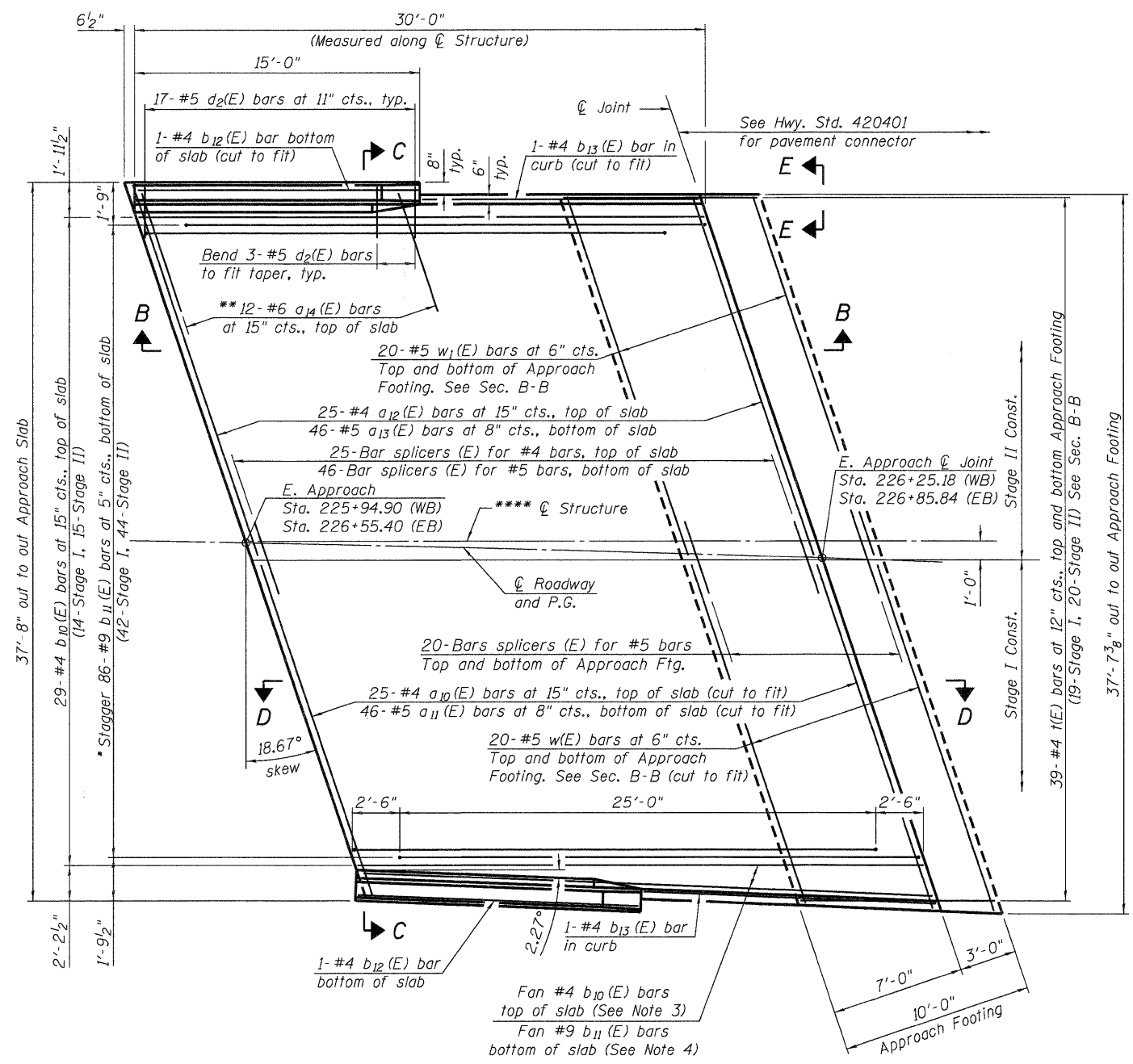
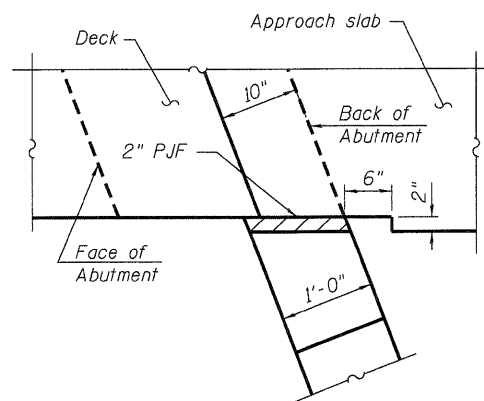


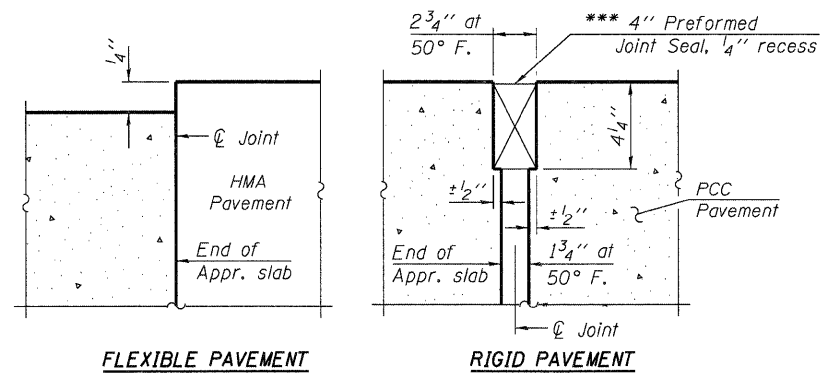
WEST APPROACH PLAN



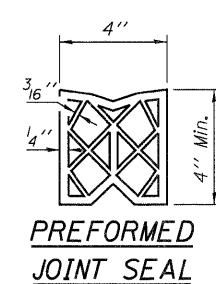
EAST APPROACH PLAN



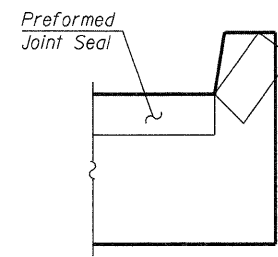
APPROACH NOTCH DETAIL
(Parapet not shown for clarity)



DETAIL A



PREFORMED JOINT SEAL



VIEW E-E

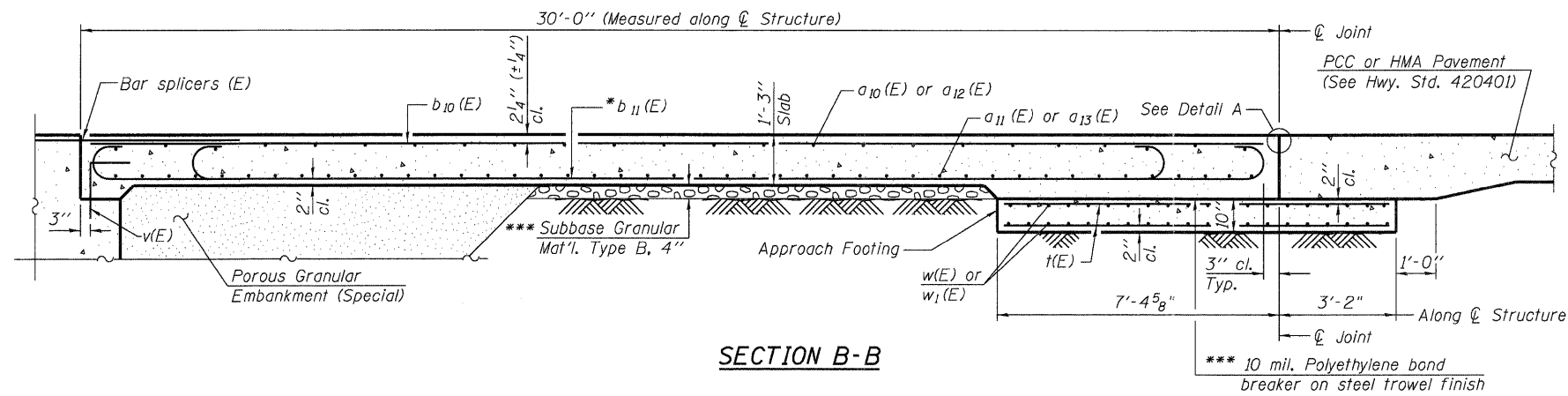
- Notes:
- * Tilt #9 b₁₁(E) bars as required to maintain clearance.
 - ** Space between a₁₀(E) and a₁₂(E) bars, typ. ea. parapet.
 - *** Cost included with Concrete Superstructure.
 - **** See sheet 2 of 28 for location of E and WB Structures relative to their Local Tangents.

Notes:

1. See sheet 17 of 28 for Sections B-B & C-C and View D-D.
2. a₁₀(E) thru a₁₄(E) bar spacings are measured along C Structure.
3. #4 b₁₀(E) bars shall be fanned to maintain 15" maximum spacing along the end of each approach slab in Stage I Construction.
4. #9 b₁₁(E) bars shall be fanned to maintain 5" maximum spacing along the end of each approach slab in Stage I Construction.

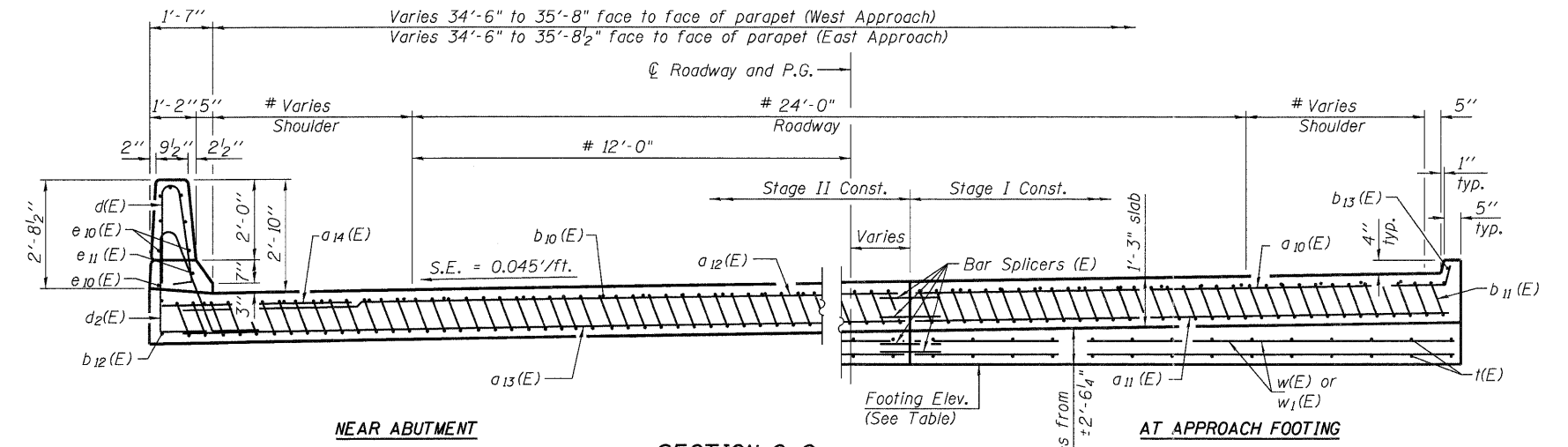
(Sheet 1 of 2)

| | | | | | | | | | | | |
|----------------------------------|---------------------|-----------|--|------------------------------------------------------------------------------------|-----------------------------------------------------------------|------------------------------------------------------------------------------|---------------------------|------------------------|------------|--------------|-----------|
| USER NAME = dheberling | DESIGNED - R.JN/BRD | REVISED - | | 7018 KINGSMILL CT., SPRINGFIELD, IL (217) 483-9457 DESIGN FIRM #184001036 | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | BRIDGE APPROACH SLABS STRUCTURE NO. 043-0002 & 043-0003 | F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| FILE NAME = 0430020283-64C94.dgn | CHECKED - SBC | REVISED - | | | | | 301 | (43B, 44B, 44HB, 45B)D | JO DAVIESS | 309 | 101 |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - | | | | | CONTRACT NO. 64C94 | | | | |
| PLOT TIME = 10:02:50 AM | CHECKED - SBC | REVISED - | | | | | ILLINOIS FED. AID PROJECT | | | | |

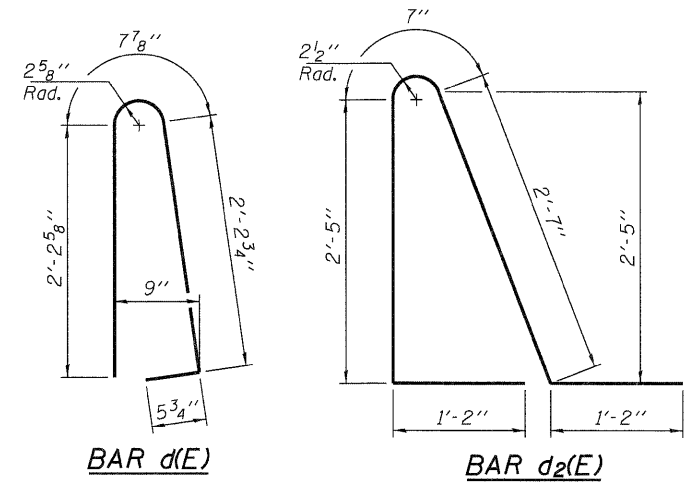


SECTION B-B

Notes:
 Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
 Approach footing concrete shall be paid for as Concrete Structures.
 Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
 For v(E) bar details, see sheets 23 thru 26 of 28.
 The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
 For bar splicer details, see sheet 27 of 28.
 Cost of excavation for approach footing included with Concrete Structures.
 For Porous Granular Embankment (Special) and drainage treatment details, see sheet 2 of 28.
 For additional parapet details, see sheet 14 of 28.
 See sheet 16 of 28 for Detail A, and View E-E.



SECTION C-C



BAR d(E)

BAR d2(E)

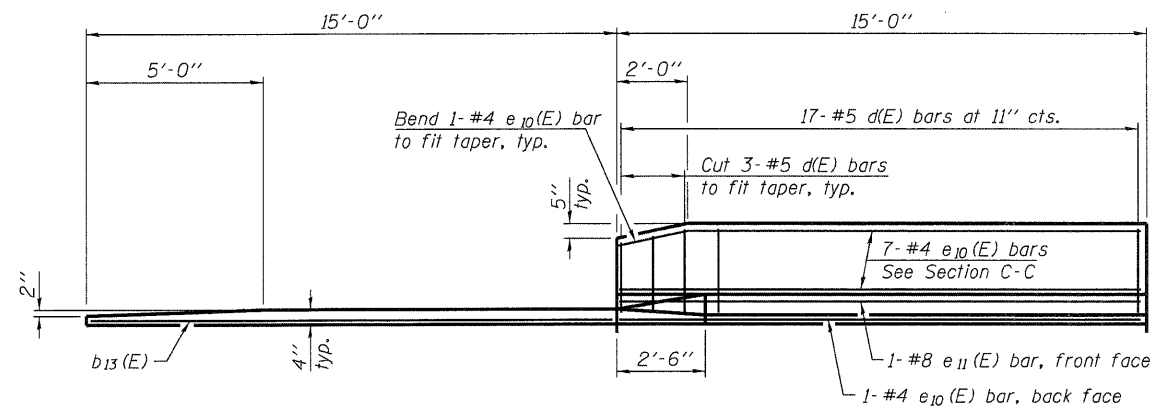
* Tilt #9 b11(E) bars as required to maintain clearance.
 *** Cost included with Concrete Superstructure.

**FOUR APPROACHES
 BILL OF MATERIAL**

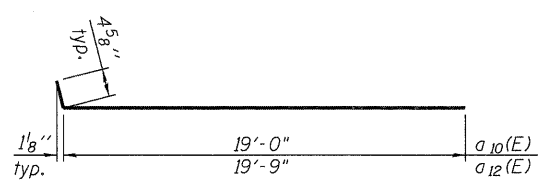
| Bar | No. | Size | Length | Shape |
|----------------------------------|-----|---------|--------|-------|
| a10(E) | 100 | #4 | 19'-5" | — |
| a11(E) | 184 | #5 | 19'-3" | — |
| a12(E) | 100 | #4 | 20'-2" | — |
| a13(E) | 184 | #5 | 20'-0" | — |
| a14(E) | 96 | #6 | 6'-6" | — |
| b10(E) | 116 | #4 | 29'-8" | — |
| b11(E) | 344 | #9 | 29'-9" | U |
| b12(E) | 8 | #4 | 14'-8" | — |
| b13(E) | 8 | #4 | 14'-9" | — |
| d(E) | 136 | #5 | 5'-7" | L |
| d2(E) | 136 | #5 | 7'-11" | L |
| e10(E) | 64 | #4 | 14'-8" | — |
| e11(E) | 8 | #8 | 14'-8" | — |
| f(E) | 312 | #4 | 10'-2" | — |
| w(E) | 160 | #5 | 19'-3" | — |
| w1(E) | 160 | #5 | 20'-0" | — |
| Concrete Structure | | Cu. Yd. | 98.4 | |
| Concrete Superstructure | | Cu. Yd. | 227.9 | |
| Reinforcement Bars, Epoxy Coated | | Pound | 59,890 | |

FOOTING ELEVATION TABLE

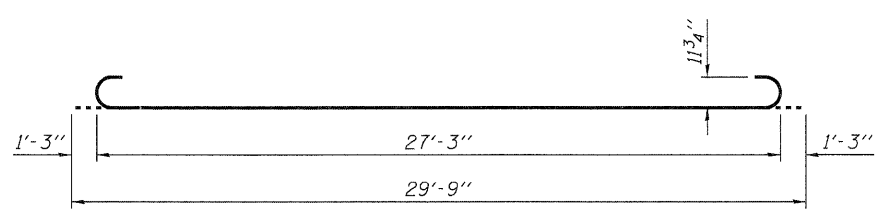
| Location | Elevation |
|------------------|-----------|
| EB West Approach | 611.65 |
| EB East Approach | 609.72 |
| WB West Approach | 612.77 |
| WB East Approach | 610.01 |



VIEW D-D



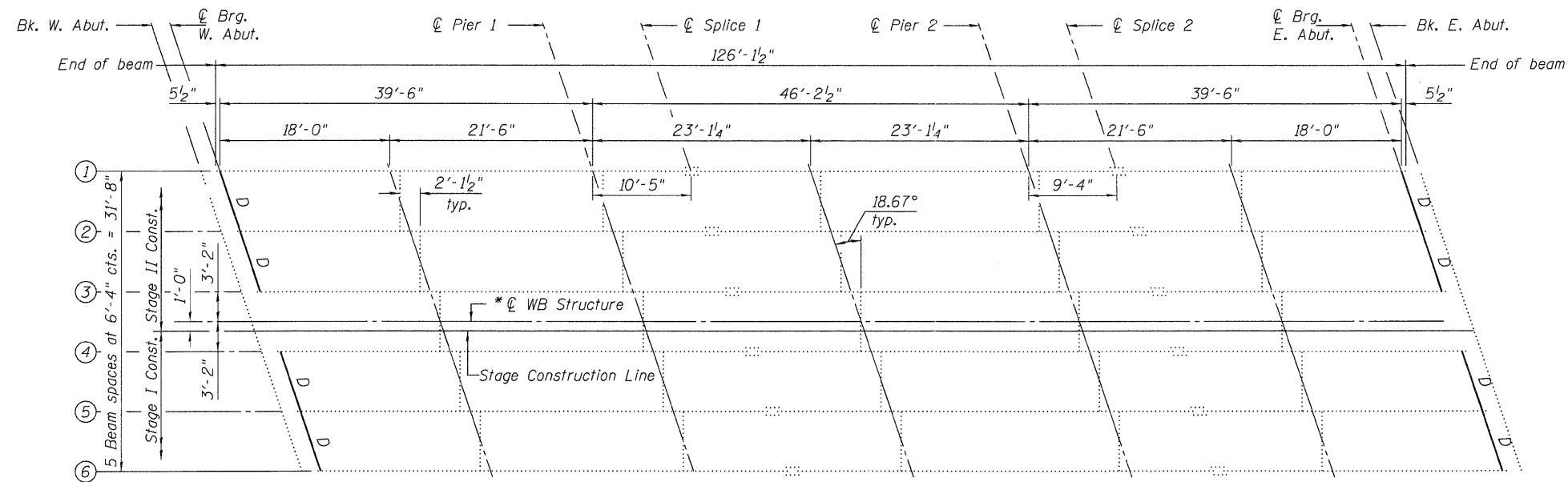
BARS a10(E) AND a12(E)



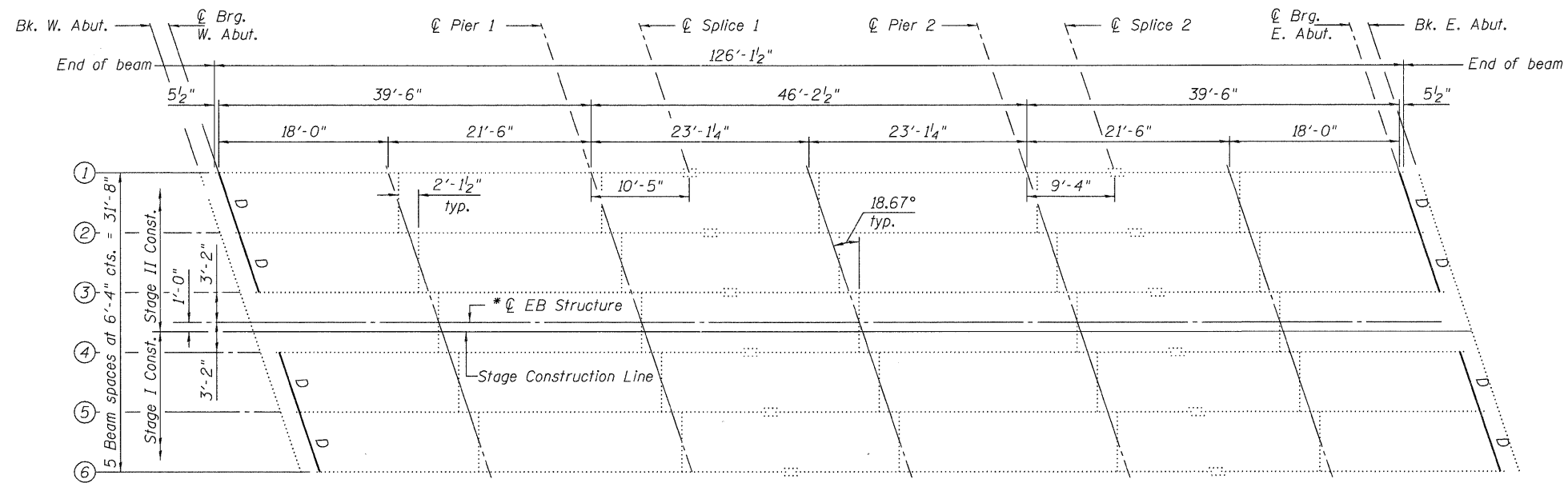
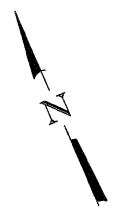
BAR b11(E)

BA-R 7-1-10

(Sheet 2 of 2)



WB FRAMING PLAN

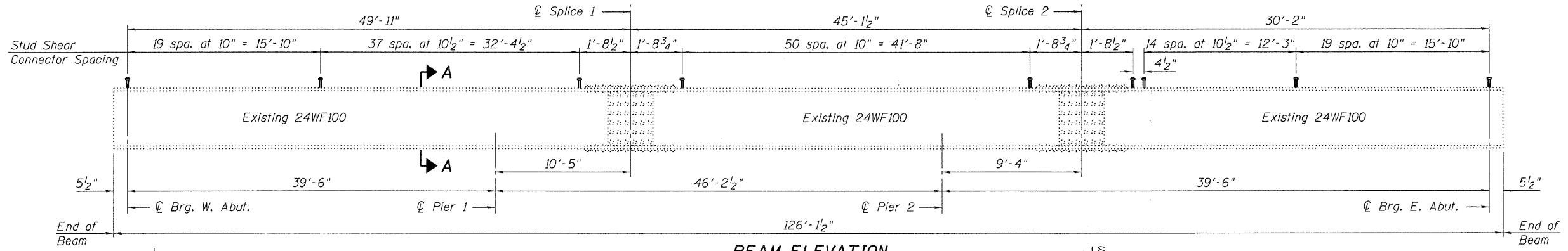


EB FRAMING PLAN

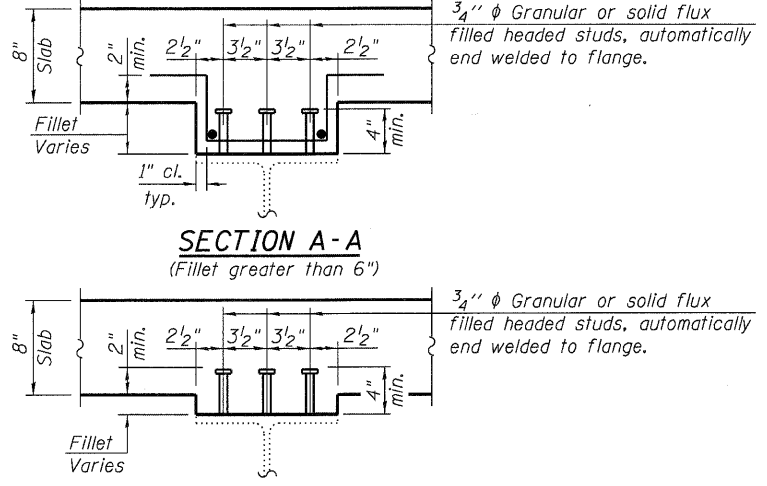
Notes:

All existing beams are 24WF100.
 * See sheet 2 of 28 for location of EB and WB Structures relative to their Local Tangents.

| | | | | | | | | | | | |
|---------------------------------|---------------------|-----------|--|------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------|---------------------------|------------------------|------------|--------------|-----------|
| USER NAME = dheberling | DESIGNED - R.JN/BRD | REVISED - | | 7018 KINGSMILL CT., SPRINGFIELD, IL (217) 483-9457 DESIGN FIRM #184001036 | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | FRAMING PLAN STRUCTURE NO. 043-0002 & 043-0003 | F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| FILE NAME = 043000283-64C94.dgn | CHECKED - SBC | REVISED - | | | | | 301 | (43B, 44B, 44HB, 45B)D | JO DAVIESS | 309 | 103 |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - | | | | | CONTRACT NO. 64C94 | | | | |
| PLOT TIME = 10:02:58 AM | CHECKED - SBC | REVISED - | | | | | ILLINOIS FED. AID PROJECT | | | | |



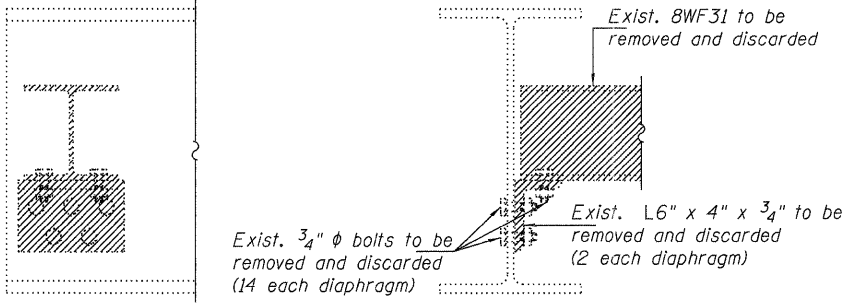
BEAM ELEVATION



SECTION A-A
(Fillet greater than 6")

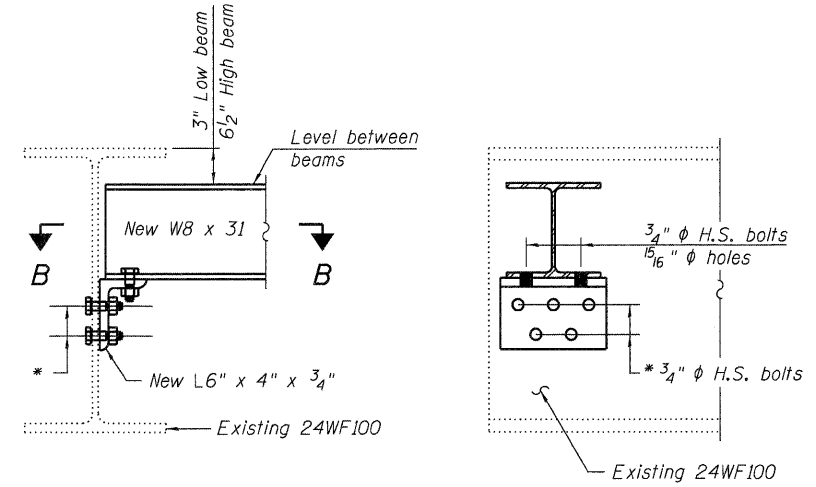
SECTION A-A
(Fillet less than 6")

Note:
Stud Shear Connectors required = 2,574/Bridge.



END DIAPHRAGM "D" REMOVAL DETAIL

(Total 20 Diaphragms to be removed. Cost included with Structural Steel Removal.)



END DIAPHRAGM "D"

(Total 16 required)

* Field drill 1 5/16" ϕ holes in new connector angle L6" x 4" x 3/4" and connect with 3/4" ϕ H.S. bolts. Use existing holes in beam web as a template. Cost included with Furnishing and Erecting Structural Steel.

Notes:
Two hardened washers shall be required over all oversized holes in diaphragms.

| INTERIOR GIRDER MOMENT TABLE | | | | |
|------------------------------|--------------------|------------------------|------------|-----------|
| | | 0.4 Sp. 1 or 0.6 Sp. 3 | Pier 1 & 2 | 0.5 Sp. 2 |
| I_s | (in ⁴) | 2987.3 | 2987.3 | 2987.3 |
| $I_c(n)$ | (in ⁴) | 11962.5 | | 11962.5 |
| $I_c(3n)$ | (in ⁴) | 8468.6 | 8468.6 | 8468.6 |
| $I_c(cr)$ | (in ⁴) | | 5230.3 | |
| S_s | (in ³) | 248.9 | 248.9 | 248.9 |
| $S_c(n)$ | (in ³) | 455.2 | | 455.2 |
| $S_c(3n)$ | (in ³) | 405.5 | 405.5 | 405.5 |
| $S_c(cr)$ | (in ³) | | 292.7 | |
| Z | (in ³) | | | |
| ϕ | (k/') | 0.855 | 0.855 | 0.855 |
| $M\phi$ | (k) | 98 | 156 | 72 |
| $s\phi$ | (k/') | 0.310 | 0.310 | 0.310 |
| $M_s\phi$ | (k) | 35 | 57 | 26 |
| $M\phi$ | (k) | 203 | 156 | 196 |
| M_I | (k) | 61 | 47 | 57 |
| $^5_3[M\phi + I]$ | (k) | 439 | 338 | 422 |
| M_o | (k) | 744 | 717 | 676 |
| M_u | (k) | 1255 | | 1284 |
| $f_s \phi$ non-comp | (ksi) | 4.7 | 7.5 | 3.5 |
| $f_s \phi$ (comp) | (ksi) | 1.0 | 2.3 | 0.8 |
| $f_s (^5_3[M\phi + M_I])$ | (ksi) | 11.6 | 13.9 | 11.1 |
| f_s (Overload) | (ksi) | 17.3 | 23.7 | 15.4 |
| f_s (Total) | (ksi) | | 30.8 | |
| VR | (k) | 29.6 | 53.4 | 31.2 |

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) due to non-composite dead loads (in⁴ and in³).

$I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total and Overload) due to short-term composite live loads (in⁴ and in³).

$I_c(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total and Overload) due to long-term composite (superimposed) dead loads (in⁴ and in³).

$I_c(cr), S_c(cr)$: Composite moment of inertia and section modulus of the steel and deck based upon the cracked concrete section with negative moment reinforcement. Used for computing f_s (Total and Overload) due to short and long-term composite dead and live loads in the negative moment region.

Z : Plastic Section Modulus of the steel section in non-composite areas (in³).

ϕ : Un-factored non-composite dead load (kips/ft.).

$M\phi$: Un-factored moment due to non-composite dead load (kip-ft.).

$s\phi$: Un-factored long-term composite (superimposed) dead load (kips/ft.).

$M_s\phi$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

$M\phi$: Un-factored live load moment (kip-ft.).

M_I : Un-factored moment due to impact (kip-ft.).

M_o : Factored design moment (kip-ft.).

$1.3 [M\phi + M_s\phi + \frac{5}{8} (M\phi + M_I)]$

M_u : Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).

f_s (Overload): Sum of stresses as computed from the moments below (ksi).

f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).

$1.3 [M\phi + M_s\phi + \frac{5}{8} (M\phi + M_I)]$

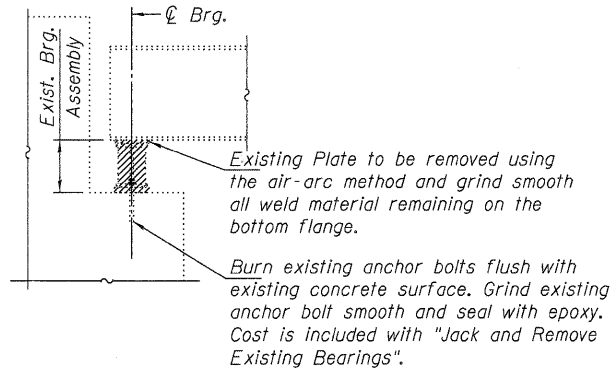
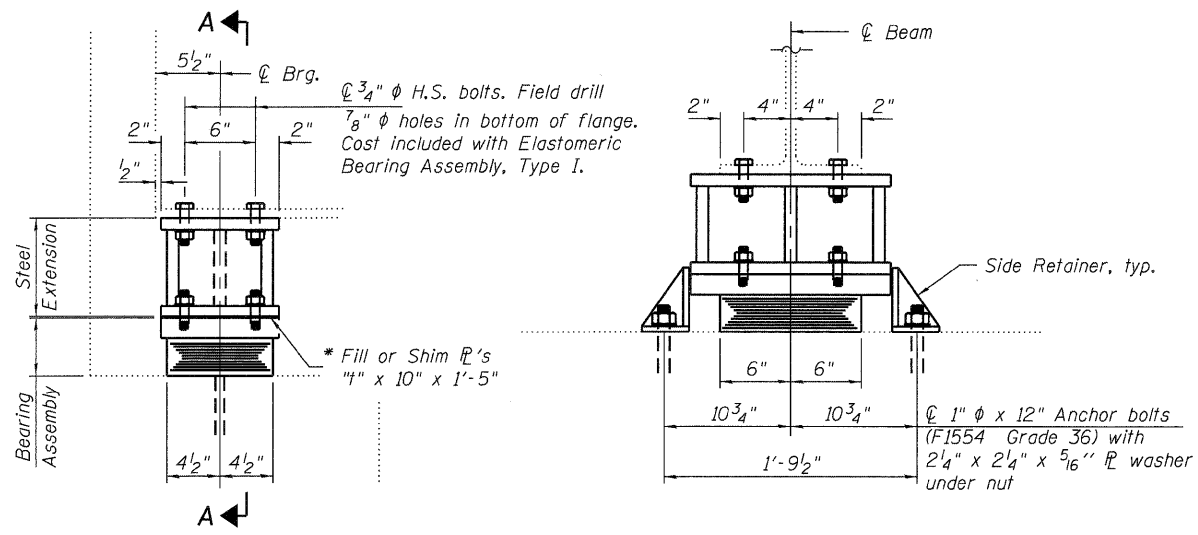
VR: Maximum ϕ + impact shear range within the composite portion of the span for stud shear connector design (kips).

| INTERIOR GIRDER REACTION TABLE | | |
|--------------------------------|---------------------|------------|
| | W. Abut. & E. Abut. | Pier 1 & 2 |
| $R\phi$ | (k) | 46.7 |
| $R\phi$ | (k) | 34.1 |
| R_I | (k) | 10.2 |
| R_{Total} | (k) | 91.0 |

* Compact section
** Braced non-compact and partially braced section
*** Includes Approach Slab dead load reaction at Abutments.

BILL OF MATERIAL

| Item | Unit | Total |
|------------------------------------------|-------|-------|
| Furnishing and Erecting Structural Steel | Pound | 4,160 |
| Structural Steel Removal | Pound | 5,170 |
| Stud Shear Connectors | Each | 5,148 |



JACK AND REMOVE EXISTING BEARINGS PROCEDURE

1. The Contractor shall submit for approval by the Engineer plans for jacking and removal prior to commencing any work at the bearings.
2. Jacking and removing existing bearings shall be done after existing deck removal is completed and prior to pouring of new deck.
3. The Maximum Dead Load Reaction with deck removed (per bearing) at each abutment is 2 kips. Minimum jack capacity is 3 kips.
4. The new bearings shall be in place and the jacks shall be lowered prior to forming and pouring the new deck.

Notes:

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified.

The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Anchor bolts for side retainers shall be installed in holes drilled before or after members are in place.

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

Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates and shims and placed as shown on Bearing Details.

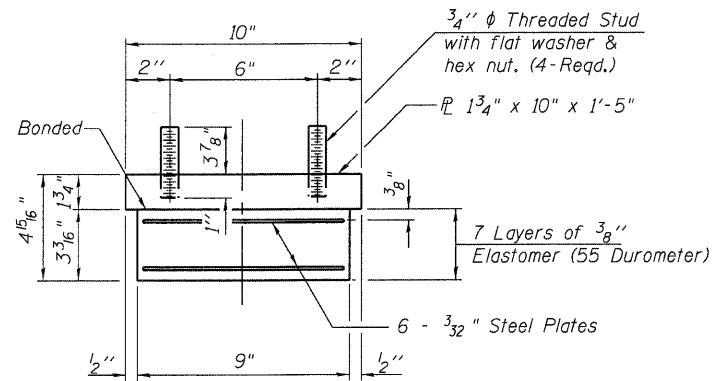
Side retainers and other steel members required for the elastomeric bearing assembly, except Steel Bearing Extension and Fill Plates, shall be included in the cost of Elastomeric Bearing Assembly, Type I. Steel Bearing Extensions and Fill Plates are included in the quantity for Furnishing and Erecting Structural Steel.

ELEVATION AT ABUT.

SECTION A-A

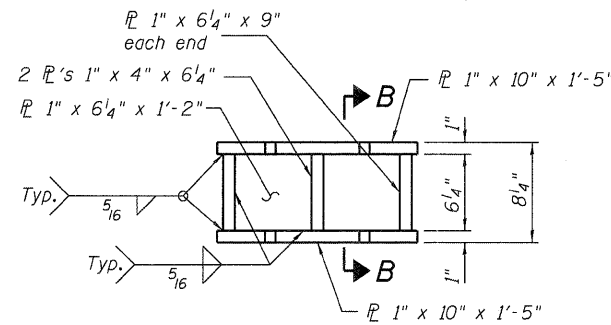
EXISTING BEARING ASSEMBLY REMOVAL DETAIL

TYPE I ELASTOMERIC EXP. BRG.



BEARING ASSEMBLY

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



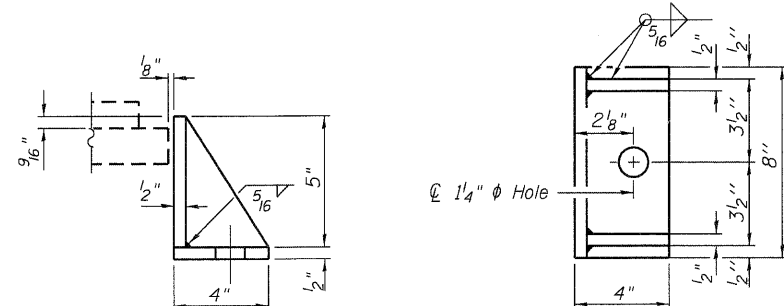
ELEVATION

SECTION B-B

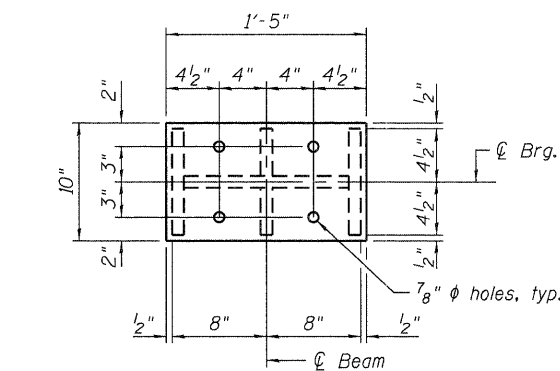
*** TABLE OF "I" DIMENSIONS**

| Beam Number | 043-0002 (EB) | | 043-0003 (WB) | |
|-------------|---------------|---------------|---------------|---------------|
| | West Abutment | East Abutment | West Abutment | East Abutment |
| 1 | 5/8" | 1 1/16" | 1/2" | 15/16" |
| 2 | 5/16" | 1/8" | 13/16" | 9/16" |
| 3 | 3/16" | 1" | 7/8" | 1/2" |
| 4 | 3/16" | 9/16" | 3/4" | 11/16" |
| 5 | 1/2" | 3/4" | 7/8" | 1 1/16" |
| 6 | 13/16" | 1 1/16" | 1" | 7/8" |

* The fill plate thicknesses shown are based on field survey data. Prior to ordering any material the Contractor shall verify in the field all bearing height and fill thickness dimensions.

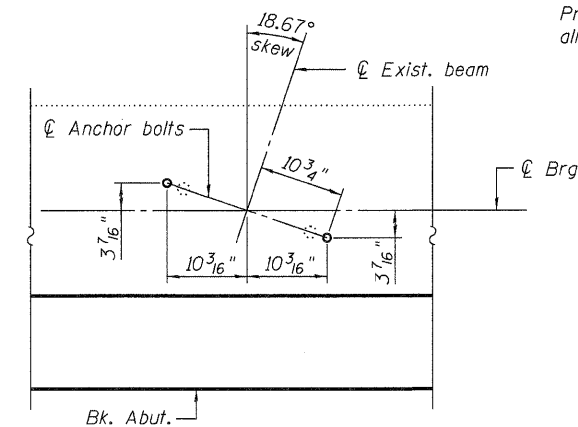


SIDE RETAINER



PLAN

STEEL EXTENSIONS AT ABUTMENTS



ANCHOR BOLT PLAN

BILL OF MATERIAL

| Item | Unit | Total |
|------------------------------------------|-------|-------|
| Elastomeric Bearing Assembly Type I | Each | 24 |
| Anchor Bolts 1" | Each | 48 |
| Jack and Remove Existing Bearings | Each | 24 |
| Furnishing and Erecting Structural Steel | Pound | 4,940 |

| | | |
|---------------------------------|--------------------|-----------|
| USER NAME = dheberling | DESIGNED - RJN/BRD | REVISED - |
| FILE NAME = 0430002&3-64C94.dgn | CHECKED - SBC | REVISED - |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - |
| PLOT TIME = 10:03:05 AM | CHECKED - SBC | REVISED - |

WHKS & CO.
ENGINEERING

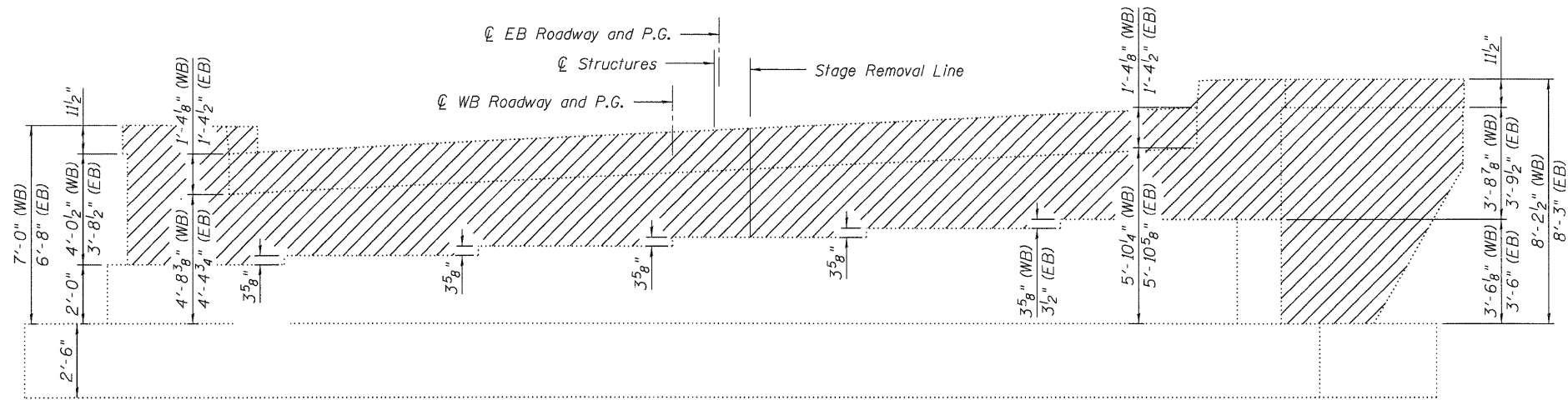
7018 KINGSMILL CT.,
SPRINGFIELD, IL
(217) 483-9457
DESIGN FIRM #184001036

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

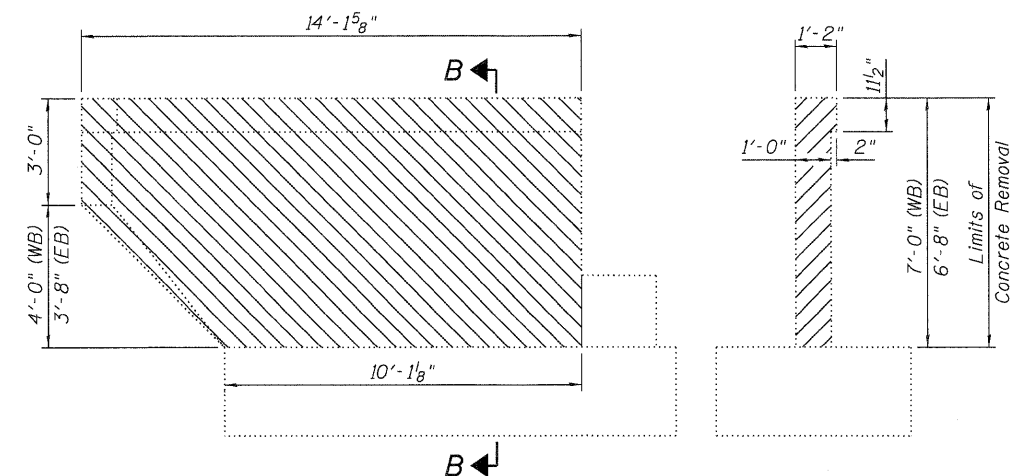
BEARING DETAILS
STRUCTURE NO. 043-0002 & 043-0003

SHEET NO. 20 OF 28 SHEETS

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-------------------------|------------|--------------|-----------|
| 301 | (43B, 44B, 44HB, 45B/D) | JO DAVIESS | 309 | 105 |
| CONTRACT NO. 64C94 | | | | |
| ILLINOIS FED. AID PROJECT | | | | |

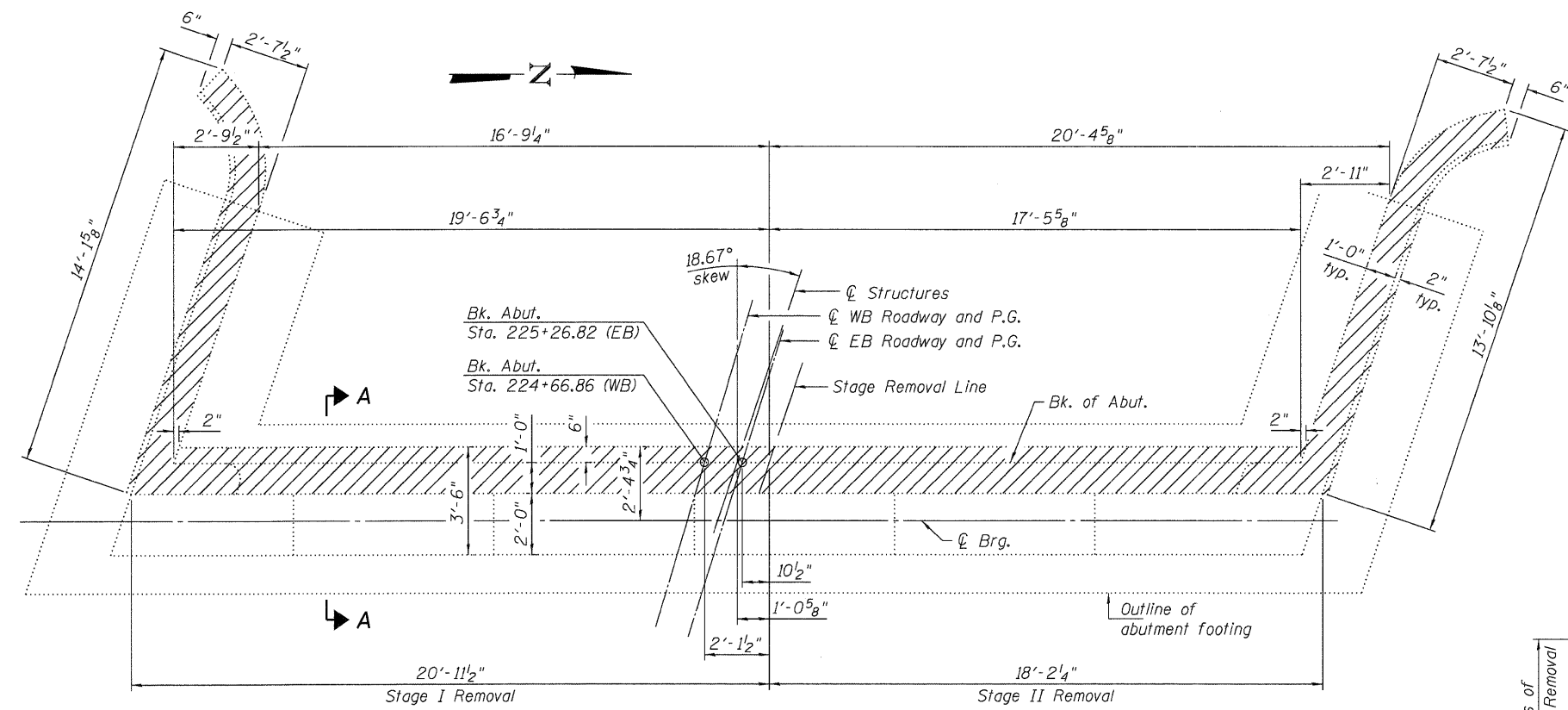


ELEVATION

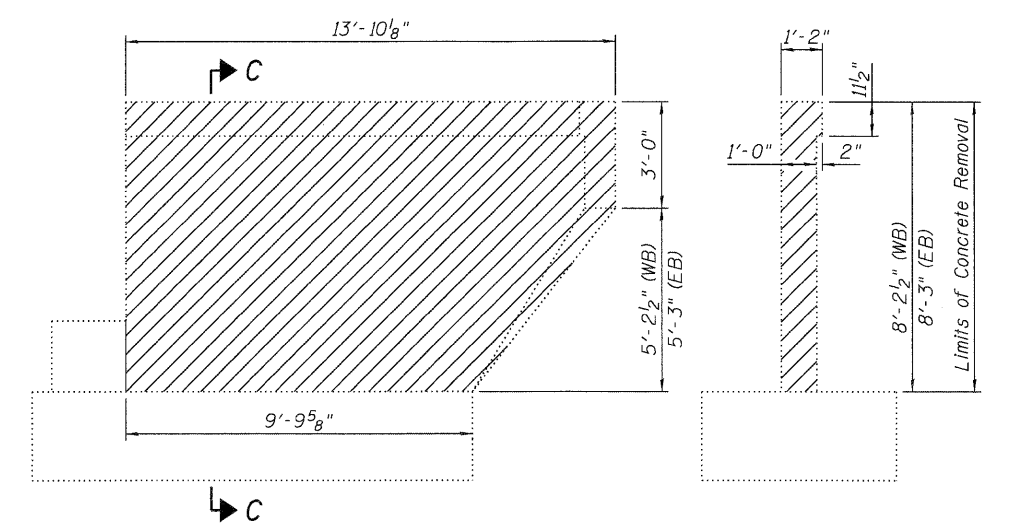


SOUTH WINGWALL ELEVATION

SECTION B-B

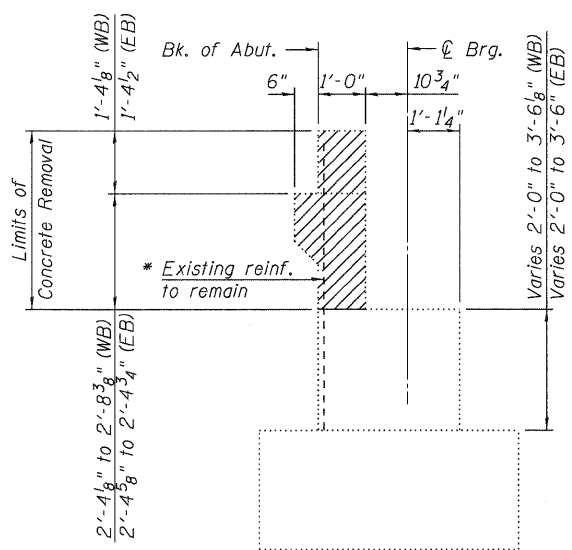


PLAN



NORTH WINGWALL ELEVATION

SECTION C-C



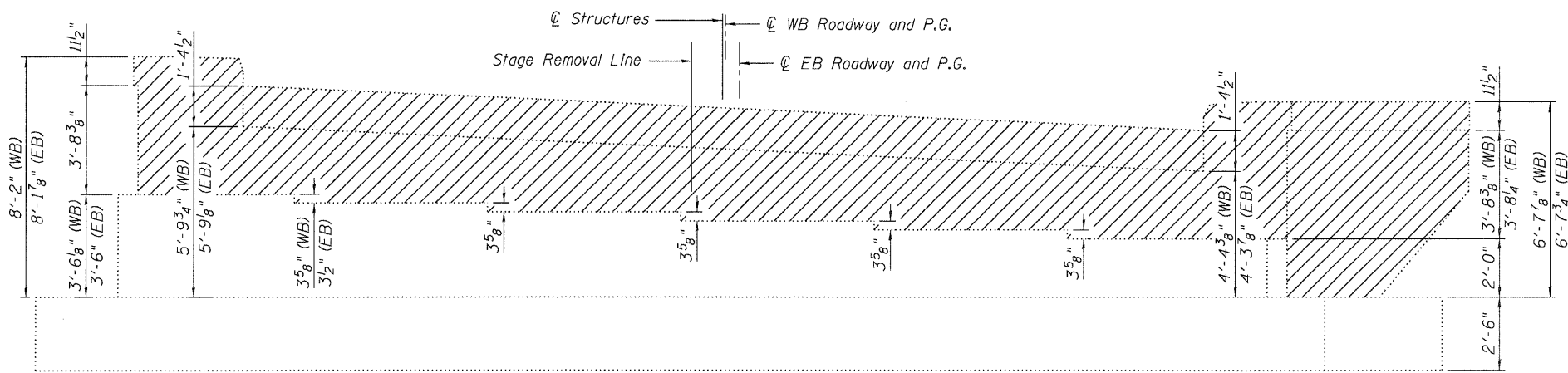
SECTION A-A
(Showing limits of concrete removal)

* Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with Concrete Removal.

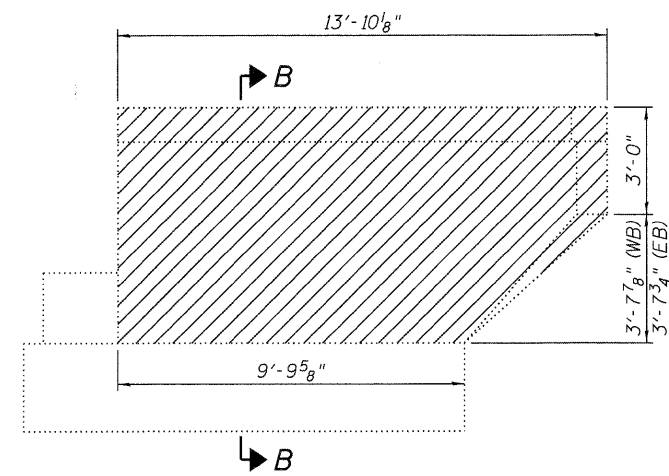
**TWO ABUTMENTS
BILL OF MATERIALS**

| Item | Unit | Total |
|------------------|---------|-------|
| Concrete Removal | Cu. Yd. | 27.4 |

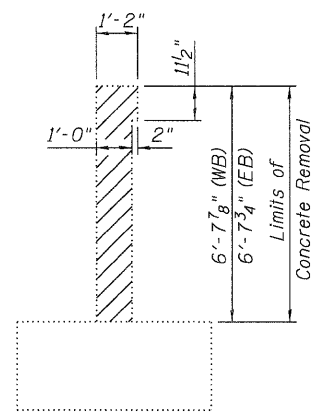
Note:
Hatched areas indicate Concrete Removal.



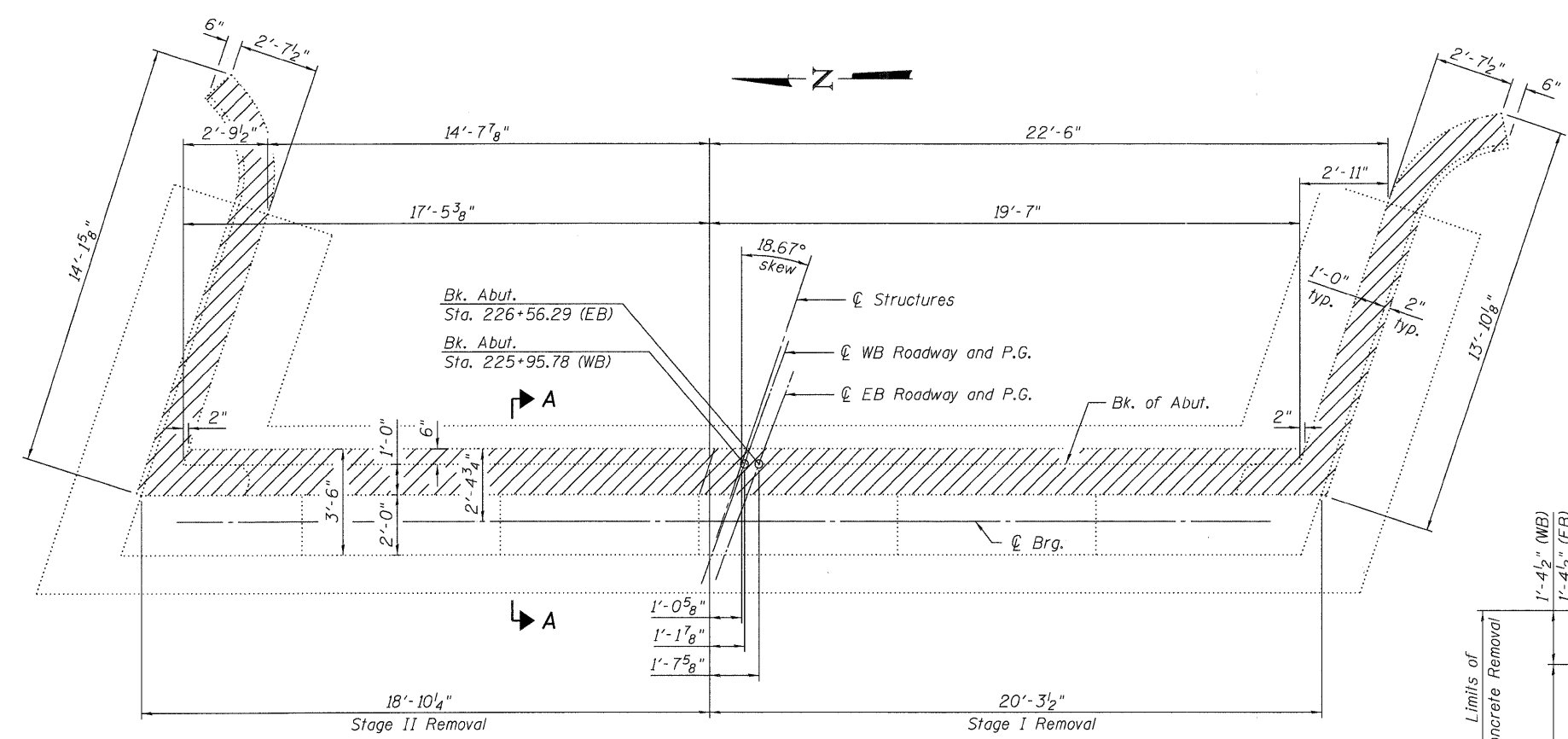
ELEVATION



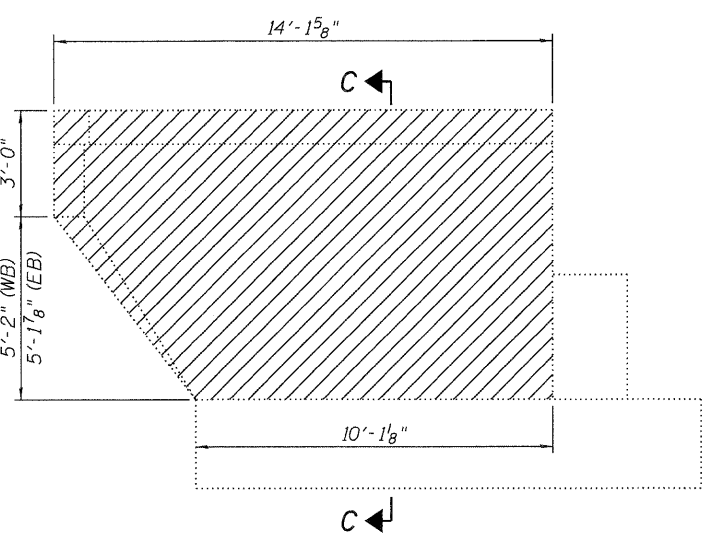
SOUTH WINGWALL ELEVATION



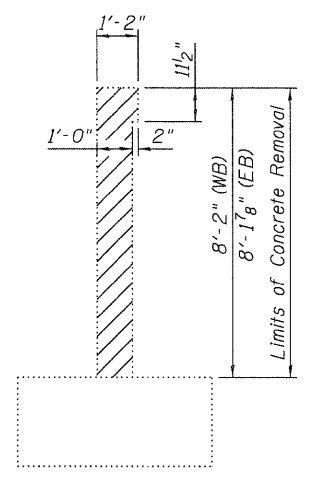
SECTION B-B



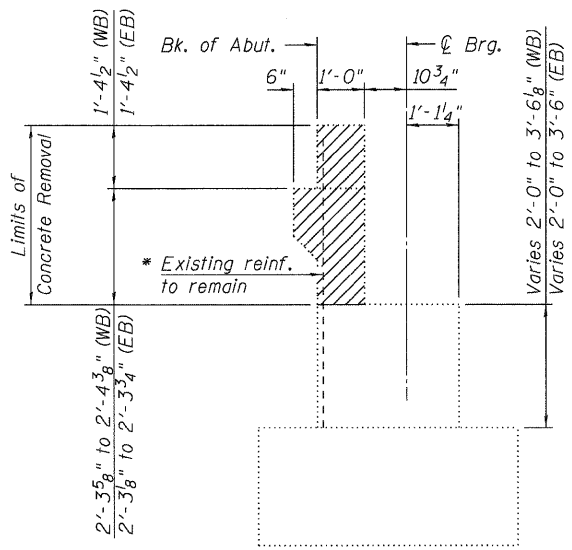
PLAN



NORTH WINGWALL ELEVATION



SECTION C-C



SECTION A-A
(Showing limits of concrete removal)

* Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with Concrete Removal.

Note:
Hatched areas indicate Concrete Removal.

**TWO ABUTMENTS
BILL OF MATERIALS**

| Item | Unit | Total |
|------------------|---------|-------|
| Concrete Removal | Cu. Yd. | 26.6 |

| | | |
|--------------------------------|--------------------|-----------|
| USER NAME = dheberling | DESIGNED - RJN/BRD | REVISED - |
| FILE NAME = 043002&3-64C94.dgn | CHECKED - SBC | REVISED - |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - |
| PLOT TIME = 10:03:11 AM | CHECKED - SBC | REVISED - |

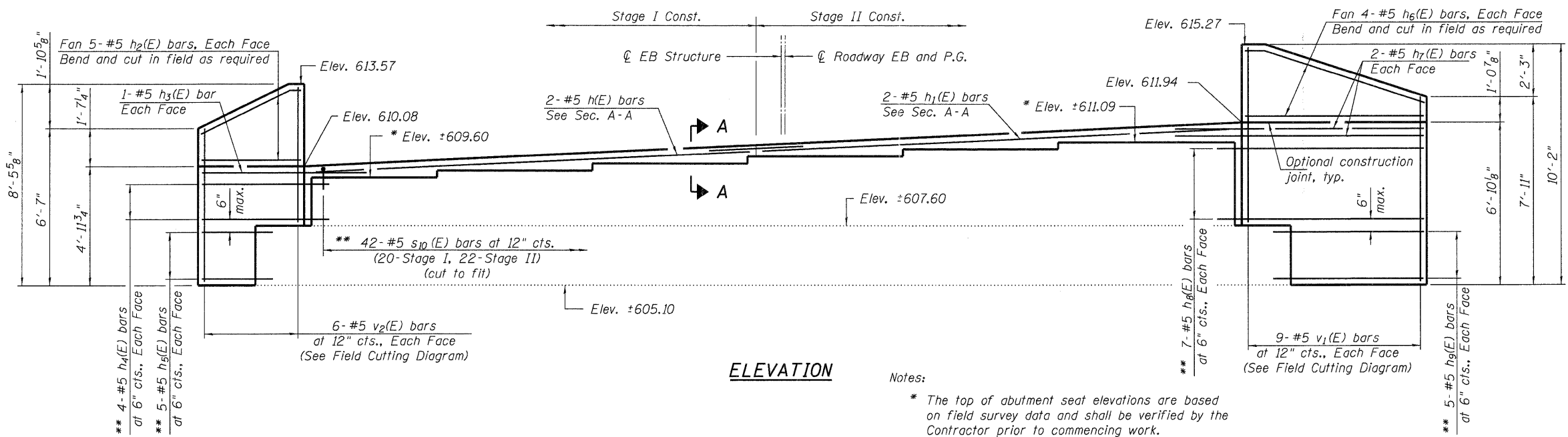
WHKS & CO.
ENGINEERING
7018 KINGSMILL CT.,
SPRINGFIELD, IL
(217) 483-9457
DESIGN FIRM #184001036

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**EAST ABUTMENTS CONCRETE REMOVAL
STRUCTURE NO. 043-002 & 043-003**

SHEET NO. 22 OF 28 SHEETS

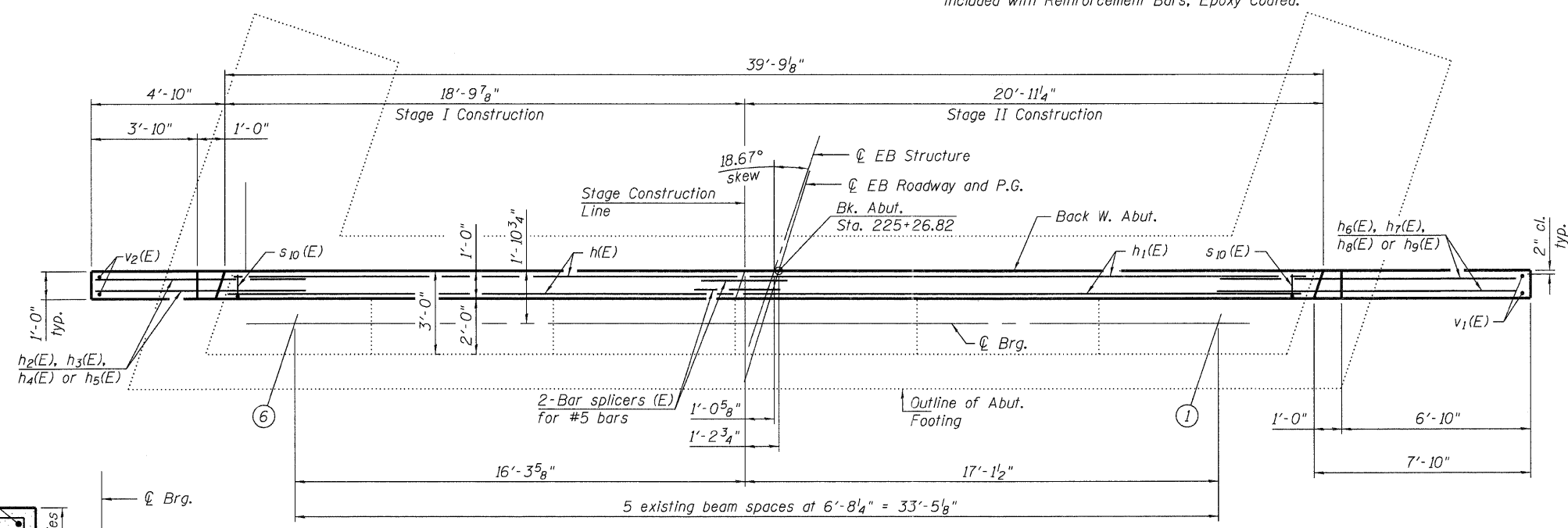
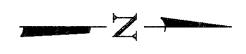
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|--------------------|-----------------------|------------|---------------------------|-----------|
| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| 301 | (43B, 44B, 44HB, 45B) | JO DAVIESS | 309 | 107 |
| CONTRACT NO. 64C94 | | | ILLINOIS FED. AID PROJECT | |



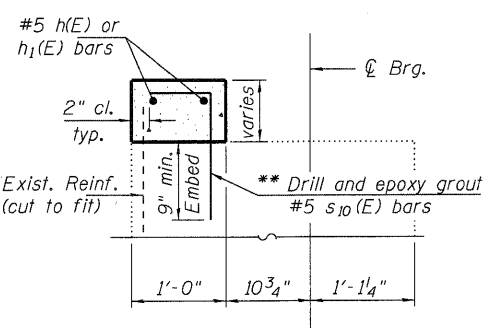
ELEVATION

Notes:

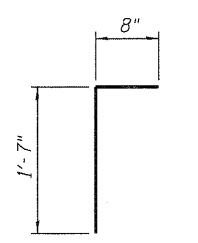
- * The top of abutment seat elevations are based on field survey data and shall be verified by the Contractor prior to commencing work.
- ** Drill and grout #5 bars into 9" min. drilled holes with 4" min. clear cover in the existing abutment according to Article 584 of the Standard Specifications. Method and grout are subject to the approval of the Engineer. Cost included with Reinforcement Bars, Epoxy Coated.



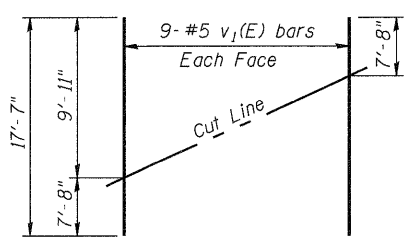
PLAN



SECTION A-A

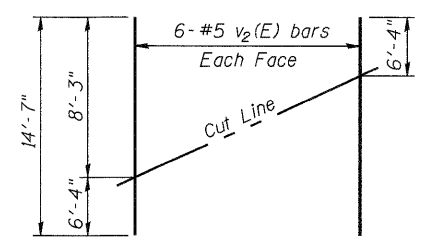


BAR s10(E)



FIELD CUTTING DIAGRAM

Order v1(E) full length. Cut as shown and use remainder of bars in opposite face. Cut bars to fit around footing.



FIELD CUTTING DIAGRAM

Order v2(E) full length. Cut as shown and use remainder of bars in opposite face. Cut bars to fit around footing.

**WEST ABUTMENT
BILL OF MATERIAL**

| Bar | No. | Size | Length | Shape |
|----------------------------------|-----|------|---------|-------|
| h(E) | 2 | #5 | 18'-7" | — |
| h1(E) | 2 | #5 | 20'-8" | — |
| h2(E) | 10 | #5 | 5'-0" | — |
| h3(E) | 2 | #5 | 7'-4" | — |
| h4(E) | 8 | #5 | 5'-10" | — |
| h5(E) | 10 | #5 | 3'-5" | — |
| h6(E) | 8 | #5 | 8'-0" | — |
| h7(E) | 4 | #5 | 10'-4" | — |
| h8(E) | 14 | #5 | 8'-10" | — |
| h9(E) | 10 | #5 | 6'-5" | — |
| s10(E) | 42 | #5 | 2'-3" | └ |
| v1(E) | 9 | #5 | 17'-7" | — |
| v2(E) | 6 | #5 | 14'-7" | — |
| Structure Excavation | | | Cu. Yd. | 102 |
| Concrete Structures | | | Cu. Yd. | 4.7 |
| Reinforcement Bars, Epoxy Coated | | | Pound | 900 |

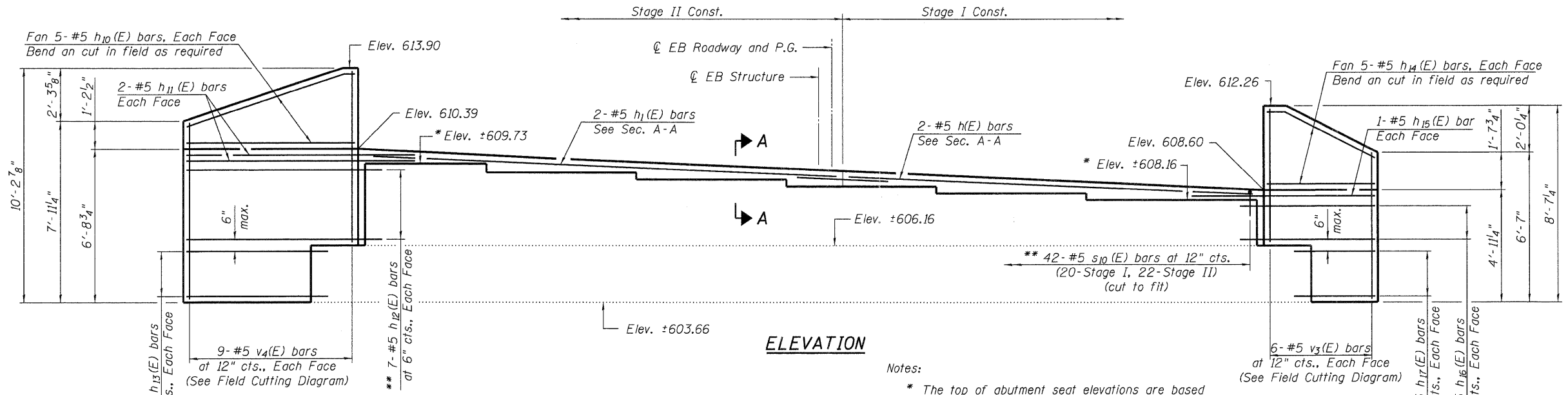
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|--------------------------------|--------------------|-----------|
| USER NAME = dheberling | DESIGNED - RJN/BRD | REVISED - |
| FILE NAME = 04300283-64C94.dgn | CHECKED - SBC | REVISED - |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - |
| PLOT TIME = 10:03:14 AM | CHECKED - SBC | REVISED - |

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(217) 483-9457
DESIGN FIRM #184001036

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**WEST ABUTMENT
STRUCTURE NO. 043-0002**
SHEET NO. 23 OF 28 SHEETS

| | | | | |
|--------------------|---------------------------------|-------------------|---------------------------|---------------|
| F.A.P. RTE. 301 | SECTION (43B, 44B, 44HB, 45BID) | COUNTY JO DAVIESS | TOTAL SHEETS 309 | SHEET NO. 108 |
| CONTRACT NO. 64C94 | | | ILLINOIS FED. AID PROJECT | |



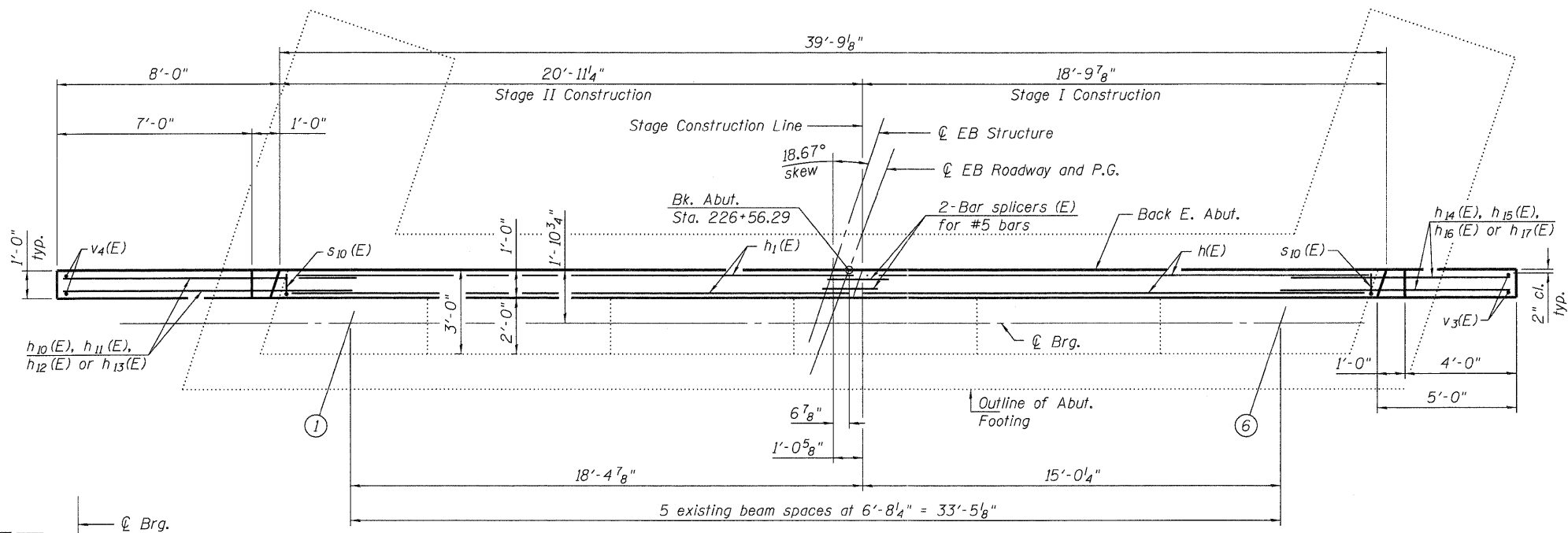
ELEVATION

Notes:

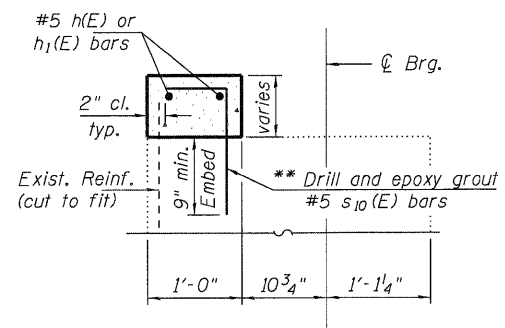
- * The top of abutment seat elevations are based on field survey data and shall be verified by the Contractor prior to commencing work.
- ** Drill and grout #5 bars into 9" min. drilled holes with 4" min. clear cover in the existing abutment according to Article 584 of the Standard Specifications. Method and grout are subject to the approval of the Engineer. Cost included with Reinforcement Bars, Epoxy Coated.

**EAST ABUTMENT
BILL OF MATERIAL**

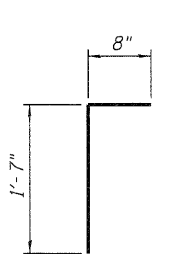
| Bar | No. | Size | Length | Shape |
|----------------------------------|-----|---------|--------|-------|
| h(E) | 2 | #5 | 18'-7" | — |
| h1(E) | 2 | #5 | 20'-8" | — |
| h10(E) | 10 | #5 | 8'-2" | — |
| h11(E) | 4 | #5 | 10'-6" | — |
| h12(E) | 14 | #5 | 9'-0" | — |
| h13(E) | 10 | #5 | 6'-7" | — |
| h14(E) | 10 | #5 | 5'-2" | — |
| h15(E) | 2 | #5 | 7'-6" | — |
| h16(E) | 8 | #5 | 6'-0" | — |
| h17(E) | 10 | #5 | 3'-7" | — |
| s10(E) | 42 | #5 | 2'-3" | └ |
| v3(E) | 6 | #5 | 14'-8" | — |
| v4(E) | 9 | #5 | 17'-8" | — |
| Structure Excavation | | Cu. Yd. | | 98 |
| Concrete Structures | | Cu. Yd. | | 4.8 |
| Reinforcement Bars, Epoxy Coated | | Pound | | 930 |



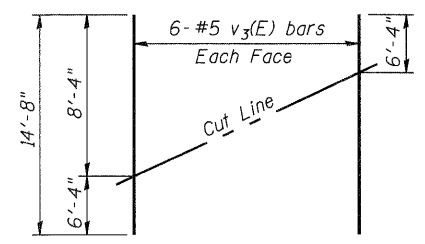
PLAN



SECTION A-A

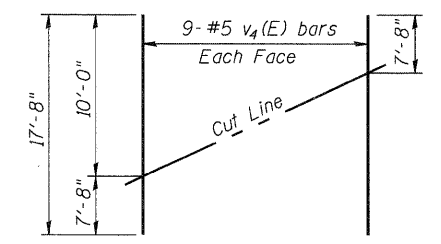


BAR s10(E)



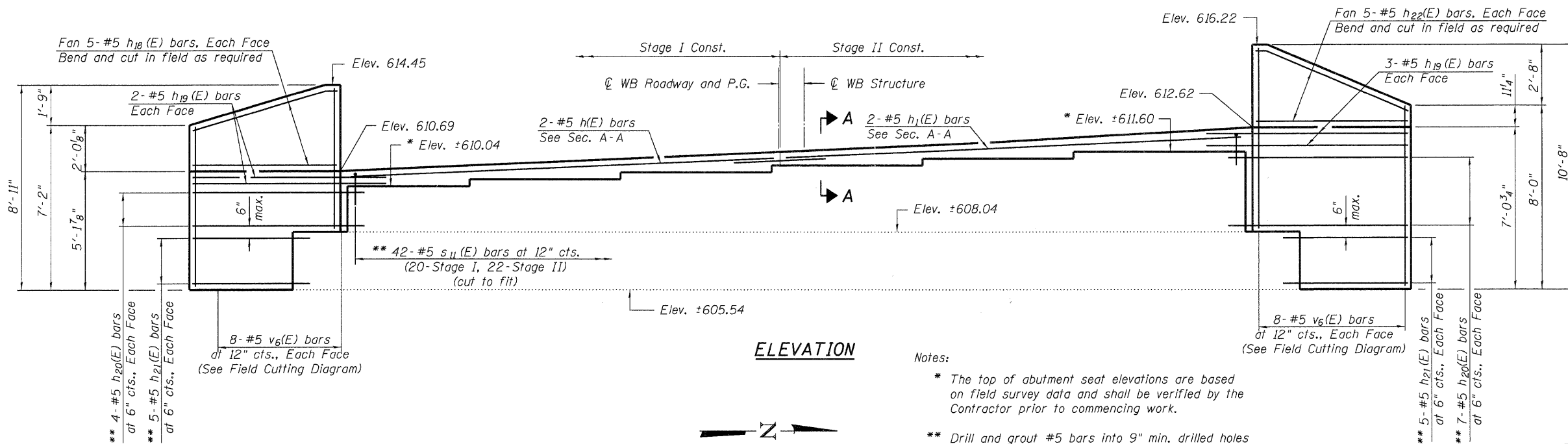
FIELD CUTTING DIAGRAM

Order v3(E) full length. Cut as shown and use remainder of bars in opposite face. Cut bars to fit around footing.



FIELD CUTTING DIAGRAM

Order v4(E) full length. Cut as shown and use remainder of bars in opposite face. Cut bars to fit around footing.



ELEVATION



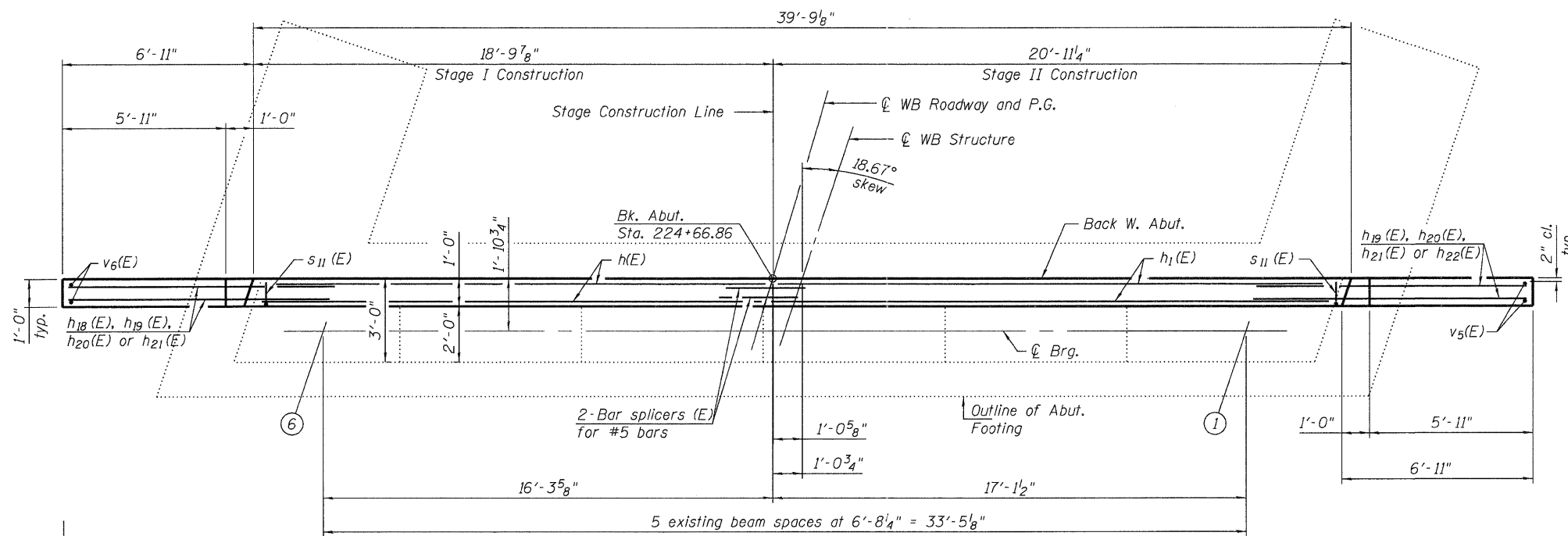
Notes:

* The top of abutment seat elevations are based on field survey data and shall be verified by the Contractor prior to commencing work.

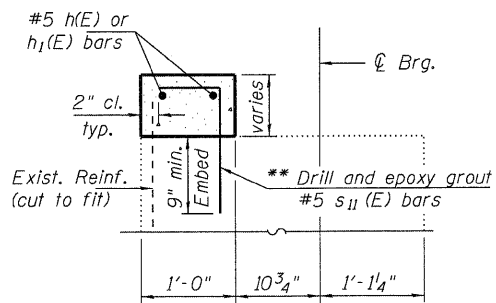
** Drill and grout #5 bars into 9" min. drilled holes with 4" min. clear cover in the existing abutment according to Article 584 of the Standard Specifications. Method and grout are subject to the approval of the Engineer. Cost included with Reinforcement Bars, Epoxy Coated.

**WEST ABUTMENT
BILL OF MATERIAL**

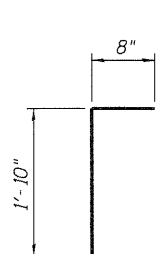
| Bar | No. | Size | Length | Shape |
|-------------------------------------|-----|------|---------|-------|
| h(E) | 2 | #5 | 18'-7" | — |
| h1(E) | 2 | #5 | 20'-8" | — |
| h18(E) | 10 | #5 | 6'-11" | — |
| h19(E) | 10 | #5 | 9'-5" | — |
| h20(E) | 22 | #5 | 7'-11" | — |
| h21(E) | 20 | #5 | 5'-6" | — |
| h22(E) | 10 | #5 | 7'-3" | — |
| s11(E) | 42 | #5 | 2'-6" | └ |
| v5(E) | 8 | #5 | 18'-2" | — |
| v6(E) | 8 | #5 | 13'-7" | — |
| Structure Excavation | | | Cu. Yd. | 113 |
| Concrete Structures | | | Cu. Yd. | 5.4 |
| Reinforcement Bars, Epoxy Coated | | | Pound | 1,000 |



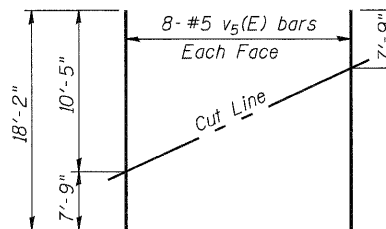
PLAN



SECTION A-A

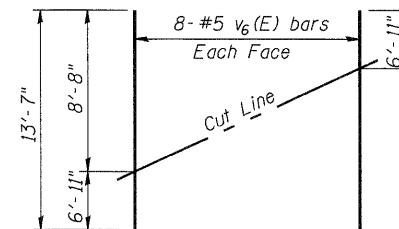


BAR s11(E)



FIELD CUTTING DIAGRAM

Order v5(E) full length. Cut as shown and use remainder of bars in opposite face. Cut bars to fit around footing.



FIELD CUTTING DIAGRAM

Order v6(E) full length. Cut as shown and use remainder of bars in opposite face. Cut bars to fit around footing.

| | | |
|---------------------------------|--------------------|-----------|
| USER NAME = dbeberling | DESIGNED - RJN/BRD | REVISED - |
| FILE NAME = 043000283-64C94.dgn | CHECKED - SBC | REVISED - |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - |
| PLOT TIME = 10:03:20 AM | CHECKED - SBC | REVISED - |

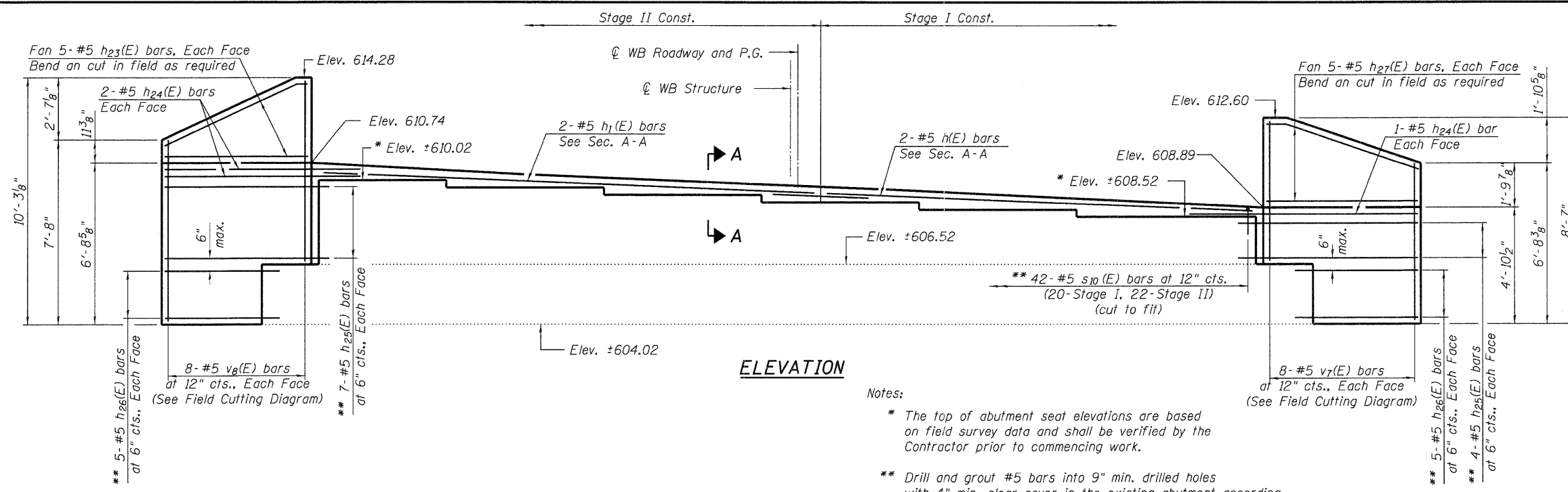
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ENGINEERING
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SPRINGFIELD, IL
(217) 483-9457
DESIGN FIRM #184001036

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**WEST ABUTMENT
STRUCTURE NO. 043-0003**

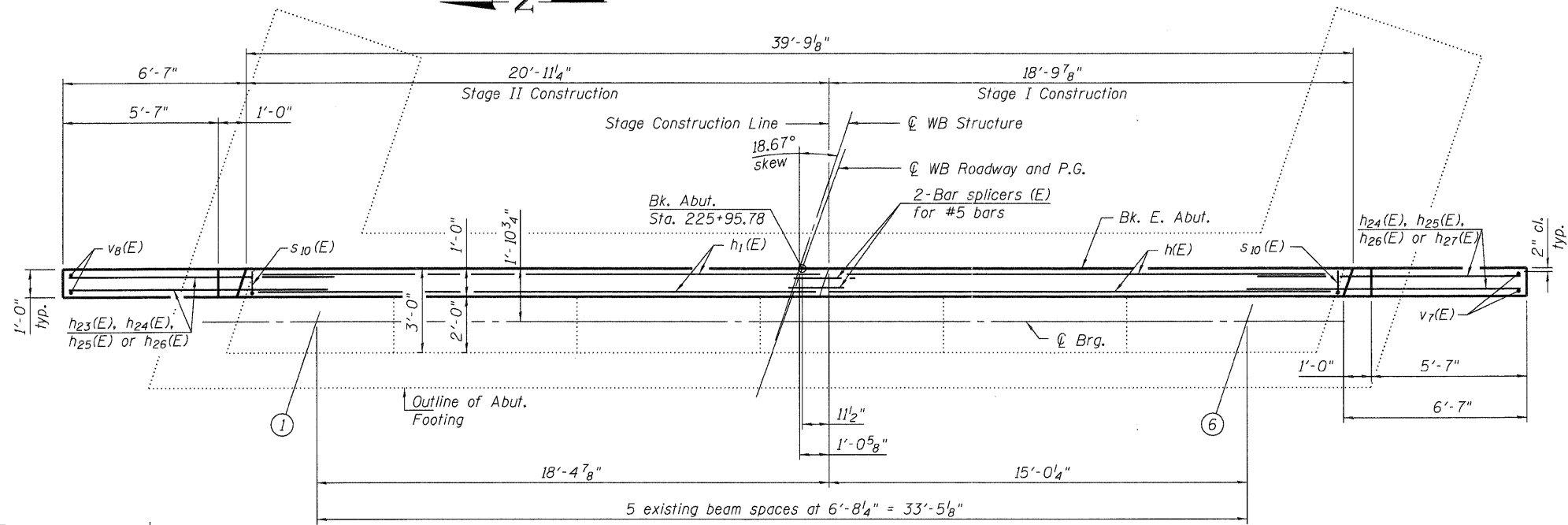
SHEET NO. 25 OF 28 SHEETS

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|--------------------|-------------------------|------------|---------------------------|-----------|
| 301 | (43B, 44B, 44HB, 45BID) | JO DAVIESS | 309 | 110 |
| CONTRACT NO. 64C94 | | | ILLINOIS FED. AID PROJECT | |

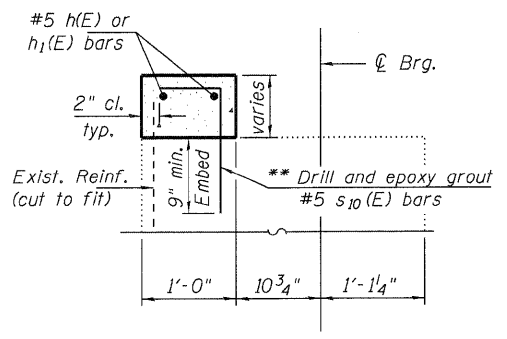


ELEVATION

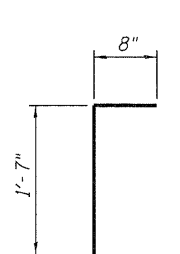
Notes:
 * The top of abutment seat elevations are based on field survey data and shall be verified by the Contractor prior to commencing work.
 ** Drill and grout #5 bars into 9" min. drilled holes with 4" min. clear cover in the existing abutment according to Article 584 of the Standard Specifications. Method and grout are subject to the approval of the Engineer. Cost included with Reinforcement Bars, Epoxy Coated.



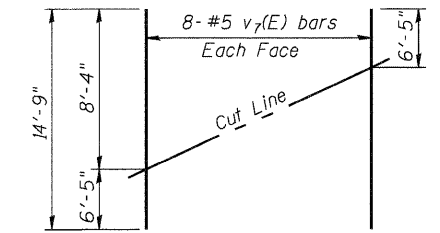
PLAN



SECTION A-A

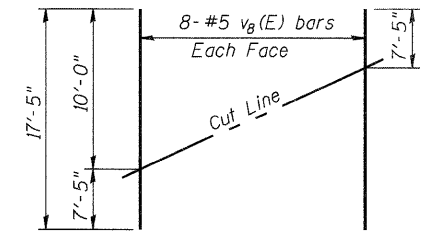


BAR s10(E)



FIELD CUTTING DIAGRAM

Order v7(E) full length. Cut as shown and use remainder of bars in opposite face. Cut bars to fit around footing.

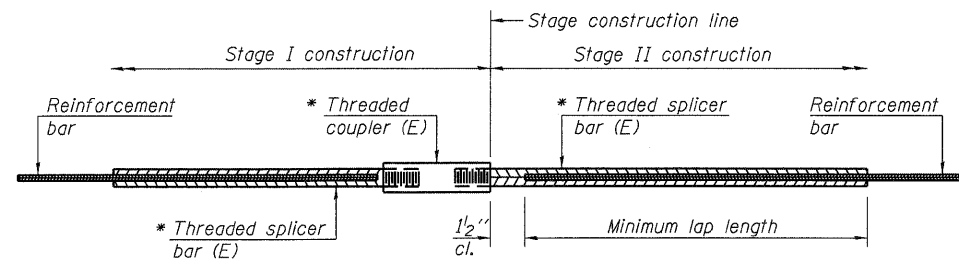


FIELD CUTTING DIAGRAM

Order v8(E) full length. Cut as shown and use remainder of bars in opposite face. Cut bars to fit around footing.

**EAST ABUTMENT
BILL OF MATERIAL**

| Bar | No. | Size | Length | Shape |
|----------------------------------|-----|------|---------|-------|
| h(E) | 2 | #5 | 18'-7" | — |
| h1(E) | 2 | #5 | 20'-8" | — |
| h23(E) | 10 | #5 | 6'-11" | — |
| h24(E) | 6 | #5 | 9'-1" | — |
| h25(E) | 22 | #5 | 7'-7" | — |
| h26(E) | 20 | #5 | 5'-2" | — |
| h27(E) | 10 | #5 | 6'-8" | — |
| s10(E) | 42 | #5 | 2'-3" | └ |
| v7(E) | 8 | #5 | 14'-9" | — |
| v8(E) | 8 | #5 | 17'-5" | — |
| Structure Excavation | | | Cu. Yd. | 97 |
| Concrete Structures | | | Cu. Yd. | 4.7 |
| Reinforcement Bars, Epoxy Coated | | | Pound | 930 |



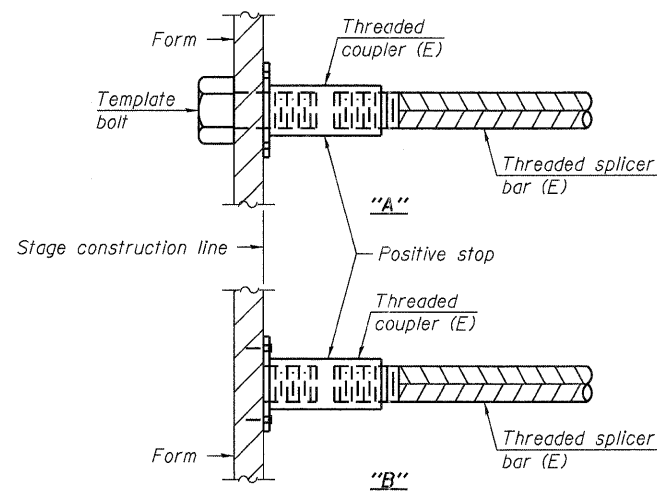
STANDARD BAR SPLICER ASSEMBLY

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

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

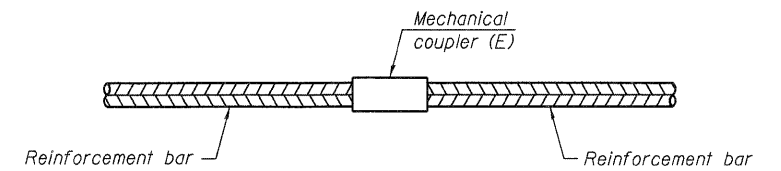
Threaded splicer bar length = min. lap length + 1/2" + thread length

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



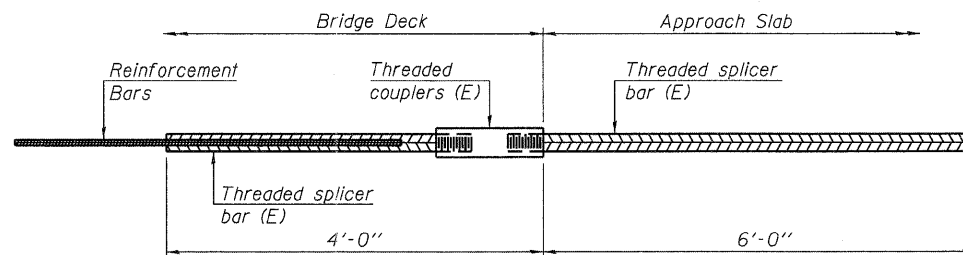
INSTALLATION AND SETTING METHODS

"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.



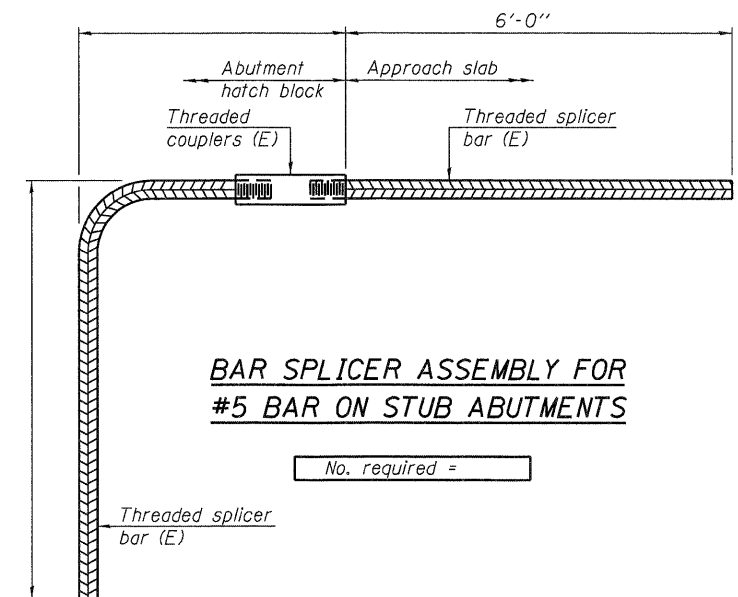
STANDARD MECHANICAL SPLICER

| Location | Bar size | No. assemblies required |
|----------|----------|-------------------------|
| | | |
| | | |
| | | |
| | | |



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

No. required = 160



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

| Location | Bar size | No. assemblies required | Table for minimum lap length |
|--------------------|----------|-------------------------|------------------------------|
| W. Approach Slab | #4 | 50 | 4 |
| W. Approach Slab | #5 | 92 | 3 |
| W. Approach Ftg. | #5 | 80 | 3 |
| E. Approach Slab | #4 | 50 | 4 |
| E. Approach Slab | #5 | 92 | 3 |
| E. Approach Ftg. | #5 | 80 | 3 |
| Top of Deck | #5 | 366 | 3 |
| Bottom of Deck | #5 | 312 | 3 |
| Semi Integral Dia. | #6 | 48 | 5 |
| W. Abutment | #5 | 4 | 3 |
| E. Abutment | #5 | 4 | 3 |

NOTES

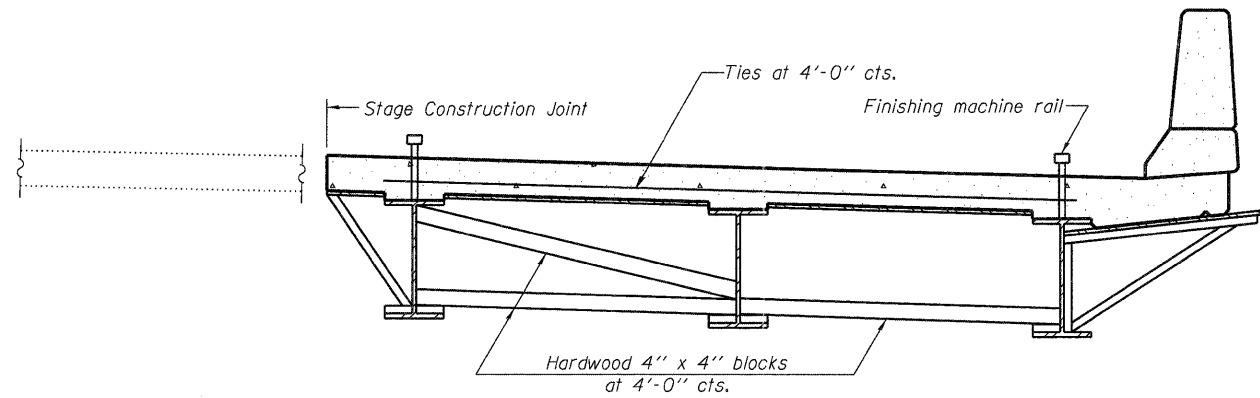
Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
 All reinforcement shall be lapped and tied to the splicer bars.
 Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.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

When cantilever forming brackets are used, the work shall be done according to Article 503.06(b) of the Standard Specifications, except as modified below and in the details shown on this sheet.

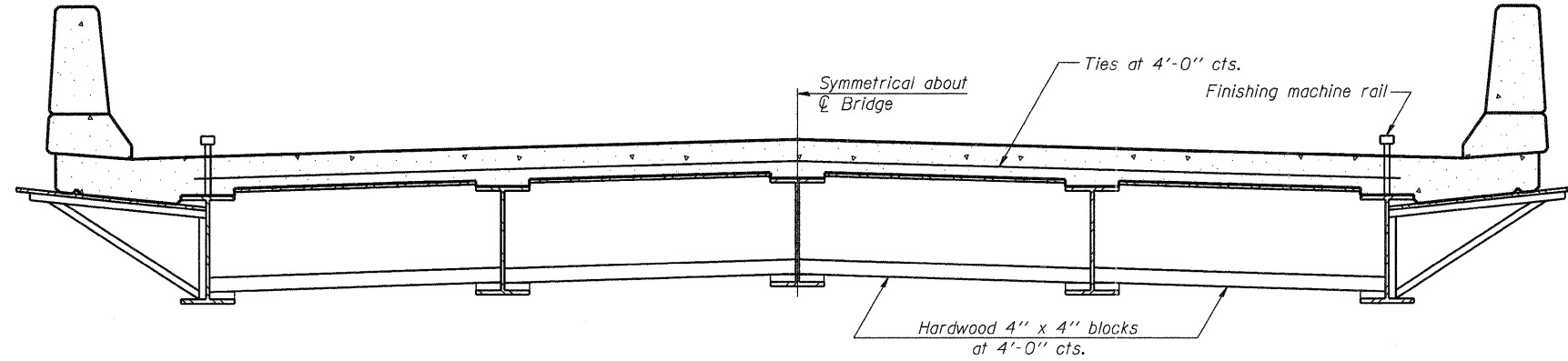
The finishing machine rails shall be placed on the top flange of the exterior beams.

The beams or girders, supporting cantilever forming brackets, shall be tied together at 4 foot intervals.

For Standard construction, or Stage Construction the Hardwood bracing materials shall be placed as shown between webs of beams in each bay.



**FORM BRACES FOR
STAGE CONSTRUCTION**



**FORM BRACES FOR
STANDARD CONSTRUCTION**

SB-1

7-1-10

| | | | | | | | | | | | |
|--------------------------------|--------------------|-----------|--|------------------------------------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------------------------|---------------------------|------------------------|------------|--------------|-----------|
| USER NAME = dheberling | DESIGNED - RJN/BRD | REVISED - | | 7018 KINGSMILL CT., SPRINGFIELD, IL (217) 483-9457 DESIGN FIRM #184001036 | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | CANTILEVER FORMING BRACKETS STRUCTURE NO. 043-0002 & 043-0003 | F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| FILE NAME = 04300283-64C94.dgn | CHECKED - SBC | REVISED - | | | | | 301 | (43B, 44B, 44HB, 45BD) | JO DAVIESS | 309 | 113 |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - | | | | | CONTRACT NO. 64C94 | | | | |
| PLOT TIME = 10:03:29 AM | CHECKED - SBC | REVISED - | | | | | ILLINOIS FED. AID PROJECT | | | | |
| SHEET NO. 28 OF 28 SHEETS | | | | | | | | | | | |

Bench Mark: Chiseled "□" NW wingwall of the WB Structure, 19.09' Lt. at Sta. 327+81.07 - Elev. 676.68.

Existing Structure: S.N. 043-0004 & S.N. 043-0005 built in 1965 as F.A. Route 6 (S.B.I. Rte. 5), Section 44-B. Each structure consists of a 3 span reinforced concrete deck on continuous WF steel beams supported by 2 reinforced concrete stub abutments founded on steel piles and 2 reinforced concrete single hammerhead piers founded on spread footings. The bridge deck was repaired in 1970-71, 1994, and 2001. Structural steel was cleaned and painted 1987. The slopewalls were repaired in 1984. 197'-8" back-to-back abutments and 35'-8" out-to-out deck. Concrete deck to be removed and replaced using stage construction.

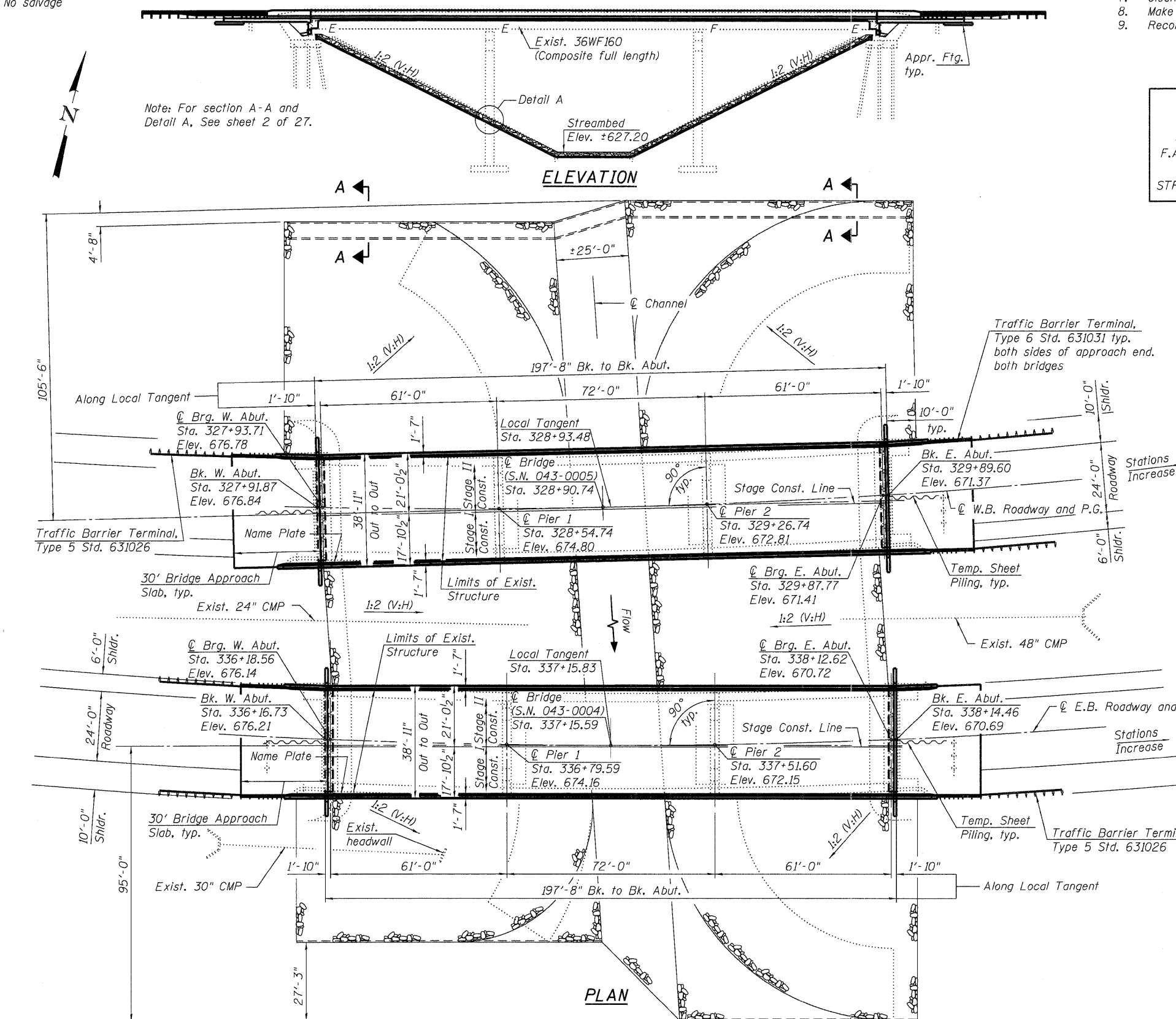
No salvage

SCOPE OF WORK

1. Remove and replace existing concrete deck.
2. Remove and replace existing slope wall with riprap.
3. Replace steel rocker bearings at abutments with elastomeric bearings.
4. Remove and replace end diaphragms.
5. Replace Approach slabs.
6. Clean and paint existing structural steel.
7. Clean, paint and reuse fixed and expansion bearings at piers.
8. Make new deck composite full length of bridge.
9. Reconfigure existing abutments and wingwalls to semi-integral.

INDEX OF SHEETS

1. General Plan & Elevation
2. General Data
3. Stage Construction Details
4. Temporary Sheet Piling
5. Temporary Concrete Barrier for Stage Construction
- 6.-10. Top of Slab Elevations
11. W.B. Approach Slab Elevations
12. E.B. Approach Slab Elevations
13. Superstructure
- 14.-15. Superstructure Details
- 16.-17. Bridge Approach Slab Details
18. Framing Plan
19. Structural Steel Details
20. Bearing Details
21. West Abutment Concrete Removal
22. East Abutment Concrete Removal
23. West Abutment (S.N. 043-0005)
24. East Abutment (S.N. 043-0005)
25. West Abutment (S.N. 043-0004)
26. East Abutment (S.N. 043-0004)
27. Bar Splicer Assembly and Mechanical Splicer Details



| | |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| STATION 328+90.74 REBUILT 20 BY STATE OF ILLINOIS F.A.P. RT. 301 SEC. 44B LOADING HS20-44 STRUCTURE NO. 043-0005 | STATION 337+15.59 REBUILT 20 BY STATE OF ILLINOIS F.A.P. RT. 301 SEC. 44B LOADING HS20-44 STRUCTURE NO. 043-0004 |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|

NAME PLATES

See Std. 515001
Existing Name Plate shall be cleaned and relocated next to new Name Plate. Cost included with Name Plates.

LOADING HS20-44

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

DESIGN SPECIFICATIONS

2002 AASHTO

DESIGN STRESSES

FIELD UNITS (New Construction)

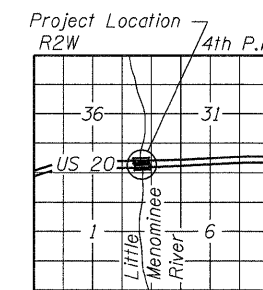
$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (reinforcement)
 $f_y = 36,000$ psi (structural steel)

FIELD UNITS (Existing Construction)

$f'_c = 3,500$ psi
 $f_y = 40,000$ psi (reinforcement)
 $f_y = 33,000$ psi (structural steel)

SEISMIC DATA

Seismic Performance Category (SPC) = A
Horizontal Bedrock Acceleration Coefficient (A) = 0.03g
Site Coefficient (S) = 1.5



LOCATION SKETCH

GENERAL PLAN & ELEVATION
U.S. ROUTE 20 OVER
LITTLE MEMONIEE RIVER
F.A.P. ROUTE 301 - SEC. 44B
JO DAVIESS COUNTY
STATION 328+90.74 (W.B.)
STATION 337+15.59 (E.B.)
STRUCTURE NO. 043-0005 (W.B.)
STRUCTURE NO. 043-0004 (E.B.)

GENERAL NOTES

Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts. Bolts 3/4" φ, holes 13/16" φ, 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.

As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 1/4" deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.

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 take appropriate precautions to deal with the presence of lead on this project. Layout of slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

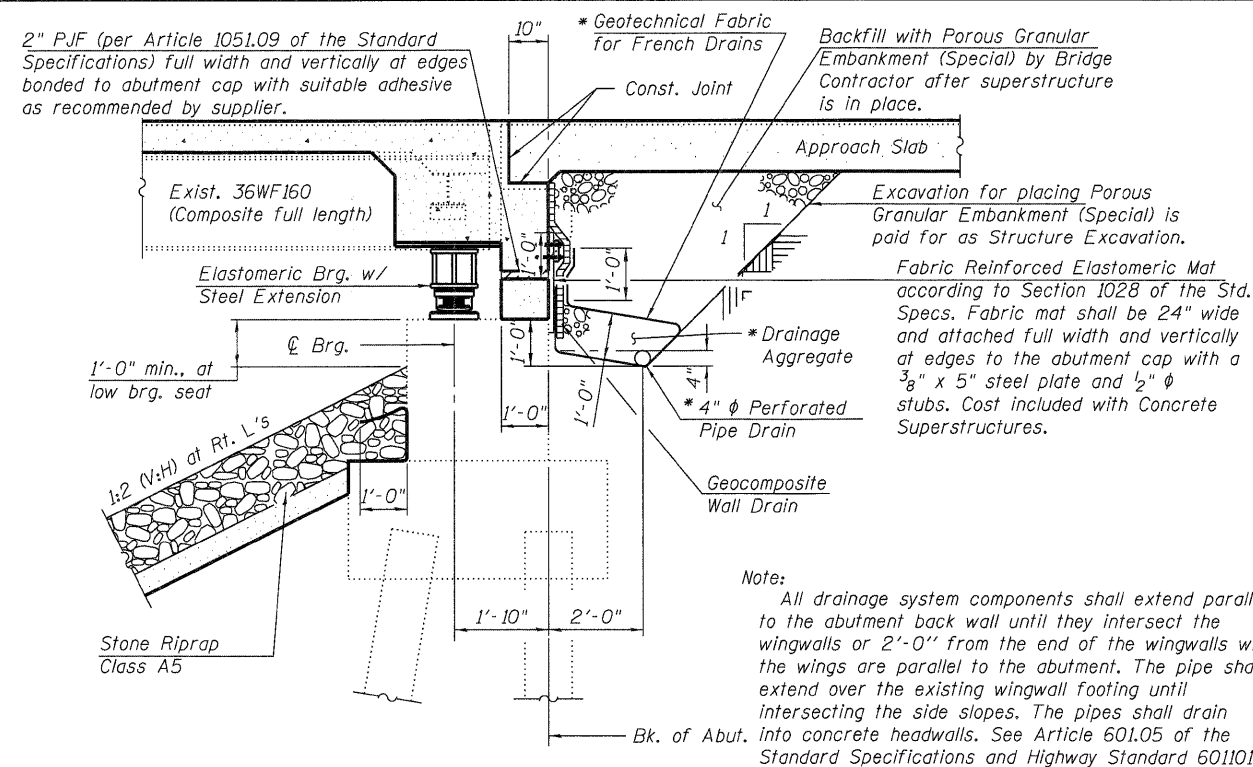
Cleaning and painting of the existing structural steel shall be as specified in the special provision for "Cleaning and Painting Existing Steel Structures". All existing steel shall be cleaned per Near White Blast Cleaning - SSPC-SP10. All new and existing steel shall be painted according to the requirements 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. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Interstate Green, Munsell No. 7.5G 4/8.

All new structural steel shall be shop painted w/ Inorganic Zinc Rich Primer per AASHTO M300, Type 1.

Slip forming of parapets will not be allowed.

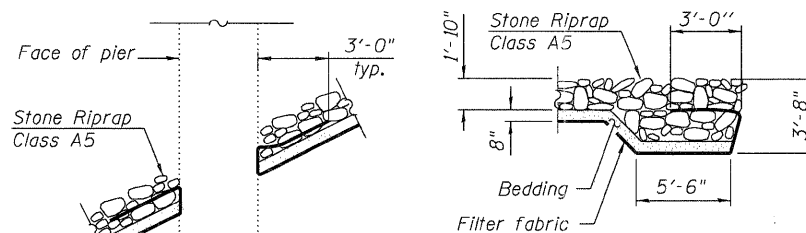
TOTAL BILL OF MATERIAL

| ITEM | UNIT | SUPER | SUB | TOTAL |
|----------------------------------------------------------------|---------|---------|-------|---------|
| Stone Riprap, Class A5 | Sq. Yd. | | 7,282 | 7,282 |
| Filter Fabric | Sq. Yd. | | 7,282 | 7,282 |
| Concrete Removal | Cu. Yd. | | 51.4 | 51.4 |
| Sloped Removal | Sq. Yd. | | 3,342 | 3,342 |
| Removal of Existing Concrete Deck No. 2 | Each | 2 | | 2 |
| Structure Excavation | Cu. Yd. | | 405 | 405 |
| Concrete Structures | Cu. Yd. | | 78.7 | 78.7 |
| Concrete Superstructure | Cu. Yd. | 810.6 | | 810.6 |
| Bridge Deck Grooving | Sq. Yd. | 1,936 | | 1,936 |
| Protective Coat | Sq. Yd. | 2,440 | | 2,440 |
| Furnishing and Erecting Structural Steel | Pound | 10,200 | | 10,200 |
| Stud Shear Connectors | Each | 6,516 | | 6,516 |
| Reinforcement Bars, Epoxy Coated | Pound | 177,720 | 5,400 | 183,120 |
| Bar Splicers | Each | 1,520 | 168 | 1,688 |
| Name Plates | Each | 2 | | 2 |
| Elastomeric Bearing Assembly, Type I | Each | | 24 | 24 |
| Anchor Bolts, 1" | Each | 48 | | 48 |
| Geocomposite Wall Drain | Sq. Yd. | | 80 | 80 |
| Porous Granular Embankment, Special | Cu. Yd. | | 259 | 259 |
| Jack and Remove Existing Bearings | Each | | 24 | 24 |
| Structural Steel Removal | Pound | 5,940 | | 5,940 |
| Cleaning and Painting Steel Bridge No. 2 | L. Sum | 1 | | 1 |
| Containment and Disposal of Lead Paint Cleaning Residues No. 2 | L. Sum | 1 | | 1 |
| Temporary Sheet Piling | Sq. Ft. | | 668 | 668 |
| Pipe Underdrains for Structures 4" | Foot | | 243 | 243 |



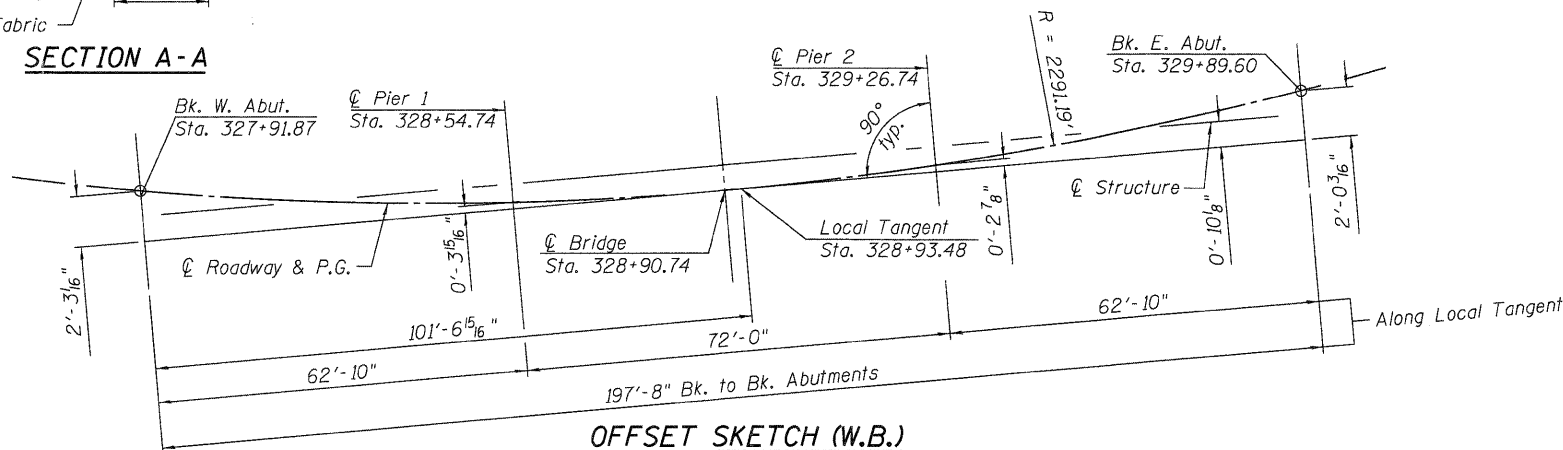
SECTION THRU SEMI-INTEGRAL ABUTMENT

* Included in the cost of Pipe Underdrains for Structures.

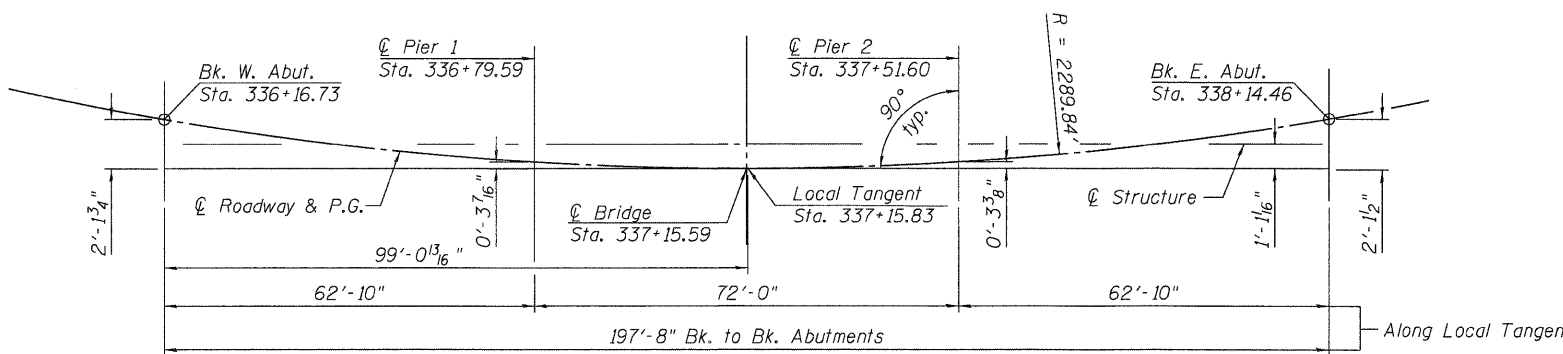


SECTION A-A

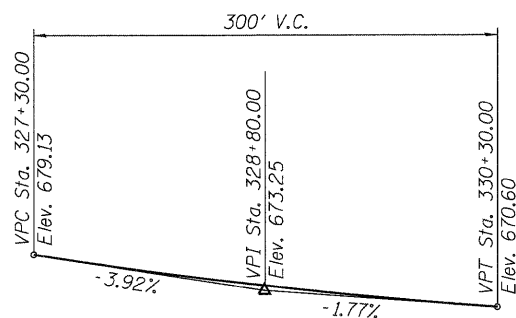
DETAIL A
(Riprap treatment around pier typ. each pier)



OFFSET SKETCH (W.B.)



OFFSET SKETCH (E.B.)

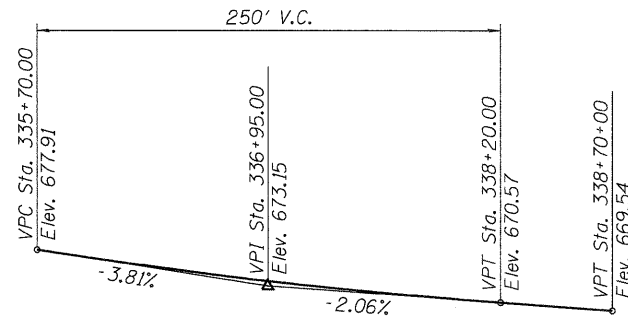


PROFILE GRADE WB

Along C of W.B. Roadway

WB CURVE DATA

Δ = 34°19'57" (Lt.)
 D = 2°30'03"
 T = 707.76'
 L = 1,372.91'
 E = 106.82'
 R = 2,291.19'
 S.E. = 0.045'/Ft.
 P.C. = Sta. 325+59.02
 P.T. = Sta. 339+31.93
 P.I. = Sta. 332+66.78

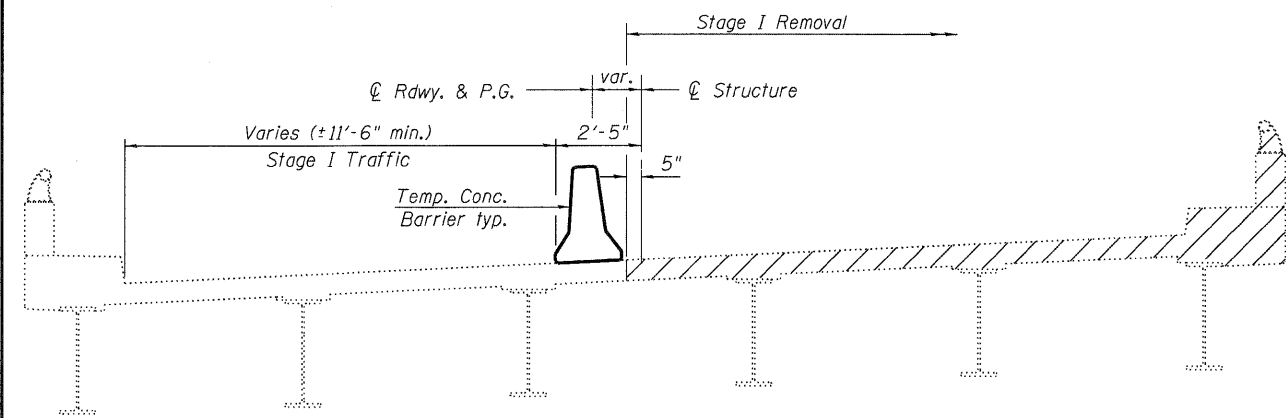


PROFILE GRADE EB

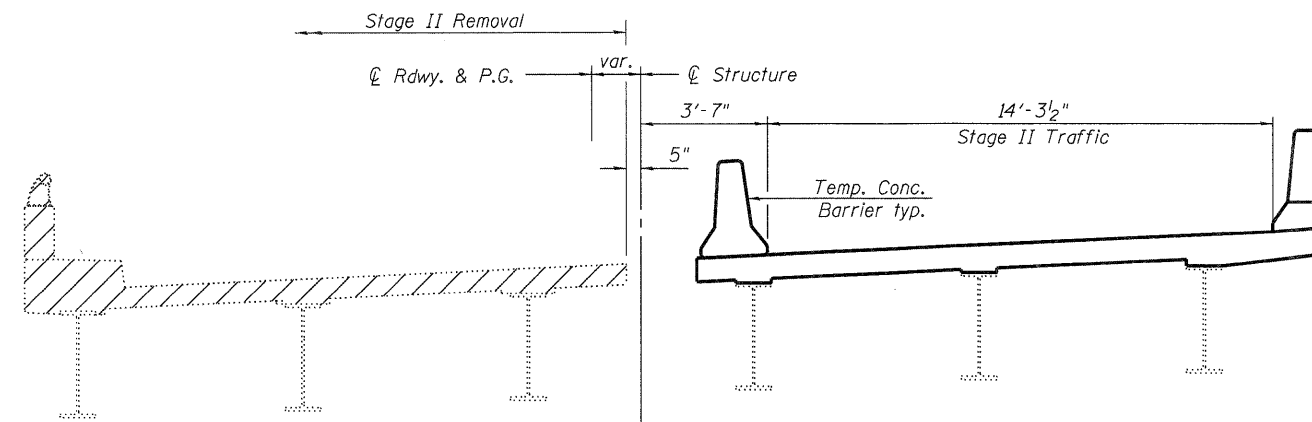
Along C of E.B. Roadway

EB CURVE DATA

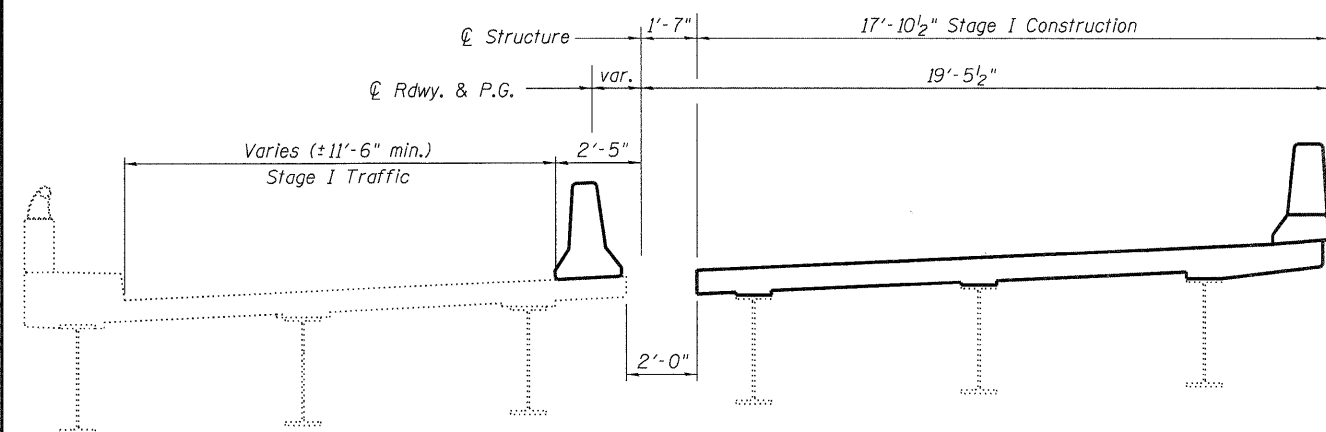
Δ = 31°29'55" (Lt.)
 D = 2°30'08"
 T = 645.77'
 L = 1,258.85'
 E = 89.32'
 R = 2,289.84'
 S.E. = 0.045'/Ft.
 P.C. = Sta. 334+33.59
 P.T. = Sta. 346+92.44
 P.I. = Sta. 340+79.36



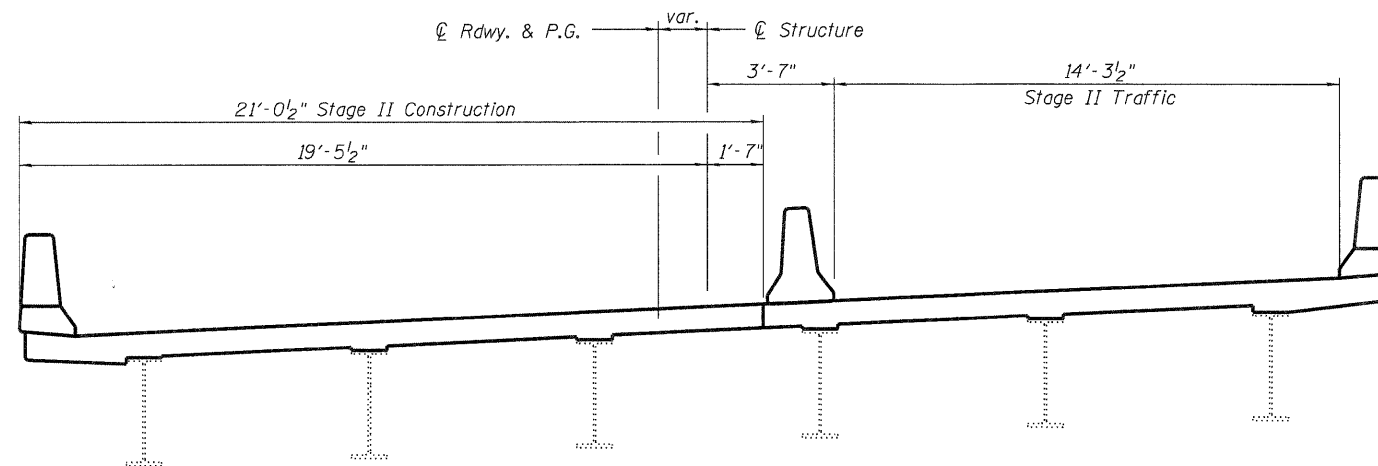
STAGE I REMOVAL



STAGE II REMOVAL



STAGE I CONSTRUCTION

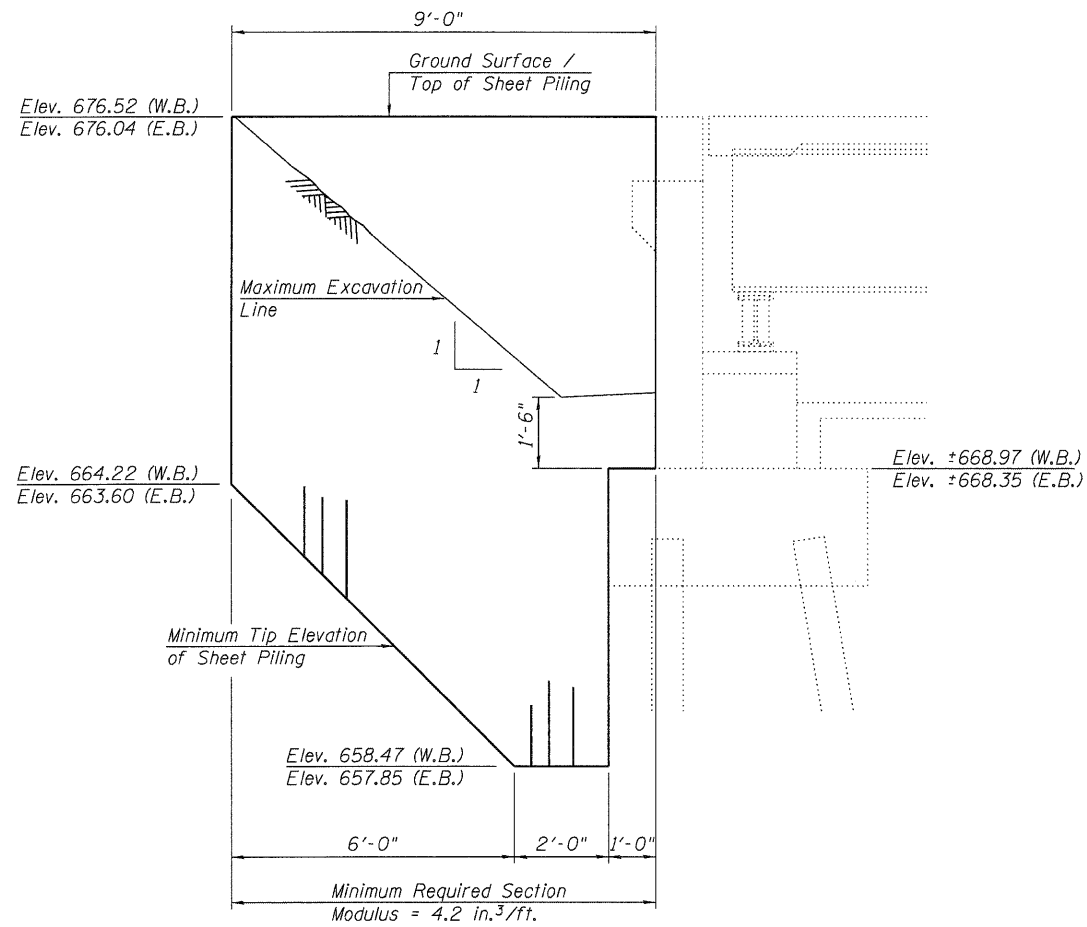


STAGE II CONSTRUCTION

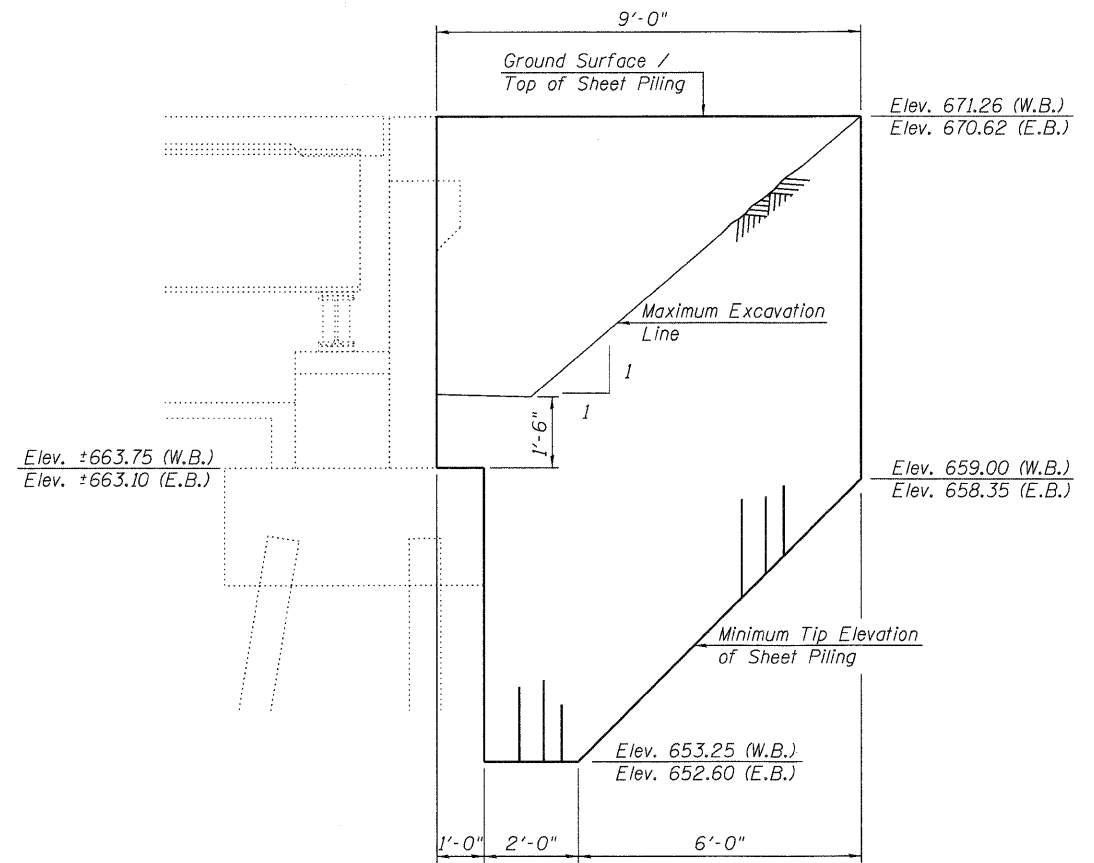
Notes:

Hatched area indicates Removal of Concrete Deck No. 2.
 For details of Temporary Concrete Barrier, see sheet 5 of 27.
 Temporary Concrete Barrier quantity included with Roadway Plans.
 All sections are looking East.

| | | | | | | | | | | | |
|----------------------------------|-------------------|-----------|--|------------------------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------|-------------------------|------------|--------------|-----------|
| USER NAME = dheber1ing | DESIGNED - BRD | REVISED - | | 7018 KINGSMILL CT., SPRINGFIELD, IL (217) 483-9457 DESIGN FIRM #184001036 | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | STAGE CONSTRUCTION DETAILS STRUCTURE NO. 043-0004 & 043-0005 | F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| FILE NAME = 043004004-043005.dgn | CHECKED - SDS | REVISED - | | | | | 301 | (43B, 44B, 44HB, 45BID) | JO DAVIESS | 309 | 116 |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - | | | | | CONTRACT NO. 64C94 | | | | |
| PLOT TIME = 10:06:38 AM | CHECKED - BRD/SDS | REVISED - | | | | | ILLINOIS FED. AID PROJECT | | | | |



TEMPORARY SHEET PILING AT WEST ABUTMENTS



TEMPORARY SHEET PILING AT EAST ABUTMENTS

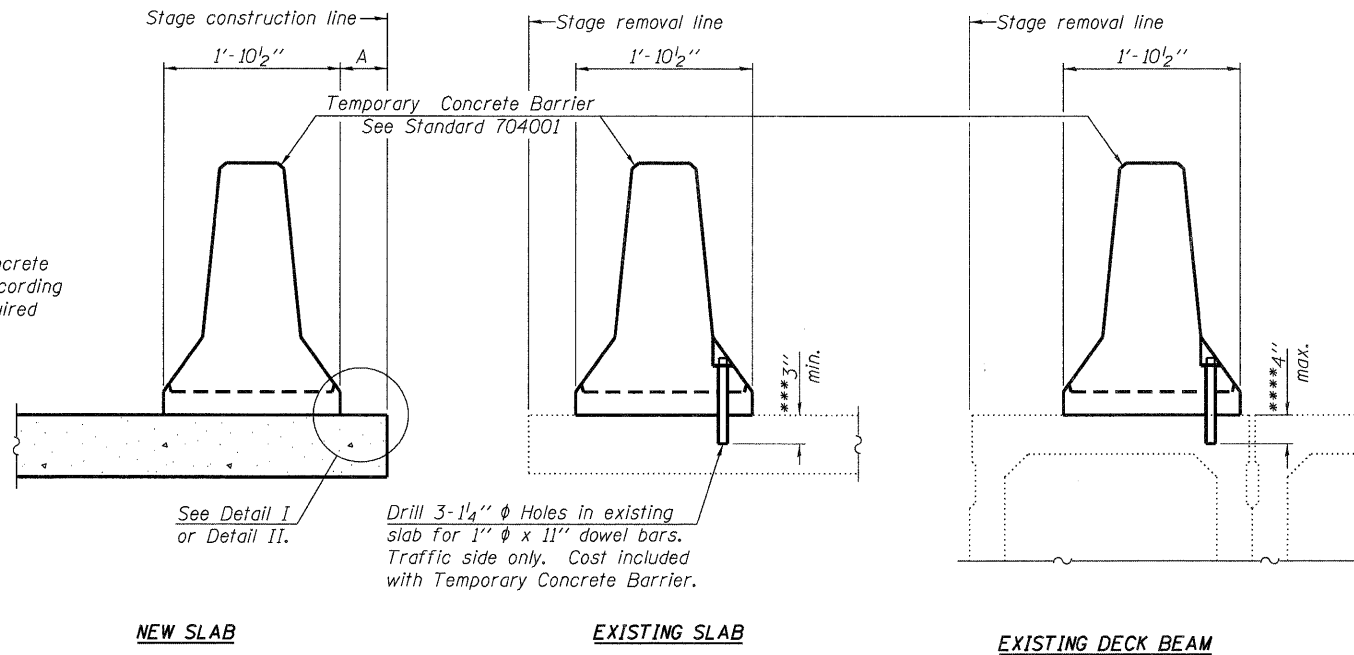
Notes:

The temporary sheet piling design is based on assumed embankment with $q_u = 1 \text{ tsf}$. Contractor shall verify soil conditions and soil strength and notify Engineer if conditions are different.
 If the Contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.
 The Contractor shall connect the first sheet to the existing abutment wall to ensure stability of sheets driven to the top of the existing footing. This connection shall be reviewed and accepted by the Engineer and included in the cost for Temporary Sheet Piling.

BILL OF MATERIAL

| Item | Unit | Total |
|------------------------|---------|-------|
| Temporary Sheet Piling | Sq. Ft. | 668 |

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

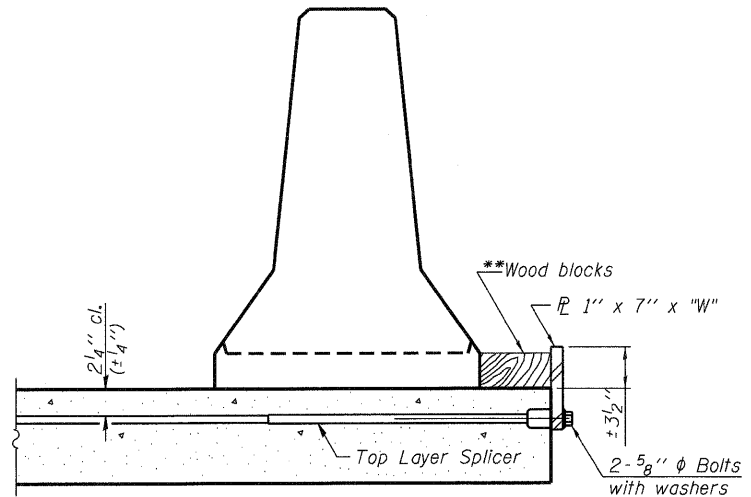
Detail I - With Bar Splicer or Couplers:
Connect one (1) 1" x 7" x "W" steel \bar{P} to the top layer of couplers with 2- $\frac{5}{8}$ " ϕ bolts screwed to coupler at approximate \bar{C} of each barrier panel.

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

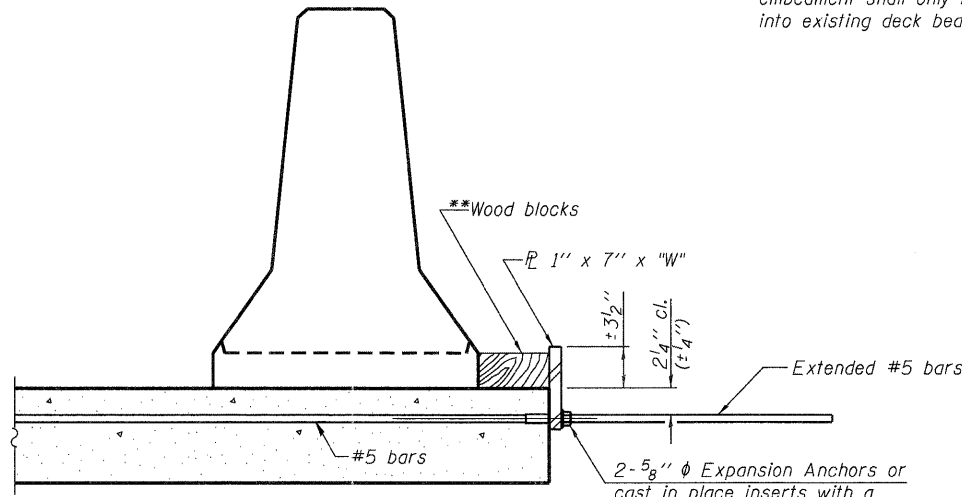
Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x "W" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

*** 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.

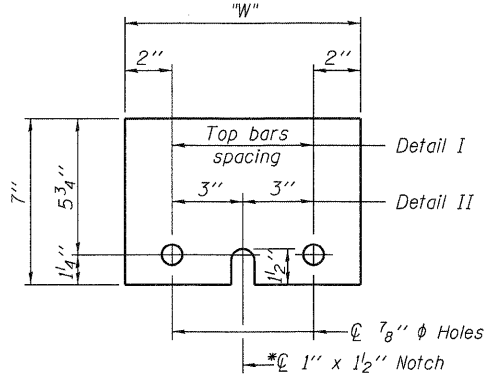
**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



DETAIL I



DETAIL II



STEEL RETAINER \bar{P} 1" x 7" x "W"

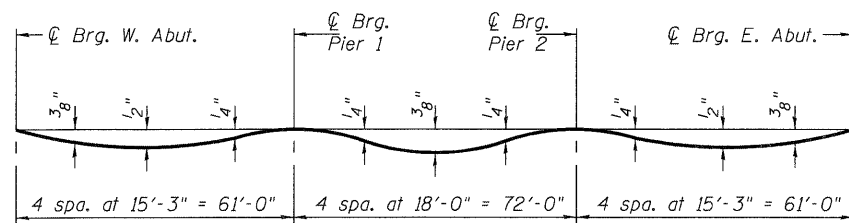
* Required only with Detail II

** 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"

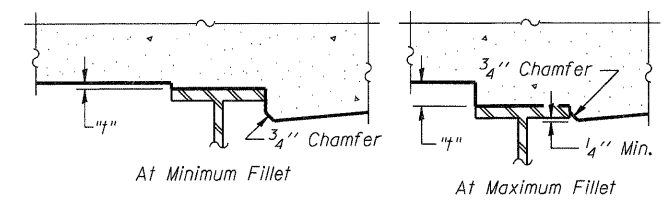
R-27 7-1-10

| | | | | | | | | | | | |
|---------------------------------|-------------------|-----------|--|------------------------------------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|---------------------------|-------------------------|------------|--------------|-----------|
| USER NAME = dheberling | DESIGNED - BRD | REVISED - | | 7018 KINGSMILL CT., SPRINGFIELD, IL (217) 483-9457 DESIGN FIRM #184001036 | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION STRUCTURE NO. 043-0004 & 043-0005 | F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| FILE NAME = B43000485-64C94.dwg | CHECKED - SDS | REVISED - | | | | | 301 | (43B, 44B, 44HB, 45B/D) | JO DAVIESS | 309 | 118 |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - | | | | | CONTRACT NO. 64C94 | | | | |
| PLOT TIME = 10:06:42 AM | CHECKED - BRD/SDS | REVISED - | | | | | ILLINOIS FED. AID PROJECT | | | | |



DEAD LOAD DEFLECTION DIAGRAM
(Includes weight of concrete only.)

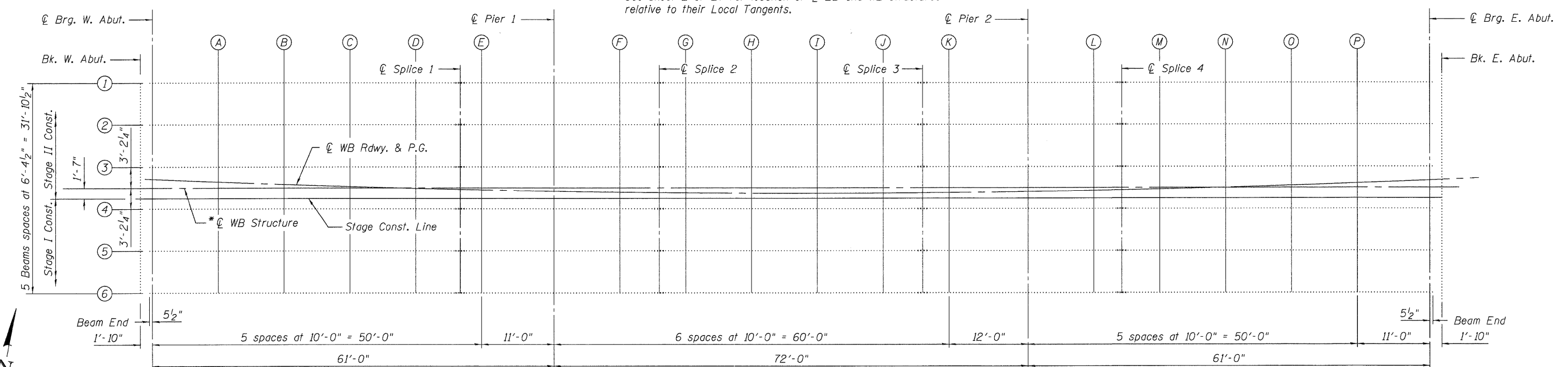
Notes:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on sheets 7 thru 10 of 27.
Work this sheet with sheets 7 thru 10 of 27 sheets.



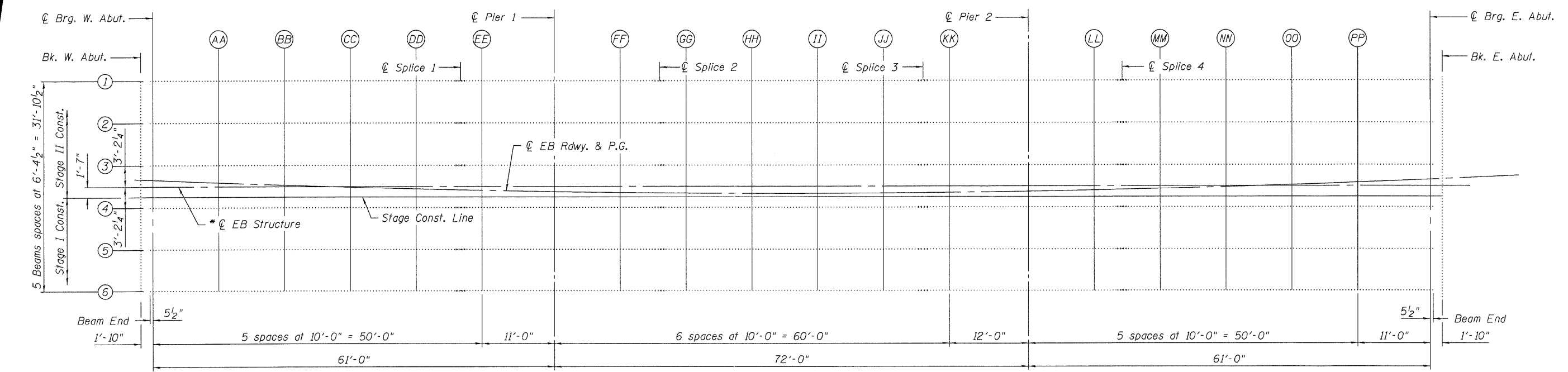
To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheets 7 thru 10 of 27, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

* See sheet 2 of 27 for location of EB and WB structures relative to their Local Tangents.



PLAN



PLAN

| | | |
|---------------------------------|-------------------|-----------|
| USER NAME = dhaberling | DESIGNED - BRD | REVISED - |
| FILE NAME = 0430004&5-64C94.dwg | CHECKED - SDS | REVISED - |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - |
| PLOT TIME = 10:06:45 AM | CHECKED - BRD/SDS | REVISED - |

WHKS & co.
ENGINEERING
7018 KINGSMILL CT.,
SPRINGFIELD, IL
(217) 483-9457
DESIGN FIRM #184001036

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB LOCATION PLAN
STRUCTURE NO. 043-0004 & 043-0005
SHEET NO. 6 OF 27 SHEETS

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-------------------------|------------|--------------|-----------|
| 301 | (43B, 44B, 44HB, 45BID) | JO DAVIESS | 309 | 119 |
| CONTRACT NO. 64C94 | | | | |
| ILLINOIS FED. AID PROJECT | | | | |

☉ BEAM 1

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 327+91.22 | -14.52 | 676.21 | 676.21 |
| ☉ Brg. W. Abut. | 327+93.06 | -14.59 | 676.14 | 676.14 |
| A | 328+03.12 | -15.01 | 675.78 | 675.80 |
| B | 328+13.18 | -15.39 | 675.43 | 675.45 |
| C | 328+23.25 | -15.71 | 675.08 | 675.11 |
| D | 328+33.31 | -15.99 | 674.74 | 674.76 |
| E | 328+43.38 | -16.24 | 674.42 | 674.43 |
| ☉ Pier 1 | 328+54.45 | -16.45 | 674.07 | 674.07 |
| F | 328+64.53 | -16.60 | 673.76 | 673.76 |
| G | 328+74.60 | -16.70 | 673.46 | 673.47 |
| H | 328+84.67 | -16.77 | 673.17 | 673.19 |
| I | 328+94.75 | -16.78 | 672.89 | 672.91 |
| J | 329+04.82 | -16.76 | 672.62 | 672.64 |
| K | 329+14.89 | -16.68 | 672.36 | 672.37 |
| ☉ Pier 2 | 329+26.98 | -16.54 | 672.06 | 672.06 |
| L | 329+37.05 | -16.37 | 671.82 | 671.82 |
| M | 329+47.12 | -16.16 | 671.58 | 671.61 |
| N | 329+57.19 | -15.90 | 671.36 | 671.39 |
| O | 329+67.25 | -15.60 | 671.15 | 671.18 |
| P | 329+77.31 | -15.26 | 670.94 | 670.96 |
| ☉ Brg. E. Abut. | 329+88.38 | -14.83 | 670.73 | 670.73 |
| Bk. E. Abut. | 329+90.22 | -14.76 | 670.70 | 670.70 |

☉ BEAM 2

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 327+91.51 | -8.15 | 676.49 | 676.49 |
| ☉ Brg. W. Abut. | 327+93.34 | -8.23 | 676.42 | 676.42 |
| A | 328+03.38 | -8.64 | 676.06 | 676.08 |
| B | 328+13.41 | -9.02 | 675.70 | 675.73 |
| C | 328+23.44 | -9.34 | 675.36 | 675.39 |
| D | 328+33.48 | -9.63 | 675.02 | 675.05 |
| E | 328+43.52 | -9.86 | 674.70 | 674.71 |
| ☉ Pier 1 | 328+54.56 | -10.08 | 674.35 | 674.35 |
| F | 328+64.61 | -10.22 | 674.04 | 674.05 |
| G | 328+74.65 | -10.33 | 673.75 | 673.76 |
| H | 328+84.70 | -10.39 | 673.46 | 673.48 |
| I | 328+94.74 | -10.41 | 673.18 | 673.20 |
| J | 329+04.79 | -10.38 | 672.91 | 672.92 |
| K | 329+14.83 | -10.31 | 672.65 | 672.65 |
| ☉ Pier 2 | 329+26.89 | -10.17 | 672.35 | 672.35 |
| L | 329+36.93 | -9.99 | 672.11 | 672.11 |
| M | 329+46.97 | -9.79 | 671.87 | 671.90 |
| N | 329+57.01 | -9.53 | 671.65 | 671.68 |
| O | 329+67.05 | -9.23 | 671.44 | 671.47 |
| P | 329+77.08 | -8.89 | 671.24 | 671.25 |
| ☉ Brg. E. Abut. | 329+88.11 | -8.46 | 671.02 | 671.02 |
| Bk. E. Abut. | 329+89.95 | -8.39 | 670.99 | 670.99 |

☉ BEAM 3

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 327+91.78 | -1.78 | 676.77 | 676.77 |
| ☉ Brg. W. Abut. | 327+93.61 | -1.86 | 676.70 | 676.70 |
| A | 328+03.61 | -2.27 | 676.34 | 676.35 |
| B | 328+13.62 | -2.64 | 675.98 | 676.01 |
| C | 328+23.63 | -2.97 | 675.64 | 675.67 |
| D | 328+33.64 | -3.25 | 675.31 | 675.33 |
| E | 328+43.65 | -3.49 | 674.98 | 674.99 |
| ☉ Pier 1 | 328+54.67 | -3.70 | 674.63 | 674.63 |
| F | 328+64.68 | -3.85 | 674.33 | 674.33 |
| G | 328+74.70 | -3.95 | 674.03 | 674.05 |
| H | 328+84.72 | -4.02 | 673.74 | 673.77 |
| I | 328+94.74 | -4.03 | 673.46 | 673.49 |
| J | 329+04.76 | -4.01 | 673.20 | 673.21 |
| K | 329+14.76 | -3.93 | 672.94 | 672.94 |
| ☉ Pier 2 | 329+26.80 | -3.79 | 672.63 | 672.63 |
| L | 329+36.81 | -3.63 | 672.39 | 672.40 |
| M | 329+46.82 | -3.41 | 672.16 | 672.19 |
| N | 329+56.84 | -3.16 | 671.94 | 671.97 |
| O | 329+66.84 | -2.86 | 671.73 | 671.76 |
| P | 329+76.85 | -2.52 | 671.53 | 671.55 |
| ☉ Brg. E. Abut. | 329+87.85 | -2.09 | 671.31 | 671.31 |
| Bk. E. Abut. | 329+89.69 | -2.02 | 671.28 | 671.28 |

☉ ROADWAY & P.G.

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 327+91.87 | 0.00 | 676.84 | 676.84 |
| ☉ Brg. W. Abut. | 327+93.70 | 0.00 | 676.78 | 676.78 |
| A | 328+03.71 | 0.00 | 676.44 | 676.45 |
| B | 328+13.72 | 0.00 | 676.10 | 676.13 |
| C | 328+23.72 | 0.00 | 675.77 | 675.80 |
| D | 328+33.73 | 0.00 | 675.45 | 675.47 |
| E | 328+43.73 | 0.00 | 675.14 | 675.15 |
| ☉ Pier 1 | 328+54.73 | 0.00 | 674.80 | 674.80 |
| F | 328+64.73 | 0.00 | 674.50 | 674.50 |
| G | 328+74.73 | 0.00 | 674.21 | 674.22 |
| H | 328+84.73 | 0.00 | 673.92 | 673.95 |
| I | 328+94.73 | 0.00 | 673.65 | 673.67 |
| J | 329+04.73 | 0.00 | 673.38 | 673.39 |
| K | 329+14.73 | 0.00 | 673.11 | 673.12 |
| ☉ Pier 2 | 329+26.74 | 0.00 | 672.81 | 672.81 |
| L | 329+36.74 | 0.00 | 672.56 | 672.57 |
| M | 329+46.74 | 0.00 | 672.32 | 672.35 |
| N | 329+56.75 | 0.00 | 672.09 | 672.12 |
| O | 329+66.75 | 0.00 | 671.86 | 671.89 |
| P | 329+76.76 | 0.00 | 671.64 | 671.66 |
| ☉ Brg. E. Abut. | 329+87.77 | 0.00 | 671.41 | 671.41 |
| Bk. E. Abut. | 329+89.60 | 0.00 | 671.37 | 671.37 |

STAGE CONSTRUCTION LINE

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 327+92.00 | 2.99 | 676.97 | 676.97 |
| ☉ Brg. W. Abut. | 327+93.83 | 2.91 | 676.90 | 676.90 |
| A | 328+03.81 | 2.49 | 676.54 | 676.56 |
| B | 328+13.80 | 2.13 | 676.19 | 676.22 |
| C | 328+23.78 | 1.80 | 675.85 | 675.88 |
| D | 328+33.77 | 1.52 | 675.52 | 675.54 |
| E | 328+43.76 | 1.28 | 675.19 | 675.20 |
| ☉ Pier 1 | 328+54.76 | 1.07 | 674.84 | 674.84 |
| F | 328+64.75 | 0.92 | 674.54 | 674.55 |
| G | 328+74.75 | 0.82 | 674.24 | 674.26 |
| H | 328+84.74 | 0.08 | 673.93 | 673.95 |
| I | 328+94.73 | 0.74 | 673.68 | 673.70 |
| J | 329+04.73 | 0.77 | 673.41 | 673.43 |
| K | 329+14.73 | 0.84 | 673.15 | 673.16 |
| ☉ Pier 2 | 329+26.72 | 0.98 | 672.85 | 672.85 |
| L | 329+36.72 | 1.15 | 672.60 | 672.61 |
| M | 329+46.71 | 1.36 | 672.38 | 672.41 |
| N | 329+56.70 | 1.61 | 672.16 | 672.19 |
| O | 329+66.69 | 1.91 | 671.95 | 671.98 |
| P | 329+76.67 | 2.25 | 671.75 | 671.76 |
| ☉ Brg. E. Abut. | 329+87.65 | 2.68 | 671.53 | 671.53 |
| Bk. E. Abut. | 329+89.48 | 2.75 | 671.50 | 671.50 |

☉ BEAM 4

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 327+92.06 | 4.59 | 677.04 | 677.04 |
| ☉ Brg. W. Abut. | 327+93.90 | 4.51 | 676.97 | 676.97 |
| A | 328+03.88 | 4.10 | 676.61 | 676.63 |
| B | 328+13.85 | 3.73 | 676.26 | 676.29 |
| C | 328+23.83 | 3.40 | 675.92 | 675.95 |
| D | 328+33.81 | 3.12 | 675.59 | 675.61 |
| E | 328+43.80 | 2.88 | 675.26 | 675.27 |
| ☉ Pier 1 | 328+54.78 | 2.67 | 674.92 | 674.92 |
| F | 328+64.77 | 2.52 | 674.61 | 674.62 |
| G | 328+74.76 | 2.42 | 674.32 | 674.33 |
| H | 328+84.75 | 2.36 | 674.03 | 674.05 |
| I | 328+94.73 | 2.34 | 673.75 | 673.77 |
| J | 329+04.72 | 2.37 | 673.48 | 673.50 |
| K | 329+14.71 | 2.44 | 673.22 | 673.23 |
| ☉ Pier 2 | 329+26.70 | 2.58 | 672.92 | 672.92 |
| L | 329+36.67 | 2.75 | 672.69 | 672.69 |
| M | 329+46.66 | 2.96 | 672.46 | 672.48 |
| N | 329+56.66 | 3.21 | 672.23 | 672.26 |
| O | 329+66.64 | 3.51 | 672.02 | 672.05 |
| P | 329+76.62 | 3.85 | 671.82 | 671.84 |
| ☉ Brg. E. Abut. | 329+87.59 | 4.28 | 671.61 | 671.61 |
| Bk. E. Abut. | 329+89.42 | 4.35 | 671.57 | 671.57 |

☉ BEAM 5

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 327+92.35 | 10.96 | 677.32 | 677.32 |
| ☉ Brg. W. Abut. | 327+94.18 | 10.88 | 677.25 | 677.25 |
| A | 328+04.12 | 10.47 | 676.89 | 676.91 |
| B | 328+14.07 | 10.10 | 676.54 | 676.57 |
| C | 328+24.02 | 9.78 | 676.20 | 676.23 |
| D | 328+33.97 | 9.49 | 675.87 | 675.89 |
| E | 328+43.93 | 9.26 | 675.55 | 675.56 |
| ☉ Pier 1 | 328+54.89 | 9.05 | 675.20 | 675.20 |
| F | 328+64.85 | 8.90 | 674.90 | 674.90 |
| G | 328+74.81 | 8.80 | 674.60 | 674.62 |
| H | 328+84.77 | 8.73 | 674.32 | 674.34 |
| I | 328+94.73 | 8.72 | 674.04 | 674.06 |
| J | 329+04.69 | 8.74 | 673.77 | 673.79 |
| K | 329+14.66 | 8.82 | 673.51 | 673.52 |
| ☉ Pier 2 | 329+26.61 | 8.96 | 673.21 | 673.21 |
| L | 329+36.57 | 9.13 | 672.97 | 672.98 |
| M | 329+46.53 | 9.33 | 672.74 | 672.77 |
| N | 329+56.48 | 9.59 | 672.52 | 672.55 |
| O | 329+66.43 | 9.89 | 672.31 | 672.34 |
| P | 329+76.39 | 10.22 | 672.11 | 672.13 |
| ☉ Brg. E. Abut. | 329+87.33 | 10.65 | 671.90 | 671.90 |
| Bk. E. Abut. | 329+89.15 | 10.72 | 671.86 | 671.86 |

☉ BEAM 6

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 327+92.64 | 17.33 | 677.60 | 677.60 |
| ☉ Brg. W. Abut. | 327+94.45 | 17.25 | 677.53 | 677.53 |
| A | 328+04.37 | 16.84 | 677.17 | 677.19 |
| B | 328+14.29 | 16.47 | 676.82 | 676.85 |
| C | 328+24.21 | 16.15 | 676.48 | 676.51 |
| D | 328+34.14 | 15.86 | 676.15 | 676.17 |
| E | 328+44.07 | 15.63 | 675.83 | 675.84 |
| ☉ Pier 1 | 328+55.00 | 15.42 | 675.48 | 675.48 |
| F | 328+64.93 | 15.27 | 675.18 | 675.19 |
| G | 328+74.86 | 15.17 | 674.89 | 674.90 |
| H | 328+84.79 | 15.11 | 674.60 | 674.62 |
| I | 328+94.73 | 15.09 | 674.33 | 674.35 |
| J | 329+04.66 | 15.12 | 674.06 | 674.07 |
| K | 329+14.60 | 15.19 | 673.80 | 673.81 |
| ☉ Pier 2 | 329+26.52 | 15.33 | 673.50 | 673.50 |
| L | 329+36.45 | 15.50 | 673.26 | 673.27 |
| M | 329+46.38 | 15.71 | 673.04 | 673.06 |
| N | 329+56.31 | 15.96 | 672.81 | 672.84 |
| O | 329+66.23 | 16.26 | 672.60 | 672.63 |
| P | 329+76.19 | 16.34 | 672.40 | 672.42 |
| ☉ Brg. E. Abut. | 329+87.07 | 17.02 | 672.19 | 672.19 |
| Bk. E. Abut. | 329+88.89 | 17.09 | 672.16 | 672.16 |

☉ BEAM 1

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 336+16.08 | -14.87 | 675.56 | 675.56 |
| ☉ Brg. W. Abut. | 336+17.93 | -14.95 | 675.49 | 675.49 |
| AA | 336+27.99 | -15.35 | 675.13 | 675.15 |
| BB | 336+38.05 | -15.71 | 674.77 | 674.80 |
| CC | 336+48.11 | -16.03 | 674.43 | 674.46 |
| DD | 336+58.18 | -16.31 | 674.09 | 674.11 |
| EE | 336+68.25 | -16.54 | 673.76 | 673.77 |
| ☉ Pier 1 | 336+79.32 | -16.74 | 673.41 | 673.41 |
| FF | 336+89.40 | -16.88 | 673.10 | 673.11 |
| GG | 336+99.49 | -16.97 | 672.80 | 672.81 |
| HH | 337+09.55 | -17.02 | 672.51 | 672.53 |
| II | 337+19.62 | -17.03 | 672.23 | 672.25 |
| JJ | 337+29.70 | -16.98 | 671.95 | 671.97 |
| KK | 337+39.77 | -16.91 | 671.69 | 671.70 |
| ☉ Pier 2 | 337+51.86 | -16.74 | 671.38 | 671.38 |
| LL | 337+61.93 | -16.57 | 671.14 | 671.15 |
| MM | 337+72.00 | -16.34 | 670.91 | 670.93 |
| NN | 337+82.07 | -16.08 | 670.68 | 670.71 |
| OO | 337+92.13 | -15.77 | 670.46 | 670.49 |
| PP | 338+02.19 | -15.41 | 670.26 | 670.27 |
| ☉ Brg. E. Abut. | 338+13.26 | -14.97 | 670.04 | 670.04 |
| Bk. E. Abut. | 338+15.11 | -14.89 | 670.00 | 670.00 |

☉ BEAM 2

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 336+16.38 | -8.50 | 675.84 | 675.84 |
| ☉ Brg. W. Abut. | 336+18.20 | -8.58 | 675.77 | 675.77 |
| AA | 336+28.23 | -8.98 | 675.41 | 675.42 |
| BB | 336+38.26 | -9.34 | 675.05 | 675.08 |
| CC | 336+48.30 | -9.66 | 674.71 | 674.74 |
| DD | 336+58.34 | -9.93 | 674.37 | 674.39 |
| EE | 336+68.38 | -10.16 | 674.04 | 674.05 |
| ☉ Pier 1 | 336+79.43 | -10.36 | 673.69 | 673.69 |
| FF | 336+89.47 | -10.50 | 673.39 | 673.39 |
| GG | 336+99.52 | -10.59 | 673.09 | 673.10 |
| HH | 337+09.56 | -10.65 | 672.80 | 672.82 |
| II | 337+19.61 | -10.65 | 672.51 | 672.54 |
| JJ | 337+29.66 | -10.61 | 672.24 | 672.26 |
| KK | 337+39.70 | -10.53 | 671.98 | 671.99 |
| ☉ Pier 2 | 337+51.76 | -10.38 | 671.67 | 671.67 |
| LL | 337+61.80 | -10.19 | 671.43 | 671.44 |
| MM | 337+71.84 | -9.97 | 671.20 | 671.22 |
| NN | 337+81.88 | -9.70 | 670.97 | 671.00 |
| OO | 337+91.92 | -9.40 | 670.75 | 670.78 |
| PP | 338+01.95 | -9.04 | 670.55 | 670.57 |
| ☉ Brg. E. Abut. | 338+12.99 | -8.60 | 670.33 | 670.33 |
| Bk. E. Abut. | 338+14.83 | -8.52 | 670.29 | 670.29 |

☉ BEAM 3

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 336+16.64 | -2.13 | 676.11 | 676.11 |
| ☉ Brg. W. Abut. | 336+18.47 | -2.21 | 676.05 | 676.05 |
| AA | 336+28.47 | -2.61 | 675.68 | 675.70 |
| BB | 336+38.48 | -2.97 | 675.33 | 675.36 |
| CC | 336+48.49 | -3.29 | 674.99 | 675.02 |
| DD | 336+58.50 | -3.56 | 674.65 | 674.67 |
| EE | 336+68.51 | -3.79 | 674.33 | 674.34 |
| ☉ Pier 1 | 336+79.53 | -3.99 | 673.98 | 673.98 |
| FF | 336+89.55 | -4.13 | 673.67 | 673.68 |
| GG | 336+99.56 | -4.22 | 673.37 | 673.39 |
| HH | 337+09.58 | -4.27 | 673.08 | 673.10 |
| II | 337+19.60 | -4.28 | 672.80 | 672.82 |
| JJ | 337+29.62 | -4.23 | 672.53 | 672.55 |
| KK | 337+39.64 | -4.16 | 672.27 | 672.27 |
| ☉ Pier 2 | 337+51.66 | -4.00 | 671.96 | 671.96 |
| LL | 337+61.67 | -3.82 | 671.72 | 671.73 |
| MM | 337+71.69 | -3.60 | 671.49 | 671.51 |
| NN | 337+81.70 | -3.33 | 671.26 | 671.29 |
| OO | 337+91.71 | -3.02 | 671.05 | 671.07 |
| PP | 338+01.71 | -2.67 | 670.84 | 670.86 |
| ☉ Brg. E. Abut. | 338+12.72 | -2.23 | 670.62 | 670.62 |
| Bk. E. Abut. | 338+14.55 | -2.15 | 670.59 | 670.59 |

☉ ROADWAY & P.G.

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 336+16.73 | 0.00 | 676.21 | 676.21 |
| ☉ Brg. W. Abut. | 336+18.56 | 0.00 | 676.14 | 676.14 |
| AA | 336+28.57 | 0.00 | 675.80 | 675.82 |
| BB | 336+38.58 | 0.00 | 675.46 | 675.49 |
| CC | 336+48.58 | 0.00 | 675.13 | 675.16 |
| DD | 336+58.59 | 0.00 | 674.81 | 674.83 |
| EE | 336+68.59 | 0.00 | 674.49 | 674.50 |
| ☉ Pier 1 | 336+79.59 | 0.00 | 674.16 | 674.16 |
| FF | 336+89.59 | 0.00 | 673.85 | 673.86 |
| GG | 336+99.59 | 0.00 | 673.56 | 673.58 |
| HH | 337+09.59 | 0.00 | 673.27 | 673.30 |
| II | 337+19.59 | 0.00 | 672.99 | 673.02 |
| JJ | 337+29.59 | 0.00 | 672.72 | 672.74 |
| KK | 337+39.59 | 0.00 | 672.46 | 672.46 |
| ☉ Pier 2 | 337+51.60 | 0.00 | 672.14 | 672.14 |
| LL | 337+61.60 | 0.00 | 671.89 | 671.90 |
| MM | 337+71.60 | 0.00 | 671.65 | 671.68 |
| NN | 337+81.61 | 0.00 | 671.41 | 671.44 |
| OO | 337+91.61 | 0.00 | 671.18 | 671.21 |
| PP | 338+01.62 | 0.00 | 670.96 | 670.98 |
| ☉ Brg. E. Abut. | 338+12.62 | 0.00 | 670.72 | 670.72 |
| Bk. E. Abut. | 338+14.46 | 0.00 | 670.69 | 670.69 |

STAGE CONSTRUCTION LINE

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 336+16.84 | 2.64 | 676.32 | 676.32 |
| ☉ Brg. W. Abut. | 336+18.67 | 2.56 | 676.25 | 676.25 |
| AA | 336+28.66 | 2.15 | 675.89 | 675.91 |
| BB | 336+38.64 | 1.80 | 675.54 | 675.57 |
| CC | 336+48.63 | 1.48 | 675.20 | 675.23 |
| DD | 336+58.62 | 1.21 | 674.86 | 674.88 |
| EE | 336+68.61 | 0.98 | 674.54 | 674.55 |
| ☉ Pier 1 | 336+79.61 | 0.78 | 674.19 | 674.19 |
| FF | 336+89.60 | 0.64 | 673.88 | 673.89 |
| GG | 336+99.60 | 0.55 | 673.59 | 673.60 |
| HH | 337+09.59 | 0.50 | 673.30 | 673.32 |
| II | 337+19.59 | 0.49 | 673.02 | 673.04 |
| JJ | 337+29.59 | 0.54 | 672.75 | 672.76 |
| KK | 337+39.59 | 0.61 | 672.48 | 672.49 |
| ☉ Pier 2 | 337+51.58 | 0.77 | 672.18 | 672.18 |
| LL | 337+61.58 | 0.95 | 671.94 | 671.95 |
| MM | 337+71.57 | 1.17 | 671.70 | 671.73 |
| NN | 337+81.56 | 1.44 | 671.48 | 671.51 |
| OO | 337+91.55 | 1.74 | 671.26 | 671.29 |
| PP | 338+01.54 | 2.10 | 671.06 | 671.08 |
| ☉ Brg. E. Abut. | 338+12.52 | 2.54 | 670.84 | 670.84 |
| Bk. E. Abut. | 338+14.34 | 2.61 | 670.81 | 670.81 |

☉ BEAM 4

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 336+16.91 | 4.24 | 676.39 | 676.39 |
| ☉ Brg. W. Abut. | 336+18.74 | 4.16 | 676.32 | 676.32 |
| AA | 336+28.71 | 3.76 | 675.96 | 675.98 |
| BB | 336+38.69 | 3.40 | 675.61 | 675.64 |
| CC | 336+48.67 | 3.08 | 675.27 | 675.30 |
| DD | 336+58.66 | 2.81 | 674.93 | 674.96 |
| EE | 336+68.65 | 2.58 | 674.61 | 674.62 |
| ☉ Pier 1 | 336+79.63 | 2.39 | 674.26 | 674.26 |
| FF | 336+89.62 | 2.24 | 673.95 | 673.96 |
| GG | 336+99.61 | 2.16 | 673.66 | 673.67 |
| HH | 337+09.60 | 2.11 | 673.37 | 673.39 |
| II | 337+19.59 | 2.10 | 673.09 | 673.11 |
| JJ | 337+29.58 | 2.14 | 672.82 | 672.83 |
| KK | 337+39.57 | 2.22 | 672.56 | 672.56 |
| ☉ Pier 2 | 337+51.56 | 2.38 | 672.25 | 672.25 |
| LL | 337+61.55 | 2.55 | 672.01 | 672.02 |
| MM | 337+71.53 | 2.78 | 671.78 | 671.80 |
| NN | 337+81.52 | 3.04 | 671.55 | 671.58 |
| OO | 337+91.50 | 3.35 | 671.34 | 671.37 |
| PP | 338+01.47 | 3.70 | 671.13 | 671.15 |
| ☉ Brg. E. Abut. | 338+12.45 | 4.14 | 670.91 | 670.91 |
| Bk. E. Abut. | 338+14.28 | 4.22 | 670.88 | 670.88 |

☉ BEAM 5

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 336+17.19 | 10.60 | 676.67 | 676.67 |
| ☉ Brg. W. Abut. | 336+19.01 | 10.53 | 676.60 | 676.60 |
| AA | 336+28.96 | 10.13 | 676.24 | 676.26 |
| BB | 336+38.91 | 9.77 | 675.89 | 675.92 |
| CC | 336+48.86 | 9.45 | 675.55 | 675.58 |
| DD | 336+58.82 | 9.18 | 675.22 | 675.24 |
| EE | 336+68.78 | 8.96 | 674.89 | 674.90 |
| ☉ Pier 1 | 336+79.73 | 8.76 | 674.55 | 674.55 |
| FF | 336+89.69 | 8.62 | 674.24 | 674.24 |
| GG | 336+99.65 | 8.53 | 673.94 | 673.96 |
| HH | 337+09.62 | 8.48 | 673.65 | 673.68 |
| II | 337+19.58 | 8.47 | 673.38 | 673.40 |
| JJ | 337+29.54 | 8.52 | 673.11 | 673.12 |
| KK | 337+39.51 | 8.59 | 672.84 | 672.85 |
| ☉ Pier 2 | 337+51.46 | 8.75 | 672.54 | 672.54 |
| LL | 337+61.42 | 8.93 | 672.30 | 672.31 |
| MM | 337+71.38 | 9.15 | 672.07 | 672.09 |
| NN | 337+81.33 | 9.41 | 671.84 | 671.87 |
| OO | 337+91.29 | 9.72 | 671.63 | 671.66 |
| PP | 338+01.24 | 10.07 | 671.42 | 671.44 |
| ☉ Brg. E. Abut. | 338+12.18 | 10.51 | 671.21 | 671.21 |
| Bk. E. Abut. | 338+14.01 | 10.58 | 671.17 | 671.17 |

☉ BEAM 6

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 336+17.46 | 16.97 | 676.95 | 676.95 |
| ☉ Brg. W. Abut. | 336+19.28 | 16.90 | 676.88 | 676.88 |
| AA | 336+29.20 | 16.49 | 676.52 | 676.54 |
| BB | 336+39.12 | 16.14 | 676.17 | 676.20 |
| CC | 336+49.05 | 15.83 | 675.83 | 675.86 |
| DD | 336+58.97 | 15.56 | 675.50 | 675.52 |
| EE | 336+68.91 | 15.33 | 675.17 | 675.18 |
| ☉ Pier 1 | 336+79.83 | 15.13 | 674.83 | 674.83 |
| FF | 336+89.77 | 14.99 | 674.52 | 674.53 |
| GG | 336+99.70 | 14.91 | 674.23 | 674.24 |
| HH | 337+09.64 | 14.85 | 673.94 | 673.96 |
| II | 337+19.57 | 14.85 | 673.66 | 673.69 |
| JJ | 337+29.51 | 14.89 | 673.39 | 673.41 |
| KK | 337+39.44 | 14.97 | 673.13 | 673.14 |
| ☉ Pier 2 | 337+51.36 | 15.13 | 672.83 | 672.83 |
| LL | 337+61.29 | 15.30 | 672.59 | 672.60 |
| MM | 337+71.22 | 15.52 | 672.36 | 672.38 |
| NN | 337+81.15 | 15.79 | 672.13 | 672.16 |
| OO | 337+91.08 | 16.09 | 671.92 | 671.95 |
| PP | 338+01.00 | 16.44 | 671.71 | 671.73 |
| ☉ Brg. E. Abut. | 338+11.91 | 16.88 | 671.50 | 671.50 |
| Bk. E. Abut. | 338+13.74 | 16.95 | 671.46 | 671.46 |

INSIDE FACE OF NORTH PARAPET

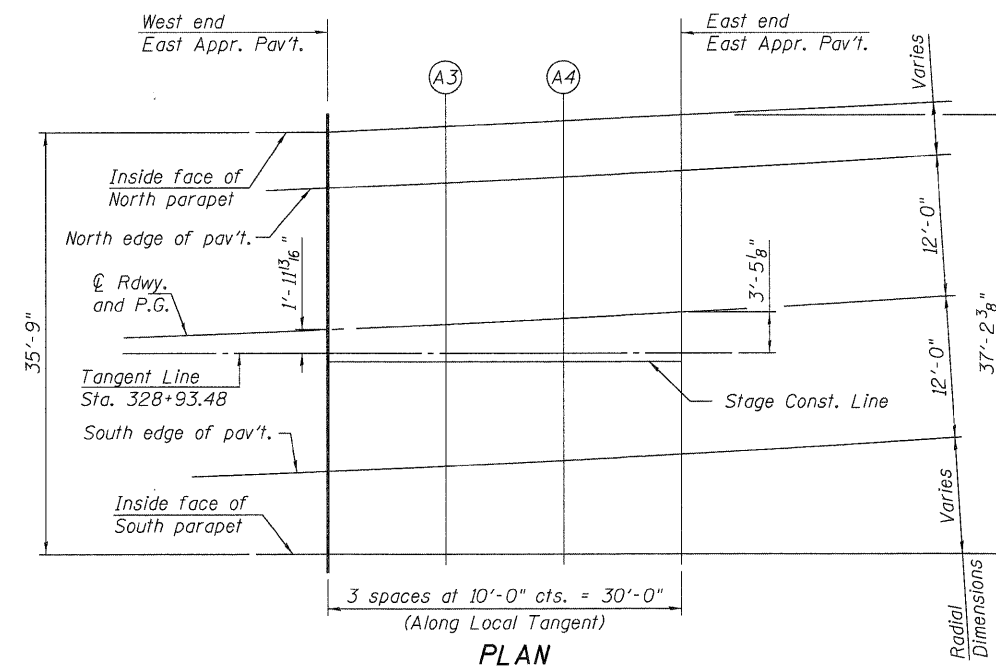
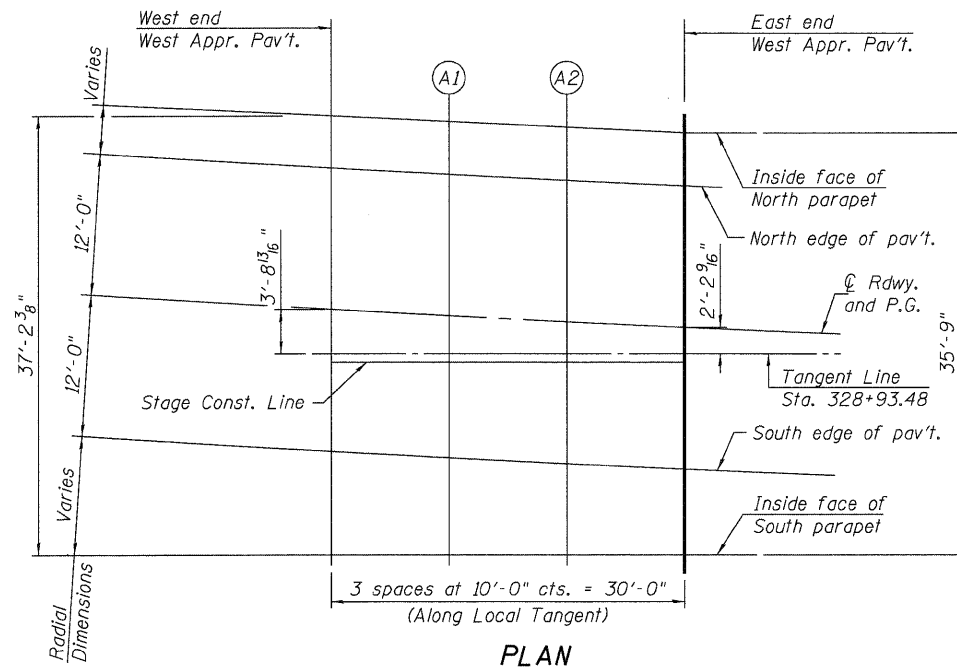
| Location | Station | Offset | Theoretical Grade Elevations |
|---------------------------|-----------|--------|------------------------------|
| W. end of W. Appr. Pav't. | 327+61.72 | -16.41 | 677.18 |
| A1 | 327+71.80 | -16.48 | 676.81 |
| A2 | 327+81.89 | -16.51 | 676.45 |
| E. end of W. Appr. Pav't. | 327+91.97 | -16.49 | 676.10 |
| W. end of E. Appr. Pav't. | 329+89.46 | -16.72 | 670.62 |
| A3 | 329+99.55 | -16.77 | 670.42 |
| A4 | 330+09.67 | -16.77 | 670.22 |
| E. end of E. Appr. Pav't. | 330+19.72 | -16.72 | 670.03 |

NORTH EDGE OF PAVEMENT

| Location | Station | Offset | Theoretical Grade Elevations |
|---------------------------|-----------|--------|------------------------------|
| W. end of W. Appr. Pav't. | 327+61.97 | -12.00 | 677.37 |
| A1 | 327+72.04 | -12.00 | 677.01 |
| A2 | 327+82.11 | -12.00 | 676.64 |
| E. end of W. Appr. Pav't. | 327+92.17 | -12.00 | 676.29 |
| W. end of E. Appr. Pav't. | 329+89.27 | -12.00 | 670.84 |
| A3 | 329+99.33 | -12.00 | 670.64 |
| A4 | 330+09.40 | -12.00 | 670.44 |
| E. end of E. Appr. Pav't. | 330+19.49 | -12.00 | 670.25 |

☐ OF ROADWAY & P.G.

| Location | Station | Offset | Theoretical Grade Elevations |
|---------------------------|-----------|--------|------------------------------|
| W. end of W. Appr. Pav't. | 327+62.67 | 0.00 | 677.89 |
| A1 | 327+72.68 | 0.00 | 677.52 |
| A2 | 327+82.69 | 0.00 | 677.16 |
| E. end of W. Appr. Pav't. | 327+92.70 | 0.00 | 676.81 |
| W. end of E. Appr. Pav't. | 329+88.77 | 0.00 | 671.39 |
| A3 | 329+98.79 | 0.00 | 671.19 |
| A4 | 330+08.79 | 0.00 | 670.99 |
| E. end of E. Appr. Pav't. | 330+18.80 | 0.00 | 670.80 |



STAGE CONSTRUCTION LINE

| Location | Station | Offset | Theoretical Grade Elevations |
|---------------------------|-----------|--------|------------------------------|
| W. end of W. Appr. Pav't. | 327+62.92 | 4.46 | 678.08 |
| A1 | 327+72.89 | 3.92 | 677.69 |
| A2 | 327+82.86 | 3.41 | 677.31 |
| E. end of W. Appr. Pav't. | 327+92.83 | 2.95 | 676.94 |
| W. end of E. Appr. Pav't. | 329+88.65 | 2.72 | 671.51 |
| A3 | 329+98.63 | 3.16 | 671.33 |
| A4 | 330+08.61 | 3.64 | 671.16 |
| E. end of E. Appr. Pav't. | 330+18.57 | 4.16 | 670.99 |

SOUTH EDGE OF PAVEMENT

| Location | Station | Offset | Theoretical Grade Elevations |
|---------------------------|-----------|--------|------------------------------|
| W. end of W. Appr. Pav't. | 327+63.34 | 12.00 | 678.40 |
| A1 | 327+73.31 | 12.00 | 678.04 |
| A2 | 327+83.27 | 12.00 | 677.68 |
| E. end of W. Appr. Pav't. | 327+93.23 | 12.00 | 677.33 |
| W. end of E. Appr. Pav't. | 329+88.27 | 12.00 | 671.94 |
| A3 | 329+98.23 | 12.00 | 671.74 |
| A4 | 330+08.18 | 12.00 | 671.54 |
| E. end of E. Appr. Pav't. | 330+18.15 | 12.00 | 671.35 |

INSIDE FACE OF SOUTH PARAPET

| Location | Station | Offset | Theoretical Grade Elevations |
|---------------------------|-----------|--------|------------------------------|
| W. end of W. Appr. Pav't. | 327+63.84 | 20.73 | 678.78 |
| A1 | 327+73.73 | 20.19 | 678.39 |
| A2 | 327+83.64 | 19.69 | 678.02 |
| E. end of W. Appr. Pav't. | 327+93.54 | 19.23 | 677.65 |
| W. end of E. Appr. Pav't. | 329+87.98 | 18.99 | 672.26 |
| A3 | 329+97.89 | 19.43 | 672.08 |
| A4 | 330+07.79 | 19.91 | 671.91 |
| E. end of E. Appr. Pav't. | 330+17.69 | 20.43 | 671.74 |

INSIDE FACE OF NORTH PARAPET

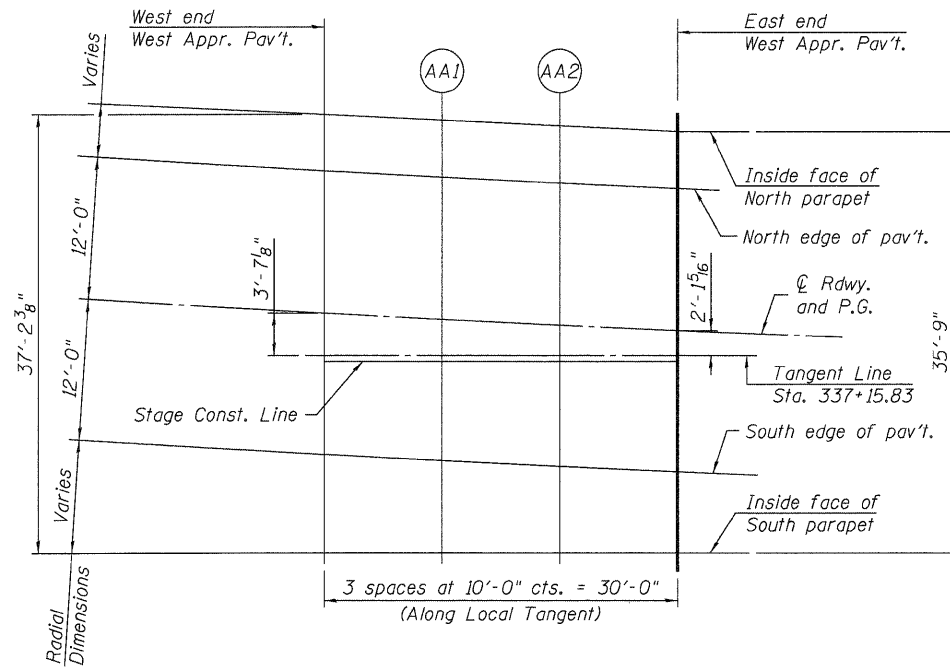
| Location | Station | Offset | Theoretical Grade Elevations |
|---------------------------|-----------|--------|------------------------------|
| W. end of W. Appr. Pav't. | 335+86.58 | -16.79 | 676.53 |
| AA1 | 335+96.66 | -16.85 | 676.16 |
| AA2 | 336+06.75 | -16.87 | 675.80 |
| E. end of W. Appr. Pav't. | 336+16.83 | -16.84 | 675.45 |
| W. end of E. Appr. Pav't. | 338+14.35 | -16.86 | 669.93 |
| AA3 | 338+24.44 | -16.90 | 669.72 |
| AA4 | 338+34.52 | -16.88 | 669.51 |
| E. end of E. Appr. Pav't. | 338+44.61 | -16.82 | 669.31 |

NORTH EDGE OF PAVEMENT

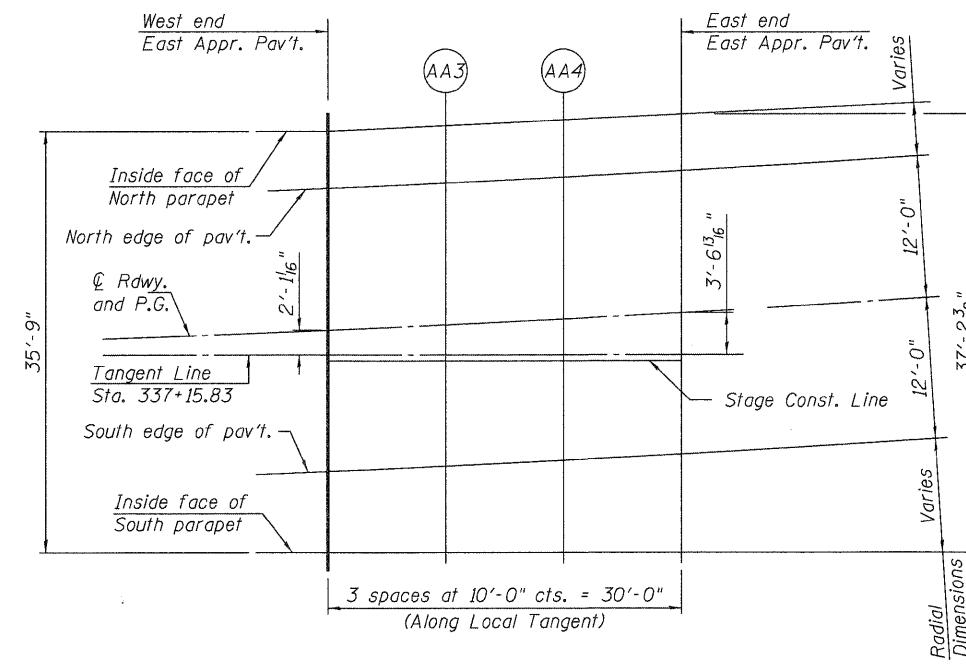
| Location | Station | Offset | Theoretical Grade Elevations |
|---------------------------|-----------|--------|------------------------------|
| W. end of W. Appr. Pav't. | 335+86.85 | -12.00 | 676.74 |
| AA1 | 335+96.92 | -12.00 | 676.37 |
| AA2 | 336+06.99 | -12.00 | 676.01 |
| E. end of W. Appr. Pav't. | 336+17.05 | -12.00 | 675.66 |
| W. end of E. Appr. Pav't. | 338+14.14 | -12.00 | 670.15 |
| AA3 | 338+24.20 | -12.00 | 669.94 |
| AA4 | 338+34.27 | -12.00 | 669.73 |
| E. end of E. Appr. Pav't. | 338+44.34 | -12.00 | 669.53 |

CL OF ROADWAY & P.G.

| Location | Station | Offset | Theoretical Grade Elevations |
|---------------------------|-----------|--------|------------------------------|
| W. end of W. Appr. Pav't. | 335+87.53 | 0.00 | 677.25 |
| AA1 | 335+97.54 | 0.00 | 676.89 |
| AA2 | 336+07.55 | 0.00 | 676.53 |
| E. end of W. Appr. Pav't. | 336+17.56 | 0.00 | 676.18 |
| W. end of E. Appr. Pav't. | 338+13.63 | 0.00 | 670.70 |
| AA3 | 338+23.64 | 0.00 | 670.50 |
| AA4 | 338+33.65 | 0.00 | 670.29 |
| E. end of E. Appr. Pav't. | 338+43.66 | 0.00 | 670.08 |



PLAN



PLAN

STAGE CONSTRUCTION LINE

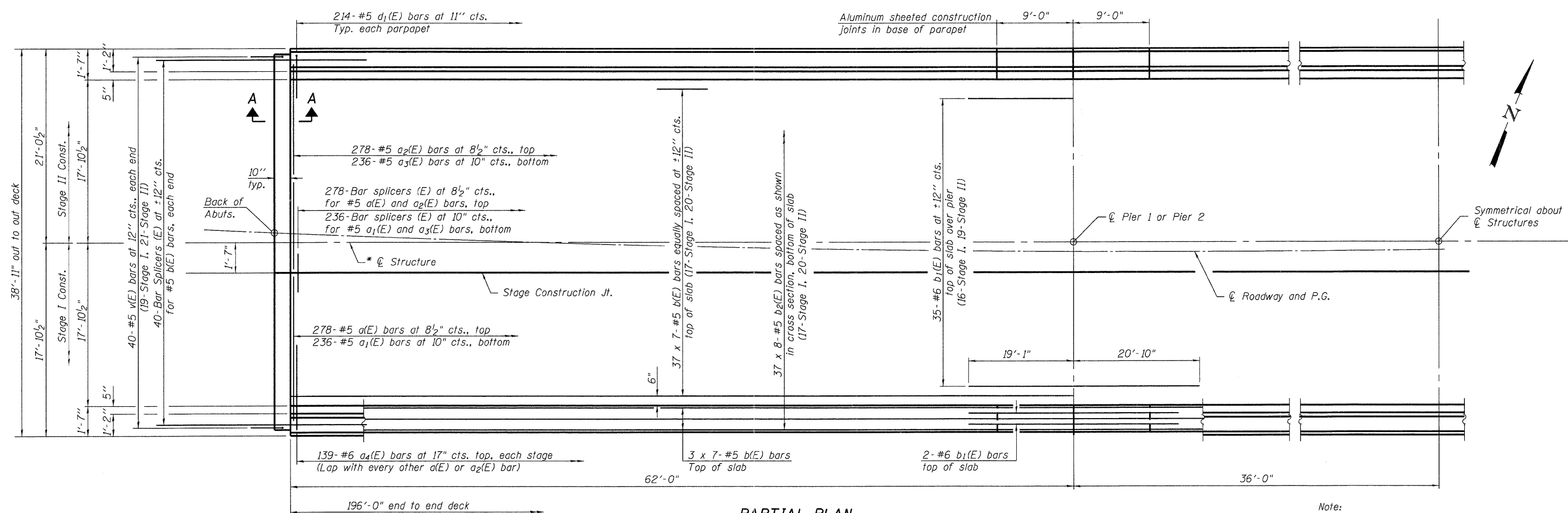
| Location | Station | Offset | Theoretical Grade Elevations |
|---------------------------|-----------|--------|------------------------------|
| W. end of W. Appr. Pav't. | 335+87.76 | 4.08 | 677.43 |
| AA1 | 335+97.72 | 3.54 | 677.04 |
| AA2 | 336+07.70 | 3.05 | 676.66 |
| E. end of W. Appr. Pav't. | 336+17.68 | 2.60 | 676.29 |
| W. end of E. Appr. Pav't. | 338+13.49 | 2.58 | 670.82 |
| AA3 | 338+23.49 | 3.03 | 670.63 |
| AA4 | 338+33.47 | 3.52 | 670.45 |
| E. end of E. Appr. Pav't. | 338+43.43 | 4.05 | 670.27 |

SOUTH EDGE OF PAVEMENT

| Location | Station | Offset | Theoretical Grade Elevations |
|---------------------------|-----------|--------|------------------------------|
| W. end of W. Appr. Pav't. | 335+88.20 | 12.00 | 677.77 |
| AA1 | 335+98.16 | 12.00 | 677.41 |
| AA2 | 336+08.12 | 12.00 | 677.05 |
| E. end of W. Appr. Pav't. | 336+18.08 | 12.00 | 676.70 |
| W. end of E. Appr. Pav't. | 338+13.12 | 12.00 | 671.25 |
| AA3 | 338+23.07 | 12.00 | 671.05 |
| AA4 | 338+33.03 | 12.00 | 670.84 |
| E. end of E. Appr. Pav't. | 338+43.03 | 12.00 | 670.64 |

INSIDE FACE OF SOUTH PARAPET

| Location | Station | Offset | Theoretical Grade Elevations |
|---------------------------|-----------|--------|------------------------------|
| W. end of W. Appr. Pav't. | 335+88.66 | 20.35 | 678.13 |
| AA1 | 335+98.56 | 19.81 | 677.74 |
| AA2 | 336+08.46 | 19.32 | 677.37 |
| E. end of W. Appr. Pav't. | 336+18.37 | 18.88 | 677.00 |
| W. end of E. Appr. Pav't. | 338+12.82 | 18.85 | 671.57 |
| AA3 | 338+22.74 | 19.30 | 671.38 |
| AA4 | 338+32.64 | 19.79 | 671.20 |
| E. end of E. Appr. Pav't. | 338+42.54 | 20.32 | 671.02 |

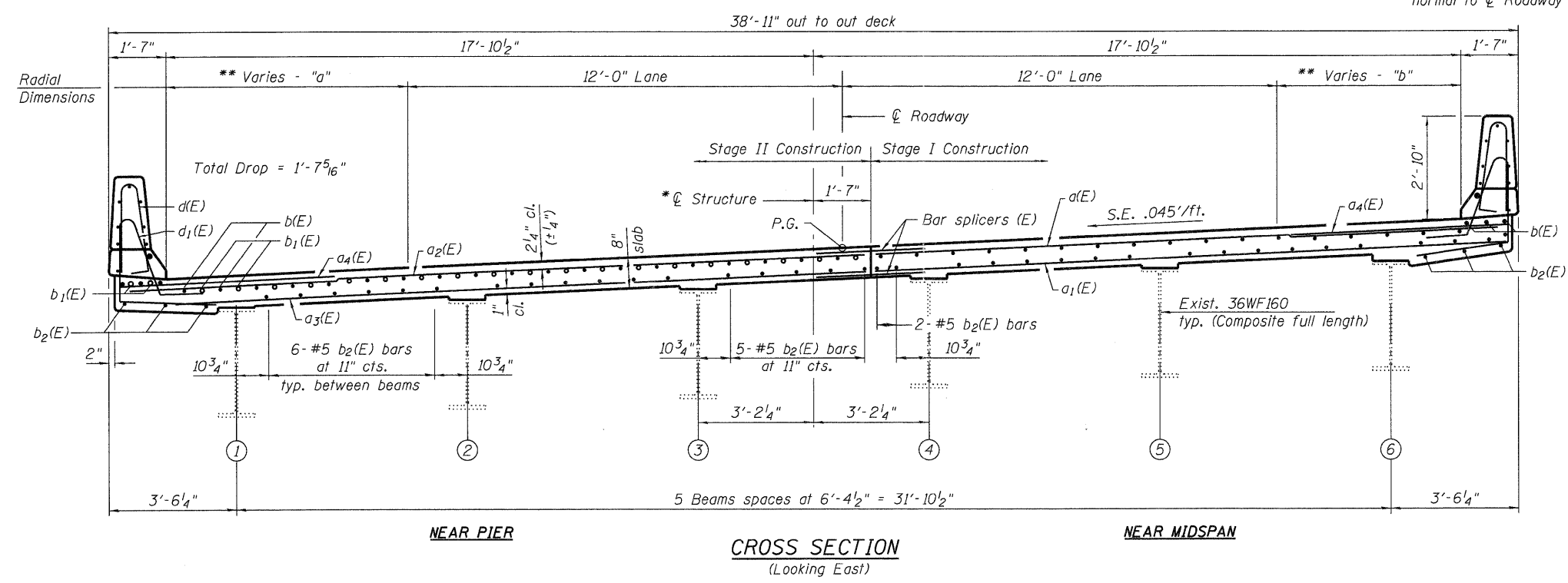


PARTIAL PLAN

MINIMUM BAR LAP
(Deck)
#5 bar = 2'-7"

- * See sheet 2 of 27 for location of ϕ Structure relative to Local Tangent.
- ** Designates radial dimensions normal to ϕ Roadway and P.G.

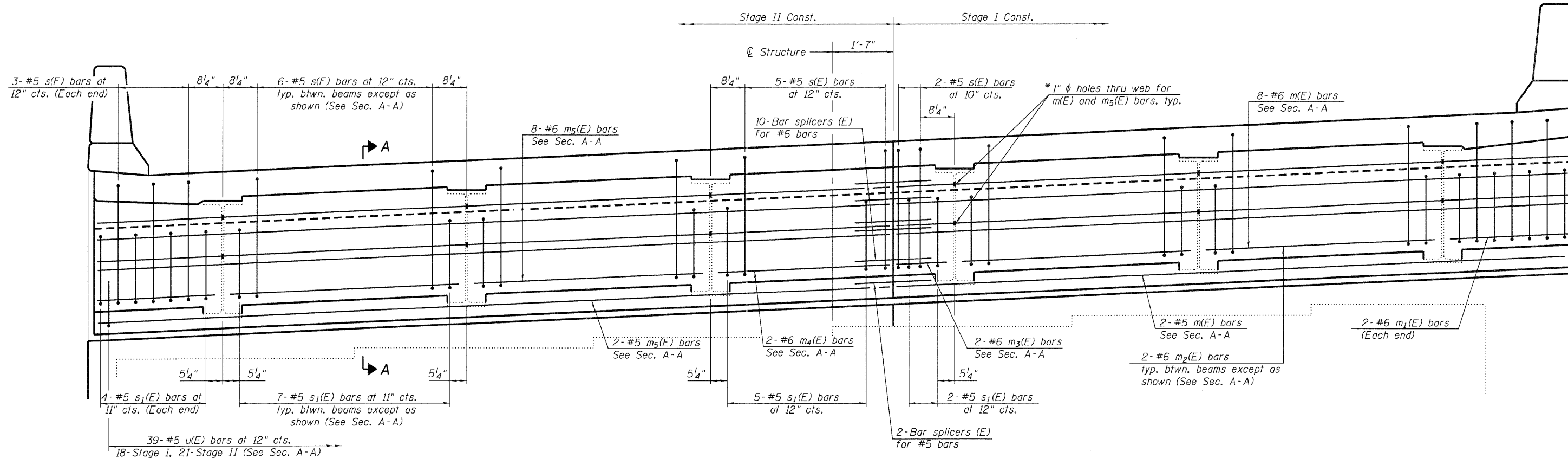
Note:
See Sheet 15 of 27 for superstructure details and Bill of Material.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
See Sheet 15 of 27 for parapet reinforcement.
See Sheet 14 of 27 for Section A-A.



CROSS SECTION
(Looking East)

SHOULDER WIDTHS

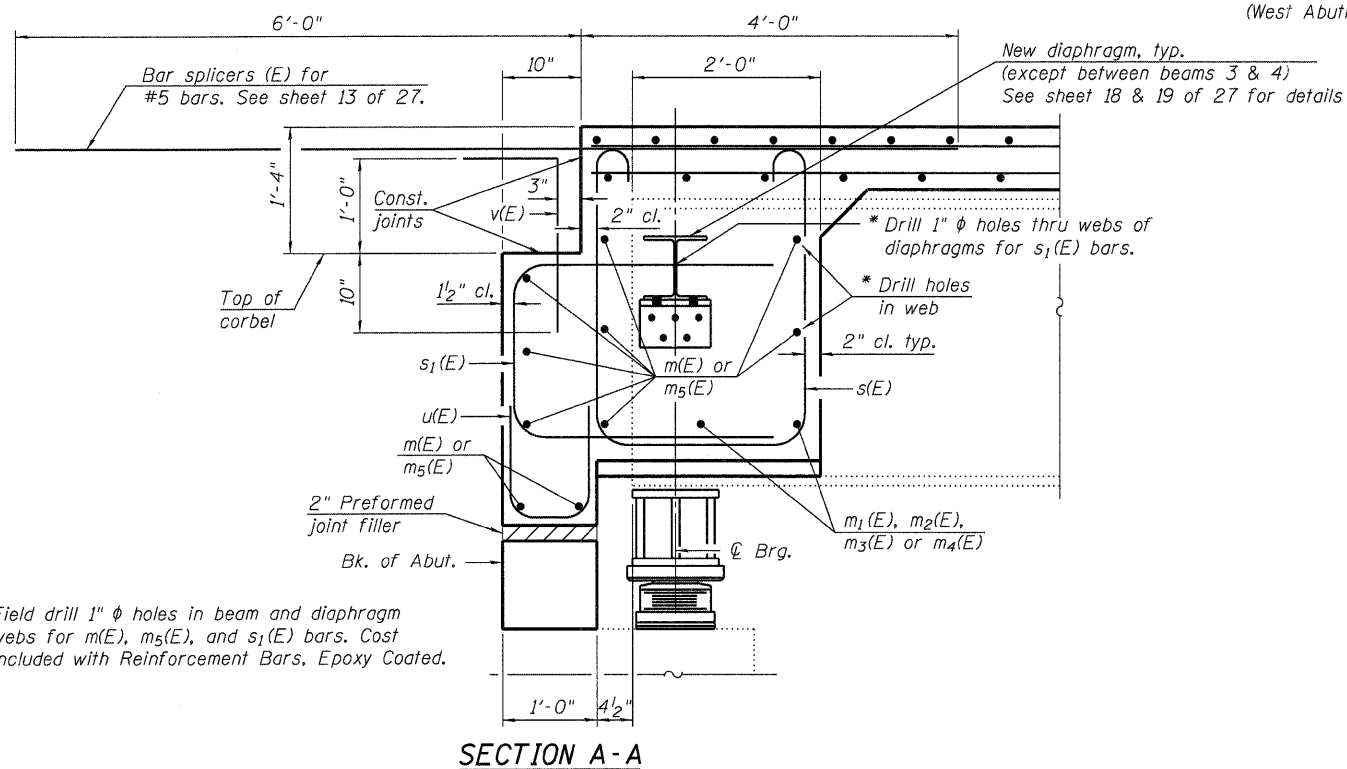
| | "a" | | "b" | |
|----------|------------|------------|-----------|------------|
| | Min. | Max. | Min. | Max. |
| 043-0004 | 4'-10 1/8" | 6'-11 1/2" | 4'-9 1/2" | 6'-10 1/2" |
| 043-0005 | 4'-6" | 6'-8 5/8" | 5'-0 3/8" | 7'-2 3/4" |



DIAPHRAGM ELEVATION AT EAST ABUTMENTS

(Looking East)
(West Abutments similar by rotation of 180°)

Notes:
Reinforcement bars in diaphragm are billed with superstructure on sheet 15 of 27.
Concrete in diaphragm is included with Concrete Superstructure on sheet 15 of 27.
For details of bars s(E) & s1(E) see sheet 15 of 27.

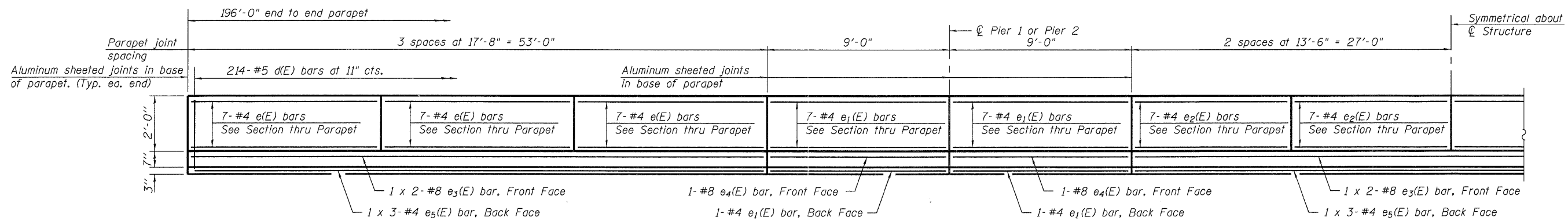


SECTION A-A

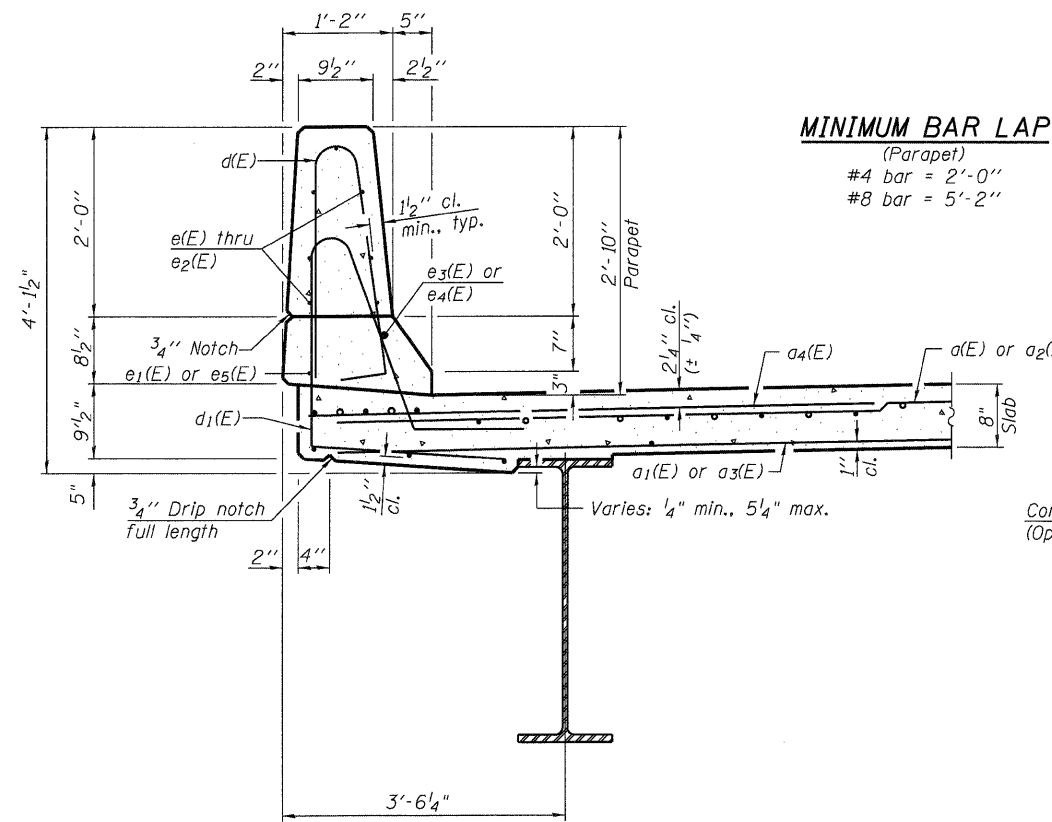
* Field drill 1" phi holes in beam and diaphragm webs for m(E), m5(E), and s1(E) bars. Cost included with Reinforcement Bars. Epoxy Coated.

TOP OF CORBEL ELEVATIONS

| Structure # | Abutment | Location | Corbel Elevation |
|--------------------|------------|---------------------------|------------------|
| 043-0004 (E.B.) | West Abut. | Inside Face of N. Parapet | 674.14 |
| | | Inside Face of S. Parapet | 675.70 |
| | East Abut. | Inside Face of N. Parapet | 668.58 |
| | | Inside Face of S. Parapet | 670.22 |
| 043-0005 (W.B.) | West Abut. | Inside Face of N. Parapet | 674.79 |
| | | Inside Face of S. Parapet | 676.35 |
| | East Abut. | Inside Face of N. Parapet | 669.27 |
| | | Inside Face of S. Parapet | 670.93 |



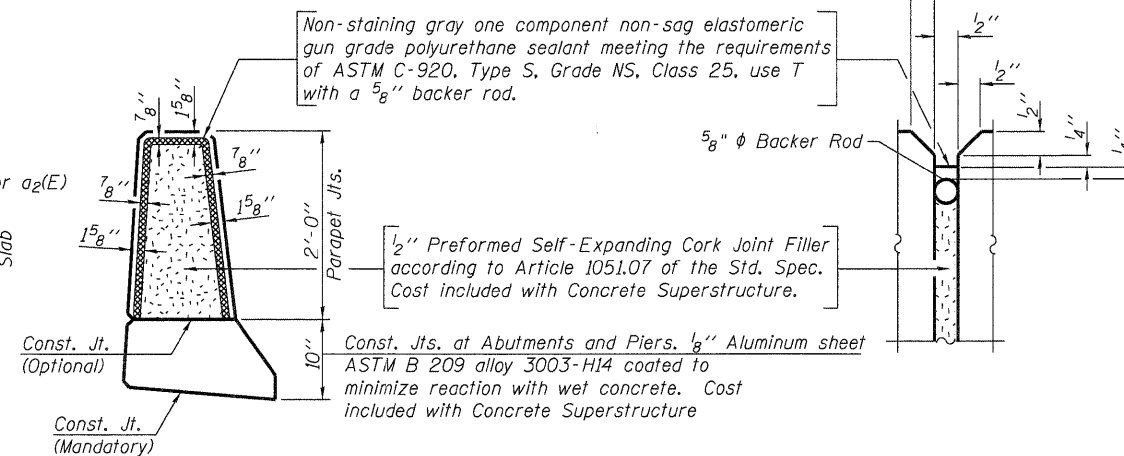
INSIDE ELEVATION OF PARAPET



SECTION THRU PARAPET

MINIMUM BAR LAP

(Parapet)
 #4 bar = 2'-0"
 #8 bar = 5'-2"

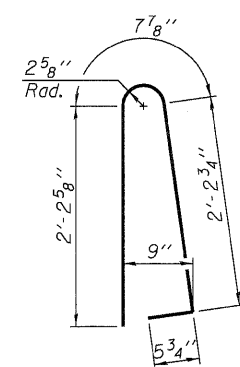


PARAPET JOINT DETAILS

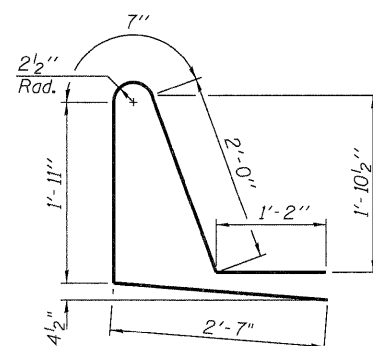
SUPERSTRUCTURE
 BILL OF MATERIAL
 TWO STRUCTURES

| Bar | No. | Size | Length | Shape |
|----------------------------------|-----|------|---------|---------|
| a(E) | 556 | #5 | 17'-2" | — |
| a1(E) | 472 | #5 | 17'-5" | — |
| a2(E) | 556 | #5 | 20'-4" | — |
| a3(E) | 472 | #5 | 20'-7" | — |
| a4(E) | 556 | #6 | 6'-6" | — |
| b(E) | 602 | #5 | 30'-2" | — |
| b1(E) | 156 | #6 | 41'-7" | — |
| b2(E) | 592 | #5 | 26'-9" | — |
| d(E) | 856 | #5 | 5'-7" | — |
| d1(E) | 856 | #5 | 8'-3" | — |
| e(E) | 168 | #4 | 17'-5" | — |
| e1(E) | 128 | #4 | 8'-9" | — |
| e2(E) | 112 | #4 | 13'-3" | — |
| e3(E) | 24 | #8 | 29'-6" | — |
| e4(E) | 16 | #8 | 8'-9" | — |
| e5(E) | 36 | #4 | 19'-3" | — |
| m(E) | 40 | #6 | 17'-5" | — |
| m1(E) | 16 | #6 | 3'-1" | — |
| m2(E) | 32 | #6 | 6'-1" | — |
| m3(E) | 8 | #6 | 1'-4" | — |
| m4(E) | 8 | #6 | 4'-6" | — |
| m5(E) | 40 | #6 | 20'-7" | — |
| s(E) | 148 | #5 | 9'-6" | U |
| s1(E) | 172 | #5 | 7'-1" | U |
| u(E) | 156 | #5 | 4'-9" | U |
| v(E) | 160 | #5 | 3'-9" | Γ |
| Concrete Superstructure | | | Cu. Yd. | 575.8 |
| Bar Splicers | | | Each | 1,236 |
| Reinforcement Bars, Epoxy Coated | | | Pound | 116,720 |

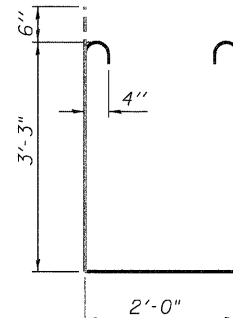
Bars indicated thus 1 x 2-#8 etc. indicates 1 line of bars with 2 lengths per line.



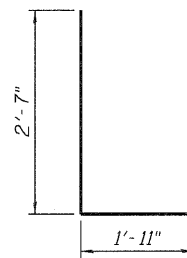
BAR d(E)



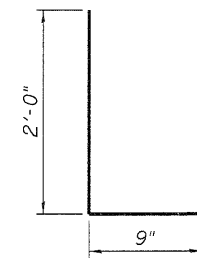
BAR d1(E)



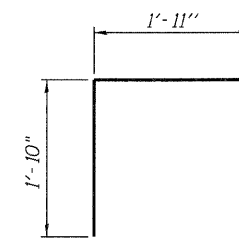
BAR s(E)



BAR s1(E)



BAR u(E)



BAR v(E)

| | | |
|---------------------------------|-------------------|-----------|
| USER NAME = dheberling | DESIGNED - BRD | REVISED - |
| FILE NAME = 0430024&5-64C94.dgn | CHECKED - SDS | REVISED - |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - |
| PLOT TIME = 10:07:15 AM | CHECKED - BRD/SDS | REVISED - |

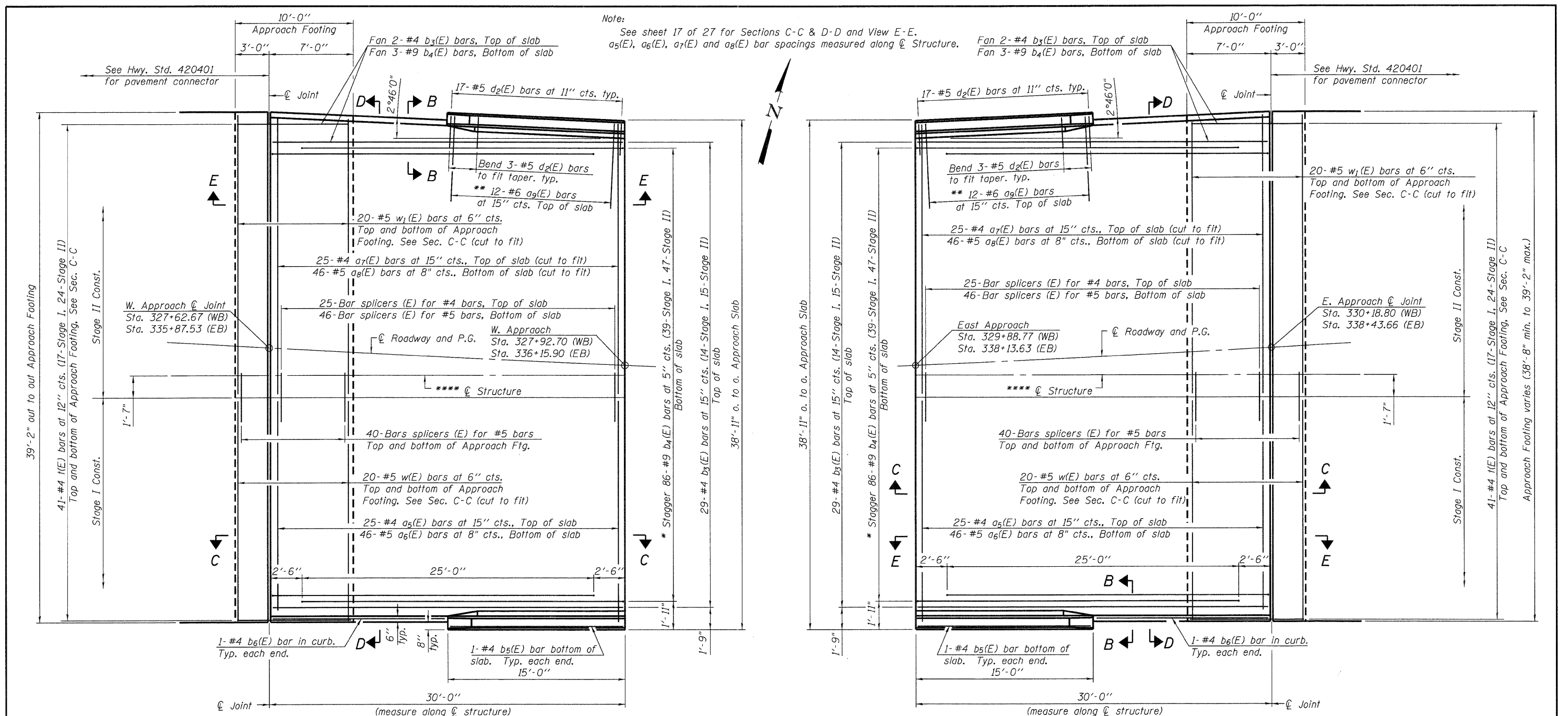
WHKS & CO.
 ENGINEERING
 7018 KINGSMILL CT.,
 SPRINGFIELD, IL
 (217) 483-9457
 DESIGN FIRM #184001036

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
 STRUCTURE NO. 043-0004 & 043-0005

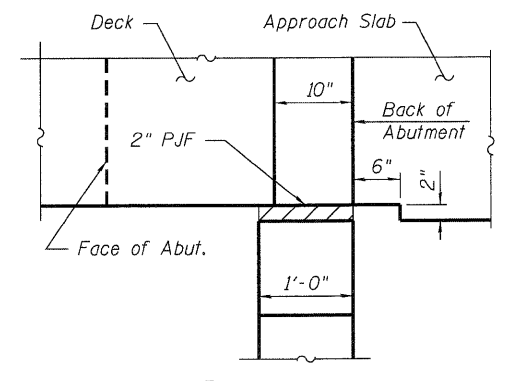
SHEET NO. 15 OF 27 SHEETS

| | | | | |
|--------------------|---------------------------------|-------------------|---------------------------|---------------|
| F.A.P. RTE. 301 | SECTION (43B, 44B, 44HB, 45BID) | COUNTY JO DAVIESS | TOTAL SHEETS 309 | SHEET NO. 128 |
| CONTRACT NO. 64C94 | | | ILLINOIS FED. AID PROJECT | |

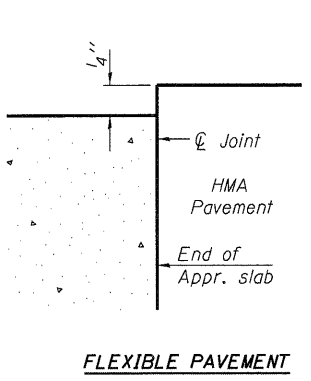


WEST APPROACH PLAN

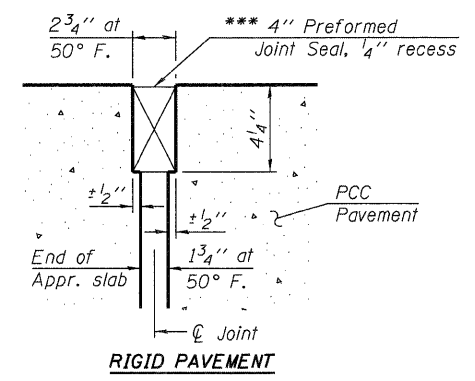
EAST APPROACH PLAN



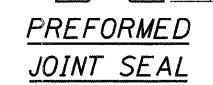
PLAN
(Parapet not shown for clarity)



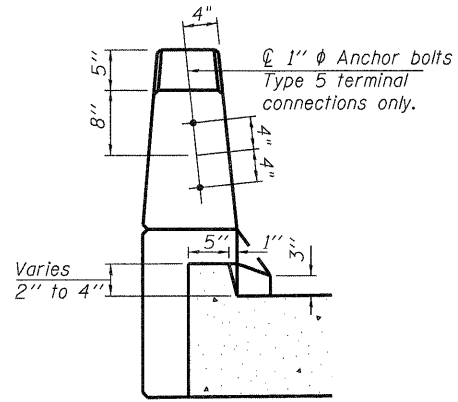
FLEXIBLE PAVEMENT



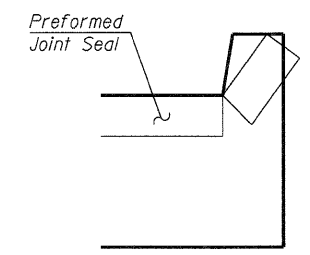
RIGID PAVEMENT



PREFORMED JOINT SEAL



VIEW B-B
(Type 5 terminal only typ. 2 locations)

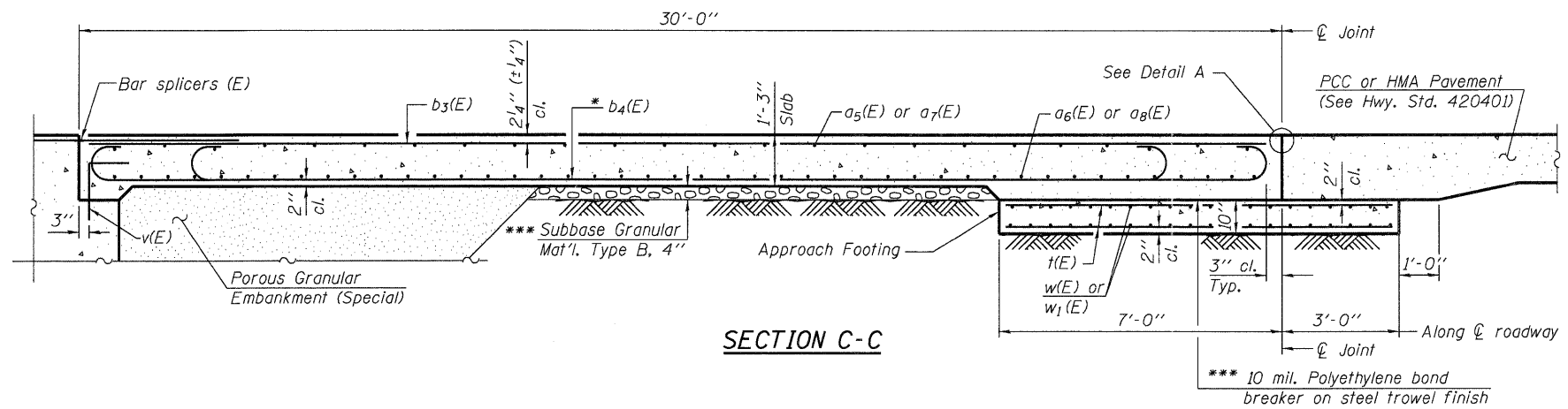


VIEW F-F

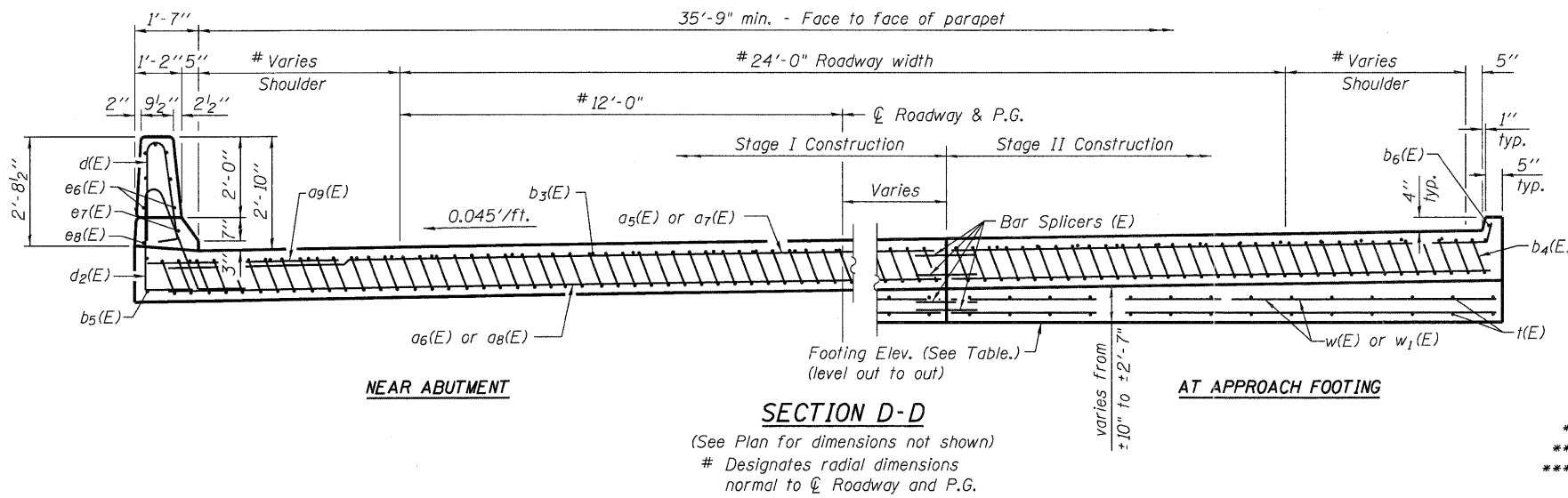
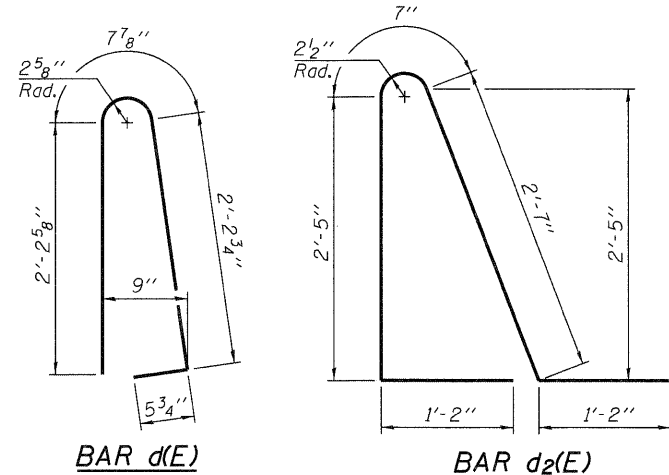
Angle Preformed Joint Seal at 45° at curbs when req'd for drainage.

- * Tilt #9 b4(E) bars as required to maintain clearance.
- ** Space between a5(E) and a7(E) bars, typ. ea. parapet.
- *** Cast included with Concrete Superstructure.
- **** See sheet 2 of 27 for location of C structure relative to local Tangent

| | | | | | | | | | | | | |
|---------------------------------|-------------------|-----------|--|------------------------------------------------------------------------------------|-----------------------------------------------------------------|-------------------------------------------------------------------------------------|------------|-------------|---------|--------|--------------|-----------|
| USER NAME = dheberling | DESIGNED - BRD | REVISED - | | 7018 KINGSMILL CT., SPRINGFIELD, IL (217) 483-9457 DESIGN FIRM #184001036 | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | BRIDGE APPROACH SLAB DETAILS STRUCTURE NO. 043-0004 & 043-0005 | | F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| FILE NAME = 0430004&5-64C94.dwg | CHECKED - SDS | REVISED - | | 301 | | (43B, 44B, 44HB, 45B/D) | JO DAVIESS | 309 | 129 | | | |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - | | CONTRACT NO. 64C94 | | | | | | | | |
| PLOT TIME = 10:07:17 AM | CHECKED - BRD/SDS | REVISED - | | ILLINOIS FED. AID PROJECT | | | | | | | | |



Notes:
 See sheet 16 of 27 for Detail A and View B-B.
 Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
 Approach footing concrete shall be paid for as Concrete Structures.
 Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
 For v(E) bar details, see sheet 15 of 27.
 The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
 For bar splicer details, see sheet 27 of 27.
 Cost of excavation for approach footing included with Concrete Structures.
 For Porous Granular Embankment (Special) and drainage treatment details, see sheet 2 of 27.
 For additional parapet details, see sheet 15 of 27.

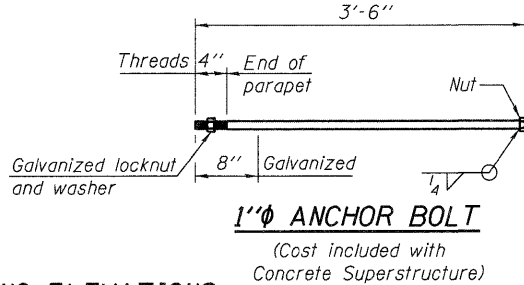


* Tilt #9 b4(E) bars as required to maintain clearance.
 ** Space between a5(E) and a7(E) bars, typ. ea. parapet.
 *** Cost included with Concrete Superstructure.
 **** See sheet 2 of 27 for location of centerline structure relative to local Tangent

**FOUR APPROACHES
 BILL OF MATERIAL**

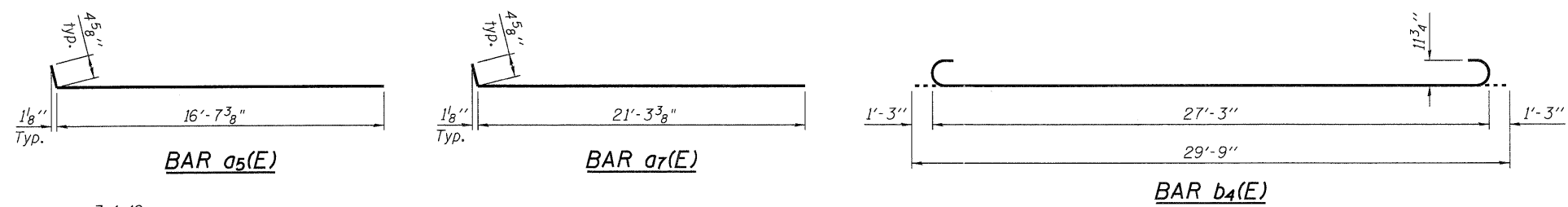
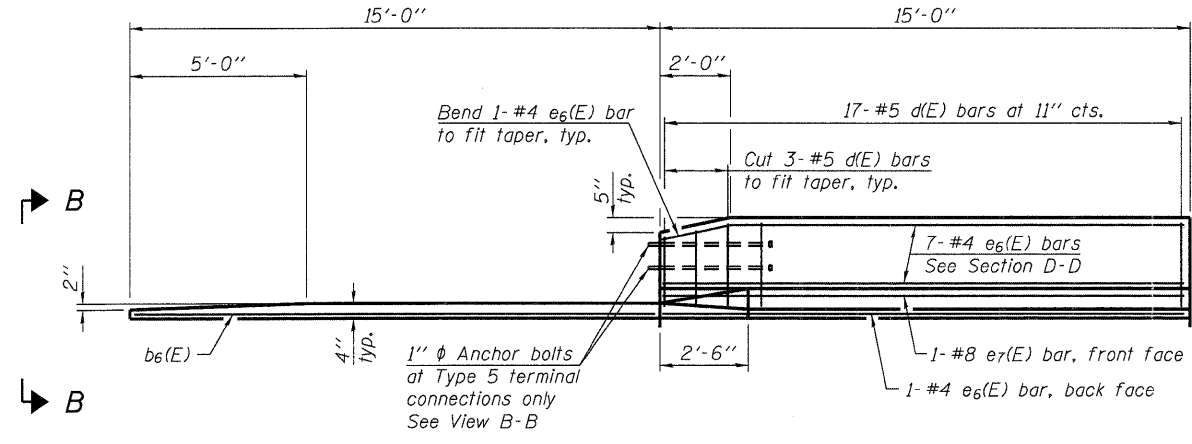
| Bar | No. | Size | Length | Shape |
|----------------------------------|-----|---------|---------|-------|
| a5(E) | 100 | #4 | 17'-0" | — |
| a6(E) | 184 | #5 | 16'-11" | — |
| a7(E) | 100 | #4 | 21'-8" | — |
| a8(E) | 184 | #5 | 21'-7" | — |
| a9(E) | 96 | #6 | 6'-6" | — |
| b3(E) | 124 | #4 | 29'-9" | — |
| b4(E) | 356 | #9 | 29'-9" | — |
| b5(E) | 8 | #4 | 14'-8" | — |
| b6(E) | 8 | #4 | 14'-9" | — |
| d(E) | 136 | #5 | 5'-7" | — |
| d2(E) | 136 | #5 | 7'-11" | — |
| e6(E) | 64 | #4 | 14'-8" | — |
| e7(E) | 8 | #8 | 14'-8" | — |
| t(E) | 328 | #4 | 9'-9" | — |
| w(E) | 160 | #5 | 15'-11" | — |
| w1(E) | 160 | #5 | 22'-10" | — |
| Concrete Superstructure | | Cu. Yd. | 234.8 | |
| Bar Splicers | | Each | 444 | |
| Reinforcement Bars, Epoxy Coated | | Pound | 61,000 | |
| Concrete Structures | | Cu. Yd. | 48.4 | |

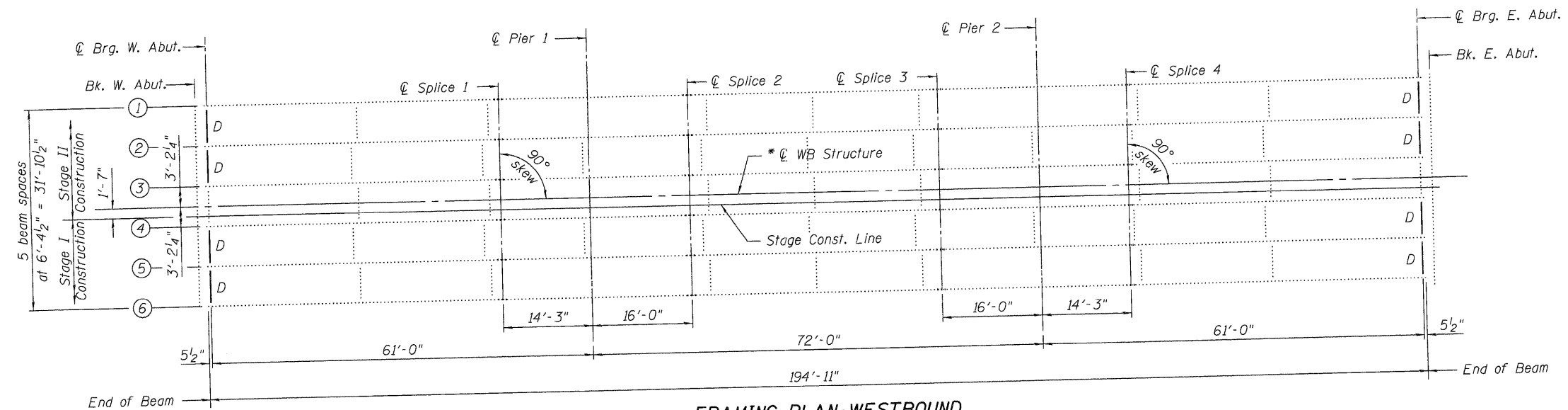
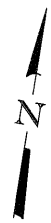
Bars indicated thus 1 x 2-#8 etc. indicates 1 line of bars with 2 lengths per line.



FOOTING ELEVATIONS

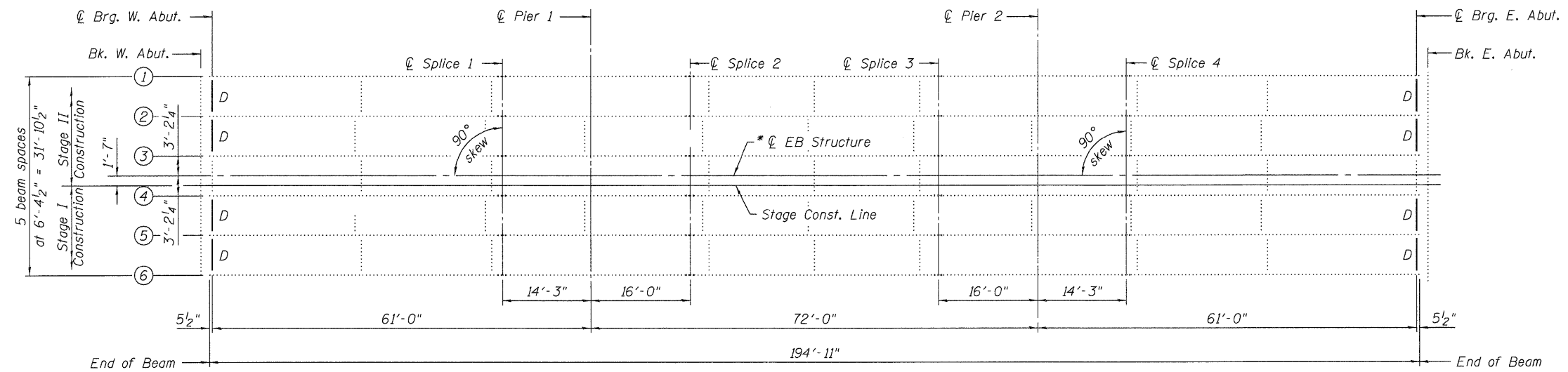
| Location | Elevation |
|-----------------------|-----------|
| West Bound West Appr. | 675.01 |
| West Bound West Appr. | 667.91 |
| West Bound West Appr. | 674.36 |
| West Bound West Appr. | 667.20 |





FRAMING PLAN-WESTBOUND
(S.N. 046-0005)

Notes:
All existing beams are 36WF160.
* See sheet 2 of 27 for location of EB and WB Structures relative to their Local Tangents.



FRAMING PLAN-EASTBOUND
(S.N. 046-0004)

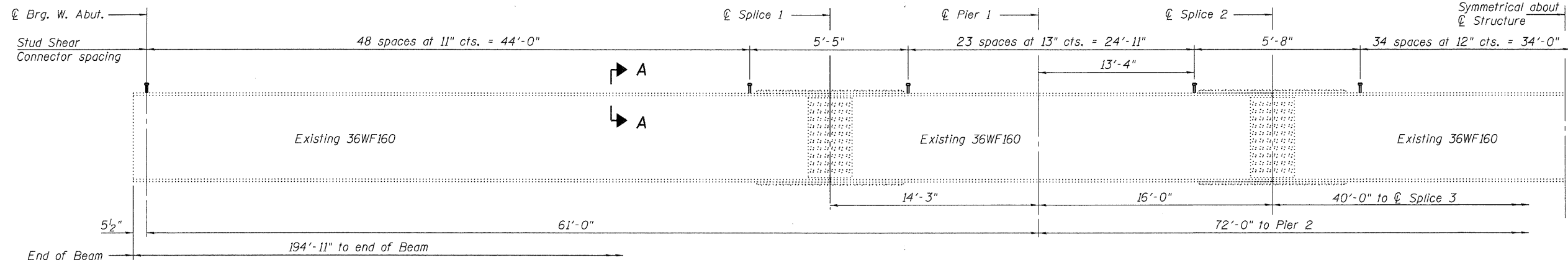
| | | | | |
|---------------------------------|-------------------|-----------|--|------------------------------------------------------------------------------------|
| USER NAME = dheber.ling | DESIGNED - BRD | REVISED - | | 7018 KINGSMILL CT., SPRINGFIELD, IL (217) 483-9457 DESIGN FIRM #184001036 |
| FILE NAME = 0430004&5-64C94.dwg | CHECKED - SDS | REVISED - | | |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - | | |
| PLOT TIME = 10:07:25 AM | CHECKED - BRD/SDS | REVISED - | | |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

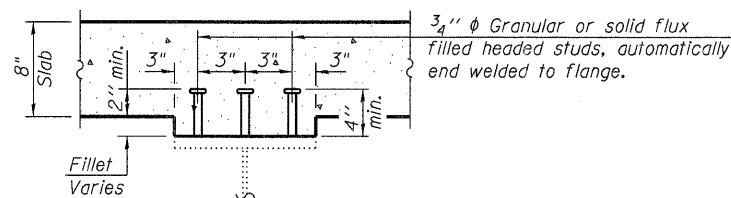
FRAMING PLAN
STRUCTURE NO. 043-0004 & 043-0005

SHEET NO. 18 OF 27 SHEETS

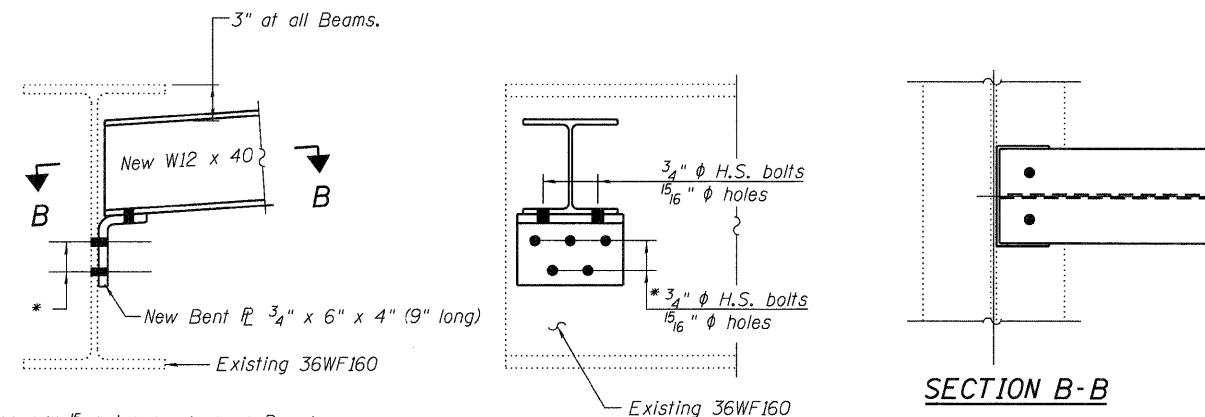
| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-------------------------|------------|--------------|-----------|
| 301 | (43B, 44B, 44HB, 45B/D) | JO DAVIESS | 309 | 131 |
| CONTRACT NO. 64C94 | | | | |
| ILLINOIS FED. AID PROJECT | | | | |



BEAM ELEVATION

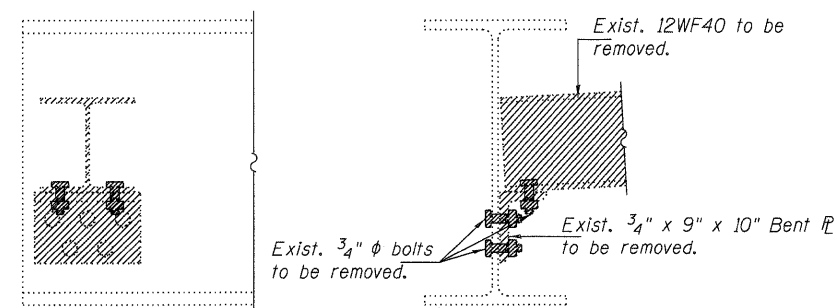


SECTION A-A



END DIAPHRAGM "D"
(Total 16 required)

Note:
Two hardened washers shall be required over all oversized holes for new diaphragms.



END DIAPHRAGM "D" REMOVAL DETAIL
(Total 20 Diaphragms to be removed. Cost included with Structural Steel Removal)

| INTERIOR GIRDER MOMENT TABLE | | | | |
|--------------------------------|--------------------|------------------------|------------|-----------|
| | | 0.4 Sp. 1 or 0.6 Sp. 3 | Pier 1 & 2 | 0.5 Sp. 2 |
| I_s | (in ⁴) | 9739 | 9739 | 9738.8 |
| $I_c(n)$ | (in ⁴) | 23569 | | 23569 |
| $I_c(3n)$ | (in ⁴) | 17266 | 17266 | 17266 |
| $I_c(cr)$ | (in ⁴) | | 12382 | |
| S_s | (in ³) | 541 | 541 | 541 |
| $S_c(n)$ | (in ³) | 760 | | 760 |
| $S_c(3n)$ | (in ³) | 592 | 592 | 592 |
| $S_c(cr)$ | (in ³) | | 603 | |
| Z | (in ³) | | | |
| ϕ | (k/') | 0.877 | 0.877 | 0.877 |
| $M\phi$ | (k) | 236.44 | 384.72 | 183.78 |
| $s\phi$ | (k/') | 0.309 | 0.309 | 0.309 |
| $M_s\phi$ | (k) | 83.12 | 137.15 | 63.08 |
| $M\phi$ | (k) | 384 | 311.47 | 369.52 |
| M_{IM} | (k) | 103.3 | 80.6 | 93.8 |
| $^{5/8}[M\phi + i]$ | (k) | 812.2 | 653.5 | 772.3 |
| M_a | (k) | 1471.2 | 1527.9 | 1324.8 |
| M_u | (k) | 1963 | | 1936 |
| $f_s \phi$ non-comp | (ksi) | 5.2 | 8.5 | 4.1 |
| $f_s \phi$ (comp) | (ksi) | 1.7 | 2.7 | 1.3 |
| $f_s [^{5/8}[M\phi + M_{IM}]]$ | (ksi) | 1.1 | 1.1 | 1.0 |
| f_s (Overload) | (ksi) | 19.8 | 24.3 | 17.5 |
| f_s (Total) | (ksi) | | 31.5 | |
| VR | (k) | 53.89 | 57 | 42.66 |

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) due to non-composite dead loads (in⁴ and in³).

$I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total and Overload) due to short-term composite live loads (in⁴ and in³).

$I_c(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total and Overload) due to long-term composite (superimposed) dead loads (in⁴ and in³).

$I_c(cr), S_c(cr)$: Composite moment of inertia and section modulus of the steel and deck based upon the cracked concrete section with negative moment reinforcement. Used for computing f_s (Total and Overload) due to short and long-term composite dead and live loads in the negative moment region.

Z : Plastic Section Modulus of the steel section in non-composite areas (in³).

ϕ : Un-factored non-composite dead load (kips/ft.).

$M\phi$: Un-factored moment due to non-composite dead load (kip-ft.).

$s\phi$: Un-factored long-term composite (superimposed) dead load (kips/ft.).

$M_s\phi$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

$M\phi$: Un-factored live load moment (kip-ft.).

M_i : Un-factored moment due to impact (kip-ft.).

M_a : Factored design moment (kip-ft.).

$1.3 [M\phi + M_s\phi + \frac{5}{8}(M\phi + M_i)]$

M_u : Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).

f_s (Overload): Sum of stresses as computed from the moments below (ksi).

$M\phi + M_s\phi + \frac{5}{8}(M\phi + M_i)$

f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).

$1.3 [M\phi + M_s\phi + \frac{5}{8}(M\phi + M_i)]$

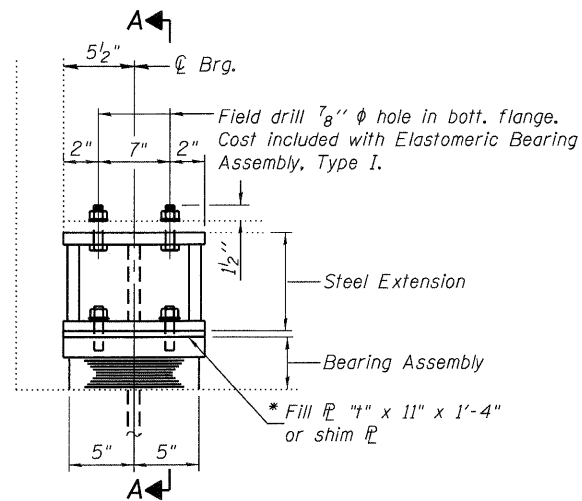
VR: Maximum ϕ + impact shear range within the composite portion of the span for stud shear connector design (kips).

| INTERIOR GIRDER REACTION TABLE | | | |
|--------------------------------|---------------------|------------|--------|
| | W. Abut. & E. Abut. | Pier 1 & 2 | |
| $R\phi$ | (k) | 56.1 | 87.4 |
| $R\phi$ | (k) | 38.13 | 41.69 |
| R_i | (k) | 10.25 | 11.2 |
| R_{Total} | (k) | 104.48 | 140.29 |

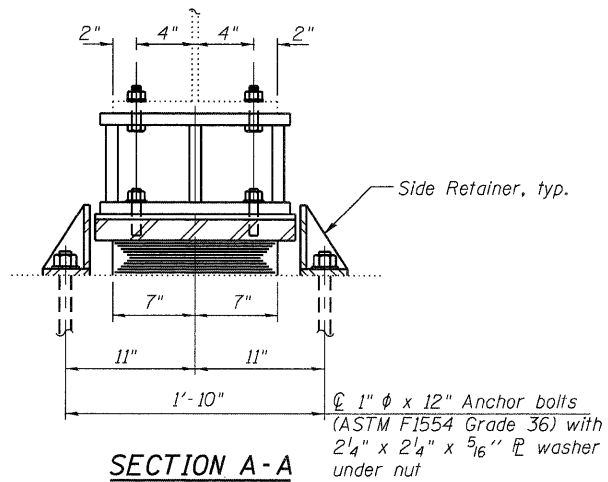
* Compact section
 ** Braced non-compact and partially braced section.
 *** Includes Approach Slab Dead Load Reaction at abutments.

BILL OF MATERIAL

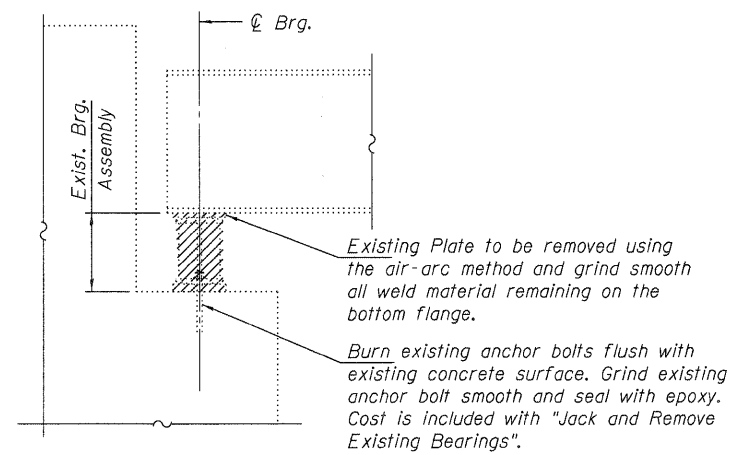
| Item | Unit | Total |
|------------------------------------------|-------|-------|
| Furnishing and Erecting Structural Steel | Pound | 4,760 |
| Structural Steel Removal | Pound | 5,940 |
| Stud Shear Connectors | Each | 6,516 |



ELEVATION AT ABUT.

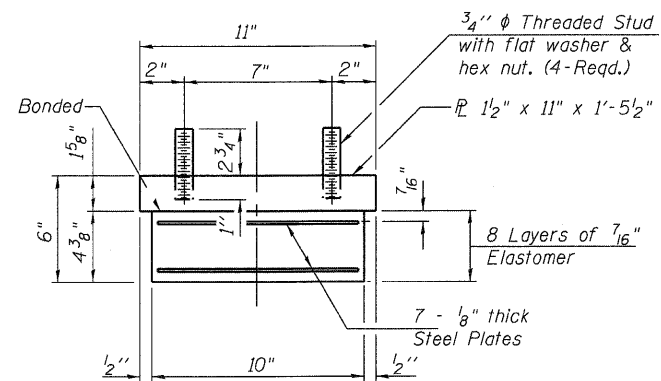


SECTION A-A



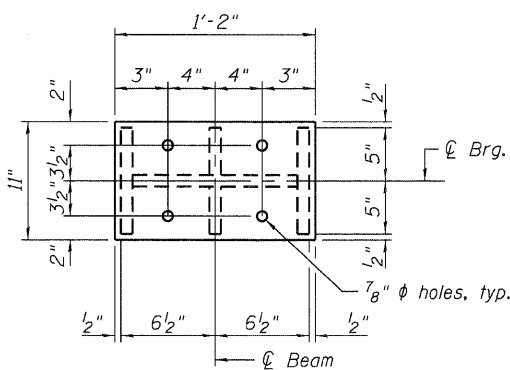
EXISTING BEARING ASSEMBLY REMOVAL DETAIL

TYPE I ELASTOMERIC EXP. BRG.

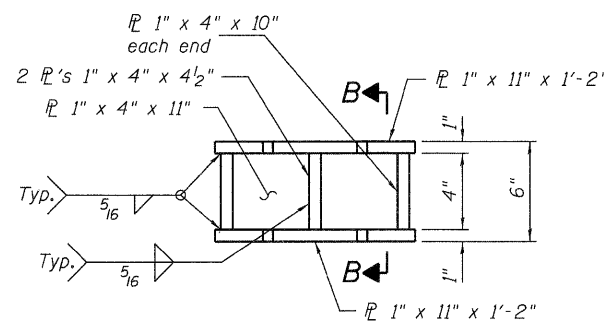


BEARING ASSEMBLY

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



STEEL BEARING EXTENSION



SECTION B-B

JACK AND REMOVE EXISTING BEARINGS PROCEDURE

1. The Contractor shall submit for approval by the Engineer plans for jacking and removal prior to commencing any work at the bearings.
2. Jacking and removing existing bearings shall be done after existing deck removal is completed and prior to pouring of new deck.
3. The Maximum Dead Load Reaction with deck removed (per bearing) at each abutment is 2 kips. Minimum jack capacity is 3 kips.
4. The new bearings shall be in place and the jacks shall be lowered prior to forming and pouring the new deck.

Notes:

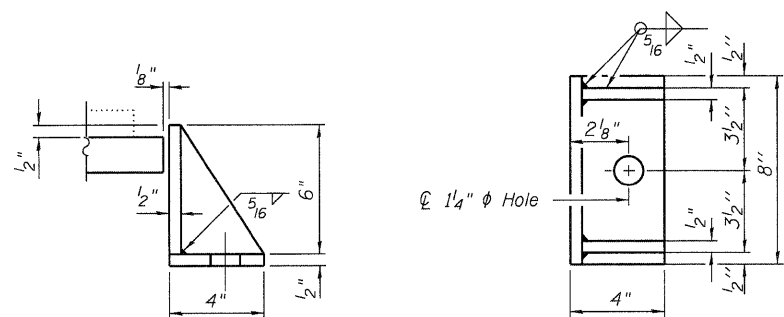
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified.

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.

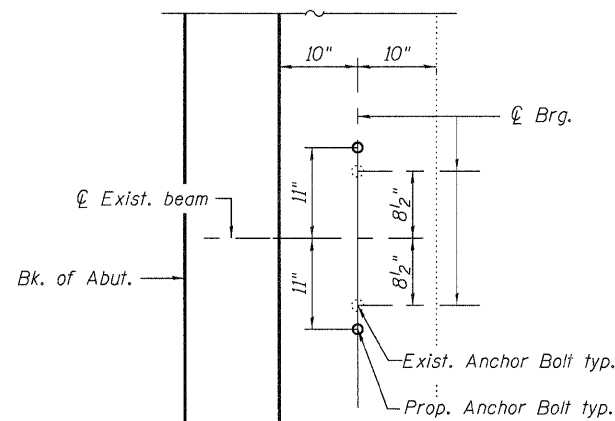
Side retainers and other steel members required for the elastomeric bearing assembly, except Steel Bearing Extension and Shim Plates, shall be included in the cost of Elastomeric Bearing Assembly, Type I. Steel Bearing Extensions and Shim Plates are included in the quantity for "Furnishing and Erecting Structural Steel".

Two 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.



SIDE RETAINER

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



ANCHOR BOLT LOCATION PLAN

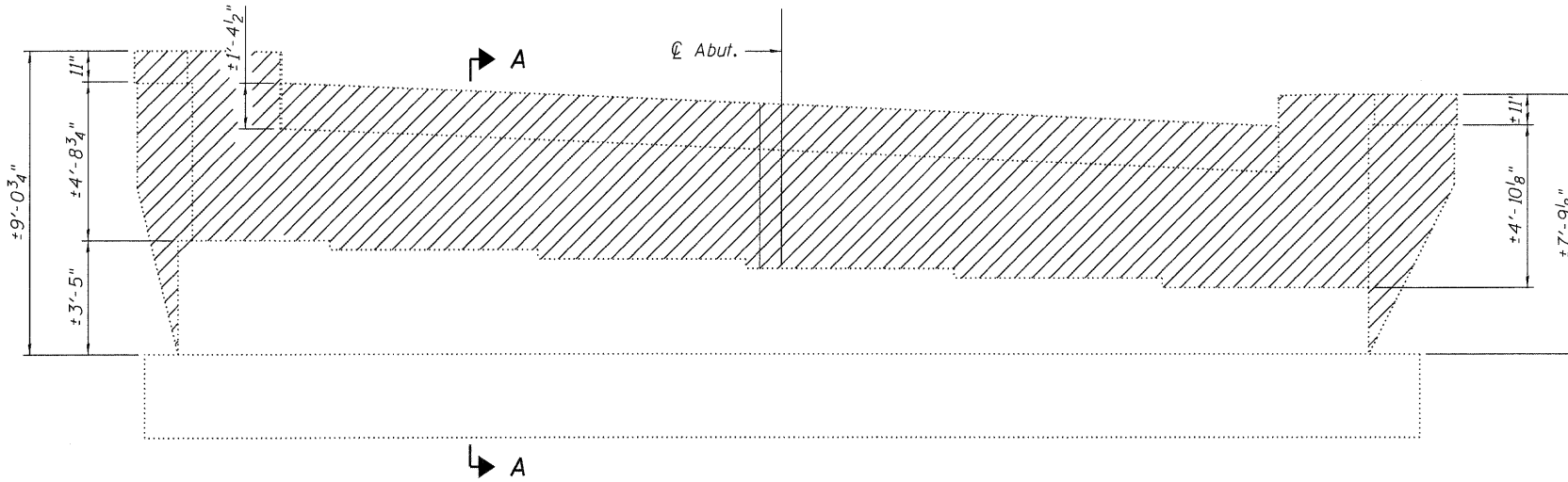
*** TABLE OF "t" DIMENSIONS**

| Beam Number | 043-0004 (EB) | | 043-0005 (WB) | |
|-------------|---------------|---------------|---------------|---------------|
| | West Abutment | East Abutment | West Abutment | East Abutment |
| 1 | 1/2" | 2 3/8" | 7/8" | 2 1/16" |
| 2 | 5/8" | 1 15/16" | 7/8" | 1 13/16" |
| 3 | - | 1 13/16" | 7/8" | 1 3/4" |
| 4 | 3/8" | 1 5/16" | 1 3/16" | 2 1/2" |
| 5 | 5/8" | 2 3/16" | 1 9/16" | 2 3/8" |
| 6 | 1 1/16" | 2 1/16" | 1 9/16" | 1 1/16" |

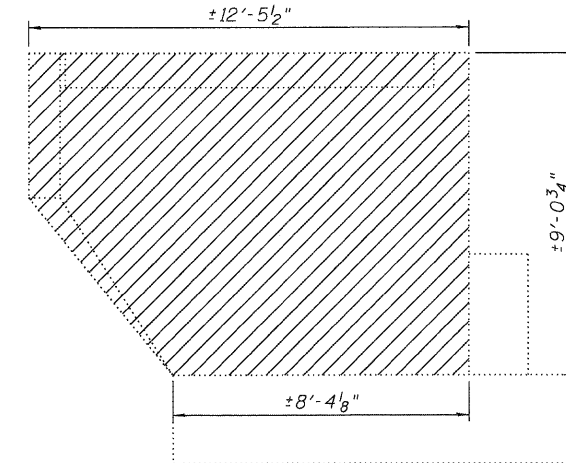
* The fill 1/4" thickness shown above are based on field survey data. The contractor shall field verify and make necessary approved adjustments prior to ordering Plates. Cost included with "Furnishing and Erecting Structural Steel".

BILL OF MATERIAL

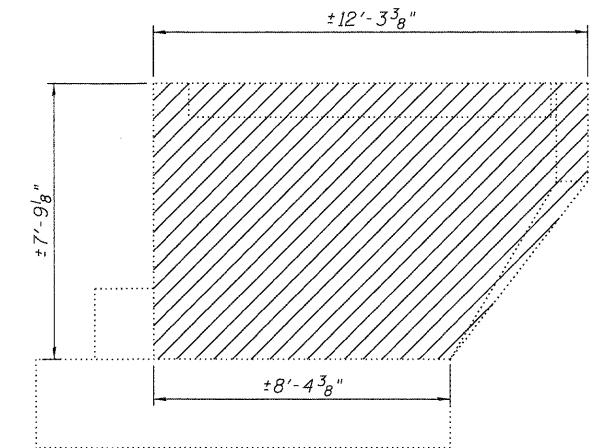
| Item | Unit | Total |
|------------------------------------------|-------|-------|
| Elastomeric Bearing Assembly, Type I | Each | 24 |
| Anchor Bolts, 1" | Each | 48 |
| Jack and Remove Existing Bearings | Each | 24 |
| Furnishing and Erecting Structural Steel | Pound | 5,440 |



ELEVATION

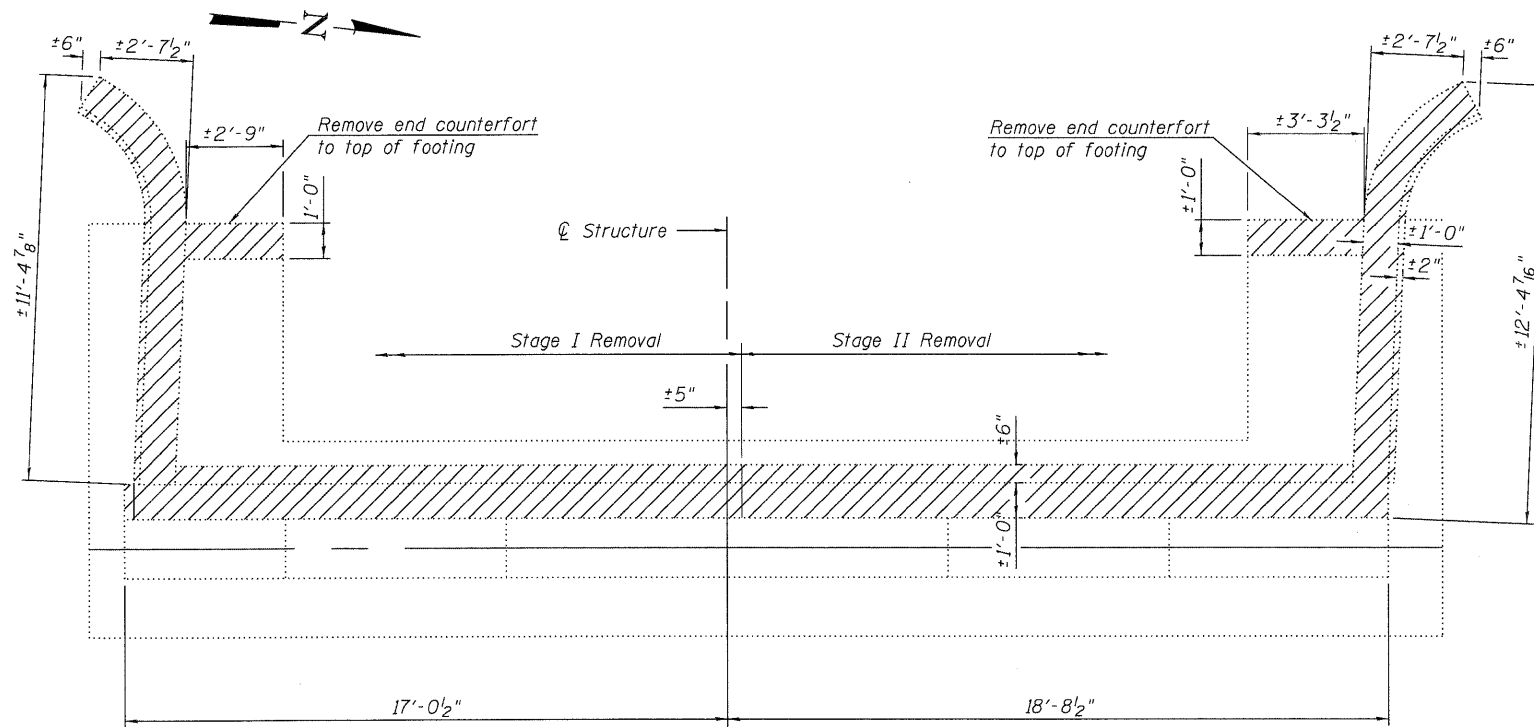


SOUTH WINGWALL ELEVATION

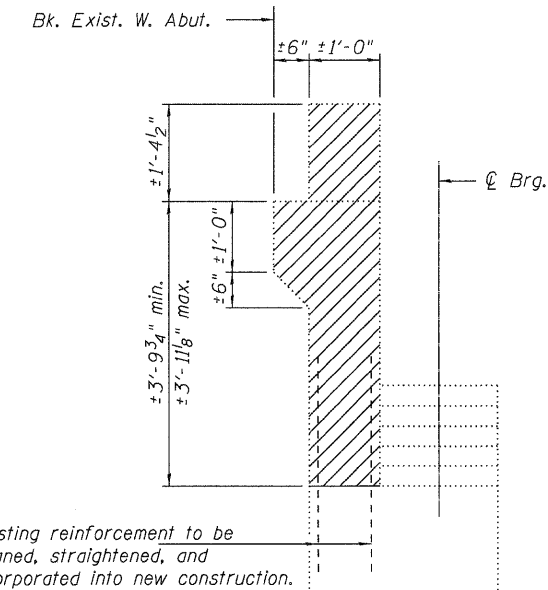


NORTH WINGWALL ELEVATION

Notes:
 Hatched areas indicate Concrete Removal. Existing reinforcement extending into removal areas shall be cleaned, straightened and incorporated into new construction. Cost included with Concrete Removal.



PLAN



Existing reinforcement to be cleaned, straightened, and incorporated into new construction.

SECTION A-A

**BILL OF MATERIALS
TWO ABUTMENTS**

| Item | Unit | Total |
|------------------|---------|-------|
| Concrete Removal | Cu. Yd. | 25.7 |

| | | |
|---------------------------------|-------------------|-----------|
| USER NAME = dheberling | DESIGNED - BRD | REVISED - |
| FILE NAME = 043000485-64C94.dwg | CHECKED - SDS | REVISED - |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - |
| PLOT TIME = 10:07:35 AM | CHECKED - BRD/SDS | REVISED - |

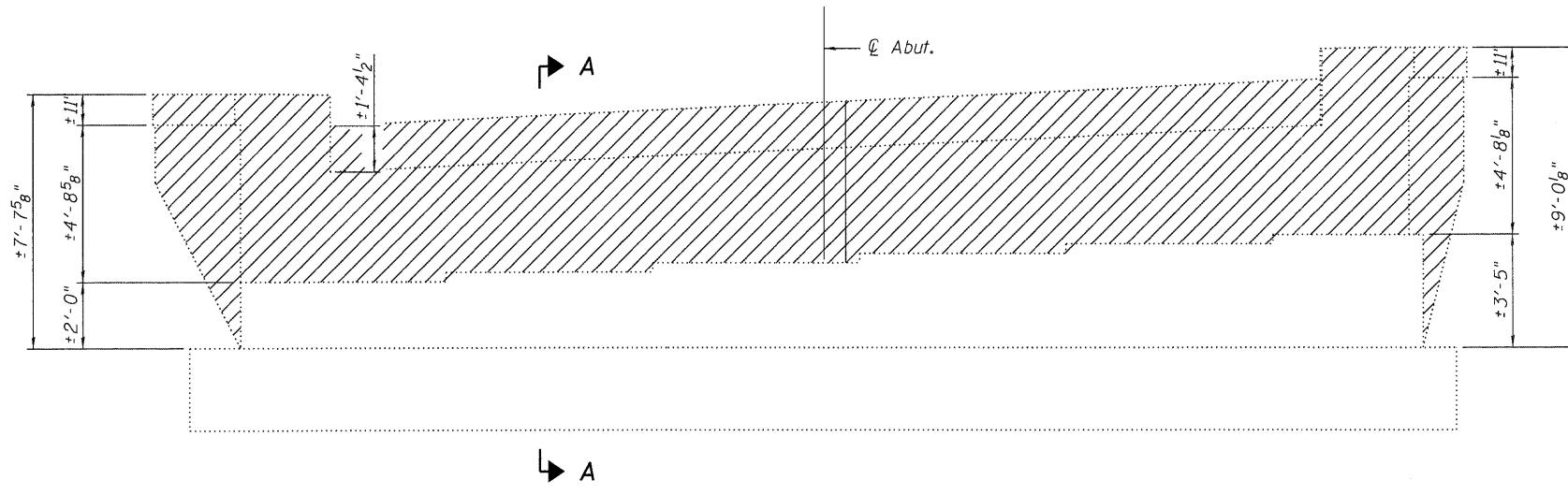
WHKS & co.
 ENGINEERING
 7018 KINGSMILL CT.,
 SPRINGFIELD, IL
 (217) 483-9457
 DESIGN FIRM #184001036

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**WEST ABUTMENTS CONCRETE REMOVAL
STRUCTURE NO. 043-0004 & 043-0005**

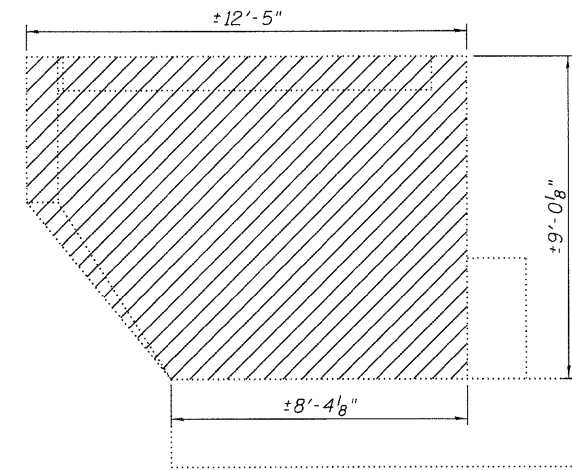
SHEET NO. 21 OF 27 SHEETS

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|--------------------|------------------------|------------|---------------------------|-----------|
| 301 | (43B, 44B, 44HB, 45B)D | JO DAVIESS | 309 | 134 |
| CONTRACT NO. 64C94 | | | ILLINOIS FED. AID PROJECT | |

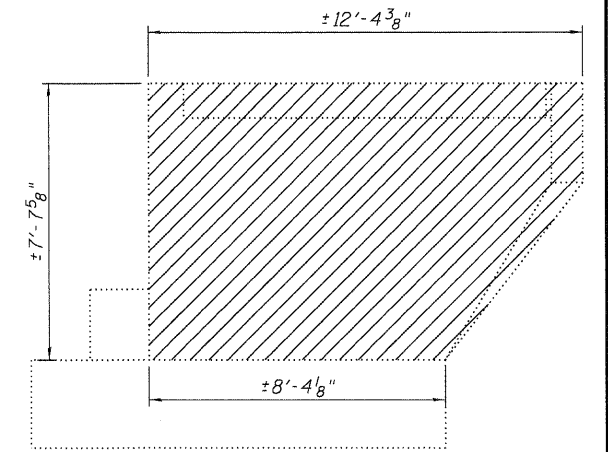


ELEVATION

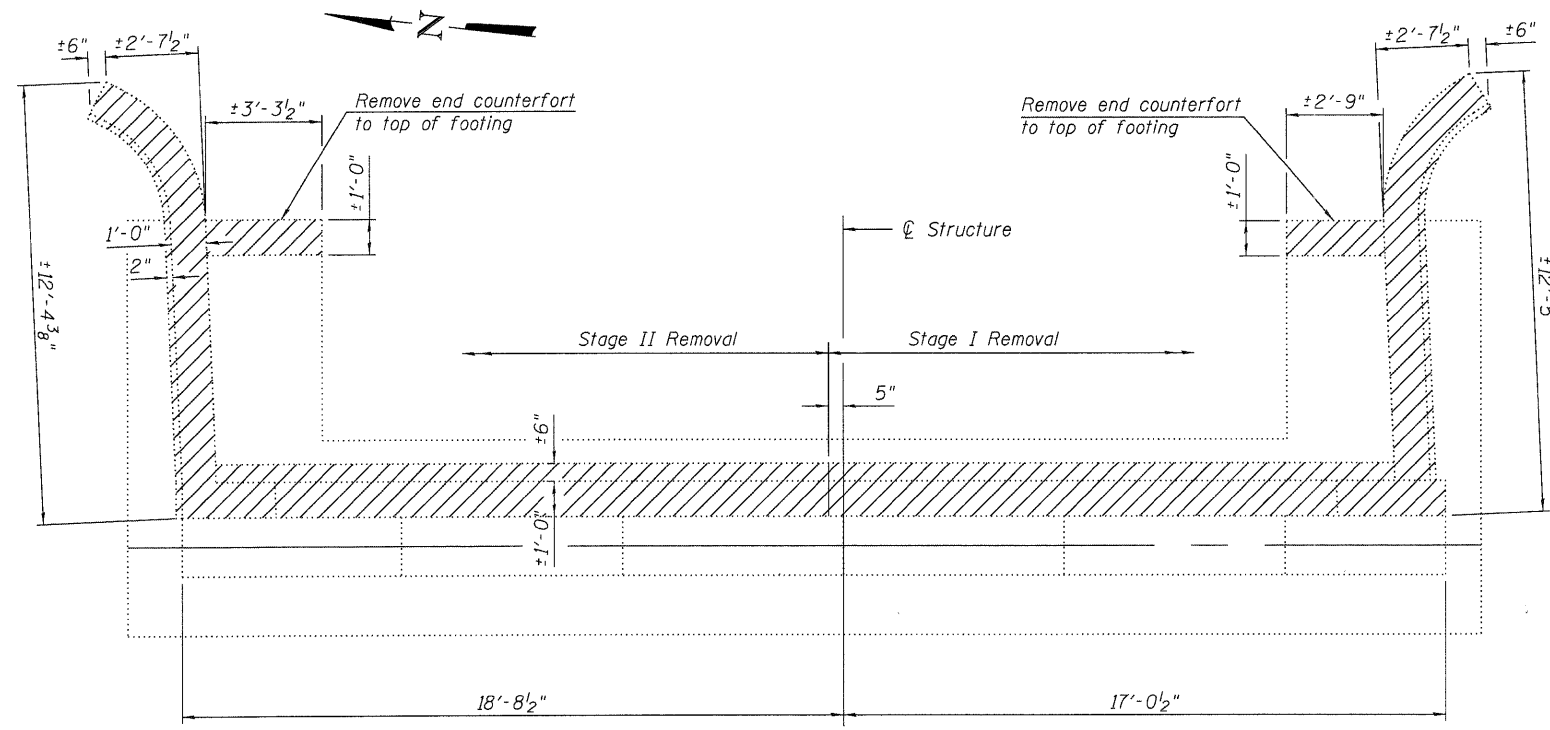
Notes:
Hatched areas indicate Concrete Removal. Existing reinforcement extending into removal areas shall be cleaned, straightened and incorporated into new construction. Cost included with Concrete Removal.



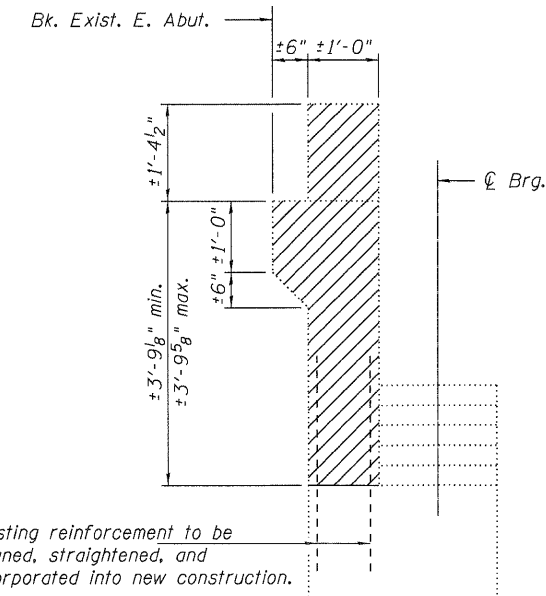
S.E. WINGWALL ELEVATION



N.E. WINGWALL ELEVATION



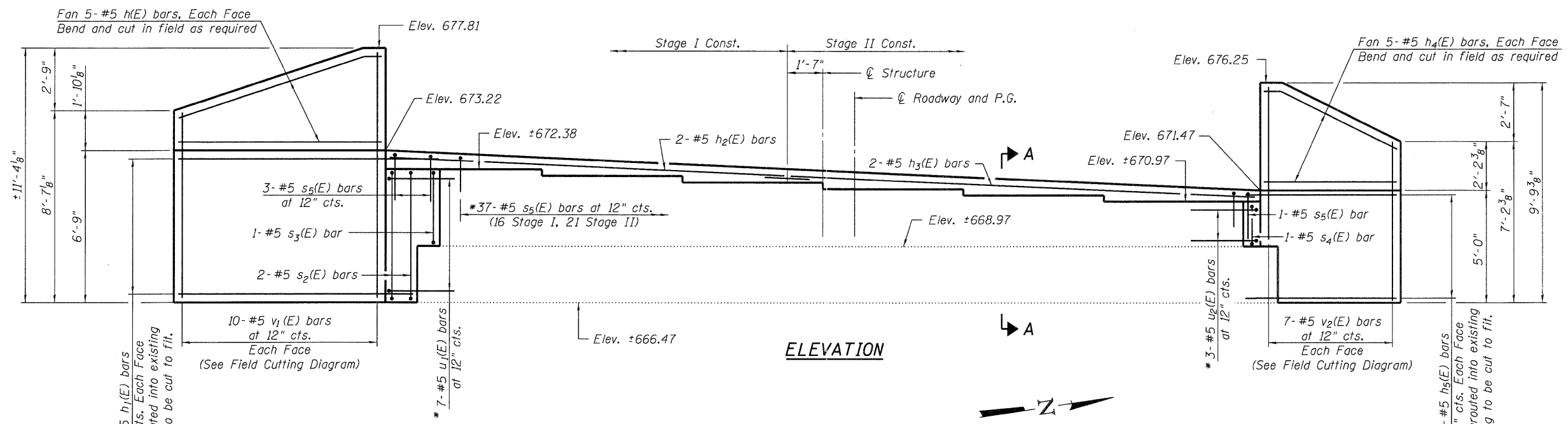
PLAN



SECTION A-A

**BILL OF MATERIALS
TWO ABUTMENTS**

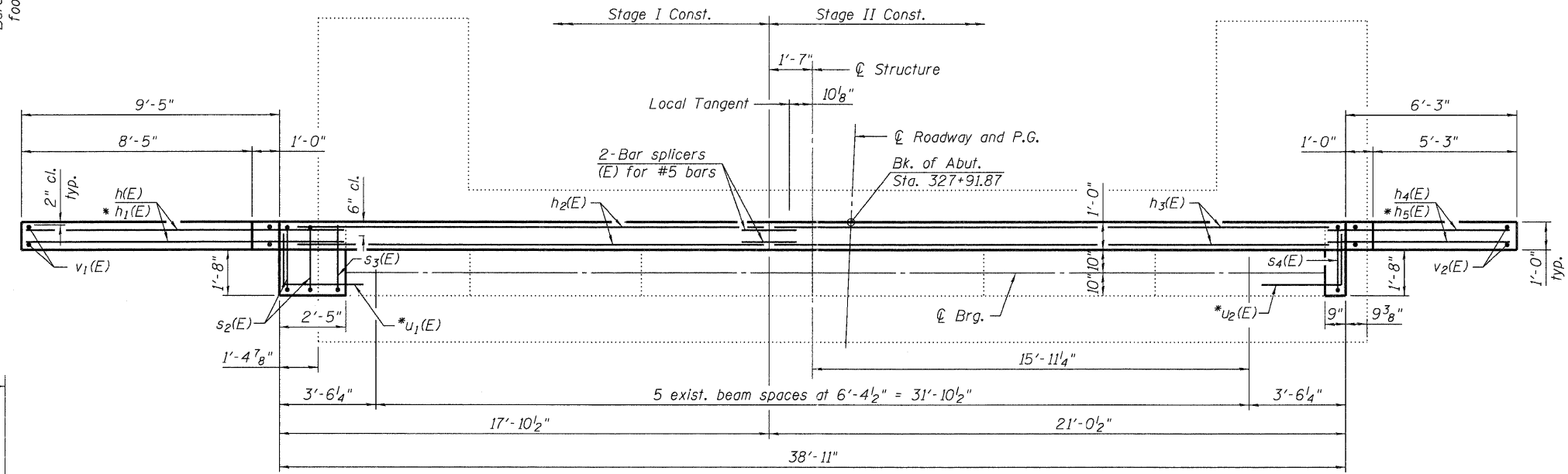
| Item | Unit | Total |
|------------------|---------|-------|
| Concrete Removal | Cu. Yd. | 25.7 |



*14-#5 h1(E) bars at 6\"/>

*12-#5 h5(E) bars at 6\"/>

ELEVATION

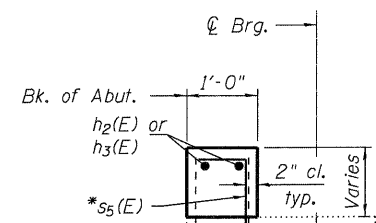


PLAN

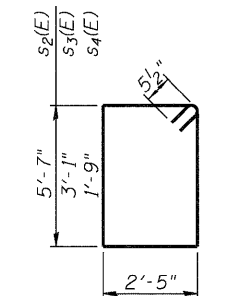
Note:
 * Drill and grout bars according to Article 584 of The Standard Specifications, 9\"/>

**WEST ABUTMENT
 BILL OF MATERIAL**

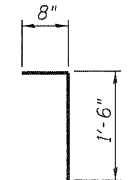
| Bar | No. | Size | Length | Shape |
|----------------------------------|-----|------|---------|-------|
| h(E) | 10 | #5 | 9'-7" | — |
| h1(E) | 28 | #5 | 11'-7" | — |
| h2(E) | 2 | #5 | 17'-7" | — |
| h3(E) | 2 | #5 | 20'-9" | — |
| h4(E) | 10 | #5 | 6'-6" | — |
| h5(E) | 24 | #5 | 7'-7" | — |
| s2(E) | 2 | #5 | 16'-11" | □ |
| s3(E) | 1 | #5 | 11'-11" | □ |
| s4(E) | 1 | #5 | 9'-3" | □ |
| s5(E) | 41 | #5 | 2'-2" | ┘ |
| u1(E) | 7 | #6 | 4'-9" | ┘ |
| u2(E) | 3 | #6 | 3'-2" | ┘ |
| v1(E) | 10 | #5 | 19'-5" | — |
| v2(E) | 7 | #5 | 16'-6" | — |
| Structure Excavation | | | Cu. Yd. | 103 |
| Concrete Structures | | | Cu. Yd. | 7.8 |
| Reinforcement Bars, Epoxy Coated | | | Pound | 1,330 |



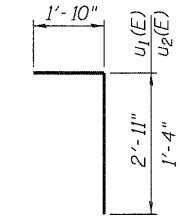
SECTION A-A



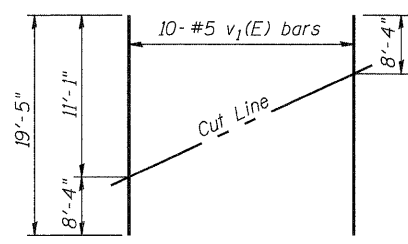
BAR s2(E), s3(E) & s4(E)



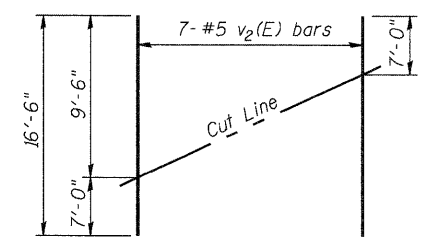
BAR s5(E)



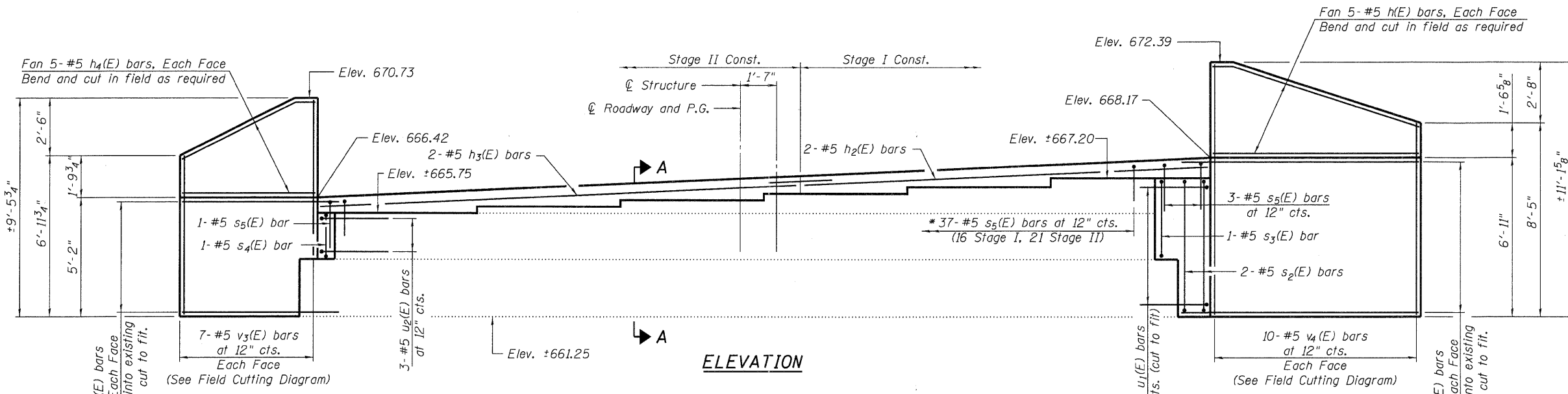
BAR u1(E) & u2(E)



FIELD CUTTING DIAGRAM
 Order v1(E) full length. Cut as shown and use remainder of bars in opposite face.



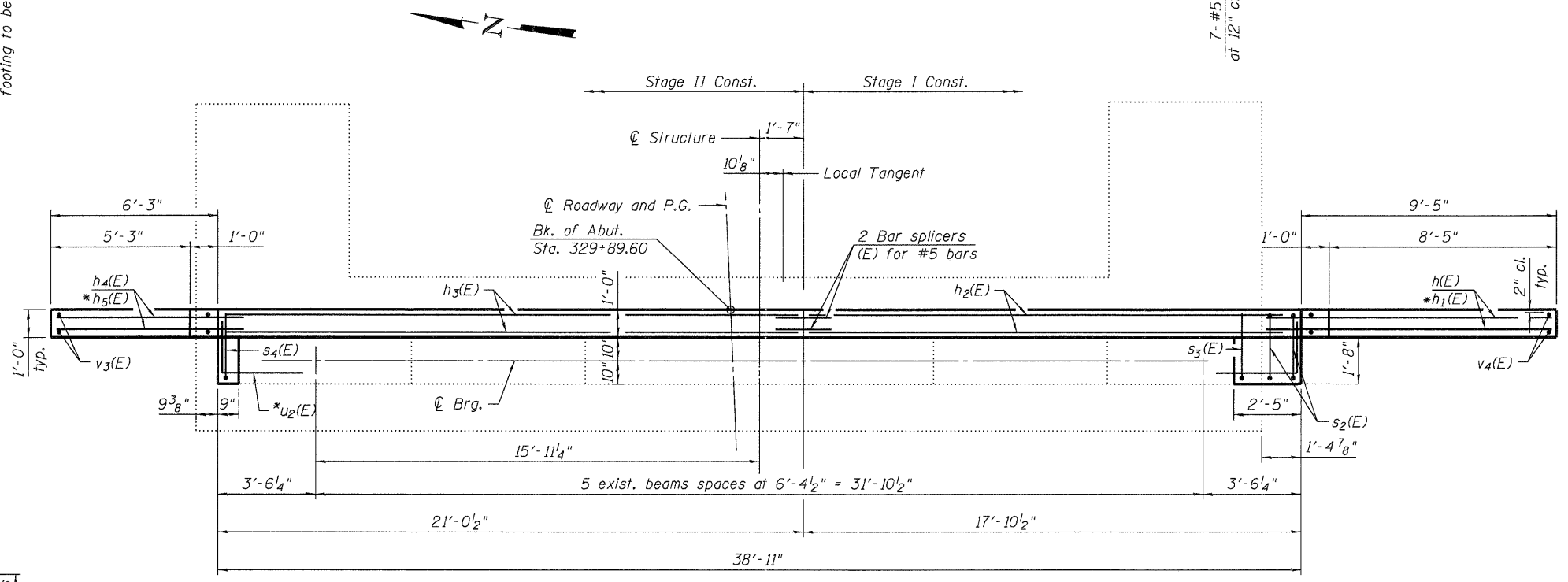
FIELD CUTTING DIAGRAM
 Order v2(E) full length. Cut as shown and use remainder of bars in opposite face.



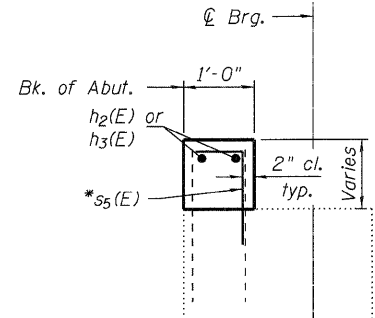
ELEVATION

(See Field Cutting Diagram)

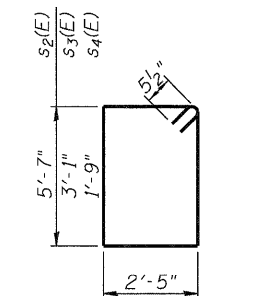
(See Field Cutting Diagram)



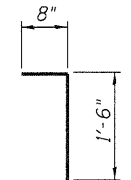
PLAN



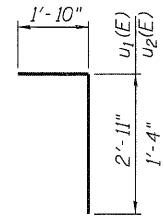
SECTION A-A



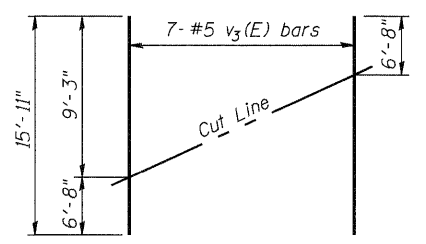
BAR s₂(E), s₃(E) & s₄(E)



BAR s₅(E)

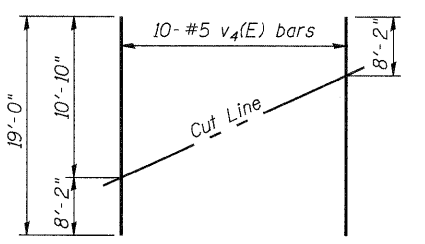


BAR u₁(E) & u₂(E)



FIELD CUTTING DIAGRAM

Order v₃(E) full length. Cut as shown and use remainder of bars in opposite face.



FIELD CUTTING DIAGRAM

Order v₄(E) full length. Cut as shown and use remainder of bars in opposite face.

**EAST ABUTMENT
BILL OF MATERIAL**

| Bar | No. | Size | Length | Shape |
|----------------------------------|-----|------|---------|-------|
| h(E) | 10 | #5 | 9'-7" | — |
| h ₁ (E) | 28 | #5 | 11'-7" | — |
| h ₂ (E) | 2 | #5 | 17'-7" | — |
| h ₃ (E) | 2 | #5 | 20'-9" | — |
| h ₄ (E) | 10 | #5 | 6'-6" | — |
| h ₅ (E) | 24 | #5 | 7'-7" | — |
| s ₂ (E) | 2 | #5 | 16'-11" | □ |
| s ₃ (E) | 1 | #5 | 11'-11" | □ |
| s ₄ (E) | 1 | #5 | 9'-3" | □ |
| s ₅ (E) | 41 | #5 | 2'-2" | └ |
| u ₁ (E) | 7 | #6 | 4'-9" | └ |
| u ₂ (E) | 3 | #6 | 3'-2" | └ |
| v ₃ (E) | 7 | #5 | 15'-9" | — |
| v ₄ (E) | 10 | #5 | 19'-0" | — |
| Structure Excavation | | | Cu. Yd. | 100 |
| Concrete Structures | | | Cu. Yd. | 7.7 |
| Reinforcement Bars, Epoxy Coated | | | Pound | 1,320 |

Note:
* Drill and grout bars according to Article 584 of The Standard Specifications, 9" min. embedment and 4" min. clear cover on grouted bars except where noted.

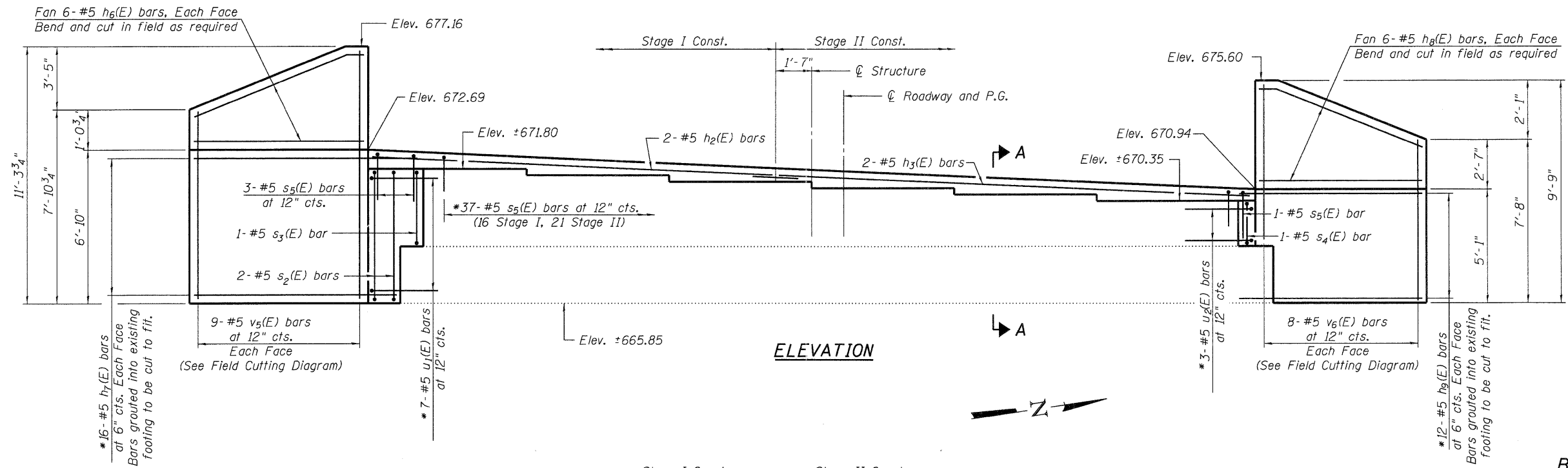
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| FILE NAME = 04300485-64C94.dgn | CHECKED - SDS | REVISED - |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - |
| PLOT TIME = 10:07:42 AM | CHECKED - BRD/SDS | REVISED - |

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DESIGN FIRM #184001036

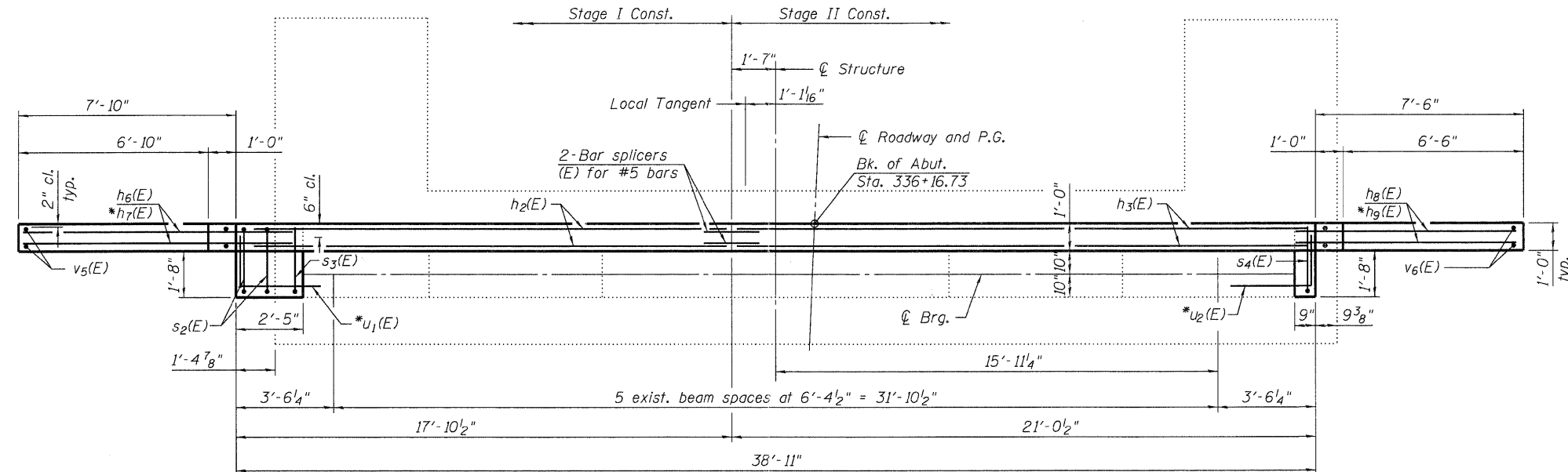
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**EAST ABUTMENT
STRUCTURE NO. 043-0005**
SHEET NO. 24 OF 27 SHEETS

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-------------------------|------------|--------------|-----------|
| 301 | (43B, 44B, 44HB, 45BID) | JO DAVIESS | 309 | 137 |
| CONTRACT NO. 64C94 | | | | |
| ILLINOIS FED. AID PROJECT | | | | |



ELEVATION

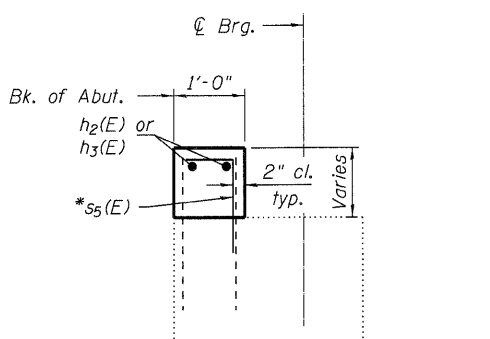


PLAN

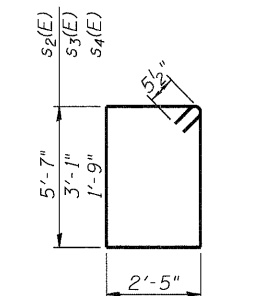
Note:
 * Drill and grout bars according to Article 584 of The Standard Specifications, 9" min. embedment and 4" min. clear cover on grouted bars except where noted.

**WEST ABUTMENT
 BILL OF MATERIAL**

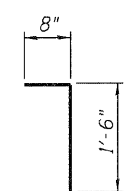
| Bar | No. | Size | Length | Shape |
|----------------------------------|-----|------|---------|-------|
| h2(E) | 2 | #5 | 17'-7" | — |
| h3(E) | 2 | #5 | 20'-9" | — |
| h6(E) | 12 | #5 | 8'-4" | — |
| h7(E) | 32 | #5 | 10'-0" | — |
| h8(E) | 12 | #5 | 7'-7" | — |
| h9(E) | 24 | #5 | 8'-10" | — |
| s2(E) | 2 | #5 | 16'-11" | ┘ |
| s3(E) | 1 | #5 | 11'-11" | ┘ |
| s4(E) | 1 | #5 | 9'-3" | ┘ |
| s5(E) | 41 | #5 | 2'-2" | ┘ |
| u1(E) | 7 | #6 | 4'-9" | ┘ |
| u2(E) | 3 | #6 | 3'-2" | ┘ |
| v5(E) | 9 | #5 | 18'-7" | — |
| v6(E) | 8 | #5 | 16'-11" | — |
| Structure Excavation | | | Cu. Yd. | 101 |
| Concrete Structures | | | Cu. Yd. | 7.6 |
| Reinforcement Bars, Epoxy Coated | | | Pound | 1,380 |



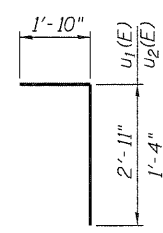
SECTION A-A



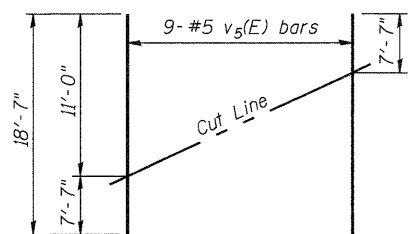
BAR s2(E), s3(E) & s4(E)



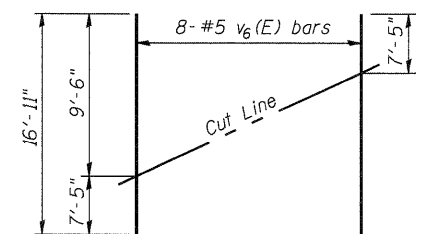
BAR s5(E)



BAR u1(E) & u2(E)



FIELD CUTTING DIAGRAM
 Order v5(E) full length. Cut as shown and use remainder of bars in opposite face.



FIELD CUTTING DIAGRAM
 Order v6(E) full length. Cut as shown and use remainder of bars in opposite face.

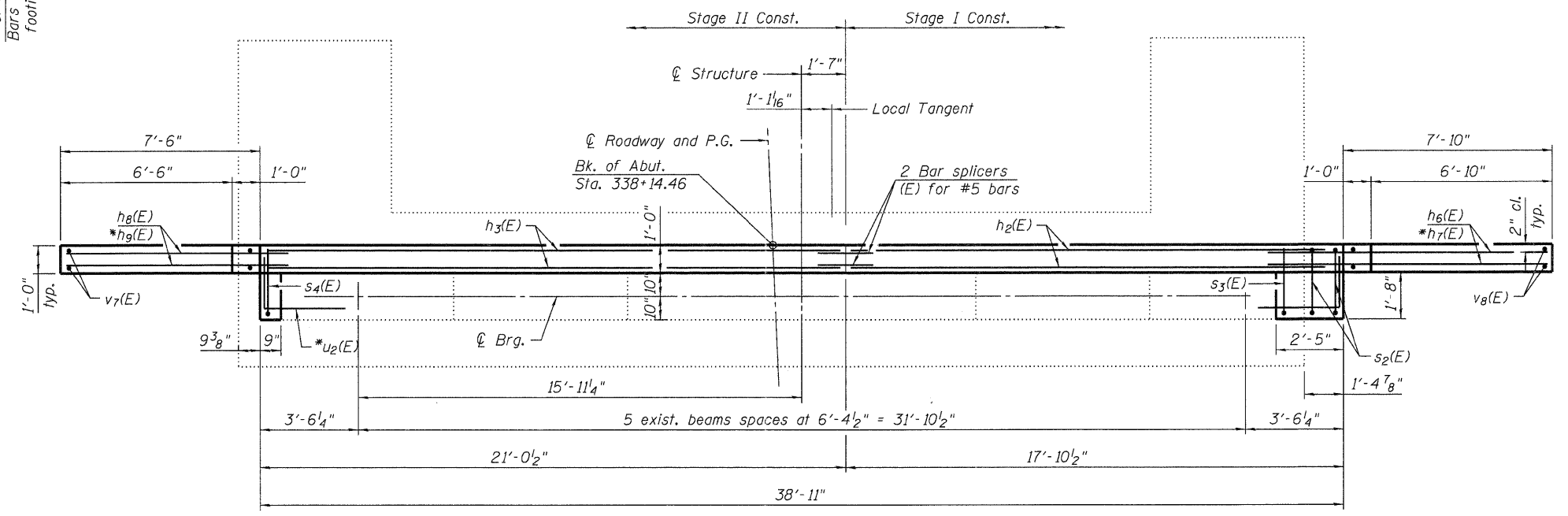
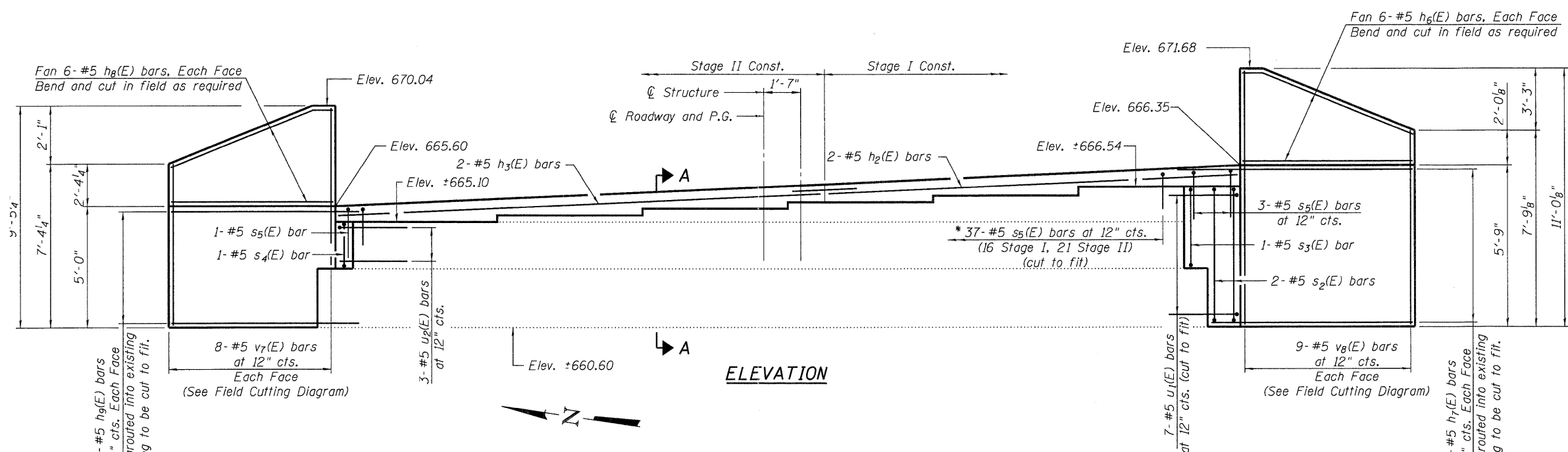
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|---------------------------------|-------------------|-----------|
| USER NAME = dheberling | DESIGNED - BRD | REVISED - |
| FILE NAME = 043000485-64C94.dwg | CHECKED - SDS | REVISED - |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - |
| PLOT TIME = 10:07:45 AM | CHECKED - BRD/SDS | REVISED - |

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 DEPARTMENT OF TRANSPORTATION**

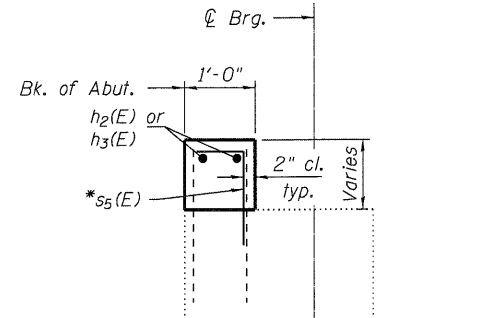
**WEST ABUTMENT
 STRUCTURE NO. 043-0004**
 SHEET NO. 25 OF 27 SHEETS

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-------------------------|------------|--------------|-----------|
| 301 | (43B, 44B, 44HB, 45BID) | JO DAVIESS | 309 | 138 |
| CONTRACT NO. 64C94 | | | | |
| ILLINOIS FED. AID PROJECT | | | | |

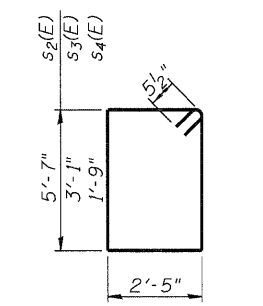


**EAST ABUTMENT
BILL OF MATERIAL**

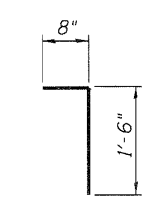
| Bar | No. | Size | Length | Shape |
|----------------------------------|-----|------|---------|-------|
| h ₂ (E) | 2 | #5 | 17'-7" | — |
| h ₃ (E) | 2 | #5 | 20'-9" | — |
| h ₆ (E) | 12 | #5 | 8'-4" | — |
| h ₇ (E) | 28 | #5 | 10'-0" | — |
| h ₈ (E) | 12 | #5 | 7'-7" | — |
| h ₉ (E) | 24 | #5 | 8'-10" | — |
| s ₂ (E) | 2 | #5 | 16'-11" | ┘ |
| s ₃ (E) | 1 | #5 | 11'-11" | ┘ |
| s ₄ (E) | 1 | #5 | 9'-3" | ┘ |
| s ₅ (E) | 41 | #5 | 2'-2" | ┘ |
| u ₁ (E) | 7 | #6 | 4'-9" | ┘ |
| u ₂ (E) | 3 | #6 | 3'-2" | ┘ |
| v ₇ (E) | 9 | #5 | 16'-3" | — |
| v ₈ (E) | 8 | #5 | 18'-3" | — |
| Structure Excavation | | | Cu. Yd. | 101 |
| Concrete Structures | | | Cu. Yd. | 7.2 |
| Reinforcement Bars, Epoxy Coated | | | Pound | 1,370 |



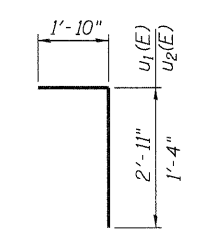
SECTION A-A



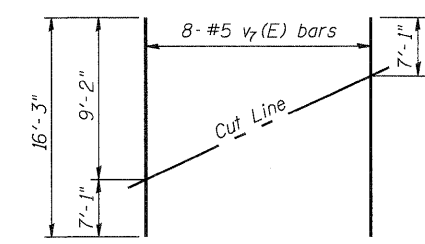
BAR s₂(E), s₃(E) & s₄(E)



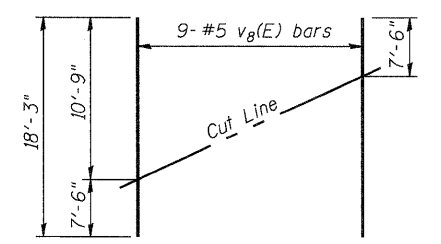
BAR s₅(E)



BAR u₁(E) & u₂(E)



FIELD CUTTING DIAGRAM
Order v₇(E) full length. Cut as shown and use remainder of bars in opposite face.



FIELD CUTTING DIAGRAM
Order v₈(E) full length. Cut as shown and use remainder of bars in opposite face.

Note:
* Drill and grout bars according to Article 584 of The Standard Specifications, 9" min. embedment and 4" min. clear cover on grouted bars except where noted.

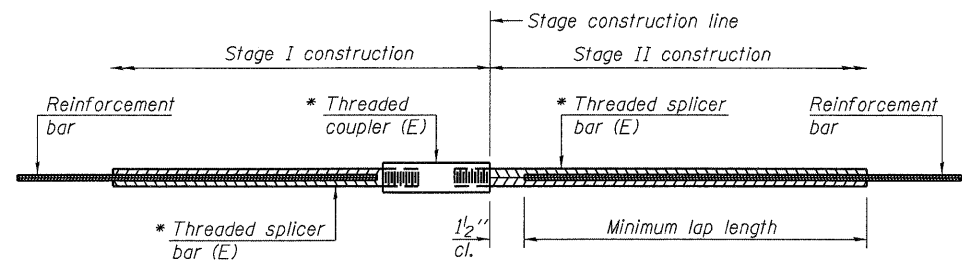
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|---------------------------------|-------------------|-----------|
| USER NAME = dheber-ling | DESIGNED - BRD | REVISED - |
| FILE NAME = 043000485-64C94.dwg | CHECKED - SDS | REVISED - |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - |
| PLOT TIME = 10:07:48 AM | CHECKED - BRD/SDS | REVISED - |

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DESIGN FIRM #184001036

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**EAST ABUTMENT
STRUCTURE NO. 043-0004**
SHEET NO. 26 OF 27 SHEETS

| | | | | |
|--------------------|--------------------------------|-------------------|---------------------------|---------------|
| F.A.P. RTE. 301 | SECTION (43B, 44B, 44HB, 45BD) | COUNTY JO DAVIESS | TOTAL SHEETS 309 | SHEET NO. 139 |
| CONTRACT NO. 64C94 | | | ILLINOIS FED. AID PROJECT | |



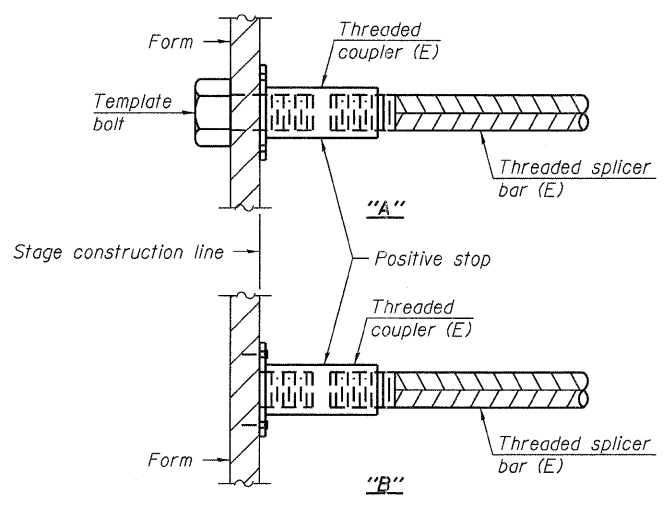
STANDARD BAR SPLICER ASSEMBLY

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

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

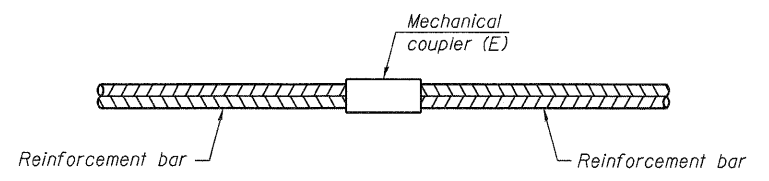
Threaded splicer bar length = min. lap length + 1/2" + thread length

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



INSTALLATION AND SETTING METHODS

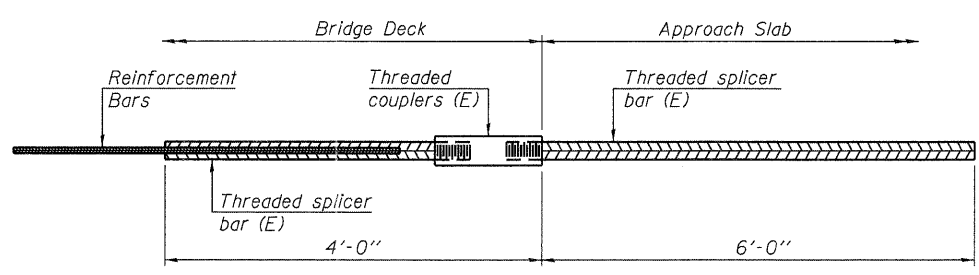
"A" : Set bar splicer assembly by means of a template bolt.
 "B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
 (E) : Indicates epoxy coating.



STANDARD MECHANICAL SPLICER

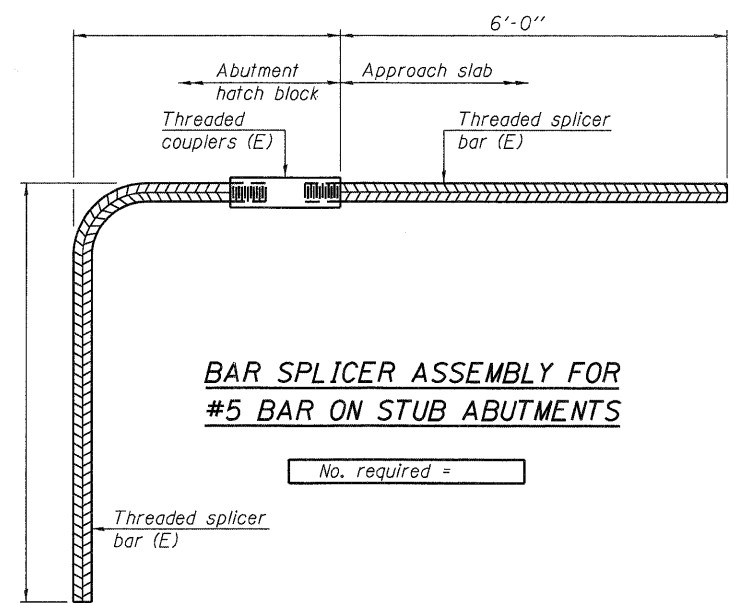
| Location | Bar size | No. assemblies required |
|----------|----------|-------------------------|
| | | |
| | | |
| | | |
| | | |

| Location | Bar size | No. assemblies required | Table for minimum lap length |
|--------------------|----------|-------------------------|------------------------------|
| Top of Deck | #5 | 556 | 3 |
| Bottom of Deck | #5 | 472 | 3 |
| Concrete Diaphragm | #5 | 48 | 3 |
| W. Approach Slabs | #4 | 50 | 3 |
| W. Approach Slabs | #5 | 92 | 3 |
| E. Approach Slabs | #4 | 50 | 3 |
| E. Approach Slabs | #5 | 92 | 3 |
| W. Approach Ftgs. | #5 | 80 | 3 |
| E. Approach Ftgs. | #5 | 80 | 3 |
| W. Abutment | #5 | 2 | 4 |
| W. Abutment | #5 | 2 | 4 |
| E. Abutment | #5 | 2 | 4 |
| E. Abutment | #5 | 2 | 4 |



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

No. required = 160



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

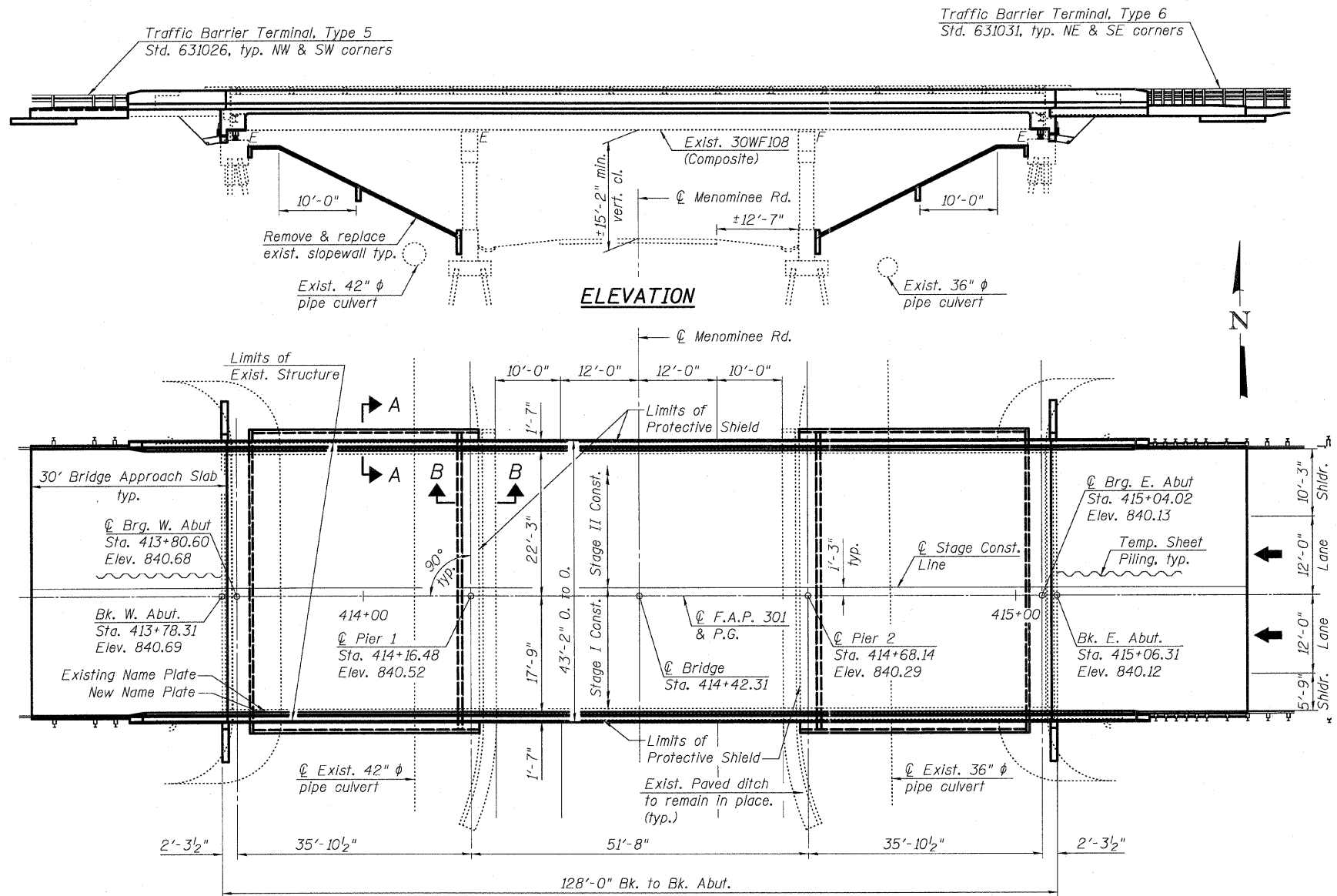
NOTES

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 approved list of bar splicer assemblies and mechanical splicers for alternatives.

Bench Mark: Chiseled "□" on Concrete Headwall, Sta. 414+09.19, 72.10' Lt. - Elev. 821.86.

Existing Structure: S.N. 043-0006 built in 1968 as F.A. Route 6 (S.B.I. Route. 5), Section 45. The structure consists of a 3 span reinforced concrete deck on continuous steel WF beams supported on reinforced concrete stub abutments and reinforced concrete double hammerhead piers. Bridge deck was repaired in 1970/71 and 1993. Structural steel was cleaned and repainted in 1987. 128'-0" back-to-back abutments and 42'-6" out-to-out deck. Concrete deck to be removed and replaced using Stage Construction.

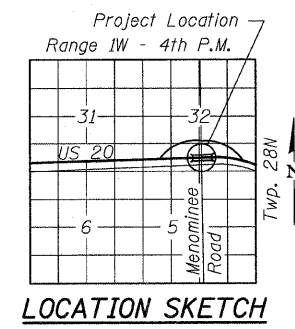
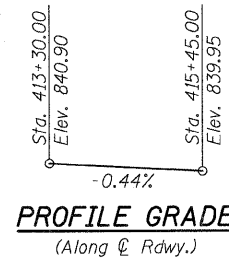
No salvage



ELEVATION

PLAN

- Notes:
1. Install Protective Shield throughout center span.
 2. Remove entire bridge deck.
 3. For Sections A-A and B-B see sheet S02.



LOADING HS20-44
Allow 25#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS
2002 AASHTO

DESIGN STRESSES

FIELD UNITS (New Construction)
 $f'_c = 3,500$ psi
 $f_y = 60,000$ psi (reinforcement)
 $f_y = 36,000$ psi (structural steel)

FIELD UNITS (Existing Construction)
 $f'_c = 3,500$ psi
 $f_y = 40,000$ psi (reinforcement)
 $f_y = 36,000$ psi (structural steel)

SEISMIC DATA

Seismic Performance Category (SPC) = A
 Horizontal Bedrock Acceleration Coefficient (A) = 0.030g
 Site Coefficient (S) = 1.5

STATION 414+42.31
 RE-BUILT 2012 BY
 STATE OF ILLINOIS
 F.A.P. RT. 301 SEC. 44-HB
 LOADING HS20-44
 STR. NO. 043-0006

NAME PLATE
See Std. 515001

Existing Name Plate shall be cleaned and relocated next to new Name Plate. Cost included with Name Plates.



APPROVED
FOR STRUCTURAL ADEQUACY ONLY
 D. Carl P. Youngquist (PE)
 ENGINEER OF BRIDGES AND STRUCTURES

GENERAL PLAN & ELEVATION
U.S. ROUTE 20 OVER
MENOMINEE ROAD
F.A.P. ROUTE 301 - SEC. 44-HB
JO DAVIESS COUNTY
STATION 414+42.31
STRUCTURE NO. 043-0006

| | | | | | | | | | | |
|-------------------------------------------------------------------------------------------------------------------------|----------------------------------|---------------|-----------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|---------------------------|--------------------------------|-------------------|------------------|---------------|
| 225 W. OHIO ST., FOURTH FL. CHICAGO, IL 60654 TEL: 312.467.8123 FAX: 312.467.8228 WWW.TERRAENGINEERING.COM | USER NAME = TERRA | DESIGNED - EA | REVISED - | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | GENERAL PLAN AND ELEVATION STRUCTURE NO. 043 - 0006 SHEET NO. S01 OF S21 SHEETS | F.A.P. RTE. 301 | SECTION (43B, 44B, 44HB, 45BD) | COUNTY JO DAVIESS | TOTAL SHEETS 309 | SHEET NO. 141 |
| | FILE NAME = D430206-001-0P&E.dgn | CHECKED - OY | REVISED - | | | ILLINOIS FED. AID PROJECT | | | | |
| | PLOT SCALE = | DRAWN - CM | REVISED - | | | | | | | |
| | PLOT DATE = 1/31/2012 | CHECKED - JB | REVISED - | | | | | | | |

GENERAL NOTES:

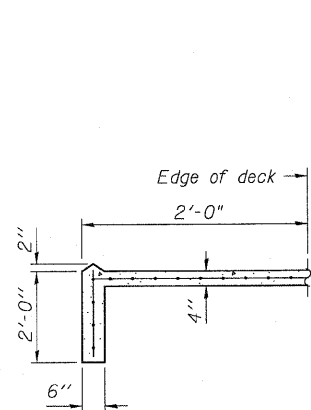
- Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts. Bolts $7/8"$ ϕ , holes $15/16"$ ϕ , unless otherwise noted.
- Calculated weight of Structural Steel = 4,500 lbs (AASHTO M270, Grade 36)
- No field welding is permitted except as specified in the contract documents.
- Reinforcement 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.
- As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding $1/4$ in. deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.
- 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 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.
- Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of $1/8$ in. (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- Cleaning and painting of the existing structural steel shall be as specified in the special provision for "Cleaning and Painting Existing Steel Structures". All existing steel shall be cleaned per Near White Blast Cleaning-SSPC-SP10. All new and existing steel 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. The color of the final finish coat for the exterior and bottom flange of the beams shall be green, Munsell No. 7.5G 4/8.
- All new structural steel shall be shop painted with an inorganic zinc rich primer per AASHTO M300 Type 1.
- Slipforming of the parapets is not allowed.

INDEX OF SHEETS

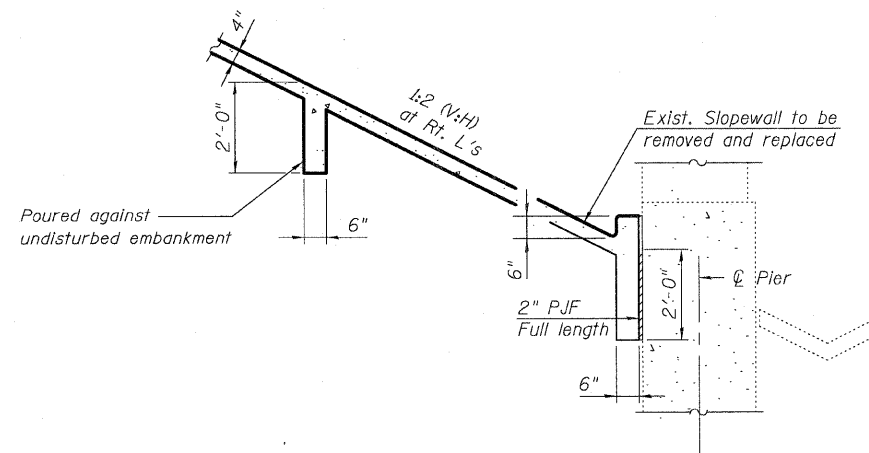
- S01 General Plan and Elevation
- S02 General Notes and Bill of Material
- S03 Stage Construction Details
- S04 Temporary Concrete Barrier for Stage Construction
- S05 Top of Slab Elevation Location Plan
- S06-S07 Top of Slab Elevations
- S08 Top of West Approach Slab Elevations
- S09 Top of East Approach Slab Elevations
- S10 Superstructure-Plan and Cross Section
- S11 Parapet Details
- S12 Semi-integral Abutment Diaphragm Details
- S13-S14 Bridge Approach Slab Details
- S15-S16 Steel Details
- S17 Bearing Details
- S18 East and West Abutments Concrete Removal
- S19 West Abutment Plan and Elevation
- S20 East Abutment Plan and Elevation
- S21 Bar Splicer Assembly Details

TOTAL BILL OF MATERIAL

| ITEM | UNIT | SUPER | SUB | TOTAL |
|-------------------------------------------|---------|--------|-------|--------|
| Porous Granular Embankment, Special | Cu. Yd. | - | 79 | 79 |
| Concrete Removal | Cu. Yd. | - | 32.4 | 32.4 |
| Slope wall Removal | Sq. Yd. | - | 400 | 400 |
| Removal of Existing Concrete Deck No. 3 | Each | 1 | - | 1 |
| Protective Shield | Sq. Yd. | 250 | - | 250 |
| Structure Excavation | Cu. Yd. | - | 174 | 174 |
| Concrete Structures | Cu. Yd. | - | 37.6 | 37.6 |
| Concrete Superstructure | Cu. Yd. | 337.1 | - | 337.1 |
| Bridge Deck Grooving | Sq. Yd. | 836 | - | 836 |
| Protective Coat | Sq. Yd. | 957 | - | 957 |
| Containment and Disposal of Lead Paint | L.Sum | 1 | - | 1 |
| Cleaning Residues No. 3 | | | | |
| Furnishing and Erecting Structural Steel | Pound | 4500 | - | 4500 |
| Stud Shear Connectors | Each | 2466 | - | 2466 |
| Structural Steel Removal | Pound | 3730 | - | 3730 |
| Cleaning and Painting Steel Bridge, No. 3 | L.Sum | 1 | - | 1 |
| Reinforcement bars, Epoxy Coated | Pound | 72,720 | 7,160 | 79,880 |
| Bar Splicers | Each | 648 | 84 | 732 |
| Slope Wall 4 Inch | Sq. Yd. | - | 400 | 400 |
| Name Plates | Each | 1 | - | 1 |
| Elastomeric Bearing Assembly, Type I | Each | 12 | - | 12 |
| Anchor Bolts, 1" | Each | 24 | - | 24 |
| Geocomposite Wall Drain | Sq. Yd. | - | 50 | 50 |
| Pipe Underdrains for Structures 4" | Foot | - | 126 | 126 |
| Jack and Remove Existing Bearings | Each | 12 | - | 12 |
| Temporary Sheet Piling | Sq. Ft. | - | 132 | 132 |



SECTION A-A

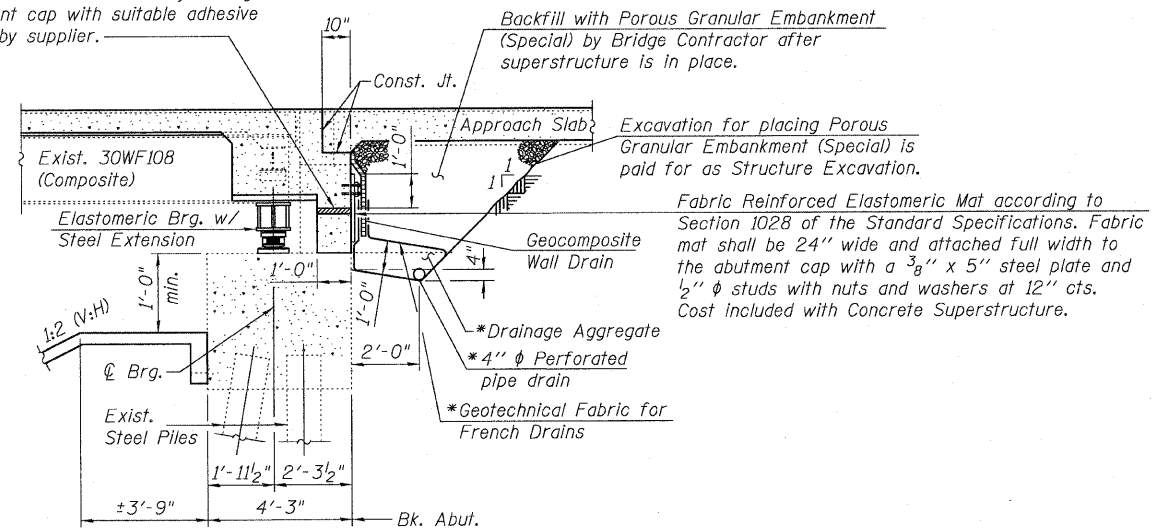


SECTION B-B

Notes:

- See Sheet S01 of S21 for locations of Section A-A and Section B-B.
- Remove existing slope wall from abutment to pier under both end spans.
- Slope wall shall be reinforced with welded wire fabric, 6 in. x 6 in. - W4.0 x 4.0, weighing 58 lbs. per 100 sq. ft.

2" P.J.F. (per Article 1051.09 of the Standard Specifications) full width and vertically at edges bonded to abutment cap with suitable adhesive as recommended by supplier.



SECTION C-C

SECTION THRU SEMI-INTEGRAL ABUTMENT

(Horiz. dim. @ Rt. L's)

*Included in the cost of Pipe Underdrains for Structures.

Note:

All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).



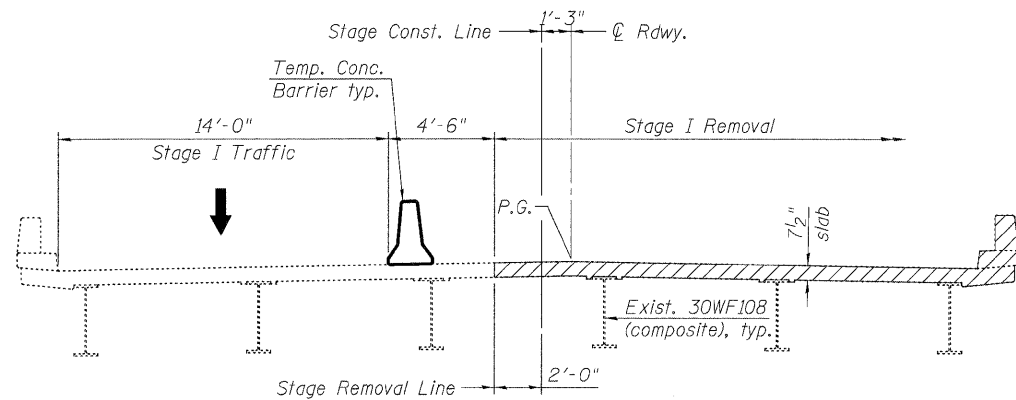
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| PLOT SCALE = | | DRAWN - | CM | REVISED - | |
| PLOT DATE = | 1/31/2012 | CHECKED - | JB | REVISED - | |

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

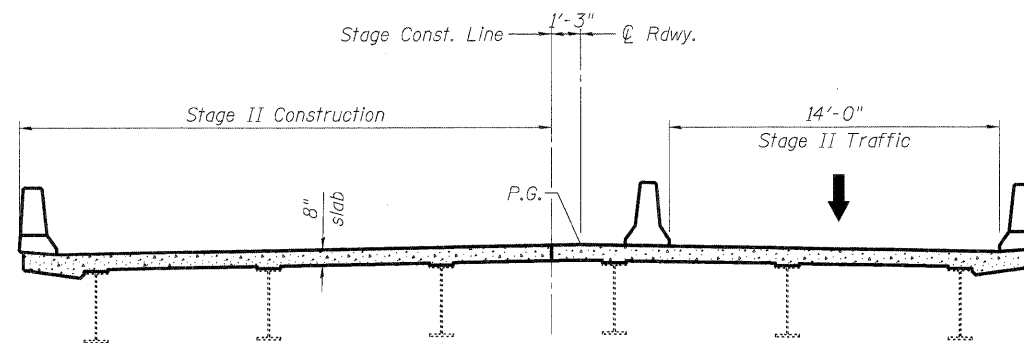
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STRUCTURE NO. 043 - 006**

SHEET NO. S02 OF S21 SHEETS

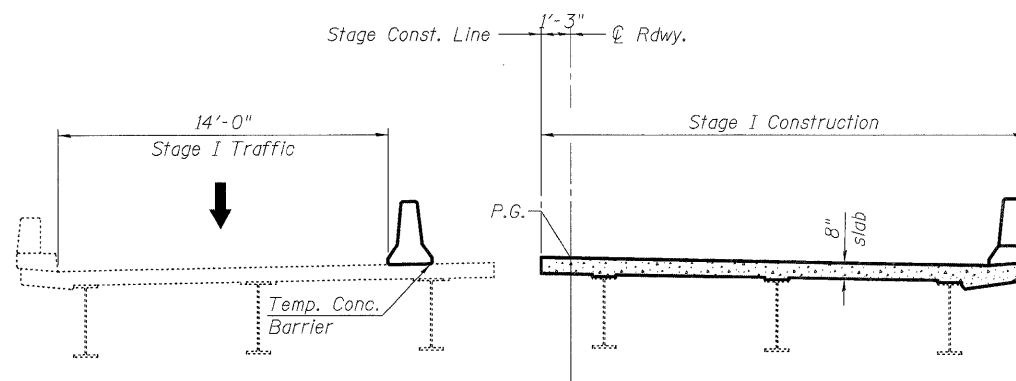
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| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| 301 | (43B, 44B, 44HB, 45B)D | JO DAVIESS | 309 | 142 |
| CONTRACT NO. 64C94 | | | ILLINOIS FED. AID PROJECT | |



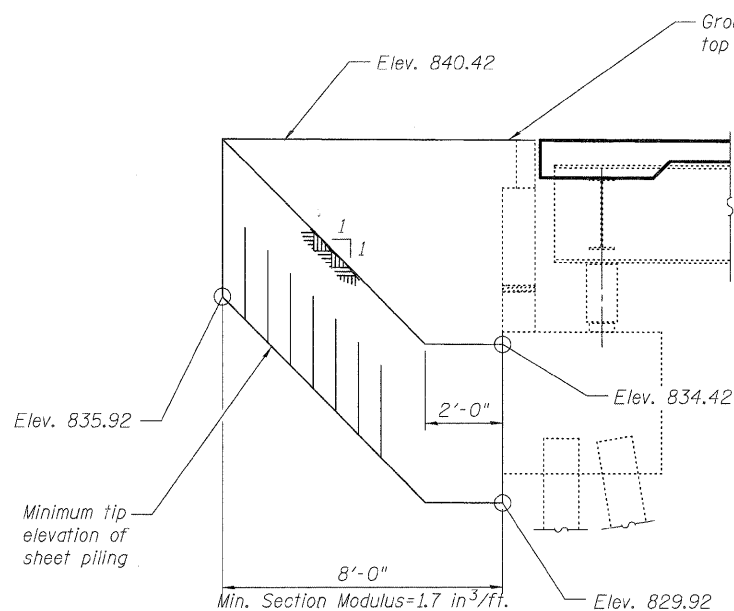
STAGE I REMOVAL
(Looking East)



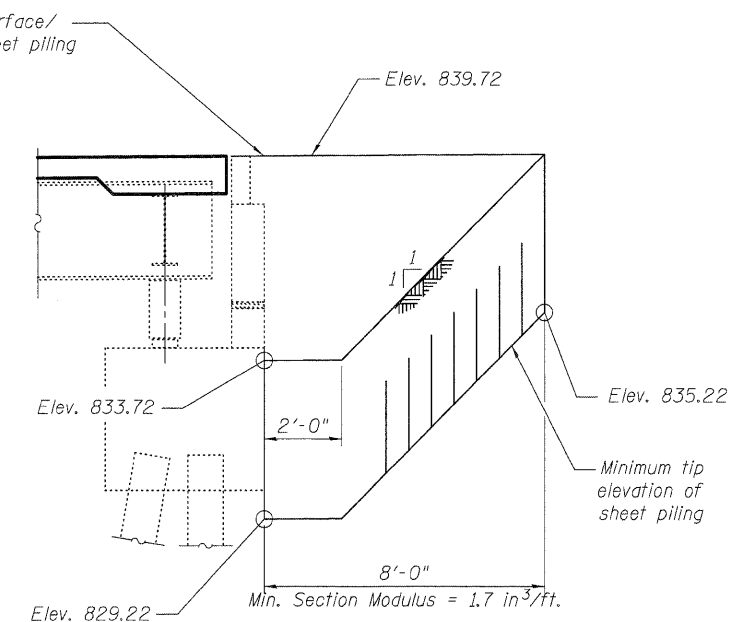
STAGE II CONSTRUCTION
(Looking East)



STAGE I CONSTRUCTION
(Looking East)



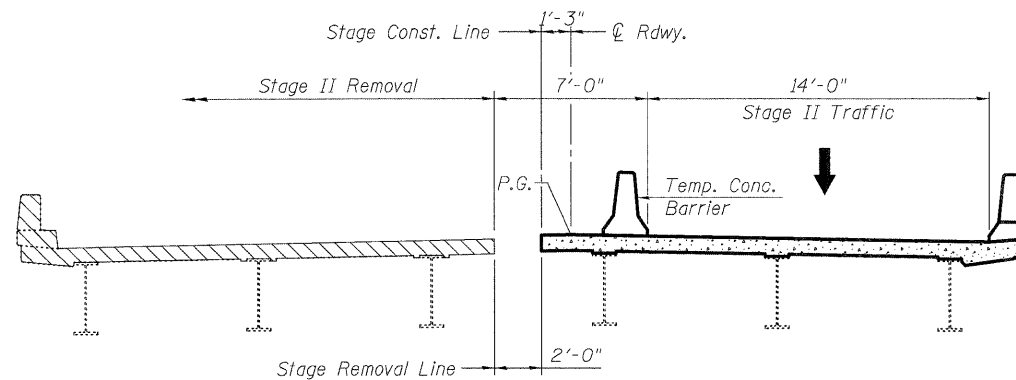
WEST ABUTMENT



EAST ABUTMENT

TEMPORARY SHEET PILING

Note:
If the Contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.

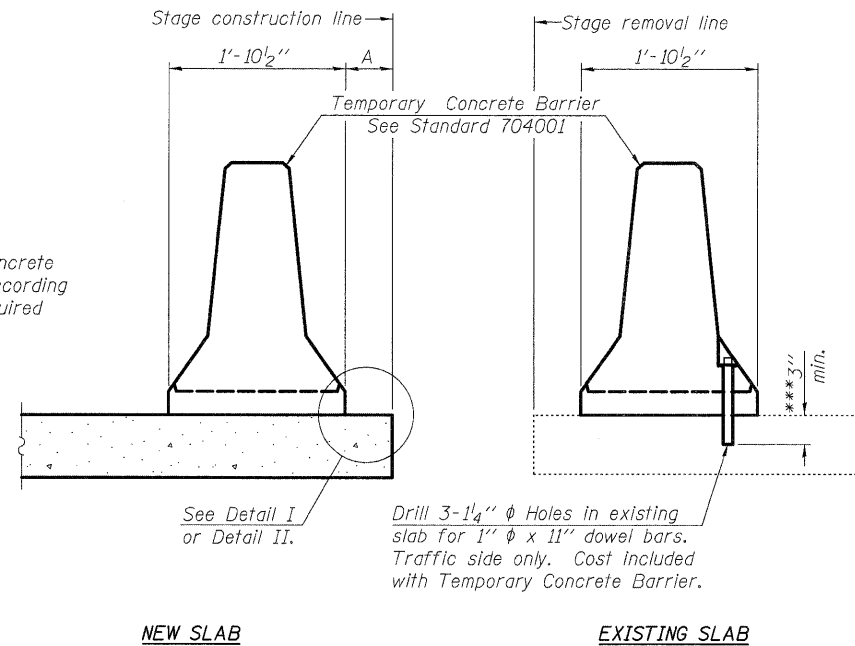


STAGE II REMOVAL
(Looking East)

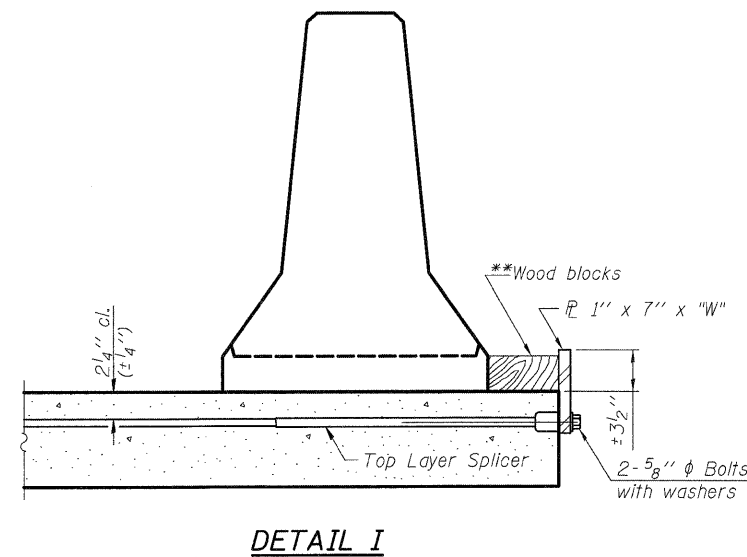
BILL OF MATERIAL

| Item | Unit | Total |
|------------------------|---------|-------|
| Temporary Sheet Piling | Sq. Ft. | 132 |

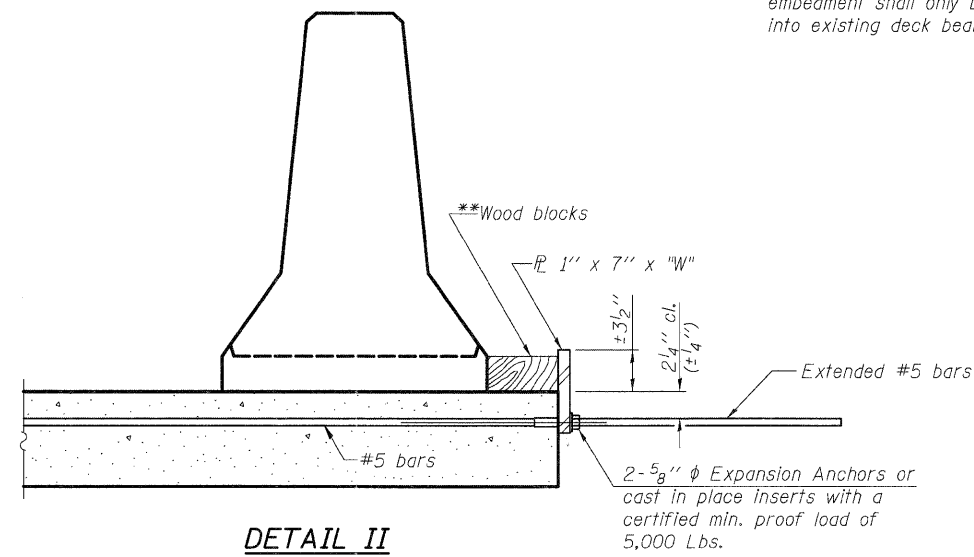
When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".



SECTIONS THRU SLAB OR DECK BEAM



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.

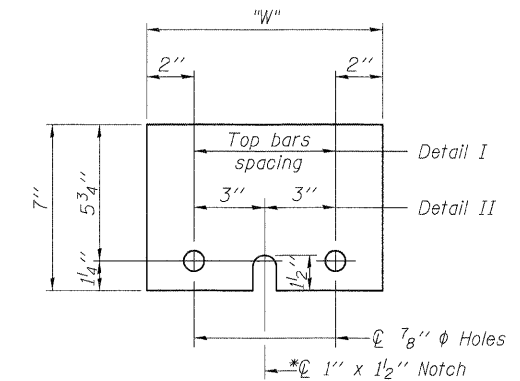
"W" = Top bars spacing + 4"

NOTES

- Detail I - With Bar Splicer or Couplers:
Connect one (1) 1" x 7" x "W" steel PL to the top layer of couplers with 2-5/8" Ø bolts screwed to coupler at approximate CL of each barrier panel.
- Detail II - With Extended Reinforcement Bars:
Connect one (1) 1" x 7" x "W" steel PL to the concrete slab or concrete wearing surface with 2-5/8" Ø Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate CL 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.



STEEL RETAINER PL 1" x 7" x "W"

* Required only with Detail II

R-27

7-1-10



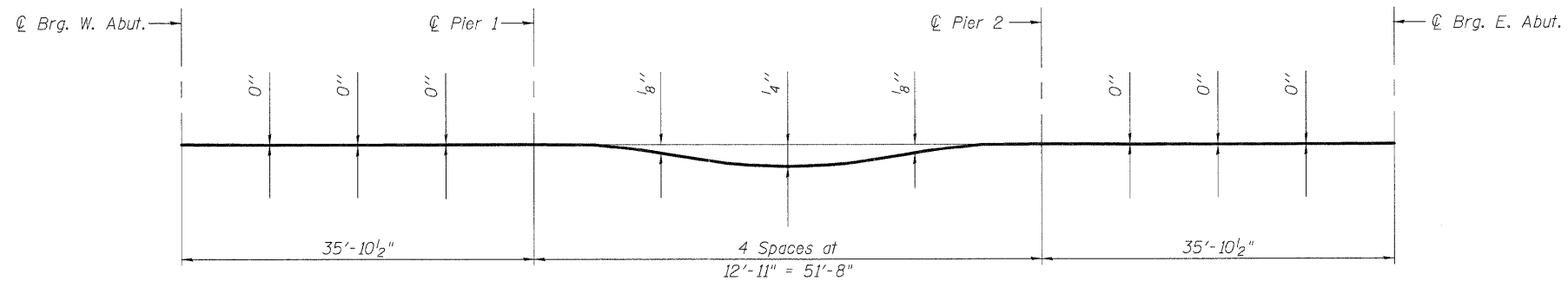
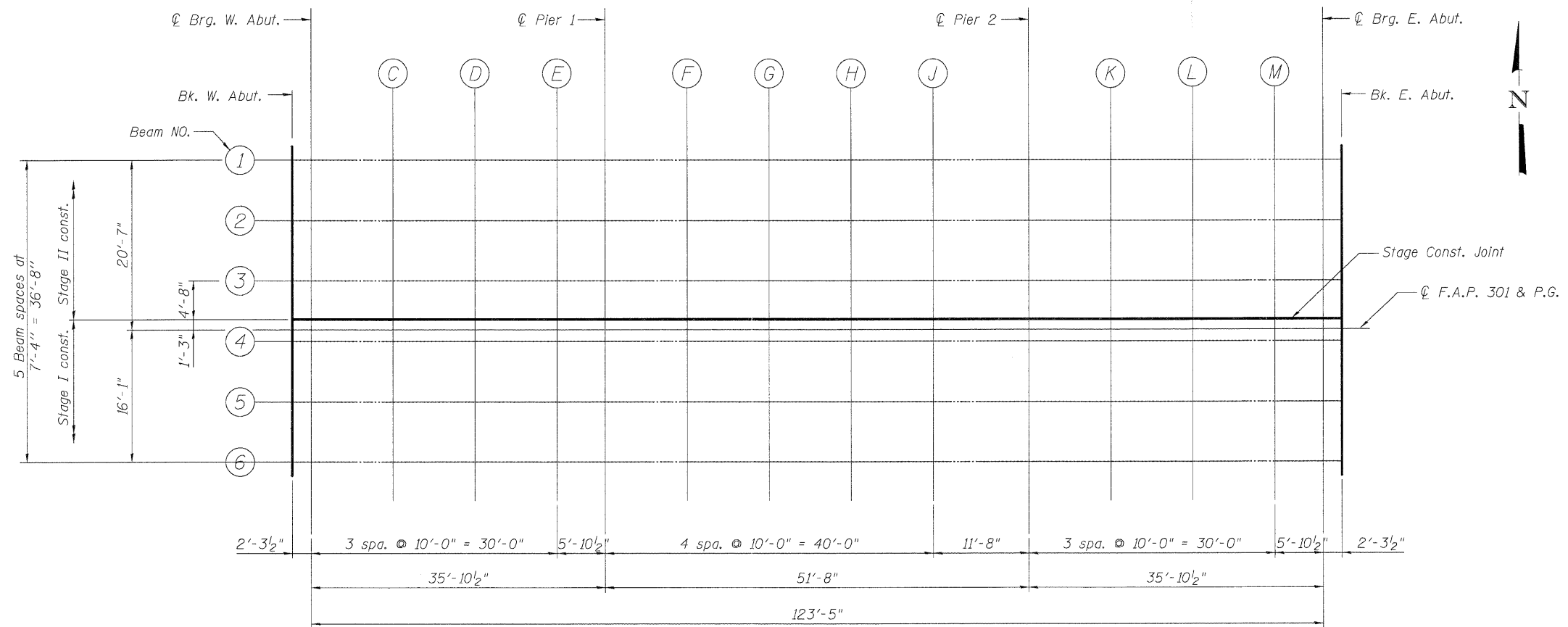
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|-------------------------------------------|---------------|-----------|
| USER NAME = TERRA | DESIGNED - EA | REVISIONS |
| FILE NAME = D430006-004-temp.conc.barrier | CHECKED - OY | REVISIONS |
| PLOT SCALE = 0.0033 ft / IN. | DRAWN - CM | REVISIONS |
| PLOT DATE = 12/6/2011 | CHECKED - JB | REVISIONS |

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
STRUCTURE NO. 043 - 0006**

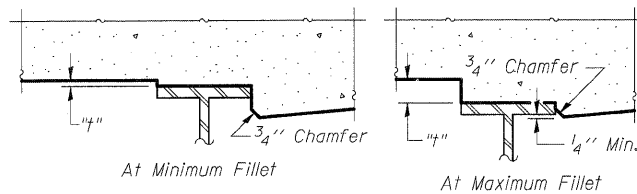
SHEET NO. S04 OF S21 SHEETS

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|--------------------|-------------------------|------------|---------------------------|-----------|
| 301 | (43B, 44B, 44HB, 45B/D) | JO DAVIESS | 309 | 144 |
| CONTRACT NO. 64C94 | | | ILLINOIS FED. AID PROJECT | |



DEAD LOAD DEFLECTION DIAGRAM
(Includes weight of concrete only)

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on sheets S06 thru S07 of S21.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheets S06 and S07 of S21, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

BEAM 1

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|--------------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 413+78.31 | -20.58 | 840.32 | 840.32 |
| CL Brg. & W. Abut. | 413+80.60 | -20.58 | 840.31 | 840.31 |
| C | 413+90.60 | -20.58 | 840.27 | 840.27 |
| D | 414+00.60 | -20.58 | 840.22 | 840.23 |
| E | 414+10.60 | -20.58 | 840.18 | 840.18 |
| CL Pier 1 & Brg. | 414+16.48 | -20.58 | 840.15 | 840.15 |
| F | 414+26.48 | -20.58 | 840.11 | 840.12 |
| G | 414+36.48 | -20.58 | 840.06 | 840.09 |
| H | 414+46.48 | -20.58 | 840.02 | 840.04 |
| J | 414+56.48 | -20.58 | 839.98 | 839.99 |
| CL Pier 2 & Brg. | 414+68.14 | -20.58 | 839.92 | 839.92 |
| K | 414+78.14 | -20.58 | 839.88 | 839.88 |
| L | 414+88.14 | -20.58 | 839.84 | 839.84 |
| M | 414+98.14 | -20.58 | 839.79 | 839.80 |
| CL Brg. & E. Abut. | 415+04.02 | -20.58 | 839.77 | 839.77 |
| Bk. E. Abut. | 415+06.31 | -20.58 | 839.76 | 839.76 |

BEAM 2

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|--------------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 413+78.31 | -13.25 | 840.48 | 840.48 |
| CL Brg. & W. Abut. | 413+80.60 | -13.25 | 840.47 | 840.47 |
| C | 413+90.60 | -13.25 | 840.43 | 840.43 |
| D | 414+00.60 | -13.25 | 840.38 | 840.39 |
| E | 414+10.60 | -13.25 | 840.34 | 840.34 |
| CL Pier 1 & Brg. | 414+16.48 | -13.25 | 840.31 | 840.31 |
| F | 414+26.48 | -13.25 | 840.27 | 840.28 |
| G | 414+36.48 | -13.25 | 840.22 | 840.24 |
| H | 414+46.48 | -13.25 | 840.18 | 840.20 |
| J | 414+56.48 | -13.25 | 840.14 | 840.15 |
| CL Pier 2 & Brg. | 414+68.14 | -13.25 | 840.08 | 840.08 |
| K | 414+78.14 | -13.25 | 840.04 | 840.04 |
| L | 414+88.14 | -13.25 | 840.00 | 840.00 |
| M | 414+98.14 | -13.25 | 839.95 | 839.96 |
| CL Brg. & E. Abut. | 415+04.02 | -13.25 | 839.93 | 839.93 |
| Bk. E. Abut. | 415+06.31 | -13.25 | 839.92 | 839.92 |

BEAM 3

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|--------------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 413+78.31 | -5.92 | 840.59 | 840.59 |
| CL Brg. & W. Abut. | 413+80.60 | -5.92 | 840.58 | 840.58 |
| C | 413+90.60 | -5.92 | 840.54 | 840.54 |
| D | 414+00.60 | -5.92 | 840.50 | 840.50 |
| E | 414+10.60 | -5.92 | 840.45 | 840.45 |
| CL Pier 1 & Brg. | 414+16.48 | -5.92 | 840.43 | 840.43 |
| F | 414+26.48 | -5.92 | 840.38 | 840.39 |
| G | 414+36.48 | -5.92 | 840.34 | 840.36 |
| H | 414+46.48 | -5.92 | 840.29 | 840.32 |
| J | 414+56.48 | -5.92 | 840.25 | 840.26 |
| CL Pier 2 & Brg. | 414+68.14 | -5.92 | 840.20 | 840.20 |
| K | 414+78.14 | -5.92 | 840.15 | 840.16 |
| L | 414+88.14 | -5.92 | 840.11 | 840.12 |
| M | 414+98.14 | -5.92 | 840.07 | 840.07 |
| CL Brg. & E. Abut. | 415+04.02 | -5.92 | 840.04 | 840.04 |
| Bk. E. Abut. | 415+06.31 | -5.92 | 840.03 | 840.03 |

STAGE CONSTRUCTION JOINT

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|--------------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 413+78.31 | -1.25 | 840.67 | 840.67 |
| CL Brg. & W. Abut. | 413+80.60 | -1.25 | 840.66 | 840.66 |
| C | 413+90.60 | -1.25 | 840.61 | 840.62 |
| D | 414+00.60 | -1.25 | 840.57 | 840.57 |
| E | 414+10.60 | -1.25 | 840.52 | 840.52 |
| CL Pier 1 & Brg. | 414+16.48 | -1.25 | 840.50 | 840.50 |
| F | 414+26.48 | -1.25 | 840.46 | 840.47 |
| G | 414+36.48 | -1.25 | 840.41 | 840.43 |
| H | 414+46.48 | -1.25 | 840.37 | 840.39 |
| J | 414+56.48 | -1.25 | 840.32 | 840.34 |
| CL Pier 2 & Brg. | 414+68.14 | -1.25 | 840.27 | 840.27 |
| K | 414+78.14 | -1.25 | 840.23 | 840.23 |
| L | 414+88.14 | -1.25 | 840.18 | 840.19 |
| M | 414+98.14 | -1.25 | 840.14 | 840.14 |
| CL Brg. & E. Abut. | 415+04.02 | -1.25 | 840.11 | 840.11 |
| Bk. E. Abut. | 415+06.31 | -1.25 | 840.10 | 840.10 |



USER NAME = TERRA
FILE NAME = D430006-026-TDS_Elev1.dgn
PLOT SCALE = 0.0833 Ft / IN.
PLOT DATE = 12/6/2011

DESIGNED - EA
CHECKED - OY
DRAWN - CM
CHECKED - JB

REVISED -
REVISED -
REVISED -
REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATIONS 1
STRUCTURE NO. 043 - 0006**

SHEET NO. 506 OF 521 SHEETS

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|-------------|-------------------------|------------|--------------|-----------|
| 301 | (43B, 44B, 44HB, 45B/D) | JO DAVIESS | 309 | 146 |

CONTRACT NO. 64C94
ILLINOIS FED. AID PROJECT

CL ROADWAY & PG

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|--------------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 413+78.31 | 0.00 | 840.69 | 840.69 |
| CL Brg. & W. Abut. | 413+80.60 | 0.00 | 840.68 | 840.68 |
| C | 413+90.60 | 0.00 | 840.63 | 840.64 |
| D | 414+00.60 | 0.00 | 840.59 | 840.59 |
| E | 414+10.60 | 0.00 | 840.54 | 840.54 |
| CL Pier 1 & Brg. | 414+16.48 | 0.00 | 840.52 | 840.52 |
| F | 414+26.48 | 0.00 | 840.47 | 840.48 |
| G | 414+36.48 | 0.00 | 840.43 | 840.45 |
| H | 414+46.48 | 0.00 | 840.39 | 840.41 |
| J | 414+56.48 | 0.00 | 840.34 | 840.35 |
| CL Pier 2 & Brg. | 414+68.14 | 0.00 | 840.29 | 840.29 |
| K | 414+78.14 | 0.00 | 840.25 | 840.25 |
| L | 414+88.14 | 0.00 | 840.20 | 840.21 |
| M | 414+98.14 | 0.00 | 840.16 | 840.16 |
| CL Brg. & E. Abut. | 415+04.02 | 0.00 | 840.13 | 840.13 |
| Bk. E. Abut. | 415+06.31 | 0.00 | 840.12 | 840.12 |

BEAM 4

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|--------------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 413+78.31 | 1.42 | 840.66 | 840.66 |
| CL Brg. & W. Abut. | 413+80.60 | 1.42 | 840.65 | 840.65 |
| C | 413+90.60 | 1.42 | 840.61 | 840.61 |
| D | 414+00.60 | 1.42 | 840.57 | 840.57 |
| E | 414+10.60 | 1.42 | 840.52 | 840.52 |
| CL Pier 1 & Brg. | 414+16.48 | 1.42 | 840.50 | 840.50 |
| F | 414+26.48 | 1.42 | 840.45 | 840.46 |
| G | 414+36.48 | 1.42 | 840.41 | 840.43 |
| H | 414+46.48 | 1.42 | 840.36 | 840.39 |
| J | 414+56.48 | 1.42 | 840.32 | 840.33 |
| CL Pier 2 & Brg. | 414+68.14 | 1.42 | 840.27 | 840.27 |
| K | 414+78.14 | 1.42 | 840.23 | 840.23 |
| L | 414+88.14 | 1.42 | 840.18 | 840.19 |
| M | 414+98.14 | 1.42 | 840.14 | 840.14 |
| CL Brg. & E. Abut. | 415+04.02 | 1.42 | 840.11 | 840.11 |
| Bk. E. Abut. | 415+06.31 | 1.42 | 840.10 | 840.10 |

BEAM 5

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|--------------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 413+78.31 | 8.75 | 840.55 | 840.55 |
| CL Brg. & W. Abut. | 413+80.60 | 8.75 | 840.54 | 840.54 |
| C | 413+90.60 | 8.75 | 840.50 | 840.50 |
| D | 414+00.60 | 8.75 | 840.45 | 840.46 |
| E | 414+10.60 | 8.75 | 840.41 | 840.41 |
| CL Pier 1 & Brg. | 414+16.48 | 8.75 | 840.38 | 840.38 |
| F | 414+26.48 | 8.75 | 840.34 | 840.35 |
| G | 414+36.48 | 8.75 | 840.29 | 840.31 |
| H | 414+46.48 | 8.75 | 840.25 | 840.27 |
| J | 414+56.48 | 8.75 | 840.21 | 840.22 |
| CL Pier 2 & Brg. | 414+68.14 | 8.75 | 840.15 | 840.15 |
| K | 414+78.14 | 8.75 | 840.11 | 840.11 |
| L | 414+88.14 | 8.75 | 840.07 | 840.07 |
| M | 414+98.14 | 8.75 | 840.02 | 840.03 |
| CL Brg. & E. Abut. | 415+04.02 | 8.75 | 840.00 | 840.00 |
| Bk. E. Abut. | 415+06.31 | 8.75 | 839.99 | 839.99 |

BEAM 6

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|--------------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 413+78.31 | 16.08 | 840.41 | 840.41 |
| CL Brg. & W. Abut. | 413+80.60 | 16.08 | 840.40 | 840.40 |
| C | 413+90.60 | 16.08 | 840.36 | 840.36 |
| D | 414+00.60 | 16.08 | 840.32 | 840.32 |
| E | 414+10.60 | 16.08 | 840.27 | 840.27 |
| CL Pier 1 & Brg. | 414+16.48 | 16.08 | 840.25 | 840.25 |
| F | 414+26.48 | 16.08 | 840.20 | 840.21 |
| G | 414+36.48 | 16.08 | 840.16 | 840.18 |
| H | 414+46.48 | 16.08 | 840.11 | 840.14 |
| J | 414+56.48 | 16.08 | 840.07 | 840.08 |
| CL Pier 2 & Brg. | 414+68.14 | 16.08 | 840.02 | 840.02 |
| K | 414+78.14 | 16.08 | 839.97 | 839.98 |
| L | 414+88.14 | 16.08 | 839.93 | 839.94 |
| M | 414+98.14 | 16.08 | 839.89 | 839.89 |
| CL Brg. & E. Abut. | 415+04.02 | 16.08 | 839.86 | 839.86 |
| Bk. E. Abut. | 415+06.31 | 16.08 | 839.85 | 839.85 |



USER NAME = TERRA
 FILE NAME = D430006-007-TOS.Elev2.dgn
 PLOT SCALE = 0.0833 ft / in.
 PLOT DATE = 12/6/2011

DESIGNED - EA
 CHECKED - OY
 DRAWN - CM
 CHECKED - JB

REVISED -
 REVISED -
 REVISED -
 REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATIONS 2
 STRUCTURE NO. 043 - 0006**

SHEET NO. S07 OF S21 SHEETS

| | | | | |
|--------------------|-------------------------|------------|---------------------------|-----------|
| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| 301 | (43B, 44B, 44HB, 45BID) | JO DAVIESS | 309 | 147 |
| CONTRACT NO. 64C94 | | | ILLINOIS FED. AID PROJECT | |

NORTH EDGE OF SHOULDER

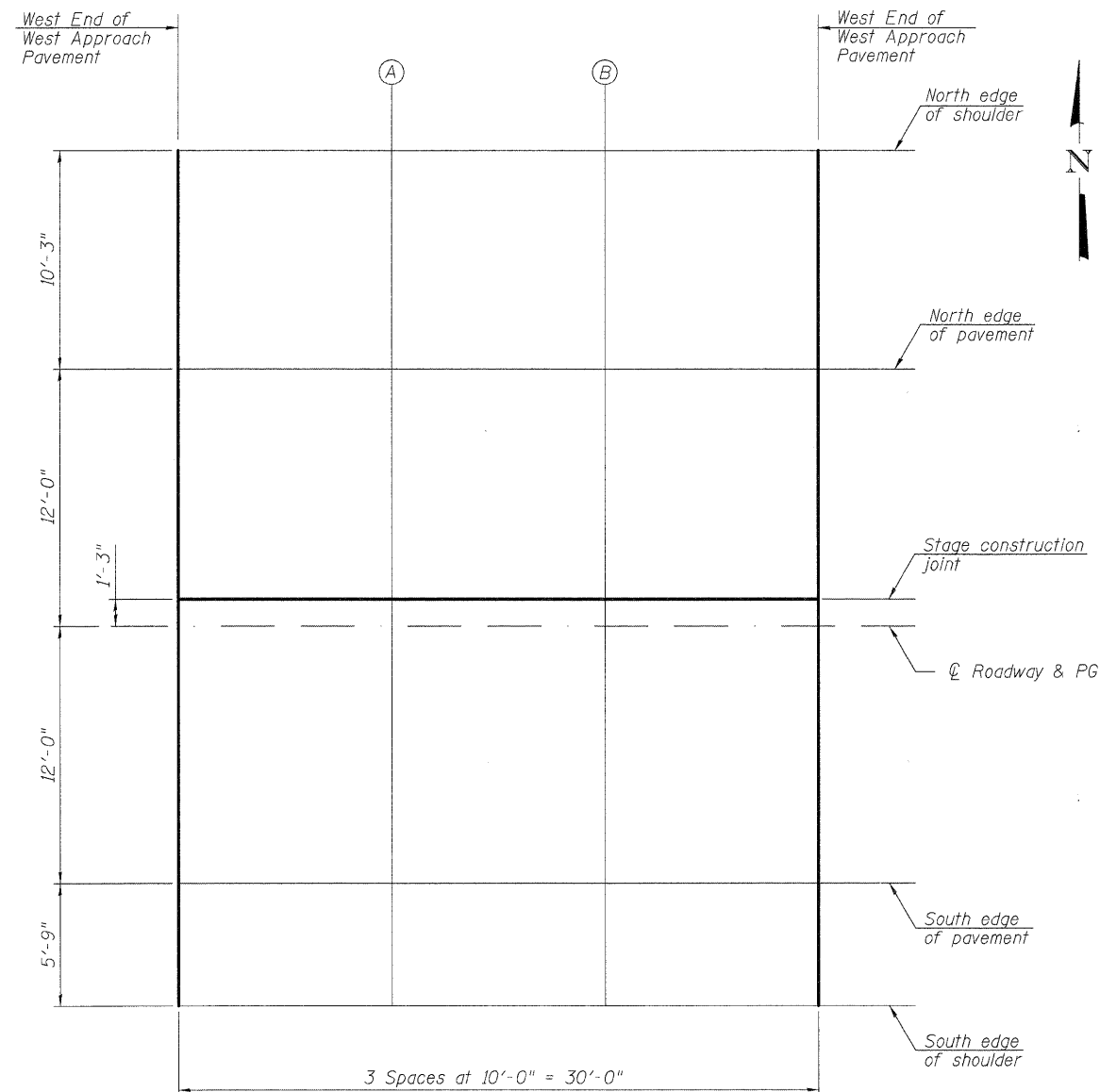
| Location | Station | Offset | Theoretical Grade Elevations |
|--------------------------|-----------|--------|------------------------------|
| West End W. Appr. Pav't. | 413+49.14 | -22.25 | 840.41 |
| A | 413+59.14 | -22.25 | 840.37 |
| B | 413+69.14 | -22.25 | 840.33 |
| East End W. Appr. Pav't. | 413+79.14 | -22.25 | 840.29 |

NORTH EDGE OF PAVEMENT

| Location | Station | Offset | Theoretical Grade Elevations |
|--------------------------|-----------|--------|------------------------------|
| West End W. Appr. Pav't. | 413+49.14 | -12.00 | 840.63 |
| A | 413+59.14 | -12.00 | 840.58 |
| B | 413+69.14 | -12.00 | 840.55 |
| East End W. Appr. Pav't. | 413+79.14 | -12.00 | 840.50 |

STAGE CONSTRUCTION JOINT

| Location | Station | Offset | Theoretical Grade Elevations |
|--------------------------|-----------|--------|------------------------------|
| West End W. Appr. Pav't. | 413+49.14 | -1.25 | 840.80 |
| A | 413+59.14 | -1.25 | 840.75 |
| B | 413+69.14 | -1.25 | 840.71 |
| East End W. Appr. Pav't. | 413+79.14 | -1.25 | 840.66 |



PLAN

☉ ROADWAY & PG

| Location | Station | Offset | Theoretical Grade Elevations |
|--------------------------|-----------|--------|------------------------------|
| West End W. Appr. Pav't. | 413+49.14 | 0.00 | 840.82 |
| A | 413+59.14 | 0.00 | 840.77 |
| B | 413+69.14 | 0.00 | 840.73 |
| East End W. Appr. Pav't. | 413+79.14 | 0.00 | 840.68 |

SOUTH EDGE OF PAVEMENT

| Location | Station | Offset | Theoretical Grade Elevations |
|--------------------------|-----------|--------|------------------------------|
| West End W. Appr. Pav't. | 413+49.14 | 12.00 | 840.63 |
| A | 413+59.14 | 12.00 | 840.58 |
| B | 413+69.14 | 12.00 | 840.54 |
| East End W. Appr. Pav't. | 413+79.14 | 12.00 | 840.50 |

SOUTH EDGE OF SHOULDER

| Location | Station | Offset | Theoretical Grade Elevations |
|--------------------------|-----------|--------|------------------------------|
| West End W. Appr. Pav't. | 413+49.14 | 17.75 | 840.51 |
| A | 413+59.14 | 17.75 | 840.46 |
| B | 413+69.14 | 17.75 | 840.42 |
| East End W. Appr. Pav't. | 413+79.14 | 17.75 | 840.38 |



| | | |
|------------------------------------------|---------------|-----------|
| USER NAME = TERRA | DESIGNED - EA | REVISED - |
| FILE NAME = D:\30025-208-TOS.W.Appr.Elev | CHECKED - OY | REVISED - |
| PLOT SCALE = 0:1.0000 ' = 1" IN. | DRAWN - CM | REVISED - |
| PLOT DATE = 12/6/2011 | CHECKED - JB | REVISED - |

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TOP OF WEST APPROACH SLAB ELEVATIONS
STRUCTURE NO. 043 - 0006**

SHEET NO. S08 OF S21 SHEETS

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-------------------------|------------|--------------|-----------|
| 301 | (43B, 44B, 44HB, 45BID) | JO DAVIESS | 309 | 148 |
| CONTRACT NO. 64C94 | | | | |
| ILLINOIS FED. AID PROJECT | | | | |

NORTH EDGE OF SHOULDER

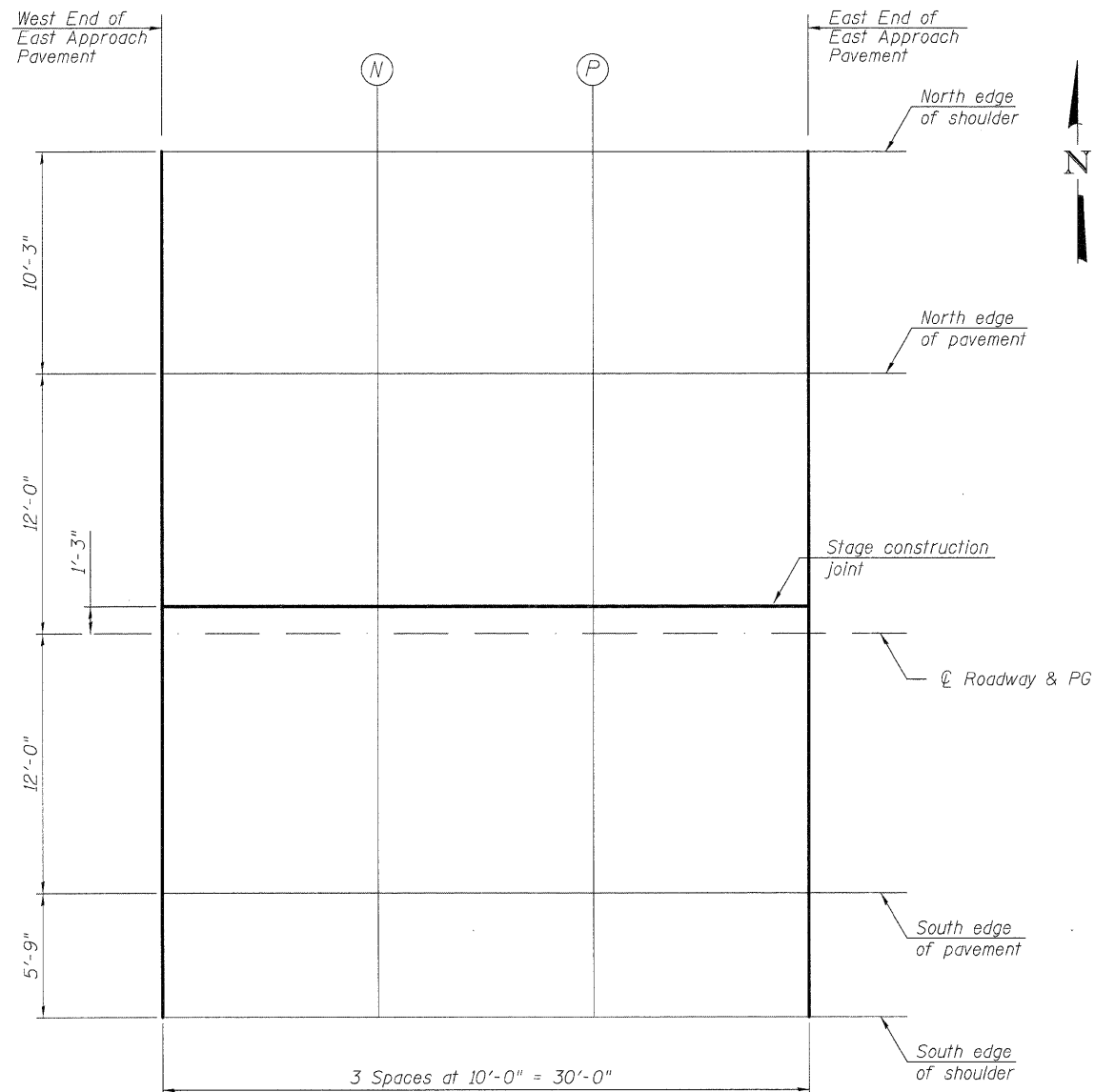
| Location | Station | Offset | Theoretical Grade Elevations |
|--------------------------|-----------|--------|------------------------------|
| West End E. Appr. Pav't. | 415+05.48 | -22.25 | 839.72 |
| N | 415+15.48 | -22.25 | 839.68 |
| P | 415+25.48 | -22.25 | 839.64 |
| East End E. Appr. Pav't. | 415+35.48 | -22.25 | 839.59 |

NORTH EDGE OF PAVEMENT

| Location | Station | Offset | Theoretical Grade Elevations |
|--------------------------|-----------|--------|------------------------------|
| West End E. Appr. Pav't. | 415+05.48 | -12.00 | 839.94 |
| N | 415+15.48 | -12.00 | 839.89 |
| P | 415+25.48 | -12.00 | 839.85 |
| East End E. Appr. Pav't. | 415+35.48 | -12.00 | 839.80 |

STAGE CONSTRUCTION JOINT

| Location | Station | Offset | Theoretical Grade Elevations |
|--------------------------|-----------|--------|------------------------------|
| West End E. Appr. Pav't. | 415+05.48 | -1.25 | 840.11 |
| N | 415+15.48 | -1.25 | 840.06 |
| P | 415+25.48 | -1.25 | 840.02 |
| East End E. Appr. Pav't. | 415+35.48 | -1.25 | 839.97 |



PLAN

☉ ROADWAY & PG

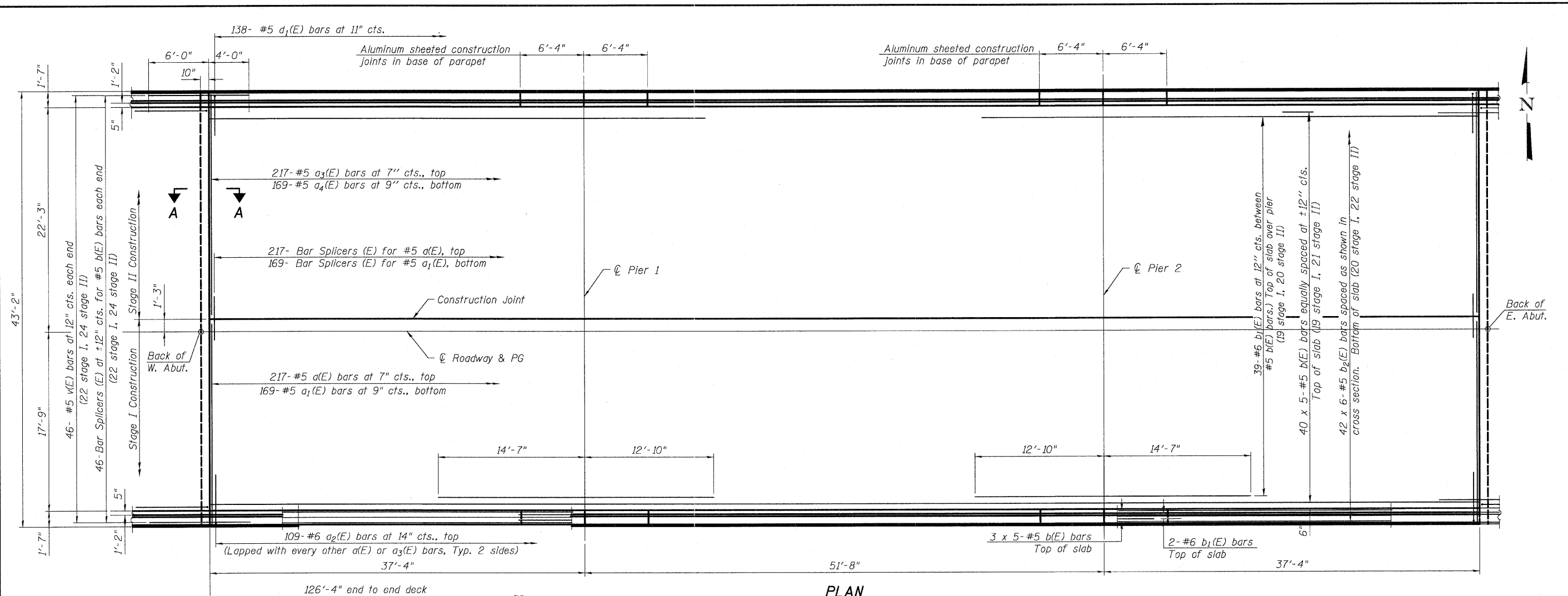
| Location | Station | Offset | Theoretical Grade Elevations |
|--------------------------|-----------|--------|------------------------------|
| West End E. Appr. Pav't. | 415+05.48 | 0.00 | 840.12 |
| N | 415+15.48 | 0.00 | 840.08 |
| P | 415+25.48 | 0.00 | 840.04 |
| East End E. Appr. Pav't. | 415+35.48 | 0.00 | 839.99 |

SOUTH EDGE OF PAVEMENT

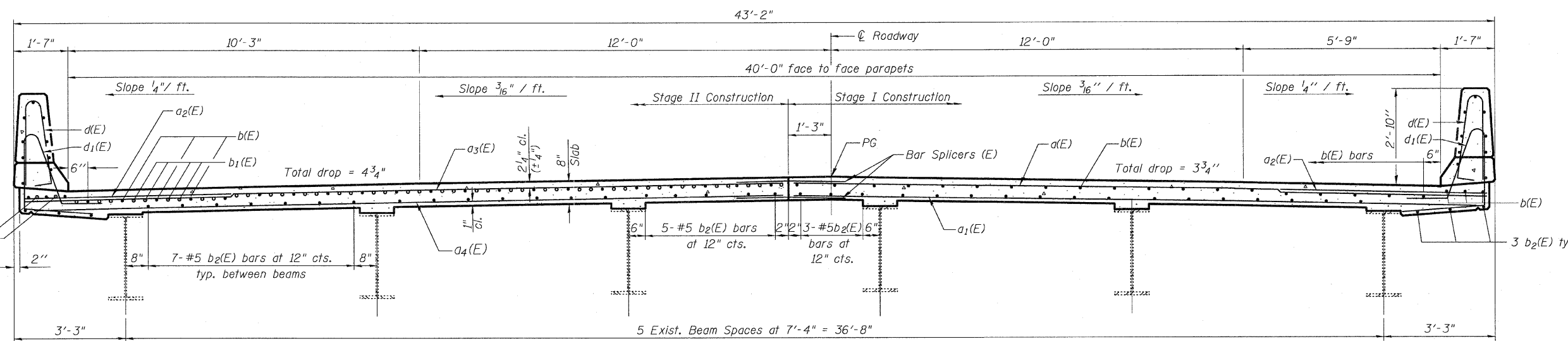
| Location | Station | Offset | Theoretical Grade Elevations |
|--------------------------|-----------|--------|------------------------------|
| West End E. Appr. Pav't. | 415+05.48 | 12.00 | 839.94 |
| N | 415+15.48 | 12.00 | 839.89 |
| P | 415+25.48 | 12.00 | 839.85 |
| East End E. Appr. Pav't. | 415+35.48 | 12.00 | 839.80 |

SOUTH EDGE OF SHOULDER

| Location | Station | Offset | Theoretical Grade Elevations |
|--------------------------|-----------|--------|------------------------------|
| West End E. Appr. Pav't. | 415+05.48 | 17.75 | 839.82 |
| N | 415+15.48 | 17.75 | 839.77 |
| P | 415+25.48 | 17.75 | 839.73 |
| East End E. Appr. Pav't. | 415+35.48 | 17.75 | 839.68 |



PLAN



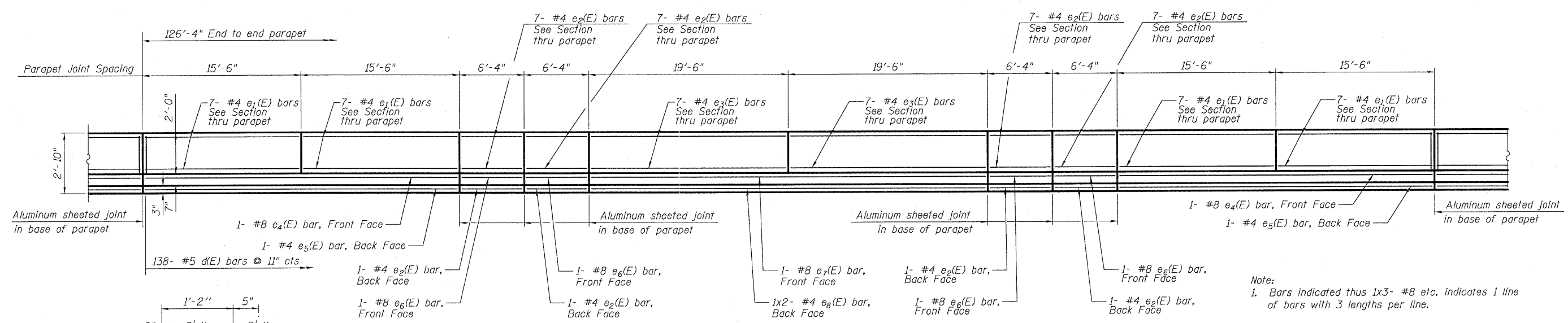
CROSS SECTION
(Looking East)

MINIMUM BAR LAP

(Slab)
 #4 bar = 2'-7"
 #5 bar = 2'-7"

Notes:
 See sheet S11 of S21 for superstructure Bill of Material.
 See sheet S12 of S21 for Section A-A.
 Bars indicated thus 40 x 5-#5 etc. indicates
 40 lines of bars with 5 lengths per line.
 See sheet S11 of S21 for parapet reinforcement.

| | | | | | | | | | | |
|---------------------------------------------------------------------------------------------------------------------|-----------------------------------|---------------|-----------|-----------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------|--------------------------------|-------------------|------------------|---------------|
| 225 W. OHIO ST., FOURTH FL. CHICAGO, IL 60654 W 312 1487 8123 F 312 1487 8228 WWW.TERRAENGINEERING.COM | USER NAME = TERRA | DESIGNED - EA | REVISED - | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | SUPERSTRUCTURE-PLAN AND CROSS SECTION STRUCTURE NO. 043 - 0006 | F.A.P. RTE. 301 | SECTION (43B, 44B, 44HB, 45BD) | COUNTY JO DAVIESS | TOTAL SHEETS 309 | SHEET NO. 150 |
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| | PLOT SCALE = | DRAWN - CM | REVISED - | | | ILLINOIS FED. AID PROJECT | | | | |
| | PLOT DATE = 1/31/2012 | CHECKED - JIB | REVISED - | | | | | | | |



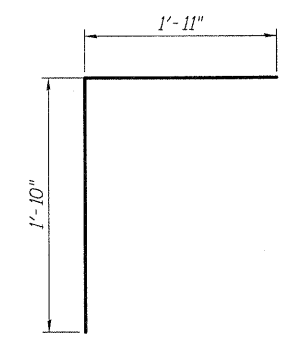
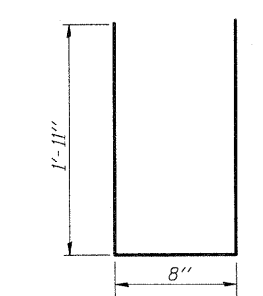
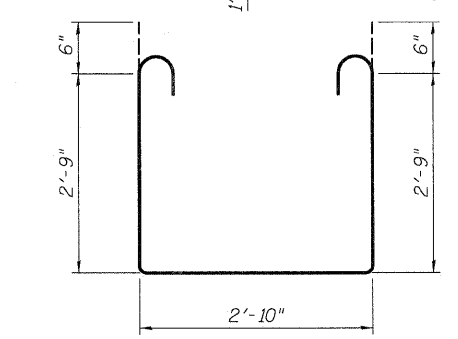
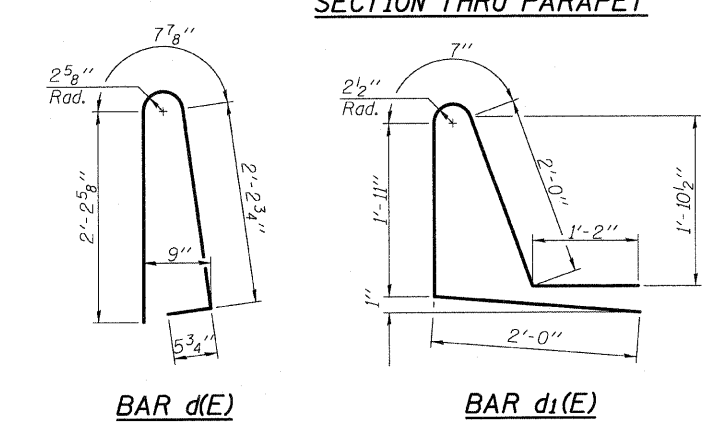
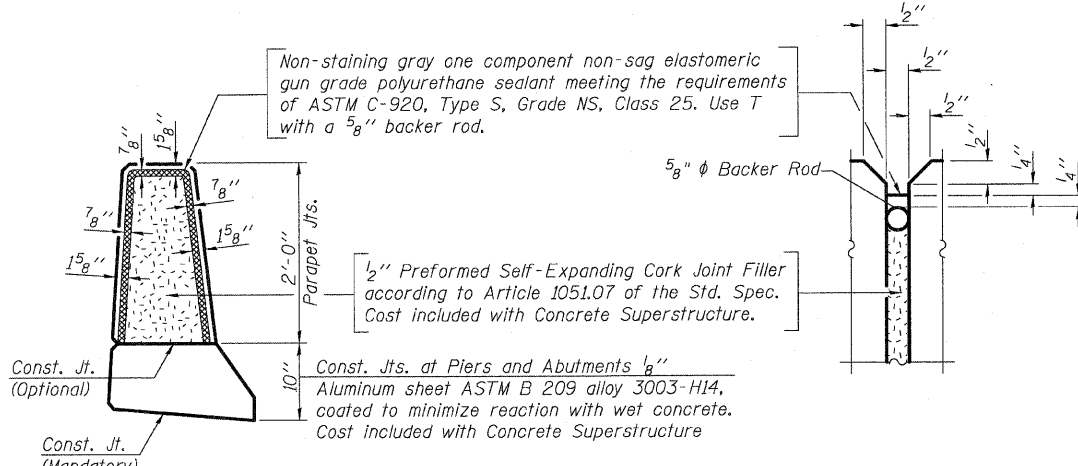
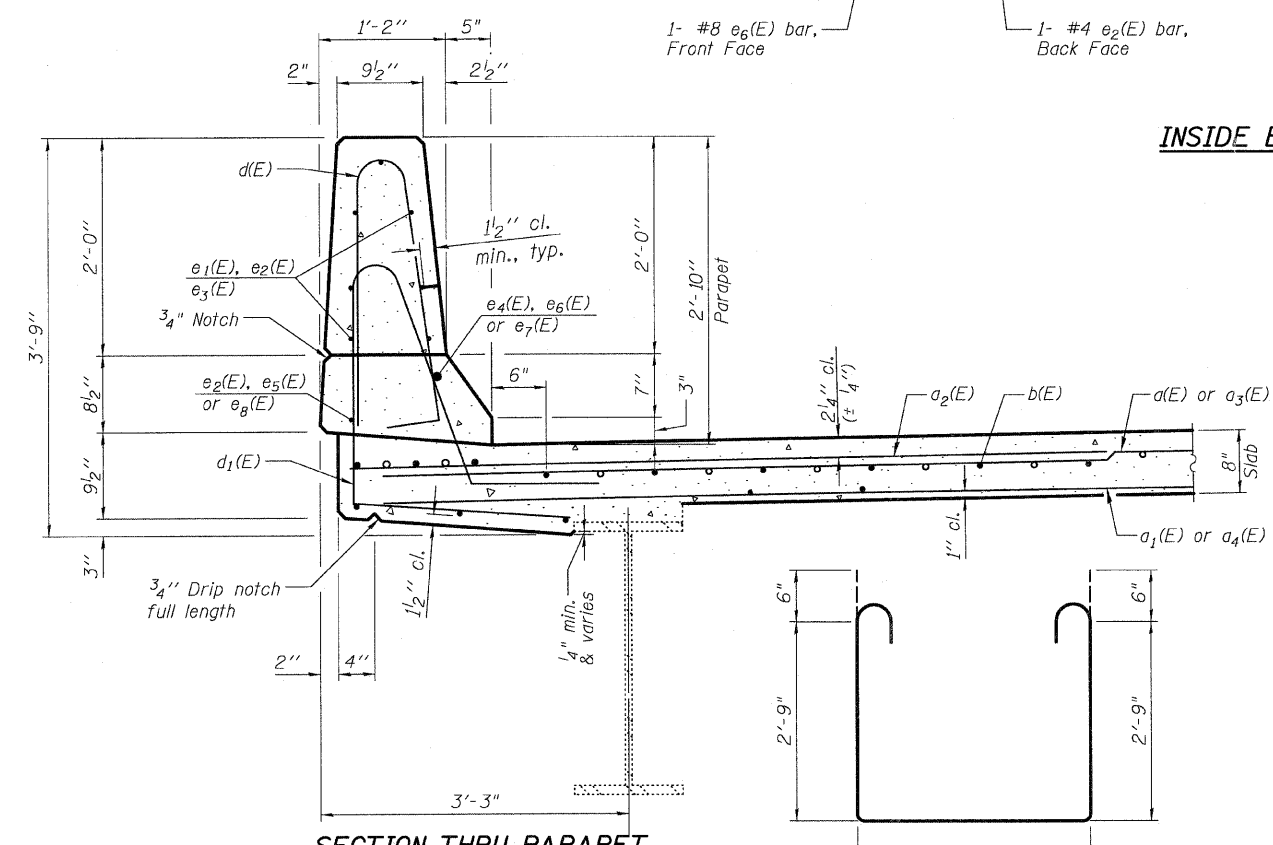
Note:
1. Bars indicated thus 1x3- #8 etc. Indicates 1 line of bars with 3 lengths per line.

INSIDE ELEVATION OF NORTH PARAPET
(South Parapet Similar)

MINIMUM BAR LAP
(Parapet)
#4 bar = 2'-0"
#8 bar = 5'-2"

SUPERSTRUCTURE BILL OF MATERIAL

| Bar | No. | Size | Length | Shape |
|----------------------------------|-----|------|---------|--------|
| d(E) | 217 | #5 | 20'-1" | — |
| a1(E) | 169 | #5 | 19'-9" | — |
| a2(E) | 218 | #6 | 6'-6" | — |
| a3(E) | 217 | #5 | 23'-4" | — |
| a4(E) | 169 | #5 | 23'-3" | — |
| b(E) | 230 | #5 | 27'-10" | — |
| b1(E) | 86 | #6 | 27'-5" | — |
| b2(E) | 252 | #5 | 23'-8" | — |
| d(E) | 276 | #5 | 5'-7" | ┌ |
| d1(E) | 276 | #5 | 7'-8" | └ |
| e1(E) | 56 | #4 | 15'-2" | — |
| e2(E) | 64 | #4 | 6'-0" | — |
| e3(E) | 28 | #4 | 19'-2" | — |
| e4(E) | 4 | #8 | 30'-8" | — |
| e5(E) | 4 | #4 | 30'-8" | — |
| e6(E) | 8 | #8 | 6'-0" | — |
| e7(E) | 2 | #8 | 38'-8" | — |
| e8(E) | 4 | #4 | 20'-5" | — |
| m(E) | 16 | #6 | 19'-0" | — |
| m1(E) | 16 | #6 | 23'-6" | — |
| m2(E) | 12 | #6 | 8'-3" | — |
| m3(E) | 12 | #6 | 10'-4" | — |
| m4(E) | 8 | #6 | 2'-11" | — |
| m5(E) | 16 | #6 | 7'-0" | — |
| m6(E) | 4 | #6 | 2'-4" | — |
| m7(E) | 4 | #6 | 4'-6" | — |
| s(E) | 92 | #5 | 8'-7" | — |
| s1(E) | 82 | #4 | 9'-4" | ┌ |
| u(E) | 88 | #5 | 4'-6" | — |
| v(E) | 92 | #5 | 3'-9" | — |
| Reinforcement Bars, Epoxy Coated | | | Pound | 45,380 |
| Concrete Superstructure | | | Cu. Yd. | 196.4 |



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225 W. OHIO ST., FOURTH FL., CHICAGO, IL 60654
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USER NAME = TERRA
FILE NAME = D430206-011-parapet_details.dgn
PLOT SCALE =
PLOT DATE = 1/31/2012

DESIGNED - EA
CHECKED - OY
DRAWN - CM
CHECKED - JB

REVISED -
REVISED -
REVISED -
REVISED -

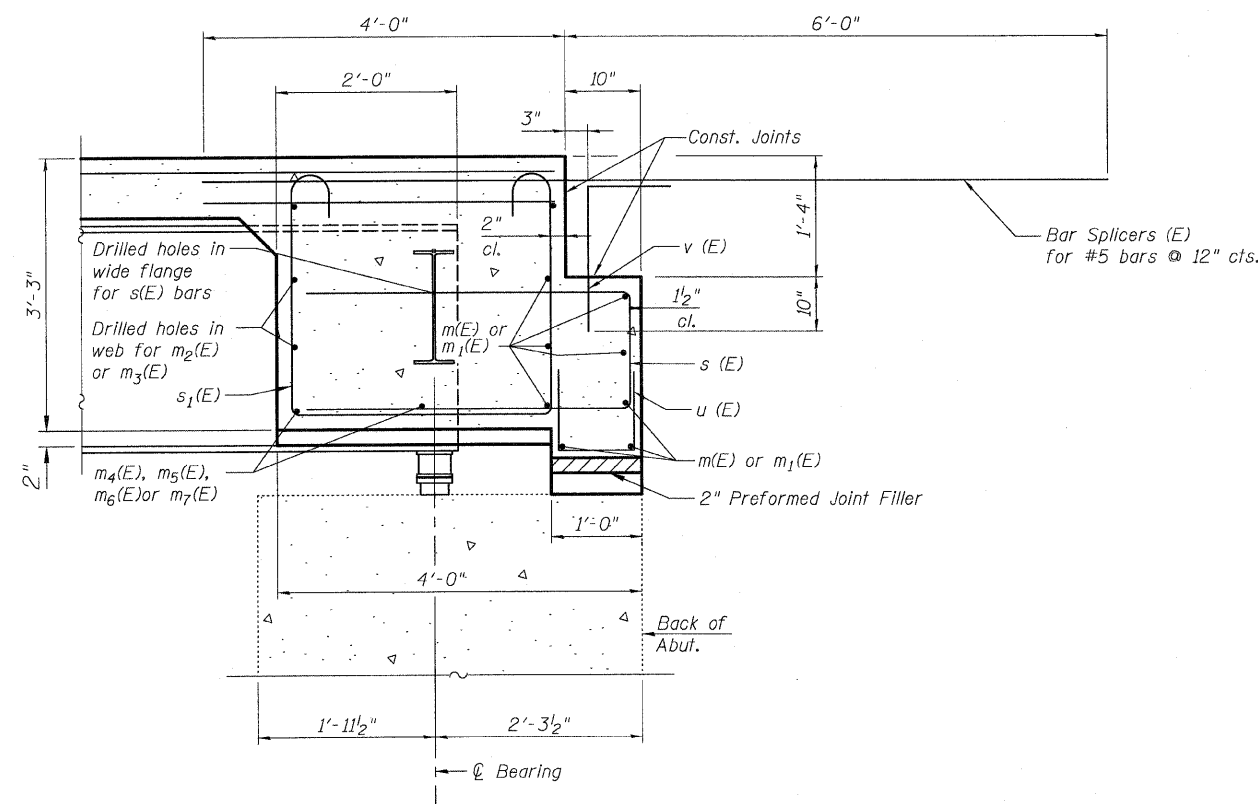
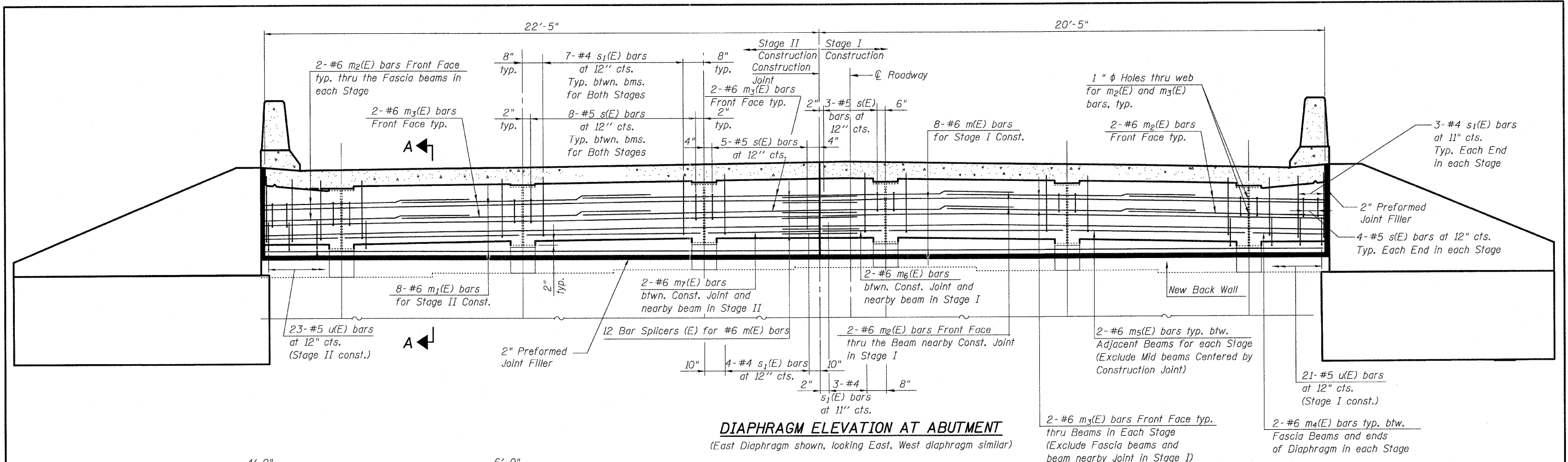
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

PARAPET DETAILS STRUCTURE NO. 043 - 0006

SHEET NO. S11 OF S21 SHEETS

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|-------------|------------------------|------------|--------------|-----------|
| 301 | (43B, 44B, 44HB, 45BD) | JO DAVIESS | 309 | 151 |

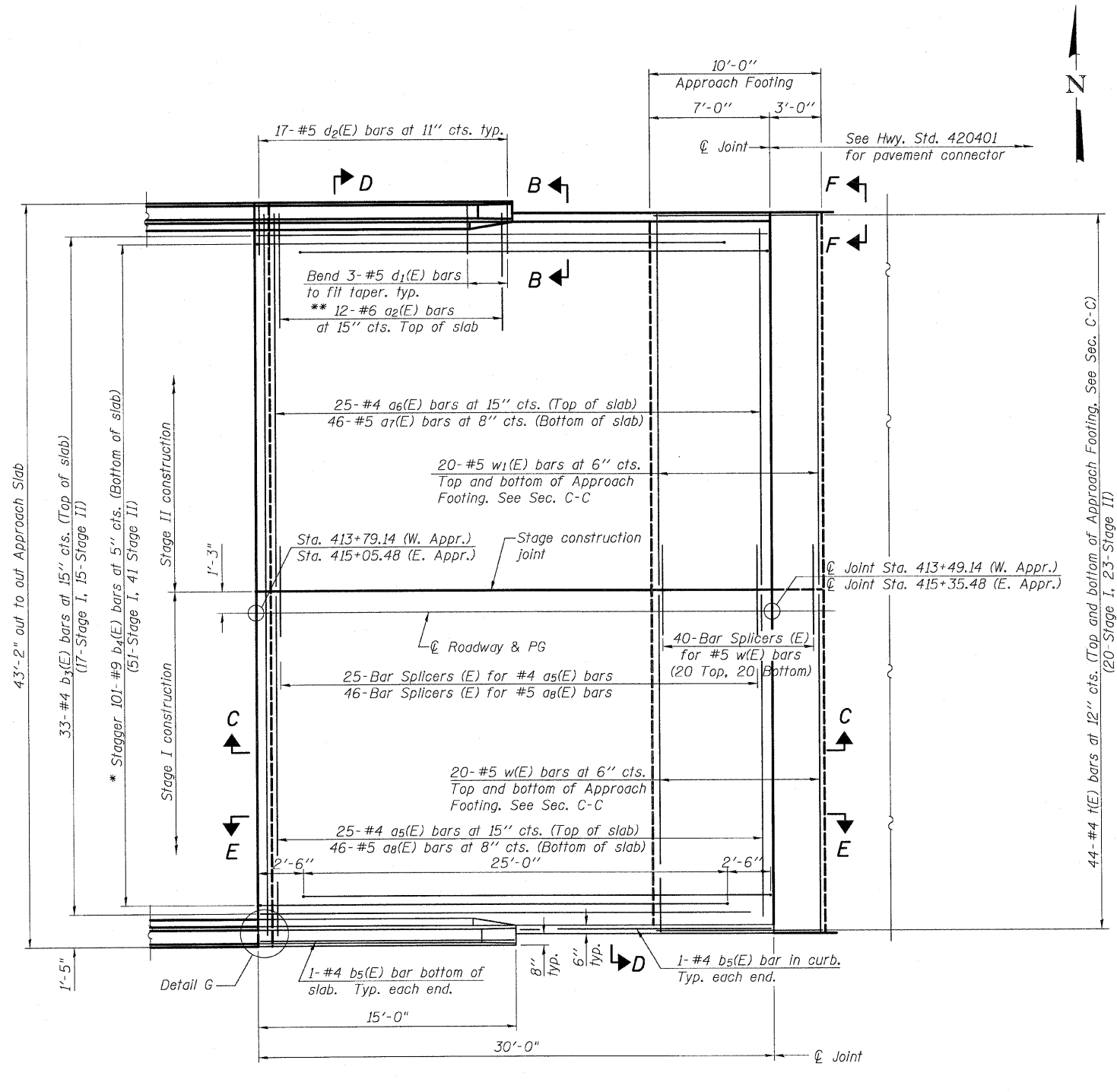
CONTRACT NO. 64C94
ILLINOIS FED. AID PROJECT



Notes:
 Reinforcement bars in diaphragm are billed with superstructure on sheet S11 of S21.
 Concrete in diaphragm is included with Concrete Superstructure on sheet S11 of S21.
 For details of bars s(E) & s1(E) see sheet S11 of S21.
 Cost of field drilling of holes in the end diaphragm shall be included in Reinforcement Bars, Epoxy Coated.

MIN. BAR LAP
 #6 bar = 3'-0"

| | | | | | | | | | | |
|-------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------------|-----------|-----------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------|------------------------|------------|--------------|-----------|
| 225 W. OHIO ST., FOURTH FL. CHICAGO, IL 60604 W(312)467-0123 F(312)467-0226 WWW.TERRAENGINEERING.COM | USER NAME = TERRA | DESIGNED - EA | REVISED - | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | SEMI-INTEGRAL ABUTMENT DIAPHRAGM DETAILS STRUCTURE NO. 043 - 0006 | F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| | FILE NAME = 0430005-012-Diaphragm.dgn | CHECKED - OY | REVISED - | | | 301 | (43B, 44B, 44HB, 45B)D | JO DAVIESS | 309 | 152 |
| | PLOT SCALE = | DRAWN - CM | REVISED - | | | CONTRACT NO. 64C94 | | | | |
| | PLOT DATE = 1/31/2012 | CHECKED - JB | REVISED - | | | ILLINOIS FED. AID PROJECT | | | | |
| | SHEET NO. S12 OF S21 SHEETS | | | | | | | | | |

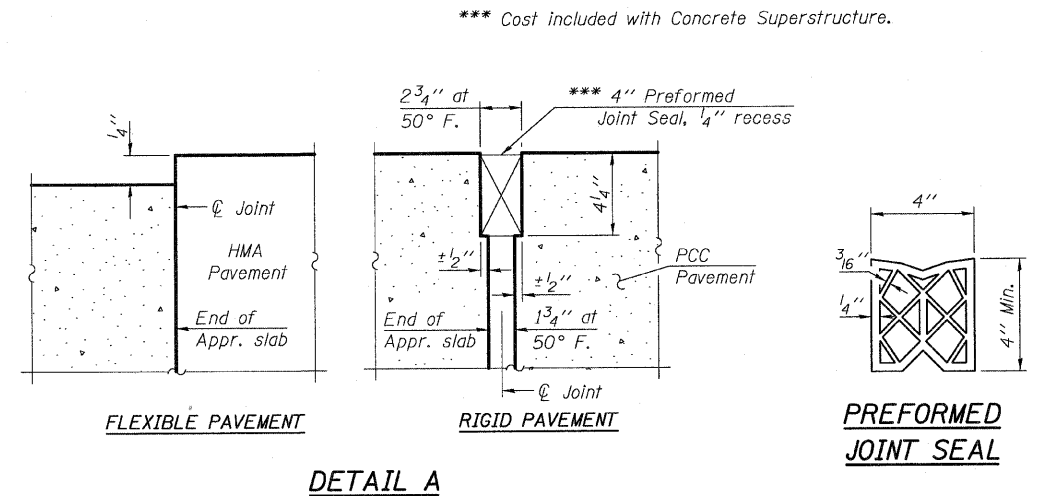


PLAN

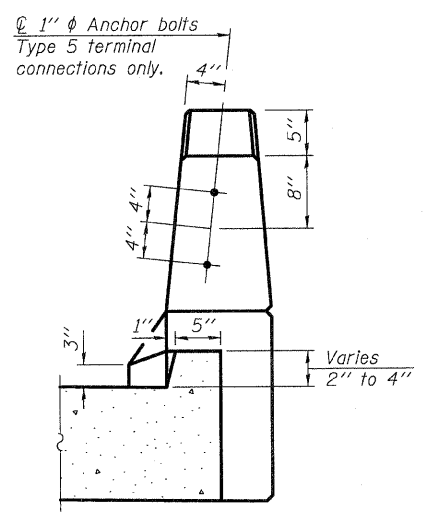
(East approach shown)

- * Tilt #9 b4(E) bars as required to maintain clearance.
- ** Space between a5(E) or a6(E) bars, typ. ea. parapet.

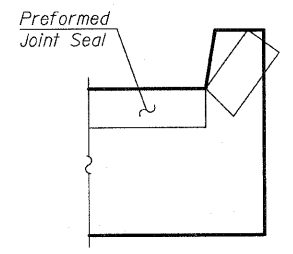
Note:
1. See sheet S14 of S21 for Sections C-C & D-D and View E-E.



DETAIL A

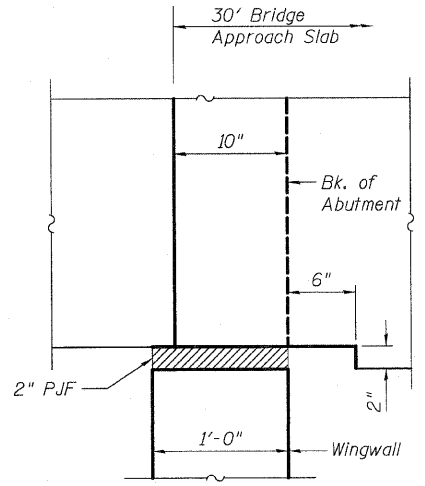


VIEW B-B



VIEW F-F

Angle Preformed Joint Seal at 45° at curbs when req'd for drainage.



DETAIL G

(Parapet not included)

(Sheet 1 of 2)



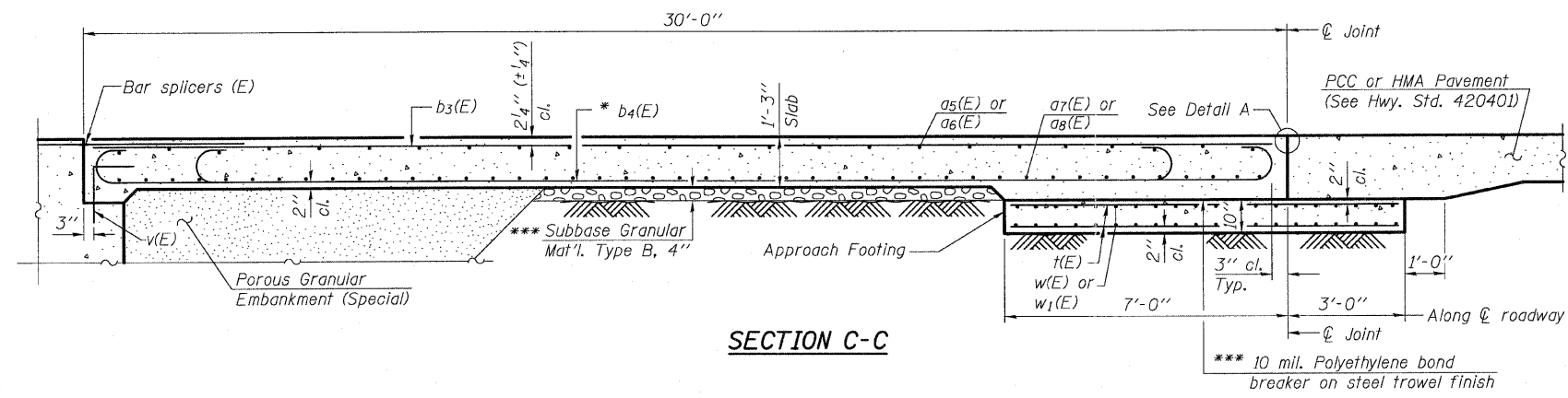
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| USER NAME = | TERRA | DESIGNED - | EA | REVISED - | |
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| PLOT SCALE = | | DRAWN - | CM | REVISED - | |
| PLOT DATE = | 1/31/2012 | CHECKED - | JB | REVISED - | |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 043 - 0006

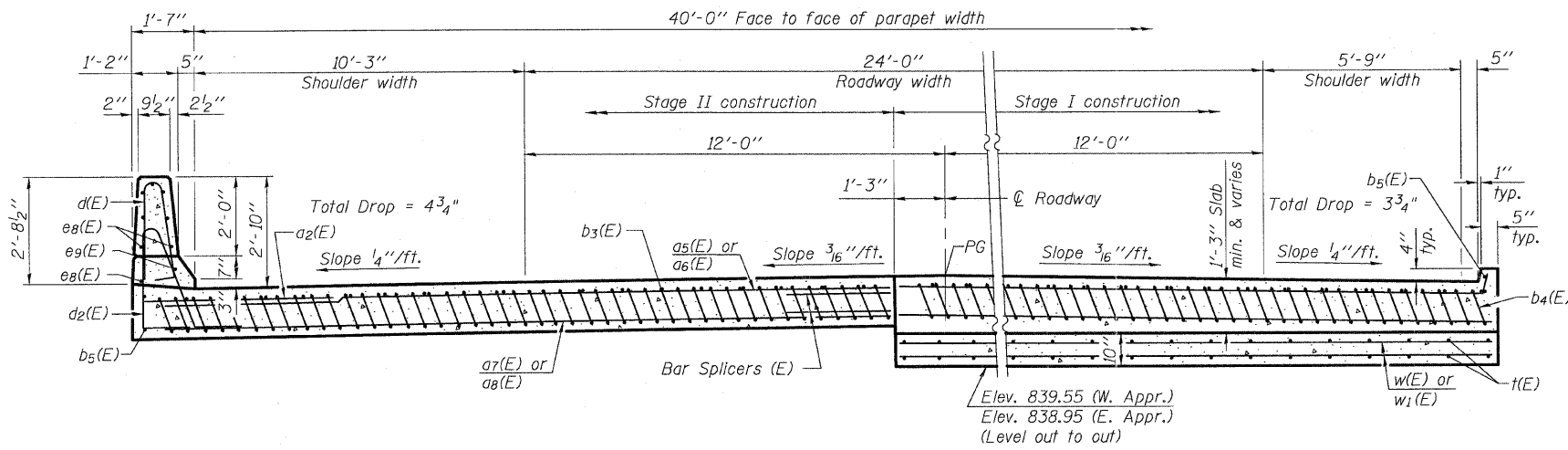
SHEET NO. S13 OF S21 SHEETS

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|------------------------|------------|--------------------|-----------|
| 301 | (43B, 44B, 44HB, 45B)D | JO DAVIESS | 309 | 153 |
| | | | CONTRACT NO. 64C94 | |
| ILLINOIS FED. AID PROJECT | | | | |



SECTION C-C

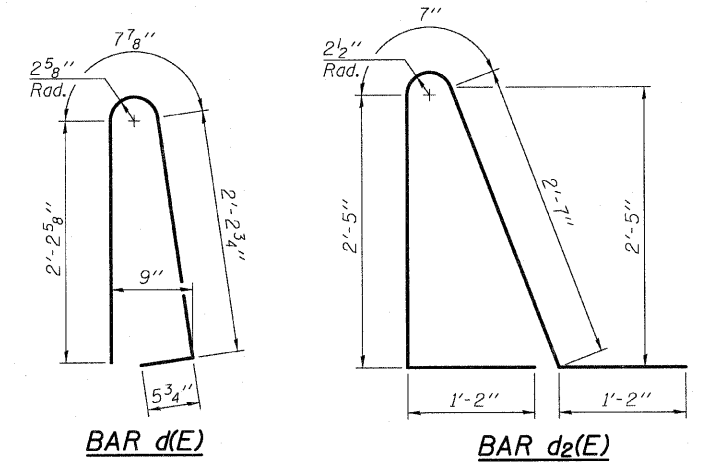
Notes:
 See sheet S13 of S21 for Detail A and View B-B.
 Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
 Approach footing concrete shall be paid for as Concrete Structures.
 Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
 For v(E) bar details, see sheet S11 of S21.
 The approach footing maximum applied service bearing pressure (Q_{max}) = 2.0 ksf.
 For bar splicer details, see sheet S21 of S21.
 Cost of excavation for approach footing included with Concrete Structures.
 For Porous Granular Embankment (Special) and drainage treatment details, see sheet S02 of S21.



NEAR ABUTMENT

SECTION D-D

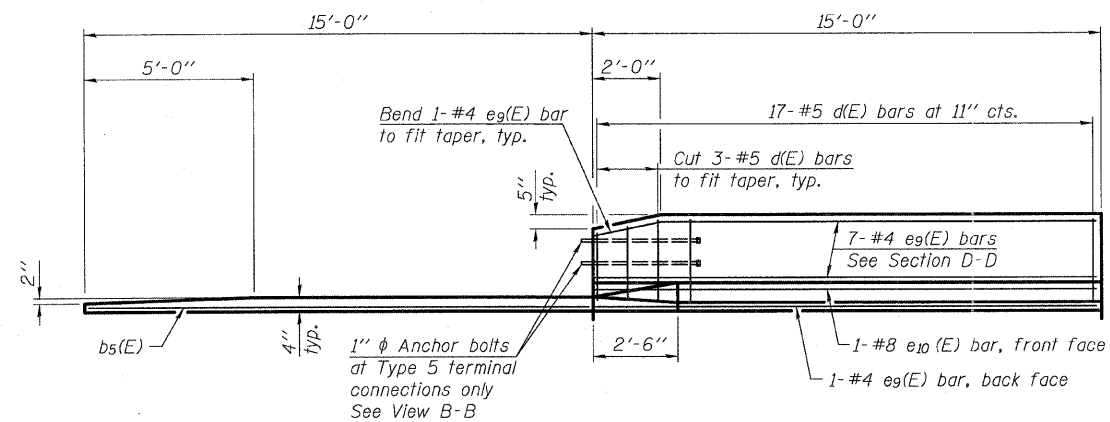
AT APPROACH FOOTING



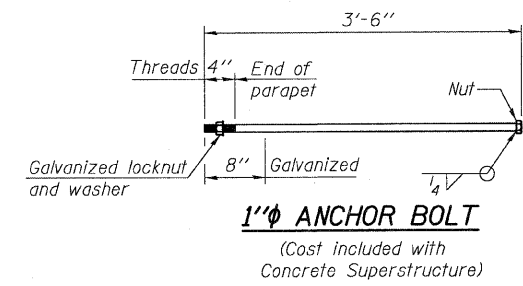
BAR d(E)

BAR d2(E)

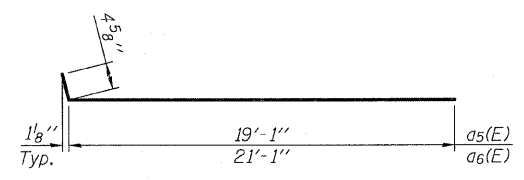
* Tilt #9 b4(E) bars as required to maintain clearance.
 *** Cost included with Concrete Superstructure.



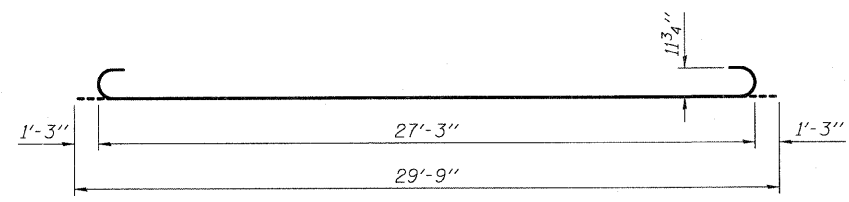
VIEW E-E



1" ANCHOR BOLT



BARS a5(E) & a6(E)



BAR b4(E)

**TWO APPROACHES
 BILL OF MATERIAL**

| Bar | No. | Size | Length | Shape |
|----------------------------------|-----|---------|--------|-------|
| a2(E) | 48 | #6 | 6'-6" | — |
| a5(E) | 50 | #4 | 19'-7" | — |
| a6(E) | 50 | #4 | 21'-7" | — |
| a7(E) | 92 | #5 | 21'-7" | — |
| a8(E) | 92 | #5 | 19'-7" | — |
| b3(E) | 72 | #4 | 29'-8" | — |
| b4(E) | 184 | #9 | 29'-9" | — |
| b5(E) | 8 | #4 | 14'-8" | — |
| d(E) | 68 | #5 | 5'-7" | U |
| d2(E) | 68 | #5 | 7'-11" | U |
| e9(E) | 32 | #4 | 14'-8" | — |
| e10(E) | 4 | #8 | 14'-8" | — |
| t(E) | 172 | #4 | 9'-8" | — |
| w(E) | 80 | #5 | 19'-7" | — |
| w1(E) | 80 | #5 | 21'-7" | — |
| Concrete Superstructure | | Cu. Yd. | 140.7 | |
| Concrete Structures | | Cu. Yd. | 27.2 | |
| Reinforcement Bars, Epoxy Coated | | Pound | 31,900 | |

(Sheet 2 of 2)



USER NAME = TERRA
 FILE NAME = D430006-014-Appr-Slab.dgn
 PLOT SCALE =
 PLOT DATE = 1/31/2012

DESIGNED - EA
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 DRAWN - CM
 CHECKED - JB

REVISED -
 REVISED -
 REVISED -
 REVISED -

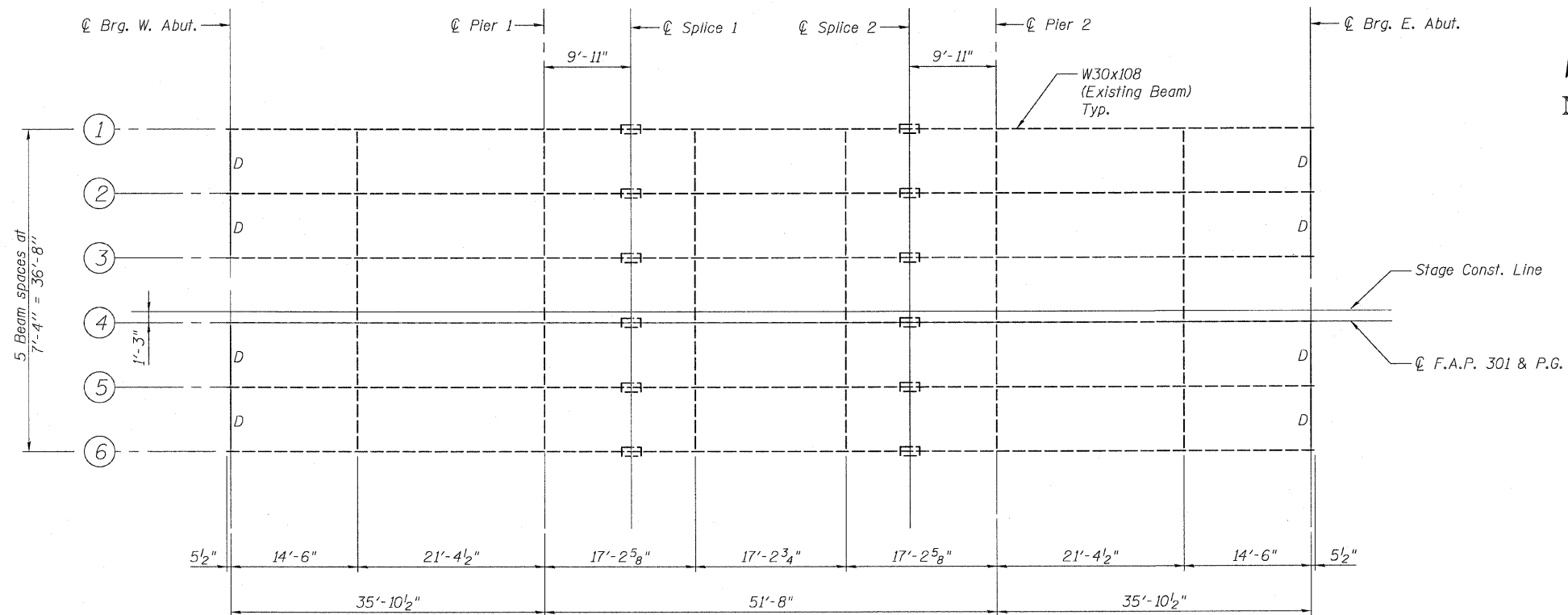
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
 STRUCTURE NO. 043 - 0006

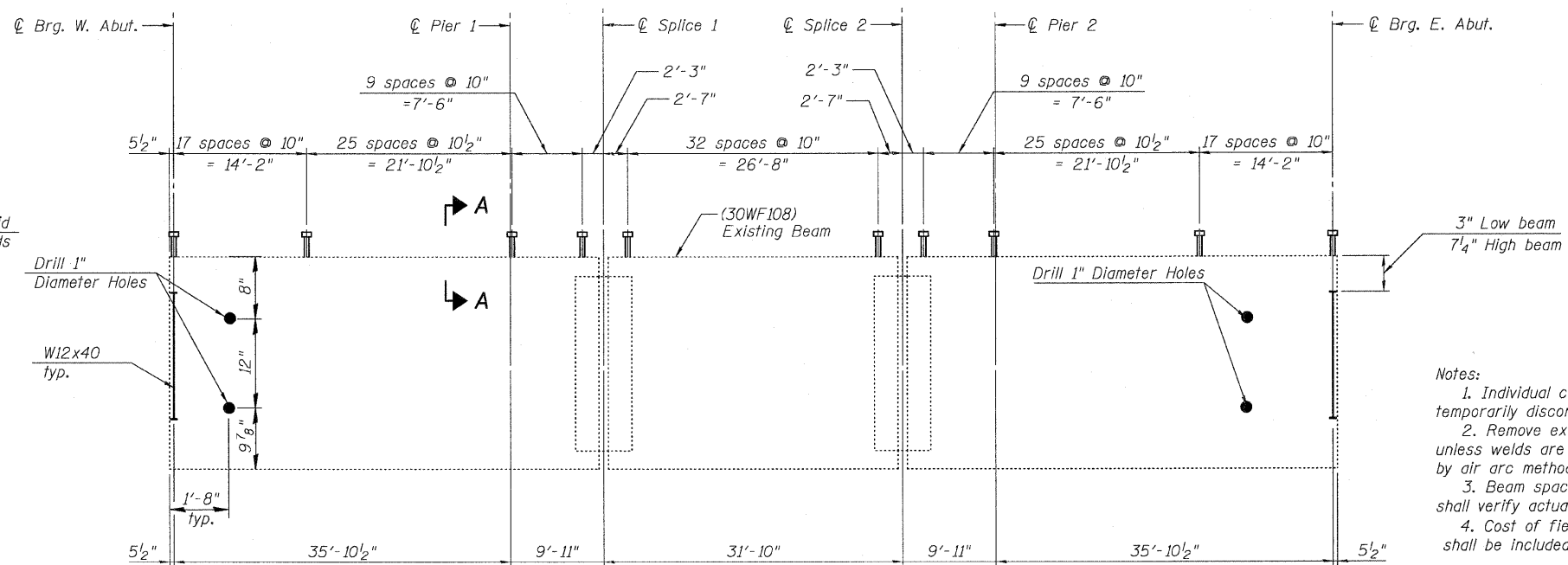
SHEET NO. S14 OF S21 SHEETS

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|-------------|------------------------|------------|--------------|-----------|
| 301 | (43B, 44B, 44HB, 45B)D | JO DAVIESS | 309 | 154 |

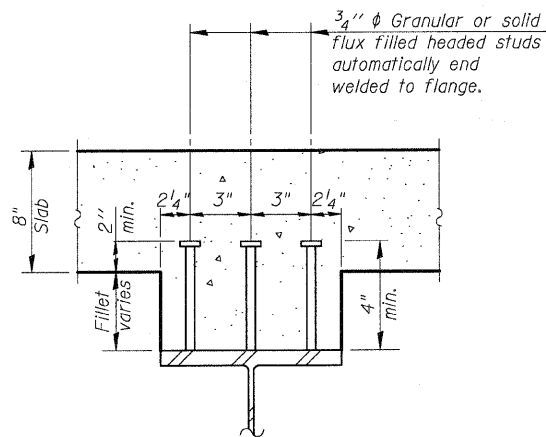
CONTRACT NO. 64C94
 ILLINOIS FED. AID PROJECT



BEAM LAYOUT PLAN



BEAM ELEVATION



SECTION A-A

- Notes:
- Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
 - Remove existing end diaphragms and angles by cold methods unless welds are encountered. If welding was used, remove weld by air arc method and grind web of stringers smooth.
 - Beam spacing is as shown on design drawings. Contractor shall verify actual spacing before fabricating end diaphragms.
 - Cost of field drilling of holes in the end diaphragm shall be included in Furnishing and Erecting Structural Steel.

BILL OF MATERIAL

| Item | Unit | Total |
|-----------------------|------|-------|
| Stud Shear Connectors | Each | 2466 |

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USER NAME = TERRA
FILE NAME = 0430806-015-steel_details.dgn
PLOT SCALE =
PLOT DATE = 1/31/2012

DESIGNED - EA
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DRAWN - CM
CHECKED - JB

REVISED -
REVISED -
REVISED -
REVISED -

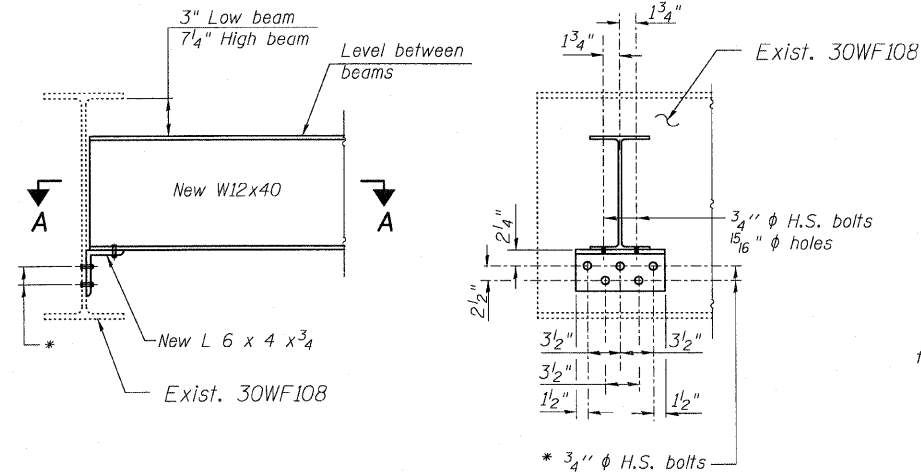
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL DETAILS
STRUCTURE NO. 043 - 0006

SHEET NO. S15 OF S21 SHEETS

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|------------------------|------------|--------------|-----------|
| 301 | (43B, 44B, 44HB, 45BD) | JO DAVIESS | 309 | 155 |
| CONTRACT NO. 64C94 | | | | |
| ILLINOIS FED. AID PROJECT | | | | |

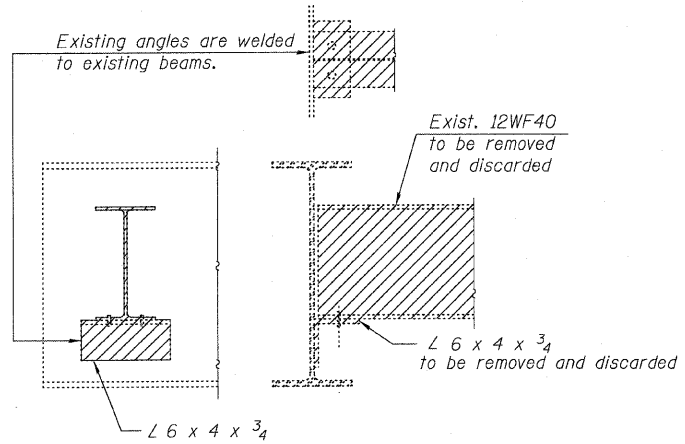
SECTION A-A



* Field drill 1 5/16" ϕ holes in new angle 6 x 4 x 3/4 and connect with 3/4" ϕ H.S. bolts. Use holes in new angle as a template to field drill holes in existing beam. Cost included with Furnishing and Erecting Structural Steel.

NEW END DIAPHRAGM "D"
(Total 8 Diaphragms)

Notes:
Two hardened washers required for each set of oversized holes.
Install 8 end diaphragms at locations marked D on sheet S15 of S21.



END DIAPHRAGM "D" REMOVAL DETAIL
Remove 10 Diaphragms and 20 Connection Angles

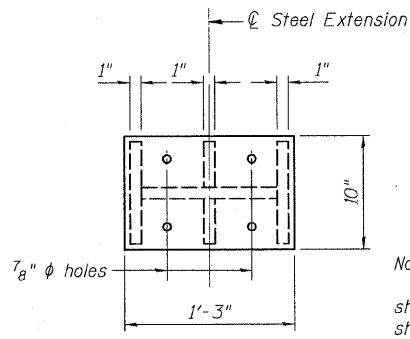
- I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) due to non-composite dead loads (in.⁴ and in.³).
- $I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total and Overload) due to short-term composite live loads (in.⁴ and in.³).
- $I_c(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total and Overload) due to long-term composite (superimposed) dead loads (in.⁴ and in.³).
- $I_c(cr), S_c(cr)$: Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing f_s (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite dead loads (in.⁴ and in.³).
- ℓ : Un-factored non-composite dead loads (kips/ft.).
- $M\ell$: Un-factored moment due to non-composite dead load (kip-ft.).
- $s\ell$: Un-factored long-term composite (superimposed) dead load (kips/ft.).
- $M_s\ell$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
- $M\ell$: Un-factored live load moment (kip-ft.).
- M_I : Un-factored moment due to impact (kip-ft.).
- M_a : Factored design moment (kip-ft.).
 $1.3[M\ell + M_s\ell + \frac{5}{8}(M\ell + M_I)]$
- M_u : Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).
- f_s (Overload): Sum of stresses as computed from the moments below (ksi).
 $M\ell + M_s\ell + \frac{5}{8}(M\ell + M_I)$
- f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
 $1.3[M\ell + M_s\ell + \frac{5}{8}(M\ell + M_I)]$
- VR : Maximum ℓ + impact shear range within the composite portion of the span for stud shear connector design (kips).

| INTERIOR BEAM MOMENT TABLE | | | | |
|--------------------------------|--------------------|------------------------|------------------|-----------|
| | | 0.4 Sp. 1 or 0.6 Sp. 3 | Pier 1 or Pier 2 | 0.5 Sp. 2 |
| I_s | (in ⁴) | 4,470 | 4,470 | 4,470 |
| $I_c(n)$ | (in ⁴) | 12,309 | - | 12,309 |
| $I_c(3n)$ | (in ⁴) | 9,316 | - | 9,316 |
| $I(cr)$ | (in ⁴) | - | 6,471 | - |
| S_s | (in ³) | 299 | 299 | 299 |
| $S_c(n)$ | (in ³) | 442 | - | 442 |
| $S_c(3n)$ | (in ³) | 403 | - | 403 |
| $S(cr)$ | (in ³) | - | 354 | - |
| ℓ | (k/ft) | 0.85 | 0.85 | 0.85 |
| $M\ell$ | (k) | 65.7 | 181.3 | 117.0 |
| $s\ell$ | (k/ft) | 0.34 | 0.34 | 0.34 |
| $M_s\ell$ | (k) | 24.7 | 68.5 | 44.1 |
| $M\ell$ | (k) | 213.8 | 199.0 | 258.7 |
| M_I | (k) | 64.2 | 59.0 | 77.7 |
| $\frac{5}{8}[M\ell + M_I]$ | (k) | 463.3 | 430.0 | 560.7 |
| M_a | (k) | 719.9 | 883.7 | 938.3 |
| M_u | (k) | 1802 | - | 1802 |
| $f_s\ell$ (non-comp) | (ksi) | 2.64 | 7.28 | 4.70 |
| $f_s\ell$ (comp) | (ksi) | 0.67 | 2.32 | 1.20 |
| $f_s \frac{5}{8}[M\ell + M_I]$ | (ksi) | 12.58 | 14.58 | 15.22 |
| f_s (Overload) | (ksi) | 15.89 | 24.17 | 21.11 |
| f_s (Total) | (ksi) | - | 31.4 | - |
| VR | (k) | 52.6 | 58.5 | 44.5 |

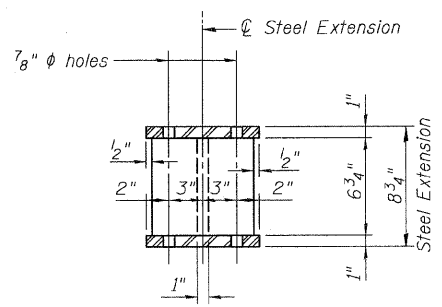
** Compact Section

| INTERIOR BEAM REACTION TABLE | | | |
|------------------------------|-------|---------|-------|
| | Abut. | Pier | |
| $R\ell$ | (k) | 48.4*** | 60.8 |
| $R\ell$ | (k) | 36.1 | 46.2 |
| R_I | (k) | 10.8 | 13.7 |
| R_{Total} | (k) | 84.6 | 120.7 |

*** Includes total reaction from approach pavement divided by 6 girders.

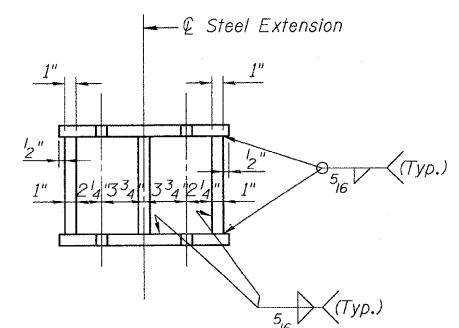


PLAN STEEL EXTENSION



ELEVATION STEEL EXTENSION: END VIEW

Fabricated from 1" Plate - Cost included with Fabrication and Erection of Structural Steel



ELEVATION STEEL EXTENSION

BILL OF MATERIAL

| Item | Unit | Total |
|--------------------------|-------|-------|
| Structural Steel Removal | Pound | 3730 |

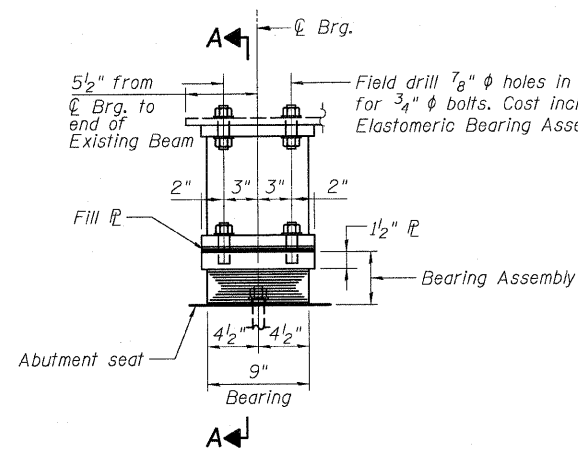


| | | |
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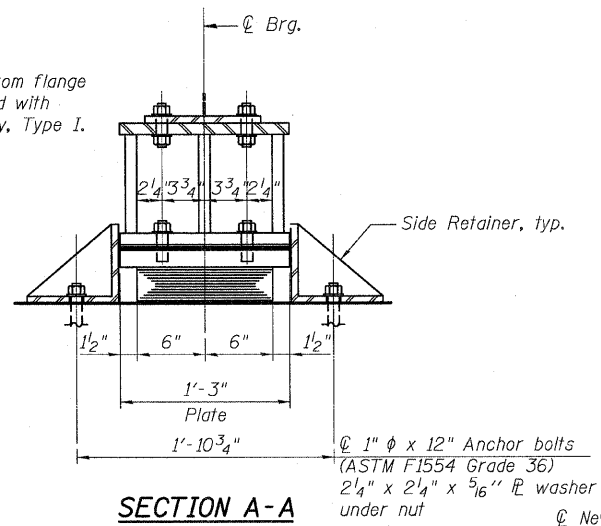
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL DETAILS
STRUCTURE NO. 043 - 0006
SHEET NO. S16 OF S21 SHEETS

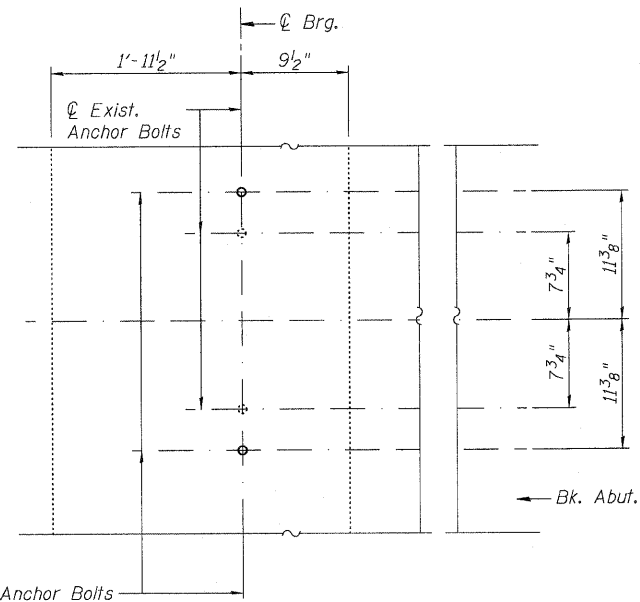
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| F.A.P. RTE. 301 | SECTION (43B, 44B, 44HB, 45B)D | COUNTY JO DAVIESS | TOTAL SHEETS 309 | SHEET NO. 156 |
| ILLINOIS FED. AID PROJECT | | | CONTRACT NO. 64C94 | |



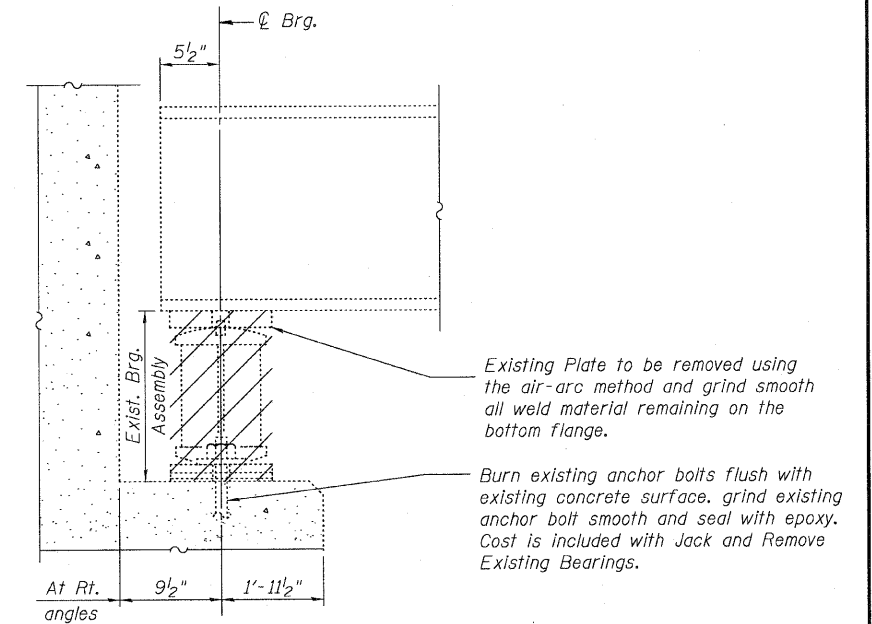
ELEVATION AT ABUT.



SECTION A-A



A.B. LOCATION PLAN



JACK AND REMOVE EXISTING BEARINGS PROCEDURE

1. The Contractor shall submit for approval by the Engineer plans for jacking prior to commencing any work at the bearings.
2. Jacking and removing existing bearings shall be done after existing deck removal is completed and prior to pouring of new deck.
3. The Maximum Dead Load Reaction with deck removed (per bearing) at each abutment is 8 kips. Minimum jack capacity is 16 kips (8 ton).
4. The new bearings shall be in place and the jacks shall be lowered prior to forming and pouring the new deck.

Notes:
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified.

The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Anchor bolts for side retainers may be installed in holes drilled before or after members are in place.

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.

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.

Jack existing stringers, remove existing bearings, drill holes in stringers to match holes in steel extensions, shim as required, and install complete bearing assembly.

Shims to be included in the cost of Elastomeric Bearing Assembly, Type I.

BILL OF MATERIAL

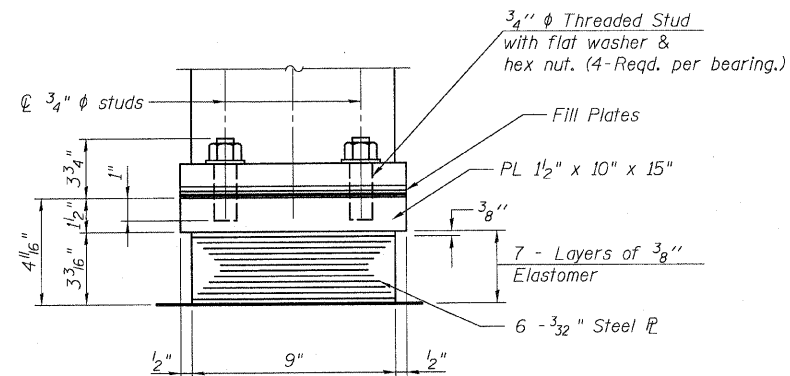
| Item | Unit | Total |
|------------------------------------------|-------|-------|
| Elastomeric Bearing Assembly, Type I | Each | 12 |
| Anchor Bolts, 1" | Each | 24 |
| Jack and Remove Existing Bearings | Each | 12 |
| Furnishing and Erecting Structural Steel | Pound | 4500 |

*** ESTIMATED FILL PLATE THICKNESSES**

| Beam | E. Abut. | W. Abut. |
|------|----------|----------|
| 1 | 3/4" | 1" |
| 2 | 7/8" | 3/4" |
| 3 | 1 1/8" | 7/8" |
| 4 | 1" | 1" |
| 5 | 1 1/8" | 3/4" |
| 6 | 1 1/8" | 1" |

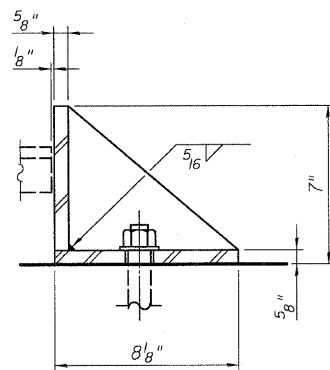
Notes:
For details of Steel Extension see Sheet S16. Steel extensions are not included in the cost of Elastomeric Bearing Assembly, Type 1.

* Before removing existing abutment bearings, the Contractor shall survey the elevations of the bottom flanges and the concrete bearing seats at the abutments and report the findings to the Engineer. The thickness of the fill plates included with the Steel Extensions has been determined from available data. Before fabricating and installing these Fill Plates, the Contractor shall verify that these fill plates will set the existing beams back at the existing elevations for the existing field conditions. Cost for Survey, Fill Plates, and required adjustments is included with cost for "Jack and Remove Existing Bearings".



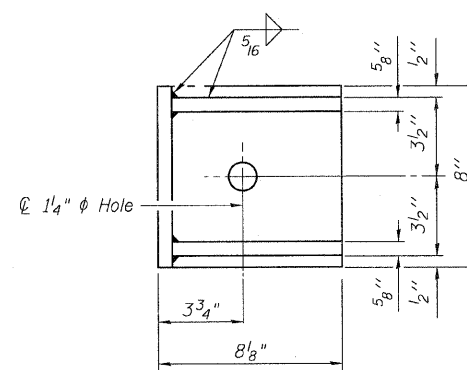
BEARING ASSEMBLY

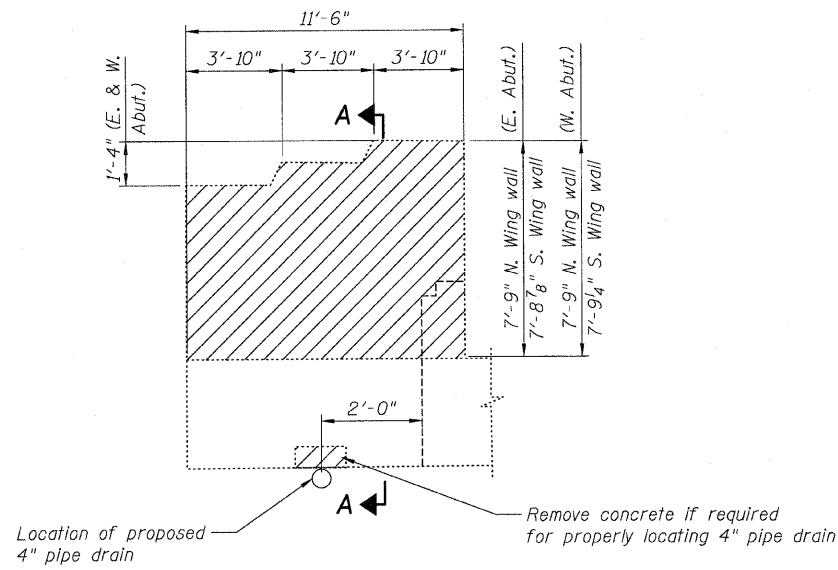
Note:
Shim plates shall not be placed under Bearing Assembly.



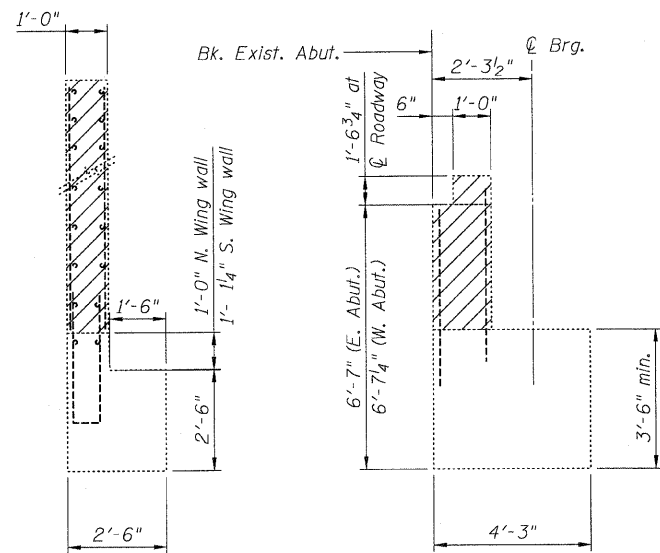
SIDE RETAINER

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



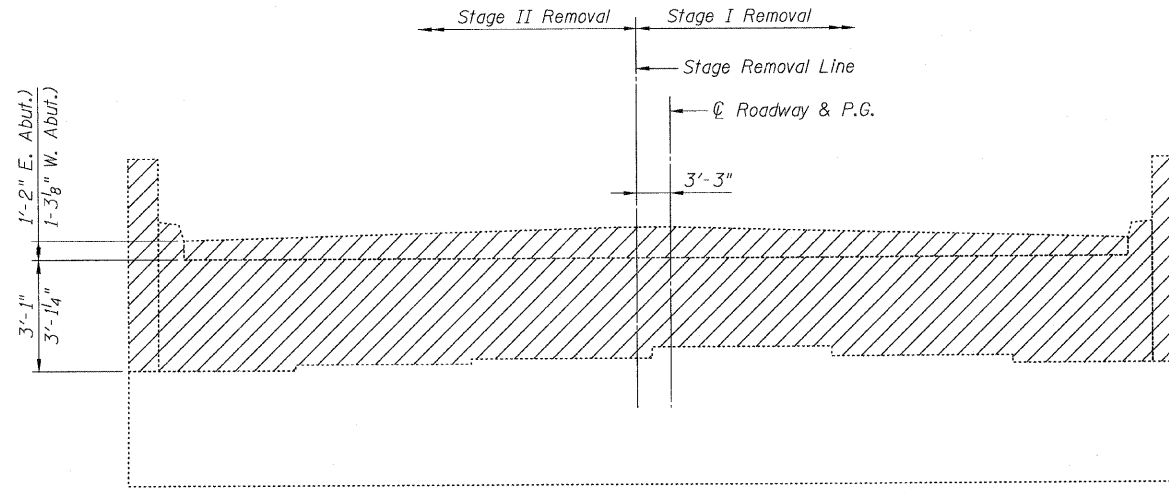


WING WALL ELEVATION



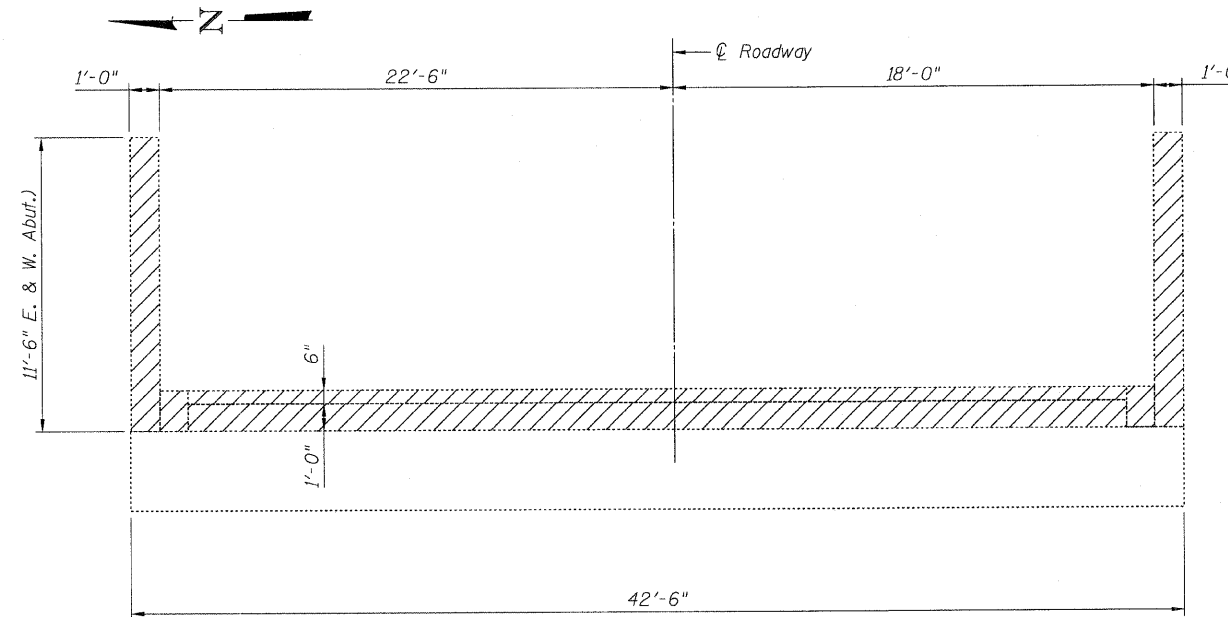
SECTION A-A

SEC. THRU ABUTMENT



ELEVATION OF EAST ABUTMENT
(Looking East, West Abutment Similar)

Notes:
Hatched areas indicate Concrete Removal. Existing reinforcement extending into removed area shall be cleaned, straightened, and incorporated into new construction. Cost included with Concrete Removal.
Remove existing backwall and wingwalls down to elevation of bridge seats.
In addition remove wingwall as required for passage of 4" perforated pipe drain.



PLAN

EAST & WEST ABUTMENTS BILL OF MATERIAL

| BEARING SEAT ELEVATION | | | | | | |
|------------------------|--------|--------|--------|--------|--------|--------|
| | BEAM 1 | BEAM 2 | BEAM 3 | BEAM 4 | BEAM 5 | BEAM 6 |
| ℄ Brg. West Abutment | 835.71 | 835.89 | 835.97 | 836.06 | 835.96 | 835.82 |
| ℄ Brg. East Abutment | 835.11 | 835.23 | 835.33 | 835.42 | 835.30 | 835.19 |

| Item | Unit | Total |
|------------------|---------|-------|
| Concrete Removal | Cu. Yd. | 32.4 |



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FILE NAME = D432025-018-E&W_Abut_removal.dgn
PLOT SCALE =
PLOT DATE = 1/31/2012

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DRAWN - CM
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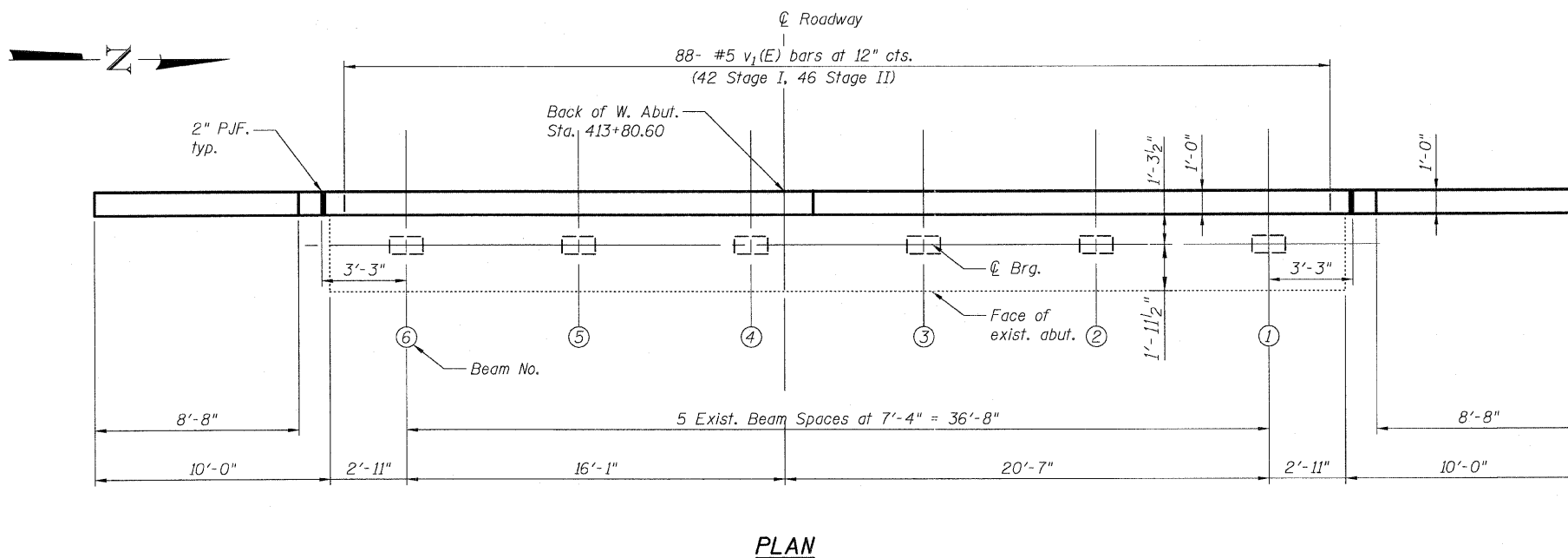
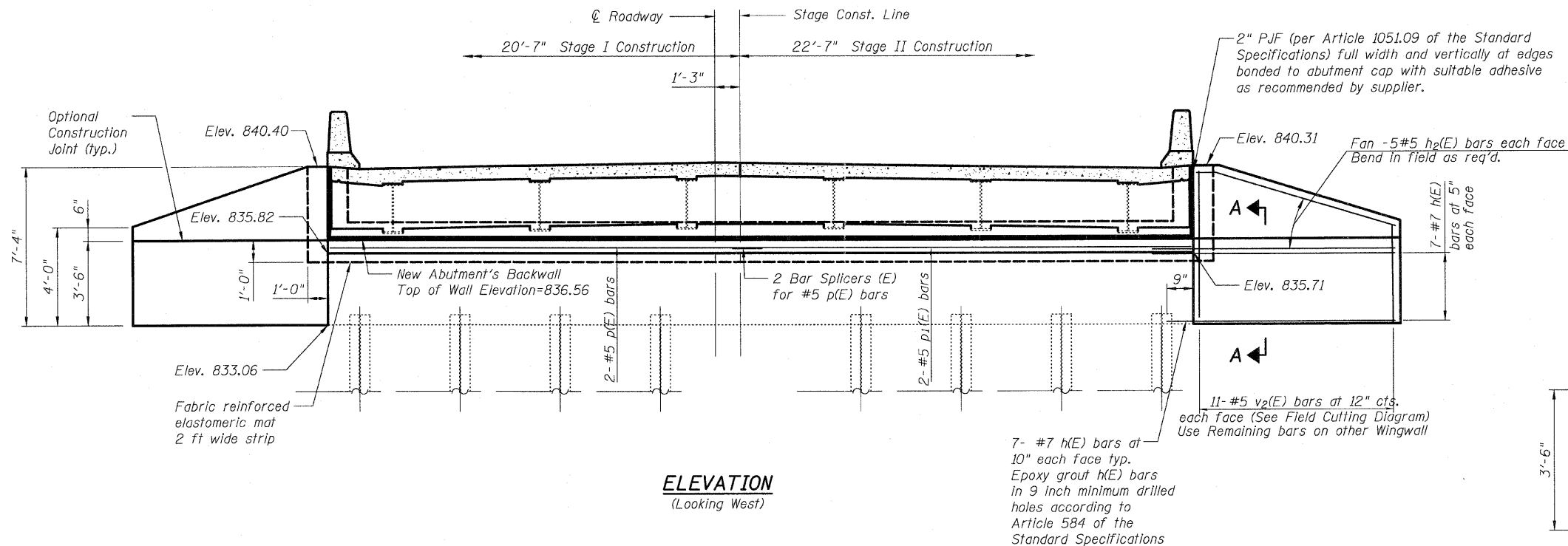
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**EAST AND WEST ABUTMENTS CONCRETE REMOVAL
STRUCTURE NO. 043 - 0006**

SHEET NO. S18 OF S21 SHEETS

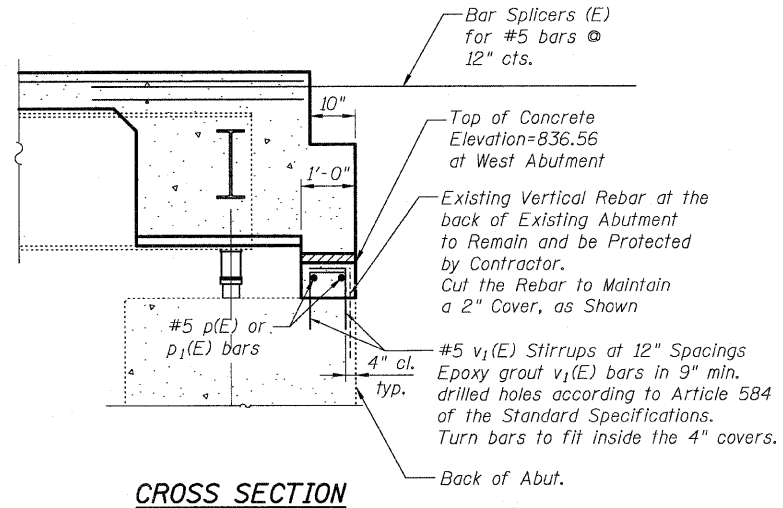
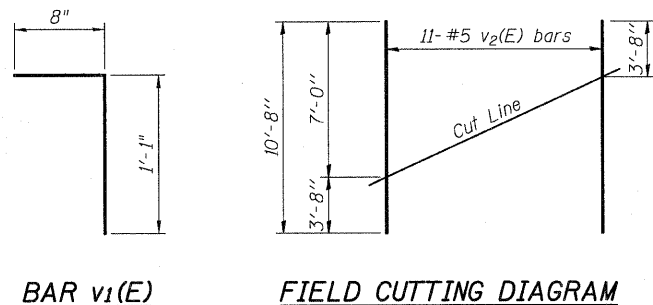
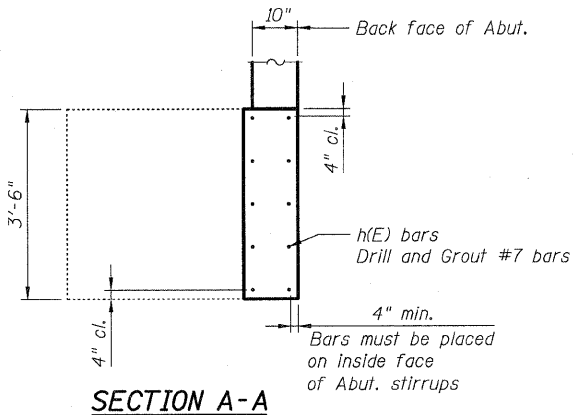
| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|-------------|------------------------|------------|--------------|-----------|
| 301 | (43B, 44B, 44HB, 45BD) | JO DAVIESS | 309 | 158 |

CONTRACT NO. 64C94
ILLINOIS FED. AID PROJECT



BILL OF MATERIAL

| Bar | No. | Size | Length | Shape |
|----------------------------------|-----|------|---------|-------|
| h(E) | 28 | #7 | 10'-8" | |
| h2(E) | 20 | #5 | 9'-4" | |
| p(E) | 2 | #5 | 20'-5" | |
| p1(E) | 2 | #5 | 22'-5" | |
| v1(E) | 88 | #5 | 1'-9" | |
| v2(E) | 22 | #5 | 10'-8" | |
| Structure Excavation | | | Cu. Yd. | 87 |
| Concrete Structures | | | Cu. Yd. | 5.2 |
| Reinforcement Bars, Epoxy Coated | | | Pound | 1300 |



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| | | |
|-------------------------------------------|---------------|-----------|
| USER NAME = TERRA | DESIGNED - EA | REVISED - |
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

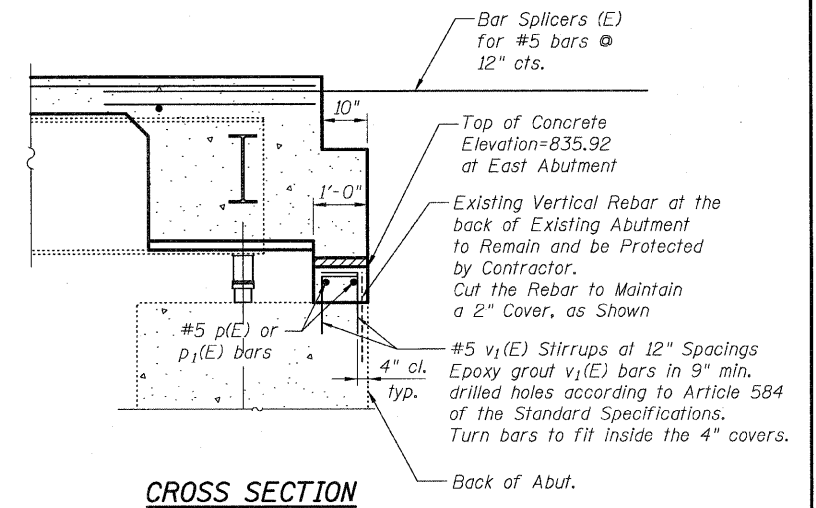
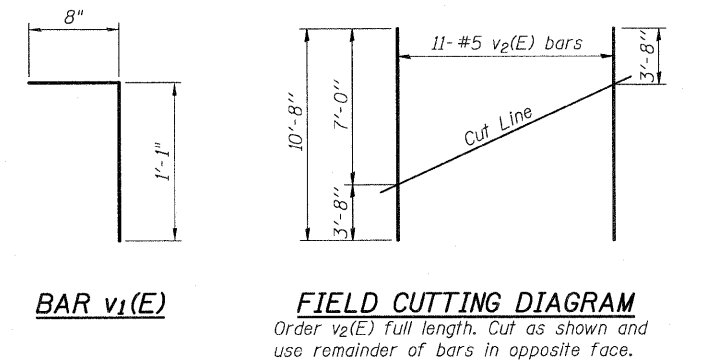
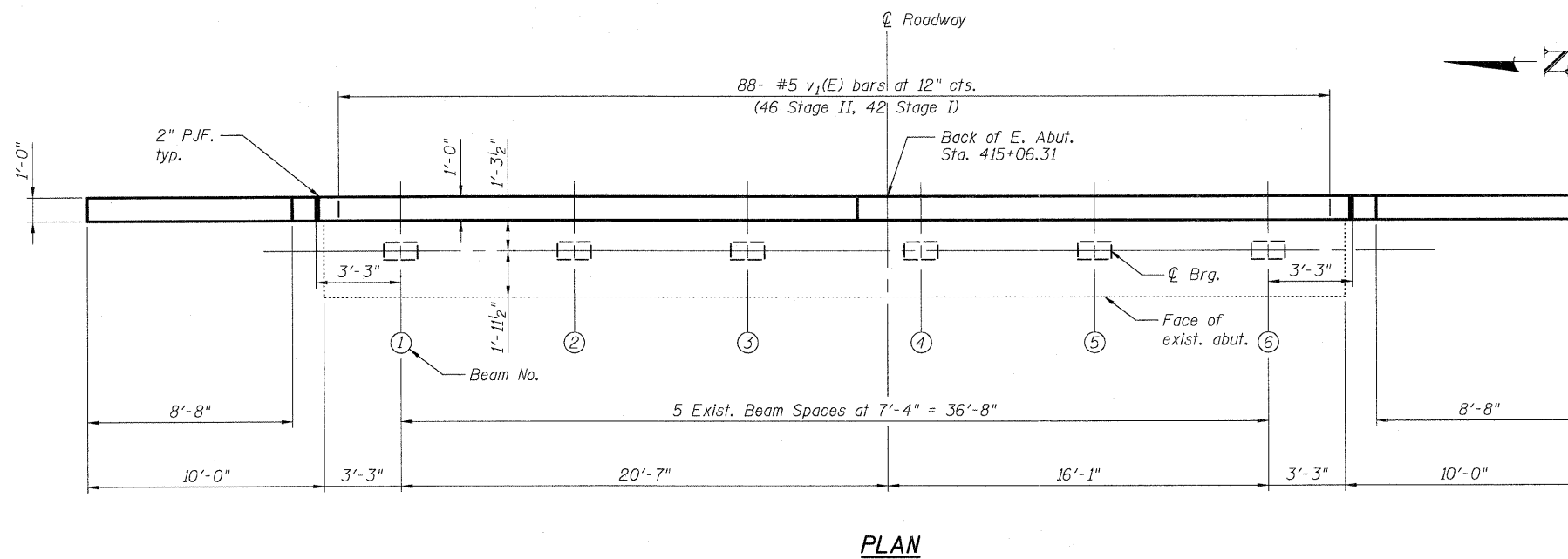
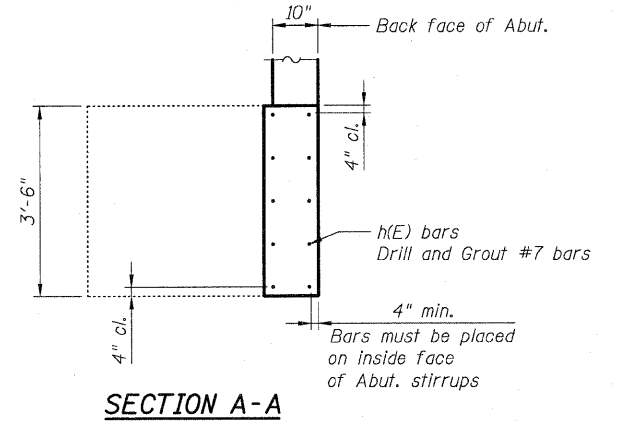
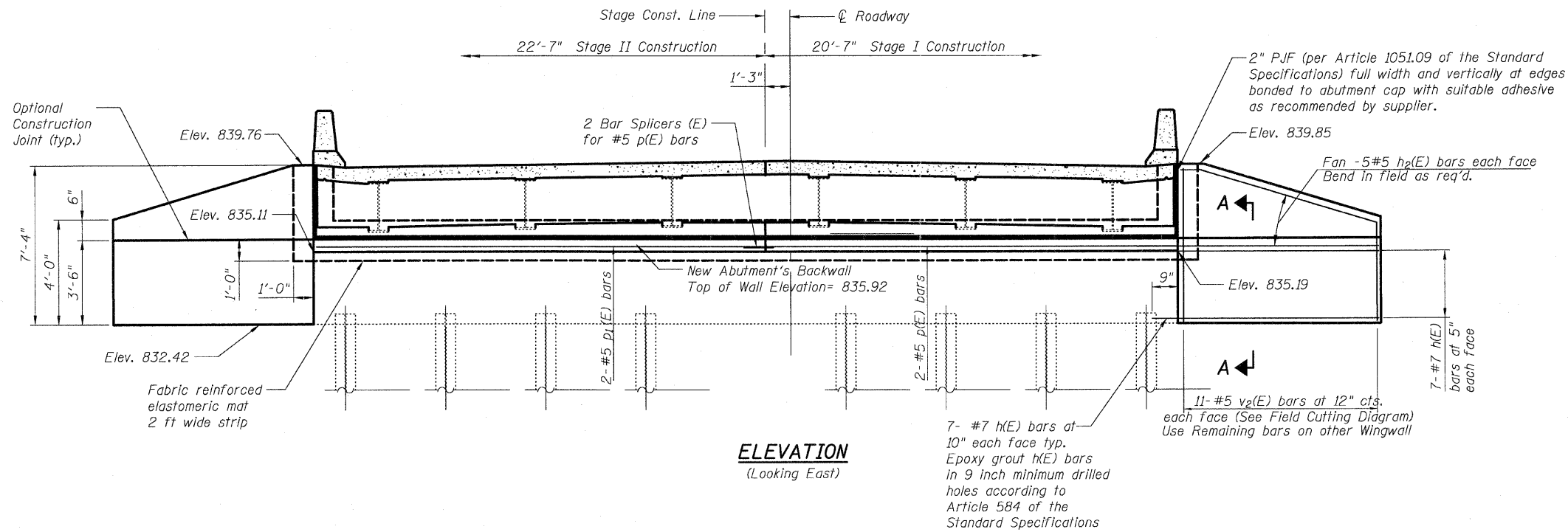
WEST ABUTMENT PLAN AND ELEVATION
STRUCTURE NO. 043 - 0006

SHEET NO. S19 OF S21 SHEETS

| | | | | |
|--------------------|--------------------------------|-------------------|---------------------------|---------------|
| F.A.P. RTE. 301 | SECTION (43B, 44B, 44HB, 45BD) | COUNTY JO DAVIESS | TOTAL SHEETS 309 | SHEET NO. 159 |
| CONTRACT NO. 64C94 | | | ILLINOIS FED. AID PROJECT | |

BILL OF MATERIAL

| Bar | No. | Size | Length | Shape |
|----------------------------------|-----|---------|--------|-------|
| h(E) | 28 | #7 | 10'-8" | — |
| h ₂ (E) | 20 | #5 | 9'-4" | — |
| p(E) | 2 | #5 | 20'-5" | — |
| p ₁ (E) | 2 | #5 | 22'-5" | — |
| v ₁ (E) | 88 | #5 | 1'-9" | — |
| v ₂ (E) | 22 | #5 | 10'-8" | — |
| Structure Excavation | | Cu. Yd. | | 87 |
| Concrete Structures | | Cu. Yd. | | 5.2 |
| Reinforcement Bars, Epoxy Coated | | Pound | | 1300 |



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FILE NAME = D430206-020-East_Abutment.dgn
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REVISED -
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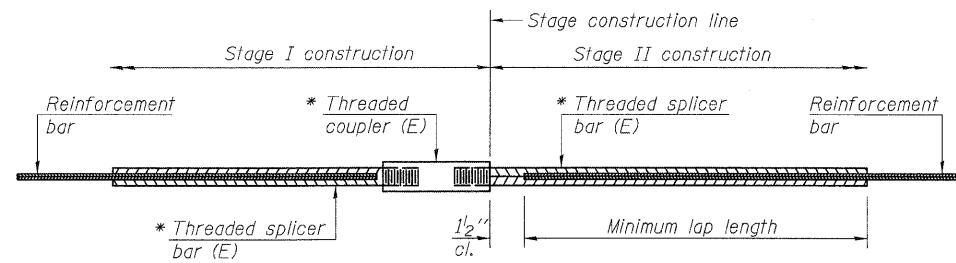
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT PLAN AND ELEVATION
STRUCTURE NO. 043 - 0006

SHEET NO. S20 OF S21 SHEETS

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|-------------|------------------------|------------|--------------|-----------|
| 301 | (43B, 44B, 44HB, 45BD) | JO DAVIESS | 309 | 160 |

CONTRACT NO. 64C94
ILLINOIS FED. AID PROJECT



STANDARD BAR SPLICER ASSEMBLY

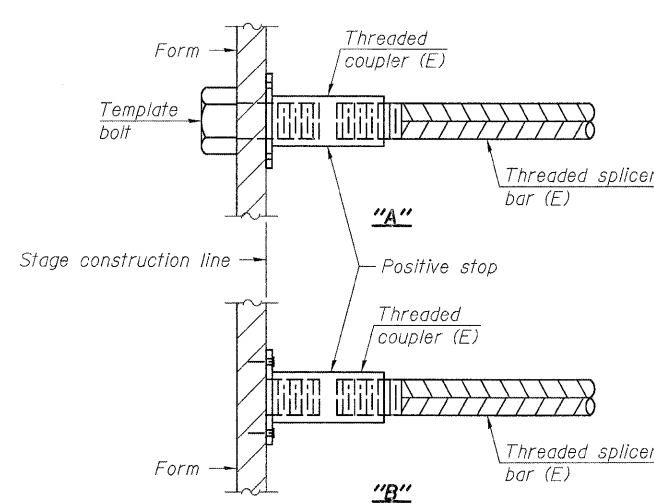
| Minimum Lap Lengths | | | | | |
|------------------------|---------|---------|---------|---------|---------|
| Bar size to be spliced | Table 1 | Table 2 | Table 3 | Table 4 | Table 5 |
| 3, 4 | 1'-5" | 1'-11" | 2'-1" | 2'-4" | 2'-3" |
| 5 | 1'-9" | 2'-5" | 2'-7" | 2'-11" | 2'-10" |
| 6 | 2'-1" | 2'-11"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

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

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

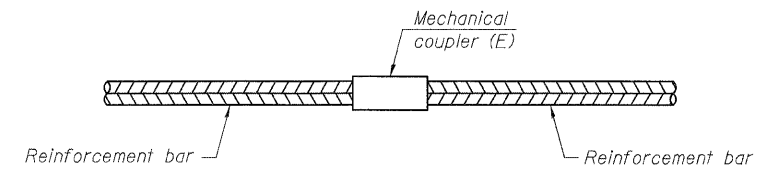
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

| Location | Bar size | No. assemblies required | Table for minimum lap length |
|--------------|----------|-------------------------|------------------------------|
| Deck | 5 | 386 | 3 |
| Diaphragm | 6 | 28 | 3 |
| App. Slab | 4 | 50 | 3 |
| App. Slab | 5 | 92 | 3 |
| App. Footing | 5 | 80 | 3 |
| Abutment | 5 | 4 | 3 |



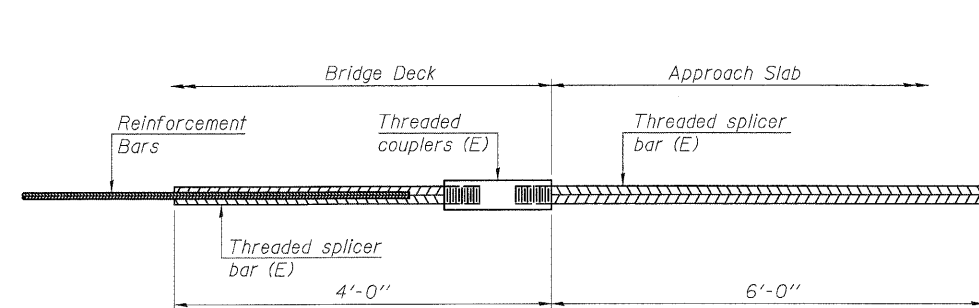
INSTALLATION AND SETTING METHODS

"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.



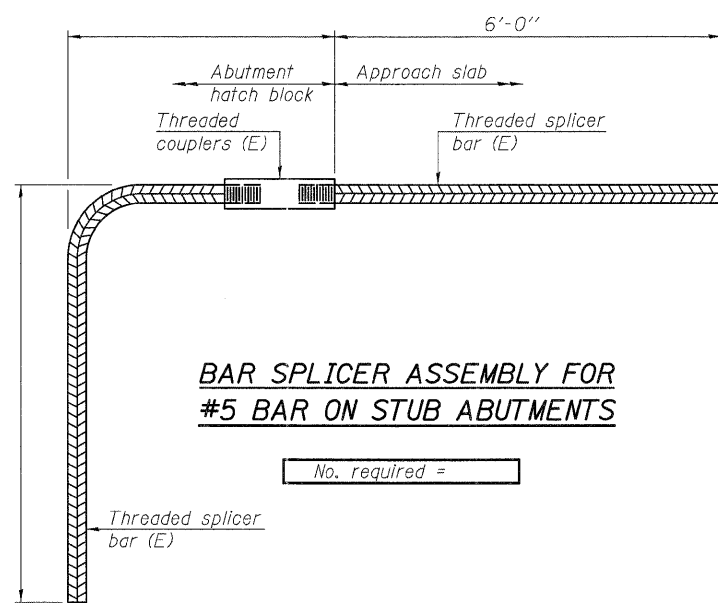
STANDARD MECHANICAL SPLICER

| Location | Bar size | No. assemblies required |
|----------|----------|-------------------------|
| | | |
| | | |
| | | |
| | | |



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

No. required = 84



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

| | | | | | | | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------------------------|-----------------|---------------------------------|-------------------|------------------|---------------|
| TERRA ENGINEERING LTD. <small>225 W. OHIO ST., FOURTH FL., CHICAGO, IL 60604 W (312) 487-0123 F (312) 487-0220 WWW.TERRAENGINEERING.COM</small> | USER NAME = TERRA FILE NAME = D430006-021-barsplicer.dgn PLOT SCALE = 0:1' = 1" IN. PLOT DATE = 12/6/2011 | DESIGNED - EA CHECKED - OY DRAWN - CM CHECKED - JB | REVISED - REVISED - REVISED - REVISED - | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | BAR SPLICER ASSEMBLY AND DETAILS STRUCTURE NO. 043 - 0006 | F.A.P. RTE. 301 | SECTION (43B, 44B, 44HB, 45B/D) | COUNTY JO DAVIESS | TOTAL SHEETS 309 | SHEET NO. 161 |
| | SHEET NO. S21 OF S21 SHEETS | | | | | | CONTRACT NO. 64C94 | | | |

ILLINOIS FED. AID PROJECT

Bench Mark: Chiseled "□" top of SW Wingwall, Sta. 485+83.96, 19.01' Rt. - Elev. 633.43

Existing Structure: S.N. 043-0007 built in 1966 as F.A. Route 6 (S.B.I. Rte. 5), Section 45-B. The existing structure consists of a 3 span concrete reinforced deck on continuous WF steel beams supported by 2 reinforced concrete stub abutments founded on steel piles and 2 reinforced concrete single hammerhead piers founded on spread footings. Bridge deck was repaired in 1971, 1993, and 2001. Structural steel was repainted in 1987. Riprap was placed around pier 2 in 2000. 209'-3" back-to-back abutments and 35'-8" out-to-out deck. Concrete deck to be removed and replaced using staged construction.

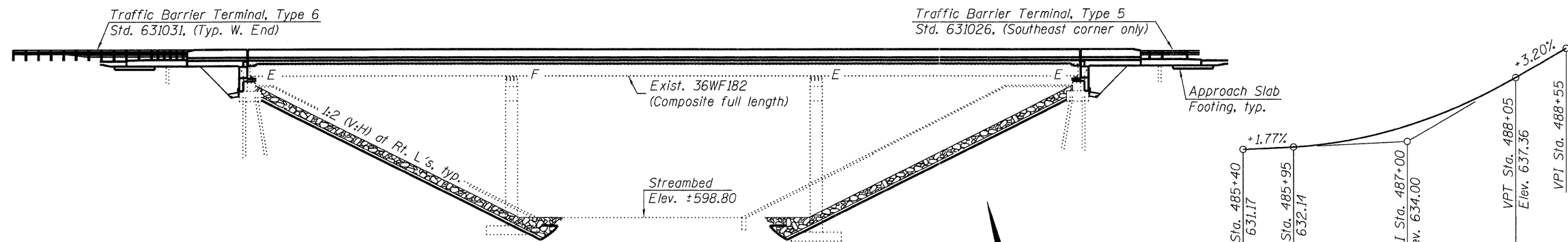
No Salvage

SCOPE OF WORK

1. Remove and replace existing concrete deck.
2. Make new deck composite full length.
3. Remove and replace existing abutment backwalls and wingwalls.
4. Replace steel rocker bearings at abutments w/ elastomeric bearings.
5. Clean, paint and reuse fixed and expansion bearings at the piers.
6. Remove and replace end diaphragms at both abutments.
7. Remove existing concrete slopewall and replace with riprap.
8. Clean and paint existing structural steel.

INDEX OF SHEETS

1. General Plan & Elevation
2. General Data
3. Stage Construction Details
4. Temporary Sheet Piling Details
5. Temporary Concrete Barrier for Stage Construction
- 6.-8. Top of Slab Elevations
9. West Approach Slab Elevations
10. East Approach Slab Elevations
11. Superstructure
12. Superstructure Details
13. Preformed Joint Strip Seal
14. Drainage Scupper, DS-11
15. West Approach Slab Details
16. East Approach Slab Details
17. Approach Slab Details
18. Framing Plan
19. Steel Details
20. Bearing Details
21. West Abutment Concrete Removal
22. West Abutment
23. West Abutment Details
24. East Abutment Concrete Removal
25. East Abutment
26. East Abutment Details
27. Bar Splicer Assembly and Mechanical Splicer Details

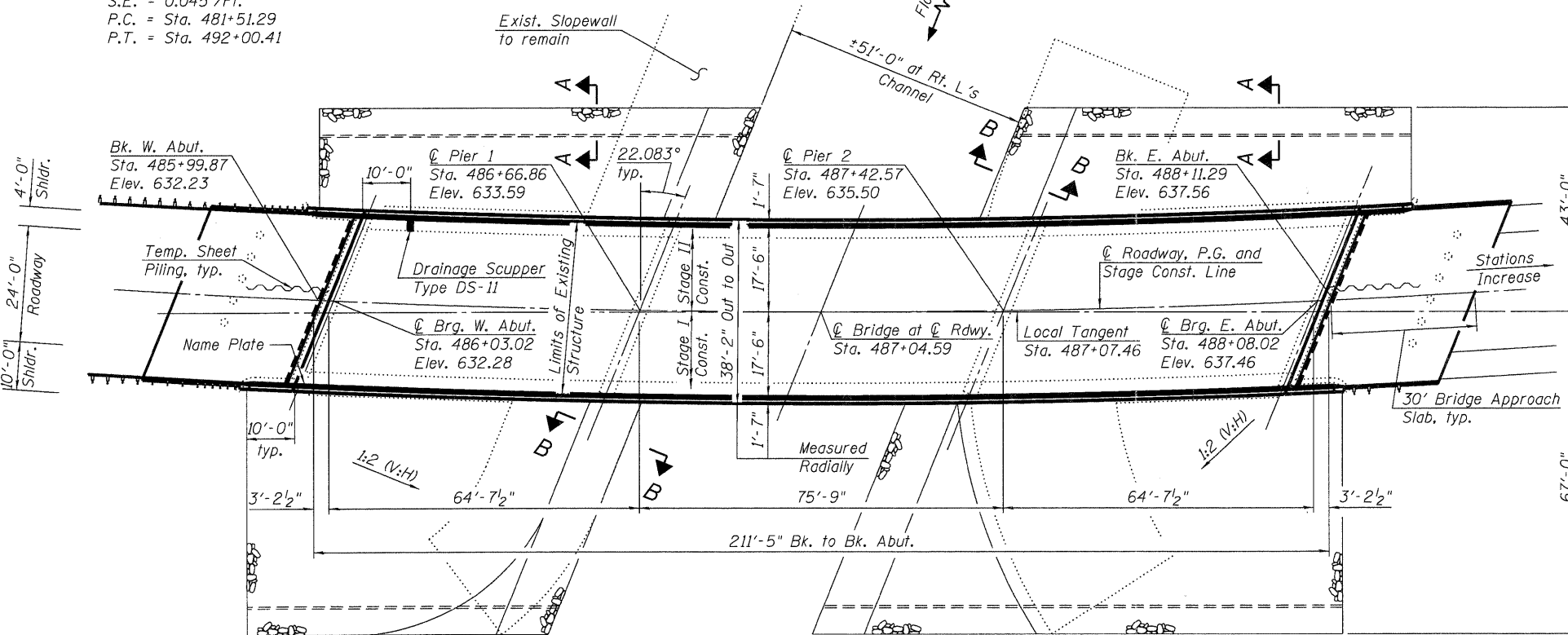


PROFILE GRADE
(Along & Roadway)

CURVE DATA

$\Delta = 26^{\circ}19'04''$ (L.I.)
 $D = 2^{\circ}30'31''$
 $T = 533.98'$
 $L = 1,049.11'$
 $E = 61.59'$
 $R = 2,283.99'$
 $S.E. = 0.045'/ft.$
 $P.C. = Sta. 481+51.29$
 $P.T. = Sta. 492+00.41$

ELEVATION



PLAN

LOADING HS20-44
 Allow 25#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS

2002 AASHTO

DESIGN STRESSES

FIELD UNITS (New Construction)

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (reinforcement)
 $f_y = 36,000$ psi (structural steel)

FIELD UNITS (Existing Construction)

$f'_c = 3,500$ psi
 $f_y = 40,000$ psi (reinforcement)
 $f_y = 36,000$ psi (structural steel)

SEISMIC DATA

Seismic Performance Category (SPC) = A
 Horizontal Bedrock Acceleration Coefficient (A) = 0.030g
 Site Coefficient (S) = 1.5

STATION 487+04.59
 REBUILT 20 BY
 STATE OF ILLINOIS
 F.A.P. RT. 301 SEC. 45B
 LOADING HS20-44
 STR. NO. 043-0007

NAME PLATE

See Std. 515001

Existing Name Plate shall be cleaned and relocated next to new Name Plate. Cost included with Name Plates.

DESIGN STRESSES

FIELD UNITS (New Construction)

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (reinforcement)
 $f_y = 36,000$ psi (structural steel)

FIELD UNITS (Existing Construction)

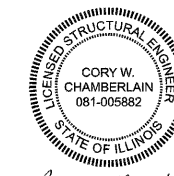
$f'_c = 3,500$ psi
 $f_y = 40,000$ psi (reinforcement)
 $f_y = 36,000$ psi (structural steel)

SEISMIC DATA

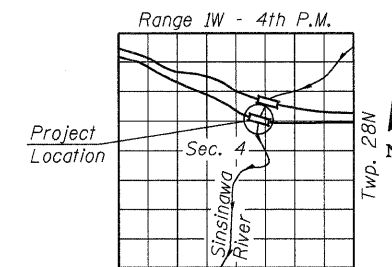
Seismic Performance Category (SPC) = A
 Horizontal Bedrock Acceleration Coefficient (A) = 0.030g
 Site Coefficient (S) = 1.5

APPROVED
 FOR STRUCTURAL ADEQUACY ONLY

J. Carl Puzey (TDP)
 ENGINEER OF BRIDGES AND STRUCTURES



Cory W. Chamberlain 12-1-11
 Expires: 11/30/2012



LOCATION SKETCH

GENERAL PLAN & ELEVATION
U.S. ROUTE 20 EB OVER
SINSINAWA RIVER
F.A.P. ROUTE 301 - SEC. 45B
JO DAVIESS COUNTY
STATION 487+04.59
STRUCTURE NO. 043-0007

| | | | | | | | | | | | |
|-------------------------------|-------------------|-----------|--|-----------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------|---------------------------|-----------------------|------------|--------------|-----------|
| USER NAME = dheberling | DESIGNED - BRD | REVISED - | | 7018 KINGSMILL CT. SPRINGFIELD, IL (217) 483-9457 DESIGN FIRM #184001036 | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | GENERAL PLAN AND ELEVATION STRUCTURE NO. 043-0007 | F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| FILE NAME = 0430007-64C94.dgn | CHECKED - CWC/SDS | REVISED - | | | | | 301 | (43B, 44B, 44HB, 45B) | JO DAVIESS | 309 | 162 |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - | | | | | CONTRACT NO. 64C94 | | | | |
| PLOT TIME = 10:20:50 AM | CHECKED - BRD | REVISED - | | | | | ILLINOIS FED. AID PROJECT | | | | |

GENERAL NOTES

Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts. Bolts 3/4" φ, holes 13/16" φ, 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.

As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 1/4" deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.

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.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8" (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.

Concrete Sealer shall be applied to the designated areas of the abutments. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

Layout of slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

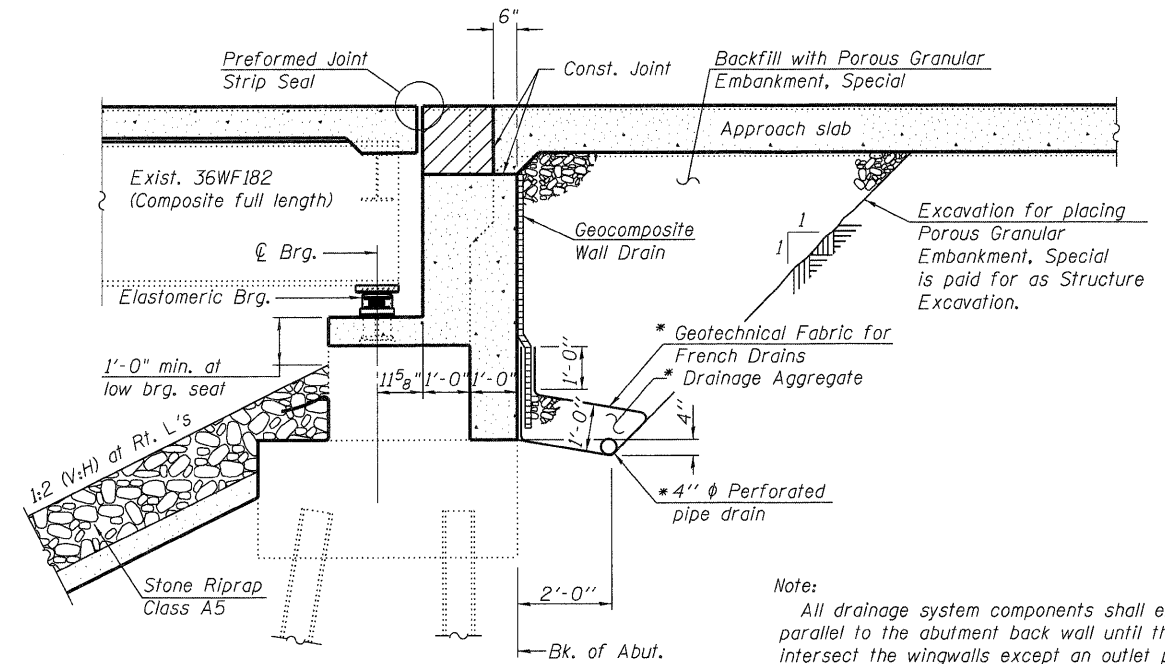
Cleaning and painting of the existing structural steel shall be as specified in the special provision for "Cleaning and Painting Existing Steel Structures". All existing steel shall be cleaned per Near White Blast Cleaning - SSPC-SP10. All new and existing steel shall be painted according to the requirements 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. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Green, Munsell No. 7.5G 4/8.

All new structural steel shall be shop painted with an Inorganic Zinc Rich Primer per AASHTO M300 Type 1.

Slipforming of parapets will not be allowed.

TOTAL BILL OF MATERIAL

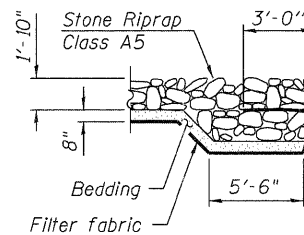
| ITEM | UNIT | SUPER | SUB | TOTAL |
|----------------------------------------------------------------|---------|--------|-------|--------|
| Stone Riprap, Class A5 | Sq. Yd. | | 2,101 | 2,101 |
| Filter Fabric | Sq. Yd. | | 2,101 | 2,101 |
| Concrete Removal | Cu. Yd. | | 30.0 | 30.0 |
| Slopedwall Removal | Sq. Yd. | | 1,271 | 1,271 |
| Removal of Existing Concrete Deck No. 4 | Each | 1 | | 1 |
| Structure Excavation | Cu. Yd. | | 211 | 211 |
| Concrete Structures | Cu. Yd. | | 87.8 | 87.8 |
| Concrete Superstructure | Cu. Yd. | 387.8 | | 387.8 |
| Bridge Deck Grooving | Sq. Yd. | 994 | | 994 |
| Protective Coat | Sq. Yd. | 1,235 | | 1,235 |
| Furnishing and Erecting Structural Steel | Pound | 4,620 | | 4,620 |
| Stud Shear Connectors | Each | 3,492 | | 3,492 |
| Reinforcement Bars, Epoxy Coated | Pound | 88,870 | 8,530 | 97,400 |
| Bar Splicers | Each | 779 | 116 | 895 |
| Name Plates | Each | 1 | | 1 |
| Preformed Joint Strip Seal | Foot | 80 | | 80 |
| Elastomeric Bearing Assembly, Type II | Each | 12 | | 12 |
| Anchor Bolt, 3/4" | Each | 48 | | 48 |
| Concrete Sealer | Sq. Ft. | | 604 | 604 |
| Geocomposite Wall Drain | Sq. Yd. | | 50 | 50 |
| Drainage Scupper, DS-11 | Each | 1 | | 1 |
| Porous Granular Embankment, Special | Cu. Yd. | | 96 | 96 |
| Jack and Remove Existing Bearings | Each | 12 | | 12 |
| Structural Steel Removal | Pound | 3,370 | | 3,370 |
| Cleaning and Painting Steel Bridge No. 4 | L. Sum | 1 | | 1 |
| Containment and Disposal of Lead Paint Cleaning Residues No. 4 | L. Sum | 1 | | 1 |
| Temporary Sheet Piling | Sq. Ft. | | 368 | 368 |
| Pipe Underdrains for Structures, 4" | Foot | | 140 | 140 |



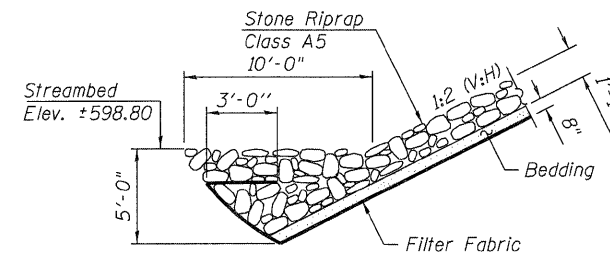
SECTION THRU PILE SUPPORTED STUB ABUTMENT
(Horiz. dim. @ Rt. L's)

* Included in the cost of Pipe Underdrains for Structures.

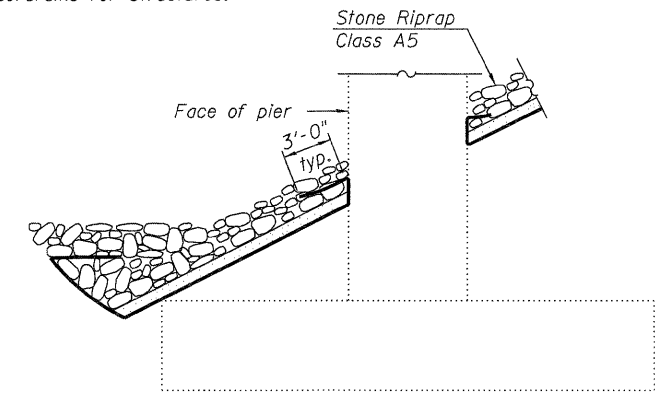
Note: All drainage system components shall extend parallel to the abutment back wall until they intersect the wingwalls except an outlet pipe shall extend until intersecting with the side slopes. The outlet pipe shall extend thru the wingwall. The outlet pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).



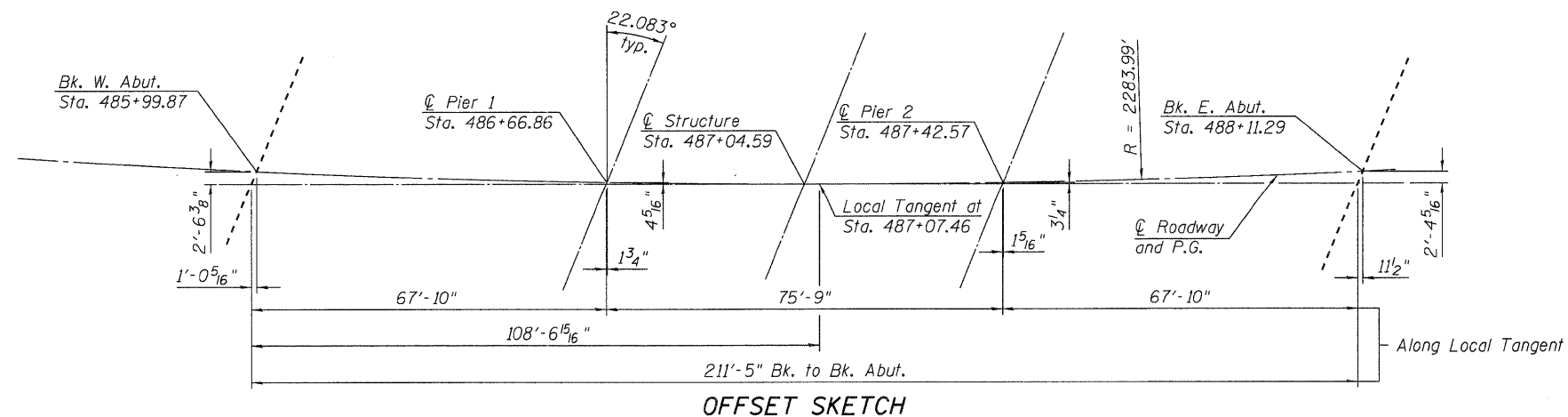
SECTION A-A



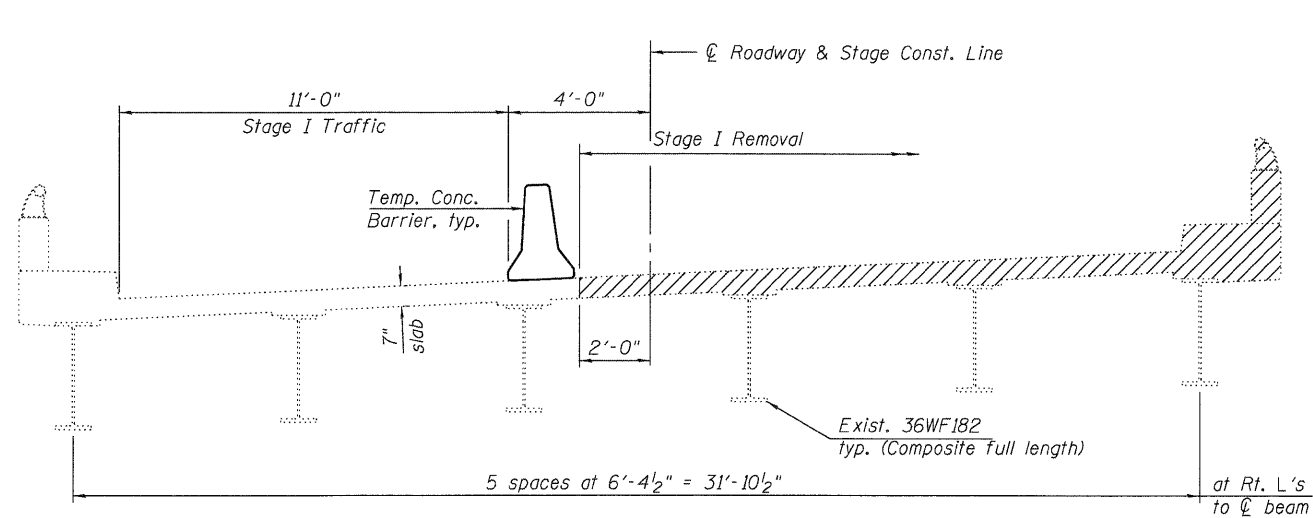
SECTION B-B



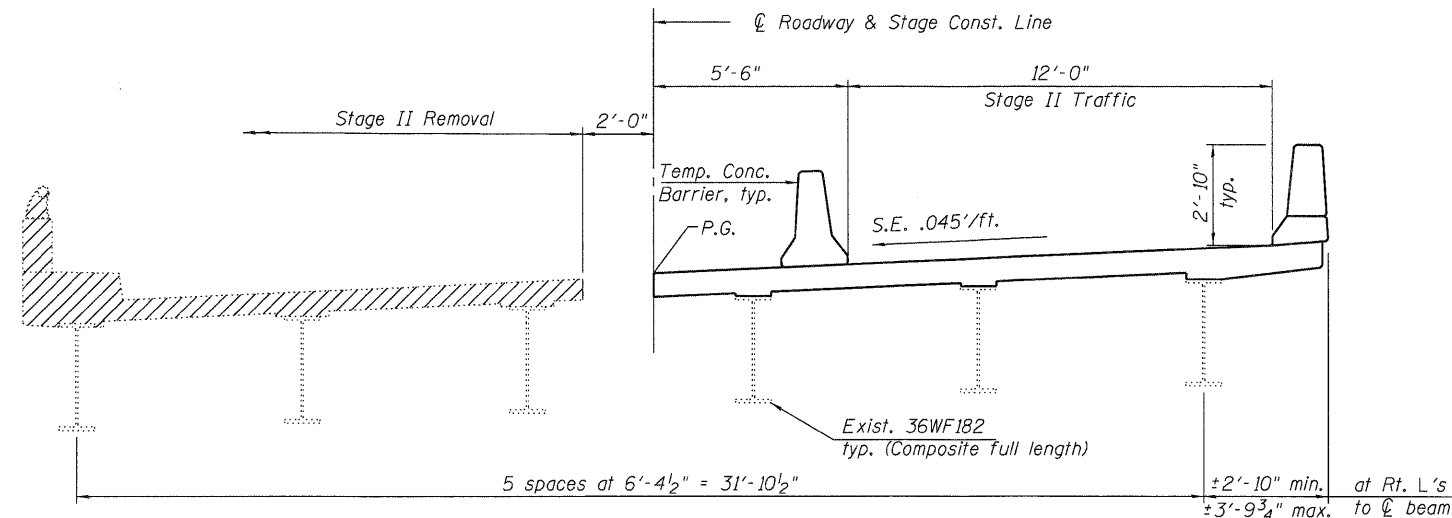
SECTION B-B (At Pier)



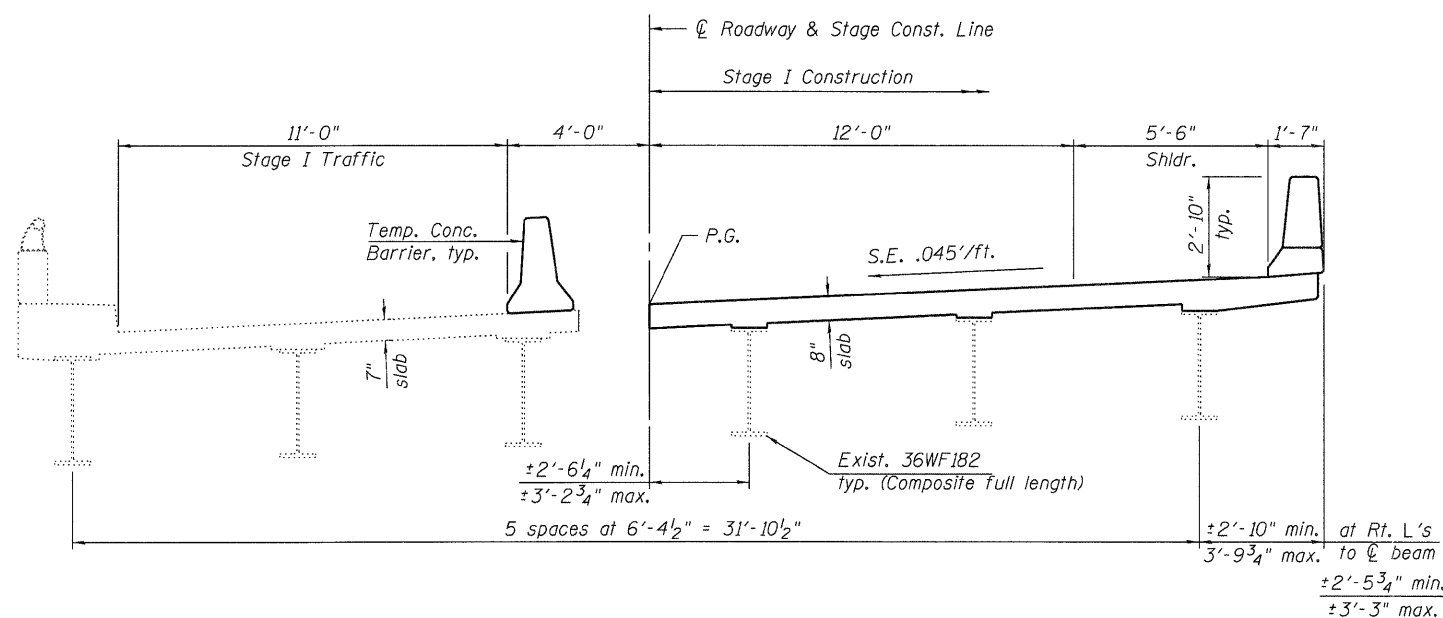
OFFSET SKETCH



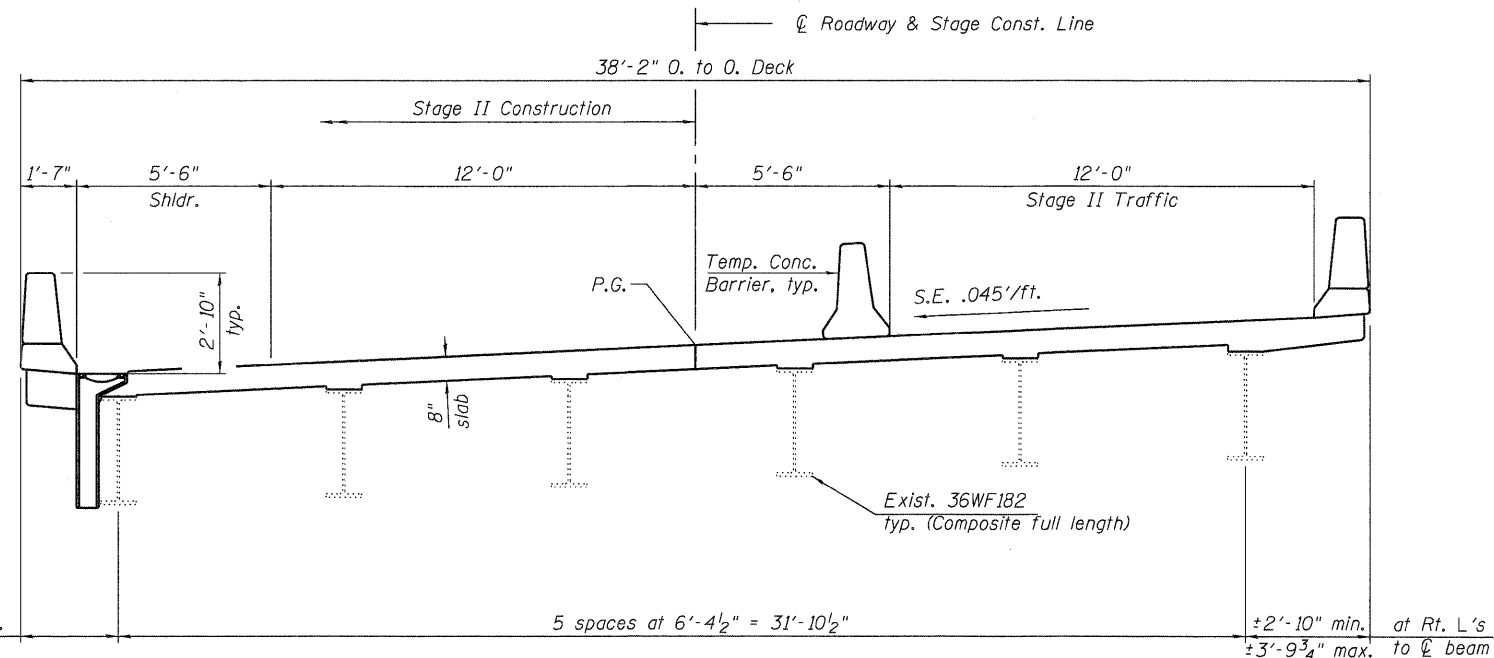
STAGE I REMOVAL
(Looking East)



STAGE II REMOVAL
(Looking East)



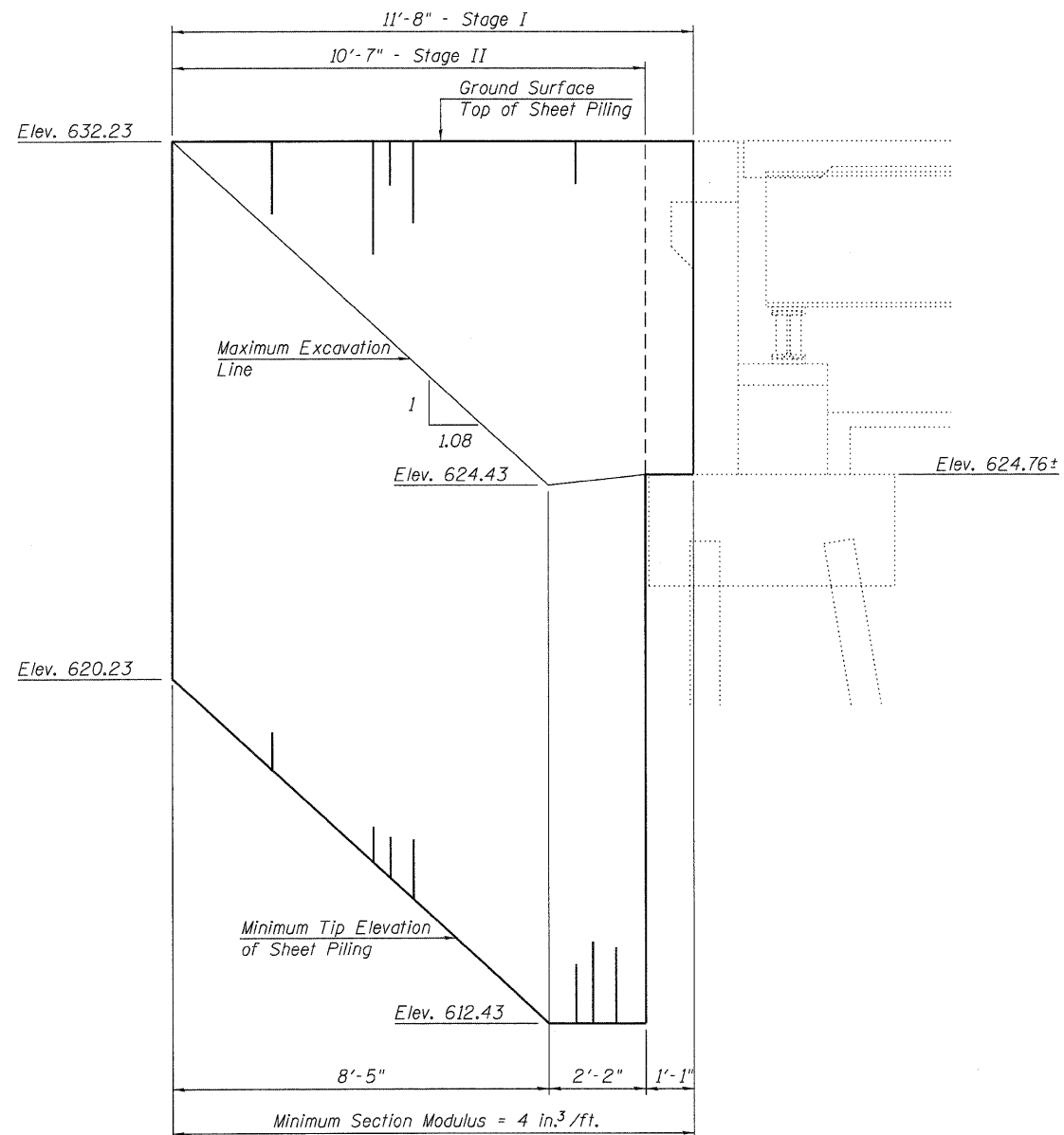
STAGE I CONSTRUCTION
(Looking East)



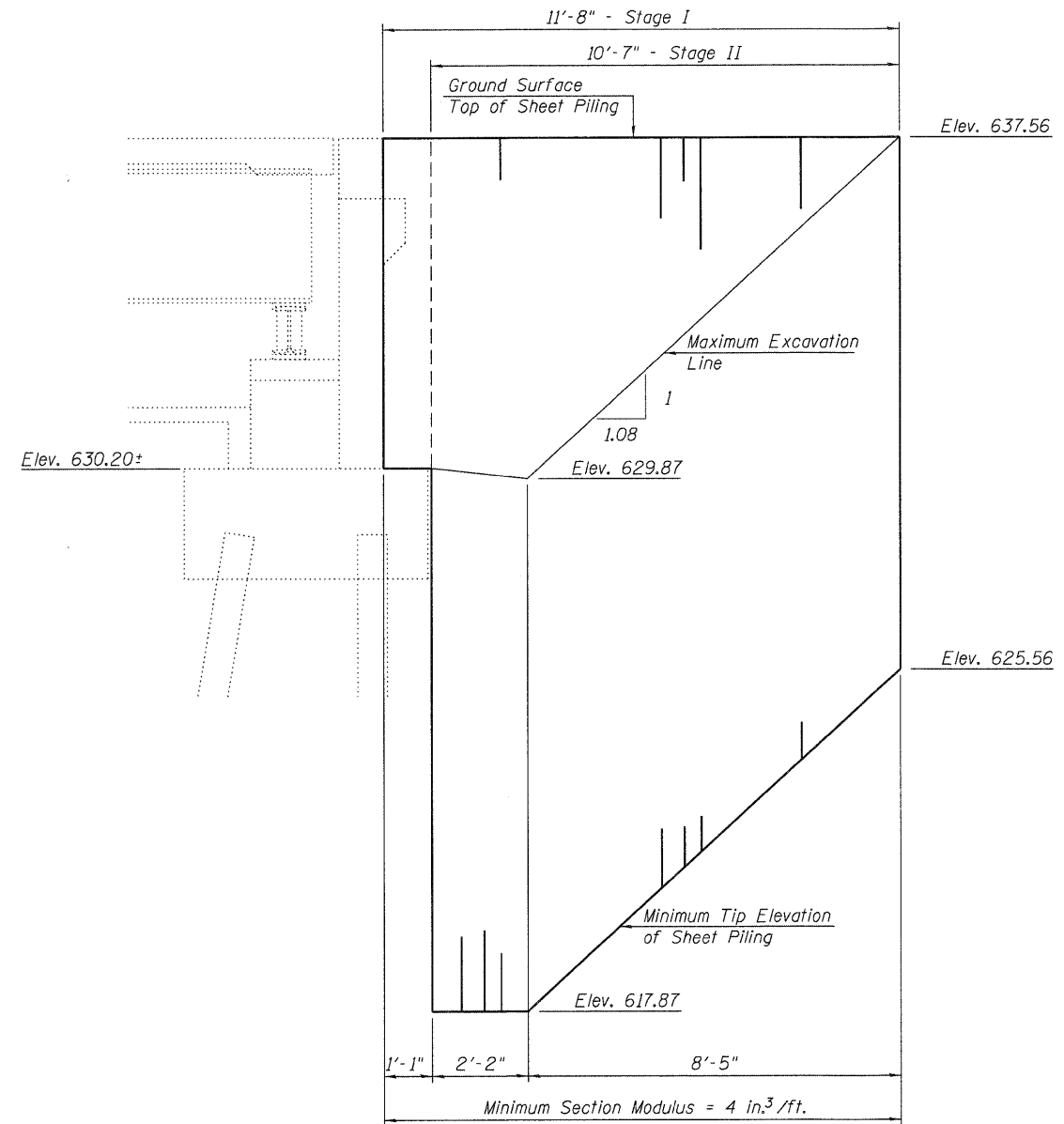
STAGE II CONSTRUCTION
(Looking East)

Note:
Hatched areas indicate Removal of Existing Concrete Deck.
Temporary Concrete Barrier quantity included with Roadway Plans.
Beam spacing shown at right angle to beams in Span 2.
All dimensions are radial unless noted otherwise.

| | | | | | | | | | | | |
|-------------------------------|-------------------|-----------|--|------------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------|---------------------------|-------------------------|------------|--------------|-----------|
| USER NAME = dheberling | DESIGNED - BRD | REVISED - | | 7018 KINGSMILL CT., SPRINGFIELD, IL (217) 483-8457 DESIGN FIRM #184001036 | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | STAGE CONSTRUCTION DETAILS STRUCTURE NO. 043-0007 | F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| FILE NAME = 0430007-64C94.dgn | CHECKED - CWC/SDS | REVISED - | | | | | 301 | (43B, 44B, 44HB, 45BID) | JO DAVIESS | 309 | 164 |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - | | | | | CONTRACT NO. 64C94 | | | | |
| PLOT TIME = 10:10:01 AM | CHECKED - BRD | REVISED - | | | | | ILLINOIS FED. AID PROJECT | | | | |



TEMPORARY SHEET PILING WEST ABUTMENT



TEMPORARY SHEET PILING EAST ABUTMENT

Notes:

If the Contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.

The Contractor shall connect the first sheet to the existing abutment wall to ensure stability of sheets driven to the top of the existing footing. This connection shall be reviewed and accepted by the Engineer and included in the cost for Temporary Sheet Piling.

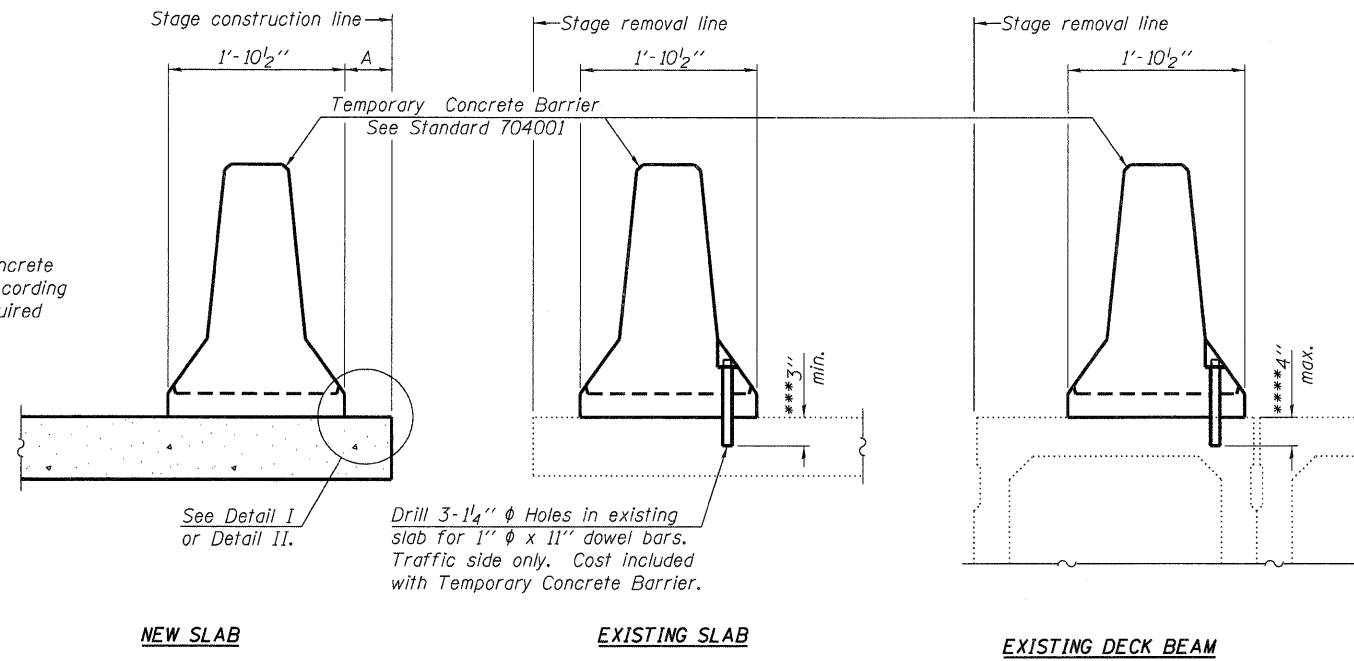
The temporary sheet piling design is based on assumed embankment with $q_u = 1 \text{ tsf}$. Contractor shall verify soil conditions and soil strength and notify Engineer if conditions are different, before excavating.

BILL OF MATERIAL

| Item | Unit | Total |
|------------------------|---------|-------|
| Temporary Sheet Piling | Sq. Ft. | 368 |

| | | | | | | | | | | | |
|-------------------------------|-------------------|-----------|--|-----------------------------------------------------------------------------------|-----------------------------------------------------------------|------------------------------------------------------------------------|---------------------------|-------------------------|------------|--------------|-----------|
| USER NAME = dheberling | DESIGNED - BRD | REVISED - | | 7018 KINGSMILL CT. SPRINGFIELD, IL (217) 483-9457 DESIGN FIRM #184001036 | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | TEMPORARY SHEET PILING DETAILS STRUCTURE NO. 043-0007 | F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| FILE NAME = 0430007-64C94.dgn | CHECKED - CWC/SDS | REVISED - | | | | | 301 | (43B, 44B, 44HB, 45B/D) | JO DAVIESS | 309 | 165 |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - | | | | | CONTRACT NO. 64C94 | | | | |
| PLOT TIME = 10:10:03 AM | CHECKED - BRD | 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

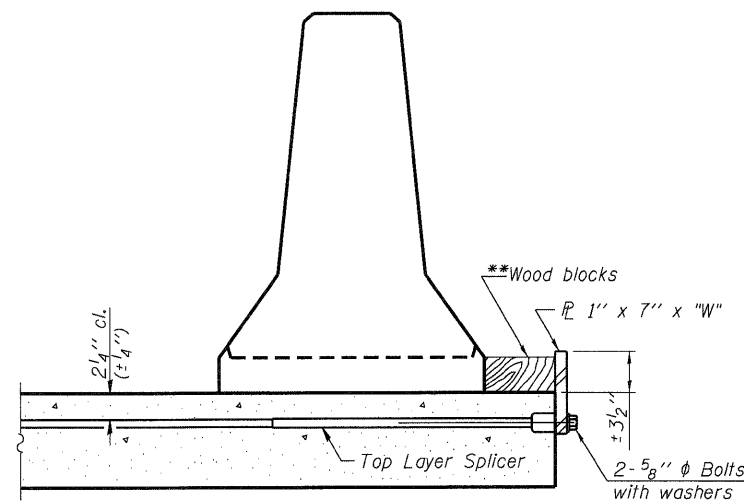
Detail I - With Bar Splicer or Couplers:
Connect one (1) 1" x 7" x "W" steel \bar{L} to the top layer of couplers with 2-5/8" ϕ bolts screwed to coupler at approximate \bar{C} of each barrier panel.

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" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate \bar{C} of each barrier panel.

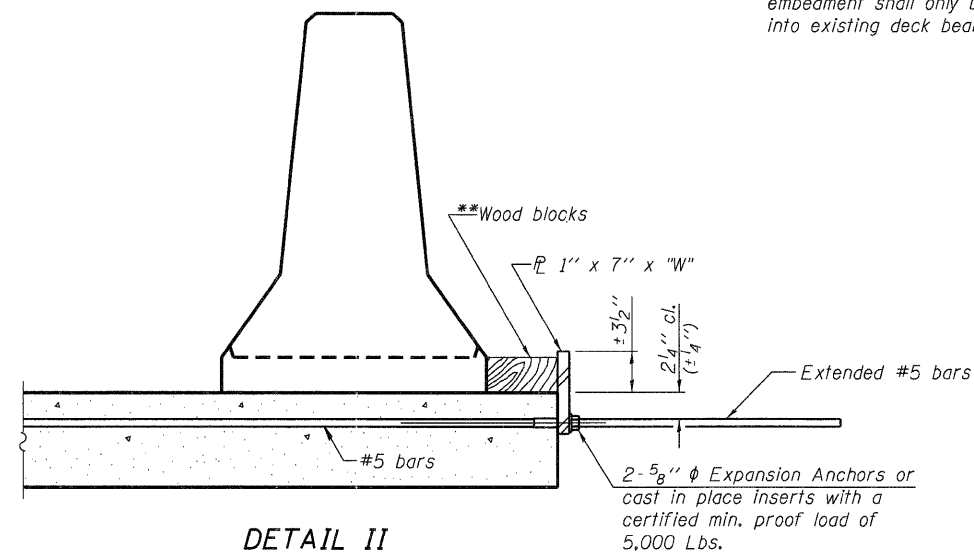
Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x "W" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

*** 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.



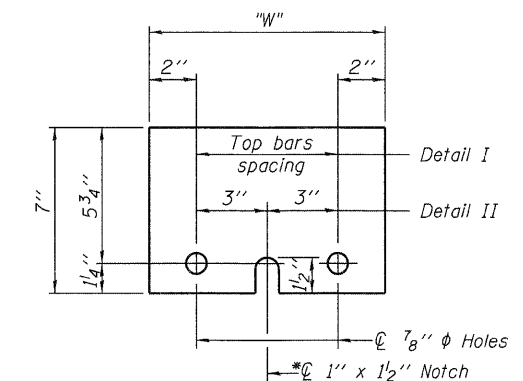
DETAIL I



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"



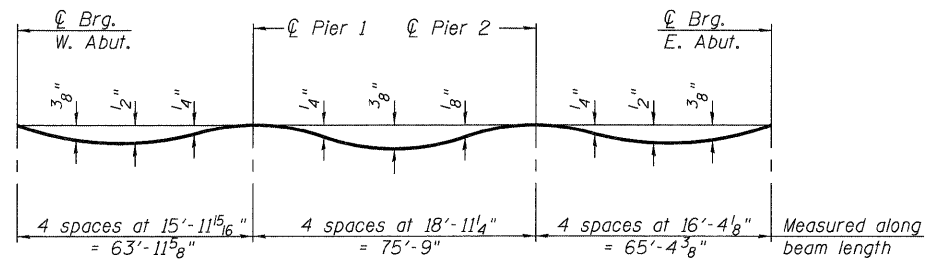
STEEL RETAINER \bar{L} 1" x 7" x "W"

* Required only with Detail II

R-27

7-1-10

| | | | | | | | | | | | |
|-------------------------------|-------------------|-----------|--|------------------------------------------------------------------------------------|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------|-------------------------|------------|--------------|-----------|
| USER NAME = dheberling | DESIGNED - BRD | REVISED - | | 7018 KINGSMILL CT., SPRINGFIELD, IL (217) 483-9457 DESIGN FIRM #184001036 | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION STRUCTURE NO. 043-0007 | F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| FILE NAME = 0430007-64C94.dgn | CHECKED - CWC/SDS | REVISED - | | | | | 301 | (43B, 44B, 44HB, 45B/D) | JO DAVIESS | 309 | 166 |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - | | | | | CONTRACT NO. 64C94 | | | | |
| PLOT TIME = 10:10:05 AM | CHECKED - BRD | REVISED - | | | | | SHEET NO. 5 OF 27 SHEETS | | | | |
| | | | | | | | ILLINOIS FED. AID PROJECT | | | | |

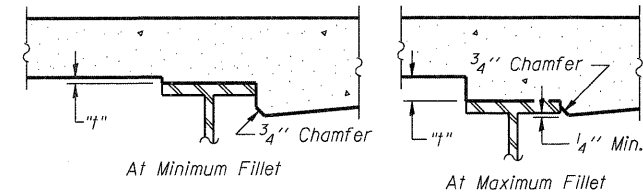


DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)

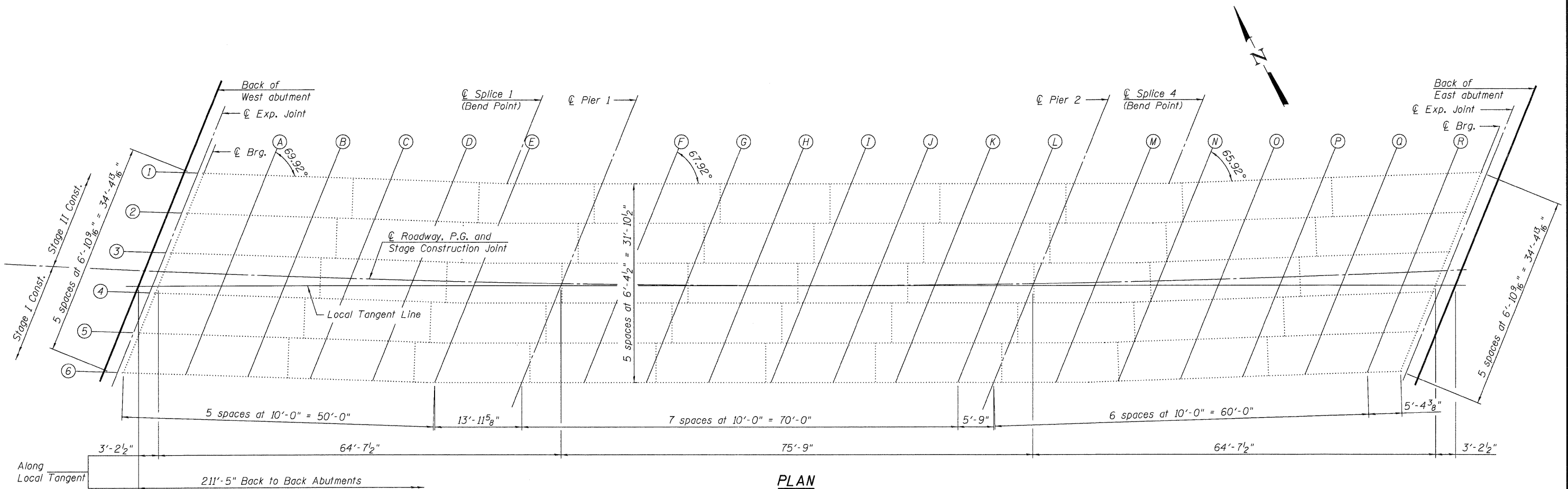
Note:

The above deflections are not to be used in the field if the Engineer is working from the grade elevations adjusted for dead load deflections as shown on sheets 7 & 8 of 27.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheets 7 & 8 of 27, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS



PLAN

Note:
Screed lines are measured along the beam length.
Work this sheet with sheets 7 & 8 of 27.

| | | | | |
|-------------------------------|-------------------|-----------|--|------------------------------------------------------------------------------------|
| USER NAME = dheberling | DESIGNED - BRD | REVISED - | | 7018 KINGSMILL CT., SPRINGFIELD, IL (217) 483-9457 DESIGN FIRM #184001036 |
| FILE NAME = 0430207-64C94.dgn | CHECKED - CWC/SDS | REVISED - | | |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - | | |
| PLOT TIME = 10:10:08 AM | CHECKED - BRD | REVISED - | | |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 043-0007

SHEET NO. 6 OF 27 SHEETS

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|-------------------------|------------|--------------|-----------|
| 301 | (43B, 44B, 44HB, 45B/D) | JO DAVIESS | 309 | 167 |
| CONTRACT NO. 64C94 | | | | |
| ILLINOIS FED. AID PROJECT | | | | |

☉ BEAM 1

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 486+05.60 | -16.16 | 631.60 | 631.60 |
| ☉ Brg. W. Abut. | 486+08.78 | -16.19 | 631.66 | 631.66 |
| A | 486+18.85 | -6.25 | 631.85 | 631.87 |
| B | 486+28.92 | -16.27 | 632.05 | 632.08 |
| C | 486+39.00 | -16.24 | 632.25 | 632.28 |
| D | 486+49.07 | -16.17 | 632.47 | 632.49 |
| E | 486+59.14 | -16.10 | 632.69 | 632.70 |
| ☉ of Pier 1 | 486+73.20 | -16.35 | 633.00 | 633.00 |
| F | 486+83.29 | -16.48 | 633.23 | 633.23 |
| G | 486+93.35 | -16.56 | 633.46 | 633.48 |
| H | 487+03.42 | -16.60 | 633.71 | 633.73 |
| I | 487+13.49 | -16.60 | 633.97 | 633.99 |
| J | 487+23.57 | -16.55 | 634.23 | 634.25 |
| K | 487+33.64 | -16.46 | 634.51 | 634.52 |
| L | 487+43.71 | -16.32 | 634.79 | 634.79 |
| ☉ Pier 2 | 487+49.50 | -16.22 | 634.96 | 634.96 |
| M | 487+59.57 | -16.02 | 635.25 | 635.26 |
| N | 487+69.64 | -15.93 | 635.55 | 635.59 |
| O | 487+79.71 | -15.99 | 635.85 | 635.89 |
| P | 487+89.78 | -16.00 | 636.16 | 636.20 |
| Q | 487+99.85 | -15.97 | 636.48 | 636.50 |
| R | 488+09.92 | -15.89 | 636.80 | 636.81 |
| ☉ Brg. E. Abut. | 488+15.32 | -15.83 | 636.98 | 636.98 |
| Bk. E. Abut. | 488+18.60 | -15.79 | 637.08 | 637.08 |

☉ BEAM 2

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 486+03.29 | -9.68 | 631.85 | 631.85 |
| ☉ Brg. W. Abut. | 486+06.46 | -9.71 | 631.91 | 631.91 |
| A | 486+16.51 | -9.78 | 632.10 | 632.11 |
| B | 486+26.55 | -9.81 | 632.29 | 632.32 |
| C | 486+36.59 | -9.79 | 632.49 | 632.53 |
| D | 486+46.63 | -9.73 | 632.70 | 632.73 |
| E | 486+56.68 | -9.67 | 632.92 | 632.93 |
| ☉ of Pier 1 | 486+70.70 | -9.94 | 633.23 | 633.23 |
| F | 486+80.74 | -10.08 | 633.46 | 633.46 |
| G | 486+90.79 | -10.17 | 633.69 | 633.70 |
| H | 487+00.83 | -10.22 | 633.93 | 633.96 |
| I | 487+10.88 | -10.23 | 634.19 | 634.21 |
| J | 487+20.92 | -10.19 | 634.45 | 634.47 |
| K | 487+30.97 | -10.11 | 634.72 | 634.73 |
| L | 487+41.01 | -9.99 | 635.00 | 635.00 |
| ☉ Pier 2 | 487+46.78 | -9.90 | 635.17 | 635.17 |
| M | 487+56.83 | -9.70 | 635.46 | 635.47 |
| N | 487+66.87 | -9.63 | 635.76 | 635.79 |
| O | 487+76.91 | -9.70 | 636.05 | 636.09 |
| P | 487+86.95 | -9.72 | 636.35 | 636.39 |
| Q | 487+96.99 | -9.70 | 636.67 | 636.70 |
| R | 488+07.03 | -9.63 | 636.99 | 637.00 |
| ☉ Brg. E. Abut. | 488+12.42 | -9.58 | 637.17 | 637.17 |
| Bk. E. Abut. | 488+15.69 | -9.54 | 637.27 | 637.27 |

☉ BEAM 3

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 486+01.00 | -3.19 | 632.10 | 632.10 |
| ☉ Brg. W. Abut. | 486+04.16 | -3.22 | 632.16 | 632.16 |
| A | 486+14.17 | -3.30 | 632.34 | 632.36 |
| B | 486+24.19 | -3.34 | 632.54 | 632.56 |
| C | 486+34.20 | -3.34 | 632.74 | 632.77 |
| D | 486+44.22 | -3.29 | 632.95 | 632.97 |
| E | 486+54.23 | -3.24 | 633.16 | 633.17 |
| ☉ of Pier 1 | 486+68.21 | -3.52 | 633.46 | 633.46 |
| F | 486+78.23 | -3.67 | 633.68 | 633.69 |
| G | 486+88.24 | -3.78 | 633.92 | 633.93 |
| H | 486+98.26 | -3.84 | 634.16 | 634.18 |
| I | 487+08.28 | -3.86 | 634.41 | 634.43 |
| J | 487+18.29 | -3.83 | 634.67 | 634.69 |
| K | 487+28.31 | -3.76 | 634.94 | 634.94 |
| L | 487+38.33 | -3.65 | 635.21 | 635.21 |
| ☉ Pier 2 | 487+44.09 | -3.56 | 635.38 | 635.38 |
| M | 487+54.10 | -3.38 | 635.67 | 635.68 |
| N | 487+64.11 | -3.32 | 635.96 | 635.99 |
| O | 487+74.13 | -3.40 | 636.25 | 636.29 |
| P | 487+84.14 | -3.44 | 636.55 | 636.59 |
| Q | 487+94.15 | -3.43 | 636.86 | 636.89 |
| R | 488+04.17 | -3.38 | 637.18 | 637.19 |
| ☉ Brg. E. Abut. | 488+09.54 | -3.33 | 637.36 | 637.36 |
| Bk. E. Abut. | 488+12.80 | -3.29 | 637.46 | 637.46 |

☉ ROADWAY, P.G. & STAGE CONSTRUCTION LINE

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 485+99.87 | 0.00 | 632.23 | 632.23 |
| ☉ Brg. W. Abut. | 486+03.02 | 0.00 | 632.28 | 632.28 |
| A | 486+12.98 | 0.00 | 632.47 | 632.49 |
| B | 486+22.97 | 0.00 | 632.66 | 632.69 |
| C | 486+32.97 | 0.00 | 632.86 | 632.89 |
| D | 486+42.98 | 0.00 | 633.07 | 633.09 |
| E | 486+53.00 | 0.00 | 633.28 | 633.29 |
| ☉ of Pier 1 | 486+66.86 | 0.00 | 633.59 | 633.59 |
| G | 486+76.79 | 0.00 | 633.82 | 633.82 |
| H | 486+86.75 | 0.00 | 634.05 | 634.06 |
| I | 486+96.72 | 0.00 | 634.29 | 634.31 |
| J | 487+06.71 | 0.00 | 634.54 | 634.56 |
| K | 487+16.71 | 0.00 | 634.80 | 634.82 |
| L | 487+26.74 | 0.00 | 635.06 | 635.07 |
| M | 487+36.79 | 0.00 | 635.33 | 635.34 |
| ☉ Pier 2 | 487+42.57 | 0.00 | 635.49 | 635.49 |
| N | 487+52.64 | 0.00 | 635.78 | 635.79 |
| O | 487+62.66 | 0.00 | 636.06 | 636.10 |
| P | 487+72.63 | 0.00 | 636.36 | 636.39 |
| Q | 487+82.61 | 0.00 | 636.66 | 636.70 |
| R | 487+92.61 | 0.00 | 636.97 | 637.00 |
| S | 488+02.63 | 0.00 | 637.28 | 637.29 |
| ☉ Brg. E. Abut. | 488+08.02 | 0.00 | 637.46 | 637.46 |
| Bk. E. Abut. | 488+11.29 | 0.00 | 637.56 | 637.56 |

| | | |
|-------------------------------|-------------------|-----------|
| USER NAME = dhaberling | DESIGNED - BRD | REVISED - |
| FILE NAME = 0430007-64C94.dgn | CHECKED - CWC/SDS | REVISED - |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - |
| PLOT TIME = 10:10:10 AM | CHECKED - BRD | REVISED - |

WHKS & CO.
ENGINEERING
7018 KINGSMILL CT.,
SPRINGFIELD, IL
(217) 483-9457
DESIGN FIRM #184001036

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATIONS
STRUCTURE NO. 043-0007**

SHEET NO. 7 OF 27 SHEETS

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|--------------------|-------------------------|------------|---------------------------|-----------|
| 301 | (43B, 44B, 44HB, 45B/D) | JO DAVIESS | 309 | 168 |
| CONTRACT NO. 64C94 | | | ILLINOIS FED. AID PROJECT | |

☉ BEAM 4

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 485+98.71 | 3.30 | 632.36 | 632.36 |
| ☉ Brg. W. Abut. | 486+01.86 | 3.27 | 632.41 | 632.41 |
| A | 486+11.85 | 3.17 | 632.59 | 632.61 |
| B | 486+21.84 | 3.12 | 632.78 | 632.81 |
| C | 486+31.83 | 3.12 | 632.98 | 633.01 |
| D | 486+41.81 | 3.16 | 633.19 | 633.21 |
| E | 486+51.79 | 3.20 | 633.40 | 633.41 |
| ☉ of Pier 1 | 486+65.74 | 2.90 | 633.69 | 633.69 |
| F | 486+75.73 | 2.74 | 633.91 | 633.92 |
| G | 486+85.72 | 2.62 | 634.14 | 634.16 |
| H | 486+95.70 | 2.55 | 634.38 | 634.41 |
| I | 487+05.69 | 2.52 | 634.63 | 634.65 |
| J | 487+15.68 | 2.53 | 634.89 | 634.91 |
| K | 487+25.67 | 2.59 | 635.15 | 635.16 |
| L | 487+35.66 | 2.69 | 635.42 | 635.43 |
| ☉ Pier 2 | 487+41.40 | 2.77 | 635.59 | 635.59 |
| M | 487+51.39 | 2.94 | 635.87 | 635.88 |
| N | 487+61.37 | 2.99 | 636.16 | 636.20 |
| O | 487+71.36 | 2.90 | 636.45 | 636.49 |
| P | 487+81.35 | 2.85 | 636.75 | 636.79 |
| Q | 487+91.33 | 2.85 | 637.06 | 637.09 |
| R | 488+01.32 | 2.89 | 637.37 | 637.38 |
| ☉ Brg. E. Abut. | 488+06.68 | 2.92 | 637.55 | 637.55 |
| Bk. E. Abut. | 488+09.93 | 2.96 | 637.65 | 637.65 |

☉ BEAM 5

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 485+96.44 | 9.79 | 632.61 | 632.61 |
| ☉ Brg. W. Abut. | 485+99.58 | 9.76 | 632.66 | 632.66 |
| A | 486+09.54 | 9.65 | 632.84 | 632.86 |
| B | 486+19.50 | 9.60 | 633.03 | 633.05 |
| C | 486+29.46 | 9.58 | 633.22 | 633.25 |
| D | 486+39.42 | 9.61 | 633.43 | 633.45 |
| E | 486+49.38 | 9.63 | 633.64 | 633.65 |
| ☉ of Pier 1 | 486+63.28 | 9.32 | 633.93 | 633.93 |
| F | 486+73.24 | 9.15 | 634.14 | 634.15 |
| G | 486+83.20 | 9.02 | 634.37 | 634.39 |
| H | 486+93.16 | 8.94 | 634.61 | 634.63 |
| I | 487+03.12 | 8.90 | 634.85 | 634.87 |
| J | 487+13.08 | 8.90 | 635.11 | 635.12 |
| K | 487+23.04 | 8.95 | 635.37 | 635.38 |
| L | 487+33.00 | 9.04 | 635.64 | 635.64 |
| ☉ Pier 2 | 487+38.73 | 9.11 | 635.80 | 635.80 |
| M | 487+48.69 | 9.27 | 636.08 | 636.09 |
| N | 487+58.64 | 9.30 | 636.37 | 636.40 |
| O | 487+68.61 | 9.20 | 636.65 | 636.69 |
| P | 487+78.57 | 9.14 | 636.95 | 636.99 |
| Q | 487+88.52 | 9.12 | 637.25 | 637.28 |
| R | 487+98.49 | 9.15 | 637.56 | 637.57 |
| ☉ Brg. E. Abut. | 488+03.83 | 9.18 | 637.73 | 637.73 |
| Bk. E. Abut. | 488+07.07 | 9.21 | 637.84 | 637.84 |

☉ BEAM 6

| Location | Station | Offset | Theoretical Grade Elevations | Theoretical Grade Elevations Adjusted For Dead Load Deflection |
|-----------------|-----------|--------|------------------------------|----------------------------------------------------------------|
| Bk. W. Abut. | 485+44.19 | 16.28 | 632.86 | 632.86 |
| ☉ Brg. W. Abut. | 485+97.32 | 16.24 | 632.91 | 632.91 |
| A | 486+07.25 | 16.13 | 633.09 | 633.11 |
| B | 486+17.18 | 16.06 | 633.27 | 633.30 |
| C | 486+27.11 | 16.04 | 633.47 | 633.50 |
| D | 486+37.04 | 16.06 | 633.67 | 633.69 |
| E | 486+46.97 | 16.07 | 633.88 | 633.89 |
| ☉ of Pier 1 | 486+60.84 | 15.75 | 634.16 | 634.16 |
| F | 486+70.76 | 15.56 | 634.38 | 634.38 |
| G | 486+80.70 | 15.42 | 634.60 | 634.61 |
| H | 486+90.63 | 15.33 | 634.83 | 634.86 |
| I | 487+00.57 | 15.28 | 635.08 | 635.10 |
| J | 487+10.50 | 15.27 | 635.33 | 635.34 |
| K | 487+20.43 | 15.30 | 635.58 | 635.59 |
| L | 487+30.36 | 15.38 | 635.85 | 635.85 |
| ☉ Pier 2 | 487+36.08 | 15.45 | 636.01 | 636.01 |
| M | 487+46.00 | 15.59 | 636.29 | 636.30 |
| N | 487+55.94 | 15.62 | 636.57 | 636.61 |
| O | 487+65.87 | 15.51 | 636.86 | 636.89 |
| P | 487+75.80 | 15.43 | 637.15 | 637.19 |
| Q | 487+85.73 | 15.40 | 637.45 | 637.48 |
| R | 487+95.66 | 15.42 | 637.76 | 637.77 |
| ☉ Brg. E. Abut. | 488+01.00 | 15.45 | 637.93 | 637.93 |
| Bk. E. Abut. | 488+04.23 | 15.47 | 638.03 | 638.03 |

INSIDE FACE OF NORTH PARAPET

| Location | Station | Offset | Theoretical Grade Elevations |
|---------------------------|-----------|--------|------------------------------|
| W. end of W. Appr. Pav't. | 485+76.35 | -17.50 | 631.02 |
| A1 | 485+86.44 | -17.50 | 631.20 |
| A2 | 485+96.53 | -17.50 | 631.38 |
| E. end of W. Appr. Pav't. | 486+06.61 | -17.50 | 631.55 |

NORTH EDGE OF PAVEMENT

| Location | Station | Offset | Theoretical Grade Elevations |
|---------------------------|-----------|--------|------------------------------|
| W. end of W. Appr. Pav't. | 485+74.47 | -12.00 | 631.24 |
| A1 | 485+84.53 | -12.00 | 631.42 |
| A2 | 485+94.59 | -12.00 | 631.59 |
| E. end of W. Appr. Pav't. | 486+04.65 | -12.00 | 631.77 |

☉ ROADWAY, P.G. AND STAGE CONSTRUCTION LINE

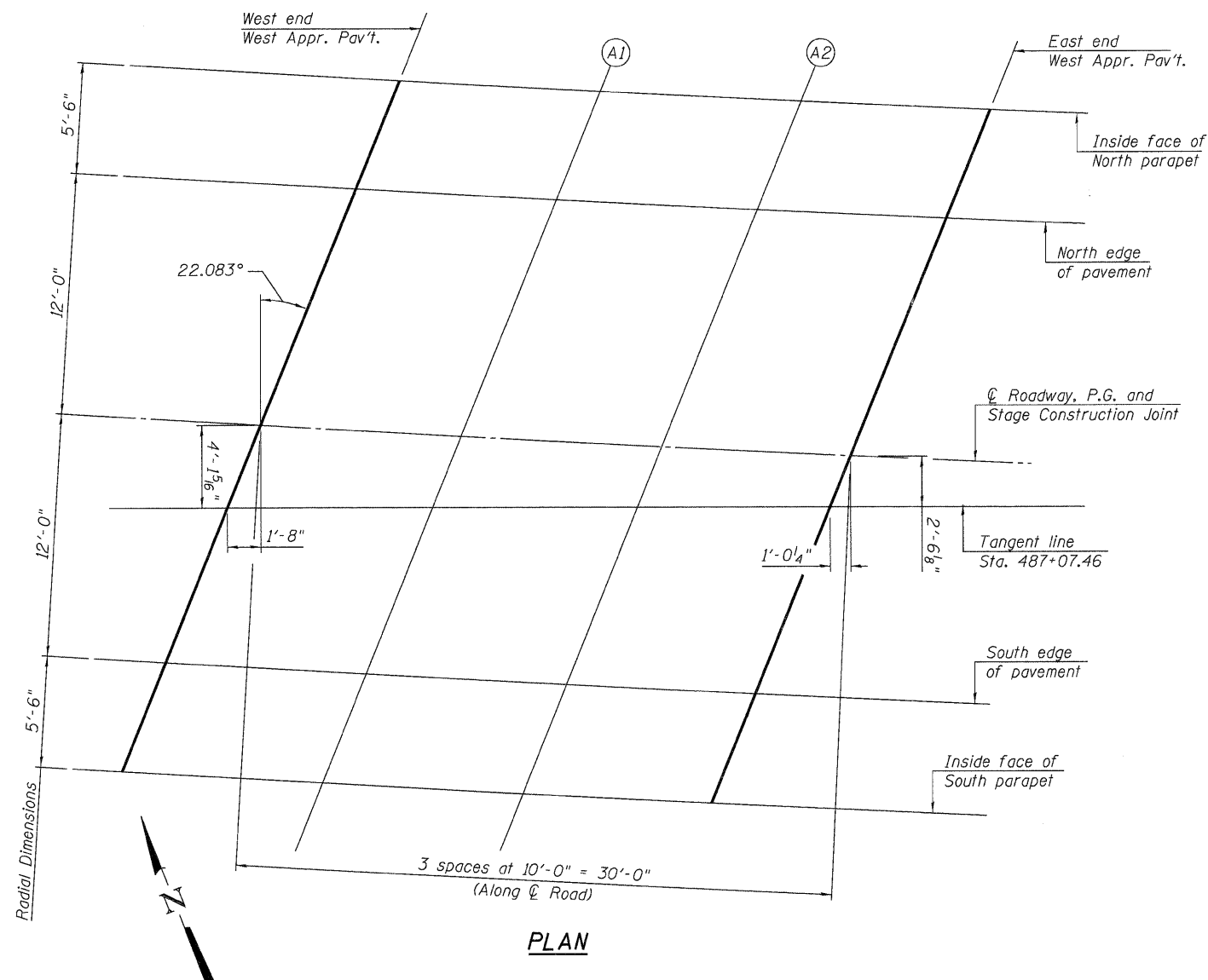
| Location | Station | Offset | Theoretical Grade Elevations |
|---------------------------|-----------|--------|------------------------------|
| W. end of W. Appr. Pav't. | 485+70.40 | 0.00 | 631.71 |
| A1 | 485+80.40 | 0.00 | 631.88 |
| A2 | 485+90.40 | 0.00 | 632.06 |
| E. end of W. Appr. Pav't. | 486+00.40 | 0.00 | 632.24 |

SOUTH EDGE OF PAVEMENT

| Location | Station | Offset | Theoretical Grade Elevations |
|---------------------------|-----------|--------|------------------------------|
| W. end of W. Appr. Pav't. | 485+66.37 | 12.00 | 632.18 |
| A1 | 485+76.32 | 12.00 | 632.35 |
| A2 | 485+86.26 | 12.00 | 632.53 |
| E. end of W. Appr. Pav't. | 485+96.20 | 12.00 | 632.70 |

INSIDE FACE OF SOUTH PARAPET

| Location | Station | Offset | Theoretical Grade Elevations |
|---------------------------|-----------|--------|------------------------------|
| W. end of W. Appr. Pav't. | 485+64.54 | 17.50 | 632.39 |
| A1 | 485+74.46 | 17.50 | 632.57 |
| A2 | 485+84.37 | 17.50 | 632.74 |
| E. end of W. Appr. Pav't. | 485+94.29 | 17.50 | 632.92 |



PLAN

INSIDE FACE OF NORTH PARAPET

| Location | Station | Offset | Theoretical Grade Elevations |
|---------------------------|-----------|--------|------------------------------|
| W. end of E. Appr. Pav't. | 488+18.85 | -17.50 | 637.02 |
| A3 | 488+28.94 | -17.50 | 637.34 |
| A4 | 488+39.04 | -17.50 | 637.66 |
| E. end of E. Appr. Pav't. | 488+49.13 | -17.50 | 637.98 |

NORTH EDGE OF PAVEMENT

| Location | Station | Offset | Theoretical Grade Elevations |
|---------------------------|-----------|--------|------------------------------|
| W. end of E. Appr. Pav't. | 488+16.29 | -12.00 | 637.18 |
| A3 | 488+26.35 | -12.00 | 637.50 |
| A4 | 488+36.41 | -12.00 | 637.83 |
| E. end of E. Appr. Pav't. | 488+46.48 | -12.00 | 638.15 |

℄ ROADWAY, P.G. AND STAGE CONSTRUCTION LINE

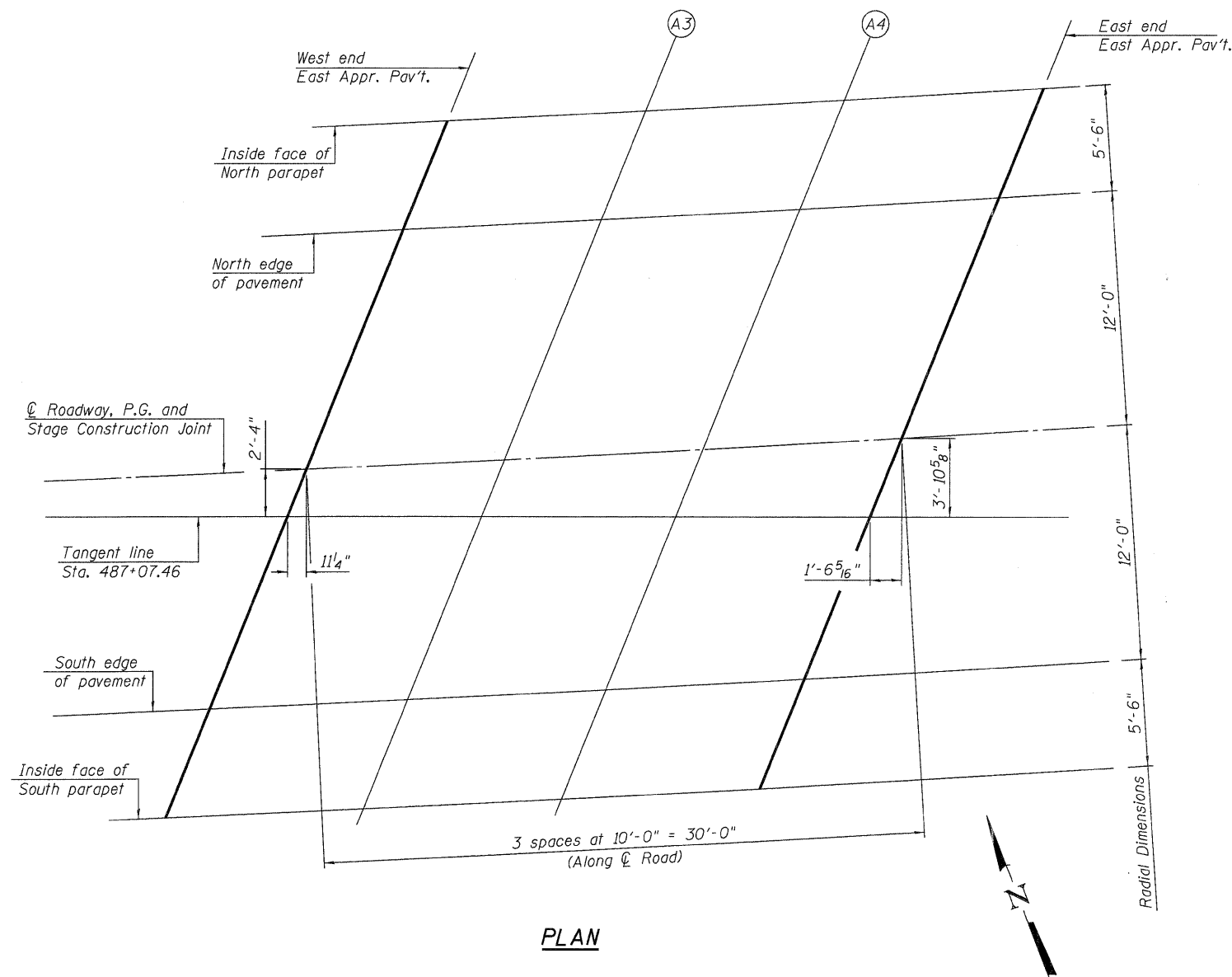
| Location | Station | Offset | Theoretical Grade Elevations |
|---------------------------|-----------|--------|------------------------------|
| W. end of E. Appr. Pav't. | 488+10.74 | 0.00 | 637.54 |
| A3 | 488+20.74 | 0.00 | 637.86 |
| A4 | 488+30.74 | 0.00 | 638.18 |
| E. end of E. Appr. Pav't. | 488+40.74 | 0.00 | 638.50 |

SOUTH EDGE OF PAVEMENT

| Location | Station | Offset | Theoretical Grade Elevations |
|---------------------------|-----------|--------|------------------------------|
| W. end of E. Appr. Pav't. | 488+05.26 | 12.00 | 637.91 |
| A3 | 488+15.20 | 12.00 | 638.23 |
| A4 | 488+25.13 | 12.00 | 638.54 |
| E. end of E. Appr. Pav't. | 488+35.07 | 12.00 | 638.86 |

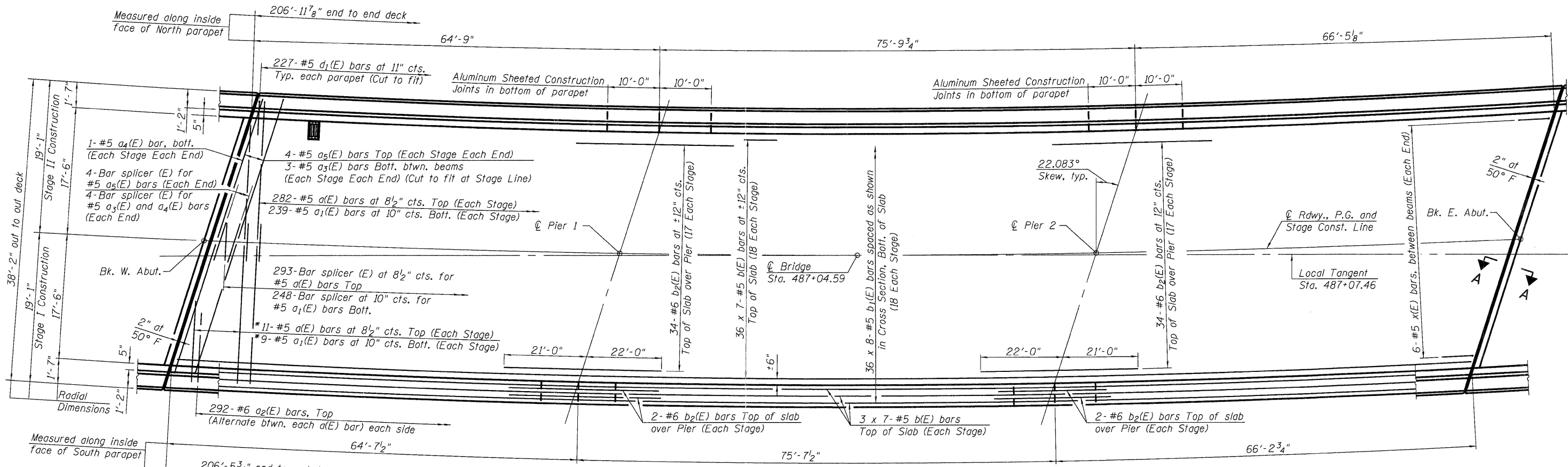
INSIDE FACE OF SOUTH PARAPET

| Location | Station | Offset | Theoretical Grade Elevations |
|---------------------------|-----------|--------|------------------------------|
| W. end of E. Appr. Pav't. | 488+02.77 | 17.50 | 638.07 |
| A3 | 488+12.68 | 17.50 | 638.39 |
| A4 | 488+22.58 | 17.50 | 638.71 |
| E. end of E. Appr. Pav't. | 488+32.49 | 17.50 | 639.03 |



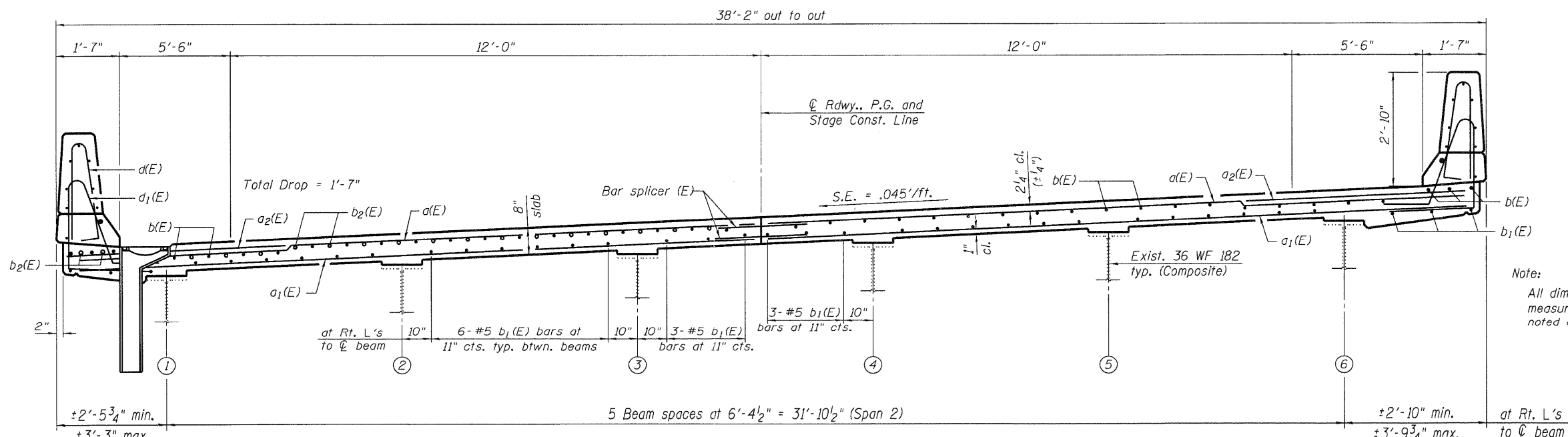
PLAN

* Order a(E) and a₁(E) bars full length. Cut to fit skew and use remainder of bars at opposite end.



PLAN

Notes:
 See Sheet 12 of 27 for superstructure details and Bill of Material.
 Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
 See Sheet 12 of 27 for parapet reinforcement.

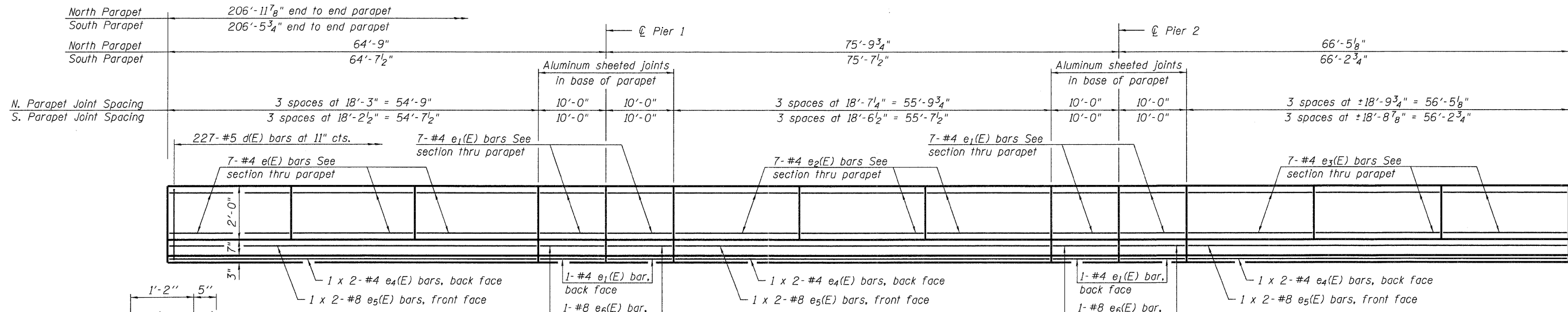


CROSS SECTION
(Looking East)

MINIMUM BAR LAP
(Deck)
#5 bar = 2'-7"

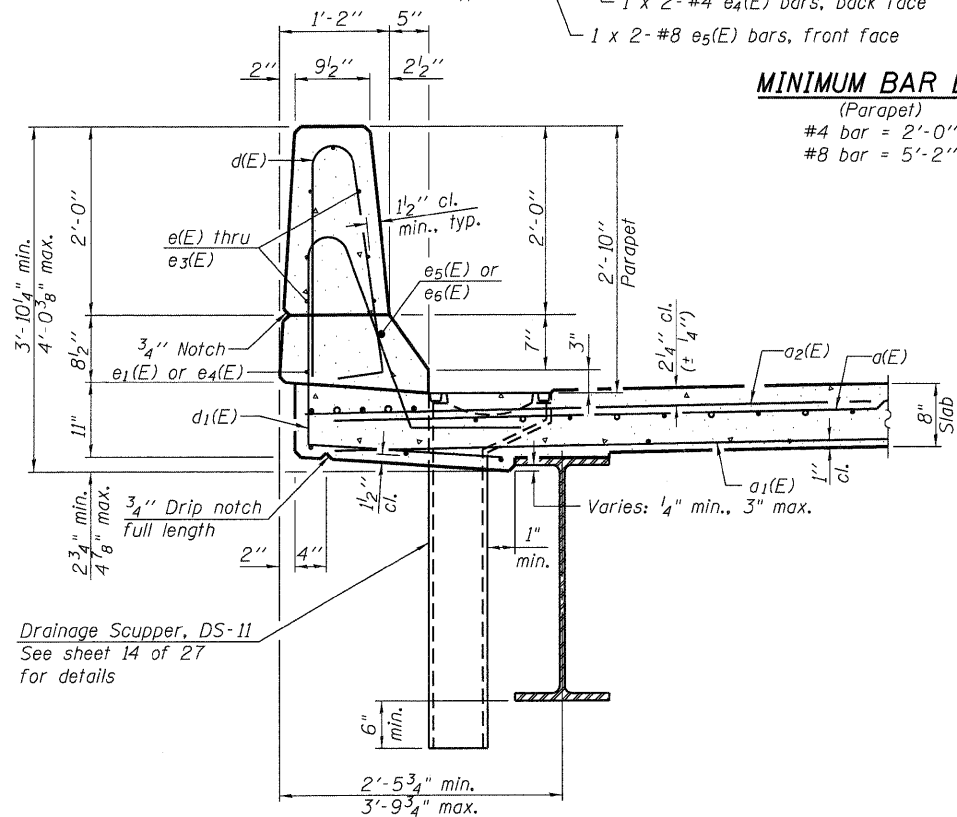
Note:
All dimensions in cross section are measured radially except where noted otherwise.

| | | | | | | | | | | | |
|-------------------------------|-------------------|-----------|--|------------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------|-------------------------|------------|--------|--------------|-----------|
| USER NAME = dheber1ing | DESIGNED - BRD | REVISED - | | 7018 KINGSMILL CT., SPRINGFIELD, IL (217) 483-9457 DESIGN FIRM #184001036 | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | SUPERSTRUCTURE STRUCTURE NO. 043-0007 | F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| FILE NAME = 0430007-64C94.dgn | CHECKED - CWC/SDS | REVISED - | | 301 | | | (43B, 44B, 44HB, 45B/D) | JO DAVIESS | 309 | 172 | |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - | | CONTRACT NO. 64C94 | | | | | | | |
| PLOT TIME = 10:18:22 AM | CHECKED - BRD | REVISED - | | ILLINOIS FED. AID PROJECT | | | | | | | |

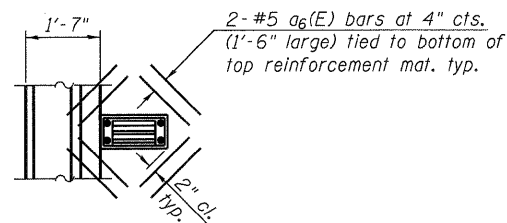


MINIMUM BAR LAP

(Parapet)
 #4 bar = 2'-0"
 #8 bar = 5'-2"



SECTION THRU PARAPET

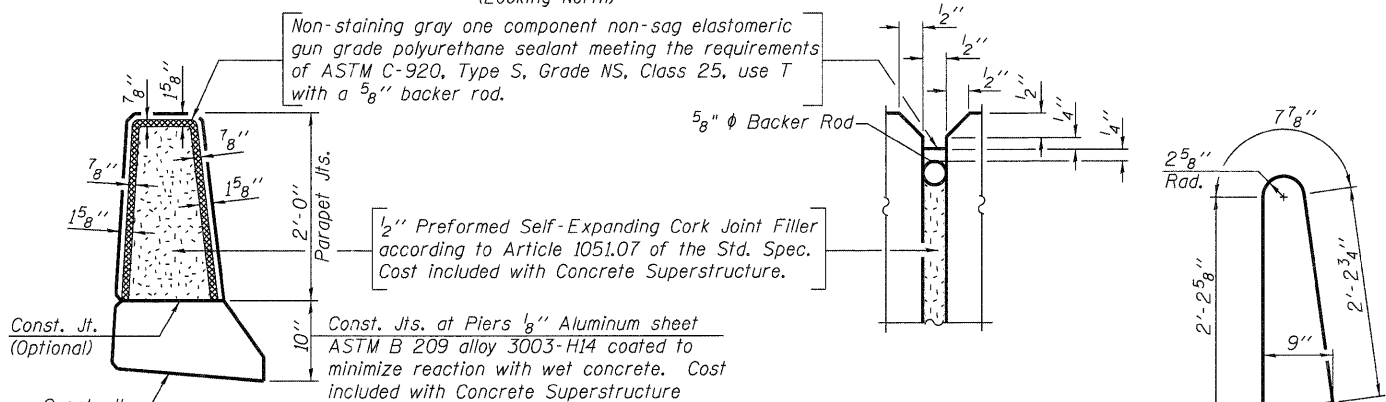


PLAN

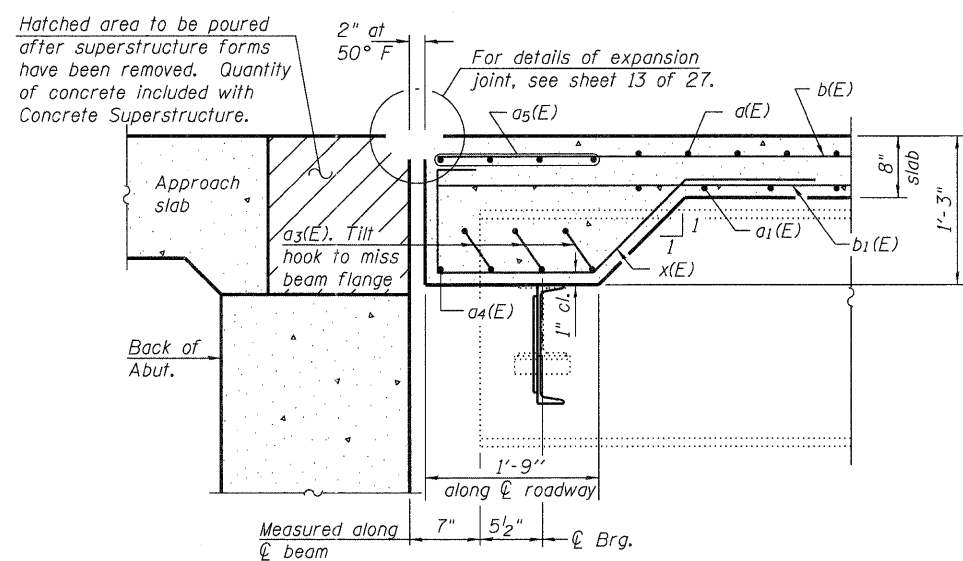
Note:
 Cut longitudinal reinforcement to clear drainage scuppers.

INSIDE ELEVATION OF PARAPETS

(Looking North)



PARAPET JOINT DETAILS



SECTION A-A

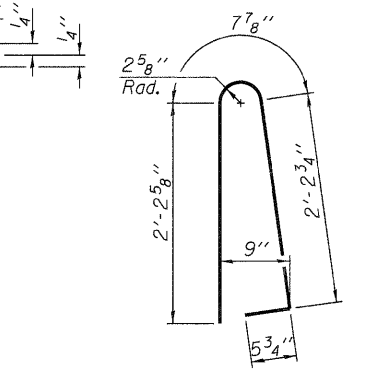
Note:
 Dimensions are based on Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Strip Seal Joint, deck dimensions may require adjustment to satisfy details on sheet 13 of 27.

SUPERSTRUCTURE BILL OF MATERIAL

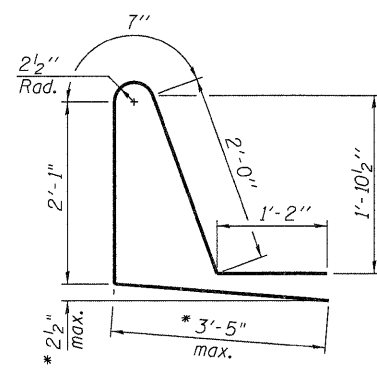
| Bar | No. | Size | Length | Shape |
|----------------------------------|-----|------|----------|--------|
| d(E) | 586 | #5 | 18'-5" | — |
| a1(E) | 496 | #5 | 18'-5" | — |
| a2(E) | 584 | #6 | 6'-6" | — |
| a3(E) | 30 | #5 | 7'-9" | — |
| a4(E) | 4 | #5 | 17'-0" | — |
| a5(E) | 16 | #5 | 19'-10" | — |
| a6(E) | 8 | #5 | 1'-6" | — |
| b(E) | 294 | #5 | 31'-10" | — |
| b1(E) | 288 | #5 | 28'-2" | — |
| b2(E) | 76 | #6 | 43'-0" | — |
| d1(E) | 454 | #5 | 5'-7" | — |
| d1(E) | 454 | #5 | 9'-3" | — |
| e(E) | 42 | #4 | 18'-0" | — |
| e1(E) | 64 | #4 | 9'-9" | — |
| e2(E) | 42 | #4 | 18'-3" | — |
| e3(E) | 42 | #4 | 18'-6" | — |
| e4(E) | 12 | #4 | 29'-2" | — |
| e5(E) | 12 | #8 | 30'-9" | — |
| e6(E) | 8 | #8 | 9'-9" | — |
| x(E) | 60 | #5 | 6'-5" | — |
| Reinforcement Bars, Epoxy Coated | | | Pound | 61,080 |
| Concrete Superstructure | | | Cu. Yds. | 273.8 |

Bars indicated thus 1 x 2-#8 etc. indicates 1 line of bars with 2 lengths per line.

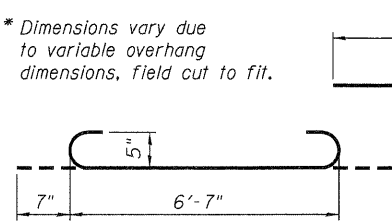
BAR d(E)



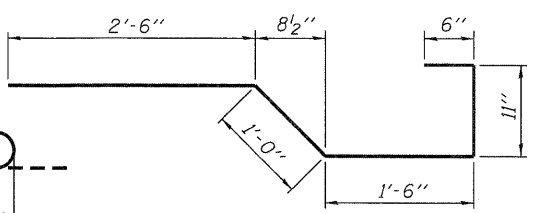
BAR d1(E)

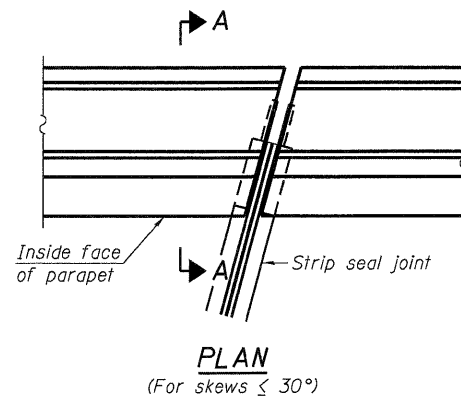


a3(E) BAR

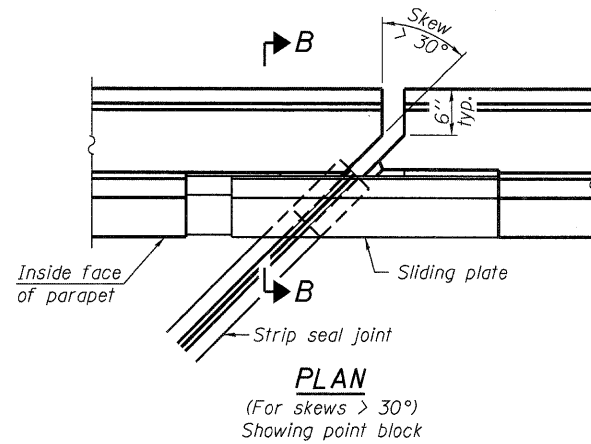


BAR x(E)

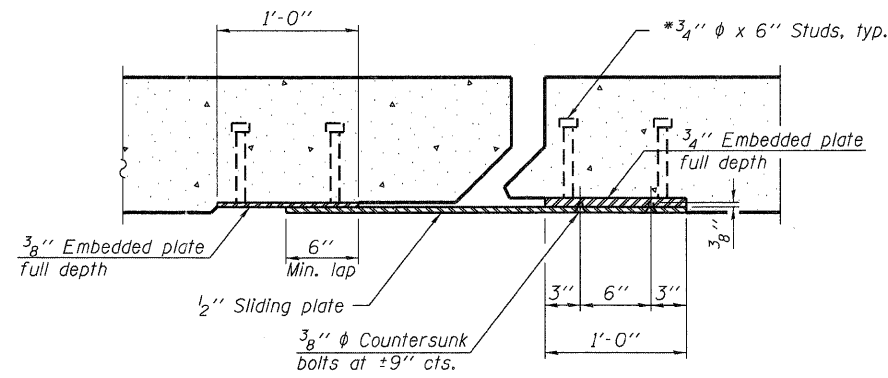




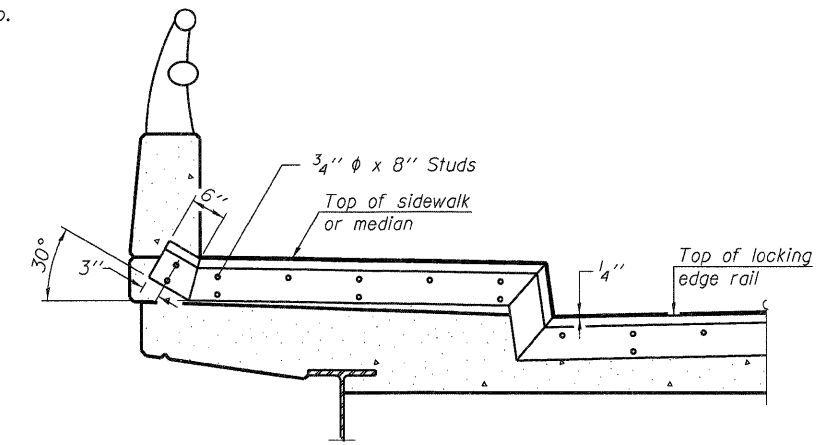
PLAN
(For skews $\leq 30^\circ$)



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

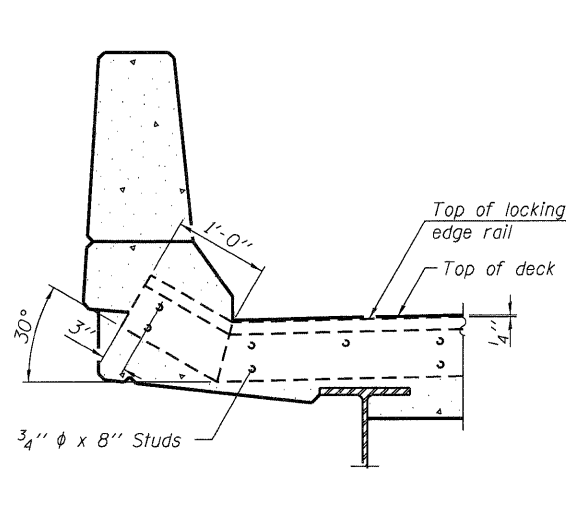


SECTION C-C

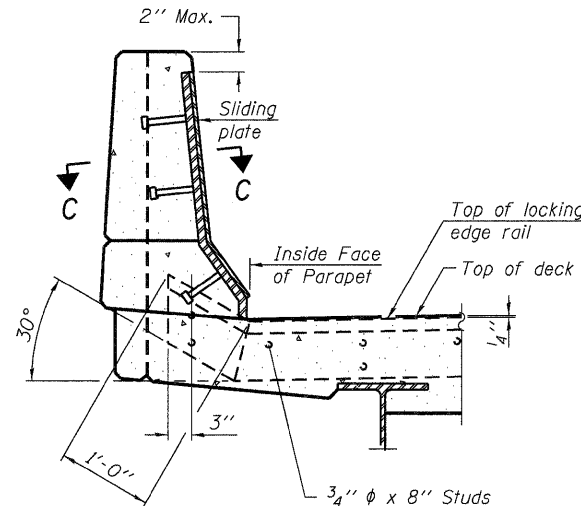


TYPICAL END TREATMENT AT SIDEWALK OR MEDIAN

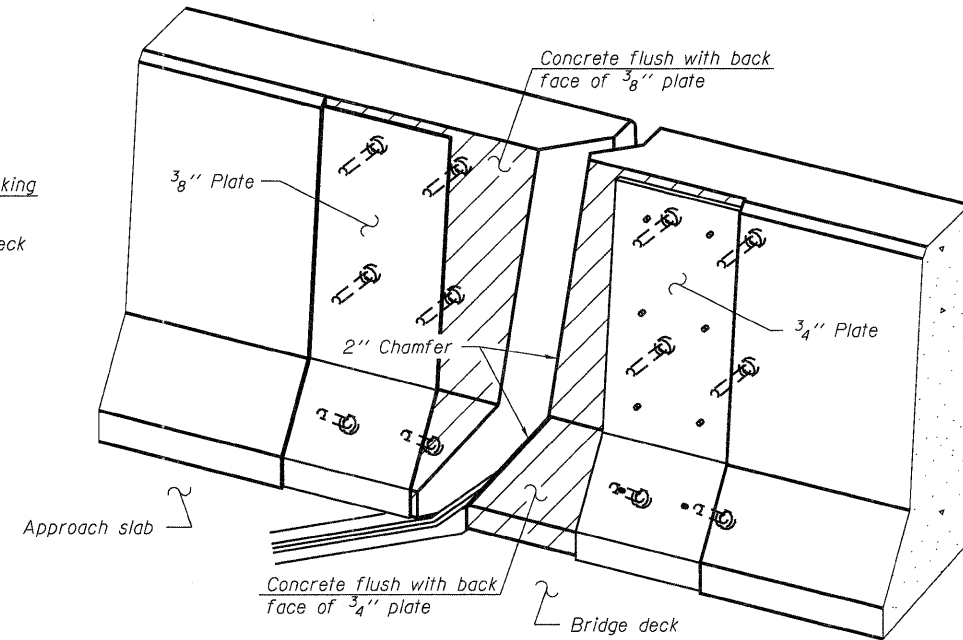
Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.



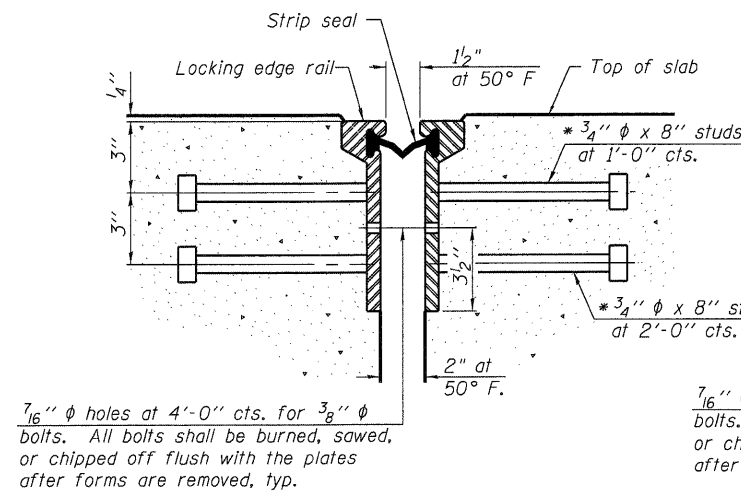
SECTION A-A



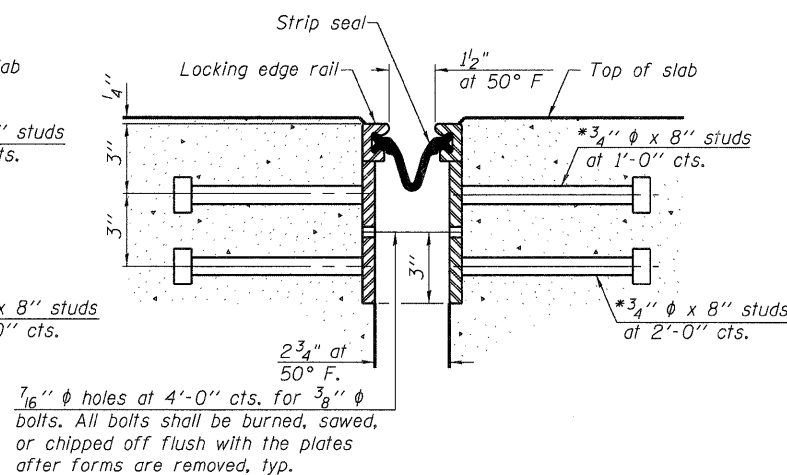
SECTION B-B



TRIMETRIC VIEW
(Showing back plates only)

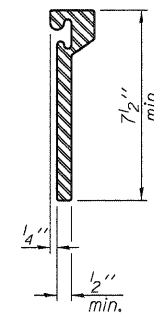


SECTION THRU ROLLED RAIL JOINT

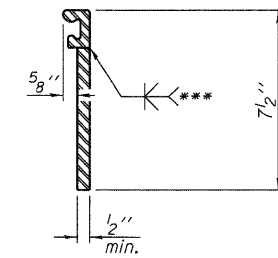


SECTION THRU WELDED RAIL JOINT

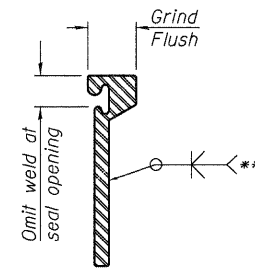
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



ROLLED EXTRUDED RAIL



WELDED RAIL



LOCKING EDGE RAIL SPLICE

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

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

LOCKING EDGE RAILS

BILL OF MATERIAL

| Item | Unit | Total |
|----------------------------|------|-------|
| Preformed Joint Strip Seal | Foot | 80 |

EJ-SSJ

7-1-10

| | | |
|-------------------------------|-------------------|-----------|
| USER NAME = dheberling | DESIGNED - BRD | REVISED - |
| FILE NAME = 0430007-64C94.dgn | CHECKED - CWC/SDS | REVISED - |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - |
| PLOT TIME = 10:10:30 AM | CHECKED - BRD | REVISED - |

WHKS & CO.
ENGINEERING

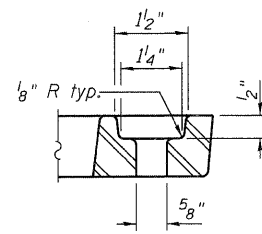
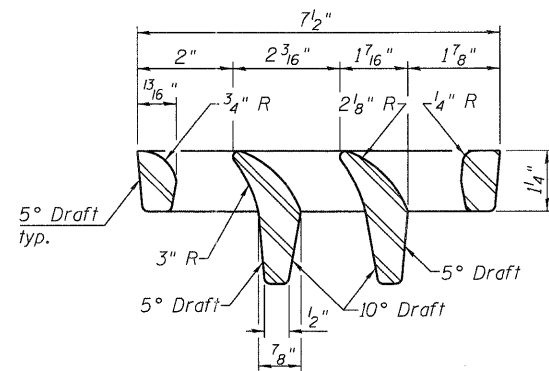
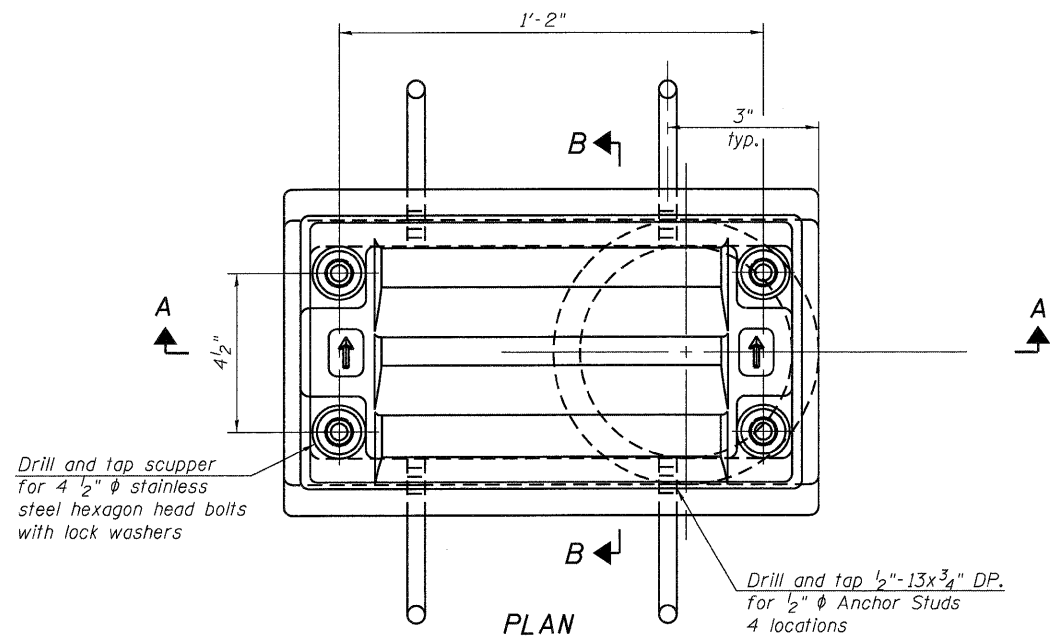
7018 KINGSMILL CT.,
SPRINGFIELD, IL
(217) 483-9457
DESIGN FIRM #184001036

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

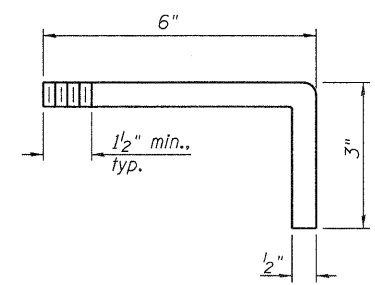
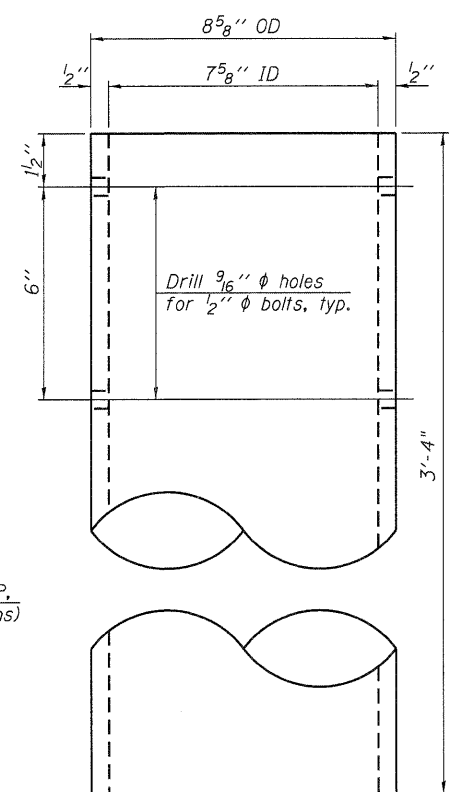
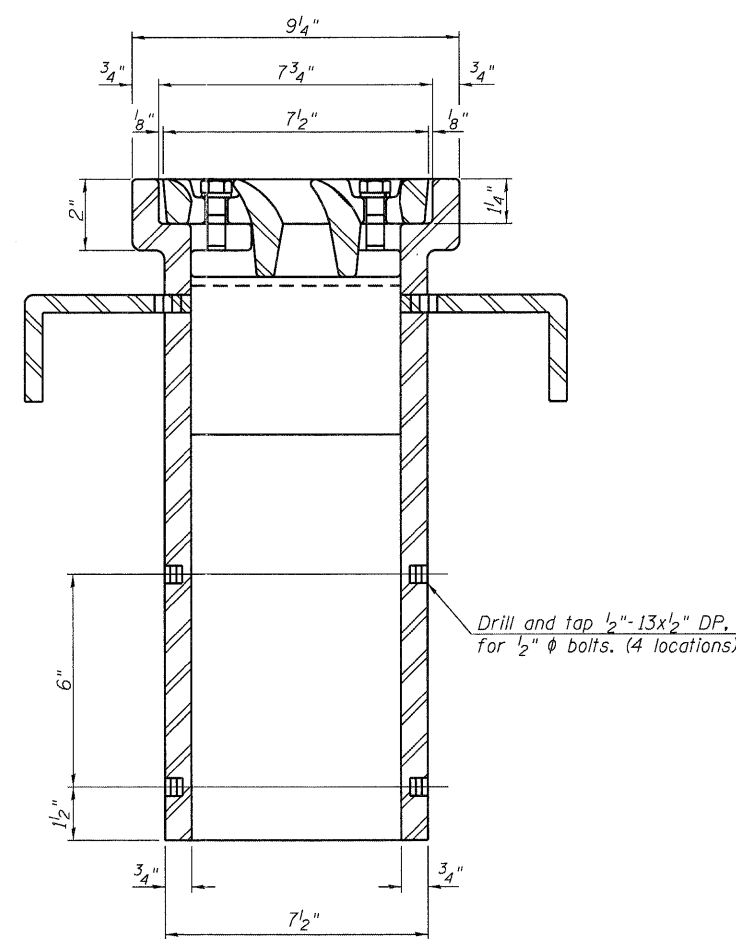
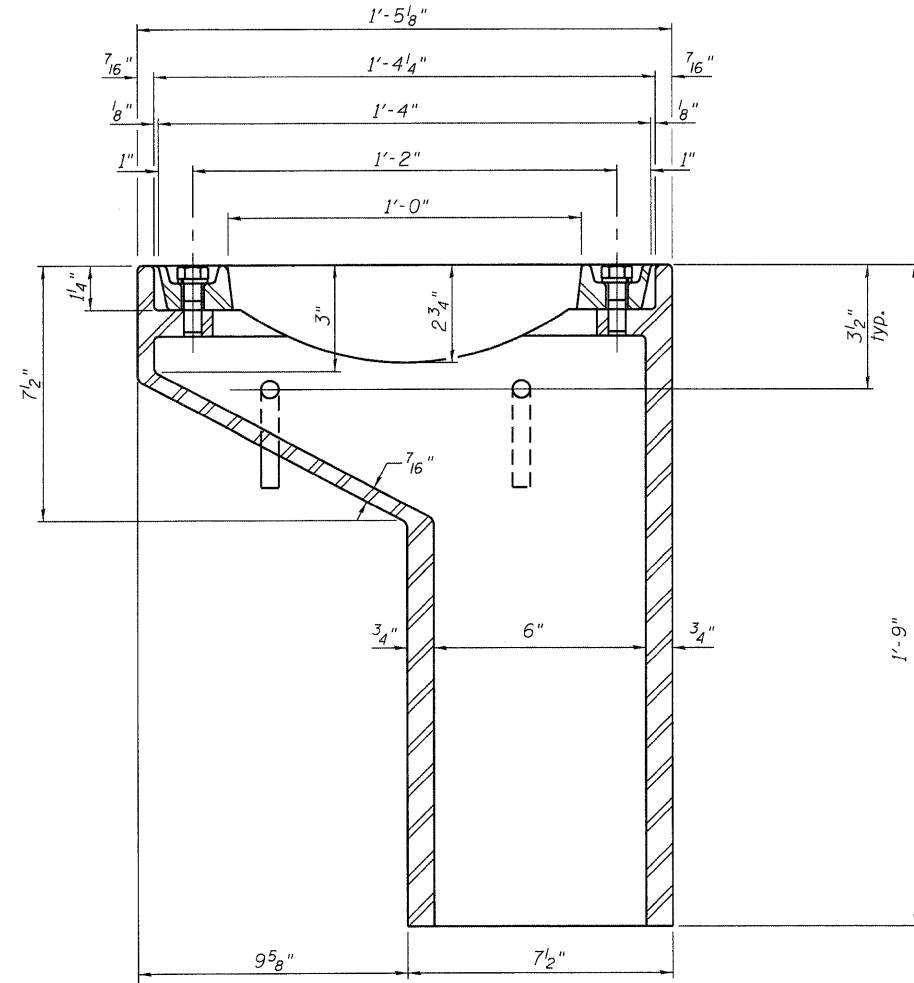
PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 043-0007

SHEET NO. 13 OF 27 SHEETS

| | | | | |
|---------------------------|--------------------------------|-------------------|--------------------|---------------|
| F.A.P. RTE. 301 | SECTION (43B, 44B, 44HB, 45B)D | COUNTY JO DAVIESS | TOTAL SHEETS 309 | SHEET NO. 174 |
| | | | CONTRACT NO. 64C94 | |
| ILLINOIS FED. AID PROJECT | | | | |



Notes:
 All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.
 Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.
 Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.
 As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.
 Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frame. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron scupper grate. Structural steel frames and downspouts shall be galvanized according to AASHTO M111.
 The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.
 Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-11.
 Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. may be used in lieu of the cast iron or steel equivalent.

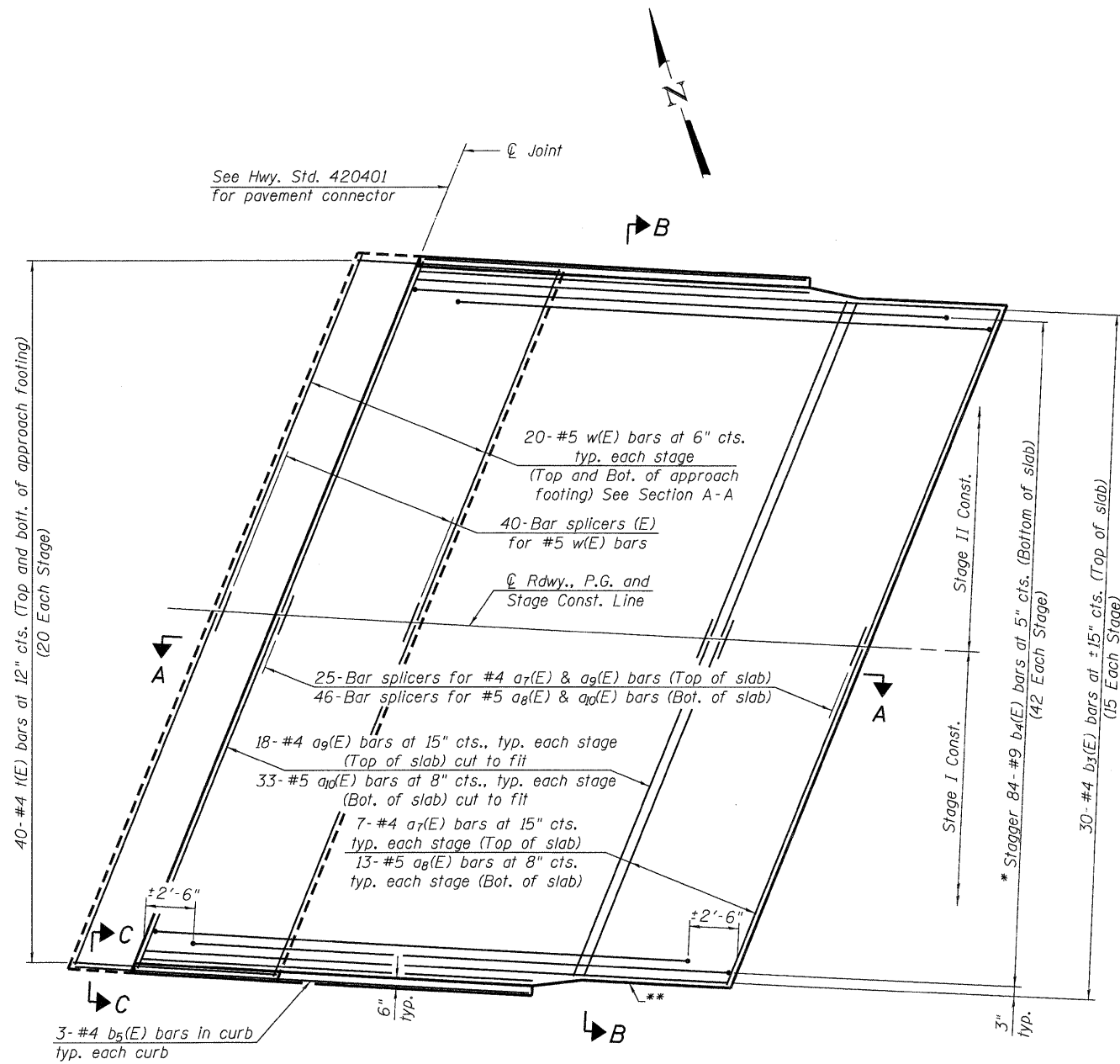


See sheet 12 of 27 for scupper location relative to parapet.

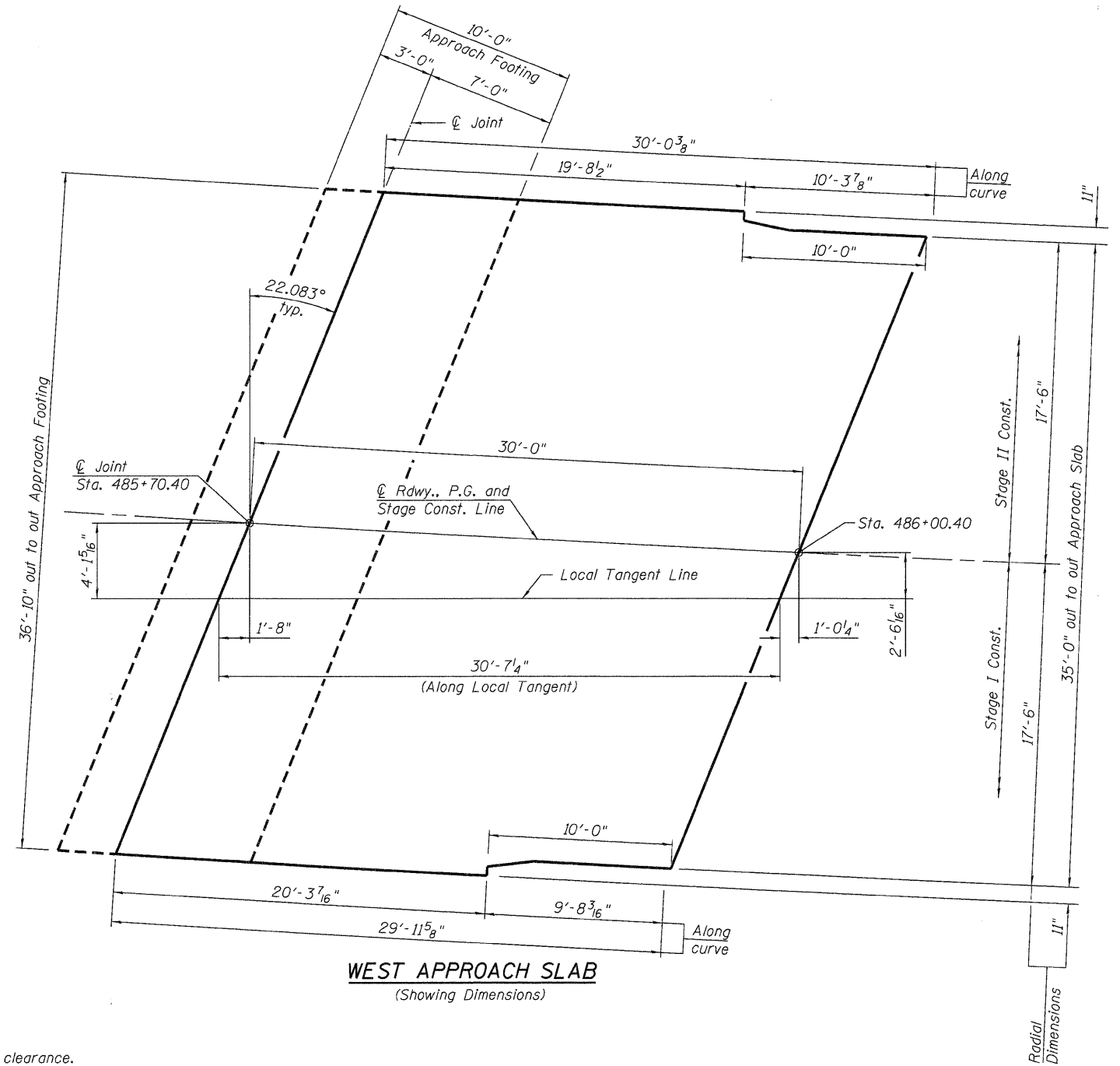
BILL OF MATERIAL

| ITEM | UNIT | QUANTITY |
|-------------------------|------|----------|
| Drainage Scupper, DS-11 | Each | 1 |

DS-11 7-1-10



WEST APPROACH SLAB
(Showing Reinforcement)



WEST APPROACH SLAB
(Showing Dimensions)

* Tilt #9 b₄(E) bars as required to maintain clearance.

** Preformed Flexible Foam Expansion Joint Filler according to Article 1051.09 of the Standard Specifications: full depth of slab, full length of parapet. Typ. each parapet.

Place longitudinal bars in approach slab parallel to a chord intersecting Roadway Centerline at Sta. 485+70.40 and Sta. 486+00.40.

USER NAME = dheberling
FILE NAME = 0430007-64C94.dgn
PLOT DATE = 12/6/2011
PLOT TIME = 10:10:36 AM

DESIGNED - BRD
CHECKED - CWC/SDS
DRAWN - DLH
CHECKED - BRD

REVISED -
REVISED -
REVISED -
REVISED -

WHKS & CO.
ENGINEERING

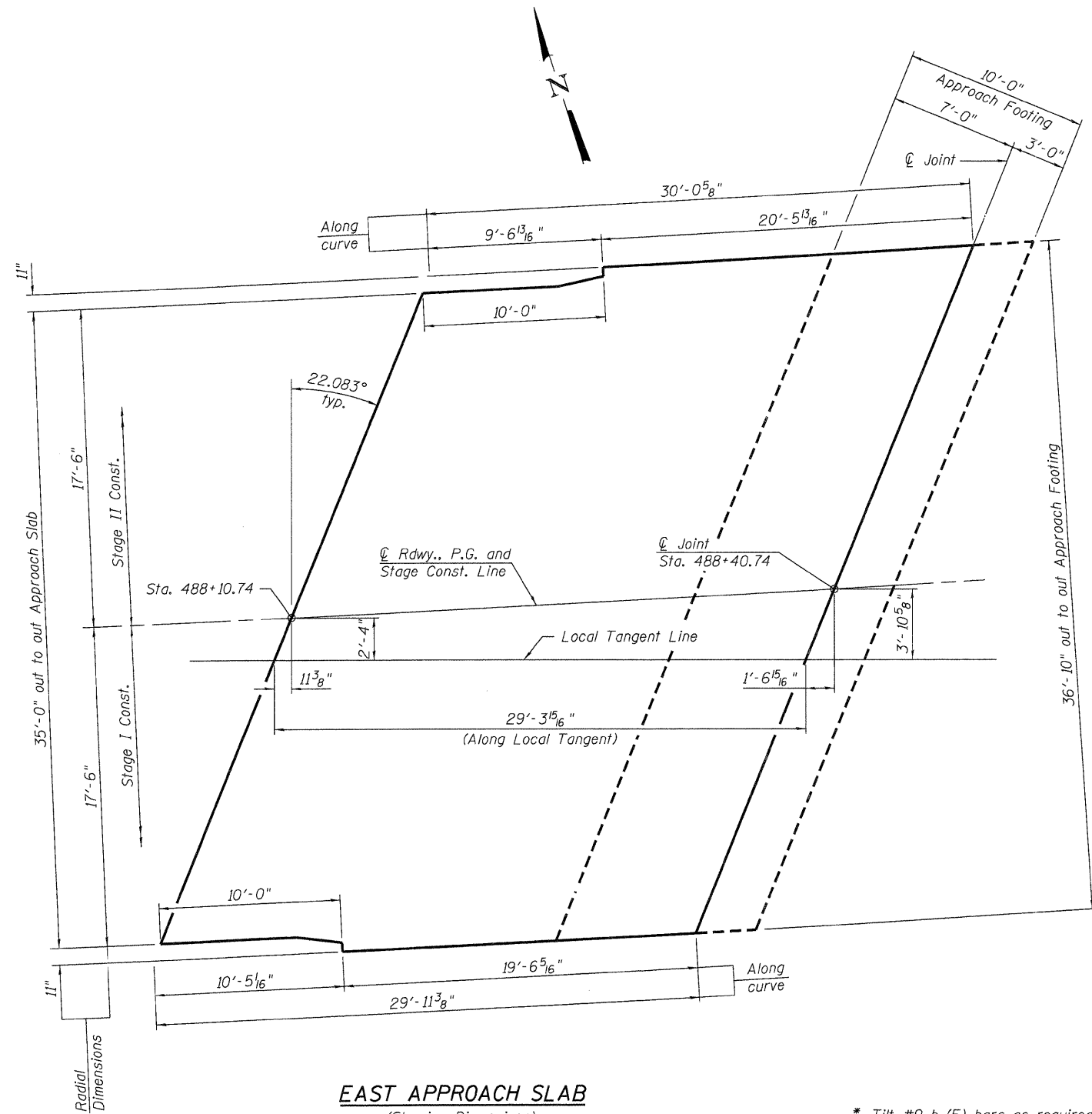
7018 KINGSMILL CT.,
SPRINGFIELD, IL
(217) 483-9457
DESIGN FIRM #184001036

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

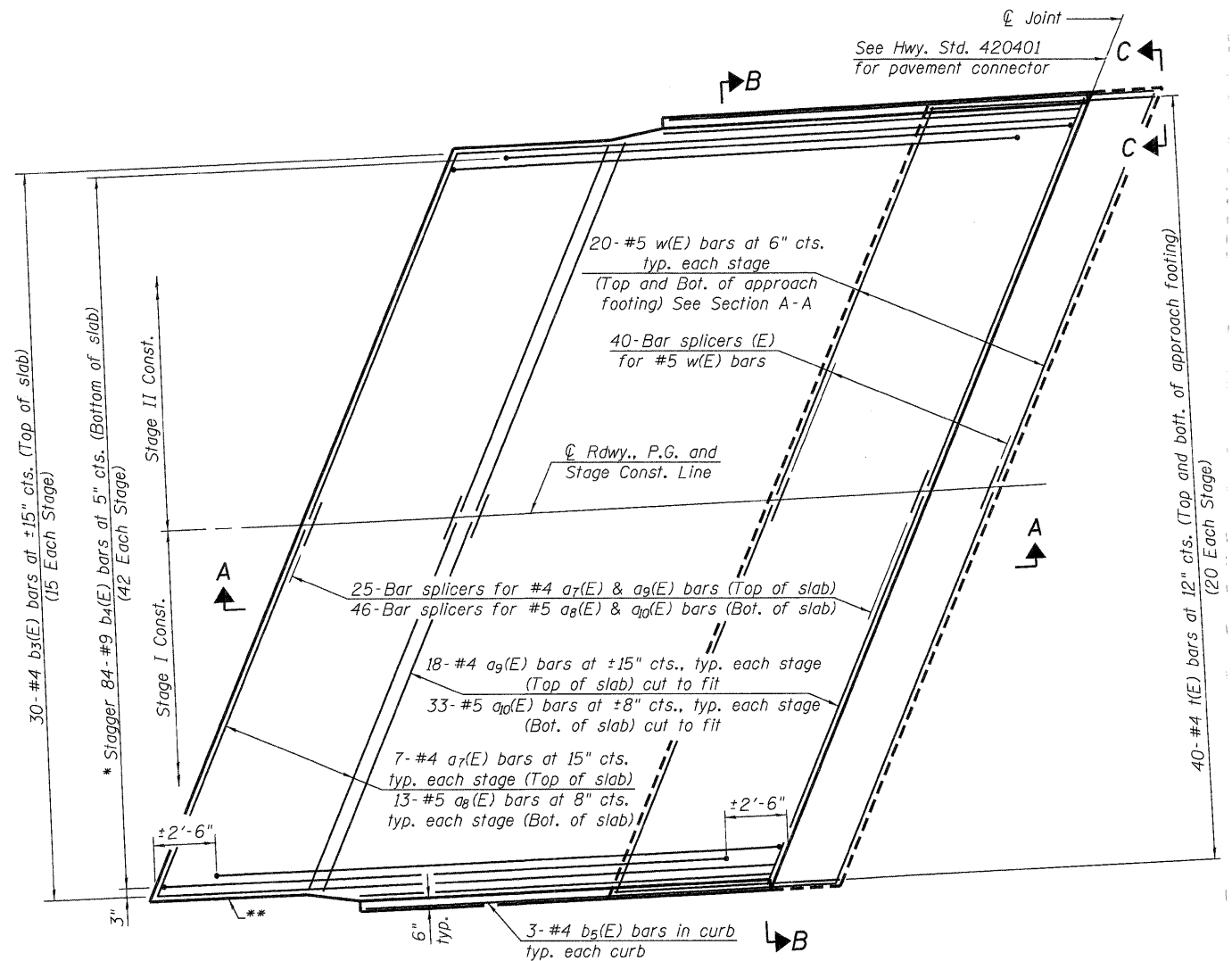
WEST APPROACH SLAB DETAILS
STRUCTURE NO. 043-0007

SHEET NO. 15 OF 27 SHEETS

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|--------------------|------------------------|------------|---------------------------|-----------|
| 301 | (43B, 44B, 44HB, 45B)D | JO DAVIESS | 309 | 176 |
| CONTRACT NO. 64C94 | | | ILLINOIS FED. AID PROJECT | |



EAST APPROACH SLAB
(Showing Dimensions)



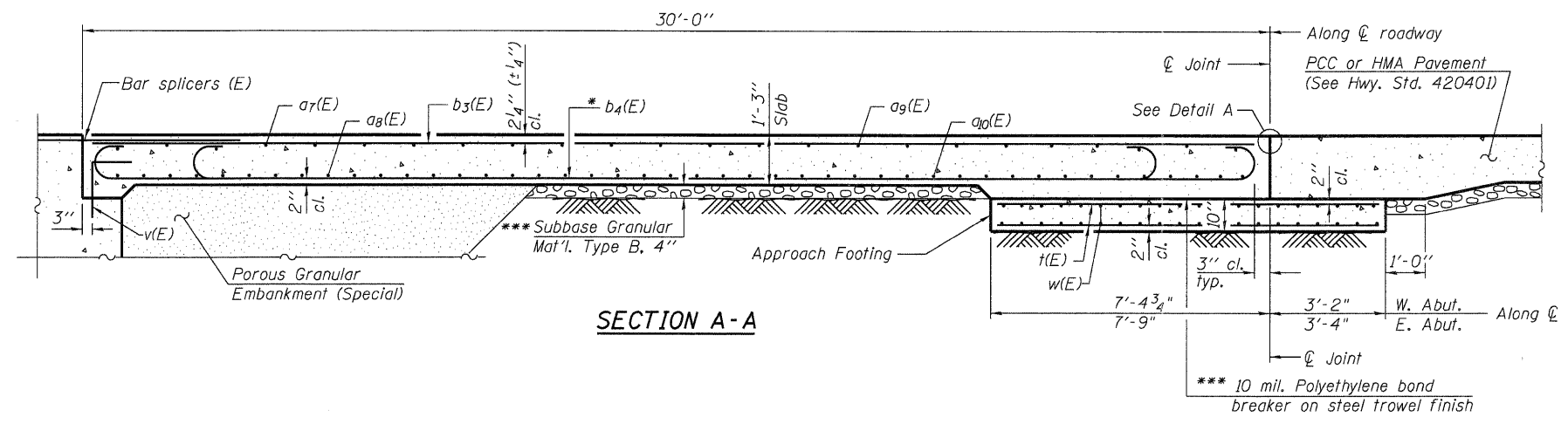
EAST APPROACH SLAB
(Showing Reinforcement)

* Tilt #9 b4(E) bars as required to maintain clearance.

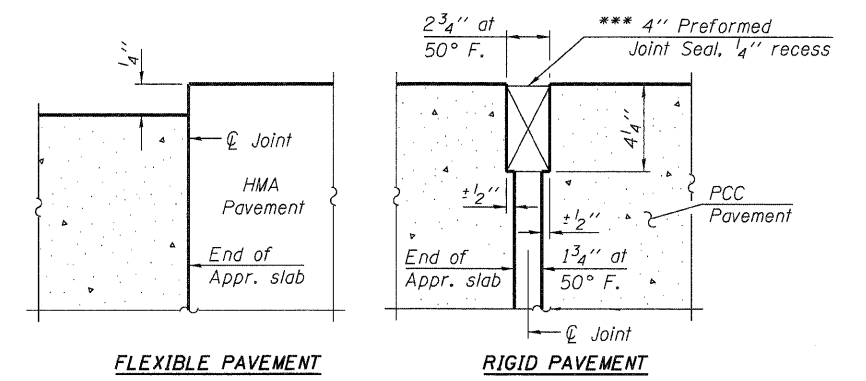
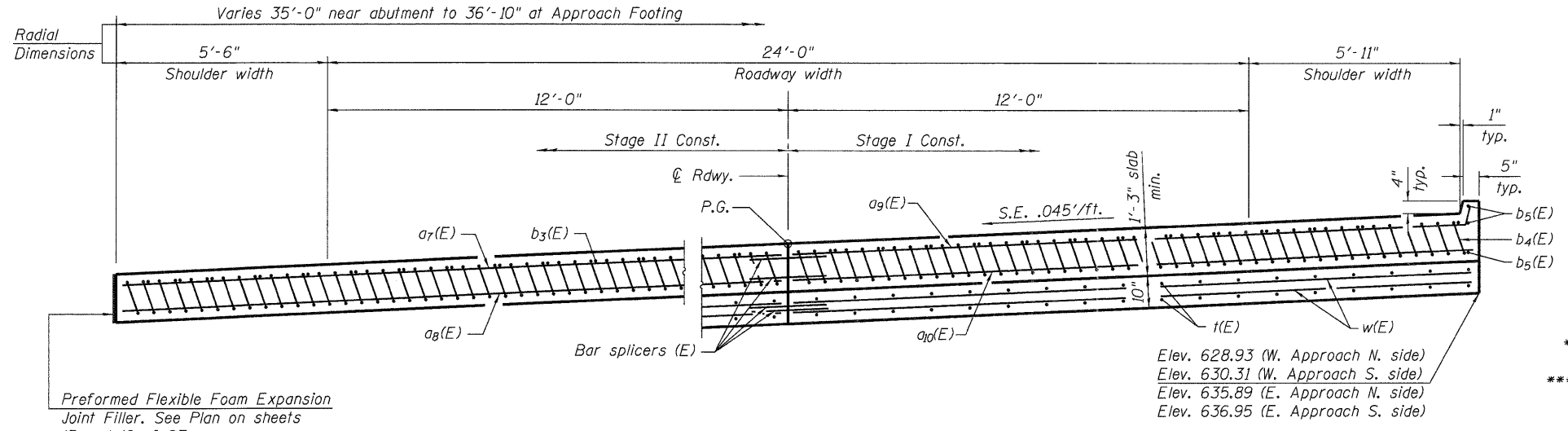
** Preformed Flexible Foam Expansion Joint Filler according to Article 1051.09 of the Standard Specifications: full depth of slab, full length of parapet. Typ. each parapet.

Place longitudinal bars in approach slab parallel to a chord intersecting Roadway Centerline at Sta. 488+10.74 and Sta. 488+40.74.

| | | | | | | | | | | | |
|-------------------------------|-------------------|-----------|--|------------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------|---------------------------|-------------------------|------------|--------------|-----------|
| USER NAME = dheberling | DESIGNED - BRD | REVISED - | | 7018 KINGSMILL CT., SPRINGFIELD, IL (217) 483-9457 DESIGN FIRM #184001036 | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | EAST APPROACH SLAB DETAILS STRUCTURE NO. 043-0007 | F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| FILE NAME = 0430007-64C94.dgn | CHECKED - CWC/SDS | REVISED - | | | | | 301 | (43B, 44B, 44HB, 45B/D) | JO DAVIESS | 309 | 177 |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - | | | | | CONTRACT NO. 64C94 | | | | |
| PLOT TIME = 10:18:39 AM | CHECKED - BRD | REVISED - | | | | | ILLINOIS FED. AID PROJECT | | | | |



Notes:
 Approach slab shall be paid for as Concrete Superstructure.
 Approach footing concrete shall be paid for as Concrete Structures.
 Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
 For v(E) bar details, see sheets 23 and 26 of 27.
 The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
 For bar splicer details, see sheet 27 of 27.
 Cost of excavation for approach footing included with Concrete Structures.
 For Porous Granular Embankment (Special) and drainage treatment details, see sheet 2 of 27.

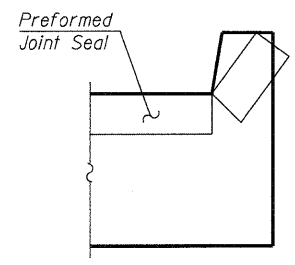
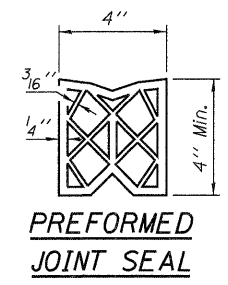


* Tilt #9 b4(E) bars as required to maintain clearance.
 *** Cost included with Concrete Superstructure.

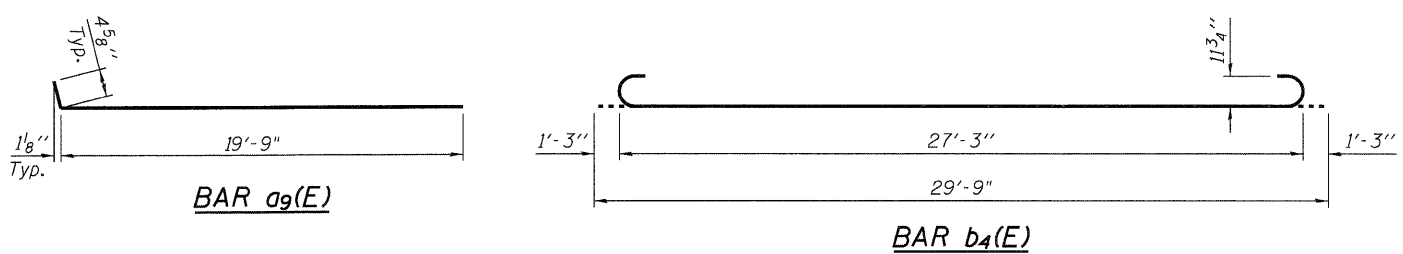
SECTION B-B
 (See Plan for dimensions not shown)

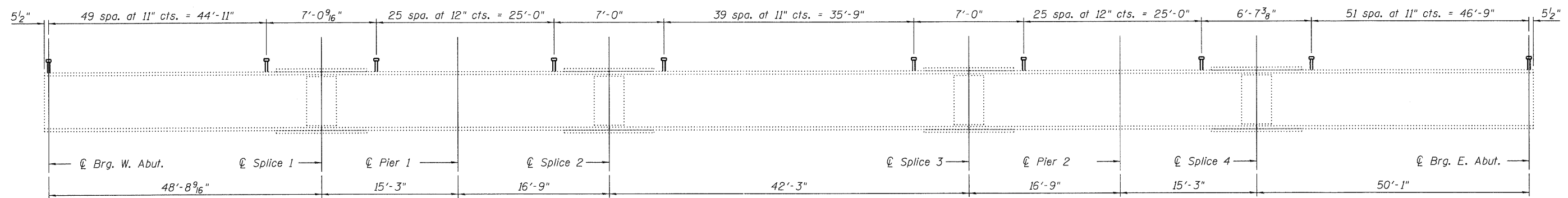
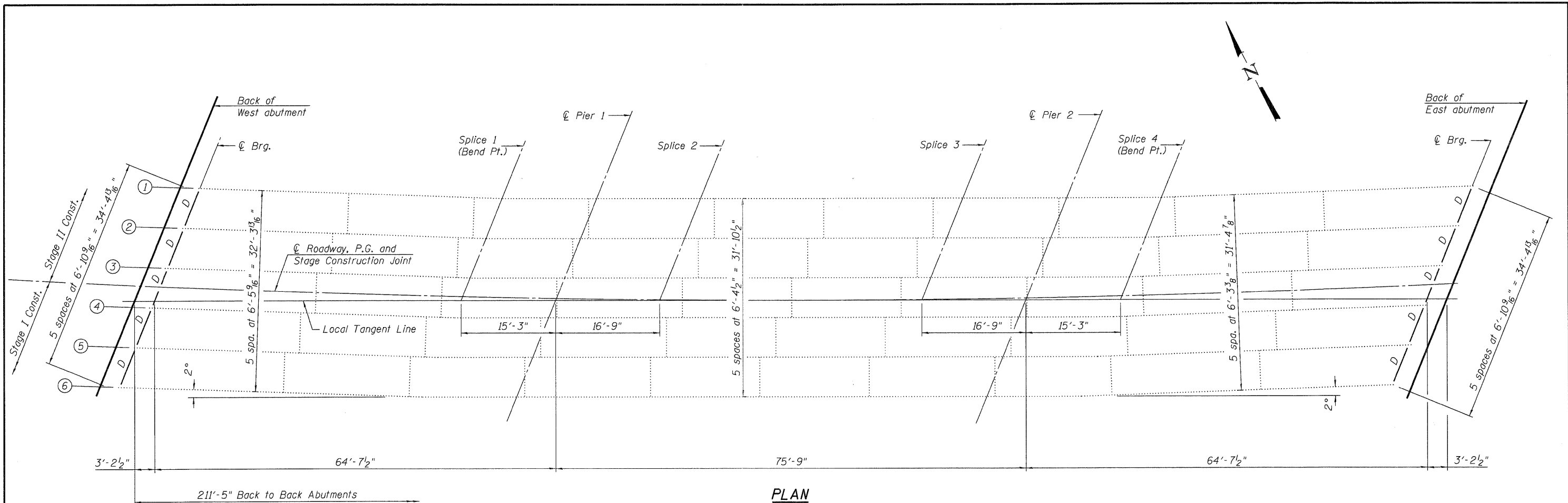
**TWO APPROACHES
 BILL OF MATERIAL**

| Bar | No. | Size | Length | Shape |
|--------|-----|----------------------------------|---------|--------|
| a7(E) | 28 | #4 | 18'-3" | — |
| a8(E) | 52 | #5 | 18'-3" | — |
| a9(E) | 72 | #4 | 20'-2" | — |
| a10(E) | 132 | #5 | 20'-2" | — |
| b3(E) | 60 | #4 | 29'-8" | — |
| b4(E) | 168 | #9 | 29'-9" | — |
| b5(E) | 12 | #4 | 19'-4" | — |
| f(E) | 160 | #4 | 10'-5" | — |
| w(E) | 160 | #5 | 19'-6" | — |
| | | Concrete Superstructure | Cu. Yd. | 114.0 |
| | | Concrete Structures | Cu. Yd. | 24.6 |
| | | Reinforcement Bars, Epoxy Coated | Pound | 27,790 |

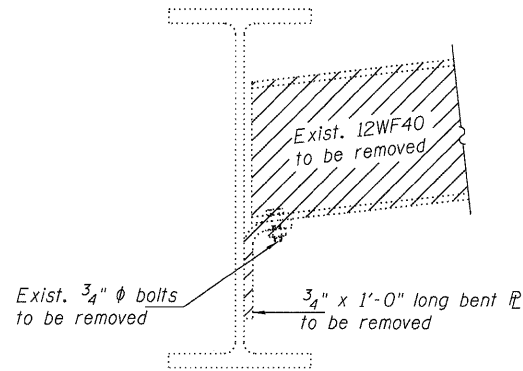


VIEW C-C
 Angle Preformed Joint Seal at 45° at curbs when req'd for drainage.





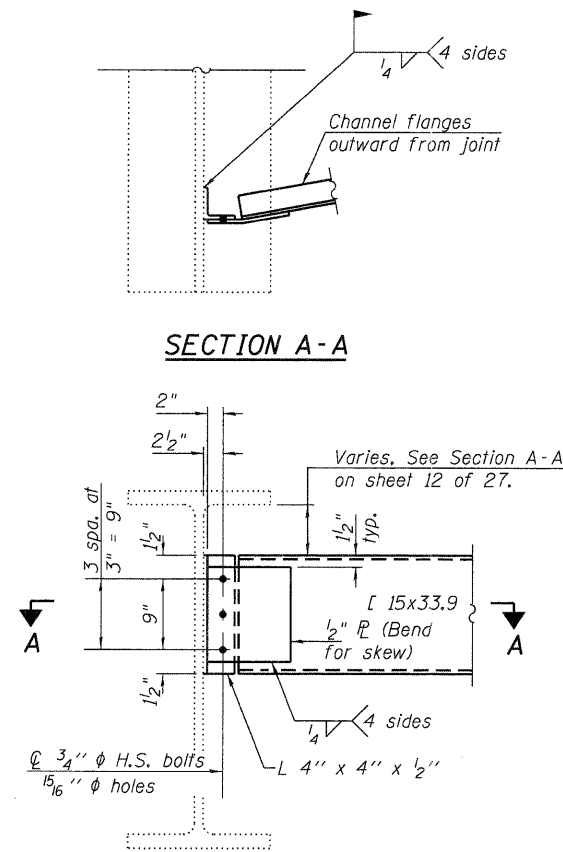
| | | | | | | | | | | | |
|-------------------------------|-------------------|-----------|--|------------------------------------------------------------------------------------|-----------------------------------------------------------------|------------------------------------------------------|---------------------------|-------------------------|------------|--------------|-----------|
| USER NAME = dheberling | DESIGNED - BRD | REVISED - | | 7018 KINGSMILL CT., SPRINGFIELD, IL (217) 483-9457 DESIGN FIRM #184001038 | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | FRAMING PLAN STRUCTURE NO. 043-0007 | F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| FILE NAME = 0430007-64C94.dgn | CHECKED - CWC/SDS | REVISED - | | | | | 301 | (43B, 44B, 44HB, 45B/D) | JO DAVIESS | 309 | 179 |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - | | | | | CONTRACT NO. 64C94 | | | | |
| PLOT TIME = 10:18:45 AM | CHECKED - BRD | REVISED - | | | | | ILLINOIS FED. AID PROJECT | | | | |



Exist. end diaphragms, bent flanges, bolts and any existing welds shall be removed. Existing welds shall be removed using the air-arc method. Grind smooth all weld material remaining on the web. Cost included with Structural Steel Removal.

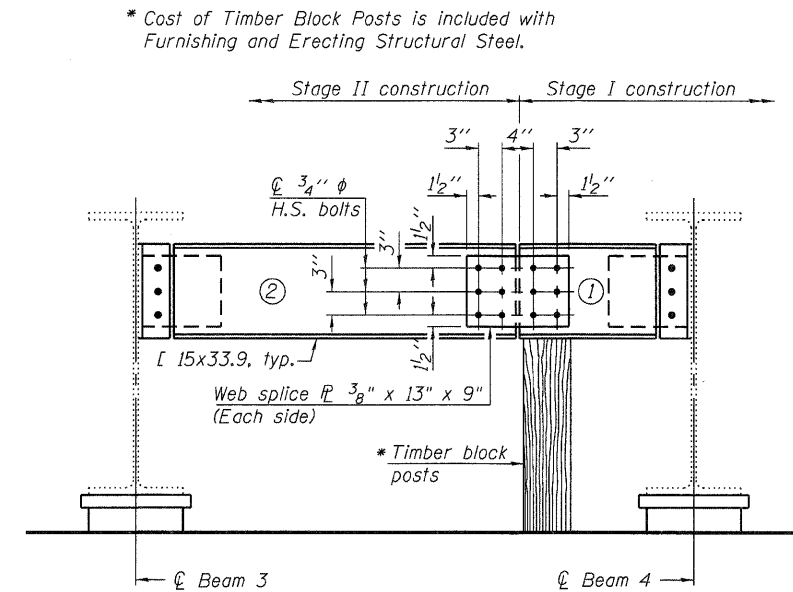
EXISTING END DIAPHRAGM REMOVAL DETAIL

(Total 10 Diaphragms to be removed)



NEW END DIAPHRAGM DETAIL

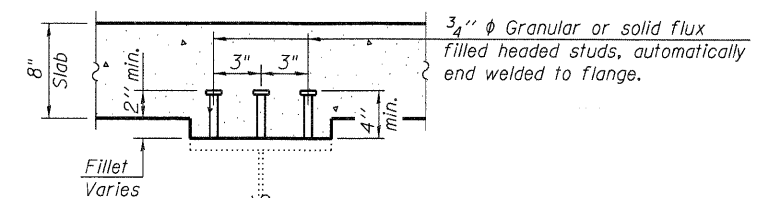
(Total 10 Diaphragms)



END DIAPHRAGM

END DIAPHRAGM STAGE CONSTRUCTION SEQUENCE

- 1.) Order diaphragm in two sections.
- 2.) Attach section ① of diaphragm to beam ④
- 3.) Place timber block posts between section ① of diaphragm and abutment bearing section.
- 4.) Attach section ② of diaphragm to both beam ③ and section ① of diaphragm during stage II construction with splice plates.
- 5.) Remove timber block posts.



SECTION A-A

BILL OF MATERIAL

| Item | Unit | Total |
|------------------------------------------|-------|-------|
| Furnishing and Erecting Structural Steel | Pound | 4,620 |
| Structural Steel Removal | Pound | 3,370 |
| Stud Shear Connectors | Each | 3,492 |

| INTERIOR GIRDER MOMENT TABLE | | | | | | |
|---------------------------------|--------------------|-----------|---------|-----------|---------|-----------|
| | | 0.4 Sp. 1 | Pier 1 | 0.5 Sp. 2 | Pier 2 | 0.6 Sp. 3 |
| I_s | (in ⁴) | 11281.5 | 11281.5 | 11281.5 | 11281.5 | 11281.5 |
| $I_c(n)$ | (in ⁴) | 26349 | | 26349 | | 26349 |
| $I_c(3n)$ | (in ⁴) | 19215 | 19215 | 19215 | 19215 | 19215 |
| $I_c(cr)$ | (in ⁴) | | 14187 | | 14187 | |
| S_s | (in ³) | 621.2 | 621.2 | 621.2 | 621.2 | 621.2 |
| $S_c(n)$ | (in ³) | 862.2 | | 862.2 | | 862.2 |
| $S_c(3n)$ | (in ³) | 776.4 | 776.4 | 776.4 | 776.4 | 776.4 |
| $S_c(cr)$ | (in ³) | | 693.7 | | 693.7 | |
| Z | (in ³) | | | | | |
| ρ | (k/') | 0.867 | 0.867 | 0.867 | 0.867 | 0.867 |
| $M\phi$ | (k) | 258 | 419 | 199 | 431 | 271 |
| $s\phi$ | (k/') | 0.309 | 0.309 | 0.309 | 0.309 | 0.309 |
| $M_s\phi$ | (k) | 92 | 151 | 69 | 155 | 96 |
| $M\phi$ | (k) | 409 | 337 | 380 | 342 | 422 |
| M_{IM} | (k) | 108 | 86 | 95 | 87 | 108 |
| $\phi_3 [M\phi + IM]$ | (k) | 863 | 705 | 791 | 715 | 883 |
| M_o | (k) | 1576 | 1657 | 1376 | 1691 | 1626 |
| M_u | (k) | 2427 | | 2427 | | 2427 |
| $f_s \phi$ non-comp | (ksi) | 5.0 | 8.1 | 3.8 | 8.3 | 5.2 |
| $f_s \phi$ (comp) | (ksi) | 1.4 | 2.6 | 1.1 | 2.7 | 1.5 |
| $f_s (\phi_3 [M\phi + M_{IM}])$ | (ksi) | 12 | 12.2 | 11.0 | 12.4 | 12.3 |
| f_s (Overload) | (ksi) | 18.4 | 22.9 | 15.9 | 23.4 | 19 |
| f_s (Total) | (ksi) | | 29.8 | | 30.4 | |
| VR | (k) | 54.27 | 49.54 | 42.95 | 49.41 | 53.98 |

| INTERIOR GIRDER REACTION TABLE | | | | | |
|--------------------------------|----------|--------|--------|----------|------|
| | W. Abut. | Pier 1 | Pier 2 | E. Abut. | |
| $R\phi$ | (k) | 29.4 | 90.9 | 92.2 | 30.1 |
| $R\phi$ | (k) | 38.5 | 45.8 | 46.1 | 30.0 |
| R_I | (k) | 10.2 | 8.7 | 8.7 | 18.8 |
| R_{Total} | (k) | 78.1 | 145.5 | 146.9 | 78.8 |

* Compact section
** Braced non-compact and partially braced section

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) due to non-composite dead loads (in⁴ and in³).

$I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total and Overload) due to short-term composite live loads (in⁴ and in³).

$I_c(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total and Overload) due to long-term composite (superimposed) dead loads (in⁴ and in³).

$I_c(cr), S_c(cr)$: Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing f_s (Total-Strength II and Service II) in cracked sections, due to both short-term composite live loads and long-term composite dead loads (in⁴ and in³).

Z : Plastic Section Modulus of the steel section in non-composite areas (in³).

ρ : Un-factored non-composite dead load (kips/ft.).

$M\phi$: Un-factored moment due to non-composite dead load (kip-ft.).

$s\phi$: Un-factored long-term composite (superimposed) dead load (kips/ft.).

$M_s\phi$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

$M\phi$: Un-factored live load moment (kip-ft.).

M_I : Un-factored moment due to impact (kip-ft.).

M_o : Factored design moment (kip-ft.).

$1.3 [M\phi + M_s\phi + \frac{5}{8} (M\phi + M_I)]$

M_u : Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).

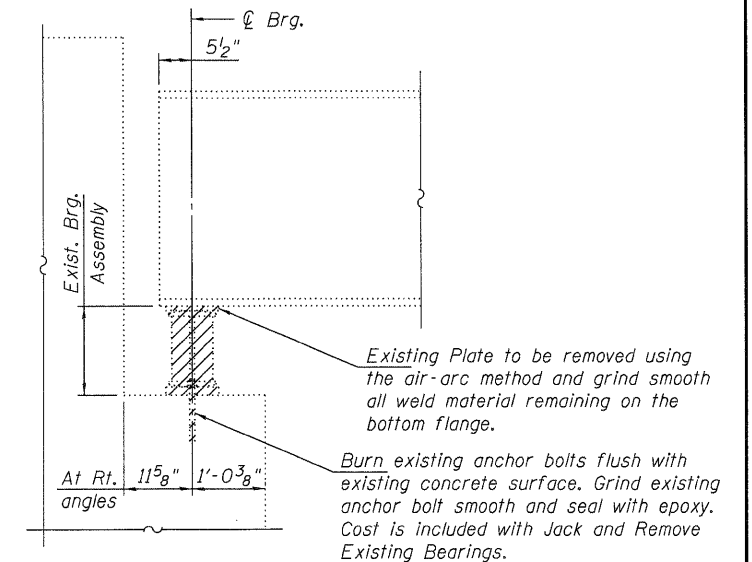
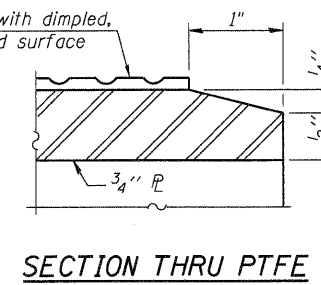
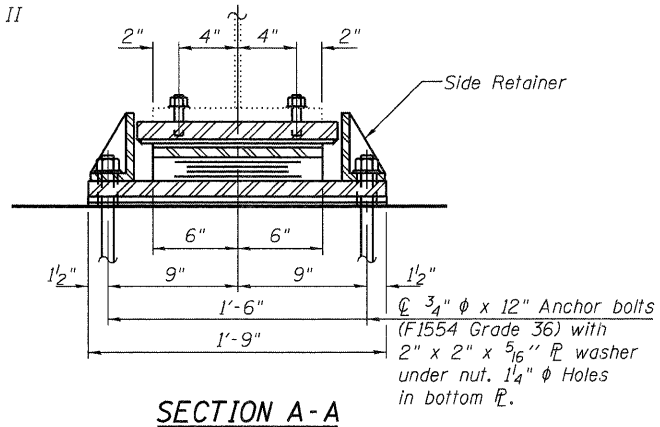
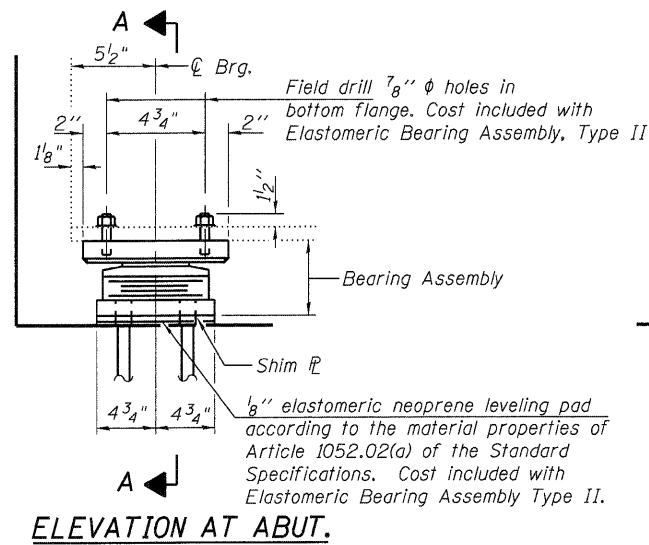
f_s (Overload): Sum of stresses as computed from the moments below (ksi).

$M\phi + M_s\phi + \frac{5}{8} (M\phi + M_I)$

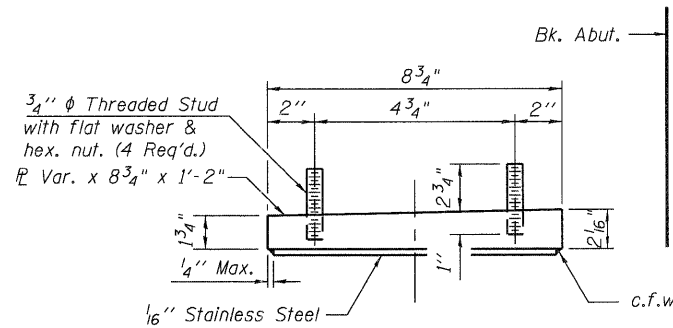
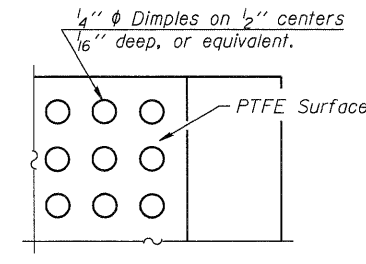
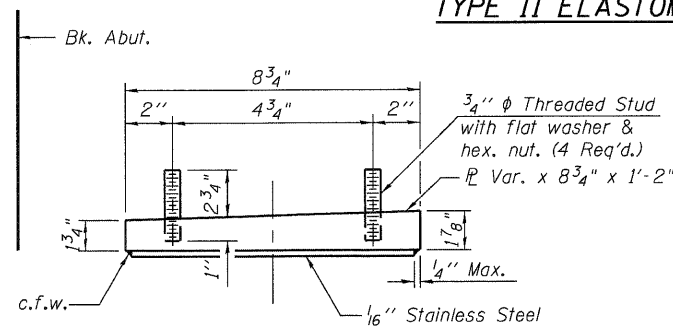
f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).

$1.3 [M\phi + M_s\phi + \frac{5}{8} (M\phi + M_I)]$

VR: Maximum ϕ + impact shear range within the composite portion of the span for stud shear connector design (kips).



TYPE II ELASTOMERIC EXP. BRG.



EXISTING BEARING ASSEMBLY REMOVAL DETAIL

Cribbing required during new bearing seat construction will not be paid for separately, but will be included with Jack and Remove Existing Bearings.

JACK AND REMOVE EXISTING BEARINGS PROCEDURE

1. The Contractor shall submit for approval by the Engineer plans for jacking and removal prior to commencing any work at the bearings.
2. Jacking and removing existing bearings shall be done after existing deck removal is completed and prior to pouring of new deck.
3. The Maximum Dead Load Reaction with deck removed (per bearing) at each abutment is 8 kips. Minimum jack capacity is 16 kips (8 ton).
4. The new bearings shall be in place and the jacks shall be lowered prior to forming and pouring the new deck.

Notes:

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified.

The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

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

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

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

Anchor bolts for new bearing assembly or side retainers should be located such that the distance from center of existing anchor bolt to center of proposed anchor bolt is not less than $2 1/4"$.

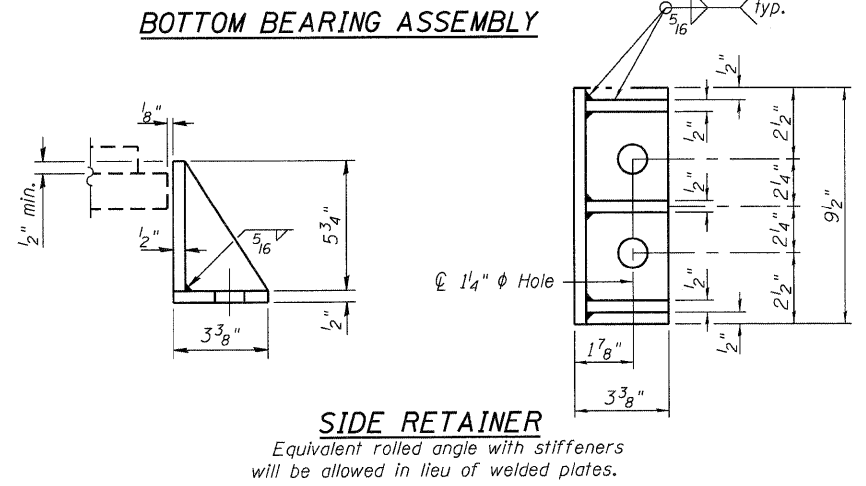
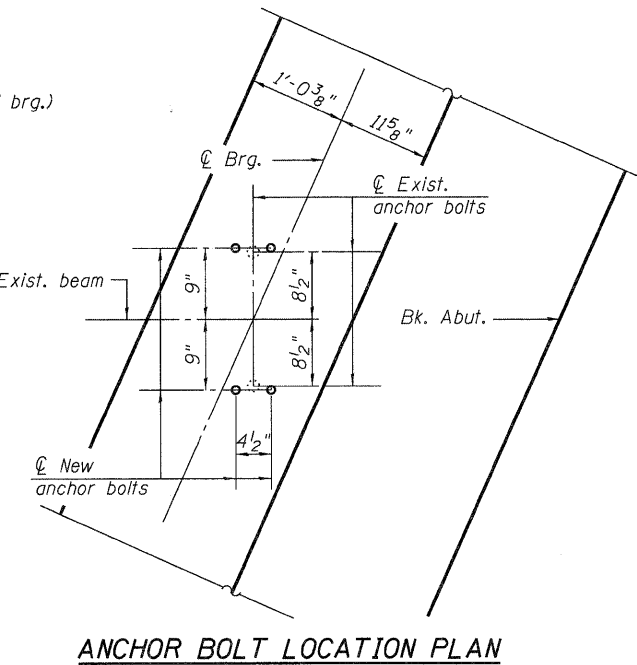
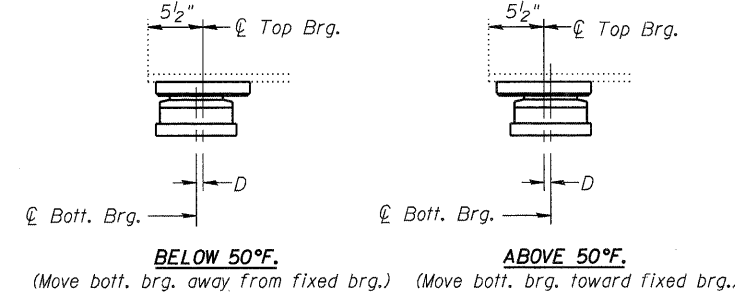
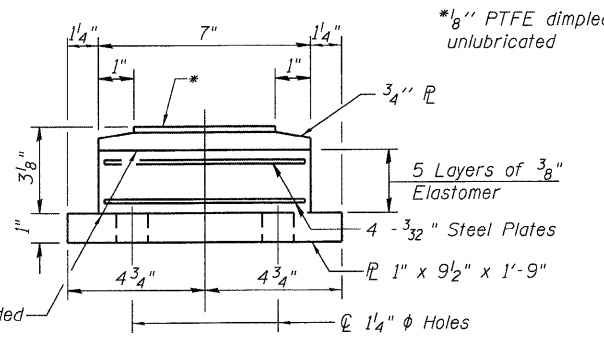
The $1/8"$ PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

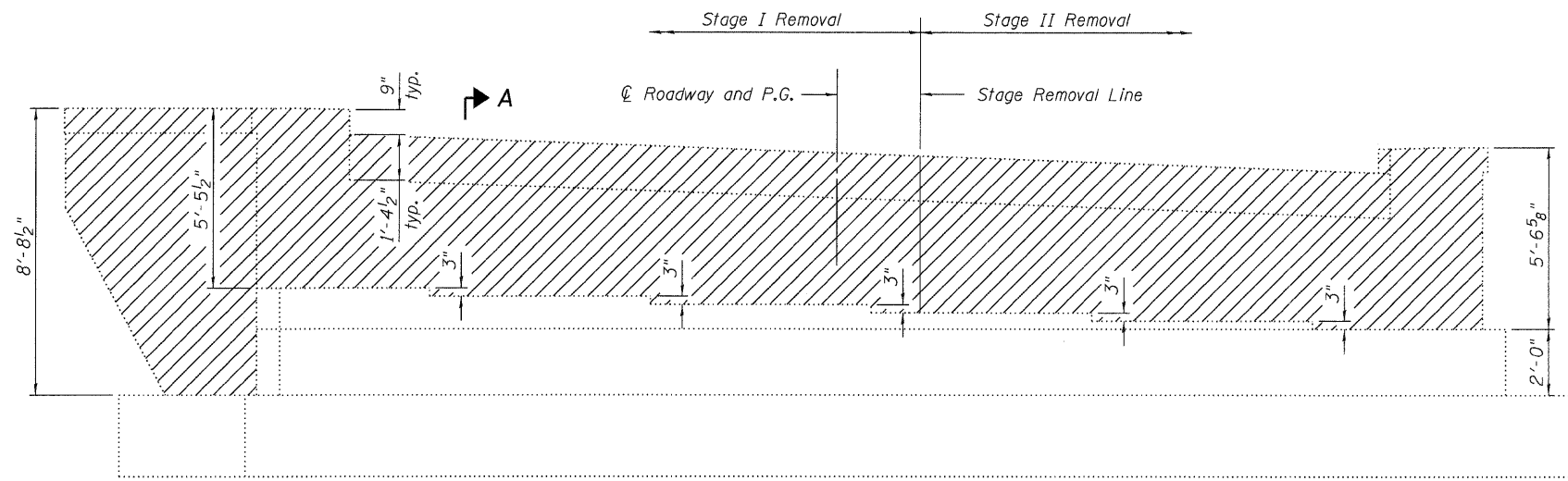
Bonding of $1/8"$ PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

Two $1/8"$ adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

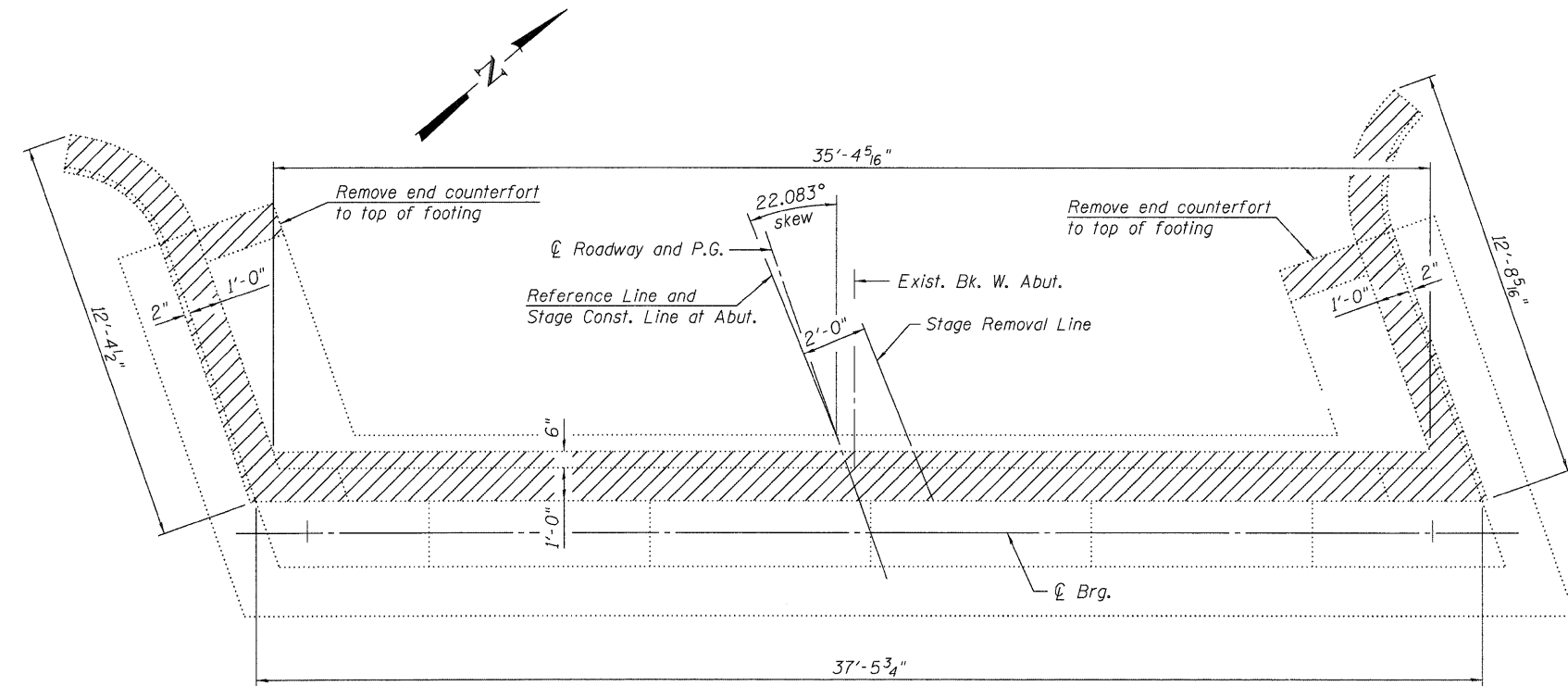
BILL OF MATERIAL

| Item | Unit | Total |
|--------------------------------------|------|-------|
| Elastomeric Bearing Assembly Type II | Each | 12 |
| Anchor Bolts, $3/4"$ | Each | 48 |
| Jack and Remove Existing Bearing | Each | 12 |



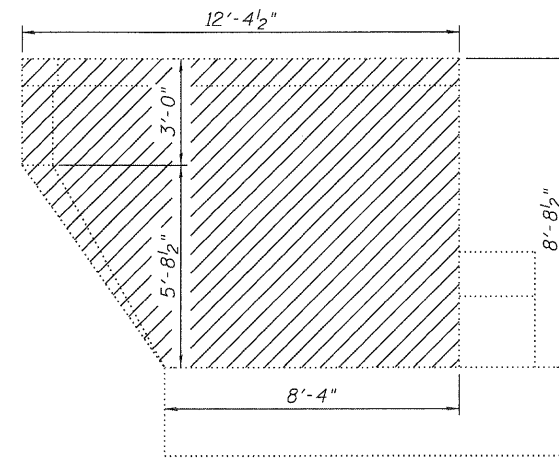


ELEVATION
(Looking West)

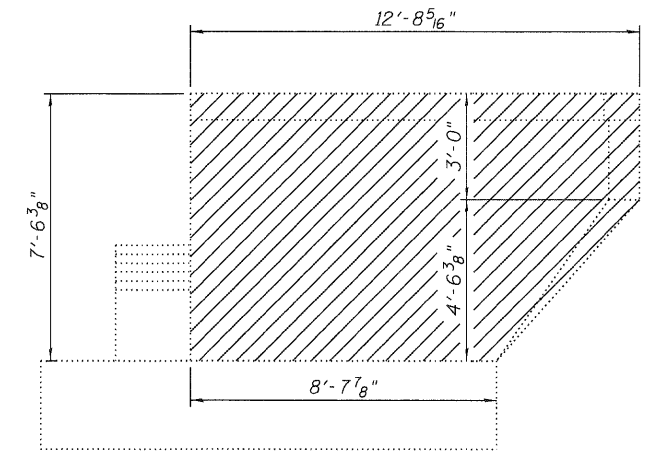


PLAN

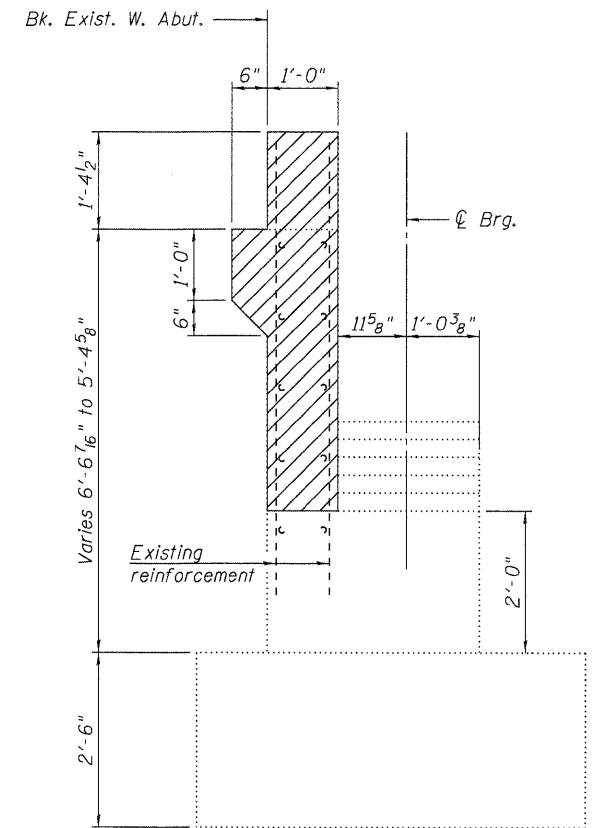
Note:
Hatched areas indicate Concrete Removal. Existing reinforcement extending into removed area shall be cleaned, straightened, and incorporated into new construction. Cost included with Concrete Removal.



SW WINGWALL ELEVATION



NW WINGWALL ELEVATION



SECTION A-A

(Horiz. dimensions are at Rt. L's)

WEST ABUTMENT BILL OF MATERIALS

| Item | Unit | Total |
|------------------|---------|-------|
| Concrete Removal | Cu. Yd. | 14.7 |

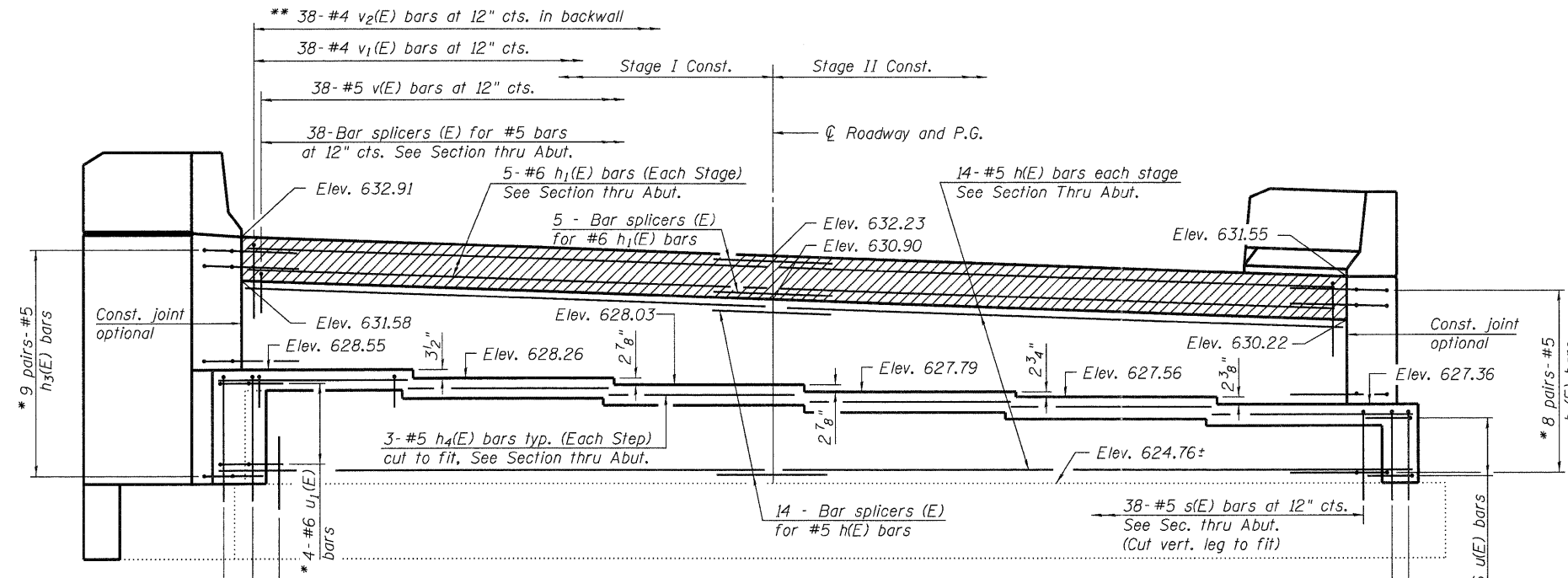
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|-------------------------------|-------------------|-----------|--|------------------------------------------------------------------------------------|
| USER NAME = dheber.ling | DESIGNED - BRD | REVISED - | | 7018 KINGSMILL CT., SPRINGFIELD, IL (217) 483-9457 DESIGN FIRM #184001038 |
| FILE NAME = 0430007-64C94.dgn | CHECKED - CWC/SDS | REVISED - | | |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - | | |
| PLOT TIME = 10:10:56 AM | CHECKED - BRD | REVISED - | | |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

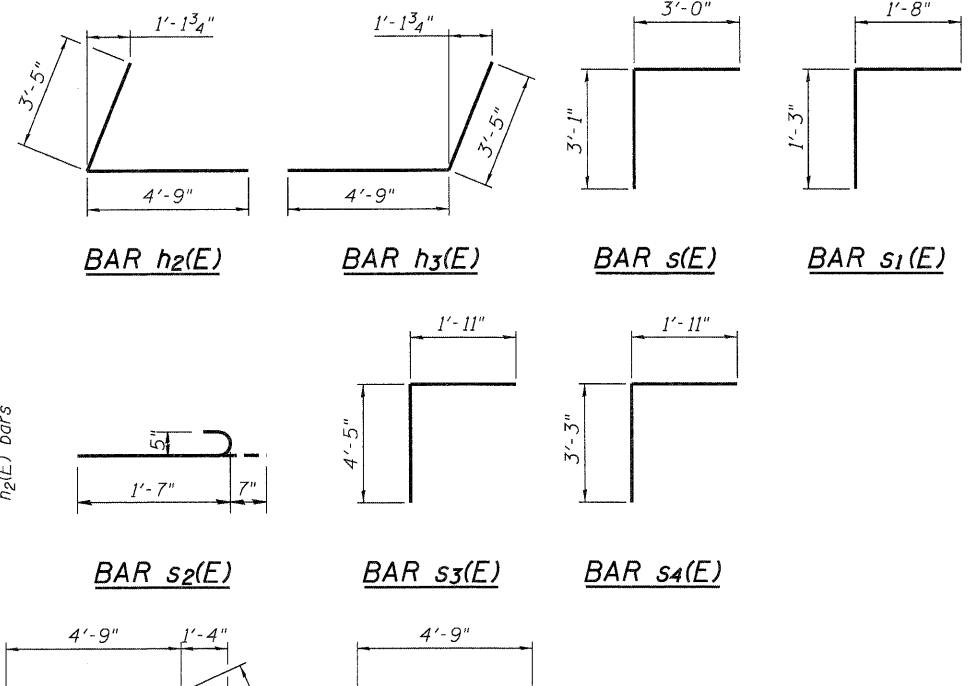
WEST ABUTMENT CONCRETE REMOVAL
STRUCTURE NO. 043-0007

SHEET NO. 21 OF 27 SHEETS

| | | | | |
|--------------------|--------------------------------|-------------------|------------------|---------------------------|
| F.A.P. RTE. 301 | SECTION (43B, 44B, 44HB, 45BD) | COUNTY JO DAVIESS | TOTAL SHEETS 309 | SHEET NO. 182 |
| CONTRACT NO. 64C94 | | | | ILLINOIS FED. AID PROJECT |



ELEVATION
(Looking West)



FIELD CUTTING DIAGRAM

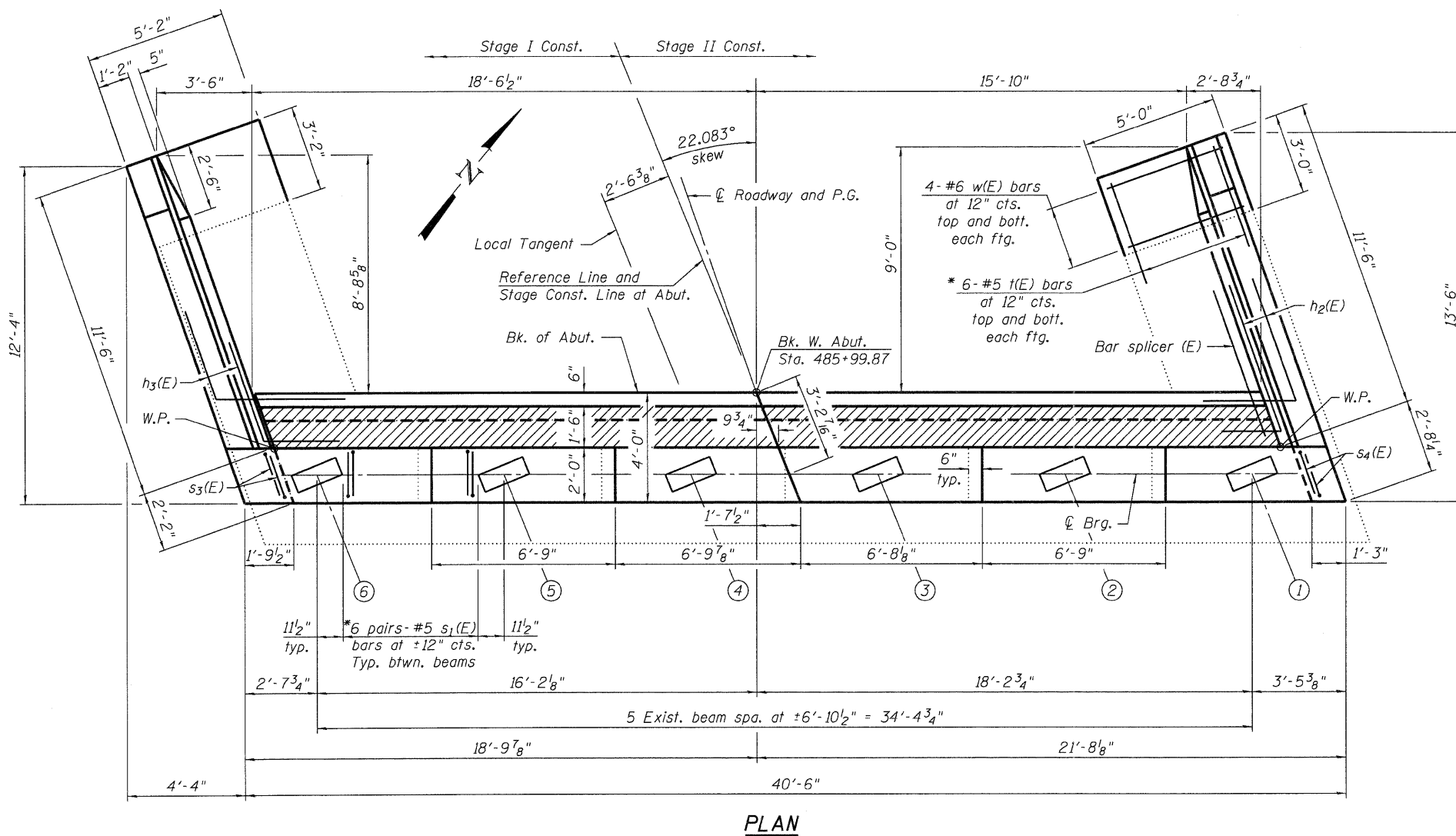
**WEST ABUTMENT
BILL OF MATERIAL**

| Bar | No. | Size | Length | Shape |
|--------|-----|------|---------|-------|
| h(E) | 28 | #5 | 19'-8" | — |
| h1(E) | 10 | #6 | 18'-3" | — |
| h2(E) | 16 | #5 | 8'-2" | L |
| h3(E) | 18 | #5 | 8'-2" | L |
| h4(E) | 18 | #5 | 6'-7" | — |
| h5(E) | 28 | #4 | 11'-3" | — |
| h6(E) | 20 | #4 | 11'-3" | — |
| s(E) | 38 | #5 | 6'-1" | ┌ |
| s1(E) | 60 | #5 | 2'-11" | ┌ |
| s2(E) | 38 | #5 | 2'-2" | ┌ |
| s3(E) | 6 | #5 | 6'-4" | ┌ |
| s4(E) | 4 | #5 | 5'-2" | ┌ |
| t(E) | 24 | #5 | 3'-7" | — |
| u(E) | 3 | #6 | 10'-7" | ┌ |
| u1(E) | 4 | #6 | 11'-2" | ┌ |
| v(E) | 38 | #5 | 3'-9" | ┌ |
| v1(E) | 38 | #4 | 2'-11" | ┌ |
| v2(E) | 19 | #5 | 11'-8" | ┌ |
| v3(E) | 38 | #5 | 4'-1" | — |
| v4(E) | 12 | #6 | 20'-2" | — |
| v5(E) | 3 | #6 | 10'-1" | — |
| v6(E) | 9 | #6 | 10'-10" | — |
| v7(E) | 3 | #6 | 8'-9" | — |
| v8(E) | 9 | #6 | 9'-6" | — |
| v9(E) | 48 | #6 | 4'-10" | — |
| v10(E) | 16 | #5 | 1'-6" | — |
| w(E) | 16 | #6 | 4'-9" | — |

| Structure Excavation | Cu. Yd. | 105 |
|----------------------------------|---------|-------|
| Concrete Structures | Cu. Yd. | 31.8 |
| Reinforcement Bars, Epoxy Coated | Pound | 4,230 |
| Concrete Sealer | Sq. Ft. | 299 |

Notes:
 Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure.
 * Drill and grout bars according to Article 584 of The Standard Specifications, 9" min. embedment.
 ** Order v2(E) bars full length, cut to fit and use remainder for Stage II Const.
 Concrete sealer is applied to new abutment seats and face and to front face of backwall.
 Drill front leg of u(E), u1(E), h2(E), and h3(E) bars into existing concrete. Cut h2(E) and h3(E) leg to fit embedment when drilled into existing concrete.

For details of Bar Splicers see sheet 27 of 27.



PLAN

USER NAME = dhaberling
 FILE NAME = 0430007-64C94.dgn
 PLOT DATE = 12/6/2011
 PLOT TIME = 10:10:58 AM

DESIGNED - BRD
 CHECKED - CWC/SDS
 DRAWN - DLH
 CHECKED - BRD

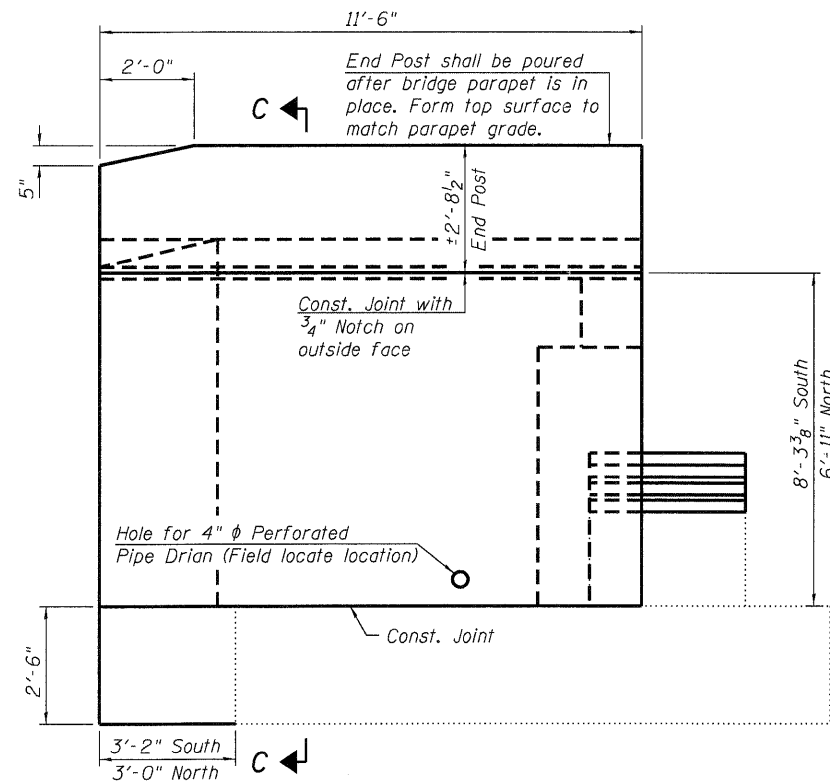
REVISI...
 REVISI...
 REVISI...
 REVISI...

WHKS & CO.
 ENGINEERING
 7018 KINGSMILL CT.
 SPRINGFIELD, IL
 (217) 483-9457
 DESIGN FIRM #184001036

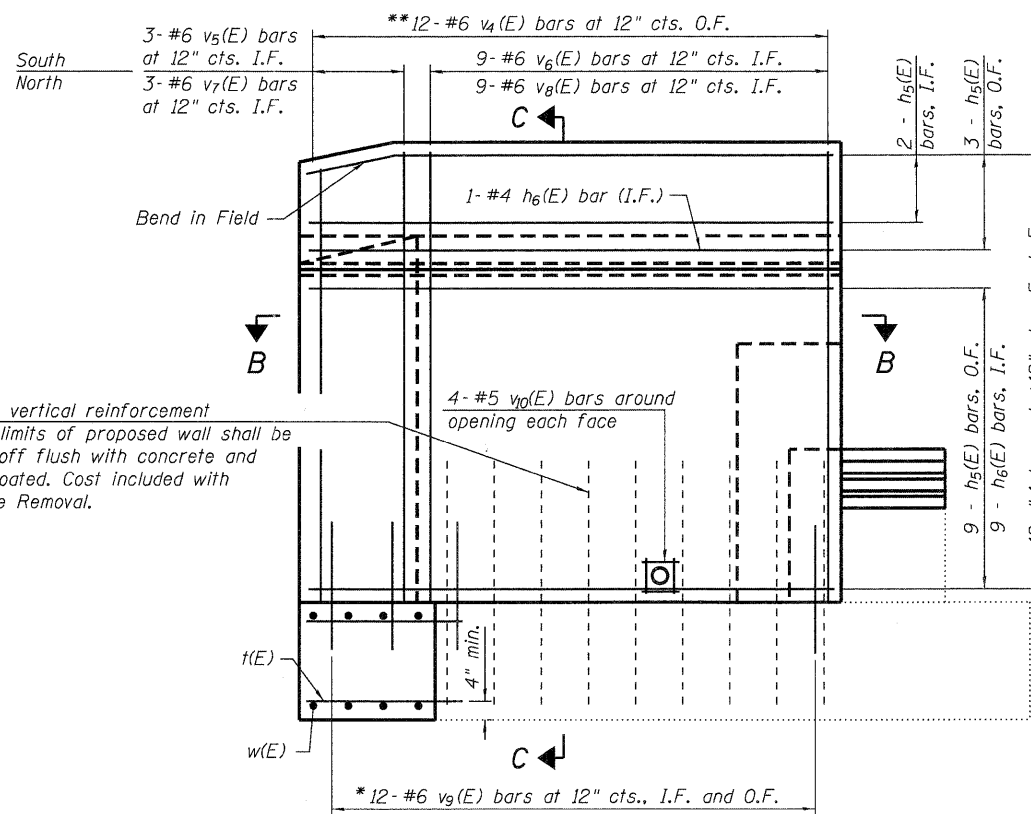
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**WEST ABUTMENT
 STRUCTURE NO. 043-0007**
 SHEET NO. 22 OF 27 SHEETS

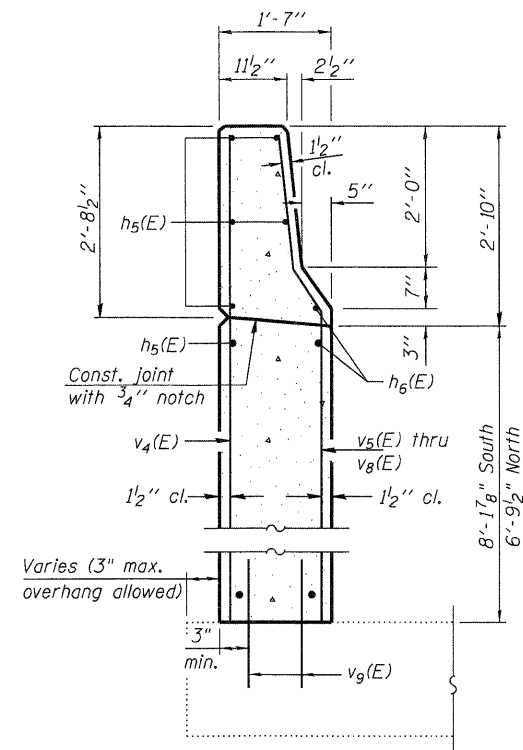
| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|------------------------|------------|--------------|--------------------|
| 301 | (43B, 44B, 44HB, 45B)D | JO DAVIESS | 309 | 183 |
| | | | | CONTRACT NO. 64C94 |
| ILLINOIS FED. AID PROJECT | | | | |



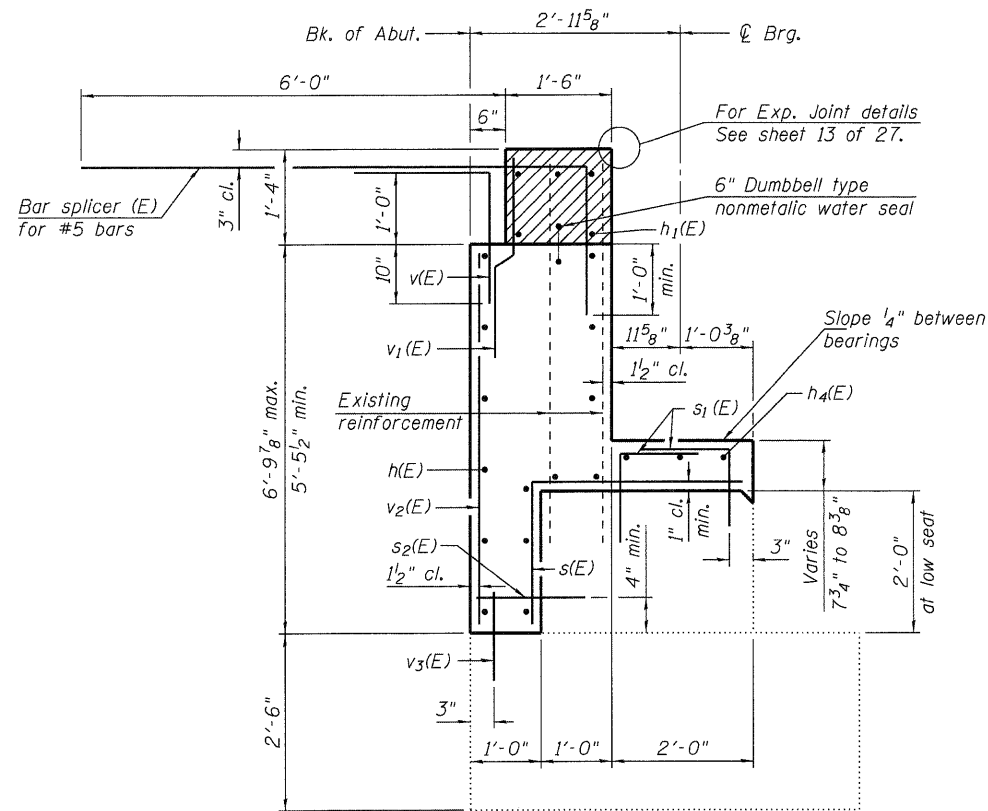
WINGWALL ELEVATION
(Showing Dimensions)



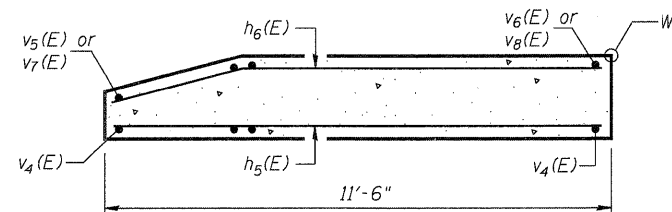
WINGWALL ELEVATION
(Showing Reinforcement)



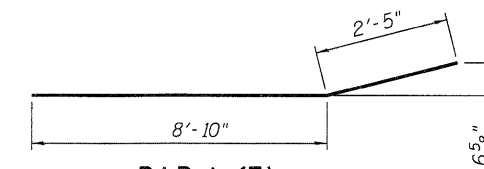
SECTION C-C



SECTION THRU ABUTMENT
(Horiz. dim. at Rt. L's)

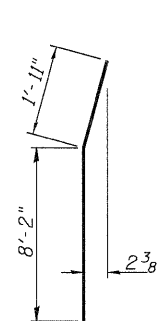


SECTION B-B

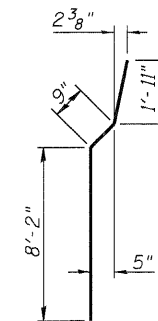


BAR h₆(E)

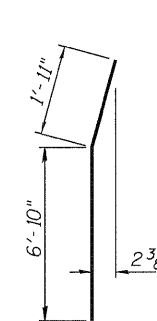
Notes:
Quantity of concrete in end post included with Concrete Superstructure on sheet 2 of 27.
Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure.
* Drill and grout bars according to Article 584 of The Standard Specifications, 9" min. embedment.
** Order v₄(E) bars full length, cut to fit and use remainder for opposite wingwall.



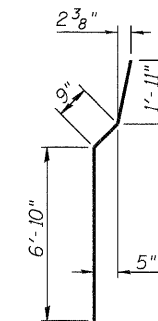
BAR v₅(E)
(South Wingwall)



BAR v₆(E)
(South Wingwall)

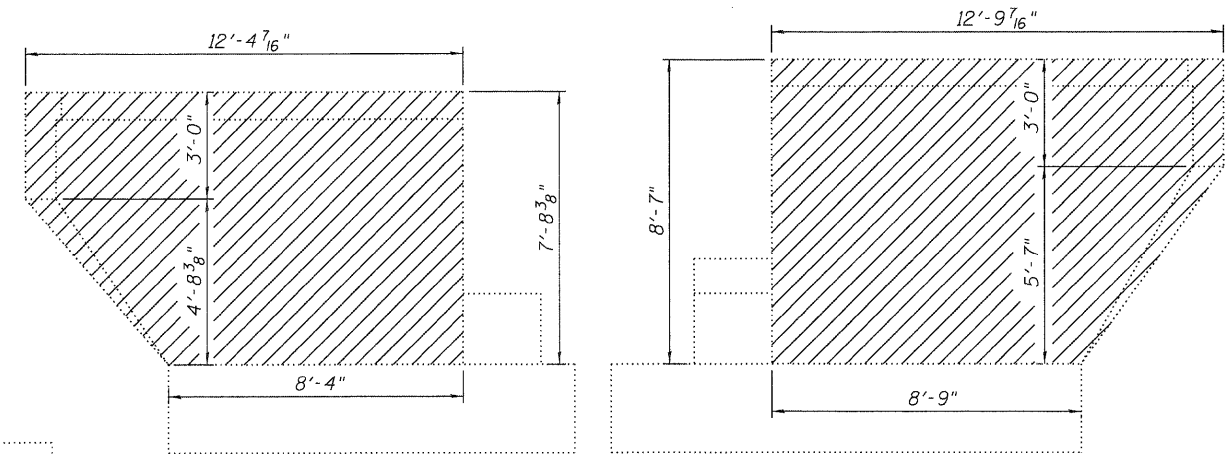
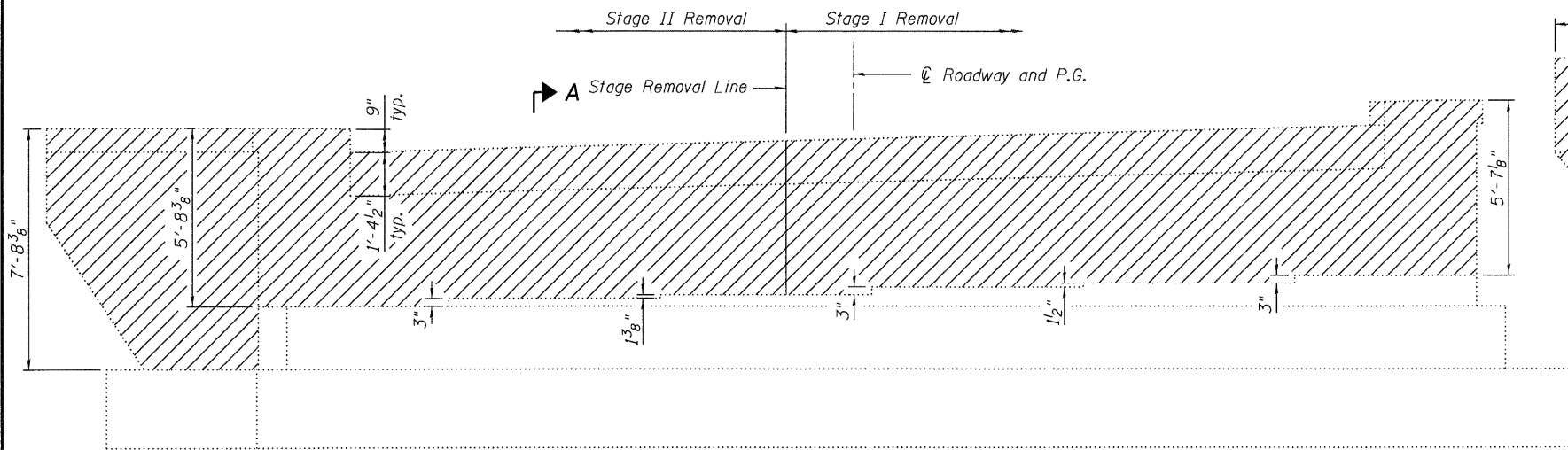


BAR v₇(E)
(North Wingwall)



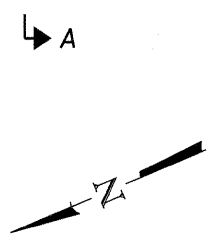
BAR v₈(E)
(North Wingwall)

| | | | | | | | | | | | |
|-------------------------------|-------------------|-----------|--|------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------|---------------------------|---------------------------------|-------------------|------------------|---------------|
| USER NAME = dheberling | DESIGNED - BRD | REVISED - | | 7018 KINGSMILL CT., SPRINGFIELD, IL (217) 483-9457 DESIGN FIRM #184001038 | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | WEST ABUTMENT DETAILS STRUCTURE NO. 043-0007 | F.A.P. RTE. 301 | SECTION (43B, 44B, 44HB, 45B/D) | COUNTY JO DAVIESS | TOTAL SHEETS 309 | SHEET NO. 184 |
| FILE NAME = 0430007-64C94.dgn | CHECKED - CWC/SDS | REVISED - | | | | | CONTRACT NO. 64C94 | | | | |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - | | | | | ILLINOIS FED. AID PROJECT | | | | |
| PLOT TIME = 10:11:02 AM | CHECKED - BRD | REVISED - | | | | | | | | | |

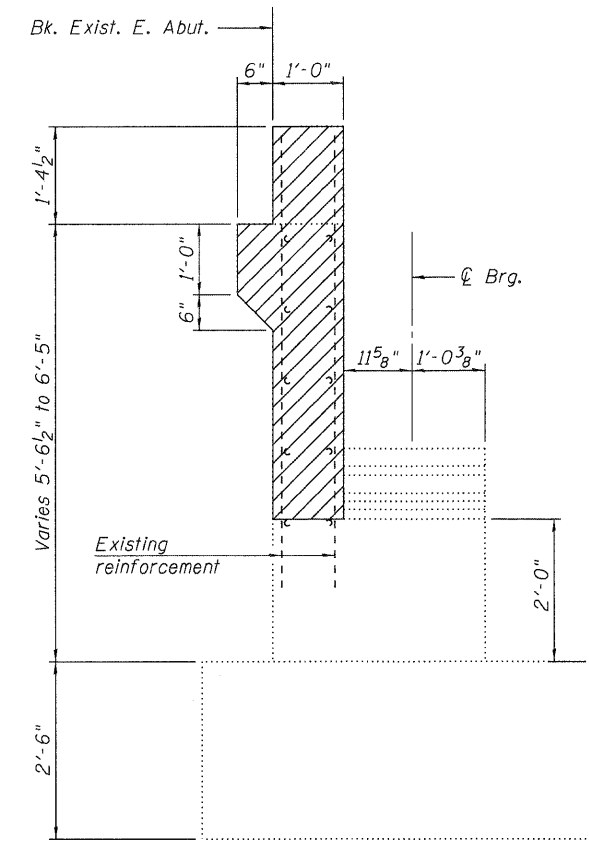


NE WINGWALL ELEVATION

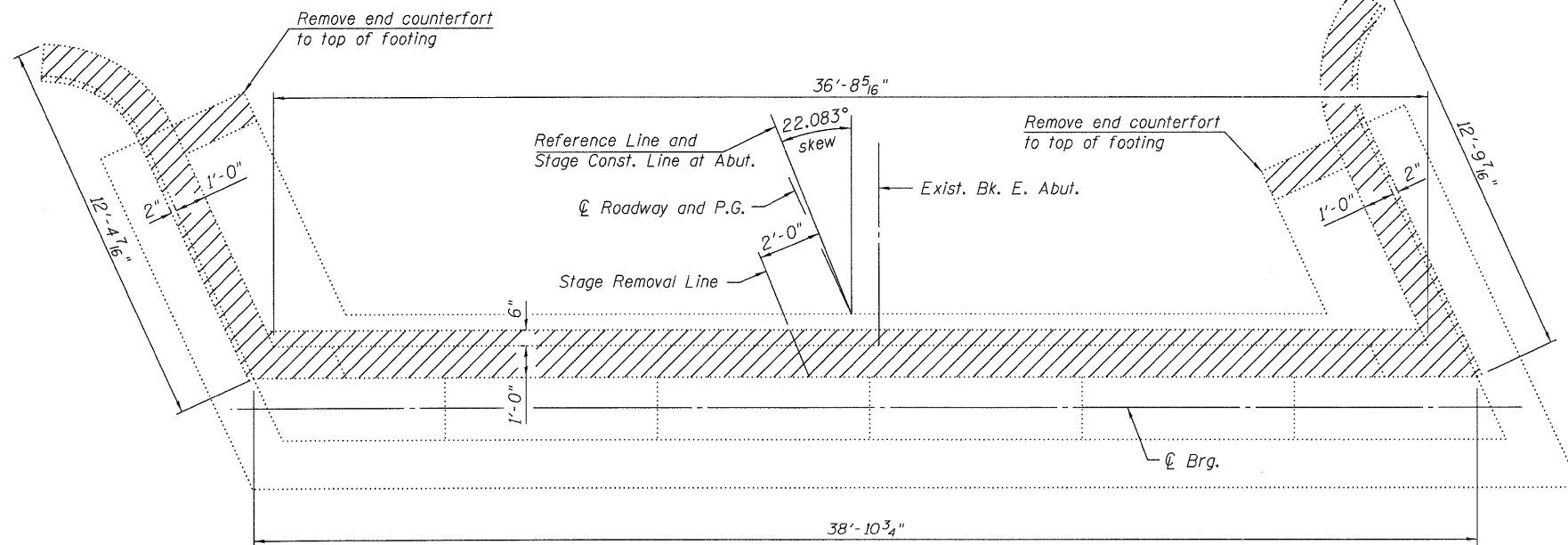
SE WINGWALL ELEVATION



ELEVATION
(Looking East)



SECTION A-A
(Horiz. dimensions are at Rt. L's)

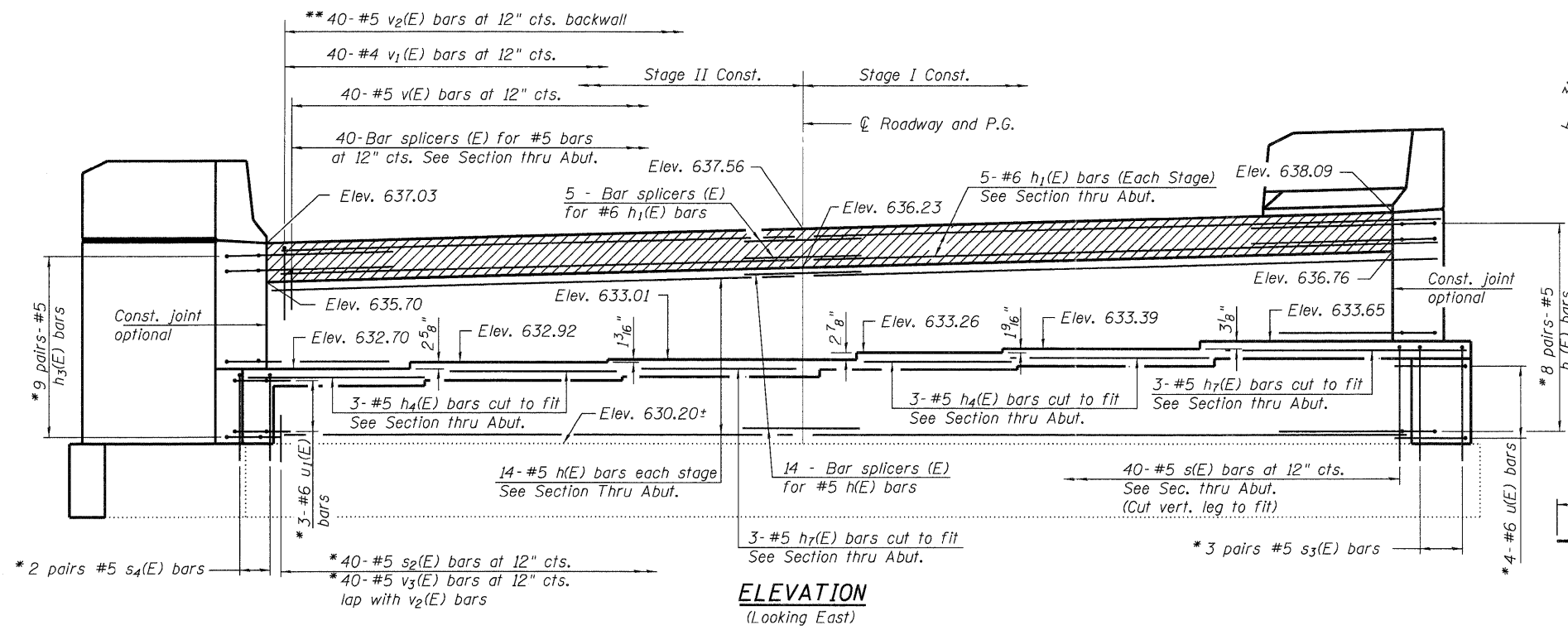


PLAN

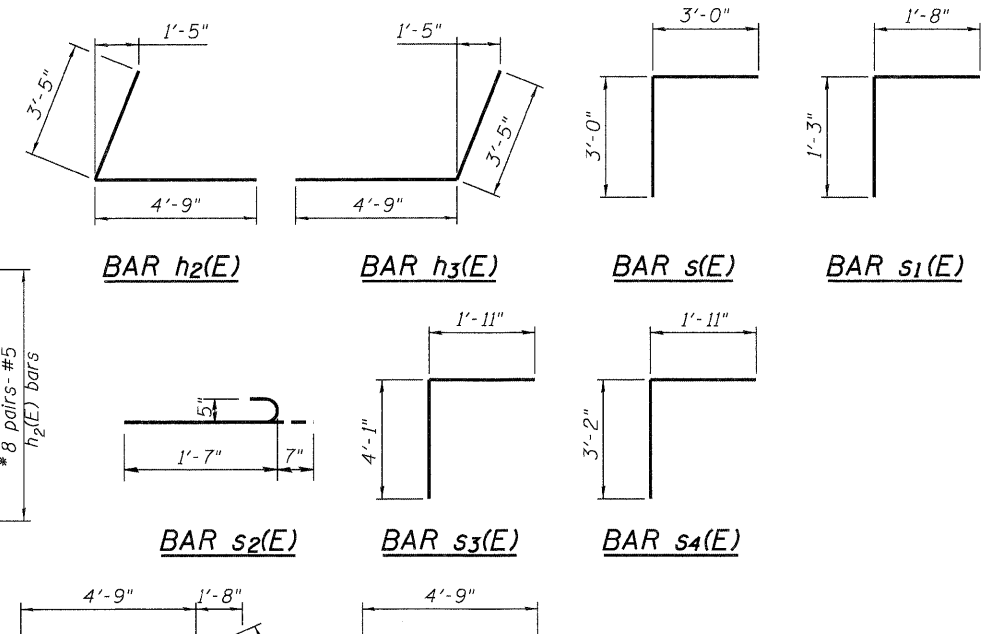
Note:
Hatched areas indicate Concrete Removal. Existing reinforcement extending into removed area shall be cleaned, straightened, and incorporated into new construction. Cost included with Concrete Removal.

EAST ABUTMENT BILL OF MATERIALS

| Item | Unit | Total |
|------------------|---------|-------|
| Concrete Removal | Cu. Yd. | 15.3 |

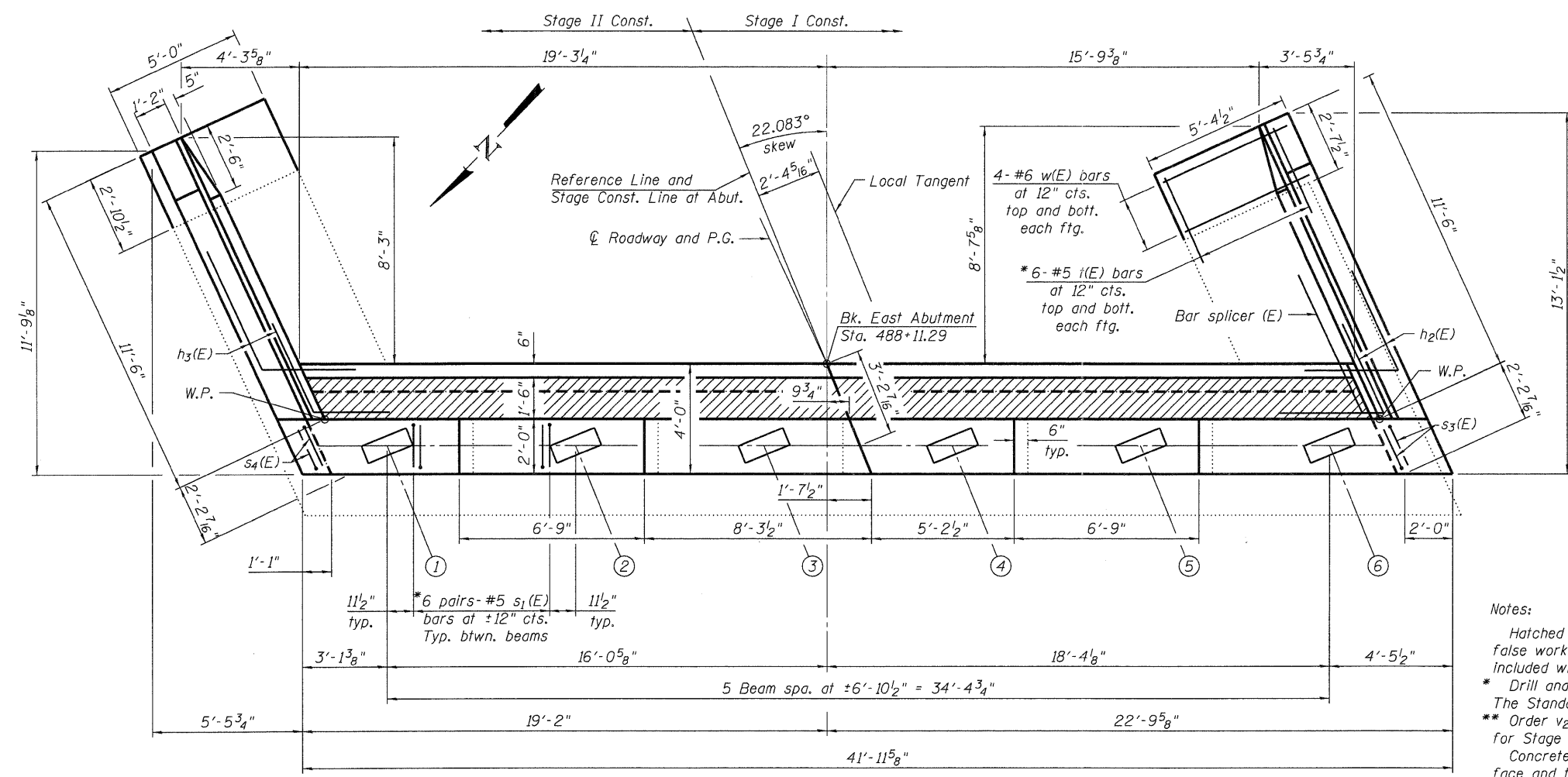


ELEVATION
(Looking East)

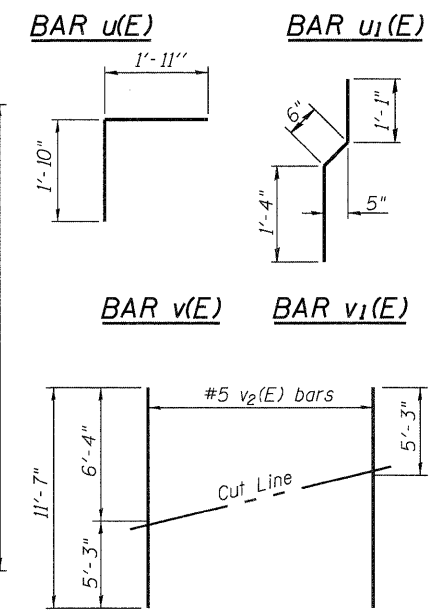


**EAST ABUTMENT
BILL OF MATERIAL**

| Bar | No. | Size | Length | Shape |
|----------------------------------|-----|------|---------|-------|
| h(E) | 28 | #5 | 20'-6" | — |
| h1(E) | 10 | #6 | 19'-0" | — |
| h2(E) | 16 | #5 | 8'-2" | L |
| h3(E) | 18 | #5 | 8'-2" | J |
| h4(E) | 12 | #5 | 6'-7" | — |
| h5(E) | 28 | #4 | 11'-3" | — |
| h6(E) | 20 | #4 | 11'-3" | — |
| h7(E) | 6 | #5 | 9'-0" | — |
| s(E) | 40 | #5 | 6'-0" | Γ |
| s1(E) | 60 | #5 | 2'-11" | Γ |
| s2(E) | 40 | #5 | 2'-2" | J |
| s3(E) | 6 | #5 | 6'-0" | J |
| s4(E) | 4 | #5 | 5'-1" | J |
| h(E) | 24 | #5 | 3'-2" | — |
| u(E) | 4 | #6 | 11'-4" | J |
| u1(E) | 3 | #6 | 10'-5" | J |
| v(E) | 40 | #5 | 3'-9" | Γ |
| v1(E) | 40 | #4 | 2'-11" | J |
| v2(E) | 20 | #5 | 11'-7" | — |
| v3(E) | 40 | #5 | 4'-1" | — |
| v4(E) | 12 | #6 | 19'-11" | — |
| v5(E) | 3 | #6 | 9'-10" | — |
| v6(E) | 9 | #6 | 10'-7" | — |
| v7(E) | 3 | #6 | 8'-9" | — |
| v8(E) | 9 | #6 | 9'-6" | — |
| v9(E) | 48 | #6 | 4'-10" | — |
| v10(E) | 16 | #5 | 1'-6" | — |
| w(E) | 16 | #6 | 4'-9" | — |
| Structure Excavation | | | Cu. Yd. | 106 |
| Concrete Structures | | | Cu. Yd. | 31.4 |
| Reinforcement Bars, Epoxy Coated | | | Pound | 4,300 |
| Concrete Sealer | | | Sq. Ft. | 305 |



PLAN



FIELD CUTTING DIAGRAM

Notes:
 Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure.
 * Drill and grout bars according to Article 584 of The Standard Specifications, 9" min. embedment.
 ** Order v2(E) bars full length, cut to fit and use remainder for Stage II Const.
 Concrete sealer is applied to new abutment seats and face and to front face of backwall.
 Drill front leg of u(E), u1(E), h2(E), and h3(E) bars into existing concrete. Cut h2(E) and h3(E) leg to fit embedment when drilled into existing concrete.

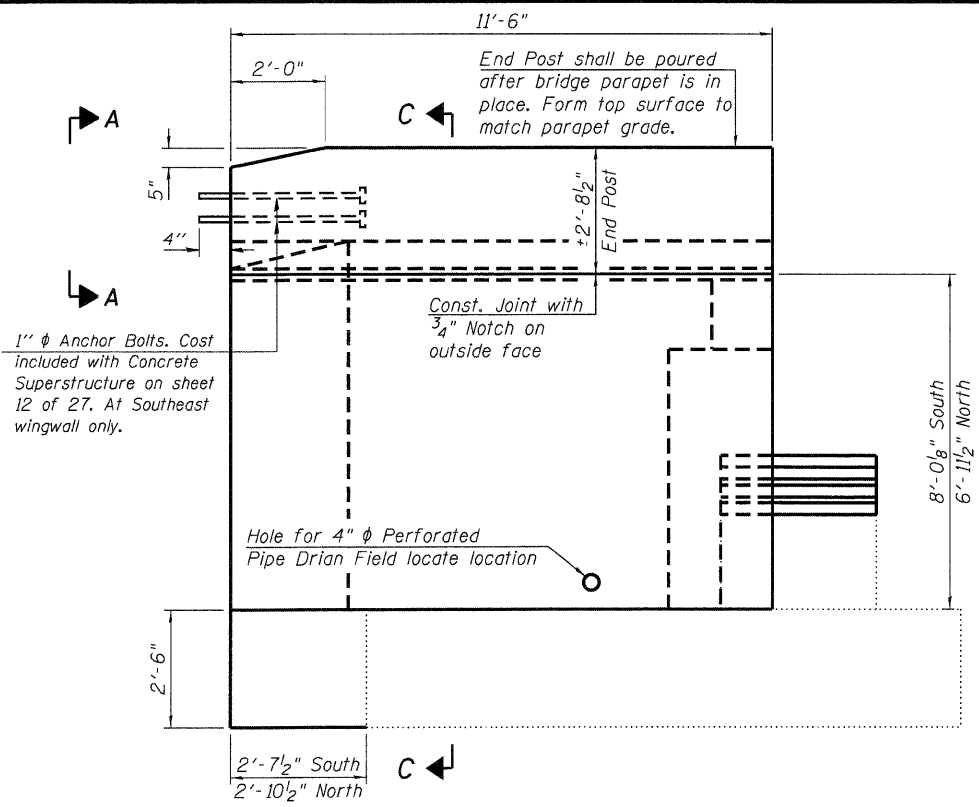
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|-------------------------------|-------------------|-----------|
| USER NAME = dheberling | DESIGNED - BRD | REVISED - |
| FILE NAME = B430007-64C94.dgn | CHECKED - CWC/SDS | REVISED - |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - |
| PLOT TIME = 10:11:07 AM | CHECKED - BRD | REVISED - |

WHKS & CO.
ENGINEERING
 7018 KINGSMILL CT.,
SPRINGFIELD, IL
(217) 483-9457
DESIGN FIRM #184001036

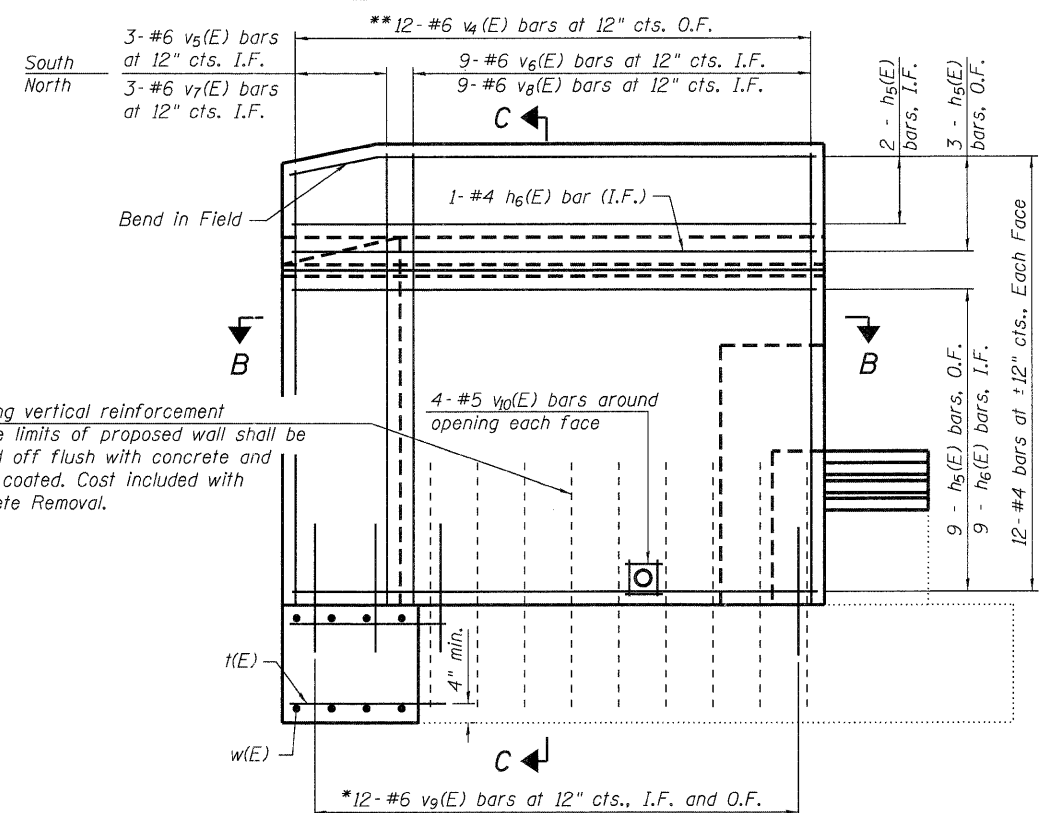
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**EAST ABUTMENT
STRUCTURE NO. 043-0007**
SHEET NO. 25 OF 27 SHEETS

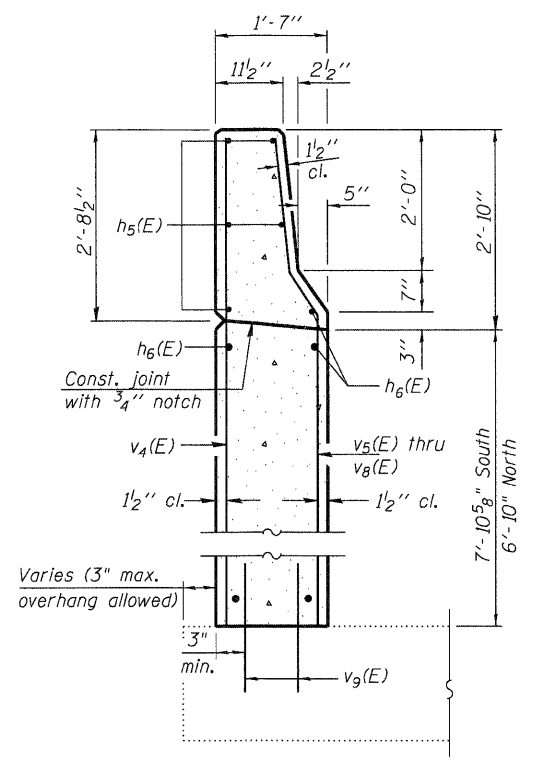
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|--------------------|--------------------------------|-------------------|---------------------------|---------------|
| F.A.P. RTE. 301 | SECTION (43B, 44B, 44HB, 45BD) | COUNTY JO DAVIESS | TOTAL SHEETS 309 | SHEET NO. 186 |
| CONTRACT NO. 64C94 | | | ILLINOIS FED. AID PROJECT | |



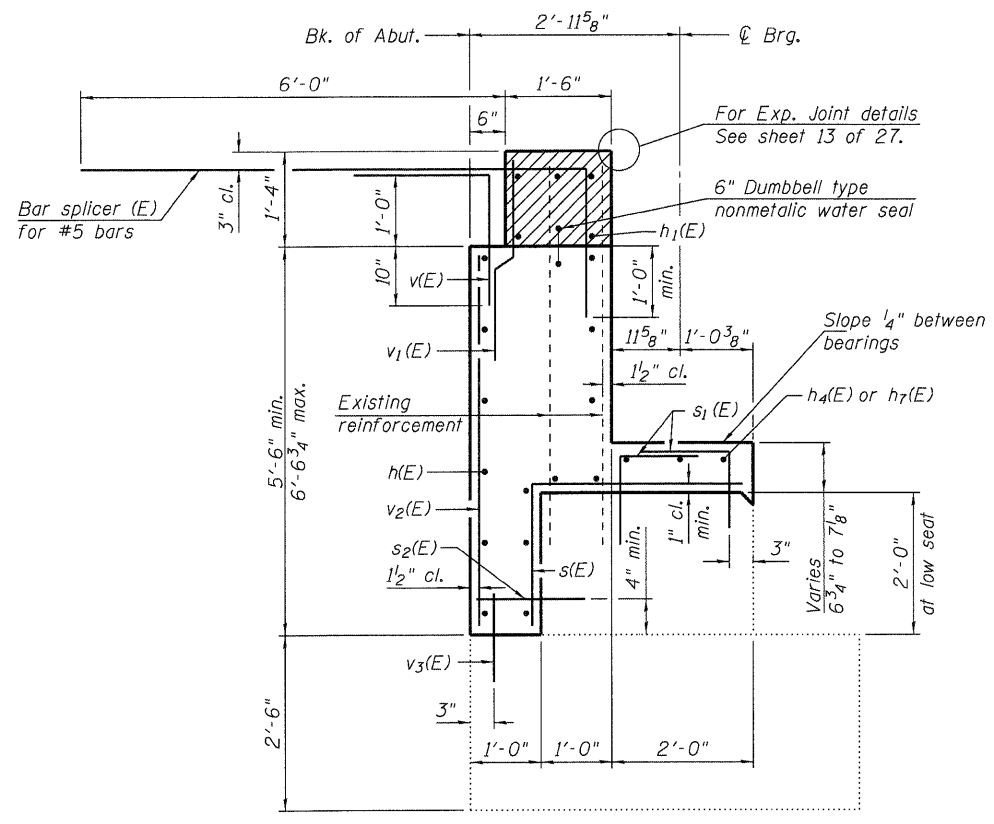
WINGWALL ELEVATION
(Showing Dimensions)



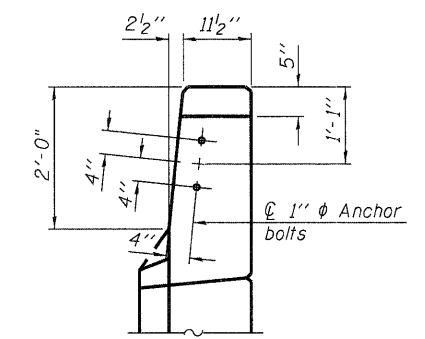
WINGWALL ELEVATION
(Showing Reinforcement)



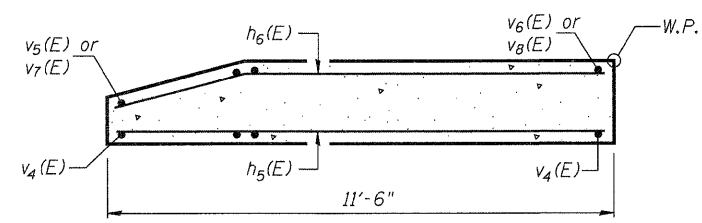
SECTION C-C



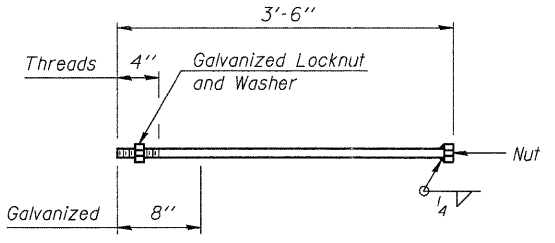
SECTION THRU ABUTMENT
(Horiz. dim. at Rt. L's)



VIEW A-A

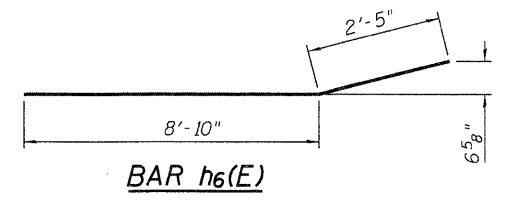


SECTION B-B

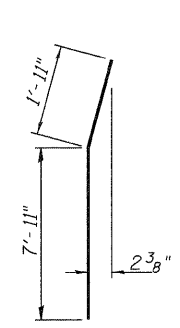


1" φ ANCHOR BOLT

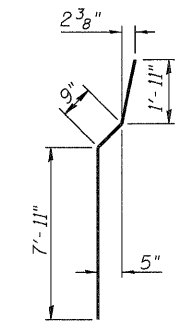
Notes:
Quantity of concrete in end post included with Concrete Superstructure on sheet 2 of 27.
Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure.
* Drill and grout bars according to Article 584 of The Standard Specifications, 9" min. embedment.
** Order v₄(E) bars full length, cut to fit and use remainder for opposite wingwall.



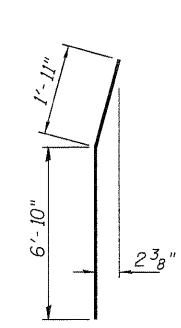
BAR h₆(E)



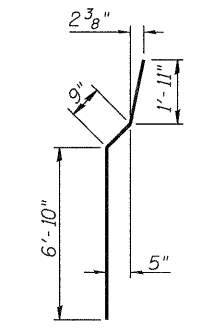
BAR v₅(E)
(South Wingwall)



BAR v₆(E)
(South Wingwall)



BAR v₇(E)
(North Wingwall)



BAR v₈(E)
(North Wingwall)

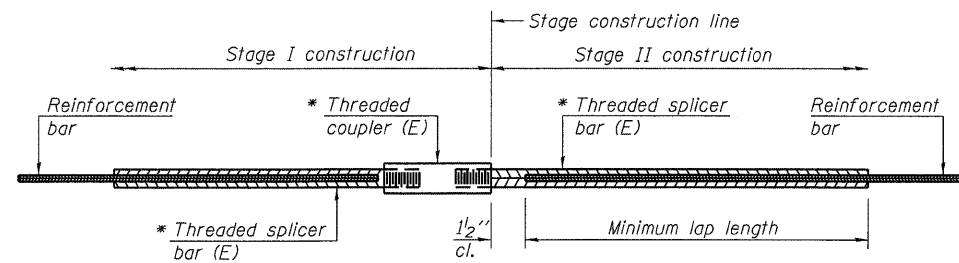
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|-------------------------------|-------------------|-----------|--|------------------------------------------------------------------------------------|
| USER NAME = dhebarling | DESIGNED - BRD | REVISED - | | 7018 KINGSMILL CT., SPRINGFIELD, IL (217) 483-9457 DESIGN FIRM #184001036 |
| FILE NAME = 0430207-64C94.dgn | CHECKED - CWC/SDS | REVISED - | | |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - | | |
| PLOT TIME = 10:11:11 AM | CHECKED - BRD | REVISED - | | |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT DETAILS
STRUCTURE NO. 043-0007

SHEET NO. 26 OF 27 SHEETS

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|--------------------|------------------------|------------|---------------------------|-----------|
| 301 | (43B, 44B, 44HB, 45B)D | JO DAVIESS | 309 | 187 |
| CONTRACT NO. 64C94 | | | ILLINOIS FED. AID PROJECT | |



STANDARD BAR SPLICER ASSEMBLY

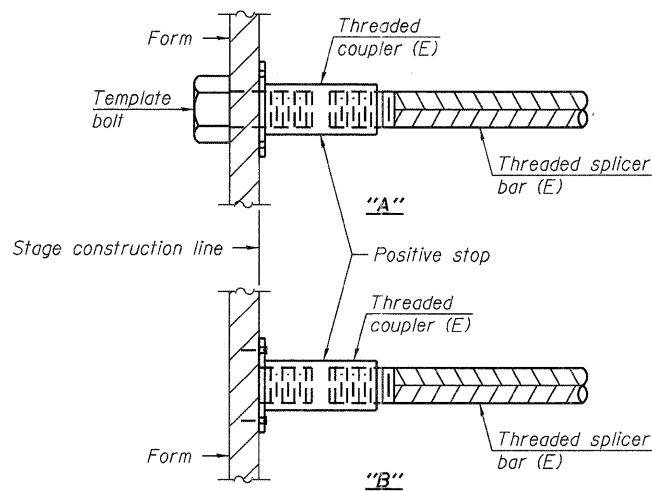
| Minimum Lap Lengths | | | | | |
|------------------------|---------|---------|---------|---------|---------|
| Bar size to be spliced | Table 1 | Table 2 | Table 3 | Table 4 | Table 5 |
| 3, 4 | 1'-5" | 1'-11" | 2'-1" | 2'-4" | 2'-3" |
| 5 | 1'-9" | 2'-5" | 2'-7" | 2'-11" | 2'-10" |
| 6 | 2'-1" | 2'-11"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

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

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

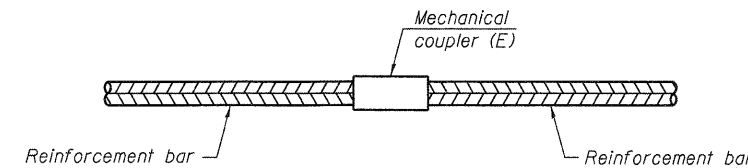
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

| Location | Bar size | No. assemblies required | Table for minimum lap length |
|------------------|----------|-------------------------|------------------------------|
| W. Approach Slab | #4 | 25 | 4 |
| W. Approach Slab | #5 | 46 | 3 |
| E. Approach Slab | #4 | 25 | 4 |
| E. Approach Slab | #5 | 46 | 3 |
| Top of Deck | #5 | 293 | 3 |
| Bottom of Deck | #5 | 248 | 3 |
| Edge Beam (Deck) | #5 | 16 | 4 |
| W. Approach Ftg. | #5 | 40 | 3 |
| E. Approach Ftg. | #5 | 40 | 3 |
| W. Abutment | #6 | 5 | 4 |
| W. Abutment | #5 | 14 | 4 |
| E. Abutment | #6 | 5 | 4 |
| E. Abutment | #5 | 14 | 4 |



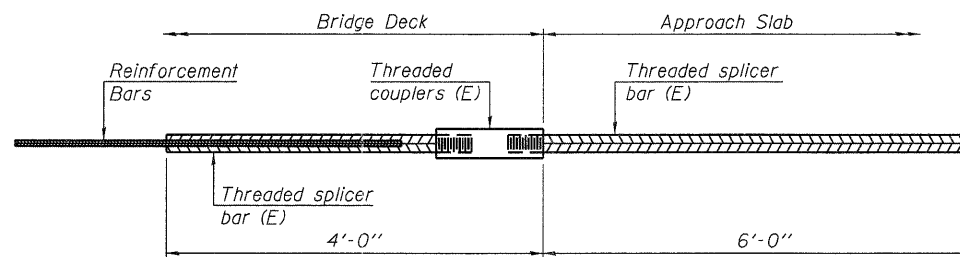
INSTALLATION AND SETTING METHODS

"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.



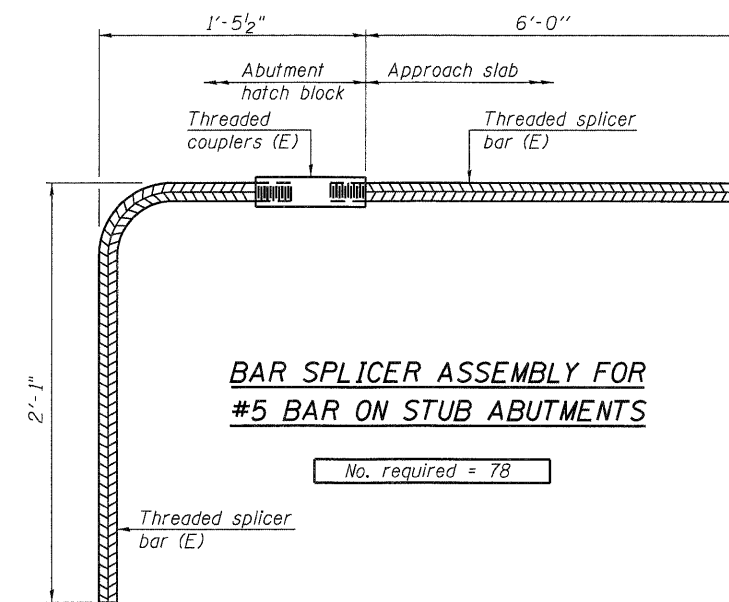
STANDARD MECHANICAL SPLICER

| 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 = 78

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 approved list of bar splicer assemblies and mechanical splicers for alternatives.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
FEDERAL AID HIGHWAY

A-D2

| SHEET NO. | SEC. | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|------|------------|--------------|-----------|
| 5 | 43 B | JO DAVIESS | 27 | 1 |
| ILLINOIS PROJECT F-240(3) | | | | |

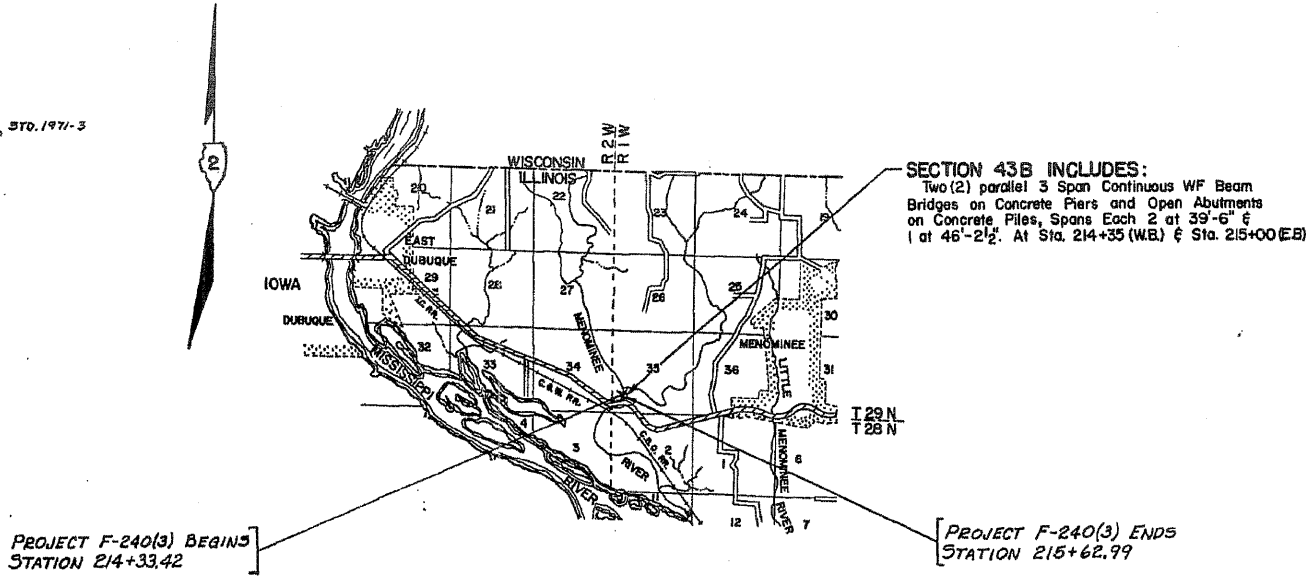
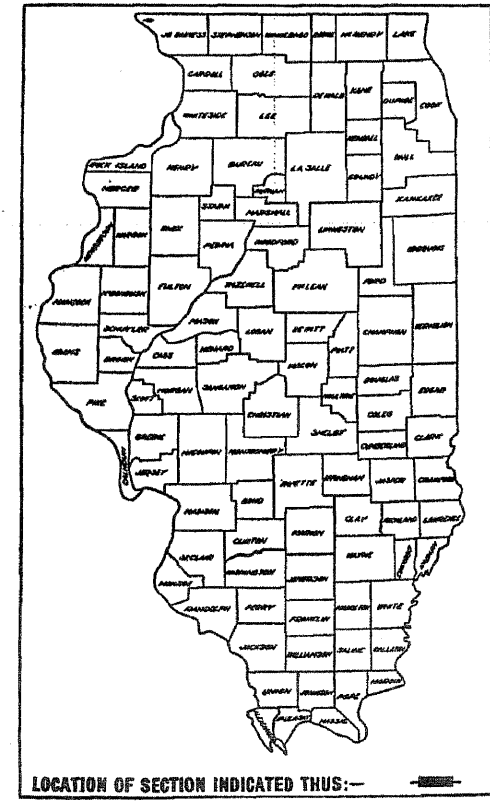
SCALES: PLAN 1 INCH = 100 FT.
 PROFILE, HOR. 1 INCH = 100 FT.
 PROFILE, VERT. 1 INCH = 10 FT.
 CROSS-SECTIONS 1 INCH = 8 FT.

INDEX OF SHEETS

| SHEET NUMBER | CONTENTS |
|--------------|-------------------------------------------------------------------|
| 1 | TITLE SHEET, INDEX OF SHEETS |
| 2 | GENERAL NOTES, SUMMARY OF QUANTITIES |
| 3 | PLAN AND PROFILE 881-6 STA. 205-235 |
| 4 | INLETS SPECIAL, MEMMINEE RIVER BRIDGE |
| 5 | GENERAL PLAN AND ELEVATION |
| 6 | EXPANSION GUARD, GENERAL NOTES FOR BRIDGE |
| 7 | SUPERSTRUCTURE |
| 8 | STRUCTURAL STEEL |
| 9 | METAL HANDRAIL |
| 10 | ABUTMENTS |
| 11 | PIERS |
| 12 | BORING DATA |
| 13 | PILE DETAIL |
| 14-22 | OR688 SECTION 891-6 |
| 23-25 | OR688 SECTION MEMMINEE RIVER CHANNEL CHANGE |
| 26 | STD. 2113 NAME PLATE |
| 27 | STD. 2150-1 SIGN FOR PRIMARY SYSTEM PROJECT, STA. 214, STA. 197-3 |

S.B.I. ROUTE 5 SEC. 43 B REVISED - CGR
(F.A. ROUTE 6)
PROJECT F-240 (3)
JO DAVIESS COUNTY

043-0002 ✓
 043-0003



| | |
|---------------------------------------------------------------------------------------|---------------|
| STATE OF ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS DIVISION OF HIGHWAYS | |
| SUBMITTED | Feb. 21, 1963 |
| EXAMINED | MARCH 7, 1963 |
| PAIRED | MARCH 7, 1963 |
| APPROVED | MARCH 7, 1963 |
| APPROVED | MARCH 7, 1963 |

| | |
|--------------------------------------------------|------|
| DEPARTMENT OF COMMERCE BUREAU OF PUBLIC ROADS | |
| APPROVED | DATE |
| | |
| DIVISION ENGINEER | |

Job No 22922 ROAD CLASSIFICATION 950-T-70

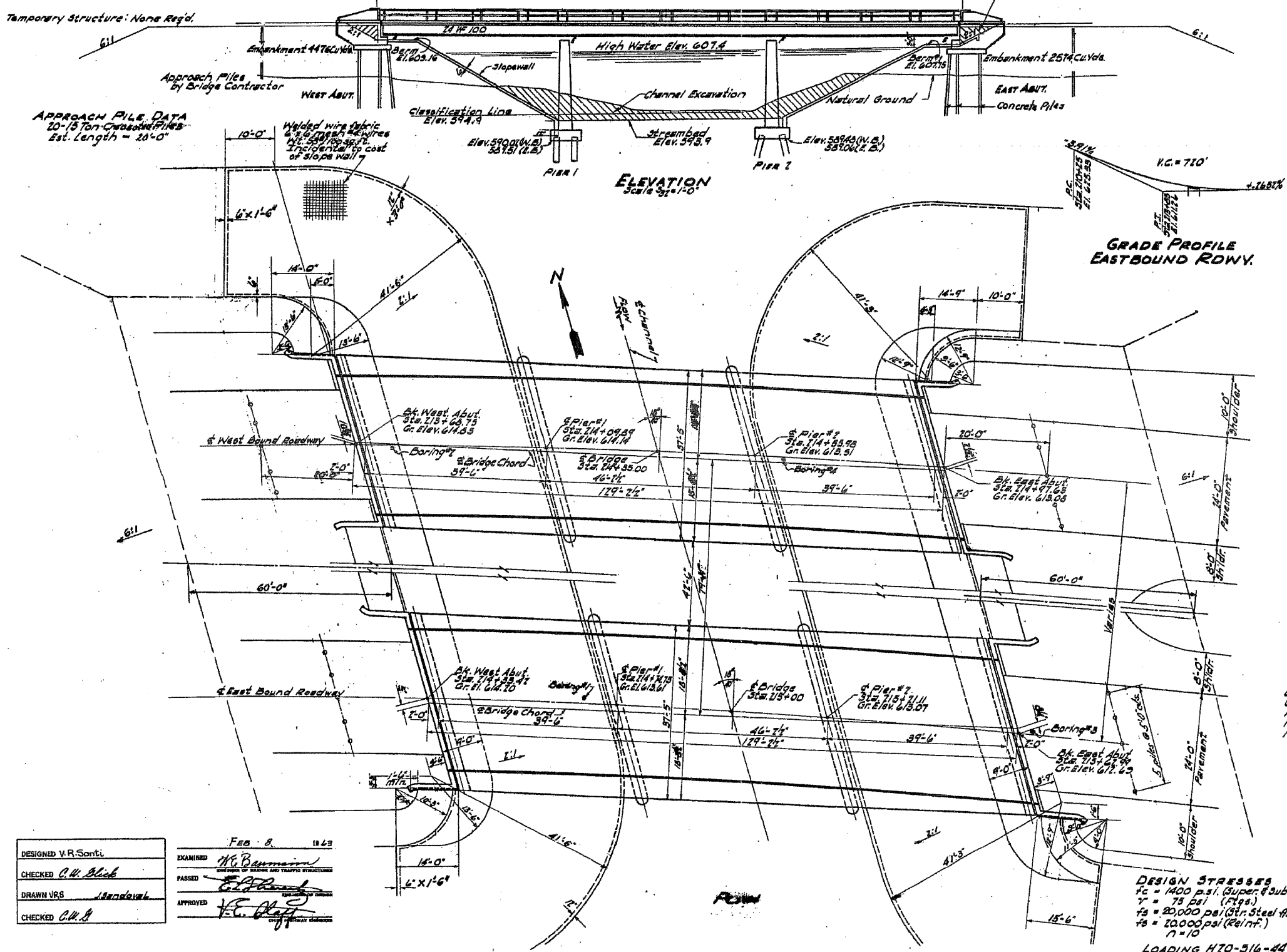
| | | | | | | | | | | | |
|------------------------------|-------------------|-----------|--|------------------------------------------------------------------------------------|---------------------------------------------------|-------------------------------------------------|--------------------------|-------------------------|------------|--------------|-----------|
| USER NAME = dheberling | DESIGNED - BRD | REVISED - | | 7018 KINGSMILL CT., SPRINGFIELD, IL (217) 483-9457 DESIGN FIRM #184001036 | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | EXISTING PLANS STRUCTURE NO. 043-0002 & 0003 | F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| FILE NAME = 0430002&3-64C94E | CHECKED - CWC/SDS | REVISED - | | | | | 301 | (43B, 44B, 44HB, 45B/D) | JO DAVIESS | 309 | 189 |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - | | | | | CONTRACT NO. 64C94 | | | | |
| PLOT TIME = 10:14:04 AM | CHECKED - BRD | REVISED - | | | | | SHEET NO. 1 OF 10 SHEETS | | | | |

B.M. on S. wingwall of East abutment of present bridge Elev. 611.37
Existing structure: R.C. Deck Girder 34'-10"-O" Rdwy. 21'-R.C. Abuts. & Piers

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

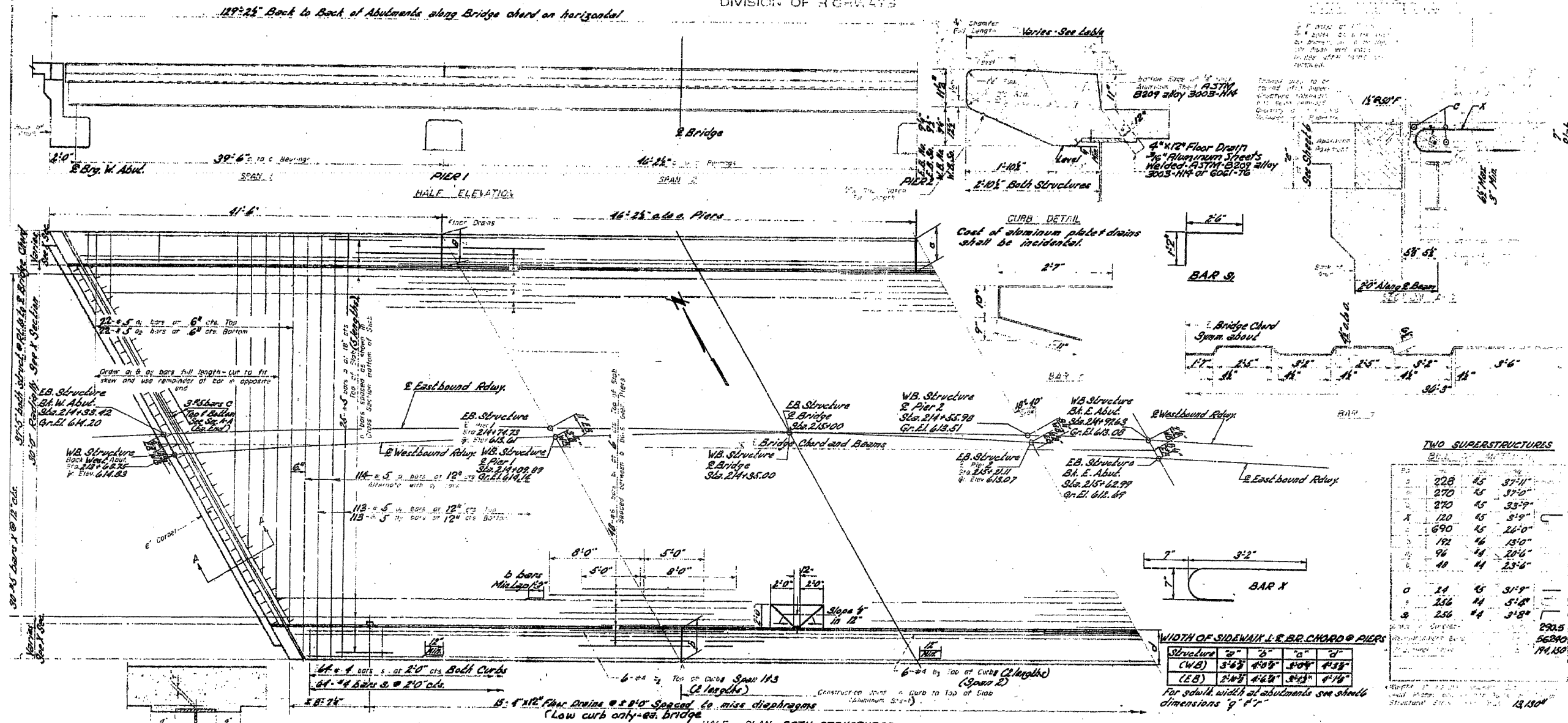
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|-------------------|---------|------------|--------------|-----------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| 438 | 438 | JO DAVIESS | 27 | 5 |
| PROJECT: F-240(3) | | | | |

SHEET NO. / 9 SHEETS

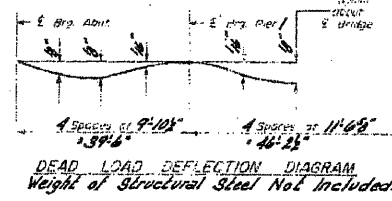
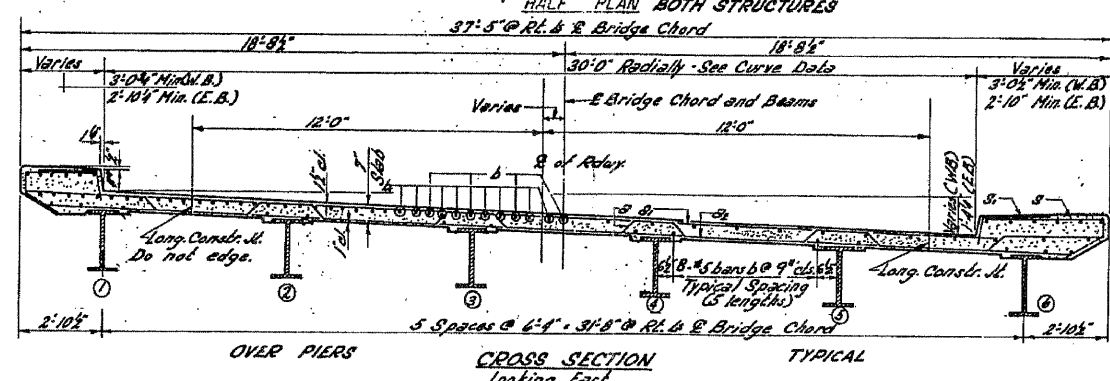


| | |
|----------|------------|
| DESIGNED | V.R. Sonti |
| CHECKED | C.H. Blich |
| DRAWN | URS |
| CHECKED | C.H. B |

Feb. 8, 1943
EXAMINED: *H. Baumann*
PASSED: *E. J. ...*
APPROVED: *V. ...*



METHOD OF DETERMINING FILLET HEIGHT "r"
After all Structural Steel has been erected elevations of the top flanges of the beams shall be taken at intervals not to exceed 10 Ft. From these elevations subtract the increment of deflection for these points, determined from the D.L. Deflection Diagram. The elevations so obtained subtracted from the theoretical grade elevations, minus floor thickness, equals the fillet height above beams. See sheet #4 for elevations top of slab above beams.

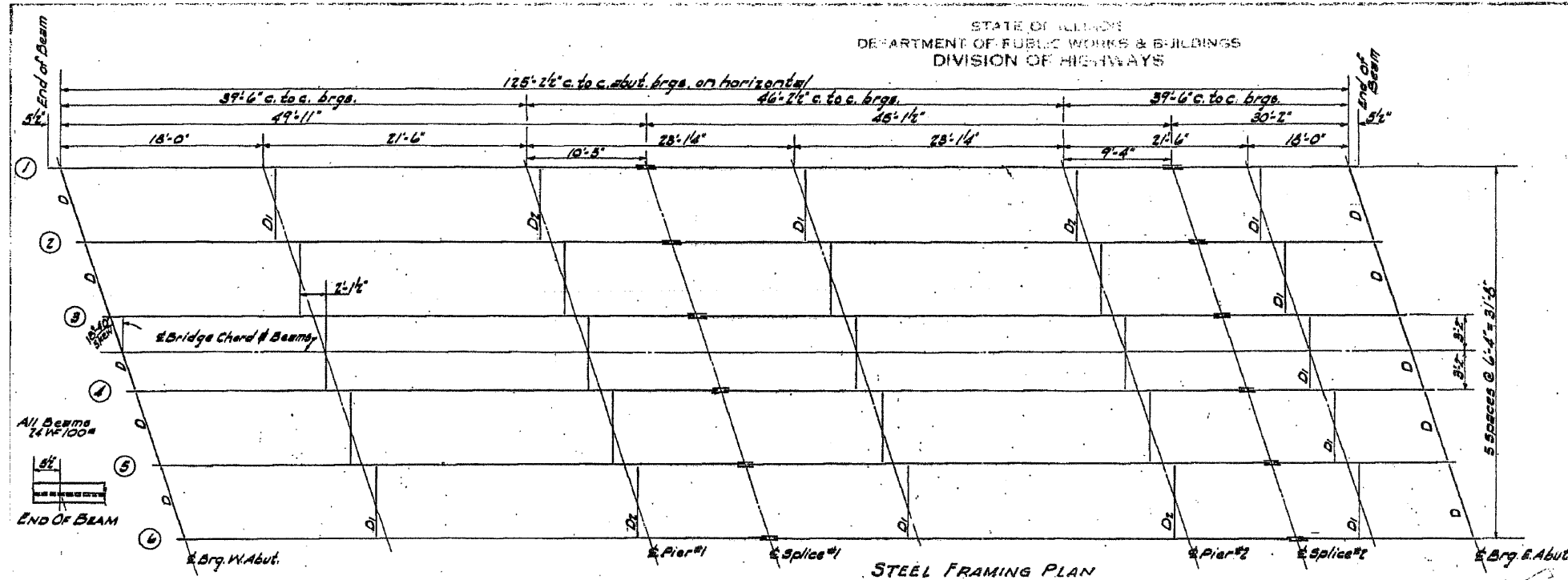


DESIGN STRESSES
F_y 36000 psi
F_t 50000 psi
F_c 14000 psi

SUPERSTRUCTURE
S.B.I. Rt. 5 SEC. 43-B
JO DAVIESS COUNTY
STA. 214+35 (W.B.)
STA. 215+00 (E.B.)

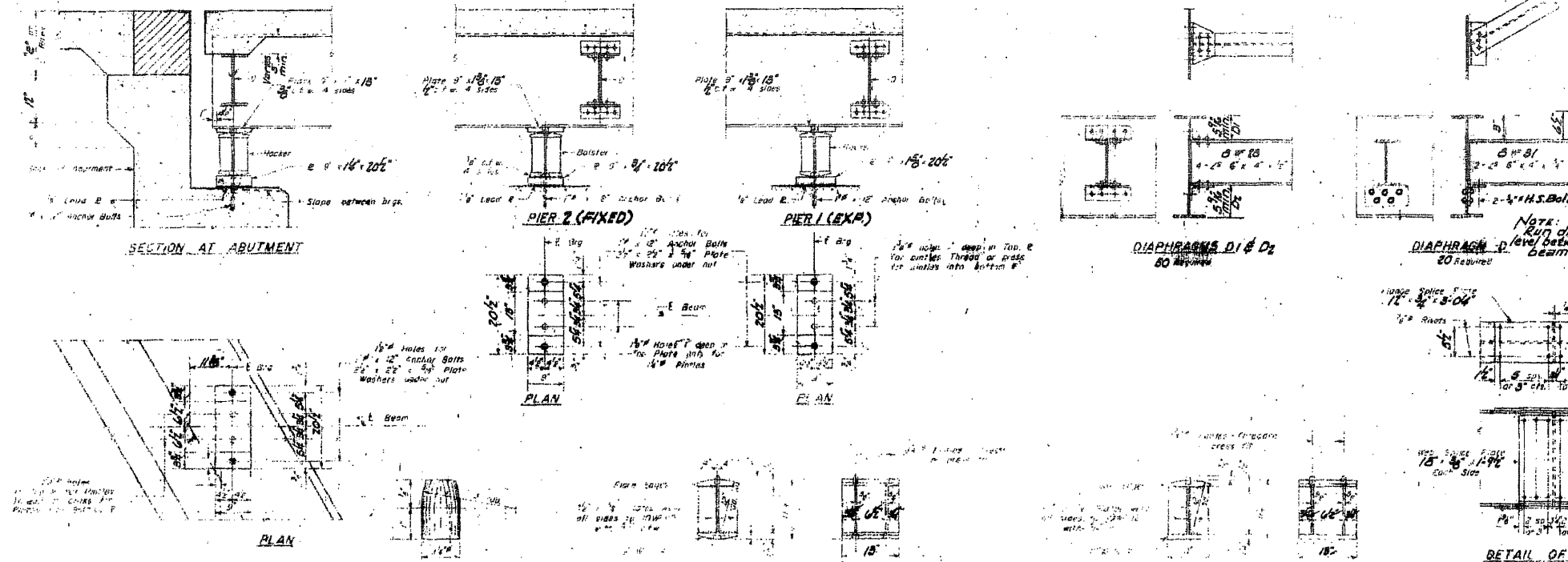
DESIGNED: V.R. Spanti
CHECKED: C.W. Black
DRAWN: J.R. Spaulding
CHECKED: C.W. Black

FEB 8 1963
APPROVED: W.E. Brummann
APPROVED: E. J. ...
APPROVED: T.E. Bluff



ELEVATION TOP OF SLAB ABOVE BEAMS

| LOCATION | B.M. 1 | B.M. 2 | B.M. 3 | B.M. 4 | B.M. 5 | B.M. 6 |
|----------------------------|--------|--------|--------|--------|--------|--------|
| W. Abut. @ Brq. | 613.30 | 613.10 | 614.94 | 614.70 | 614.78 | 614.74 |
| 10'-0" E. of Brq. W. Abut. | 613.22 | 613.00 | 614.76 | 614.50 | 614.78 | 614.74 |
| 20'-0" E. of Brq. W. Abut. | 613.07 | 614.84 | 614.59 | 614.37 | 614.09 | 613.74 |
| 30'-0" E. of Brq. W. Abut. | 614.94 | 614.69 | 614.42 | 614.14 | 613.88 | 613.55 |
| Splice #1 | 614.82 | 614.55 | 614.27 | 613.95 | 613.68 | 613.37 |
| Splice #2 | 614.69 | 614.41 | 614.12 | 613.81 | 613.51 | 613.19 |
| 10'-5" E. of Pier #1 | 614.68 | 614.28 | 613.97 | 613.66 | 613.35 | 613.05 |
| 20'-5" E. of Pier #1 | 614.46 | 614.15 | 613.84 | 613.52 | 613.21 | 612.90 |
| Splice #1 | 614.26 | 613.95 | 613.64 | 613.33 | 613.02 | 612.71 |
| Splice #2 | 614.18 | 613.84 | 613.58 | 613.32 | 612.97 | 612.61 |
| 10'-4" E. of Pier #2 | 614.04 | 613.78 | 613.48 | 613.17 | 612.81 | 612.50 |
| 20'-4" E. of Pier #2 | 613.94 | 613.68 | 613.38 | 613.07 | 612.72 | 612.41 |
| E. Abut. @ Brq. | 613.85 | 613.54 | 613.24 | 612.94 | 612.68 | 612.38 |
| W. Abut. @ Brq. | 614.94 | 614.62 | 614.30 | 613.99 | 613.67 | 613.35 |
| 10'-0" E. of Brq. W. Abut. | 614.78 | 614.46 | 614.14 | 613.83 | 613.51 | 613.20 |
| 20'-0" E. of Brq. W. Abut. | 614.68 | 614.31 | 613.99 | 613.68 | 613.36 | 613.05 |
| 30'-0" E. of Brq. W. Abut. | 614.48 | 614.17 | 613.85 | 613.54 | 613.22 | 612.91 |
| Splice #1 | 614.35 | 614.04 | 613.72 | 613.41 | 613.10 | 612.79 |
| Splice #2 | 614.21 | 613.90 | 613.59 | 613.28 | 612.97 | 612.66 |
| 10'-5" E. of Pier #1 | 614.09 | 613.78 | 613.47 | 613.16 | 612.85 | 612.54 |
| 20'-5" E. of Pier #1 | 613.98 | 613.67 | 613.36 | 613.05 | 612.74 | 612.43 |
| Splice #1 | 613.81 | 613.50 | 613.20 | 612.89 | 612.59 | 612.28 |
| Splice #2 | 613.72 | 613.41 | 613.11 | 612.81 | 612.50 | 612.20 |
| 10'-4" E. of Pier #2 | 613.64 | 613.33 | 613.03 | 612.72 | 612.42 | 612.12 |
| 20'-4" E. of Pier #2 | 613.54 | 613.23 | 612.93 | 612.63 | 612.33 | 612.03 |
| E. Abut. @ Brq. | 613.48 | 613.18 | 612.88 | 612.58 | 612.28 | 611.98 |



DESIGNED - BRD
CHECKED - CWC/SDS
DRAWN - DLH
CHECKED - BRD

REVISIONS:
REVISED -
REVISED -
REVISED -
REVISED -

APPROVED: V.A. Santti
C.W. Smith
VRS
C.M.B.

DESIGNED: H.E. Beumann
CHECKED: E. H. ...
APPROVED: V.E. ...

DATE: FEB 5 1963

WHKS & CO. ENGINEERING
7018 KINGSMILL CT., SPRINGFIELD, IL (217) 483-9457 DESIGN FIRM #184001036

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

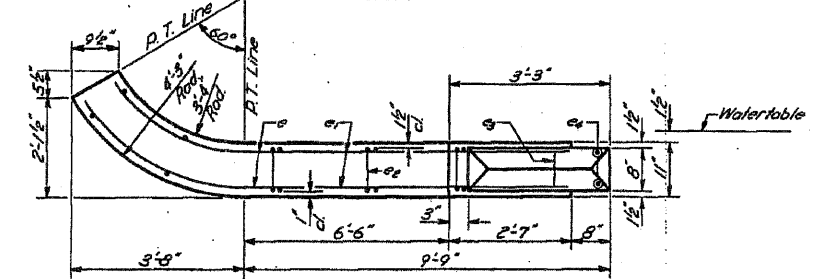
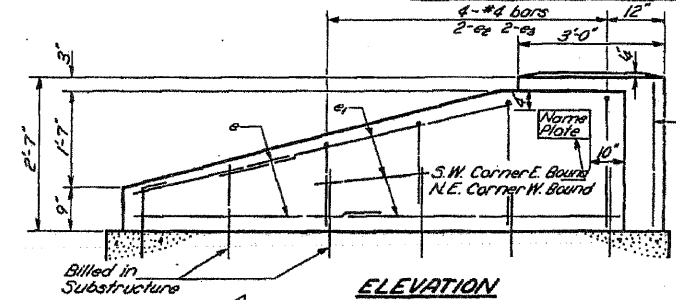
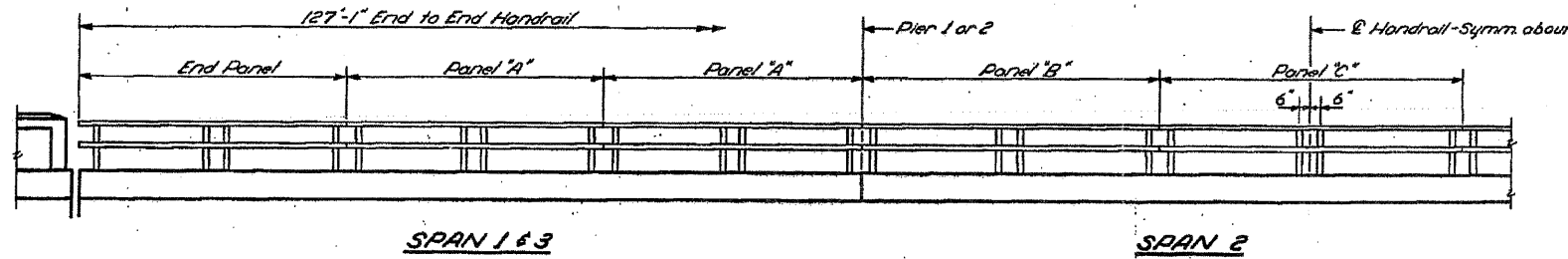
EXISTING PLANS
STRUCTURE NO. 043-0002 & 0003
SHEET NO. 5 OF 10 SHEETS

F.A.P. RTE. 301 SECTION 43B, 44B, 44HB, 45BDJ COUNTY JO DAVIESS COUNTY TOTAL SHEETS 309 SHEET NO. 193 CONTRACT NO. 64C94

STRUCTURAL STEEL
S.B.I. RT. 5 SEC. 43-B
JO DAVIESS COUNTY
STA. 214+35 (W.B.)
STA. 215+00 (E.B.)

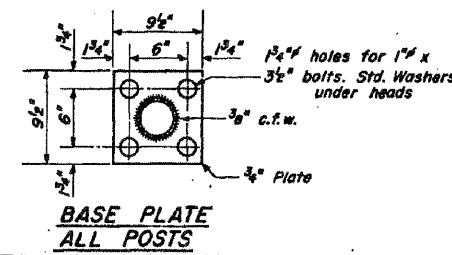
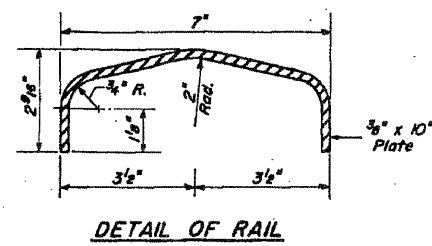
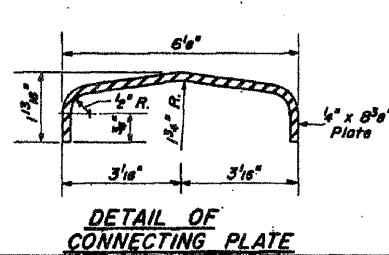
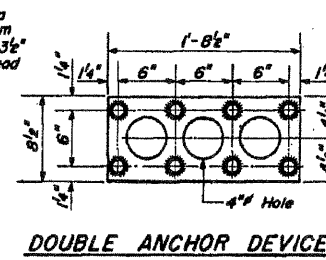
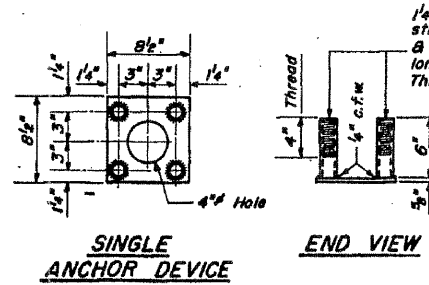
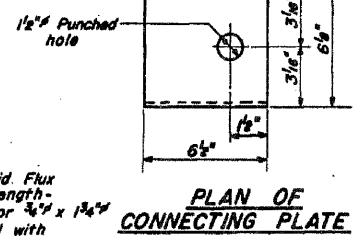
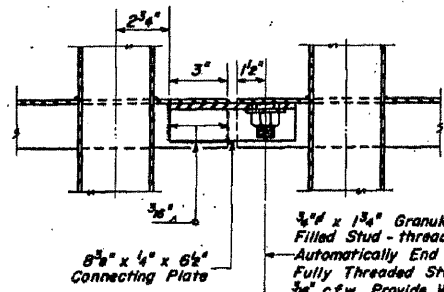
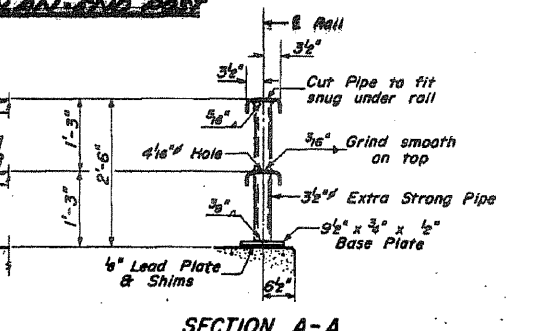
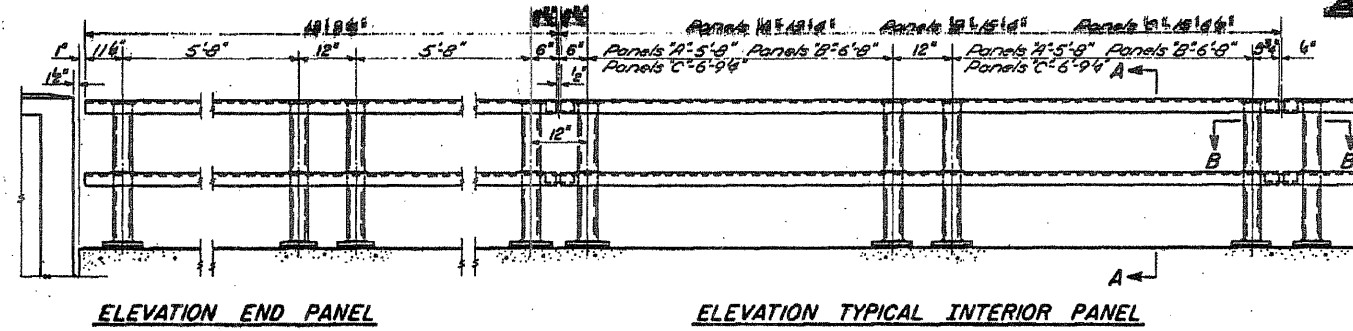
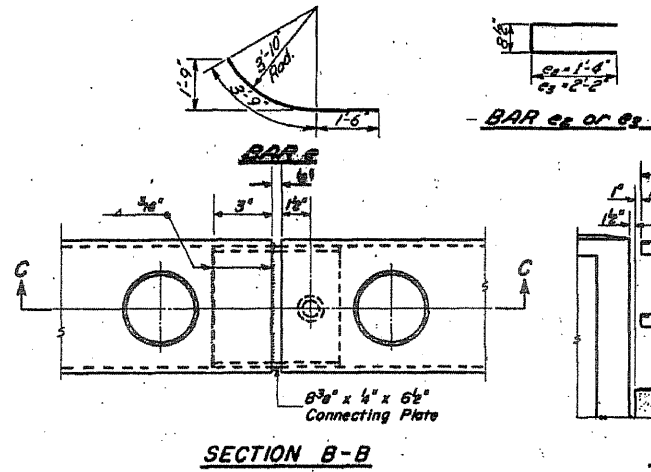
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

| | | | | |
|--------------------------|-----|------------|-------|--------------|
| DATE | BY | CHECKED | SCALE | SHEET NO. |
| 5/2/62 | 43B | Jo Daviess | 27 | 9 |
| PROJECT | | | | TOTAL SHEETS |
| S.B.I. RT. 5 - SEC. 43-B | | | | 9 SHEETS |



BILL OF REINFORCEMENT

| Bar | No. | Size | Length | Shape |
|-----|-----|------|--------|-------|
| e1 | 32 | #4 | 5'-3" | — |
| e1 | 48 | #4 | 9'-3" | — |
| e2 | 16 | #4 | 3'-4" | — |
| e3 | 16 | #4 | 5'-0" | — |
| e4 | 16 | #4 | 2'-3" | — |



NOTES

After erection, all Bolts and Washers shall be spot painted with one coat of red lead paint. The entire rail shall then receive two coats of aluminum paint.

Provide 1-3/8" and 2-1/8" Shims for 50% of the Posts.

TWO STRUCTURES
BILL OF MATERIAL

| Item | Unit | Quantity |
|--------------------|----------|----------|
| Metal Handrail | Lin. Ft. | 508 |
| Class X Concrete | Cu. Yds. | 6.5 |
| Reinforcement Bars | Lbs. | 520 |

HANDRAIL
S.B.I. RT. 5 - SEC. 43-B
JO DAVIESS COUNTY
STA. 214+35 (W.B.)
STA. 215+00 (E.B.)

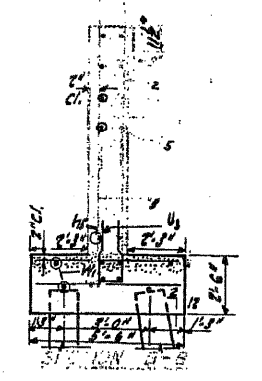
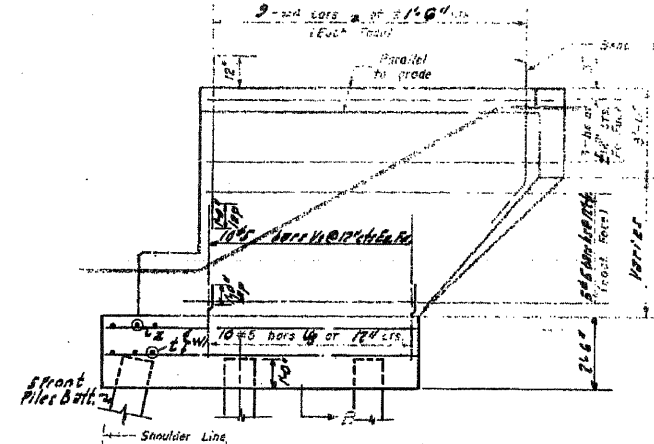
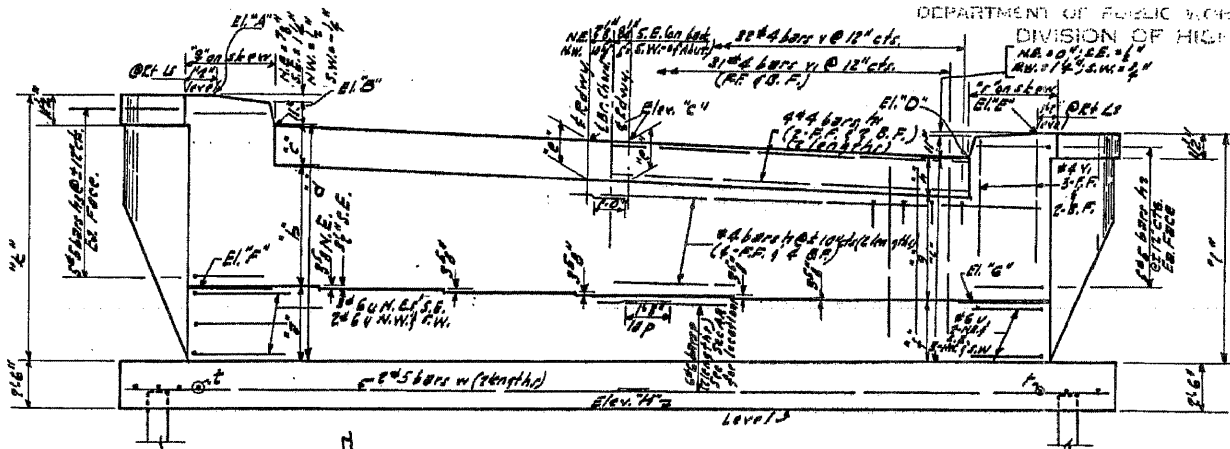
| | | | |
|----------|---------|----------|------|
| DESIGNED | BRD | REVISION | DATE |
| CHECKED | CWC/SDS | REVISION | DATE |
| DRAWN | DLH | REVISION | DATE |
| CHECKED | BRD | REVISION | DATE |

APPROVED: [Signature]

7-12 2-26-62

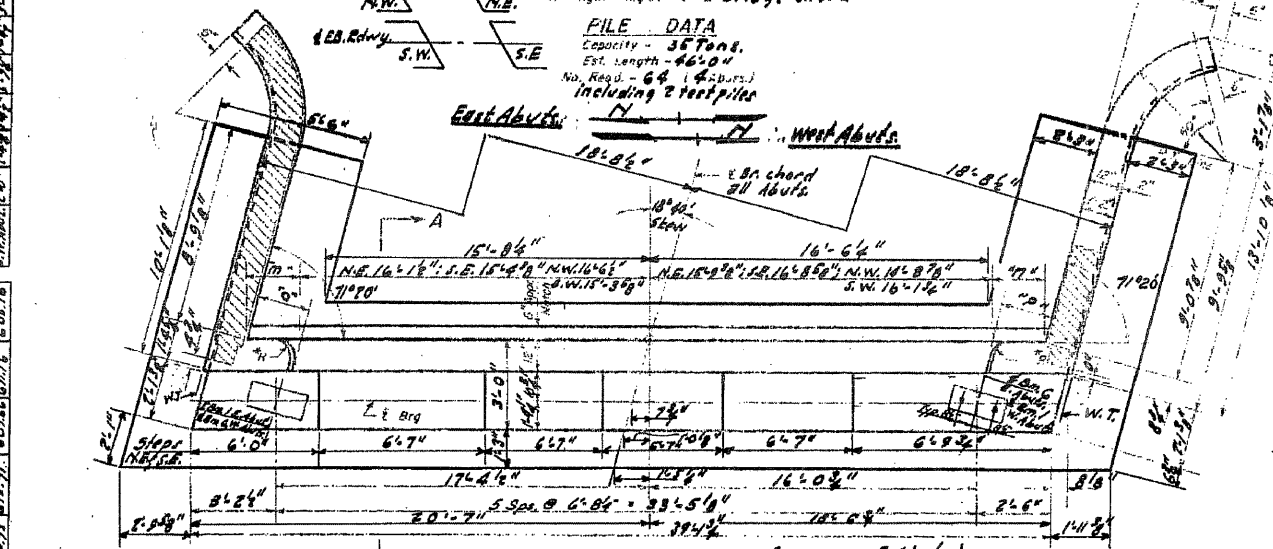
SCHEDULE OF ABUTMENT DIMENSIONS ON FRONT FACE

SCHEDULE OF DIMENSIONS IN PLAN



ELEVATION showing E. Abut. At Right Angles to S. Bridge Chord

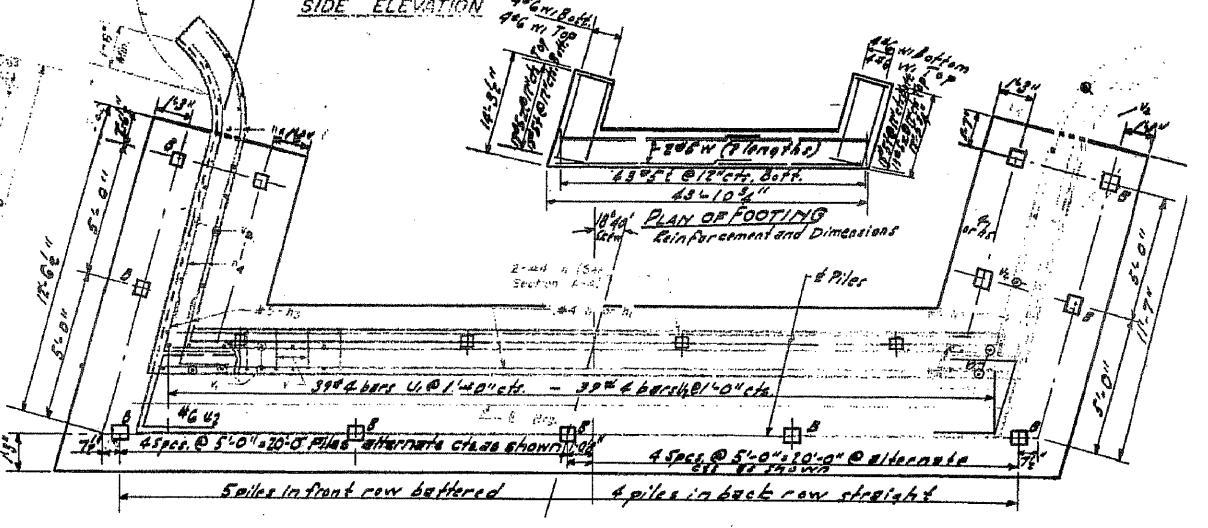
FILE DATA
Capacity - 36 Tons.
Est. Length - 66'-0"
No. Ribs - 6 @ 14'-0" apart
including 2 rest piles



PLAN OF ABUTMENT (Showing E. Abut.)

SCHEDULE OF DIMENSIONS IN PLAN

| LINE | TYPE | NO. | LENGTH | WIDTH | AREA |
|------------|-------|-----|--------|--------|--------|
| N.E. Abut. | Rect. | 1 | 21'-7" | 14'-7" | 317.74 |
| S.E. Abut. | Rect. | 2 | 18'-6" | 14'-7" | 271.42 |
| N.W. Abut. | Rect. | 3 | 21'-7" | 14'-7" | 317.74 |
| S.W. Abut. | Rect. | 4 | 18'-6" | 14'-7" | 271.42 |



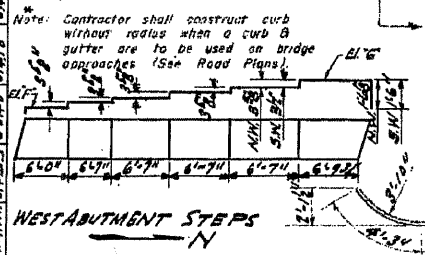
PLAN OF ABUTMENT Reinforcement 1/2" @ 50% min

4 ABUTMENTS
BILL OF REINFORCEMENT

| EXP. | NO. | SIZE | LENGTH | WEIGHT | NO. | SIZE | LENGTH | WEIGHT |
|------|-----|------|--------|--------|-----|------|--------|--------|
| N | 80 | #4 | 20'-0" | 120 | U3 | 80 | #5 | 6'-0" |
| N | 32 | #4 | 16'-0" | 160 | W | 16 | #5 | 22'-3" |
| N | 40 | #4 | 8'-0" | 320 | W | 64 | #6 | 12'-0" |
| N | 48 | #4 | 8'-0" | 384 | | | | |
| N | 80 | #5 | 18'-0" | 720 | | | | |
| P | 48 | #7 | 20'-3" | 864 | U | 288 | #5 | 5'-3" |
| U | 20 | #6 | 8'-9" | 178 | U | 144 | #4 | 5'-9" |
| U | 156 | #4 | 9'-3" | 5832 | U | 276 | #5 | 5'-3" |
| U | 156 | #4 | 6'-3" | 3948 | U | 104 | #5 | 5'-3" |

4 ABUTMENTS
BILL OF MATERIALS

| | |
|----------------|--------------|
| Concrete | 211.6 |
| Concrete Piles | 8,780 |
| Test Piles | Un. Fl. 2832 |
| | 2 |



WEST ABUTMENT STEPS

BAR D1

BAR D2

BAR V

BAR U

DESIGNED BY: K.R. Santic
CHECKED BY: C.W. Auld
DRAWN BY: F. Mercutio
REVISIONS: 1, 2, 3, 4

APPROVED BY: H.R. Bauman
DATE: FEB 8 1963
DESIGNED BY: E. Blumenthal
CHECKED BY: V.E. Claff

1-3-64 5-21-60 9-25-58

WHKS & CO.
ENGINEERING

7018 KINGSMILL CT.
SPRINGFIELD, IL
(217) 483-9457
DESIGN FIRM #184001036

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

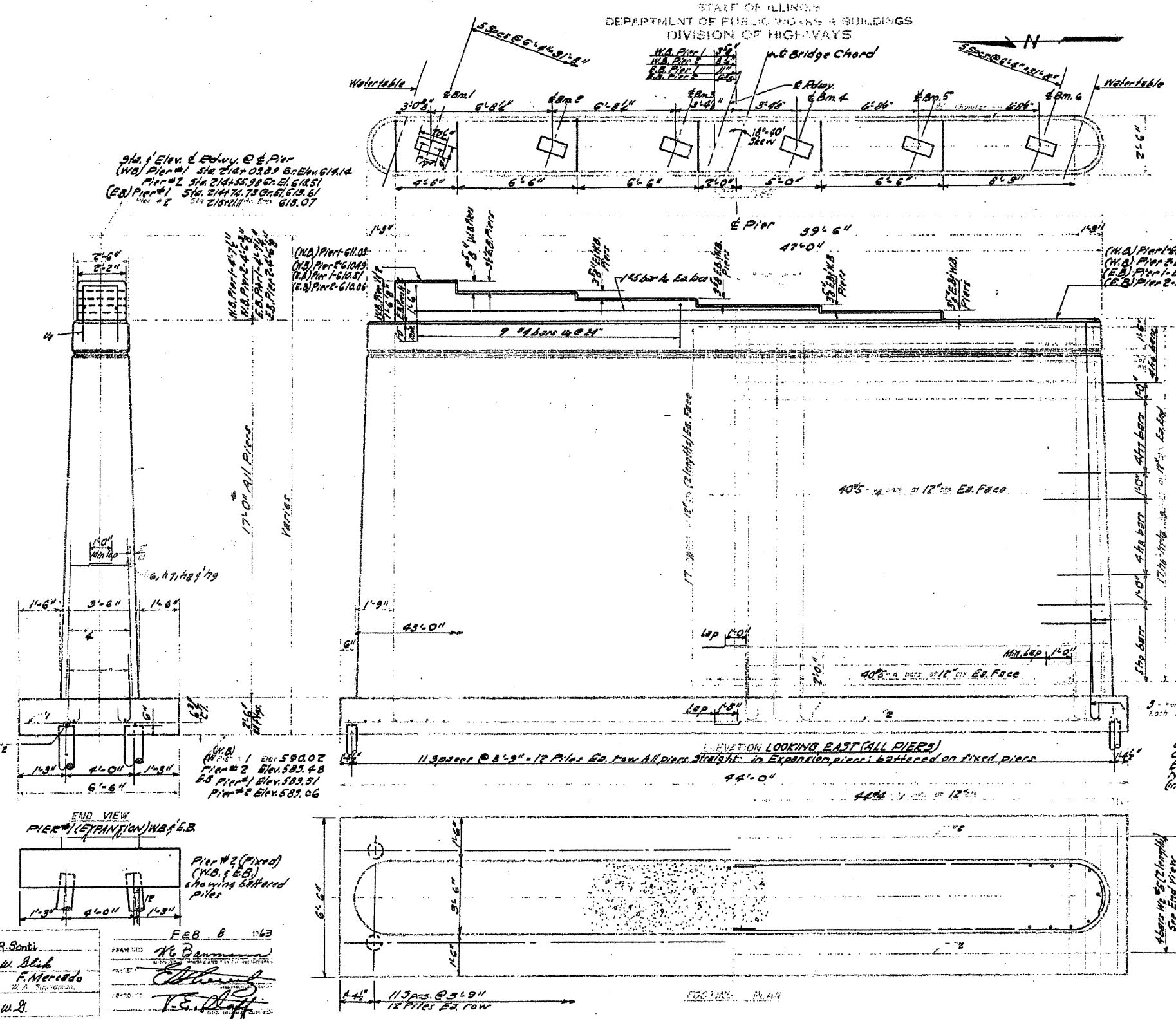
EXISTING PLANS
STRUCTURE NO. 043-0002 & 0003

SHEET NO. 7 OF 10 SHEETS

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|--------------------|-------------------------|------------|---------------------------|-----------|
| 301 | (43B, 44B, 44HB, 45BID) | JO DAVIESS | 309 | 195 |
| CONTRACT NO. 64C94 | | | ILLINOIS FED. AID PROJECT | |

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

5 43B Jo Daviess 27 11 9



| | | |
|----|------|-------|
| h6 | 140' | 2'30" |
| h7 | 142' | 2'60" |
| h8 | 143' | 2'90" |
| h9 | 144' | 3'00" |

| | | | |
|-----|-----|----|--------|
| 6 | 64 | 24 | 3'-3" |
| 17 | 64 | 24 | 3'-6" |
| 18 | 64 | 24 | 3'-9" |
| 19 | 80 | 24 | 4'-0" |
| 110 | 272 | 24 | 20'-3" |
| 111 | 8 | 25 | 25'-6" |

PILE DATA
Untreated Piles
Capacity 20 Tons
Estimated length 28'-0"
No. Reqd. 96
(including 2 test piles)

429
13670
Untreated Piles Lin. Ft. 2632
Test Piles (Timber) 2

PIERS

S.B.L. Pt. 5 Sec. 31-B
JO DAVIESS COUNTY
STA. 214+35 (WB)
STA. 215+00 (E.B.)

DESIGNED - BRD
CHECKED - CWC/SDS
DRAWN - DLH
CHECKED - BRD

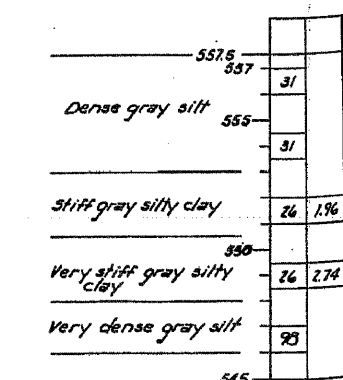
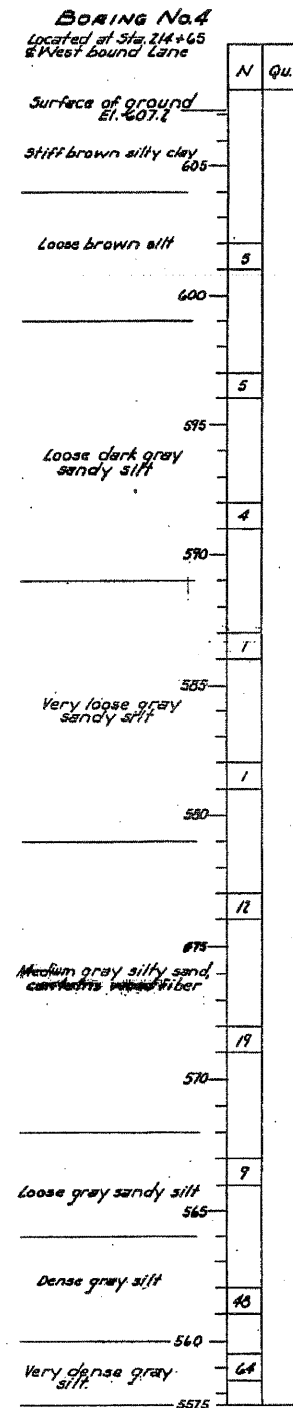
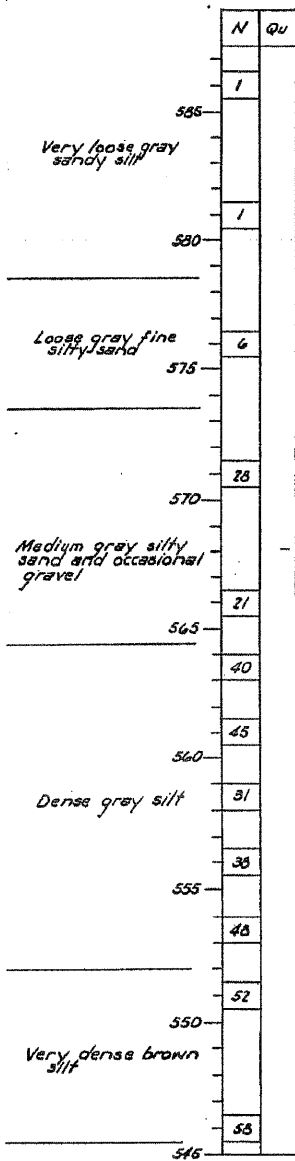
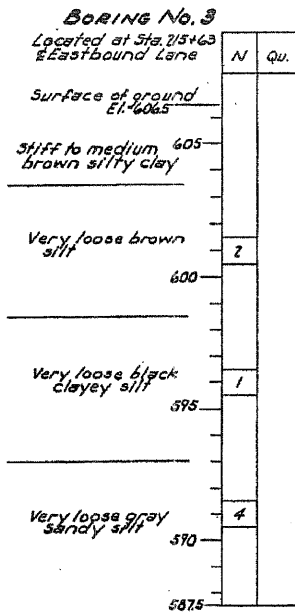
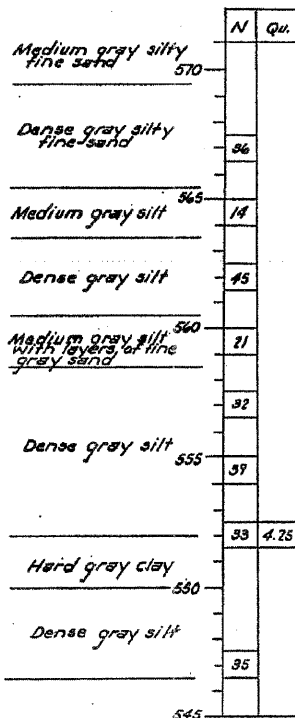
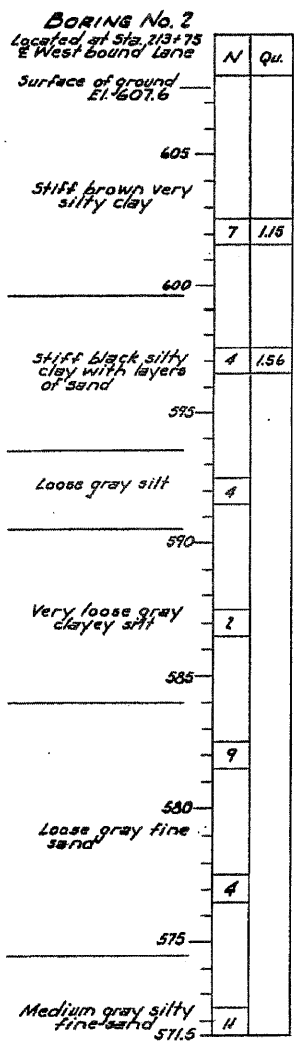
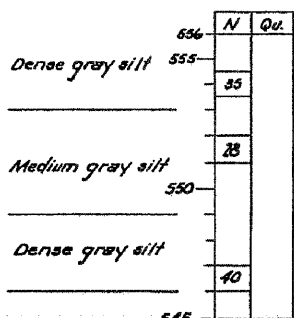
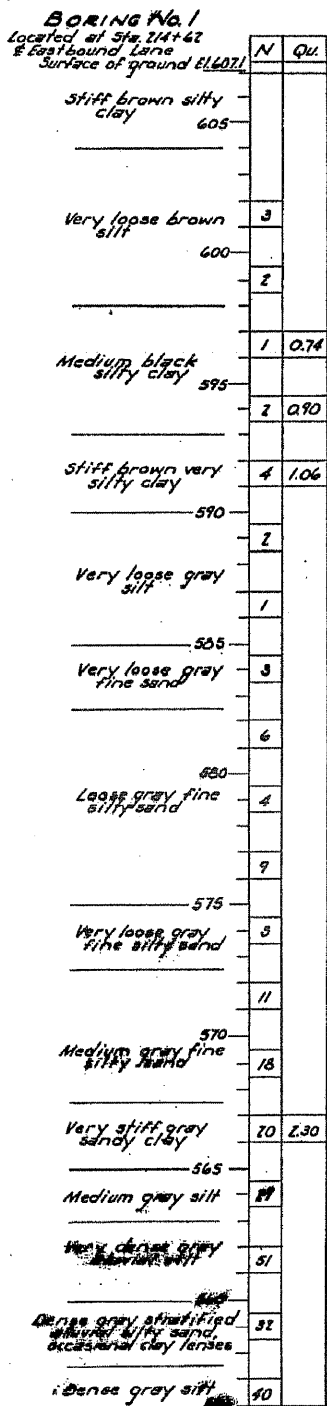
REVISIONS:
1. REVISED -
2. REVISED -
3. REVISED -

APPROVED:
V.R. Sonti
C.W. Shick
F. Mercedo
C.W. St.

DATE: FEB 8 1963

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

| | | | | |
|-------------------------|---------|------------|--------------|-----------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| 5 | 43B | JO DAVIESS | 27 | 12 |
| SHEET NO. 8 9 SHEETS | | | | |



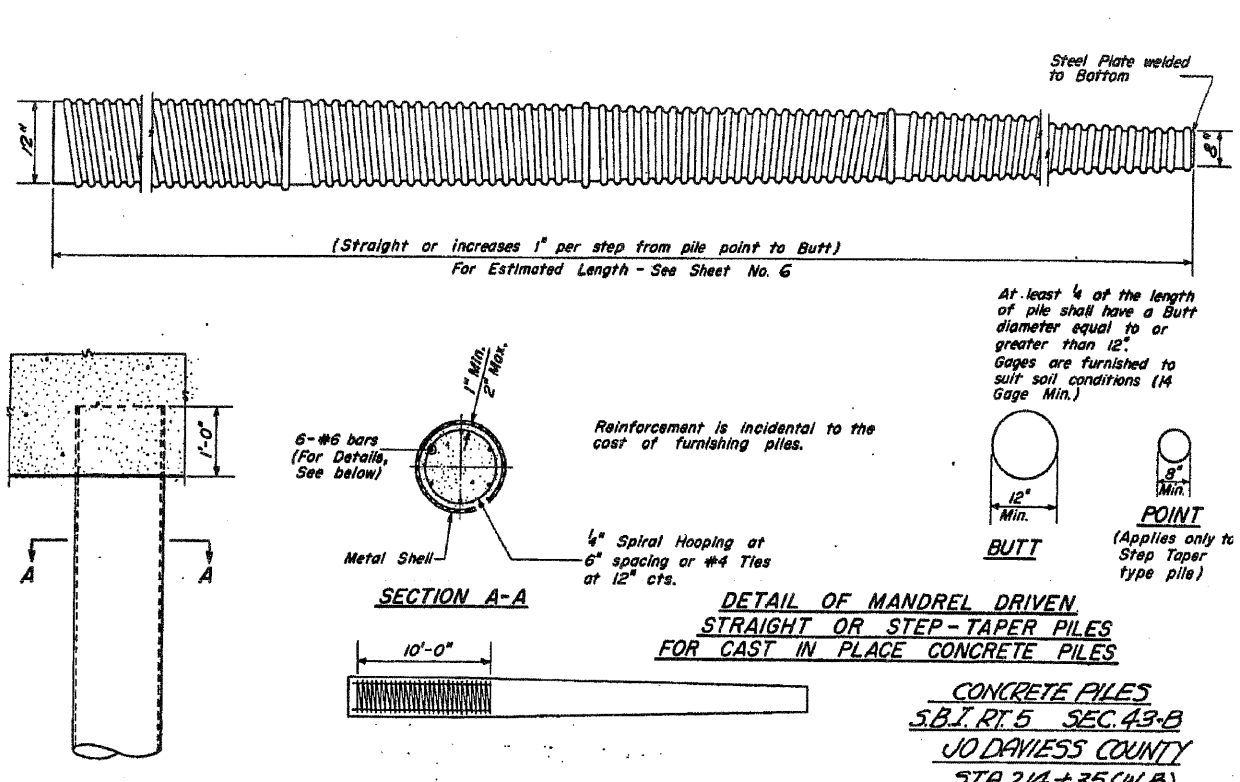
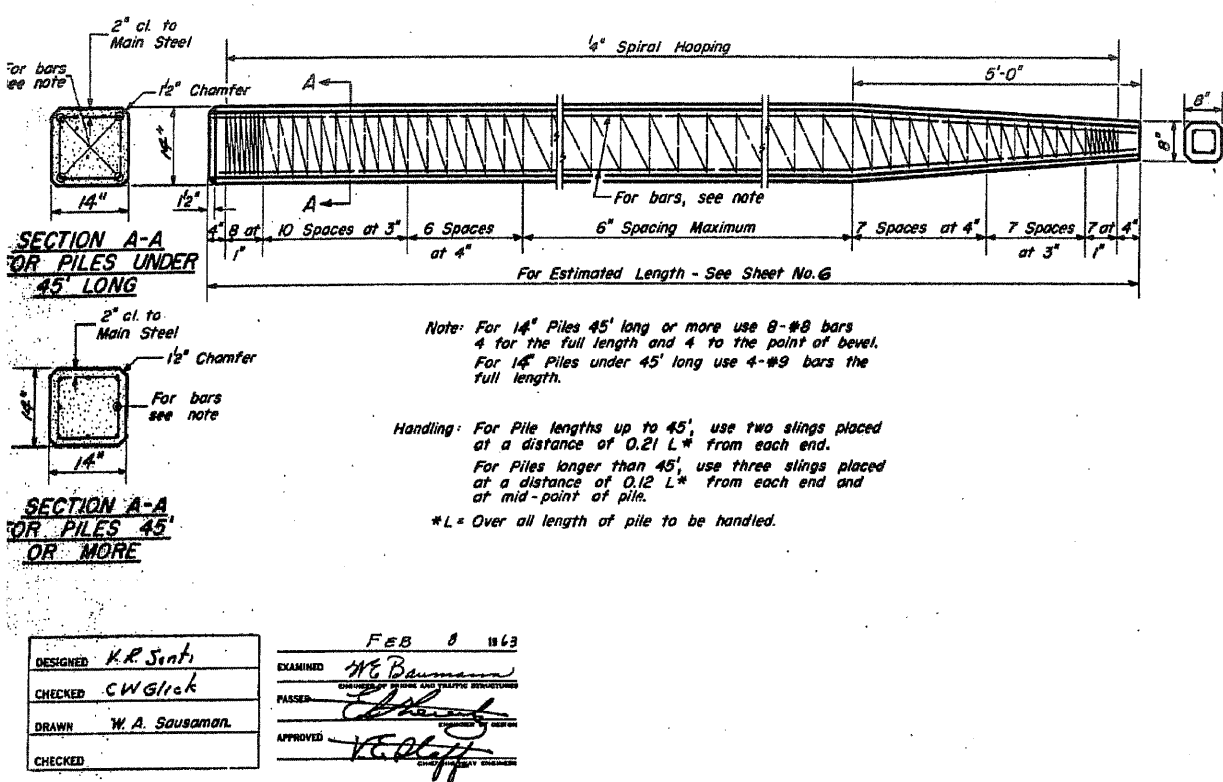
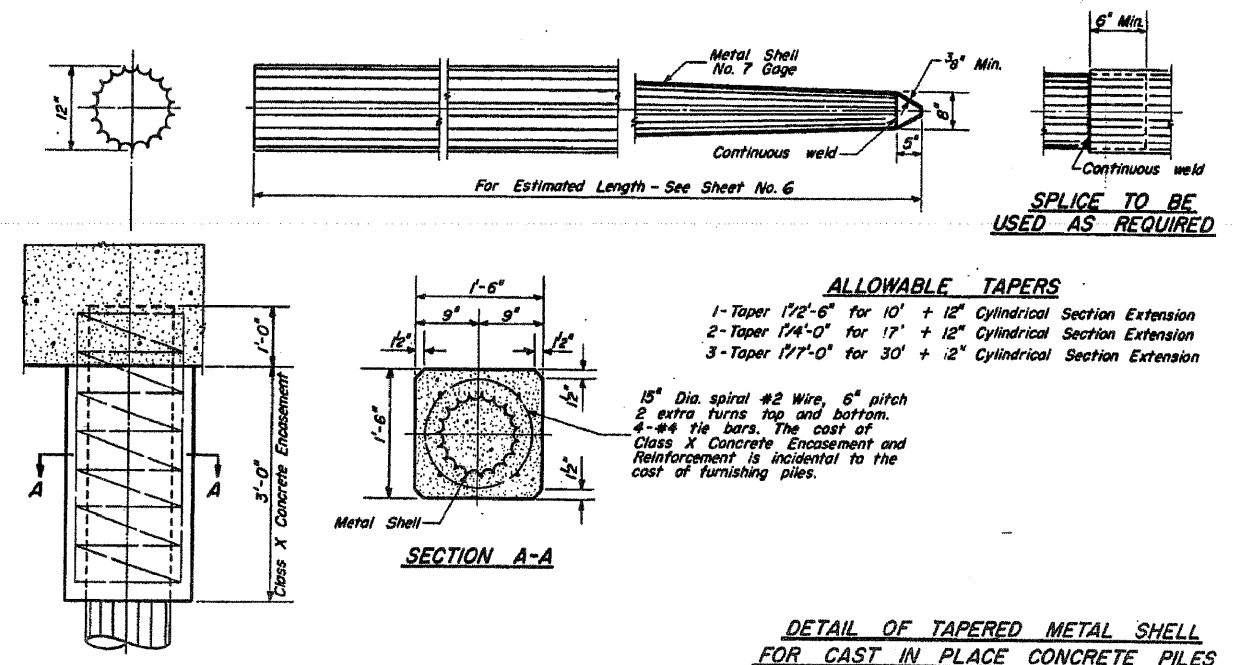
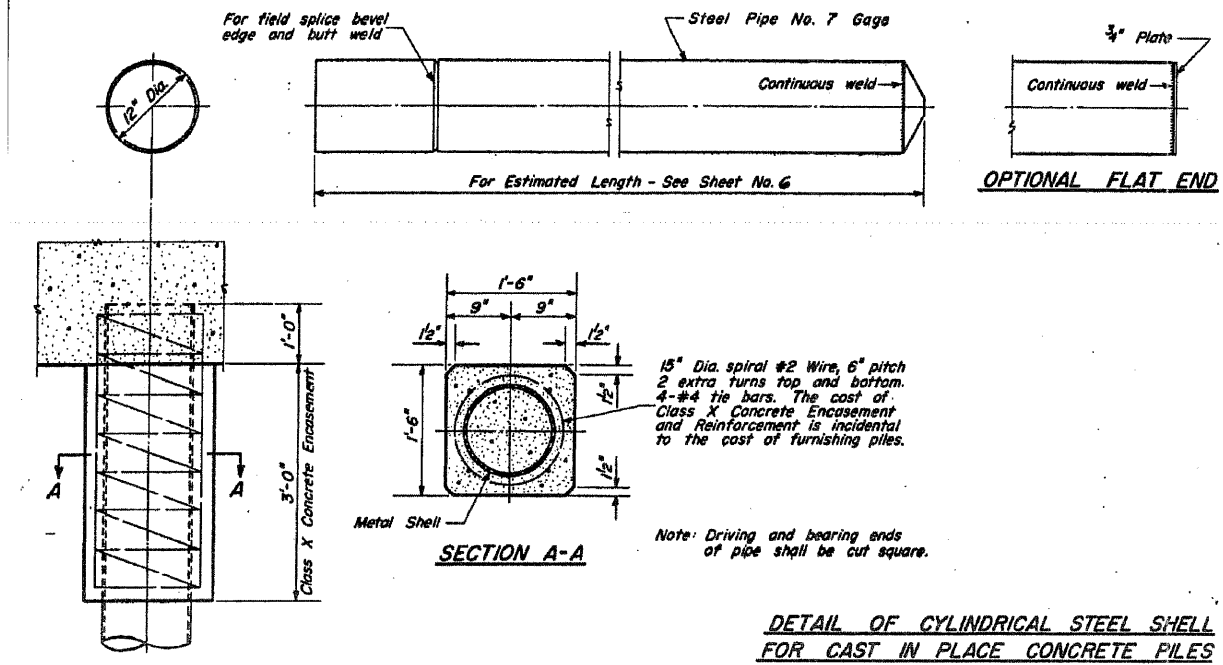
Notes:
N = Blows per foot of penetration of sampling spoon. Hammer Weight = 350 lbs.
Drop = 12"
Qu = Unconfined compressive strength in Tons per sq. ft.

DESIGNED W. B. Santi
CHECKED C. W. Bluh
DRAWN JRS
CHECKED C. W. Bluh

EXAMINED W. E. Baumann
PASSED [Signature]
APPROVED [Signature]

FEB 8 1963

BORING DATA
S.B.I.R. 5 SEC. 43-B
JO DAVIESS COUNTY
STA. 214 + 35 (W.B.)
STA. 215 + 00 (E.B.)



DESIGNED: K.R. Sentz
CHECKED: CWG/ick
DRAWN: W. A. Sausaman
CHECKED: [Signature]

EXAMINED: W.E. Baumann
PASSED: [Signature]
APPROVED: V.E. Cluff

FEB 8 1963

-1 Rev. 5-12-61 9-27-62

DETAIL OF PRECAST CONCRETE PILES

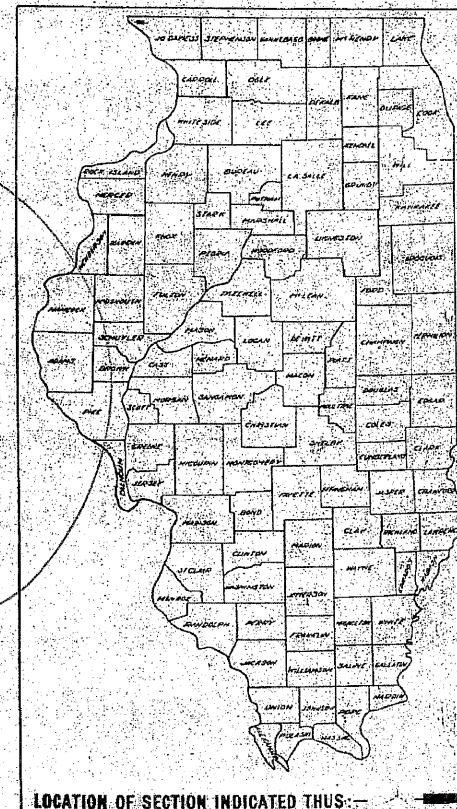
DETAIL OF MANDREL DRIVEN STRAIGHT OR STEP-TAPER PILES FOR CAST IN PLACE CONCRETE PILES

CONCRETE PILES
S.B.I. RT. 5 SEC. 43-B
JO DAVIESS COUNTY
STA. 214+35 (N.B.)
STA. 215+00 (E.B.)

**STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
FEDERAL AID HIGHWAY**

| | | | | |
|-----------|-------|------------|-----------|--------------|
| ROUTE NO. | SEC. | CONTRACT | SHEET NO. | TOTAL SHEETS |
| SBI 5 | 44A&B | JO DAVIESS | 373 | 1 |

P-92-003-00



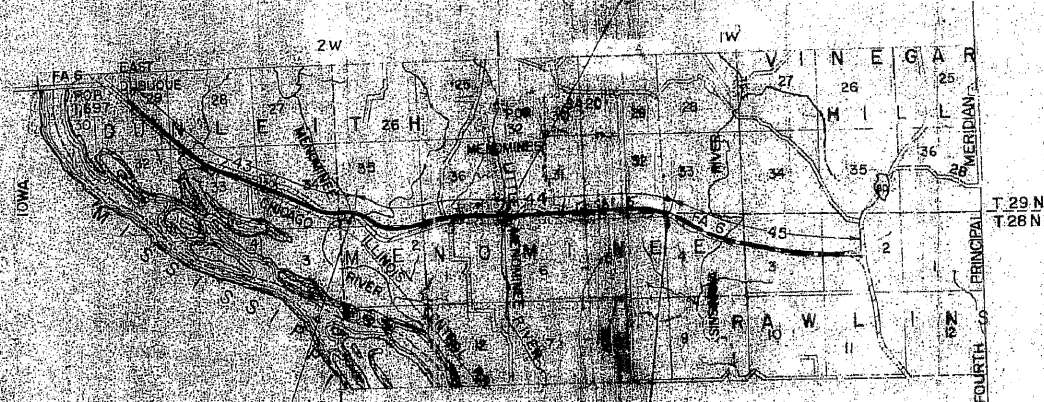
SEE SHEET NO. 1A FOR INDEX OF SHEETS

**SBI ROUTE 5 SEC 44A&B
(FA ROUTE 6) PROJ F-240(5)
JO DAVIESS COUNTY**

C-92-350-64

SEE SHEET # 2 FOR DETAILED LAYOUT SEC. 44A&B

SECTION 44A&B INCLUDES
Two (2) parallel 3-Span Continuous WF Beam Bridges on Cantilevered Conc. Piers and Open Abutments on Steel Piles, Spans Each 2@51'0" & 1@72'-0". At Sta. 317+94.5 (WB) & Sta. 318+66.3 (EB)



PROJECT F-240(5)
PROPOSED IMPROVEMENT
BEGINS STA. 231+28 (W)

PROJECT F-240(5)
PROPOSED IMPROVEMENT
ENDS STA. 438+00 (W)

EQUATIONS W.B. LAINE :-
254+90.94 = 254+89.67
300+10.50 = 300+11.07
351+63.57 = 351+64.58
425+00.39 = 422+97.49

OMISSION W.B. LAINE :-
403+04 TO 403+75

SBI RTE 5 SEC 44A&B

NET LENGTH OF PROJECT F-240(5) = 20,603.69 Feet = 3.902 Miles

ROAD CLASSIFICATION
1985-T-70

| | |
|---------------------------------------------------------------------------------------|------------------------------------------|
| STATE OF ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS DIVISION OF HIGHWAYS | |
| SUBMITTED | July 10, 1964 <i>W. M. Mendenhall</i> |
| EXAMINED | August 5, 1964 <i>W. Mendenhall</i> |
| PASSED | August 5, 1964 |
| APPROVED | August 6, 1964 <i>W. Mendenhall</i> |
| APPROVED | August 5, 1964 <i>Francis J. ...</i> |

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
APPROVED: _____
DIVISION ENGINEER

| | | | | | | | | | | | |
|-----------------------------|-------------------|-----------|--|-----------------------------------------------------------------------------------|---------------------------------------------------|-----------------------------------------------------------------------------|---------------------------|-------------------------|------------|--------------|-----------|
| USER NAME = dhaberling | DESIGNED - BRD | REVISED - | | 7018 KINGSMILL CT. SPRINGFIELD, IL (217) 483-9457 DESIGN FIRM #184001036 | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | EXISTING PLANS STRUCTURE NO. 043-0004 & 0005 SHEET NO. 1 OF 11 SHEETS | F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| FILE NAME = 0430004&5-64C94 | CHECKED - CWC/SDS | REVISED - | | | | | 301 | (43B, 44B, 44HB, 45B/D) | JO DAVIESS | 309 | 199 |
| PLOT DATE = 12/6/2011 | DRAWN - DLH | REVISED - | | | | | CONTRACT NO. 64C94 | | | | |
| PLOT TIME = 10:14:39 AM | CHECKED - BRD | REVISED - | | | | | ILLINOIS FED. AID PROJECT | | | | |

B.M. on N.W. Corner of E. Abutment of Existing Bridge Elev 642.08
Existing Structure - R.C.D.G. 1 Span @ 60' with 19' Roadway on R.C. closed Abutment.
to be removed by Contractor. (No salvage)

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

| | | | | | |
|--------------|---------|------------|------|------|-------------|
| DATE | SECTION | COUNTY | FEET | FEET | SHEET NO. 1 |
| 5-11-21 | 444B | JO DAVIESS | 373 | 30 | 11 SHEETS |
| F.A.P. RT. 5 | | | | | F-240(5) |

HORIZ CURVE DATA

| | |
|--------------------------------|--------------|
| E.B. Lane | W.B. Lane |
| A = 31'-27" | A = 34'-21" |
| D = 2'-30" | D = 2'-30" |
| R = 2292.01' | R = 2292.01' |
| T = 645.33' | T = 708.40' |
| L = 1258.00' | L = 1374.00' |
| E = 89.12' | E = 106.98' |
| Max. S.E. = 0.045% both curves | |
| Full S.E. Both structures | |

APPROACH PILE DATA

West Abutment
Type: Crossed Timber
Est. Length 20'-0"
No. Required 12

APPROACH PILE DATA

East Abutment
Type: Crossed Timber
Est. Length 20'-0"
No. Required 12

DESIGN STRESSES

| | |
|-------------------------------|---------------|
| f _c = 1400 p.s.i. | Super |
| f _s = 75 p.s.i. | Pier Footings |
| f _s = 20000 p.s.i. | Reinforcement |
| f _s = 18000 p.s.i. | Struct. |
| n = 10 | |

Max. Footing Pressure 2.6 7/8
Average Footing Pressure 1.6 7/8

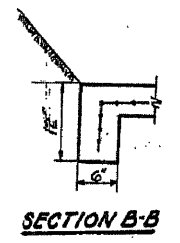
WATERWAY INFORMATION

Drainage Area ----- 7025 Acres
Character ----- 1/4" clay wooded cut
Required Opening ----- (35 yr Flood) 500 Sq Ft
Present Opening ----- 534 Sq Ft
Proposed Opening ----- 500 Sq Ft

Ordinary Water Elev. 628.2
Low Water Elev. 627.7

STATION 318 + 30
BUILT 19 BY
STATE OF ILLINOIS
S.B.I. RT. 5 SEC. 44-B
E.A. PROJ. F-240(5)
LOADING HS 20-44

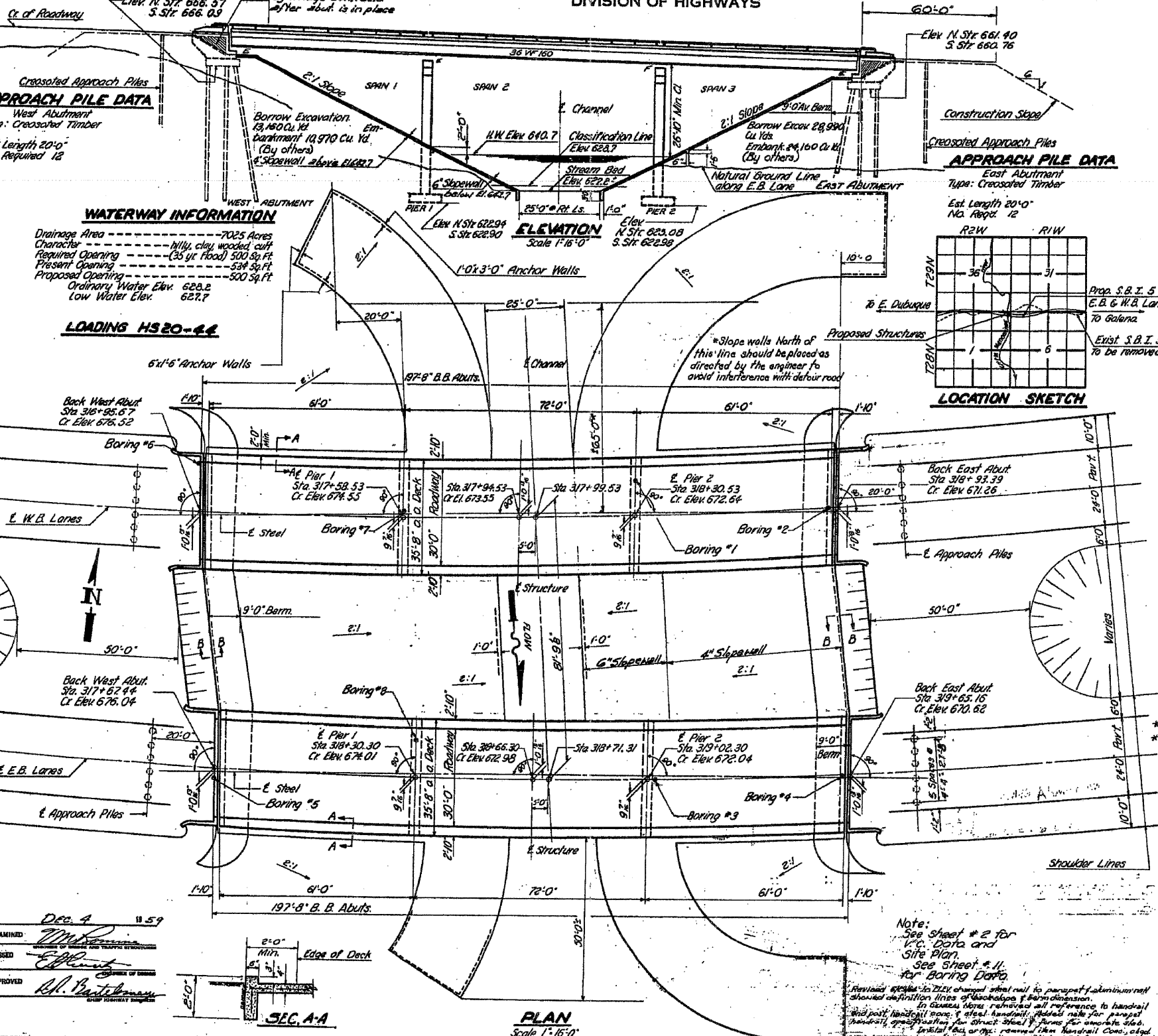
NAME PLATE LETTERING
See Standard 2113-1



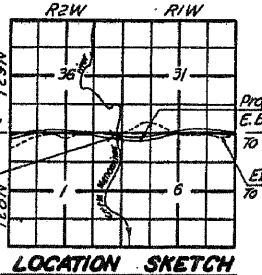
SECTION B-B

LOADING HS 20-44

| | | | |
|----------|--------------|----------|-------------|
| DESIGNED | Tom R. Smith | EXAMINED | Dec 4 11 59 |
| CHECKED | T. Tanaka | PASSED | |
| DRAWN | Tom R. Smith | APPROVED | |
| CHECKED | T. Tanaka | | |



PLAN
Scale 1" = 16'-0"



LOCATION SKETCH

GENERAL NOTES

Class X Concrete shall be used throughout
Coarse aggregate to be used in parapet
handrails and end post must be absolutely free of
chert, flint, limonite, lignite & soft sandstone.
The concrete floor slab shall be finished in ac-
cordance with Article 519 of the Standard Specifications.
Slope Wall shall be reinforced with welded wire
fabric 6"x6" mesh, #4 wires, weighing 38# per 100 Sq Ft.
Layout of slope walls may be varied to suit
ground conditions in the field as directed by the Engineer.
Holes shall be prepared for piles driven in embank-
ment in accordance with Article 60.9(a) of the Standard
Specifications.
Rivets #4 Open holes 3/4" unless noted.
All structural steel shall comply with
specifications for steel A.S.T.M. Designation A36.
All bolsters, rockers, bearing plates, lead plates,
pintles and anchor bolts shall be fabricated and set in
accordance with Article 515 of the Standard Specifi-
cations, and are included in quantity of structural steel.
Anchor bolts shall be set before fastening diagrams
over supports.
The following surfaces of expansion guards shall be
given two shop coats of red lead paint, outside face of vertical
legs and top face of horizontal legs of 4"x4"x1/2"
Expansion guards shall be fabricated and erected in
accordance with Article 513 (a) of the Standard Specifications.
Expansion guards are included in quantity of Struc-
tural Steel Est. Weight 3370 lbs.
Except as otherwise provided, all structural steel
shall receive one shop coat of red lead paint and two field
coats of aluminum paint. See Article 56.1 to 56.5 inclusive
of the Standard Specifications.
All paint shall be furnished and applied by the
Contractor.
The Contractor shall drive 4 test piles in per-
manent locations as directed by the Engineer before
ordering remainder of piles. (One each Steel test pile
at East and West Abutments of North and South structures.
Permanent forms will not be permitted in
forming the concrete slab.

TOTAL BILL OF MATERIAL - SEC. 44-B

| Item | Units | Superstr | Substr | Total |
|-----------------------------|----------|----------|--------|---------|
| Class X Concrete | Cu. Yds. | 455.4 | 735.3 | 1190.7 |
| Bridge Seat Sealant | Lump Sum | | | 1.8 |
| Reinforcement Bars | Lbs. | 103,250 | 44,500 | 147,750 |
| Structural Steel | Lbs. | 455,200 | | 455,200 |
| Steel Piles (A36) | Lin. Ft. | | 1560 | 1560 |
| Steel Test Piles (A36) | Each | | 4 | 4 |
| Crossed Timber Piles | Lin. Ft. | | | 480 |
| Class A Excavation for Str. | Cu. Yds. | | 642 | 642 |
| Class B Excavation for Str. | Cu. Yds. | | 433 | 433 |
| 4" Slope Wall | Sq. Yds. | | | 1697 |
| 6" Slope Wall | Sq. Yds. | | | 2739 |
| Aluminum Handrail | Lin. Ft. | | 782 | 782 |
| Name Plates | Each | | | 2 |
| Removal of Existing Str. | Each | | | 1 |
| Temporary Bridge | Each | | | 1 |
| Rock Excavation | Cu. Yds. | | 34 | 34 |
| Protective Coat | Sq. Yds. | | | 1690 |

* Applied at Abutment seats.
** Includes excavation for slope wall

GENERAL PLAN & ELEVATION
LITTLE MENOMINEE RIVER
PROJ. F-240(5)
S.B.I. RT. 5 SEC. 44(B)
JO DAVIESS COUNTY
STA. 318 + 30