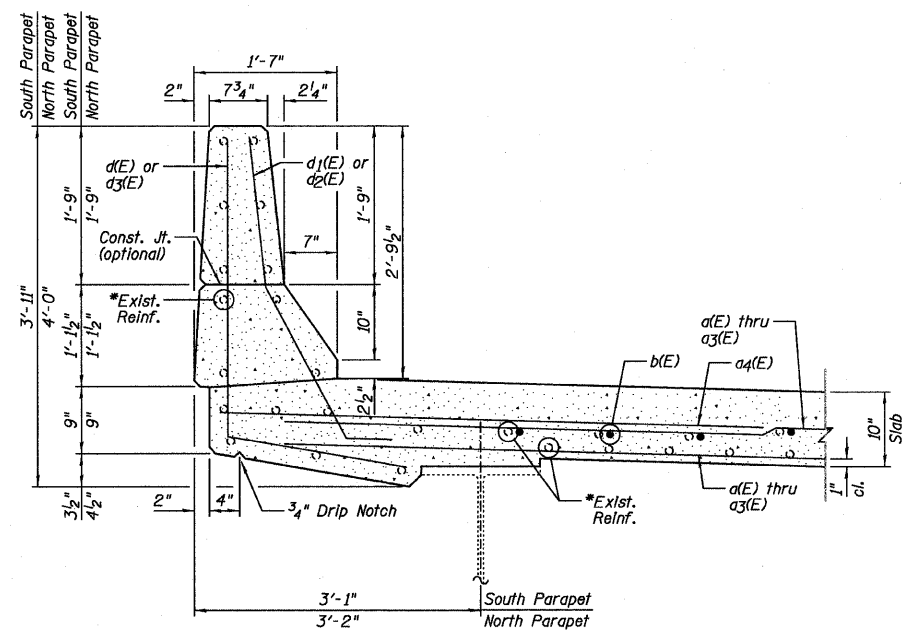
**SECTION A-A**  
(Horizontal Dimensions • Rt. L's)



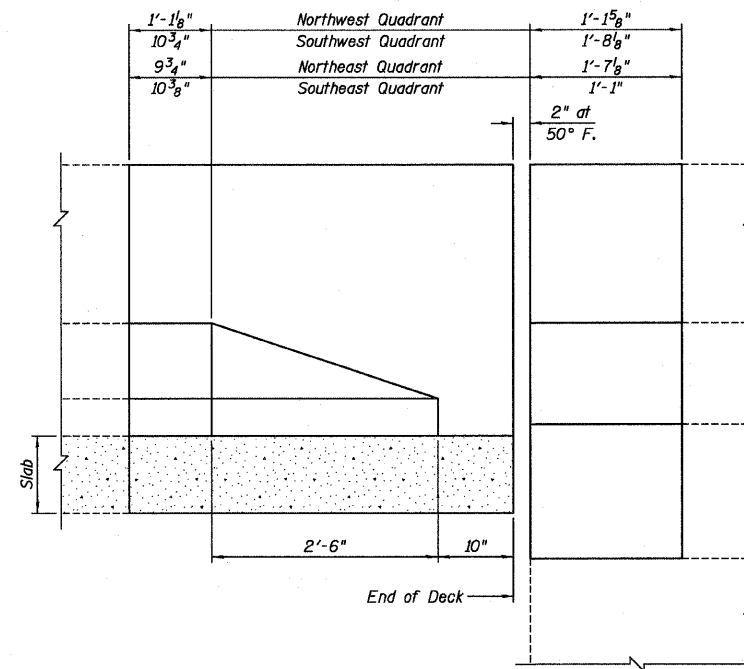
**SECTION B-B**  
(Horizontal Dimensions • Rt. L's)



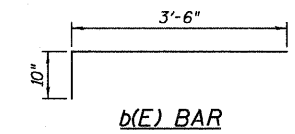
**SECTION THRU WINGWALL**



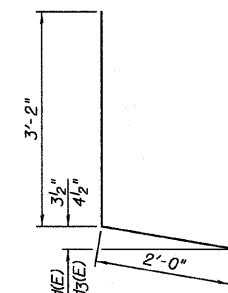
**SECTION THRU PARAPET**



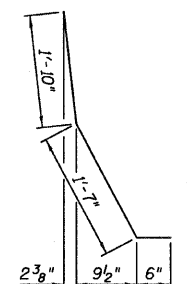
**INSIDE FACE PARAPET ELEVATION**  
(Dimensions measured along inside face of parapet)



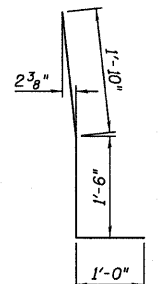
**b(E) BAR**



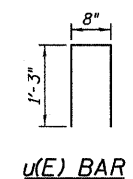
**d(E) & d3(E) BAR**



**d1(E) BAR**



**d2(E) BAR**



**u(E) BAR**

**NOTES:**

- \*Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
- For location of Section A-A and B-B, see Sheet A7.

**Farnsworth GROUP, INC.**  
2709 McGraw Drive  
Schaumburg, Illinois 60194  
308663-8435, 308663-1571 fax

DESIGNED - JCZ  
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DRAWN - DJM/JWK  
DATE - 12/05/11

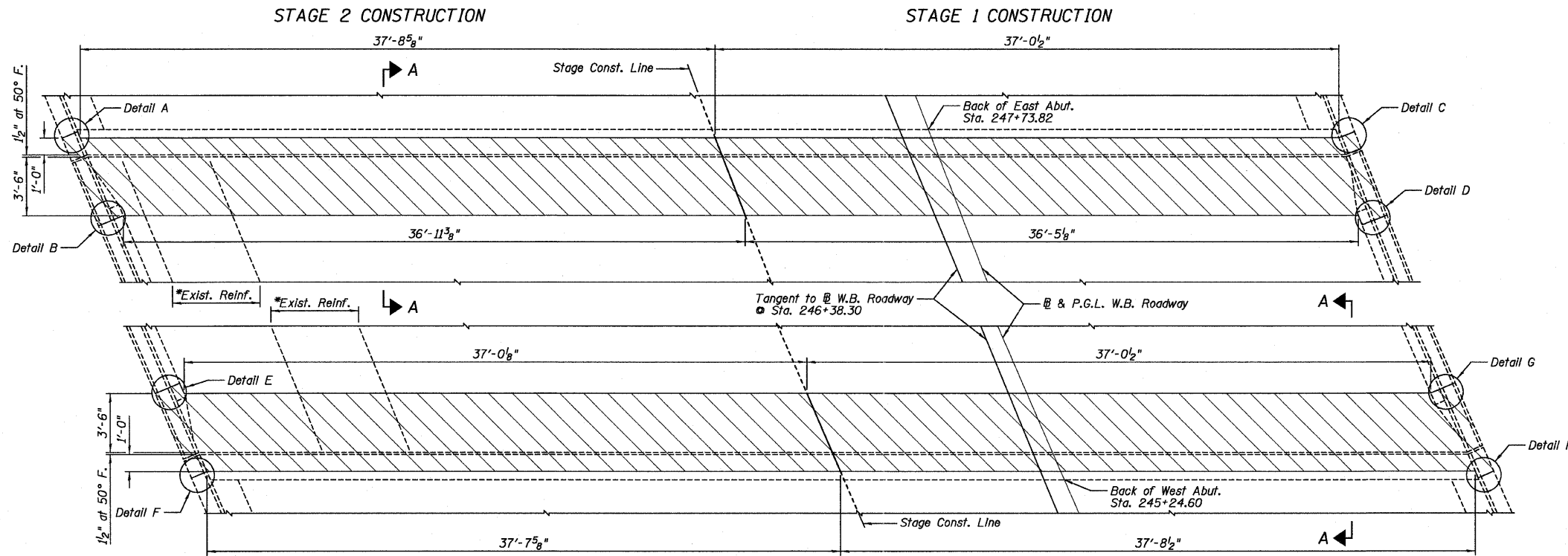
REVISOR  
REVISOR  
REVISOR  
REVISOR

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

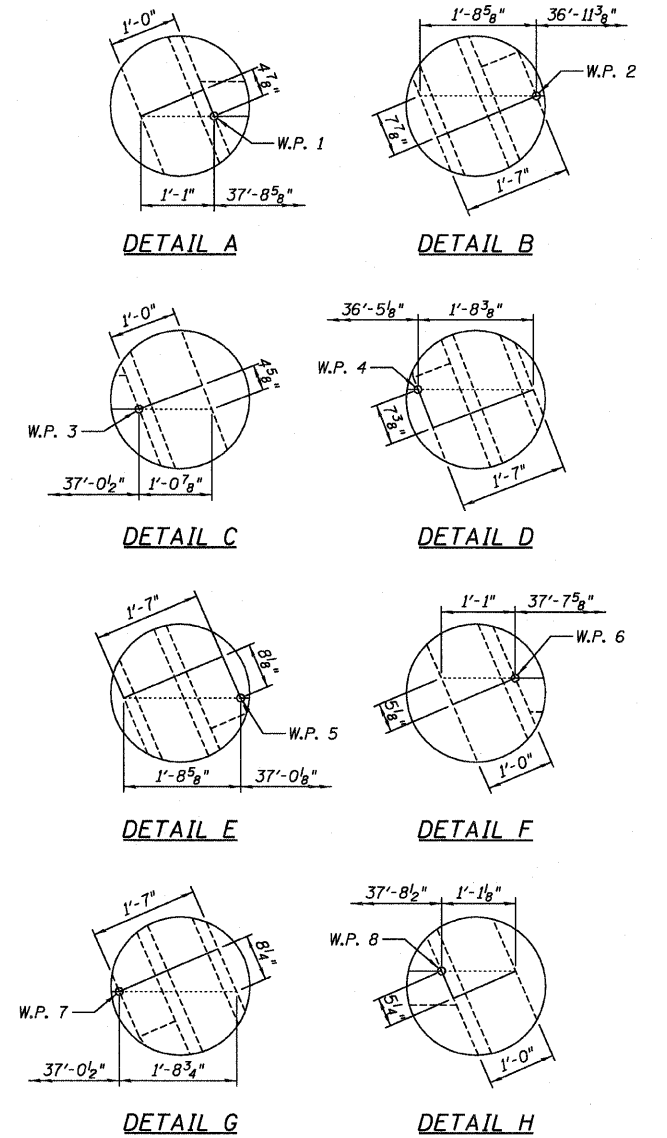
**JOINT REPLACEMENT DETAILS, EASTBOUND ROADWAY  
STRUCTURE NO. 082-0167 (E.B.)  
STRUCTURE NO. 082-0168 (W.B.)**

SHEET NO. A8 OF 21 SHEETS

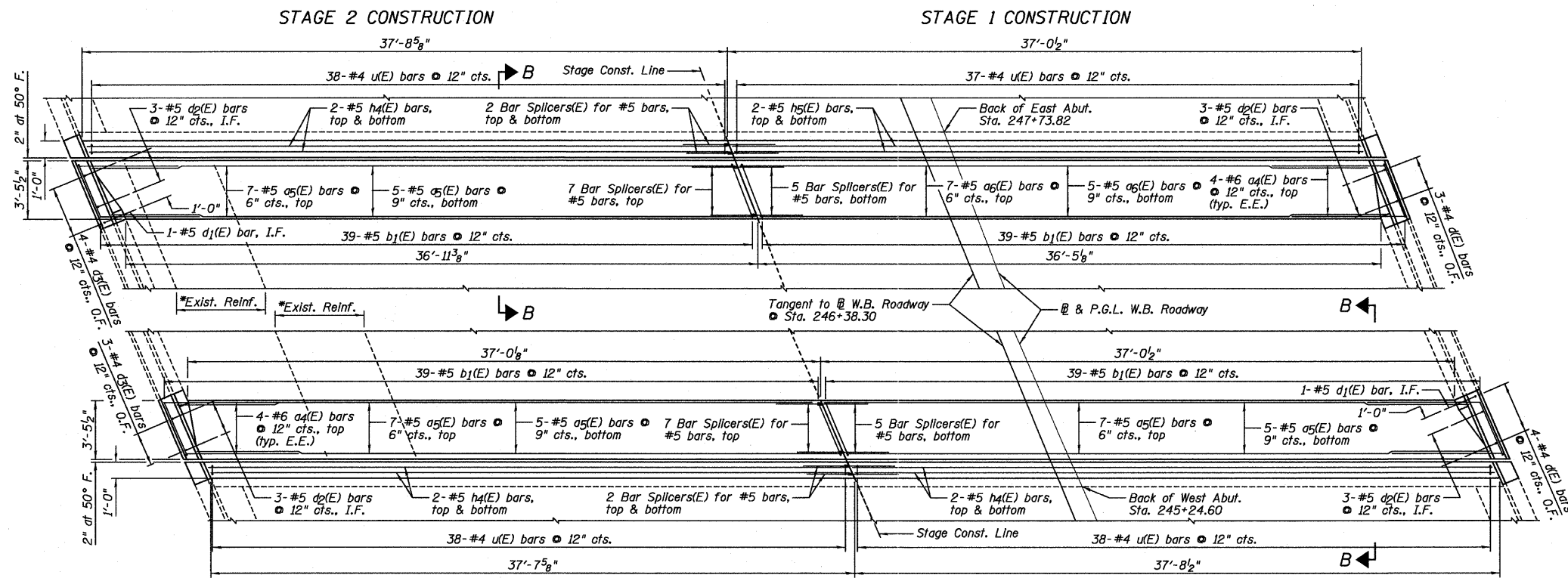
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	108
				CONTRACT NO. 76415
ILLINOIS FED. AID PROJECT				



PARTIAL PLAN SHOWING CONCRETE REMOVAL



NOTE:  
Dimensions for Detail A thru Detail H are similar for the concrete replacement.



PARTIAL PLAN SHOWING CONCRETE REPLACEMENT

NOTES:  
1.) Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.  
2.) For Section A-A and B-B, see Sheet A10.  
3.) E.E. denotes Each End, I.F. denotes Inside Face and O.F. denotes Outside Face.

Farnsworth GROUP, INC.  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/663-2435, 309/663-1571 fax

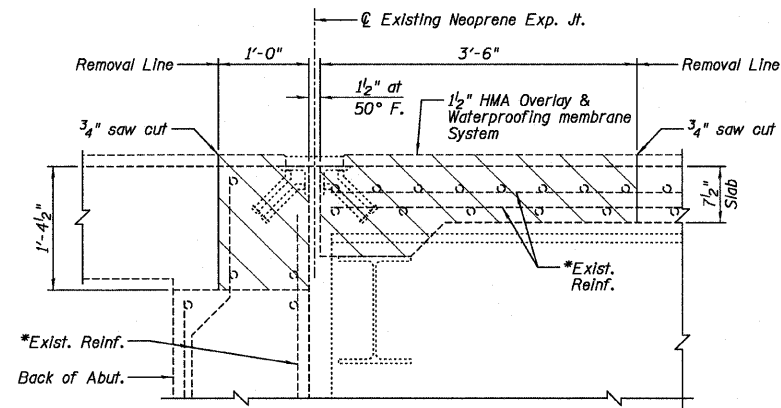
DESIGNED - JCZ	REVISOR
CHECKED - JML	REVISOR
DRAWN - DJM/JWK	REVISOR
CHECKED - MSW	REVISOR

DATE - 12/05/11
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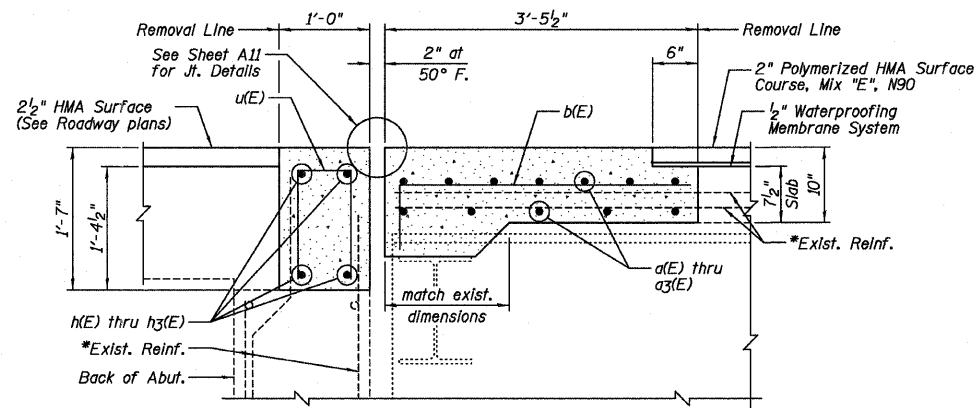
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

JOINT REPLACEMENT DETAILS, WESTBOUND ROADWAY  
STRUCTURE NO. 082-0167 (E.B.)  
STRUCTURE NO. 082-0168 (W.B.)  
SHEET NO. A9 OF 21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	B2-(3,4)RS	ST. CLAIR	167	109
CONTRACT NO. 76415			ILLINOIS FED. AID PROJECT	



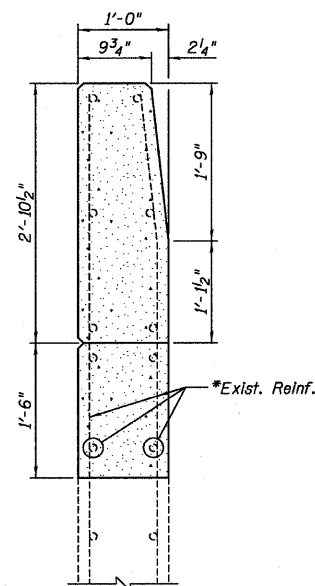
**SECTION A-A**  
(Horizontal Dimensions • Rt. L's)



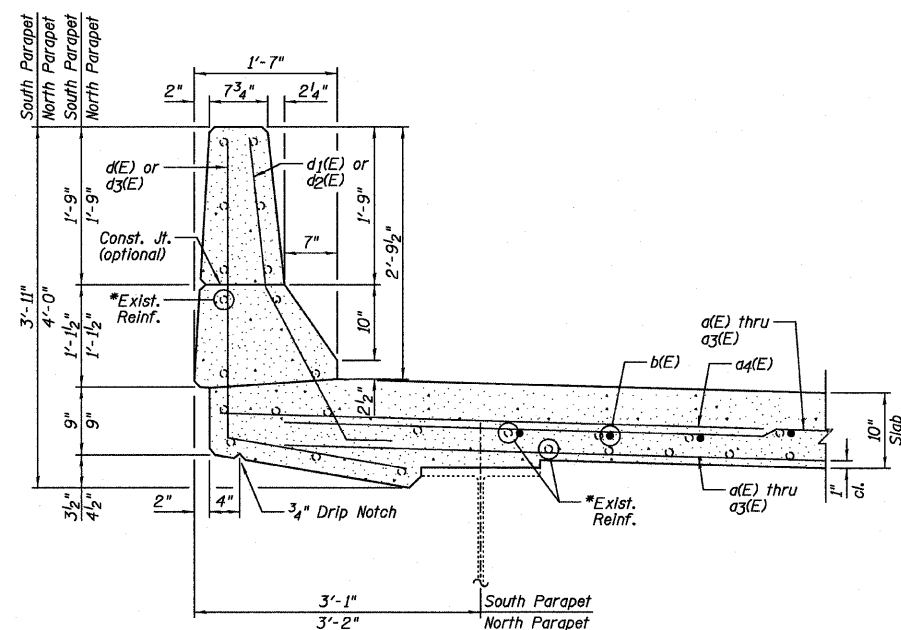
**SECTION B-B**  
(Horizontal Dimensions • Rt. L's)

**BILL OF MATERIAL**

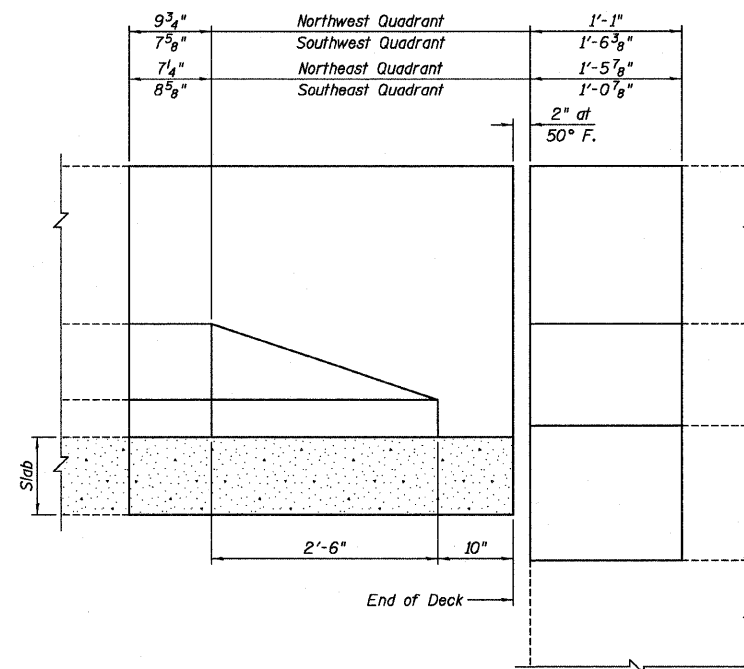
Bar	No.	Size	Length	Shape
a4(E)	16	#6	6'-6"	—
a5(E)	36	#5	37'-7"	—
a6(E)	12	#5	37'-1"	—
b1(E)	156	#5	4'-2"	—
d(E)	7	#4	5'-2"	L
d1(E)	2	#5	3'-11"	L
d2(E)	12	#5	4'-4"	L
d3(E)	7	#4	5'-2"	L
h4(E)	12	#5	37'-3"	—
h5(E)	4	#5	36'-8"	—
u(E)	151	#4	3'-2"	—
Item		Unit	Quantity	
Concrete Removal		Cu. Yd.	25.0	
Concrete Superstructure		Cu. Yd.	29.4	
Reinforcement Bars, Epoxy Coated		Pound	3,760	
Bar Splicers		Each	32	



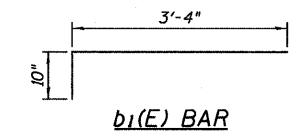
**SECTION THRU WINGWALL**



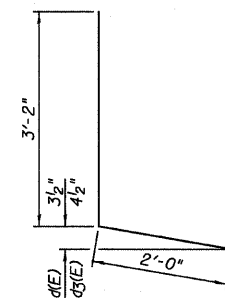
**SECTION THRU PARAPET**



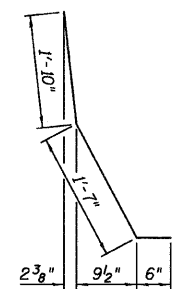
**INSIDE FACE PARAPET ELEVATION**  
(Dimensions measured along inside face of parapet)



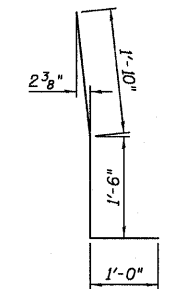
**b1(E) BAR**



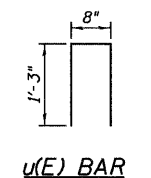
**d(E) & d3(E) BAR**



**d1(E) BAR**



**d2(E) BAR**



**u(E) BAR**

**NOTES:**

- Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
- For location of Section A-A and B-B, see Sheet A9.

**Farnsworth GROUP, INC.**  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/663-8436, 309/663-1571 fax

DESIGNED - JCZ  
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DATE - 12/05/11

REVIS  
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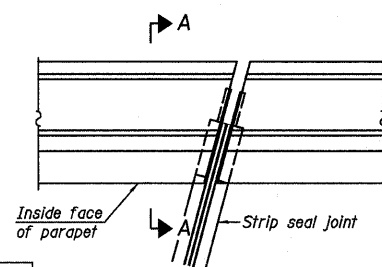
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**JOINT REPLACEMENT DETAILS, WESTBOUND ROADWAY  
STRUCTURE NO. 082-0167 (E.B.)  
STRUCTURE NO. 082-0168 (W.B.)**

SHEET NO. A10 OF 21 SHEETS

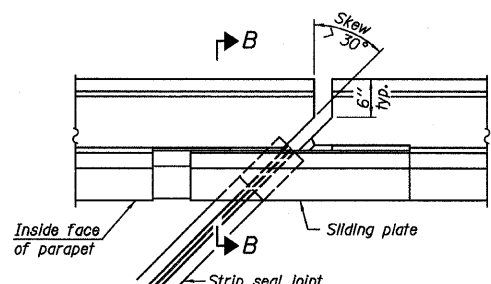
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	110
				CONTRACT NO. 76415
ILLINOIS FED. AID PROJECT				



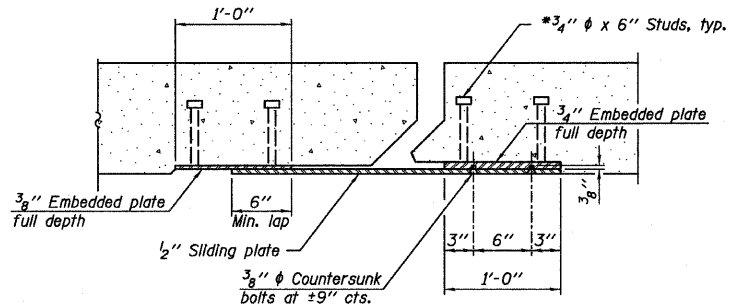


Modify end treatment of locking edge rails to match existing conditions

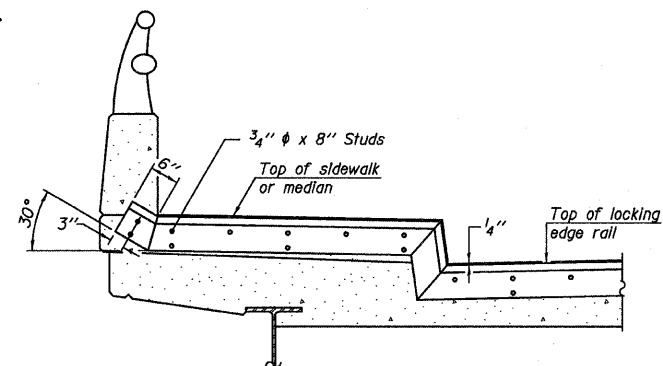
**PLAN**  
(For skews  $\leq 30^\circ$ )



**PLAN**  
(For skews  $> 30^\circ$ )  
Showing point block

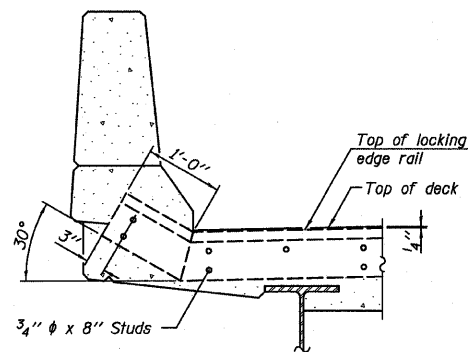


**SECTION C-C**



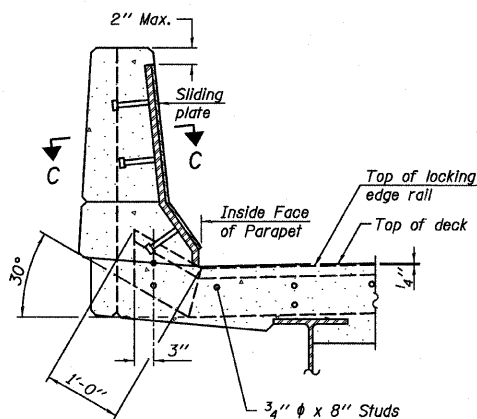
**TYPICAL END TREATMENT AT SIDEWALK OR MEDIAN**

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

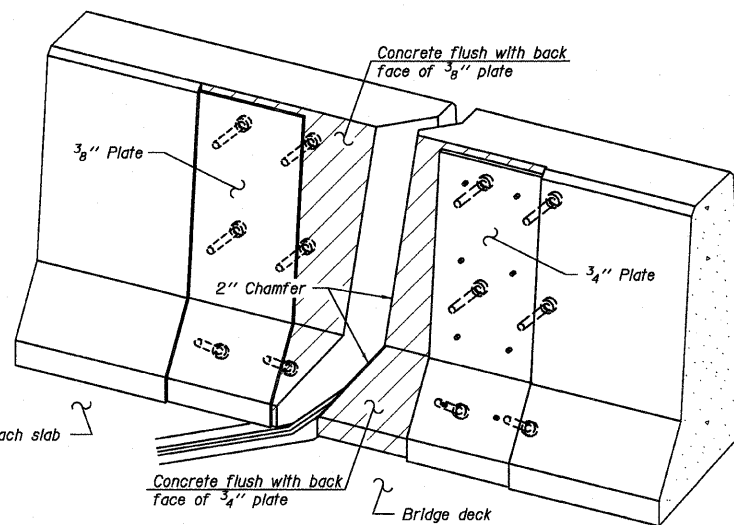


Modify end treatment of locking edge rails to match existing conditions

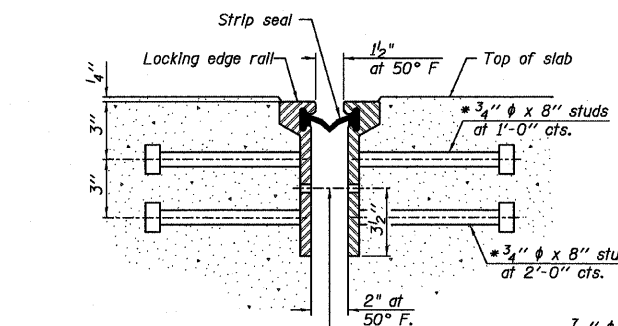
**SECTION A-A**



**SECTION B-B**

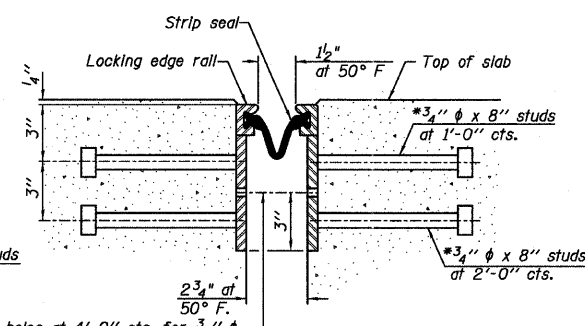


**TRIMETRIC VIEW**  
(Showing back plates only)



7/16"  $\phi$  holes at 4'-0" cts. for 3/8"  $\phi$  bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

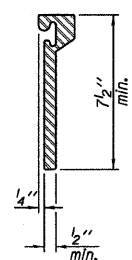
**SECTION THRU ROLLED RAIL JOINT**



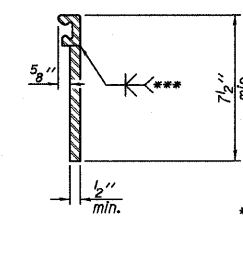
7/16"  $\phi$  holes at 4'-0" cts. for 3/8"  $\phi$  bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

**SECTION THRU WELDED RAIL JOINT**

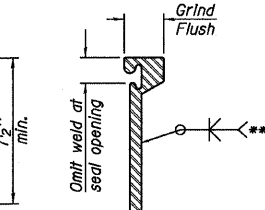
\* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



**ROLLED EXTRUDED RAIL**



**WELDED RAIL**



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

**LOCKING EDGE RAIL SPLICE**

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

**LOCKING EDGE RAILS**

**BILL OF MATERIAL**

ITEM	UNIT	082-0167	082-0168	TOTAL
Preformed Joint Strip Seal	Foot	169	154	323

EJ-SSJ

7-1-10

**Farnsworth GROUP, INC.**  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/663-8436, 309/663-1571 fax

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DATE - 12/05/11  
CHECKED - MSW

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REVISED  
REVISED  
REVISED

**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**

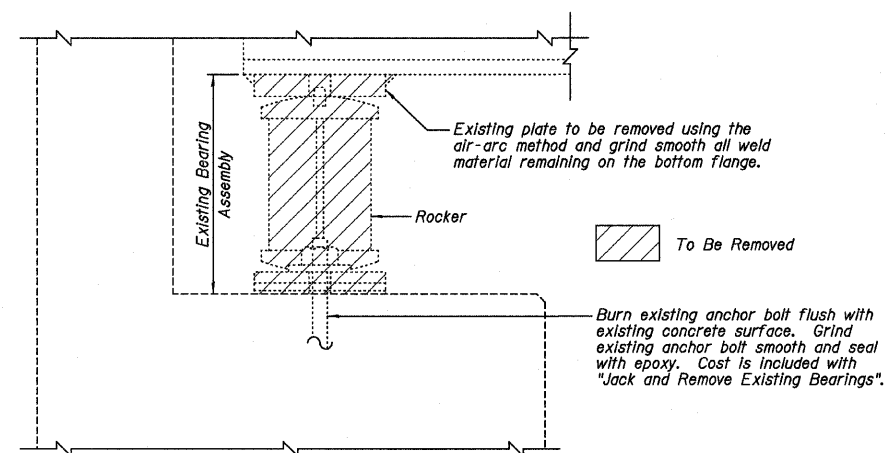
**PREFORMED JOINT STRIP SEAL STRUCTURE NO. 082-0167 (E.B.) STRUCTURE NO. 082-0168 (W.B.)**

SHEET NO. A11 OF 21 SHEETS

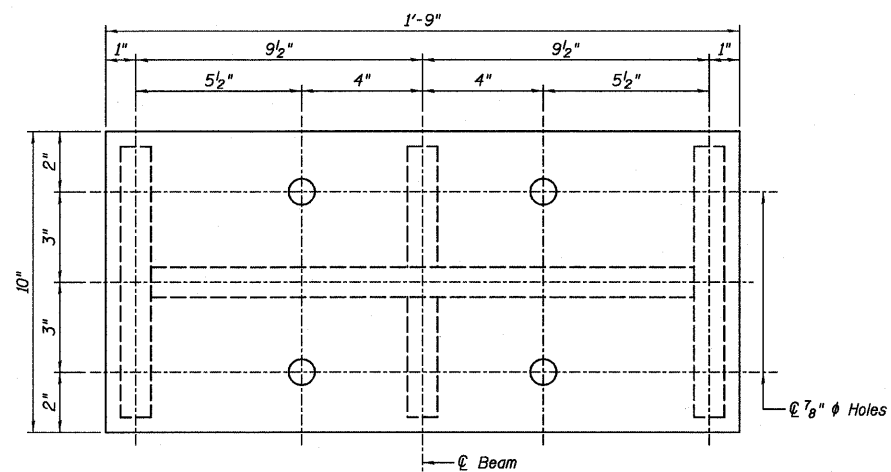
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	111
				CONTRACT NO. 76415
ILLINOIS FED. AID PROJECT				

Interior Beam Reaction Table (E.B.)		
	West Abut.	East Abut.
$R_p$ (k)	45	37
$R_t$ (k)	39	39
Imp. (k)	9	9
$R$ total (k)	93	85

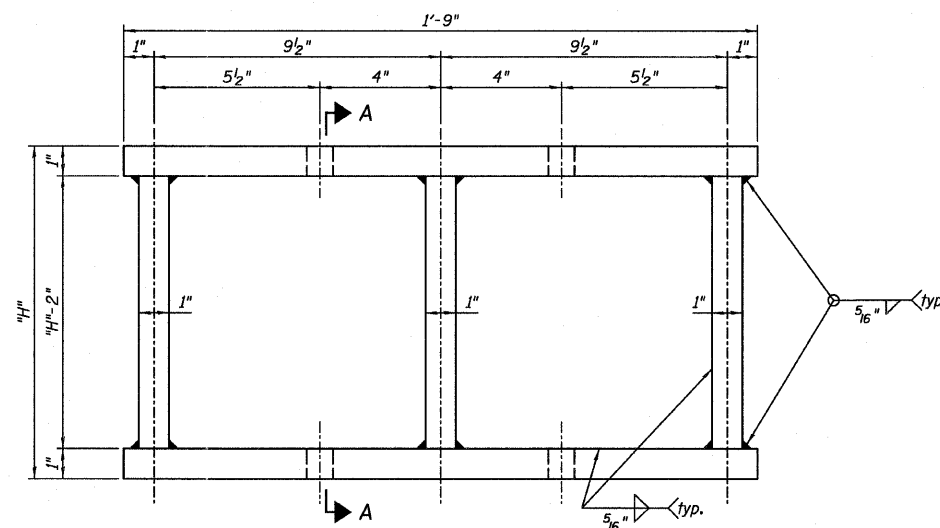
Interior Beam Reaction Table (W.B.)		
	West Abut.	East Abut.
$R_p$ (k)	42	35
$R_t$ (k)	39	38
Imp. (k)	9	9
$R$ total (k)	90	82



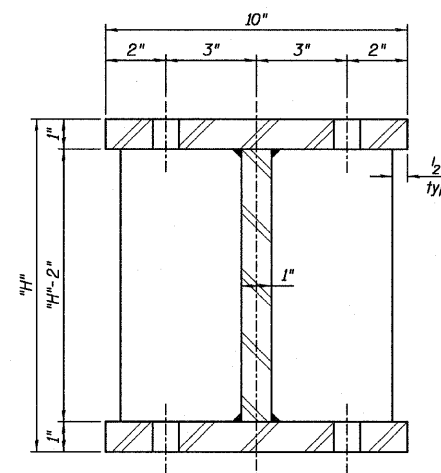
EXISTING BEARING REMOVAL DETAIL



PLAN STEEL EXTENSION



ELEVATION STEEL EXTENSION



SECTION A-A

Dimension "H" (in.)		
Beam No.	West Abut.	East Abut.
1-3	9 1/16"	6 1/2"
4-11	8 9/16"	6"
12-13	9 1/16"	6 1/2"
14-21	8 9/16"	6"
22-24	9 1/16"	6 1/2"

BILL OF MATERIAL

ITEM	UNIT	082-0167	082-0168	TOTAL
Furnishing and Erecting Structural Steel	Pound	4,460	4,460	8,920
Jack And Remove Existing Bearings	Each	24	24	48

NOTES:

- 1.) Prior to ordering any material, the Contractor shall verify in the field all bearing heights and shim thickness dimensions.
- 2.) For location of Steel Extensions see Sheet A13 and A14.

Farnsworth GROUP, INC.  
2709 McGraw Drive  
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309/663-9435, 309/663-1571 fax

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DRAWN - DJM/JWK  
DATE - 12/05/11

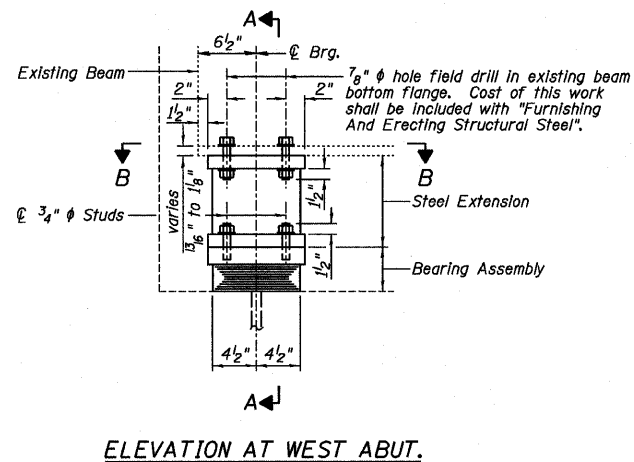
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

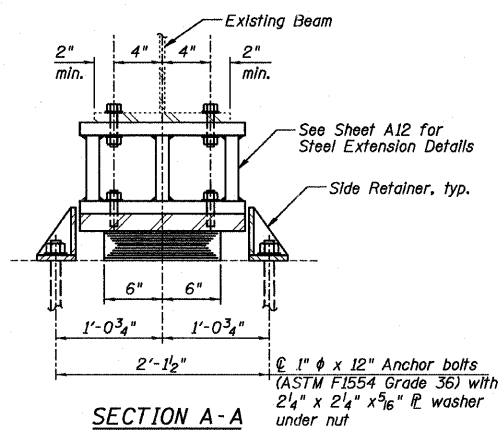
BEARING DETAILS AND NOTES  
STRUCTURE NO. 082-0167 (E.B.)  
STRUCTURE NO. 082-0168 (W.B.)

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	112
				CONTRACT NO. 76415
ILLINOIS FED. AID PROJECT				

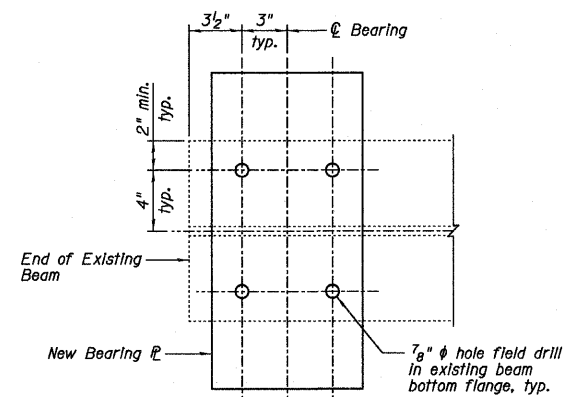
SHEET NO. A12 OF 21 SHEETS



ELEVATION AT WEST ABUT.

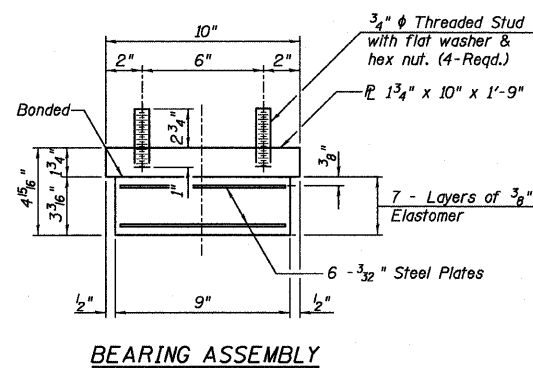


SECTION A-A



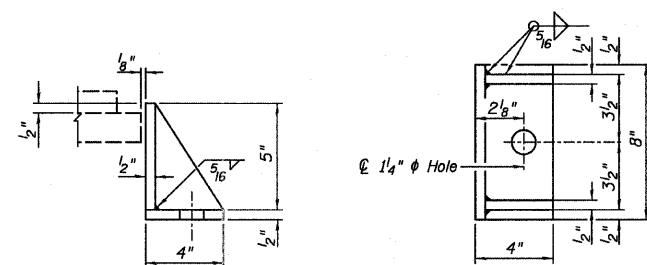
PLAN VIEW B-B

TYPE I ELASTOMERIC EXP. BRG.



BEARING ASSEMBLY

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



SIDE RETAINER

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

Notes:

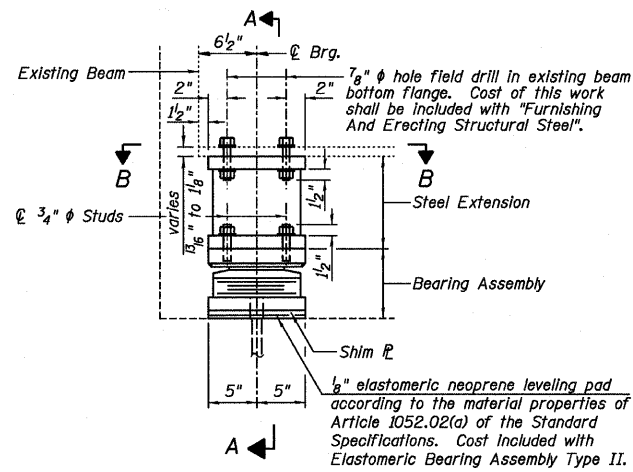
- Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
- Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
- Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.

BILL OF MATERIAL

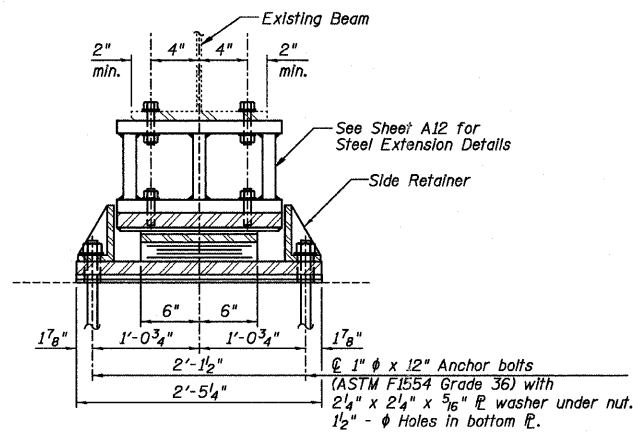
ITEM	UNIT	082-0167	082-0168	TOTAL
Furnishing and Erecting Structural Steel	Pound	210	210	420
Anchor Bolts, 1"	Each	24	24	48
Elastomeric Bearing Assembly, Type I	Each	12	12	24

NOTES:

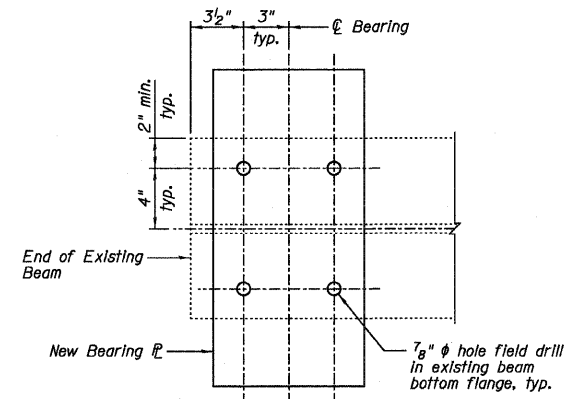
- Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
- See Special Provisions for Jacking and Removing procedures for existing bearings.
- Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.
- Steel extensions, shim ∅ and connection bolts shall be paid for as "Furnishing and Erecting Structural Steel". For steel extensions, see Bill of Material on Sheet A12.
- Minimum jack capacity = 70 tons.



ELEVATION AT EAST ABUT.

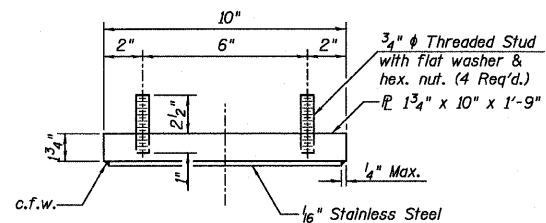


SECTION A-A

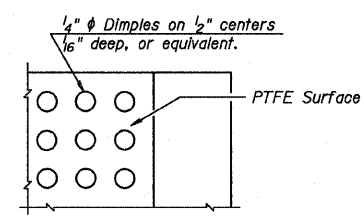


PLAN VIEW B-B

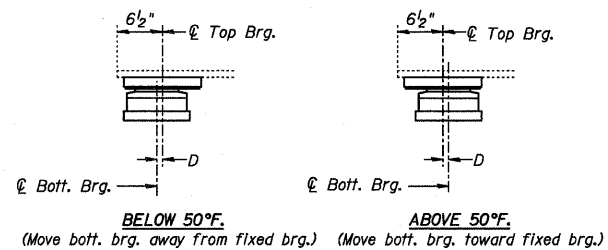
TYPE II ELASTOMERIC EXP. BRG.



TOP BEARING ASSEMBLY

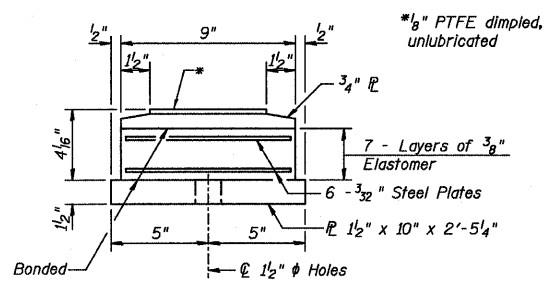


PLAN-PTFE SURFACE

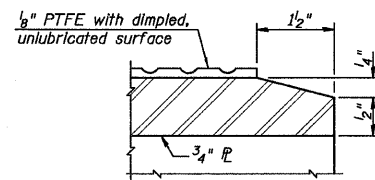


SETTING ANCHOR BOLTS AT EXP. BRG.

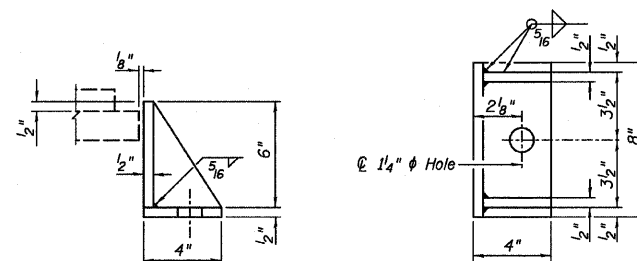
D=1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.



BOTTOM BEARING ASSEMBLY



SECTION THRU PTFE



SIDE RETAINER

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

Notes:

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

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

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

The 1/8" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

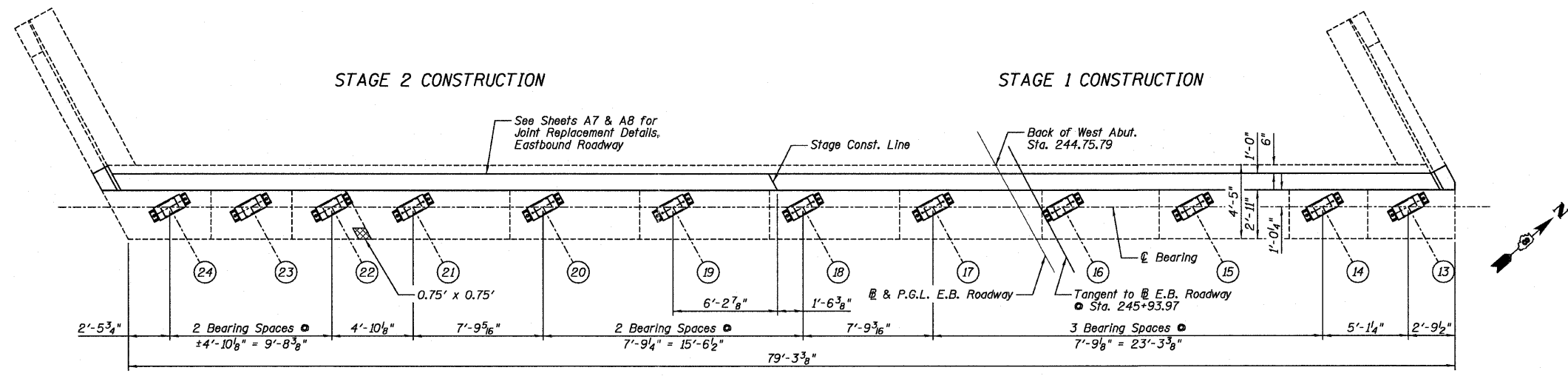
Bonding of 1/8" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

BILL OF MATERIAL

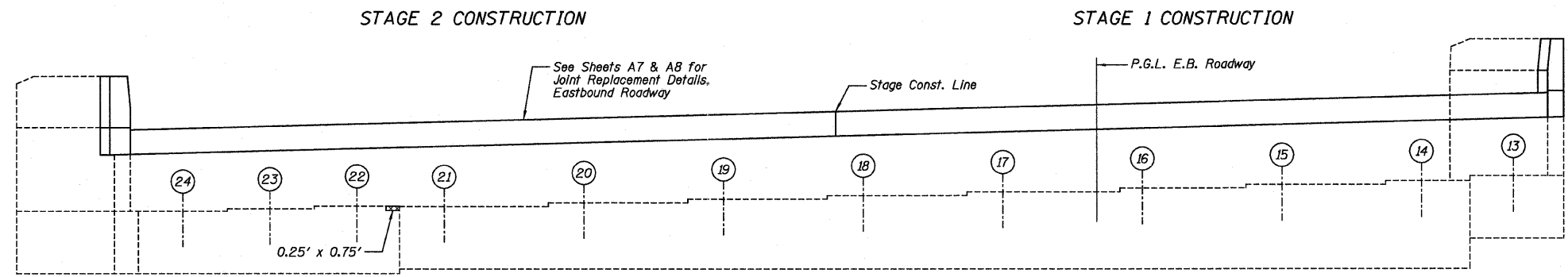
ITEM	UNIT	082-0167	082-0168	TOTAL
Furnishing and Erecting Structural Steel	Pound	220	220	440
Anchor Bolts, 1"	Each	24	24	48
Elastomeric Bearing Assembly, Type II	Each	12	12	24

NOTES:

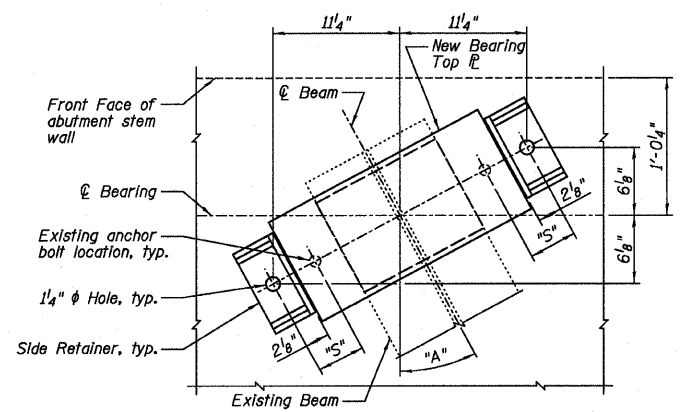
- Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
- See Special Provisions for Jacking and Removing procedures for existing bearings.
- Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.
- Steel extensions, shim ∅, and connection bolts shall be paid for as "Furnishing and Erecting Structural Steel". For steel extensions, see Bill of Material on Sheet A12.
- Minimum jack capacity = 64 tons.



TOP VIEW



ELEVATION



BEARING PLAN AT ABUTMENT

Beam No.	Angle		Dimension "S"
	"A"	"S"	
13	28°23'39"	2 1/4"	
14-21	28°22'00"	4 1/4"	
22-24	28°23'39"	2 1/4"	

**LEGEND**

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

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	1

**Farnsworth GROUP, INC.**  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/663-8435, 309/663-1571 fax

DESIGNED - JCZ  
CHECKED - JML  
DRAWN - DJM/JWK  
DATE - 12/05/11

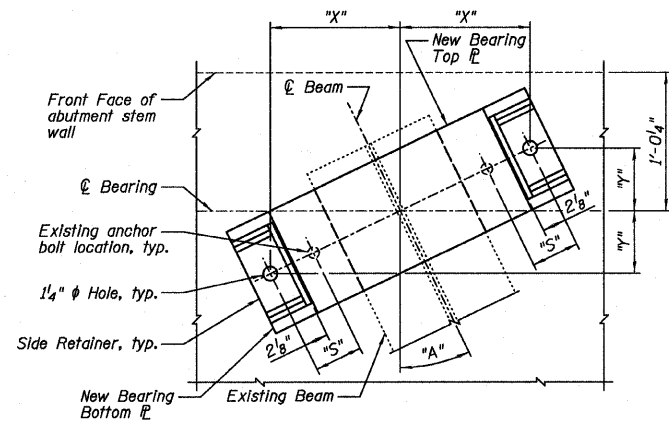
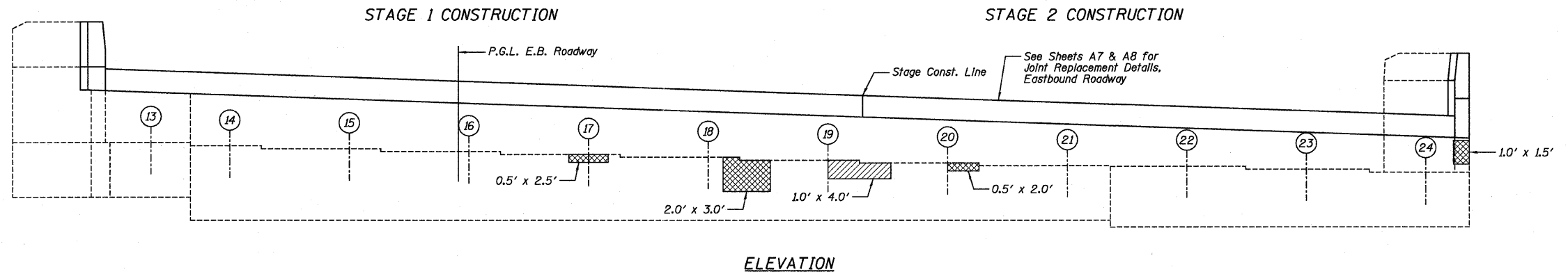
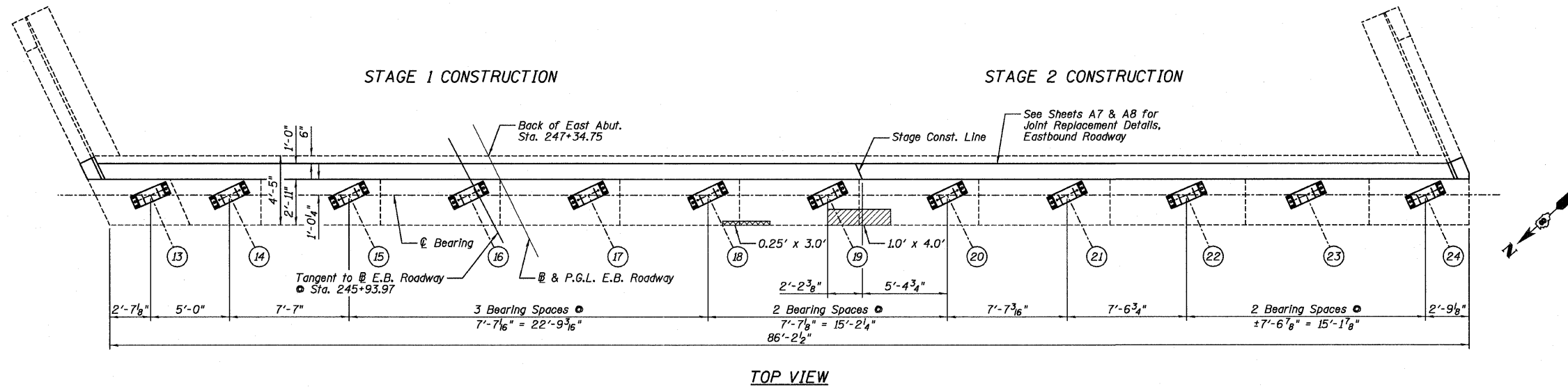
REVISOR  
REVISOR  
REVISOR  
REVISOR

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**WEST ABUTMENT, EASTBOUND ROADWAY  
STRUCTURE NO. 082-0167 (E.B.)  
STRUCTURE NO. 082-0168 (W.B.)**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	115
CONTRACT NO. 76415				
ILLINOIS FED. AID PROJECT				

SHEET NO. A15 OF 21 SHEETS



BEARING PLAN AT ABUTMENT

Beam No.	Angle	Dimension			
		"A"	"S"	"X"	"Y"
13	23°28'27"	2 1/4"	11 3/4"	5 1/8"	
14-21	25°48'00"	4 1/4"	11 1/2"	5 1/2"	
22	23°28'27"	2 1/4"	11 3/4"	5 1/8"	
23-24	24°23'13"	2 1/4"	11 5/8"	5 1/4"	

**LEGEND**

	Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)
	Structural Repair of Concrete (Depth Greater than 5 Inches)

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	11
Structural Repair of Concrete (Depth Greater than 5 Inches)	Sq. Ft.	8

**Farnsworth GROUP, INC.**  
 2709 McGraw Drive  
 Bloomington, Illinois 61704  
 309/663-8435, 309/663-1571 fax

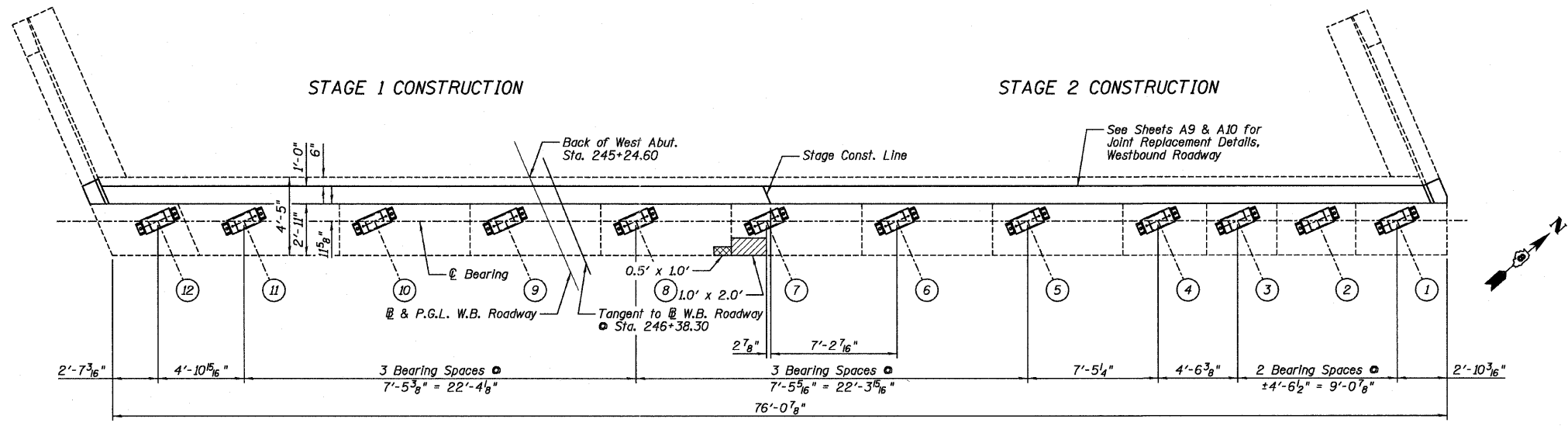
DESIGNED - JCZ	REVISED
CHECKED - JML	REVISED
DRAWN - DJM/JWK	REVISED
CHECKED - MSW	REVISED
DATE - 12/05/11	

**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**

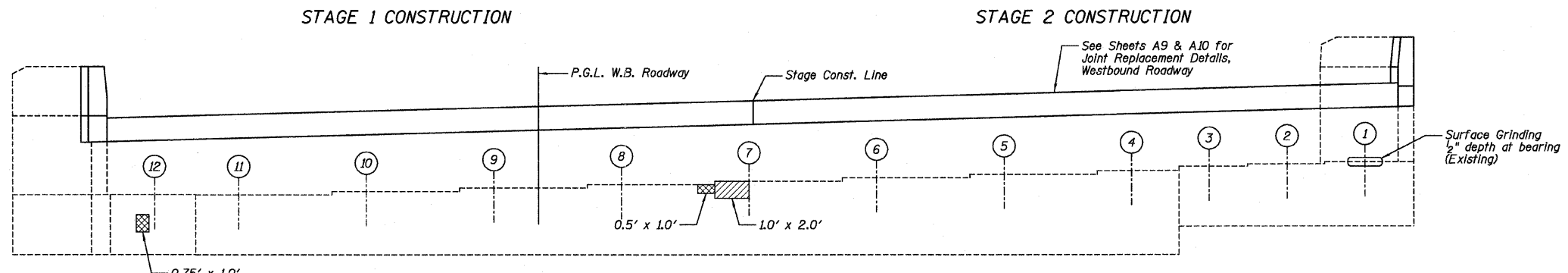
**EAST ABUTMENT, EASTBOUND ROADWAY  
 STRUCTURE NO. 082-0167 (E.B.)  
 STRUCTURE NO. 082-0168 (W.B.)**

SHEET NO. A16 OF 21 SHEETS

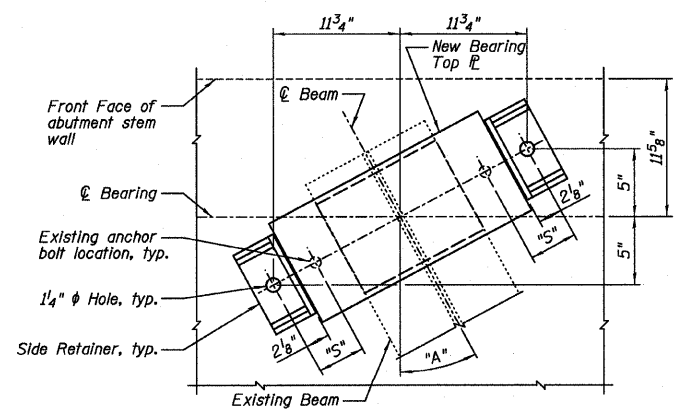
F.A.I. RTE. 64	SECTION 82-(3,4)RS	COUNTY ST. CLAIR	TOTAL SHEETS 167	SHEET NO. 116
				CONTRACT NO. 76415
ILLINOIS FED. AID PROJECT				



TOP VIEW



ELEVATION



BEARING PLAN AT ABUTMENT

Beam No.	Angle "A"	Dimension "S"
1-3	23°12'4"	2 1/4"
4-11	23°21'43"	4 1/4"
12	23°12'4"	2 1/4"

**LEGEND**

	Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)
	Structural Repair of Concrete (Depth Greater than 5 Inches)

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	2
Structural Repair of Concrete (Depth Greater than 5 Inches)	Sq. Ft.	4

**Farnsworth GROUP, INC.**  
 2709 McGraw Drive  
 Bloomington, Illinois 61704  
 309/953-8436, 309/953-1571 fax

DESIGNED - JCZ	REVISED
CHECKED - JML	REVISED
DRAWN - DJM/JWK	REVISED
CHECKED - MSW	REVISED
DATE - 12/05/11	

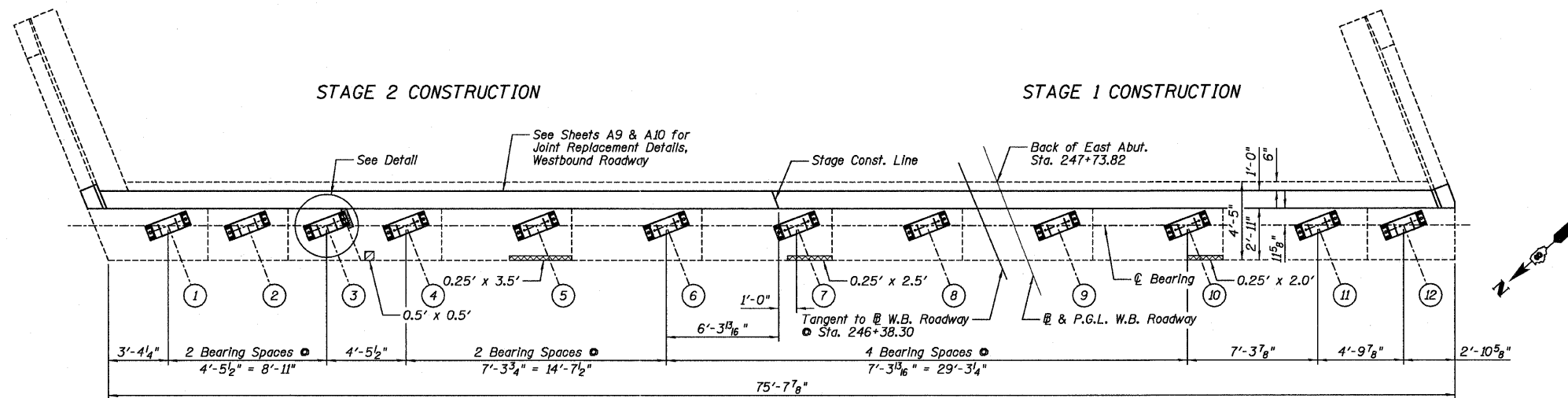
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**WEST ABUTMENT, WESTBOUND ROADWAY**  
**STRUCTURE NO. 082-0167 (E.B.)**  
**STRUCTURE NO. 082-0168 (W.B.)**

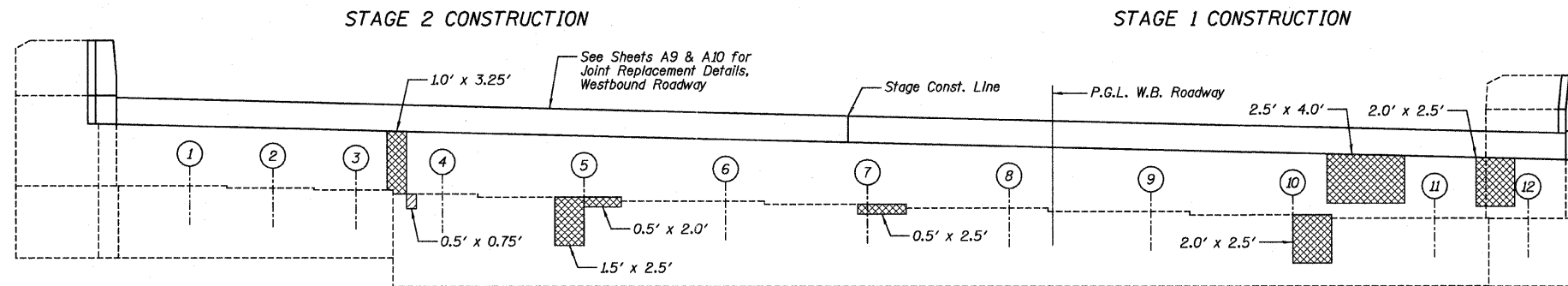
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	117
CONTRACT NO. 76415				
ILLINOIS FED. AID PROJECT				

SHEET NO. A17 OF 21 SHEETS

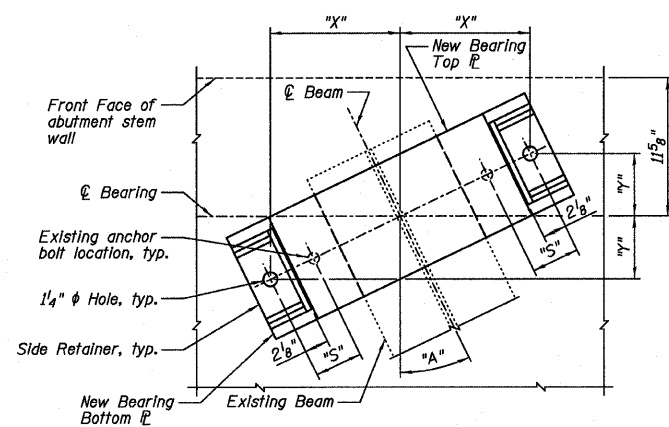




TOP VIEW

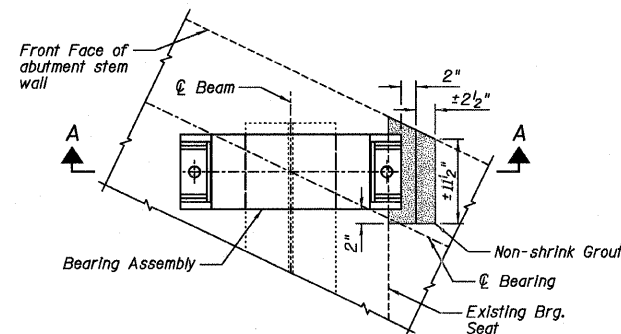


ELEVATION



BEARING PLAN AT ABUTMENT

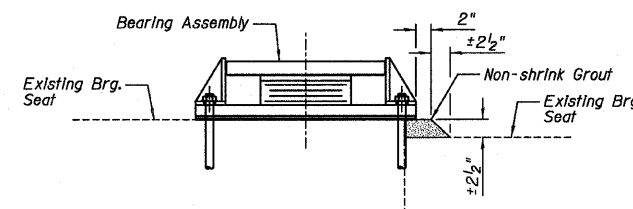
Beam No.	Angle		Dimension		
	"A"	"S"	"X"	"Y"	"Z"
1-3	21°2'15"	2 1/4"	11 7/8"	4 5/8"	
4-11	28°22'00"	4 1/4"	11 1/4"	6"	
12	21°2'15"	2 1/4"	11 7/8"	4 5/8"	



DETAIL

NOTE:

Non-shrink grout will not be paid for separately but shall be included with the cost of Elastomeric Bearing Assembly, Type II.



SECTION A-A

LEGEND

- Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)
- Structural Repair of Concrete (Depth Greater than 5 Inches)
- Non-Shrink Grout

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	31
Structural Repair of Concrete (Depth Greater than 5 Inches)	Sq. Ft.	1

**Farnsworth GROUP, INC.**  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/863-6435, 309/863-1571 fax

DESIGNED - JJC  
CHECKED - JML  
DRAWN - DJM/JWK  
DATE - 12/05/11

REVISOR  
REVISOR  
REVISOR  
REVISOR

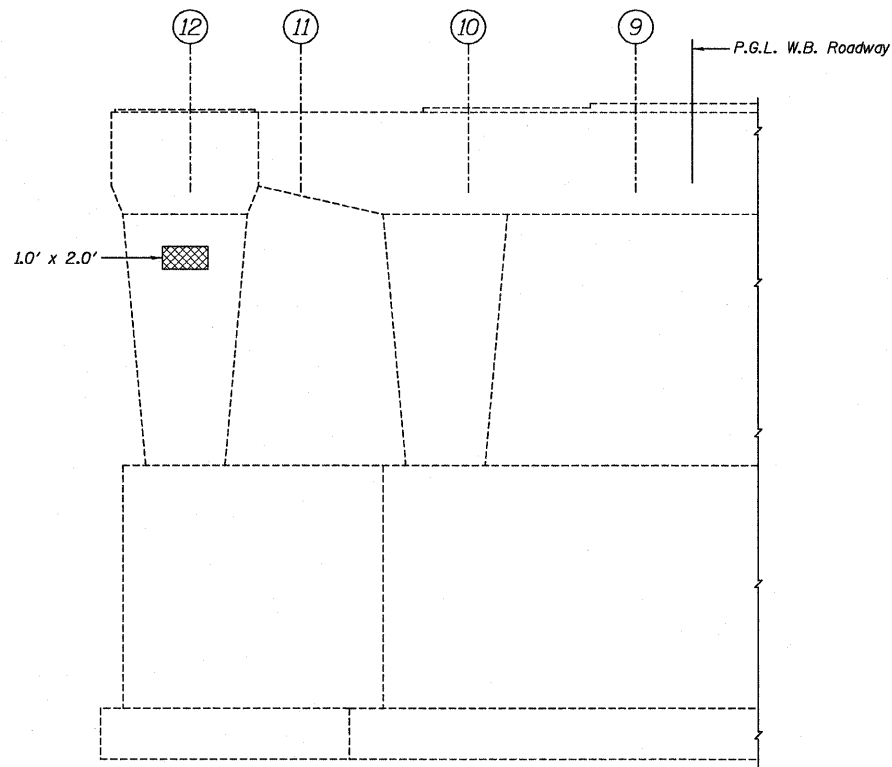
DESIGNED - JJC  
CHECKED - MSW

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT, WESTBOUND ROADWAY  
STRUCTURE NO. 082-0167 (E.B.)  
STRUCTURE NO. 082-0168 (W.B.)

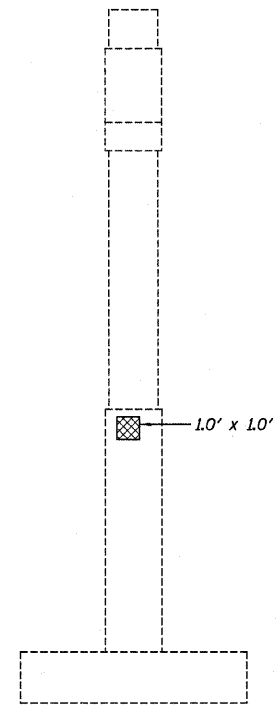
SHEET NO. A18 OF 21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	118
CONTRACT NO. 76415				
ILLINOIS FED. AID PROJECT				




**PARTIAL ELEVATION**  
(Looking West)

**PIER NO. 2, WESTBOUND ROADWAY**



**NORTH END VIEW**  
(Looking South)

**PIER NO. 1, EASTBOUND ROADWAY**

**LEGEND**  
 Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)

**BILL OF MATERIAL**

ITEM	UNIT	082-0167	082-0168	TOTAL
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	1	2	3

**Farnsworth**  
GROUP, INC.  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/903-8435, 309/903-1571 fax

DESIGNED - JCZ  
CHECKED - JML  
DRAWN - DJM/JWK  
DATE - 12/05/11

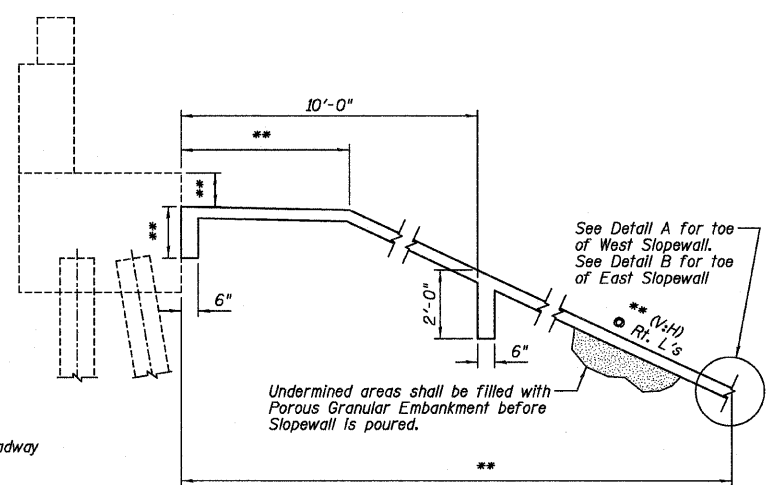
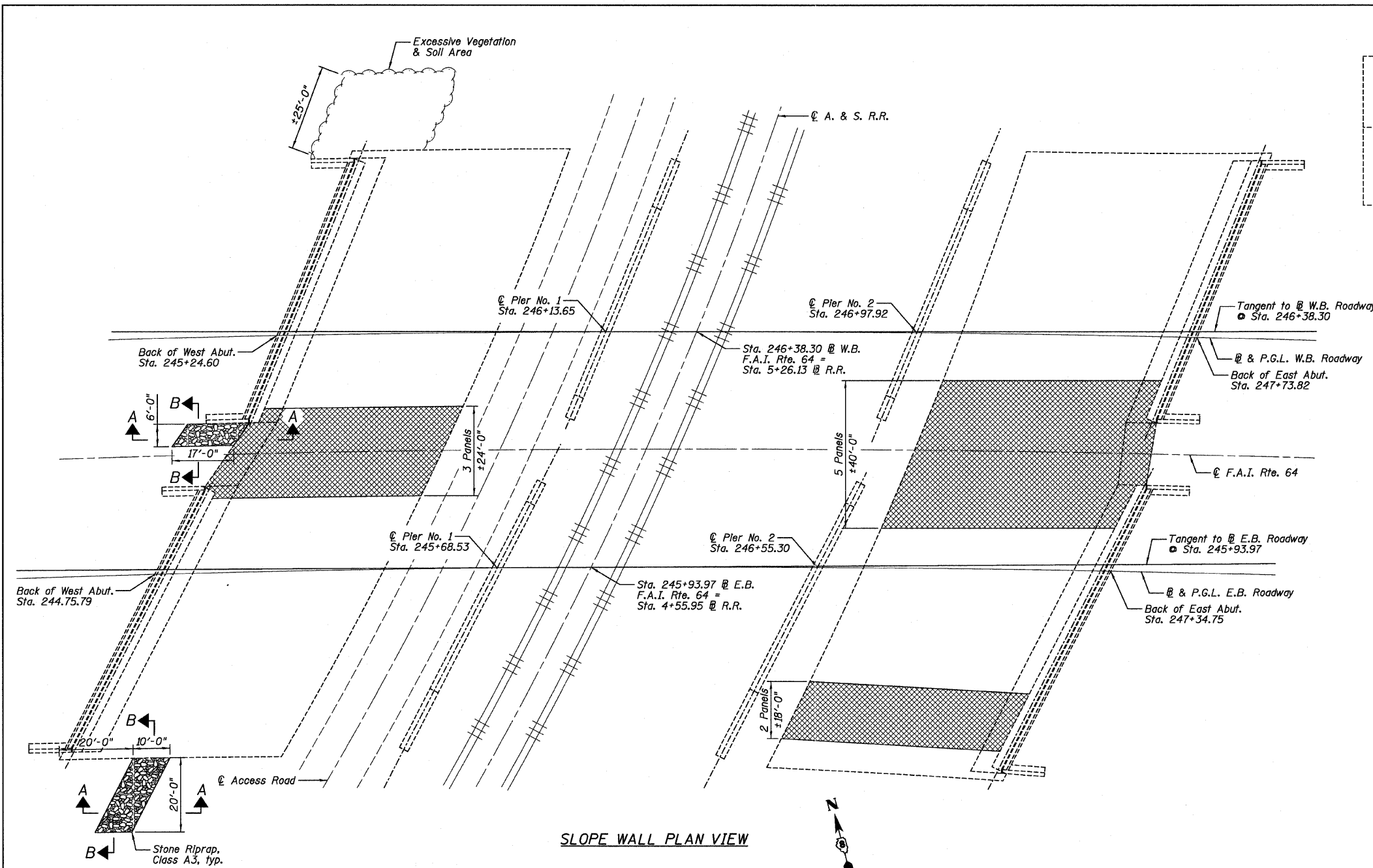
REVISED  
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REVISED

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

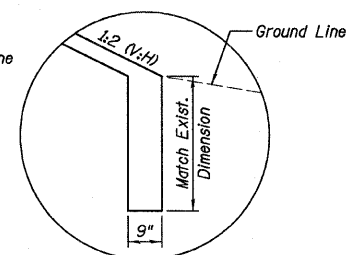
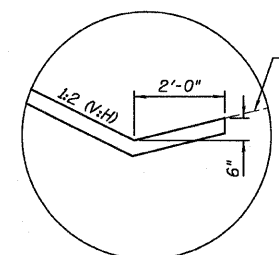
**PIER REPAIR**  
**STRUCTURE NO. 082-0167 (E.B.)**  
**STRUCTURE NO. 082-0168 (W.B.)**

SHEET NO. A19 OF 21 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	119
CONTRACT NO. 76415				
ILLINOIS FED. AID PROJECT				



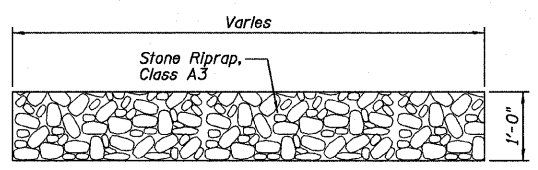
- NOTES:**
- 1.) \*\*Match existing dimension.
  - 2.) Horizontal dimensions @ Rt. L's to Roadway.
  - 3.) Slope wall shall be reinforced with welded wire fabric, 6" x 6" - W4.0 x W4.0 weighing 58 lbs. per 100 sq. ft.
  - 4.) The actual area of slope undermining is unknown, therefore a 2'-6" thickness of Porous Granular Embankment has been assumed under the areas of the slopewall marked for repair. The actual amount shall be measured in the field.



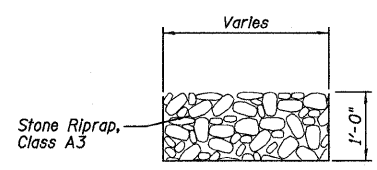
**DETAIL A**  
(Toe of West Slopewall)

**DETAIL B**  
(Toe of East Slopewall)

**LEGEND**  
 Remove and Replace Slopewall



**SECTION A-A**



**SECTION B-B**

**BILL OF MATERIAL**

ITEM	UNIT	082-0167	082-0168	TOTAL
Porous Granular Embankment	Cu. Yd.	314	195	509
Stone Riprap, Class A3	Sq. Yd.	22	11	33
Slopewall Removal	Sq. Yd.	377	234	611
Slopewall 4 Inch	Sq. Yd.	377	234	611

**Farnsworth GROUP, INC.**  
 2709 McGraw Drive  
 Skokie, Illinois 61104  
 309/663-8436, 309/663-1571 fax

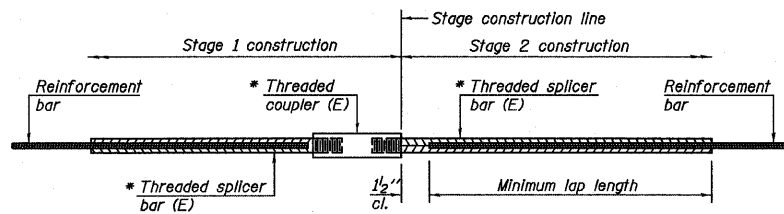
DESIGNED - JCZ  
 CHECKED - JML  
 DRAWN - DJM/JWK  
 DATE - 12/05/11

REVISÉ  
 REVISÉ  
 REVISÉ  
 REVISÉ

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**SLOPEWALL REPAIR AND RIPRAP PLACEMENT  
 STRUCTURE NO. 082-0167 (E.B.)  
 STRUCTURE NO. 082-0168 (W.B.)**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-13,41RS	ST. CLAIR	167	120
				CONTRACT NO. 76415
ILLINOIS FED. AID PROJECT				



**STANDARD BAR SPLICER ASSEMBLY**

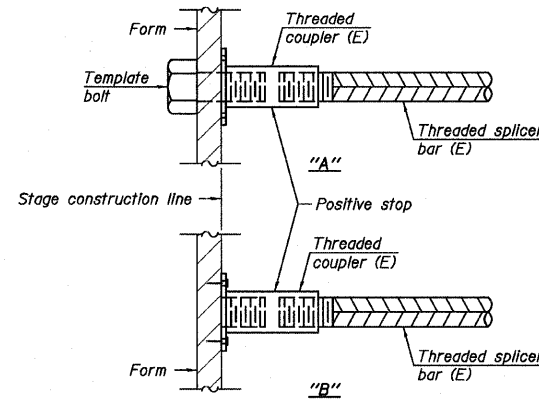
Bar size to be spliced	Minimum Lap Lengths				
	Table 1	Table 2	Table 3	Table 4	Table 5
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-3"
5	1'-9"	2'-5"	2'-7"	2'-11"	2'-10"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-4"
7	2'-9"	3'-10"	4'-2"	4'-8"	4'-6"
8	3'-8"	5'-1"	5'-5"	6'-2"	5'-10"
9	4'-7"	6'-5"	6'-10"	7'-9"	7'-5"

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

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

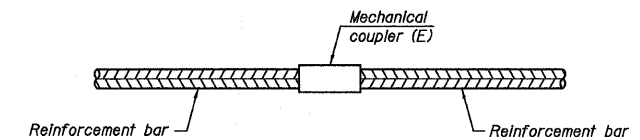
\* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Exp. Jts. Deck	#5	24 (EB) & 24 (WB)	4
Exp. Jts. Abut.	#5	8 (EB) & 8 (WB)	4



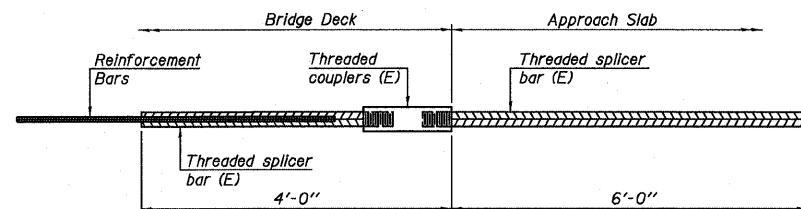
**INSTALLATION AND SETTING METHODS**

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



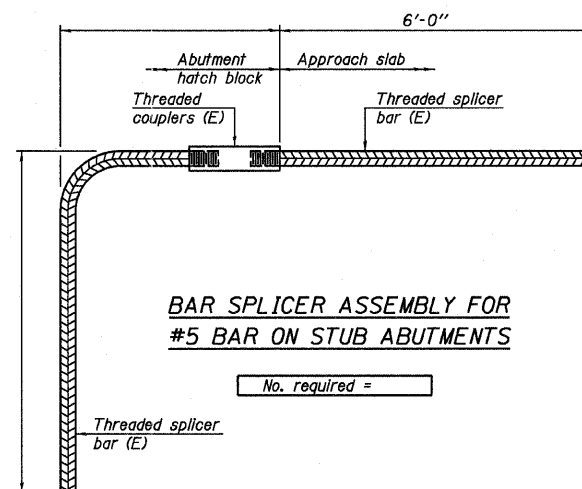
**STANDARD MECHANICAL SPLICER**

Location	Bar size	No. assemblies required



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

No. required =



**BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS**

No. required =

**NOTES**

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

BSD-1

7-1-10

**Farnsworth GROUP, INC.**  
2709 McGraw Drive  
Bloomington, Illinois 61704  
308/865-8435, 308/865-1571 fax

DATE - 12/05/11

DESIGNED - JCZ  
CHECKED - JML  
DRAWN - DJM/JWK  
CHECKED - MSW

REVISED  
REVISED  
REVISED  
REVISED

**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**

**BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS**  
STRUCTURE NO. 082-0167 (E.B.)  
STRUCTURE NO. 082-0168 (W.B.)

SHEET NO. A21 OF 21 SHEETS

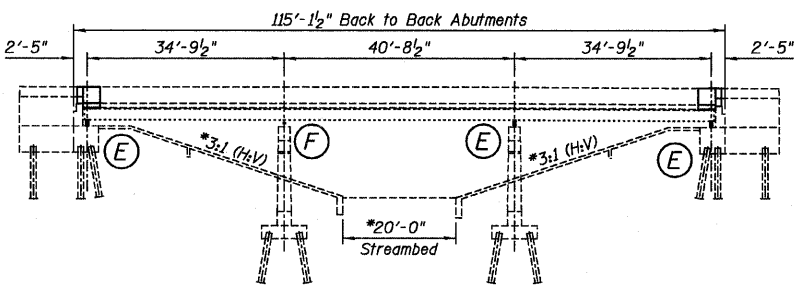
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	121
CONTRACT NO. 76415				
ILLINOIS FED. AID PROJECT				

SEE SHEET B2 FOR INDEX TO SHEETS

**SCOPE OF WORK**

- 1.) Maintain two lanes of traffic in each direction according to Stage Construction cross sections.
- 2.) Remove and close the longitudinal expansion joints.
- 3.) Remove and replace the transverse expansion joints with Preformed Joint Strip Seal.
- 4.) Clean the bearing seats at the abutments and Pier No. 2.
- 5.) Jack and remove the existing bearings at the abutments and Pier No. 2.
- 6.) Install elastomeric bearings with steel extensions at the abutments and Pier No. 2.
- 7.) Clean and paint each beam end, along with the end diaphragms.
- 8.) Remove and replace the diaphragms indicated on the plans.
- 9.) Formed concrete repair of all areas indicated on the plans.
- 10.) Plug Existing Deck Drains as indicated on the plans.
- 11.) Partial Deck Slab Repair of all areas indicated on the plans.
- 12.) Remove the bituminous wearing surface and hydro-scarify the deck.
- 13.) Install a Microsilica Concrete Overlay.
- 14.) Perform Channel Excavation as indicated on the plans.
- 15.) Fill eroded areas with Stone Riprap, Class A3 as indicated on the plans.

Existing Structure: Structures No. 082-0169 (E.B.) and 082-0170 (W.B.), built in 1968 as Section 82-4B and widened in 1980 as Section 82-4BY. The dual superstructures consist of continuous three span non-composite rolled beam bridges with 7 1/2" concrete slabs and 1 1/2" bituminous overlay. The dual substructures consist of concrete stub abutments supported by concrete piles and solid wall piers supported by timber piles. The back-to-back of abutment dimension measures 115'-1 1/2" and the out-to-out of deck measures 137'-7 5/8" to 141'-2 3/8" (E.B.) and 104'-6 3/4" to 108'-5 1/4" (W.B.). The span lengths (CL bearing to CL bearing) are 34'-9 1/2", 40'-8 1/2", and 34'-9 1/2". The skew angle is 11°2'0" right forward. Two lanes of traffic will be maintained on each bridge utilizing stage construction.

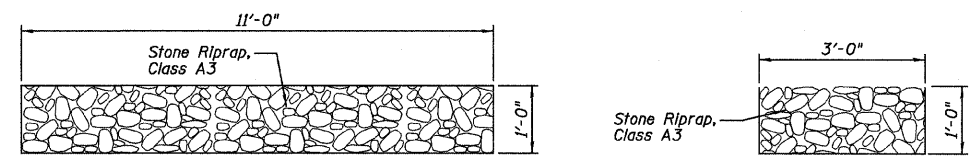


**ELEVATION**  
\*Horizontal dimensions @ Rt. L's

CURVE DATA: (Curve No. B-2, E.B. F.A.I. 64)	CURVE DATA: (Curve No. A-2, W.B. F.A.I. 64)	CURVE DATA: (Curve No. 2, @ F.A.I. 64)	CURVE DATA: (Curve No. 61, Ramp C)	CURVE DATA: (Curve No. 60)
PI STA. = 262+13.98 Δ = 17° 35' 25.76" D = 01° 29' 15" R = 3851.72' T = 595.95' L = 1182.524' P.C. STA = 256+18.03 P.T. STA = 268+00.55	PI STA. = 262+23.15 Δ = 17° 35' 25.76" D = 01° 30' 45.6" R = 3787.72' T = 586.048' L = 1162.875' P.C. STA = 256+37.10 P.T. STA = 267+99.98	PI STA. = 262+18.56 Δ = 17° 35' 25.76" D = 01° 30' 00" R = 3819.72' T = 590.999' L = 1172.70' P.C. STA = 256+27.56 P.T. STA = 268+00.26	PI STA. = 11+07.78 Δ = 65° 30' 12" D = 10° 56' 55" R = 523.32' T = 336.63' L = 598.28' P.C. STA = 7+71.15 = 266+87.06	PI STA. = 3+36.58 Δ = 10° 51' 25" D = 01° 37' 04" R = 3541.92' T = 336.58' L = 671.15'

**CURVE DATA:**  
(Curve No. 15)

PI STA. = 264+31.93  
Δ = 08° 24' 38"  
D = 01° 59' 41"  
R = 2872.51'  
T = 211.21'  
L = 421.66'



**STONE RIPRAP, CLASS A3 DETAILS**

**LOADING HS20-44 & ALTERNATE**  
Original and 1980 Construction  
Allow 25#/sq. ft. for future wearing surface.

**DESIGN SPECIFICATIONS**  
1980 Construction  
1977 AASHTO and 1978 Interim Specifications

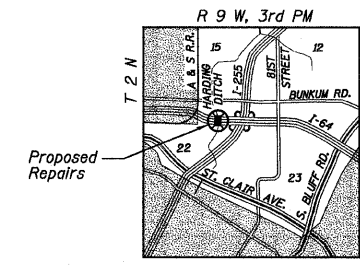
**DESIGN STRESSES**  
Original Construction  
f<sub>c</sub> = 1,400 psi (Super & Sub)  
f<sub>s</sub> = 20,000 psi (Reinforcement)  
f<sub>s</sub> = 20,000 psi (Structural Steel)  
V<sub>o</sub> = 75 psi (Footings)

1980 Construction  
f'<sub>c</sub> = 3,500 psi  
f<sub>y</sub> = 60,000 psi (Reinforcement)  
f<sub>s</sub> = 20,000 psi (Structural Steel)

Field Units  
f'<sub>c</sub> = 3,500 psi  
f<sub>y</sub> = 60,000 psi (Reinforcement)  
f<sub>s</sub> = 36,000 psi (Structural Steel)

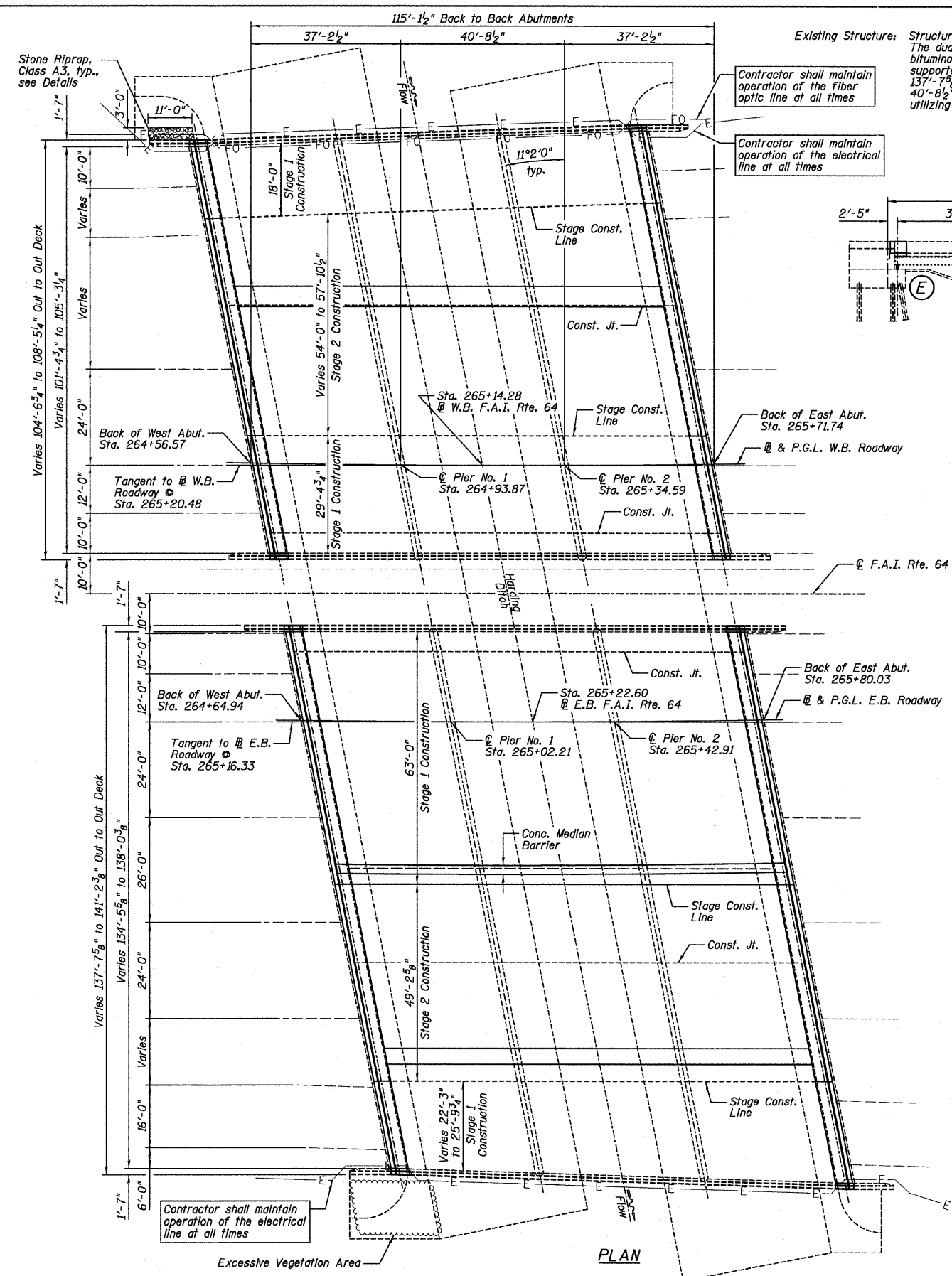


Joseph M. Lowrance  
Date 12-05-11  
JOSEPH M. LOWRANCE  
ILLINOIS STRUCTURAL ENGINEER  
NO. 081-006446  
Exp. Date 11/30/12



**LOCATION SKETCH**

**GENERAL PLAN AND ELEVATION**  
**INTERSTATE 64 OVER HARDING DITCH**  
**F.A.I. ROUTE 64 - SEC 82-(3,4)RS**  
**ST. CLAIR COUNTY**  
**STATION 265+14.28 (E.B.)**  
**STATION 265+22.60 (W.B.)**  
**STRUCTURE NO. 082-0169 (E.B.)**  
**STRUCTURE NO. 082-0170 (W.B.)**



**Farnsworth**  
GROUP, INC.  
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306663-8436, 306663-1571 fax

DESIGNED - JCZ	REVISOR
CHECKED - JML	REVISOR
DRAWN - DJM/JWK	REVISOR
CHECKED - MSW	REVISOR

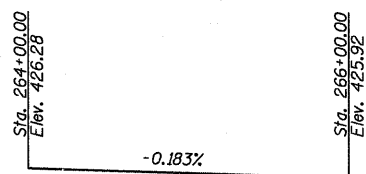
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

SHEET NO. B1 OF 34 SHEETS

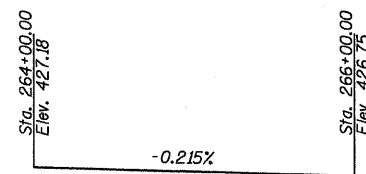
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	122
				CONTRACT NO. 76415
ILLINOIS FED. AID PROJECT				

**INDEX TO SHEETS**

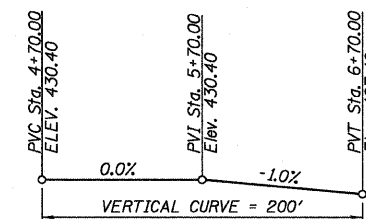
SHEET NO.	TITLE
B1	GENERAL PLAN AND ELEVATION
B2	GENERAL DATA
B3	STAGE CONSTRUCTION, EASTBOUND ROADWAY
B4	STAGE CONSTRUCTION, WESTBOUND ROADWAY
B5	TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
B6	TOP OF DECK REPAIR, EASTBOUND ROADWAY
B7	TOP OF DECK REPAIR WESTBOUND ROADWAY
B8	PARAPET REPAIR
B9	MEDIAN BARRIER DETAILS
B10-B12	EXPANSION JOINT REPLACEMENT DETAILS, EASTBOUND ROADWAY
B13-B15	EXPANSION JOINT REPLACEMENT DETAILS, WESTBOUND ROADWAY
B16	PERFORMED JOINT STRIP SEAL
B17-B19	LONGITUDINAL JOINT CLOSURE DETAILS, EASTBOUND ROADWAY
B20-B21	LONGITUDINAL JOINT CLOSURE DETAILS, WESTBOUND ROADWAY
B22-B22A	STRUCTURAL STEEL
B23	BEARING DETAILS AND NOTES
B24	TYPE I BEARING DETAILS, WEST ABUTMENT
B25	TYPE I BEARING DETAILS, PIER NO. 2
B26	TYPE I BEARING DETAILS, EAST ABUTMENT
B27	WEST ABUTMENT, EASTBOUND ROADWAY
B28	EAST ABUTMENT, EASTBOUND ROADWAY
B29	WEST ABUTMENT, WESTBOUND ROADWAY
B30	EAST ABUTMENT, WESTBOUND ROADWAY
B31	PIER NO. 2, EASTBOUND ROADWAY
B32	PIER NO. 2, WESTBOUND ROADWAY
B33	CHANNEL EXCAVATION PLAN AND ELEVATION
B34	BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS



**PROFILE GRADE**  
(Along P.G.L. E.B. F.A.I. 64)



**PROFILE GRADE**  
(Along P.G.L. W.B. F.A.I. 64)



**PROFILE GRADE**  
(Along E Ramp C)

**TOTAL BILL OF MATERIAL**

ITEMS	UNITS	SUPER		SUB		TOTAL
		082-0169	082-0170	082-0169	082-0170	
Channel Excavation	Cu. Yd.			449	360	809
Stone Riprap, Class A3	Sq. Yd.				4	4
Concrete Removal	Cu. Yd.	83.9	49.6			133.5
Concrete Superstructure	Cu. Yd.	90.3	54.4			144.7
Bridge Deck Grooving	Sq. Yd.	1,660	1,253			2,913
Protective Coat	Sq. Yd.	378	237			615
Furnishing and Erecting Structural Steel	Pound	16,710	10,940			27,650
Cleaning and Painting Structural Steel, Location 1	L. Sum	0.5	0.5			1
Cleaning and Painting Structural Steel, Location 2	L. Sum	0.5	0.5			1
Reinforcement Bars, Epoxy Coated	Pound	14,870	8,710			23,580
Bar Splicers	Each	72	72			144
Preformed Joint Strip Seal	Foot	281.5	214.5			496
Elastomeric Bearing Assembly, Type I	Each	63	45			108
Anchor Bolts, 1"	Each	126	90			216
Jack and Remove Existing Bearings	Each	63	45			108
Structural Steel Removal	Pound	1,280				1,280
Hot-Mix Asphalt Surface Removal (Deck)	Sq. Yd.	1,727	1,310			3,037
Containment and Disposal of Lead Paint Cleaning Residues No. 1	L. Sum	0.5	0.5			1
Containment and Disposal of Lead Paint Cleaning Residues No. 2	L. Sum	0.5	0.5			1
Cleaning Bridge Seats	Sq. Ft.			1,041	795	1,836
Bridge Deck Scarification 3/4"	Sq. Yd.	1,506	1,154			2,660
Bridge Deck Microsilica Concrete Overlay 2 3/4"	Sq. Yd.	1,506	1,154			2,660
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.		3	66	53	122
Structural Repair of Concrete (Depth Greater than 5 Inches)	Sq. Ft.			39	3	42
Plug Existing Deck Drains	Each	10	10			20
Joint Sealer	Foot	42	42			84

**GENERAL NOTES**

- Fasteners shall be high strength bolts. Bolts 3/4" φ, open holes 13/16" φ, unless otherwise noted.
- All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.
- No field welding is permitted except as specified in the contract documents.
- Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60.
- Reinforcement bars designated (E) shall be epoxy coated.
- Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.
- Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
- The existing structural steel coating contains lead. The Contractor shall deal with the presence of lead on this project according to the Guide Bridge Special Provision "Containment and Disposal of Lead Paint Cleaning Residues".
- A minimum of 2 air monitors will be required to monitor abrasive blasting operations at this site. See the Guide Bridge Special Provision for "Containment and Disposal of Lead Paint Cleaning Residues".
- Cleaning and painting of the existing structural steel shall be as specified in the Guide Bridge Special Provision for "Cleaning and Painting Existing Steel Structures". All beams, bearings, and other structural steel within 5 ft. (measured along the beam) of either side of deck expansion joints shall be cleaned per Near White Blast Cleaning - SSPC-SP10. The exterior surfaces and bottom of the bottom flange of the Tascas beams shall not be cleaned or painted. The designated areas cleaned per Near White Blast Cleaning shall be painted according to the requirements of Paint System 1-OZ/E/U. The color of the final finish coat for all interior steel surfaces shall be Gray, Munsell No. 5B 7/1.
- All structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1. Cost included with Furnishing and Erecting Structural Steel.
- The area along the slope walls as determined by the Engineer should be cleared of vegetation, bushes, saplings, etc. according to Section 201 of the Standard Specifications. This work will be included with Stone Riprap, Class A3.
- The Channel Excavation may be varied in the field to suit the channel conditions as directed by the Engineer. All excavated material shall remain on site.
- The bearing seats at the abutments and Pier No. 2 cover an area of 1,041 Sq. Ft. (E.B.) and 795 Sq. Ft. (W.B.). These areas shall be cleaned according to the Special Provisions and paid for at the contract unit price for "Cleaning Bridge Seats".
- All areas of erosion are to be repaired by placing Class A3 Stone Riprap in a manner to match the existing ground profile or to improve the ground profile.
- Joint openings shall be adjusted according to Article 520.04 of the Standard Specifications when the deck is poured at an ambient temperature other than 50°F.
- Cost of removal and re-installation of all members necessary to complete the work as detailed on the plans and as specified in the Special Provisions shall be included with "Furnishing and Erecting Structural Steel." Cost of removal of members to be replaced as detailed on the plans and as specified in the Special Provisions shall be included with "Structural Steel Removal."
- Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with "Concrete Removal."
- If the analysis submitted to the Contractor for the jacking/temporary support system to be used shows temporary stiffeners are required to prevent web crippling or buckling, the stiffeners shall be steel and bolted to the web. If stiffeners are not required, hardwood timbers shall be installed tightly between the top and bottom flange to prevent flange rotation.
- Protective Coat shall be applied to the full length of the parapets and new concrete at the Expansion Joints and Joint Closure Locations. Protective coat shall not be applied to areas that will receive the Microsilica Concrete Overlay.



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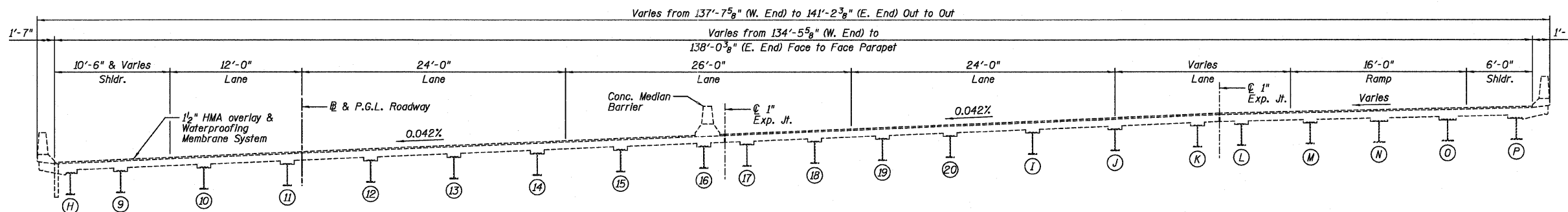
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CHECKED - JML	REVISED
DRAWN - DJM/JWK	REVISED
DATE - 12/05/11	CHECKED - MSW
	REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

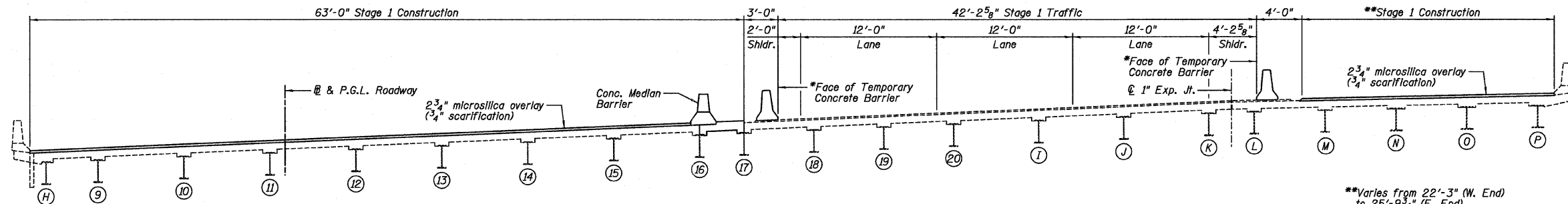
GENERAL DATA  
STRUCTURE NO. 082-0169 (E.B.)  
STRUCTURE NO. 082-0170 (W.B.)

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	123
CONTRACT NO. 76415				
ILLINOIS FED. AID PROJECT				

SHEET NO. B2 OF 34 SHEETS

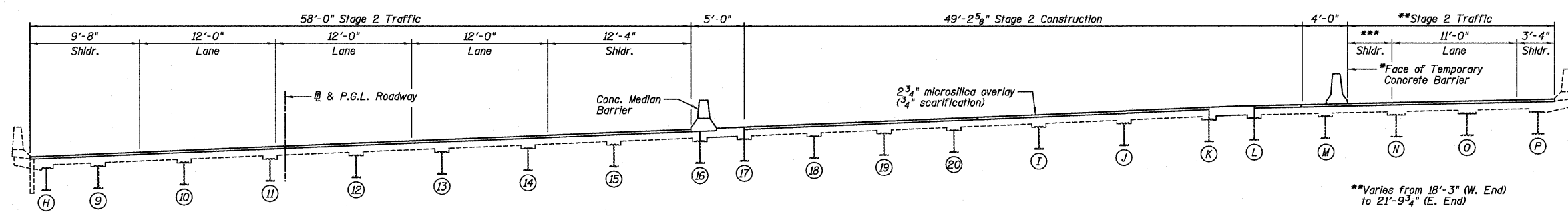


**EXISTING CROSS SECTION**  
 (Looking East @  $\odot$  of Bridge)  
 (All roadway dimensions are given radially)



**STAGE 1 CONSTRUCTION**  
 (Looking East @  $\odot$  of Bridge)  
 \*Temporary Concrete Barrier, See Std. 704001

\*\*Varies from 22'-3" (W. End) to 25'-9<sup>3</sup>/<sub>4</sub>" (E. End)



**STAGE 2 CONSTRUCTION**  
 (Looking East @  $\odot$  of Bridge)  
 \*Temporary Concrete Barrier, See Std. 704001

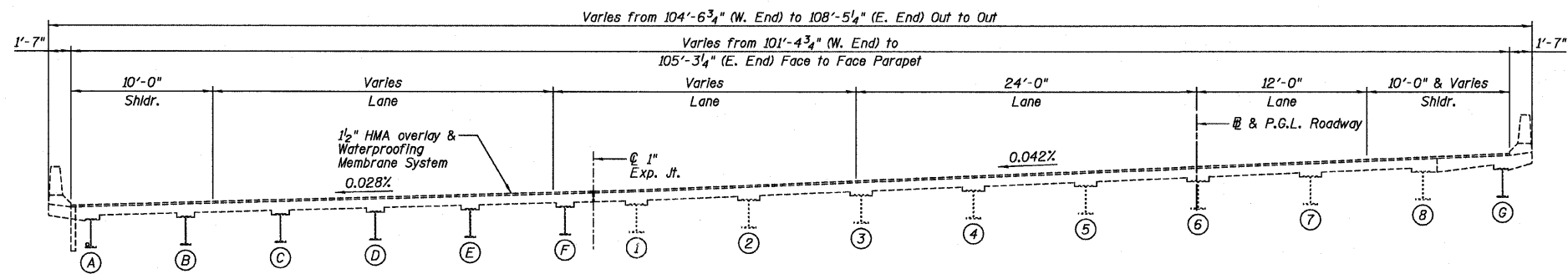
\*\*Varies from 18'-3" (W. End) to 21'-9<sup>3</sup>/<sub>4</sub>" (E. End)

\*\*\*Varies from 3'-11" (W. End) to 7'-5<sup>3</sup>/<sub>4</sub>" (E. End)

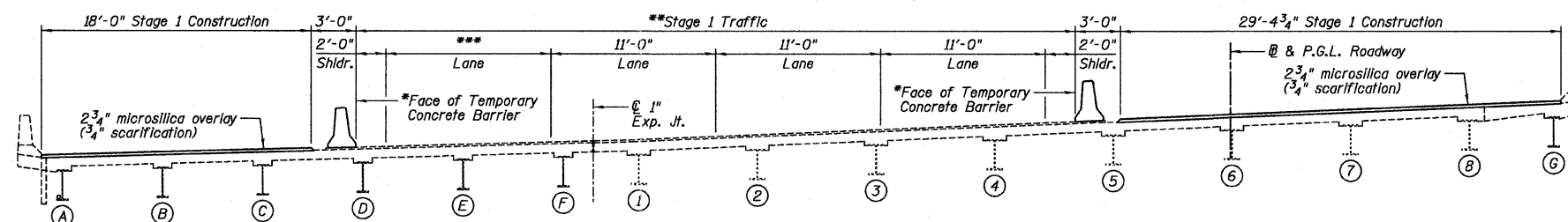
**NOTE:**  
 See Roadway Plans for Temporary Concrete Barrier quantities.

<b>Farnsworth GROUP, INC.</b> 2709 McGraw Drive Bloomington, Illinois 61704 309/863-8435, 309/863-1571 fax	DESIGNED - JCZ	REVISED	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>STAGE CONSTRUCTION, EASTBOUND ROADWAY</b> <b>STRUCTURE NO. 082-0169 (E.B.)</b> <b>STRUCTURE NO. 082-0170 (W.B.)</b>	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	CHECKED - JML	REVISED			64	B2-(3,4)RS	ST. CLAIR	167	124
DATE - 12/05/11	DRAWN - DJM/JWK	REVISED			CONTRACT NO. 76415				
	CHECKED - MSW	REVISED			ILLINOIS FED. AID PROJECT				

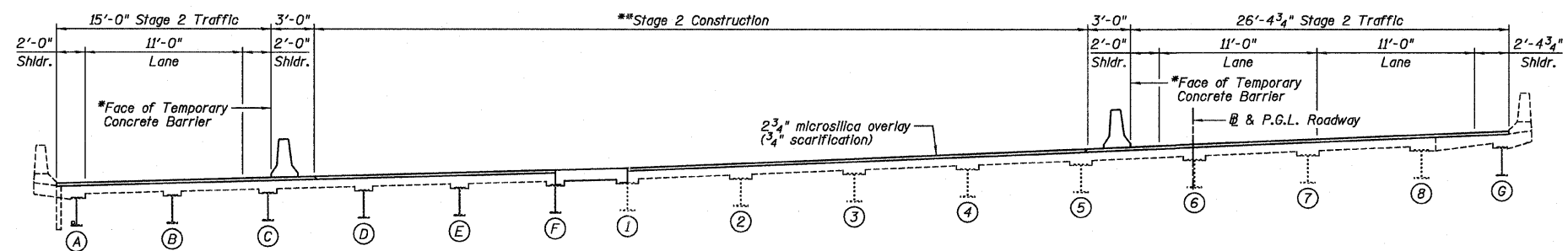




**EXISTING CROSS SECTION**  
 (Looking East @  $\odot$  of Bridge)  
 (All roadway dimensions are given radially)



**STAGE 1 CONSTRUCTION**  
 (Looking East @  $\odot$  of Bridge)  
 \*Temporary Concrete Barrier, See Sid. 704001  
 \*\*Varies from 48'-0" (W. End) to 51'-10 1/2" (E. End)  
 \*\*\*Varies from 11'-0" (W. End) to 14'-10 1/2" (E. End)



**STAGE 2 CONSTRUCTION**  
 (Looking East @  $\odot$  of Bridge)  
 \*Temporary Concrete Barrier, See Sid. 704001  
 \*\*Varies from 54'-0" (W. End) to 57'-10 1/2" (E. End)

**NOTE:**  
 See Roadway Plans for Temporary Concrete Barrier quantities.

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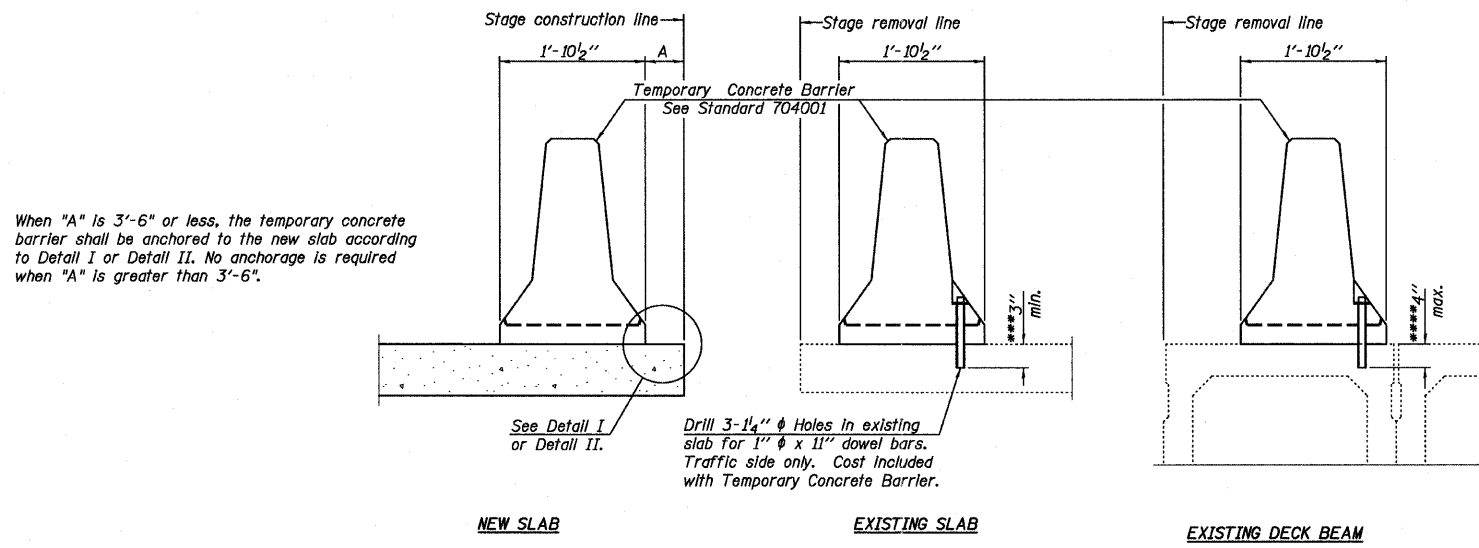
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CHECKED - MSW	REVISED
DATE - 12/05/11	

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**STAGE CONSTRUCTION, WESTBOUND ROADWAY**  
**STRUCTURE NO. 082-0169 (E.B.)**  
**STRUCTURE NO. 082-0170 (W.B.)**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	125
CONTRACT NO. 76415				
ILLINOIS FED. AID PROJECT				

SHEET NO. B4 OF 34 SHEETS



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

NEW SLAB

EXISTING SLAB

EXISTING DECK BEAM

SECTIONS THRU SLAB OR DECK BEAM

Drill 3-1/4"  $\phi$  Holes in existing slab for 1"  $\phi$  x 11" dowel bars. Traffic side only. Cost Included with Temporary Concrete Barrier.

See Detail I or Detail II.

**NOTES**

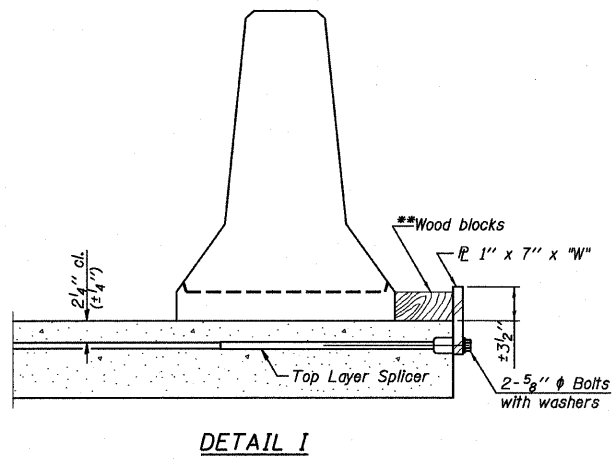
Detail I - With Bar Splicer or Couplers:  
Connect one (1) 1" x 7" x "W" steel  $\bar{L}$  to the top layer of couplers with 2-5/8"  $\phi$  bolts screwed to coupler at approximate  $\bar{C}$  of each barrier panel.

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

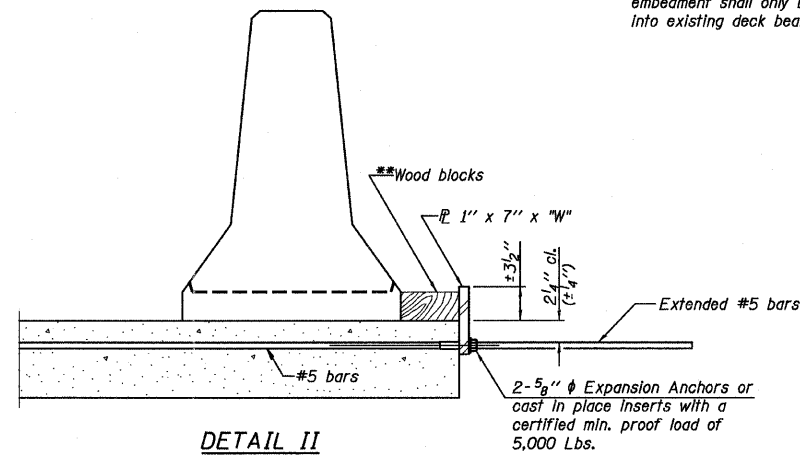
Cost of anchorage is Included with Temporary Concrete Barrier. The 1" x 7" x "W" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

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

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



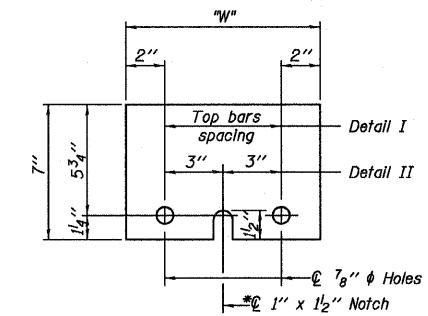
DETAIL I



DETAIL II

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

"W" = Top bars spacing + 4"



STEEL RETAINER  $\bar{L}$  1" x 7" x "W"

\* Required only with Detail II

R-27

7-1-10

**Farnsworth**  
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Bloomington, Illinois 61704  
309/863-8435, 309/863-1571 fax

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DRAWN - DJM/JWK  
DATE - 12/05/11

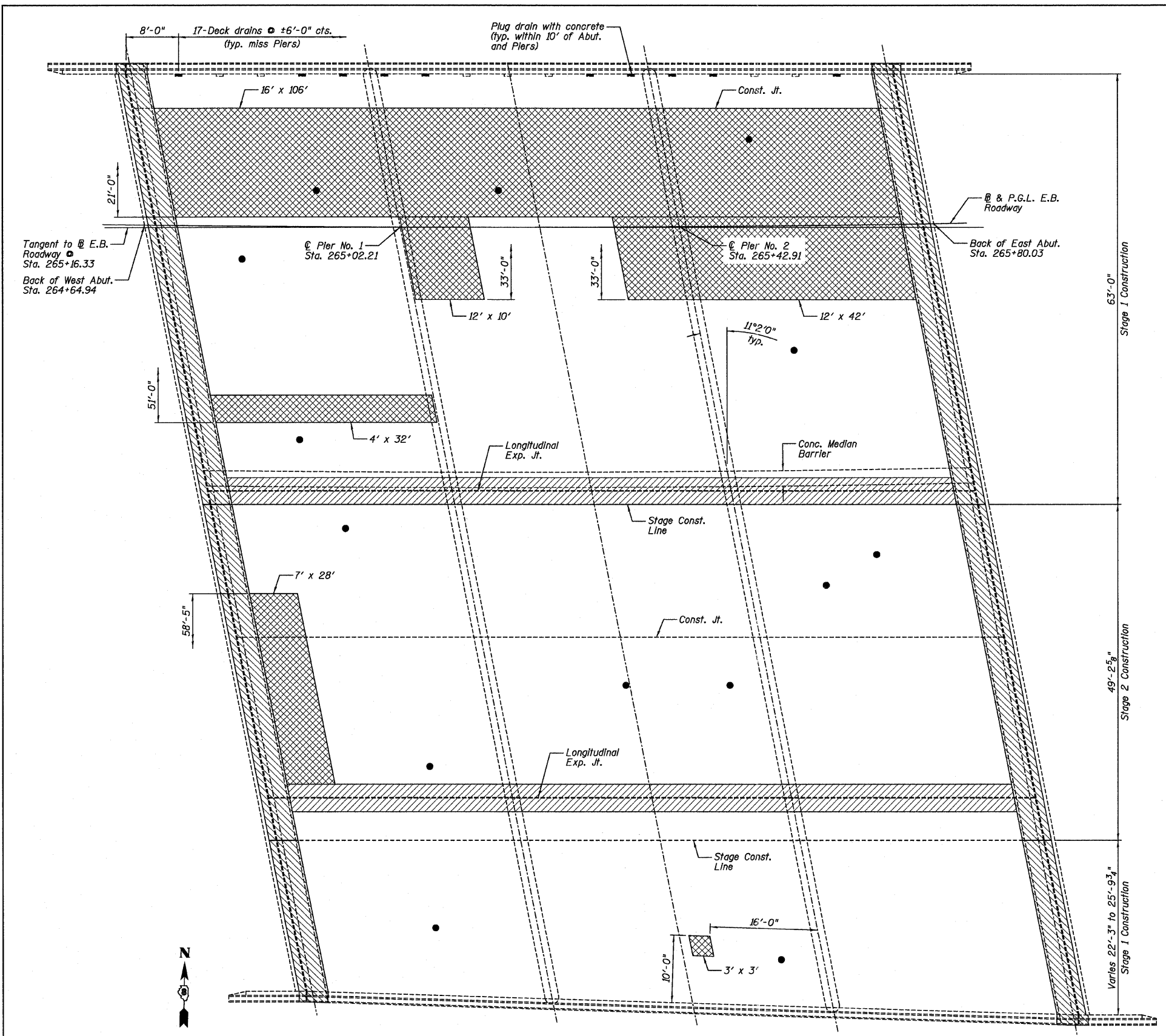
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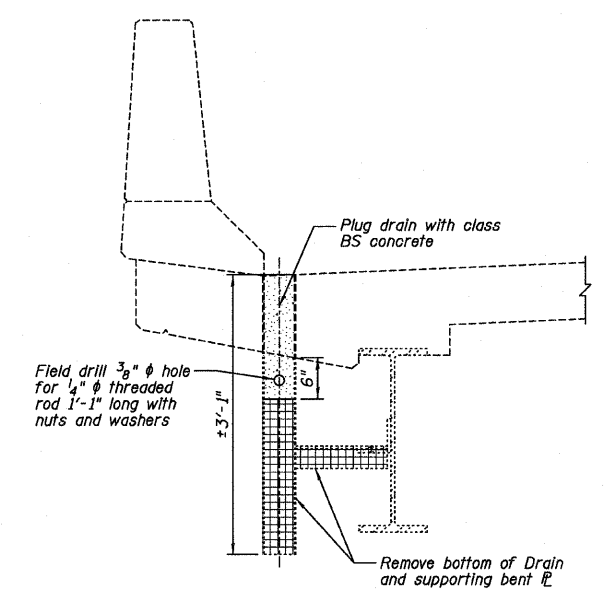
TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION  
STRUCTURE NO. 082-0169 (E.B.)  
STRUCTURE NO. 082-0170 (W.B.)

SHEET NO. B5 OF 34 SHEETS

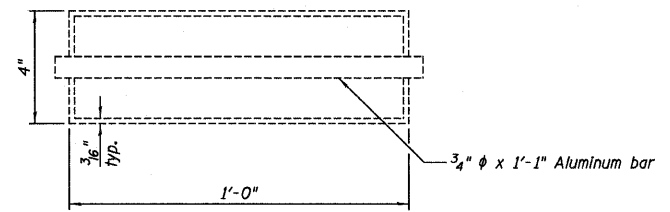
F.A.I. RTE. 64	SECTION 82-13,4RS	COUNTY ST. CLAIR	TOTAL SHEETS 167	SHEET NO. 126
ILLINOIS FED. AID PROJECT				CONTRACT NO. 76415



TOP OF DECK PLAN



DRAIN ELIMINATION DETAIL



TOP PLAN OF DRAIN

LEGEND

- Deck Slab Repair (Partial)
- Concrete Removal for Expansion Joint Replacement (see Sheets B10 thru B12)
- Longitudinal Joint Closure (see Sheets B17 thru B19)
- 4"  $\phi$  Core Hole (see "Bridge Deck Microsilica Concrete Overlay" Special Provisions for repair requirements)

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Plug Existing Deck Drains	Each	10
* Deck Slab Repair (Partial)	Sq. Yd.	295

\* FOR INFORMATION ONLY

NOTE:

All dimensions to deck slab repair areas are from the face of parapet to the location shown unless noted otherwise.

**Farnsworth GROUP, INC.**  
2709 McGraw Drive  
Schaumburg, Illinois 61104  
309/863-8435, 309/863-1571 fax

DESIGNED - JCZ  
CHECKED - JML  
DRAWN - DJM/JWK  
DATE - 12/05/11

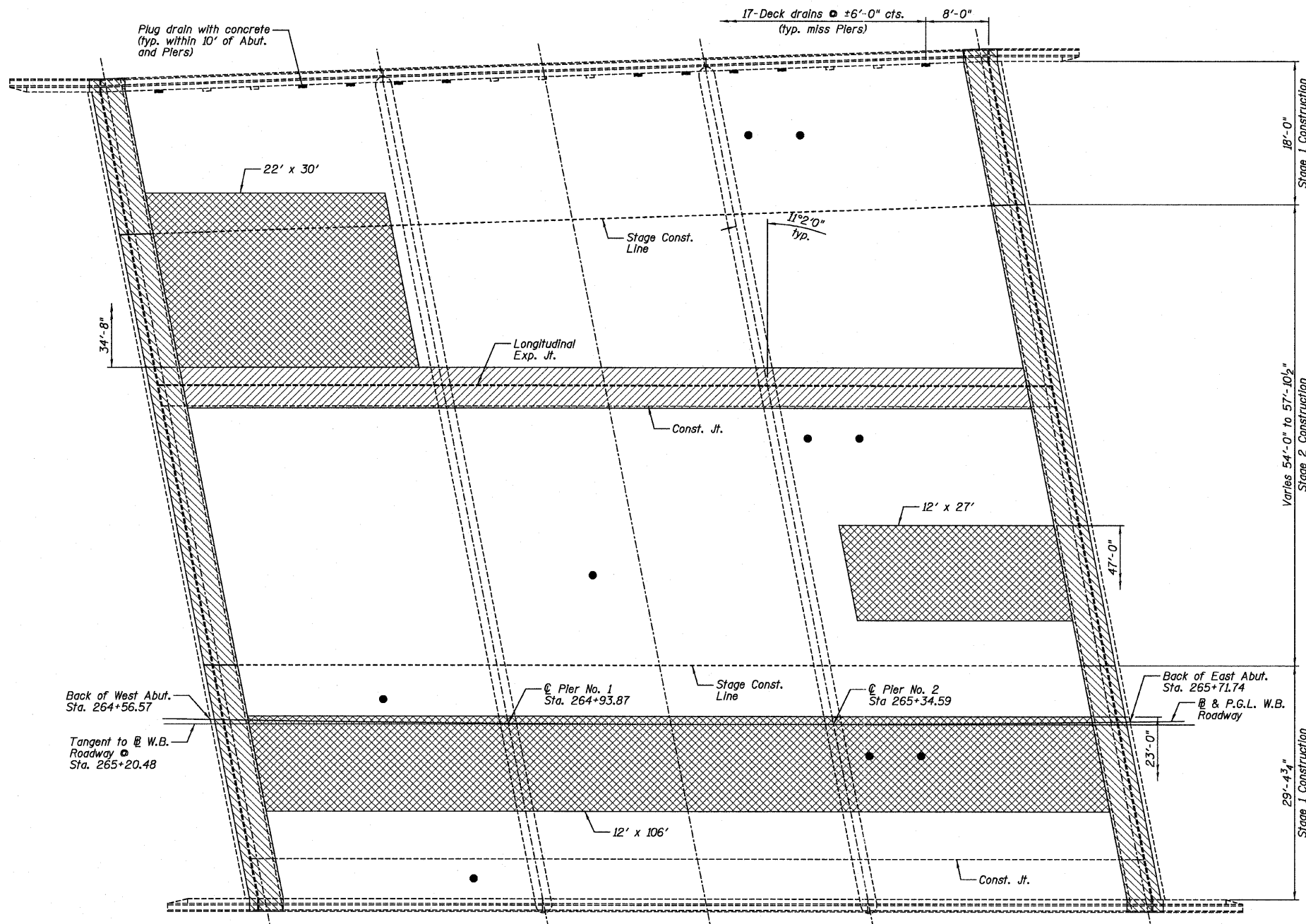
REVIS  
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DESIGNED - JCZ  
CHECKED - MSW

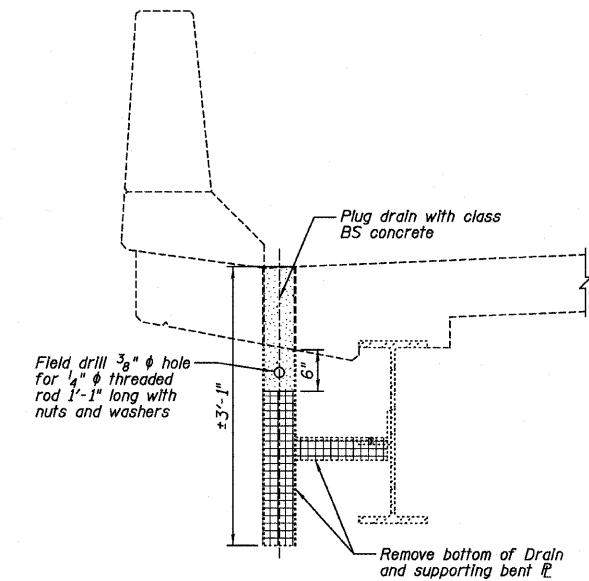
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

TOP OF DECK REPAIR, EASTBOUND ROADWAY  
STRUCTURE NO. 082-0169 (E.B.)  
STRUCTURE NO. 082-0170 (W.B.)  
SHEET NO. B6 OF 34 SHEETS

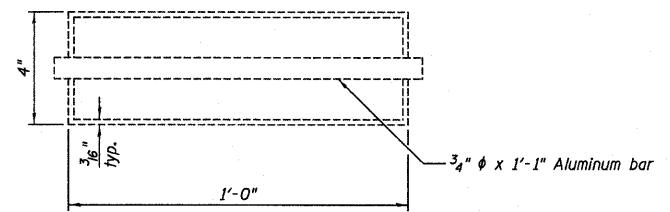
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	127
				CONTRACT NO. 76415
ILLINOIS FED. AID PROJECT				



TOP OF DECK PLAN



DRAIN ELIMINATION DETAIL



TOP PLAN OF DRAIN

LEGEND

- Deck Slab Repair (Partial)
- Concrete Removal for Expansion Joint Replacement (see Sheets B10 thru B12)
- Longitudinal Joint Closure (see Sheets B17 thru B19)
- 4" Core Hole (see "Bridge Deck Microsilica Concrete Overlay" Special Provisions for repair requirements)

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Plug Existing Deck Drains	Each	10
* Deck Slab Repair (Partial)	Sq. Yd.	251

\* FOR INFORMATION ONLY

NOTE:

All dimensions to deck slab repair areas are from the face of parapet to the location shown unless noted otherwise.

**Farnsworth GROUP, INC.**  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/663-8435, 309/663-1571 fax

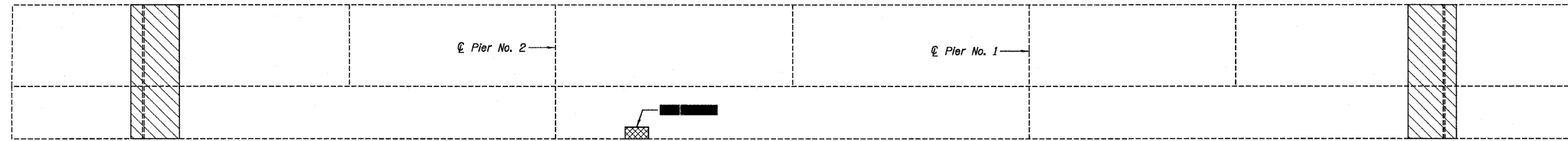
DESIGNED - JCZ	REVISION
CHECKED - JML	REVISION
DRAWN - DJM/JWK	REVISION
CHECKED - MSW	REVISION
DATE - 12/05/11	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

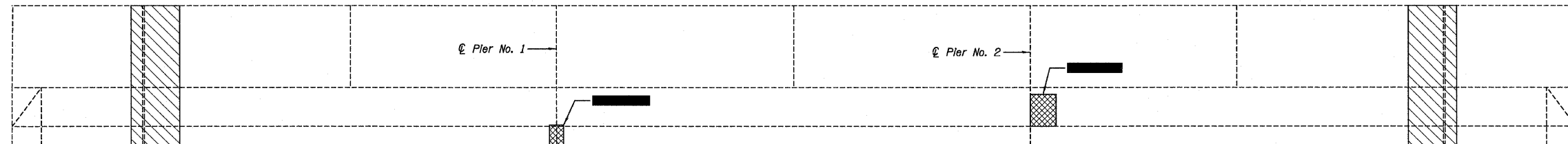
TOP OF DECK REPAIR, WESTBOUND ROADWAY  
STRUCTURE NO. 082-0169 (E.B.)  
STRUCTURE NO. 082-0170 (W.B.)

SHEET NO. 07 OF 34 SHEETS

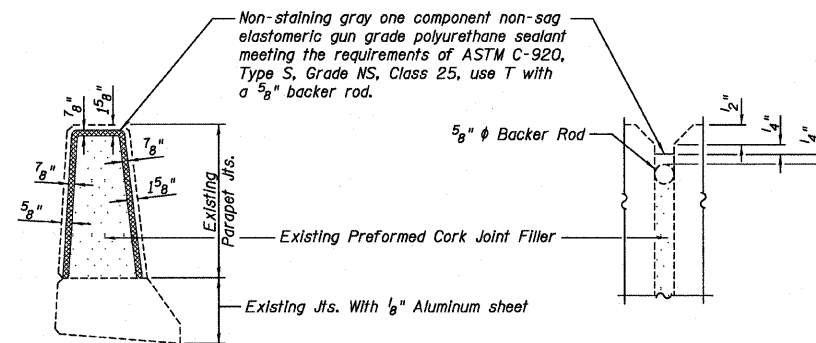
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	128
CONTRACT NO. 76415				
ILLINOIS FED. AID PROJECT				



WESTBOUND ROADWAY, OUTSIDE ELEVATION OF NORTH PARAPET



WESTBOUND ROADWAY, INSIDE ELEVATION OF NORTH PARAPET



PARAPET JOINT DETAILS  
(5 Joints per Parapet)

LEGEND

- Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)
- Concrete Removal for Expansion Joint Replacement (see Sheets B10 thru B15)

BILL OF MATERIAL

Item	Unit	082-0169	082-0170	Total
Structural Repair of Concrete, (Depth Equal to or Less than 5 Inches)	Sq. Ft.		3	3
Joint Sealer	Foot	42	42	84

NOTE:

Elevations of Parapet Views are exaggerated vertically.

**Farnsworth**  
GROUP, INC.  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/663-8435, 309/663-1571 fax

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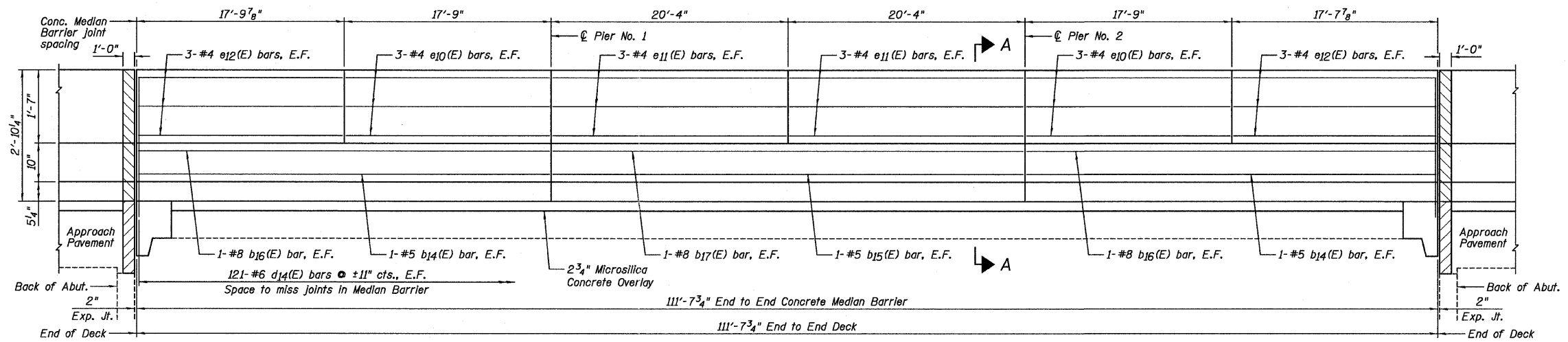
DESIGNED - JCZ	REVISED
CHECKED - JML	REVISED
DRAWN - DJM/JWK	REVISED
CHECKED - MSW	REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PARAPET REPAIR  
STRUCTURE NO. 082-0169 (E.B.)  
STRUCTURE NO. 082-0170 (W.B.)

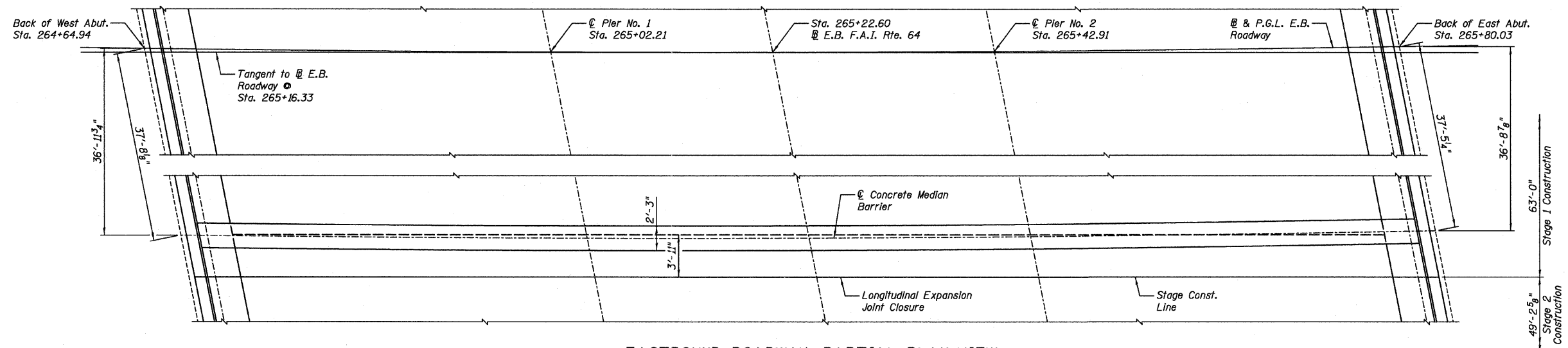
SHEET NO. B8 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	129
				CONTRACT NO. 76415
ILLINOIS FED. AID PROJECT				



**EASTBOUND ROADWAY, ELEVATION OF CONCRETE MEDIAN BARRIER (LOOKING NORTH)**

All horizontal dimensions are parallel to Tangent @ Sta. 265+16.33



**EASTBOUND ROADWAY, PARTIAL PLAN VIEW**

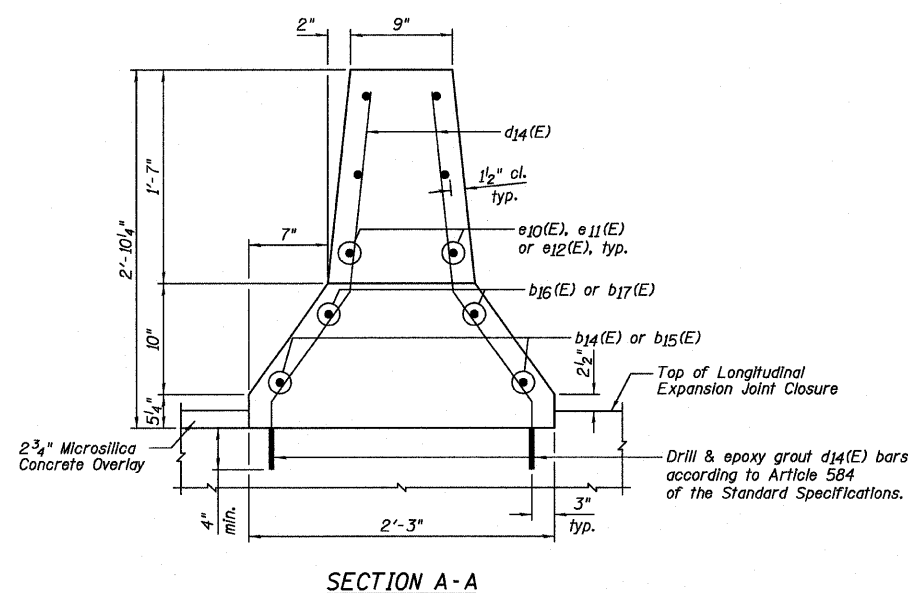
Reinforcement not shown for clarity.

**BAR LIST**

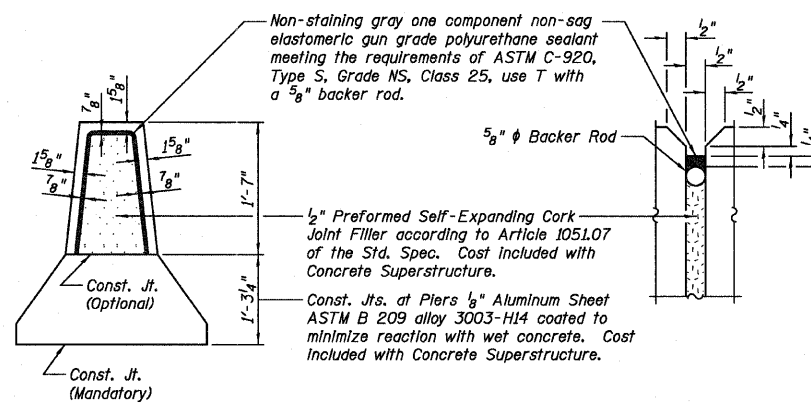
Bar	No.	Size	Length	Shape
b14(E)	4	#5	35'-2"	
b15(E)	2	#5	40'-4"	
b16(E)	4	#8	35'-2"	
b17(E)	2	#8	40'-4"	
d14(E)	242	#6	3'-3"	
e10(E)	12	#4	17'-5"	
e11(E)	12	#4	20'-0"	
e12(E)	12	#4	17'-3"	

**BILL OF MATERIAL**

Item	Unit	Total
Concrete Removal	Cu. Yd.	15.5
Concrete Superstructure	Cu. Yd.	15.8
Reinforcement Bars, Epoxy Coated	Pound	2,440



**SECTION A-A**

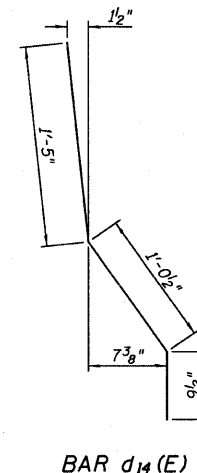


**MEDIAN BARRIER JOINT DETAILS**

(5 Joints in Median Barrier)

**LEGEND**

- Concrete Removal for Median Barrier Removal
- Concrete Removal for Expansion Joint Replacement (see Sheets B10 thru B12)



**BAR d14(E)**

**Farnsworth GROUP, INC.**  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/663-8435, 309/663-1571 fax

DESIGNED - JCZ  
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DATE - 12/05/11  
CHECKED - MSW

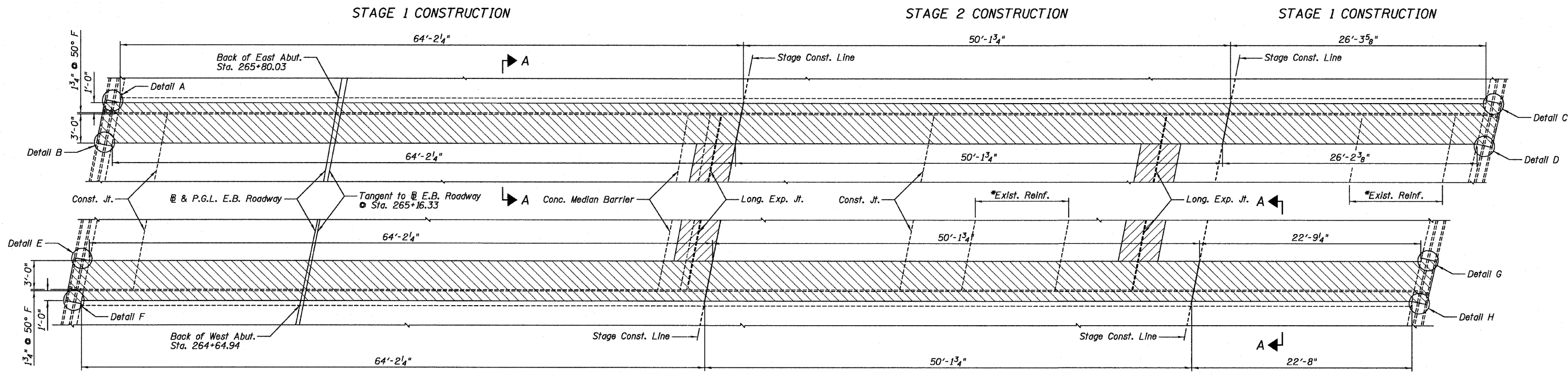
REVISED  
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REVISED

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

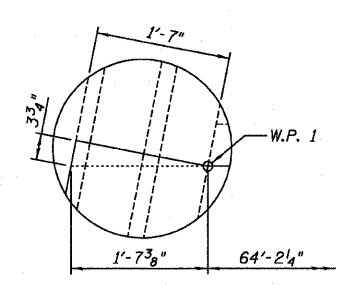
**MEDIAN BARRIER DETAILS  
STRUCTURE NO. 082-0169 (E.B.)  
STRUCTURE NO. 082-0170 (W.B.)**

SHEET NO. B9 OF 34 SHEETS

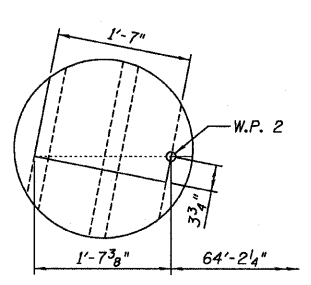
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-13,4RS	ST. CLAIR	167	130
				CONTRACT NO. 76415
ILLINOIS FED. AID PROJECT				



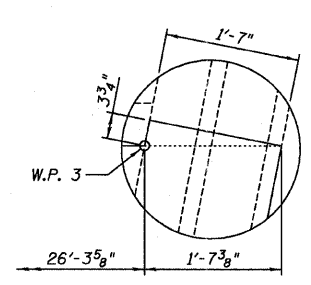
PARTIAL PLAN SHOWING CONCRETE REMOVAL



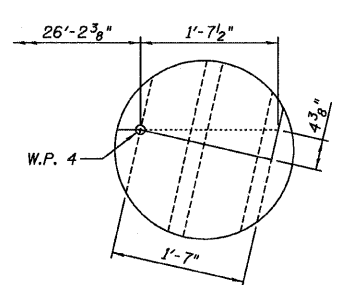
DETAIL A



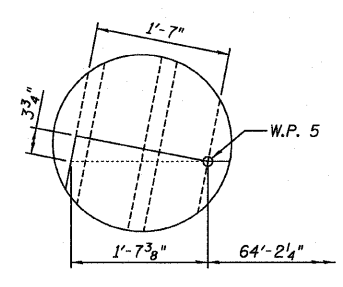
DETAIL B



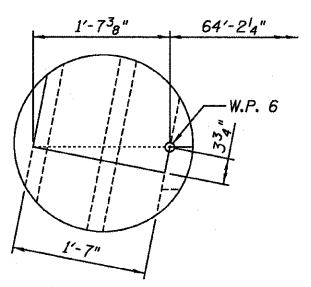
DETAIL C



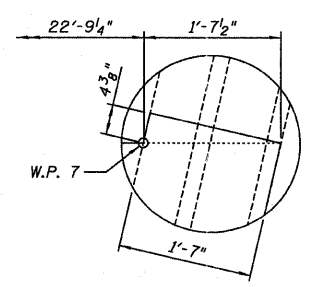
DETAIL D



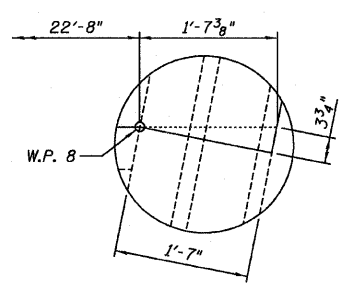
DETAIL E



DETAIL F



DETAIL G



DETAIL H

**NOTE:**  
Dimensions for Detail A thru Detail H are similar for the concrete replacement.

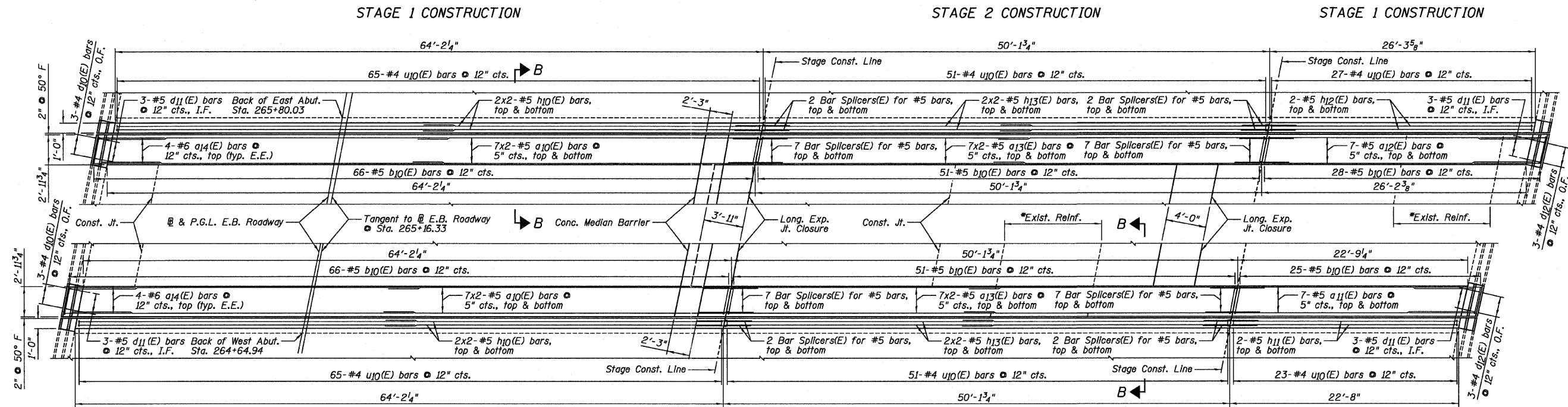
**LEGEND**

- Expansion Joint Removal
- Longitudinal Expansion Joint Removal

- NOTES:**
- 1.) \*Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
  - 2.) For Section A-A, see Sheet B12.
  - 3.) For Bill of Material, see Sheet B12.

<b>Farnsworth</b> GROUP, INC. <small>2709 McGraw Drive Bloomington, Illinois 61704 309/663-8435, 309/663-1571 fax</small>	DESIGNED - JCZ	REVISED	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>EXPANSION JOINT REPLACEMENT DETAILS, EASTBOUND ROADWAY</b> <b>STRUCTURE NO. 082-0169 (E.B.)</b> <b>STRUCTURE NO. 082-0170 (W.B.)</b> <small>SHEET NO. B10 OF 34 SHEETS</small>	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	DATE - 12/05/11	CHECKED - JML			REVISED	64	82-(3,4)RS	ST. CLAIR	167
	DRAWN - DJM/JWK	REVISED	CONTRACT NO. 76415						
	CHECKED - MSW	REVISED	ILLINOIS FED. AID PROJECT						





PARTIAL PLAN SHOWING CONCRETE REPLACEMENT

MIN. BAR LAP
#5 - 2'-11"

**NOTES:**

- 1.) \*Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
- 2.) For Section B-B, see Sheet B12.
- 3.) For Bill of Material, see Sheet B12.
- 4.) E.E. denotes Each End, I.F. denotes Inside Face and O.F. denotes Outside Face.

**Farnsworth**  
GROUP, INC.  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/663-8435, 309/663-1571 fax

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DRAWN - DJM/JWK  
DATE - 12/05/11

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DEPARTMENT OF TRANSPORTATION

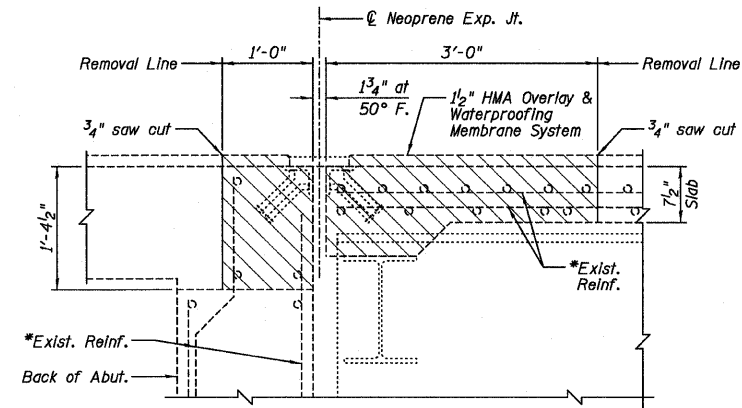
EXPANSION JOINT REPLACEMENT DETAILS, EASTBOUND ROADWAY  
STRUCTURE NO. 082-0169 (E.B.)  
STRUCTURE NO. 082-0170 (W.B.)

SHEET NO. B11 OF 34 SHEETS

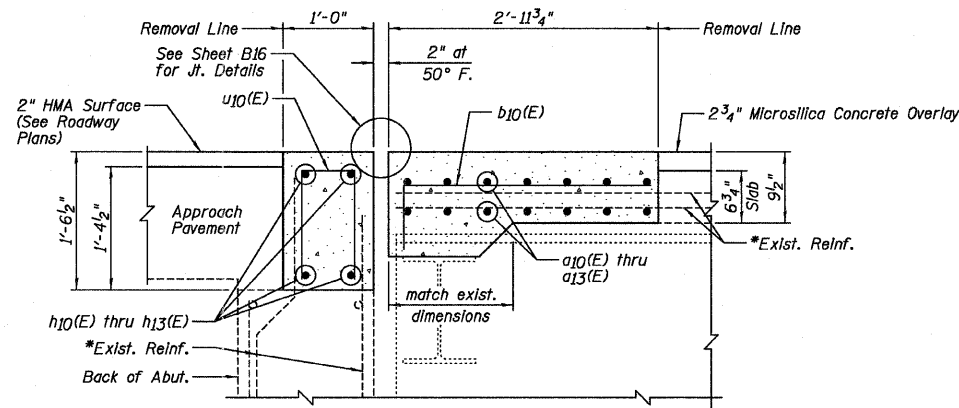
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-13,41RS	ST. CLAIR	167	132
				CONTRACT NO. 76415
ILLINOIS FED. AID PROJECT				

**BILL OF MATERIAL**

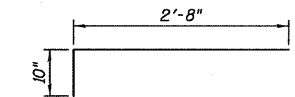
Bar	No.	Size	Length	Shape
a10(E)	56	#5	33'-10"	—
a11(E)	14	#5	23'-4"	—
a12(E)	14	#5	26'-9"	—
a13(E)	56	#5	26'-4"	—
a14(E)	16	#6	6'-6"	—
b10(E)	287	#5	3'-6"	┌
d10(E)	6	#4	5'-9"	L
d11(E)	12	#5	4'-1"	L
d12(E)	6	#4	5'-9"	L
h10(E)	16	#5	33'-5"	—
h11(E)	4	#5	22'-4"	—
h12(E)	4	#5	25'-11"	—
h13(E)	16	#5	26'-4"	—
u10(E)	282	#4	3'-2"	┌
Item		Unit	Quantity	
Concrete Removal		Cu. Yd.	41.9	
Concrete Superstructure		Cu. Yd.	48.5	
Reinforcement Bars, Epoxy Coated		Pound	7,340	
Bar Splicers		Each	72	



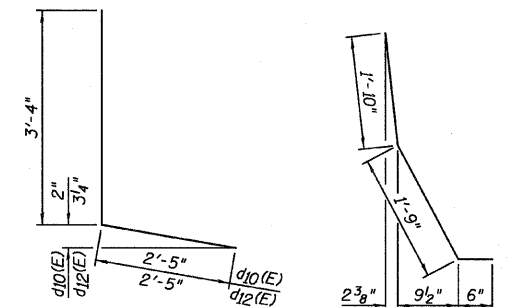
**SECTION A-A**  
(Horizontal Dimensions in Rt. L's)



**SECTION B-B**  
(Horizontal Dimensions in Rt. L's)

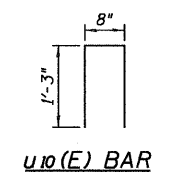


**b10(E) BAR**

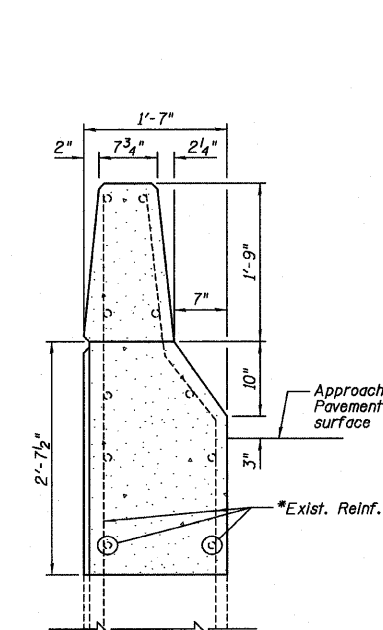


**d10(E) & d12(E) BAR**

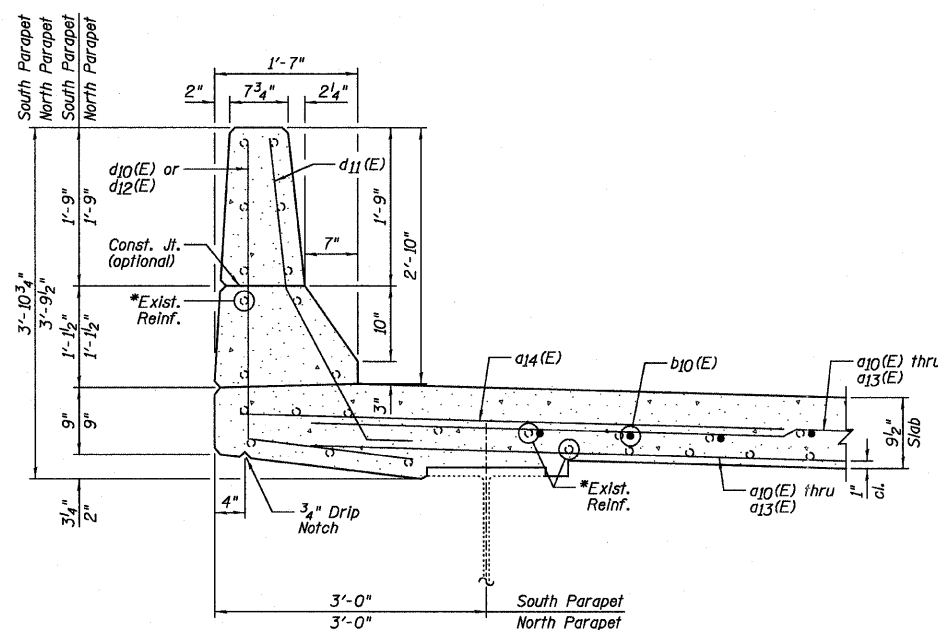
**d11(E) BAR**



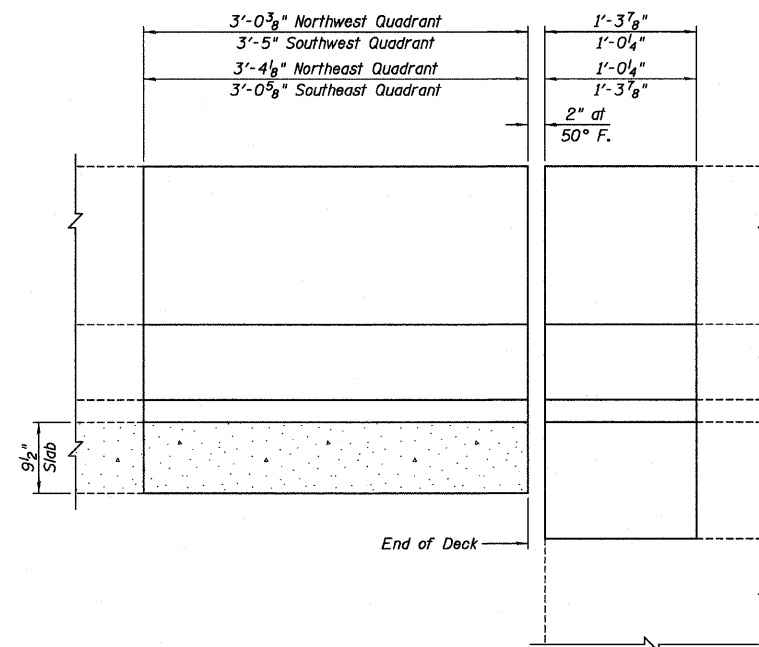
**u10(E) BAR**



**SECTION THRU WINGWALL**



**SECTION THRU PARAPET**



**INSIDE FACE PARAPET ELEVATION**  
(Dimensions measured along inside face of parapet)

**NOTES:**

- Hatched areas indicate concrete sections to be removed. Perimeters of concrete removal areas shall be saw cut 3/4 inch prior to the removal of the concrete.
- \*Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
- For location of Section A-A, see Sheet B10. For location of Section B-B, see Sheet B11.

**Farnsworth**  
GROUP, INC.  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/863-8436, 309/863-1571 fax

DESIGNED - JCZ  
CHECKED - JML  
DRAWN - DJM/JWK  
DATE - 12/05/11

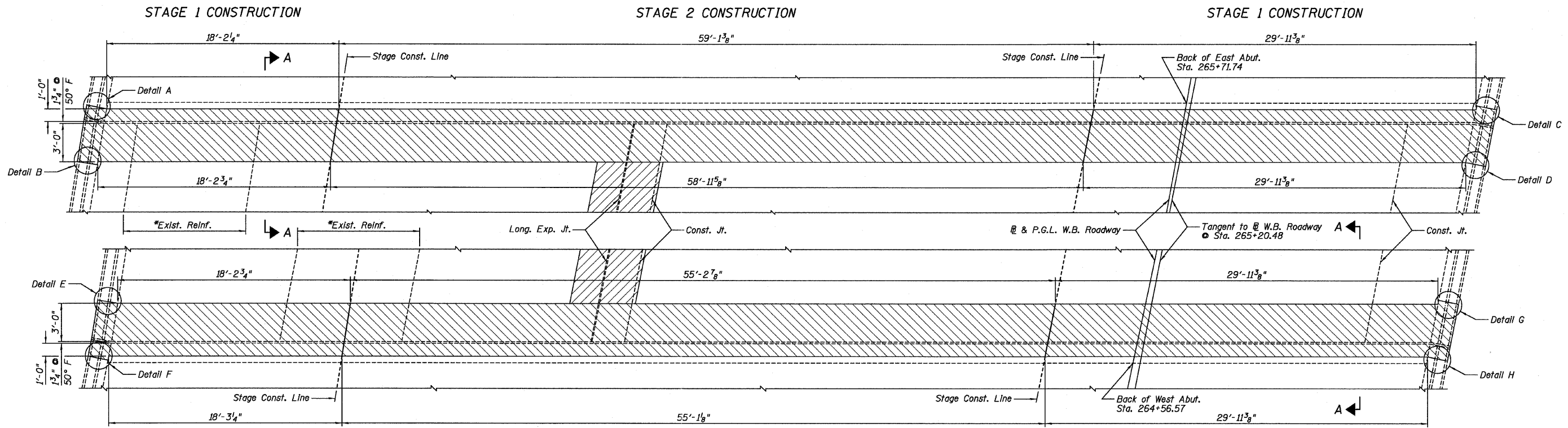
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REVISOR  
REVISOR

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

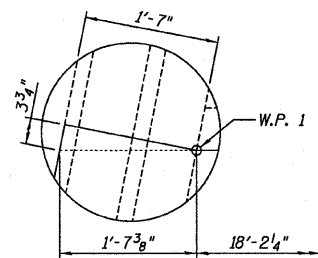
**EXPANSION JOINT REPLACEMENT DETAILS, EASTBOUND ROADWAY**  
**STRUCTURE NO. 082-0169 (E.B.)**  
**STRUCTURE NO. 082-0170 (W.B.)**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	133
				CONTRACT NO. 76415
ILLINOIS FED. AID PROJECT				

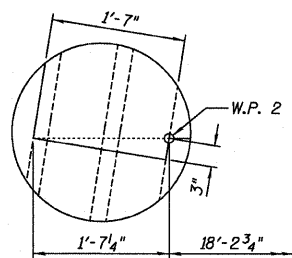
SHEET NO. B12 OF 34 SHEETS



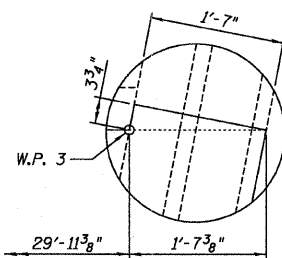
PARTIAL PLAN SHOWING CONCRETE REMOVAL



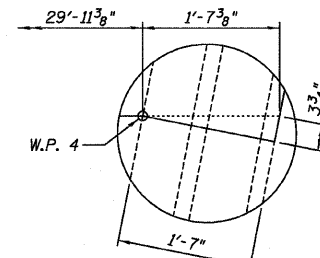
DETAIL A



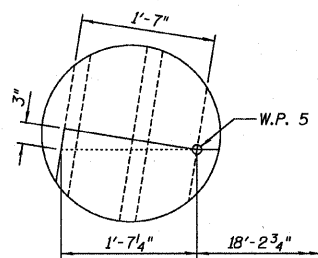
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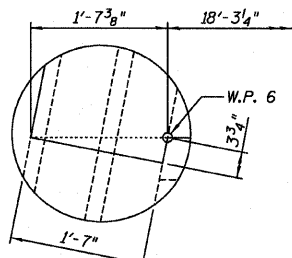
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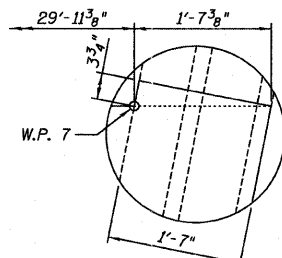
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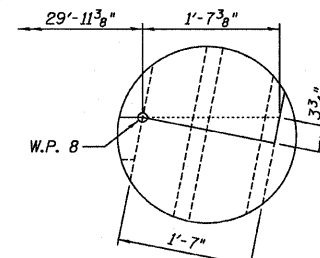
DETAIL E



DETAIL F



DETAIL G



DETAIL H

LEGEND

- Expansion Joint Removal
- Longitudinal Expansion Joint Removal

NOTES:

- 1.) \*Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
- 2.) For Section A-A, see Sheet B15.
- 3.) For Bill of Material, see Sheet B15.

NOTE:

Dimensions for Detail A thru Detail H are similar for the concrete replacement.

**Farnsworth**  
GROUP, INC.  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/663-8435, 309/663-1571 fax

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DRAWN - DJM/JWK  
DATE - 12/05/11

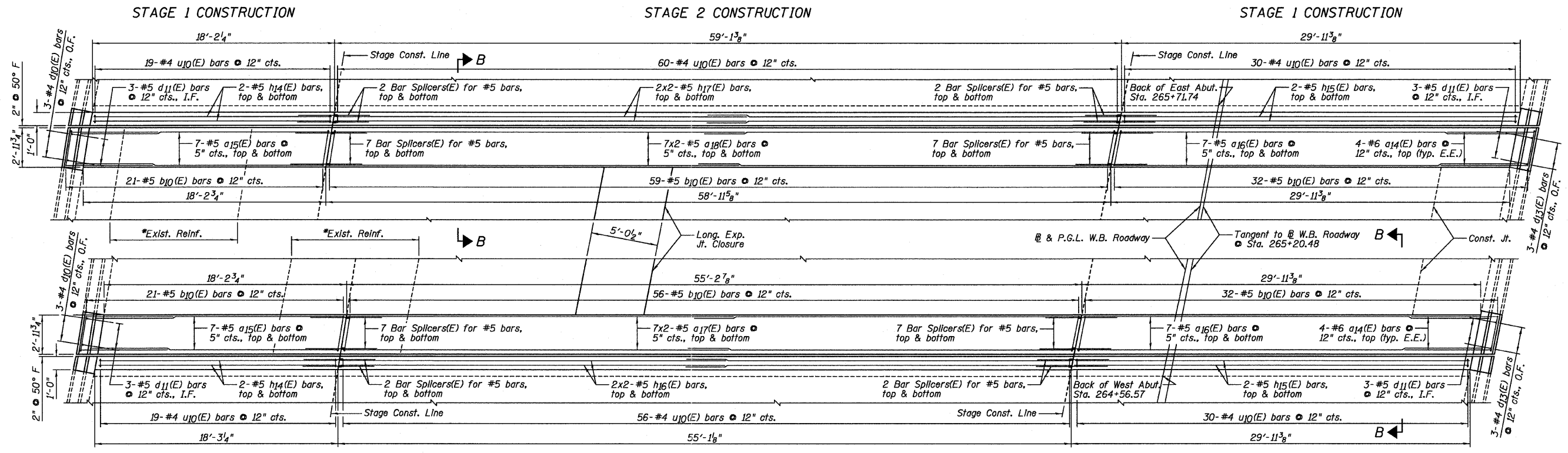
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REVIS  
REVIS  
REVIS

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXPANSION JOINT REPLACEMENT DETAILS, WESTBOUND ROADWAY  
STRUCTURE NO. 082-0169 (E.B.)  
STRUCTURE NO. 082-0170 (W.B.)

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	134
CONTRACT NO. 76415			ILLINOIS FED. AID PROJECT	

SHEET NO. B13 OF 34 SHEETS



PARTIAL PLAN SHOWING CONCRETE REPLACEMENT



MIN. BAR LAP  
#5 - 2'-11"

**NOTES:**

- 1.) \*Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
- 2.) For Section B-B, see Sheet B15.
- 3.) For Bill of Material, see Sheet B15.
- 4.) E.E. denotes Each End, I.F. denotes Inside Face and O.F. denotes Outside Face.

**Farnsworth**  
GROUP, INC.  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/663-8436, 309/663-1571 fax

DESIGNED - JCZ	REVISIONS
CHECKED - JML	REVISIONS
DRAWN - DJM/JWK	REVISIONS
DATE - 12/05/11	CHECKED - MSW
	REVISIONS

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

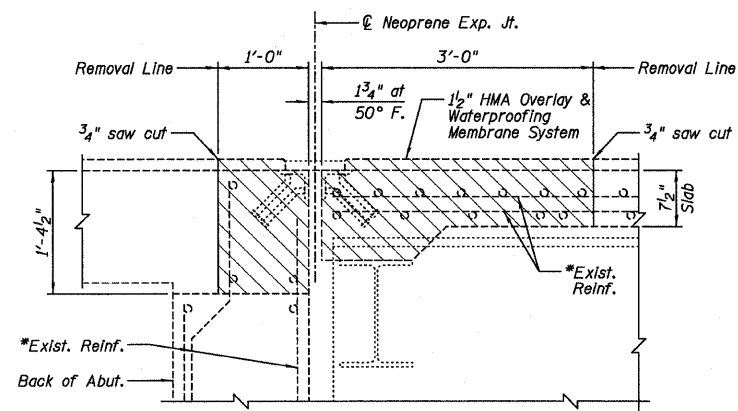
EXPANSION JOINT REPLACEMENT DETAILS, WESTBOUND ROADWAY  
STRUCTURE NO. 082-0169 (E.B.)  
STRUCTURE NO. 082-0170 (W.B.)

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-13,41RS	ST. CLAIR	167	135
CONTRACT NO. 76415				
ILLINOIS FED. AID PROJECT				

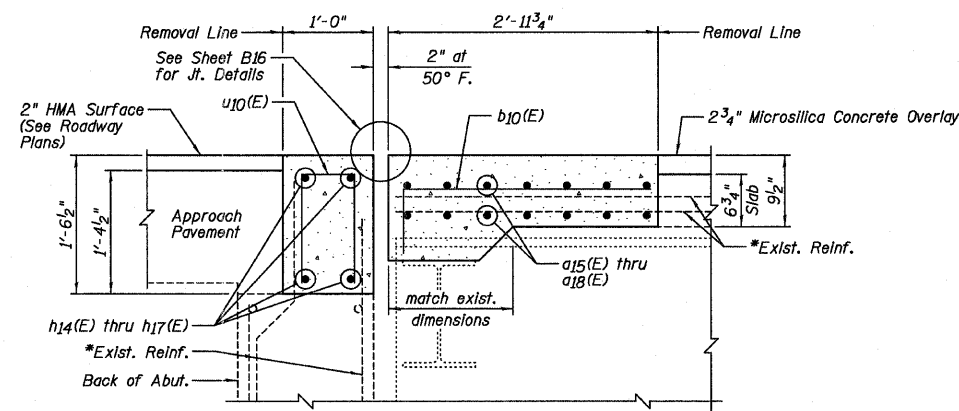
SHEET NO. B14 OF 34 SHEETS

**BILL OF MATERIAL**

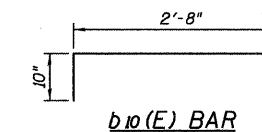
Bar	No.	Size	Length	Shape
a14(E)	16	#6	6'-6"	—
a15(E)	28	#5	18'-10"	—
a16(E)	28	#5	30'-6"	—
a17(E)	28	#5	28'-11"	—
a18(E)	28	#5	30'-9"	—
b10(E)	221	#5	3'-6"	—
d10(E)	6	#4	5'-9"	L
d11(E)	12	#5	4'-1"	L
d13(E)	6	#4	4'-9"	L
h14(E)	8	#5	17'-10"	—
h15(E)	8	#5	29'-7"	—
h16(E)	8	#5	28'-10"	—
h17(E)	8	#5	30'-10"	—
u10(E)	214	#4	3'-2"	—
Item	Unit	Quantity		
Concrete Removal	Cu. Yd.	32.6		
Concrete Superstructure	Cu. Yd.	37.5		
Reinforcement Bars, Epoxy Coated	Pound	5,590		
Bar Splicers	Each	72		



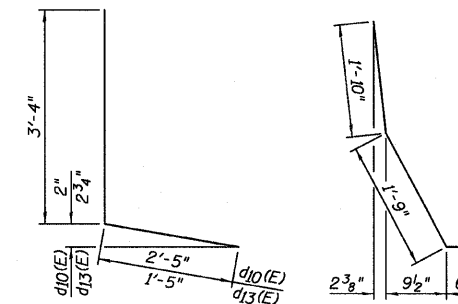
**SECTION A-A**  
(Horizontal Dimensions @ Rt. L's)



**SECTION B-B**  
(Horizontal Dimensions @ Rt. L's)

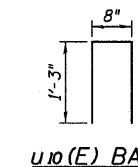


**b10(E) BAR**

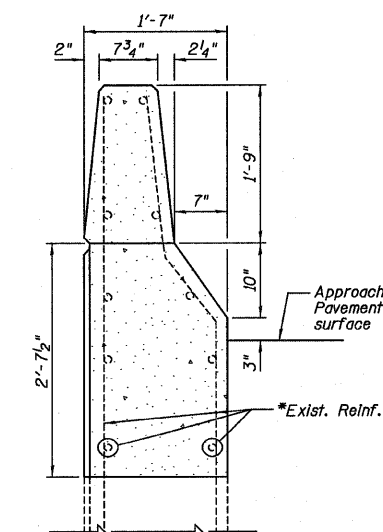


**d10(E) & d13(E) BAR**

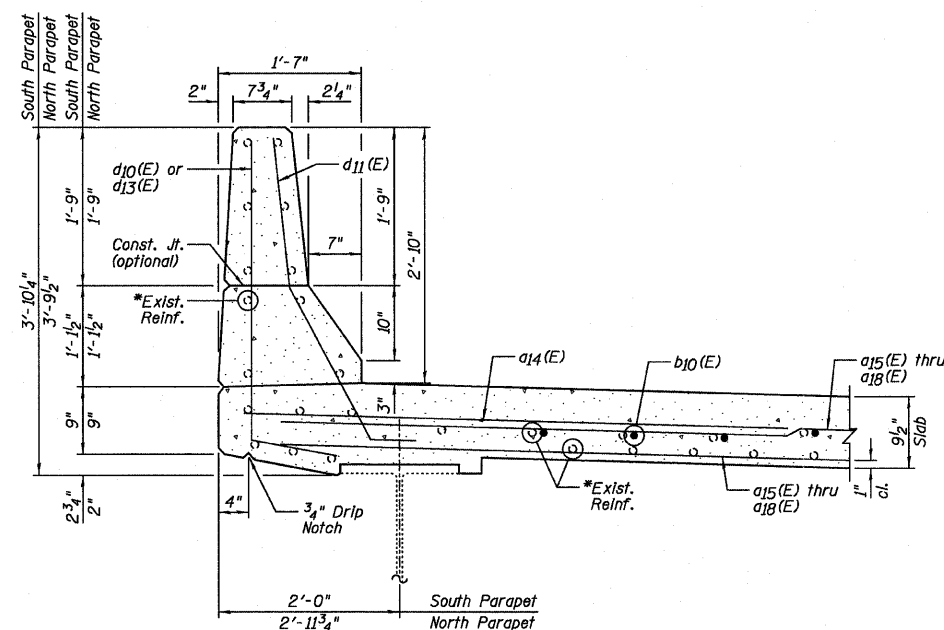
**d11(E) BAR**



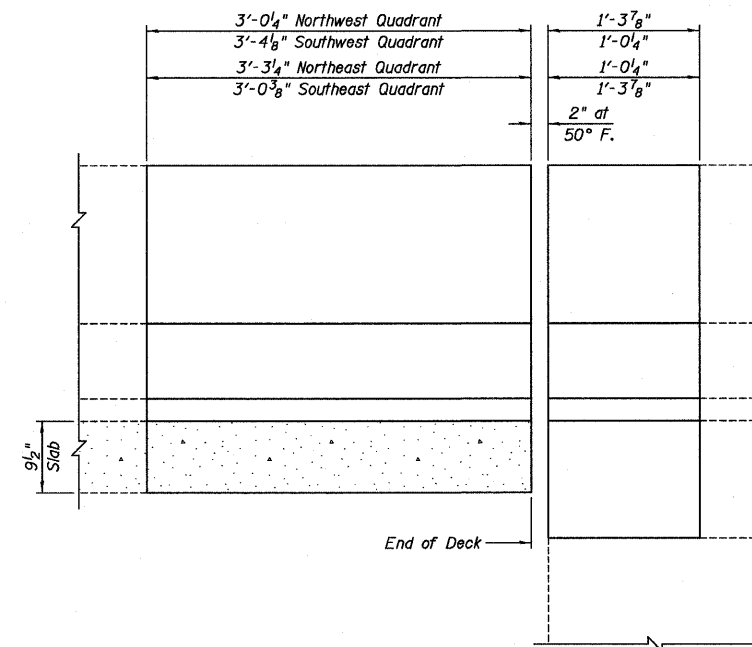
**u10(E) BAR**



**SECTION THRU WINGWALL**



**SECTION THRU PARAPET**



**INSIDE FACE PARAPET ELEVATION**  
(Dimensions measured along inside face of parapet)

**NOTES:**

- Hatched areas indicate concrete sections to be removed. Perimeters of concrete removal areas shall be saw cut 3/4" prior to the removal of the concrete.
- Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
- For location of Section A-A, see Sheet B13. For location of Section B-B, see Sheet B14.

**Farnsworth**  
GROUP, INC.  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/663-8435, 309/663-1571 fax

DESIGNED - JCZ  
CHECKED - JML  
DRAWN - DJM/JWK  
DATE - 12/05/11

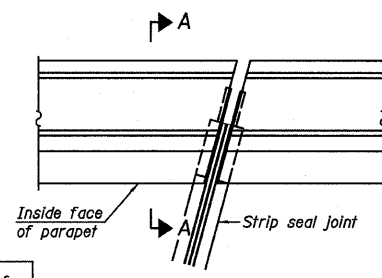
REVISOR  
REVISOR  
REVISOR  
REVISOR

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**EXPANSION JOINT REPLACEMENT DETAILS, WESTBOUND ROADWAY**  
**STRUCTURE NO. 082-0169 (E.B.)**  
**STRUCTURE NO. 082-0170 (W.B.)**

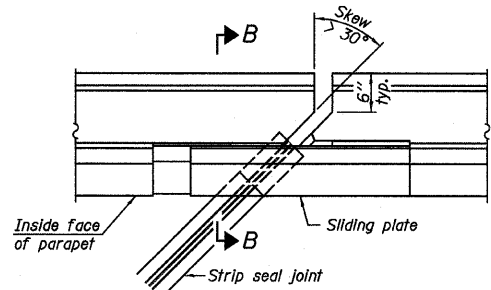
SHEET NO. B15 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	136
				CONTRACT NO. 76415
ILLINOIS FED. AID PROJECT				

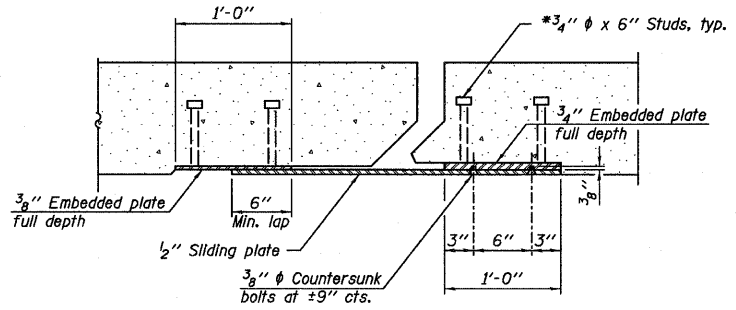


**PLAN**  
(For skews  $\leq 30^\circ$ )  
Showing point block

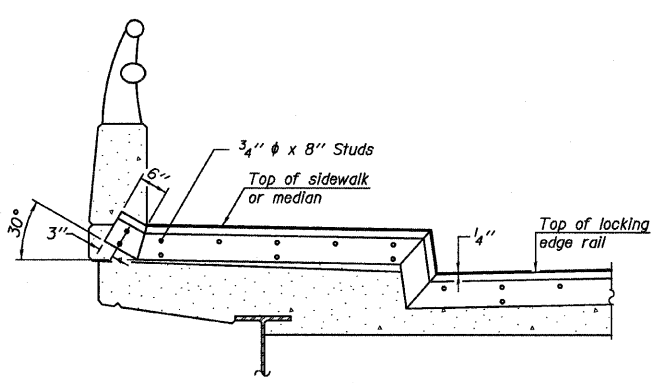
Modify end treatment of locking edge rails to match existing conditions



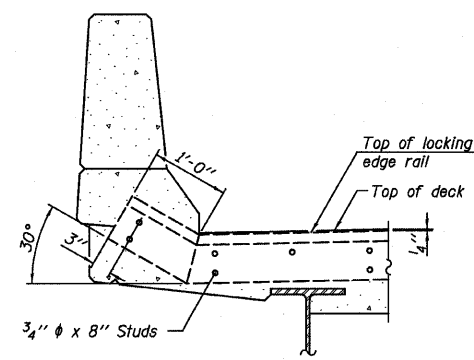
**PLAN**  
(For skews  $> 30^\circ$ )  
Showing point block



**SECTION C-C**

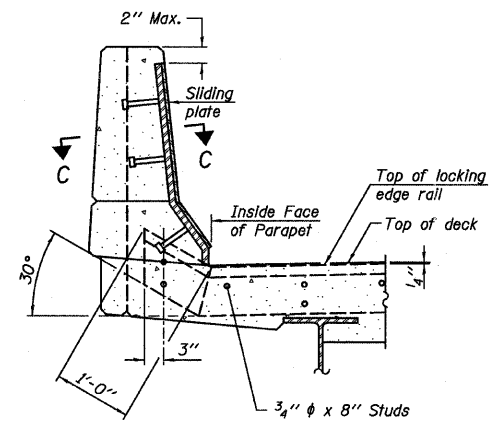


**TYPICAL END TREATMENT AT SIDEWALK OR MEDIAN**  
Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.

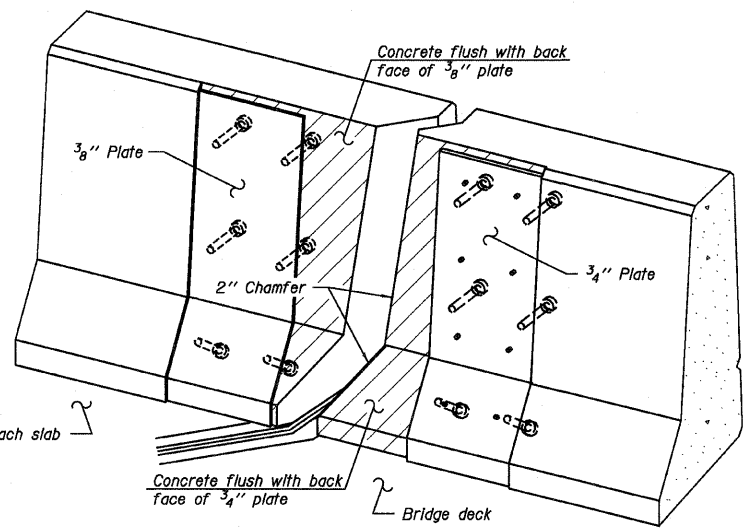


**SECTION A-A**

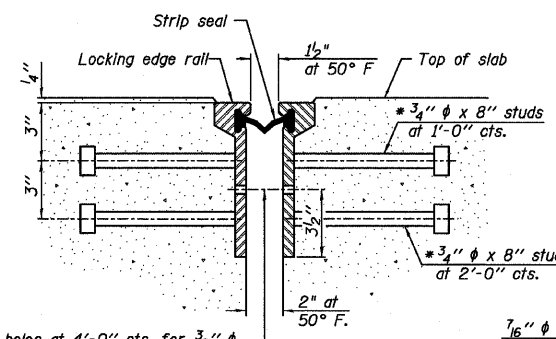
Modify end treatment of locking edge rails to match existing conditions



**SECTION B-B**

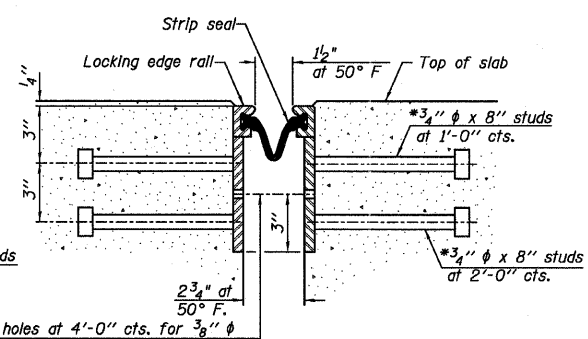


**TRIMETRIC VIEW**  
(Showing back plates only)



**SECTION THRU ROLLED RAIL JOINT**

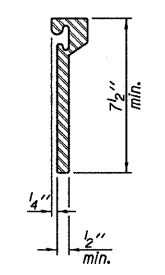
$7/16"$   $\phi$  holes at 4'-0" cts. for  $3/8"$   $\phi$  bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.



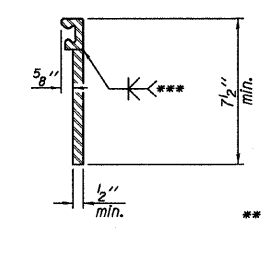
**SECTION THRU WELDED RAIL JOINT**

$7/16"$   $\phi$  holes at 4'-0" cts. for  $3/8"$   $\phi$  bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

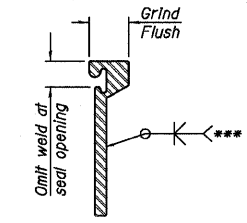
\* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



**ROLLED EXTRUDED RAIL**



**WELDED RAIL**



**LOCKING EDGE RAIL SPLICE**

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

**LOCKING EDGE RAILS**

**BILL OF MATERIAL**

ITEM	UNIT	082-0169	082-0170	TOTAL
Preformed Joint Strip Seal	Foot	281.5	214.5	496

EJ-SSJ

7-1-10

**Farnsworth GROUP, INC.**  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/663-8435, 309/663-1571 fax

DESIGNED - JCZ  
CHECKED - JML  
DRAWN - DJM/JWK  
DATE - 12/05/11  
CHECKED - MSW

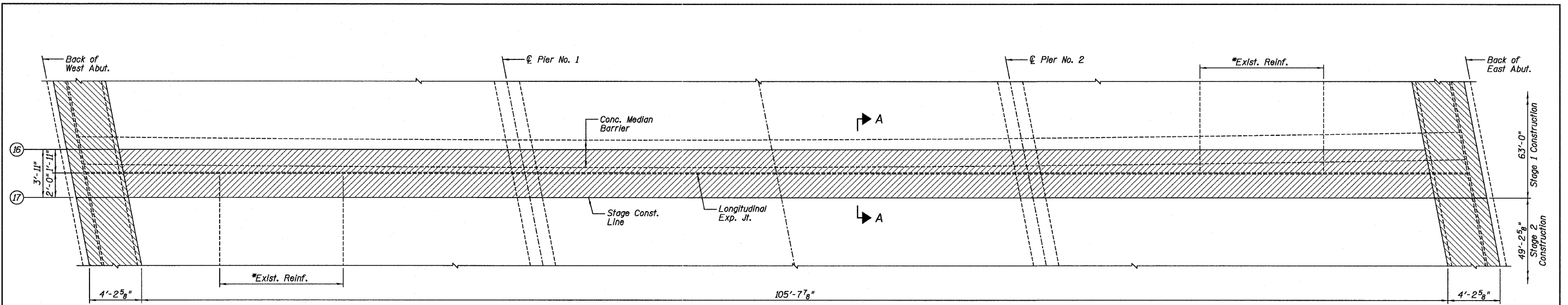
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REVISED  
REVISED  
REVISED

**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**

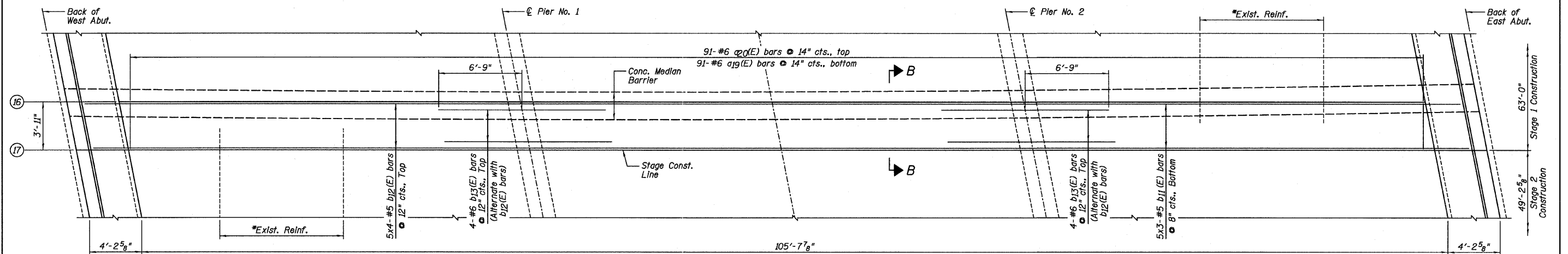
**PREFORMED JOINT STRIP SEAL STRUCTURE NO. 082-0169 (E.B.) STRUCTURE NO. 082-0170 (W.B.)**

F.A.I. RTE. 64 SECTION 82-13,4RS COUNTY ST. CLAIR TOTAL SHEETS 167 SHEET NO. 137 CONTRACT NO. 76415 ILLINOIS FED. AID PROJECT

SHEET NO. B16 OF 34 SHEETS



PARTIAL PLAN SHOWING CONCRETE REMOVAL



PARTIAL PLAN SHOWING CONCRETE REPLACEMENT



MIN. BAR LAP  
#5 - 2'-3"

LEGEND

- Longitudinal Expansion Joint Removal
- Expansion Joint Removal

NOTES:

- 1.) \*Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
- 2.) For Sections A-A and B-B, see Sheet B19.
- 3.) Bars indicated thus 5x4-#5 etc. Indicates 5 lines of bars with 4 lengths per line

**Farnsworth**  
GROUP, INC.  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/663-8435, 309/663-1571 fax

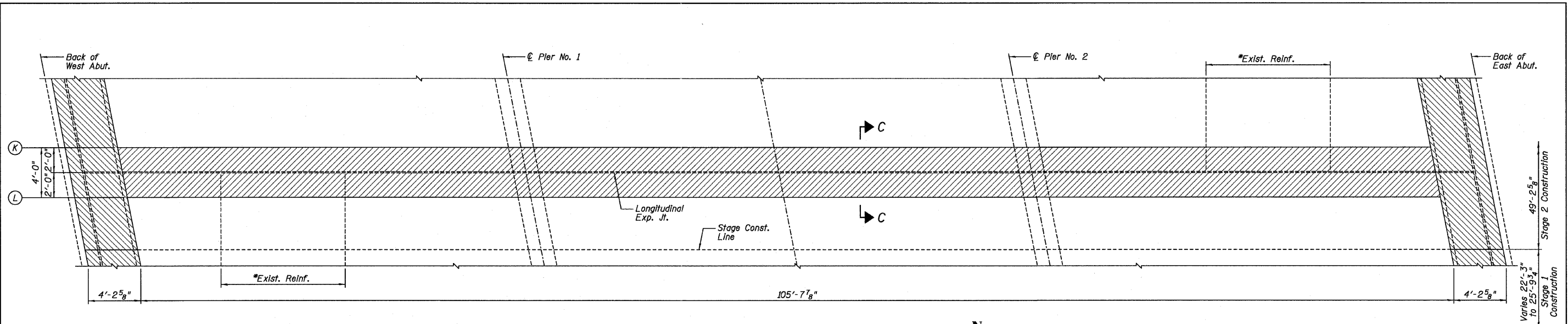
DESIGNED - JCZ	REVISÉ
CHECKED - JML	REVISÉ
DRAWN - DJM/JWK	REVISÉ
DATE - 12/05/11	CHECKED - MSW
	REVISÉ

DESIGNED - JCZ	REVISÉ
CHECKED - JML	REVISÉ
DRAWN - DJM/JWK	REVISÉ
DATE - 12/05/11	CHECKED - MSW
	REVISÉ

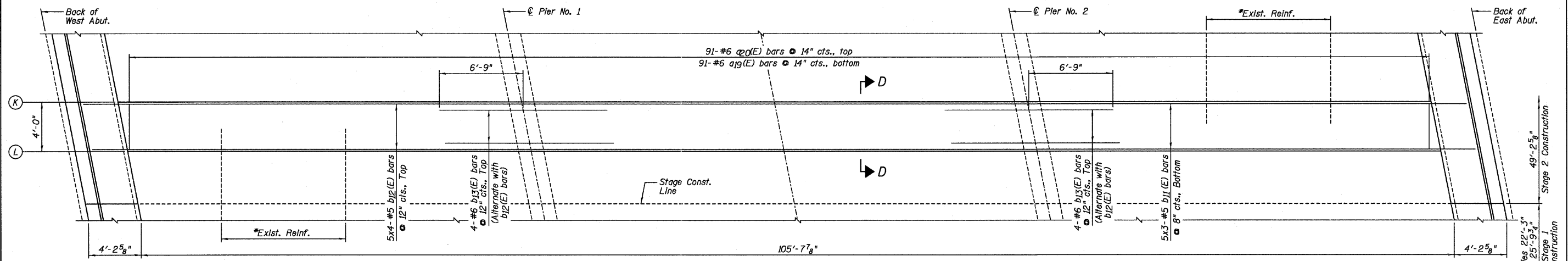
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

LONGITUDINAL JOINT CLOSURE DETAILS, EASTBOUND ROADWAY  
STRUCTURE NO. 082-0169 (E.B.)  
STRUCTURE NO. 082-0170 (W.B.)  
SHEET NO. B17 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	138
				CONTRACT NO. 76415
ILLINOIS FED. AID PROJECT				



PARTIAL PLAN SHOWING CONCRETE REMOVAL



PARTIAL PLAN SHOWING CONCRETE REPLACEMENT

MIN. BAR LAP  
#5 - 2'-3"

LEGEND

- Longitudinal Expansion Joint Removal
- Expansion Joint Removal

NOTES:

- 1.) \*Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
- 2.) For Sections C-C and D-D, see Sheet B19.
- 3.) Bars indicated thus 5x4-#5 etc. indicates 5 lines of bars with 4 lengths per line

**Farnsworth GROUP, INC.**  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/663-8435, 309/663-1571 fax

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CHECKED - JML	REVISED
DRAWN - DJM/JWK	REVISED
CHECKED - MSW	REVISED
DATE - 12/05/11	

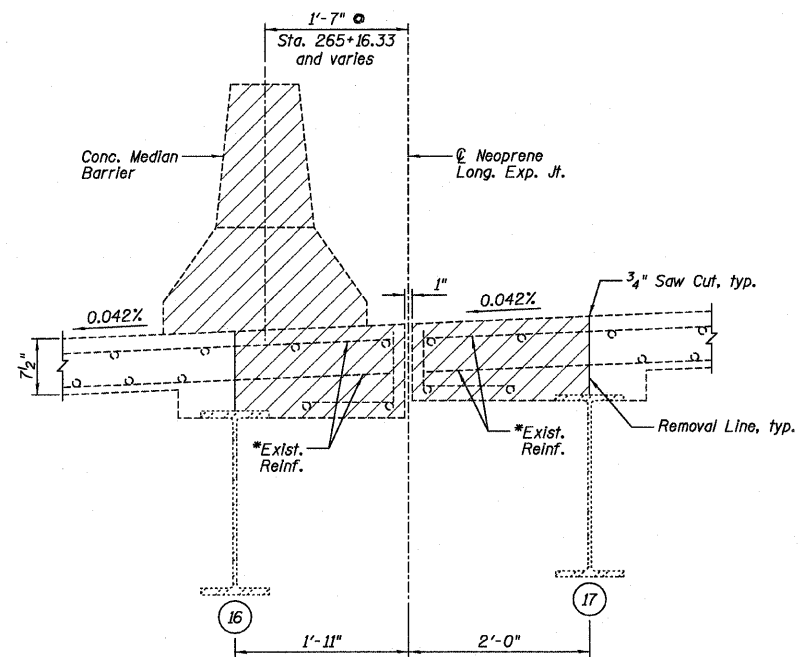
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

LONGITUDINAL JOINT CLOSURE DETAILS, EASTBOUND ROADWAY  
STRUCTURE NO. 082-0169 (E.B.)  
STRUCTURE NO. 082-0170 (W.B.)

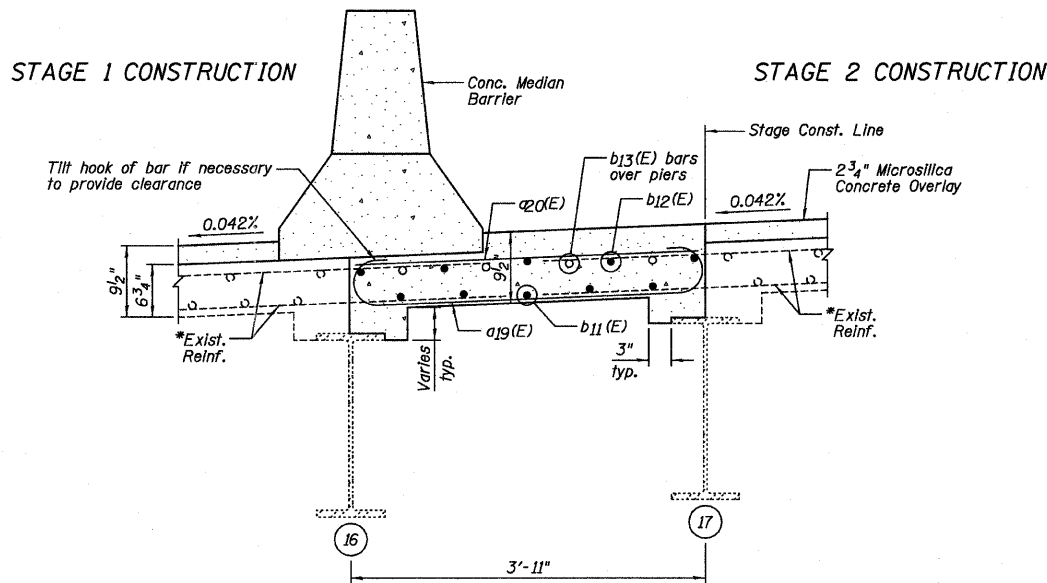
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	B2-(3,4)RS	ST. CLAIR	167	139
CONTRACT NO. 76415			ILLINOIS FED. AID PROJECT	

SHEET NO. B18 OF 34 SHEETS

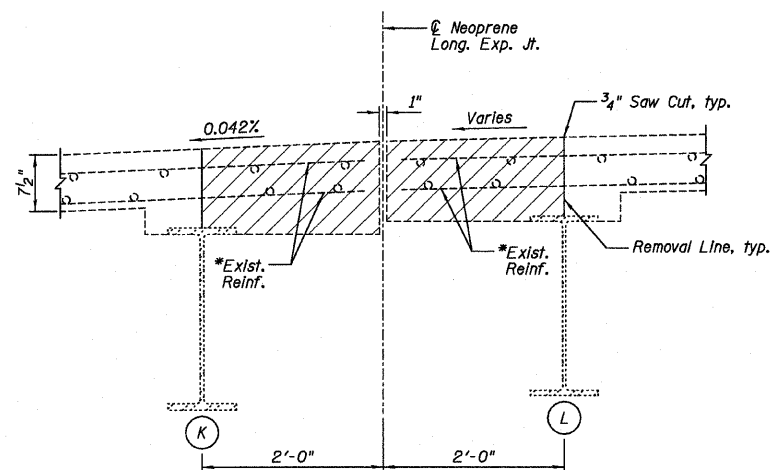




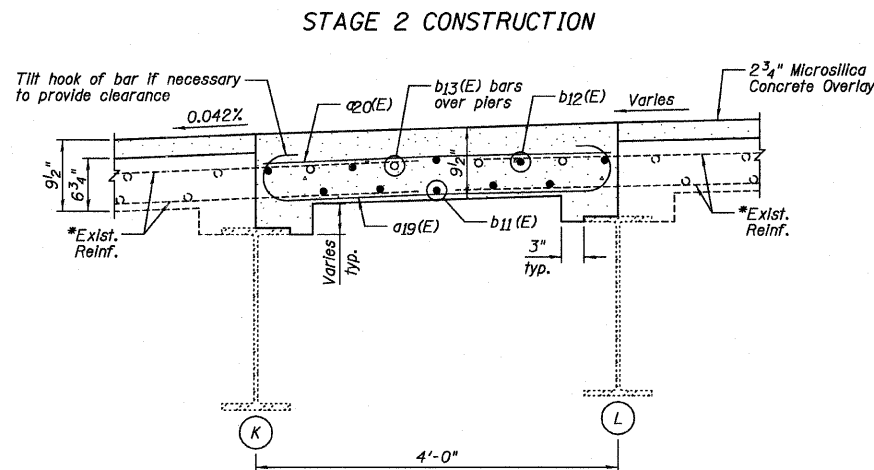
**SECTION A-A**  
(Horizontal Dimensions @ Rt. L's)  
(Existing 1/2" HMA Overlay & Waterproofing Membrane System not shown.)



**SECTION B-B**  
(Horizontal Dimensions @ Rt. L's)  
See Sheet B9 for Concrete Median Barrier Reinforcement)



**SECTION C-C**  
(Horizontal Dimensions @ Rt. L's)  
(Existing 1/2" HMA Overlay & Waterproofing Membrane System not shown.)

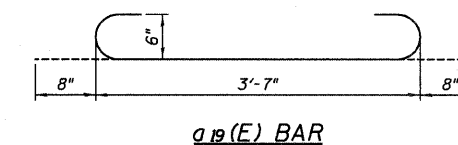


**SECTION D-D**  
(Horizontal Dimensions @ Rt. L's)

**TWO JOINT CLOSURES**  
**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a19(E)	182	#6	4'-11"	U
a20(E)	182	#6	3'-7"	U
b11(E)	30	#5	38'-7"	—
b12(E)	40	#5	29'-6"	—
b13(E)	16	#6	13'-6"	—
<b>Item</b>				
Concrete Removal			Cu. Yd.	26.5
Concrete Superstructure			Cu. Yd.	26.0
Reinforcement Bars, Epoxy Coated			Pound	5,090

Note: The quantities listed are for the Longitudinal Joint Closures only.



**NOTES:**

- Hatched areas indicate concrete sections to be removed. Perimeters of concrete removal areas shall be saw cut 3/4" prior to the removal of the concrete.
- Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
- For location of Sections A-A and B-B, see Sheet B17. For location of Sections C-C and D-D, see Sheet B18.
- For Median Barrier Details and Bill of Material, see Sheet B9.

**Farnsworth**  
GROUP, INC.  
2709 McGraw Drive  
Schaumburg, Illinois 61104  
309/963-8435, 309/963-1571 fax

DESIGNED - JCZ  
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DRAWN - DJM/JWK  
DATE - 12/05/11

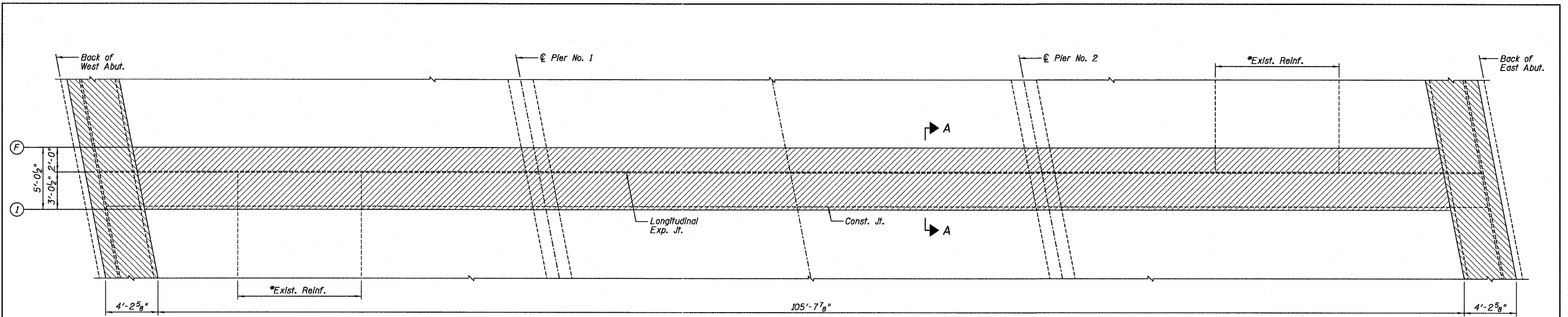
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**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

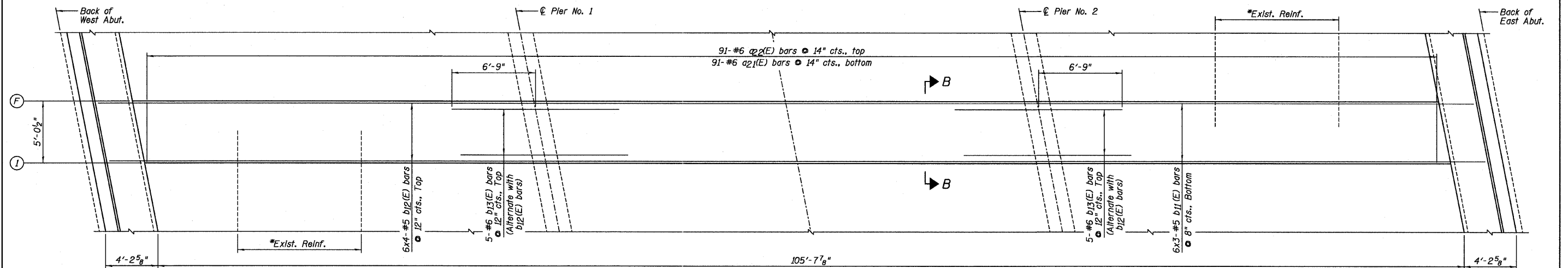
**LONGITUDINAL JOINT CLOSURE DETAILS, EASTBOUND ROADWAY**  
**STRUCTURE NO. 082-0169 (E.B.)**  
**STRUCTURE NO. 082-0170 (W.B.)**

SHEET NO. B19 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-03,41RS	ST. CLAIR	167	140
CONTRACT NO. 76415				
ILLINOIS FED. AID PROJECT				



PARTIAL PLAN SHOWING CONCRETE REMOVAL



PARTIAL PLAN SHOWING CONCRETE REPLACEMENT



MIN. BAR LAP  
#5 - 2'-3"

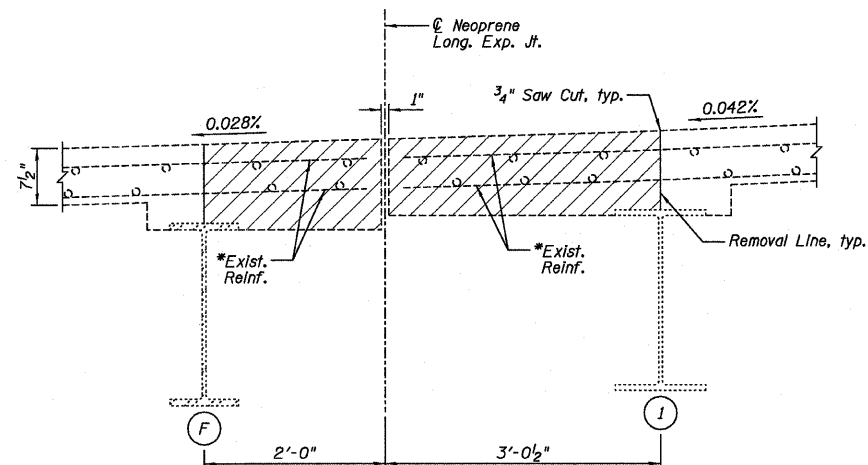
LEGEND

- Longitudinal Expansion Joint Removal
- Expansion Joint Removal

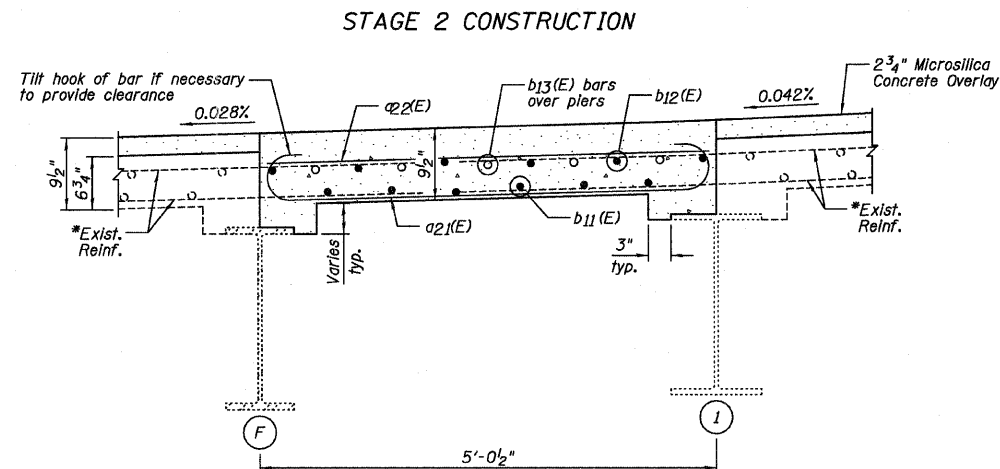
NOTES:

- 1.) \*Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
- 2.) For Sections A-A and B-B, see Sheet B21.

<b>Farnsworth</b> GROUP, INC. <small>2709 McGraw Drive Bloomington, Illinois 61704 309/663-8435, 309/663-1571 fax</small>	DESIGNED - JCZ	REVISED	<b>STATE OF ILLINOIS</b> DEPARTMENT OF TRANSPORTATION	<b>LONGITUDINAL JOINT CLOSURE DETAILS, WESTBOUND ROADWAY</b> STRUCTURE NO. 082-0169 (E.B.) STRUCTURE NO. 082-0170 (W.B.) SHEET NO. B20 OF 34 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	DATE - 12/05/11	CHECKED - JML			REVISED	64	82-(3,4)RS	ST. CLAIR	167
	DRAWN - DJM/JWK	REVISED	CONTRACT NO. 76415						
	CHECKED - MSW	REVISED	ILLINOIS FED. AID PROJECT						



**SECTION A-A**  
 (Horizontal Dimensions  $\bullet$  Rt. L's)  
 (Existing 1/2" HMA Overlay & Waterproofing Membrane System not shown.)

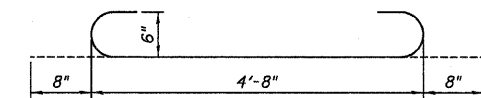


**SECTION B-B**  
 (Horizontal Dimensions  $\bullet$  Rt. L's)

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a21(E)	91	#6	6'-0"	
a22(E)	91	#6	4'-8"	
b11(E)	18	#5	38'-7"	
b12(E)	24	#5	29'-6"	
b13(E)	10	#6	13'-6"	
Item	Unit	Quantity		
Concrete Removal	Cu. Yd.	17.0		
Concrete Superstructure	Cu. Yd.	16.9		
Reinforcement Bars, Epoxy Coated	Pound	3,120		

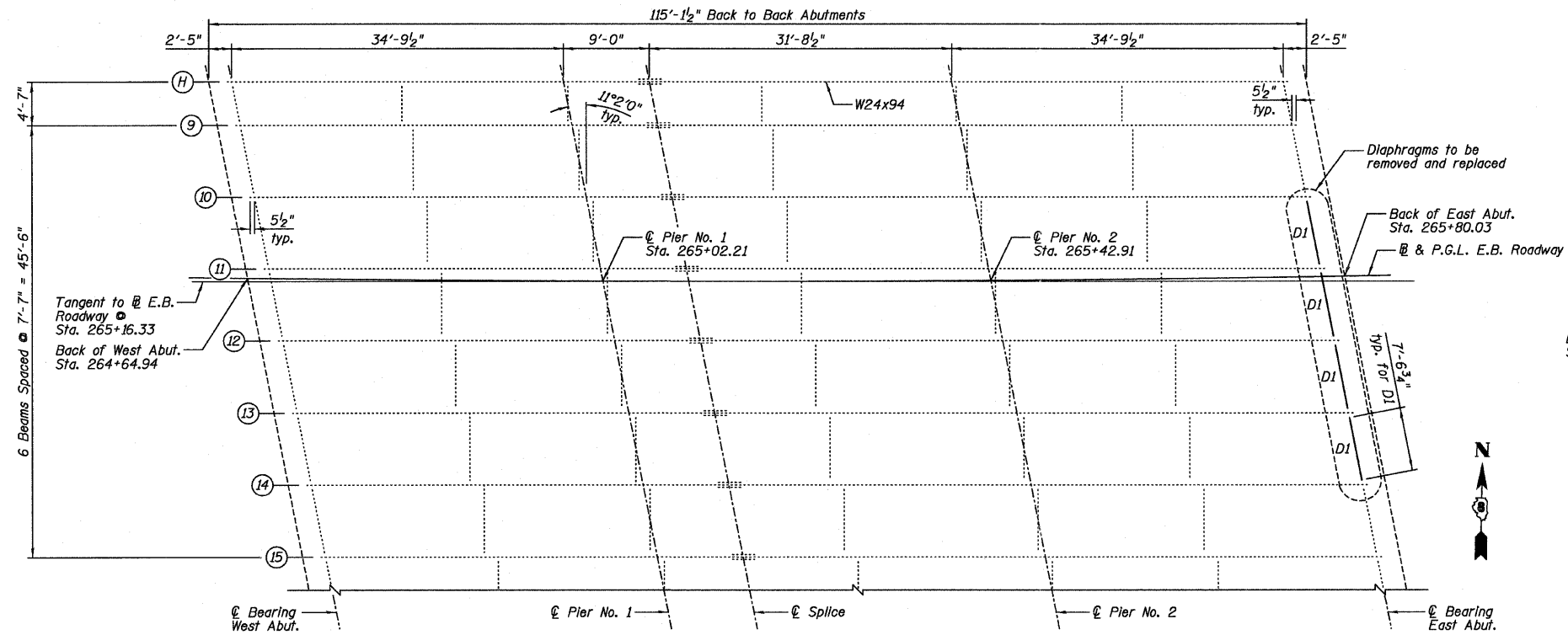
Note: The quantities listed are for the Longitudinal Joint Closure only.



**a21(E) BAR**

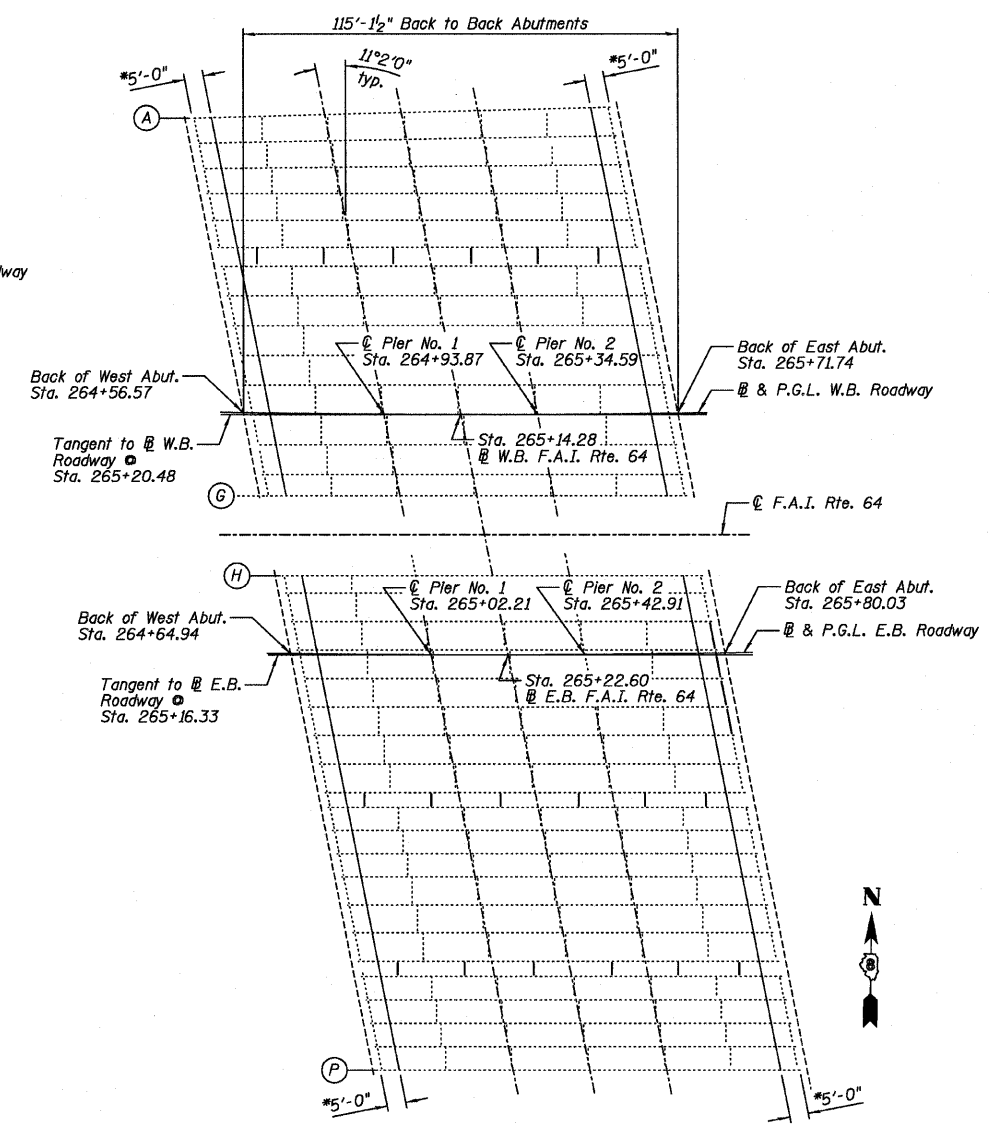
**NOTES:**

- Hatched areas indicate concrete sections to be removed. Perimeters of concrete removal areas shall be saw cut 3/4" prior to the removal of the concrete.
- Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.
- For location of Sections A-A and B-B, see Sheet B20.

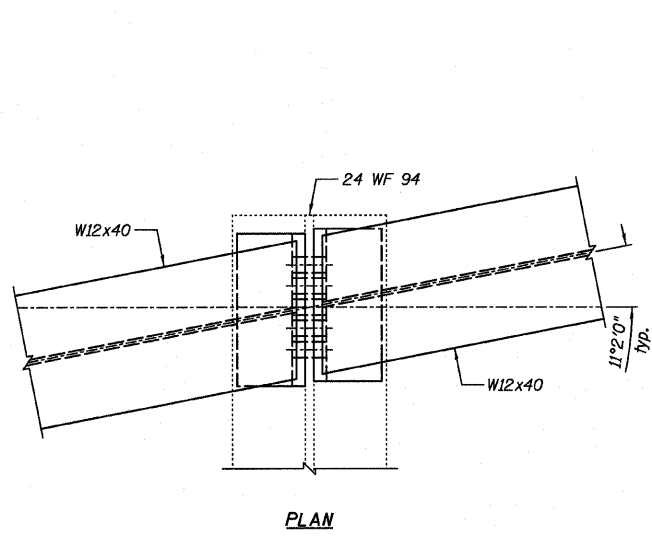


**PARTIAL PLAN - EASTBOUND ROADWAY**  
(Stage 1 Construction)

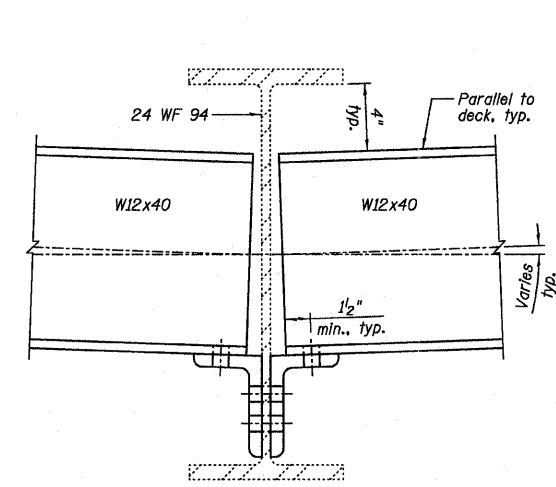
Note: All beams are 24 WF 94 unless noted otherwise.



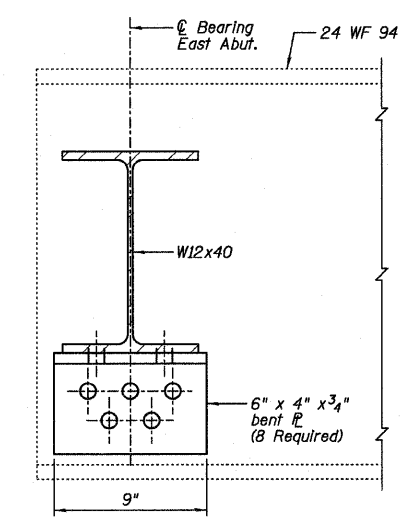
**PLAN**



**PLAN**



**ELEVATION**



**SECTION**

**DIAPHRAGM D1**  
(4 - Required)

**NOTES:**

- 1.) Detail 5/16"  $\phi$  holes for all 3/4"  $\phi$  bolts.
- 2.) Two hardened washers shall be required for each set of oversized holes.
- 3.) For existing to proposed connection, match existing bolt holes. The Contractor shall provide connection details for all existing to proposed connections per the existing shop drawings.

**BILL OF MATERIAL**

ITEM	UNIT	082-0169	082-0170	TOTAL
Furnishing and Erecting Structural Steel	Pound	2,900	980	3,880
Structural Steel Removal	Pound	1,280		1,280

**NOTES:**

- 1.) \*Limits of Cleaning and Painting Structural Steel.
- 2.) Clean and paint each beam end, along with the end diaphragms. See General Note 10 on Sheet B2.
- 3.) For Cleaning and Painting Structural Steel, the West Abutments are combined for Location 1, and the East Abutments are combined for Location 2.

**Farnsworth GROUP, INC.**  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/853-8435, 309/853-1571 fax

DESIGNED - JCZ  
CHECKED - JML  
DRAWN - DJM/JWK  
DATE - 12/05/11  
CHECKED - MSW

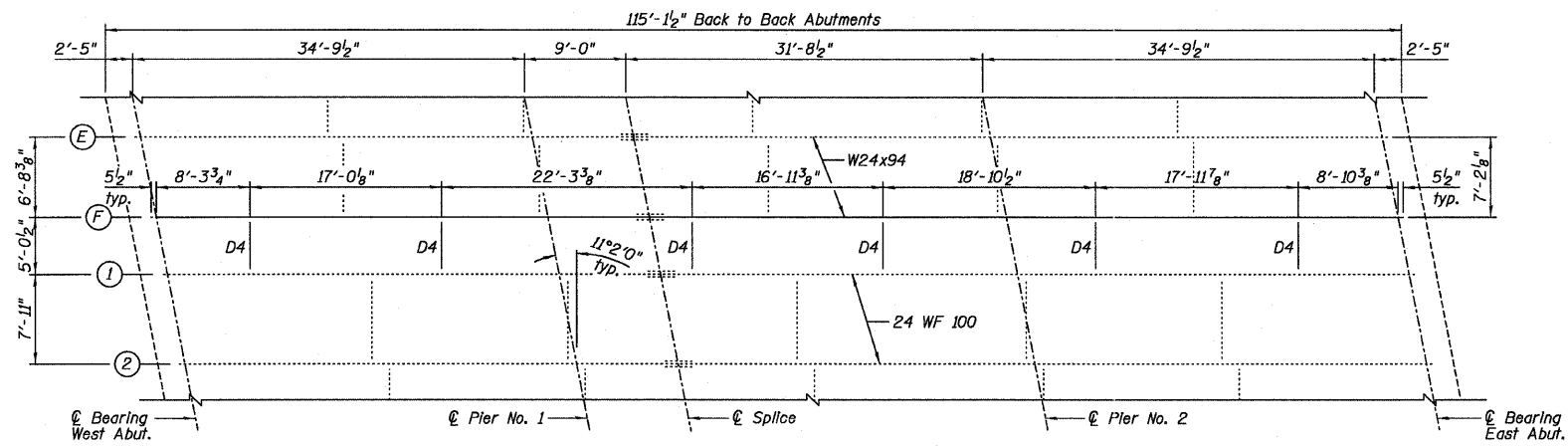
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**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**

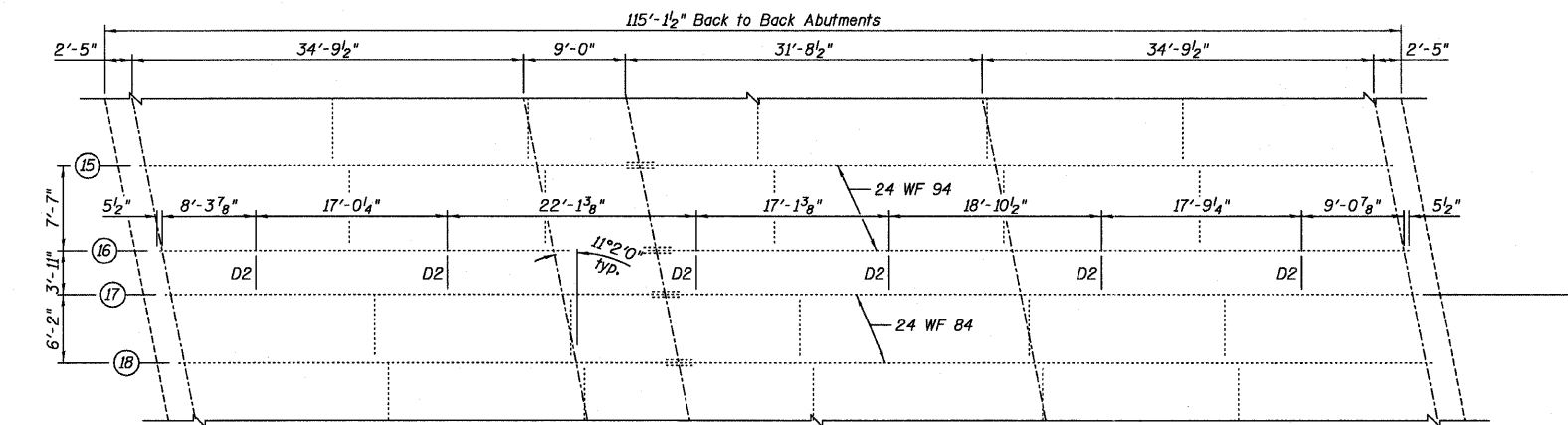
**STRUCTURAL STEEL STRUCTURE NO. 082-0169 (E.B.) STRUCTURE NO. 082-0170 (W.B.)**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	143
CONTRACT NO. 76415				
ILLINOIS FED. AID PROJECT				

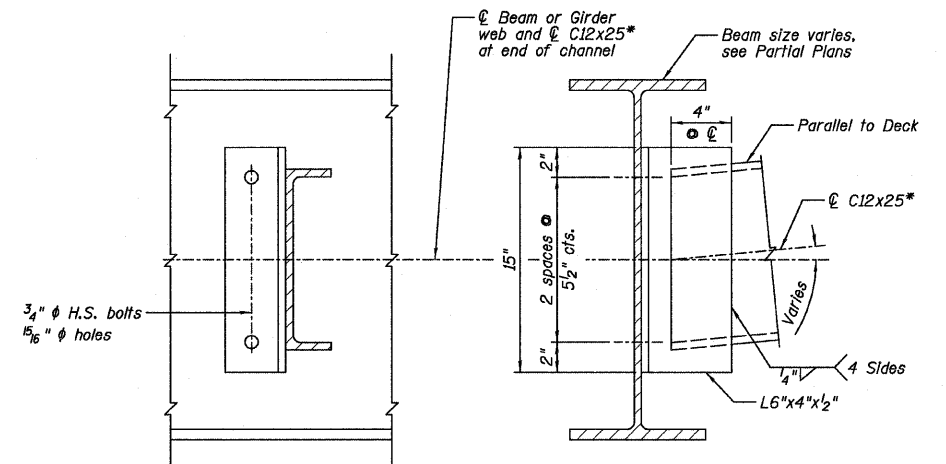
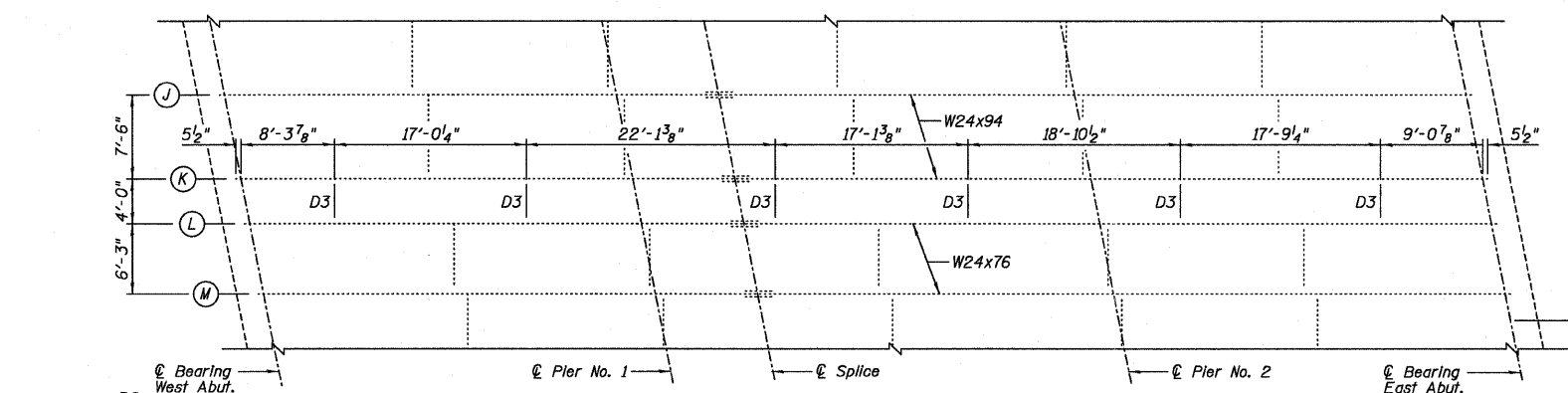
SHEET NO. B22 OF 34 SHEETS



**PARTIAL PLAN - WESTBOUND ROADWAY**  
(Stage 2 Construction)



**PARTIAL PLAN - EASTBOUND ROADWAY**  
(\*\*Dimension to face of parapet)



**INTERIOR DIAPHRAGMS - D2, D3, D4**  
(6 - Required, Each)

**NOTES:**

- 1.) Detail 5/8"  $\phi$  holes for all 3/4"  $\phi$  bolts
- 2.) Two hardened washers shall be required for each set of oversized holes.
- 3.) For Bill of Material, see Sheet B22.
- 4.) Install new diaphragms before pouring the Longitudinal Joint Closure at each location (see Sheets B17 - B21). Alternate channels are permitted to facilitate material acquisition.
- 5.) \* Calculated weight of structural steel is based on the lighter section. The alternate, if utilized, shall be provided at no extra cost to the Department. Either channel section C12x25 or C12x30 is acceptable for the interior diaphragms

**Farnsworth**  
GROUP, INC.  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/663-8436, 309/663-1571 fax

DESIGNED - JCZ  
CHECKED - JML  
DRAWN - DJM/JWK  
DATE - 12/05/11

REVISÉ  
REVISÉ  
REVISÉ  
REVISÉ

DESIGNED - JCZ  
CHECKED - MSW

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

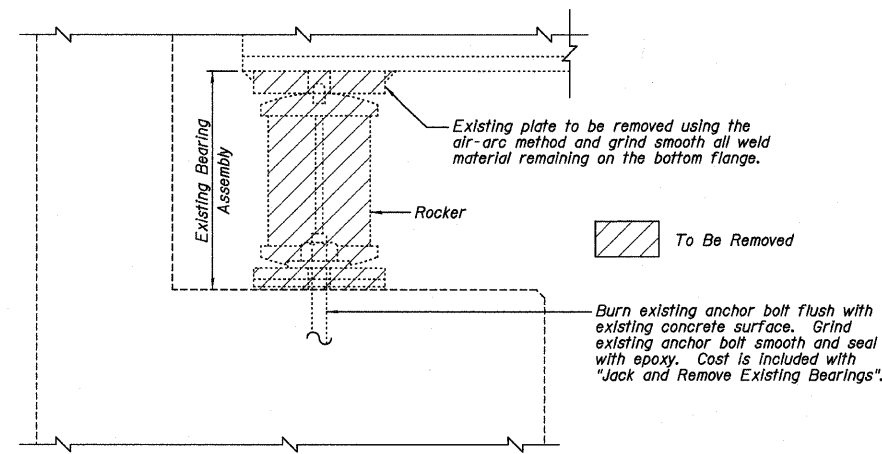
**STRUCTURAL STEEL**  
**STRUCTURE NO. 082-0169 (E.B.)**  
**STRUCTURE NO. 082-0170 (W.B.)**

SHEET NO. B22A OF 34 SHEETS

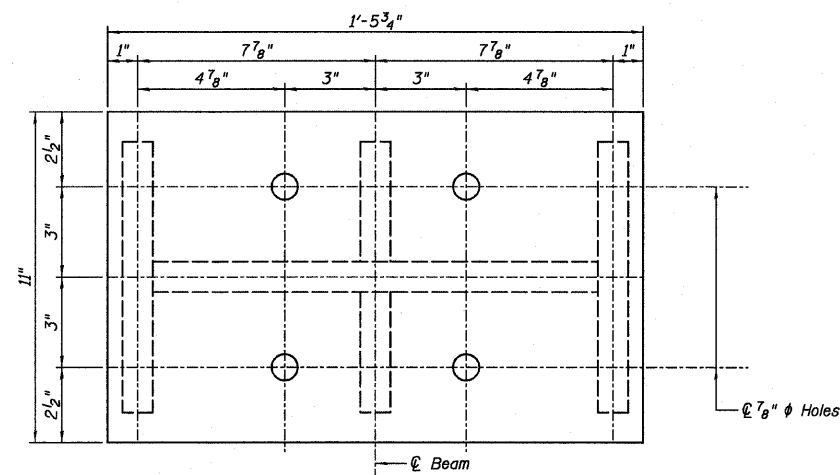
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	143A
				CONTRACT NO. 76415
ILLINOIS FED. AID PROJECT				

	Abutments	Piers
RP (k)	17	52
R <sub>L</sub> (k)	34	45
Imp. (k)	10	13
R total (k)	61	110

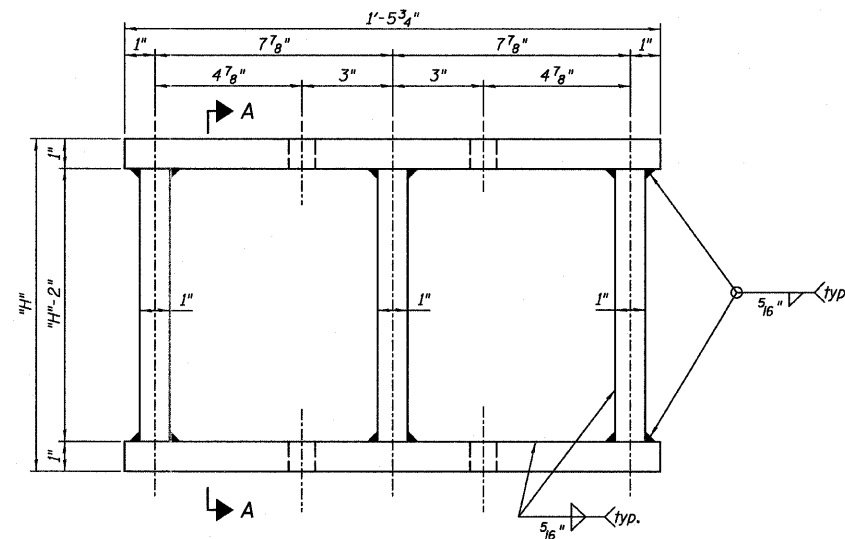
	Abutments	Piers
RP (k)	17	52
R <sub>L</sub> (k)	36	47
Imp. (k)	11	14
R total (k)	64	113



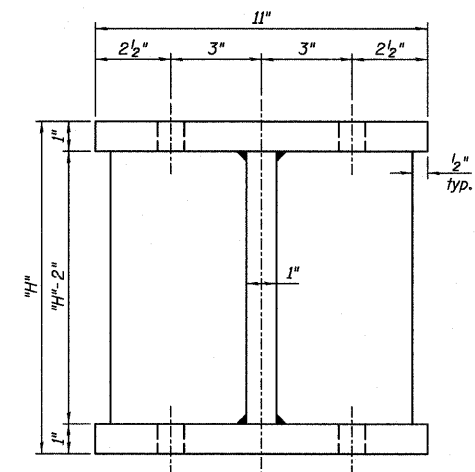
EXISTING BEARING REMOVAL DETAIL



PLAN STEEL EXTENSION



ELEVATION STEEL EXTENSION



SECTION A-A

Beam No.	West Abut.	Pier No. 2	East Abut.
A-F	10 5/16"	9 1/16"	8 9/16"
I-B	10 5/16"	9 7/16"	8 9/16"
G-H	10 5/16"	9 1/16"	8 9/16"
9-20	10 5/16"	9 1/16"	8 9/16"
I-P	10 5/16"	9 1/16"	8 9/16"

BILL OF MATERIAL

ITEM	UNIT	082-0169	082-0170	TOTAL
Furnishing and Erecting Structural Steel	Pound	12,650	9,080	21,730
Jack And Remove Existing Bearings	Each	63	45	108

NOTES:

- 1.) Prior to ordering any material, the Contractor shall verify in the field all bearing heights and shim thickness dimensions.
- 2.) For location of Steel Extensions see Sheets B24 thru B26.

**Farnsworth**  
GROUP, INC.  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/663-8435, 309/663-1571 fax

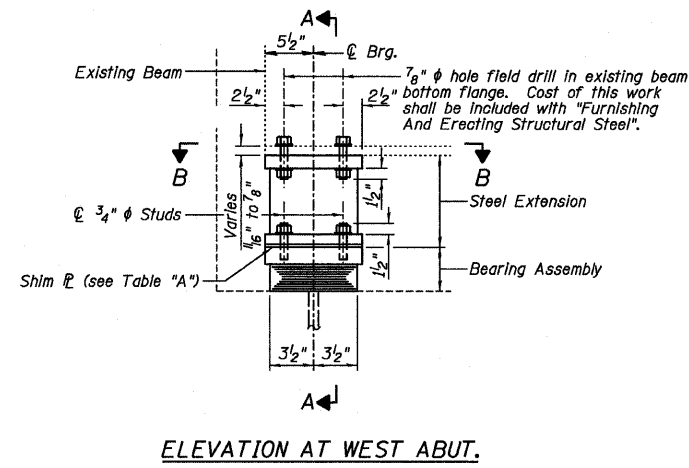
DESIGNED - JCZ	REVISED
CHECKED - JML	REVISED
DRAWN - DJM/JWK	REVISED
DATE - 12/05/11	CHECKED - MSW
	REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BEARING DETAILS AND NOTES  
STRUCTURE NO. 082-0169 (E.B.)  
STRUCTURE NO. 082-0170 (W.B.)

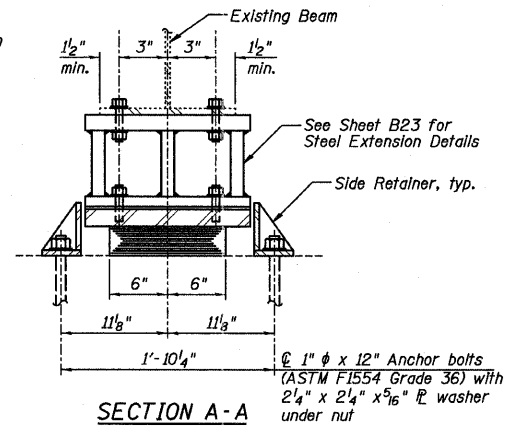
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	144
CONTRACT NO. 76415				
ILLINOIS FED. AID PROJECT				

SHEET NO. B23 OF 34 SHEETS

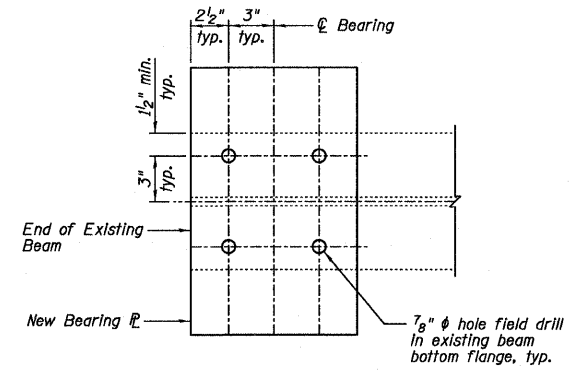


ELEVATION AT WEST ABUT.

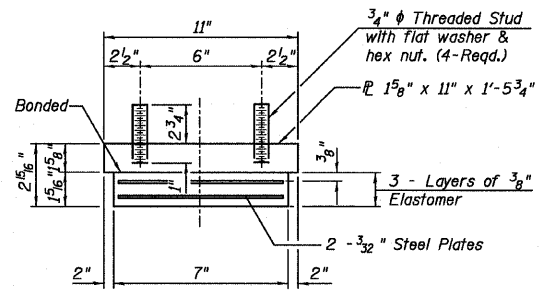
TYPE I ELASTOMERIC EXP. BRG.



SECTION A-A



PLAN VIEW B-B

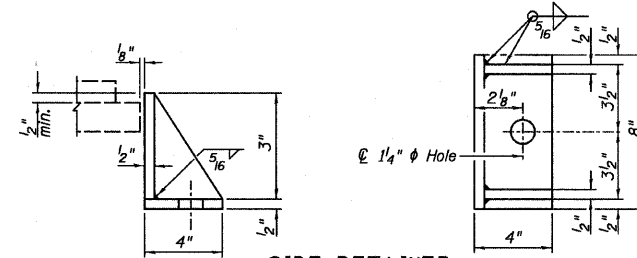


BEARING ASSEMBLY

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

TABLE "A"

Beam No.	Shim Thickness
1-8	1/8"



SIDE RETAINER

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

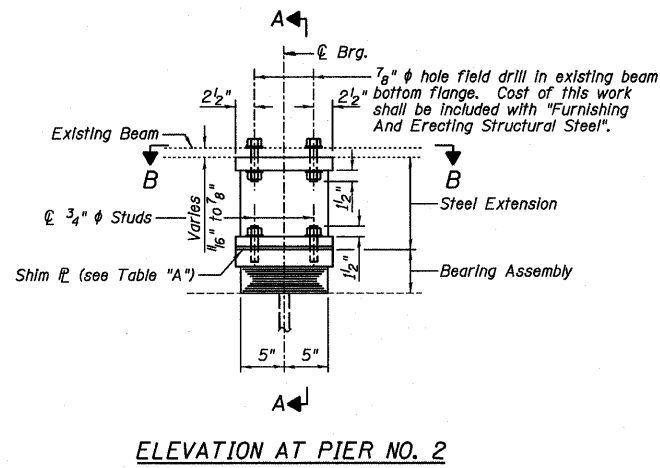
BILL OF MATERIAL

ITEM	UNIT	082-0169	082-0170	TOTAL
Furnishing and Erecting Structural Steel	Pound	360	290	650
Anchor Bolts, 1"	Each	42	30	72
Elastomeric Bearing Assembly, Type I	Each	21	15	36

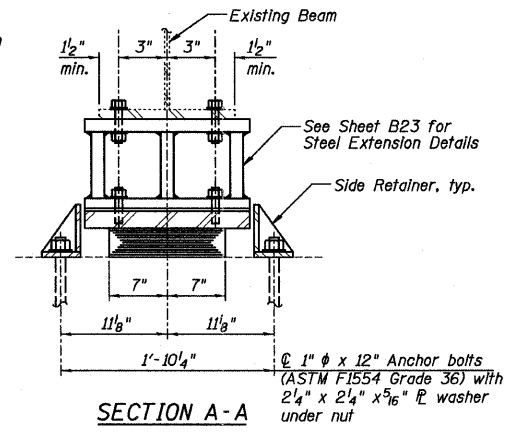
Notes:  
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.  
Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.

NOTES:

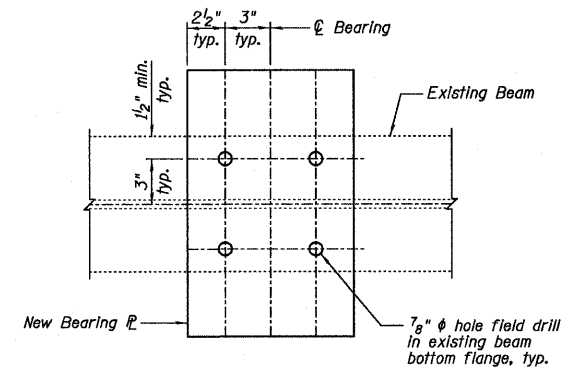
- Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
- See Special Provisions for Jacking and Removing procedures for existing bearings.
- Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.
- Steel extensions, shim ℓ and connection bolts shall be paid for as "Furnishing and Erecting Structural Steel". For steel extensions, see Bill of Material on Sheet B23.
- Minimum Jack capacity = 48 tons.



ELEVATION AT PIER NO. 2

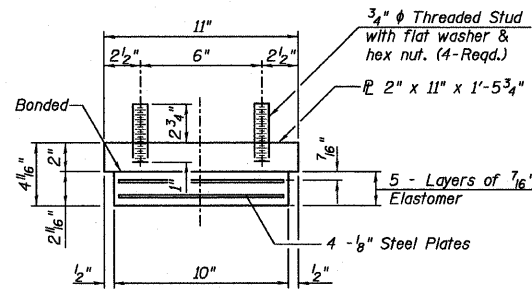


SECTION A-A



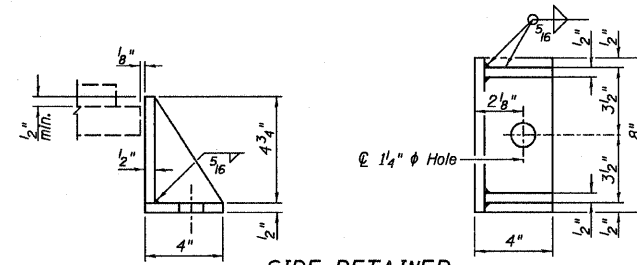
PLAN VIEW B-B

TYPE I ELASTOMERIC EXP. BRG.



BEARING ASSEMBLY

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



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

Notes:  
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.  
Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.

TABLE "A"

Beam No.	Shim Thickness
A-F	$1/8$ "
G-H	$3/8$ "
9-20	$1/2$ "
I-K	$3/4$ "

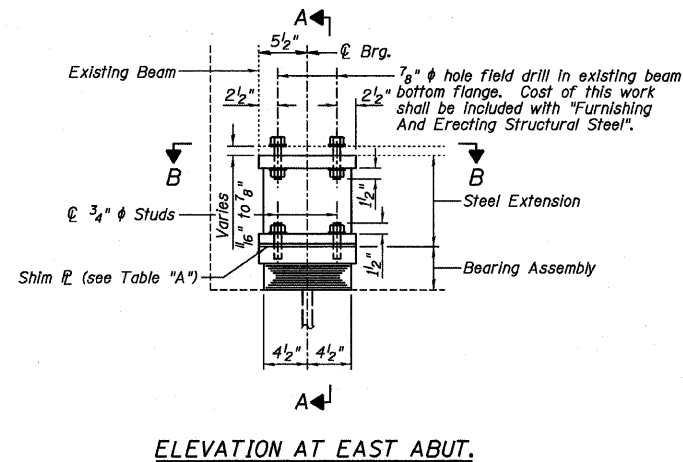
BILL OF MATERIAL

ITEM	UNIT	082-0169	082-0170	TOTAL
Furnishing and Erecting Structural Steel	Pound	440	290	730
Anchor Bolts, 1"	Each	42	30	72
Elastomeric Bearing Assembly, Type I	Each	21	15	36

NOTES:

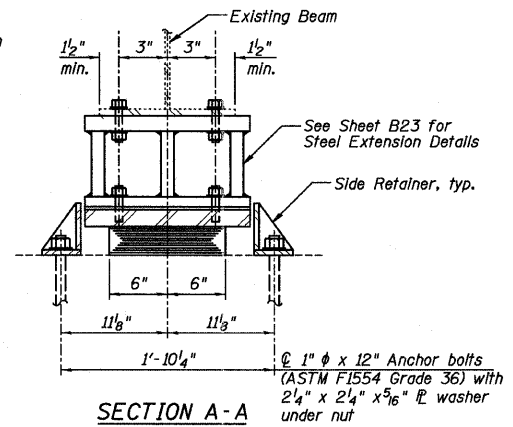
- Two  $1/8$  in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
- See Special Provisions for Jacking and Removing procedures for existing bearings.
- Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.
- Steel extensions, shim  $\ell$  and connection bolts shall be paid for as "Furnishing and Erecting Structural Steel". For steel extensions, see Bill of Material on Sheet B23.
- Minimum Jack capacity = 85 tons.



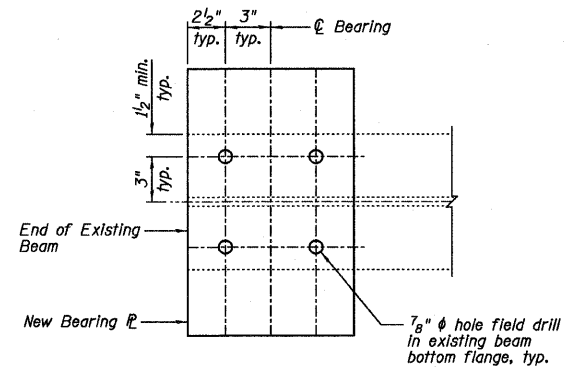


ELEVATION AT EAST ABUT.

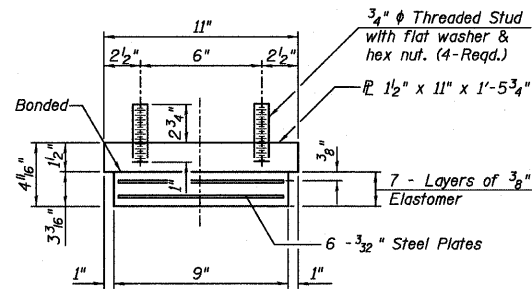
TYPE I ELASTOMERIC EXP. BRG.



SECTION A-A

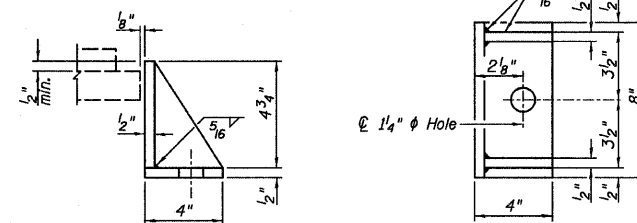


PLAN VIEW B-B



BEARING ASSEMBLY

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



SIDE RETAINER

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

Notes:  
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.  
Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.

TABLE "A"

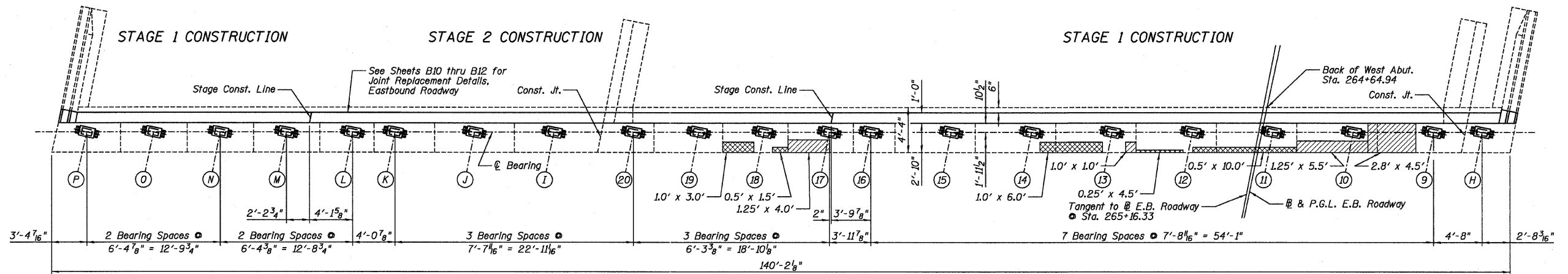
Beam No.	Shim Thickness
1-8	1/8"

BILL OF MATERIAL

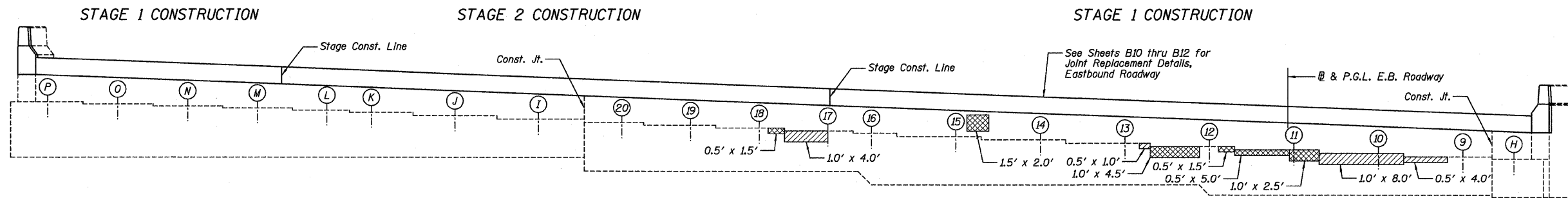
ITEM	UNIT	082-0169	082-0170	TOTAL
Furnishing and Erecting Structural Steel	Pound	360	300	660
Anchor Bolts, 1"	Each	42	30	72
Elastomeric Bearing Assembly, Type I	Each	21	15	36

NOTES:

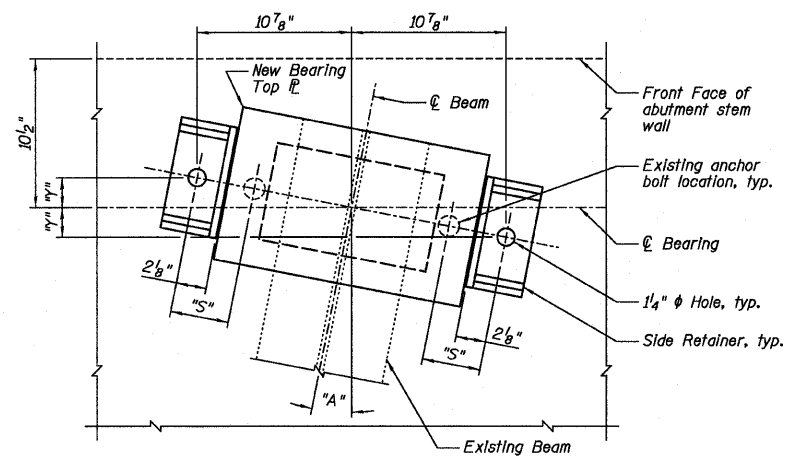
- Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
- See Special Provisions for Jacking and Removing procedures for existing bearings.
- Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.
- Steel extensions, shim  $\bar{E}$  and connection bolts shall be paid for as "Furnishing and Erecting Structural Steel". For steel extensions, see Bill of Material on Sheet B23.
- Minimum Jack capacity = 48 tons.



TOP VIEW



ELEVATION



BEARING PLAN AT ABUTMENT

Beam No.	Angle		Dimension	
	"A"	"S"	"x"	"y"
H	11°02'00"	4 <sup>1</sup> / <sub>8</sub> "	2 <sup>1</sup> / <sub>8</sub> "	
9-20	11°02'00"	4 <sup>1</sup> / <sub>8</sub> "	2 <sup>1</sup> / <sub>8</sub> "	
I-M	11°02'00"	4 <sup>1</sup> / <sub>8</sub> "	2 <sup>1</sup> / <sub>8</sub> "	
N	11°02'00"	2 <sup>1</sup> / <sub>4</sub> "	2 <sup>1</sup> / <sub>8</sub> "	
O	11°56'22"	2 <sup>1</sup> / <sub>4</sub> "	2 <sup>1</sup> / <sub>4</sub> "	
P	12°50'23"	2 <sup>1</sup> / <sub>4</sub> "	2 <sup>1</sup> / <sub>2</sub> "	

**LEGEND**

	Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)
	Structural Repair of Concrete (Depth Greater than 5 Inches)

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	30
Structural Repair of Concrete (Depth Greater than 5 Inches)	Sq. Ft.	39

**Farnsworth GROUP, INC.**  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/663-8435, 309/663-1571 fax

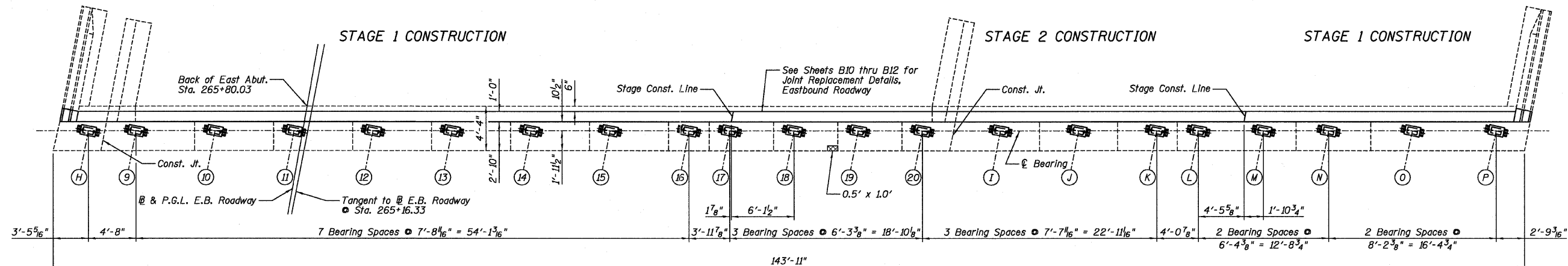
DESIGNED - JCZ	REVISION
CHECKED - JML	REVISION
DRAWN - DJM/JWK	REVISION
DATE - 12/05/11	REVISION
CHECKED - MSW	REVISION

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

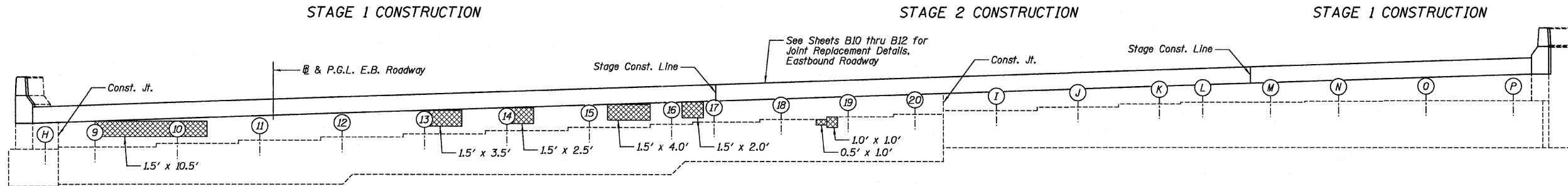
WEST ABUTMENT, EASTBOUND ROADWAY  
STRUCTURE NO. 082-0169 (E.B.)  
STRUCTURE NO. 082-0170 (W.B.)

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	148
CONTRACT NO. 76415				
ILLINOIS FED. AID PROJECT				

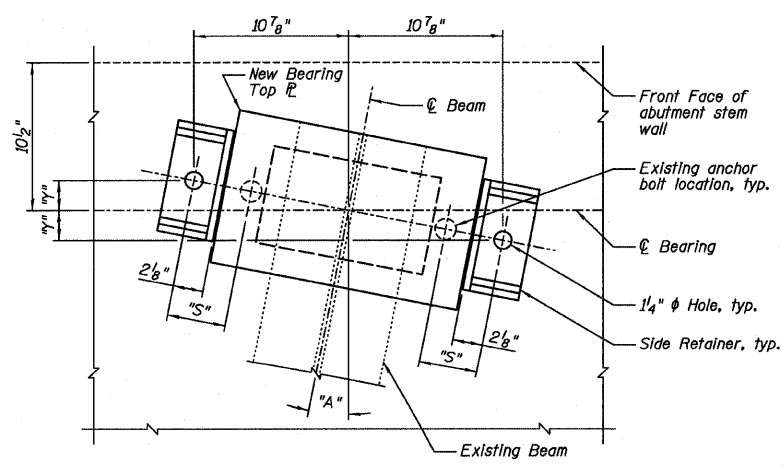
SHEET NO. B27 OF 34 SHEETS



TOP VIEW



ELEVATION



BEARING PLAN AT ABUTMENT

Beam No.	Angle		Dimension	
	"A"	"S"	"S"	"R"
H	11°02'00"	4 1/8"	2 1/8"	2 1/8"
9-20	11°02'00"	4 1/8"	2 1/8"	2 1/8"
I-M	11°02'00"	4 1/8"	2 1/8"	2 1/8"
N	11°02'00"	2 1/4"	2 1/8"	2 1/8"
O	11°56'22"	2 1/4"	2 1/4"	2 1/4"
P	12°50'23"	2 1/4"	2 1/2"	2 1/2"

**LEGEND**  
 Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	36

**Farnsworth GROUP, INC.**  
 2709 McCraw Drive  
 Bloomington, Illinois 61704  
 309/663-8436, 309/663-1571 fax

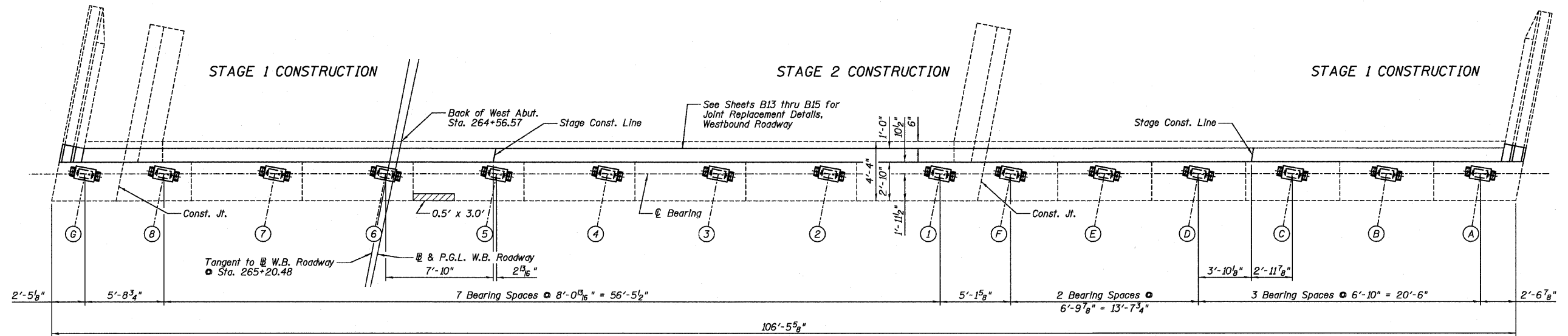
DESIGNED - JCZ  
 CHECKED - JML  
 DRAWN - DJM/JWK  
 DATE - 12/05/11

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 REVISED

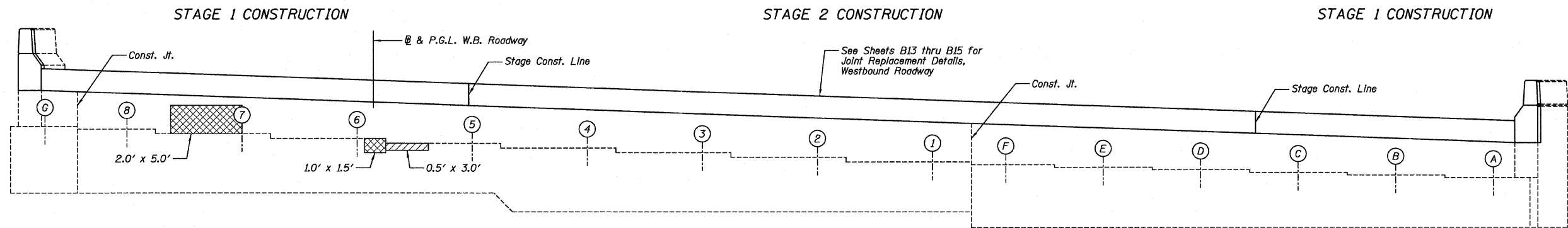
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**EAST ABUTMENT, EASTBOUND ROADWAY**  
**STRUCTURE NO. 082-0169 (E.B.)**  
**STRUCTURE NO. 082-0170 (W.B.)**  
 SHEET NO. B28 OF 34 SHEETS

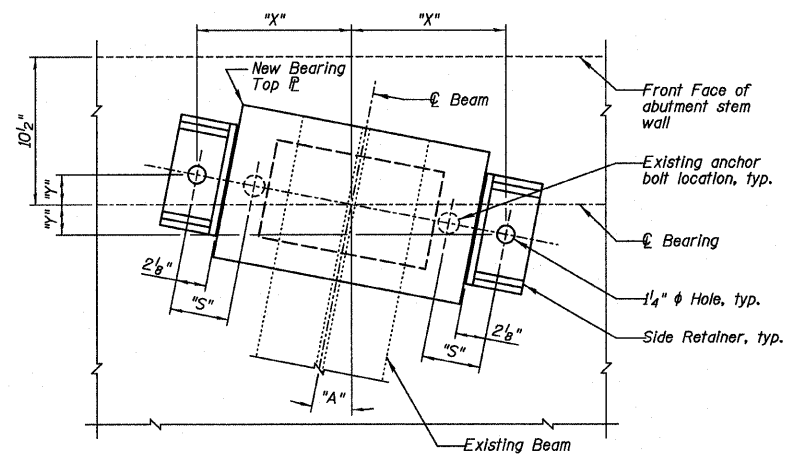
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	149
				CONTRACT NO. 76415
ILLINOIS FED. AID PROJECT				



TOP VIEW



ELEVATION



BEARING PLAN AT ABUTMENT

Beam No.	Angle	Dimension		
	"A"	"S"	"X"	"Y"
A	09°01'45"	4 1/8"	11"	1 3/8"
B	09°31'57"	4 1/8"	11"	1 15/16"
C	10°02'03"	4 1/8"	10 15/16"	1 15/16"
D	10°32'05"	4 1/8"	10 15/16"	2 1/8"
E	10°47'03"	4 1/8"	10 15/16"	2 1/8"
F	11°02'00"	4 1/8"	10 15/16"	2 1/8"
I-B	11°02'00"	2 5/8"	10 15/16"	2 1/8"
G	11°02'00"	4 1/8"	10 15/16"	2 1/8"

LEGEND

- Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)
- Structural Repair of Concrete (Depth Greater than 5 Inches)

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	12
Structural Repair of Concrete (Depth Greater than 5 Inches)	Sq. Ft.	3

**Farnsworth**  
GROUP, INC.  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/663-8435, 309/663-1571 fax

DESIGNED - JCZ  
CHECKED - JML  
DRAWN - DJM/JWK  
DATE - 12/05/11

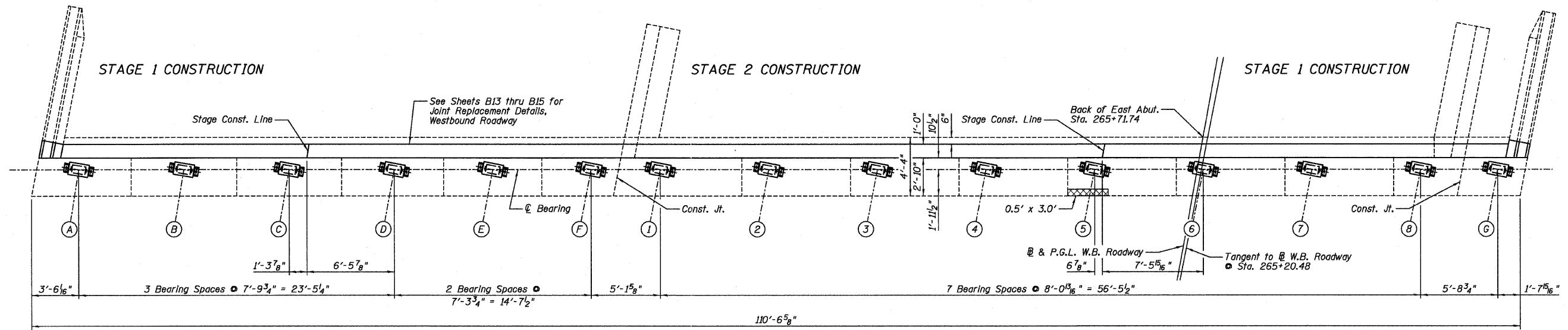
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DEPARTMENT OF TRANSPORTATION

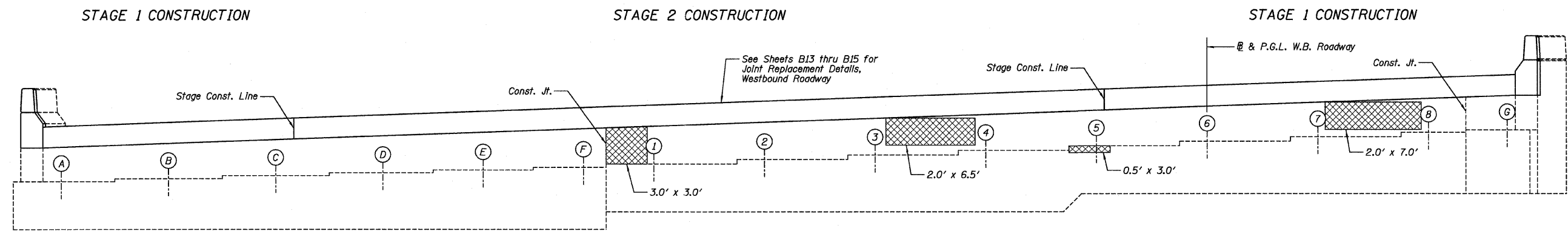
WEST ABUTMENT, WESTBOUND ROADWAY  
STRUCTURE NO. 082-0169 (E.B.)  
STRUCTURE NO. 082-0170 (W.B.)

SHEET NO. B29 OF 34 SHEETS

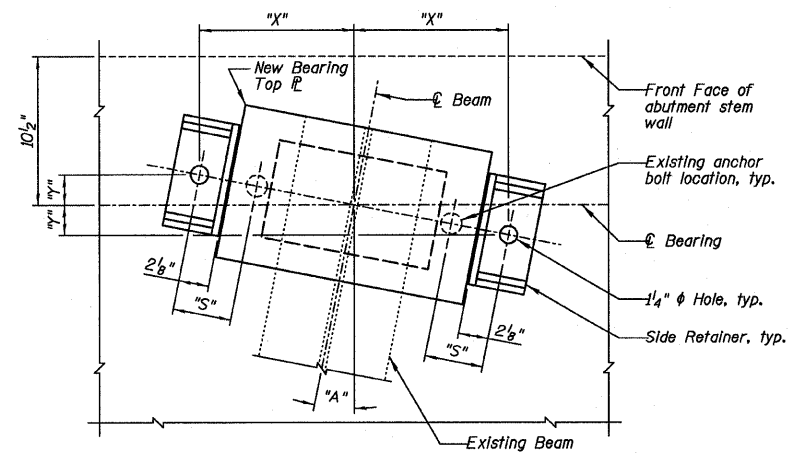
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	150
CONTRACT NO. 76415				
ILLINOIS FED. AID PROJECT				



TOP VIEW



ELEVATION



BEARING PLAN AT ABUTMENT

Beam No.	Angle	Dimension		
	"A"	"S"	"X"	"Y"
A	09°01'45"	4 $\frac{1}{8}"$	11"	1 $\frac{3}{4}"$
B	09°31'57"	4 $\frac{1}{8}"$	11"	1 $\frac{15}{16}"$
C	10°02'03"	4 $\frac{1}{8}"$	10 $\frac{15}{16}"$	1 $\frac{15}{16}"$
D	10°32'05"	4 $\frac{1}{8}"$	10 $\frac{15}{16}"$	2 $\frac{1}{16}"$
E	10°47'03"	4 $\frac{1}{8}"$	10 $\frac{15}{16}"$	2 $\frac{1}{16}"$
F	11°02'00"	4 $\frac{1}{8}"$	10 $\frac{15}{16}"$	2 $\frac{1}{8}"$
I-B	11°02'00"	2 $\frac{3}{8}"$	10 $\frac{15}{16}"$	2 $\frac{1}{8}"$
G	11°02'00"	4 $\frac{1}{8}"$	10 $\frac{15}{16}"$	2 $\frac{1}{8}"$

**LEGEND**

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

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	39

**Farnsworth GROUP, INC.**  
2709 McCraw Drive  
Bloomington, Illinois 61704  
309/663-8435, 309/663-1571 fax

DESIGNED - JCZ  
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DRAWN - DJM/JWK  
DATE - 12/05/11

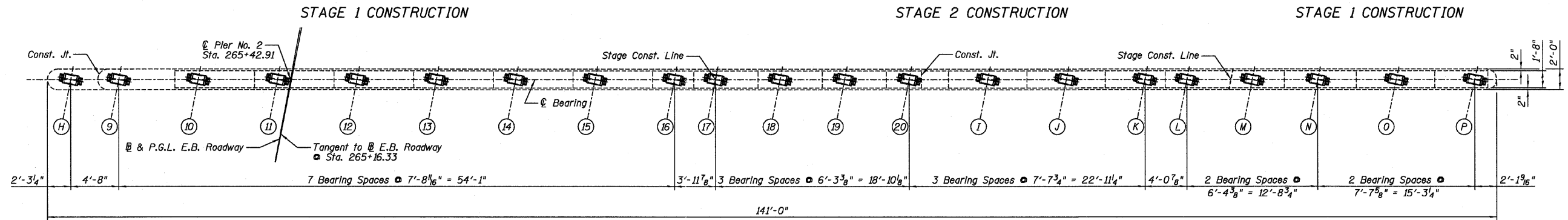
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**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**

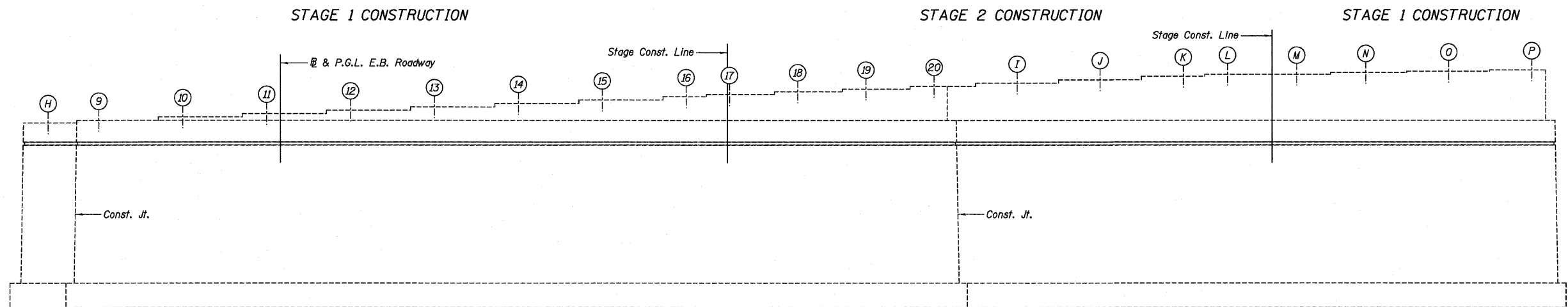
**EAST ABUTMENT, WESTBOUND ROADWAY  
STRUCTURE NO. 082-0169 (E.B.)  
STRUCTURE NO. 082-0170 (W.B.)**

SHEET NO. B30 OF 34 SHEETS

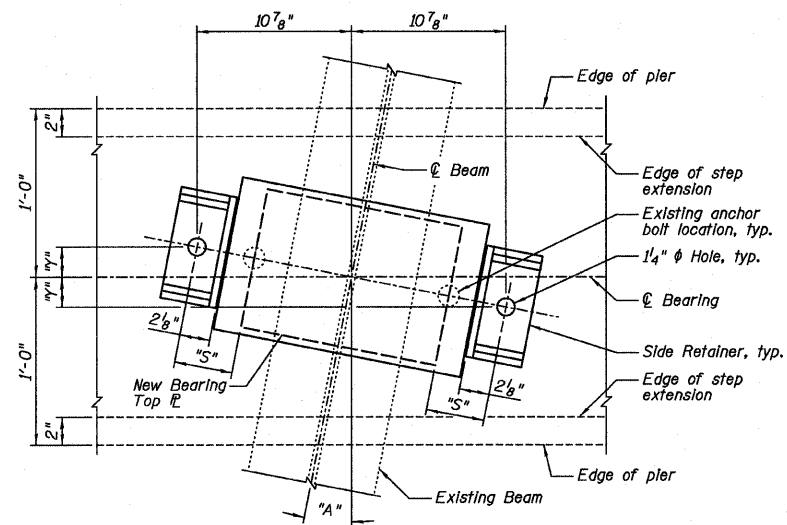
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	151
				CONTRACT NO. 76415
ILLINOIS FED. AID PROJECT				



TOP VIEW



ELEVATION  
(Looking East)



Beam No.	Angle	Dimension		
		"A"	"S"	"Y"
H	11°02'00"	4 1/8"	2 1/2"	
9-20	11°02'00"	4 1/8"	2 1/2"	
I-M	11°02'00"	4 1/8"	2 1/2"	
N	11°02'00"	2 1/4"	2 1/2"	
O	11°56'22"	2 1/4"	2 1/4"	
P	12°50'23"	2 1/4"	2 1/2"	

BEARING PLAN AT PIER

**Farnsworth**  
GROUP, INC.  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/663-8435, 309/663-1571 fax

DESIGNED - JCZ  
CHECKED - JML  
DRAWN - DJM/JWK  
DATE - 12/05/11

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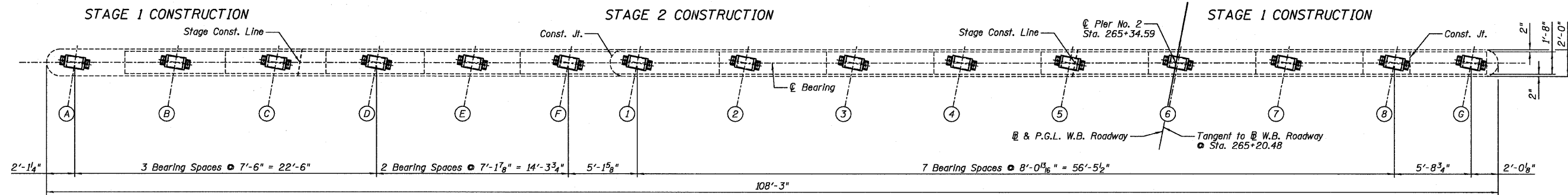
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PIER NO. 2, EASTBOUND ROADWAY  
STRUCTURE NO. 082-0169 (E.B.)  
STRUCTURE NO. 082-0170 (W.B.)

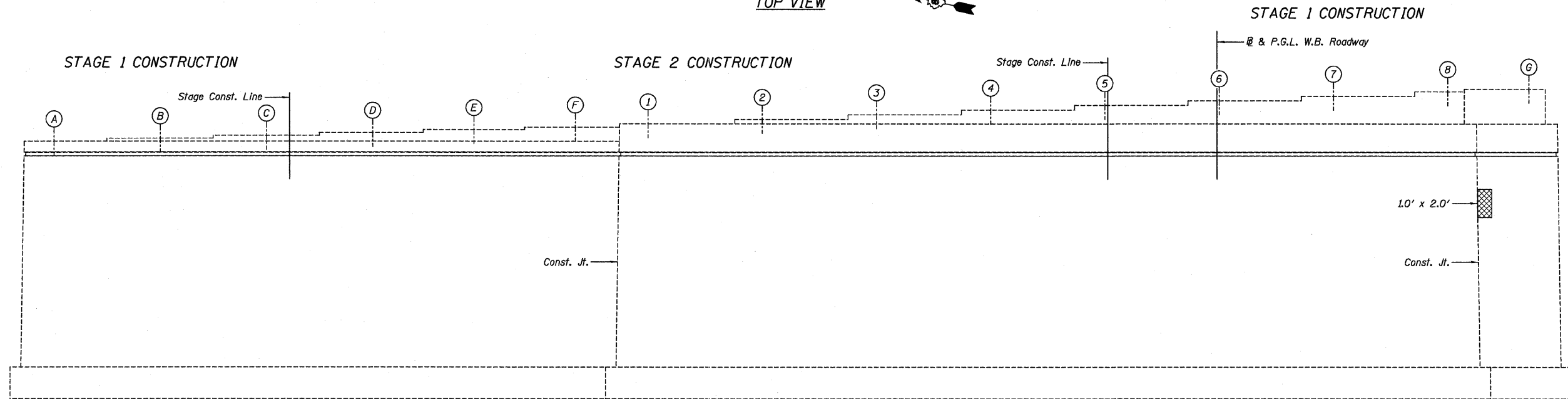
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	B2-(3,4)RS	ST. CLAIR	167	152
				CONTRACT NO. 76415

SHEET NO. B31 OF 34 SHEETS

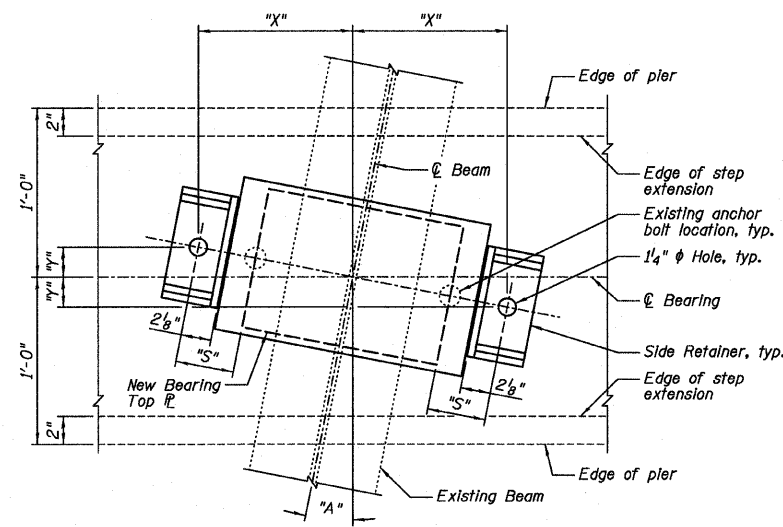
ILLINOIS FED. AID PROJECT



TOP VIEW



ELEVATION  
(Looking East)



BEARING PLAN AT PIER

Beam No.	Angle	Dimension		
		"S"	"X"	"Y"
A	09°01'45"	4 1/8"	11"	1 3/4"
B	09°31'57"	4 1/8"	11"	1 1/8"
C	10°02'03"	4 1/8"	10 5/16"	1 5/16"
D	10°32'05"	4 1/8"	10 5/16"	2 1/16"
E	10°47'03"	4 1/8"	10 5/16"	2 1/16"
F	11°02'00"	4 1/8"	10 5/16"	2 1/8"
1-8	11°02'00"	2 5/8"	10 5/16"	2 1/8"
G	11°02'00"	4 1/8"	10 5/16"	2 1/8"

LEGEND

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

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	2

**Farnsworth**  
GROUP, INC.  
2709 McGraw Drive  
Bloomington, Illinois 61704  
308/663-8435, 308/663-1571 fax

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DRAWN - DJM/JWK  
DATE - 12/05/11

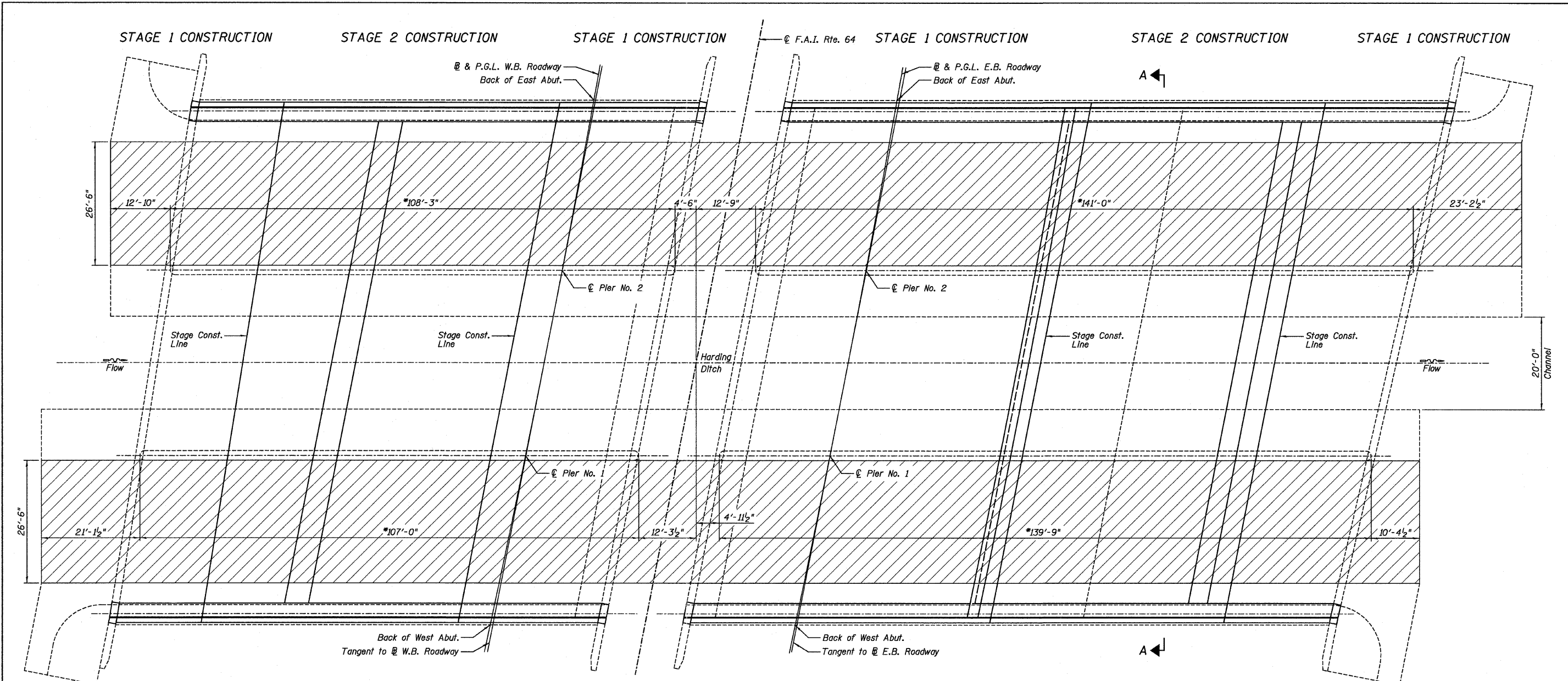
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DEPARTMENT OF TRANSPORTATION

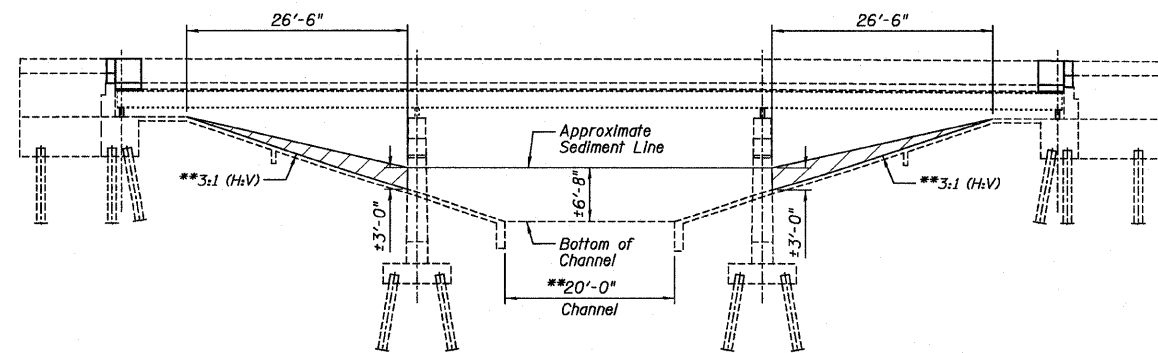
PIER NO. 2, WESTBOUND ROADWAY  
STRUCTURE NO. 082-0169 (E.B.)  
STRUCTURE NO. 082-0170 (W.B.)

SHEET NO. B32 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	153
CONTRACT NO. 76415			ILLINOIS FED. AID PROJECT	



**CHANNEL EXCAVATION PLAN VIEW**  
 \*Dimensioned from C Pler at 2'-0" width of pier cap.



**ELEVATION A-A**  
 \*\*Horizontal dimensions @ Rt. L's

**LEGEND**

	Channel Excavation Area
--	-------------------------

**BILL OF MATERIAL**

ITEM	UNIT	082-0169	082-0170	TOTAL
Channel Excavation	Cu. Yd.	449	360	809

**Farnsworth GROUP, INC.**  
 2709 McGraw Drive  
 Bloomington, Illinois 61704  
 309/863-9433, 309/863-1571 fax

DESIGNED - JCZ  
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 DRAWN - DJM/JWK  
 DATE - 12/05/11

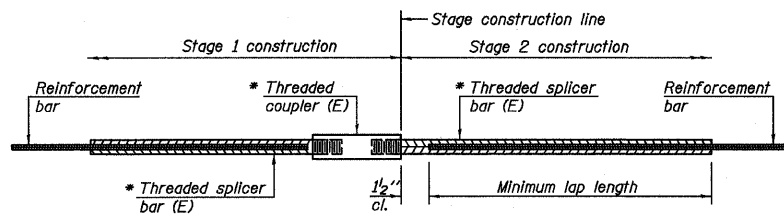
REVISOR  
 REVISION  
 REVISION  
 REVISION

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**CHANNEL EXCAVATION PLAN AND ELEVATION**  
**STRUCTURE NO. 082-0169 (E.B.)**  
**STRUCTURE NO. 082-0170 (W.B.)**  
 SHEET NO. B33 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	154
				CONTRACT NO. 76415
ILLINOIS FED. AID PROJECT				





**STANDARD BAR SPLICER ASSEMBLY**

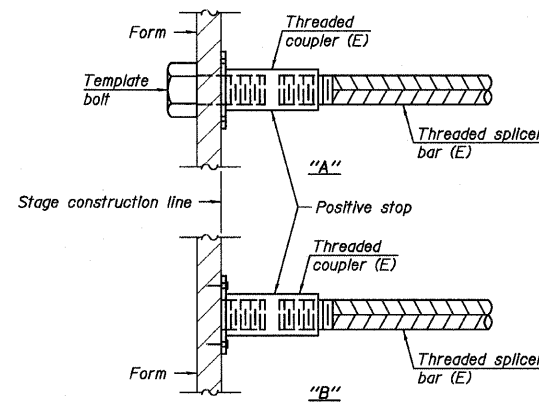
Bar size to be spliced	Minimum Lap Lengths				
	Table 1	Table 2	Table 3	Table 4	Table 5
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-3"
5	1'-9"	2'-5"	2'-7"	2'-11"	2'-10"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-4"
7	2'-9"	3'-10"	4'-2"	4'-8"	4'-6"
8	3'-8"	5'-1"	5'-5"	6'-2"	5'-10"
9	4'-7"	6'-5"	6'-10"	7'-9"	7'-5"

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

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

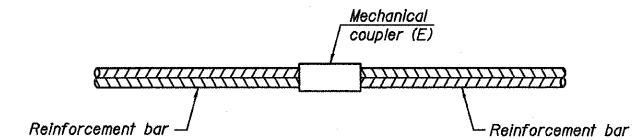
\* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Exp. Jts. Deck	#5	56 (EB) + 56 (WB)	4
Exp. Jts. Abuts.	#5	16 (EB) + 16 (WB)	4



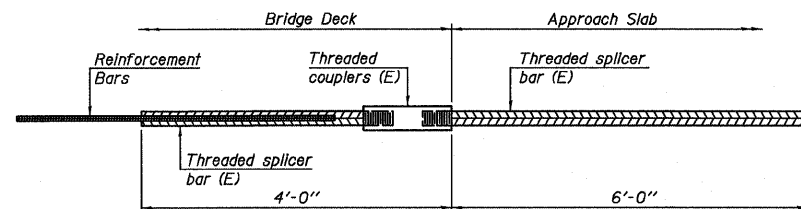
**INSTALLATION AND SETTING METHODS**

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



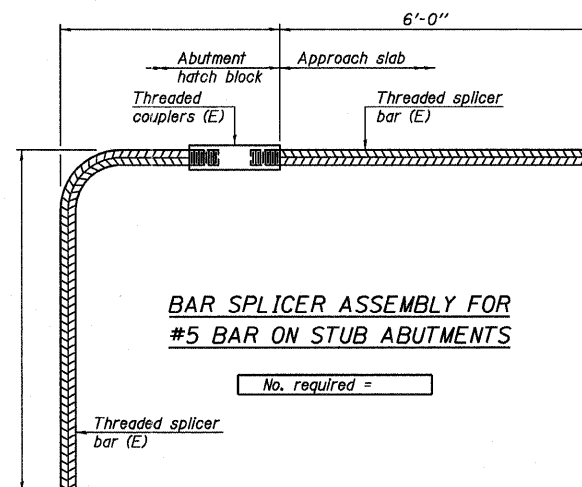
**STANDARD MECHANICAL SPLICER**

Location	Bar size	No. assemblies required



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

No. required =



No. required =

**NOTES**

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

BSD-1

7-1-10

**Farnsworth GROUP, INC.**  
2709 McGraw Drive  
Sicomin, Illinois 61704  
309/663-8435, 309/663-1571 fax

DESIGNED - JCZ	REVISD
CHECKED - JML	REVISD
DRAWN - DJM/JWK	REVISD
DATE - 12/05/11	CHECKED - MSW
	REVISD

**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**

**BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS**  
STRUCTURE NO. 082-0169 (E.B.)  
STRUCTURE NO. 082-0170 (W.B.)

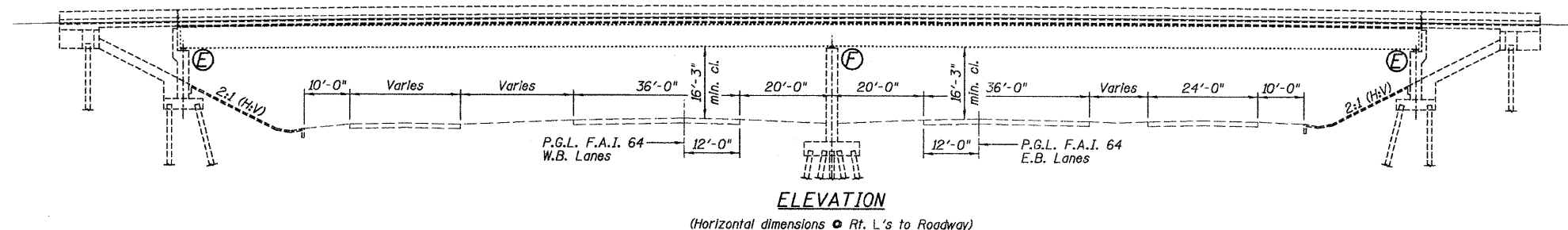
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	155
				CONTRACT NO. 76415
ILLINOIS FED. AID PROJECT				

SHEET NO. B34 OF 34 SHEETS

Existing Structure: Structure No. 082-0261, built in 1979 as Section 82-2HB-1. The superstructure consists of a continuous two span composite welded plate girder bridge with a 7½" concrete slab. The substructure consists of concrete filled vaulted abutments supported by concrete piles and a concrete solid stem pier supported by timber piles. The back-to-back of approach bent dimension measures 311'-10" and the out-to-out of deck dimension measures 43'-2". The span lengths are 141'-0" and 127'-0" (C bearing to C bearing) with a 2°11'37" left forward skew. One lane of traffic will be maintained utilizing stage construction.

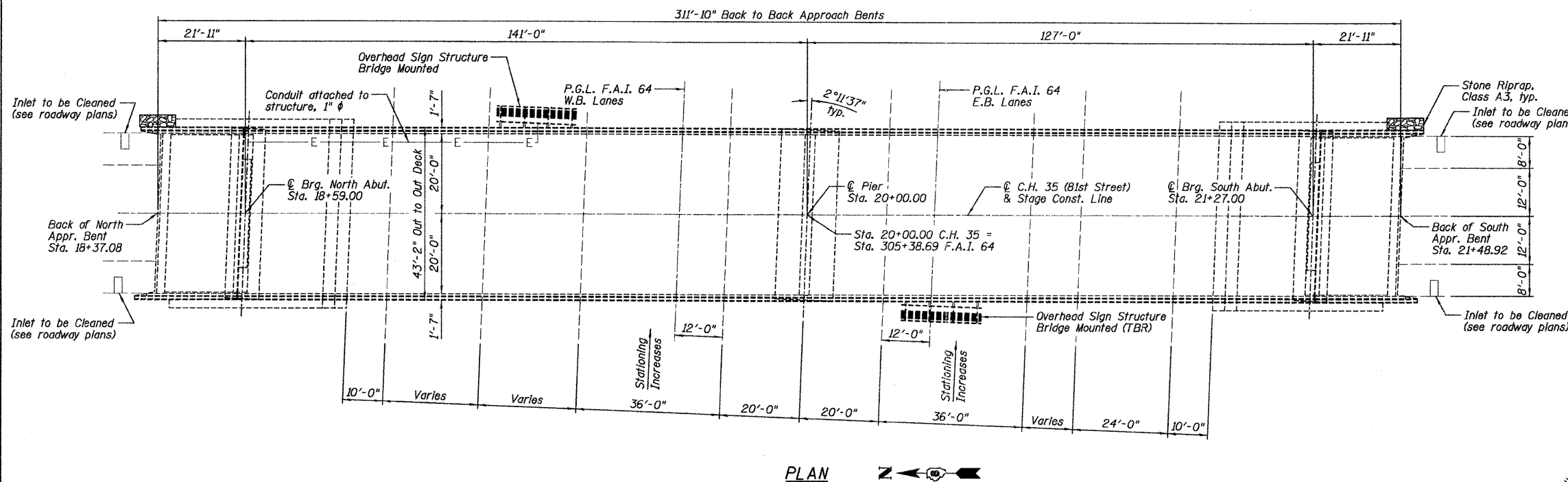
**SCOPE OF WORK**

- 1.) Maintain one lane of traffic according to the Stage Construction cross sections.
- 2.) Formed concrete repair all areas indicated on the plans.
- 3.) Apply Polymer Modified cement mortar to all areas indicated on the plans.
- 4.) Remove and replace Neoprene Expansion Joints with silicone Joint sealer.
- 5.) Remove and replace the parapet joint sealer.
- 6.) Erect a protective shield system beneath the South span indicated on the plans.
- 7.) Remove the existing bridge mounted overhead sign structure on the South span.
- 8.) Install a hot-mix asphalt surface course with a waterproofing membrane to the deck.
- 9.) Seal all slopewall cracks indicated on the plans.
- 10.) Fill eroded areas with Stone Riprap, Class A3 as indicated on the plans.
- 11.) Clean shoulder inlets in each quadrant of the bridge.



**INDEX TO SHEETS**

SHEET NO.	TITLE
C1	GENERAL PLAN AND ELEVATION
C2	GENERAL DATA
C3	STAGE CONSTRUCTION / MISCELLANEOUS DETAILS
C4	TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
C5	DECK REPAIR
C6	EXPANSION JOINT REPAIR
C7	NORTH ABUTMENT REPAIR
C8	SOUTH ABUTMENT REPAIR
C9	NORTH SLOPEWALL REPAIR AND RIPRAP PLACEMENT
C10	SOUTH SLOPEWALL REPAIR AND RIPRAP PLACEMENT



**LOADING HS20-44**

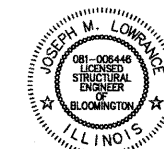
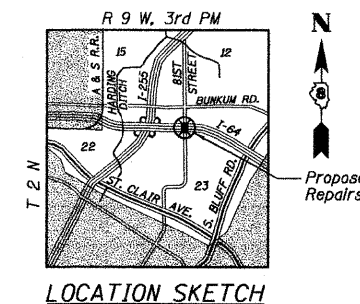
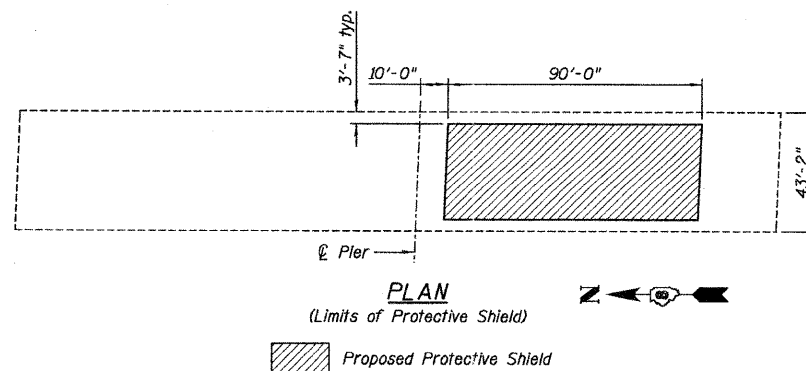
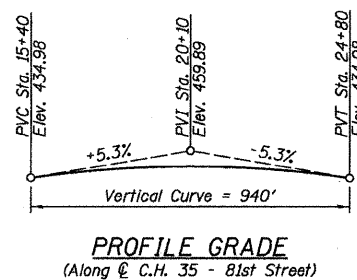
Original Construction  
Allow 25#/sq. ft. for future wearing surface.

**DESIGN SPECIFICATIONS**

Original Construction  
1977 AASHTO AND 1978 Interim specifications

**DESIGN STRESSES**

Original Construction  
f'c = 3,500 psi  
fy = 60,000 psi (Reinforcement)  
fy = 36,000 to 50,000 psi (Structural Steel)



Joseph M. Lowrance  
Date 11-17-11  
JOSEPH M. LOWRANCE  
ILLINOIS STRUCTURAL ENGINEER  
NO. 081-006446  
Exp. Date 11/30/12

**GENERAL PLAN AND ELEVATION**  
**81ST STREET (C.H. 35) OVER**  
**INTERSTATE 64**  
**F.A.I. 64 - SEC 82-(3,4)RS**  
**ST. CLAIR COUNTY**  
**STA. 305+38.69**  
**STRUCTURE NO. 082-0261**

**Farnsworth**  
GROUP, INC.  
2705 McDraw Drive  
Bloomington, Illinois 61704  
309/963-8435, 309/963-1971 fax

DESIGNED - JCZ	REVISED
CHECKED - JML	REVISED
DRAWN - DJM/JWK	REVISED
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**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

SHEET NO. C1 OF 10 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	156
				CONTRACT NO. 76415
ILLINOIS FED. AID PROJECT				

**TOTAL BILL OF MATERIAL**

ITEMS	UNITS	SUPER	SUB	TOTAL
Stone Riprap, Class A3	Sq. Yd.		6	6
Hot-Mix Asphalt Surface Course, Mix "C", N70	Ton	133		133
Protective Shield	Sq. Yd.	360		360
Protective Coat	Sq. Yd.	262		262
Waterproofing Membrane System	Sq. Yd.	1,191		1,191
Remove Overhead Sign Structure - Bridge Mounted	Each	1		1
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.		115	115
Silicone Joint Sealer, 2"	Foot	84		84
Joint Sealer	Foot	108		108
Polymer Concrete	Cu. Ft.	25		25
Polymer Modified Portland Cement Mortar	Sq. Ft.	14		14
Slope Wall Crack Sealing	Foot		48	48
Temporary Ramp, Special	Sq. Yd.	35		35

**GENERAL NOTES**

- 1.) Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
- 2.) Protective coat shall not be applied to surfaces to which Waterproofing Membrane System is applied.
- 3.) All areas of erosion are to be repaired by placing Class A3 Stone Riprap in a manner to match the existing ground profile or to improve the ground profile.
- 4.) The area along the Slope walls as determined by the Engineer should be cleared of vegetation, brush, saplings, etc. according to Section 201 of the Standard Specification. This work shall be included with Stone Riprap, Class A3.
- 5.) Joint openings shall be adjusted according to Article 520.04 of the Standard Specifications when the expansion joint's bent  $\bar{E}$  is installed at an ambient temperature other than 50°F.
- 6.) The hot-mix asphalt mixture requirements are included in the roadway plans.



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DATE - 11/17/11	

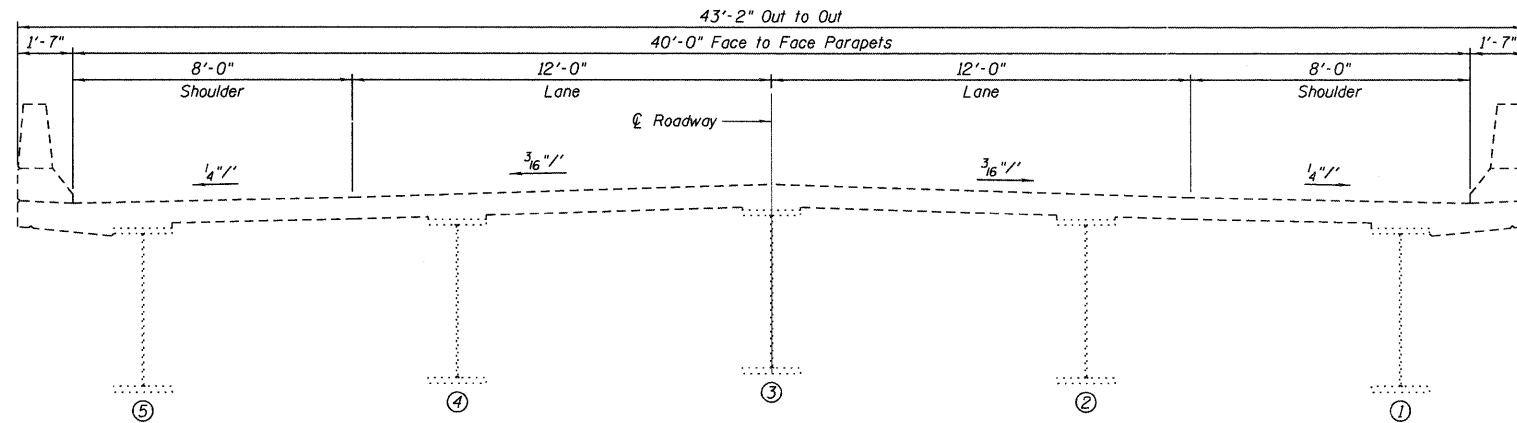
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**GENERAL DATA  
STRUCTURE NO. 082-0261**

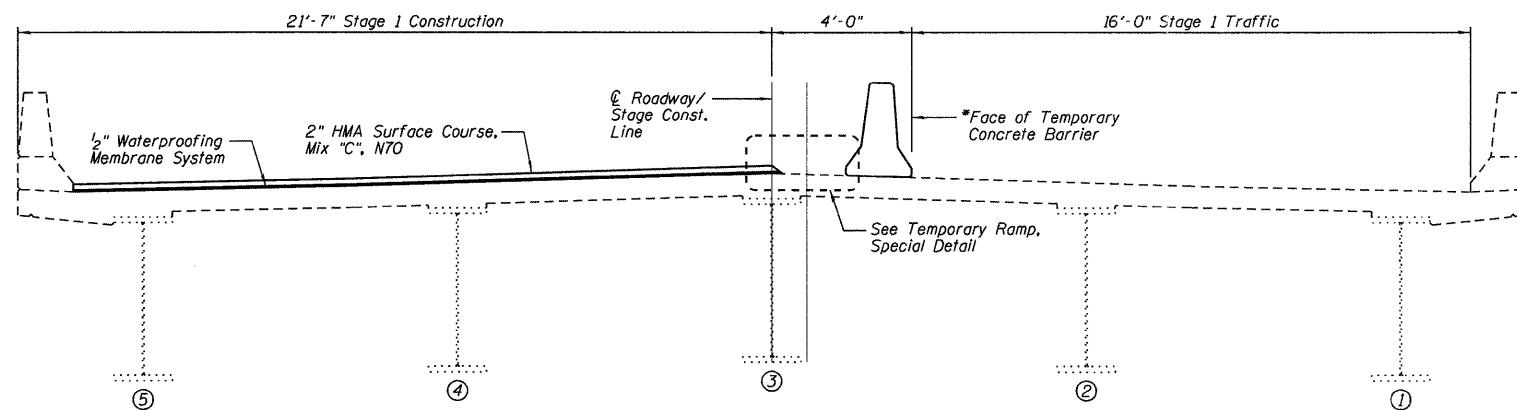
SHEET NO. C2 OF 10 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	157
ILLINOIS FED. AID PROJECT				

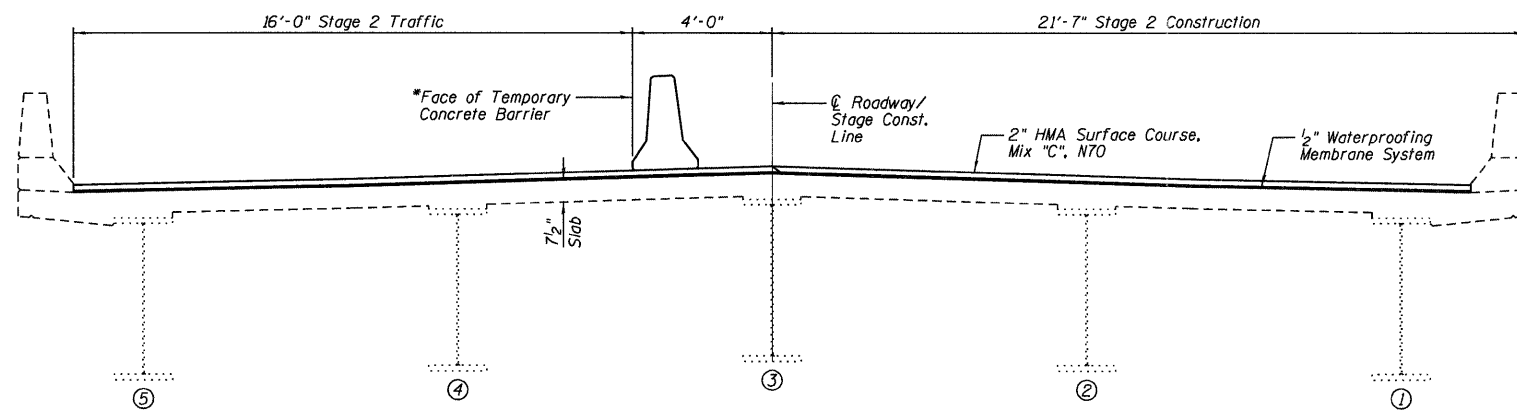
CONTRACT NO. 76415



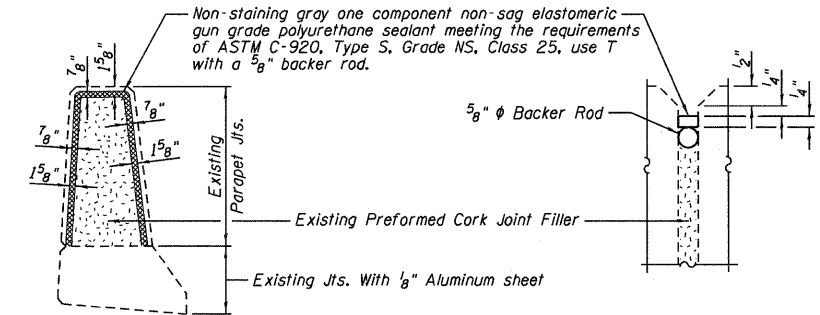
**EXISTING CROSS SECTION**  
(Looking South @  $\odot$  of Bridge)



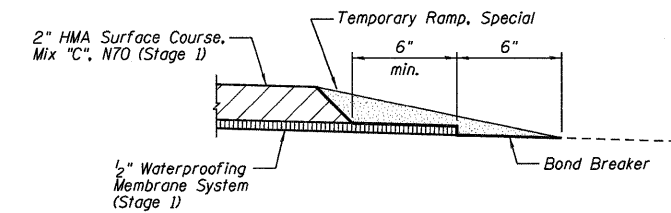
**STAGE 1**  
(Looking South @  $\odot$  of Bridge)  
\*Temporary Concrete Barrier, see STD. T04001



**STAGE 2**  
(Looking South @  $\odot$  of Bridge)  
\*Temporary Concrete Barrier, see STD. T04001



**PARAPET JOINT DETAILS**  
(13 joints per parapet)



**TEMPORARY RAMP, SPECIAL**

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Joint Sealer	Foot	108

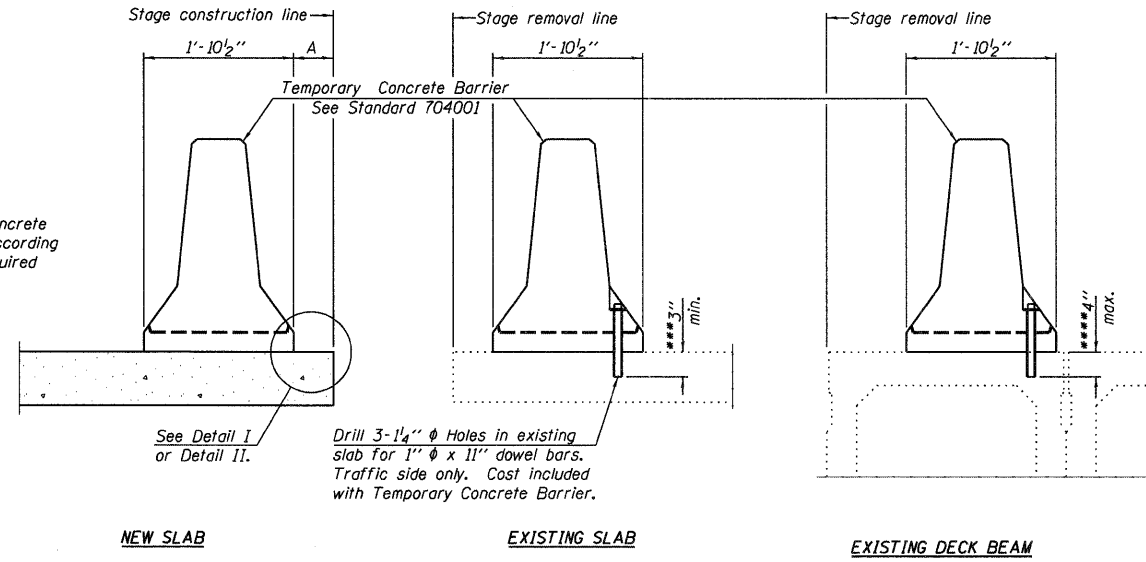
**NOTE:**

See Roadway Plans for Temporary Concrete Barrier quantities.

DESIGNED - JCZ	REVISED
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DRAWN - DJM/JWK	REVISED
CHECKED - MSW	REVISED
DATE - 11/17/11	

F.A.I. RTE. 64	SECTION 82-(3,4)RS	COUNTY ST. CLAIR	TOTAL SHEETS 167	SHEET NO. 158
ILLINOIS FED. AID PROJECT			CONTRACT NO. 76415	

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



**SECTIONS THRU SLAB OR DECK BEAM**

**NOTES**

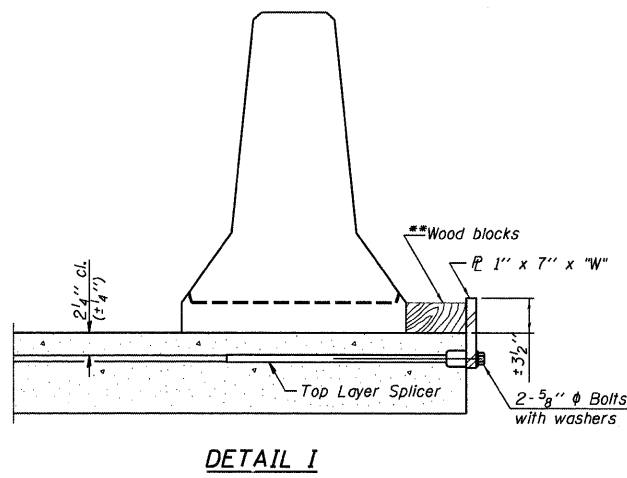
Detail I - With Bar Splicer or Couplers:  
Connect one (1) 1" x 7" x "W" steel  $\bar{L}$  to the top layer of couplers with 2-5/8"  $\phi$  bolts screwed to coupler at approximate  $\bar{C}$  of each barrier panel.

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

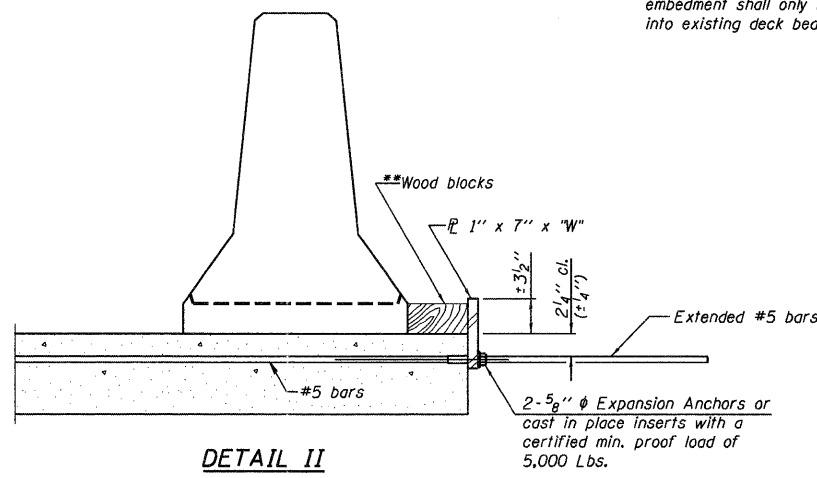
Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x "W" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

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

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



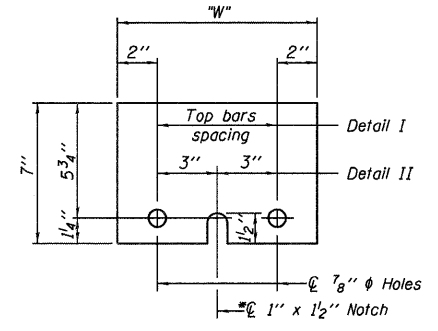
**DETAIL I**



**DETAIL II**

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

"W" = Top bars spacing + 4"

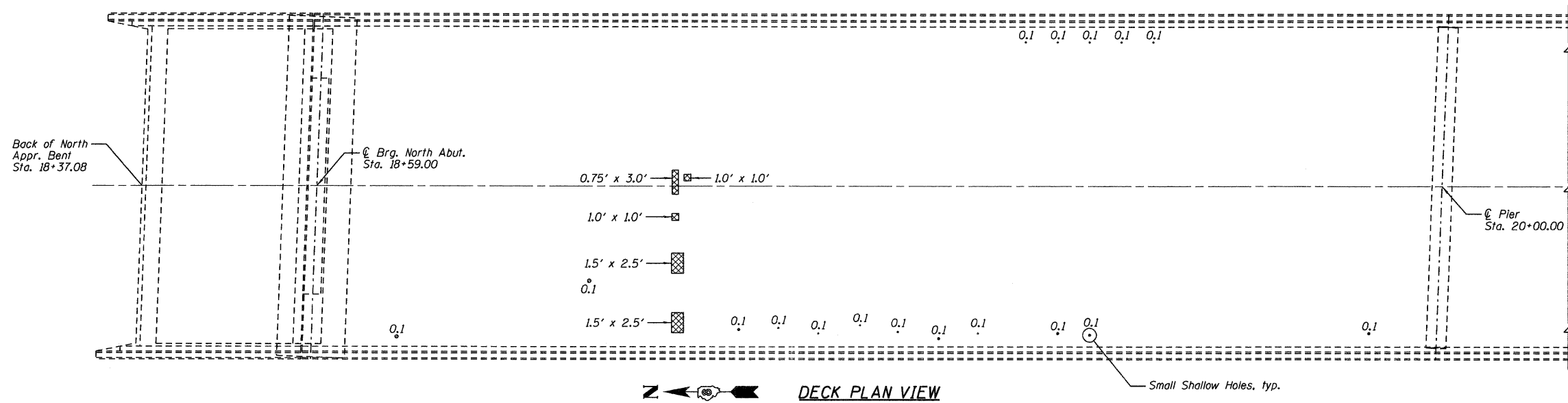


**STEEL RETAINER  $\bar{L}$  1" x 7" x "W"**  
\* Required only with Detail II

R-27

7-1-10

<p>Farnsworth GROUP, INC. 2709 McGraw Drive Bloomington, Illinois 61704 309/663-8455, 309/663-1571 fax</p>	DESIGNED - JCZ	REVISED	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION</b> <b>STRUCTURE NO. 082-0261</b>	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	CHECKED - JML	REVISED			64	82-(3,4)RS	ST. CLAIR	167	159
	DRAWN - DJM/JWK	REVISED			CONTRACT NO. 76415				
	CHECKED - MSW	REVISED			ILLINOIS FED. AID PROJECT				
DATE - 11/17/11				SHEET NO. C4 OF 10 SHEETS					24-8570



**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Protective Coat	Sq. Yd.	262
Polymer Modified Portland Cement Mortar	Sq. Ft.	14

**LEGEND**

- Polymer Modified Portland Cement Mortar with area (sq. ft.)
- ▨ Polymer Modified Portland Cement Mortar

**NOTE:**

Apply protective coat to the top and interior surfaces of the parapets.

**Farnsworth**  
GROUP, INC.  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/663-8435, 309/663-1571 fax

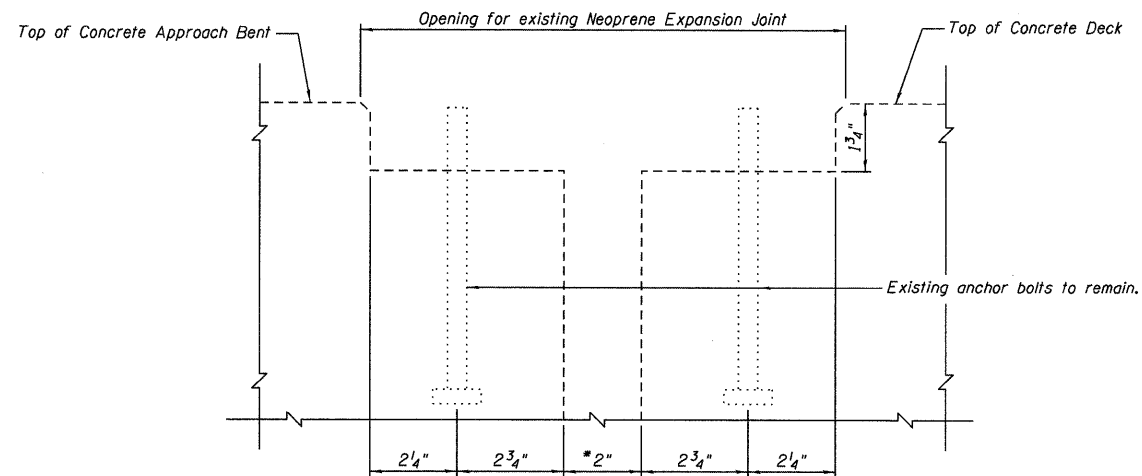
DESIGNED - JCZ	REVISED
CHECKED - JML	REVISED
DRAWN - DJM/JWK	REVISED
CHECKED - MSW	REVISED
DATE - 11/17/11	

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

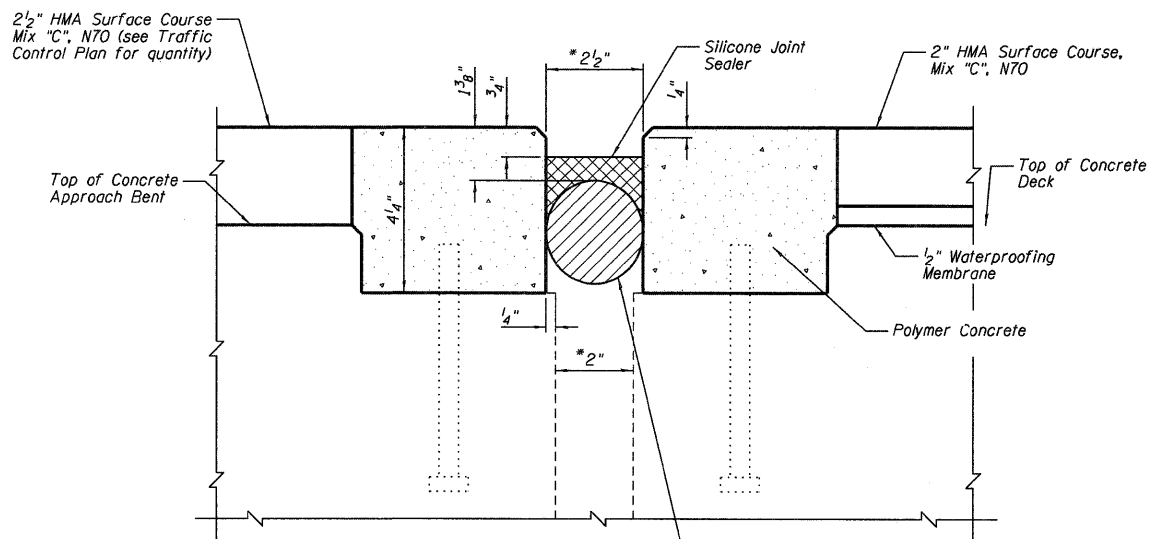
**DECK REPAIR**  
**STRUCTURE NO. 082-0261**

SHEET NO. C5 OF 10 SHEETS

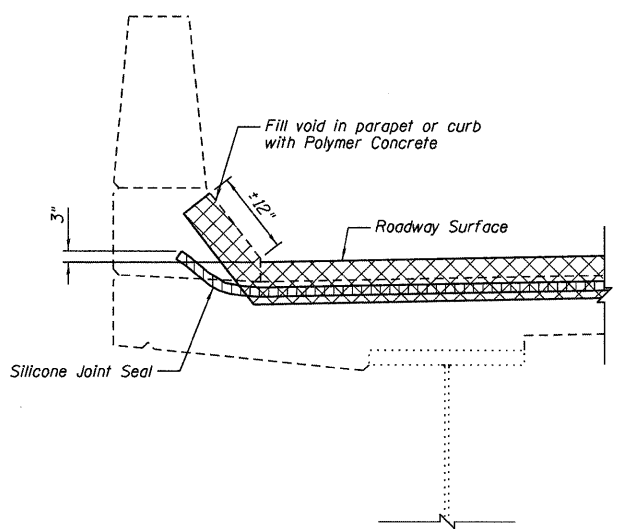
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	160
CONTRACT NO. 76415				
ILLINOIS FED. AID PROJECT				



**EXISTING CROSS SECTION**  
 (Horizontal Dimensions @ Rt. L's)  
 \*At 50°F



**PROPOSED CROSS SECTION**  
 (Horizontal Dimensions @ Rt. L's)  
 \*At 50°F



**TYPICAL END TREATMENTS**

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Silicone Joint Sealer, 2"	Foot	84
Polymer Concrete	Cu. Ft.	25

**Farnsworth**  
 GROUP, INC.  
 2709 McGraw Drive  
 Bloomington, Illinois 61704  
 309/883-8435, 309/883-1571 fax

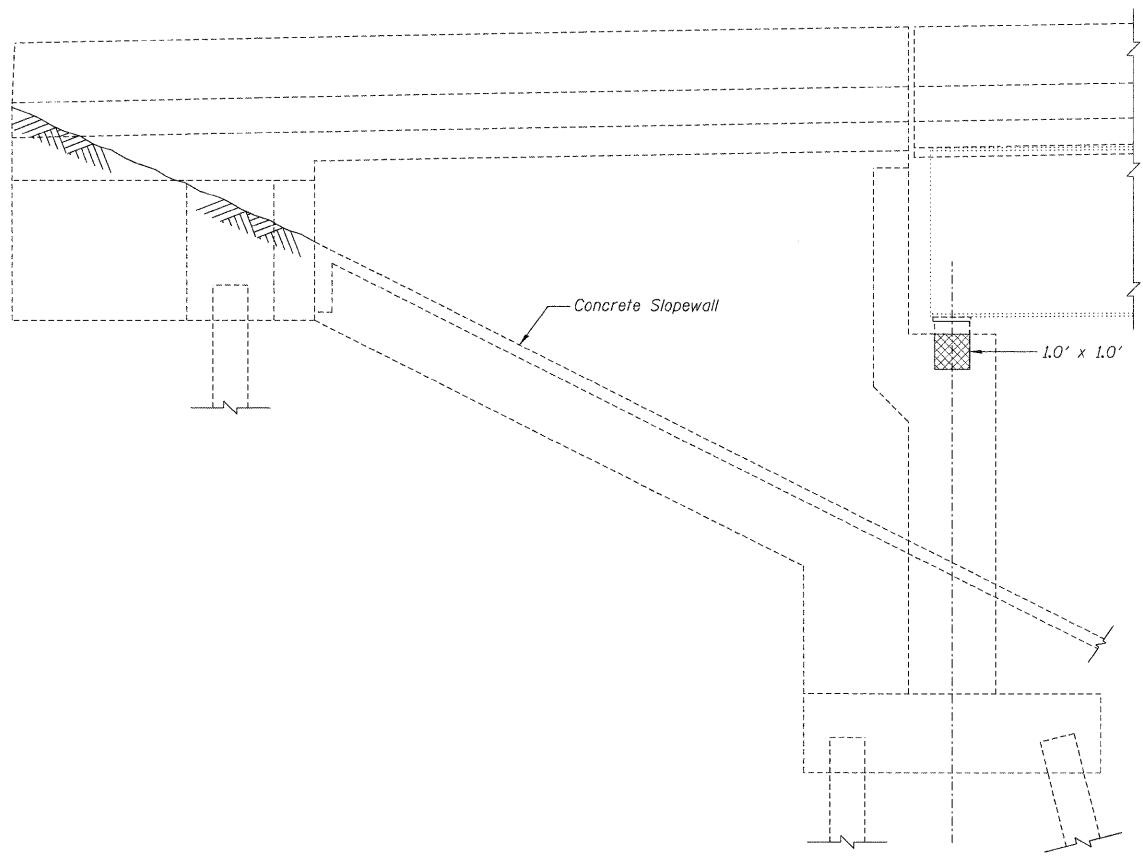
DESIGNED - JCZ	REVISED
CHECKED - JML	REVISED
DRAWN - DJM/JWK	REVISED
CHECKED - MSW	REVISED
DATE - 11/17/11	

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

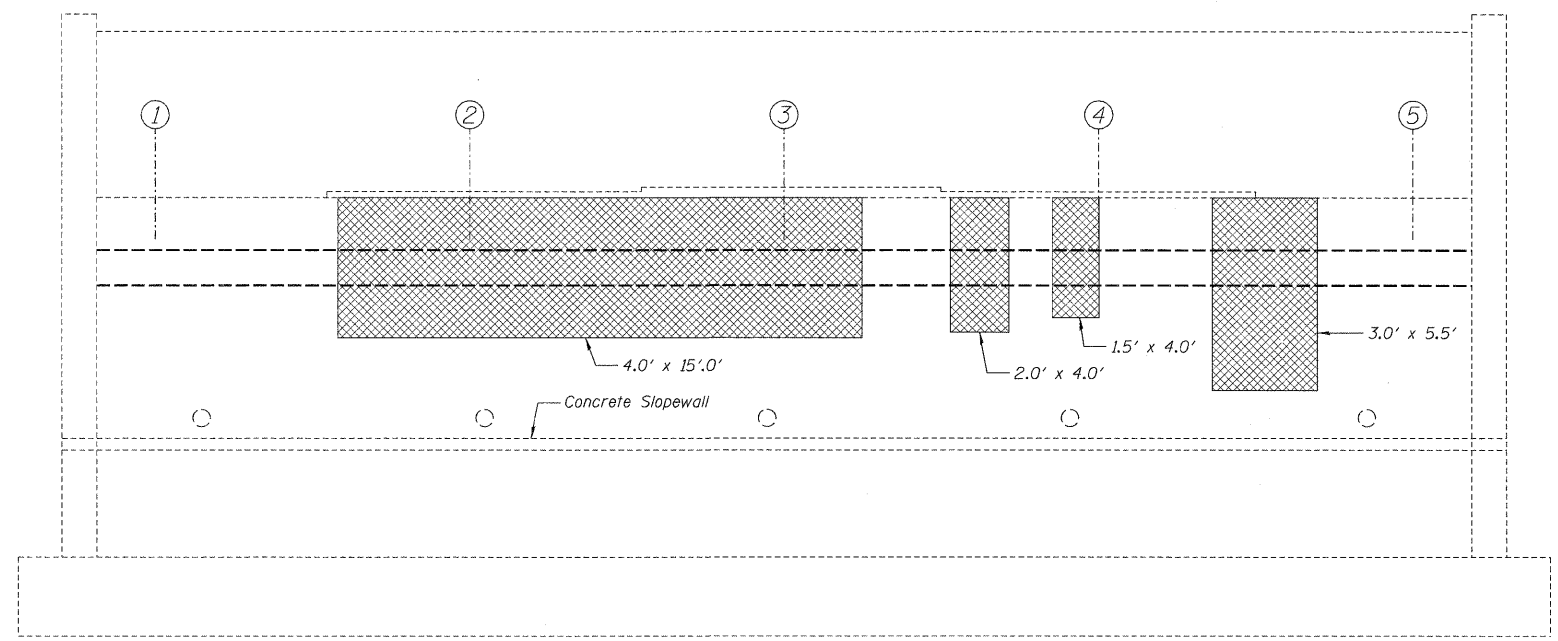
**EXPANSION JOINT REPAIR**  
**STRUCTURE NO. 082-0261**

SHEET NO. C6 OF 10 SHEETS

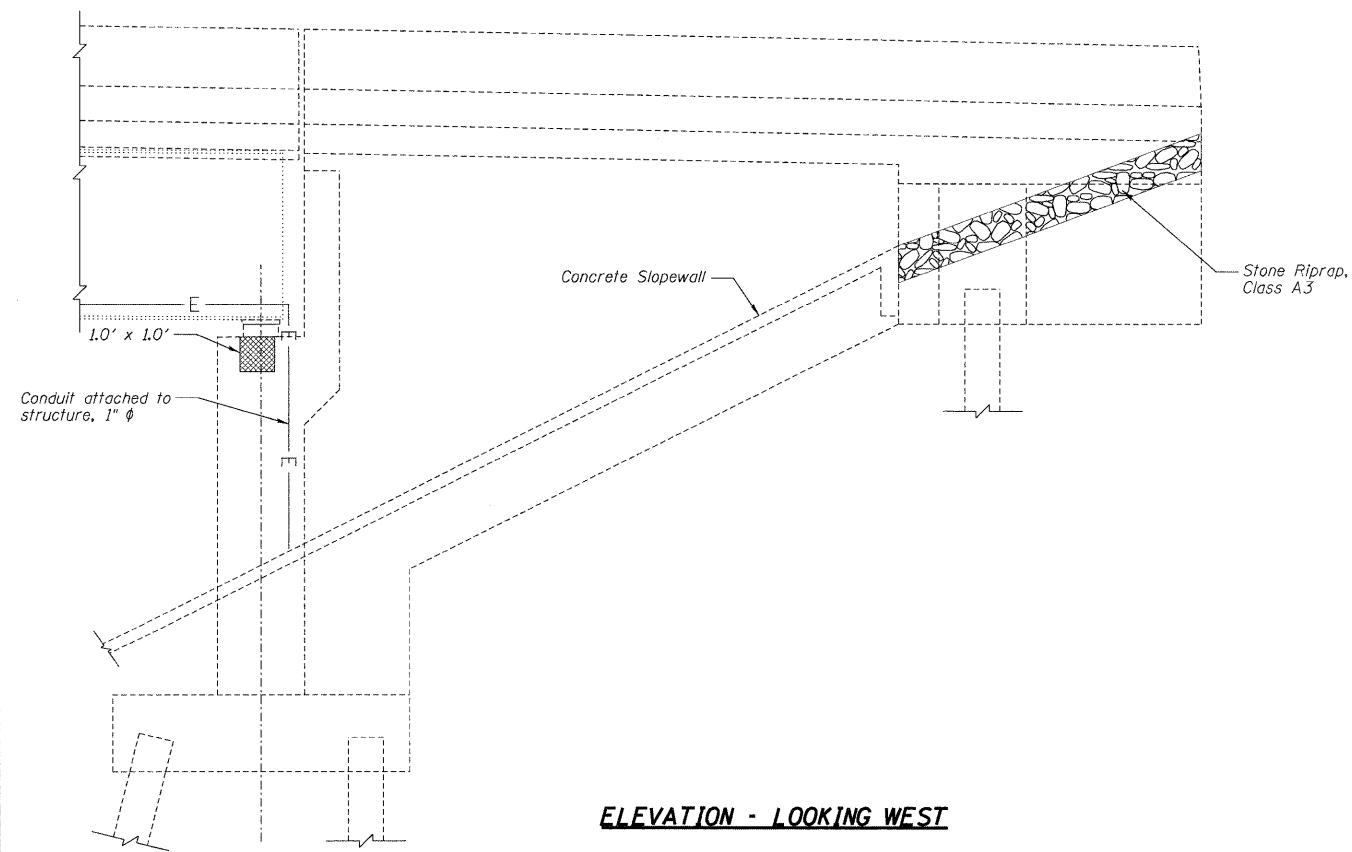
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-13,4RS	ST. CLAIR	167	161
CONTRACT NO. 76415				
ILLINOIS FED. AID PROJECT				



**ELEVATION - LOOKING EAST**



**ELEVATION - LOOKING NORTH**



**ELEVATION - LOOKING WEST**

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	93

**LEGEND**

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

**Farnsworth GROUP, INC.**  
2739 McGraw Drive  
Bloomington, Illinois 61704  
309/663-8435, 309/663-1571 fax

DESIGNED - JCZ	REVISED
CHECKED - JML	REVISED
DRAWN - DJM/JWK	REVISED
CHECKED - MSW	REVISED

DATE - 11/17/11

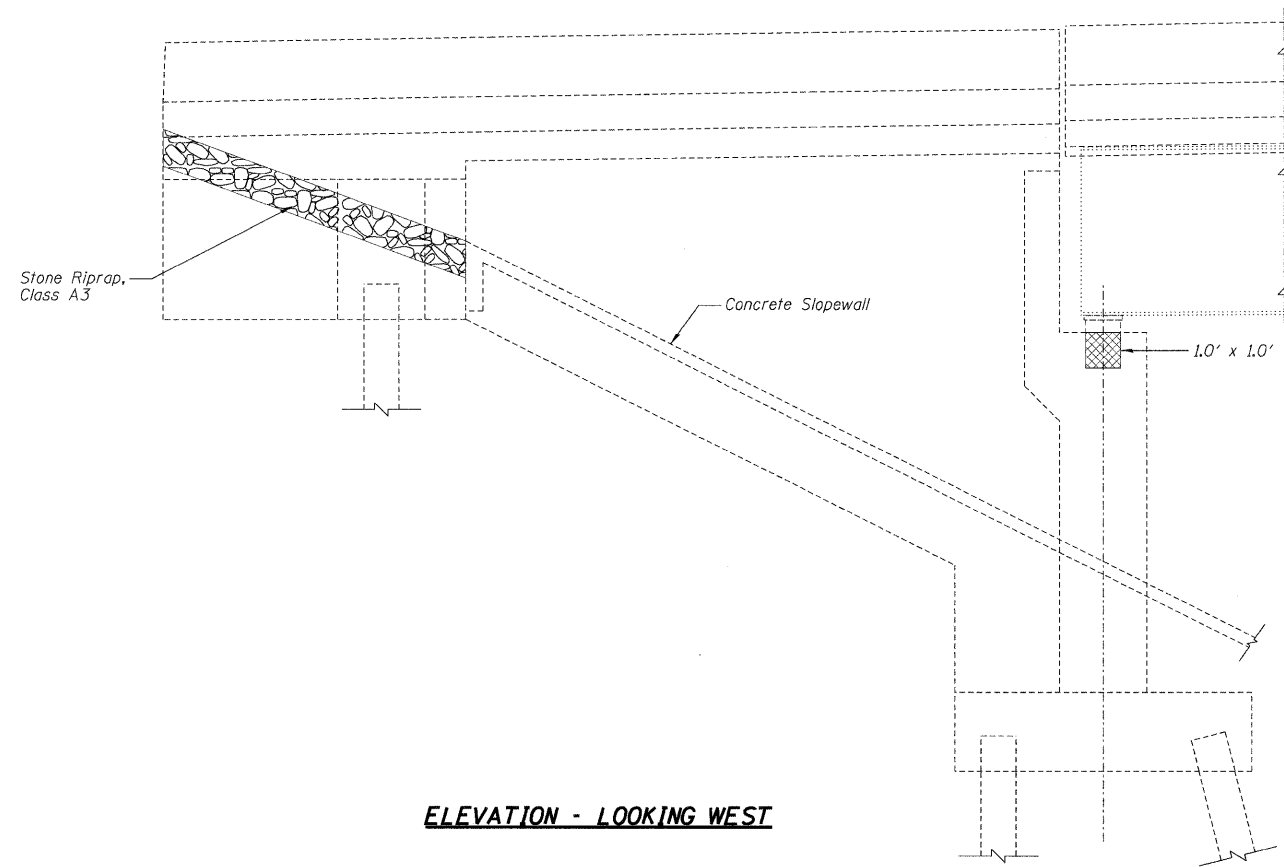
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**NORTH ABUTMENT REPAIR  
STRUCTURE NO. 082-0261**

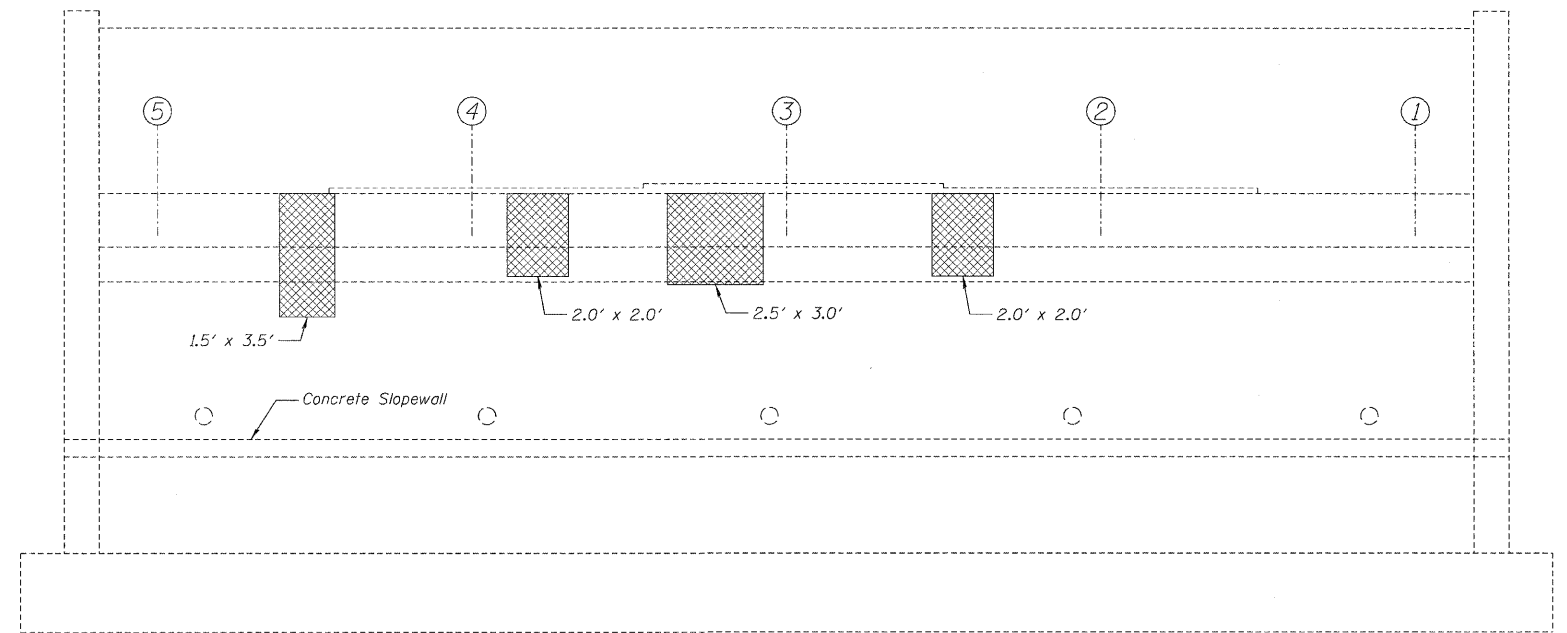
SHEET NO. C7 OF 10 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	162
				<b>CONTRACT NO. 76415</b>
ILLINOIS FED. AID PROJECT				





**ELEVATION - LOOKING WEST**



**ELEVATION - LOOKING SOUTH**

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	22

**LEGEND**

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

**Farnsworth**  
GROUP, INC.  
2709 McGraw Drive  
Bloomington, Illinois 61704  
309/963-9435, 309/963-1571 fax

DESIGNED - JCZ	REVISED
CHECKED - JML	REVISED
DRAWN - DJM/JWK	REVISED
CHECKED - MSW	REVISED

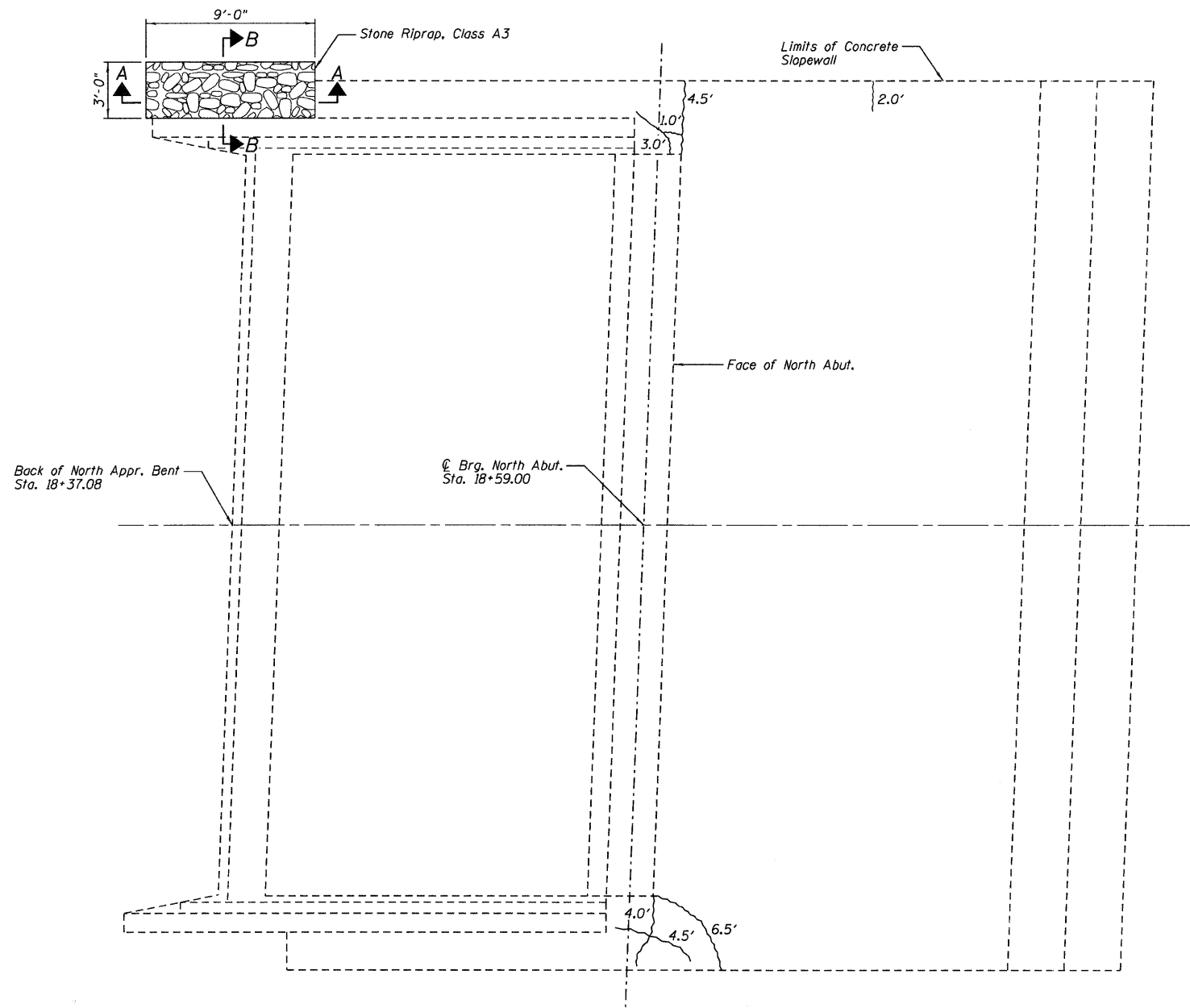
DATE - 11/17/11
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**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

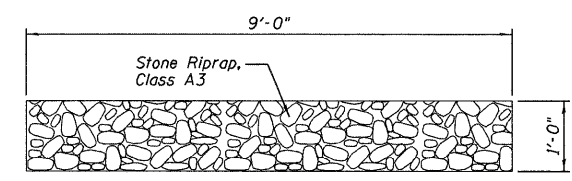
**SOUTH ABUTMENT REPAIR**  
**STRUCTURE NO. 082-0261**

SHEET NO. C8 OF 10 SHEETS

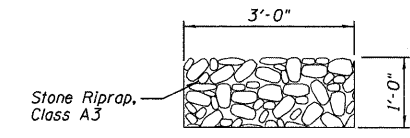
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-(3,4)RS	ST. CLAIR	167	163
CONTRACT NO. 76415				
ILLINOIS FED. AID PROJECT				



**NORTH SLOPEWALL PLAN**



**SECTION A-A**



**SECTION B-B**

**LEGEND**  
 (#') — Slope Wall Crack Sealing with Length

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Stone Riprap, Class A3	Sq. Yd.	3
Slope Wall Crack Sealing	Foot	26

**Farnsworth GROUP, INC.**  
 2709 MacDraw Drive  
 Bloomington, Illinois 61704  
 309/663-8435, 309/663-1571 fax

DESIGNED - JCZ	REVISED
CHECKED - JML	REVISED
DRAWN - DJM/JWK	REVISED
CHECKED - MSW	REVISED
DATE - 11/17/11	

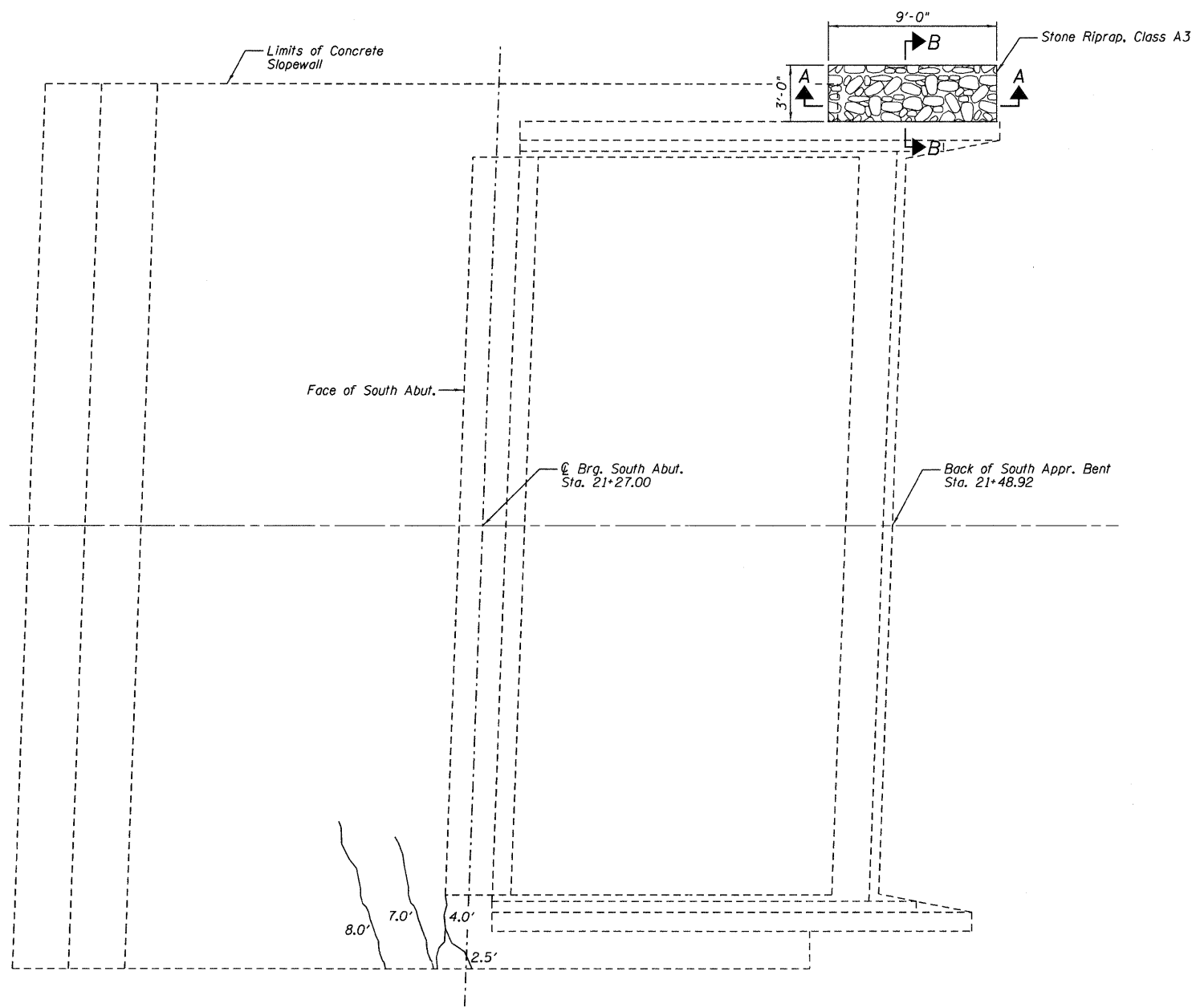
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**NORTH SLOPEWALL REPAIR AND RIPRAP REPLACEMENT  
 STRUCTURE NO. 082-0261**

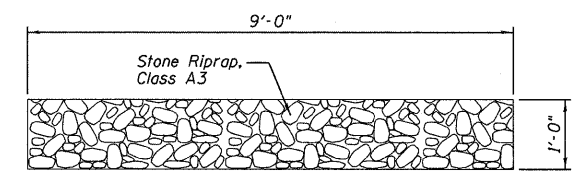
SHEET NO. C9 OF 10 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-13,4RS	ST. CLAIR	167	164
CONTRACT NO. 76415				
ILLINOIS FED. AID PROJECT				

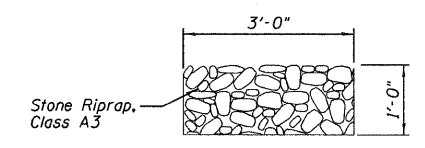
Edge of Shoulder  
E.B.L. F.A.I. 64



**SOUTH SLOPEWALL PLAN**



**SECTION A-A**



**SECTION B-B**

**LEGEND**

(#') — SlopeWall Crack Sealing with Length

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Stone Riprap, Class A3	Sq. Yd.	3
SlopeWall Crack Sealing	Foot	22

**Farnsworth**  
GROUP, INC.  
2709 McCraw Drive  
Bloomington, Illinois 61704  
309/663-8433, 309/663-1571 fax

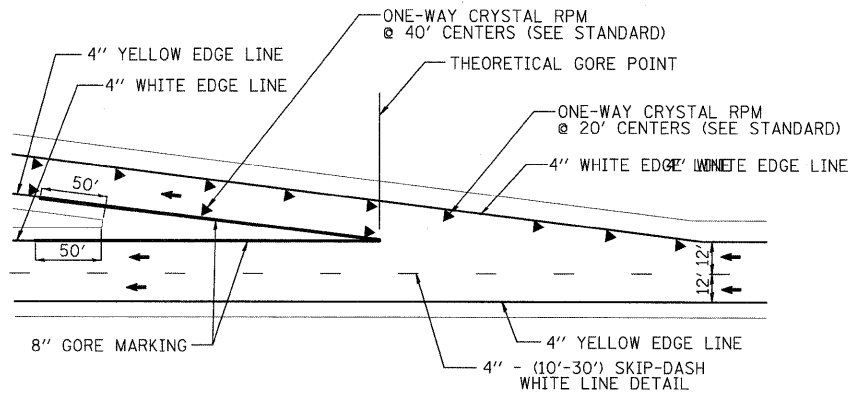
DESIGNED - JCZ	REVISED
CHECKED - JML	REVISED
DRAWN - DJM/JWK	REVISED
CHECKED - MSW	REVISED
DATE - 11/17/11	

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

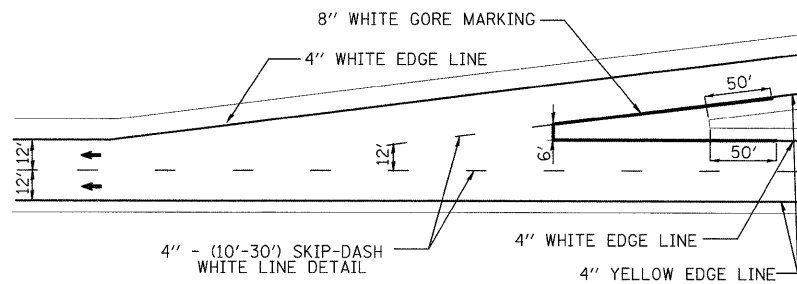
**SOUTH SLOPEWALL REPAIR AND RIPRAP REPLACEMENT**  
**STRUCTURE NO. 082-0261**

SHEET NO. C10 OF 10 SHEETS

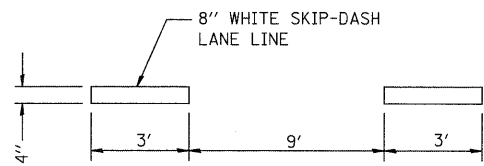
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	82-13,4RS	ST. CLAIR	167	165
ILLINOIS FED. AID PROJECT			CONTRACT NO. 76415	



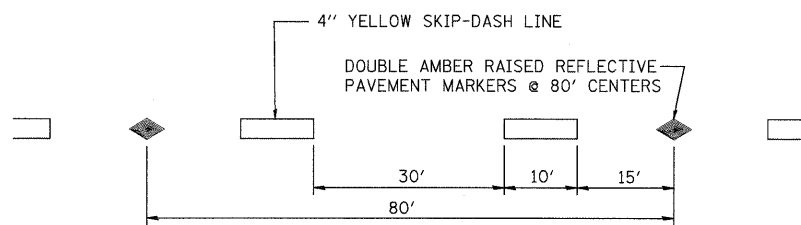
TYPICAL EXIT RAMP MARKINGS



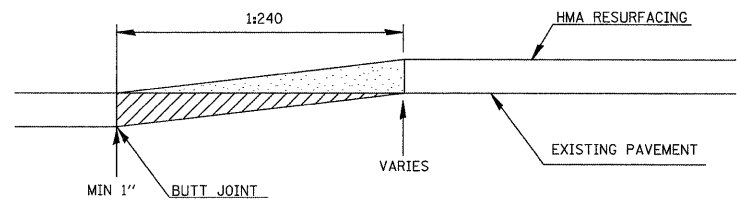
TYPICAL ENTRANCE RAMP MARKINGS



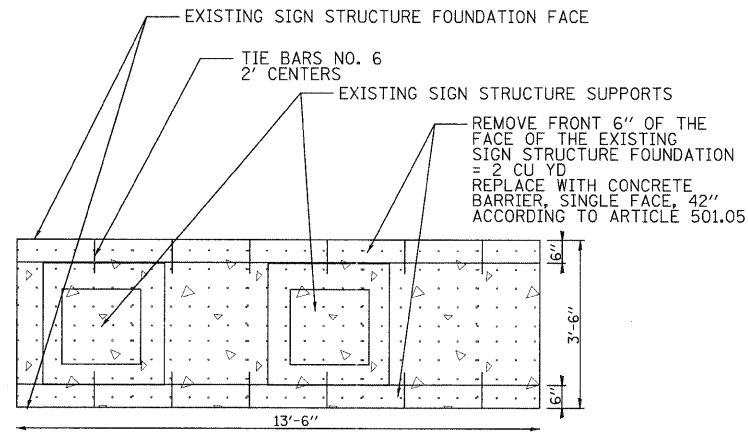
4" - (3'-9") SKIP-DASH WHITE LINE DETAIL



4" - (10'-30') SKIP-DASH WHITE LINE DETAIL



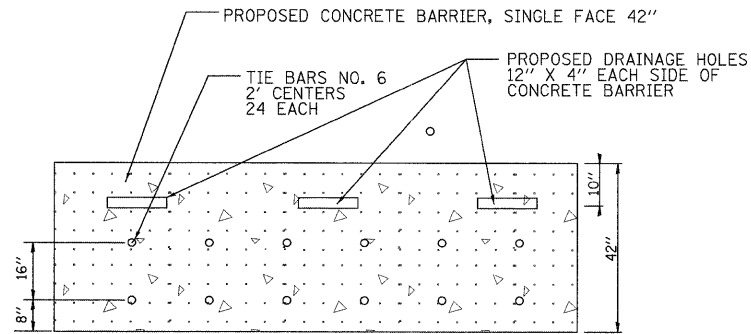
BUTT-JOINT DETAIL



TOP VIEW

EXISTING SIGN STRUCTURE FOUNDATION IN CONCRETE BARRIER

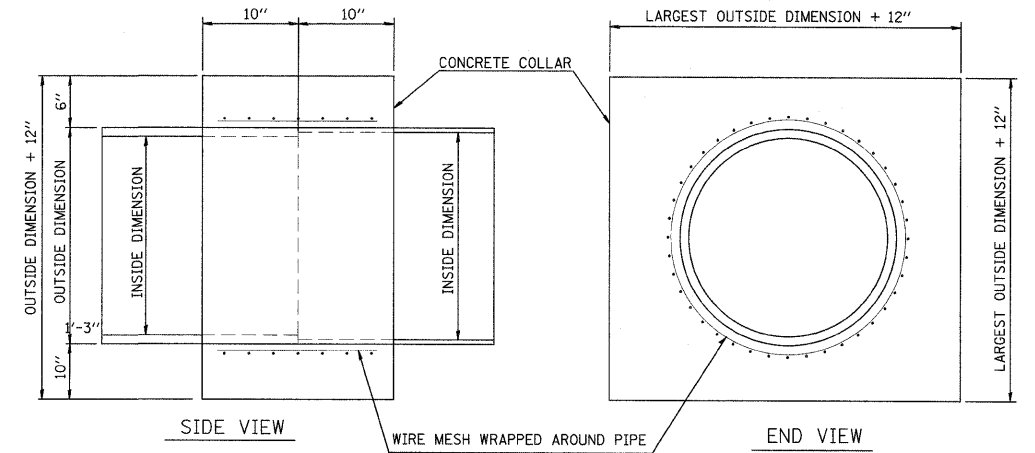
STA. 262+36



SIDE VIEW TIE BARS NO. 6

PROPOSED CONCRETE BARRIER AT EXISTING SIGN STRUCTURE FOUNDATION

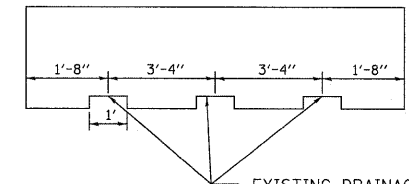
STA. 262+36



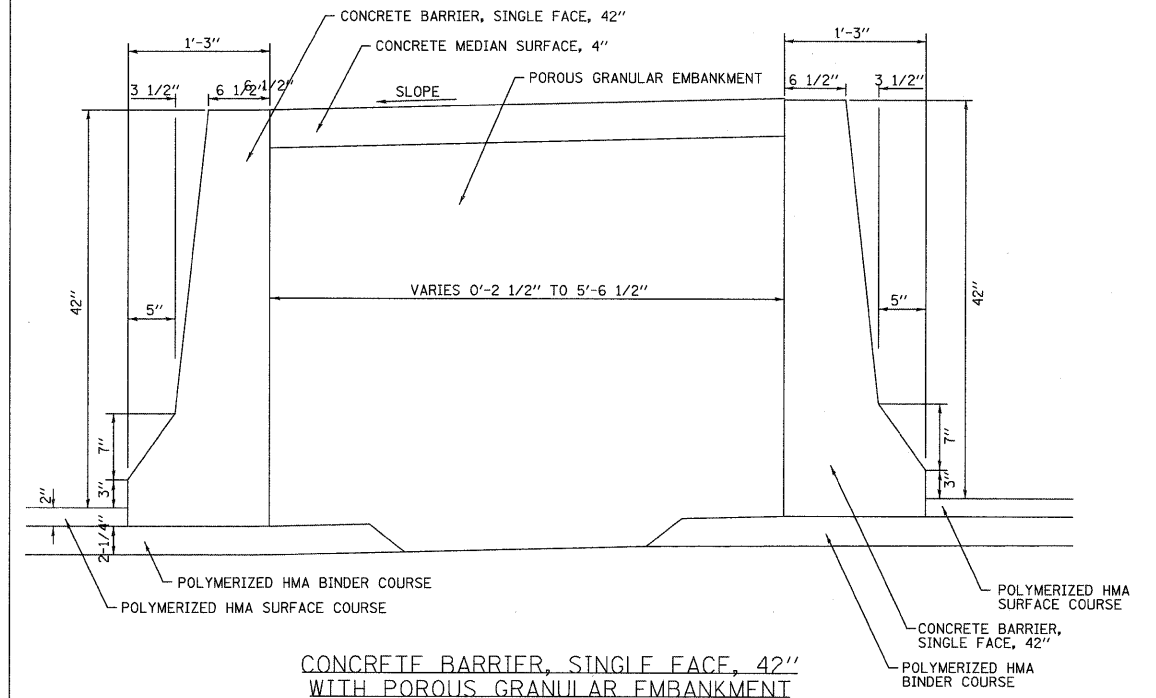
NOTE:  
 CONCRETE COLLARS WILL BE PAID FOR AT THE CONTRACT UNIT PRICE, CU. YD., FOR CONCRETE COLLARS INCLUDING ALL MATERIAL AND LABOR SPECIFIED TO COMPLETE THE WORK IN PLACE.

CONCRETE COLLAR DETAIL

10' OF EXISTING CONCRETE BARRIER (TYPICAL)



CONCRETE BARRIER DRAINAGE OPENING DETAIL



CONCRETE BARRIER, SINGLE FACE, 42" WITH POROUS GRANULAR EMBANKMENT

EASTBOUND - STA. 261+46 TO STA. 263+26  
 WESTBOUND - STA. 278+97.25 TO STA. 280+71

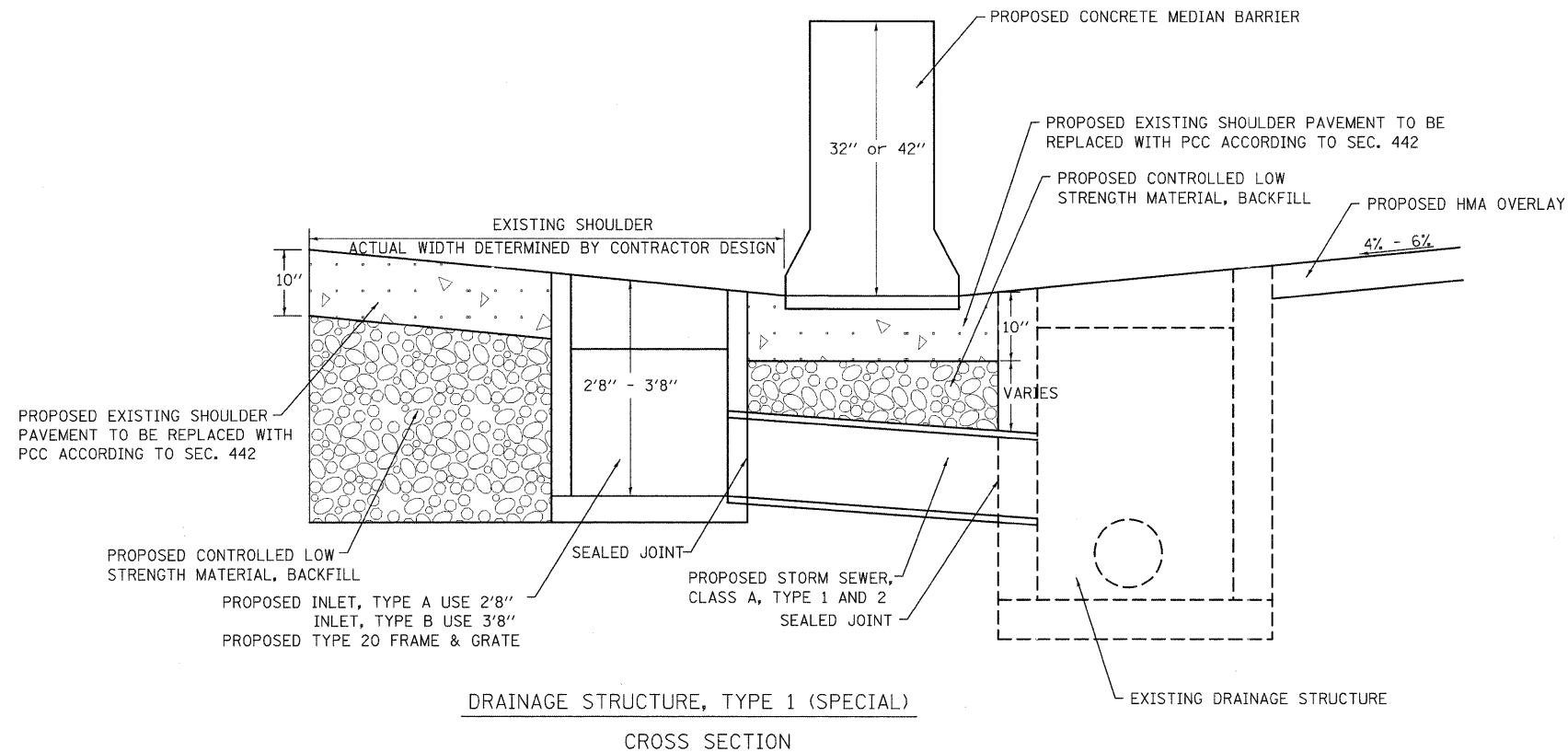
FILE NAME =	USER NAME = burnsideem	DESIGNED -	REVISED -
c:\pwork\pwork\burnsideem\8019244\d876415-sht-plan.dgn		DRAWN -	REVISED -
PLOT SCALE = 50.0000' / 1"		CHECKED -	REVISED -
PLOT DATE = 11/21/2011		DATE -	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

DETAILS

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

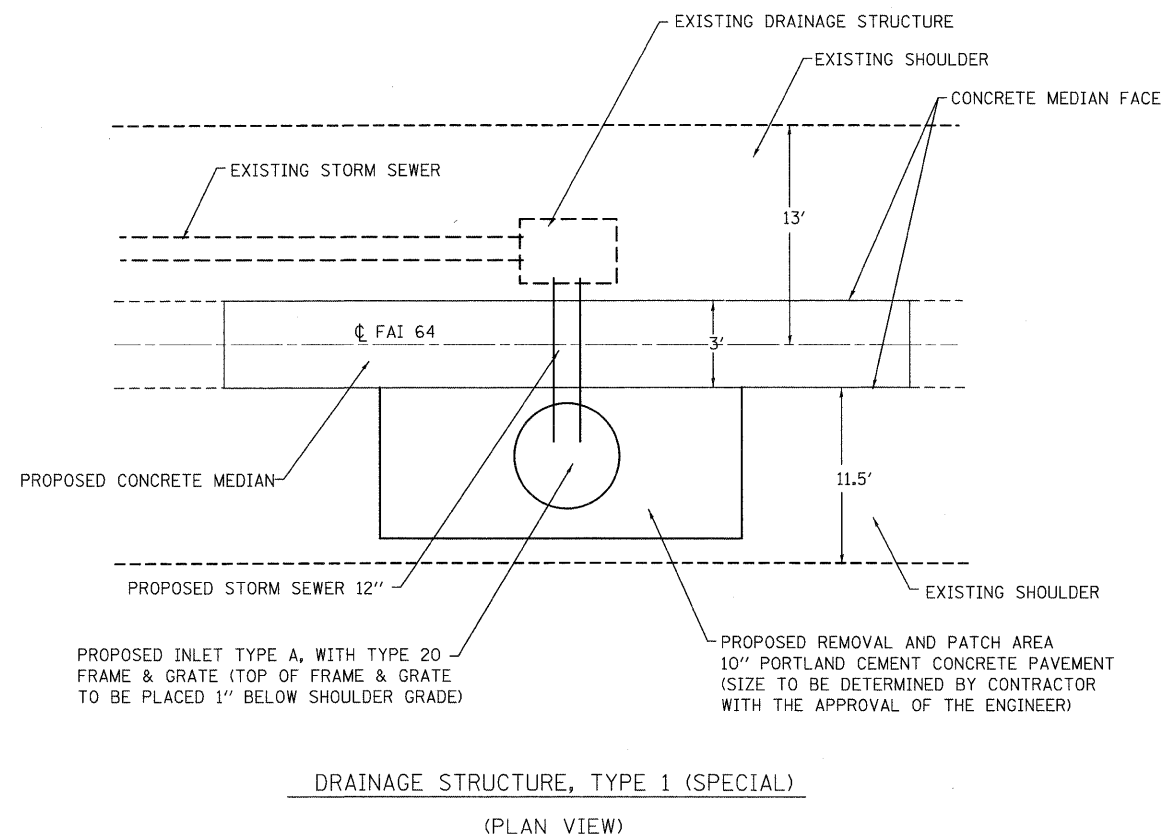
F.A.I. RTE. 64	SECTION 82-(3,4)RS	COUNTY ST. CLAIR	TOTAL SHEETS 167	SHEET NO. 166
CONTRACT NO. 76415			ILLINOIS FED. AID PROJECT	



NOTE: SEALED JOINT TO THE SATISFACTION OF THE ENGINEER - WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF PAY ITEM "DRAINAGE STRUCTURE, TYPE 1 (SPECIAL)"

NOTES:

- ① PAVED SHOULDER REMOVAL, SOIL EXCAVATION, TRENCH PROTECTION (FOR EXCAVATION AREA AND MEDIAN), PLACEMENT OF CONTROLLED LOW STRENGTH MATERIAL, AND PAVEMENT PATCH SHALL ALL BE INCLUDED IN THE PAY ITEM "DRAINAGE STRUCTURE, TYPE 1 (SPECIAL)".
- ② PROPOSED INLET TYPE A W/ TYPE 20 FRAME AND GRATE WILL BE PAID FOR SEPARATELY. 12" STORM SEWER WILL BE PAID FOR SEPARATELY ALSO.
- ③ ANY DAMAGE TO CONCRETE MEDIAN SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.
- ④ SOIL SUPPORT SYSTEM OF AGGREGATE AND WELDED WIRE WILL BE ENCOUNTERED DURING EXCAVATION. REMOVAL OF SOIL SUPPORT SYSTEM INCLUDED IN COST OF "DRAINAGE STRUCTURE, TYPE 1 (SPECIAL)".



FILE NAME =	USER NAME = burnsideem	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>DRAINAGE STRUCTURE, TYPE 1 (SPECIAL)</b>	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
ca:\pwork\pwork\burnsideem\0109244\0876415-sht-plan.dgn	PLOT SCALE = 50.0000' / 1"	DRAWN -	REVISED -			64	82-13,4RS	ST. CLAIR	167	167	
PLOT DATE = 10/21/2011	DATE -	CHECKED -	REVISED -			<b>CONTRACT NO. 76415</b>					
						FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					