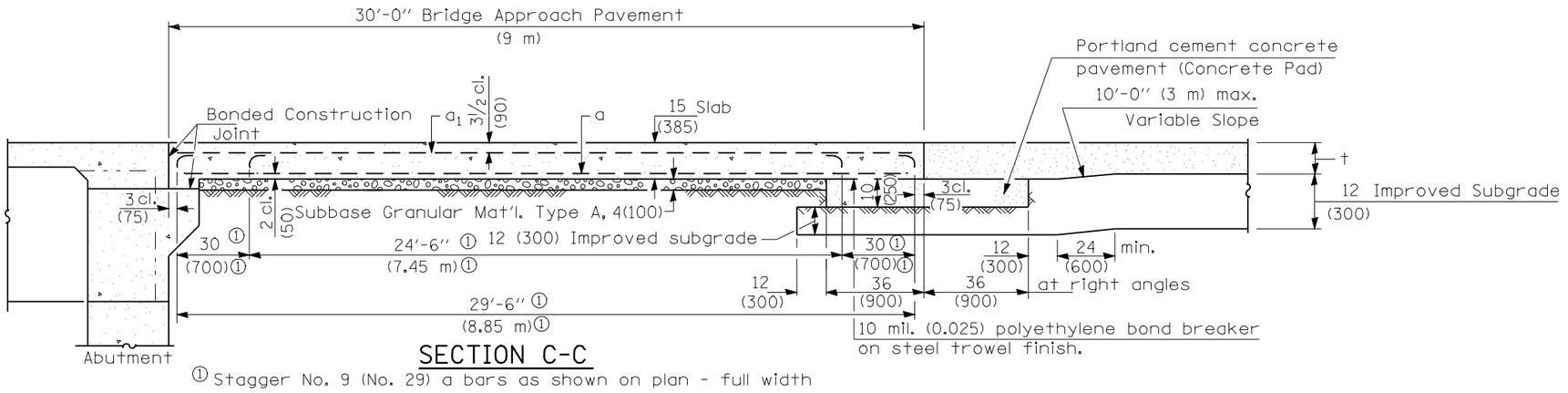
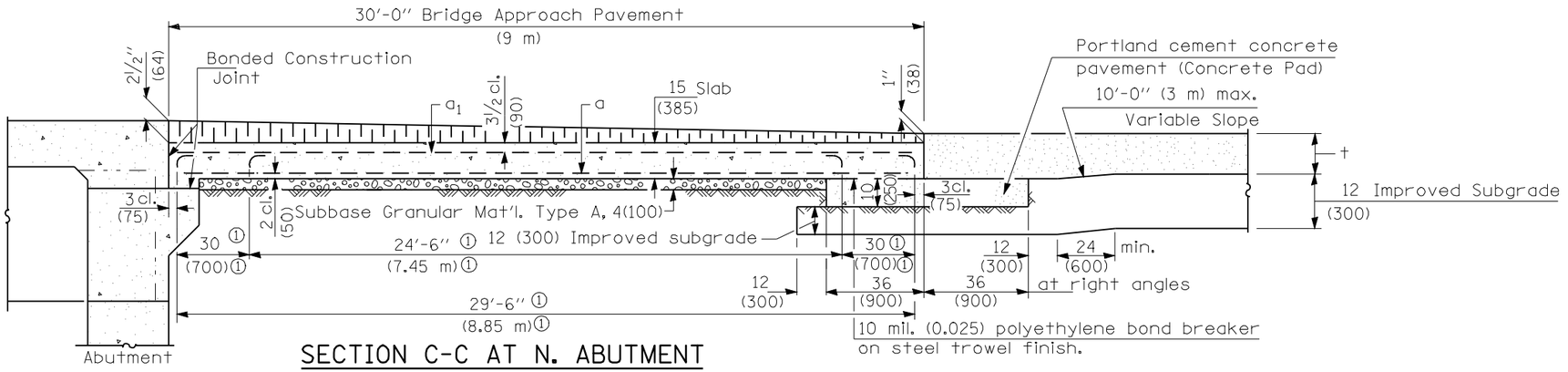


SECTION C-C

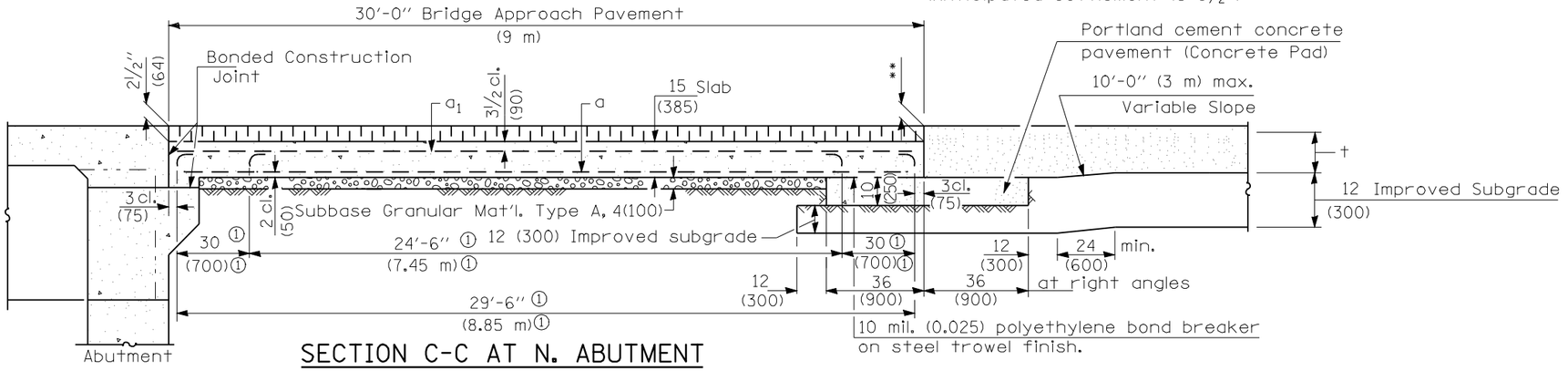
① Stagger No. 9 (No. 29) a bars as shown on plan - full width



SECTION C-C AT N. ABUTMENT WOLF LAKE STAGE 1 & 2

① Stagger No. 9 (No. 29) a bars as shown on plan - full width

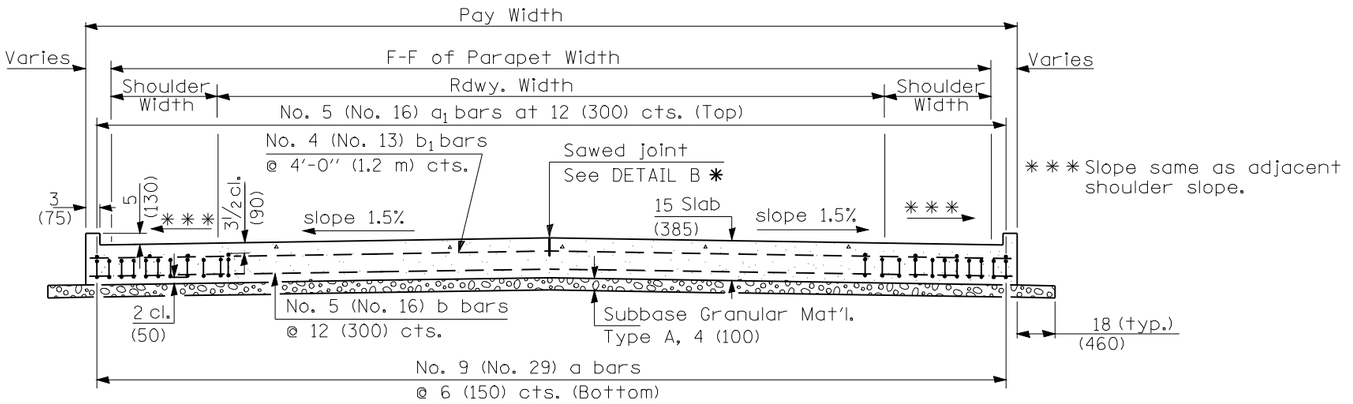
** 2½" (+) anticipated settlement
(Anticipated Settlement is 3½")



SECTION C-C AT N. ABUTMENT WOLF LAKE STAGE 3

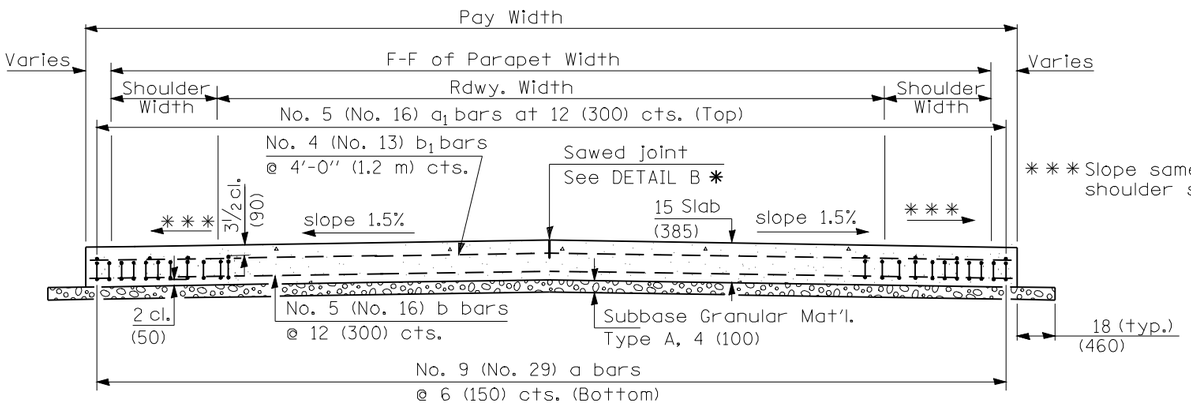
① Stagger No. 9 (No. 29) a bars as shown on plan - full width

FILE NAME = c:\pw_work\PWIDOT\LAUGHLINRL\d0134498\BridgeApproachPvmtDetails.dgn	USER NAME = laughlinrl	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BRIDGE APPROACH PAVEMENT DETAILS	F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = 0.24.384 ms / IN.	DRAWN -	REVISED -			614	144(B-1, B-2)	CASS, MASON	351	101
	PLOT DATE = Mar-31-2009 07:57:05AM	CHECKED -	REVISED -					CONTRACT NO. 72A76		
		DATE -	REVISED -		SCALE: SHEET NO. 2 OF 4 SHEETS STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



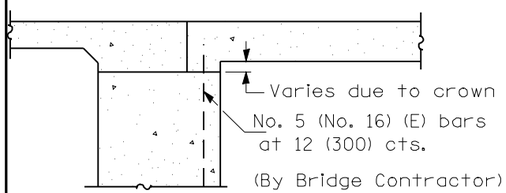
SECTION D-D

(See Plan for Dimensions not shown)



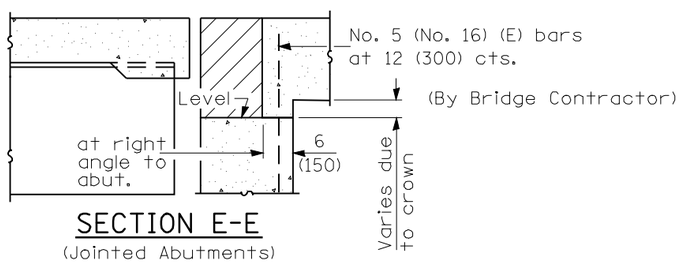
SECTION D-D AT N. ABUTMENT WOLF LAKE

(See Plan for Dimensions not shown)



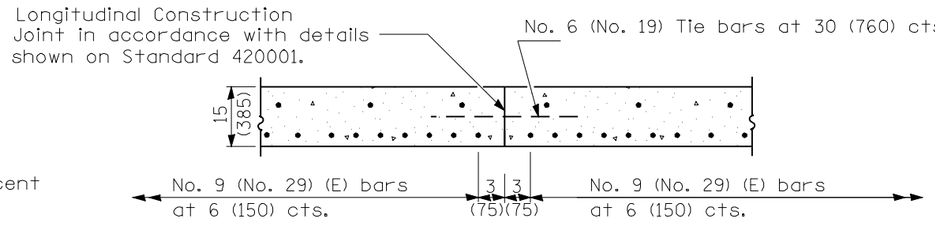
SECTION E-E

(Integral Abutments)



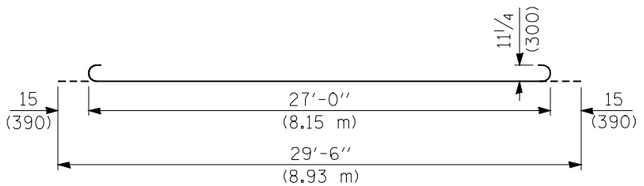
SECTION E-E

(Jointed Abutments)

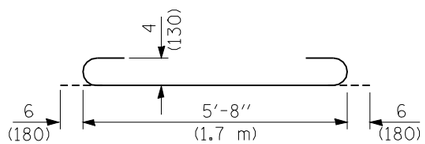


LONGITUDINAL STAGE CONSTRUCTION JOINT

As approved by the Engineer, the Contractor may elect to reduce the widths of pour by use of the Optional Longitudinal Construction Joint shown. Joints shall be located at the edge of a traffic lane.



BAR a

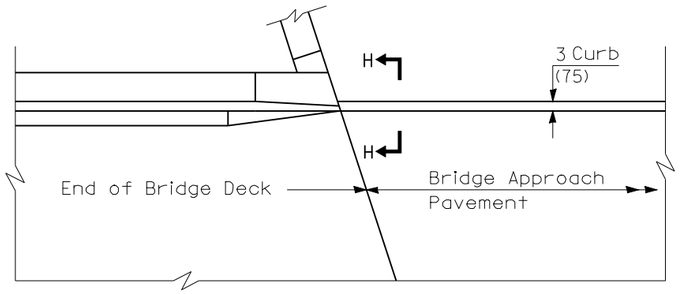


BAR a_2

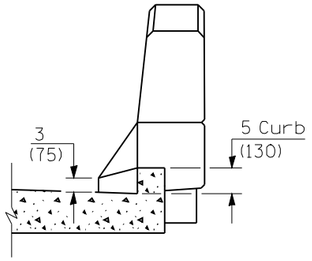
DESIGN STRESSES

fy = 60,000 p.s.i. (400 MPa)
f'c = 3,500 p.s.i. (24 MPa)
n = 8.5

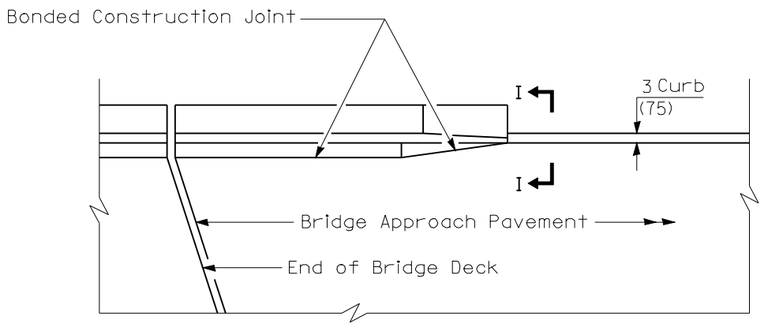
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	PLOT SCALE = 0i24.384 mi / IN.	DRAWN -	REVISED -			614	144(B-1, B-2)	CASS, MASON	351	102
	PLOT DATE = Mar-31-2009 07:57:07AM	CHECKED -	REVISED -		SCALE:	SHEET NO. 3 OF 4 SHEETS	STA.	TO STA.	CONTRACT NO. 72A76	
		DATE -	REVISED -			FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



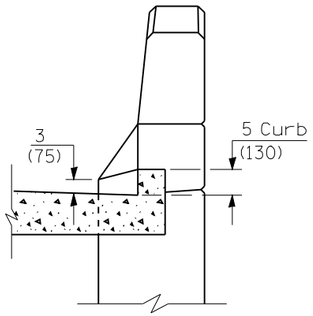
PARAPET TO CURB TRANSITION
INTEGRAL ABUTMENT



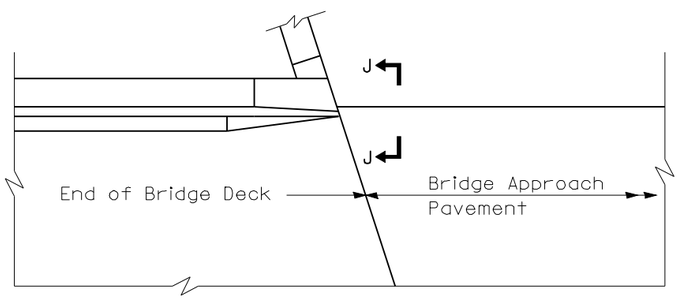
SECTION H - H



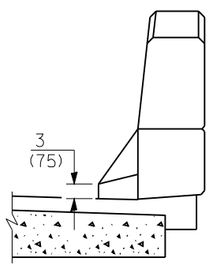
PARAPET TO CURB TRANSITION
PILE BENT ABUTMENT



SECTION I - I

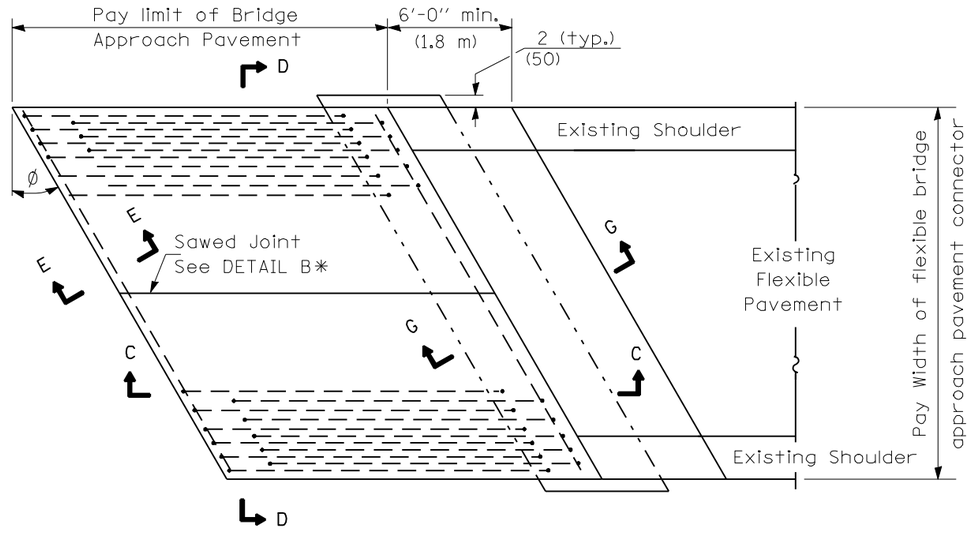


PARAPET TO PAVEMENT TRANSITION
NORTH INTEGRAL ABUTMENT - WOLF LAKE

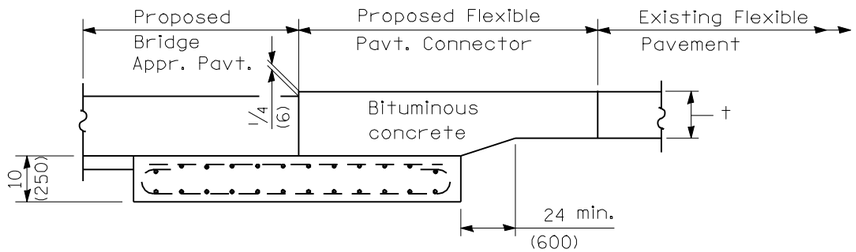


SECTION J - J

EXISTING CONSTRUCTION



BRIDGE APPROACH PAVEMENT CONNECTOR (FLEXIBLE)



SECTION G-G - FLEXIBLE PAVEMENT

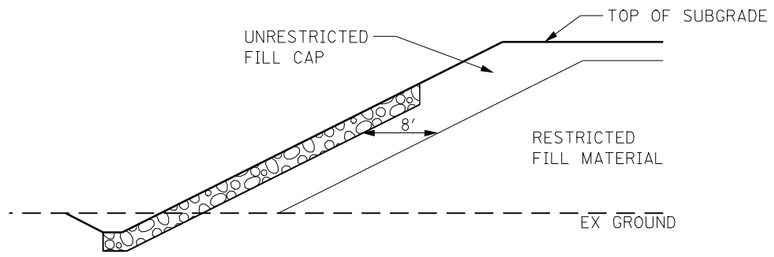
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		DRAWN -	REVISED -
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	PLOT DATE = Mar-31-2009 07:57:09AM	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH PAVEMENT DETAILS

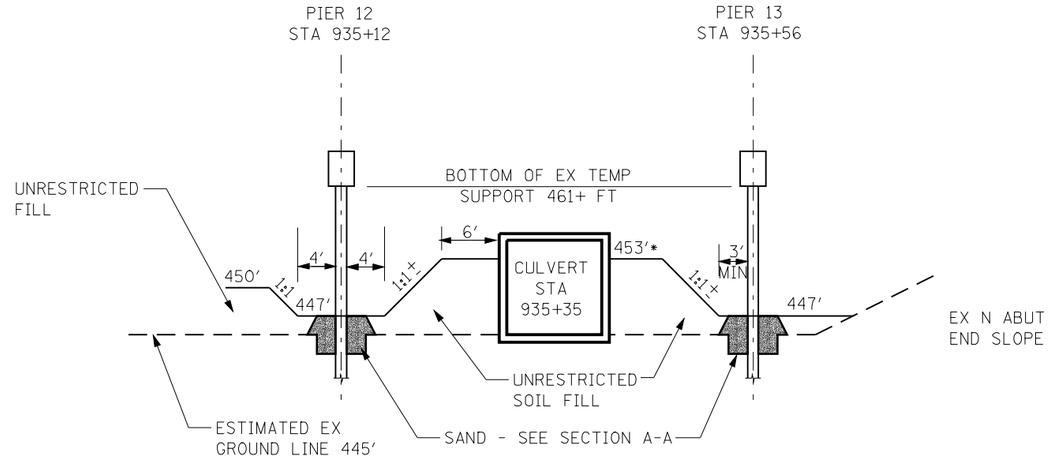
SCALE: | SHEET NO. 4 OF 4 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
614	144(B-1, B-2)	CASS, MASON	351	103
		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



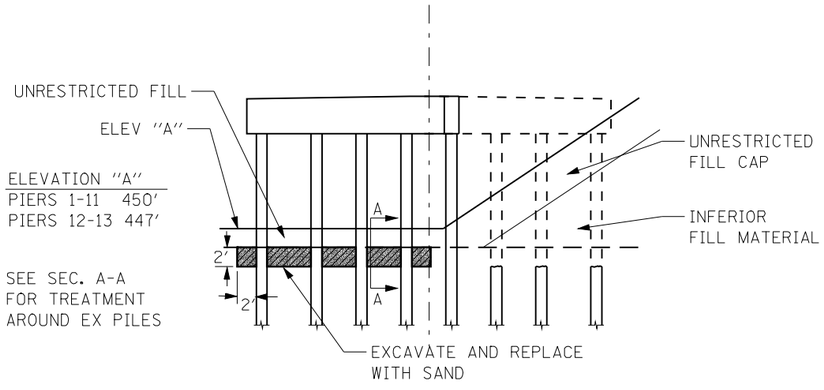
CAPPING RESTRICTED FILL

NOTE: IF NO RIPRAP IS PROPOSED, THE 8′ UNRESTRICTED SOIL CAP SHOULD BE MEASURED FROM THE PROPOSED SLOPE FACE.



STAGE I FILL SECTION
AT PIERS 12 & 13 & AT NEW CULVERT

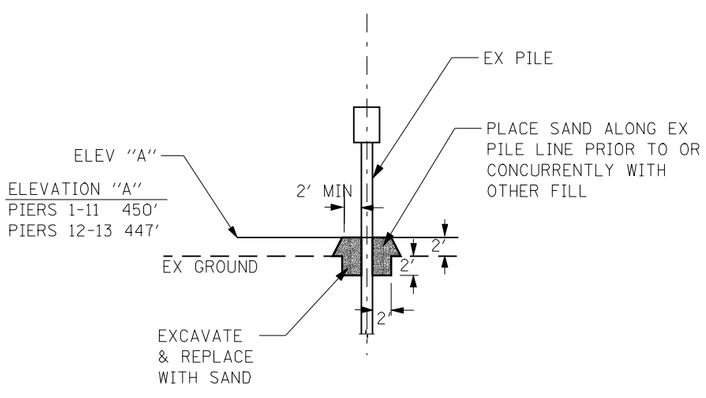
* FILL HEIGHT MAY BE INCREASED AS HEADROOM ALLOWS TOP OF SLOPE LINES SHOWN ON THE STAGE I SECTIONS AT PIERS 12 & 13 STILL APPLY.



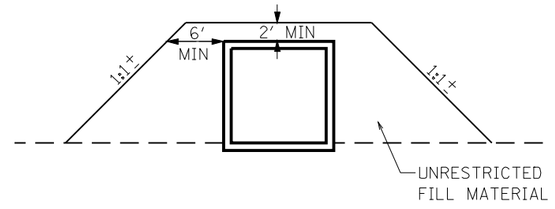
STAGE I FILL STA 929+89 TO STA 936+01

NOTE: THE MAXIMUM FILL ELEVATION ''A'' BENEATH STAGE I TRAFFIC IS REQUIRED TO PREVENT DOWNDRAG INDUCED FAILURE OF THE EXISTING PILES.

EXISTING PILES SHALL BE REMOVED TO 2 FT BELOW THE EXISTING GROUND LINE.

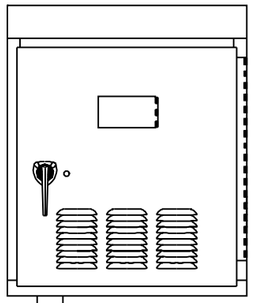


SECTION A-A
STAGE I FILL



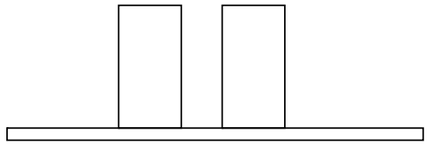
SECTION THROUGH CULVERT FILL -- STA 935+35

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	PLOT SCALE = 16.0000 ' / IN.	DRAWN -	REVISED -			614	144(B-1, B-2)	CASS, MASON	351	104
	PLOT DATE = Mar-31-2009 07:57:12AM	CHECKED -	REVISED -					CONTRACT NO. 72A76		
		DATE -	REVISED -		SCALE: SHEET NO. 1 OF 1 SHEETS STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



Temporary Controller Cabinet

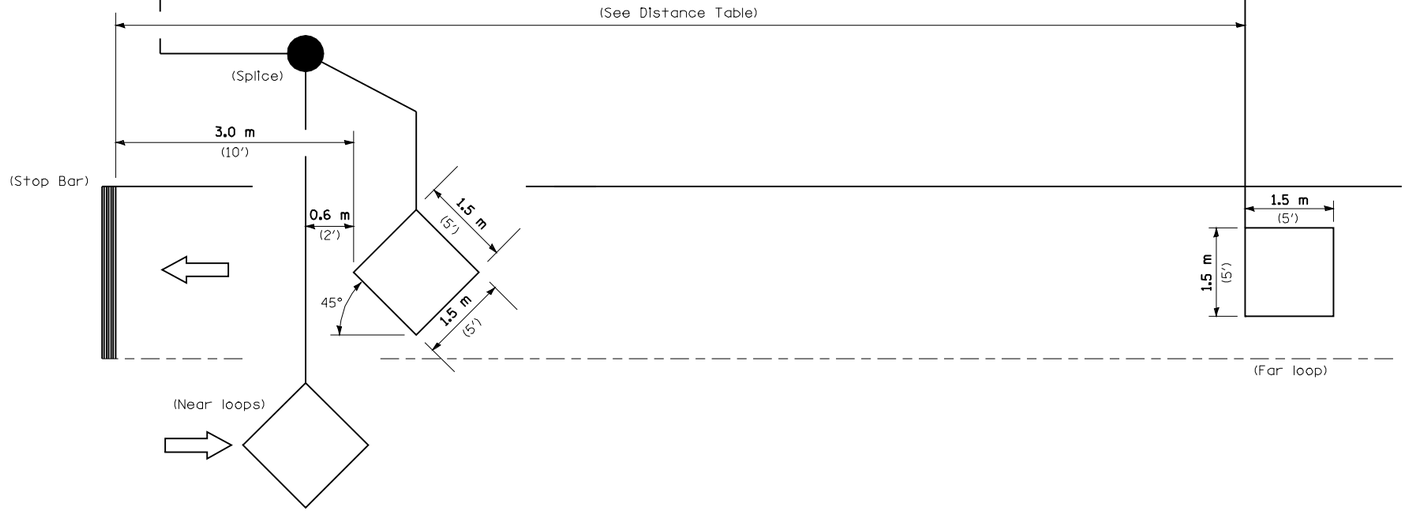
DETECTOR AMPLIFIER NOTES



AMP 1: DELAY = 8 SECONDS
DELAY SHALL BE INHIBITED DURING GREEN

AMP 2: NO DELAY

FAR LOOP DISTANCE TABLE	
ADVISORY SPEED (MPH)	DISTANCE FROM STOP BAR (FT.)
30 OR LESS	220
35	260
40	300
45	330
50	370
55	400



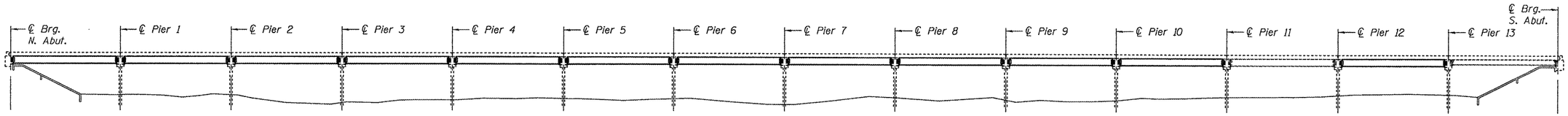
NOTE: All loops centered in lane.

INDUCTION LOOP DETECTOR

BRIDGE TEMP SIGNAL.DGN

FILE NAME = c:\pw_work\PWIDOT\LAUGHLINRL\d0134498\Bridge_Temp_Signal.dgn	USER NAME = laughlinrl	DESIGNED - KDA	REVISED -	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**TEMPORARY BRIDGE TRAFFIC SIGNAL LOOP PLACEMENT DETAIL SHEET**	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = 40.0000 ' / IN.	DRAWN - KDA	REVISED -			614	144(B-1, B-2)	CASS, MASON	351	105
	PLOT DATE = Mar-31-2009 07:57:14AM	CHECKED -	REVISED -						CONTRACT NO. 72A76	
		DATE - 6/16/04	REVISED -		SCALE: SHEET NO. OF SHEETS STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



GENERAL NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

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.

See Section 584 of the Standard Specifications for Epoxy Grouting of Threaded Rods.

The cost of epoxy grouting threaded rods shall be included with Erecting Structural Steel.

The contractor is advised that the existing PPC Deck Beams are in a deteriorated condition with reduced load carrying capacity. It is the contractors responsibility to account for the condition of the beams when developing construction procedures.

If the contractor's procedure for placement of beams involves placement of cranes or other heavy equipment on the bridge, a detailed procedure shall be submitted to the Engineer for approval. The procedure shall include calculations, prepared and sealed by an Illinois Licensed Structural Engineer, verifying that the equipment and procedure used will not overstress the existing beams. To distribute load to multiple beams and protect the existing surface, in all cases a double layer mat of heavy timbers shall be used at all times under crane tracks or wheels and any outriggers in the down position. If necessary, shims shall be used under the crane mat to ensure uniform contact with the underlying beams.

SUPPORT BEAM CHART

BEAMS TO BE SUPPORTED	EXISTING SUPPORT TO BE USED
Span 1, Beam 1	Span 1, Beam 12
Span 2, Beam 1	Span 2, Beam 12
Span 3, Beams 1 & 4	Span 3, Beams 10 & 11
Span 4, Beams 1 & 2	Span 4, Beams 10 & 11
Span 5, Beams 1 & 2	Span 5, Beam 11; Span 8, Beam 10
Span 6, Beam 1	Span 11, Beam 9
Span 7, Beam 2	Span 7, Beam 11
Span 8, Beams 1 & 2	Span 8, Beams 11 & 12
Span 9, Beams 1 & 2	Span 2, Beams 10 & 11
Span 10, Beams 1 & 2	Span 12, Beams 10 & 12
Span 11, Beams 1 & 2	Span 11, Beams 10 & 11
Span 13, Beams 1 & 2	Span 13, Beams 11 & 12

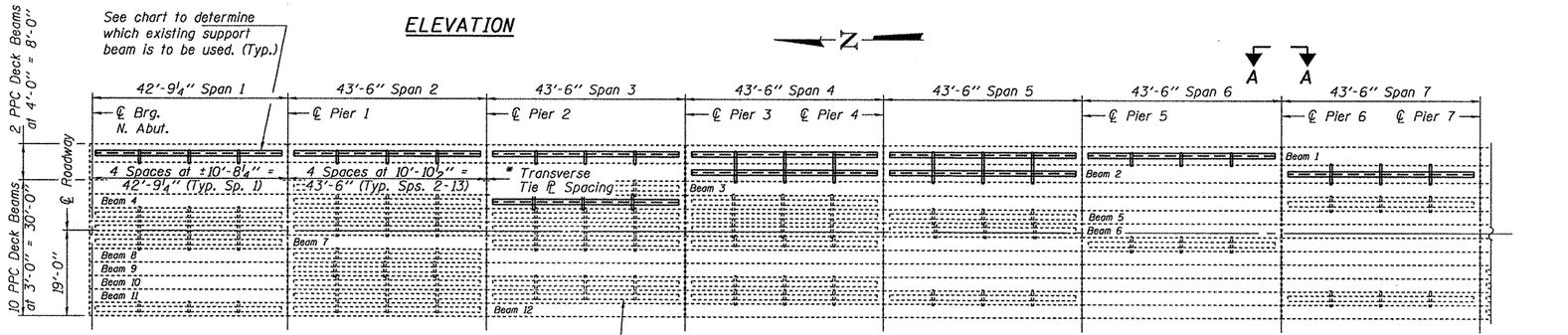
DESIGNED Victor H. Vega
CHECKED Quinn E. Blair
DRAWN Kyle M. Steffen
CHECKED VHV

MAY 5, 2009
EXAMINED
ENGINEER OF STRUCTURAL SERVICES
PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
RALPH E. ANDERSON
081-004625
SPRINGFIELD
LICENSED STRUCTURAL ENGINEER

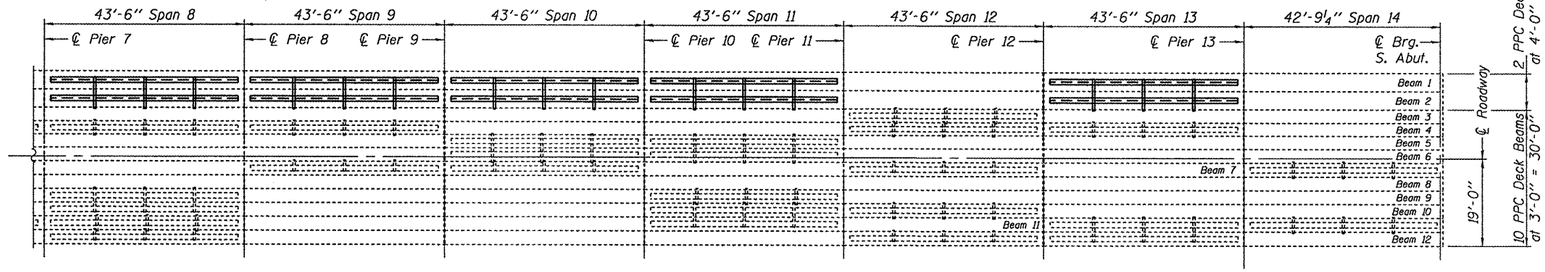
Expires: November 30, 2010

ELEVATION



* ℄ Transverse tie ℄'s (3 per span). Place additional shims at midpoints between tie ℄'s. Securely weld shims to top flange of support beam. Minimum shim size is 6" x flange width. Spacing may be adjusted to miss existing transverse tie ℄'s.

PLAN



PLAN

TOTAL BILL OF MATERIAL

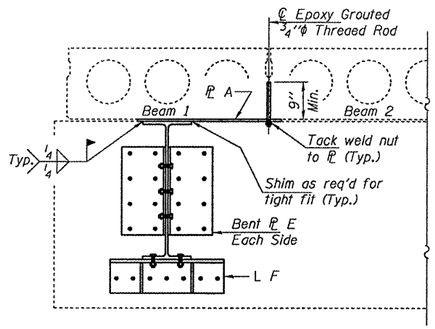
ITEM	UNIT	QUANTITY
Erecting Structural Steel	Pound	107,680

PLAN AND ELEVATION
SN 009-0006

SHEET NO. 1	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2 SHEETS	614	144(B-1,B-2)	CASS	351	106
			CONTRACT NO. 72A76		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

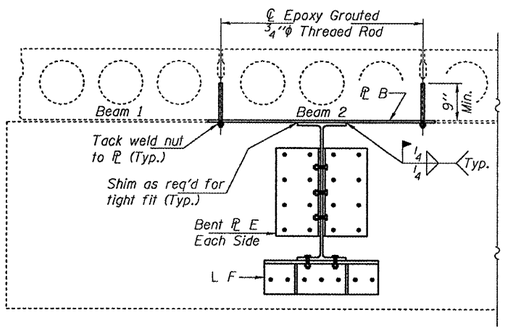
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



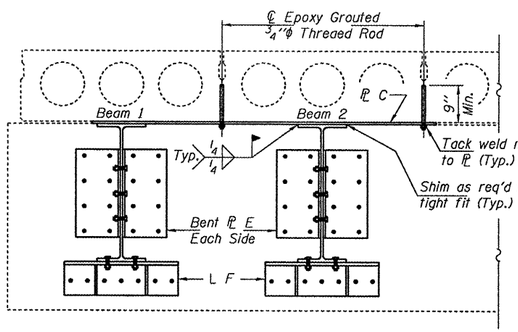
TYPICAL CROSS SECTION THRU SPANS 1, 2, & 6

(Looking South)



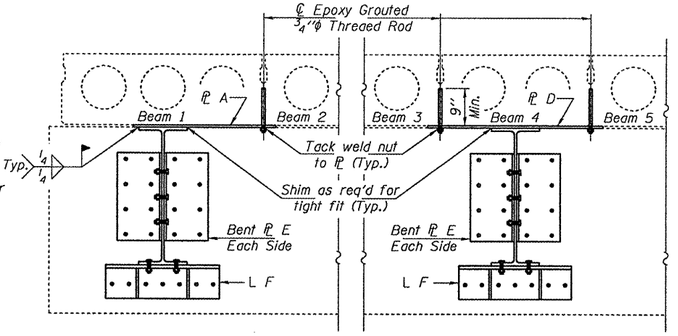
TYPICAL CROSS SECTION THRU SPAN 7

(Looking South)



TYPICAL CROSS SECTION THRU SPANS 4, 5, 8, 9, 10, 11, & 13

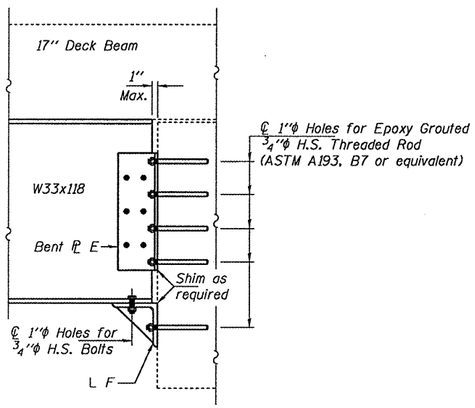
(Looking South)



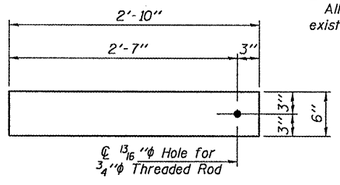
TYPICAL CROSS SECTION THRU SPAN 3

(Looking South)

NOTE:
Transverse Tie ℄'s A thru D, shim ℄'s, 3/4"ϕ H.S. bolts & 3/4"ϕ threaded rods shall be new steel. Cost included with Erecting Structural Steel. (Estimated quantity = 4130 lbs.)
All W33x118 support beams, Bent ℄ E & L F shall be existing steel.

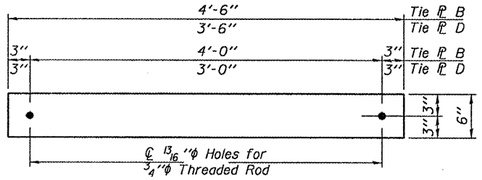


SECTION A-A
TYPICAL CONNECTION DETAIL



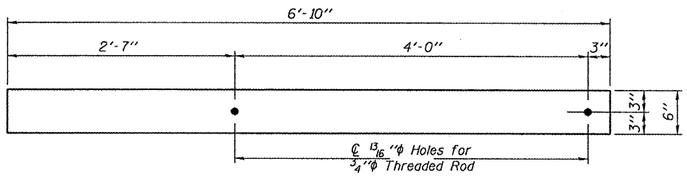
TRANSVERSE TIE ℄ A

℄ 1/2" x 2'-10" x 6"
(12 Required)



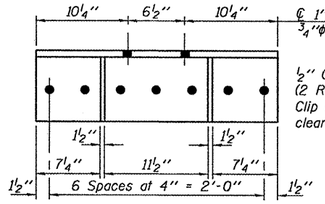
TRANSVERSE TIE ℄'s B & D

℄ B 1/2" x 4'-6" x 6" (3 Req'd)
℄ D 1/2" x 3'-6" x 6" (3 Req'd)



TRANSVERSE TIE ℄ C

℄ 1/2" x 6'-10" x 6"
(21 Required)

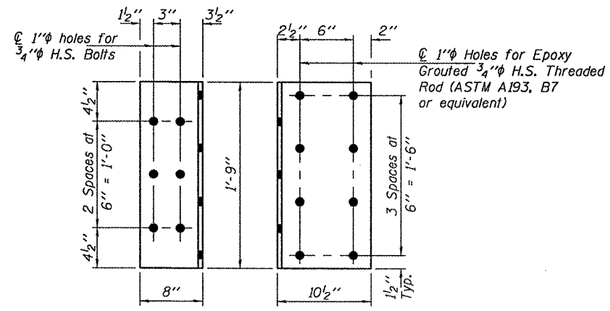


L F DETAILS

L 8 x 8 x 3/4 x 2'-3"
For Information Only

TYPICAL SECTION THRU L F

For Information Only



Bent ℄ E

℄ 1/2" x 1'-6" x 1'-9"
For Information Only

DECK CROSS SECTIONS
SN 009-0006

DESIGNED	VHV
CHECKED	DAB
DRAWN	Kyle M. Steffen
CHECKED	VHV DAB

EXAMINED — MAY 5, 2009
ENGINEER OF STRUCTURAL SERVICES
PASSED — Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

SHEET NO. 2	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2 SHEETS	614	144(B-1,B-2)	CASS	351	107
			CONTRACT NO. 72A76		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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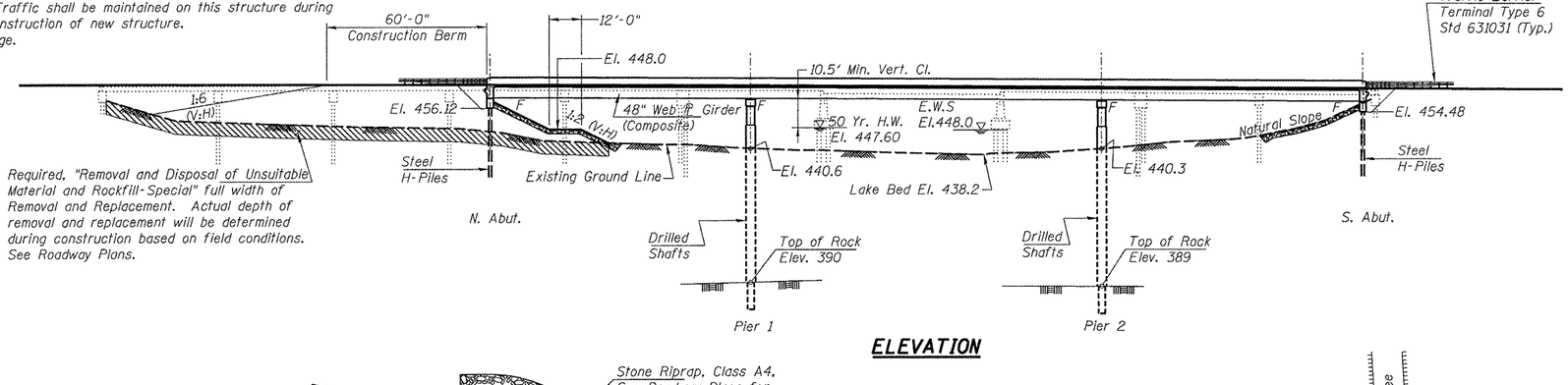
BM TJM. #1 : Set a chiseled "□" in top of S.W. Abut. Wing Wall of bridge #063-0007; on Il. 78, 1.72 miles North of Illini St. in Chandlerville. Bridge over Wolf Lake. NAVD 88 Elev. = 462.64 Ft.

BM TJM. #2 : Set a "60d Spike Nail" in West face of P.P. set on East Side ± of IL 78; 1100' South of Bridge #063-0007, 1.32 miles North of Illini St. in Chandlerville. NAVD 88 Elev. = 456.29 Ft.

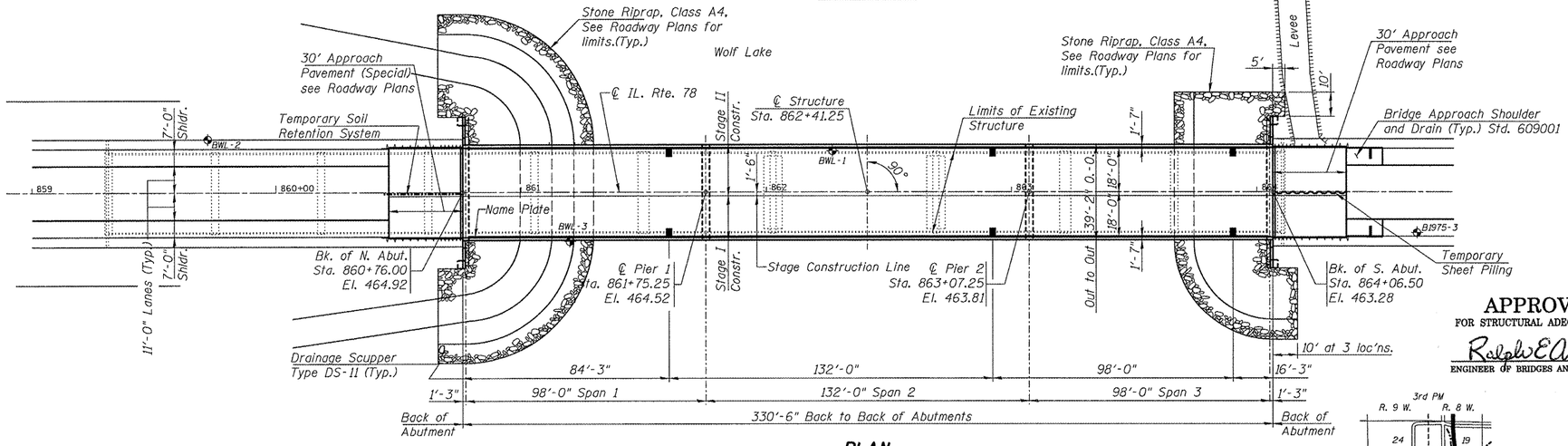
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

The Contractor shall submit Structural Assessment Report(s) as required for Contractor's means and methods of construction. See Special Provisions.

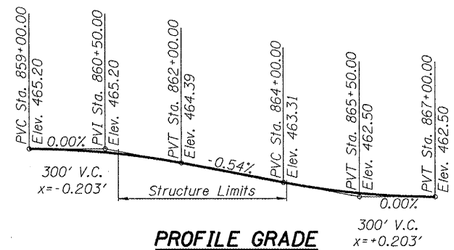
Existing Structure (No. 063-0007):
Originally constructed in 1931 and re-constructed in 1981. The existing 10 span bridge consists of precast prestressed concrete (PPC) deck beams. Approach spans are supported on pile bents with concrete piles and cap. The main span is supported on solid concrete piers and footings with concrete piles. Overall length of 481'-6" back to back of abutments, and out to out deck width of 33' with 0° skew.
Staged Traffic shall be maintained on this structure during stage construction of new structure.
No Salvage.



ELEVATION



PLAN



PROFILE GRADE
(Along ℄ Roadway)

DESIGN SPECIFICATIONS
2007 AASHTO LRFD Bridge Design Specifications
4th Edition

DESIGN STRESSES
FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (Struct. Steel) (M270 Grade 50W)

LOADING HL-93
Allow 50#/sq. ft. for future wearing surface.

SEISMIC DATA
Seismic Performance Zone (SPZ) = 1
Bedrock Acceleration Coefficient (A) = 0.04
Site Coefficient (S) = 1.0

THOMAS E. HANSON 061-004281 LICENSED STRUCTURAL ENGINEER OF ILLINOIS SPRINGFIELD, ILLINOIS

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

DATE SIGNED : 3/27/09
LIC.EXP.DATE : 11/30/2010

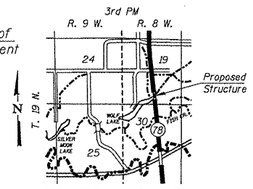
WATERWAY INFORMATION

Drainage Area = 38.2 sq. mi.
Ex. Low Grade Elev. 461.64 @ Sta. 866+50
Pr. Low Grade Elev. 462.50 @ Sta. 867+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	401	1536	1580	447.0	0.2	0.2	447.2	447.2
Design	50	401	1702	1750	447.6	0.1	0.1	447.8	447.7
Base	100	401	5499	4683	457.4	0.0	0.0	457.4	457.4
Overtopping	-	-	-	-	-	-	-	-	-
Max. Calc.	500	401	6141	5006	458.9	0.0	0.0	458.9	458.9

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	N. Abut.	Pier 1	Pier 2	S. Abut.
	456.1	430.6	430.3	454.4



LOCATION SKETCH

GENERAL PLAN & ELEVATION
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO.	SHEET NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
07S2026	1	614	144(B-1, B-2)	Mason	351	108
DATE 03/27/09	29 SHEETS			CONTRACT NO. 72A76		
		FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

LAYOUT	TEH	10/10/08
DRAWN	RCH	10/10/08
REVIEWED	TEH	12/29/08

03-04-2009
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts in painted areas and M164 Type 3 in unpainted areas. Bolts $\frac{7}{8}$" ϕ, holes $\frac{15}{16}$" ϕ, unless otherwise noted.

Calculated weight of Structural Steel = 381.755 lbs.

All structural steel shall be AASHTO M 270 Grade 50W.

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. See Special Provisions.

Reinforcement bars designated (E) shall be epoxy coated.

Bearing seat surfaces shall be constructed or adjusted to their designated elevations within a tolerance of $\frac{1}{8}$ inch (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.

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

The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.

Structural steel shall only be painted for a distance equal to the depth of embedment into the concrete cap plus 3 inches. Those areas shall be primed in the shop with a Department approved zinc rich primer. No field painting shall be required. All structural steel shall be cleaned as specified in the Special Provision for "Surface Preparation and Painting Requirements for Weathering Steel".

The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at substructures specified or approved by the Engineer before ordering the remainder of piles.

In lieu of the hammer selection criteria and use of the FHWA Modified Gates formula specified in Section 512 of the Standard Specifications, the Contractor shall conduct a wave equation analysis to establish the driving criteria at specified substructures. The analysis and calculations shall be submitted to the Engineer for approval.

The Contractor shall obtain a construction permit from the Illinois Department of Natural Resources (IDNR), Office of Water Resources for any temporary construction activity placed in the water except cofferdams. This shall include the placement of material for run-arounds, causeways, etc. Any permit application by the Contractor shall refer to the IDNR permit number as shown in the contract plans.

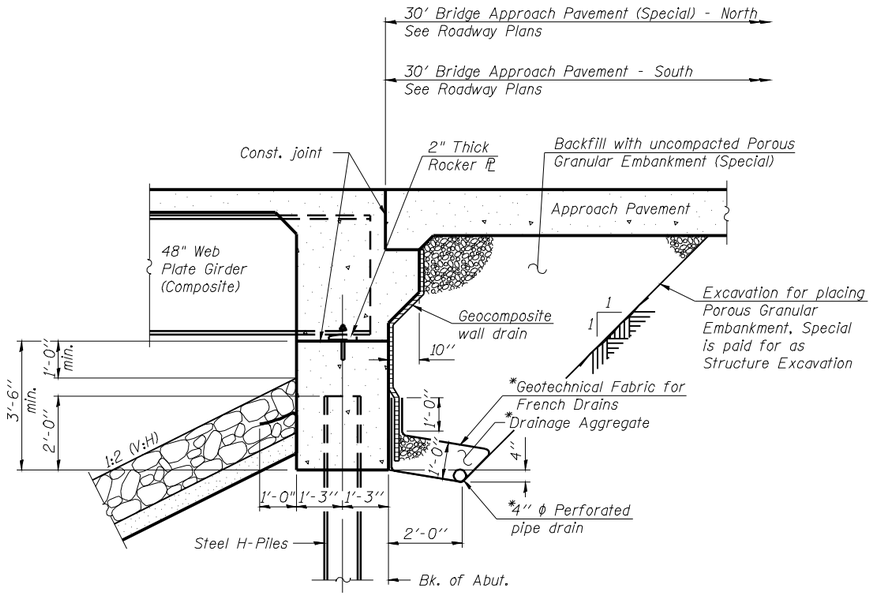
Slipforming of parapets is not allowed.

The Contractor is advised that the existing PPC Deck beams are in a deteriorated condition with reduced load carring capacity. It is the Contractor's responsibility to account for the condition of the beams when developing construction procedures for removal of the superstructure.

If the Contractor's procedures for existing deck beam removal involves placement of heavy equipment on the existing deck beams, a detailed procedure shall be submitted to the Engineer for approval. The procedure shall include calculations, sealed by an Illinois Licensed Structural Engineer, verifying the structural adequacy of the beams for the proposed loads. Cost included with Removal of Existing Structure No. 1.

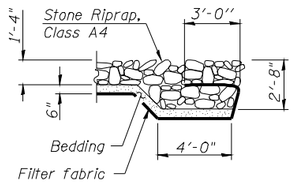
Current Ratings (9/22/08) on File for Existing Structure No. 063-0007
Inventory: HS 15
Operating: HS 26.1
Live Load Restrictions: No

Inventory and Operating Ratings are provided for information only. Inventory and Operating Ratings are based on HS loading and configuration using the load factor method. Live Load Restrictions are based on Illinois legal loads and configurations. The Ratings and the Live Load Restrictions are not necessarily representative of capacities to support the Contractor's equipment.

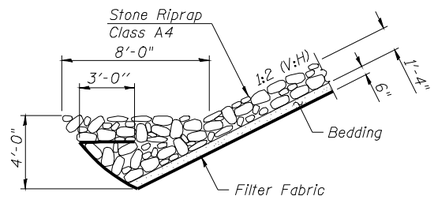


SECTION THRU INTEGRAL ABUTMENT

*Included in the cost of Pipe Underdrains for Structures.



SECTION THRU FLANK of RIPRAP SLOPEWALL



SECTION THRU TOE of RIPRAP SLOPEWALL

INDEX OF SHEETS

1	General Plan and Elevation
2	General Notes & Summary of Quantities
3	Substructure Layout
4	Stage Construction Details
5	Temporary Concrete Barrier
6-8	Top of Slab Elevations
9-10	Top of Slab Elevations - Approach Slab
11-13	Superstructure Details
14	DS-11 Scuppers Details
15-17	Structural Steel Details
18	Bearing Details
19	North Abutment Details
20	South Abutment Details
21	'L' Type Retaining Wall Wing Extensions
22	Pier 1 Details
23	Pier 2 Details
24	Bar Splicer Details
25	Steel H-pile Details
26	Sub-Surface Profile
27-29	Boring Logs

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment, Special	Cu. Yd.	-	182	182
Stone Riprap, Class A4	Sq. Yd.	-	1311	1311
Filter Fabric	Sq. Yd.	-	1311	1311
Removal of Existing Structures No. 1	Each	-	-	1
Structure Excavation	Cu. Yd.	-	146	146
Concrete Structures	Cu. Yd.	-	89.7	89.7
Concrete Superstructure	Cu. Yd.	444.5	-	444.5
Bridge Deck Grooving	Sq. Yd.	1281	-	1281
Concrete Encasement	Cu. Yd.	-	6.6	6.6
Protective Coat	Sq. Yd.	1599	-	1599
Furnishing and Erecting Structural Steel	L. Sum	0.12	-	0.12
Stud Shear Connectors	Each	3924	-	3924
Reinforcement Bars	Pound	-	12050	12050
Reinforcement Bars, Epoxy Coated	Pound	106070	52100	158170
Bar Splicers	Each	1095	80	1175
Furnishing Steel Piles HP14x89	Foot	-	740	740
Driving Piles	Foot	-	740	740
Test Pile Steel HP14x89	Each	-	2	2
Pile Shoes	Each	-	12	12
Temporary Sheet Piling	Sq. Ft.	-	231	231
Name Plates	Each	1	-	1
Permanent Casing	Foot	-	444	444
Drilled Shaft in Soil	Cu. Yd.	-	169.6	169.6
Drilled Shaft in Rock	Cu. Yd.	-	18.8	18.8
Anchor Bolts, 1"	Each	24	-	24
Anchor Bolts, 1¼"	Each	24	-	24
Geocomposite Wall Drain	Sq. Yd.	-	92	92
Pipe Underdrains for Structures 4"	Foot	-	156	156
Drainage Scuppers, DS-11	Each	6	-	6
Temporary Soil Retention System	Sq. Ft.	-	60	60
Asbestos Bearing Pad Removal	Each	220	-	220
		-	-	-

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 slope. The pipes shall drain into concrete headwalls. (See Artical 601.05 of the Standard Specifications and Highway Standard 601101)

STATION 862+41.25
BUILT 20__ BY
STATE OF ILLINOIS
F.A.P. RT. 614 SEC. 144(B-2)
LOADING HL93
STRUCTURE NO. 063-0500

NAME PLATE

See Std. 515001

GENERAL NOTES & SUMMARY OF QUANTITIES
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

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JOB NO. 07S2026
DATE 03/27/09

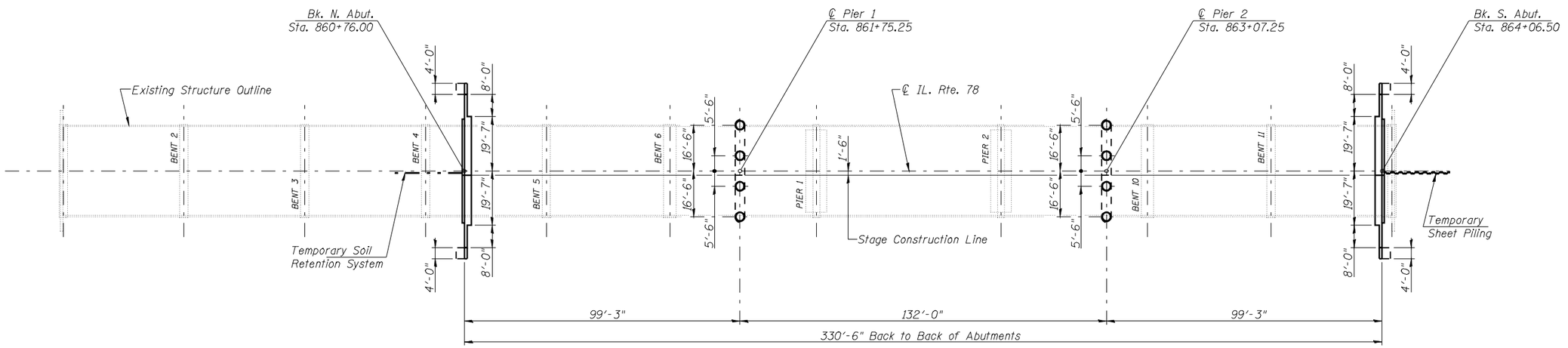
SHEET NO. 2
29 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

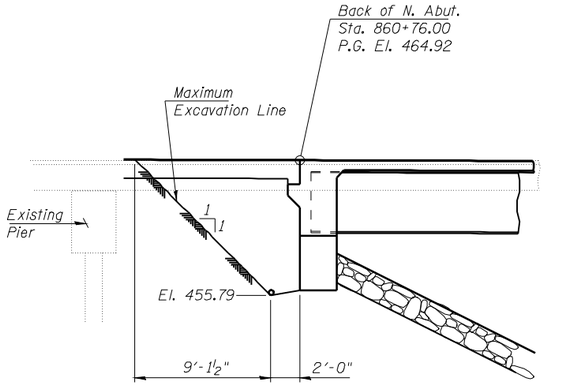
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STATE OF ILLINOIS
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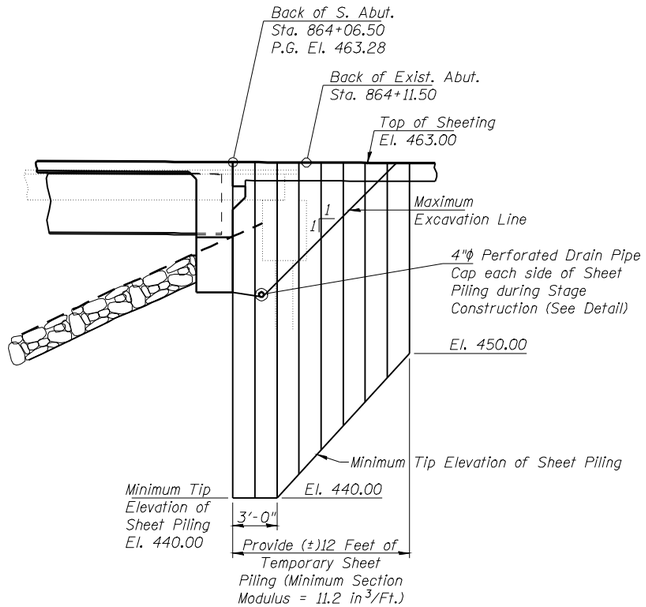
SUBSTRUCTURE LAYOUT



A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptence by the Engineer.

TEMPORARY SOIL RETENTION SYSTEM

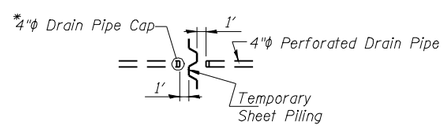
(North Abutment)



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.

TEMPORARY SHEET PILING

(South Abutment)



DRAIN PIPE DETAIL AT SHEET PILING

*Included in the cost of Pipe Underdrains for Structures.

SUBSTRUCTURE LAYOUT
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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DATE 03/27/09

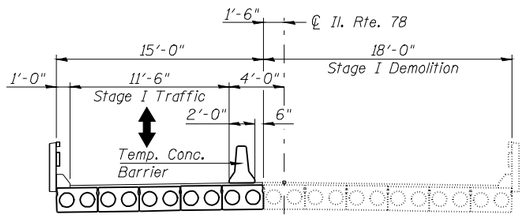
SHEET NO. 3
29 SHEETS

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		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

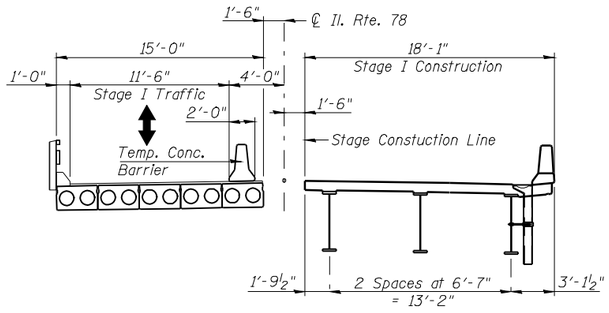
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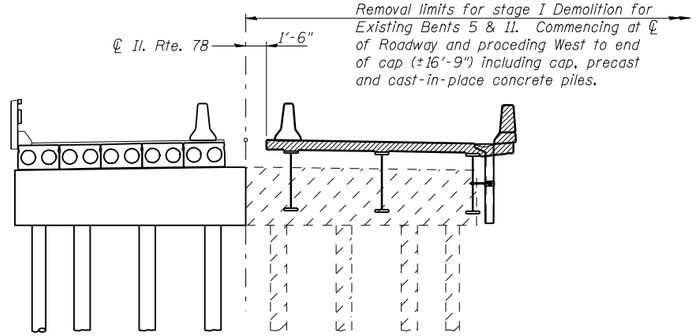
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



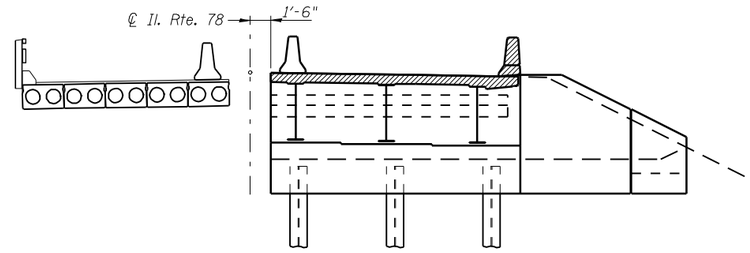
STAGE I DEMOLITION
(Looking South)



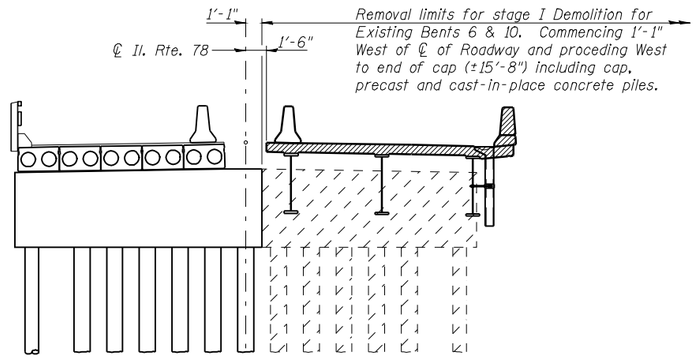
STAGE I CONSTRUCTION
(Looking South)



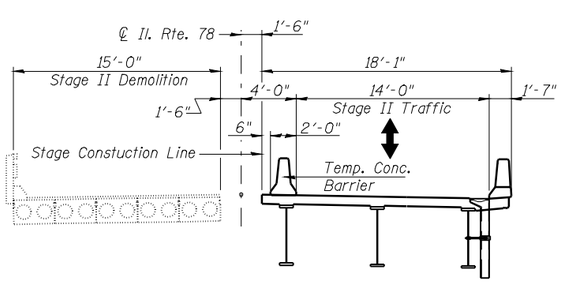
STAGE I DEMOLITION AT EXISTING BENTS 5 & 11
(Looking South)



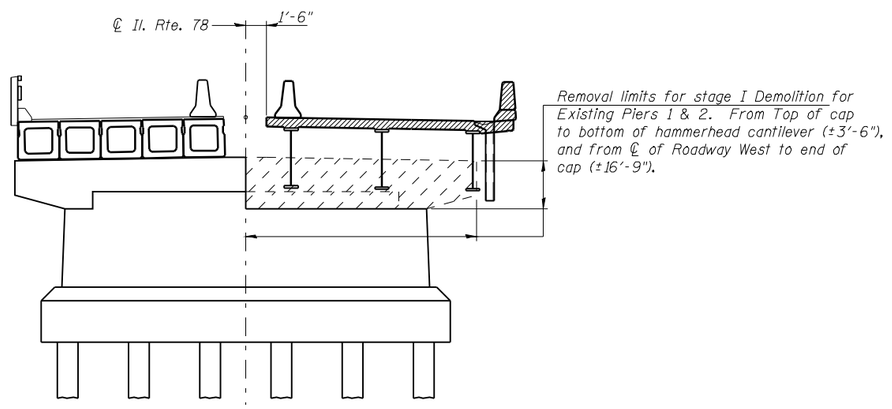
STAGE CONSTRUCTION AT PROPOSED ABUTMENTS
(Looking South)



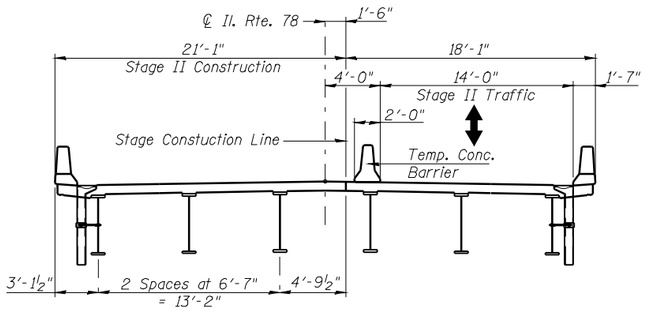
STAGE I DEMOLITION AT EXISTING BENTS 6 & 10
(Looking South)



STAGE II DEMOLITION
(Looking South)



STAGE I DEMOLITION AT EXISTING PIERS 1 & 2
(Looking South)



STAGE II CONSTRUCTION
(Looking South)

See Sheet 3 of 29 for existing bent and pier locations.

STAGE CONSTRUCTION DETAILS
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

LAYOUT	TEH	10/25/08
DRAWN	Rod	12/15/08
REVIEWED	TEH	12/19/08

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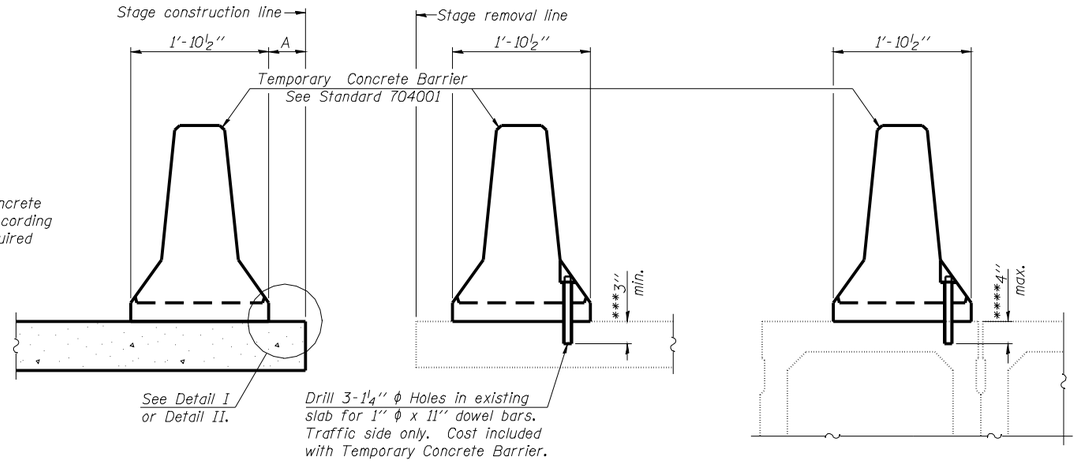
JOB NO. 07S2026
DATE 03/27/09

SHEET NO. 4
29 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
614	144(B-1, B-2)	Mason	351	111
		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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



NEW SLAB | **EXISTING SLAB** | **EXISTING DECK BEAM**

NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel ℙ to the top layer of couplers with 2-⅝" ϕ bolts screwed to coupler at approximate ℄ of each barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x 10" steel ℙ to the concrete slab or concrete wearing surface with 2-⅝" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each barrier panel.

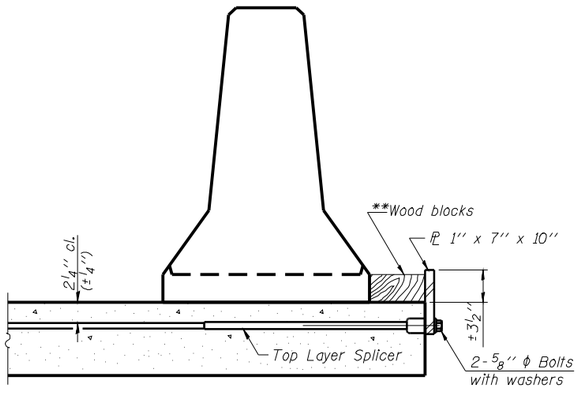
Cost of anchorage is included with Temporary Concrete Barrier.

The 1" x 7" x 10" 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.

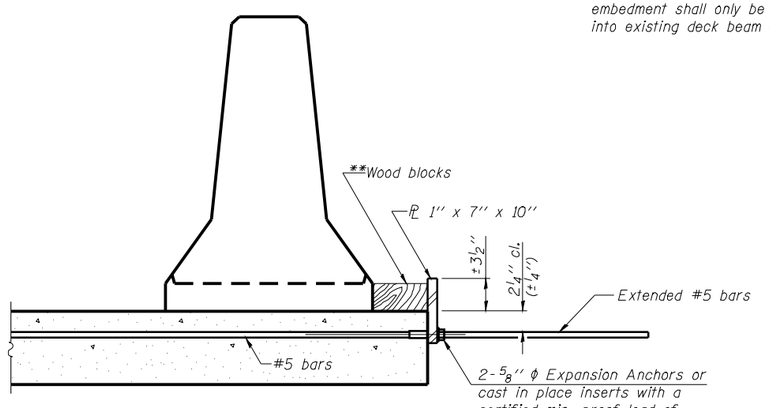
SECTIONS THRU SLAB OR DECK BEAM

*** 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.

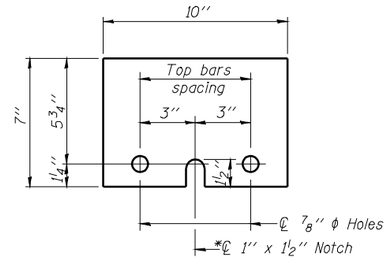


DETAIL I



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.



STEEL RETAINER ℙ 1" x 7" x 10"

* Required only with Detail II

TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION F.A.P. 614 (IL 78) OVER WOLF LAKE (PUBLIC BODY OF WATER) SECTION 144 (B-2) MASON COUNTY STA. 862+41.25 STRUCTURE NUMBER 063-0500

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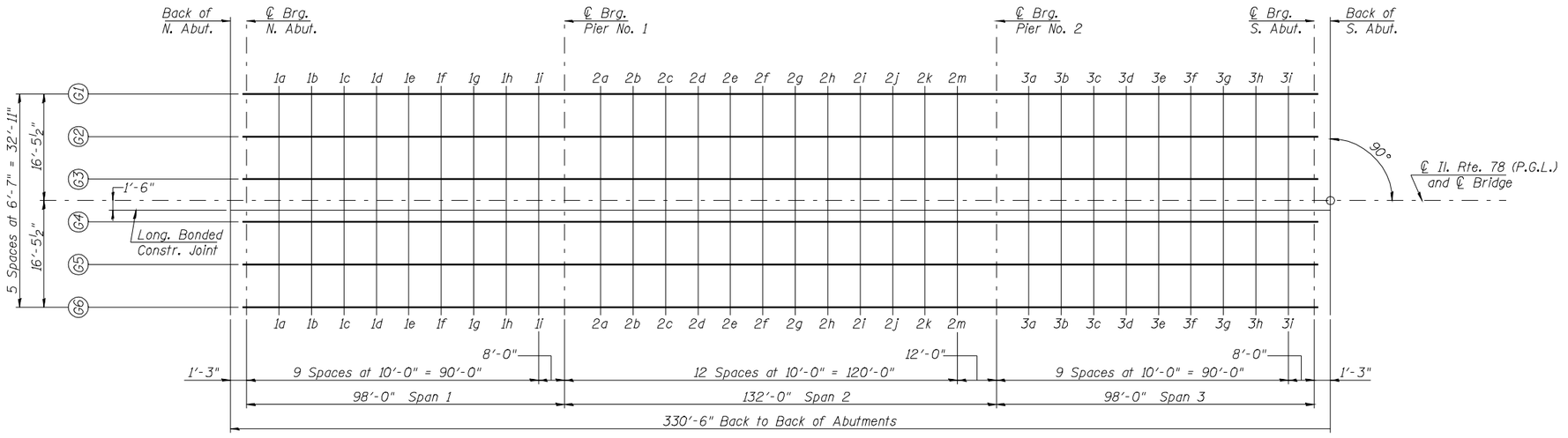
JOB NO. 07S2026
DATE 03/27/09
SHEET NO. 5
29 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
614	144(B-1, B-2)	Mason	351	112
		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

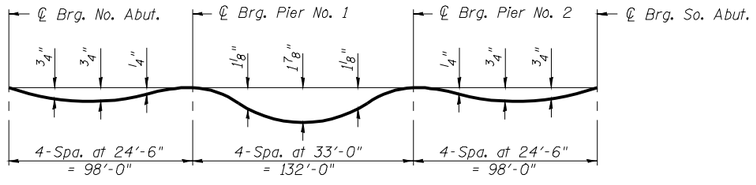
LAYOUT	MNM	01/10/09
DRAWN	Rod	01/13/09
REVIEWED	TEH	01/15/09

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



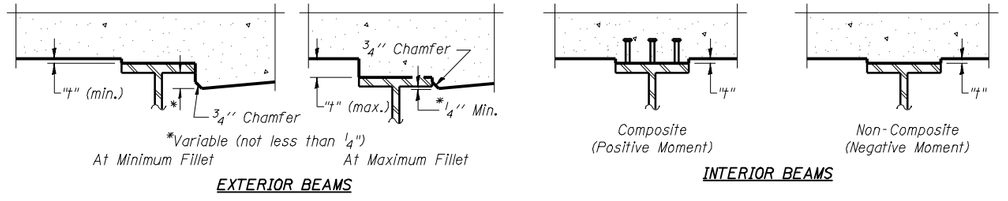
DIAGRAMMATIC PLAN



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 29.



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 7 & 8 of 29, minus 8" slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

TOP OF SLAB ELEVATIONS (Sheet 1 of 3)
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

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JOB NO. 07S2026
DATE 03/27/09

SHEET NO. 6
29 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
614	144(B-1, B-2)	Mason	351	113
		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

LAYOUT	Rod	12/03/08
DRAWN	Rod	12/03/08
REVIEWED	TEH	12/11/08

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GIRDER 1

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
Bk. No. Abut.	860+76.00	-16.46	464.65	464.65
℄ Brg. No. Abut	860+77.25	-16.46	464.65	464.65
1a	860+87.25	-16.46	464.62	464.64
1b	860+97.25	-16.46	464.58	464.63
1c	861+07.25	-16.46	464.54	464.61
1d	861+17.25	-16.46	464.51	464.57
1e	861+27.25	-16.46	464.47	464.53
1f	861+37.25	-16.46	464.42	464.47
1g	861+47.25	-16.46	464.38	464.41
1h	861+57.25	-16.46	464.34	464.35
1i	861+67.25	-16.46	464.29	464.29
℄ Brg. Pier No. 1	861+75.25	-16.46	464.25	464.25
2a	861+85.25	-16.46	464.20	464.23
2b	861+95.25	-16.46	464.15	464.20
2c	862+05.25	-16.46	464.09	464.18
2d	862+15.25	-16.46	464.04	464.14
2e	862+25.25	-16.46	463.98	464.11
2f	862+35.25	-16.46	463.93	464.08
2g	862+45.25	-16.46	463.88	464.03
2h	862+55.25	-16.46	463.82	463.95
2i	862+65.25	-16.46	463.77	463.88
2j	862+75.25	-16.46	463.72	463.80
2k	862+85.25	-16.46	463.66	463.72
2m	862+95.25	-16.46	463.61	463.64
℄ Brg Pier No. 2	863+07.25	-16.46	463.54	463.54
3a	863+17.25	-16.46	463.49	463.50
3b	863+27.25	-16.46	463.43	463.45
3c	863+37.25	-16.46	463.38	463.41
3d	863+47.25	-16.46	463.33	463.38
3e	863+57.25	-16.46	463.27	463.34
3f	863+67.25	-16.46	463.22	463.28
3g	863+77.25	-16.46	463.16	463.23
3h	863+87.25	-16.46	463.11	463.16
3i	863+97.25	-16.46	463.06	463.08
℄ Brg. So. Abut.	864+05.25	-16.46	463.01	463.01
Bk. So. Abut.	864+06.50	-16.46	463.01	463.01

GIRDER 2

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
Bk. No. Abut.	860+76.00	-9.88	464.77	464.77
℄ Brg. No. Abut	860+77.25	-9.88	464.77	464.77
1a	860+87.25	-9.88	464.74	464.76
1b	860+97.25	-9.88	464.70	464.76
1c	861+07.25	-9.88	464.67	464.73
1d	861+17.25	-9.88	464.63	464.69
1e	861+27.25	-9.88	464.59	464.65
1f	861+37.25	-9.88	464.55	464.59
1g	861+47.25	-9.88	464.50	464.53
1h	861+57.25	-9.88	464.46	464.47
1i	861+67.25	-9.88	464.41	464.42
℄ Brg. Pier No. 1	861+75.25	-9.88	464.37	464.37
2a	861+85.25	-9.88	464.32	464.35
2b	861+95.25	-9.88	464.27	464.32
2c	862+05.25	-9.88	464.21	464.30
2d	862+15.25	-9.88	464.16	464.26
2e	862+25.25	-9.88	464.11	464.23
2f	862+35.25	-9.88	464.05	464.20
2g	862+45.25	-9.88	464.00	464.15
2h	862+55.25	-9.88	463.94	464.07
2i	862+65.25	-9.88	463.89	464.00
2j	862+75.25	-9.88	463.84	463.92
2k	862+85.25	-9.88	463.78	463.84
2m	862+95.25	-9.88	463.73	463.76
℄ Brg Pier No. 2	863+07.25	-9.88	463.66	463.66
3a	863+17.25	-9.88	463.61	463.62
3b	863+27.25	-9.88	463.56	463.57
3c	863+37.25	-9.88	463.50	463.53
3d	863+47.25	-9.88	463.45	463.50
3e	863+57.25	-9.88	463.39	463.46
3f	863+67.25	-9.88	463.34	463.41
3g	863+77.25	-9.88	463.29	463.35
3h	863+87.25	-9.88	463.23	463.28
3i	863+97.25	-9.88	463.18	463.20
℄ Brg. So. Abut.	864+05.25	-9.88	463.13	463.13
Bk. So. Abut.	864+06.50	-9.88	463.13	463.13

GIRDER 3

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
Bk. No. Abut.	860+76.00	-3.29	464.87	464.87
℄ Brg. No. Abut	860+77.25	-3.29	464.87	464.87
1a	860+87.25	-3.29	464.84	464.86
1b	860+97.25	-3.29	464.80	464.85
1c	861+07.25	-3.29	464.76	464.83
1d	861+17.25	-3.29	464.73	464.79
1e	861+27.25	-3.29	464.69	464.75
1f	861+37.25	-3.29	464.64	464.69
1g	861+47.25	-3.29	464.60	464.63
1h	861+57.25	-3.29	464.56	464.57
1i	861+67.25	-3.29	464.51	464.51
℄ Brg. Pier No. 1	861+75.25	-3.29	464.47	464.47
2a	861+85.25	-3.29	464.42	464.45
2b	861+95.25	-3.29	464.37	464.42
2c	862+05.25	-3.29	464.31	464.39
2d	862+15.25	-3.29	464.26	464.36
2e	862+25.25	-3.29	464.20	464.33
2f	862+35.25	-3.29	464.15	464.30
2g	862+45.25	-3.29	464.10	464.25
2h	862+55.25	-3.29	464.04	464.17
2i	862+65.25	-3.29	463.99	464.10
2j	862+75.25	-3.29	463.93	464.02
2k	862+85.25	-3.29	463.88	463.94
2m	862+95.25	-3.29	463.83	463.86
℄ Brg Pier No. 2	863+07.25	-3.29	463.76	463.76
3a	863+17.25	-3.29	463.71	463.72
3b	863+27.25	-3.29	463.65	463.67
3c	863+37.25	-3.29	463.60	463.63
3d	863+47.25	-3.29	463.55	463.60
3e	863+57.25	-3.29	463.49	463.56
3f	863+67.25	-3.29	463.44	463.50
3g	863+77.25	-3.29	463.38	463.45
3h	863+87.25	-3.29	463.33	463.38
3i	863+97.25	-3.29	463.28	463.30
℄ Brg. So. Abut.	864+05.25	-3.29	463.23	463.23
Bk. So. Abut.	864+06.50	-3.29	463.23	463.23

℄ BRIDGE & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
Bk. No. Abut.	860+76.00	0.00	464.92	464.92
℄ Brg. No. Abut	860+77.25	0.00	464.92	464.92
1a	860+87.25	0.00	464.88	464.91
1b	860+97.25	0.00	464.85	464.90
1c	861+07.25	0.00	464.81	464.88
1d	861+17.25	0.00	464.78	464.84
1e	861+27.25	0.00	464.74	464.80
1f	861+37.25	0.00	464.69	464.74
1g	861+47.25	0.00	464.65	464.68
1h	861+57.25	0.00	464.60	464.62
1i	861+67.25	0.00	464.56	464.56
℄ Brg. Pier No. 1	861+75.25	0.00	464.52	464.52
2a	861+85.25	0.00	464.47	464.50
2b	861+95.25	0.00	464.42	464.47
2c	862+05.25	0.00	464.36	464.44
2d	862+15.25	0.00	464.31	464.41
2e	862+25.25	0.00	464.25	464.38
2f	862+35.25	0.00	464.20	464.35
2g	862+45.25	0.00	464.15	464.30
2h	862+55.25	0.00	464.09	464.22
2i	862+65.25	0.00	464.04	464.15
2j	862+75.25	0.00	463.98	464.07
2k	862+85.25	0.00	463.93	463.99
2m	862+95.25	0.00	463.88	463.91
℄ Brg Pier No. 2	863+07.25	0.00	463.81	463.81
3a	863+17.25	0.00	463.76	463.76
3b	863+27.25	0.00	463.70	463.72
3c	863+37.25	0.00	463.65	463.68
3d	863+47.25	0.00	463.60	463.64
3e	863+57.25	0.00	463.54	463.61
3f	863+67.25	0.00	463.49	463.55
3g	863+77.25	0.00	463.43	463.50
3h	863+87.25	0.00	463.38	463.43
3i	863+97.25	0.00	463.33	463.35
℄ Brg. So. Abut.	864+05.25	0.00	463.28	463.28
Bk. So. Abut.	864+06.50	0.00	463.28	463.28

TOP OF SLAB ELEVATIONS (Sheet 2 of 3)
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

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JOB NO. 07S2026
DATE 03/27/09

SHEET NO. 7
29 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
614	144(B-1, B-2)	Mason	351	114
		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

LAYOUT	Rod	12/03/08
DRAWN	Rod	12/03/08
REVIEWED	TEH	12/11/08

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LONGITUDINAL BONDED CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
Bk. No. Abut.	860+76.00	1.50	464.90	464.90
℄ Brg. No. Abut	860+77.25	1.50	464.90	464.90
1a	860+87.25	1.50	464.86	464.89
1b	860+97.25	1.50	464.83	464.88
1c	861+07.25	1.50	464.79	464.86
1d	861+17.25	1.50	464.75	464.82
1e	861+27.25	1.50	464.71	464.78
1f	861+37.25	1.50	464.67	464.72
1g	861+47.25	1.50	464.63	464.65
1h	861+57.25	1.50	464.58	464.60
1i	861+67.25	1.50	464.54	464.54
℄ Brg. Pier No. 1	861+75.25	1.50	464.50	464.50
2a	861+85.25	1.50	464.45	464.47
2b	861+95.25	1.50	464.39	464.45
2c	862+05.25	1.50	464.34	464.42
2d	862+15.25	1.50	464.29	464.39
2e	862+25.25	1.50	464.23	464.36
2f	862+35.25	1.50	464.18	464.32
2g	862+45.25	1.50	464.12	464.27
2h	862+55.25	1.50	464.07	464.20
2i	862+65.25	1.50	464.02	464.12
2j	862+75.25	1.50	463.96	464.05
2k	862+85.25	1.50	463.91	463.97
2m	862+95.25	1.50	463.85	463.89
℄ Brg Pier No. 2	863+07.25	1.50	463.79	463.79
3a	863+17.25	1.50	463.73	463.74
3b	863+27.25	1.50	463.68	463.70
3c	863+37.25	1.50	463.63	463.66
3d	863+47.25	1.50	463.57	463.62
3e	863+57.25	1.50	463.52	463.59
3f	863+67.25	1.50	463.46	463.53
3g	863+77.25	1.50	463.41	463.48
3h	863+87.25	1.50	463.36	463.41
3i	863+97.25	1.50	463.30	463.32
℄ Brg. So. Abut.	864+05.25	1.50	463.26	463.26
Bk. So. Abut.	864+06.50	1.50	463.25	463.25

GIRDER 4

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
Bk. No. Abut.	860+76.00	3.29	464.87	464.87
℄ Brg. No. Abut	860+77.25	3.29	464.87	464.87
1a	860+87.25	3.29	464.84	464.86
1b	860+97.25	3.29	464.80	464.85
1c	861+07.25	3.29	464.76	464.83
1d	861+17.25	3.29	464.73	464.79
1e	861+27.25	3.29	464.69	464.75
1f	861+37.25	3.29	464.64	464.69
1g	861+47.25	3.29	464.60	464.63
1h	861+57.25	3.29	464.56	464.57
1i	861+67.25	3.29	464.51	464.51
℄ Brg. Pier No. 1	861+75.25	3.29	464.47	464.47
2a	861+85.25	3.29	464.42	464.45
2b	861+95.25	3.29	464.37	464.42
2c	862+05.25	3.29	464.31	464.39
2d	862+15.25	3.29	464.26	464.36
2e	862+25.25	3.29	464.20	464.33
2f	862+35.25	3.29	464.15	464.30
2g	862+45.25	3.29	464.10	464.25
2h	862+55.25	3.29	464.04	464.17
2i	862+65.25	3.29	463.99	464.10
2j	862+75.25	3.29	463.93	464.02
2k	862+85.25	3.29	463.88	463.94
2m	862+95.25	3.29	463.83	463.86
℄ Brg Pier No. 2	863+07.25	3.29	463.76	463.76
3a	863+17.25	3.29	463.71	463.72
3b	863+27.25	3.29	463.65	463.67
3c	863+37.25	3.29	463.60	463.63
3d	863+47.25	3.29	463.55	463.60
3e	863+57.25	3.29	463.49	463.56
3f	863+67.25	3.29	463.44	463.50
3g	863+77.25	3.29	463.38	463.45
3h	863+87.25	3.29	463.33	463.38
3i	863+97.25	3.29	463.28	463.30
℄ Brg. So. Abut.	864+05.25	3.29	463.23	463.23
Bk. So. Abut.	864+06.50	3.29	463.23	463.23

GIRDER 5

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
Bk. No. Abut.	860+76.00	9.88	464.77	464.77
℄ Brg. No. Abut	860+77.25	9.88	464.77	464.77
1a	860+87.25	9.88	464.74	464.76
1b	860+97.25	9.88	464.70	464.76
1c	861+07.25	9.88	464.67	464.73
1d	861+17.25	9.88	464.63	464.69
1e	861+27.25	9.88	464.59	464.65
1f	861+37.25	9.88	464.55	464.59
1g	861+47.25	9.88	464.50	464.53
1h	861+57.25	9.88	464.46	464.47
1i	861+67.25	9.88	464.41	464.42
℄ Brg. Pier No. 1	861+75.25	9.88	464.37	464.37
2a	861+85.25	9.88	464.32	464.35
2b	861+95.25	9.88	464.27	464.32
2c	862+05.25	9.88	464.21	464.30
2d	862+15.25	9.88	464.16	464.26
2e	862+25.25	9.88	464.11	464.23
2f	862+35.25	9.88	464.05	464.20
2g	862+45.25	9.88	464.00	464.15
2h	862+55.25	9.88	463.94	464.07
2i	862+65.25	9.88	463.89	464.00
2j	862+75.25	9.88	463.84	463.92
2k	862+85.25	9.88	463.78	463.84
2m	862+95.25	9.88	463.73	463.76
℄ Brg Pier No. 2	863+07.25	9.88	463.66	463.66
3a	863+17.25	9.88	463.61	463.62
3b	863+27.25	9.88	463.56	463.57
3c	863+37.25	9.88	463.50	463.53
3d	863+47.25	9.88	463.45	463.50
3e	863+57.25	9.88	463.39	463.46
3f	863+67.25	9.88	463.34	463.41
3g	863+77.25	9.88	463.29	463.35
3h	863+87.25	9.88	463.23	463.28
3i	863+97.25	9.88	463.18	463.20
℄ Brg. So. Abut.	864+05.25	9.88	463.13	463.13
Bk. So. Abut.	864+06.50	9.88	463.13	463.13

GIRDER 6

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
Bk. No. Abut.	860+76.00	16.46	464.65	464.65
℄ Brg. No. Abut	860+77.25	16.46	464.65	464.65
1a	860+87.25	16.46	464.62	464.64
1b	860+97.25	16.46	464.58	464.63
1c	861+07.25	16.46	464.54	464.61
1d	861+17.25	16.46	464.51	464.57
1e	861+27.25	16.46	464.47	464.53
1f	861+37.25	16.46	464.42	464.47
1g	861+47.25	16.46	464.38	464.41
1h	861+57.25	16.46	464.34	464.35
1i	861+67.25	16.46	464.29	464.29
℄ Brg. Pier No. 1	861+75.25	16.46	464.25	464.25
2a	861+85.25	16.46	464.20	464.23
2b	861+95.25	16.46	464.15	464.20
2c	862+05.25	16.46	464.09	464.18
2d	862+15.25	16.46	464.04	464.14
2e	862+25.25	16.46	463.98	464.11
2f	862+35.25	16.46	463.93	464.08
2g	862+45.25	16.46	463.88	464.03
2h	862+55.25	16.46	463.82	463.95
2i	862+65.25	16.46	463.77	463.88
2j	862+75.25	16.46	463.72	463.80
2k	862+85.25	16.46	463.66	463.72
2m	862+95.25	16.46	463.61	463.64
℄ Brg Pier No. 2	863+07.25	16.46	463.54	463.54
3a	863+17.25	16.46	463.49	463.50
3b	863+27.25	16.46	463.43	463.45
3c	863+37.25	16.46	463.38	463.41
3d	863+47.25	16.46	463.33	463.38
3e	863+57.25	16.46	463.27	463.34
3f	863+67.25	16.46	463.22	463.28
3g	863+77.25	16.46	463.16	463.23
3h	863+87.25	16.46	463.11	463.16
3i	863+97.25	16.46	463.06	463.08
℄ Brg. So. Abut.	864+05.25	16.46	463.01	463.01
Bk. So. Abut.	864+06.50	16.46	463.01	463.01

TOP OF SLAB ELEVATIONS (Sheet 3 of 3)
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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JOB NO. 07S2026
DATE 03/27/09

SHEET NO. 8
29 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
614	144(B-1, B-2)	Mason	351	115
		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

LAYOUT	Rod	12/03/08
DRAWN	Rod	12/03/08
REVIEWED	TEH	12/11/08

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST EDGE of APPROACH PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
Free End of North Appr.	860+46.00	-18.67	464.49
'A'	860+56.00	-18.67	464.46
'B'	860+66.00	-18.67	464.43
Abut. End of North Appr.	860+76.00	-18.67	464.40

EAST CROWN BREAKPOINT

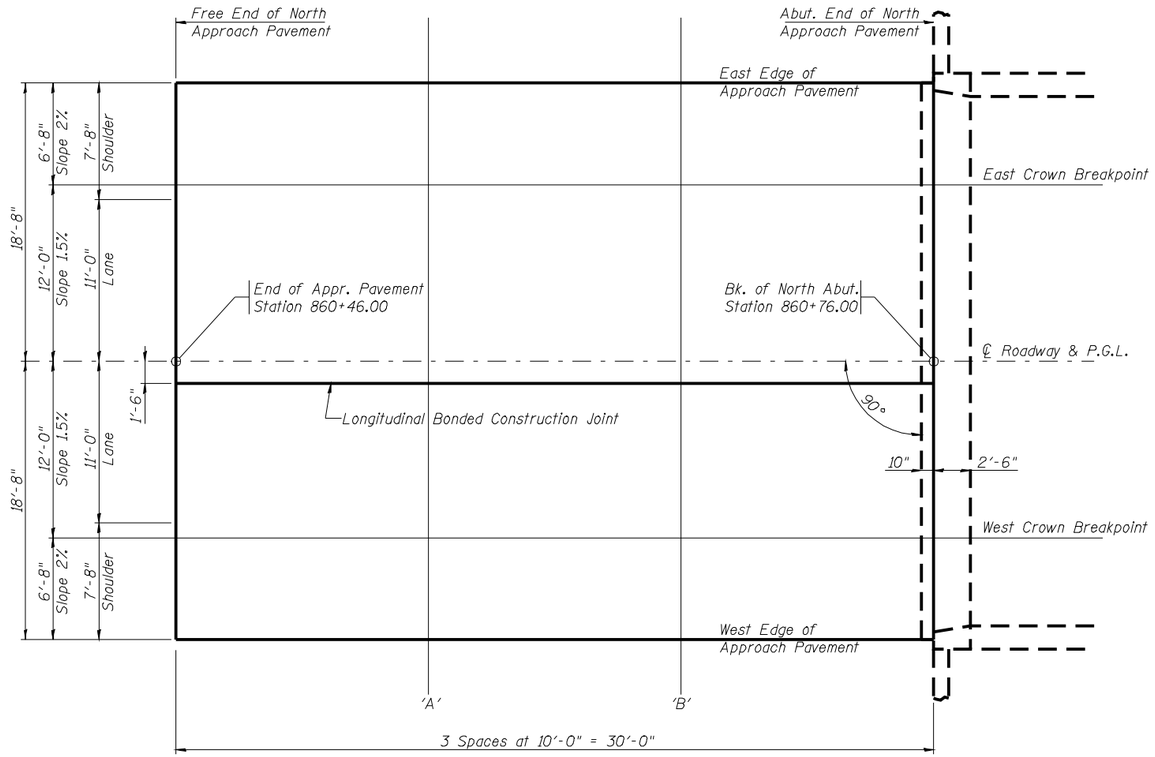
Location	Station	Offset	Theoretical Grade Elevations
Free End of North Appr.	860+46.00	-12.00	464.62
'A'	860+56.00	-12.00	464.59
'B'	860+66.00	-12.00	464.56
Abut. End of North Appr.	860+76.00	-12.00	464.53

℄ ROADWAY & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations
Free End of North Appr.	860+46.00	0.00	464.80
'A'	860+56.00	0.00	464.77
'B'	860+66.00	0.00	464.74
Abut. End of North Appr.	860+76.00	0.00	464.71

LONGITUDINAL BONDED CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations
Free End of North Appr.	860+46.00	1.50	464.78
'A'	860+56.00	1.50	464.75
'B'	860+66.00	1.50	464.72
Abut. End of North Appr.	860+76.00	1.50	464.69



PLAN

WEST CROWN BREAKPOINT

Location	Station	Offset	Theoretical Grade Elevations
Free End of North Appr.	860+46.00	12.00	464.62
'A'	860+56.00	12.00	464.59
'B'	860+66.00	12.00	464.56
Abut. End of North Appr.	860+76.00	12.00	464.53

WEST EDGE of APPROACH PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
Free End of North Appr.	860+46.00	18.67	464.49
'A'	860+56.00	18.67	464.46
'B'	860+66.00	18.67	464.43
Abut. End of North Appr.	860+76.00	18.67	464.40

NORTH - TOP OF APPROACH SLAB ELEVATIONS
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

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JOB NO. 07S2026
DATE 03/27/09

SHEET NO. 9
29 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
614	144(B-1, B-2)	Mason	351	116
		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

LAYOUT	Rod	12/03/08
DRAWN	Rod	12/03/08
REVIEWED	TEH	12/11/08

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST GUTTER LINE

Location	Station	Offset	Theoretical Grade Elevations
Abut. End of South Appr.	864+06.50	-18.00	462.98
'A'	864+16.50	-18.00	462.92
'B'	864+26.50	-18.00	462.87
Free End of South Appr.	864+36.50	-18.00	462.82

EAST CROWN BREAKPOINT

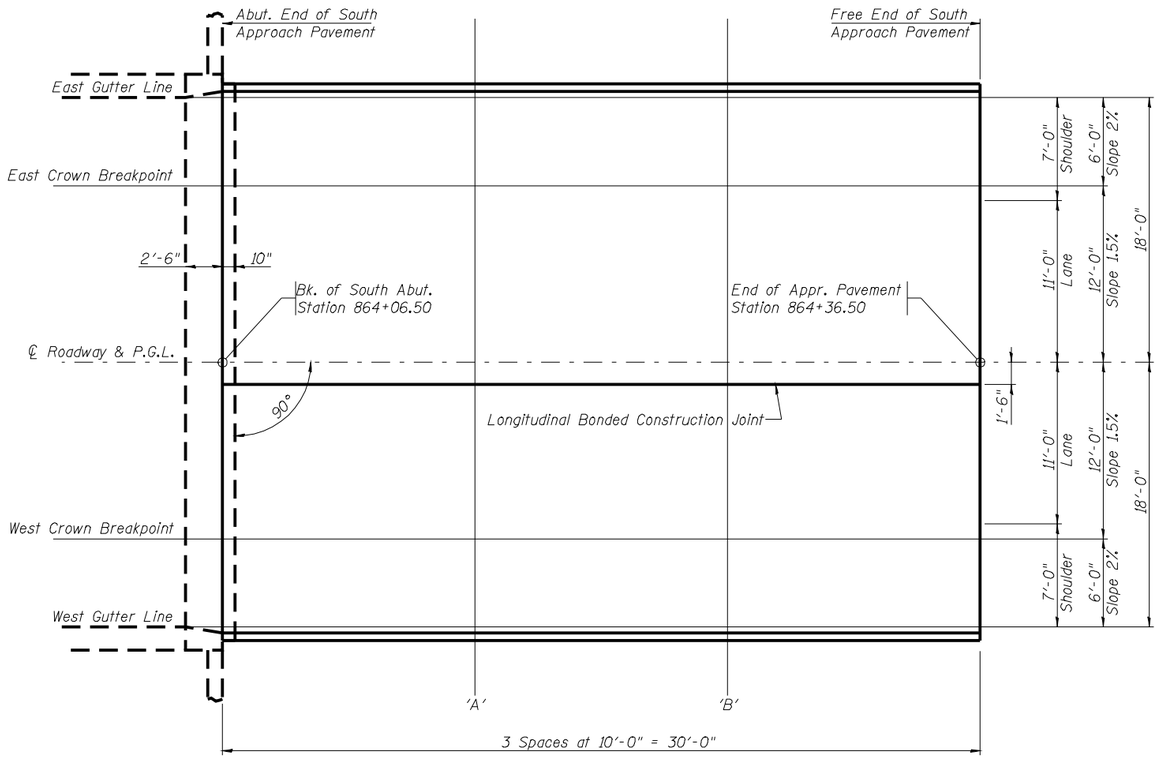
Location	Station	Offset	Theoretical Grade Elevations
Abut. End of South Appr.	864+06.50	-12.00	463.10
'A'	864+16.50	-12.00	463.04
'B'	864+26.50	-12.00	462.99
Free End of South Appr.	864+36.50	-12.00	462.94

℄ ROADWAY & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations
Abut. End of South Appr.	864+06.50	0.00	463.28
'A'	864+16.50	0.00	463.22
'B'	864+26.50	0.00	463.17
Free End of South Appr.	864+36.50	0.00	463.12

LONGITUDINAL BONDED CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations
Abut. End of South Appr.	864+06.50	1.50	463.25
'A'	864+16.50	1.50	463.20
'B'	864+26.50	1.50	463.15
Free End of South Appr.	864+36.50	1.50	463.10



PLAN

WEST CROWN BREAKPOINT

Location	Station	Offset	Theoretical Grade Elevations
Abut. End of South Appr.	864+06.50	12.00	463.10
'A'	864+16.50	12.00	463.04
'B'	864+26.50	12.00	462.99
Free End of South Appr.	864+36.50	12.00	462.94

WEST GUTTER LINE

Location	Station	Offset	Theoretical Grade Elevations
Abut. End of South Appr.	864+06.50	18.00	462.98
'A'	864+16.50	18.00	462.92
'B'	864+26.50	18.00	462.87
Free End of South Appr.	864+36.50	18.00	462.82

SOUTH - TOP OF APPROACH SLAB ELEVATIONS
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

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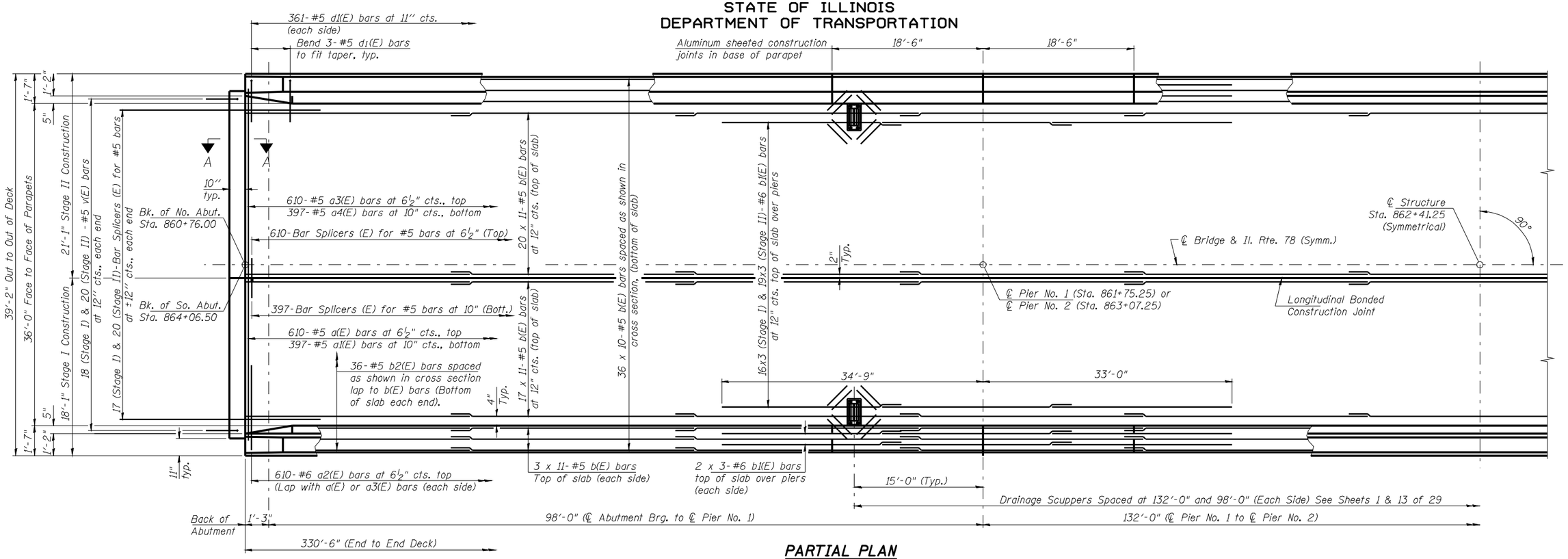
JOB NO. 07S2026
DATE 03/27/09
SHEET NO. 10
29 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
614	144(B-1, B-2)	Mason	351	117
		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

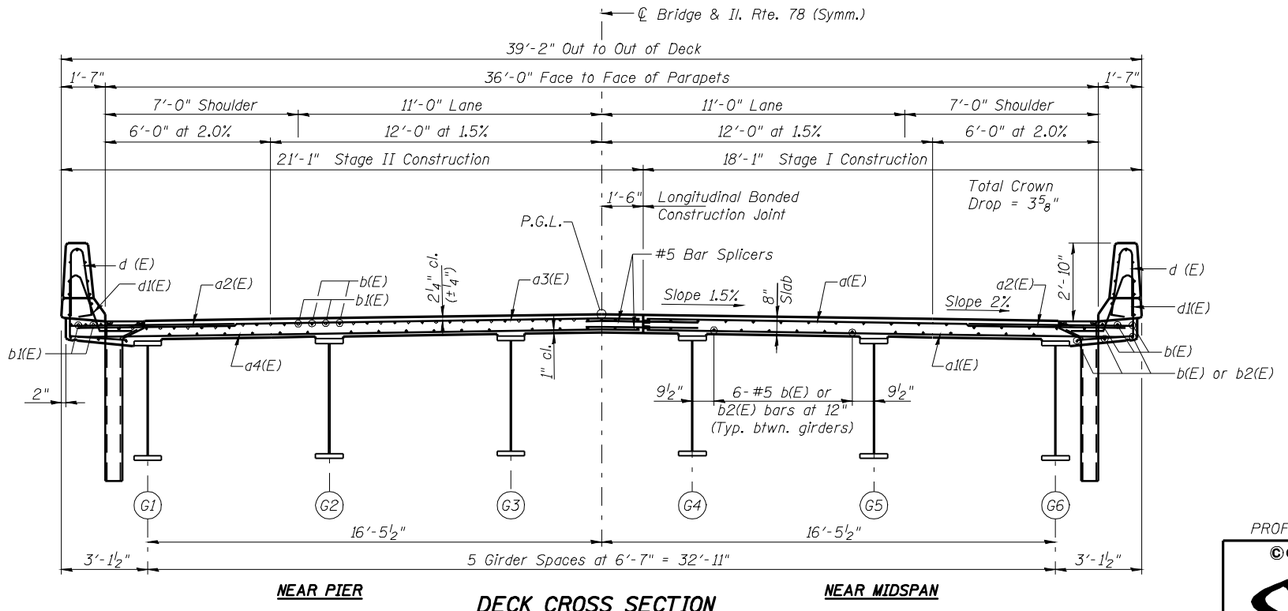
LAYOUT	Rod	12/03/08
DRAWN	Rod	12/03/08
REVIEWED	TEH	12/11/08

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PARTIAL PLAN



DECK CROSS SECTION

(Looking South)

Notes:

See Sheet 13 of 29 for superstructure details, bar laps and Bill of Material.

Bars indicated thus 17 x 11-#5 etc. indicates 17 lines of bars with 11 lengths per line.

See Sheet 13 of 29 for parapet reinforcement.

See Sheet 12 of 29 for Section A-A.

SUPERSTRUCTURE PLAN
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

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JOB NO. 07S2026

DATE 03/27/09

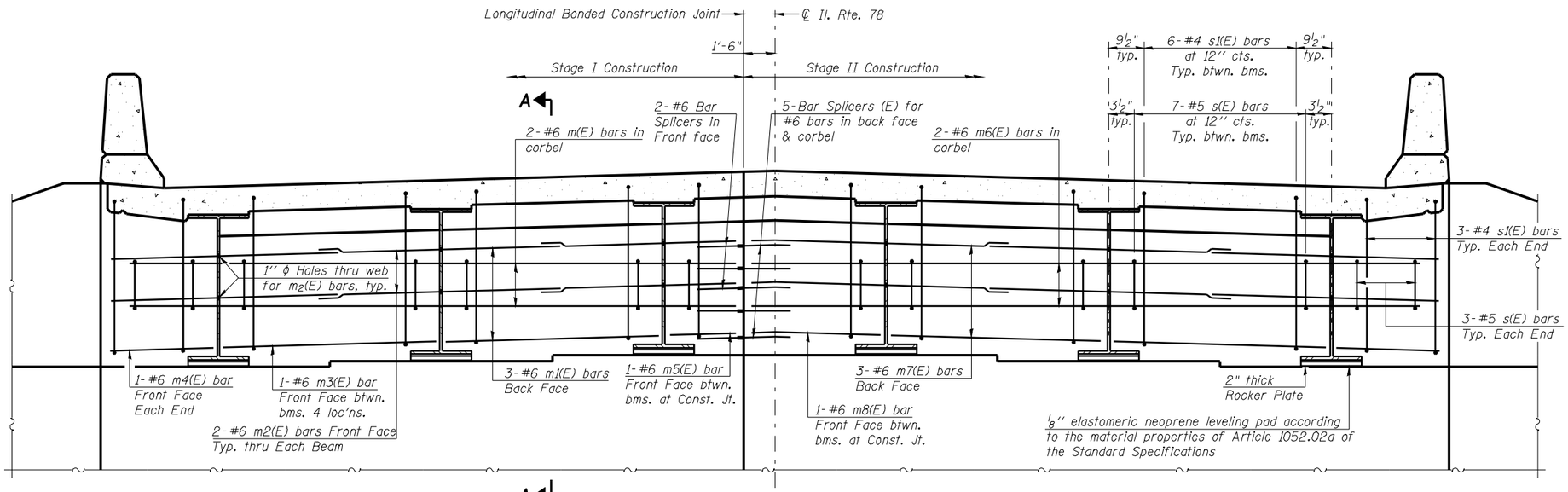
SHEET NO. 11 29 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
614	144(B-1, B-2)	Mason	351	118
		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

LAYOUT	TEH	10/22/08
DRAWN	Rod	12/04/08
REVIEWED	TEH	12/11/08

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STATE OF ILLINOIS
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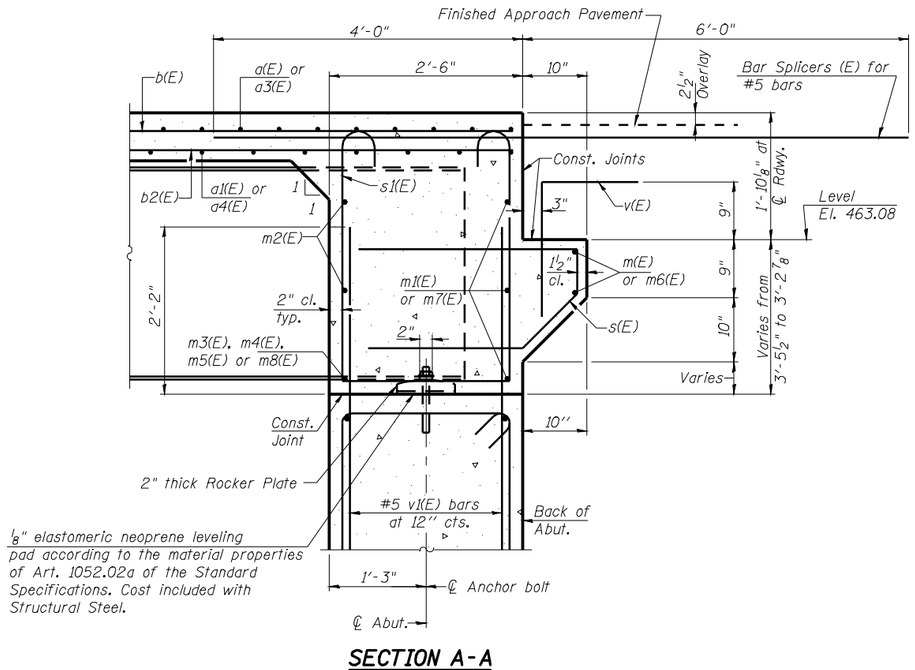
DIAPHRAGM ELEVATION AT NORTH ABUTMENT

Looking North (North Abutment shown South Abutment similar)

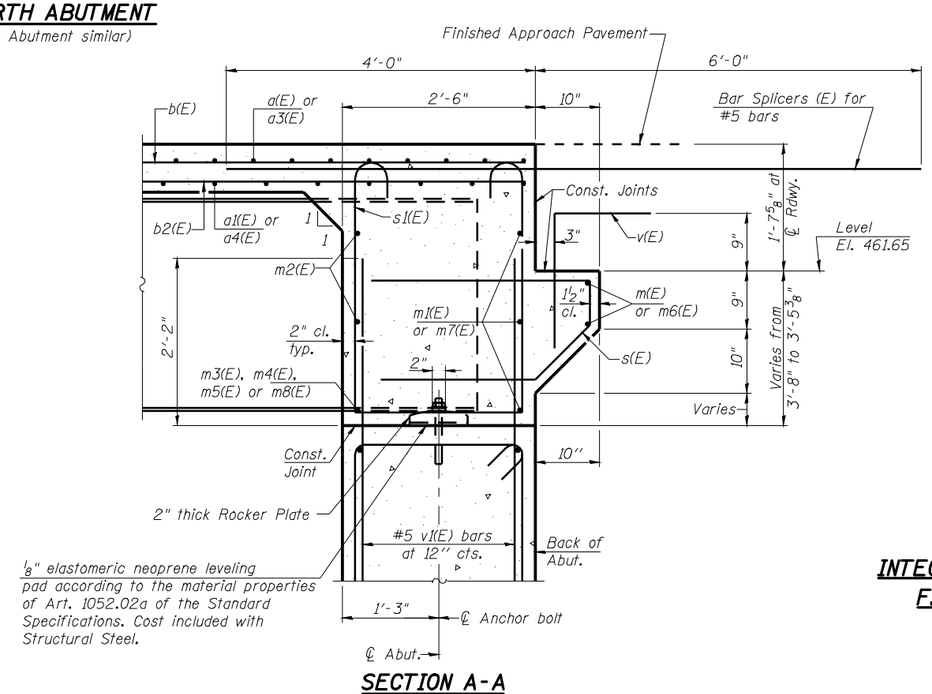
Notes:
Reinforcement bars in diaphragm are billed with superstructure on sheet 13 of 29.
Concrete in diaphragm is included with Concrete Superstructure on sheet 13 of 29.
For details of bars s(E) & s1(E) see sheet 13 of 29.
The s(E) and s1(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.

MIN. BAR LAP

#6 bar = 2'-9"



SECTION A-A (NORTH ABUTMENT)



SECTION A-A (SOUTH ABUTMENT)

INTEGRAL ABUTMENT DIAPHRAGM DETAILS
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

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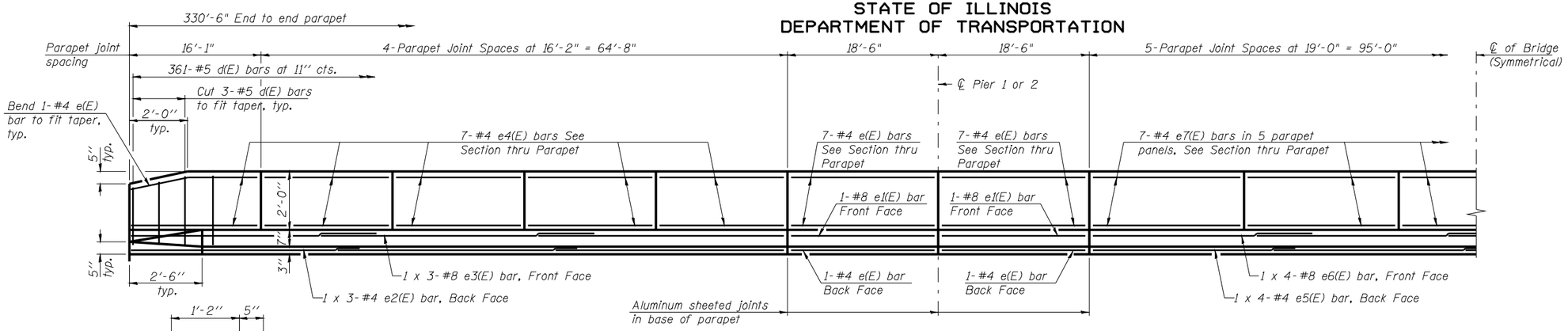
JOB NO. 07S2026
DATE 03/27/09
SHEET NO. 12
29 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
614	144(B-1, B-2)	Mason	351	119
		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

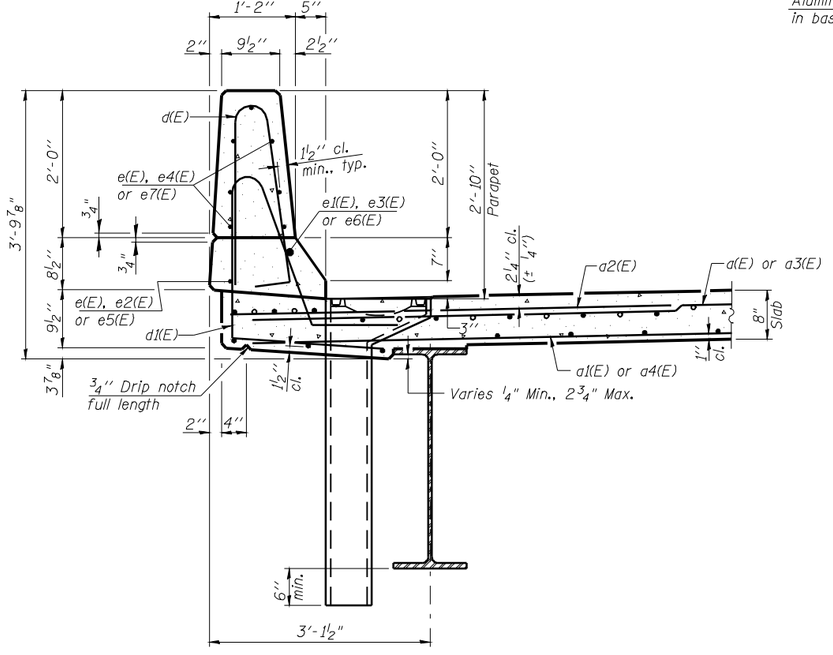
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DRAWN	Rod	12/09/08
REVIEWED	TEH	12/11/08

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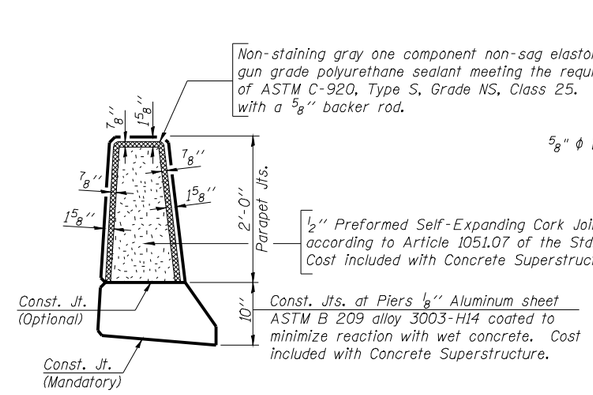
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



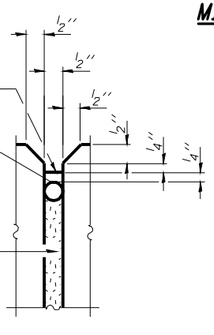
INSIDE ELEVATION OF PARAPET



SECTION THRU PARAPET



PARAPET JOINT DETAILS



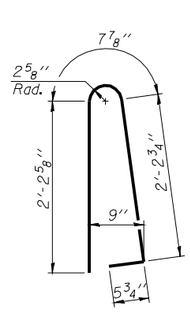
MINIMUM BAR LAP

#4 bar = 1'-8"
#5 bar = 2'-2"
#6 bar = 2'-7"
#8 bar = 4'-6"

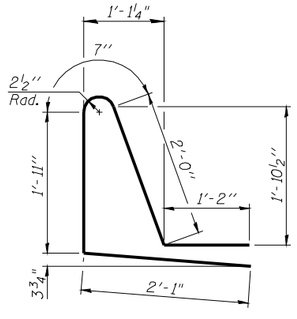
SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	610	#5	17'-7"	
a1(E)	397	#5	16'-11"	
a2(E)	1220	#6	6'-0"	
a3(E)	610	#5	20'-7"	
a4(E)	397	#5	19'-11"	
a5(E)	48	#5	1'-6"	
b(E)	833	#5	32'-0"	
b1(E)	234	#6	24'-4"	
b2(E)	72	#5	17'-1"	
d(E)	722	#5	5'-7"	
d1(E)	722	#5	7'-9"	
e(E)	64	#4	18'-2"	
e1(E)	8	#8	18'-2"	
e2(E)	12	#4	27'-11"	
e3(E)	12	#8	29'-10"	
e4(E)	140	#4	15'-9"	
e5(E)	8	#4	24'-11"	
e6(E)	8	#8	27'-1"	
e7(E)	70	#4	18'-8"	
m(E)	4	#6	16'-10"	
m1(E)	6	#6	17'-9"	
m2(E)	24	#6	9'-4"	
m3(E)	8	#6	6'-2"	
m4(E)	4	#6	2'-11"	
m5(E)	2	#6	1'-5"	
m6(E)	4	#6	19'-10"	
m7(E)	6	#6	20'-9"	
m8(E)	2	#6	4'-5"	
s(E)	82	#5	6'-0"	
s1(E)	72	#4	12'-4"	
v(E)	76	#5	3'-4"	
Reinforcement Bars, Epoxy Coated		Pound	106070	
Concrete Superstructure		Cu. Yds.	444.5	

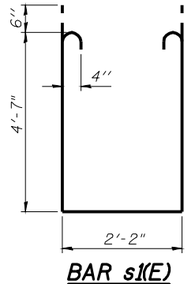
Bars indicated thus 1 x 3 -#5 etc. indicates 1 line of bars with 3 lengths per line.



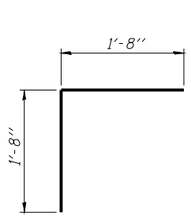
BAR d(E)



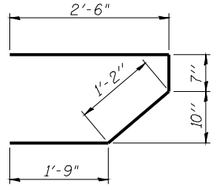
BAR d1(E)



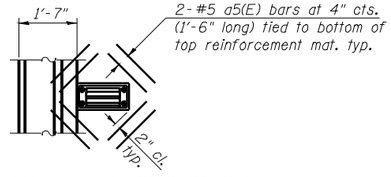
BAR s1(E)



BAR v(E)



BAR s(E)



PLAN - REINFORCEMENT TREATMENT AT SCUPPERS

Note:
Cut longitudinal reinforcement to clear drainage scuppers.

SUPERSTRUCTURE DETAILS
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

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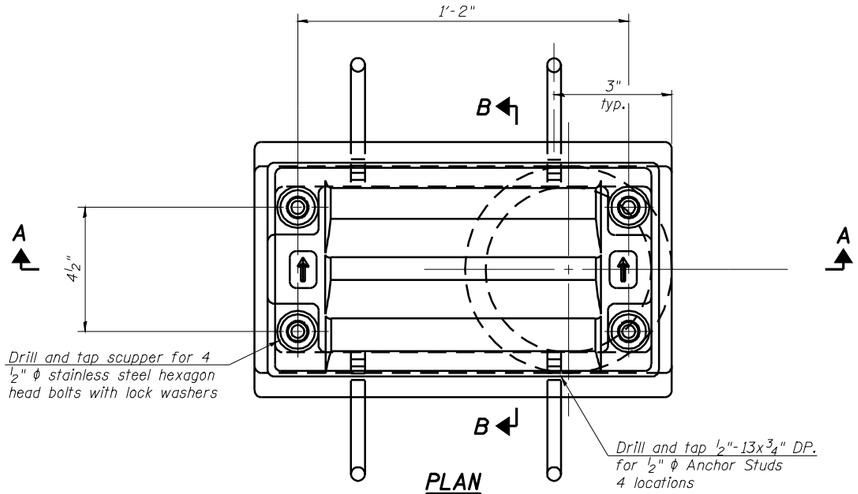
JOB NO. 07S2026
DATE 03/27/09
SHEET NO. 13
29 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
614	144(B-1, B-2)	Mason	351	120
		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

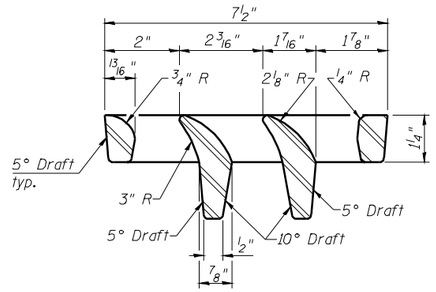
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DRAWN	Rod	12/09/08
REVIEWED	TEH	12/11/08

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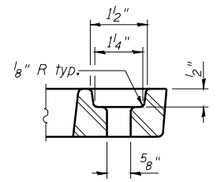
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN



VANE GRATE DETAIL



BOLT HOLE DETAIL

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.

Scuppers need not be painted.

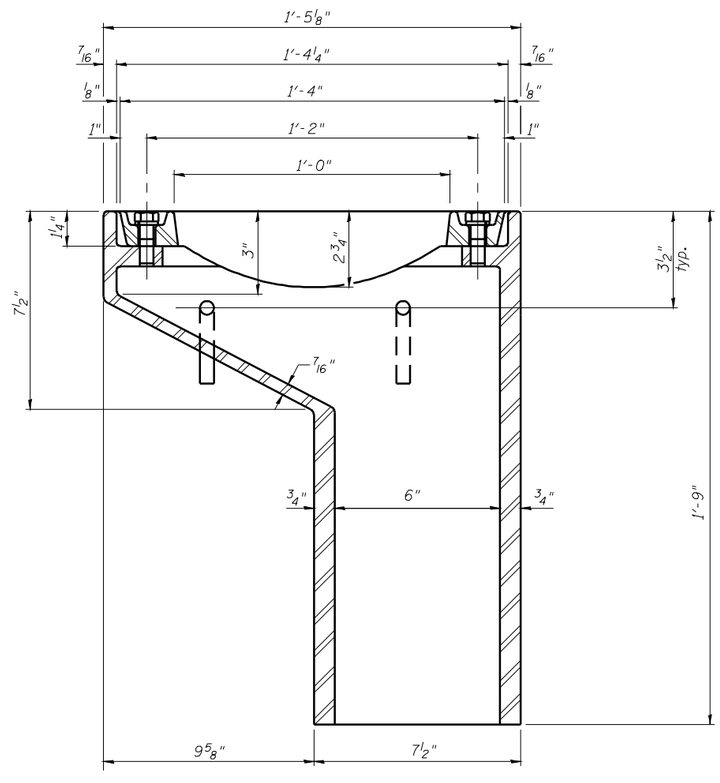
As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.

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.

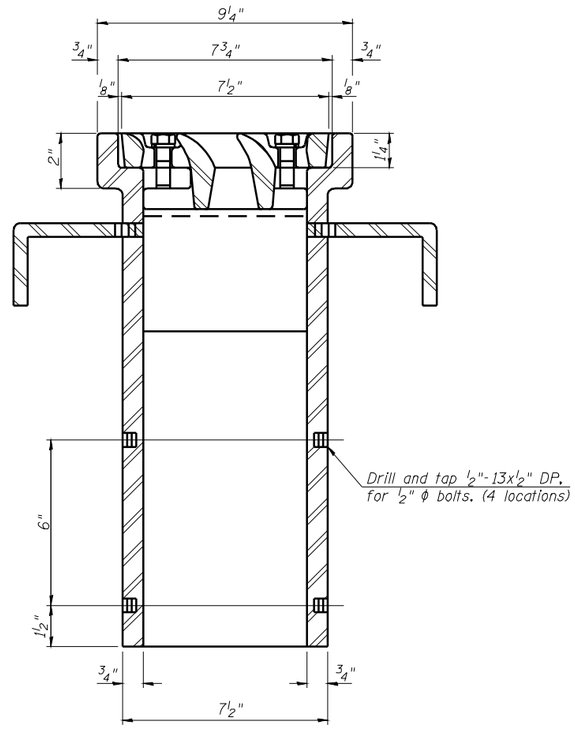
Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-11.

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.

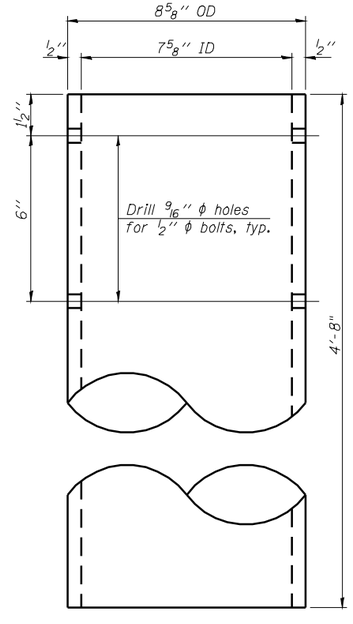


SECTION A-A

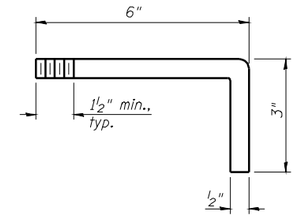
See sheet 11 and 13 of 28 for scupper location relative to parapet.



SECTION B-B



DOWNSPOUT



ANCHOR STUD DETAIL

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scuppers, DS-11	Each	6

DRAINAGE SCUPPER DETAILS DS-11
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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JOB NO. 07S2026
DATE 03/27/09

SHEET NO. 14
29 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

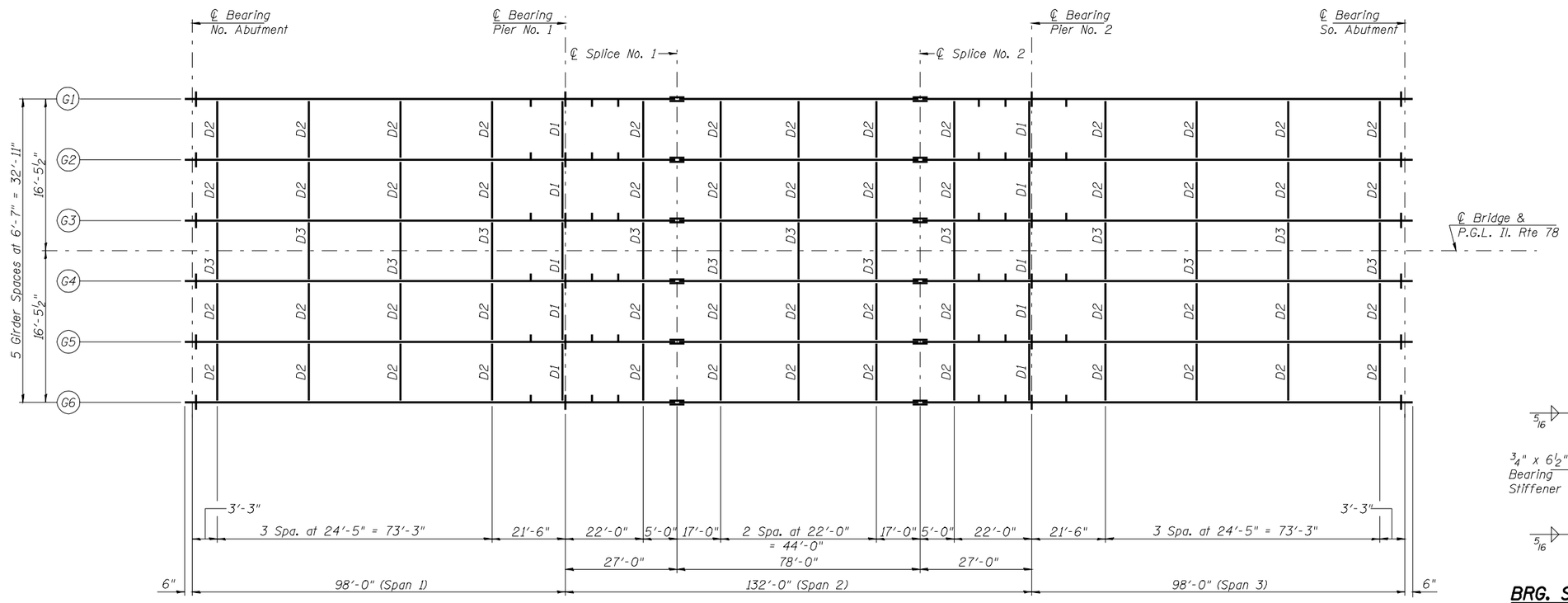
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DRAWN	Rod	12/10/08
REVIEWED	TEH	12/11/08

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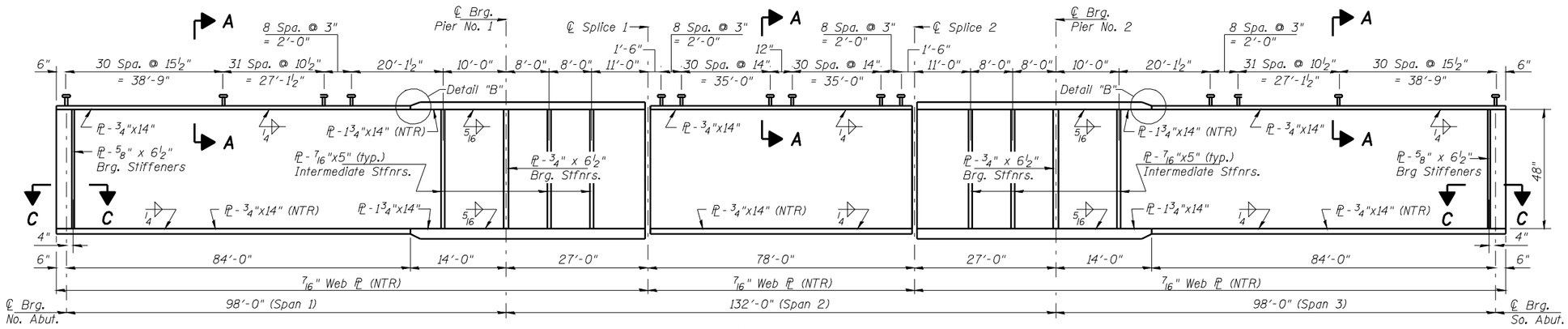
DS-11

10-1-08

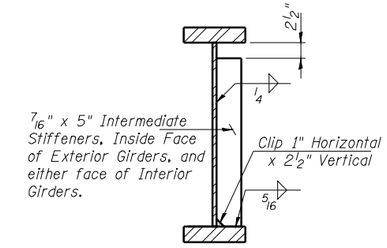
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



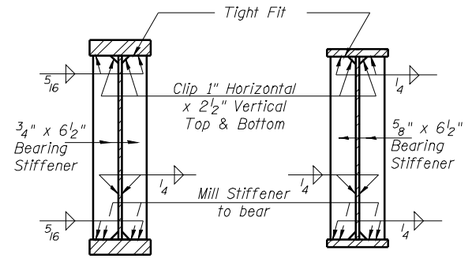
FRAMING PLAN



GIRDER ELEVATION

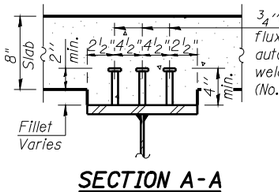


INTERMEDIATE STIFFENERS



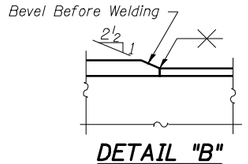
BRG. STIFFENERS AT PIERS

BRG. STIFFENERS AT ABUTMENTS

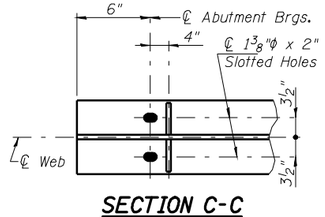


¾"℄ Granular or solid flux filled headed studs automatically end welded to flange. (No. Req'd.= 3,924)

SECTION A-A



DETAIL "B"



SECTION C-C

Notes:
All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

FRAMING PLAN
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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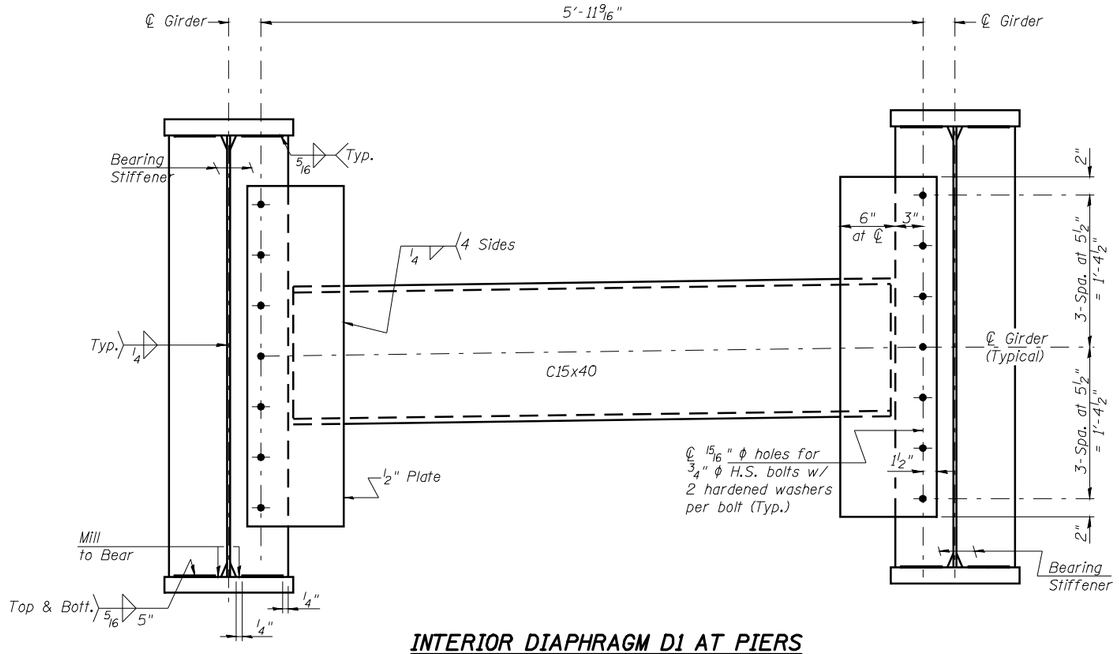
JOB NO. 07S2026
DATE 03/27/09
SHEET NO. 15
29 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

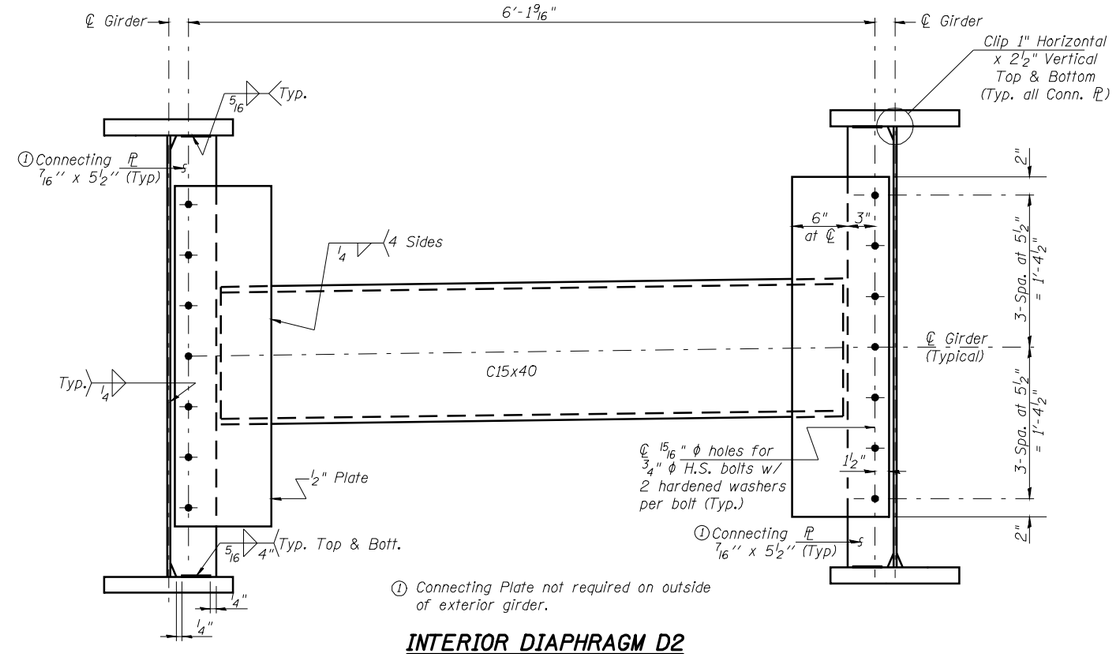
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DRAWN	Rod	12/05/08
REVIEWED	TEH	12/11/08

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DEPARTMENT OF TRANSPORTATION

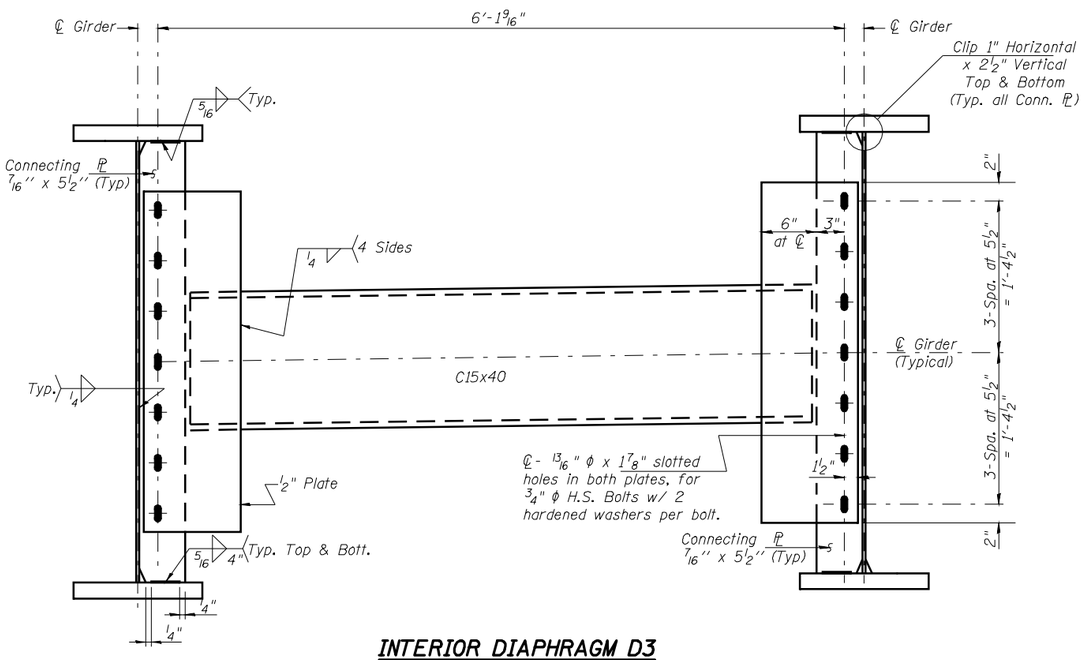


INTERIOR DIAPHRAGM D1 AT PIERS
(10 Required)



1 Connecting Plate not required on outside of exterior girder.

INTERIOR DIAPHRAGM D2
(52 Required)



INTERIOR DIAPHRAGM D3
(13 Required)

All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

Bolts in slotted holes shall be finger tight until the second stage pour is complete, and position slots so bolts start at one end with no concrete load and finish near the opposite end under deck load, allowing maximum displacement without laterally stressing main members.

STUCTURAL STEEL DETAILS (Sheet 1 of 2)
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

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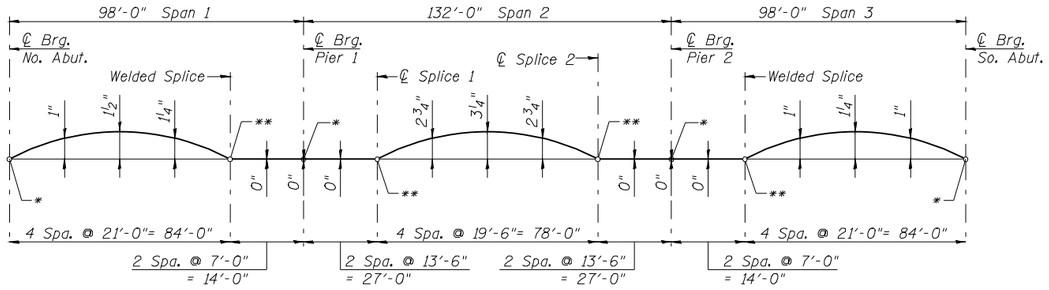
JOB NO. 07S2026
DATE 03/27/09
SHEET NO. 16
29 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
614	144(B-1, B-2)	Mason	351	123
		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

LAYOUT	TEH	10/25/08
DRAWN	Rod	12/05/08
REVIEWED	TEH	12/11/08

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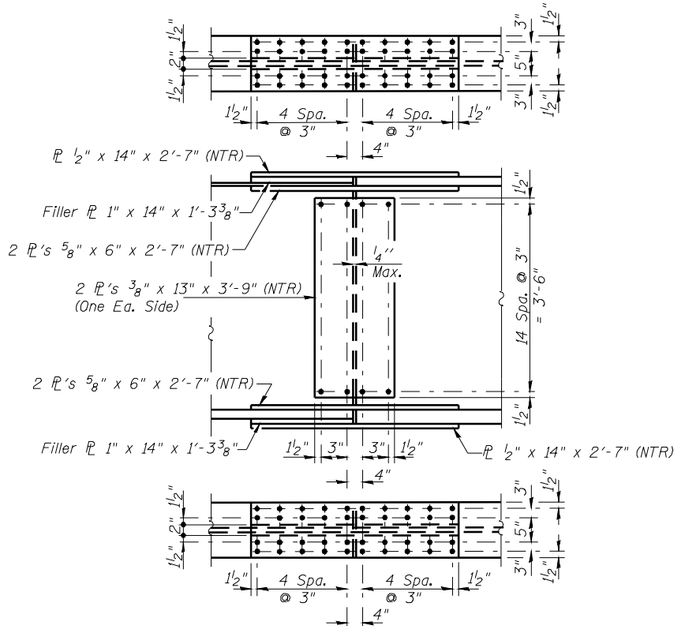
CAMBER DIAGRAM

* See Table for Final Top of Web Elevations at abutments and piers.
** Theoretical Top of Web Elevations before dead load deflections.

TOP of WEB ELEVATIONS TABLE

For Fabrication Only

Girder Number	℄ Brg. No. Abut.	Weld Splice	℄ Brg. Pier 1	℄ Splice No. 1	℄ Splice No. 2	℄ Brg. Pier 2	Weld Splice	℄ Brg. So. Abut.
Girder 1	463.86	463.44	463.37	463.23	462.77	462.65	462.59	462.22
Girder 2	463.98	463.56	463.49	463.35	462.89	462.77	462.71	462.34
Girder 3	464.08	463.66	463.59	463.45	462.99	462.87	462.81	462.44
Girder 4	464.08	463.66	463.59	463.45	462.99	462.87	462.81	462.44
Girder 5	463.98	463.56	463.49	463.35	462.89	462.77	462.71	462.34
Girder 6	463.86	463.44	463.37	463.23	462.77	462.65	462.59	462.22



DETAIL - FIELD SPLICE

Note:
Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
Use ⅞" ϕ H.S. Bolts with ¹⁵⁄₁₆" ϕ holes for all splice connections.

INTERIOR GIRDER MOMENT TABLE					
			0.4 Span 1 or 0.6 Span 3	Pier 1 or Pier 2	0.5 Span 2
	I_s	(in^4)	16510	34364	16510
	$I_c(n)$	(in^4)	38608	-	38608
	$I_c(3n)$	(in^4)	29058	-	29058
	S_s	(in^3)	667	1335	667
	$S_c(n)$	(in^3)	903	-	903
	$S_c(3n)$	(in^3)	829	-	829
	DC1	(k/')	0.853	1.332	0.882
	M_{DC1}	('k)	438	1989	559
	DC2	(k/')	0.150	-	0.150
	M_{DC2}	('k)	89	-	118
	DW	(k/')	0.300	-	0.300
	M_{DW}	('k)	179	-	235
	M_{L+IM}	('k)	1185	1321	1344
	M_U(Strength I)	('k)	3000	4902	3551
***	$\phi_f M_n$, $\phi_f M_{nc}$	('k)	4596	-	4513
	f_s DC1	(ksi)	7.88	17.89	10.06
	f_s DC2	(ksi)	1.29	-	1.70
	f_s DW	(ksi)	2.58	-	3.40
	f_s 1.3(L+IM)	(ksi)	20.46	15.44	23.21
	f_s (Service II)	(ksi)	32.21	33.32	38.37
****	f_s (Total)(Strength I)	(ksi)	-	44.08	-
	V_f	(k)	27.9	-	24.6

*** Compact Sections.
**** Non-compact and Slender Sections.

INTERIOR GIRDER REACTION TABLE HL93 Loading			
		No. Abut. or So. Abut.	Pier 1 or Pier 2
R_{DC1}	(k)	27.9	113.9
R_{DC2}	(k)	5.2	19.4
R_{DW}	(k)	10.4	38.8
R_{L+IM}	(k)	80.6	151.3
R_{Total}	(k)	124.1	323.4

I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) 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-Strength I, and Service II) 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-Strength I, and Service II) due to long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).
DC1: Un-factored non-composite dead load (kips/ft.).
M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).
DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).
M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).
DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).
M_{DW}: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).
M_{L+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
M_U (Strength I): Factored design moment (kip-ft.).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$
$\phi_f M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).
$\phi_f M_{nc}$: Compact non-composite negative moment capacity computed according to Article A6.1.1 (kip-ft.).
f_s (Service II): Sum of stresses as computed from the moments below (ksi).
$M_{DC1} + M_{DC2} + M_{DW} + 1.3\ M_{L+IM}$
f_s (Total)(Strength I): Sum of stresses as computed from the moments below on non-compact section (ksi).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$
V_f: Maximum Factored shear range computed according to Article 6.10.10.

STRUCTURAL STEEL DETAILS (Sheet 2 of 2)
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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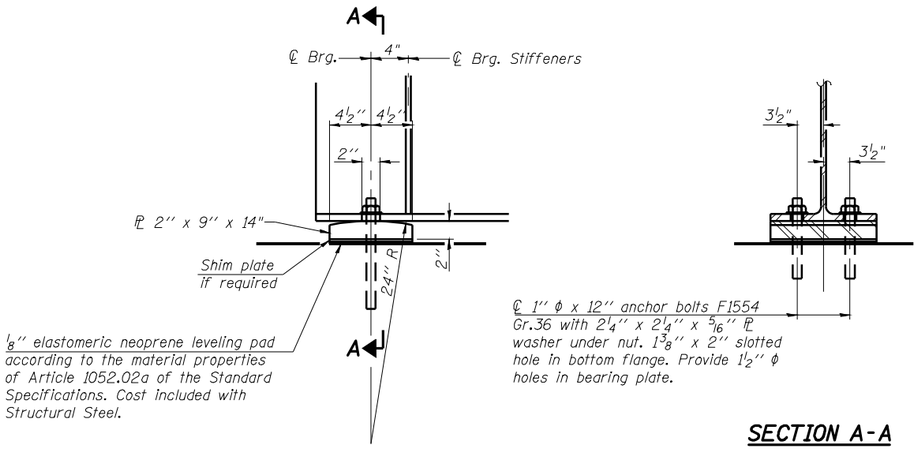
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DATE 03/27/09
SHEET NO. 17
29 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
614	144(B-1, B-2)	Mason	351	124
		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

LAYOUT	TEH	10/25/08
DRAWN	Rod	12/08/08
REVIEWED	TEH	12/11/08

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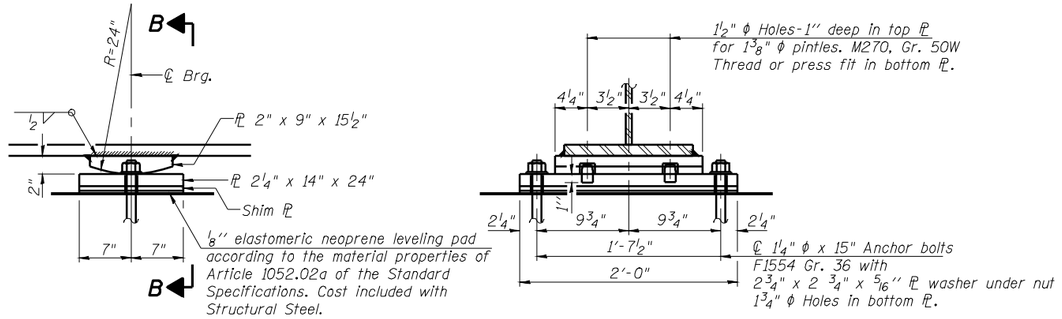
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SECTION A-A

ELEVATION AT ABUTMENT

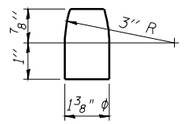
INTEGRAL ABUTMENT FIXED BEARING DETAILS



ELEVATION AT PIER

SECTION B-B

FIXED PIER BEARING DETAILS



PINTLE

Notes:

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

Anchor bolts may be either cast in place or installed in holes drilled after the supported member is in place.

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

Steel members required for the bearing assembly shall be included in the cost of Structural Steel.

Two ⅛ in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

The anchor bolt lengths shown are the required total lengths for cast-in-place headed anchor bolts. The required total length for the sealed capsule alternate anchor bolt shall be according to the manufacturer's recommendations.

The structural steel plates and pintles of the Bearing Assembly shall conform to the requirements of AASHTO M270 Grade 50W.

BILL OF MATERIAL

Item	Unit	Total
Anchor Bolts, 1"	Each	24
Anchor Bolts, 1¼"	Each	24

BEARING DETAILS
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

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JOB NO. 07S2026
DATE 03/27/09
SHEET NO. 18
29 SHEETS

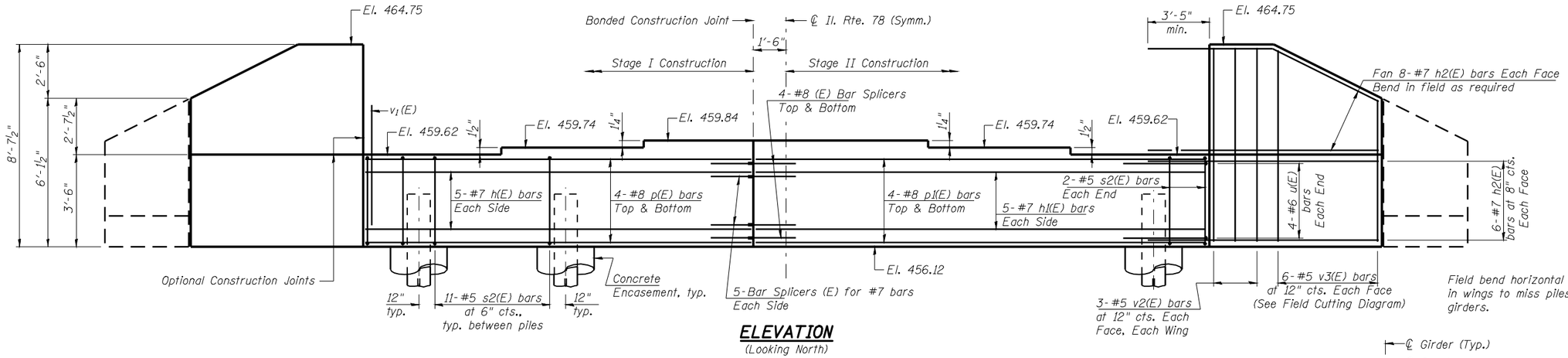
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
614	144(B-1, B-2)	Mason	351	125
		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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DRAWN	Rod	12/08/08
REVIEWED	TEH	12/11/08

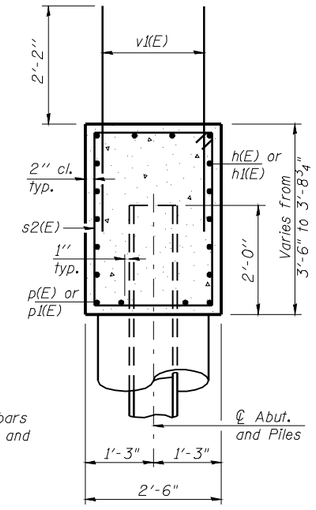
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Notes:
Pour steps monolithically with cap.

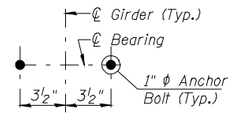
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION
(Looking North)



SEC. THRU ABUT.

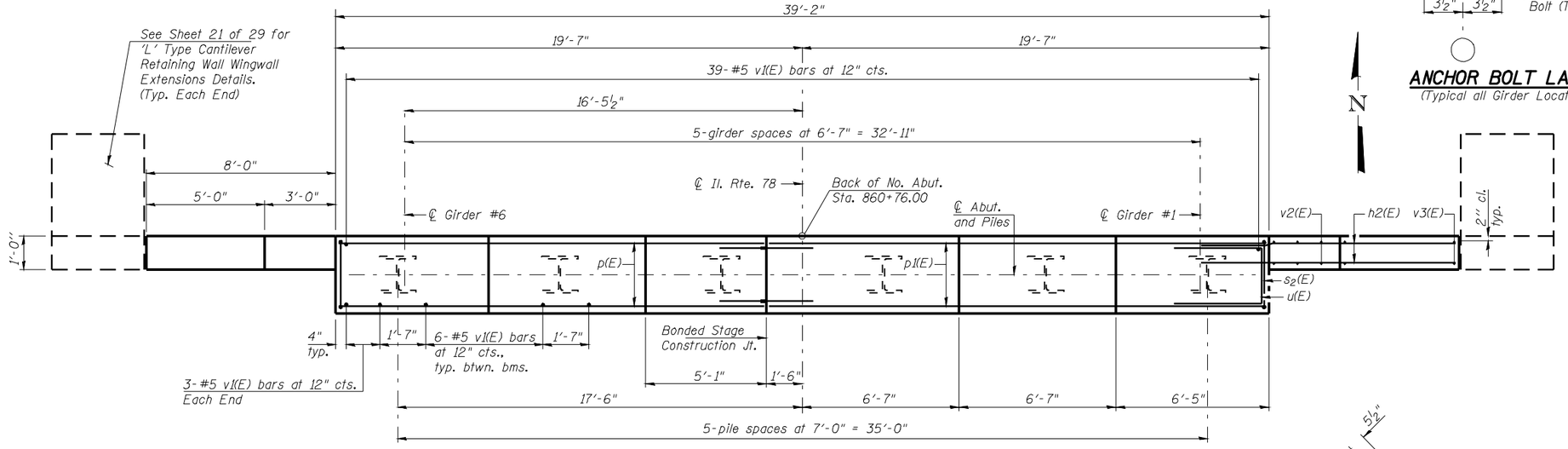


ANCHOR BOLT LAYOUT
(Typical all Girder Locations)

BILL OF MATERIAL (No. Abut.)

Bar	No.	Size	Length	Shape
h(E)	10	#7	17'-9"	——
h1(E)	10	#7	20'-9"	——
h2(E)	56	#7	11'-3"	——
p(E)	8	#8	17'-9"	——
p1(E)	8	#8	20'-9"	——
s2(E)	59	#5	11'-7"	□
u(E)	8	#6	7'-3"	⊐
v1(E)	75	#5	4'-4"	——
v2(E)	12	#5	8'-3"	——
v3(E)	12	#5	14'-0"	——
Structure Excavation		Cu. Yd.	52	
Concrete Structures		Cu. Yd.	17.8	
Reinforcement Bars, Epoxy Coated		Pound	4310	
Furnishing Steel Piles, HP14x89		Foot	375	
Driving Piles		Foot	375	
Test Pile, HP14x89		Each	1	
Concrete Encasement		Cu. Yd.	3.3	
Pile Shoes		Each	6	

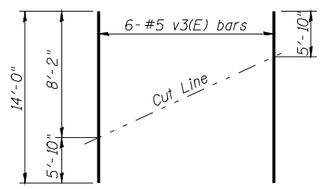
For details of Bar Splicers, see sheet 24 of 29.
For details of piles and Concrete Encasement, see sheet 25 of 29.



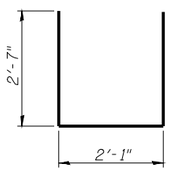
PLAN

PILE DATA

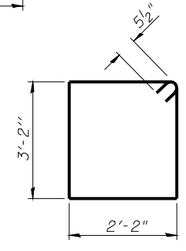
Type:	HP14x89
Nominal Required Bearing:	705 Kips
Factored Resistance Available:	327 Kips
Est. Length:	75 Feet
No. Production Piles:	5
No. Test Piles:	1 (In Stage 1 Area)



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



BAR u(E)



BAR s2(E)

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JOB NO. 07S2026
DATE 03/27/09
SHEET NO. 19
29 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
614	144(B-1, B-2)	Mason	351	126
		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

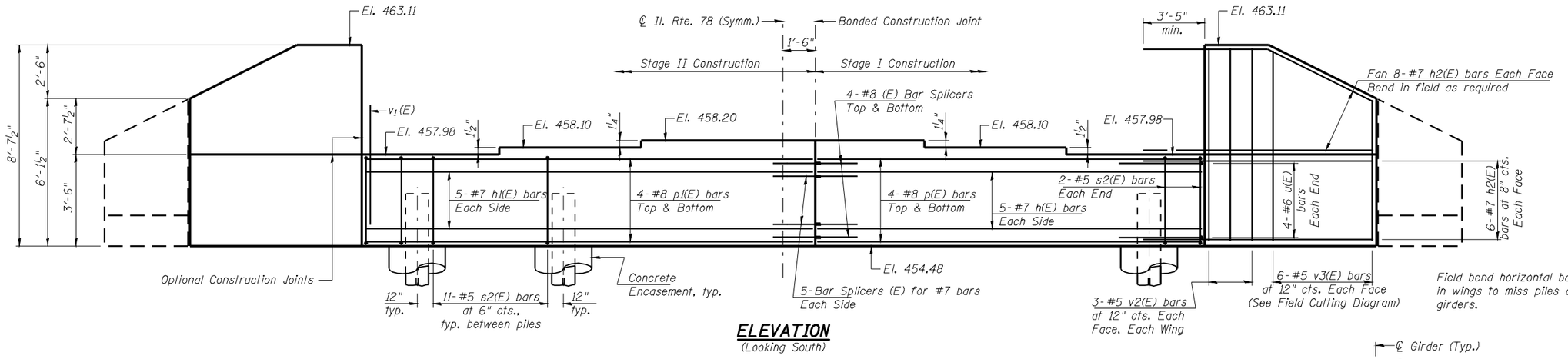
NORTH ABUTMENT
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

LAYOUT	MNM	11/06/08
DRAWN	Rod	12/12/08
REVIEWED	TEH	12/19/08

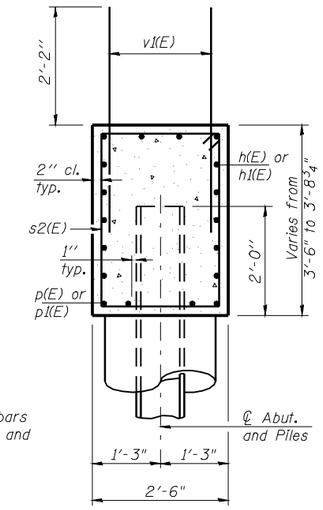
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Notes:
Pour steps monolithically with cap.

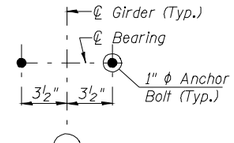
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



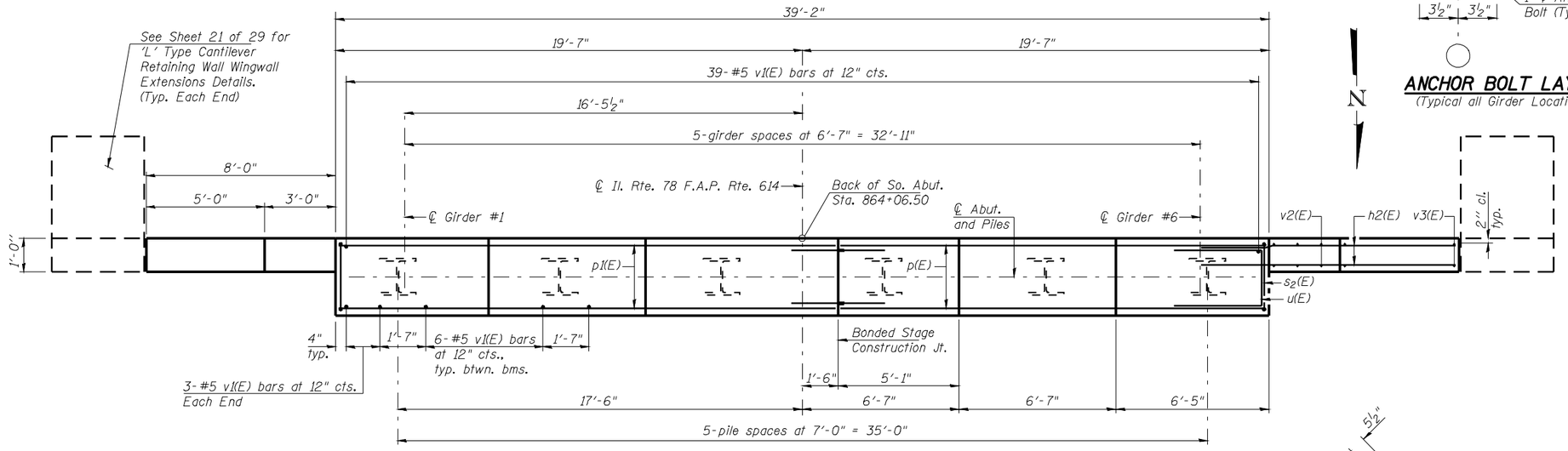
ELEVATION
(Looking South)



SEC. THRU ABUT.



ANCHOR BOLT LAYOUT
(Typical all Girder Locations)



PLAN

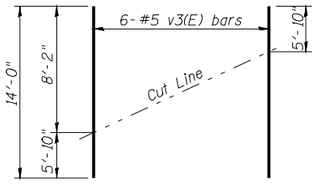
BILL OF MATERIAL (So. Abut.)

Bar	No.	Size	Length	Shape
h(E)	10	#7	17'-9"	———
h1(E)	10	#7	20'-9"	———
h2(E)	56	#7	11'-3"	———
p(E)	8	#8	17'-9"	———
p1(E)	8	#8	20'-9"	———
s2(E)	59	#5	11'-7"	□
u(E)	8	#6	7'-3"	⊐
v1(E)	75	#5	4'-4"	———
v2(E)	12	#5	8'-3"	———
v3(E)	12	#5	14'-0"	———
Structure Excavation			Cu. Yd.	52
Concrete Structures			Cu. Yd.	17.8
Reinforcement Bars, Epoxy Coated			Pound	4310
Furnishing Steel Piles, HP14x89			Foot	365
Driving Piles			Foot	365
Test Pile, HP14x89			Each	1
Concrete Encasement			Cu. Yd.	3.3
Pile Shoes			Each	6

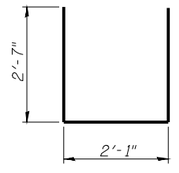
For details of Bar Splicers, see sheet 24 of 29.
For details of piles and Concrete Encasement, see sheet 25 of 29.

PILE DATA

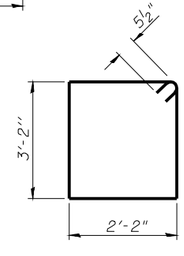
Type:	HP14x89
Nominal Required Bearing:	705 Kips
Factored Resistance Available:	352 Kips
Est. Length:	73 Feet
No. Production Piles:	5
No. Test Piles:	1 (In Stage 1 Area)



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



BAR u(E)



BAR s2(E)

SOUTH ABUTMENT
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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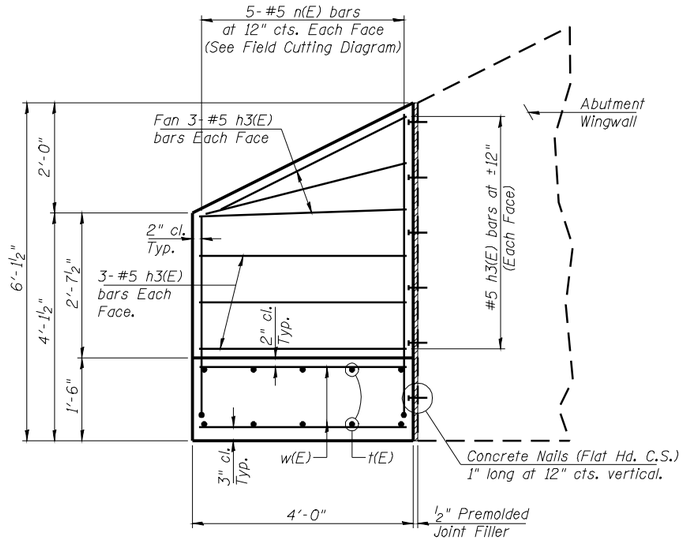
JOB NO. 07S2026
DATE 03/27/09
SHEET NO. 20
29 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
614	144(B-1, B-2)	Mason	351	127
		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

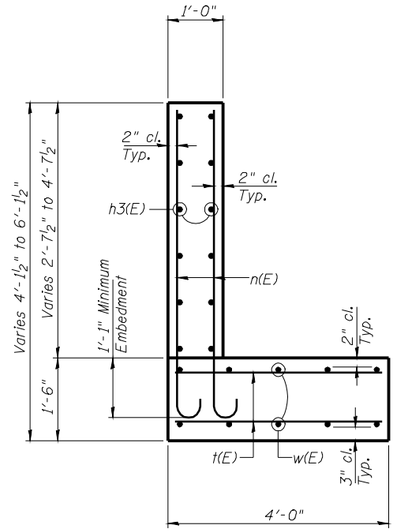
LAYOUT	MNM	11/06/08
DRAWN	Rod	12/11/08
REVIEWED	TEH	12/19/08

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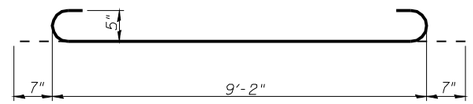
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION



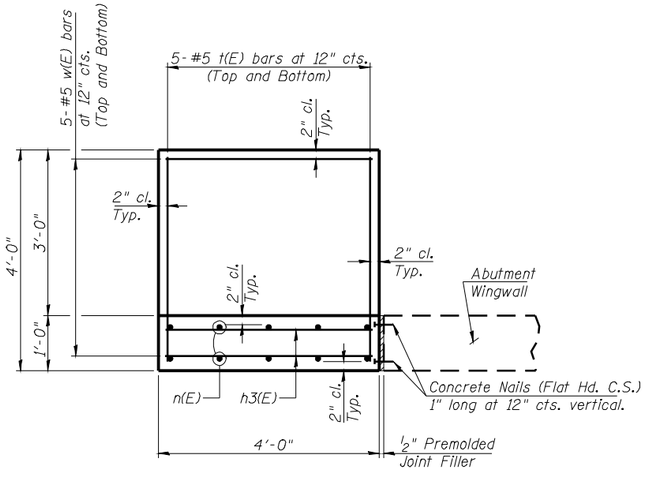
SECTION THRU WALL



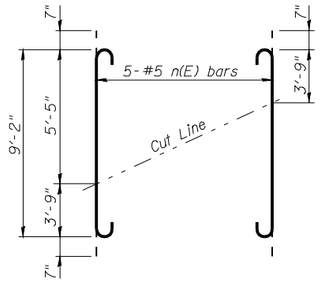
BAR n(E)

BILL OF MATERIAL
4 WINGWALL EXTENSIONS

Bar	No.	Size	Length	Shape
h3(E)	48	#5	3'-8"	
n(E)	20	#5	10'-4"	
t(E)	40	#5	3'-8"	
w(E)	40	#5	3'-8"	
Structure Excavation			Cu. Yd.	42
Concrete Structures			Cu. Yd.	5.7
Reinforcement Bars, Epoxy Coated			Pound	710



PLAN



FIELD CUTTING DIAGRAM

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

'L' TYPE RETAINING WALL WING EXTENSIONS
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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JOB NO. 07S2026
DATE 03/27/09

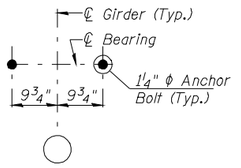
SHEET NO. 21
29 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
614	144(B-1, B-2)	Mason	351	128
		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

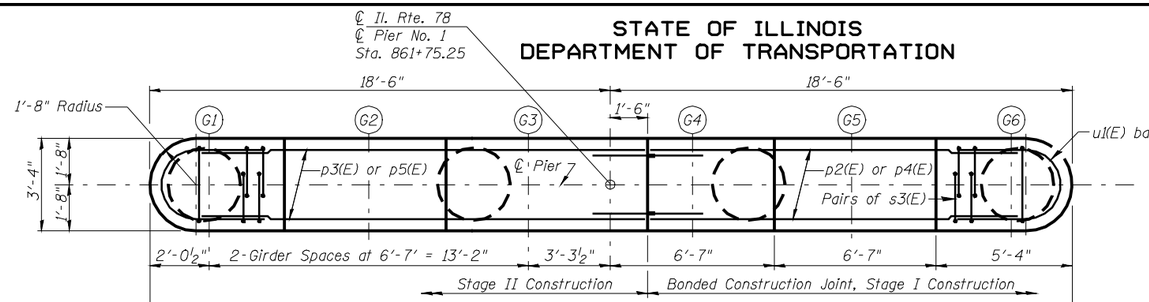
LAYOUT	MNM	11/06/08
DRAWN	Rod	12/12/08
REVIEWED	TEH	12/19/08

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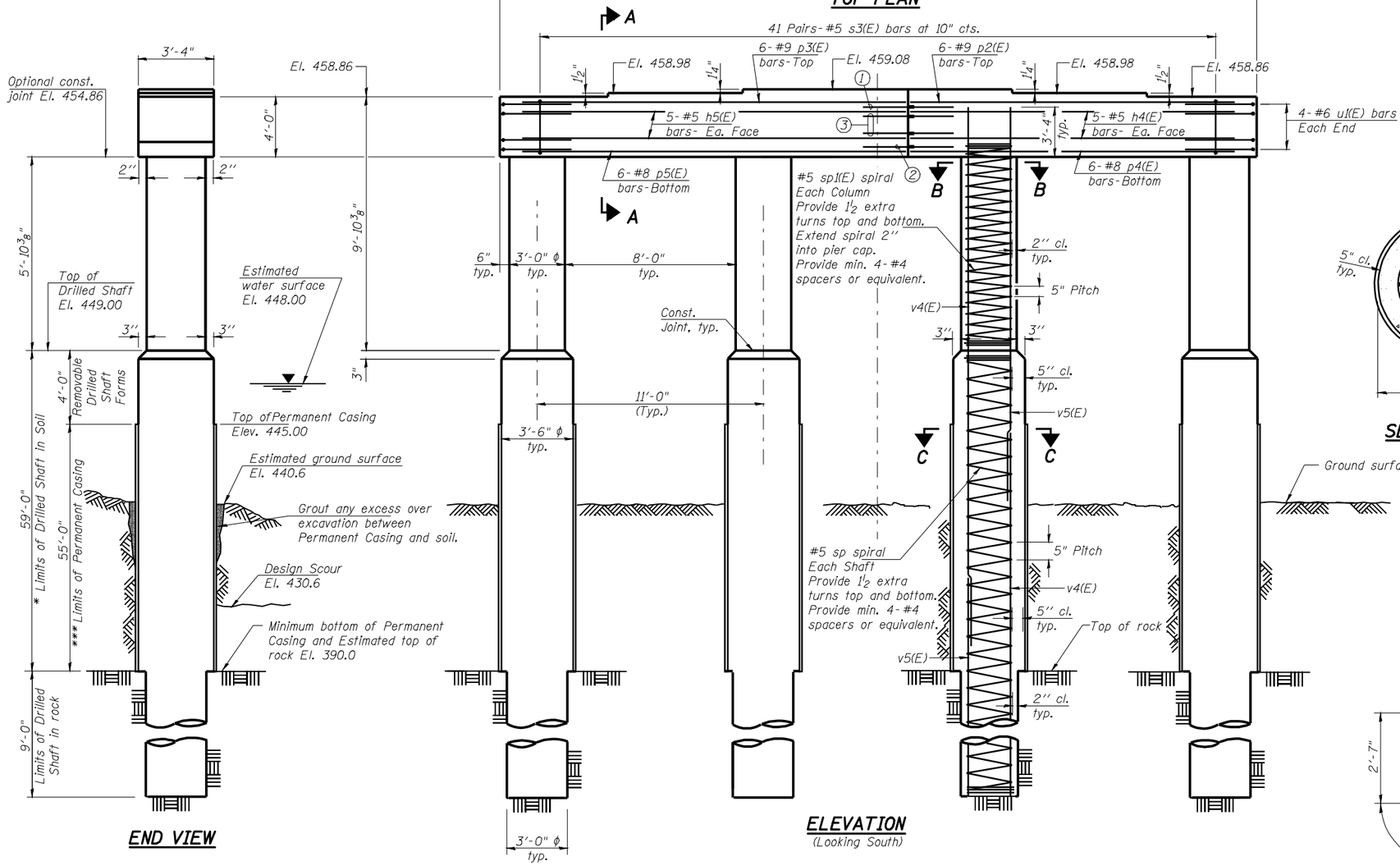
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ANCHOR BOLT LAYOUT
(Typical all Girder Locations)



TOP PLAN



ELEVATION
(Looking South)

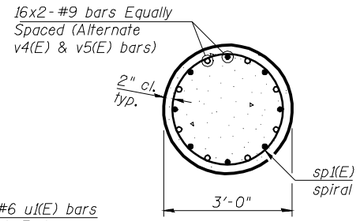
END VIEW

*** Contractor is responsible for determining the casing thickness and the actual tip elevation to be used. See Article 516.06(d) of the Standard Specifications.
Pay limits for the Permanent Casing shall be based on the minimum length shown.

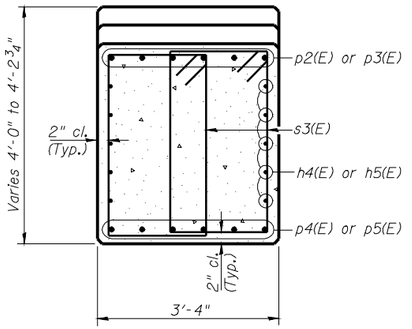
* If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

BAR SPLICER PLACEMENT

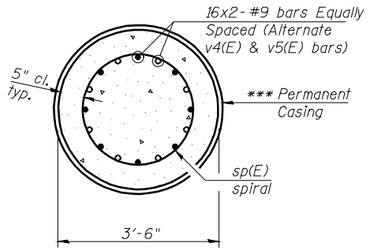
① = 6-Bar Splicers (E) for #9 bars Top
② = 6-Bar Splicers (E) for #8 bars Bottom
③ = 5-Bar Splicers (E) for #5 bars Each Side



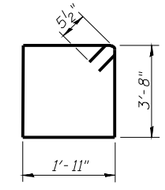
SECTION B-B



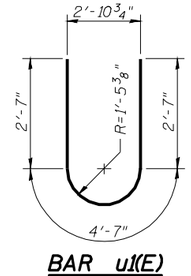
SECTION A-A



SECTION C-C



BAR s3(E)



BAR u1(E)

BILL OF MATERIAL (Pier 1)

	Bar	No.	Size	Length	Shape
	h4(E)	10	#5	15'-3"	
	h5(E)	10	#5	18'-3"	
	p2(E)	6	#9	15'-3"	
	p3(E)	6	#9	18'-3"	
	p4(E)	6	#8	15'-3"	
	p5(E)	6	#8	18'-3"	
	s3(E)	82	#5	12'-1"	
**	sp	4	#5	68'-0"	
**	sp1(E)	4	#5	6'-0"	
	u1(E)	8	#6	9'-9"	
	v4(E)	64	#9	49'-0"	
	v5(E)	64	#9	34'-0"	
	Concrete Structures			Cu. Yd.	24.6
	Reinforcement Bars, Epoxy Coated			Pound	21410
	Reinforcement Bars			Pounds	5980
	Drilled Shaft in Soil			Cu. Yd.	84.1
	Drilled Shaft in Rock			Cu. Yd.	9.4
	Permanent Casing			Foot	220

Cast steps monolithically with cap.
Space cap reinforcement to miss anchor bolts.
Minimum lap for spirals = 2'-6"
** Length is height of spiral.

Note Well:
Casings shall not be installed using vibratory methods within 30 feet of any part of an existing foundation. See the special provisions for Drilled Shaft Casing Installation.

PIER NO. 1
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

LAYOUT	MNM	11/13/08
DRAWN	Rod	12/15/08
REVIEWED	TEH	12/19/08

Mon 3/2009 07:58:09 AM
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PROFESSIONAL DESIGN FIRM LICENSE #184-001084

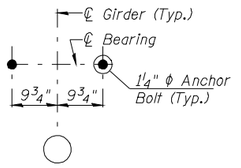
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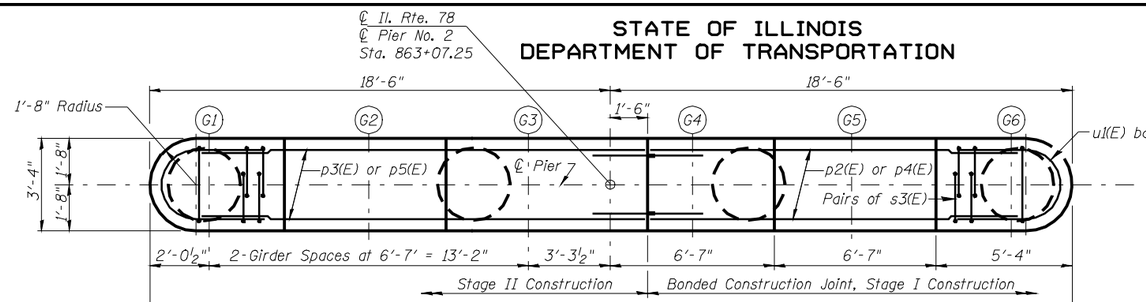
JOB NO. 07S2026
DATE 03/27/09
SHEET NO. 22
29 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
614	144(B-1, B-2)	Mason	351	129
		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

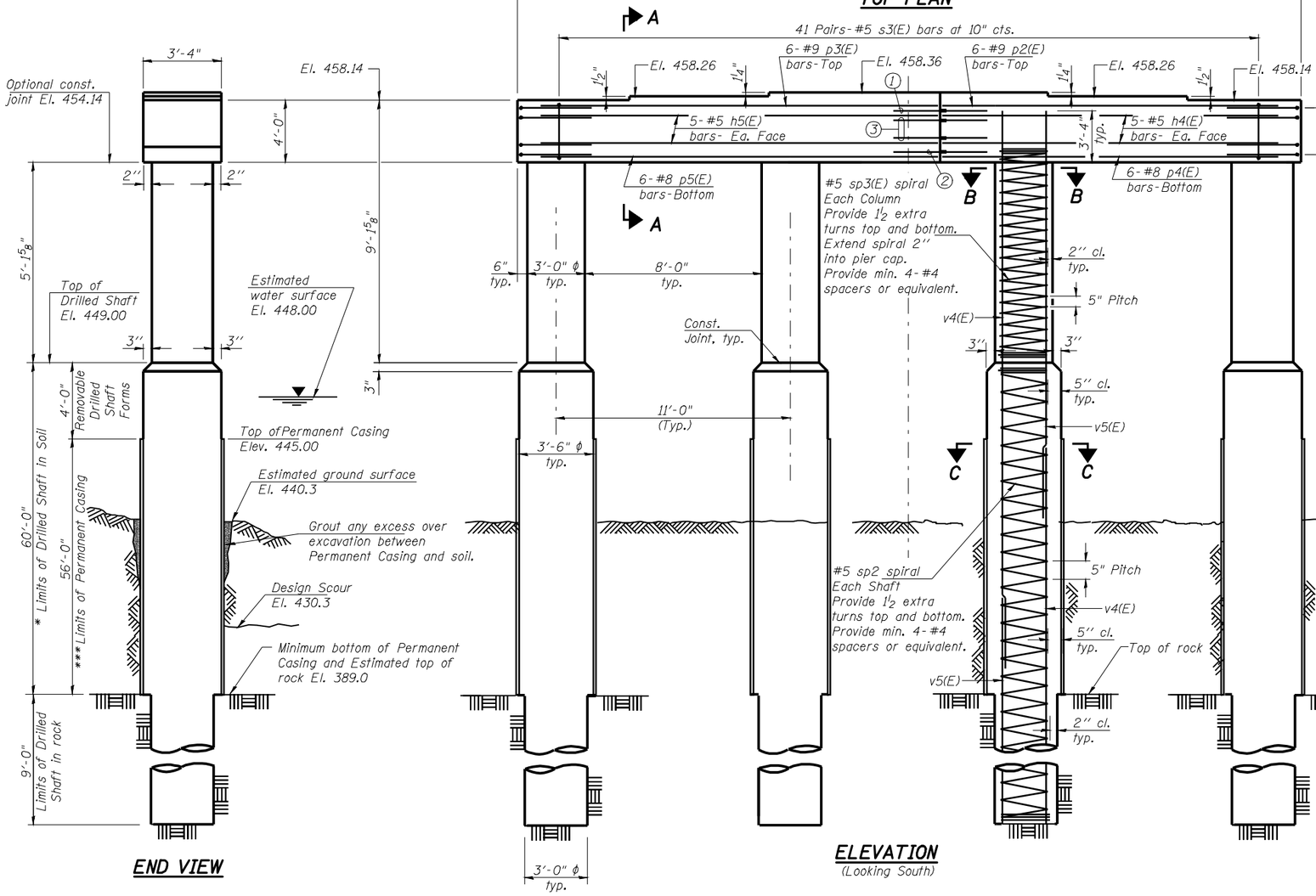
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ANCHOR BOLT LAYOUT
(Typical all Girder Locations)



TOP PLAN



END VIEW

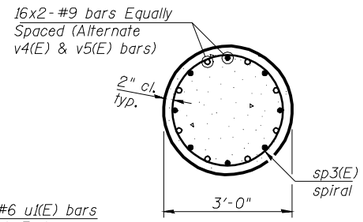
ELEVATION
(Looking South)

*** Contractor is responsible for determining the casing thickness and the actual tip elevation to be used. See Article 516.06(d) of the Standard Specifications.
Pay limits for the Permanent Casing shall be based on the minimum length shown.

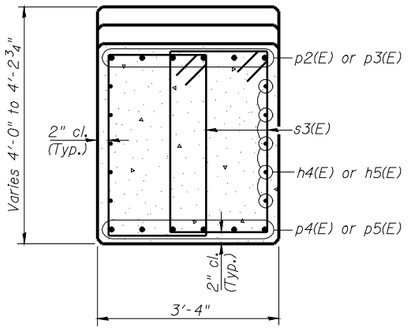
* If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

BAR SPLICER PLACEMENT

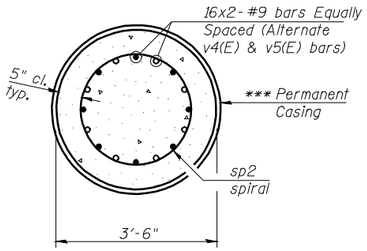
① = 6-Bar Splicers (E) for #9 bars Top
② = 6-Bar Splicers (E) for #8 bars Bottom
③ = 5-Bar Splicers (E) for #5 bars Each Side



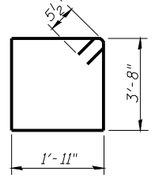
SECTION B-B



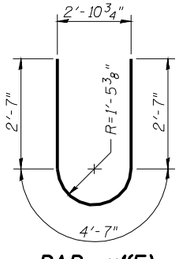
SECTION A-A



SECTION C-C



BAR s3(E)



BAR u1(E)

BILL OF MATERIAL (Pier 2)

	Bar	No.	Size	Length	Shape
	h4(E)	10	#5	15'-3"	—
	h5(E)	10	#5	18'-3"	—
	p2(E)	6	#9	15'-3"	—
	p3(E)	6	#9	18'-3"	—
	p4(E)	6	#8	15'-3"	—
	p5(E)	6	#8	18'-3"	—
	s3(E)	82	#5	12'-1"	□
**	sp2	4	#5	69'-0"	∧∧∧
**	sp3(E)	4	#5	5'-6"	∧∧∧
	u1(E)	8	#6	9'-9"	⊃
	v4(E)	64	#9	49'-0"	—
	v5(E)	64	#9	34'-0"	—
	Concrete Structures			Cu. Yd.	23.8
	Reinforcement Bars, Epoxy Coated			Pound	21360
	Reinforcement Bars			Pounds	6070
	Drilled Shaft in Soil			Cu. Yd.	85.5
	Drilled Shaft in Rock			Cu. Yd.	9.4
	Permanent Casing			Foot	224

Cast steps monolithically with cap.
Space cap reinforcement to miss anchor bolts.
Minimum lap for spirals = 2'-6"
** Length is height of spiral.

Note Well:
Casings shall not be installed using vibratory methods within 30 feet of any part of an existing foundation. See the special provisions for Drilled Shaft Casing Installation.

PIER NO. 2
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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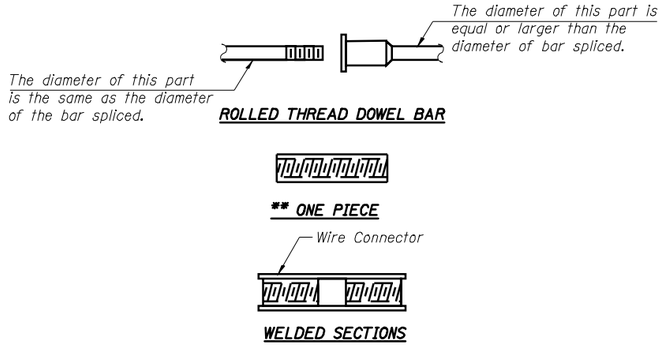
JOB NO. 07S2026
DATE 03/27/09
SHEET NO. 23
29 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
614	144(B-1, B-2)	Mason	351	130
		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

LAYOUT	MNM	11/13/08
DRAWN	Rod	12/15/08
REVIEWED	TEH	12/19/08

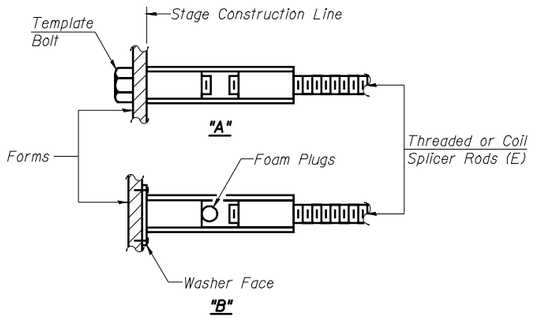
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



BAR SPLICER ASSEMBLY ALTERNATIVES

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



INSTALLATION AND SETTING METHODS

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

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.

Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.

All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.

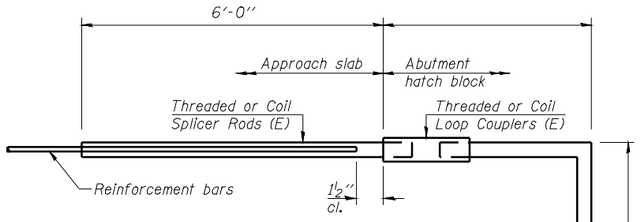
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

① Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_t$

② Minimum *Pull-out Strength (Tension in kips) = $0.66 \times f_y \times A_t$

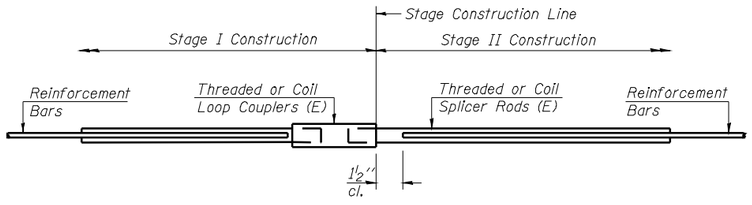
Where f_y = Yield strength of lapped reinforcement bars in ksi.
A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	7.9
#5	2'-2"	23.0	12.3
#6	2'-7"	33.1	17.4
#7	3'-5"	45.1	23.8
#8	4'-6"	58.9	31.3
#9	5'-9"	75.0	39.6
#10	7'-3"	95.0	50.3
#11	9'-0"	117.4	61.8



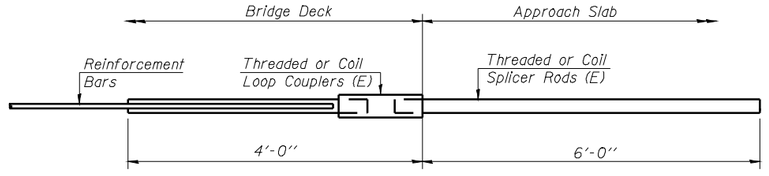
FOR STUB ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required =



STANDARD

Bar Size	No. Assemblies Required	Location
#5	1007	Superstructure
#6	14	End Diaphragms
#8	16	Abutment Caps
#7	20	Abutment Caps
#9	12	Pier Caps
#8	12	Pier Caps
#5	20	Pier Caps



FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required = 74

BAR SPLICER ASSEMBLY DETAILS
F.A.P. 614 (IL 78) OVER WOLF LAKE (PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

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JOB NO. 07S2026
DATE 03/27/09
SHEET NO. 24
29 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

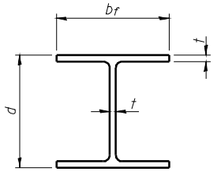
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DRAWN	Rod	12/15/08
REVIEWED	TEH	12/19/08

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BSD-1

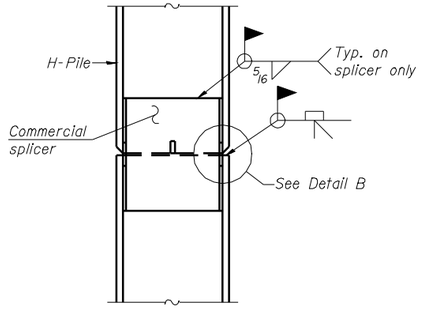
10-1-08

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

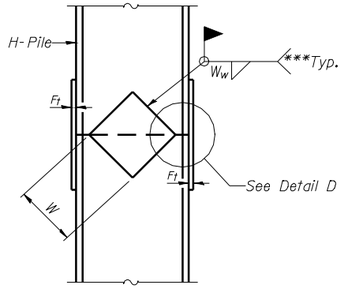


STEEL PILE TABLE

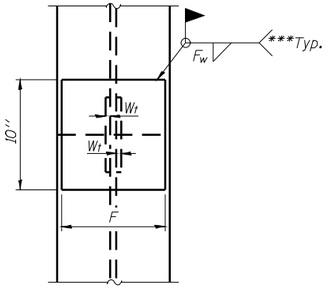
Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4''	14 7/8''	13/16''	30''
x102	14''	14 3/4''	11/16''	30''
x89	13 7/8''	14 3/4''	5/8''	30''
x73	13 5/8''	14 5/8''	1/2''	30''
HP 12x84	12 1/4''	12 1/4''	11/16''	24''
x74	12 1/8''	12 1/4''	5/8''	24''
x63	12''	12 1/8''	1/2''	24''
x53	11 3/4''	12''	7/16''	24''
HP 10x57	10''	10 1/4''	9/16''	24''
x42	9 3/4''	10 1/8''	7/16''	24''
HP 8x36	8''	8 1/8''	7/16''	18''



ELEVATION

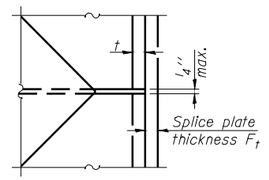


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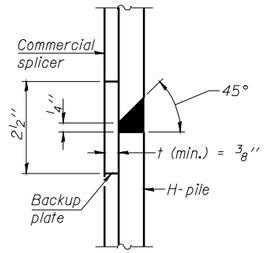


END VIEW

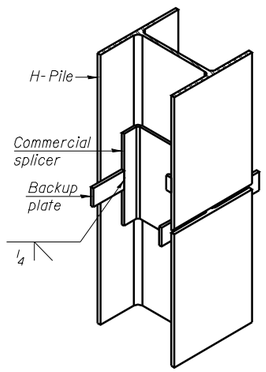
Designation	F	F_t	F_w	W	W_t	W_w
HP 14x117	12 1/2''	1''	7/8''	7 3/4''	5/8''	1/2''
x102	12 1/2''	7/8''	3/4''	7 3/4''	5/8''	1/2''
x89	12 1/2''	3/4''	11/16''	7 3/4''	5/8''	1/2''
x73	12 1/2''	5/8''	9/16''	7 3/4''	5/8''	1/2''
HP 12x84	10''	7/8''	11/16''	6 1/2''	5/8''	1/2''
x74	10''	7/8''	11/16''	6 1/2''	5/8''	1/2''
x63	10''	5/8''	1/2''	6 1/2''	1/2''	3/8''
x53	10''	5/8''	1/2''	6 1/2''	1/2''	3/8''
HP 10x57	8''	3/4''	9/16''	5 1/4''	1/2''	3/8''
x42	8''	5/8''	9/16''	5 1/4''	1/2''	3/8''
HP 8x36	7''	5/8''	7/16''	4 1/4''	1/2''	3/8''



DETAIL D

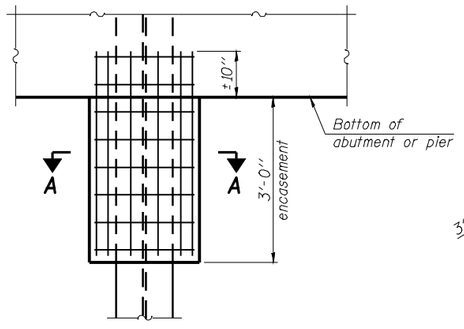


DETAIL "B"



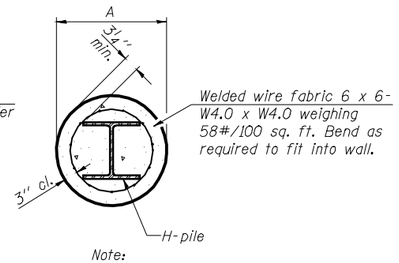
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



ELEVATION

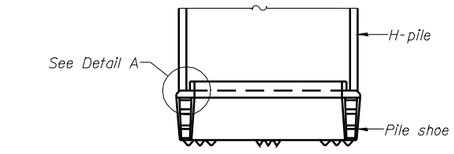
WELDED PLATE FIELD SPLICE



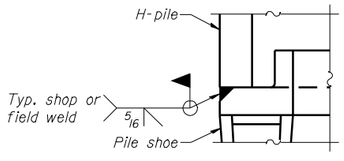
Note:
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A

PILE ENCASEMENT

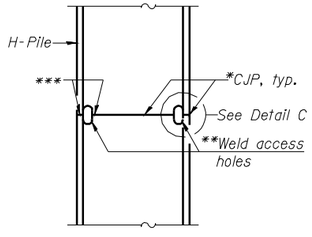


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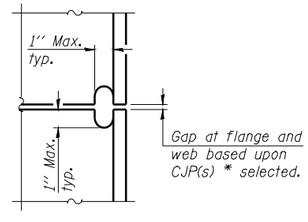


DETAIL A

H-PILE SHOE ATTACHMENT



ELEVATION



DETAIL C

COMPLETE PENETRATION WELD SPLICE

* Use joint conforming to Figure 3.4 in AWS D1.1, Structure Welding Code - Steel.
** Preparation per Fig. 5.2 in AWS D1.1, Structure Welding Code - Steel.
*** Interrupt welds 1/4'' from end of each pile.

Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.

HP PILE DETAILS
F.A.P. 614 (IL 78) OVER WOLF LAKE (PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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JOB NO. 07S2026
DATE 03/27/09
SHEET NO. 25
29 SHEETS

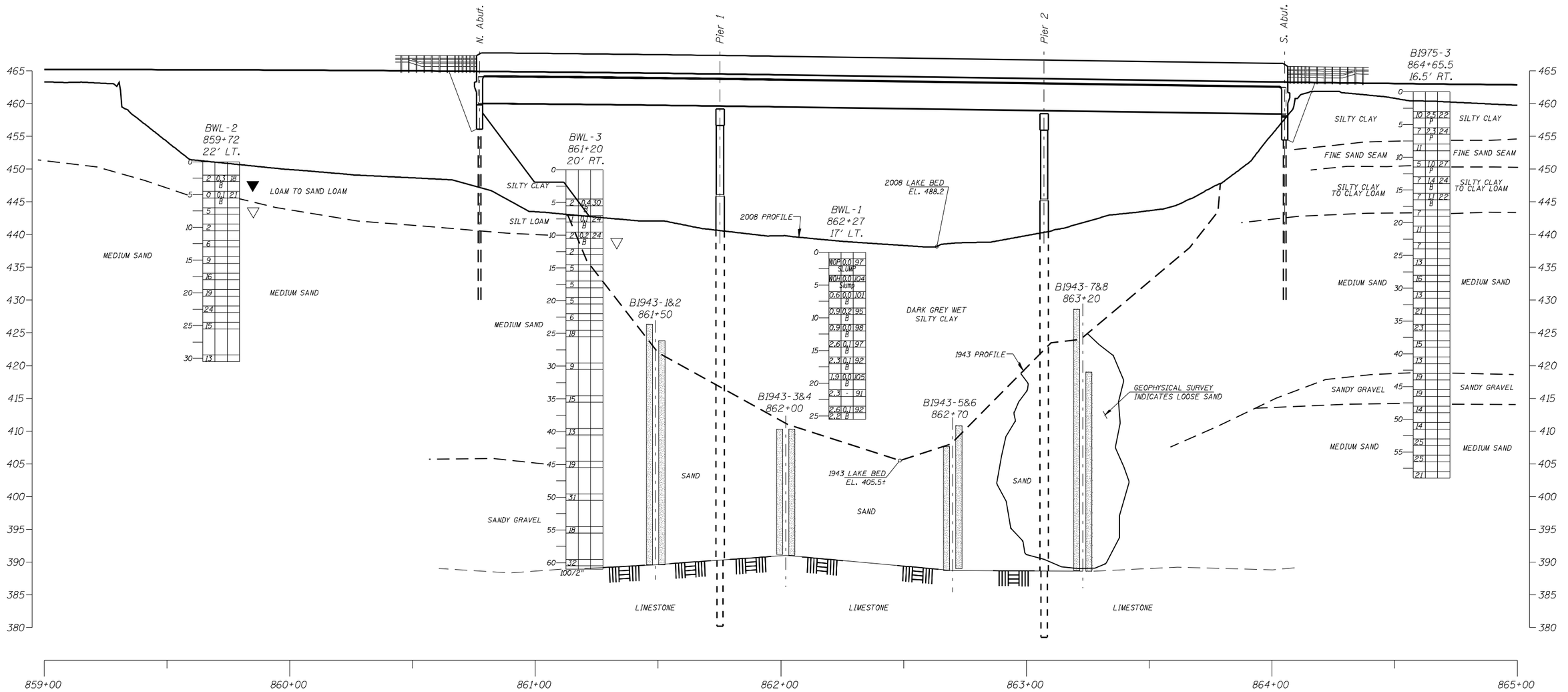
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
614	144(B-1, B-2)	Mason	351	132
		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

LAYOUT	MNM	11/13/08
DRAWN	Rod	12/15/08
REVIEWED	TEH	12/19/08

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F-HP 10-1-08

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



LEGEND

DEPTH

N | Qu tsf | w %

▽ = GROUNDWATER FIRST ENCOUNTER

▼ = GROUNDWATER AFTER 4 DAYS

NOTES:

NO TEST DATA IS AVAILABLE FOR 1943 BORINGS.

REFER TO SN 009-0510 BORINGS 0510-P3 AND 0510-P6 FOR ROCK CORE DATA.

SUB-SURFACE PROFILE
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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JOB NO. 07S2026

DATE 03/27/09

SHEET NO. 26

29 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
614	144(B-1, B-2)	Mason	351	133
		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

LAYOUT	Rod	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	-

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Illinois Department of Transportation
Division of Highways
District 6

SOIL BORING LOG

Page 1 of 1

Date 091208
091308

ROUTE FA 614 (IL 78) DESCRIPTION IL 78 over Wolf Lake LOGGED BY M. Teppan

SECTION 144EB-1 LOCATION SE 14, SEC. 19, TWP. 19 N, RNG. 9 W, 3 PM

COUNTY Mason DRILLING METHOD Washed Driven Casing HAMMER TYPE 45 lb w/30" Fall Manual

STRUCT. NO. 063-0500
Station 862+41

BORING NO. WL1
Station 862+27
Offset 17.0ft LT
Ground Surface Elev. 437.3 ft

Surface Water Elev. 444.8 ft
Stream Bed Elev. 437.3* ft
Groundwater Elev.:
▽ First Encounter No Encounter ft
▼ Upon Completion Washed ft
▼ After Hrs. Casing Pulled ft

DEPTH (ft)	BLOWS /6"	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS /6"	UCS Qu (tsf)	MOIST (%)
Grey Wet SILTY CLAY				Grey Wet SILTY CLAY (continued)			
	W						
with some organics	O	0.0	97	Dark Grey Wet SILTY CLAY with Blocky Structure	0.6		
	P	Slump		Sample Broke	1.0	-	91
					1.3		
	W			CASING REFUSAL	0.3		
Dark Grey	O	0.0	104		1.3	0.1	92
-5	H	Slump		-35	1.3	B	
				411.80	2.2		
	0			Boring Completed			
	0.3	0.0	101	Casing OD = 2 7/8"			
	0.3	B		Casing Wall thickness = 14"			
				NOTE: BLOW COUNTS SHOWN ARE THE RESULT OF MULTIPLYING THE 45 LB HAMMER BLOWS BY 0.3 TO ADJUST DATA TO REFLECT BLOWS RESULTING FROM A STANDARD 140 LB HAMMER.			
	WOH						
with blocky structure	0.6	0.2	95				
-10	0.3	B		-30			
	WOH						
Dark Grey Wet SILTY CLAY with Blocky Structure	0.6	0.0	98				
	0.3	B					
	WOH						
	1.3	0.1	97				
-15	1.3	B		-35			
End 091208							
Begin 091308							
	0.6						
CLASSIFICATION WL1-1	1.3	0.1	93				
41 % CLAY	1.0	B					
55 % SILT							
LL = 72 PI = 39							
	WOH						
	0.6	0.0	105				
-20	1.3	B		-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, E-Estimated)
Abbreviations W.O.H – Sampler Advanced By Weight of Hammer, W.O.P – Advanced by Weight of Pipe, B.S. – Before Seating
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) BBS, from 137 (Rev. 8-98)

File Name: S:\SOILBORE\BORE\WOLFBRG.DGN DATE: 3.26.2009 USER: Dan Temples DATUM: NAD83 (CORS96) (Feet)
Lattitude: 40°12'13.0" Longitude: 89°51'33.9" Datum: NAD83 Adj. To Monitor 2.5-96.00-07

Illinois Department of Transportation
Division of Highways
District 6

SOIL BORING LOG

Page 1 of 1

Date 091308

ROUTE FA 614 (IL 78) DESCRIPTION IL 78 over Wolf Lake LOGGED BY M. Teppan

SECTION 144EB-1 LOCATION SE 14, SEC. 19, TWP. 19 N, RNG. 9 W, 3 PM

COUNTY Mason DRILLING METHOD HSA HAMMER TYPE 140# Auto

STRUCT. NO. 063-0500
Station 862+41

BORING NO. WL2
Station 859+72
Offset 22.0ft LT
Ground Surface Elev. 451.1 ft

Surface Water Elev. 444.8 ft
Stream Bed Elev. 437.3* ft
Groundwater Elev.:
▽ First Encounter 444.1 ft
▼ Upon Completion Washed ft
▼ After 4 Days Hrs. 448.1 ft

DEPTH (ft)	BLOWS /6"	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS /6"	UCS Qu (tsf)	MOIST (%)
Black Moist LOAM				Medium SAND (continued)	10		
0	1	0.3	15	Tan With Some Pea Gravel	9		
	1	B		Washed	13		
▼ 447.60					11		
Very Dark Grey Very Moist SAND LOAM	0			Brown Medium to Coarse Sand	5		
-5	0	0.1	21	with Some Medium Pea Gravel	6		
	0	B		-35 Washed	9		
▽ 444.10	1						
Medium SAND	2						
Grey	3						
Free Water							
	0			Washed	3		
-10	1			-40	5		
	1			430.60	5		
				Boring Completed			
With Some Pea Gravel	0						
Washed	2						
	4						
Tan Medium SAND With Some	1						
Pea Gravel	4						
-15 Washed	5			-45			
	5						
	6						
	10						
Washed	6						
-20	9			-50			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, E-Estimated)
Abbreviations W.O.H – Sampler Advanced By Weight of Hammer, W.O.P – Advanced by Weight of Pipe, B.S. – Before Seating
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) BBS, from 137 (Rev. 8-98)

File Name: S:\SOILBORE\BORE\WOLFBRG.DGN DATE: 3.26.2009 USER: Dan Temples DATUM: NAD83 (CORS96) (Feet)
Lattitude: 40°12'13.0" Longitude: 89°51'33.9" Datum: NAD83 Adj. To Monitor 2.5-96.00-07

LAYOUT	TEH	12/22/08
DRAWN	DAP	12/23/08
REVIEWED	TEH	-

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BORINGS (Sheet 1 of 3)
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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JOB NO. 07S2026
DATE 03/27/09

SHEET NO. 27
29 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
614	144(B-1, B-2)	Mason	351	134
		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Illinois Department of Transportation
Division of Highways
District 6

SOIL BORING LOG

Page 1 of 2

Date 9/2/08

ROUTE FA 614 (IL 78) DESCRIPTION IL 78 over Wolf Lake LOGGED BY M. Teppen

SECTION 144BR-1 LOCATION SE 1/4, SEC. 19, TWP. 19 N, RNG. 9 W, 3 PM

COUNTY Mason DRILLING METHOD HSA HAMMER TYPE 140# Auto

STRUCT. NO. 063-0500
Station 862+41

BORING NO. WL3
Station 861+20
Offset 20.0ft RT
Ground Surface Elev. 449.9 ft

Surface Water Elev. 444.5 ft
Stream Bed Elev. 437.3* ft

Groundwater Elev.:
▽ First Encounter 439.4 ft
▼ Upon Completion Washed ft
▼ After Hrs. Plugged ft

DEPTH (ft)	BLOWS /6"	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS /6"	UCS Qu (tsf)	MOIST (%)
Dark Grey to Brown and Grey Moist SILTY CLAY				Fine to Medium Clean SAND (continued)	2		
					4		
(Auger Seat Past First Sample Interval)				Tan Medium Clean SAND with some Small Pea Gravel Washed	3		
	1				3		
-5	1	0.4	30	Washed	6		
	1	B			7		
443.90					11		
Light Grey Very Moist SILT LOAM							
	1						
	0	0.1	34				
	1	B					
	1				2		
-10	1	0.2	34	Washed	3		
with Grey Clean Medium Sand ▽ 439.40	1	B			6		
Fine to Medium Clean SAND							
	0						
Tan	1						
Free Water	1						
	4				5		
Washed -25	3			Washed	6		
	2				9		
	1						
Washed	2						
	3						
Tan Medium Clean SAND with some Small Pea Gravel Washed							
	5				5		
-30	3			Washed -40	6		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, E-Estimated)
Abbreviations W.O.H – Sampler Advanced By Weight of Hammer, W.O.P – Advanced by Weight of Pipe, B.S. – Before Seating
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
District 6

SOIL BORING LOG

Page 2 of 2

Date 9/2/08

ROUTE FA 614 (IL 78) DESCRIPTION IL 78 over Wolf Lake LOGGED BY M. Teppen

SECTION 144BR-1 LOCATION SE 1/4, SEC. 19, TWP. 19 N, RNG. 9 W, 3 PM

COUNTY Mason DRILLING METHOD HSA HAMMER TYPE 140# Auto

STRUCT. NO. 063-0500
Station 862+41

BORING NO. WL3
Station 861+20
Offset 20.0ft RT
Ground Surface Elev. 449.9 ft

Surface Water Elev. 444.5 ft
Stream Bed Elev. 437.3* ft

Groundwater Elev.:
▽ First Encounter 439.4 ft
▼ Upon Completion Washed ft
▼ After Hrs. Plugged ft

DEPTH (ft)	BLOWS /6"	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS /6"	UCS Qu (tsf)	MOIST (%)
Fine to Medium Clean SAND (continued)	7			Brown Medium SANDY GRAVEL 398.40	25		
				(continued) 398.90	100/2"		
				Light Grey Very Well Indurated Cherty LIMESTONE			
				Auger Refusal - Boring Completed			
408.90							
Brown Medium SANDY GRAVEL	9						
Medium to Course -45	9						
Washed	10						
Brown Medium SANDY GRAVEL	5						
Washed -60	13						
	18						
	2						
Brown Medium SANDY GRAVEL -65	5						
Washed	13						
Brown Medium SANDY GRAVEL	9						
Washed -80	7						

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, E-Estimated)
Abbreviations W.O.H – Sampler Advanced By Weight of Hammer, W.O.P – Advanced by Weight of Pipe, B.S. – Before Seating
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) BBS, from 137 (Rev. 8-99)

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LAYOUT	TEH	12/22/08
DRAWN	DAP	12/23/08
REVIEWED	TEH	-

BORINGS (Sheet 2 of 3)
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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JOB NO. 07S2026
DATE 03/27/09

SHEET NO. 28
29 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
614	144(B-1, B-2)	Mason	351	135
		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Illinois Department of Transportation
Division of Highways
District 6

SOIL BORING LOG

Page 1 of 2

Date 05/75

ROUTE FA 614 (IL 78) DESCRIPTION IL 78 over Wolf Lake LOGGED BY D. Brunn

SECTION 144BR-1 LOCATION SE 14, SEC. 19, TWP. 19N, RNG. 9 W, 3 PM

COUNTY Mason DRILLING METHOD HSA HAMMER TYPE 140# Manual

STRUCT. NO. 063-0007
Station 862+30

BORING NO. 1975-3
Station 864+65.5
Offset 18.5ft RT
Ground Surface Elev. 461.8 ft

Surface Water Elev. No Data ft
Stream Bed Elev. No Data ft

Groundwater Elev.:
▽ First Encounter No Data ft
▼ Upon Completion No Data ft
▼ After ____ Hrs. No Data ft

DEPTH (ft)	BLOWS /6"	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS /6"	UCS Qu (tsf)	MOIST (%)
Black Moist SILTY CLAY				SAND (continued)			
				Grey Medium Grained Wet SAND	11		
	10	2.5 P	22	Coarse Grained	7		
-5				-35			
	7	2.3 P	24		13		
w/Clay Loam Seam							
453.30	11				16		
Grey Fine Grained Moist SAND							
-10				-40			
450.80	5	1.0 P	27	Brown Medium Grained Wet SAND	13		
Black Moist SILTY CLAY LOAM							
448.80							
Black Moist SILTY CLAY	7	1.4 B	24		21		
-25				-65			
446.30							
Grey and Brown Moist CLAY LOAM	7	1.1 B	23		23		
443.80							
SAND	7				15		
Grey Fine Grained Wet SAND							
-30				-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, E-Estimated)
Abbreviations W.O.H – Sampler Advanced By Weight of Hammer, W.O.P – Advanced by Weight of Pipe, B.R. – Before Seating
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) BRS, from 137 (Rev. 8-98)

File Name: S:\DOS\LOGS\ BUREAU\BORINGS\063-0007 S. 19 OVER WOLF LAKE.GPJ Date Printed: 3/9/09
Lithon Template Name: 2A Header 8-94.GDT

Illinois Department of Transportation
Division of Highways
District 6

SOIL BORING LOG

Page 2 of 2

Date 05/75

ROUTE FA 614 (IL 78) DESCRIPTION IL 78 over Wolf Lake LOGGED BY D. Brunn

SECTION 144BR-1 LOCATION SE 14, SEC. 19, TWP. 19N, RNG. 9 W, 3 PM

COUNTY Mason DRILLING METHOD HSA HAMMER TYPE 140# Manual

STRUCT. NO. 063-0007
Station 862+30

BORING NO. 1975-3
Station 864+65.5
Offset 18.5ft RT
Ground Surface Elev. 461.8 ft

Surface Water Elev. No Data ft
Stream Bed Elev. No Data ft

Groundwater Elev.:
▽ First Encounter No Data ft
▼ Upon Completion No Data ft
▼ After ____ Hrs. No Data ft

DEPTH (ft)	BLOWS /6"	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS /6"	UCS Qu (tsf)	MOIST (%)
SAND (continued)				Boring Converted to gINT 06/12/2007			
Brown Medium Grained Wet SAND	13						
418.80							
Brown SAND and GRAVEL	19			-65			
-65							
413.80	19						
Brown Medium Grained Wet SAND	14						
-80				-70			
	14						
	25			-75			
-85							
	25						
	21						
402.80							
Boring Completed				-90			
-95							

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, E-Estimated)
Abbreviations W.O.H – Sampler Advanced By Weight of Hammer, W.O.P – Advanced by Weight of Pipe, B.R. – Before Seating
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LAYOUT	TEH	12/22/08
DRAWN	DAP	12/23/08
REVIEWED	TEH	-

BORINGS (Sheet 3 of 3)
F.A.P. 614 (IL 78) OVER WOLF LAKE
(PUBLIC BODY OF WATER)
SECTION 144 (B-2)
MASON COUNTY
STA. 862+41.25
STRUCTURE NUMBER 063-0500

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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JOB NO. 07S2026
DATE 03/27/09

SHEET NO. 29
29 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
614	144(B-1, B-2)	Mason	351	136
		CONTRACT NO. 72A76		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

BM TJM. #3 : Set a "60 d Spike Nail" in West face of P.P. set on East+/- side IL 78; North of North Levee of Sangamon, 1.14 miles North of Illini St. in Chandlerville. NAVD 88 Elev. = 457.05 Ft.

BM TJM. #4 : Set a chiseled "□" in top of N.W. Abut. Wing Wall of bridge #009-0006; on IL 78, 0.47 miles North of Illini St. in Chandlerville. Bridge over Sangamon River overflow. NAVD 88 Elev. = 464.94 Ft.

Existing Structure (No. 009-0005):
Originally constructed in 1931 and re-constructed in 1981. The existing 17 span bridge consists of precast prestressed concrete (PPC) deck beams in 13 approach spans and steel girders in 4 main river spans. Approach spans are supported on pile bents with concrete piles and cap. Main spans are supported on solid concrete piers and footings with timber piles. Overall length of 972' back to back of abutments, and out to out deck width of 33' with 0° skew.
Traffic shall be maintained on this structure during construction of new structure.
No Salvage.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Current Ratings (9/22/08) on File for Existing Structure No. 009-0005
Inventory: HS 6
Operating: HS 10
Live Load Restrictions: No

Inventory and Operating Ratings are provided for information only. Inventory and Operating Ratings are based on HS loading and configuration using the load factor method. Live Load Restrictions are based on Illinois legal loads and configurations. The Ratings and the Live Load Restrictions are not necessarily representative of capacities to support the Contractor's equipment.

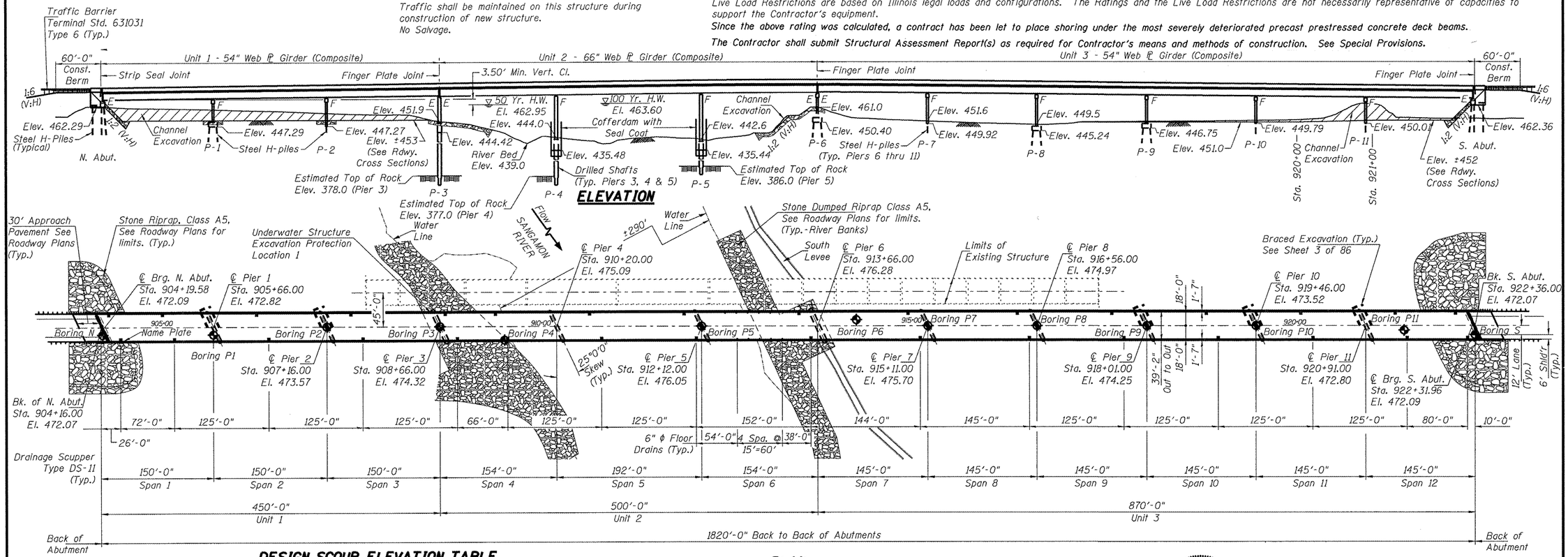
Since the above rating was calculated, a contract has been let to place shoring under the most severely deteriorated precast prestressed concrete deck beams.

The Contractor shall submit Structural Assessment Report(s) as required for Contractor's means and methods of construction. See Special Provisions.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	137
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 1
86 SHEETS

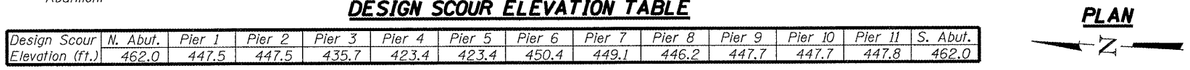
Contract #72A76



DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	N. Abut.	Pier 1	Pier 2	Pier 3	Pier 4	Pier 5	Pier 6	Pier 7	Pier 8	Pier 9	Pier 10	Pier 11	S. Abut.
	462.0	447.5	447.5	435.7	423.4	423.4	450.4	449.1	446.2	447.7	447.7	447.8	462.0

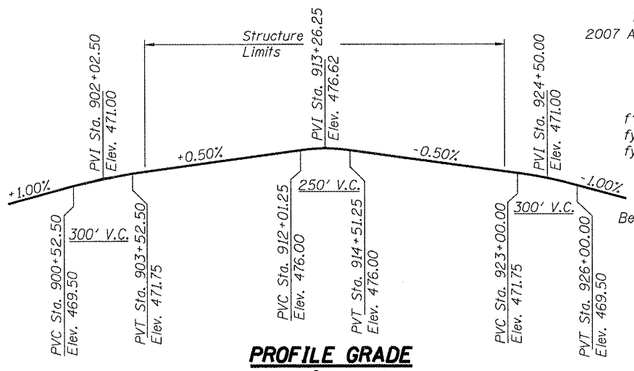
PLAN



WATERWAY INFORMATION

Drainage Area = 5215 Sq. Miles
Ex. Low Grade Elev. 464.43 @ Sta. 906+25
Pr. Low Grade Elev. 466.50 @ Sta. 892+00

Frequency Year	Structure	Discharge C.F.S. Exist.	Discharge C.F.S. Prop.	Waterway Opening Sq. Ft. Exist.	Waterway Opening Sq. Ft. Prop.	Natural H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
10	Main Channel	29,477	49,283	7,908	20,162					
	Relief Structure	19,990	197	6,927	100	460.90	0.32	0.13	461.22	461.03
	Total	49,467	49,480	14,834	20,262					
50	Main Channel	40,376	73,308	8,525	23,397					
	Relief Structure	32,607	224	7,995	100	462.95	0.42	0.17	463.37	463.12
	Total	72,983	73,532	16,520	23,497					
100	Main Channel	49,162	82,911	8,635	24,424					
	Relief Structure	33,797	254	8,332	100	463.60	0.40	0.16	464.00	463.76
	Total	82,959	83,165	16,967	24,524					
420 Overtopping	Main Channel	56,305	100,382	10,408	26,459					
	Relief Structure	38,139	176	8,334	100	464.02	0.41	0.35	464.43	464.37
	Total	94,444	100,558	18,742	26,559					
500	Main Channel	58,091	104,750	8,663	26,968					
	Relief Structure	39,224	157	8,335	100	464.14	0.42	0.40	464.56	464.54
	Total	97,315	104,907	16,999	27,068					



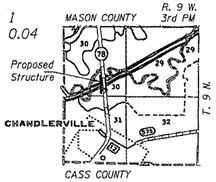
PROFILE GRADE
(Along ℄ Roadway)

LOADING HL-93
Allow 50#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS
2007 AASHTO LRFD Bridge Design Specifications 4th Edition

DESIGN STRESSES
FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (Struct. Steel) (M270 Grade 50W)

SEISMIC DATA
Seismic Performance Zone (SPZ) = 1
Bedrock Acceleration Coefficient (A) = 0.04
Site Coefficient (S) = 1.0



LOCATION SKETCH

THOMAS E. HAVENS 081-005721 LICENSED STRUCTURAL ENGINEER SPRINGFIELD, ILLINOIS

DATE SIGNED : 3/27/09
LIC. EXP. DATE : 11/30/2010

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Ralph E Anderson
ENGINEER OF BRIDGES AND STRUCTURES

GENERAL PLAN & ELEVATION
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510
PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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Hanson Professional Services Inc.

JOB NO. 07S2026
DATE 03/27/09

LAYOUT	TEH	09/12/08
DRAWN	DAB	09/30/08
REVIEWED	TEH	09/30/08

03-25-2009
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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	138
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 2

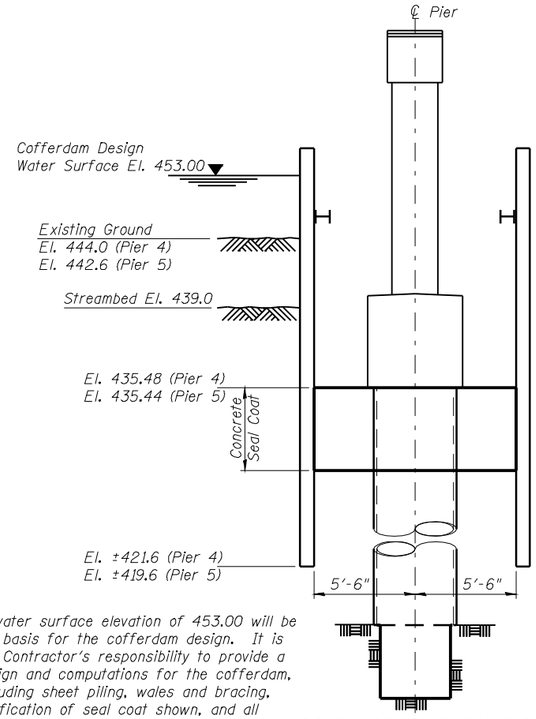
86 SHEETS

Contract #72A76

STATE OF ILLINOIS
DEPARTMENT OF TRANSFORTATION

GENERAL NOTES

1. Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts in painted areas and Type 3, in unpainted areas. Bolts $\frac{7}{8}$"in. ϕ, with $\frac{15}{16}$" ϕ holes unless otherwise noted.
2. Calculated weight of Structural Steel = 2,677,990 lbs.
3. All structural steel shall be AASHTO M 270 Grade 50W (except Strip Seal Expansion Joints shall be AASHTO M270 Grade 36).
4. No field welding is permitted except as specified in the contract documents.
5. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions
6. Reinforcement bars designated (E) shall be epoxy coated.
7. Bearing seat surfaces shall be constructed or adjusted to their designated elevations within a tolerance of $\frac{1}{8}$ inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
8. Concrete Sealer shall be applied to the backwalls, seats, step areas, and front cap face of the North and South Abutments, and to the vertical pier cap faces (including ends), seat areas, and the vertical step faces of Piers 3 and 6.
9. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
10. Structural steel shall only be painted for a distance of 10 ft. each way from the deck joints. All structural steel shall be cleaned as specified in the Special Provision for "Surface Preparation and Painting Requirements for Weathering Steel".
11. All exposed structural steel of the bearings and the Finger Joints shall be cleaned and shop painted as specified in the Special Provision for "Surface Preparation and Painting Requirements for Weathering Steel".
12. Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.
13. The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.
14. The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at substructures specified or approved by the Engineer before ordering the remainder of piles.
15. In lieu of the hammer selection criteria and use of the FHWA Modified Gates formula specified in Section 512 of the Standard Specifications, the Contractor shall conduct a wave equation analysis to establish the driving criteria at all pile foundations which specify a nominal required bearing above 600 kips. The analysis and calculations shall be submitted to the Engineer for approval.
16. The Contractor shall obtain a construction permit from the Illinois Department of Natural Resources (IDNR), Office of Water Resources for any temporary construction activity placed in the water except cofferdams. This shall include the placement of material for run-arounds, causeways, etc. Any permit application by the Contractor shall refer to the IDNR permit number as shown in the contract plans.
17. Seal coat thickness design is based on the Estimated Water Surface Elevation (EWSE). Cofferdam design details and proposed changes in seal coat thickness shall be submitted for approval with the cofferdam design.
18. The debris deflection system attached to the existing bridge near Piers 2, 3 and 4 are to be considered part of the existing structure and its removal will not be paid for seperately.
19. Slipforming of parapets is not allowed.



A water surface elevation of 453.00 will be the basis for the cofferdam design. It is the Contractor's responsibility to provide a design and computations for the cofferdam, including sheet piling, wales and bracing, verification of seal coat shown, and all other required appurtenances, subject to the approval of the Engineer.

Plan dimensions of cofferdam: 11'-0" x 50'-0".

COFFERDAM DETAILS

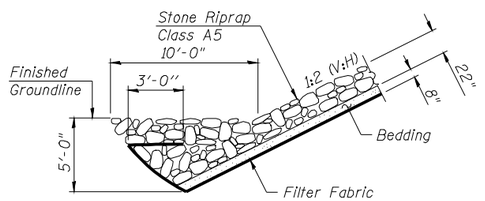
(Piers 4 and 5)
Horiz. dim. @ Rt. L's

INDEX OF SHEETS

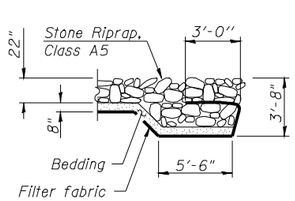
1	General Plan and Elevation
2	General Notes, Rip Rap & Summary of Quantities
3	Substructure Layout snd Deck Placing Sequence
4-6	Top of Slab Elevations - Unit 1
7-9	Top of Slab Elevations - Unit 2
10-14	Top of Slab Elevations - Unit 3
15-16	Top of Slab Elevations - Approach Slab
17-19	Superstructure Unit 1 - Details
20-22	Superstructure Unit 2 - Details
23-28	Superstructure Unit 3 - Details
29-30	Floor Drain Details & DS-11 Scuppers Details
31	Preformed Joint Strip Seal (North Abutment)
32-33	Finger Plate Expansion Joint (Pier 3)
34-35	Finger Plate Expansion Joint (Pier 6)
36-37	Finger Plate Expansion Joint (South Abutment)
38-40	Structural Steel Unit 1 - Details
41-42	Structural Steel Unit 2 - Details
43-46	Structural Steel Unit 3 - Details
47-48	Elastomeric & Fixed Steel Bearing Details - Unit 1
49	Elastomeric & Fixed Steel Bearing Details - Unit 2
50-51	Elastomeric & Fixed Steel Bearing Details - Unit 3
52-53	North Abutment - Details
54-55	South Abutment - Details
56	Pier 1 - Details
57	Pier 2 - Details
58-59	Pier 3 - Details
60-61	Pier 4 - Details
62-63	Pier 5 - Details
64	Pier 6 - Details
65	Pier 7 - Details
66	Pier 8 - Details
67	Pier 9 - Details
68	Pier 10 - Details
69	Pier 11 - Details
70	Bar Splicer - Details
71	Steel H-pile - Details
72	Metal Shell Pile - Details
73-86	Boring Logs

TOTAL BILL OF MATERIAL

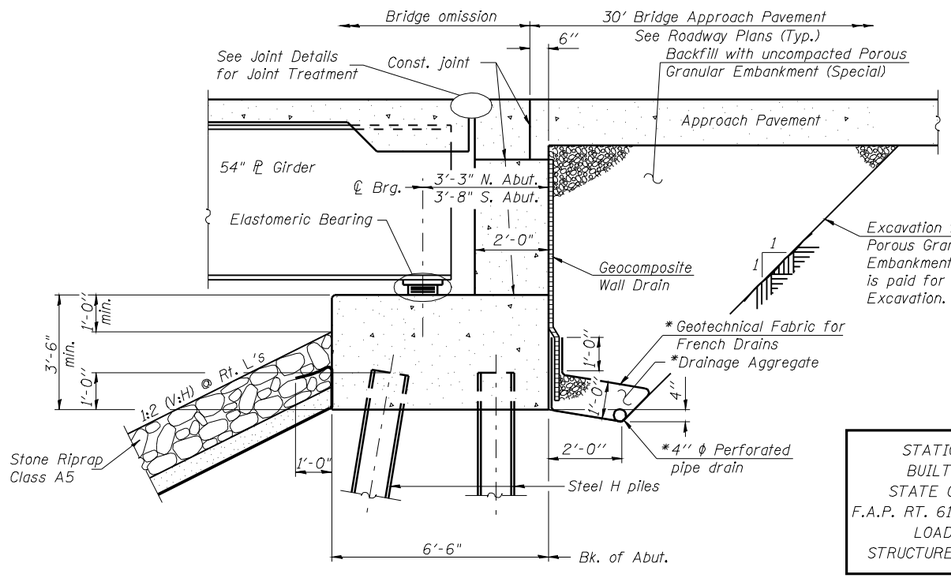
ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment, Special	Cu. Yd.	-	169	169
Stone Riprap, Class A5	Sq. Yd.	-	3273	3273
Filter Fabric	Sq. Yd.	-	3273	3273
Removal of Existing Structures No. 2	Each	-	-	1
Structure Excavation	Cu. Yd.	-	1043	1043
Cofferdam Excavation	Cu. Yd.	-	595	595
Cofferdam (Pier 4)	Each	-	1	1
Cofferdam (Pier 5)	Each	-	1	1
Floor Drains	Each	10	-	10
Concrete Structures	Cu. Yd.	-	1556.1	1556.1
Concrete Superstructure	Cu. Yd.	2264.1	-	2264.1
Bridge Deck Grooving	Sq. Yd.	6814	-	6814
Seal Coat Concrete	Cu. Yd.	-	243	243
Concrete Encasement	Cu. Yd.	-	36	36
Protective Coat	Sq. Yd.	8759	-	8759
Furnishing and Erecting Structural Steel	L. Sum	0.88	-	0.88
Stud Shear Connectors	Each	17064	-	17064
Reinforcement Bars	Pound	-	20150	20150
Reinforcement Bars, Epoxy Coated	Pound	569890	194030	763920
Bar Splicers	Each	-	82	82
Furnishing Metal Shell Piles 14" x 0.25"	Foot	-	85	85
Furnishing Steel Piles HP14x89	Foot	-	10560	10560
Driving Piles	Foot	-	10560	10560
Test Pile Steel HP14x89	Each	-	2	2
Pile Load Test	Each	-	1	1
Pile Shoes	Each	-	126	126
Name Plates	Each	1	-	1
Permanent Casing	Foot	-	432	432
Drilled Shaft in Soil	Cu. Yd.	-	372	372
Drilled Shaft in Rock	Cu. Yd.	-	46	46
Preformed Joint Strip Seal	Foot	42	-	42
Finger Plate Expansion Joint, 7"	Foot	80	-	80
Finger Plate Expansion Joint, 8"	Foot	40	-	40
Fabric Reinforced Elastormeric Trough	Foot	141	-	141
Elastomeric Bearing Assembly, Type I	Each	6	-	6
Elastomeric Bearing Assembly, Type II	Each	18	-	18
Elastomeric Bearing Assembly, Type III	Each	12	-	12
Anchor Bolt, 1½"	Each	180	-	180
Concrete Sealer	Sq. Ft.	-	2400	2400
Geocomposite Wall Drain	Sq. Yd.	-	76	76
Pipe Underdrains for Structures 4"	Foot	-	168	168
Braced Excavation	Cu. Yd.	-	399	399
Drainage Scupper, DS-11	Each	32	-	32
Underwater Structure Excavtion Protection - Location 1	Each	-	1	1
Asbestos Bearing Pad Removal	Each	176	-	176



SECTION THRU TOE OF RIPRAP SLOPEWALL



SECTION THRU FLANK OF RIPRAP SLOPEWALL



TYPICAL SECTION THRU ABUTMENTS

(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 slope. The pipes shall drain into concrete headwalls. (See Artical 601.05 of the Standard Specifications and Highway Standard 601101)

STATION 913+26
BUILT 20__ BY
STATE OF ILLINOIS
F.A.P. RT. 614 SEC. 144(B-1)
LOADING HL93
STRUCTURE NO. 009-0510

NAME PLATE

See Std. 515001

GENERAL NOTES, RIP RAP, SUMMARY of QUANTITIES
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026

DATE 03/27/09

LAYOUT	TEH	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

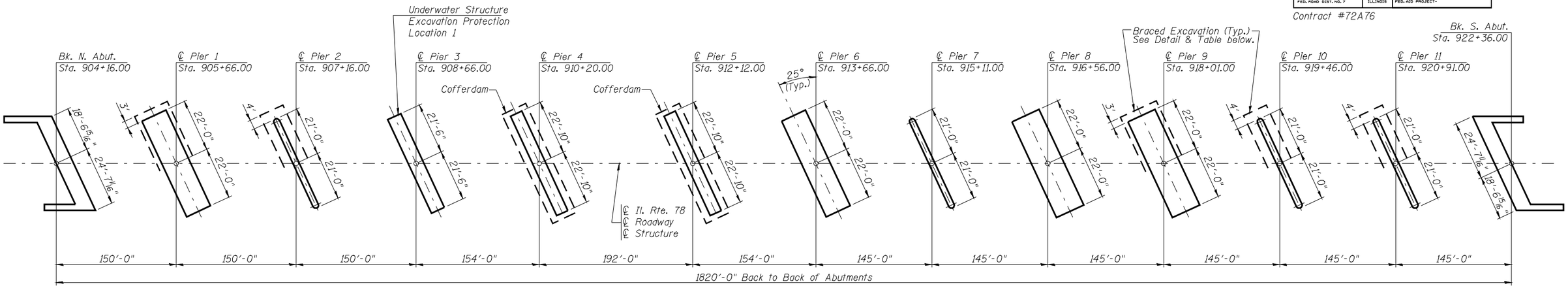
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

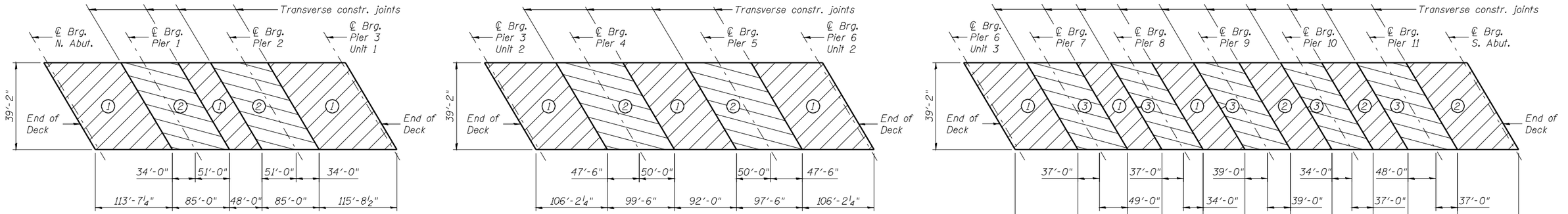
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	139
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 3
86 SHEETS

Contract #72A76



SUBSTRUCTURE LAYOUT



DECK POURING SEQUENCE - UNIT 1

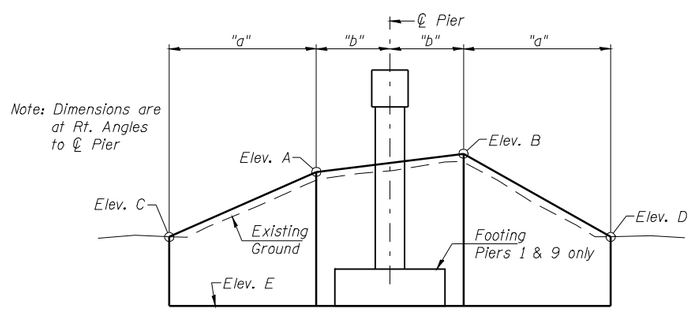
The pour can start from either end of deck.

DECK POURING SEQUENCE - UNIT 2

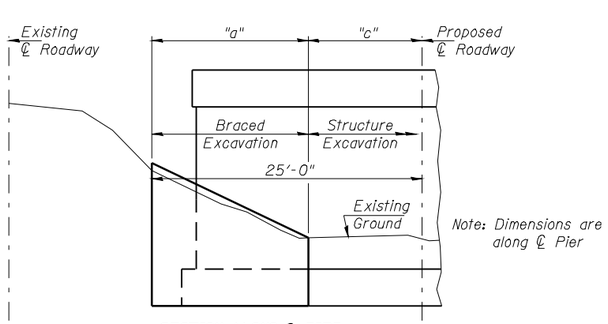
The pour can start from either end of deck.

DECK POURING SEQUENCE - UNIT 3

Pour sequence 1 or sequence 2 are interchangeable



UNFOLDED ELEVATION VIEW



SECTION ALONG ℄ PIER

BRACED EXCAVATION SCHEMAIC (PIERS 1, 2, 9, 10 & 11)

	"a"	"b"	"c"	Elev. A	Elev. B	Elev. C	Elev. D	Elev. E
Pier 1	15.2'	7.50'	9.8'	462.21	462.15	453.00	453.00	447.29
Pier 2	15.5'	5.25'	9.5'	462.36	462.37	453.00	453.00	447.27
Pier 9	25.0'	8.25'	0	461.27	461.23	451.30	451.34	446.75
Pier 10	13.9'	5.25'	11.1'	460.82	460.62	453.39	453.47	449.79
Pier 11	21.8	5.25'	3.2	464.06	464.22	451.00	451.00	450.01

Note:
A cantilever sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a Braced Excavation design including plan details and calculations for review and acceptance by the Engineer.

When the deck pour is stopped for the day at one or more of the transverse bonded construction joints in the deck pouring sequence as shown, the next pour shall not be made until both of the following are met:

1) *At least 72 hours shall have elapsed from the end of the previous pour.*
2) *The concrete strength shall have attained a minimum flexural strength of 650 psi or a minimum compressive strength of 3500 psi.*

SUBSTRUCTURE LAYOUT and DECK PLACING SEQUENCE
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026
DATE 03/27/09

LAYOUT	TEH	09/12/08
DRAWN	MM, Rod	09/30/08
REVIEWED	TEH	09/30/08

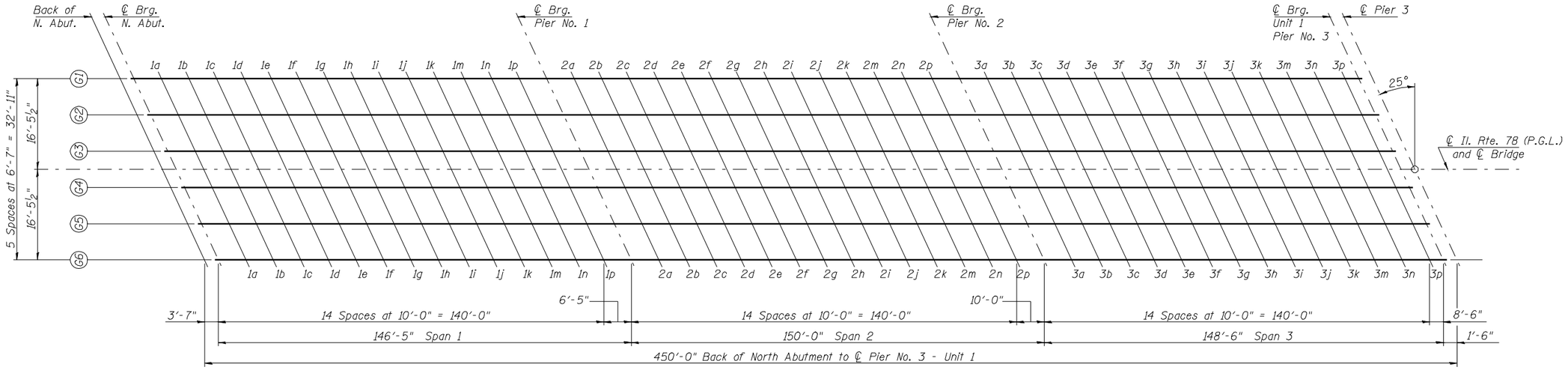
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

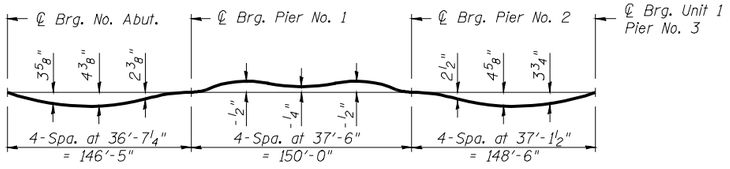
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	140
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 4
86 SHEETS

Contract #72A76



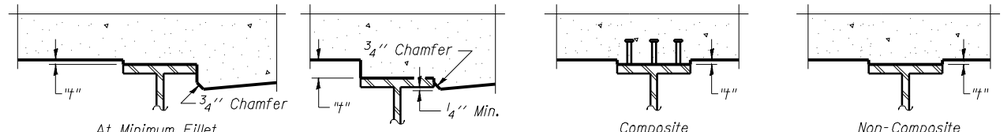
UNIT 1 - DIAGRAMMATIC PLAN



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 5 & 6 of 86.



EXTERIOR BEAMS

INTERIOR BEAMS

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 5 & 6 of 86, minus 8" slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

UNIT 1 - TOP OF SLAB ELEVATIONS (Sheet 1 of 3)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

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Hanson Professional Services Inc.

JOB NO. 07S2026

DATE 03/27/09

LAYOUT	BWC/ANM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	141
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 5
86 SHEETS

Contract #72A76

GIRDER 1

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
Bk. No. Abut.	904+08.33	-16.46	471.76	471.76
℄ Brg. No. Abut	904+11.91	-16.46	471.78	471.78
1a	904+21.91	-16.46	471.83	471.91
1b	904+31.91	-16.46	471.88	472.04
1c	904+41.91	-16.46	471.93	472.17
1d	904+51.91	-16.46	471.98	472.28
1e	904+61.91	-16.46	472.03	472.35
1f	904+71.91	-16.46	472.08	472.42
1g	904+81.91	-16.46	472.13	472.49
1h	904+91.91	-16.46	472.18	472.51
1i	905+01.91	-16.46	472.23	472.52
1j	905+11.91	-16.46	472.28	472.52
1k	905+21.91	-16.46	472.33	472.53
1m	905+31.91	-16.46	472.38	472.52
1n	905+41.91	-16.46	472.43	472.52
1p	905+51.91	-16.46	472.48	472.51
℄ Brg. Pier No. 1	905+58.33	-16.46	472.51	472.51
2a	905+68.33	-16.46	472.56	472.55
2b	905+78.33	-16.46	472.61	472.59
2c	905+88.33	-16.46	472.66	472.63
2d	905+98.33	-16.46	472.71	472.67
2e	906+08.33	-16.46	472.76	472.73
2f	906+18.33	-16.46	472.81	472.78
2g	906+28.33	-16.46	472.86	472.84
2h	906+38.33	-16.46	472.91	472.89
2i	906+48.33	-16.46	472.96	472.93
2j	906+58.33	-16.46	473.01	472.97
2k	906+68.33	-16.46	473.06	473.02
2m	906+78.33	-16.46	473.11	473.07
2n	906+88.33	-16.46	473.16	473.14
2p	906+98.33	-16.46	473.21	473.20
℄ Brg Pier No. 2	907+08.33	-16.46	473.26	473.26
3a	907+18.33	-16.46	473.31	473.37
3b	907+28.33	-16.46	473.36	473.47
3c	907+38.33	-16.46	473.41	473.58
3d	907+48.33	-16.46	473.46	473.69
3e	907+58.33	-16.46	473.51	473.78
3f	907+68.33	-16.46	473.56	473.88
3g	907+78.33	-16.46	473.61	473.98
3h	907+88.33	-16.46	473.66	474.04
3i	907+98.33	-16.46	473.71	474.07
3j	908+08.33	-16.46	473.76	474.10
3k	908+18.33	-16.46	473.81	474.13
3m	908+28.33	-16.46	473.86	474.10
3n	908+38.33	-16.46	473.91	474.07
3p	908+48.33	-16.46	473.96	474.03
℄ Brg. Pier No. 3 (Unit 1)	908+56.83	-16.46	474.00	474.00
℄ Pier No. 3	908+58.33	-16.46	474.01	474.01

GIRDER 2

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
Bk. No. Abut.	904+11.40	-9.88	471.90	471.90
℄ Brg. No. Abut	904+14.98	-9.88	471.91	471.91
1a	904+24.98	-9.88	471.96	472.05
1b	904+34.98	-9.88	472.01	472.18
1c	904+44.98	-9.88	472.06	472.31
1d	904+54.98	-9.88	472.11	472.42
1e	904+64.98	-9.88	472.16	472.49
1f	904+74.98	-9.88	472.21	472.56
1g	904+84.98	-9.88	472.26	472.63
1h	904+94.98	-9.88	472.31	472.65
1i	905+04.98	-9.88	472.36	472.66
1j	905+14.98	-9.88	472.41	472.66
1k	905+24.98	-9.88	472.46	472.66
1m	905+34.98	-9.88	472.51	472.66
1n	905+44.98	-9.88	472.56	472.65
1p	905+54.98	-9.88	472.61	472.65
℄ Brg. Pier No. 1	905+61.40	-9.88	472.65	472.65
2a	905+71.40	-9.88	472.70	472.69
2b	905+81.40	-9.88	472.75	472.72
2c	905+91.40	-9.88	472.80	472.76
2d	906+01.40	-9.88	472.85	472.81
2e	906+11.40	-9.88	472.90	472.86
2f	906+21.40	-9.88	472.95	472.92
2g	906+31.40	-9.88	473.00	472.98
2h	906+41.40	-9.88	473.05	473.03
2i	906+51.40	-9.88	473.10	473.07
2j	906+61.40	-9.88	473.15	473.11
2k	906+71.40	-9.88	473.20	473.15
2m	906+81.40	-9.88	473.25	473.21
2n	906+91.40	-9.88	473.30	473.27
2p	907+01.40	-9.88	473.35	473.33
℄ Brg Pier No. 2	907+11.40	-9.88	473.40	473.40
3a	907+21.40	-9.88	473.45	473.50
3b	907+31.40	-9.88	473.50	473.61
3c	907+41.40	-9.88	473.55	473.72
3d	907+51.40	-9.88	473.60	473.82
3e	907+61.40	-9.88	473.65	473.92
3f	907+71.40	-9.88	473.70	474.02
3g	907+81.40	-9.88	473.75	474.12
3h	907+91.40	-9.88	473.80	474.17
3i	908+01.40	-9.88	473.85	474.20
3j	908+11.40	-9.88	473.90	474.23
3k	908+21.40	-9.88	473.95	474.26
3m	908+31.40	-9.88	474.00	474.24
3n	908+41.40	-9.88	474.05	474.20
3p	908+51.40	-9.88	474.10	474.17
℄ Brg. Pier No. 3 (Unit 1)	908+59.90	-9.88	474.14	474.14
℄ Pier No. 3	908+61.40	-9.88	474.15	474.15

GIRDER 3

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
Bk. No. Abut.	904+14.47	-3.29	472.01	472.01
℄ Brg. No. Abut	904+18.05	-3.29	472.03	472.03
1a	904+28.05	-3.29	472.08	472.16
1b	904+38.05	-3.29	472.13	472.29
1c	904+48.05	-3.29	472.18	472.42
1d	904+58.05	-3.29	472.23	472.53
1e	904+68.05	-3.29	472.28	472.60
1f	904+78.05	-3.29	472.33	472.67
1g	904+88.05	-3.29	472.38	472.74
1h	904+98.05	-3.29	472.43	472.76
1i	905+08.05	-3.29	472.48	472.77
1j	905+18.05	-3.29	472.53	472.77
1k	905+28.05	-3.29	472.58	472.78
1m	905+38.05	-3.29	472.63	472.77
1n	905+48.05	-3.29	472.68	472.77
1p	905+58.05	-3.29	472.73	472.76
℄ Brg. Pier No. 1	905+64.47	-3.29	472.76	472.76
2a	905+74.47	-3.29	472.81	472.80
2b	905+84.47	-3.29	472.86	472.84
2c	905+94.47	-3.29	472.91	472.88
2d	906+04.47	-3.29	472.96	472.92
2e	906+14.47	-3.29	473.01	472.98
2f	906+24.47	-3.29	473.06	473.03
2g	906+34.47	-3.29	473.11	473.09
2h	906+44.47	-3.29	473.16	473.14
2i	906+54.47	-3.29	473.21	473.18
2j	906+64.47	-3.29	473.26	473.23
2k	906+74.47	-3.29	473.31	473.27
2m	906+84.47	-3.29	473.36	473.32
2n	906+94.47	-3.29	473.41	473.39
2p	907+04.47	-3.29	473.46	473.45
℄ Brg Pier No. 2	907+14.47	-3.29	473.51	473.51
3a	907+24.47	-3.29	473.56	473.62
3b	907+34.47	-3.29	473.61	473.73
3c	907+44.47	-3.29	473.66	473.83
3d	907+54.47	-3.29	473.71	473.94
3e	907+64.47	-3.29	473.76	474.03
3f	907+74.47	-3.29	473.81	474.13
3g	907+84.47	-3.29	473.86	474.23
3h	907+94.47	-3.29	473.91	474.29
3i	908+04.47	-3.29	473.96	474.32
3j	908+14.47	-3.29	474.01	474.35
3k	908+24.47	-3.29	474.06	474.38
3m	908+34.47	-3.29	474.11	474.35
3n	908+44.47	-3.29	474.16	474.32
3p	908+54.47	-3.29	474.21	474.28
℄ Brg. Pier No. 3 (Unit 1)	908+62.97	-3.29	474.25	474.25
℄ Pier No. 3	908+64.47	-3.29	474.26	474.26

℄ BRIDGE & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
Bk. No. Abut.	904+16.00	0.00	472.07	472.07
℄ Brg. No. Abut	904+19.58	0.00	472.09	472.09
1a	904+29.58	0.00	472.14	472.22
1b	904+39.58	0.00	472.19	472.35
1c	904+49.58	0.00	472.24	472.48
1d	904+59.58	0.00	472.29	472.59
1e	904+69.58	0.00	472.34	472.66
1f	904+79.58	0.00	472.39	472.73
1g	904+89.58	0.00	472.44	472.80
1h	904+99.58	0.00	472.49	472.82
1i	905+09.58	0.00	472.54	472.83
1j	905+19.58	0.00	472.59	472.83
1k	905+29.58	0.00	472.64	472.84
1m	905+39.58	0.00	472.69	472.83
1n	905+49.58	0.00	472.74	472.83
1p	905+59.58	0.00	472.79	472.82
℄ Brg. Pier No. 1	905+66.00	0.00	472.82	472.82
2a	905+76.00	0.00	472.87	472.86
2b	905+86.00	0.00	472.92	472.90
2c	905+96.00	0.00	472.97	472.93
2d	906+06.00	0.00	473.02	472.98
2e	906+16.00	0.00	473.07	473.03
2f	906+26.00	0.00	473.12	473.09
2g	906+36.00	0.00	473.17	473.15
2h	906+46.00	0.00	473.22	473.20
2i	906+56.00	0.00	473.27	473.24
2j	906+66.00	0.00	473.32	473.28
2k	906+76.00	0.00	473.37	473.32
2m	906+86.00	0.00	473.42	473.38
2n	906+96.00	0.00	473.47	473.44
2p	907+06.00	0.00	473.52	473.51
℄ Brg Pier No. 2	907+16.00	0.00	473.57	473.57
3a	907+26.00	0.00	473.62	473.68
3b	907+36.00	0.00	473.67	473.78
3c	907+46.00	0.00	473.72	473.89
3d	907+56.00	0.00	473.77	473.99
3e	907+66.00	0.00	473.82	474.09
3f	907+76.00	0.00	473.87	474.19
3g	907+86.00	0.00	473.92	474.29
3h	907+96.00	0.00	473.97	474.35
3i	908+06.00	0.00	474.02	474.38
3j	908+16.00	0.00	474.07	474.41
3k	908+26.00	0.00	474.12	474.44
3m	908+36.00	0.00	474.17	474.41
3n	908+46.00	0.00	474.22	474.37
3p	908+56.00	0.00	474.27	474.34
℄ Brg. Pier No. 3 (Unit 1)	908+64.50	0.00	474.31	474.31
℄ Pier No. 3	908+66.00	0.00	474.32	474.32

UNIT 1 - TOP OF SLAB ELEVATIONS (Sheet 2 of 3)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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JOB NO. 07S2026

DATE 03/27/09

LAYOUT	BWC/NNM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	142
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 6
86 SHEETS

Contract #72A76

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GIRDER 4

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
Bk. No. Abut.	904+17.53	3.29	472.03	472.03
℄ Brg. No. Abut	904+21.11	3.29	472.04	472.04
1a	904+31.11	3.29	472.09	472.18
1b	904+41.11	3.29	472.14	472.31
1c	904+51.11	3.29	472.19	472.44
1d	904+61.11	3.29	472.24	472.55
1e	904+71.11	3.29	472.29	472.62
1f	904+81.11	3.29	472.34	472.69
1g	904+91.11	3.29	472.39	472.75
1h	905+01.11	3.29	472.44	472.78
1i	905+11.11	3.29	472.49	472.78
1j	905+21.11	3.29	472.54	472.79
1k	905+31.11	3.29	472.59	472.79
1m	905+41.11	3.29	472.64	472.79
1n	905+51.11	3.29	472.69	472.78
1p	905+61.11	3.29	472.74	472.78
℄ Brg. Pier No. 1	905+67.53	3.29	472.78	472.78
2a	905+77.53	3.29	472.83	472.82
2b	905+87.53	3.29	472.88	472.85
2c	905+97.53	3.29	472.93	472.89
2d	906+07.53	3.29	472.98	472.94
2e	906+17.53	3.29	473.03	472.99
2f	906+27.53	3.29	473.08	473.05
2g	906+37.53	3.29	473.13	473.11
2h	906+47.53	3.29	473.18	473.16
2i	906+57.53	3.29	473.23	473.20
2j	906+67.53	3.29	473.28	473.24
2k	906+77.53	3.29	473.33	473.28
2m	906+87.53	3.29	473.38	473.34
2n	906+97.53	3.29	473.43	473.40
2p	907+07.53	3.29	473.48	473.46
℄ Brg Pier No. 2	907+17.53	3.29	473.53	473.53
3a	907+27.53	3.29	473.58	473.63
3b	907+37.53	3.29	473.63	473.74
3c	907+47.53	3.29	473.68	473.85
3d	907+57.53	3.29	473.73	473.95
3e	907+67.53	3.29	473.78	474.05
3f	907+77.53	3.29	473.83	474.15
3g	907+87.53	3.29	473.88	474.24
3h	907+97.53	3.29	473.93	474.30
3i	908+07.53	3.29	473.98	474.33
3j	908+17.53	3.29	474.03	474.36
3k	908+27.53	3.29	474.08	474.39
3m	908+37.53	3.29	474.13	474.37
3n	908+47.53	3.29	474.18	474.33
3p	908+57.53	3.29	474.23	474.30
℄ Brg. Pier No. 3 (Unit 1)	908+66.03	3.29	474.27	474.27
℄ Pier No. 3	908+67.53	3.29	474.28	474.28

GIRDER 5

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
Bk. No. Abut.	904+20.60	9.88	471.94	471.94
℄ Brg. No. Abut	904+24.18	9.88	471.96	471.96
1a	904+34.18	9.88	472.01	472.09
1b	904+44.18	9.88	472.06	472.22
1c	904+54.18	9.88	472.11	472.35
1d	904+64.18	9.88	472.16	472.46
1e	904+74.18	9.88	472.21	472.53
1f	904+84.18	9.88	472.26	472.60
1g	904+94.18	9.88	472.31	472.67
1h	905+04.18	9.88	472.36	472.70
1i	905+14.18	9.88	472.41	472.70
1j	905+24.18	9.88	472.46	472.71
1k	905+34.18	9.88	472.51	472.71
1m	905+44.18	9.88	472.56	472.71
1n	905+54.18	9.88	472.61	472.70
1p	905+64.18	9.88	472.66	472.70
℄ Brg. Pier No. 1	905+70.60	9.88	472.69	472.69
2a	905+80.60	9.88	472.74	472.73
2b	905+90.60	9.88	472.79	472.77
2c	906+00.60	9.88	472.84	472.81
2d	906+10.60	9.88	472.89	472.85
2e	906+20.60	9.88	472.94	472.91
2f	906+30.60	9.88	472.99	472.97
2g	906+40.60	9.88	473.04	473.02
2h	906+50.60	9.88	473.09	473.07
2i	906+60.60	9.88	473.14	473.11
2j	906+70.60	9.88	473.19	473.16
2k	906+80.60	9.88	473.24	473.20
2m	906+90.60	9.88	473.29	473.26
2n	907+00.60	9.88	473.34	473.32
2p	907+10.60	9.88	473.39	473.38
℄ Brg Pier No. 2	907+20.60	9.88	473.44	473.44
3a	907+30.60	9.88	473.49	473.55
3b	907+40.60	9.88	473.54	473.66
3c	907+50.60	9.88	473.59	473.76
3d	907+60.60	9.88	473.64	473.87
3e	907+70.60	9.88	473.69	473.97
3f	907+80.60	9.88	473.74	474.06
3g	907+90.60	9.88	473.79	474.16
3h	908+00.60	9.88	473.84	474.22
3i	908+10.60	9.88	473.89	474.25
3j	908+20.60	9.88	473.94	474.28
3k	908+30.60	9.88	473.99	474.31
3m	908+40.60	9.88	474.04	474.28
3n	908+50.60	9.88	474.09	474.25
3p	908+60.60	9.88	474.14	474.21
℄ Brg. Pier No. 3 (Unit 1)	908+69.10	9.88	474.19	474.19
℄ Pier No. 3	908+70.60	9.88	474.19	474.19

GIRDER 6

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
Bk. No. Abut.	904+23.67	16.46	471.84	471.84
℄ Brg. No. Abut	904+27.25	16.46	471.86	471.86
1a	904+37.25	16.46	471.91	471.99
1b	904+47.25	16.46	471.96	472.12
1c	904+57.25	16.46	472.01	472.25
1d	904+67.25	16.46	472.06	472.36
1e	904+77.25	16.46	472.11	472.43
1f	904+87.25	16.46	472.16	472.50
1g	904+97.25	16.46	472.21	472.57
1h	905+07.25	16.46	472.26	472.59
1i	905+17.25	16.46	472.31	472.60
1j	905+27.25	16.46	472.36	472.60
1k	905+37.25	16.46	472.41	472.60
1m	905+47.25	16.46	472.46	472.60
1n	905+57.25	16.46	472.51	472.60
1p	905+67.25	16.46	472.56	472.59
℄ Brg. Pier No. 1	905+73.67	16.46	472.59	472.59
2a	905+83.67	16.46	472.64	472.63
2b	905+93.67	16.46	472.69	472.66
2c	906+03.67	16.46	472.74	472.70
2d	906+13.67	16.46	472.79	472.75
2e	906+23.67	16.46	472.84	472.80
2f	906+33.67	16.46	472.89	472.86
2g	906+43.67	16.46	472.94	472.92
2h	906+53.67	16.46	472.99	472.97
2i	906+63.67	16.46	473.04	473.01
2j	906+73.67	16.46	473.09	473.05
2k	906+83.67	16.46	473.14	473.09
2m	906+93.67	16.46	473.19	473.15
2n	907+03.67	16.46	473.24	473.21
2p	907+13.67	16.46	473.29	473.28
℄ Brg Pier No. 2	907+23.67	16.46	473.34	473.34
3a	907+33.67	16.46	473.39	473.44
3b	907+43.67	16.46	473.44	473.55
3c	907+53.67	16.46	473.49	473.66
3d	907+63.67	16.46	473.54	473.76
3e	907+73.67	16.46	473.59	473.86
3f	907+83.67	16.46	473.64	473.96
3g	907+93.67	16.46	473.69	474.06
3h	908+03.67	16.46	473.74	474.11
3i	908+13.67	16.46	473.79	474.14
3j	908+23.67	16.46	473.84	474.17
3k	908+33.67	16.46	473.89	474.20
3m	908+43.67	16.46	473.94	474.18
3n	908+53.67	16.46	473.99	474.14
3p	908+63.67	16.46	474.04	474.11
℄ Brg. Pier No. 3 (Unit 1)	908+72.17	16.46	474.08	474.08
℄ Pier No. 3	908+73.67	16.46	474.09	474.09

UNIT 1 - TOP OF SLAB ELEVATIONS (Sheet 3 of 3)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026

DATE 03/27/09

LAYOUT	BMC/NMM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

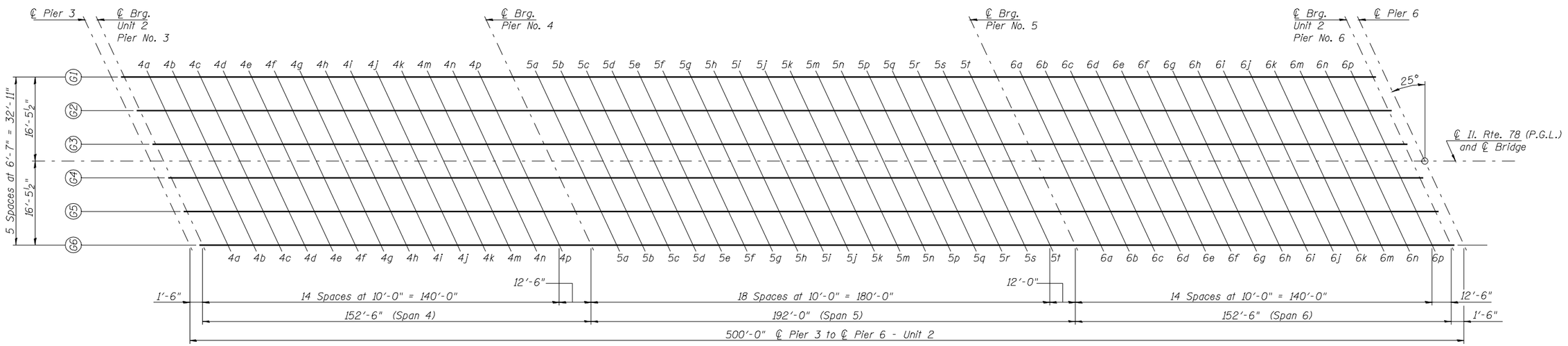
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

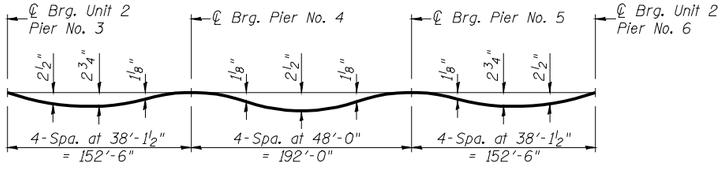
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	143
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 7
86 SHEETS

Contract #72A76



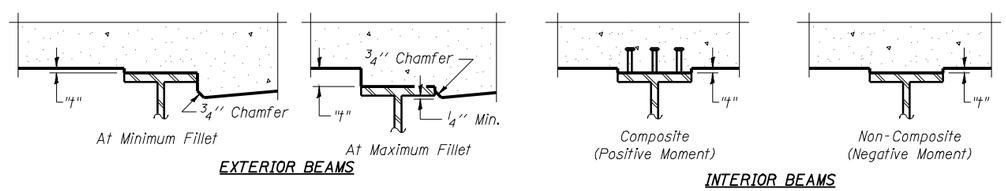
UNIT 2 - DIAGRAMMATIC PLAN



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 8 & 9 of 86.



EXTERIOR BEAMS

INTERIOR BEAMS

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 8 & 9 of 86, minus 8" slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

UNIT 2 - TOP OF SLAB ELEVATIONS (Sheet 1 of 3)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

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JOB NO. 07S2026

DATE 03/27/09

LAYOUT	MNM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

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Contract #72A76

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	144
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 8
86 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GIRDER 1

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
℄ Pier No. 3 (Unit 2)	908+58.33	-16.46	474.01	474.01
℄ Brg. Pier No. 3	908+59.83	-16.46	474.02	474.02
4a	908+69.83	-16.46	474.07	474.12
4b	908+79.83	-16.46	474.12	474.23
4c	908+89.83	-16.46	474.17	474.33
4d	908+99.83	-16.46	474.22	474.43
4e	909+09.83	-16.46	474.27	474.48
4f	909+19.83	-16.46	474.32	474.54
4g	909+29.83	-16.46	474.37	474.59
4h	909+39.83	-16.46	474.42	474.64
4i	909+49.83	-16.46	474.47	474.65
4j	909+59.83	-16.46	474.52	474.66
4k	909+69.83	-16.46	474.57	474.68
4m	909+79.83	-16.46	474.62	474.70
4n	909+89.83	-16.46	474.67	474.72
4p	909+99.83	-16.46	474.72	474.75
℄ Brg. Pier No. 4	910+12.33	-16.46	474.78	474.78
5a	910+22.33	-16.46	474.83	474.85
5b	910+32.33	-16.46	474.88	474.92
5c	910+42.33	-16.46	474.93	474.99
5d	910+52.33	-16.46	474.98	475.06
5e	910+62.33	-16.46	475.03	475.13
5f	910+72.33	-16.46	475.08	475.20
5g	910+82.33	-16.46	475.13	475.28
5h	910+92.33	-16.46	475.18	475.35
5i	911+02.33	-16.46	475.23	475.42
5j	911+12.33	-16.46	475.28	475.48
5k	911+22.33	-16.46	475.33	475.50
5m	911+32.33	-16.46	475.38	475.53
5n	911+42.33	-16.46	475.43	475.56
5p	911+52.33	-16.46	475.48	475.59
5q	911+62.33	-16.46	475.53	475.61
5r	911+72.33	-16.46	475.58	475.64
5s	911+82.33	-16.46	475.63	475.67
5t	911+92.33	-16.46	475.68	475.70
℄ Brg Pier No. 5	912+04.33	-16.46	475.74	475.74
6a	912+14.33	-16.46	475.79	475.81
6b	912+24.33	-16.46	475.83	475.88
6c	912+34.33	-16.46	475.87	475.94
6d	912+44.33	-16.46	475.90	476.01
6e	912+54.33	-16.46	475.93	476.07
6f	912+64.33	-16.46	475.96	476.13
6g	912+74.33	-16.46	475.98	476.19
6h	912+84.33	-16.46	476.00	476.23
6i	912+94.33	-16.46	476.02	476.24
6j	913+04.33	-16.46	476.03	476.24
6k	913+14.33	-16.46	476.03	476.24
6m	913+24.33	-16.46	476.04	476.21
6n	913+34.33	-16.46	476.04	476.16
6p	913+44.33	-16.46	476.03	476.10
℄ Brg. Pier No. 6 (Unit 2)	913+56.83	-16.46	476.02	476.02
℄ Pier No. 6	913+58.33	-16.46	476.02	476.02

GIRDER 2

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
℄ Pier No. 3 (Unit 2)	908+61.40	-9.88	474.15	474.15
℄ Brg. Pier No. 3	908+62.90	-9.88	474.15	474.15
4a	908+72.90	-9.88	474.20	474.26
4b	908+82.90	-9.88	474.25	474.36
4c	908+92.90	-9.88	474.30	474.47
4d	909+02.90	-9.88	474.35	474.56
4e	909+12.90	-9.88	474.40	474.62
4f	909+22.90	-9.88	474.45	474.68
4g	909+32.90	-9.88	474.50	474.73
4h	909+42.90	-9.88	474.55	474.77
4i	909+52.90	-9.88	474.60	474.79
4j	909+62.90	-9.88	474.65	474.80
4k	909+72.90	-9.88	474.70	474.81
4m	909+82.90	-9.88	474.75	474.84
4n	909+92.90	-9.88	474.80	474.86
4p	910+02.90	-9.88	474.85	474.89
℄ Brg. Pier No. 4	910+15.40	-9.88	474.92	474.92
5a	910+25.40	-9.88	474.97	474.99
5b	910+35.40	-9.88	475.02	475.06
5c	910+45.40	-9.88	475.07	475.13
5d	910+55.40	-9.88	475.12	475.20
5e	910+65.40	-9.88	475.17	475.27
5f	910+75.40	-9.88	475.22	475.34
5g	910+85.40	-9.88	475.27	475.41
5h	910+95.40	-9.88	475.32	475.49
5i	911+05.40	-9.88	475.37	475.56
5j	911+15.40	-9.88	475.42	475.61
5k	911+25.40	-9.88	475.47	475.64
5m	911+35.40	-9.88	475.52	475.67
5n	911+45.40	-9.88	475.57	475.69
5p	911+55.40	-9.88	475.62	475.72
5q	911+65.40	-9.88	475.67	475.75
5r	911+75.40	-9.88	475.72	475.78
5s	911+85.40	-9.88	475.77	475.81
5t	911+95.40	-9.88	475.82	475.84
℄ Brg Pier No. 5	912+07.40	-9.88	475.88	475.88
6a	912+17.40	-9.88	475.92	475.95
6b	912+27.40	-9.88	475.96	476.01
6c	912+37.40	-9.88	476.00	476.08
6d	912+47.40	-9.88	476.03	476.14
6e	912+57.40	-9.88	476.06	476.20
6f	912+67.40	-9.88	476.09	476.26
6g	912+77.40	-9.88	476.11	476.32
6h	912+87.40	-9.88	476.13	476.36
6i	912+97.40	-9.88	476.14	476.36
6j	913+07.40	-9.88	476.15	476.37
6k	913+17.40	-9.88	476.16	476.37
6m	913+27.40	-9.88	476.16	476.34
6n	913+37.40	-9.88	476.16	476.28
6p	913+47.40	-9.88	476.15	476.22
℄ Brg. Pier No. 6 (Unit 2)	913+59.90	-9.88	476.14	476.14
℄ Pier No. 6	913+61.40	-9.88	476.13	476.13

GIRDER 3

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
℄ Pier No. 3 (Unit 2)	908+64.47	-3.29	474.26	474.26
℄ Brg. Pier No. 3	908+65.97	-3.29	474.27	474.27
4a	908+75.97	-3.29	474.32	474.37
4b	908+85.97	-3.29	474.37	474.48
4c	908+95.97	-3.29	474.42	474.58
4d	909+05.97	-3.29	474.47	474.68
4e	909+15.97	-3.29	474.52	474.73
4f	909+25.97	-3.29	474.57	474.79
4g	909+35.97	-3.29	474.62	474.85
4h	909+45.97	-3.29	474.67	474.89
4i	909+55.97	-3.29	474.72	474.90
4j	909+65.97	-3.29	474.77	474.91
4k	909+75.97	-3.29	474.82	474.93
4m	909+85.97	-3.29	474.87	474.95
4n	909+95.97	-3.29	474.92	474.97
4p	910+05.97	-3.29	474.97	475.00
℄ Brg. Pier No. 4	910+18.47	-3.29	475.03	475.03
5a	910+28.47	-3.29	475.08	475.10
5b	910+38.47	-3.29	475.13	475.17
5c	910+48.47	-3.29	475.18	475.24
5d	910+58.47	-3.29	475.23	475.31
5e	910+68.47	-3.29	475.28	475.38
5f	910+78.47	-3.29	475.33	475.45
5g	910+88.47	-3.29	475.38	475.53
5h	910+98.47	-3.29	475.43	475.60
5i	911+08.47	-3.29	475.48	475.67
5j	911+18.47	-3.29	475.53	475.73
5k	911+28.47	-3.29	475.58	475.75
5m	911+38.47	-3.29	475.63	475.78
5n	911+48.47	-3.29	475.68	475.81
5p	911+58.47	-3.29	475.73	475.84
5q	911+68.47	-3.29	475.78	475.86
5r	911+78.47	-3.29	475.83	475.89
5s	911+88.47	-3.29	475.88	475.92
5t	911+98.47	-3.29	475.93	475.95
℄ Brg Pier No. 5	912+10.47	-3.29	475.99	475.99
6a	912+20.47	-3.29	476.03	476.06
6b	912+30.47	-3.29	476.07	476.12
6c	912+40.47	-3.29	476.11	476.18
6d	912+50.47	-3.29	476.14	476.24
6e	912+60.47	-3.29	476.17	476.31
6f	912+70.47	-3.29	476.20	476.37
6g	912+80.47	-3.29	476.22	476.42
6h	912+90.47	-3.29	476.23	476.46
6i	913+00.47	-3.29	476.24	476.47
6j	913+10.47	-3.29	476.25	476.47
6k	913+20.47	-3.29	476.26	476.47
6m	913+30.47	-3.29	476.26	476.43
6n	913+40.47	-3.29	476.25	476.38
6p	913+50.47	-3.29	476.25	476.31
℄ Brg. Pier No. 6 (Unit 2)	913+62.97	-3.29	476.23	476.23
℄ Pier No. 6	913+64.47	-3.29	476.23	476.23

℄ BRIDGE & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
℄ Pier No. 3 (Unit 2)	908+66.00	0.00	474.32	474.32
℄ Brg. Pier No. 3	908+67.50	0.00	474.33	474.33
4a	908+77.50	0.00	474.38	474.43
4b	908+87.50	0.00	474.43	474.53
4c	908+97.50	0.00	474.48	474.64
4d	909+07.50	0.00	474.53	474.73
4e	909+17.50	0.00	474.58	474.79
4f	909+27.50	0.00	474.63	474.85
4g	909+37.50	0.00	474.68	474.90
4h	909+47.50	0.00	474.73	474.94
4i	909+57.50	0.00	474.78	474.96
4j	909+67.50	0.00	474.83	474.97
4k	909+77.50	0.00	474.88	474.99
4m	909+87.50	0.00	474.93	475.01
4n	909+97.50	0.00	474.98	475.03
4p	910+07.50	0.00	475.03	475.06
℄ Brg. Pier No. 4	910+20.00	0.00	475.09	475.09
5a	910+30.00	0.00	475.14	475.16
5b	910+40.00	0.00	475.19	475.23
5c	910+50.00	0.00	475.24	475.30
5d	910+60.00	0.00	475.29	475.37
5e	910+70.00	0.00	475.34	475.44
5f	910+80.00	0.00	475.39	475.51
5g	910+90.00	0.00	475.44	475.58
5h	911+00.00	0.00	475.49	475.66
5i	911+10.00	0.00	475.54	475.73
5j	911+20.00	0.00	475.59	475.78
5k	911+30.00	0.00	475.64	475.81
5m	911+40.00	0.00	475.69	475.84
5n	911+50.00	0.00	475.74	475.87
5p	911+60.00	0.00	475.79	475.89
5q	911+70.00	0.00	475.84	475.92
5r	911+80.00	0.00	475.89	475.95
5s	911+90.00	0.00	475.94	475.98
5t	912+00.00	0.00	475.99	476.01
℄ Brg Pier No. 5	912+12.00	0.00	476.05	476.05
6a	912+22.00	0.00	476.09	476.11
6b	912+32.00	0.00	476.13	476.18
6c	912+42.00	0.00	476.16	476.24
6d	912+52.00	0.00	476.20	476.30
6e	912+62.00	0.00	476.22	476.36
6f	912+72.00	0.00	476.25	476.42
6g	912+82.00	0.00	476.27	476.48
6h	912+92.00	0.00	476.28	476.51
6i	913+02.00	0.00	476.30	476.52
6j	913+12.00	0.00	476.30	476.52
6k	913+22.00	0.00	476.31	476.52
6m	913+32.00	0.00	476.31	476.48
6n	913+42.00	0.00	476.30	476.42
6p	913+52.00	0.00	476.29	476.36
℄ Brg. Pier No. 6 (Unit 2)	913+64.50	0.00	476.28	476.28
℄ Pier No. 6	913+66.00	0.00	476.28	476.28

UNIT 2 - TOP OF SLAB ELEVATIONS (Sheet 2 of 3)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026

DATE 03/27/09

LAYOUT	MNM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	145
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 9
86 SHEETS

Contract #72A76

GIRDER 4

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
℄ Pier No. 3 (Unit 2)	908+67.53	3.29	474.28	474.28
℄ Brg. Pier No. 3	908+69.03	3.29	474.28	474.28
4a	908+79.03	3.29	474.33	474.39
4b	908+89.03	3.29	474.38	474.49
4c	908+99.03	3.29	474.43	474.60
4d	909+09.03	3.29	474.48	474.69
4e	909+19.03	3.29	474.53	474.75
4f	909+29.03	3.29	474.58	474.80
4g	909+39.03	3.29	474.63	474.86
4h	909+49.03	3.29	474.68	474.90
4i	909+59.03	3.29	474.73	474.92
4j	909+69.03	3.29	474.78	474.93
4k	909+79.03	3.29	474.83	474.94
4m	909+89.03	3.29	474.88	474.96
4n	909+99.03	3.29	474.93	474.99
4p	910+09.03	3.29	474.98	475.01
℄ Brg. Pier No. 4	910+21.53	3.29	475.05	475.05
5a	910+31.53	3.29	475.10	475.12
5b	910+41.53	3.29	475.15	475.19
5c	910+51.53	3.29	475.20	475.26
5d	910+61.53	3.29	475.25	475.33
5e	910+71.53	3.29	475.30	475.40
5f	910+81.53	3.29	475.35	475.47
5g	910+91.53	3.29	475.40	475.54
5h	911+01.53	3.29	475.45	475.61
5i	911+11.53	3.29	475.50	475.69
5j	911+21.53	3.29	475.55	475.74
5k	911+31.53	3.29	475.60	475.77
5m	911+41.53	3.29	475.65	475.80
5n	911+51.53	3.29	475.70	475.82
5p	911+61.53	3.29	475.75	475.85
5q	911+71.53	3.29	475.80	475.88
5r	911+81.53	3.29	475.85	475.91
5s	911+91.53	3.29	475.90	475.94
5t	912+01.53	3.29	475.95	475.97
℄ Brg Pier No. 5	912+13.53	3.29	476.00	476.00
6a	912+23.53	3.29	476.05	476.07
6b	912+33.53	3.29	476.09	476.14
6c	912+43.53	3.29	476.12	476.20
6d	912+53.53	3.29	476.15	476.25
6e	912+63.53	3.29	476.18	476.32
6f	912+73.53	3.29	476.20	476.37
6g	912+83.53	3.29	476.22	476.43
6h	912+93.53	3.29	476.24	476.46
6i	913+03.53	3.29	476.25	476.47
6j	913+13.53	3.29	476.25	476.47
6k	913+23.53	3.29	476.26	476.47
6m	913+33.53	3.29	476.26	476.43
6n	913+43.53	3.29	476.25	476.37
6p	913+53.53	3.29	476.24	476.31
℄ Brg. Pier No. 6 (Unit 2)	913+66.03	3.29	476.23	476.23
℄ Pier No. 6	913+67.53	3.29	476.22	476.22

GIRDER 5

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
℄ Pier No. 3 (Unit 2)	908+70.60	9.88	474.19	474.19
℄ Brg. Pier No. 3	908+72.10	9.88	474.20	474.20
4a	908+82.10	9.88	474.25	474.30
4b	908+92.10	9.88	474.30	474.41
4c	909+02.10	9.88	474.35	474.51
4d	909+12.10	9.88	474.40	474.61
4e	909+22.10	9.88	474.45	474.66
4f	909+32.10	9.88	474.50	474.72
4g	909+42.10	9.88	474.55	474.78
4h	909+52.10	9.88	474.60	474.82
4i	909+62.10	9.88	474.65	474.83
4j	909+72.10	9.88	474.70	474.85
4k	909+82.10	9.88	474.75	474.86
4m	909+92.10	9.88	474.80	474.88
4n	910+02.10	9.88	474.85	474.91
4p	910+12.10	9.88	474.90	474.93
℄ Brg. Pier No. 4	910+24.60	9.88	474.96	474.96
5a	910+34.60	9.88	475.01	475.03
5b	910+44.60	9.88	475.06	475.10
5c	910+54.60	9.88	475.11	475.17
5d	910+64.60	9.88	475.16	475.24
5e	910+74.60	9.88	475.21	475.31
5f	910+84.60	9.88	475.26	475.39
5g	910+94.60	9.88	475.31	475.46
5h	911+04.60	9.88	475.36	475.53
5i	911+14.60	9.88	475.41	475.60
5j	911+24.60	9.88	475.46	475.66
5k	911+34.60	9.88	475.51	475.69
5m	911+44.60	9.88	475.56	475.71
5n	911+54.60	9.88	475.61	475.74
5p	911+64.60	9.88	475.66	475.77
5q	911+74.60	9.88	475.71	475.80
5r	911+84.60	9.88	475.76	475.83
5s	911+94.60	9.88	475.81	475.86
5t	912+04.60	9.88	475.86	475.89
℄ Brg Pier No. 5	912+16.60	9.88	475.92	475.92
6a	912+26.60	9.88	475.96	475.98
6b	912+36.60	9.88	476.00	476.05
6c	912+46.60	9.88	476.03	476.11
6d	912+56.60	9.88	476.06	476.16
6e	912+66.60	9.88	476.09	476.22
6f	912+76.60	9.88	476.11	476.28
6g	912+86.60	9.88	476.13	476.34
6h	912+96.60	9.88	476.14	476.37
6i	913+06.60	9.88	476.15	476.37
6j	913+16.60	9.88	476.16	476.37
6k	913+26.60	9.88	476.16	476.37
6m	913+36.60	9.88	476.16	476.33
6n	913+46.60	9.88	476.15	476.27
6p	913+56.60	9.88	476.14	476.21
℄ Brg. Pier No. 6 (Unit 2)	913+69.10	9.88	476.12	476.12
℄ Pier No. 6	913+70.60	9.88	476.12	476.12

GIRDER 6

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
℄ Pier No. 3 (Unit 2)	908+73.67	16.46	474.09	474.09
℄ Brg. Pier No. 3	908+75.17	16.46	474.09	474.09
4a	908+85.17	16.46	474.14	474.20
4b	908+95.17	16.46	474.19	474.30
4c	909+05.17	16.46	474.24	474.41
4d	909+15.17	16.46	474.29	474.50
4e	909+25.17	16.46	474.34	474.56
4f	909+35.17	16.46	474.39	474.62
4g	909+45.17	16.46	474.44	474.67
4h	909+55.17	16.46	474.49	474.71
4i	909+65.17	16.46	474.54	474.73
4j	909+75.17	16.46	474.59	474.74
4k	909+85.17	16.46	474.64	474.76
4m	909+95.17	16.46	474.69	474.78
4n	910+05.17	16.46	474.74	474.80
4p	910+15.17	16.46	474.79	474.83
℄ Brg. Pier No. 4	910+27.67	16.46	474.86	474.86
5a	910+37.67	16.46	474.91	474.93
5b	910+47.67	16.46	474.96	475.00
5c	910+57.67	16.46	475.01	475.07
5d	910+67.67	16.46	475.06	475.14
5e	910+77.67	16.46	475.11	475.21
5f	910+87.67	16.46	475.16	475.28
5g	910+97.67	16.46	475.21	475.35
5h	911+07.67	16.46	475.26	475.43
5i	911+17.67	16.46	475.31	475.50
5j	911+27.67	16.46	475.36	475.55
5k	911+37.67	16.46	475.41	475.58
5m	911+47.67	16.46	475.46	475.61
5n	911+57.67	16.46	475.51	475.63
5p	911+67.67	16.46	475.56	475.66
5q	911+77.67	16.46	475.61	475.69
5r	911+87.67	16.46	475.66	475.72
5s	911+97.67	16.46	475.71	475.75
5t	912+07.67	16.46	475.76	475.78
℄ Brg Pier No. 5	912+19.67	16.46	475.81	475.81
6a	912+29.67	16.46	475.85	475.88
6b	912+39.67	16.46	475.89	475.94
6c	912+49.67	16.46	475.92	476.00
6d	912+59.67	16.46	475.95	476.05
6e	912+69.67	16.46	475.97	476.11
6f	912+79.67	16.46	475.99	476.17
6g	912+89.67	16.46	476.01	476.22
6h	912+99.67	16.46	476.02	476.25
6i	913+09.67	16.46	476.03	476.25
6j	913+19.67	16.46	476.04	476.25
6k	913+29.67	16.46	476.04	476.25
6m	913+39.67	16.46	476.03	476.21
6n	913+49.67	16.46	476.03	476.15
6p	913+59.67	16.46	476.02	476.08
℄ Brg. Pier No. 6 (Unit 2)	913+72.17	16.46	476.00	476.00
℄ Pier No. 6	913+73.67	16.46	475.99	475.99

UNIT 2 - TOP OF SLAB ELEVATIONS (Sheet 3 of 3)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026

DATE 03/27/09

LAYOUT	MNM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

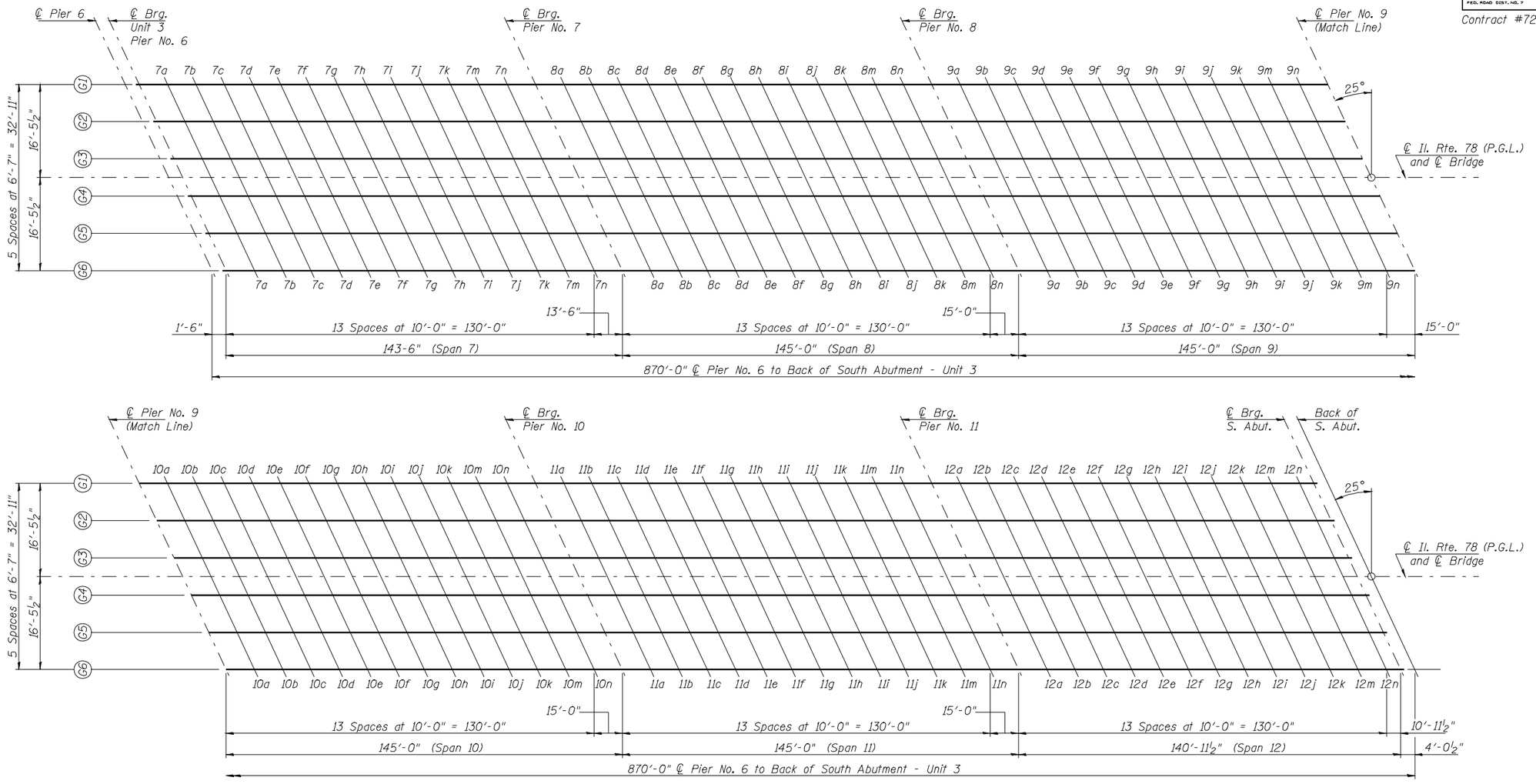
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

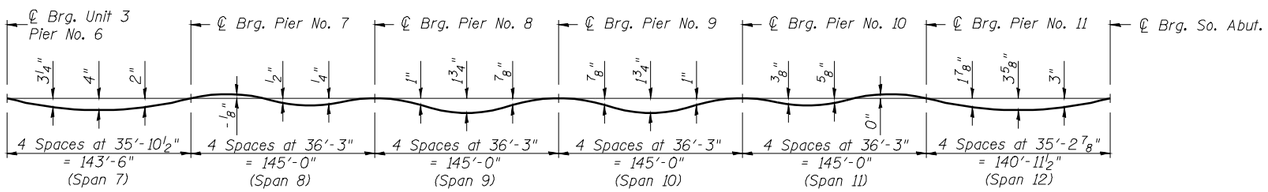
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	146
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 10
86 SHEETS

Contract #72A76



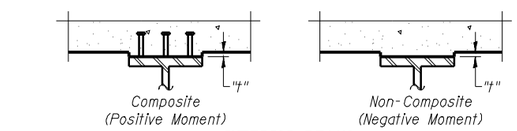
UNIT 3 - DIAGRAMMATIC PLAN



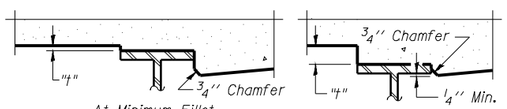
DEAD LOAD DEFLECTION DIAGRAM

(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 11 thru 14 of 86.



INTERIOR BEAMS



EXTERIOR BEAMS

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 11 thru 14 of 86, minus 8" slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

UNIT 3 - TOP OF SLAB ELEVATIONS (Sheet 1 of 5)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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JOB NO. 07S2026

DATE 03/27/09

LAYOUT	NPT/ANM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	147
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 11
86 SHEETS

Contract #72A76

GIRDER 1

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
℄ Pier No. 6 (Unit 3)	913+58.33	-16.46	476.02	476.02
℄ Brg. Pier No. 6	913+59.83	-16.46	476.02	476.02
7a	913+69.83	-16.46	476.00	476.08
7b	913+79.83	-16.46	475.98	476.13
7c	913+89.83	-16.46	475.96	476.18
7d	913+99.83	-16.46	475.93	476.21
7e	914+09.83	-16.46	475.90	476.19
7f	914+19.83	-16.46	475.86	476.17
7g	914+29.83	-16.46	475.82	476.15
7h	914+39.83	-16.46	475.78	476.07
7i	914+49.83	-16.46	475.73	475.98
7j	914+59.83	-16.46	475.68	475.89
7k	914+69.83	-16.46	475.63	475.79
7m	914+79.83	-16.46	475.58	475.69
7n	914+89.83	-16.46	475.53	475.60
℄ Brg. Pier No. 7	915+03.33	-16.46	475.46	475.46
8a	915+13.33	-16.46	475.41	475.41
8b	915+23.33	-16.46	475.36	475.36
8c	915+33.33	-16.46	475.31	475.30
8d	915+43.33	-16.46	475.26	475.26
8e	915+53.33	-16.46	475.21	475.23
8f	915+63.33	-16.46	475.16	475.19
8g	915+73.33	-16.46	475.11	475.16
8h	915+83.33	-16.46	475.06	475.11
8i	915+93.33	-16.46	475.01	475.05
8j	916+03.33	-16.46	474.96	474.99
8k	916+13.33	-16.46	474.91	474.94
8m	916+23.33	-16.46	474.86	474.88
8n	916+33.33	-16.46	474.81	474.83
℄ Brg Pier No. 8	916+48.33	-16.46	474.74	474.74
9a	916+58.33	-16.46	474.69	474.71
9b	916+68.33	-16.46	474.64	474.69
9c	916+78.33	-16.46	474.59	474.66
9d	916+88.33	-16.46	474.54	474.63
9e	916+98.33	-16.46	474.49	474.60
9f	917+08.33	-16.46	474.44	474.57
9g	917+18.33	-16.46	474.39	474.53
9h	917+28.33	-16.46	474.34	474.47
9i	917+38.33	-16.46	474.29	474.40
9j	917+48.33	-16.46	474.24	474.33
9k	917+58.33	-16.46	474.19	474.26
9m	917+68.33	-16.46	474.14	474.19
9n	917+78.33	-16.46	474.09	474.12
℄ Brg. Pier No. 9	917+93.33	-16.46	474.01	474.01
10a	918+03.33	-16.46	473.96	473.98
10b	918+13.33	-16.46	473.91	473.95
10c	918+23.33	-16.46	473.86	473.92
10d	918+33.33	-16.46	473.81	473.89
10e	918+43.33	-16.46	473.76	473.86
10f	918+53.33	-16.46	473.71	473.83
10g	918+63.33	-16.46	473.66	473.80
10h	918+73.33	-16.46	473.61	473.74
10i	918+83.33	-16.46	473.56	473.68
10j	918+93.33	-16.46	473.51	473.61
10k	919+03.33	-16.46	473.46	473.54
10m	919+13.33	-16.46	473.41	473.47
10n	919+23.33	-16.46	473.36	473.40
℄ Brg. Pier No. 10	919+38.33	-16.46	473.29	473.29

GIRDER 1 (Cont'd.)

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
℄ Brg. Pier No. 10	919+38.33	-16.46	473.29	473.29
11a	919+48.33	-16.46	473.24	473.25
11b	919+58.33	-16.46	473.19	473.21
11c	919+68.33	-16.46	473.14	473.16
11d	919+78.33	-16.46	473.09	473.12
11e	919+88.33	-16.46	473.04	473.08
11f	919+98.33	-16.46	472.99	473.04
11g	920+08.33	-16.46	472.94	472.99
11h	920+18.33	-16.46	472.89	472.93
11i	920+28.33	-16.46	472.84	472.87
11j	920+38.33	-16.46	472.79	472.80
11k	920+48.33	-16.46	472.74	472.74
11m	920+58.33	-16.46	472.69	472.69
11n	920+68.33	-16.46	472.64	472.64
℄ Brg Pier No. 11	920+83.33	-16.46	472.56	472.56
12a	920+93.33	-16.46	472.51	472.56
12b	921+03.33	-16.46	472.46	472.55
12c	921+13.33	-16.46	472.41	472.55
12d	921+23.33	-16.46	472.36	472.54
12e	921+33.33	-16.46	472.31	472.53
12f	921+43.33	-16.46	472.26	472.52
12g	921+53.33	-16.46	472.21	472.51
12h	921+63.33	-16.46	472.16	472.45
12i	921+73.33	-16.46	472.11	472.39
12j	921+83.33	-16.46	472.06	472.32
12k	921+93.33	-16.46	472.01	472.24
12m	922+03.33	-16.46	471.96	472.11
12n	922+13.33	-16.46	471.91	471.99
℄ Brg. So. Abut.	922+24.29	-16.46	471.86	471.86
Bk. So. Abut.	922+28.33	-16.46	471.84	471.84

GIRDER 2

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
℄ Pier No. 6 (Unit 3)	913+61.40	-9.88	476.13	476.13
℄ Brg. Pier No. 6	913+62.90	-9.88	476.13	476.13
7a	913+72.90	-9.88	476.12	476.19
7b	913+82.90	-9.88	476.09	476.25
7c	913+92.90	-9.88	476.07	476.30
7d	914+02.90	-9.88	476.04	476.32
7e	914+12.90	-9.88	476.01	476.30
7f	914+22.90	-9.88	475.97	476.28
7g	914+32.90	-9.88	475.93	476.26
7h	914+42.90	-9.88	475.89	476.18
7i	914+52.90	-9.88	475.84	476.09
7j	914+62.90	-9.88	475.79	475.99
7k	914+72.90	-9.88	475.74	475.90
7m	914+82.90	-9.88	475.69	475.80
7n	914+92.90	-9.88	475.64	475.70
℄ Brg. Pier No. 7	915+06.40	-9.88	475.57	475.57
8a	915+16.40	-9.88	475.52	475.52
8b	915+26.40	-9.88	475.47	475.46
8c	915+36.40	-9.88	475.42	475.41
8d	915+46.40	-9.88	475.37	475.36
8e	915+56.40	-9.88	475.32	475.33
8f	915+66.40	-9.88	475.27	475.30
8g	915+76.40	-9.88	475.22	475.26
8h	915+86.40	-9.88	475.17	475.21
8i	915+96.40	-9.88	475.12	475.16
8j	916+06.40	-9.88	475.07	475.10
8k	916+16.40	-9.88	475.02	475.04
8m	916+26.40	-9.88	474.97	474.99
8n	916+36.40	-9.88	474.92	474.93
℄ Brg Pier No. 8	916+51.40	-9.88	474.85	474.85
9a	916+61.40	-9.88	474.80	474.82
9b	916+71.40	-9.88	474.75	474.79
9c	916+81.40	-9.88	474.70	474.77
9d	916+91.40	-9.88	474.65	474.74
9e	917+01.40	-9.88	474.60	474.70
9f	917+11.40	-9.88	474.55	474.67
9g	917+21.40	-9.88	474.50	474.64
9h	917+31.40	-9.88	474.45	474.58
9i	917+41.40	-9.88	474.40	474.51
9j	917+51.40	-9.88	474.35	474.44
9k	917+61.40	-9.88	474.30	474.36
9m	917+71.40	-9.88	474.25	474.29
9n	917+81.40	-9.88	474.20	474.23
℄ Brg. Pier No. 9	917+96.40	-9.88	474.12	474.12
10a	918+06.40	-9.88	474.07	474.09
10b	918+16.40	-9.88	474.02	474.06
10c	918+26.40	-9.88	473.97	474.03
10d	918+36.40	-9.88	473.92	474.00
10e	918+46.40	-9.88	473.87	473.97
10f	918+56.40	-9.88	473.82	473.94
10g	918+66.40	-9.88	473.77	473.91
10h	918+76.40	-9.88	473.72	473.85
10i	918+86.40	-9.88	473.67	473.78
10j	918+96.40	-9.88	473.62	473.72
10k	919+06.40	-9.88	473.57	473.65
10m	919+16.40	-9.88	473.52	473.58
10n	919+26.40	-9.88	473.47	473.50
℄ Brg. Pier No. 10	919+41.40	-9.88	473.40	473.40

GIRDER 2 (Cont'd.)

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
℄ Brg. Pier No. 10	919+41.40	-9.88	473.40	473.40
11a	919+51.40	-9.88	473.35	473.35
11b	919+61.40	-9.88	473.30	473.31
11c	919+71.40	-9.88	473.25	473.27
11d	919+81.40	-9.88	473.20	473.23
11e	919+91.40	-9.88	473.15	473.18
11f	920+01.40	-9.88	473.10	473.14
11g	920+11.40	-9.88	473.05	473.10
11h	920+21.40	-9.88	473.00	473.04
11i	920+31.40	-9.88	472.95	472.97
11j	920+41.40	-9.88	472.90	472.91
11k	920+51.40	-9.88	472.85	472.84
11m	920+61.40	-9.88	472.80	472.79
11n	920+71.40	-9.88	472.75	472.74
℄ Brg Pier No. 11	920+86.40	-9.88	472.67	472.67
12a	920+96.40	-9.88	472.62	472.66
12b	921+06.40	-9.88	472.57	472.66
12c	921+16.40	-9.88	472.52	472.65
12d	921+26.40	-9.88	472.47	472.64
12e	921+36.40	-9.88	472.42	472.64
12f	921+46.40	-9.88	472.37	472.63
12g	921+56.40	-9.88	472.32	472.62
12h	921+66.40	-9.88	472.27	472.56
12i	921+76.40	-9.88	472.22	472.49
12j	921+86.40	-9.88	472.17	472.43
12k	921+96.40	-9.88	472.12	472.34
12m	922+06.40	-9.88	472.07	472.22
12n	922+16.40	-9.88	472.02	472.10
℄ Brg. So. Abut.	922+27.36	-9.88	471.97	471.97
Bk. So. Abut.	922+31.40	-9.88	471.95	471.95

UNIT 3 - TOP OF SLAB ELEVATIONS (Sheet 2 of 5)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026

DATE 03/27/09

LAYOUT	MPT/MNM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

Mar-31-2009 09:00:49AM
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	148
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 12
86 SHEETS

Contract #72A76

GIRDER 3

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
℄ Pier No. 6 (Unit 3)	913+64.47	-3.29	476.23	476.23
℄ Brg. Pier No. 6	913+65.97	-3.29	476.23	476.23
7a	913+75.97	-3.29	476.21	476.28
7b	913+85.97	-3.29	476.19	476.34
7c	913+95.97	-3.29	476.16	476.39
7d	914+05.97	-3.29	476.13	476.41
7e	914+15.97	-3.29	476.10	476.39
7f	914+25.97	-3.29	476.06	476.37
7g	914+35.97	-3.29	476.02	476.34
7h	914+45.97	-3.29	475.97	476.26
7i	914+55.97	-3.29	475.92	476.17
7j	914+65.97	-3.29	475.87	476.08
7k	914+75.97	-3.29	475.82	475.98
7m	914+85.97	-3.29	475.77	475.88
7n	914+95.97	-3.29	475.72	475.79
℄ Brg. Pier No. 7	915+09.47	-3.29	475.65	475.65
8a	915+19.47	-3.29	475.60	475.60
8b	915+29.47	-3.29	475.55	475.55
8c	915+39.47	-3.29	475.50	475.49
8d	915+49.47	-3.29	475.45	475.45
8e	915+59.47	-3.29	475.40	475.41
8f	915+69.47	-3.29	475.35	475.38
8g	915+79.47	-3.29	475.30	475.35
8h	915+89.47	-3.29	475.25	475.30
8i	915+99.47	-3.29	475.20	475.24
8j	916+09.47	-3.29	475.15	475.18
8k	916+19.47	-3.29	475.10	475.13
8m	916+29.47	-3.29	475.05	475.07
8n	916+39.47	-3.29	475.00	475.01
℄ Brg Pier No. 8	916+54.47	-3.29	474.93	474.93
9a	916+64.47	-3.29	474.88	474.90
9b	916+74.47	-3.29	474.83	474.88
9c	916+84.47	-3.29	474.78	474.85
9d	916+94.47	-3.29	474.73	474.82
9e	917+04.47	-3.29	474.68	474.79
9f	917+14.47	-3.29	474.63	474.75
9g	917+24.47	-3.29	474.58	474.72
9h	917+34.47	-3.29	474.53	474.66
9i	917+44.47	-3.29	474.48	474.59
9j	917+54.47	-3.29	474.43	474.52
9k	917+64.47	-3.29	474.38	474.45
9m	917+74.47	-3.29	474.33	474.38
9n	917+84.47	-3.29	474.28	474.31
℄ Brg. Pier No. 9	917+99.47	-3.29	474.20	474.20
10a	918+09.47	-3.29	474.15	474.17
10b	918+19.47	-3.29	474.10	474.14
10c	918+29.47	-3.29	474.05	474.11
10d	918+39.47	-3.29	474.00	474.08
10e	918+49.47	-3.29	473.95	474.05
10f	918+59.47	-3.29	473.90	474.02
10g	918+69.47	-3.29	473.85	473.99
10h	918+79.47	-3.29	473.80	473.93
10i	918+89.47	-3.29	473.75	473.87
10j	918+99.47	-3.29	473.70	473.80
10k	919+09.47	-3.29	473.65	473.73
10m	919+19.47	-3.29	473.60	473.66
10n	919+29.47	-3.29	473.55	473.59
℄ Brg. Pier No. 10	919+44.47	-3.29	473.48	473.48

GIRDER 3 (Cont'd.)

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
℄ Brg. Pier No. 10	919+44.47	-3.29	473.48	473.48
11a	919+54.47	-3.29	473.43	473.44
11b	919+64.47	-3.29	473.38	473.40
11c	919+74.47	-3.29	473.33	473.35
11d	919+84.47	-3.29	473.28	473.31
11e	919+94.47	-3.29	473.23	473.27
11f	920+04.47	-3.29	473.18	473.23
11g	920+14.47	-3.29	473.13	473.18
11h	920+24.47	-3.29	473.08	473.12
11i	920+34.47	-3.29	473.03	473.06
11j	920+44.47	-3.29	472.98	472.99
11k	920+54.47	-3.29	472.93	472.93
11m	920+64.47	-3.29	472.88	472.88
11n	920+74.47	-3.29	472.83	472.83
℄ Brg Pier No. 11	920+89.47	-3.29	472.75	472.75
12a	920+99.47	-3.29	472.70	472.75
12b	921+09.47	-3.29	472.65	472.74
12c	921+19.47	-3.29	472.60	472.74
12d	921+29.47	-3.29	472.55	472.73
12e	921+39.47	-3.29	472.50	472.72
12f	921+49.47	-3.29	472.45	472.71
12g	921+59.47	-3.29	472.40	472.70
12h	921+69.47	-3.29	472.35	472.64
12i	921+79.47	-3.29	472.30	472.58
12j	921+89.47	-3.29	472.25	472.51
12k	921+99.47	-3.29	472.20	472.42
12m	922+09.47	-3.29	472.15	472.30
12n	922+19.47	-3.29	472.10	472.18
℄ Brg. So. Abut.	922+30.43	-3.29	472.05	472.05
Bk. So. Abut.	922+34.47	-3.29	472.03	472.03

℄ BRIDGE & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
℄ Pier No. 6 (Unit 3)	913+66.00	0.00	476.28	476.28
℄ Brg. Pier No. 6	913+67.50	0.00	476.27	476.27
7a	913+77.50	0.00	476.25	476.33
7b	913+87.50	0.00	476.23	476.38
7c	913+97.50	0.00	476.21	476.43
7d	914+07.50	0.00	476.17	476.45
7e	914+17.50	0.00	476.14	476.44
7f	914+27.50	0.00	476.10	476.41
7g	914+37.50	0.00	476.06	476.39
7h	914+47.50	0.00	476.01	476.31
7i	914+57.50	0.00	475.96	476.21
7j	914+67.50	0.00	475.91	476.12
7k	914+77.50	0.00	475.86	476.02
7m	914+87.50	0.00	475.81	475.92
7n	914+97.50	0.00	475.76	475.83
℄ Brg. Pier No. 7	915+11.00	0.00	475.70	475.70
8a	915+21.00	0.00	475.65	475.64
8b	915+31.00	0.00	475.60	475.59
8c	915+41.00	0.00	475.55	475.54
8d	915+51.00	0.00	475.50	475.49
8e	915+61.00	0.00	475.45	475.46
8f	915+71.00	0.00	475.40	475.42
8g	915+81.00	0.00	475.35	475.39
8h	915+91.00	0.00	475.30	475.34
8i	916+01.00	0.00	475.25	475.28
8j	916+11.00	0.00	475.20	475.23
8k	916+21.00	0.00	475.15	475.17
8m	916+31.00	0.00	475.10	475.11
8n	916+41.00	0.00	475.05	475.06
℄ Brg Pier No. 8	916+56.00	0.00	474.97	474.97
9a	916+66.00	0.00	474.92	474.94
9b	916+76.00	0.00	474.87	474.92
9c	916+86.00	0.00	474.82	474.89
9d	916+96.00	0.00	474.77	474.86
9e	917+06.00	0.00	474.72	474.83
9f	917+16.00	0.00	474.67	474.80
9g	917+26.00	0.00	474.62	474.76
9h	917+36.00	0.00	474.57	474.70
9i	917+46.00	0.00	474.52	474.63
9j	917+56.00	0.00	474.47	474.56
9k	917+66.00	0.00	474.42	474.49
9m	917+76.00	0.00	474.37	474.42
9n	917+86.00	0.00	474.32	474.35
℄ Brg. Pier No. 9	918+01.00	0.00	474.25	474.25
10a	918+11.00	0.00	474.20	474.21
10b	918+21.00	0.00	474.15	474.18
10c	918+31.00	0.00	474.10	474.15
10d	918+41.00	0.00	474.05	474.12
10e	918+51.00	0.00	474.00	474.09
10f	918+61.00	0.00	473.95	474.06
10g	918+71.00	0.00	473.90	474.03
10h	918+81.00	0.00	473.85	473.98
10i	918+91.00	0.00	473.80	473.91
10j	919+01.00	0.00	473.75	473.84
10k	919+11.00	0.00	473.70	473.78
10m	919+21.00	0.00	473.65	473.70
10n	919+31.00	0.00	473.60	473.63
℄ Brg. Pier No. 10	919+46.00	0.00	473.52	473.52

℄ BRIDGE & P.G.L. (Cont'd.)

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
℄ Brg. Pier No. 10	919+46.00	0.00	473.52	473.52
11a	919+56.00	0.00	473.47	473.48
11b	919+66.00	0.00	473.42	473.44
11c	919+76.00	0.00	473.37	473.40
11d	919+86.00	0.00	473.32	473.35
11e	919+96.00	0.00	473.27	473.31
11f	920+06.00	0.00	473.22	473.27
11g	920+16.00	0.00	473.17	473.22
11h	920+26.00	0.00	473.12	473.16
11i	920+36.00	0.00	473.07	473.10
11j	920+46.00	0.00	473.02	473.03
11k	920+56.00	0.00	472.97	472.97
11m	920+66.00	0.00	472.92	472.92
11n	920+76.00	0.00	472.87	472.87
℄ Brg Pier No. 11	920+91.00	0.00	472.80	472.80
12a	921+01.00	0.00	472.75	472.79
12b	921+11.00	0.00	472.70	472.78
12c	921+21.00	0.00	472.65	472.78
12d	921+31.00	0.00	472.60	472.77
12e	921+41.00	0.00	472.55	472.76
12f	921+51.00	0.00	472.50	472.75
12g	921+61.00	0.00	472.45	472.74
12h	921+71.00	0.00	472.40	472.68
12i	921+81.00	0.00	472.35	472.62
12j	921+91.00	0.00	472.30	472.55
12k	922+01.00	0.00	472.25	472.47
12m	922+11.00	0.00	472.20	472.34
12n	922+21.00	0.00	472.15	472.22
℄ Brg. So. Abut.	922+31.96	0.00	472.09	472.09
Bk. So. Abut.	922+36.00	0.00	472.07	472.07

UNIT 3 - TOP OF SLAB ELEVATIONS (Sheet 3 of 5)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026

DATE 03/27/09

LAYOUT	KPT/MNM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	149
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 13
86 SHEETS

Contract #72A76

GIRDER 4

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
℄ Pier No. 6 (Unit 3)	913+67.53	3.29	476.22	476.22
℄ Brg. Pier No. 6	913+69.03	3.29	476.22	476.22
7a	913+79.03	3.29	476.20	476.28
7b	913+89.03	3.29	476.18	476.33
7c	913+99.03	3.29	476.15	476.38
7d	914+09.03	3.29	476.12	476.40
7e	914+19.03	3.29	476.09	476.38
7f	914+29.03	3.29	476.05	476.36
7g	914+39.03	3.29	476.00	476.33
7h	914+49.03	3.29	475.96	476.25
7i	914+59.03	3.29	475.91	476.15
7j	914+69.03	3.29	475.86	476.06
7k	914+79.03	3.29	475.81	475.97
7m	914+89.03	3.29	475.76	475.87
7n	914+99.03	3.29	475.71	475.77
℄ Brg. Pier No. 7	915+12.53	3.29	475.64	475.64
8a	915+22.53	3.29	475.59	475.59
8b	915+32.53	3.29	475.54	475.53
8c	915+42.53	3.29	475.49	475.48
8d	915+52.53	3.29	475.44	475.43
8e	915+62.53	3.29	475.39	475.40
8f	915+72.53	3.29	475.34	475.36
8g	915+82.53	3.29	475.29	475.33
8h	915+92.53	3.29	475.24	475.28
8i	916+02.53	3.29	475.19	475.22
8j	916+12.53	3.29	475.14	475.17
8k	916+22.53	3.29	475.09	475.11
8m	916+32.53	3.29	475.04	475.06
8n	916+42.53	3.29	474.99	475.00
℄ Brg Pier No. 8	916+57.53	3.29	474.91	474.91
9a	916+67.53	3.29	474.86	474.89
9b	916+77.53	3.29	474.81	474.86
9c	916+87.53	3.29	474.76	474.83
9d	916+97.53	3.29	474.71	474.81
9e	917+07.53	3.29	474.66	474.77
9f	917+17.53	3.29	474.61	474.74
9g	917+27.53	3.29	474.56	474.71
9h	917+37.53	3.29	474.51	474.64
9i	917+47.53	3.29	474.46	474.57
9j	917+57.53	3.29	474.41	474.50
9k	917+67.53	3.29	474.36	474.43
9m	917+77.53	3.29	474.31	474.36
9n	917+87.53	3.29	474.26	474.29
℄ Brg. Pier No. 9	918+02.53	3.29	474.19	474.19
10a	918+12.53	3.29	474.14	474.16
10b	918+22.53	3.29	474.09	474.13
10c	918+32.53	3.29	474.04	474.10
10d	918+42.53	3.29	473.99	474.07
10e	918+52.53	3.29	473.94	474.04
10f	918+62.53	3.29	473.89	474.01
10g	918+72.53	3.29	473.84	473.98
10h	918+82.53	3.29	473.79	473.92
10i	918+92.53	3.29	473.74	473.85
10j	919+02.53	3.29	473.69	473.79
10k	919+12.53	3.29	473.64	473.72
10m	919+22.53	3.29	473.59	473.65
10n	919+32.53	3.29	473.54	473.57
℄ Brg. Pier No. 10	919+47.53	3.29	473.46	473.46

GIRDER 4 (Cont'd.)

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
℄ Brg. Pier No. 10	919+47.53	3.29	473.46	473.46
11a	919+57.53	3.29	473.41	473.42
11b	919+67.53	3.29	473.36	473.38
11c	919+77.53	3.29	473.31	473.34
11d	919+87.53	3.29	473.26	473.30
11e	919+97.53	3.29	473.21	473.25
11f	920+07.53	3.29	473.16	473.21
11g	920+17.53	3.29	473.11	473.17
11h	920+27.53	3.29	473.06	473.11
11i	920+37.53	3.29	473.01	473.04
11j	920+47.53	3.29	472.96	472.97
11k	920+57.53	3.29	472.91	472.91
11m	920+67.53	3.29	472.86	472.86
11n	920+77.53	3.29	472.81	472.81
℄ Brg Pier No. 11	920+92.53	3.29	472.74	472.74
12a	921+02.53	3.29	472.69	472.73
12b	921+12.53	3.29	472.64	472.73
12c	921+22.53	3.29	472.59	472.72
12d	921+32.53	3.29	472.54	472.71
12e	921+42.53	3.29	472.49	472.70
12f	921+52.53	3.29	472.44	472.70
12g	921+62.53	3.29	472.39	472.69
12h	921+72.53	3.29	472.34	472.63
12i	921+82.53	3.29	472.29	472.56
12j	921+92.53	3.29	472.24	472.50
12k	922+02.53	3.29	472.19	472.41
12m	922+12.53	3.29	472.14	472.29
12n	922+22.53	3.29	472.09	472.17
℄ Brg. So. Abut.	922+33.49	3.29	472.03	472.03
Bk. So. Abut.	922+37.53	3.29	472.01	472.01

GIRDER 5

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
℄ Pier No. 6 (Unit 3)	913+70.60	9.88	476.12	476.12
℄ Brg. Pier No. 6	913+72.10	9.88	476.12	476.12
7a	913+82.10	9.88	476.10	476.17
7b	913+92.10	9.88	476.07	476.22
7c	914+02.10	9.88	476.04	476.27
7d	914+12.10	9.88	476.01	476.29
7e	914+22.10	9.88	475.97	476.27
7f	914+32.10	9.88	475.93	476.25
7g	914+42.10	9.88	475.89	476.22
7h	914+52.10	9.88	475.84	476.13
7i	914+62.10	9.88	475.79	476.04
7j	914+72.10	9.88	475.74	475.95
7k	914+82.10	9.88	475.69	475.85
7m	914+92.10	9.88	475.64	475.75
7n	915+02.10	9.88	475.59	475.66
℄ Brg. Pier No. 7	915+15.60	9.88	475.52	475.52
8a	915+25.60	9.88	475.47	475.47
8b	915+35.60	9.88	475.42	475.42
8c	915+45.60	9.88	475.37	475.36
8d	915+55.60	9.88	475.32	475.32
8e	915+65.60	9.88	475.27	475.28
8f	915+75.60	9.88	475.22	475.25
8g	915+85.60	9.88	475.17	475.22
8h	915+95.60	9.88	475.12	475.17
8i	916+05.60	9.88	475.07	475.11
8j	916+15.60	9.88	475.02	475.05
8k	916+25.60	9.88	474.97	475.00
8m	916+35.60	9.88	474.92	474.94
8n	916+45.60	9.88	474.87	474.88
℄ Brg Pier No. 8	916+60.60	9.88	474.80	474.80
9a	916+70.60	9.88	474.75	474.77
9b	916+80.60	9.88	474.70	474.75
9c	916+90.60	9.88	474.65	474.72
9d	917+00.60	9.88	474.60	474.69
9e	917+10.60	9.88	474.55	474.66
9f	917+20.60	9.88	474.50	474.62
9g	917+30.60	9.88	474.45	474.59
9h	917+40.60	9.88	474.40	474.53
9i	917+50.60	9.88	474.35	474.46
9j	917+60.60	9.88	474.30	474.39
9k	917+70.60	9.88	474.25	474.32
9m	917+80.60	9.88	474.20	474.25
9n	917+90.60	9.88	474.15	474.18
℄ Brg. Pier No. 9	918+05.60	9.88	474.07	474.07
10a	918+15.60	9.88	474.02	474.04
10b	918+25.60	9.88	473.97	474.01
10c	918+35.60	9.88	473.92	473.98
10d	918+45.60	9.88	473.87	473.95
10e	918+55.60	9.88	473.82	473.92
10f	918+65.60	9.88	473.77	473.89
10g	918+75.60	9.88	473.72	473.86
10h	918+85.60	9.88	473.67	473.80
10i	918+95.60	9.88	473.62	473.74
10j	919+05.60	9.88	473.57	473.67
10k	919+15.60	9.88	473.52	473.60
10m	919+25.60	9.88	473.47	473.53
10n	919+35.60	9.88	473.42	473.46
℄ Brg. Pier No. 10	919+50.60	9.88	473.35	473.35

GIRDER 5 (Cont'd.)

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
℄ Brg. Pier No. 10	919+50.60	9.88	473.35	473.35
11a	919+60.60	9.88	473.30	473.31
11b	919+70.60	9.88	473.25	473.27
11c	919+80.60	9.88	473.20	473.22
11d	919+90.60	9.88	473.15	473.18
11e	920+00.60	9.88	473.10	473.14
11f	920+10.60	9.88	473.05	473.10
11g	920+20.60	9.88	473.00	473.05
11h	920+30.60	9.88	472.95	472.99
11i	920+40.60	9.88	472.90	472.93
11j	920+50.60	9.88	472.85	472.86
11k	920+60.60	9.88	472.80	472.80
11m	920+70.60	9.88	472.75	472.75
11n	920+80.60	9.88	472.70	472.70
℄ Brg Pier No. 11	920+95.60	9.88	472.62	472.62
12a	921+05.60	9.88	472.57	472.62
12b	921+15.60	9.88	472.52	472.61
12c	921+25.60	9.88	472.47	472.61
12d	921+35.60	9.88	472.42	472.60
12e	921+45.60	9.88	472.37	472.59
12f	921+55.60	9.88	472.32	472.58
12g	921+65.60	9.88	472.27	472.57
12h	921+75.60	9.88	472.22	472.51
12i	921+85.60	9.88	472.17	472.45
12j	921+95.60	9.88	472.12	472.38
12k	922+05.60	9.88	472.07	472.29
12m	922+15.60	9.88	472.02	472.17
12n	922+25.60	9.88	471.97	472.05
℄ Brg. So. Abut.	922+36.56	9.88	471.92	471.92
Bk. So. Abut.	922+40.60	9.88	471.90	471.90

UNIT 3 - TOP OF SLAB ELEVATIONS (Sheet 4 of 5)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

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Hanson Professional Services Inc.

JOB NO. 07S2026

DATE 03/27/09

LAYOUT	NPT/MNM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	150
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 14
86 SHEETS

Contract #72A76

GIRDER 6

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
℄ Pier No. 6 (Unit 3)	913+73.67	16.46	475.99	475.99
℄ Brg. Pier No. 6	913+75.17	16.46	475.99	475.99
7a	913+85.17	16.46	475.97	476.04
7b	913+95.17	16.46	475.94	476.09
7c	914+05.17	16.46	475.91	476.14
7d	914+15.17	16.46	475.88	476.16
7e	914+25.17	16.46	475.84	476.14
7f	914+35.17	16.46	475.80	476.11
7g	914+45.17	16.46	475.75	476.08
7h	914+55.17	16.46	475.71	476.00
7i	914+65.17	16.46	475.66	475.90
7j	914+75.17	16.46	475.61	475.81
7k	914+85.17	16.46	475.56	475.71
7m	914+95.17	16.46	475.51	475.62
7n	915+05.17	16.46	475.46	475.52
℄ Brg. Pier No. 7	915+18.67	16.46	475.39	475.39
8a	915+28.67	16.46	475.34	475.33
8b	915+38.67	16.46	475.29	475.28
8c	915+48.67	16.46	475.24	475.23
8d	915+58.67	16.46	475.19	475.18
8e	915+68.67	16.46	475.14	475.15
8f	915+78.67	16.46	475.09	475.11
8g	915+88.67	16.46	475.04	475.08
8h	915+98.67	16.46	474.99	475.03
8i	916+08.67	16.46	474.94	474.97
8j	916+18.67	16.46	474.89	474.92
8k	916+28.67	16.46	474.84	474.86
8m	916+38.67	16.46	474.79	474.81
8n	916+48.67	16.46	474.74	474.75
℄ Brg Pier No. 8	916+63.67	16.46	474.66	474.66
9a	916+73.67	16.46	474.61	474.64
9b	916+83.67	16.46	474.56	474.61
9c	916+93.67	16.46	474.51	474.58
9d	917+03.67	16.46	474.46	474.56
9e	917+13.67	16.46	474.41	474.52
9f	917+23.67	16.46	474.36	474.49
9g	917+33.67	16.46	474.31	474.46
9h	917+43.67	16.46	474.26	474.39
9i	917+53.67	16.46	474.21	474.32
9j	917+63.67	16.46	474.16	474.25
9k	917+73.67	16.46	474.11	474.18
9m	917+83.67	16.46	474.06	474.11
9n	917+93.67	16.46	474.01	474.04
℄ Brg. Pier No. 9	918+08.67	16.46	473.94	473.94
10a	918+18.67	16.46	473.89	473.91
10b	918+28.67	16.46	473.84	473.88
10c	918+38.67	16.46	473.79	473.85
10d	918+48.67	16.46	473.74	473.81
10e	918+58.67	16.46	473.69	473.79
10f	918+68.67	16.46	473.64	473.76
10g	918+78.67	16.46	473.59	473.73
10h	918+88.67	16.46	473.54	473.67
10i	918+98.67	16.46	473.49	473.60
10j	919+08.67	16.46	473.44	473.54
10k	919+18.67	16.46	473.39	473.47
10m	919+28.67	16.46	473.34	473.40
10n	919+38.67	16.46	473.29	473.32
℄ Brg. Pier No. 10	919+53.67	16.46	473.21	473.21

GIRDER 6 (Cont'd.)

Location	Station	Offset	Theoretical Grade Elevations	Theo. Grade Elevations Adj. for D.L. Deflection
℄ Brg. Pier No. 10	919+53.67	16.46	473.21	473.21
11a	919+63.67	16.46	473.16	473.17
11b	919+73.67	16.46	473.11	473.13
11c	919+83.67	16.46	473.06	473.09
11d	919+93.67	16.46	473.01	473.05
11e	920+03.67	16.46	472.96	473.00
11f	920+13.67	16.46	472.91	472.96
11g	920+23.67	16.46	472.86	472.92
11h	920+33.67	16.46	472.81	472.86
11i	920+43.67	16.46	472.76	472.79
11j	920+53.67	16.46	472.71	472.72
11k	920+63.67	16.46	472.66	472.66
11m	920+73.67	16.46	472.61	472.61
11n	920+83.67	16.46	472.56	472.56
℄ Brg Pier No. 11	920+98.67	16.46	472.49	472.49
12a	921+08.67	16.46	472.44	472.48
12b	921+18.67	16.46	472.39	472.48
12c	921+28.67	16.46	472.34	472.47
12d	921+38.67	16.46	472.29	472.46
12e	921+48.67	16.46	472.24	472.45
12f	921+58.67	16.46	472.19	472.45
12g	921+68.67	16.46	472.14	472.44
12h	921+78.67	16.46	472.09	472.38
12i	921+88.67	16.46	472.04	472.31
12j	921+98.67	16.46	471.99	472.25
12k	922+08.67	16.46	471.94	472.16
12m	922+18.67	16.46	471.89	472.04
12n	922+28.67	16.46	471.84	471.92
℄ Brg. So. Abut.	922+39.63	16.46	471.78	471.78
Bk. So. Abut.	922+43.67	16.46	471.76	471.76

UNIT 3 - TOP OF SLAB ELEVATIONS (Sheet 5 of 5)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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JOB NO. 07S2026

DATE 03/27/09

LAYOUT	NPT/MNM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	151
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 15
86 SHEETS

Contract #72A76

EAST GUTTER LINE

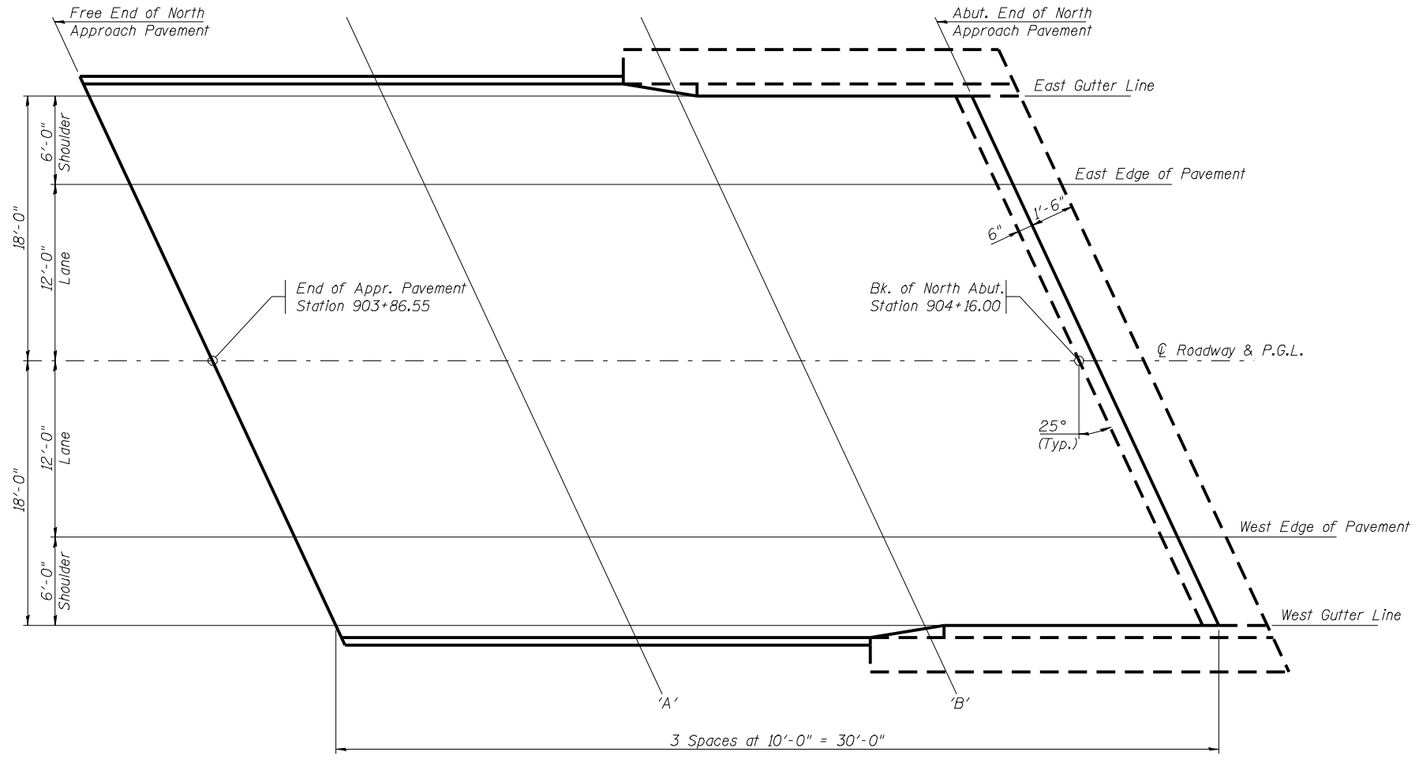
Location	Station	Offset	Theoretical Grade Elevations
Free End of North Appr.	903+78.16	-18.00	471.58
'A'	903+88.16	-18.00	471.63
'B'	903+98.16	-18.00	471.68
Abut. End of North Appr.	904+08.16	-18.00	471.73

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
Free End of North Appr.	903+80.96	-12.00	471.71
'A'	903+90.96	-12.00	471.76
'B'	904+00.96	-12.00	471.81
Abut. End of North Appr.	904+10.96	-12.00	471.86

℄ ROADWAY & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations
Free End of North Appr.	903+86.55	0.00	471.92
'A'	903+96.55	0.00	471.97
'B'	904+06.55	0.00	472.02
Abut. End of North Appr.	904+16.55	0.00	472.07



PLAN

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
Free End of North Appr.	903+92.15	12.00	471.77
'A'	904+02.15	12.00	471.82
'B'	904+12.15	12.00	471.87
Abut. End of North Appr.	904+22.15	12.00	471.92

WEST GUTTER LINE

Location	Station	Offset	Theoretical Grade Elevations
Free End of North Appr.	903+94.95	18.00	471.66
'A'	904+04.95	18.00	471.71
'B'	904+14.95	18.00	471.76
Abut. End of North Appr.	904+24.95	18.00	471.81

NORTH - TOP OF APPROACH SLAB ELEVATIONS
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

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JOB NO. 07S2026

DATE 03/27/09

LAYOUT	Rod	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	152
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 16
86 SHEETS

Contract #72A76

EAST GUTTER LINE

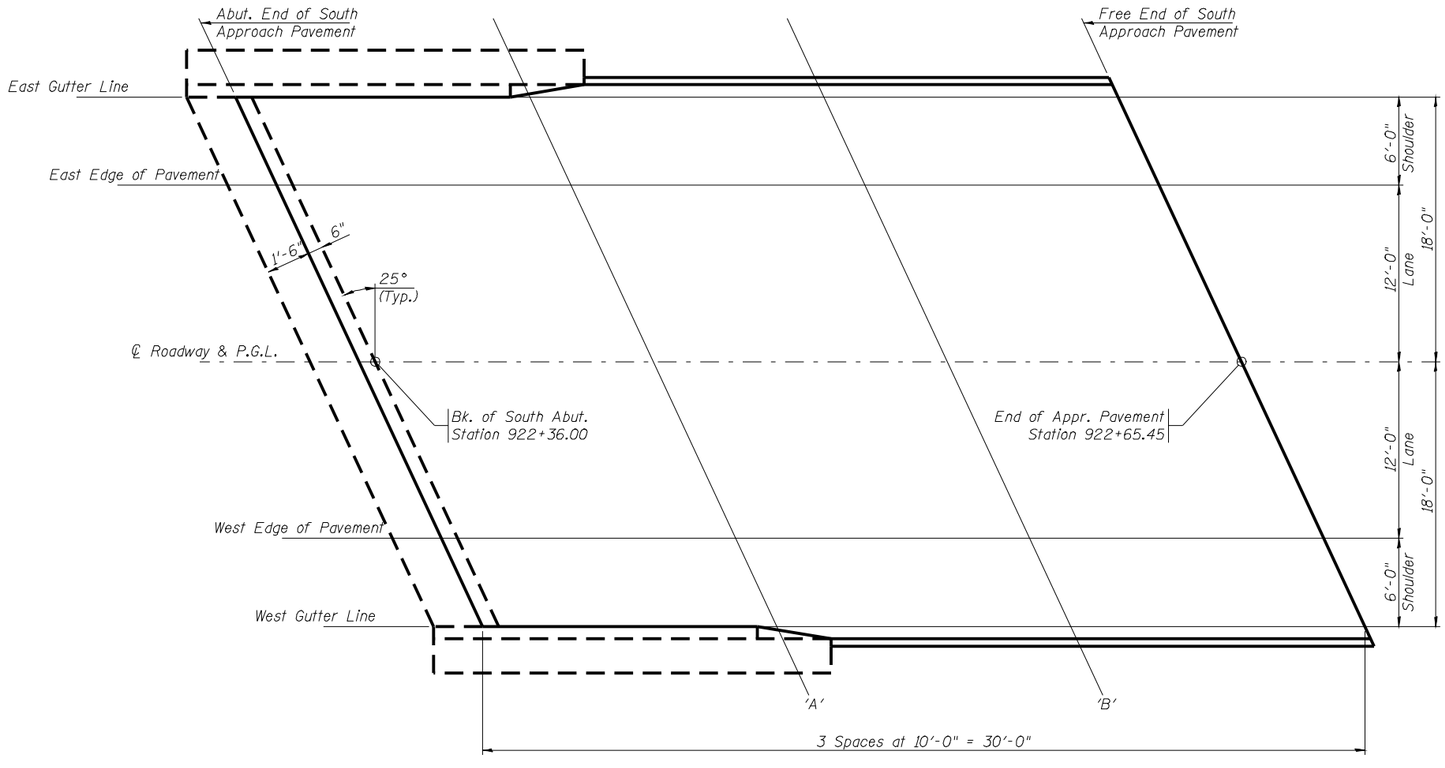
Location	Station	Offset	Theoretical Grade Elevations
Abut. End of South Appr.	922+27.06	-18.00	471.82
'A'	922+37.06	-18.00	471.77
'B'	922+47.06	-18.00	471.72
Free End of South Appr.	922+57.06	-18.00	471.67

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
Abut. End of South Appr.	922+29.85	-12.00	471.92
'A'	922+39.85	-12.00	471.87
'B'	992+49.85	-12.00	436.82
Free End of South Appr.	992+59.85	-12.00	436.77

℄ ROADWAY & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations
Abut. End of South Appr.	922+35.45	0.00	472.07
'A'	922+45.45	0.00	472.02
'B'	922+55.45	0.00	471.97
Free End of South Appr.	922+65.45	0.00	471.92



PLAN

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
Abut. End of South Appr.	992+41.04	12.00	436.87
'A'	992+51.04	12.00	436.82
'B'	992+61.04	12.00	436.77
Free End of South Appr.	992+71.04	12.00	436.72

WEST GUTTER LINE

Location	Station	Offset	Theoretical Grade Elevations
Abut. End of South Appr.	922+43.84	18.00	471.73
'A'	922+53.84	18.00	471.68
'B'	922+63.84	18.00	471.63
Free End of South Appr.	922+73.84	18.00	471.58

SOUTH - TOP OF APPROACH SLAB ELEVATIONS
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

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JOB NO. 07S2026
DATE 03/27/09

LAYOUT	Rod	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

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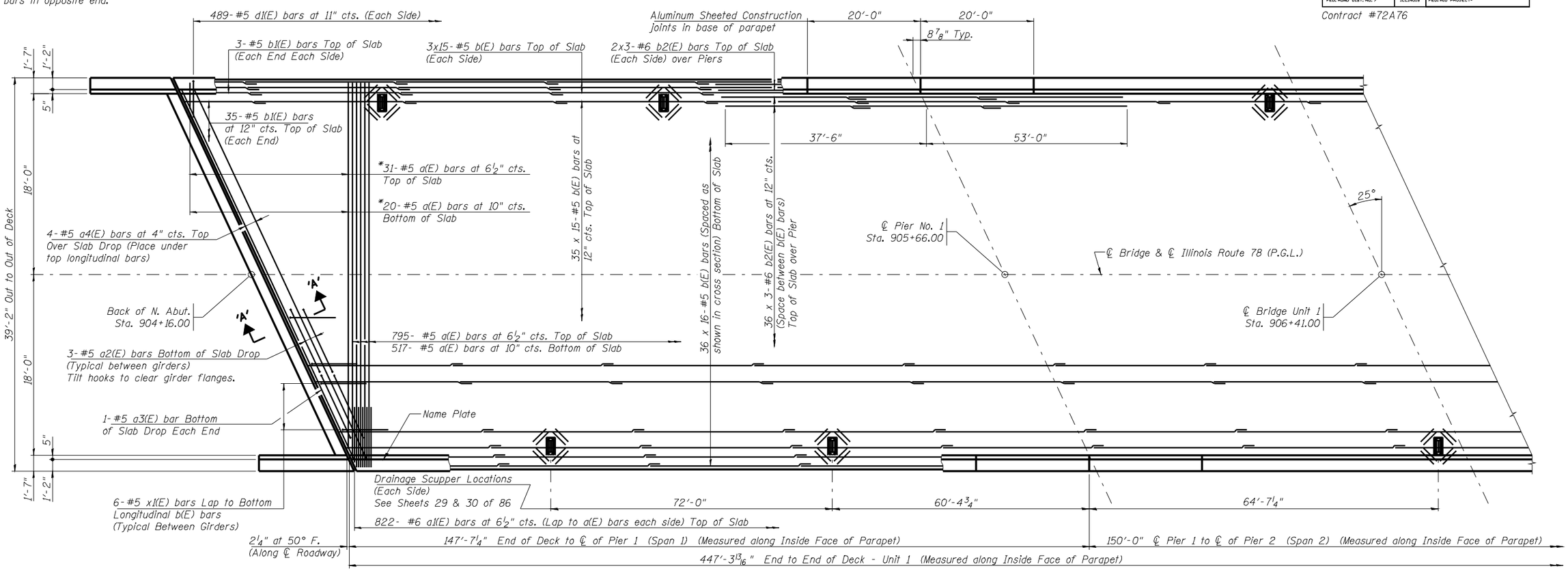
*Order a(E) bars full length.
Cut to fit skew and use remainder
of bars in opposite end.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

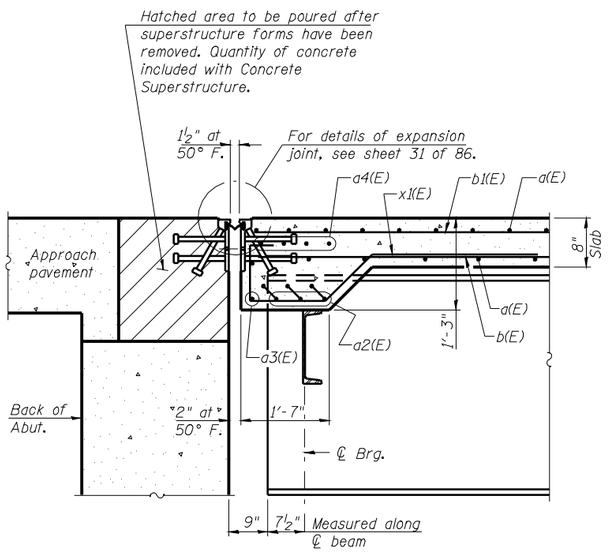
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	153
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 17
86 SHEETS

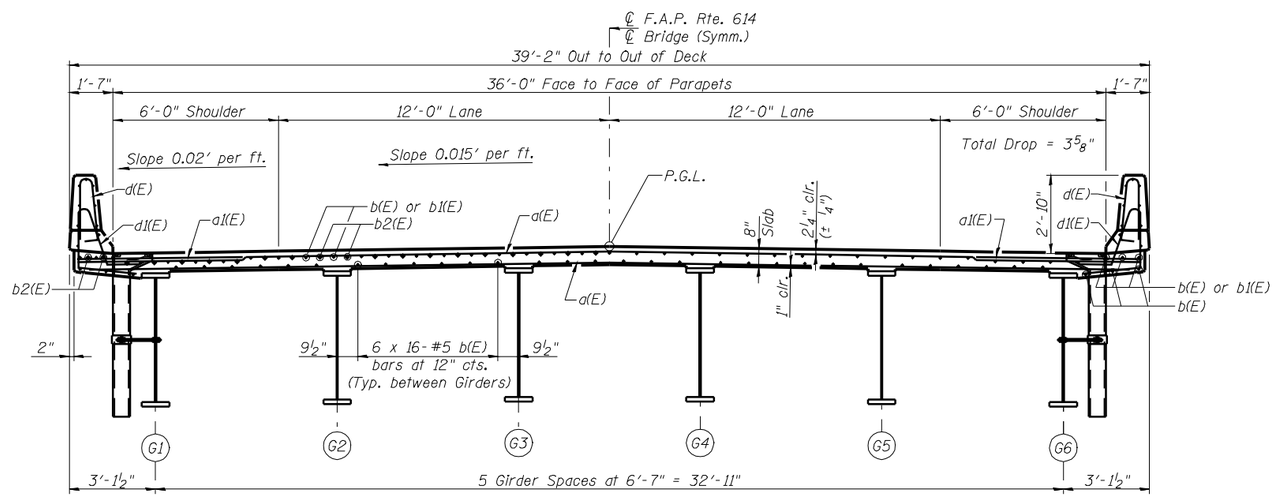
Contract #72A76



UNIT 1 - HALF PLAN (Spans 1 & 2)



SECTION A-A
(At Rt. Angles to Bk. of Abut. Unless Noted)



CROSS SECTION
(Looking Upstation)

Notes:
See Sheet 19 of 86 for superstructure details, bar laps and Bill of Material.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
See Sheet 19 of 86 for parapet reinforcement.
Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Base Sheet EJ-SSJ, Sheet 31 of 86.

UNIT 1 - SUPERSTRUCTURE HALF PLAN (Spans 1 & 2)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

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JOB NO. 07S2026
DATE 03/27/09

LAYOUT	Rod	09/12/08
DRAWN	DAB	09/30/08
REVIEWED	TEH	09/30/08

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	154
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 18
86 SHEETS

Contract #72A76

*Order d(E) bars full length.
Cut to fit skew and use remainder
of bars in opposite end.

Aluminum Sheeted Construction
Joints in base of parapet

20'-0" 20'-0"

8 7/8" Typ.

#6 a1(E) bars at 6 1/2" cts. (Lap to a(E) bars each side) Top of Slab

1'-2" 1'-7" 5" 18'-0" 18'-0" 5" 1'-2" 1'-7" 39'-2" Out to Out of Deck

2-#5 a6(E) bars at 4" cts. Top
In Slab Drop (Place under top
longitudinal bars)

25°

℄ Bridge Unit 1
Sta. 906+41.00

℄ Pier No. 2
Sta. 907+16.00

℄ Pier No. 3
Sta. 908+66.00

℄ Bridge & ℄ Illinois Route 78 (P.G.L.)

#5 d(E) bars at 6 1/2" cts. Top of Slab
#5 a(E) bars at 10" cts. Bottom of Slab

36 x 3-#6 b2(E) bars at 12" cts.
(Space between b(E) bars)
Top of Slab over Pier

#5 b(E) bars (Spaced as
shown in cross section) Bottom of Slab

#5 b(E) bars at
12" cts. Top of Slab

*#5 a(E) bars at 10" cts.
Remainder of cut bars Bottom of Slab

*#5 a(E) bars at 6 1/2" cts.
Remainder of cut bars Top of Slab

1 x 6-#5 a5(E) bars Extend
through Finger Plate Stools
and lap between beams

53'-0" 37'-6"

#5 b1(E) bars at
12" cts. Top of
Slab (Each End)

#5 b1(E) bars Top
of Slab (Each End
Each Side)

2x3-#6 b2(E) bars Top of Slab
(Each Side) over Piers

#5 b(E) bars Top of Slab
(Each Side)

6-#5 x2(E) bars Lap to Bottom
Longitudinal b(E) bars
(Typical Between Girders)

Drainage Scupper Locations
(Each Side)
See Sheets 29 & 30 of 86

#5 d1(E) bars at 11" cts. (Each Side)

End of Deck to End of Parapet = 1 5/16"

End of Deck to End of Parapet = 1 5/16"

39'-7 1/4"

150'-0" ℄ Pier 1 to ℄ Pier 2 (Span 2) (Measured along Inside Face of Parapet)

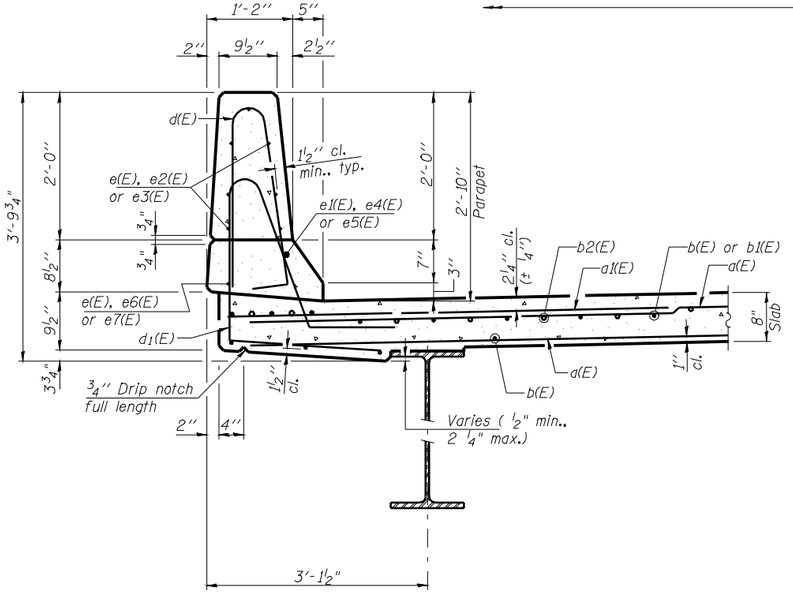
149'-8 9/16" ℄ Pier 2 to End of Deck (Span 3) (Measured along Inside Face of Parapet)

447'-3 13/16" End to End of Deck - Unit 1 (Measured along Inside Face of Parapet)

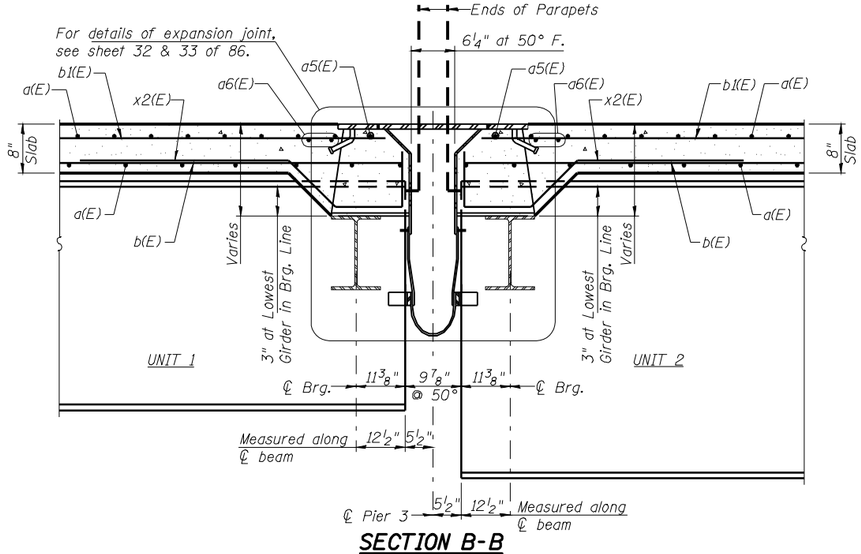
6 7/8" at 50° F.
Ctrd. on ℄ Pier
(Along ℄ Roadway)

Z

UNIT 1 - HALF PLAN - (Spans 2 & 3)



SECTION THRU PARAPET



SECTION B-B

(At Rt. Angles to ℄ Pier Unless Noted)

Notes:
See Sheet 19 of 86 for superstructure details, bar laps and Bill of Material.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
See Sheet 19 of 86 for parapet reinforcement.

UNIT 1 - SUPERSTRUCTURE HALF PLAN (Spans 2 & 3)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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JOB NO. 07S2026
DATE 03/27/09

LAYOUT	Rod	09/12/08
DRAWN	DAB	09/30/08
REVIEWED	TEH	09/30/08

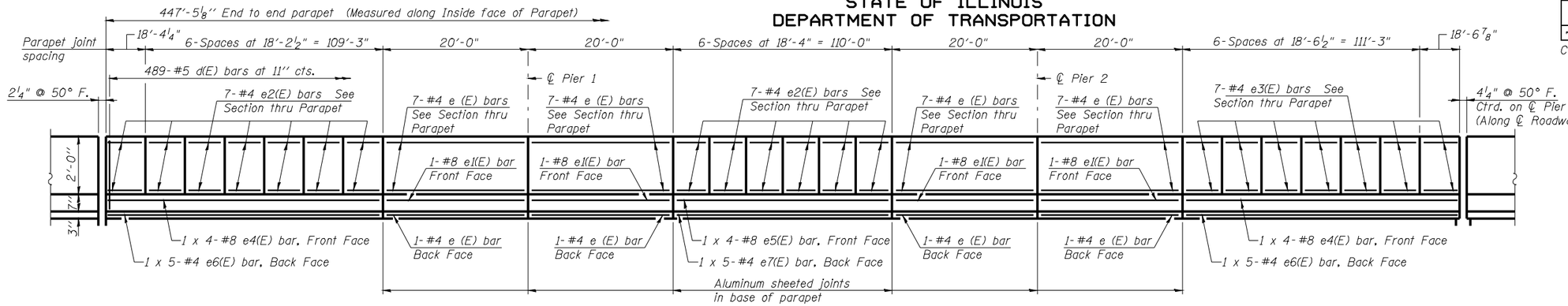
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

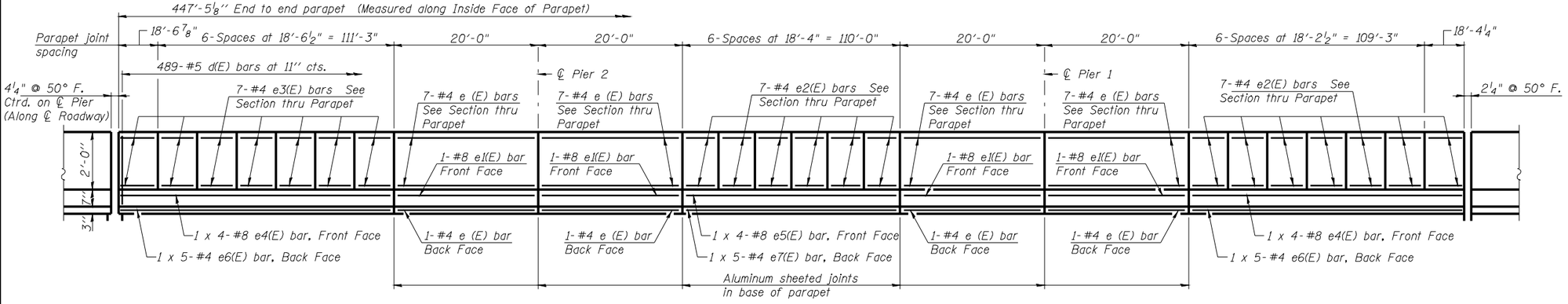
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	155
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 19
86 SHEETS

Contract #72A76



UNIT 1 - INSIDE ELEVATION OF EAST PARAPET

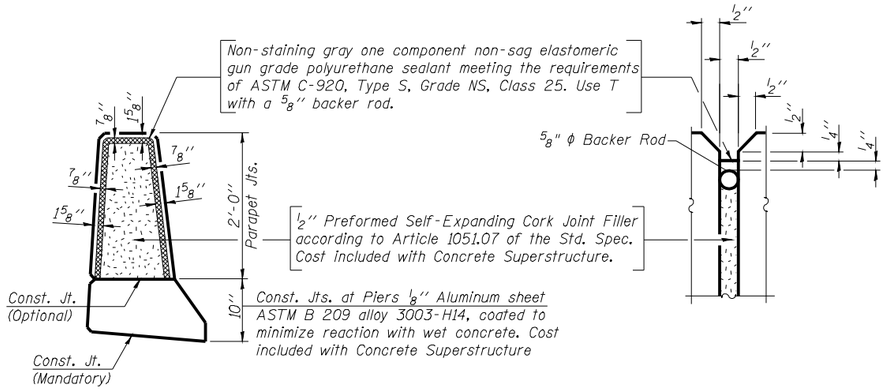


UNIT 1 - INSIDE ELEVATION OF WEST PARAPET

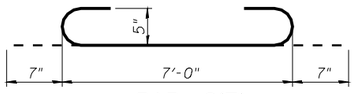
BILL OF MATERIAL
SUPERSTRUCTURE - UNIT 1

Bar	No.	Size	Length	Shape
a(E)	1363	#5	37'-0"	
a_1(E)	1644	#6	6'-0"	
a_2(E)	15	#5	8'-2"	
a_3(E)	1	#5	36'-0"	
a_4(E)	4	#5	39'-9"	
a_5(E)	6	#5	9'-5"	
a_6(E)	2	#5	39'-9"	
a_7(E)	64	#5	1'-6"	
b(E)	1191	#5	30'-1"	
b_1(E)	82	#5	16'-2"	
b_2(E)	240	#6	32'-0"	
d(E)	978	#5	5'-7"	
d_1(E)	978	#5	7'-9"	
e(E)	64	#4	19'-9"	
e_1(E)	8	#8	19'-9"	
e_2(E)	182	#4	17'-11"	
e_3(E)	98	#4	18'-2"	
e_4(E)	16	#8	34'-11"	
e_5(E)	8	#8	30'-0"	
e_6(E)	20	#4	27'-0"	
e_7(E)	10	#4	23'-0"	
x_1(E)	30	#5	6'-5"	
x_2(E)	30	#5	5'-7"	
Reinforcement Bars, Epoxy Coated		Pound	139620	
Concrete Superstructure		Cu. Yds.	562.4	

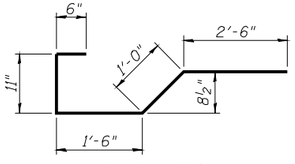
Bars indicated thus 1 x 4-#5 etc. indicates 1 line of bars with 4 lengths per line.



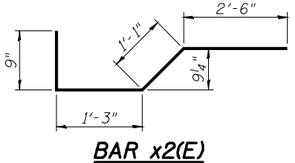
PARAPET JOINT DETAILS



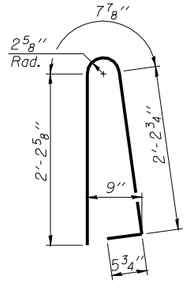
BAR a2(E)



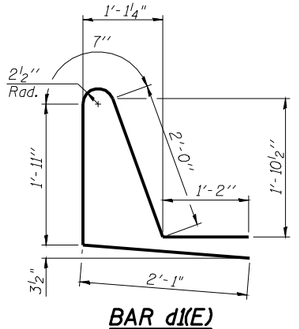
BAR x1(E)



BAR x2(E)



BAR d(E)



BAR d1(E)

MINIMUM BAR LAP

#4 bar = 1'-4" (Parapet)
#5 bar = 2'-2"
#6 bar = 2'-7"
#8 bar = 3'-5" (Parapet)

UNIT 1 - SUPERSTRUCTURE DETAILS
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

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JOB NO. 07S2026

DATE 03/27/09

LAYOUT	Rod	09/12/08
DRAWN	DAB	09/30/08
REVIEWED	TEH	09/30/08

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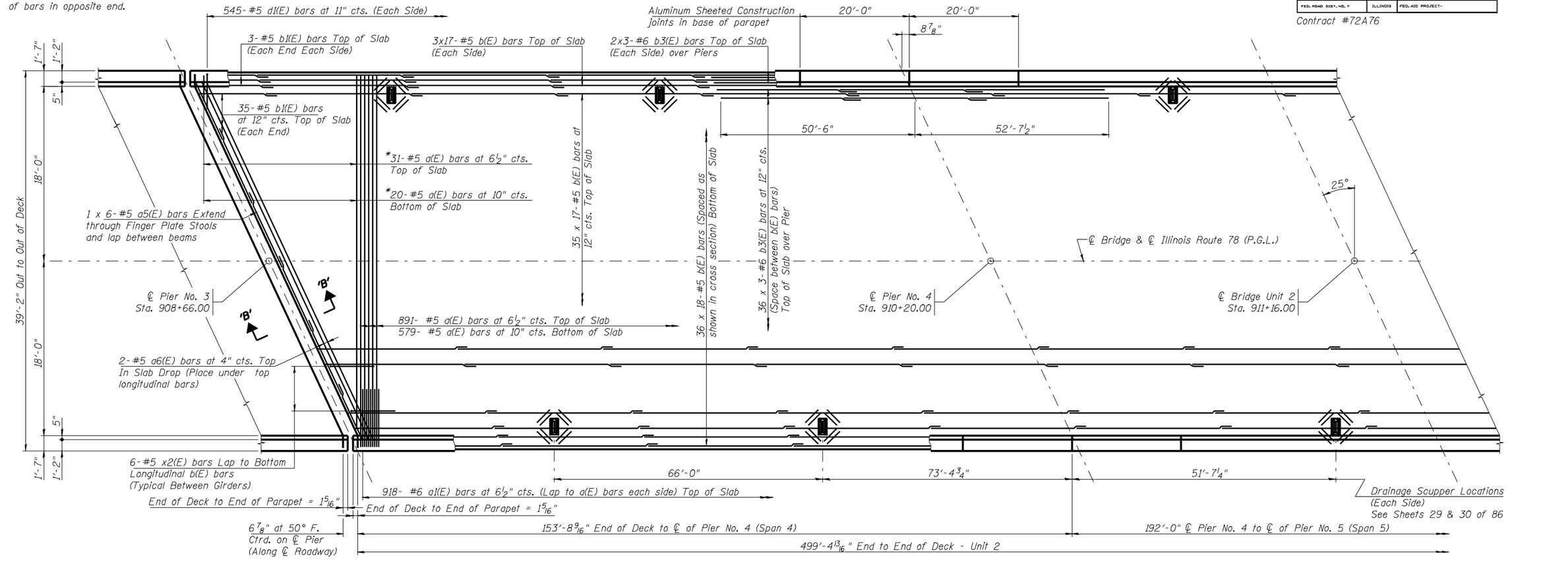
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

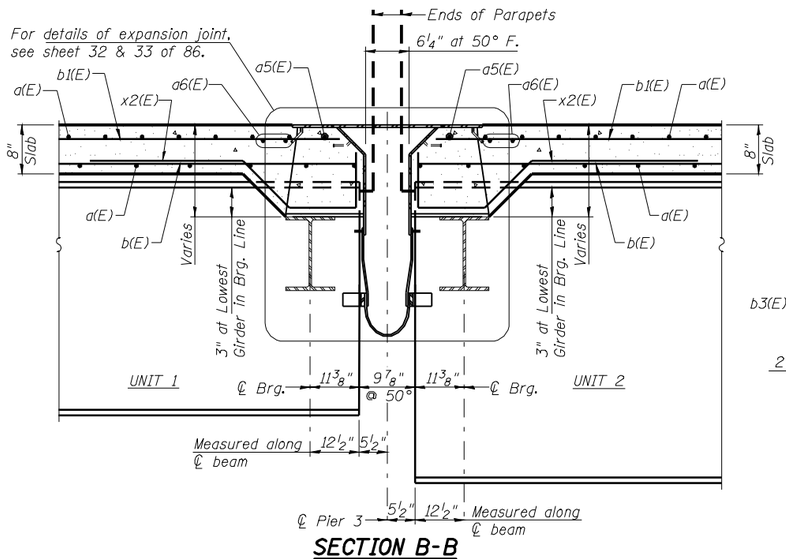
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	156
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 20
86 SHEETS

Contract #72A76

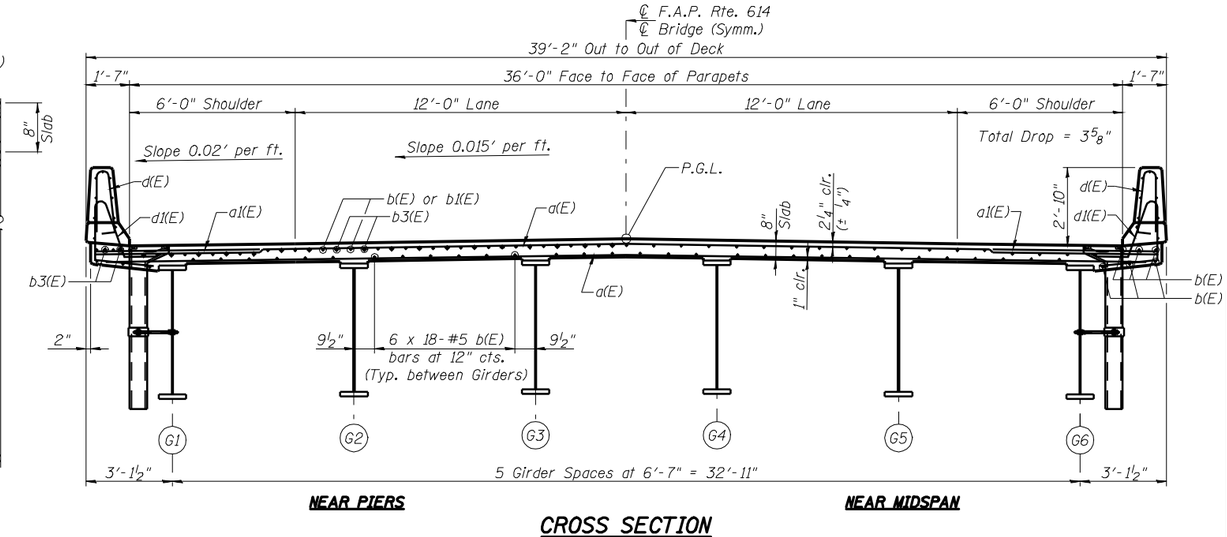
*Order d(E) bars full length.
Cut to fit skew and use remainder
of bars in opposite end.





SECTION B-B
(At Rt. Angles to ℄ Pier Unless Noted)

UNIT 2 - HALF PLAN (Spans 4 & 5)



NEAR PIERS

NEAR MIDSPAN

CROSS SECTION
(Looking Upstation)

Notes:
See Sheet 22 of 86 for superstructure details, bar laps and Bill of Material.
Bars indicated thus 20 x 3- #5 etc. indicates 20 lines of bars with 3 lengths per line.
See Sheet 22 of 86 for parapet reinforcement.

UNIT 2 - SUPERSTRUCTURE HALF PLAN (Spans 4 & 5)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

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JOB NO. 07S2026

DATE 03/27/09

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DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	157
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 21
86 SHEETS

Contract #72A76

*Order d(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.

Aluminum Sheeted Construction joints in base of parapet

20'-0" 20'-0"

8 7/8"

#5 d1(E) bars at 11" cts. (Each Side)

1'-2" 1'-7" 5" 18'-0" 39'-2" Out to Out of Deck

2-#5 a6(E) bars at 4" cts. Top In Slab Drop (Place under top longitudinal bars)

25°

℄ Bridge Unit 2 Sta. 911+16.00

℄ Pier No. 5 Sta. 912+12.00

℄ Pier No. 6 Sta. 913+66.00

℄ Bridge & ℄ Illinois Route 78 (P.G.L.)

#5 a(E) bars at 6½" cts. Top of Slab
#5 a(E) bars at 10" cts. Bottom of Slab

36 x 3-#6 b3(E) bars at 12" cts. (Space between b(E) bars) Top of Slab over Pier

#5 b(E) bars (Spaced as shown in cross section) Bottom of Slab

#5 b1(E) bars at 12" cts. Top of Slab

*#5 a(E) bars at 10" cts. Remainder of cut bars Bottom of Slab

*#5 a(E) bars at 6½" cts. Remainder of cut bars Top of Slab

1 x 6-#5 a5(E) bars Extend through Finger Plate Stools and lap between beams

#5 b1(E) bars at 12" cts. Top of Slab (Each End)

52'-7½" 50'-6"

2x3-#6 b3(E) bars Top of Slab (Each Side) over Piers

#5 b(E) bars Top of Slab (Each Side)

#5 b1(E) bars Top of Slab (Each End Each Side)

6-#5 x2(E) bars Lap to Bottom Longitudinal b(E) bars (Typical Between Girders)

Drainage Scupper and Floor Drain Locations (Each Side) See Sheets 29 & 30 of 86

15'-4 3/4" 38'-7 1/4" 15'-0" 15'-0" 15'-0" 15'-0" 38'-0"

End of Deck to End of Parapet = 1 3/8"

End of Deck to End of Parapet=1 3/8"

192'-0" ℄ Pier No. 4 to ℄ of Pier No. 5 (Span 5)

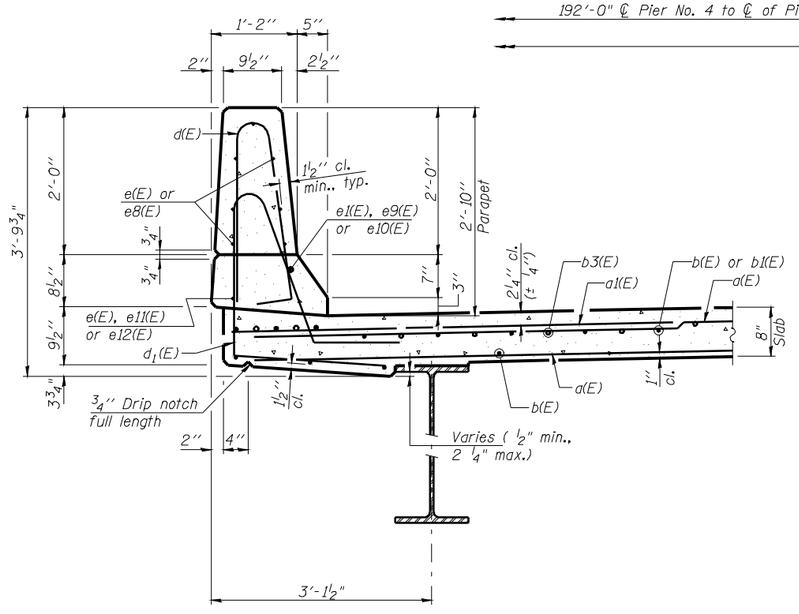
153'-8 1/4" ℄ Pier No. 5 to End of Deck (Span 6)

499'-4 13/16" End to End of Deck - Unit 2

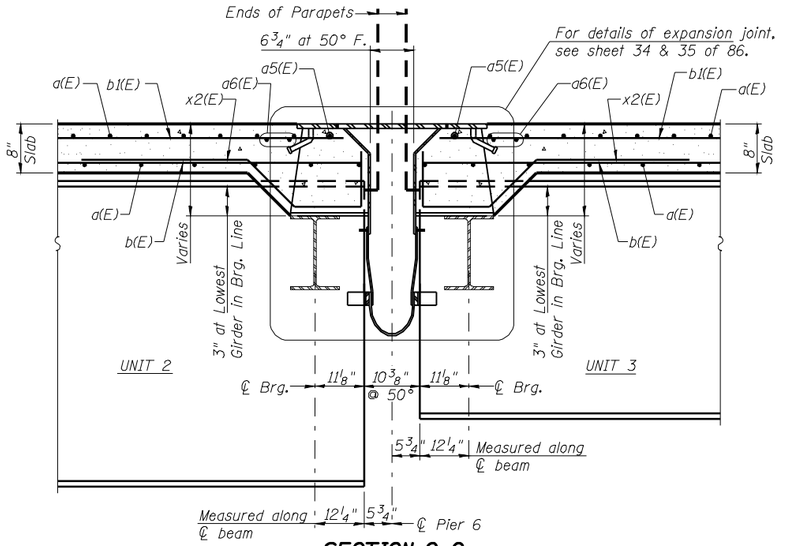
7½" at 50° F. Ctrd. on ℄ Pier (Along ℄ Roadway)

N

UNIT 2 - HALF PLAN (Spans 5 & 6)



SECTION THRU PARAPET



SECTION C-C

(At Rt. Angles to ℄ Pier Unless Noted)

Notes:
See Sheet 22 of 86 for superstructure details, bar laps and Bill of Material.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
See Sheet 22 of 86 for parapet reinforcement.

UNIT 2 - SUPERSTRUCTURE HALF PLAN (Spans 5 & 6)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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JOB NO. 07S2026
DATE 03/27/09

LAYOUT	Rod	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

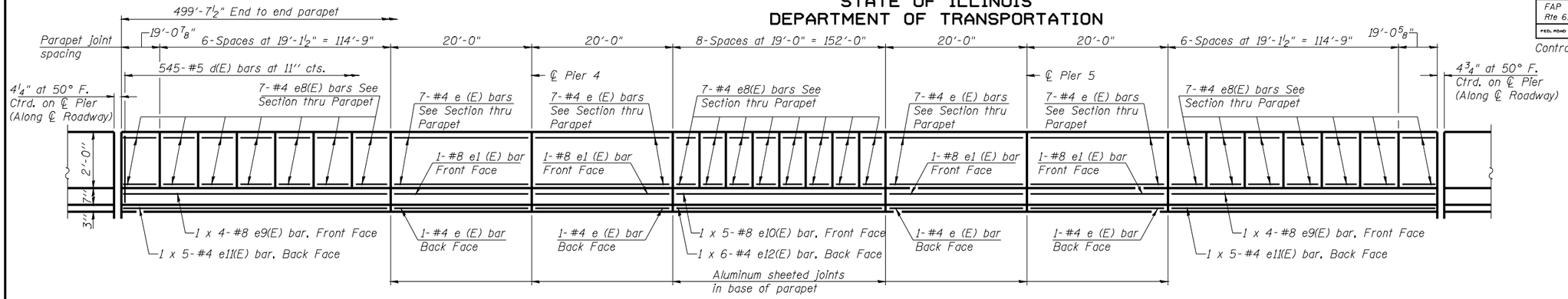
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

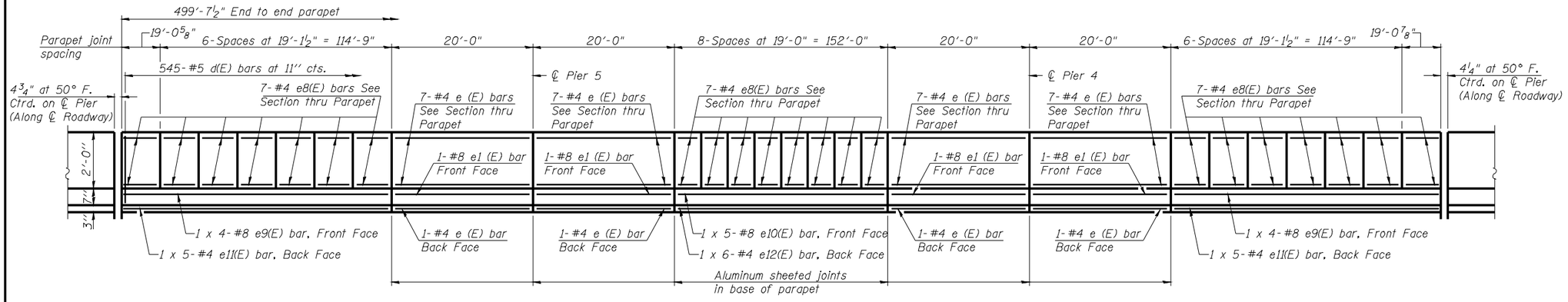
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	158
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 22
86 SHEETS

Contract #72A76



UNIT 2 - INSIDE ELEVATION OF EAST PARAPET

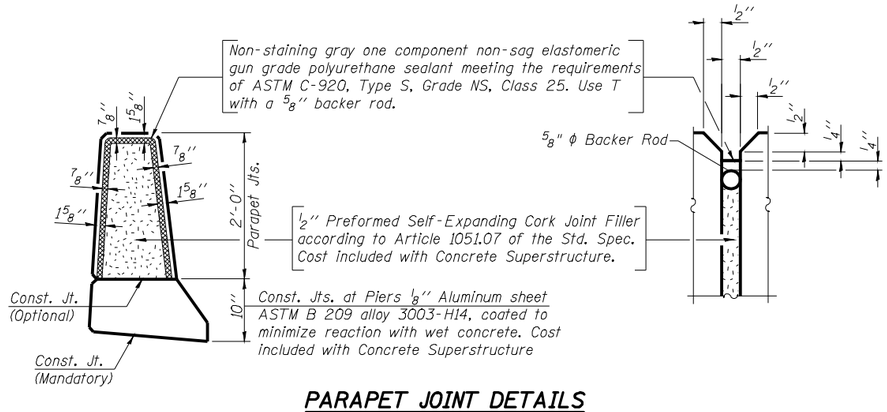


UNIT 2 - INSIDE ELEVATION OF WEST PARAPET

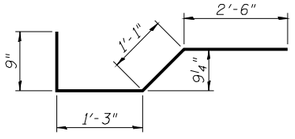
BILL OF MATERIAL
SUPERSTRUCTURE - UNIT 2

Bar	No.	Size	Length	Shape
d(E)	1521	#5	37'-0"	—
d_1(E)	1836	#6	6'-0"	—
d_5(E)	12	#5	9'-5"	—
d_6(E)	4	#5	39'-9"	—
d_7(E)	80	#5	1'-6"	—
b(E)	1345	#5	30'-1"	—
b_1(E)	82	#5	16'-2"	—
b_3(E)	240	#6	36'-6"	—
d(E)	1090	#5	5'-7"	⌐
d_1(E)	1090	#5	7'-9"	L
e(E)	64	#4	19'-9"	—
e_1(E)	8	#8	19'-9"	—
e_8(E)	308	#4	18'-9"	—
e_9(E)	16	#8	35'-11"	—
e_{10}(E)	10	#8	33'-1"	—
e_{11}(E)	20	#4	27'-9"	—
e_{12}(E)	12	#4	26'-5"	—
x_2(E)	60	#5	5'-7"	⌐
Reinforcement Bars, Epoxy Coated	Pound		156120	
Concrete Superstructure	Cu. Yds.		619.6	

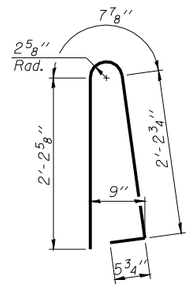
Bars indicated thus 1 x 6-#4 etc. indicates 1 line of bars with 6 lengths per line.



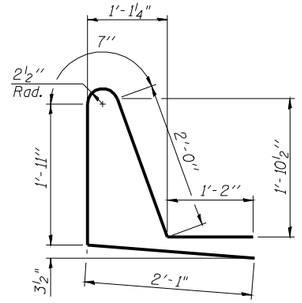
PARAPET JOINT DETAILS



BAR x2(E)



BAR d(E)



BAR d1(E)

MINIMUM BAR LAP

#4 bar = 1'-4" (Parapet)
#5 bar = 2'-2"
#6 bar = 2'-7"
#8 bar = 3'-5" (Parapet)

UNIT 2 - SUPERSTRUCTURE DTAILS
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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REVIEWED	TEH	09/30/08

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	159
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 23
86 SHEETS

Contract #72A76

*Order d(E) bars full length.
Cut to fit skew and use remainder of bars in opposite end.

946- #5 d1(E) bars at 11" cts. (Each Side)

3- #5 b1(E) bars Top of Slab (Each End Each Side)

3x30- #5 b(E) bars Top of Slab (Each Side)

2x3- #6 b4(E) bars Top of Slab (Each Side) over Piers

Aluminum Sheeted Construction joints in base of parapet

20'-0" 20'-0" $8\frac{7}{8}$"

1'-7" 1'-2" 5" 18'-0" 18'-0" 5" 1'-7" 1'-2" 39'-2" Out to Out of Deck

35- #5 b1(E) bars at 12" cts. Top of Slab (Each End)

*31- #5 d(E) bars at $6\frac{1}{2}$" cts. Top of Slab

*20- #5 d(E) bars at 10" cts. Bottom of Slab

35 x 30- #5 b(E) bars at 12" cts. Top of Slab

36 x 31- #5 b(E) bars (Spaced as shown in cross section) Bottom of Slab

36 x 3- #6 b4(E) bars at 12" cts. (Space between b(E) bars) Top of Slab over Pier

40'-6" 51'-6"

25°

1 x 6- #5 a5(E) bars Extend through Finger Plate Stools and lap between beams

℄ Bridge & ℄ Illinois Route 78 (P.G.L.)

℄ Pier No. 6 Sta. 913+66.00

℄ Pier No. 7 Sta. 915+11.00

℄ Span 8 Sta. 915+83.50

'C' 'C'

1569- #5 d(E) bars at $6\frac{1}{2}$" cts. Top of Slab
1020- #5 d(E) bars at 10" cts. Bottom of Slab

2- #5 a6(E) bars at 4" cts. Top In Slab Drop (Place under top longitudinal bars)

6- #5 x2(E) bars Lap to Bottom Longitudinal b(E) bars Each End (Typical Between Girders)

1596- #6 a1(E) bars at $6\frac{1}{2}$" cts. (Lap to d(E) bars each side) Top of Slab

End of Deck to End of Parapet = $1\frac{3}{8}$" End of Deck to End of Parapet = $1\frac{3}{8}$"

$7\frac{1}{2}$" at 50° F. Ctrd. on ℄ Pier (Along ℄ Roadway)

144'-$8\frac{1}{4}$" End of Deck to ℄ Pier 7 (Span 7)

18'-$4\frac{3}{4}$"

Drainage Scupper Locations (Each Side) See Sheets 29 & 30 of 86

145'-0" ℄ Pier 7 to ℄ Pier 8 (Span 8)

866'-$10\frac{7}{8}$" End to End of Deck - Unit 3

Ends of Parapets

$6\frac{3}{4}$" at 50° F.

For details of expansion joint, see sheet 34 & 35 of 86.

a(E) b1(E) a6(E) a5(E) x2(E) a5(E) a6(E) x2(E) b1(E) a(E)

8" Slab 8" Slab

a(E) b(E) Varies 3" at Lowest Girder in Brg. Line 3" at Lowest Girder in Brg. Line Varies b(E) a(E)

UNIT 2 UNIT 3

℄ Brg. $11\frac{1}{8}$" $10\frac{3}{8}$" @ 50° $11\frac{1}{8}$" ℄ Brg.

$5\frac{3}{4}$" $12\frac{1}{4}$" Measured along ℄ beam

Measured along ℄ beam $12\frac{1}{4}$" $5\frac{3}{4}$" ℄ Pier 6

SECTION C-C
(At Rt. Angles to ℄ Pier Unless Noted)

UNIT 3 - QUARTER PLAN (Spans 7 & 8)

℄ F.A.P. Rte. 614
℄ Bridge (Symm.)

39'-2" Out to Out of Deck

1'-7" 36'-0" Face to Face of Parapets 1'-7"

6'-0" Shoulder 12'-0" Lane 12'-0" Lane 6'-0" Shoulder

Total Drop = $3\frac{5}{8}$"

Slope 0.02' per ft. Slope 0.015' per ft.

d(E) d1(E) a1(E) b(E) or b1(E) b4(E), b5(E) or b6(E) a(E) P.G.L. 8" Slab $2\frac{1}{4}$" clr. (± $\frac{1}{4}$") a1(E) 2'-10" d(E) d1(E)

b4(E), b5(E) or b6(E) a(E) 1" clr. b(E) or b1(E) b(E)

2" $9\frac{1}{2}$" 6 x 31- #5 b(E) bars at 12" cts. (Typ. between Girders) $9\frac{1}{2}$"

G1 G2 G3 G4 G5 G6

3'-$1\frac{1}{2}$" 5 Girder Spaces at 6'-7" = 32'-11" 3'-$1\frac{1}{2}$"

NEAR PIERS NEAR MIDSPAN

CROSS SECTION
(Looking Upstation)

Notes:
See Sheet 28 of 86 for superstructure details, bar laps and Bill of Material.
Bars indicated thus 20 x 3- #5 etc. indicates 20 lines of bars with 3 lengths per line.
See Sheet 27 of 86 for parapet reinforcement.

UNIT 3 - SUPERSTRUCTURE QUARTER PLAN (Spans 7 & 8)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

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JOB NO. 07S2026

DATE 03/27/09

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REVIEWED	TEH	09/30/08

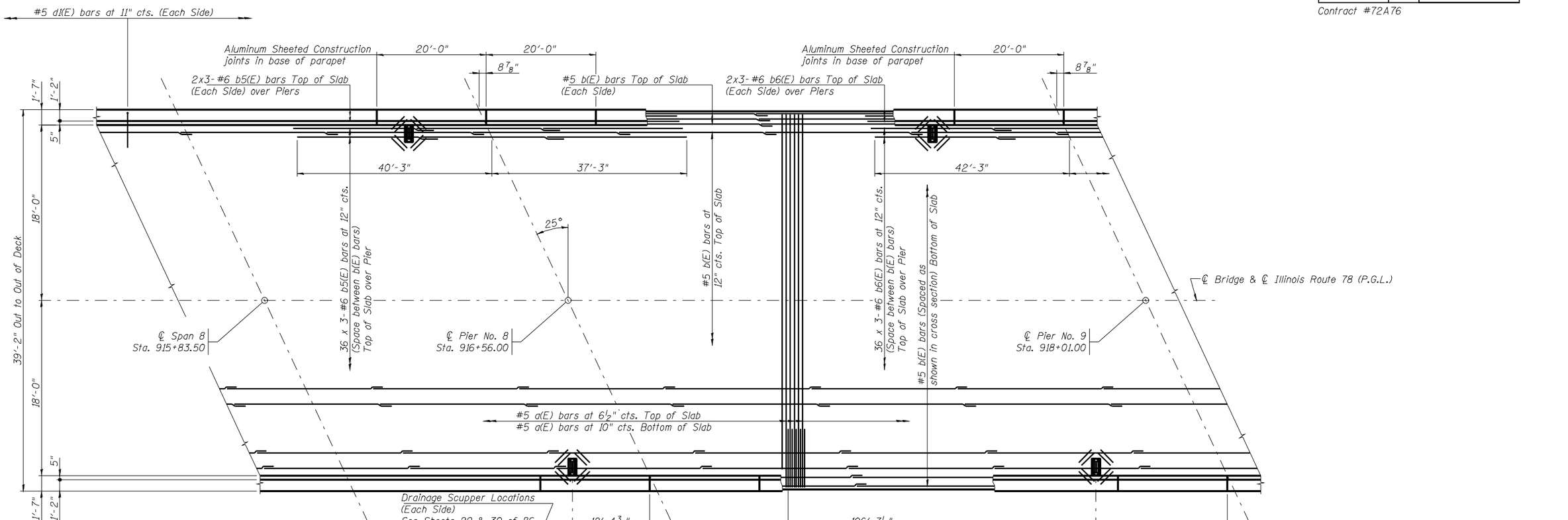
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

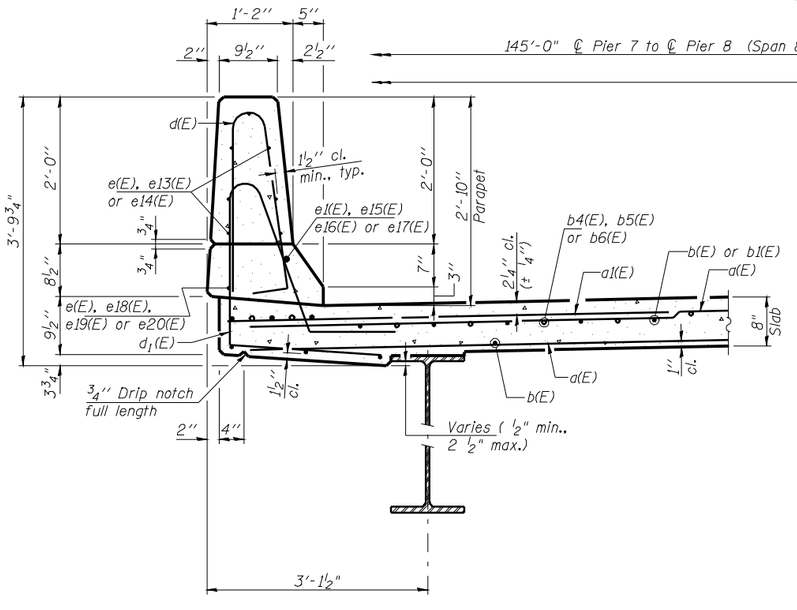
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FAP Rte 614	144(B-1)	Cass & Mason	351	160
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 24
86 SHEETS

Contract #72A76



UNIT 3 - QUARTER PLAN (Spans 8 & 9)



SECTION THRU PARAPET

Notes:
See Sheet 28 of 86 for superstructure details, bar laps and Bill of Material.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
See Sheet 27 of 86 for parapet reinforcement.

UNIT 3 - SUPERSTRUCTURE QUARTER PLAN (Spans 8 & 9)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

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JOB NO. 07S2026

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REVIEWED	TEH	09/30/08

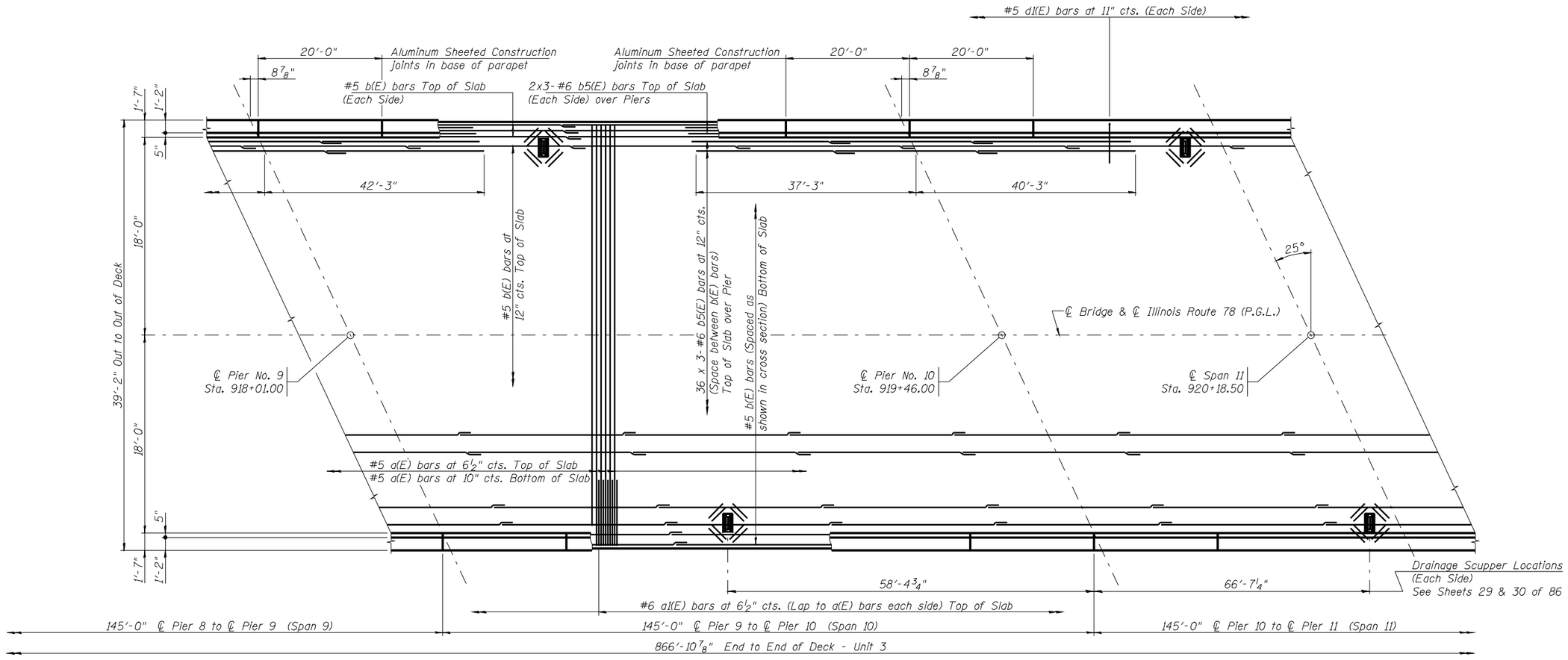
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DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	161
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 25
86 SHEETS

Contract #72A76



N

UNIT 3 - QUARTER PLAN (Spans 10 & 11)

Notes:
See Sheet 28 of 86 for superstructure details, bar laps and Bill of Material.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
See Sheet 27 of 86 for parapet reinforcement.

UNIT 3-SUPERSTRUCTURE QUARTER PLAN (Spans 10 & 11)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

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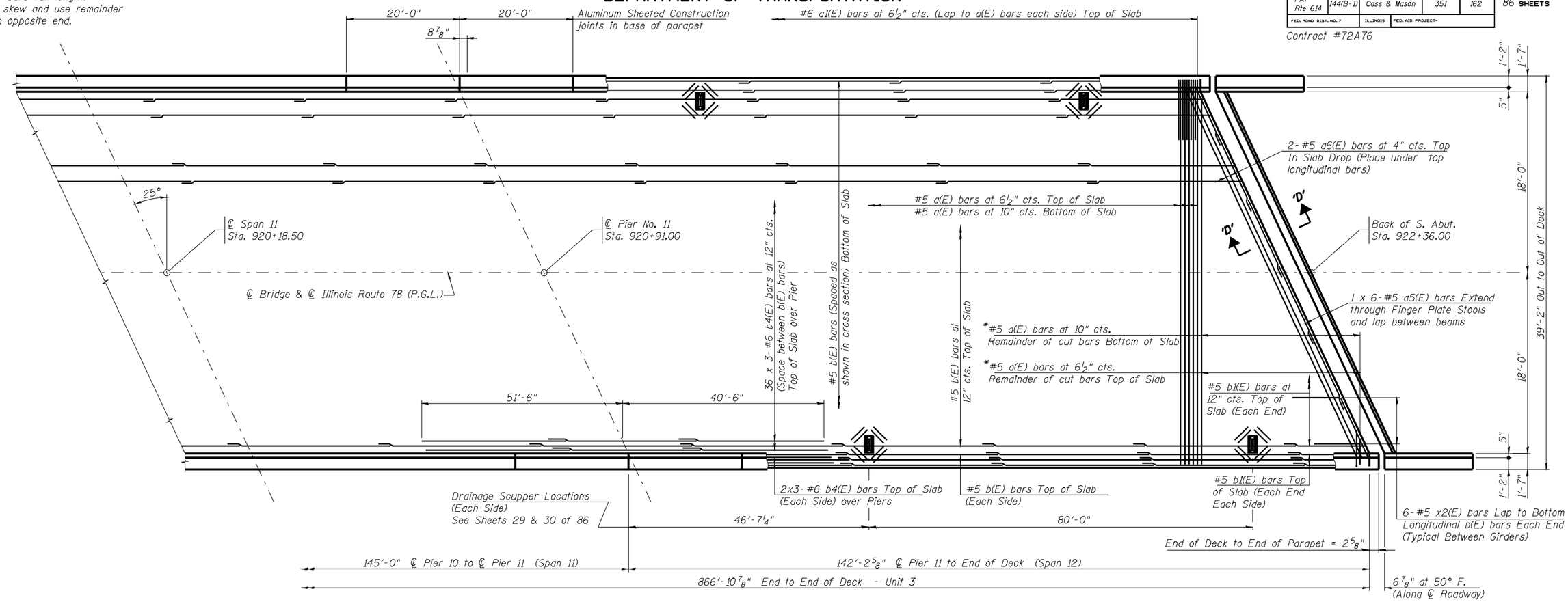
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

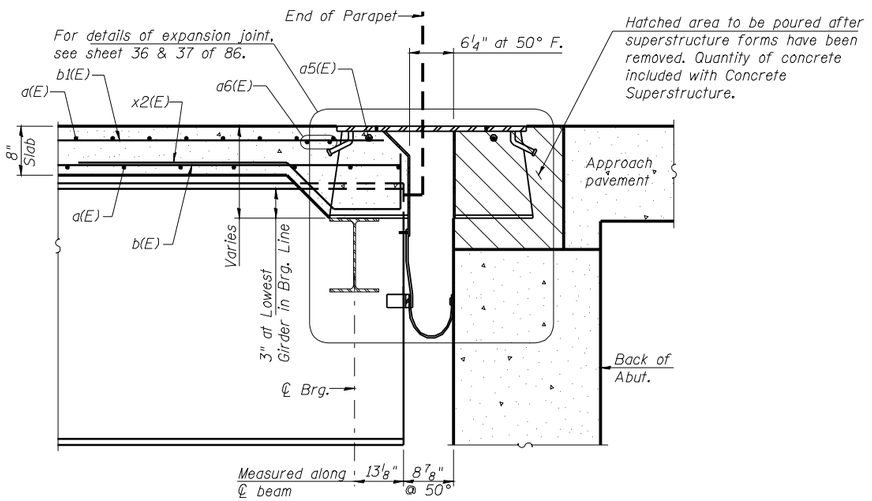
SHEET NO. 26
86 SHEETS

Contract #72A76

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



UNIT 3 - QUARTER PLAN (Spans 11 & 12)



SECTION D-D
(At Rt. Angles to Bk of Abut. Unless Noted)

Notes:
See Sheet 28 of 86 for superstructure details, bar laps and Bill of Material.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
See Sheet 27 of 86 for parapet reinforcement.

UNIT 3-SUPERSTRUCTURE QUARTER PLAN (Spans 11 & 12)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

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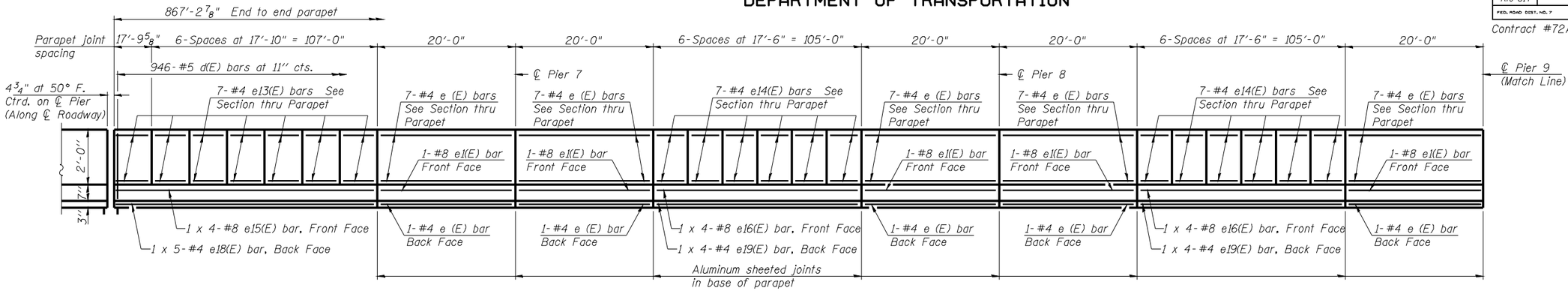
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

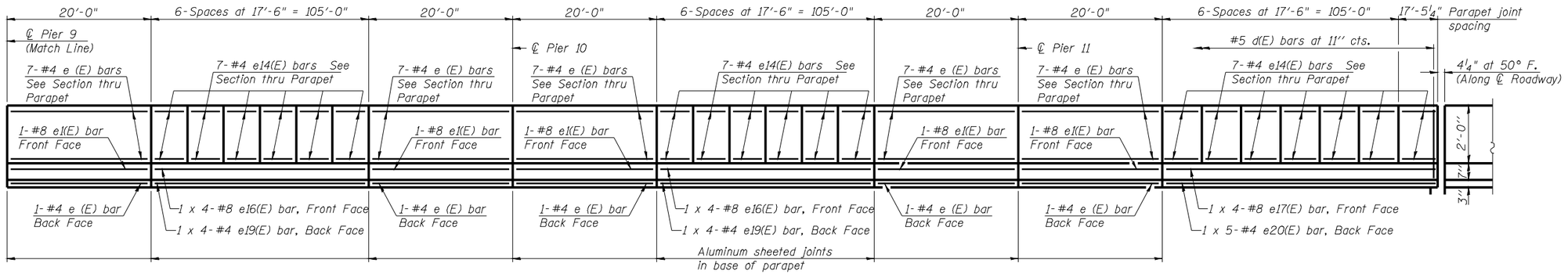
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 27
86 SHEETS

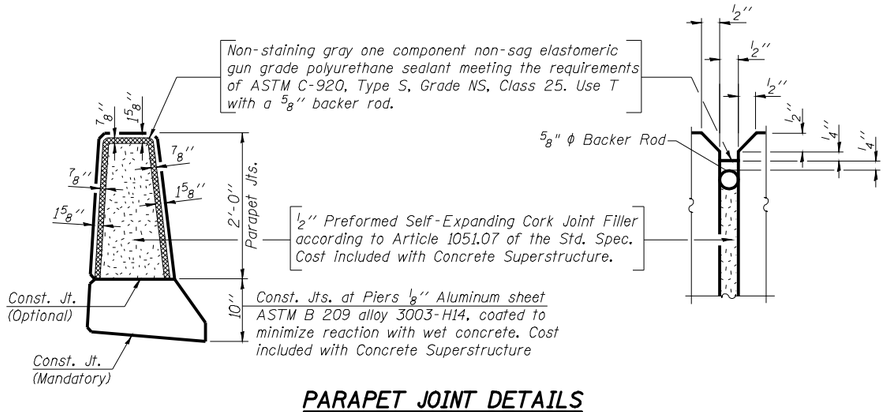
Contract #72A76



UNIT 3 - INSIDE ELEVATION OF EAST PARAPET (Spans 7 thru 9)



UNIT 3 - INSIDE ELEVATION OF EAST PARAPET (Spans 10 thru 12)



PARAPET JOINT DETAILS

Notes:
See Sheet 28 of 86 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.

MINIMUM BAR LAP

(Parapet)
#4 bar = 1'-4"
#8 bar = 3'-5"

UNIT 3 - SUPERSTRUCTURE DETAILS (Sheet 1 of 2)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

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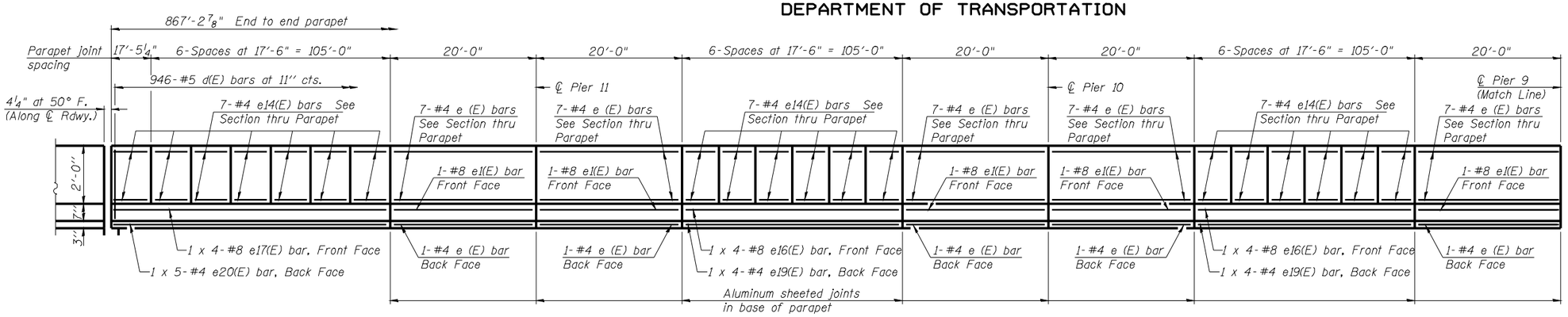
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

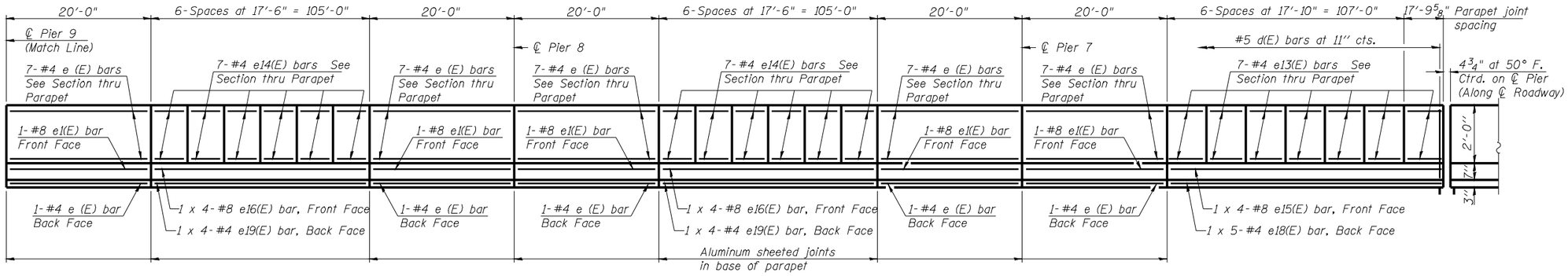
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	164
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 28
86 SHEETS

Contract #72A76



UNIT 3 - INSIDE ELEVATION OF WEST PARAPET (Spans 12 thru 10)

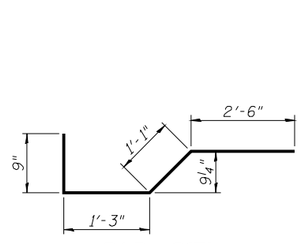


UNIT 3 - INSIDE ELEVATION OF WEST PARAPET (Spans 9 thru 7)

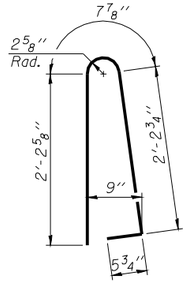
BILL OF MATERIAL
SUPERSTRUCTURE - UNIT 3

Bar	No.	Size	Length	Shape
a(E)	2640	#5	37'-0"	
a_1(E)	3192	#6	6'-0"	
a_5(E)	12	#5	9'-5"	
a_6(E)	4	#5	39'-9"	
a_7(E)	112	#5	1'-6"	
b(E)	2346	#5	30'-1"	
b_1(E)	82	#5	16'-2"	
b_4(E)	240	#6	32'-6"	
b_5(E)	240	#6	27'-9"	
b_6(E)	120	#6	30'-0"	
d(E)	1892	#5	5'-7"	
d_1(E)	1892	#5	7'-9"	
e(E)	160	#4	19'-9"	
e_1(E)	20	#8	19'-9"	
e_{13}(E)	98	#4	17'-6"	
e_{14}(E)	434	#4	17'-2"	
e_{15}(E)	8	#8	33'-8"	
e_{16}(E)	32	#8	28'-10"	
e_{17}(E)	8	#8	33'-1"	
e_{18}(E)	10	#4	26'-0"	
e_{19}(E)	32	#4	27'-3"	
e_{20}(E)	10	#4	25'-6"	
x_2(E)	60	#5	5'-7"	
Reinforcement Bars, Epoxy Coated		Pound	274150	
Concrete Superstructure		Cu. Yds.	1082.1	

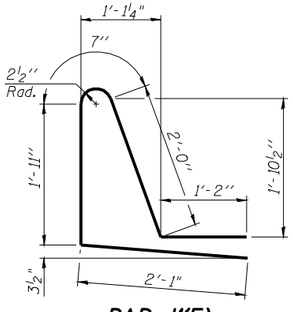
Bars indicated thus 1 x 5-#4 etc. indicates 1 line of bars with 5 lengths per line.



BAR x2(E)



BAR d(E)



BAR d1(E)

MINIMUM BAR LAP

#4 bar = 1'-4" (Parapet)
#5 bar = 2'-2"
#6 bar = 2'-7"
#8 bar = 3'-5" (Parapet)

UNIT 3 - SUPERSTRUCTURE DETAILS (Sheet 2 of 2)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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JOB NO. 07S2026

DATE 03/27/09

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DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

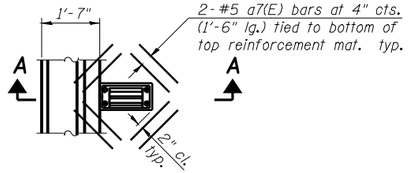
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

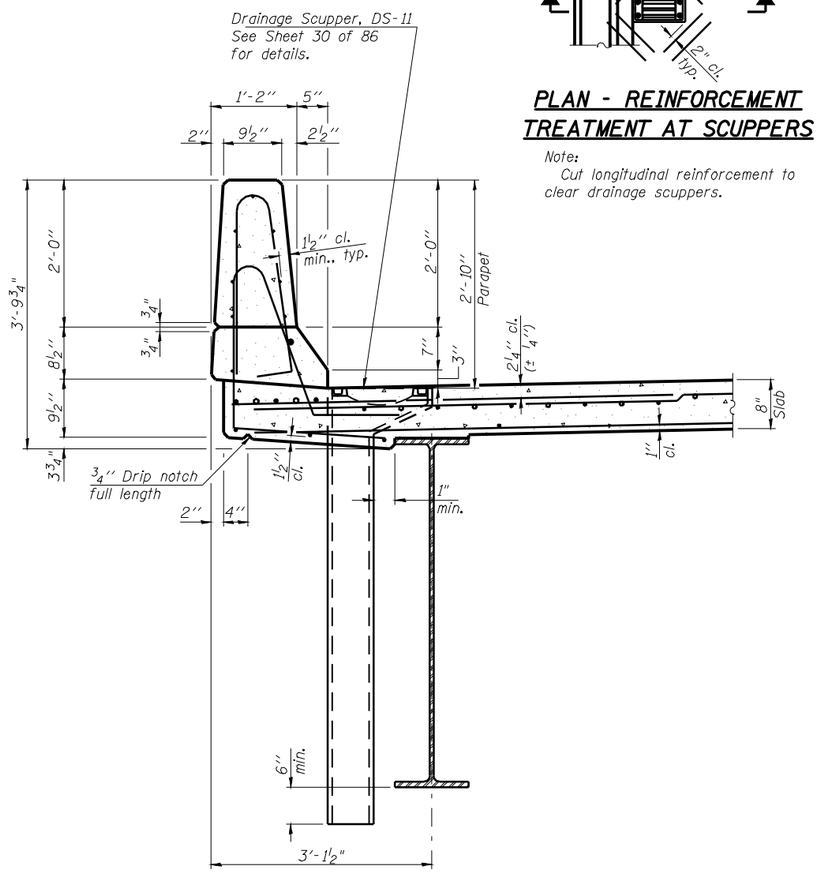
SHEET NO. 29
86 SHEETS

Contract #72A76

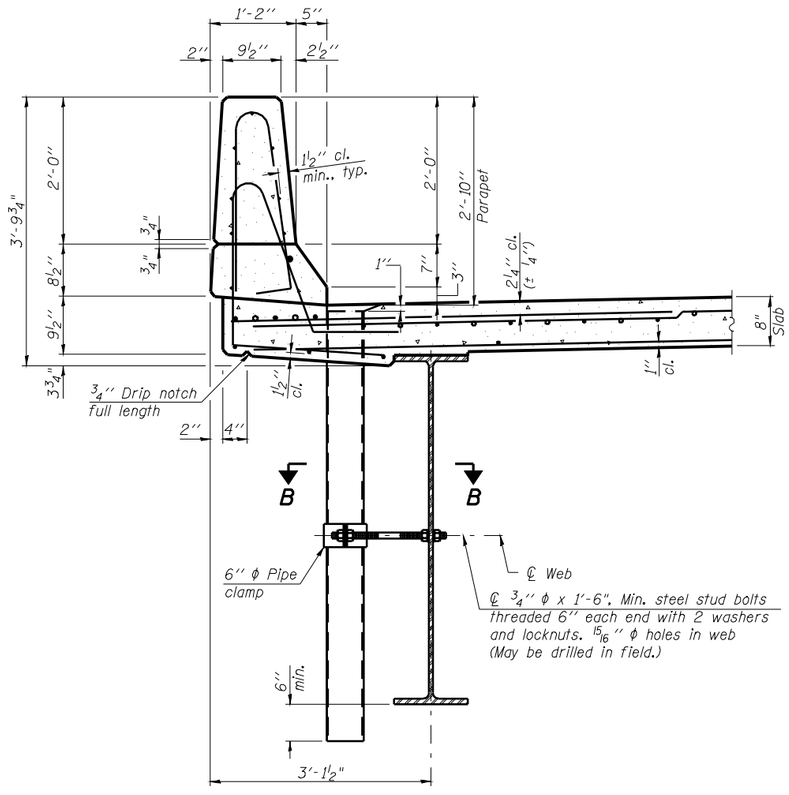


PLAN - REINFORCEMENT TREATMENT AT SCUPPERS

Note:
Cut longitudinal reinforcement to clear drainage scuppers.

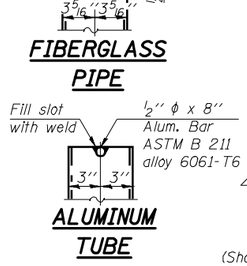


SECTION A-A thru PARAPET SHOWING SCUPPER INSTALLATION



SECTION THRU PARAPET SHOWING FLOOR DRAIN INSTALLATION

TOP PLAN

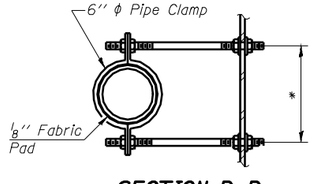


FIBERGLASS PIPE

ALUMINUM TUBE

TOP PLAN

(Showing Aluminum Tube)



SECTION B-B

* Dimension as required by Pipe Clamp

Note:
Drains shall be located clear of all diaphragms.
Floor drains need not be painted.
Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum. Galvanize clamping device according to AASHTO M232.

PARAPET SECTIONS w/DECK DRAIN DETAILS
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

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JOB NO. 07S2026

DATE 03/27/09

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DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

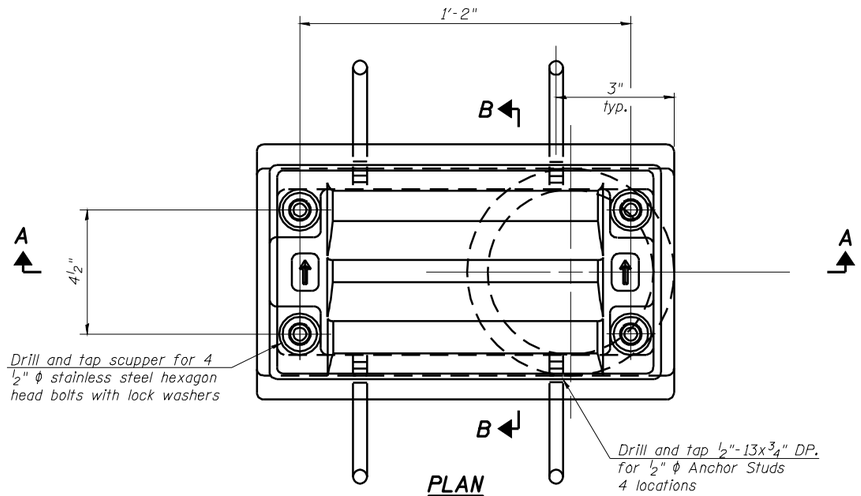
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

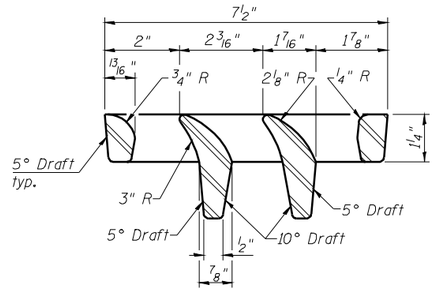
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FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 30
86 SHEETS

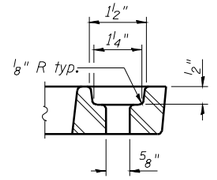
Contract #72A76



PLAN



VANE GRATE DETAIL



BOLT HOLE DETAIL

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.

Scuppers need not be painted.

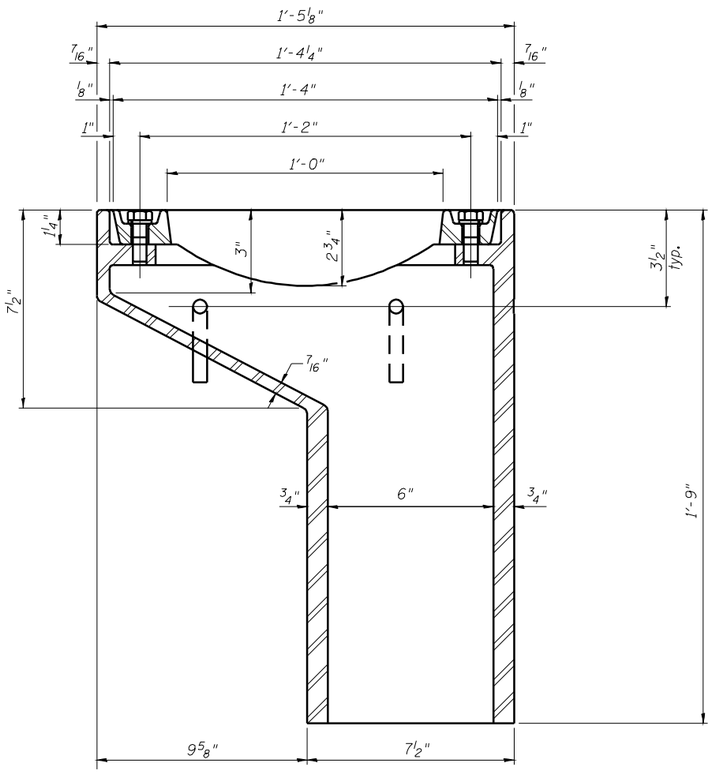
As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.

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.

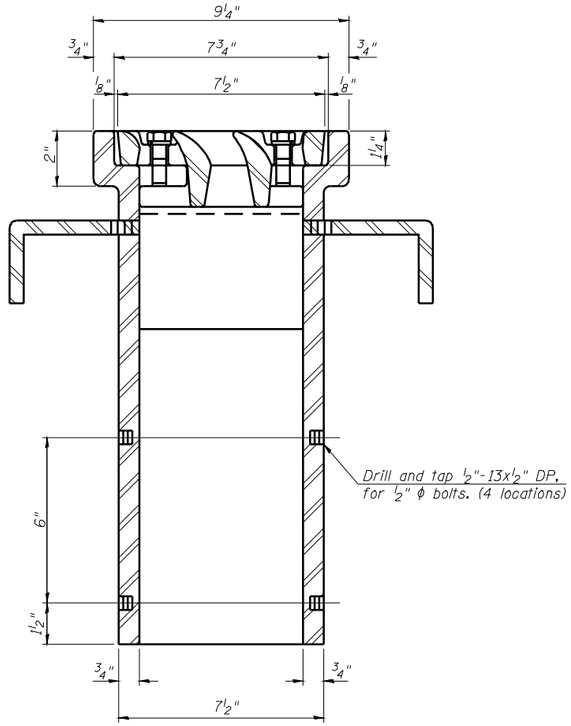
Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-11.

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.

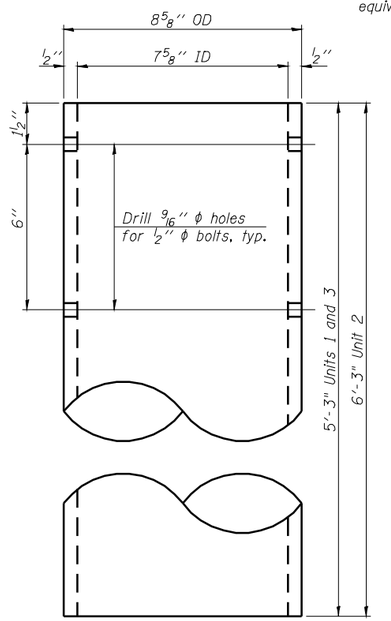


SECTION A-A

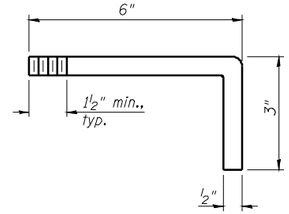
See sheets 17, 18, 20, 21 and 23 thru 26 of 86 for scupper location relative to parapet.



SECTION B-B



DOWNSPOUT



ANCHOR STUD DETAIL

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-11	Each	32

DRAINAGE SCUPPER DETAILS, DS-11
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

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JOB NO. 07S2026

DATE 03/27/09

LAYOUT	Rod	09/12/08
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REVIEWED	TEH	09/30/08

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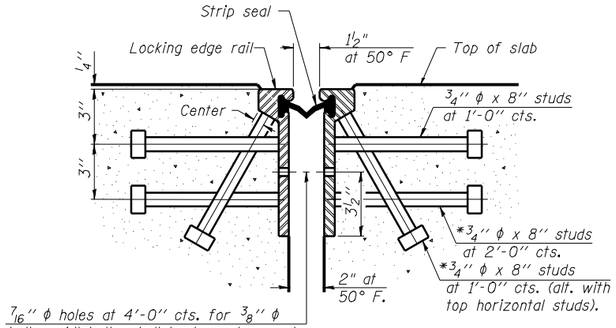
*Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

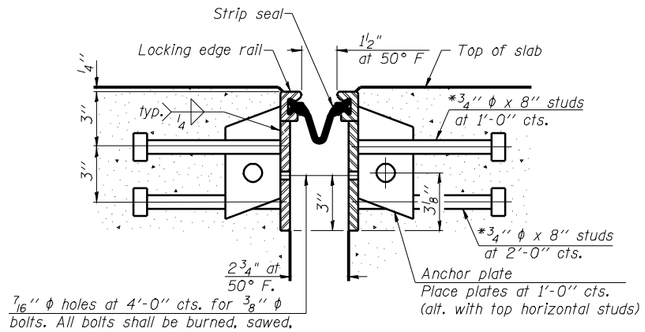
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	167
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 31
86 SHEETS

Contract #72A76





Notes:

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

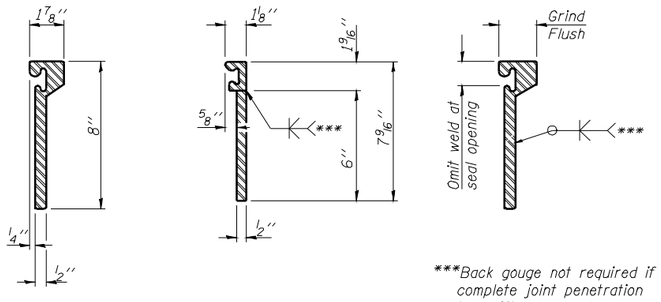
The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities and stage construction joints.

The manufacturer's recommended installation methods shall be followed.

The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.

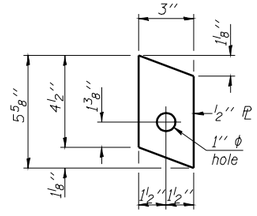
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

SECTION THRU ROLLED RAIL JOINT

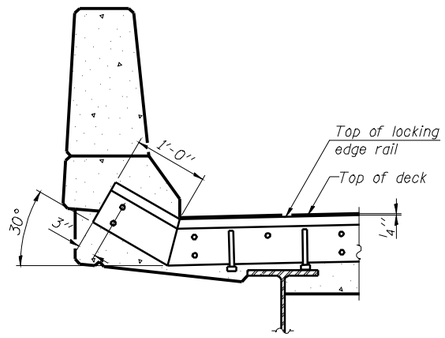


***Back gouge not required if complete joint penetration is verified by mock-up.

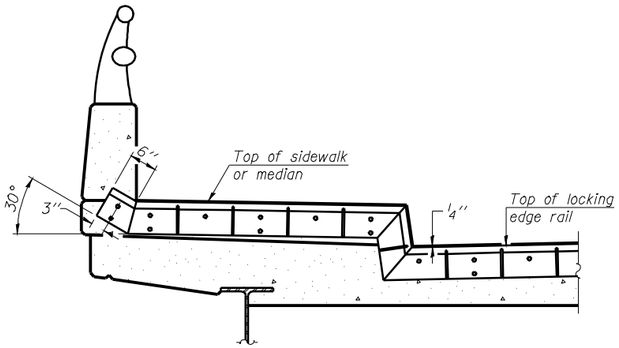
SECTION THRU WELDED RAIL JOINT



ANCHOR PL
(for welded rail)



AT PARAPET



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.

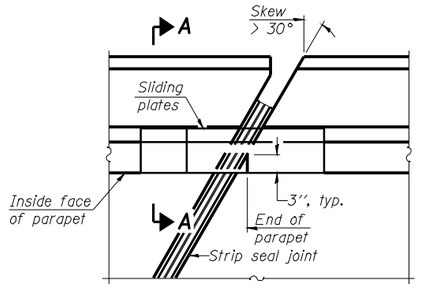
ROLLED EXTRUDED RAIL

WELDED RAIL

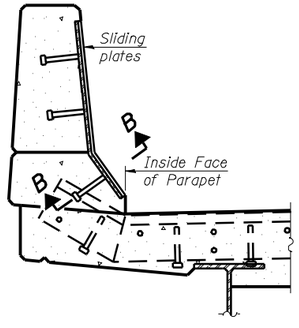
LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.

LOCKING EDGE RAILS



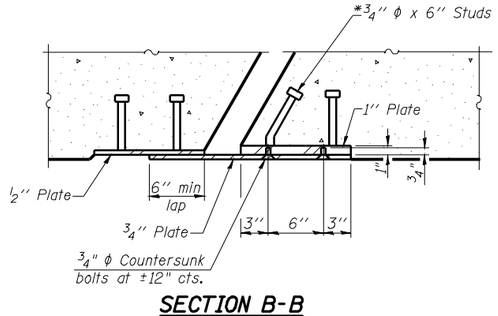
PLAN



SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)

TYPICAL END TREATMENTS



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	42

PREFORMED JOINT STRIP SEAL (NORTH ABUTMENT)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

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JOB NO. 07S2026

DATE 03/27/09

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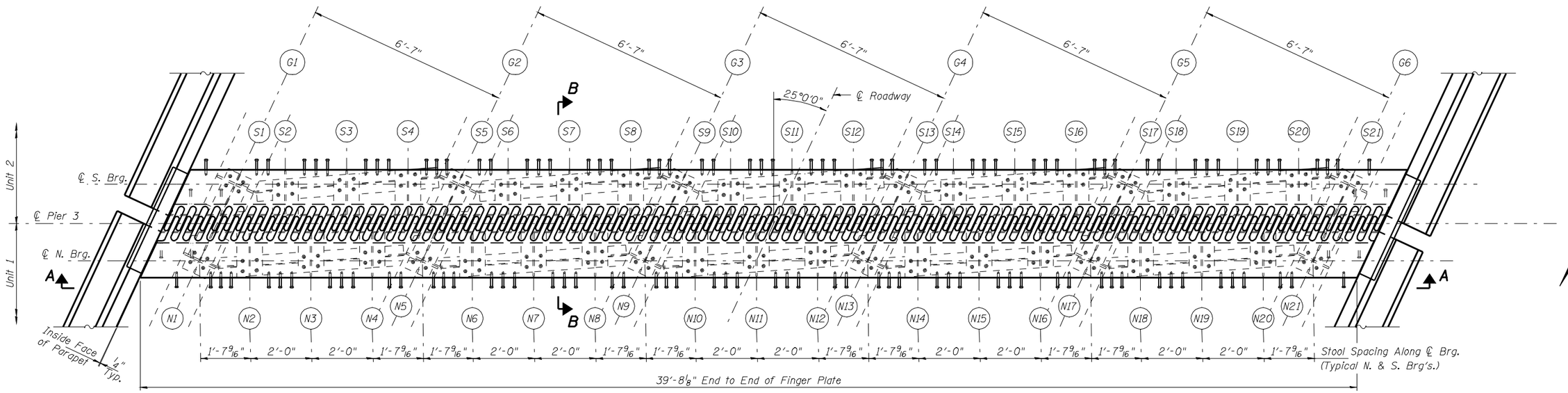
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

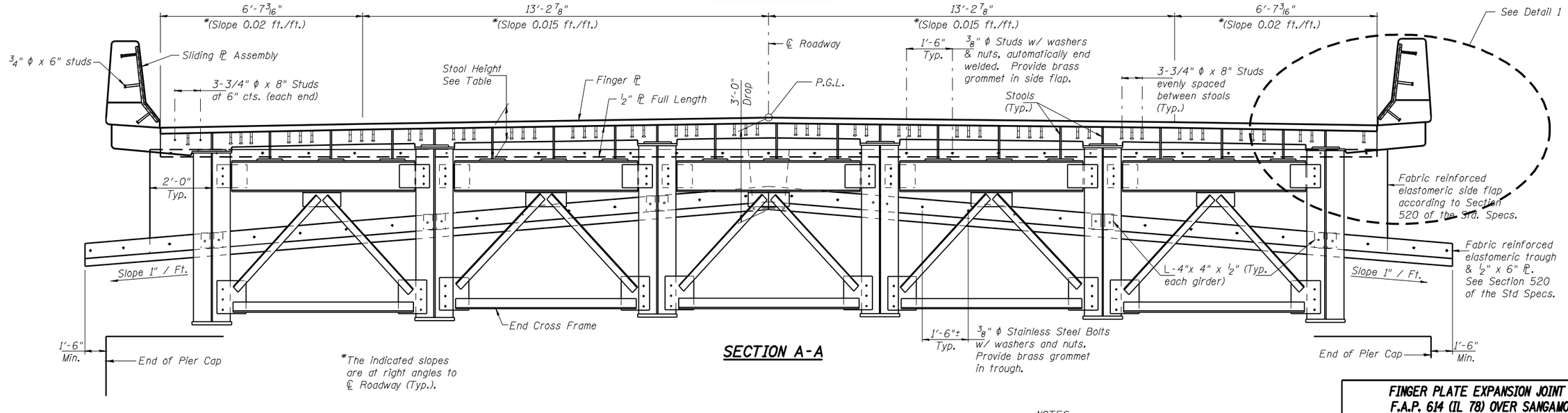
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FAP Rte 614	144(B-1)	Cass & Mason	351	168
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 32
86 SHEETS

Contract #72A76



PLAN AT PIER 3



SECTION A-A

TABLE OF STOOL HEIGHTS

STOOL MARK (UNIT 1)	N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12	N13	N14	N15	N16	N17	N18	N19	N20	N21
STOOL HEIGHT	6 1/4"	10 3/8"	10 7/8"	11 5/16"	6 1/4"	11 15/16"	12 5/16"	12 11/16"	6 1/4"	13 5/16"	13 11/16"	13 7/16"	6 1/4"	12 15/16"	12 11/16"	12 7/16"	6 1/4"	11 15/16"	11 5/8"	11 1/4"	6 1/4"
STOOL MARK (UNIT 2)	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	S17	S18	S19	S20	S21
STOOL HEIGHT	6 1/4"	10 3/8"	10 7/8"	11 5/16"	6 1/4"	11 15/16"	12 5/16"	12 11/16"	6 1/4"	13 5/16"	13 11/16"	13 7/16"	6 1/4"	12 15/16"	12 11/16"	12 7/16"	6 1/4"	11 15/16"	11 5/8"	11 1/4"	6 1/4"

NOTES:
1. Work this sheet with Sheet 33 of 86.
2. M270 Grade 50W steel shall be used for the finger plates and attachments.
3. Finger plate expansion joint shall be assembled in their final relative position with the ends in place for shop inspection and acceptance.
4. The Webs of stools N1 & S1, N5 & S5, N9 & S9, N13 & S13, N17 & S17 and N21 & S21 are parallel to the girder webs.

FINGER PLATE EXPANSION JOINT (PIER 3)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

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JOB NO. 07S2026

DATE 03/27/09

LAYOUT	MNM	09/12/08
DRAWN	DAB	09/30/08
REVIEWED	TEH	09/30/08

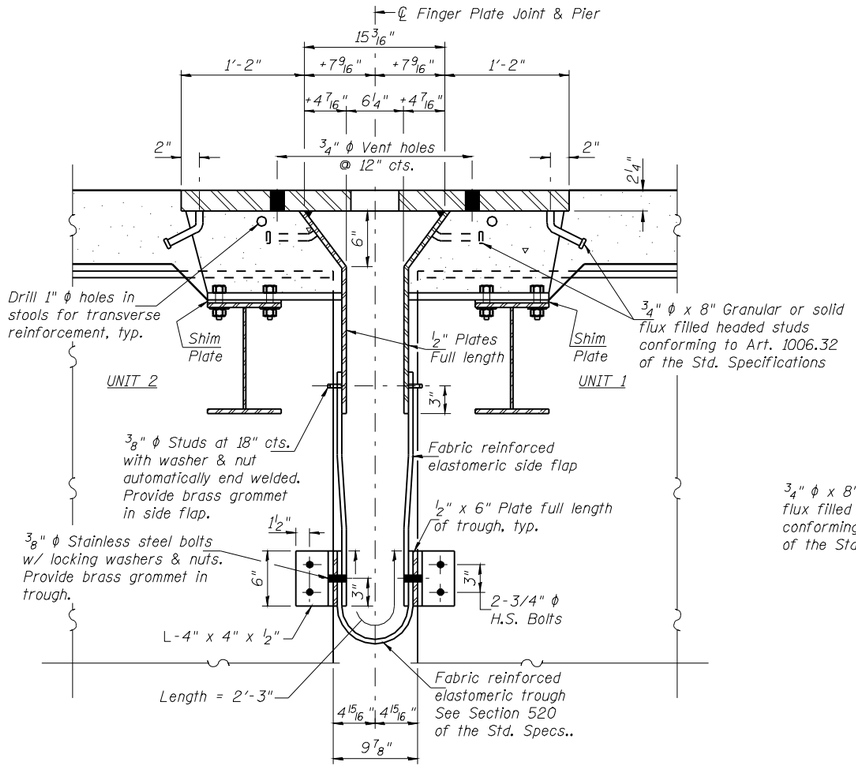
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

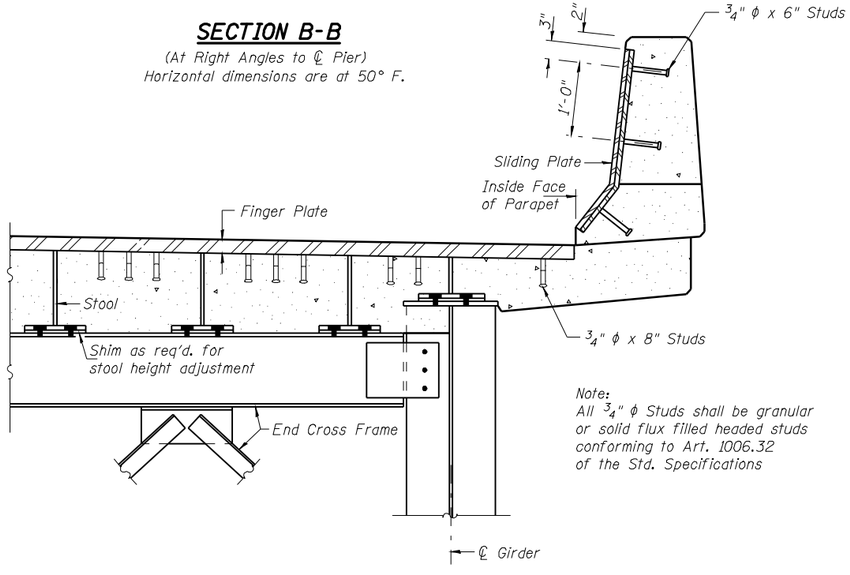
SHEET NO. 33
86 SHEETS

Contract #72A76



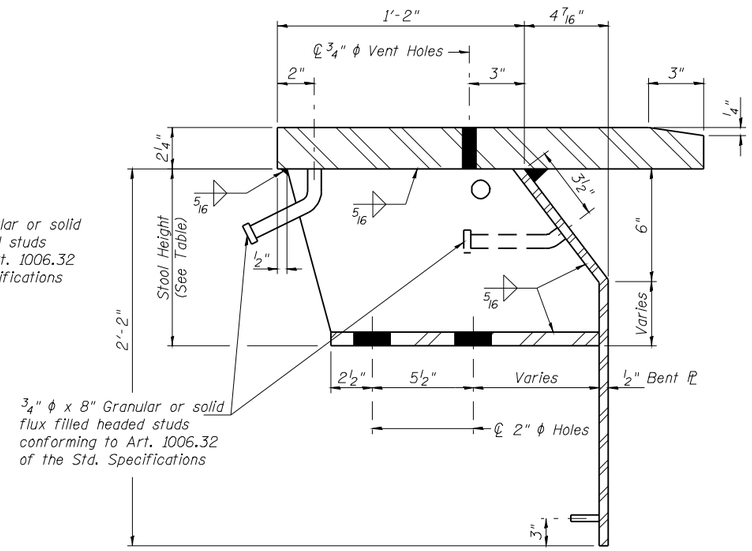
SECTION B-B

(At Right Angles to ℄ Pier)
Horizontal dimensions are at 50° F.

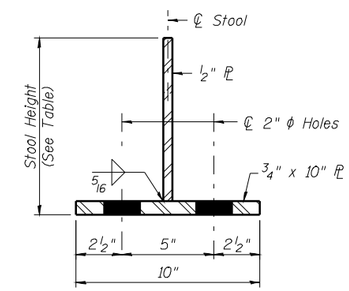


Note:
All 3/4" ϕ Studs shall be granular or solid flux filled headed studs conforming to Art. 1006.32 of the Std. Specifications

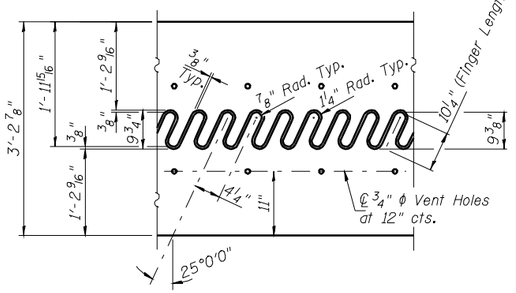
DETAIL 1



STOOL DETAIL

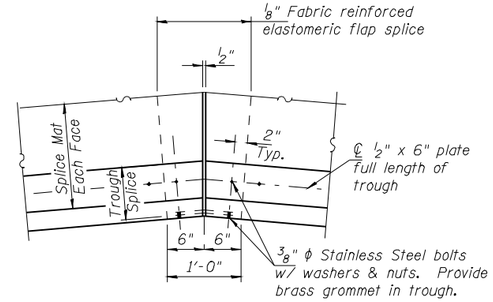


SECTION THRU STOOL

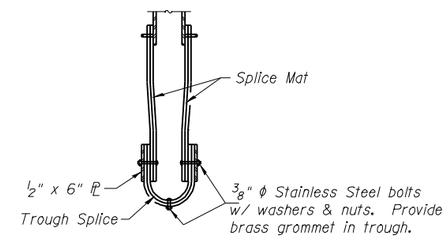


FLAME CUTTING DIAGRAM

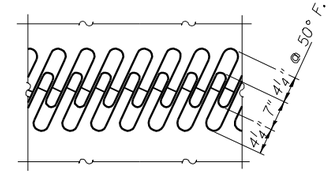
Cut from PL 2 1/4" x 3'-2 7/8" x 41'-2 1/4"



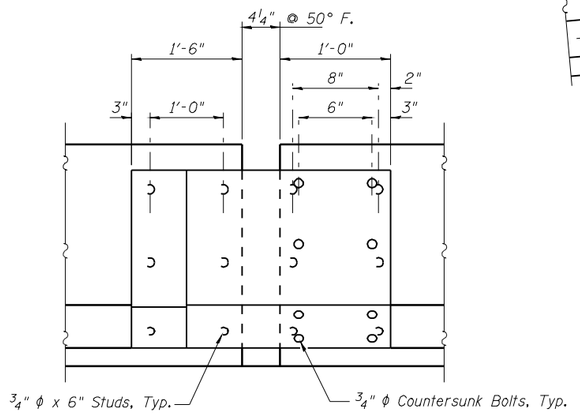
TROUGH SPLICE DETAIL



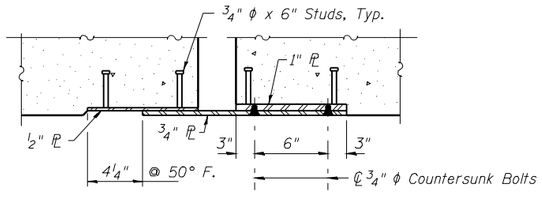
SECTION THRU TROUGH SPLICE



FINGER PLATE SETTING DIAGRAM



INSIDE ELEVATION OF PARAPET AT JOINT



HORIZONTAL SECTION OF PARAPET AT JOINT

NOTES:
1. Work this sheet with Sheet 32 of 86.
2. Provide 1-1/4", 1-1/8" and 1-1/16" shim plates for stools supported by girders and cross frames.

FINGER PLATE EXPANSION JOINT DETAILS (PIER 3)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026
DATE 03/27/09

LAYOUT	WNM	09/12/08
DRAWN	DAB	09/30/08
REVIEWED	TEH	09/30/08

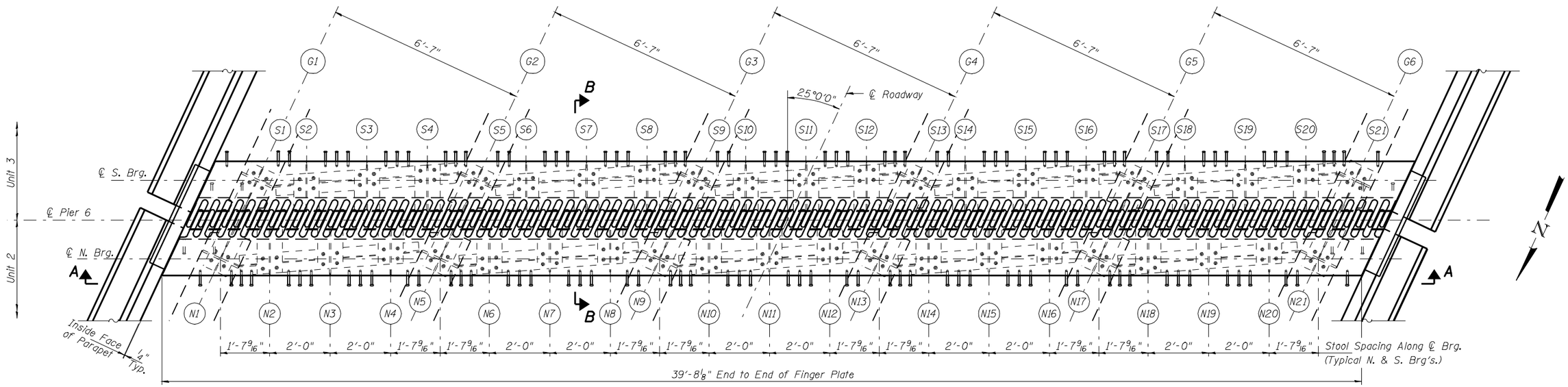
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

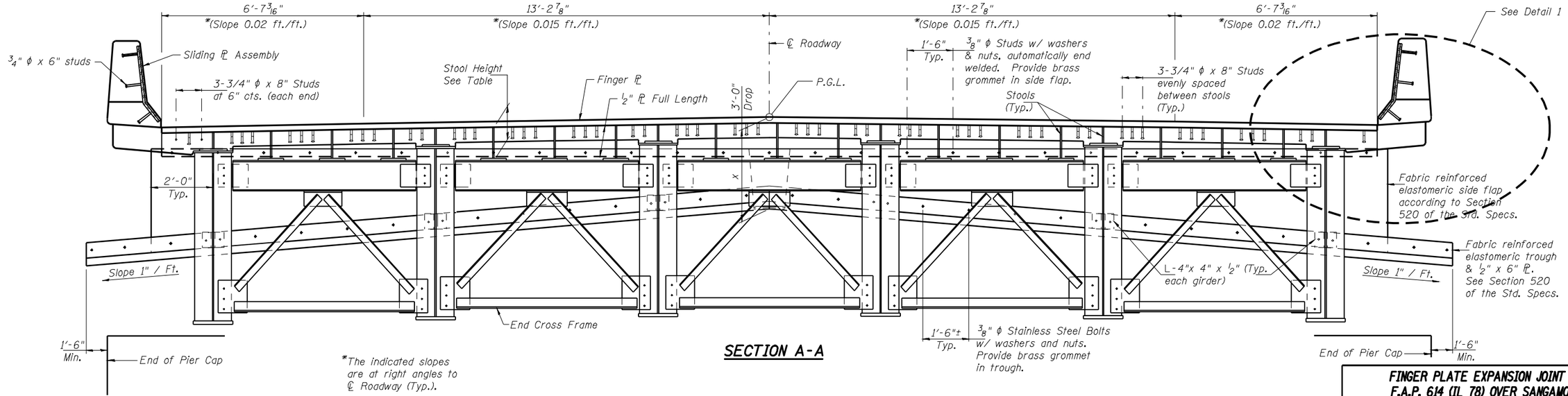
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	170
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 34
86 SHEETS

Contract #72A76



PLAN AT PIER 6



SECTION A-A

*The indicated slopes are at right angles to ℄ Roadway (Typ.).

TABLE OF STOOL HEIGHTS

STOOL MARK (UNIT 2)	N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12	N13	N14	N15	N16	N17	N18	N19	N20	N21
STOOL HEIGHT	6"	10 3/8"	10 13/16"	11 3/16"	6"	11 11/16"	12"	12 5/16"	6"	12 13/16"	13 1/8"	12 13/16"	6"	12 1/4"	11 7/8"	11 9/16	6"	11"	10 9/16"	10 1/8"	6"
STOOL MARK (UNIT 3)	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	S17	S18	S19	S20	S21
STOOL HEIGHT	6"	10 3/8"	10 13/16"	11 3/16"	6"	11 11/16"	12"	12 5/16"	6"	12 13/16"	13 1/8"	12 13/16"	6"	12 1/4"	11 7/8"	11 9/16	6"	11"	10 9/16"	10 1/8"	6"

NOTES:
1. Work this sheet with Sheet 35 of 86.
2. M270 Grade 50W steel shall be used for the finger plates and attachments.
3. Finger plate expansion joint shall be assembled in their final relative position with the ends in place for shop inspection and acceptance.
4. The Webs of stools N1 & S1, N5 & S5, N9 & S9, N13 & S13, N17 & S17 and N21 & S21 are parallel to the girder webs.

FINGER PLATE EXPANSION JOINT (PIER 6)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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JOB NO. 07S2026
DATE 03/27/09

LAYOUT	MNM	09/12/08
DRAWN	DAB	09/30/08
REVIEWED	TEH	09/30/08

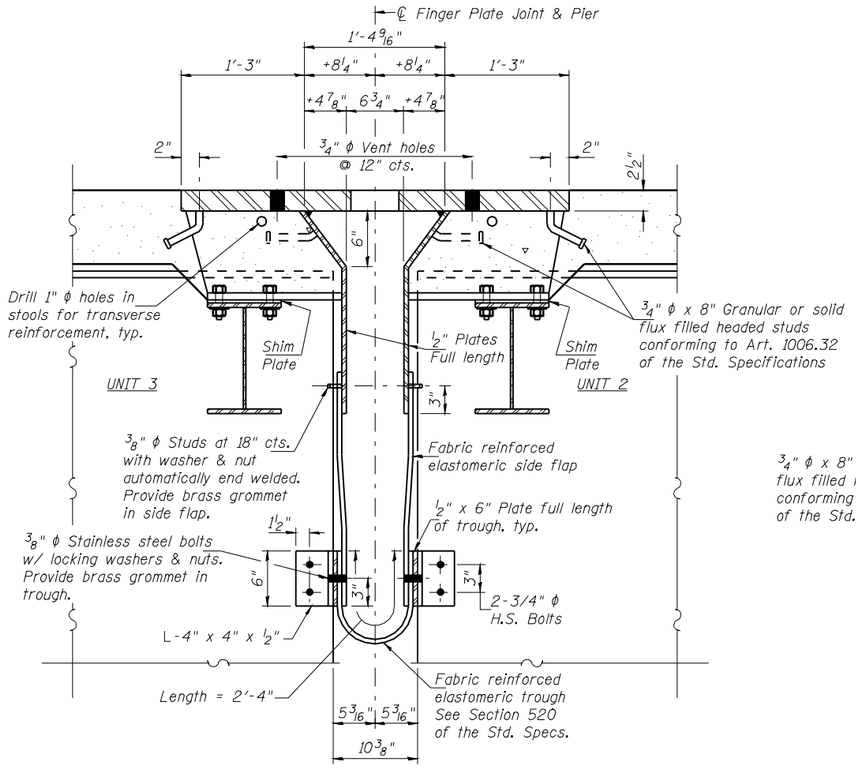
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	171
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

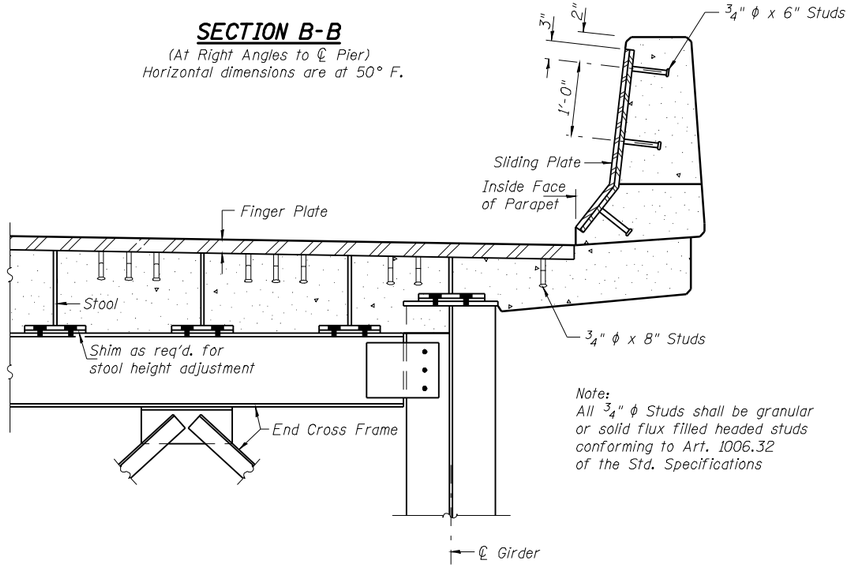
SHEET NO. 35
86 SHEETS

Contract #72A76



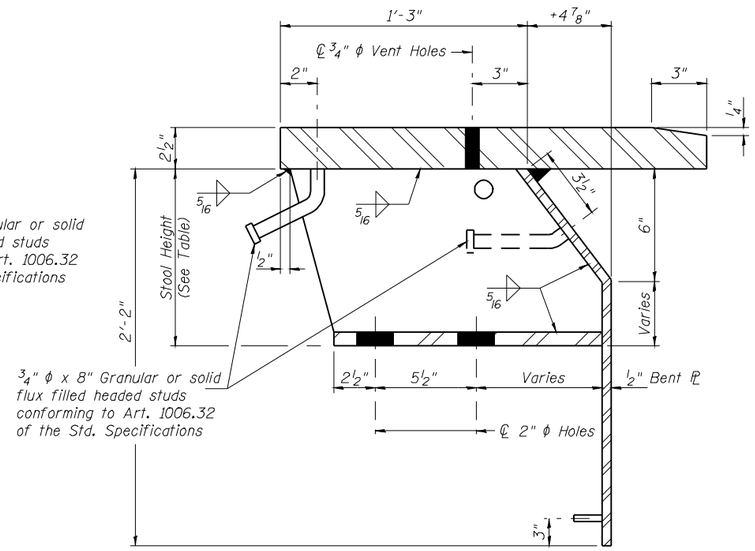
SECTION B-B

(At Right Angles to ℄ Pier)
Horizontal dimensions are at 50° F.

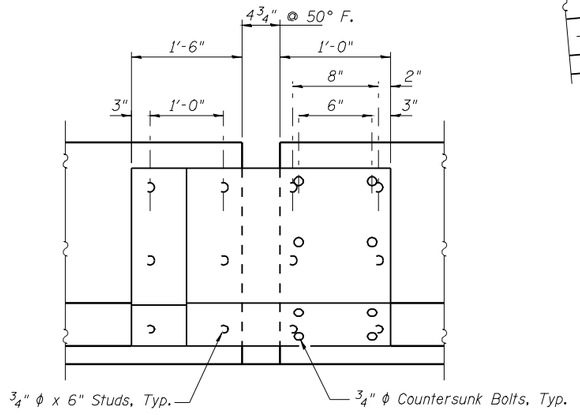


Note:
All 3/4" ϕ Studs shall be granular or solid flux filled headed studs conforming to Art. 1006.32 of the Std. Specifications

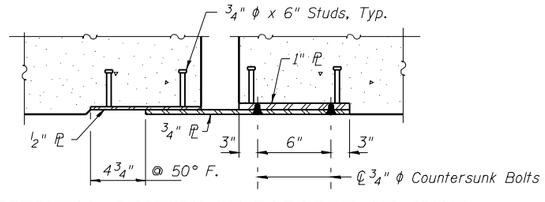
DETAIL 1



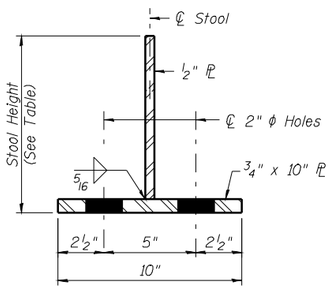
STOOL DETAIL



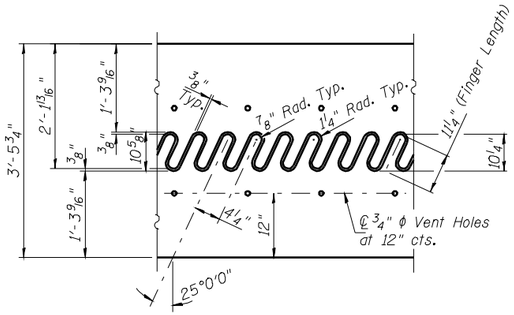
INSIDE ELEVATION OF PARAPET AT JOINT



HORIZONTAL SECTION OF PARAPET AT JOINT

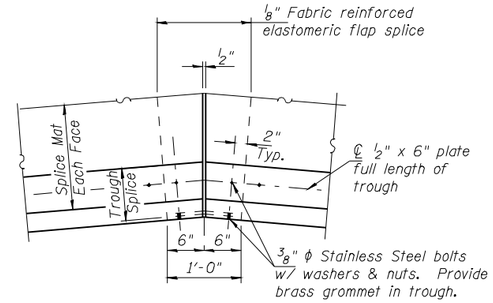


SECTION THRU STOOL

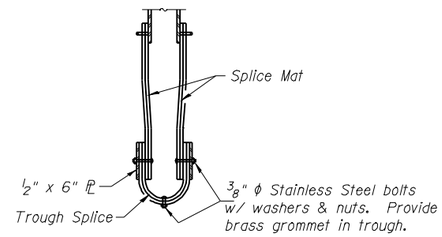


FLAME CUTTING DIAGRAM

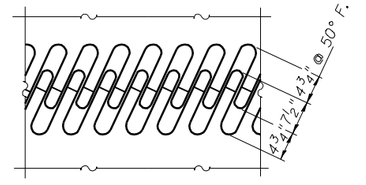
Cut from PL 2 1/2" x 3'-5 3/4" x 41'-3 5/8"



TROUGH SPLICE DETAIL



SECTION THRU TROUGH SPLICE



FINGER PLATE SETTING DIAGRAM

NOTES:
1. Work this sheet with Sheet 34 of 86.
2. Provide 1-1/4", 1-1/8" and 1-1/16" shim plates for stools supported by girders and cross frames.

FINGER PLATE EXPANSION JOINT DETAILS (PIER 6)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026
DATE 03/27/09

LAYOUT	WMM	09/12/08
DRAWN	DAB	09/30/08
REVIEWED	TEH	09/30/08

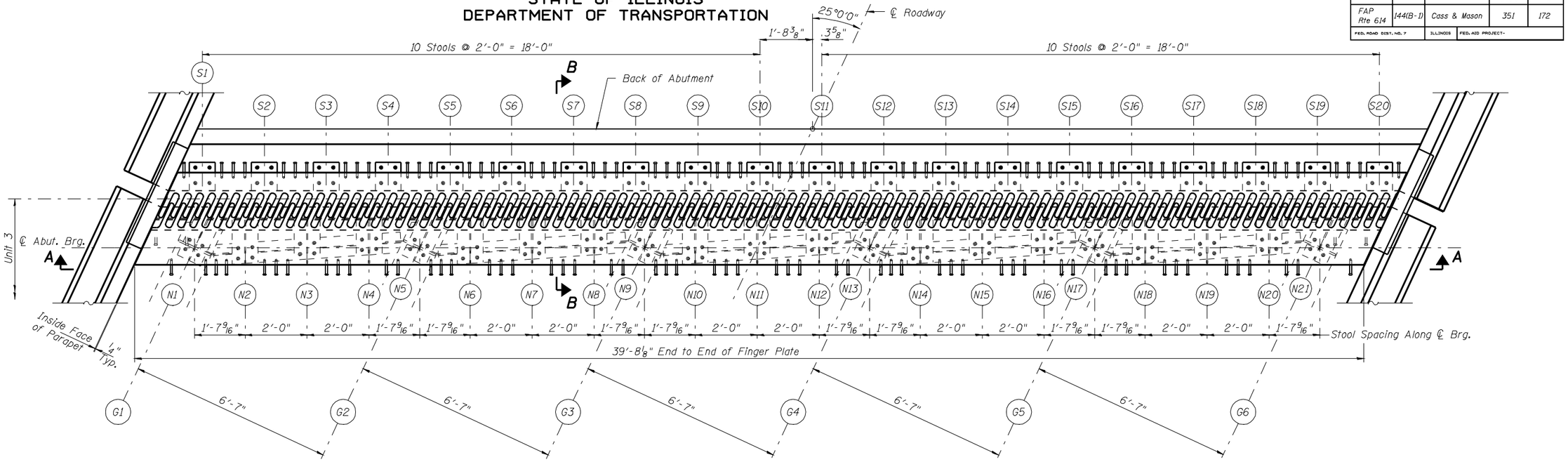
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Contract #72A76

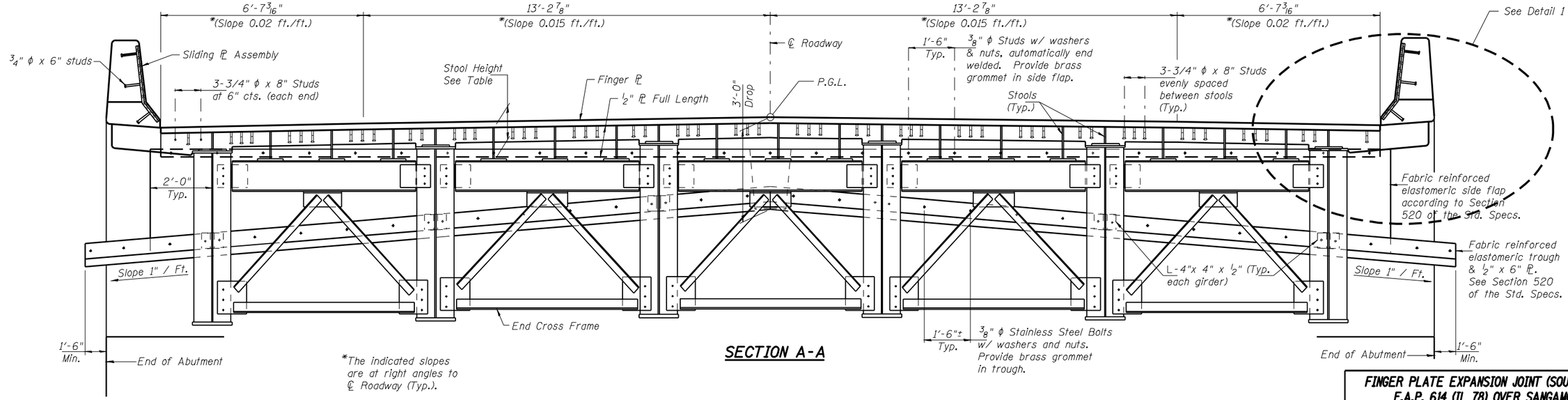
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	172
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 36
86 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN AT SOUTH ABUTMENT



SECTION A-A

TABLE OF STOOL HEIGHTS

STOOL MARK (UNIT 3)	N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12	N13	N14	N15	N16	N17	N18	N19	N20	N21
STOOL HEIGHT	6 1/4"	11 1/4"	11 5/8"	11 15/16"	6 1/4"	12 7/16"	12 11/16"	12 15/16"	6 1/4"	13 7/16"	13 11/16"	13 5/16"	6 1/4"	12 11/16"	12 5/16"	11 15/16"	6 1/4"	11 5/16"	10 7/8"	10 3/8"	6 1/4"
STOOL MARK (ABUT.)	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	S17	S18	S19	S20	-
STOOL HEIGHT	10"	11"	11"	11"	12"	12"	12"	12"	13"	13"	13"	12"	12"	12"	11"	11"	11"	10"	10"	9"	-

NOTES:
1. Work this sheet with Sheet 37 of 86.
2. M270 Grade 50W steel shall be used for the finger plates and attachments.
3. Finger plate expansion joint shall be assembled in their final relative position with the ends in place for shop inspection and acceptance.
4. The Webs of stools N1, N5, N9, N13, N17 and N21 are parallel to the girder webs.

FINGER PLATE EXPANSION JOINT (SOUTH ABUTMENT)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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JOB NO. 07S2026
DATE 03/27/09

LAYOUT	MNM	09/12/08
DRAWN	DAB	09/30/08
REVIEWED	TEH	09/30/08

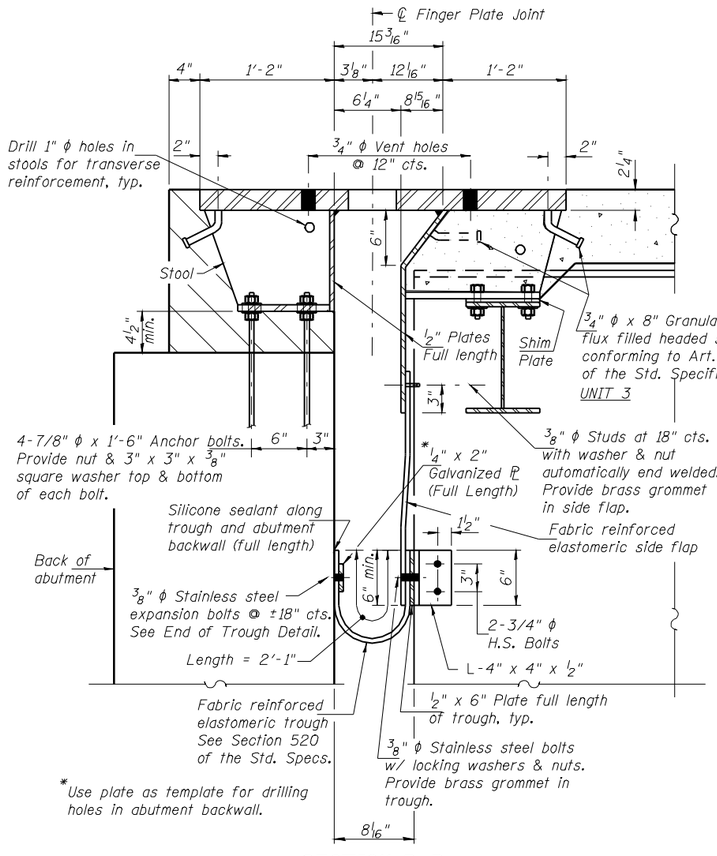
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	173
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

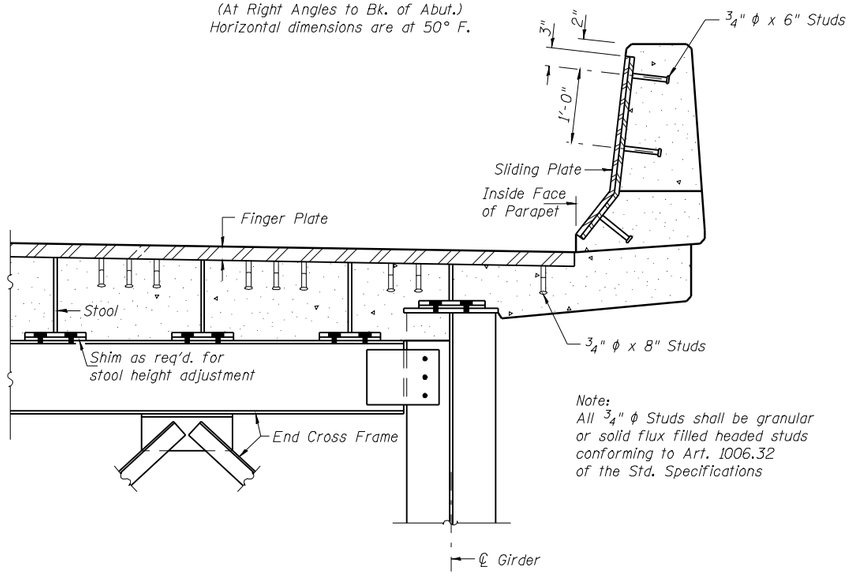
SHEET NO. 37
86 SHEETS

Contract #72A76

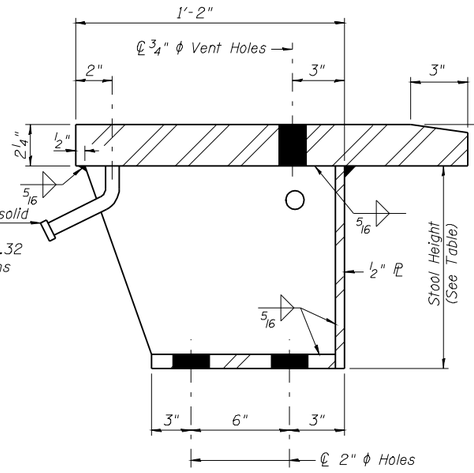


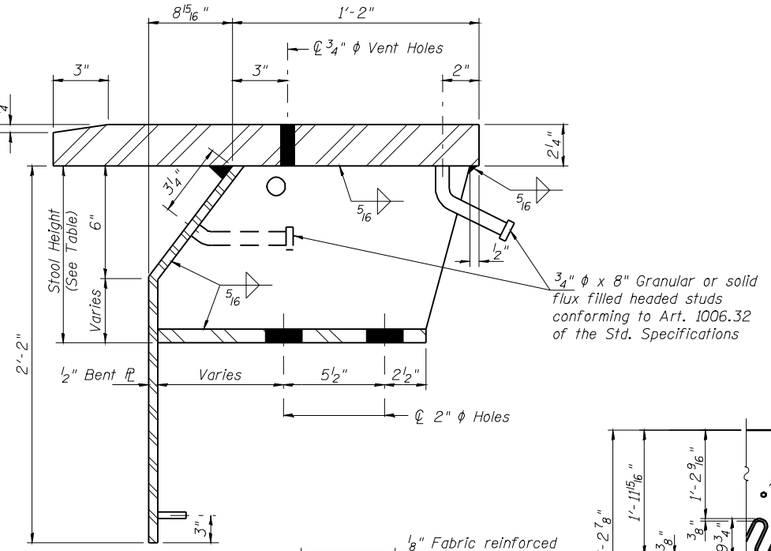
SECTION B-B

(At Right Angles to Bk. of Abut.)
Horizontal dimensions are at 50° F.

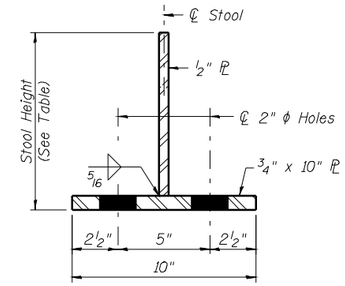


DETAIL 1

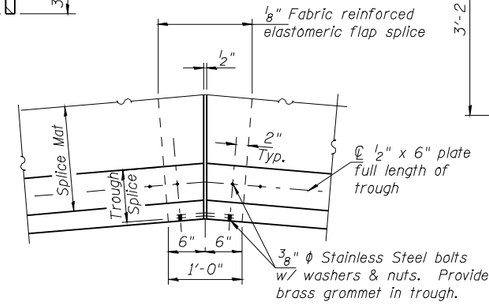




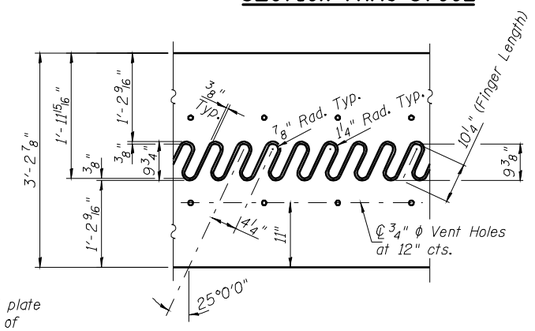
STOOLS DETAIL



SECTION THRU STOOL

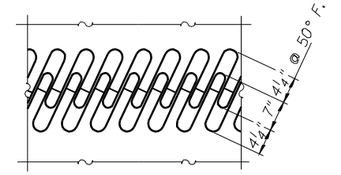


TROUGH SPLICE DETAIL



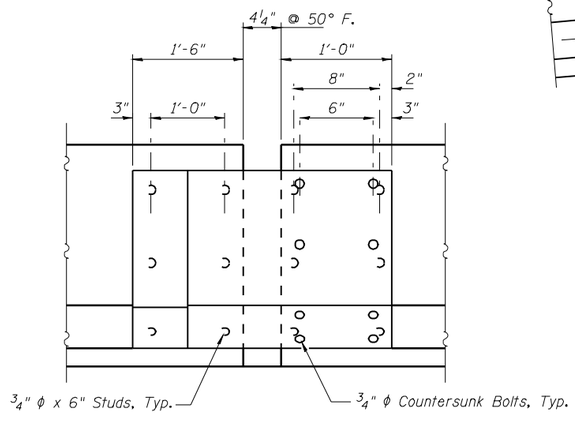
FLAME CUTTING DIAGRAM

Cut from PL 2 1/4" x 3'-2 7/8" x 41'-2 1/4"

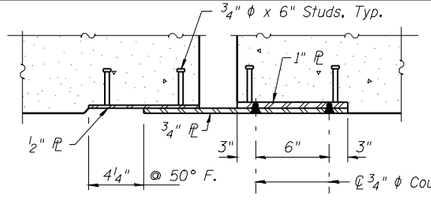


FINGER PLATE SETTING DIAGRAM

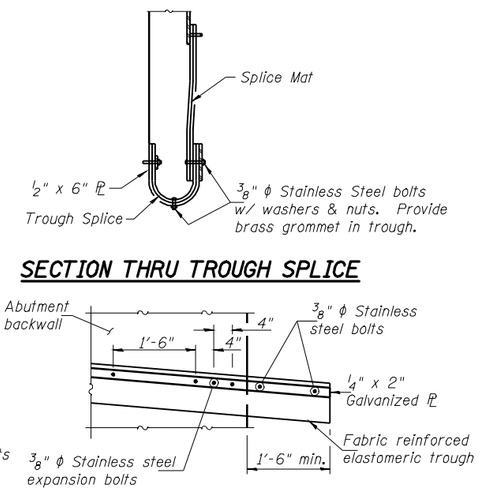
NOTES:
1. Work this sheet with Sheet 36 of 86.
2. Provide 1-1/4", 1-1/8" and 1-1/16" shim plates for stools supported by girders and cross frames.



INSIDE ELEVATION OF PARAPET AT JOINT



HORIZONTAL SECTION OF PARAPET AT JOINT



SECTION THRU TROUGH SPLICE

END OF TROUGH DETAIL AT ABUT.

Note:
All 3/4" ϕ Studs shall be granular or solid flux filled headed studs conforming to Art. 1006.32 of the Std. Specifications

FINGER PLATE EXPANSION JOINT DETAILS (SOUTH ABUT.)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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JOB NO. 07S2026
DATE 03/27/09

LAYOUT	MNM	09/12/08
DRAWN	DAB	09/30/08
REVIEWED	TEH	09/30/08

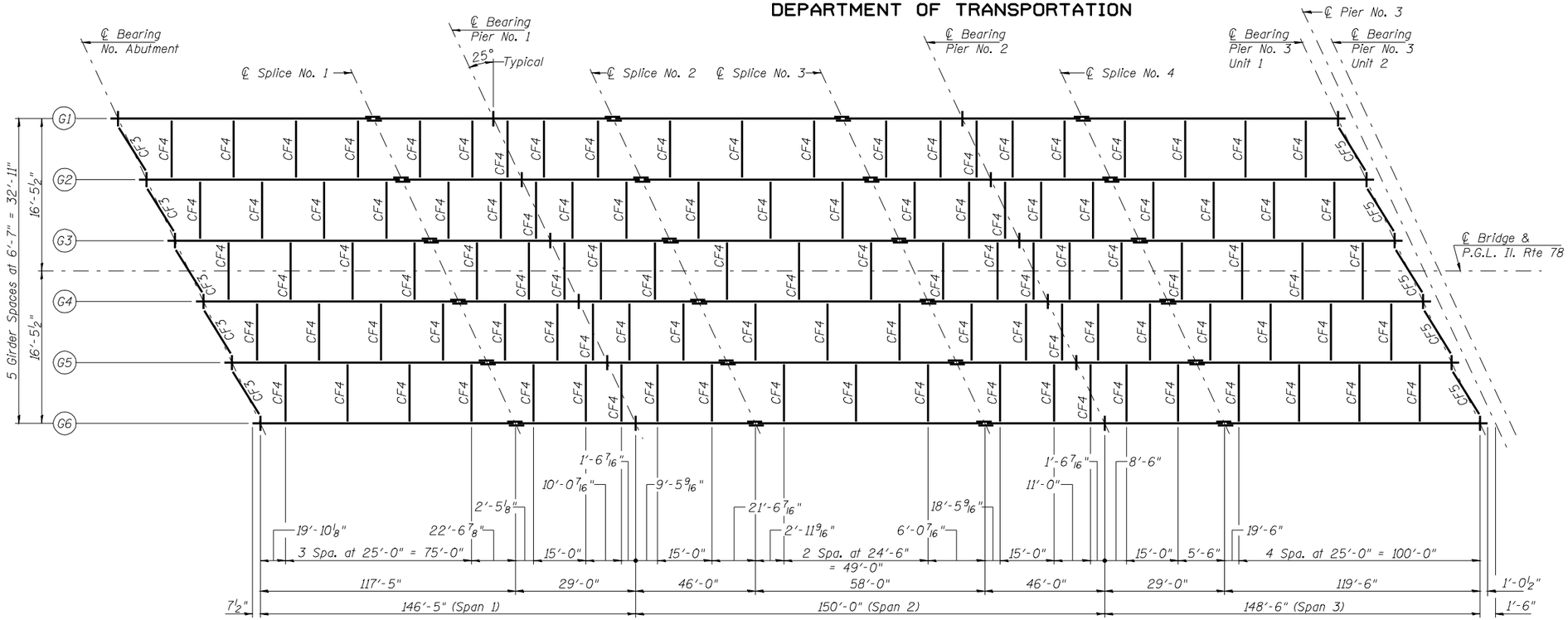
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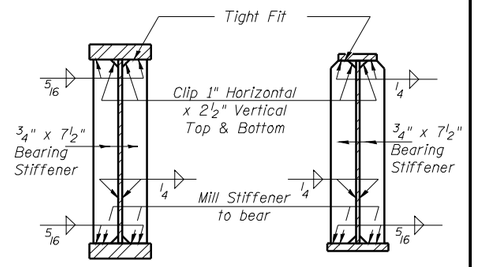
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	174
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 38
86 SHEETS

Contract #72A76



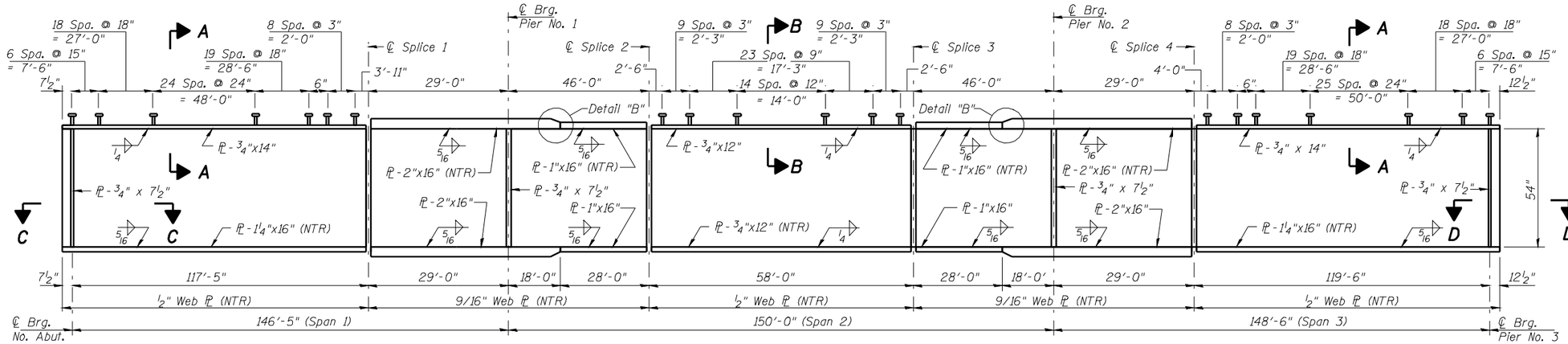


SECTION AT PIERS 1 and 2

SECTION AT N. ABUT. & PIER 3

Notes:
All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

UNIT 1 - FRAMING PLAN (Spans 1 thru 3)

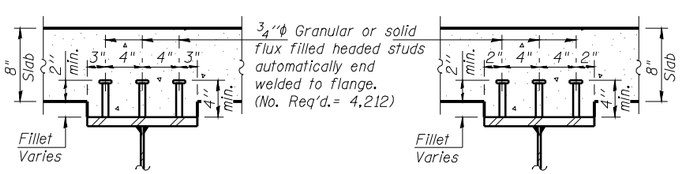


BEARING SHIM TABLE

Gir. No.	Location	Thickness	℄ Size
4	N. Abut.	3/16"	13"x16"
4	Pier 1	3/16"	16"x29"
4	Pier 2	3/16"	16"x29"
4	Pier 3	3/16"	13"x31¼"

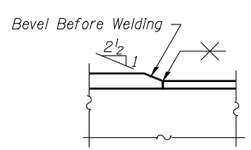
See Bearing Detail Sheets for Hole Diameters and Placement.

UNIT 1 - GIRDER ELEVATION (Spans 1 thru 3)

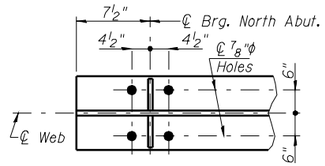


SECTION A-A

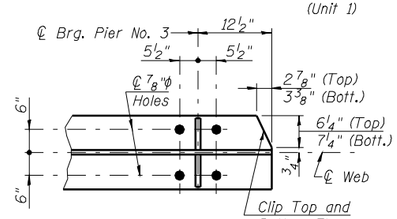
SECTION B-B



DETAIL "B"



SECTION C-C



SECTION D-D

UNIT 1 - FRAMING PLAN (Spans 1 thru 3)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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JOB NO. 07S2026

DATE 03/27/09

LAYOUT	BWC/ANM	09/12/08
DRAWN	DAB	09/30/08
REVIEWED	TEH	09/30/08

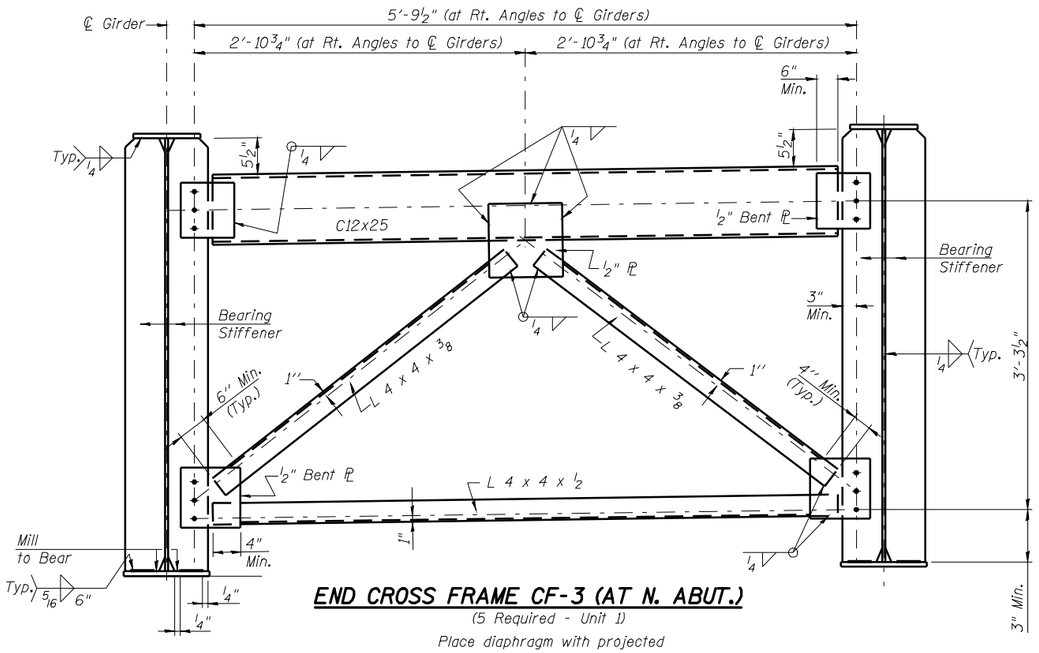
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	175
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 39
86 SHEETS

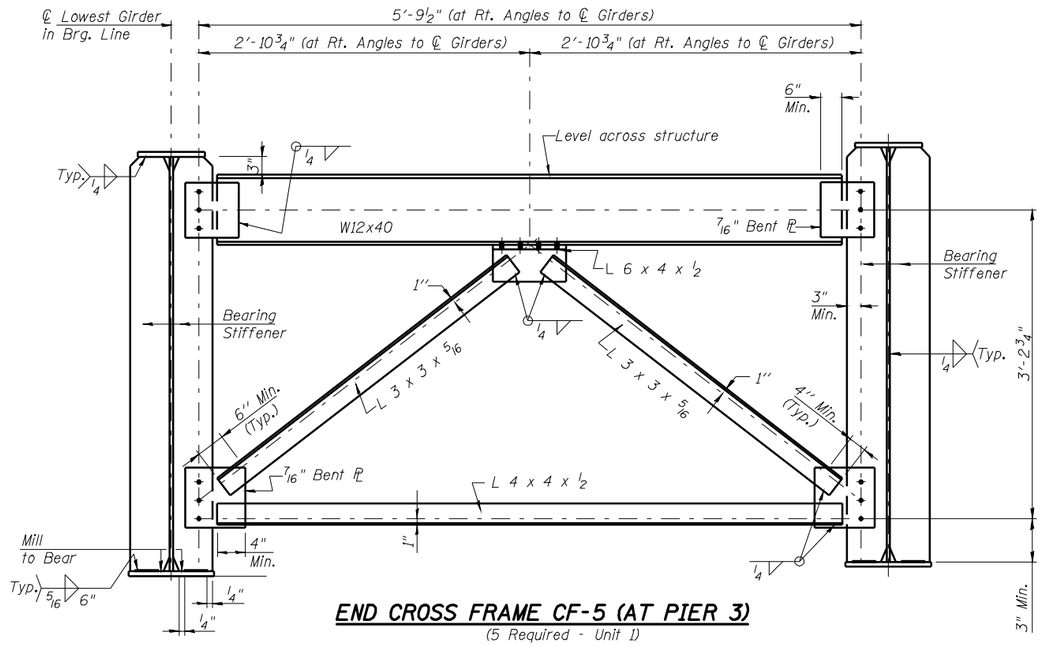
Contract #72A76



END CROSS FRAME CF-3 (AT N. ABUT.)

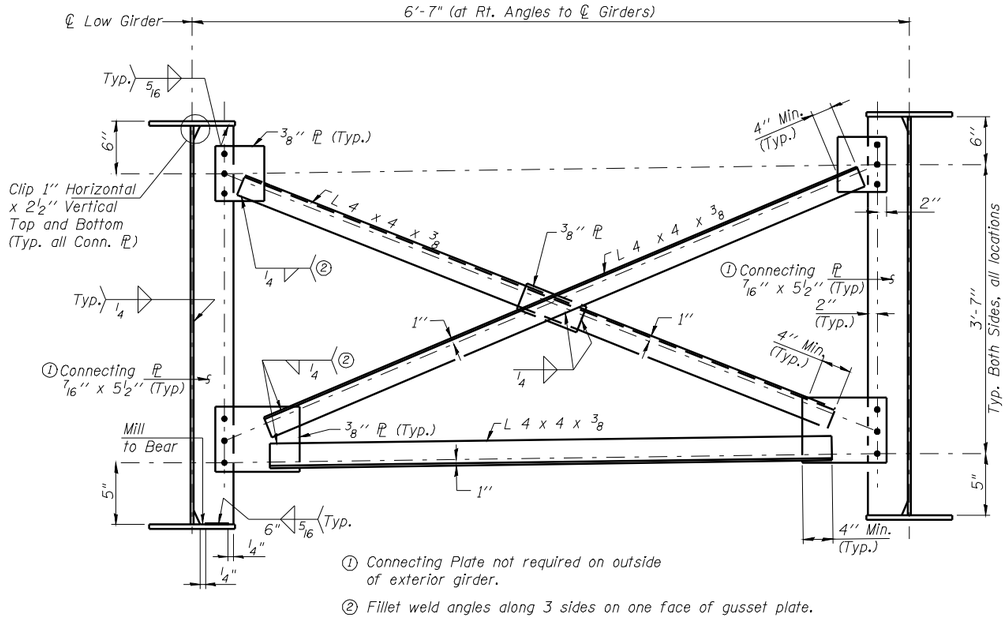
(5 Required - Unit 1)

Place diaphragm with projected legs outward from abutment backwall.



END CROSS FRAME CF-5 (AT PIER 3)

(5 Required - Unit 1)



① Connecting Plate not required on outside of exterior girder.

② Fillet weld angles along 3 sides on one face of gusset plate.

INTERIOR CROSS FRAME CF-4

(105 Required - Unit 1)

Note:
Provide 15/16" ϕ holes for ¾" ϕ High Strength Bolts with 1-Nut and 2-Hardened Washers each (Typical for all Cross Frame Connections).

UNIT 1 - STRUCTURAL STEEL DETAILS (Sheet 1 of 2)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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JOB NO. 07S2026

DATE 03/27/09

LAYOUT	BWC/ANM	09/12/08
DRAWN	DAB	09/30/08
REVIEWED	TEH	09/30/08

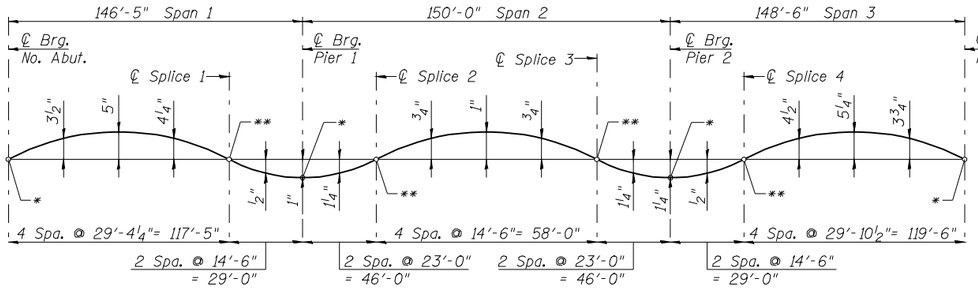
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	176
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 40
86 SHEETS

Contract #72A76



UNIT 1 - CAMBER DIAGRAM (Spans 1 thru 3)

* See Table for Final Top of Web Elevations at abutments and piers.
** Theoretical Top of Web Elevations before dead load deflections.

UNIT 1 - TOP of WEB ELEVATIONS TABLE (Spans 1 thru 3)

For Fabrication Only

Girder Number	℄ Brg. No. Abut.	℄ Splice No. 1	℄ Brg. Pier 1	℄ Splice No. 2	℄ Splice No. 3	℄ Brg. Pier 2	℄ Splice No. 4	℄ Brg. Pier 3
Girder 1	470.99	471.61	471.61	471.83	472.12	472.35	472.66	473.21
Girder 2	471.12	471.75	471.75	471.97	472.26	472.48	472.80	473.35
Girder 3	471.24	471.86	471.87	472.08	472.37	472.60	472.91	473.46
Girder 4	471.25	471.88	471.88	472.10	472.38	472.61	472.93	473.48
Girder 5	471.17	471.80	471.80	472.01	472.30	472.53	472.84	473.39
Girder 6	471.06	471.69	471.69	471.91	472.20	472.42	472.74	473.29

UNIT 1 - INTERIOR GIRDER MOMENT TABLE

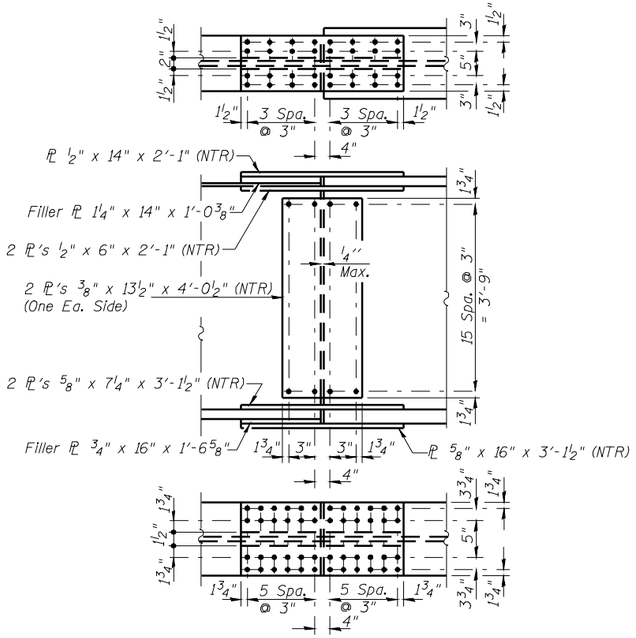
		0.4 Span 1	Pier 1	0.5 Span 2	Pier 2	0.6 Span 3
I_s	(in^4)	28474	57579	20051	57579	28474
$I_c(n)$	(in^4)	70619	-	48072	-	70619
$I_c(3n)$	(in^4)	50565	-	35698	-	50565
S_s	(in^3)	1205	1986	723	1986	1205
$S_c(n)$	(in^3)	1619	-	1021	-	1619
$S_c(3n)$	(in^3)	1481	-	925	-	1481
DC1	(k/')	0.898	1.492	0.849	1.492	0.898
M_{DC1}	('k)	1464	3306	258	3394	1506
DC2	(k/')	0.150	-	0.150	-	0.150
M_{DC2}	('k)	252	-	83	-	260
DW	(k/')	0.300	-	0.300	-	0.300
M_{DW}	('k)	504	-	165	-	519
M_{L+IM}	('k)	2089	1893	1395	1907	2118
M_u(Strength I)	('k)	6555	7613	3115	7751	6692
*** $\phi_f M_n$, $\phi_f M_{nc}$ | ('k) | 7801 | - | 5308 | - | 7761 |
f_s DC1 | (ksi) | 14.6 | 20.0 | 4.3 | 20.5 | 15.0 |
f_s DC2 | (ksi) | 2.0 | - | 1.1 | - | 2.1 |
f_s DW | (ksi) | 4.1 | - | 2.1 | - | 4.2 |
f_s 1.3(L+IM) | (ksi) | 20.1 | 14.9 | 21.3 | 15.0 | 20.4 |
f_s (Service II) | (ksi) | 40.8 | 34.9 | 28.8 | 35.5 | 41.7 |
**** f_s (Total)(Strength I) | (ksi) | - | 46.0 | - | 46.9 | - |
V_r | (k) | 32.8 | - | 23.9 | - | 33.0 |

*** Compact Sections.
**** Non-compact and Slender Sections.

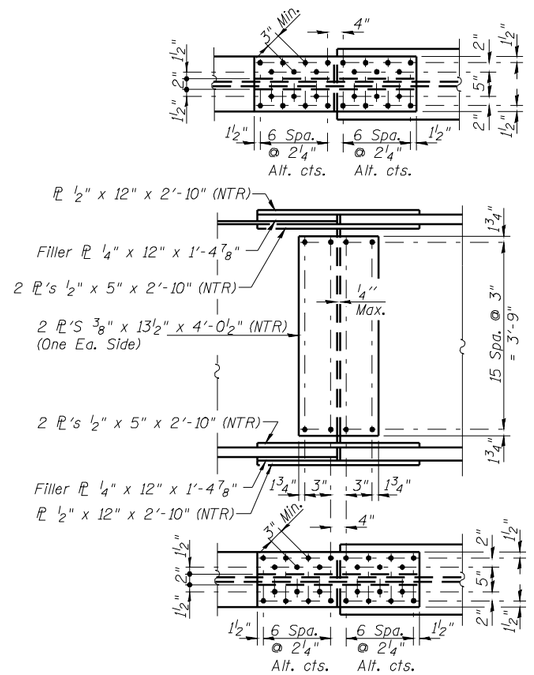
UNIT 1 - INTERIOR GIRDER REACTION TABLE
HL93 Loading

		North Abutment	Pier 1	Pier 2	Pier 3
R_{DC1}	(k)	52.1	152.1	154.2	52.9
R_{DC2}	(k)	8.7	24.5	24.8	8.8
R_{DW}	(k)	17.4	48.9	49.5	17.6
R_{L+IM}	(k)	102.9	180.2	181.0	103.4
R_{Total}	(k)	181.1	405.8	409.4	182.7

I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) 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-Strength I, and Service II) 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-Strength I, and Service II) due to long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).
DC1: Un-factored non-composite dead load (kips/ft.).
M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).
DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).
M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).
DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).
M_{DW}: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).
M_{L+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
M_u (Strength I): Factored design moment (kip-ft.).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$
$\phi_f M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).
$\phi_f M_{nc}$: Compact non-composite negative moment capacity computed according to Article A6.1.1 (kip-ft.).
f_s (Service II): Sum of stresses as computed from the moments below (ksi).
$M_{DC1} + M_{DC2} + M_{DW} + 1.3\ M_{L+IM}$
f_s (Total)(Strength I): Sum of stresses as computed from the moments below on non-compact section (ksi).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$
V_r: Factored shear range computed according to Article 6.10.10.



DETAIL - FIELD SPLICE NO. 1 & 4



DETAIL - FIELD SPLICE NO. 2 & 3

Note:
Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
Use ⅞" ϕ H.S. Bolts with ¹⁵⁄₁₆" ϕ holes for all splice connections.
Use 7#8" ϕ H.S. Bolts with 15#16" ϕ holes for all splice connections.

UNIT 1 - STRUCTURAL STEEL DETAILS (Sheet 2 of 2)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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JOB NO. 07S2026
DATE 03/27/09

LAYOUT	BWC/ANM	09/12/08
DRAWN	DAB	09/30/08
REVIEWED	TEH	09/30/08

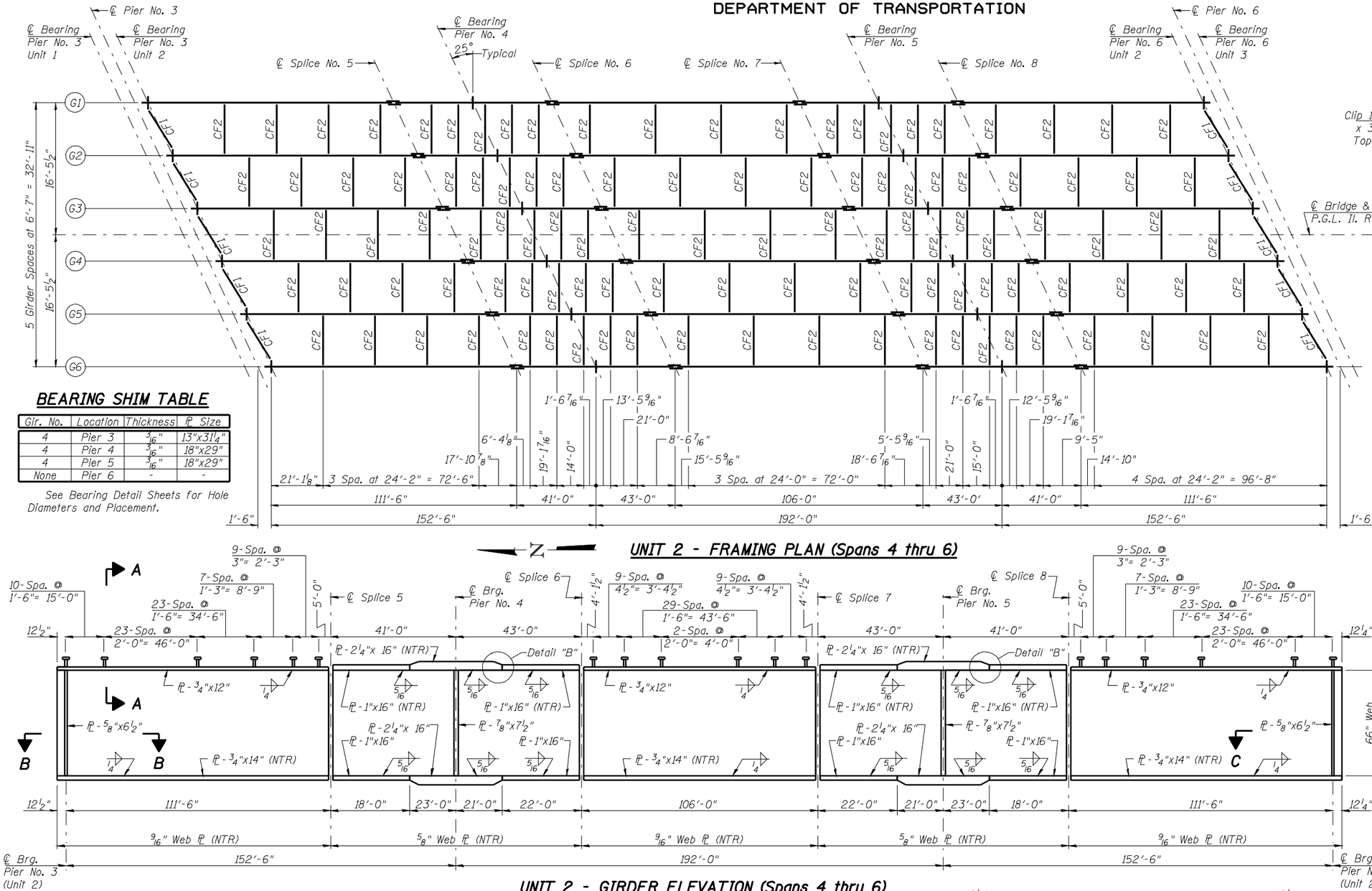
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	177
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 41
86 SHEETS

Contract #72A76



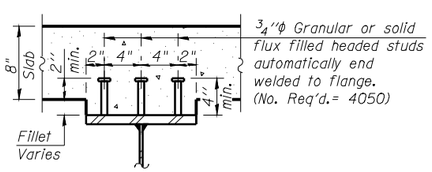
BEARING SHIM TABLE

Gir. No.	Location	Thickness	ℙ Size
4	Pier 3	3/16"	13"x31¼"
4	Pier 4	3/16"	18"x29"
4	Pier 5	3/16"	18"x29"
None	Pier 6	-	-

See Bearing Detail Sheets for Hole Diameters and Placement.

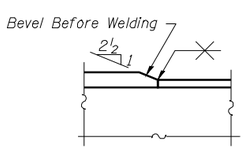
UNIT 2 - FRAMING PLAN (Spans 4 thru 6)

UNIT 2 - GIRDER ELEVATION (Spans 4 thru 6)



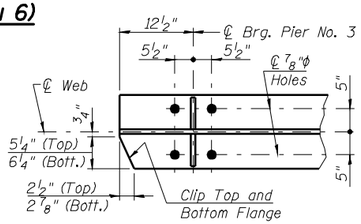
¾"℄ Granular or solid flux filled headed studs automatically end welded to flange. (No. Req'd.= 4050)

SECTION A-A

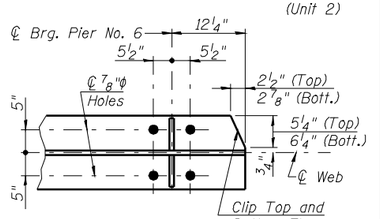


DETAIL "B"

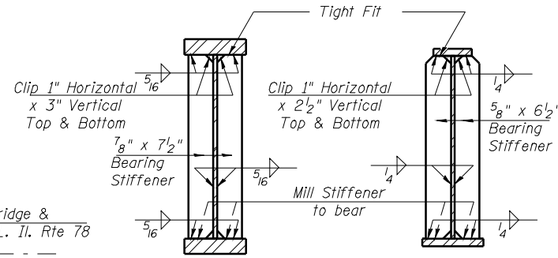
Notes:
All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.



SECTION B-B

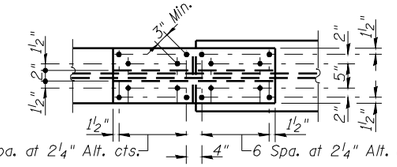


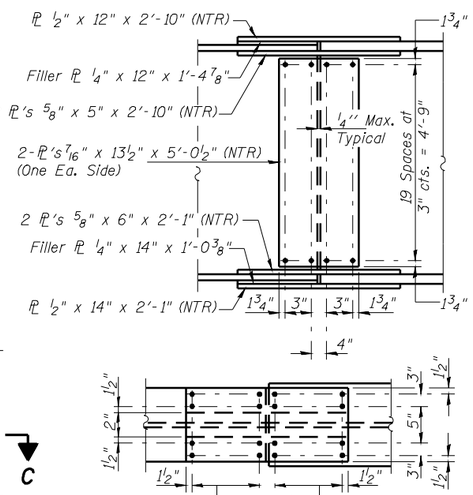
SECTION C-C



SECTION AT PIERS 4 & 5

SECTION AT PIERS 3 & 6





FIELD SPLICE DETAIL

Note:
Use ⅞" ϕ H.S. Bolts with 15/16" ϕ holes for all splice connections

UNIT 2 - FRAMING PLAN (Spans 4 thru 6)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

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JOB NO. 07S2026
DATE 03/27/09

LAYOUT	MNM	09/12/08
DRAWN	RcG	09/30/08
REVIEWED	TEH	09/30/08

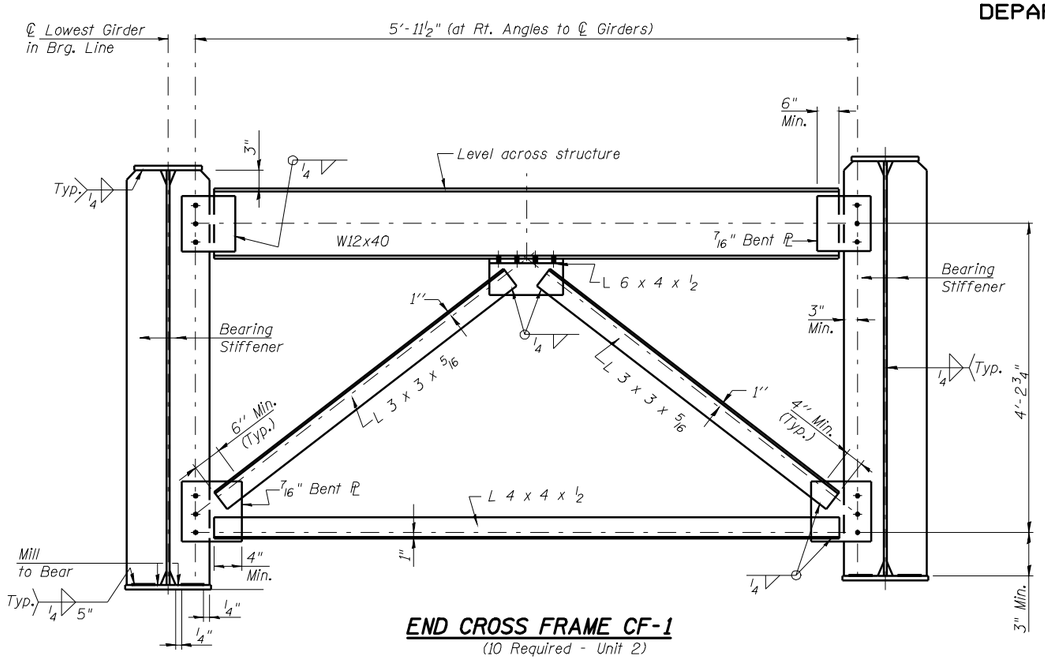
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	178
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

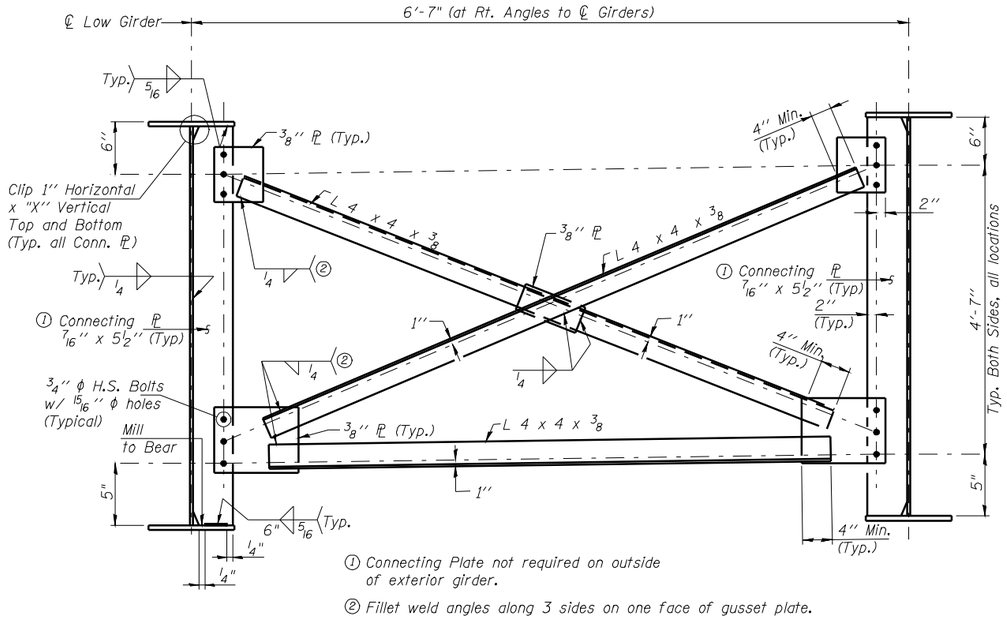
SHEET NO. 42
86 **SHEETS**

Contract #72A76



END CROSS FRAME CF-1

(10 Required - Unit 2)



① Connecting Plate not required on outside of exterior girder.

② Fillet weld angles along 3 sides on one face of gusset plate.

"X" - 2½" for 9/16" Webs
"X" - 3" for 5/8" Webs

INTERIOR CROSS FRAME CF-2

(110 Required - Unit 2)

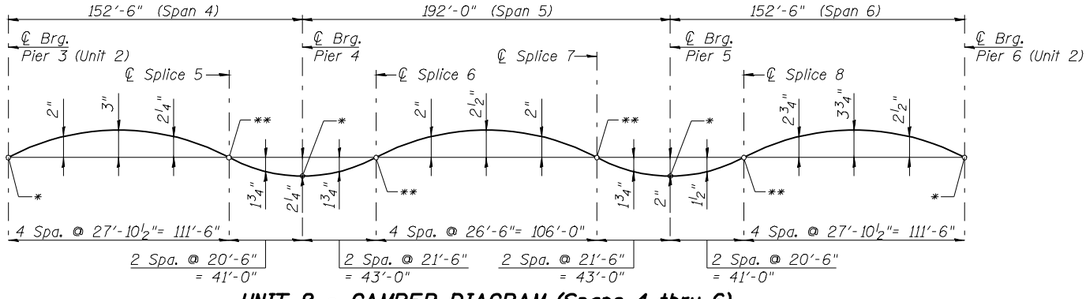
Note:
Provide 15/16" ϕ holes for ¾" ϕ High Strength Bolts with 1-Nut and 2-Hardened Washers each (Typical for all Cross Frame Connections).

UNIT 2 - INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp. 4 0.6 Sp. 6	0.5 Sp. 5	Piers 4 & 5
I_s	(in^4)	35154	35154	98849
$I_c(n)$	(in^4)	82317	82317	-
$I_c(3n)$	(in^4)	59998	59998	-
S_s	(in^3)	1070	1070	2804
$S_c(n)$	(in^3)	1517	1517	-
$S_c(3n)$	(in^3)	1359	1359	-
DC1	(k/')	0.936	0.936	1.41
M_{DC1}	('k)	1254	1020	4856
DC2	(k/')	0.150	0.150	-
M_{DC2}	('k)	224	204	-
DW	(k/')	0.300	0.300	-
M_{DW}	('k)	447	408	-
M_{L+IM}	('k)	2149	2104	2436
M_u(Strength I)	('k)	6279	5824	10577
*** $\phi_f M_n$, $\phi_f M_{nc}$	('k)	7176	7391	-
f_s DC1	(ksi)	14.06	11.45	20.78
f_s DC2	(ksi)	1.98	1.80	-
f_s DW	(ksi)	3.95	3.60	-
f_s 1.3(L+IM)	(ksi)	22.10	21.63	13.56
f_s (Service II)	(ksi)	42.09	38.48	34.33
**** f_s (Total)(Strength I)	(ksi)	-	-	45.26
V_f	(k)	33.2	26.0	-

*** Compact Sections.
**** Non-compact and Slender Sections.

UNIT 2 - INTERIOR GIRDER REACTION TABLE HL93 Loading			
		Piers 3 & 6	Piers 4 & 5
R_{DC1}	(k)	49.1	185.6
R_{DC2}	(k)	8.2	29.0
R_{DW}	(k)	16.5	58.1
R_{L+IM}	(k)	103.4	197.2
R_{Total}	(k)	177.2	469.9

I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) 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-Strength I, and Service II) 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-Strength I, and Service II) due to long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).
DC1: Un-factored non-composite dead load (kips/ft.).
M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).
DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).
M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).
DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).
M_{DW}: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).
M_{L+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
M_u (Strength I): Factored design moment (kip-ft.).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$
$\phi_f M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).
$\phi_f M_{nc}$: Compact non-composite negative moment capacity computed according to Article A6.1.1 (kip-ft.).
f_s (Service II): Sum of stresses as computed from the moments below (ksi).
$M_{DC1} + M_{DC2} + M_{DW} + 1.3\ M_{L+IM}$
f_s (Total)(Strength I): Sum of stresses as computed from the moments below on non-compact section (ksi).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$
V_f: Factored shear range computed according to Article 6.10.10.



UNIT 2 - CAMBER DIAGRAM (Spans 4 thru 6)

* See Table for Final Top of Web Elevations at abutments and piers.
** Theoretical Top of Web Elevations before dead load deflections.

UNIT 2 - TOP of WEB ELEVATIONS TABLE (Spans 4 thru 6)

For Fabrication Only

Girder Number	℄ Brg. Pier 3	℄ Splice No. 5	℄ Brg. Pier 4	℄ Splice No. 6	℄ Splice No. 7	℄ Brg. Pier 5	℄ Splice No. 8	℄ Brg. Pier 6
Girder 1	473.23	473.84	473.85	474.24	474.77	474.81	475.17	475.23
Girder 2	473.36	473.98	473.99	474.38	474.91	474.94	475.30	475.34
Girder 3	473.48	474.09	474.10	474.49	475.02	475.05	475.41	475.44
Girder 4	473.49	474.11	474.11	474.51	475.04	475.07	475.42	475.43
Girder 5	473.41	474.02	474.03	474.42	474.95	474.98	475.33	475.33
Girder 6	473.30	473.92	473.93	474.32	474.85	474.87	475.22	475.20

UNIT 2 - STRUCTURAL STEEL DETAILS
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026

DATE 03/27/09

LAYOUT	MNM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

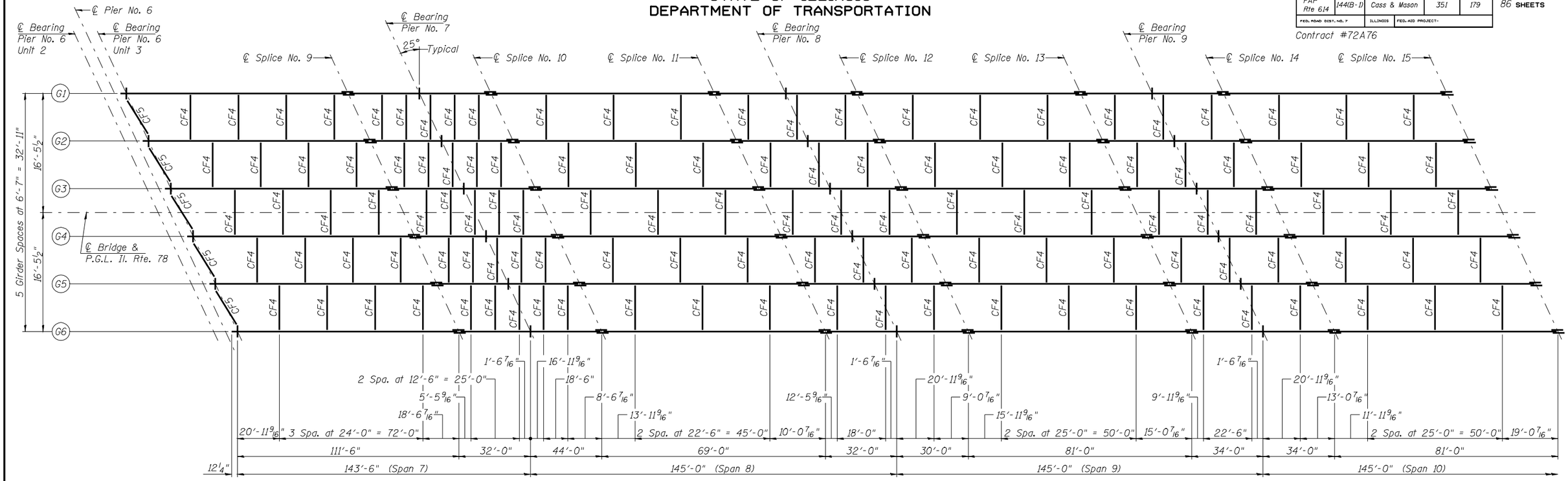
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

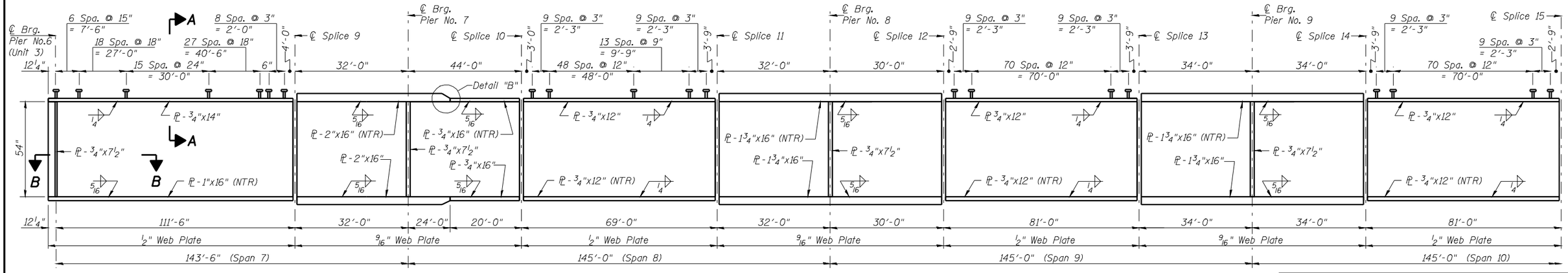
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FAP Rte 614	144(B-1)	Cass & Mason	351	179
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

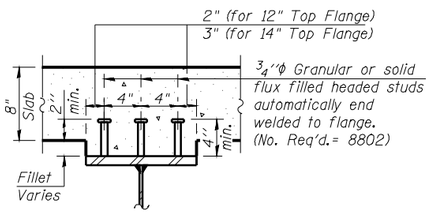
SHEET NO. 43
86 SHEETS

Contract #72A76

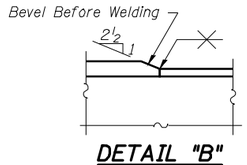


UNIT 3 - PARTIAL FRAMING PLAN (Spans 7 thru 10)





SECTION A-A



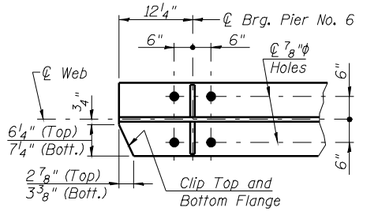
DETAIL "B"

UNIT 3 - PARTIAL GIRDER ELEVATION (Spans 7 thru 10)

Notes:

All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.



SECTION B-B

UNIT 3 - PARTIAL FRAMING PLAN (Spans 7 thru 10)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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JOB NO. 07S2026

DATE 03/27/09

LAYOUT	MPT/MNM	09/12/08
DRAWN	Rcd	09/30/08
REVIEWED	TEH	09/30/08

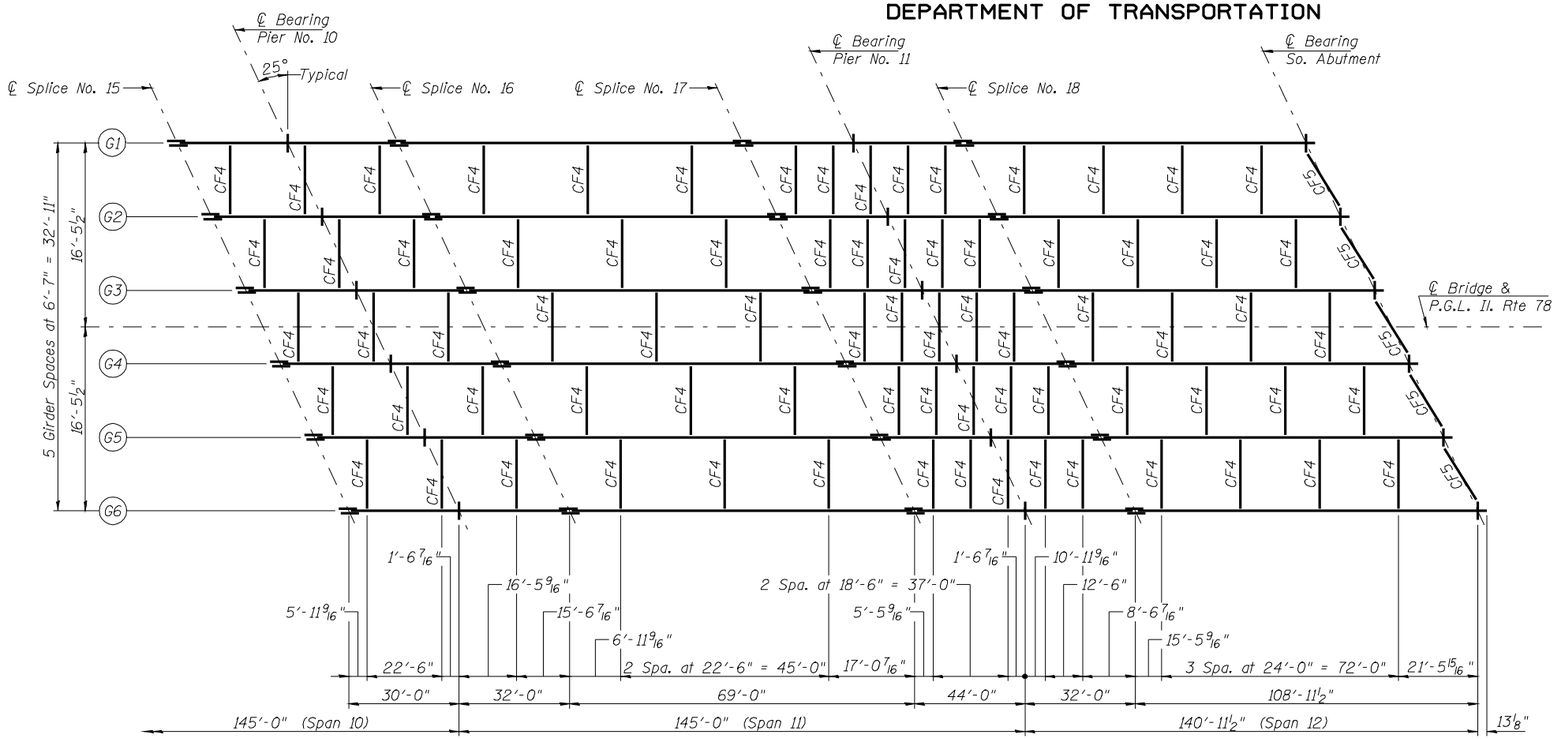
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

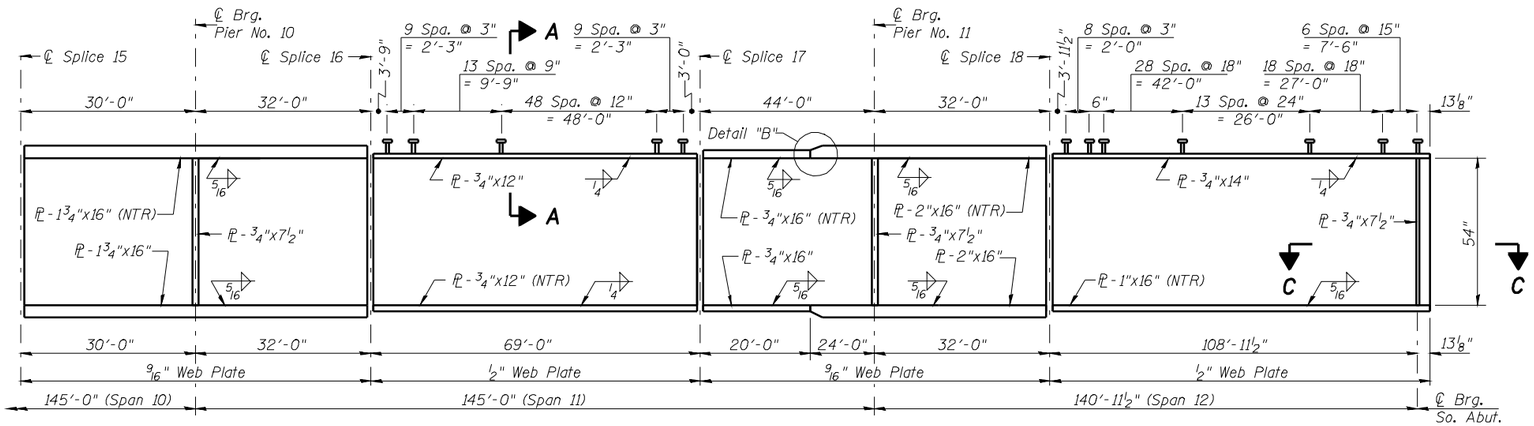
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	180
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 44
86 SHEETS

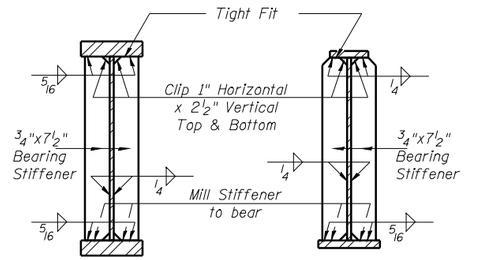
Contract #72A76



UNIT 3 - PARTIAL FRAMING PLAN (Spans 10 thru 12)



UNIT 3 - PARTIAL GIRDER ELEVATION (Spans 10 thru 12)



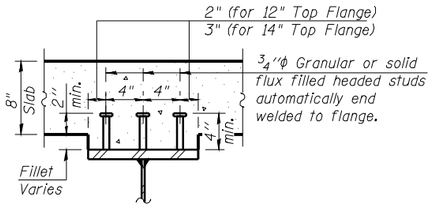
SECTION AT PIERS 7 thru 11

SECTION AT PIER 6 & S. ABUT.

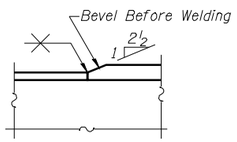
BEARING SHIM TABLE

Gir. No.	Location	Thickness	℄ Size
None	Pier 6	-	-
3	Pier 7	3/16"	16"x29"
3	Pier 8	3/16"	15"x29"
3	Pier 9	3/16"	16"x29"
3	Pier 10	3/16"	15"x29"
3	Pier 11	3/16"	16"x29"
3	S. Abut.	3/16"	13"x31¼"

See Bearing Detail Sheets for Hole Diameters and Placement.



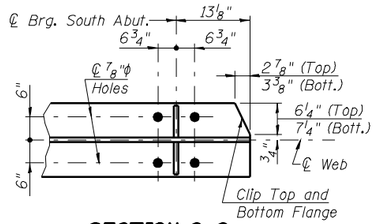
SECTION A-A



DETAIL "B"

Notes:
All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.



SECTION C-C

UNIT 3 - PARTIAL FRAMING PLAN (Spans 10 thru 12)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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JOB NO. 07S2026

DATE 03/27/09

LAYOUT	KPT/MNM	09/12/08
DRAWN	Rad	09/30/08
REVIEWED	TEH	09/30/08

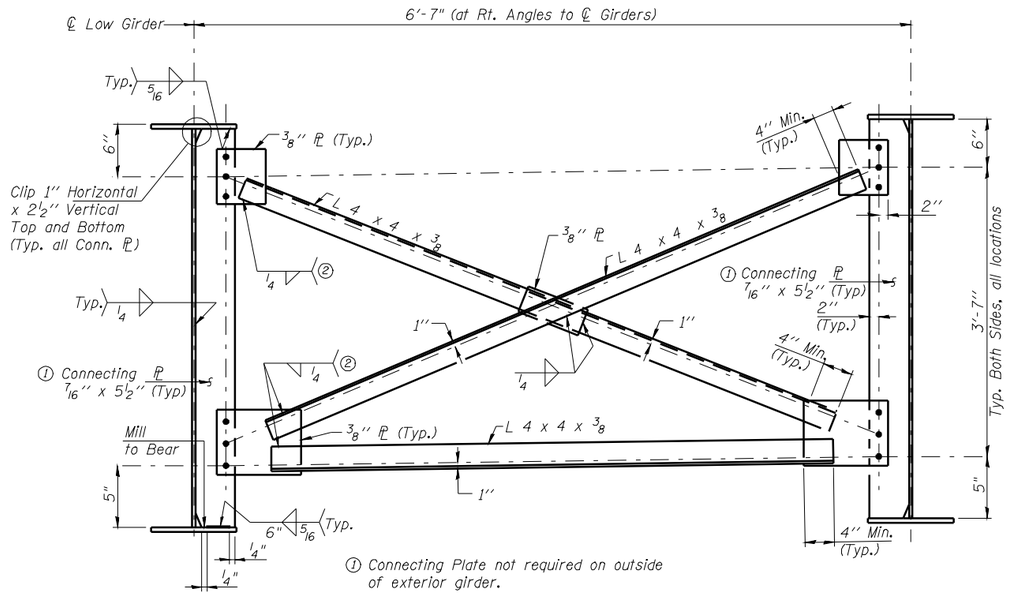
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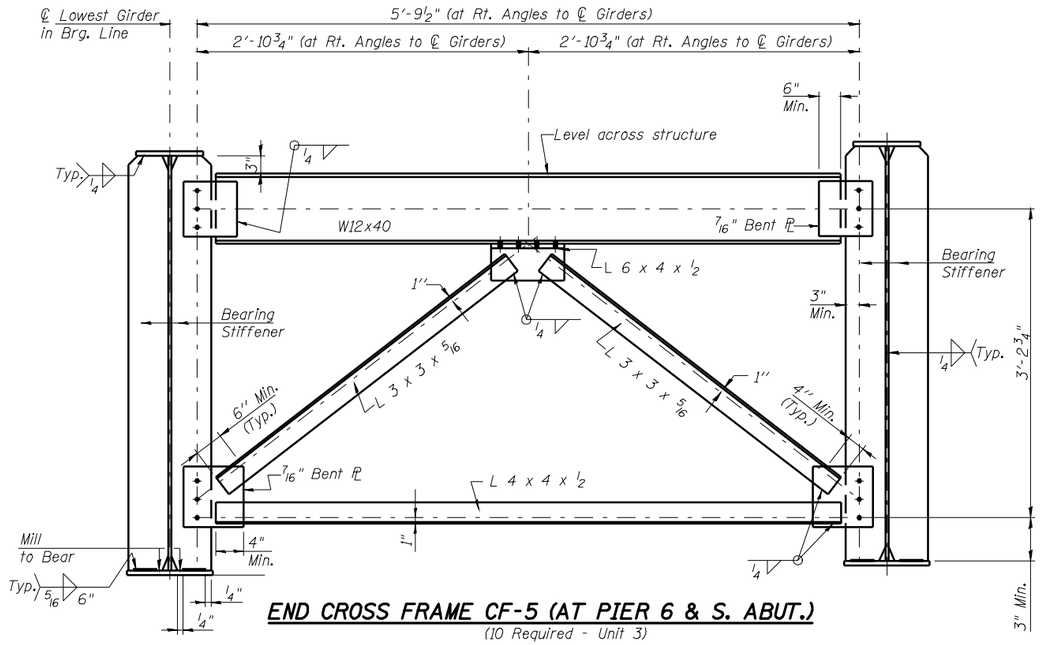
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	181
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 45
86 SHEETS

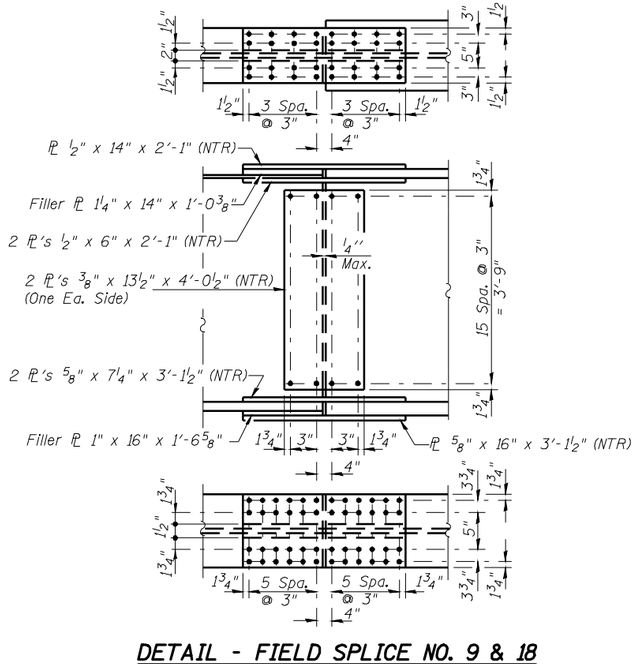
Contract #72A76



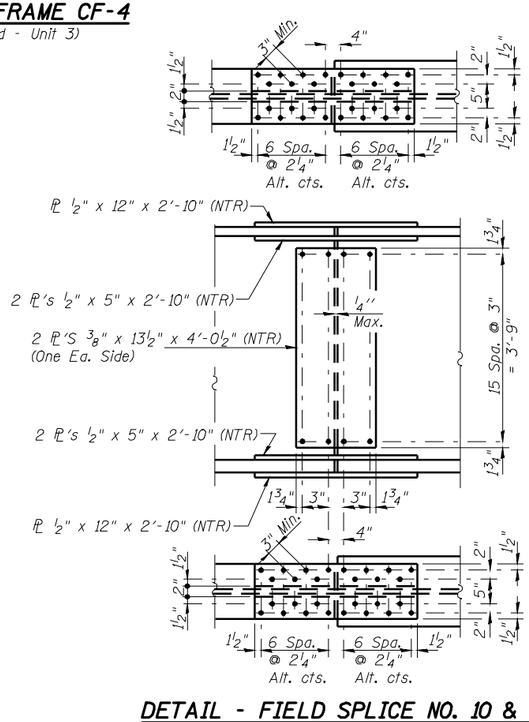


END CROSS FRAME CF-5 (AT PIER 6 & S. ABUT.)
(10 Required - Unit 3)

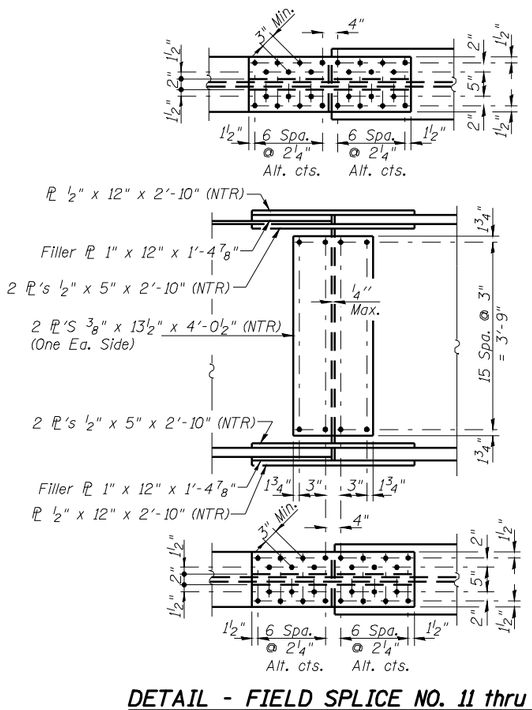
INTERIOR CROSS FRAME CF-4
(195 Required - Unit 3)



DETAIL - FIELD SPLICE NO. 9 & 18



DETAIL - FIELD SPLICE NO. 10 & 17



DETAIL - FIELD SPLICE NO. 11 thru 16

Note:
Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
Use 7/8" ϕ H.S. Bolts with 15/16" ϕ holes for all splice connections.
Use 7/8" ϕ H.S. Bolts with 15/16" ϕ holes for all splice connections.
Provide 15/16" ϕ holes for 3/4" ϕ High Strength Bolts with 1-Nut and 2-Hardened Washers each (Typical for all Cross Frame Connections).

UNIT 3 - STRUCTURAL STEEL DETAILS (Sheet 1 of 2)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026
DATE 03/27/09

LAYOUT	KPT/MNM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	182
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 46
86 SHEETS

Contract #72A76

UNIT 3 - INTERIOR GIRDER MOMENT TABLE

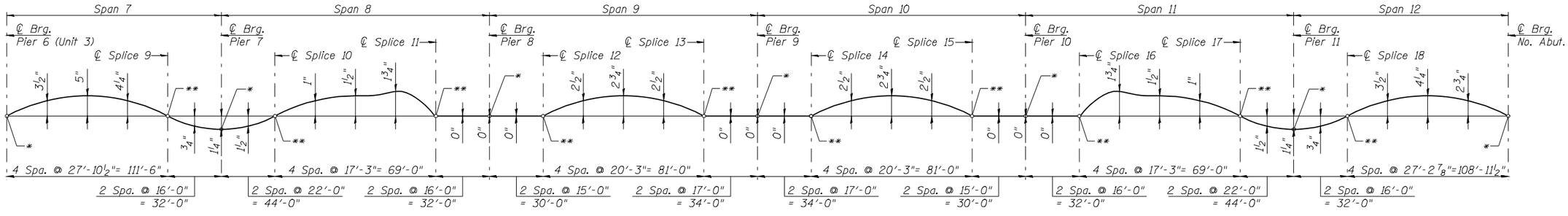
			0.4 Span 7	Pier 7	0.55 Span 8	Pier 8	0.5 Span 9	Pier 9	0.5 Span 10	Pier 10	0.45 Span 11	Pier 11	0.6 Span 12
	I_s	(in^4)	26096	57579	20051	50908	20051	50908	20051	50908	20051	57579	26096
	$I_c(n)$	(in^4)	62808	-	48072	-	48072	-	48072	-	48072	-	62808
	$I_c(3n)$	(in^4)	45695	-	35698	-	35698	-	35698	-	35698	-	45695
	S_s	(in^3)	1038	1986	723	1771	723	1771	723	1771	723	1986	1038
	$S_c(n)$	(in^3)	1403	-	1021	-	1021	-	1021	-	1021	-	1403
	$S_c(3n)$	(in^3)	1281	-	925	-	925	-	925	-	925	-	1281
	DC1	(k/')	0.877	1.487	0.844	1.456	0.844	1.456	0.844	1.456	0.844	1.487	0.877
	M_{DC1}	('k)	1290	3459	396	2414	587	2877	579	2437	411	3384	1234
	DC2	(k/')	0.15	-	0.15	-	0.15	-	0.15	-	0.15	-	0.15
	M_{DC2}	('k)	232	-	92	-	119	-	118	-	94	-	221
	DW	(k/')	0.3	-	0.3	-	0.3	-	0.3	-	0.3	-	0.3
	M_{DW}	('k)	463	-	184	-	238	-	235	-	188	-	443
	M_{L+IM}	('k)	1989	1931	1424	1739	1527	1778	1522	1735	1428	1910	1951
	M_U(Strength I)	('k)	6077	7876	3378	6190	3910	6854	3887	6213	3412	7742	5898
***	$\phi_f M_n$, $\phi_f M_{nc}$	('k)	6685	-	5210	-	5067	-	5073	-	5199	-	6742
	f_s DC1	(ksi)	14.9	20.9	6.6	16.4	9.8	19.5	9.6	16.5	6.8	20.5	14.3
	f_s DC2	(ksi)	2.2	-	1.2	-	1.5	-	1.5	-	1.2	-	2.1
	f_s DW	(ksi)	4.3	-	2.4	-	3.1	-	3.1	-	2.4	-	4.1
	f_s 1.3(L+IM)	(ksi)	22.1	15.2	21.8	15.3	23.3	15.7	23.3	15.3	21.8	15.0	21.7
	f_s (Service II)	(ksi)	43.5	36.1	31.9	31.7	37.7	35.2	37.5	31.8	32.3	35.5	42.2
****	f_s (Total)(Strength I)	(ksi)	-	47.6	-	42.0	-	46.5	-	42.1	-	46.8	-
	V_r	(k)	32.7	-	24.4	-	25.6	-	25.6	-	24.4	-	32.7

*** Compact Sections.
**** Non-compact and Slender Sections.

UNIT 3 - INTERIOR GIRDER REACTION TABLE
HL93 Loading

		Pier 6	Pier 7	Pier 8	Pier 9	Pier 10	Pier 11	South Abutment
R_{DC1}	(k)	48.7	154.1	125.0	137.5	125.6	152.4	47.6
R_{DC2}	(k)	8.3	24.7	20.9	22.2	20.9	24.4	8.2
R_{DW}	(k)	16.7	49.4	41.8	44.4	41.9	48.9	16.3
R_{L+IM}	(k)	102.1	182.0	172.5	175.9	172.4	181.1	101.5
R_{Total}	(k)	175.8	410.2	360.2	380.0	360.8	406.8	173.6

I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) 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-Strength I, and Service II) 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-Strength I, and Service II) due to long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).
DC1: Un-factored non-composite dead load (kips/ft.).
M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).
DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).
M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).
DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).
M_{DW}: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).
M_{L+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
M_U (Strength I): Factored design moment (kip-ft.).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$
$\phi_f M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).
$\phi_f M_{nc}$: Compact non-composite negative moment capacity computed according to Article A6.1.1 (kip-ft.).
f_s (Service II): Sum of stresses as computed from the moments below (ksi).
$M_{DC1} + M_{DC2} + M_{DW} + 1.3\ M_{L+IM}$
f_s (Total)(Strength I): Sum of stresses as computed from the moments below on non-compact section (ksi).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$
V_r: Factored shear range computed according to Article 6.10.10.



UNIT 3 - CAMBER DIAGRAM (Spans 7 thru 12)

* See Table for Final Top of Web Elevations at abutments and piers.
** Theoretical Top of Web Elevations before dead load deflections.

UNIT 3 - TOP of WEB ELEVATIONS TABLE (Spans 7 thru 12)

For Fabrication Only

Girder Number	℄ Brg. Pier 6	℄ Splice No. 9	℄ Brg. Pier 7	℄ Splice No. 10	℄ Splice No. 11	℄ Brg. Pier 8	℄ Splice No. 12	℄ Splice No. 13	℄ Brg. Pier 9	℄ Splice No. 14	℄ Splice No. 15	℄ Brg. Pier 10	℄ Splice No. 16	℄ Splice No. 17	℄ Brg. Pier 11	℄ Splice No. 18	℄ Brg. So. Abut.
Girder 1	475.22	474.86	474.57	474.41	473.98	473.85	473.73	473.30	473.13	472.96	472.58	472.40	472.22	471.96	471.66	471.63	471.07
Girder 2	475.34	474.97	474.67	474.51	474.09	473.96	473.84	473.41	473.24	473.06	472.68	472.51	472.32	472.06	471.77	471.74	471.17
Girder 3	475.43	475.05	474.76	474.60	474.17	474.04	473.92	473.49	473.32	473.15	472.77	472.59	472.41	472.15	471.85	471.82	471.26
Girder 4	475.43	475.04	474.74	474.58	474.16	474.03	473.90	473.48	473.30	473.13	472.75	472.58	472.39	472.13	471.84	471.80	471.24
Girder 5	475.32	474.92	474.63	474.47	474.04	473.91	473.79	473.36	473.19	473.02	472.64	472.46	472.28	472.02	471.72	471.69	471.13
Girder 6	475.20	474.79	474.49	474.33	473.91	473.78	473.65	473.22	473.05	472.88	472.50	472.33	472.14	471.88	471.59	471.55	470.99

UNIT 3 - STRUCTURAL STEEL DETAILS (Sheet 2 of 2)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026
DATE 03/27/09

LAYOUT	NPT/MNM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

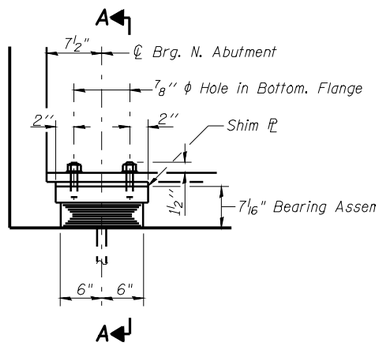
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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	183
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 47
86 SHEETS

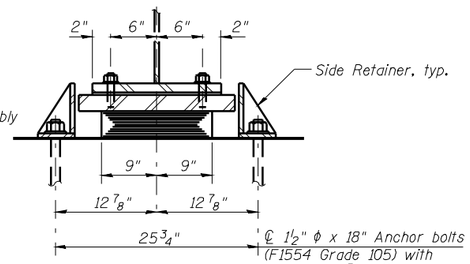
Contract #72A76

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



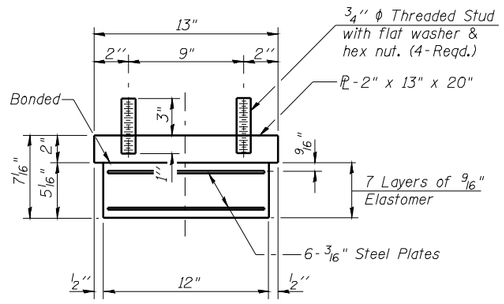
ELEVATION AT ABUT.

Provide a 3/16" Shim at Girder No. 4. Cost included with cost of Furnishing and Erecting Structural Steel.



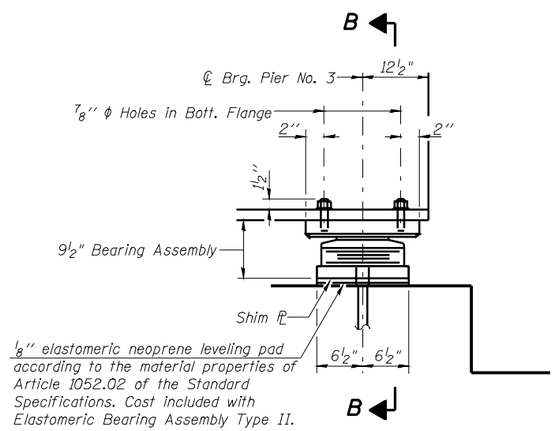
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG. - N. ABUTMENT



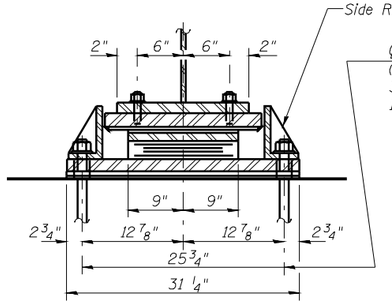
BEARING ASSEMBLY

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



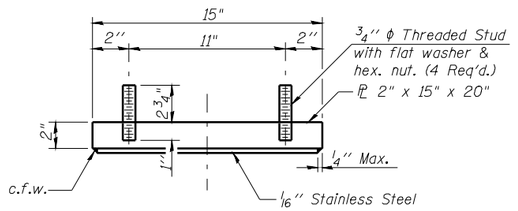
ELEVATION AT PIER

Provide a 3/16" Shim at Girder No. 4. Cost included with cost of Furnishing and Erecting Structural Steel.

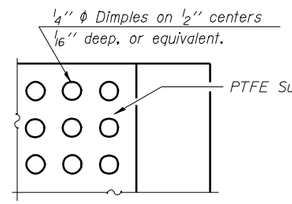


SECTION B-B

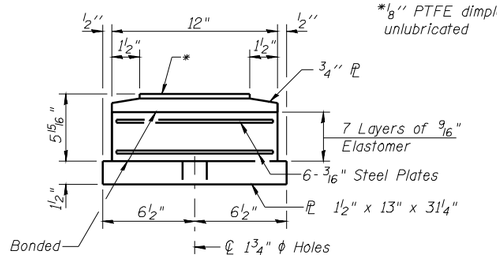
TYPE II ELASTOMERIC EXP. BRG. - PIER 3



TOP BEARING ASSEMBLY

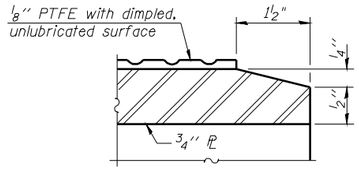


PLAN-PTFE SURFACE



*⅛" PTFE dimpled, unlubricated

BOTTOM BEARING ASSEMBLY



SECTION THRU PTFE

Notes:
The anchor bolt lengths shown are the required total lengths for cast-in-place headed anchor bolts. The required total length for the sealed capsule alternate anchor bolt shall be according to the manufacturer's recommendations.

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

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

Anchor bolts for Type II bearings shall be placed in holes drilled through 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 bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I or Type II.

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

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

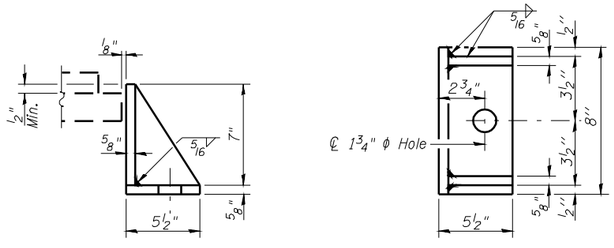
The structural steel plates of the Bearing Assembly shall conform to the requirements of AASHTO M270 Grade 50W.

Two ⅛" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on the bearing details.

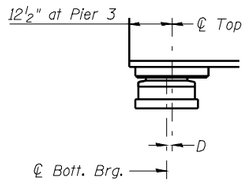
H.S. studs in the bearing assembly shall be galvanized according to AASHTO M298 Class 50.

BILL OF MATERIAL

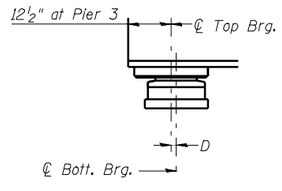
Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	6
Elastomeric Bearing Assembly, Type II	Each	6
Anchor Bolts, 1½"	Each	24



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

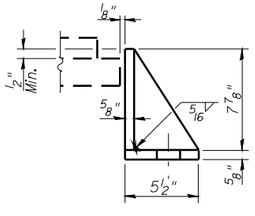


BELOW 50°F.
(Move bott. brg. away from fixed brg.)

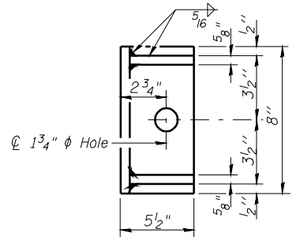


ABOVE 50°F.
(Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.
D=⅛" per each 100° of expansion for every 15° temp. change from the normal temp. of 50°F.



SIDE RETAINER - PIER 3
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



ELASTOMERIC BEARING DETAILS - UNIT 1
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026
DATE 03/27/09

LAYOUT	BWC/ANM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

Wm-3-2009 0902484M
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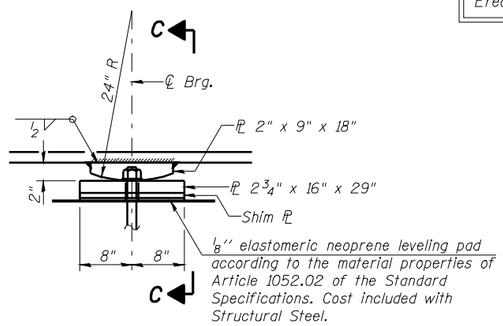
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Provide a $\frac{3}{16}$" Shim at Girder No. 4. Cost included with cost of Furnishing and Erecting Structural Steel.

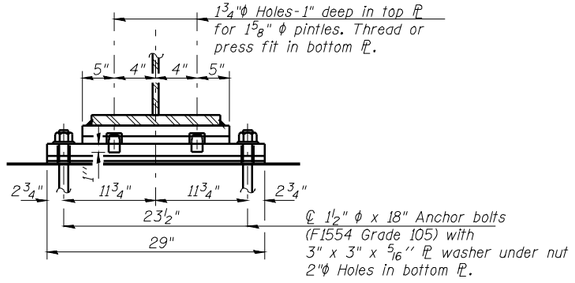
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	184
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 48
86 SHEETS

Contract #72A76

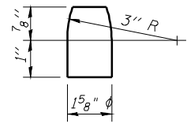


ELEVATION AT PIER



SECTION C-C

FIXED BEARING - PIERS 1 & 2



PINTLE

Notes:

The anchor bolt lengths shown are the required total lengths for cast-in-place headed anchor bolts. The required total length for the sealed capsule alternate anchor bolt shall be according to the manufacturer's recommendations.

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

Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.

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

The structural steel plates and pintles of the Bearing Assembly shall conform to the requirements of AASHTO M270 Grade 50W.

Two $\frac{1}{8}$" 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
Anchor Bolts, 1 1/2"	Each	24

FIXED STEEL BEARING DETAILS - UNIT 1
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026

DATE 03/27/09

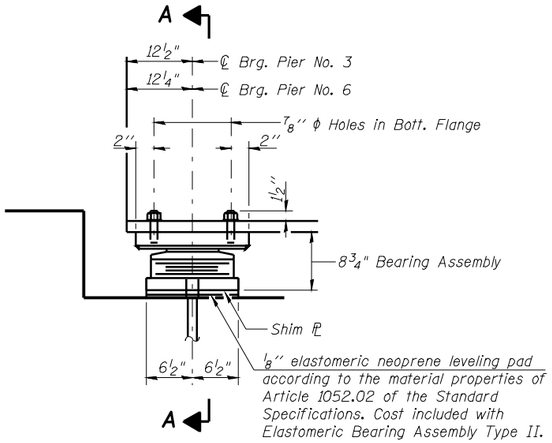
LAYOUT	BMC/ANM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

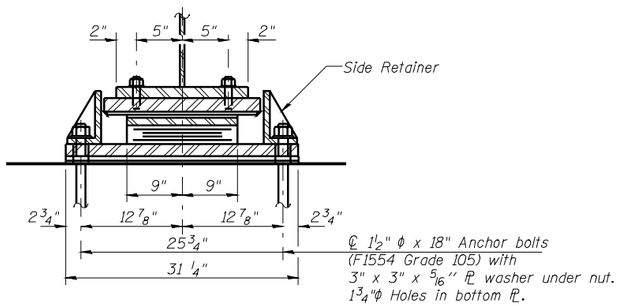
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	185
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 49
86 SHEETS
Contract #72A76



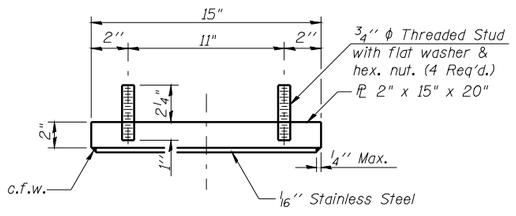
ELEVATION AT PIER

Provide a 3/16" Shim at Girder No. 4. Cost included with cost of Furnishing and Erecting Structural Steel. (Pier No. 3 only).

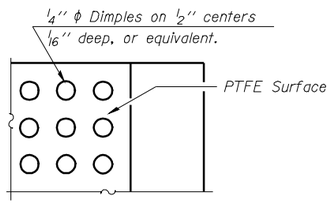


SECTION A-A

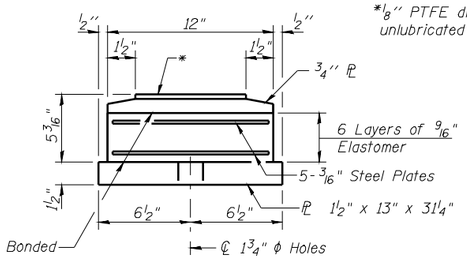
TYPE II ELASTOMERIC EXP. BRG. - PIERS 3 & 6



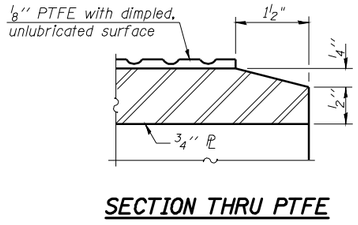
TOP BEARING ASSEMBLY



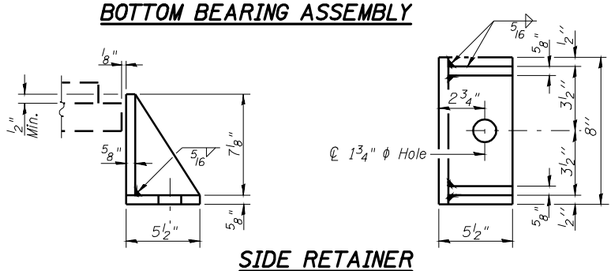
PLAN-PTFE SURFACE



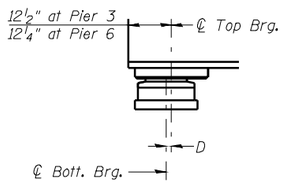
BOTTOM BEARING ASSEMBLY



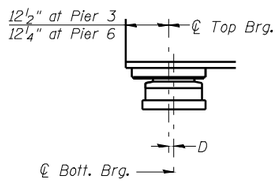
SECTION THRU PTFE



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



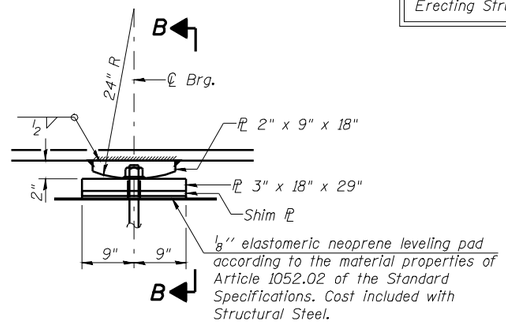
BELOW 50°F.
(Move bott. brg. away from fixed brg.)



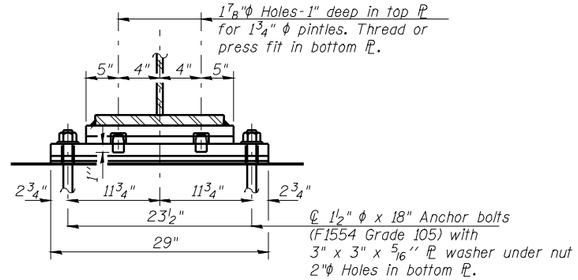
ABOVE 50°F.
(Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.
D=1/8" per each 100° of expansion for every 15° temp. change from the normal temp. of 50°F.

Provide a 3/16" Shim at Girder No. 4. Cost included with cost of Furnishing and Erecting Structural Steel.

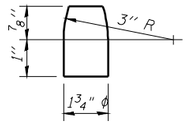


ELEVATION AT PIER



SECTION B-B

FIXED BEARING - PIERS 4 & 5



PINTLE

Notes:
The anchor bolt lengths shown are the required total lengths for cast-in-place headed anchor bolts. The required total length for the sealed capsule alternate anchor bolt shall be according to the manufacturer's recommendations.
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.
Anchor bolts for Type II bearings shall be placed in holes drilled through 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 bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II.
The 1/8" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.
Bonding of 1/8" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.
The structural steel plates and pintles of the Bearing Assembly shall conform to the requirements of AASHTO M270 Grade 50W.
Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on the bearing details.
H.S. studs in the bearing assembly shall be galvanized according to AASHTO M298 Class 50.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type II	Each	12
Anchor Bolts, 1 1/2"	Each	48

ELASTOMERIC & FIXED STEEL BEARING DETAILS - UNIT 2
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510
PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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JOB NO. 07S2026
DATE 03/27/09

LAYOUT	MNM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

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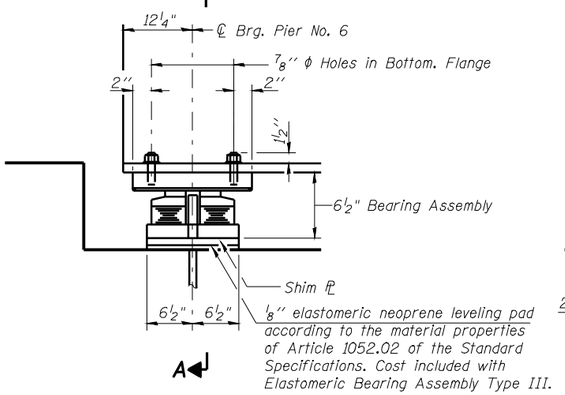
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

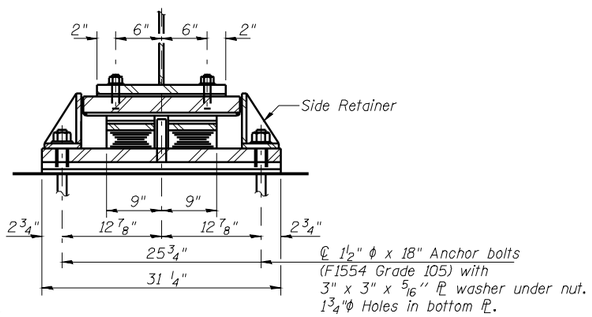
SHEET NO. 50
86 SHEETS

Contract #72A76

Provide a $\frac{3}{16}$" Shim at Girder No. 3. Cost included with cost of Furnishing and Erecting Structural Steel. South Abutment only.

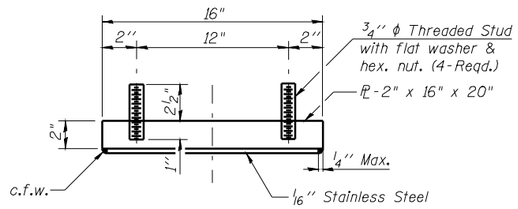


ELEVATION AT PIER

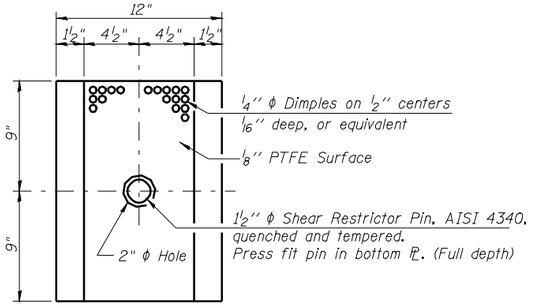


SECTION A-A

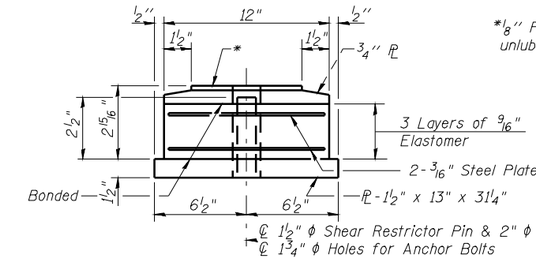
TYPE III ELASTOMERIC EXP. BRG. - PIER 6



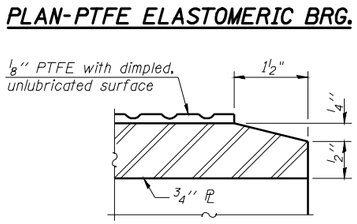
TOP BEARING ASSEMBLY



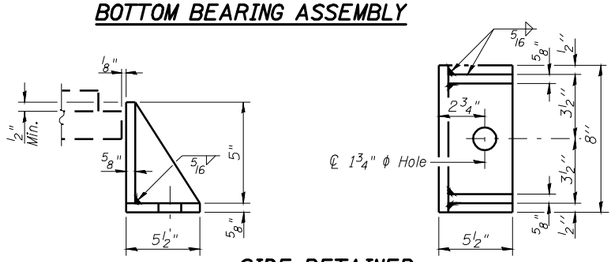
PLAN-PTFE ELASTOMERIC BRG.



BOTTOM BEARING ASSEMBLY

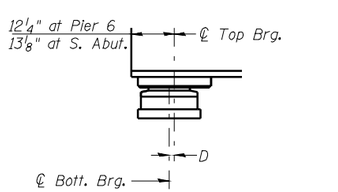


SECTION THRU PTFE

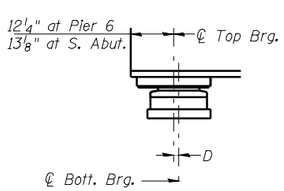


SIDE RETAINER

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



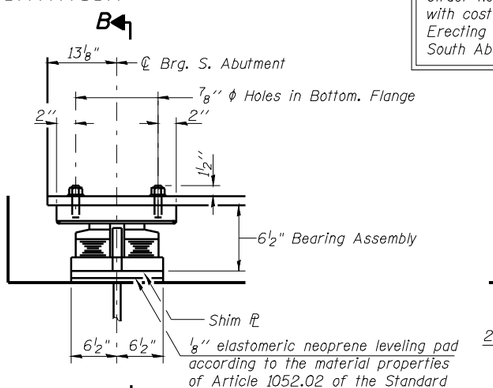
BELOW 50°F.
(Move bott. brg. away from fixed brg.)



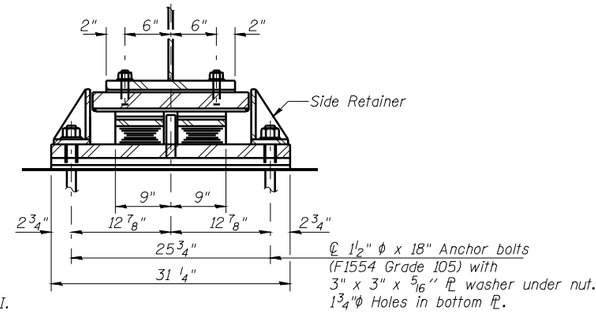
ABOVE 50°F.
(Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

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

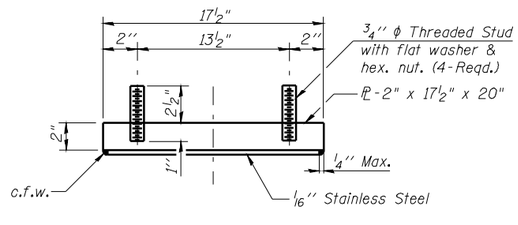


ELEVATION AT ABUT.

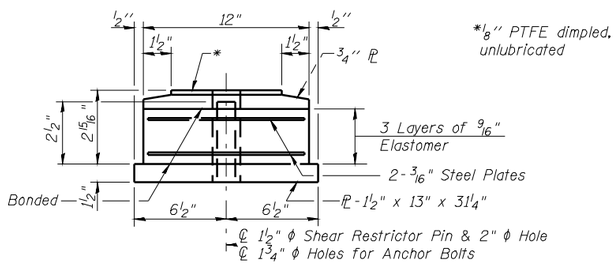


SECTION B-B

TYPE III ELASTOMERIC EXP. BRG. - S. ABUTMENT



TOP BEARING ASSEMBLY



BOTTOM BEARING ASSEMBLY

Notes:

The anchor bolt lengths shown are the required total lengths for cast-in-place headed anchor bolts. The required total length for the sealed capsule alternate anchor bolt shall be according to the manufacturer's recommendations.

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

Anchor bolts for Type III 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 bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type III.

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.

The structural steel plates of the Bearing Assembly shall conform to the requirements of AASHTO M270 Grade 50W.

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

H.S. studs in the bearing assembly shall be galvanized according to AASHTO M298 Class 50.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type III	Each	12
Anchor Bolts, 1 1/2"	Each	24

ELASTOMERIC BEARING DETAILS - UNIT 3
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026

DATE 03/27/09

LAYOUT	APT/ANM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

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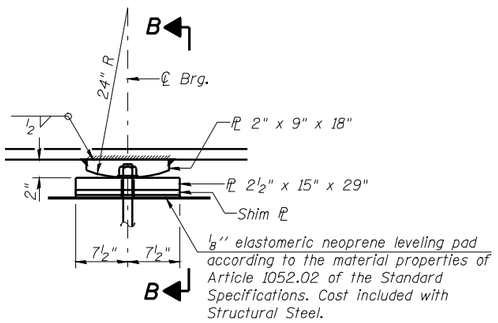
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	187
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

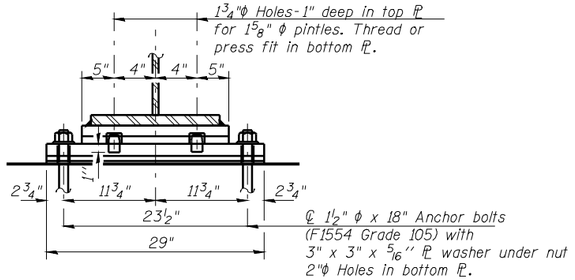
SHEET NO. 51
86 SHEETS

Contract #72A76

Provide a $\frac{3}{16}$" Shim at Girder No. 3. Cost included with cost of Furnishing and Erecting Structural Steel.



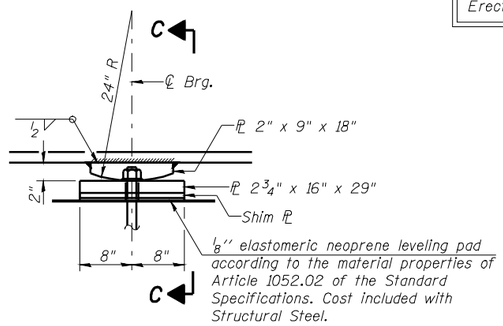
ELEVATION AT PIER



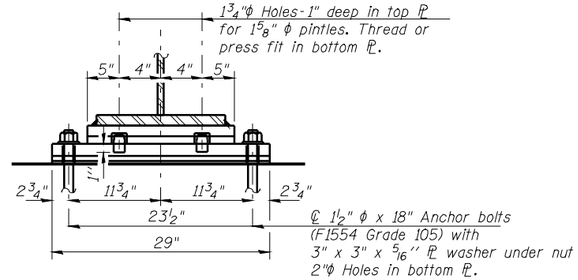
SECTION B-B

FIXED BEARING - PIERS 8 & 10

Provide a $\frac{3}{16}$" Shim at Girder No. 3. Cost included with cost of Furnishing and Erecting Structural Steel.

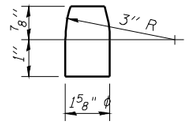


ELEVATION AT PIER



SECTION C-C

FIXED BEARING - PIERS 7, 9 & 11



PINTLE

Notes:

The anchor bolt lengths shown are the required total lengths for cast-in-place headed anchor bolts. The required total length for the sealed capsule alternate anchor bolt shall be according to the manufacturer's recommendations.

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

Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.

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

The structural steel plates and pintles of the Bearing Assembly shall conform to the requirements of AASHTO M270 Grade 50W.

Two $\frac{1}{8}$" 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
Anchor Bolts, 1 1/2"	Each	60

FIXED STEEL BEARING DETAILS - UNIT 3
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026

DATE 03/27/09

LAYOUT	VPT/MNM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

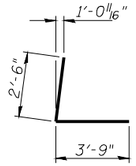
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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

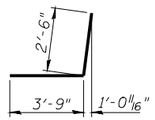
SHEET NO. 52
86 SHEETS

Contract #72A76

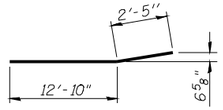
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



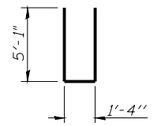
BAR h1(E)



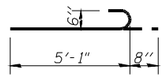
BAR h2(E)



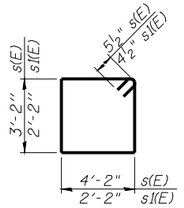
BAR h4(E)



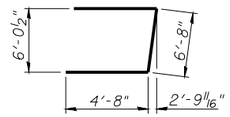
BAR n(E)



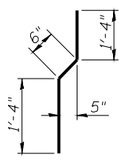
BAR n1(E)



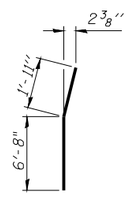
BARS s(E) & s1(E)



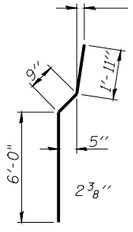
BAR u(E)



BAR v1(E)



BAR v3(E)



BAR v4(E)

H-PILE PILE DATA

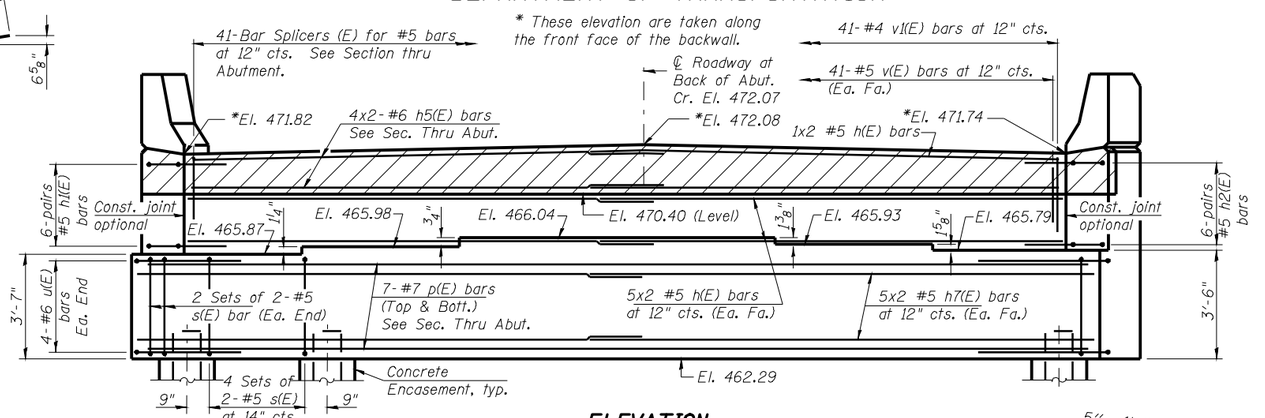
Type:	HP14x89
Nominal Required Bearing:	705 Kips
Factored Resistance Available:	304 Kips
Est. Length:	90 Feet
No. Production Piles:	10
No. Test Piles:	None

EXPERIMENTAL PILE DATA

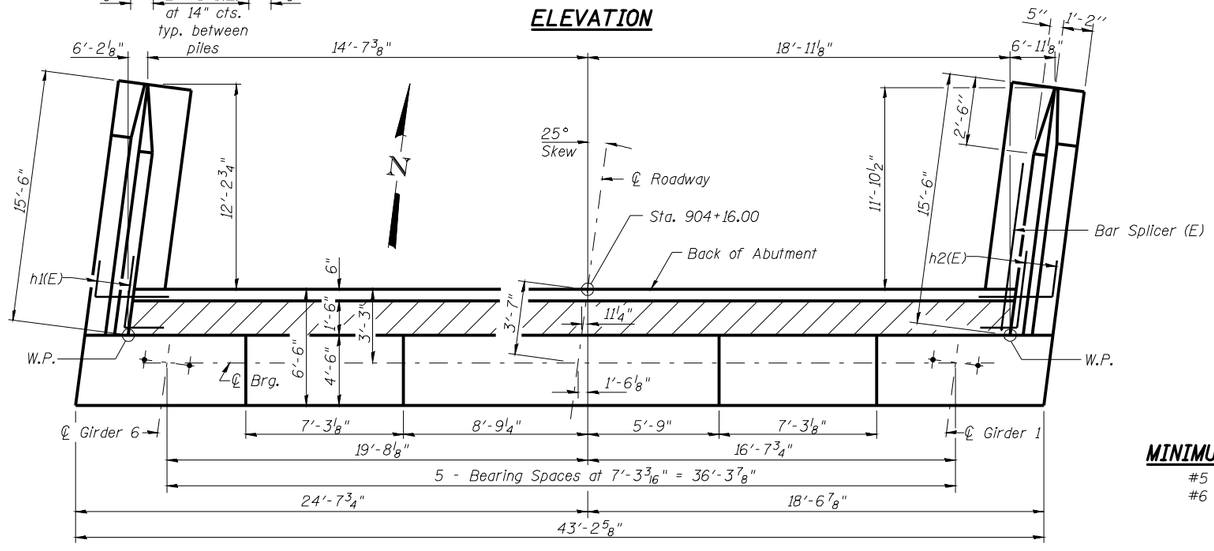
Type:	14" Metal Shell (0.25" Wall Thkns.)
Nominal Required Bearing:	300 Kips
Factored Resistance Available:	150 Kips
Est. Length:	85 Feet
No. Production Piles:	1
No. Test Piles:	None

NORTH ABUTMENT EXPERIMENTAL PILE DRIVING and TESTING SEQUENCE

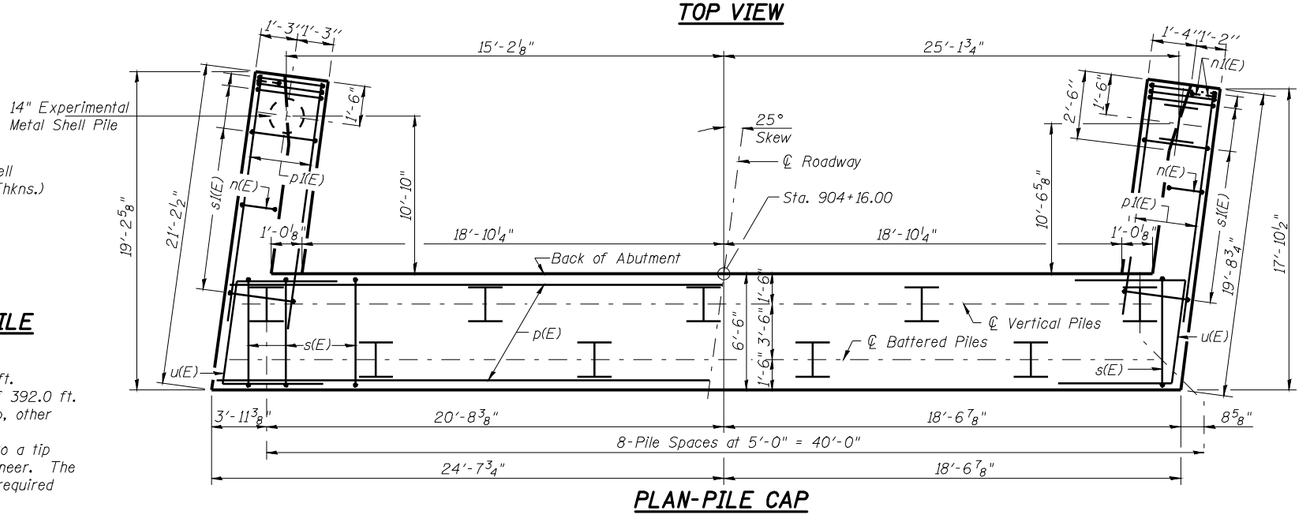
1. Pre-core experimental pile location to elevation 451.0 ft.
2. With dynamic monitoring, drive pile to a tip elevation of 392.0 ft.
3. Wait a minimum 3 calendar days to allow pile to set-up, other abutment piles may be driven during this waiting period.
4. Redrive the experimental pile with dynamic monitoring to a tip elevation of 383.0 ft or higher as directed by the Engineer. The driven bearing during redriving will exceed the nominal required bearing shown in the Experimental Pile Data table.



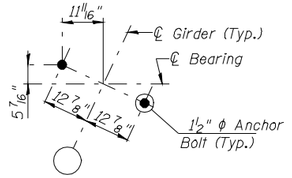
ELEVATION



TOP VIEW



PLAN-PILE CAP



ANCHOR BOLT LAYOUT
(Typical all Girder Locations)

MINIMUM BAR LAPS

#5 bar = 2'-5"
#6 bar = 2'-10"

NORTH ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	22	#5	21'-0"	
h1(E)	12	#5	6'-3"	
h2(E)	12	#5	6'-3"	
h3(E)	26	#4	15'-3"	
h4(E)	18	#4	15'-3"	
h5(E)	8	#6	21'-3"	
h7(E)	20	#5	22'-9"	
n(E)	26	#6	11'-6"	
n1(E)	12	#6	5'-9"	
p(E)	14	#7	42'-10"	
p1(E)	12	#7	16'-0"	
s(E)	72	#5	15'-7"	
s1(E)	34	#4	9'-5"	
u(E)	8	#6	16'-0"	
v(E)	82	#5	9'-0"	
v1(E)	41	#4	3'-2"	
v2(E)	32	#6	8'-7"	
v3(E)	6	#6	8'-7"	
v4(E)	26	#6	8'-8"	
Structure Excavation		Cu. Yd.	193	
Concrete Structures		Cu. Yd.	69.5	
Reinforcement Bars, Epoxy Coated		Pound	7250	
Furnishing Metal Shell Piles 14" X 0.250"		Foot	85	
Furnishing Steel Piles, HP14x89		Foot	900	
Driving Piles		Foot	900	
Pile Shoes		Each	10	
Concrete Encasement		Cu. Yd.	6.0	
Concrete Sealer		Sq. Ft.	612	

For details of Bar Splicers, see sheet 70 of 86.
For details of piles and Concrete Encasement, see sheet 71 & 72 of 86.

NORTH ABUTMENT - PLAN and ELEVATION
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026
DATE 03/27/09

LAYOUT	MNM	09/12/08
DRAWN	Rcd	09/30/08
REVIEWED	TEH	09/30/08

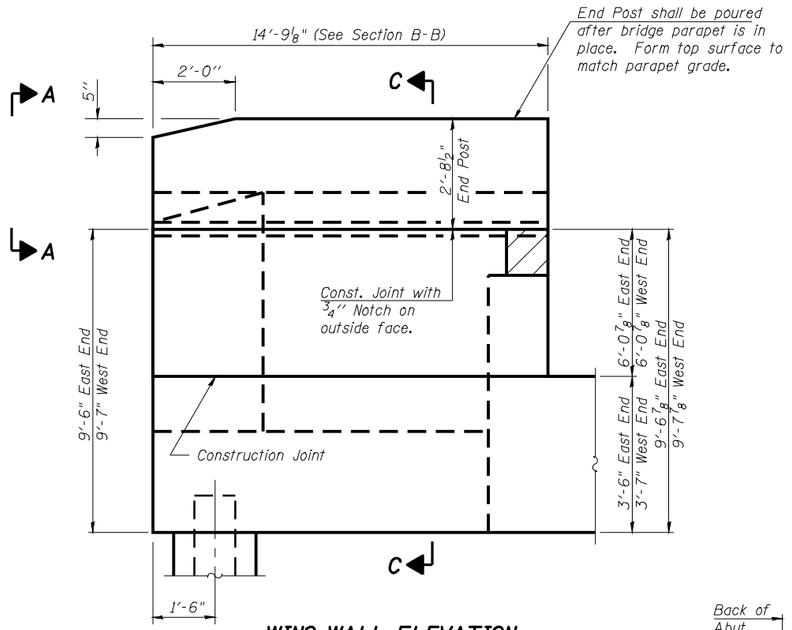
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

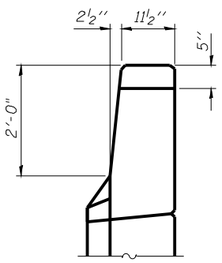
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	189
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 53
86 SHEETS

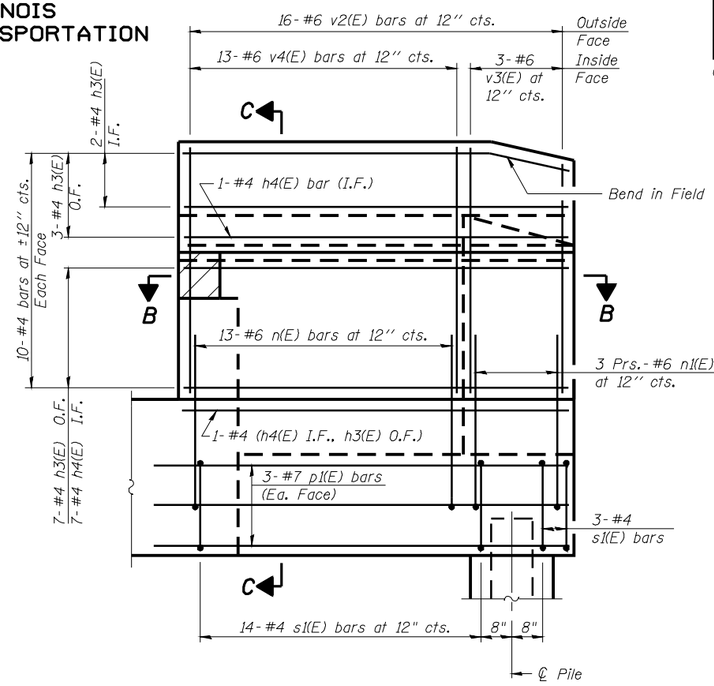
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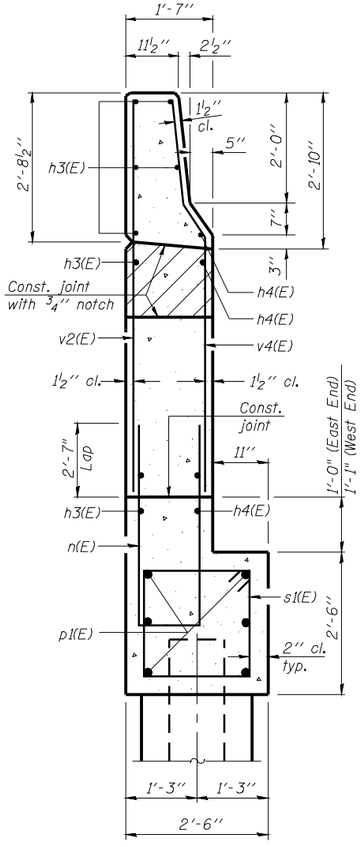
WING WALL ELEVATION
Showing Dimensions



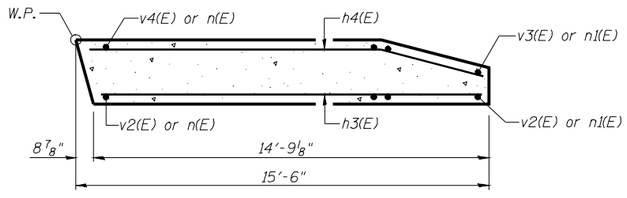
VIEW A-A



WING WALL ELEVATION
Showing Reinforcement



SEC. THRU ABUT.



SECTION B-B

SECTION C-C

Notes:
Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure.
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
Quantity of concrete in end post included with Concrete Superstructure on sheet 19 of 86.
For Concrete Encasement details, see sheet 71 of 86.

NORTH ABUTMENT - DETAILS
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510
PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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JOB NO. 07S2026
DATE 03/27/09

LAYOUT	MNM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

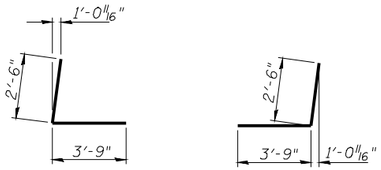
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

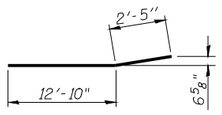
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	190
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 54
86 SHEETS

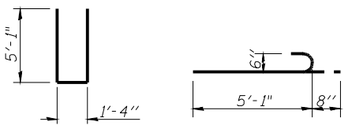
Contract #72A76



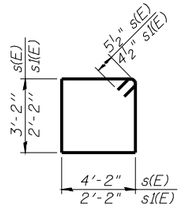
BAR h1(E) BAR h2(E)

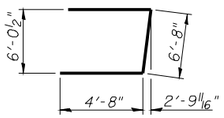


BAR h4(E)

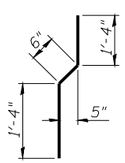


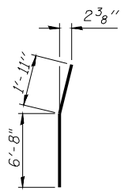
BAR n(E) BAR n1(E)

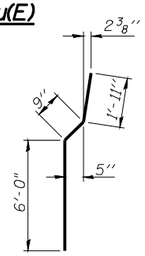




BARS s(E) & s1(E) BAR u(E)



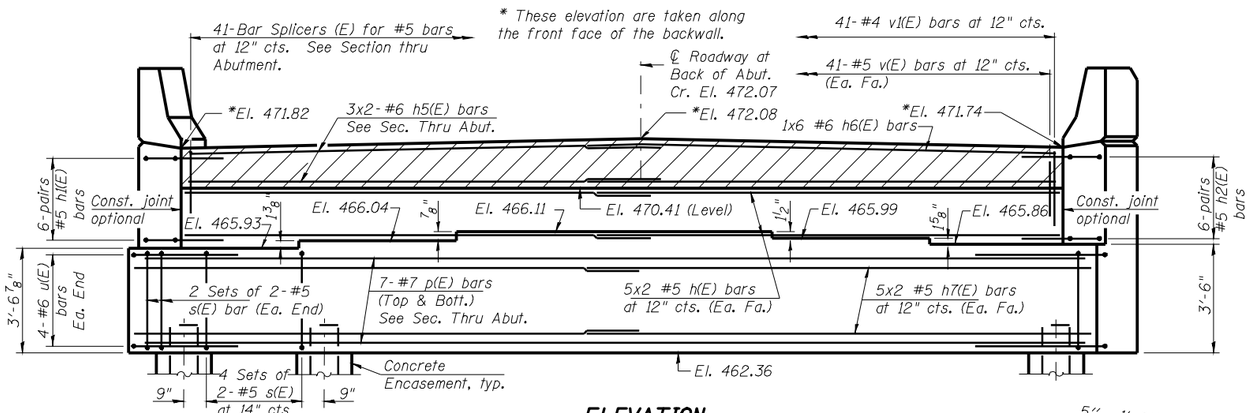




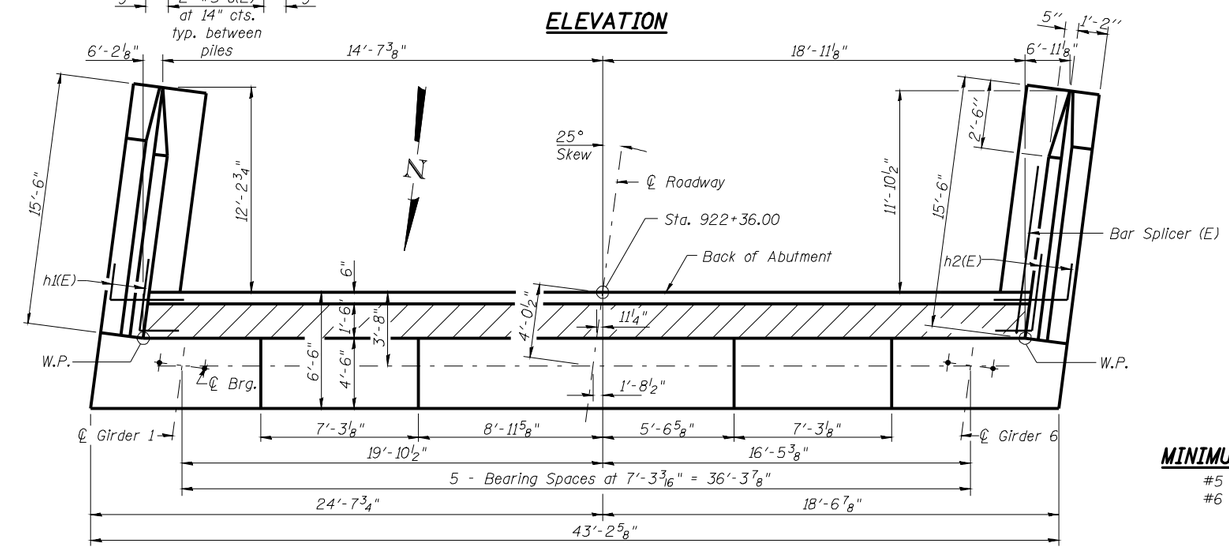
BAR v1(E) BAR v3(E) BAR v4(E)

PILE DATA

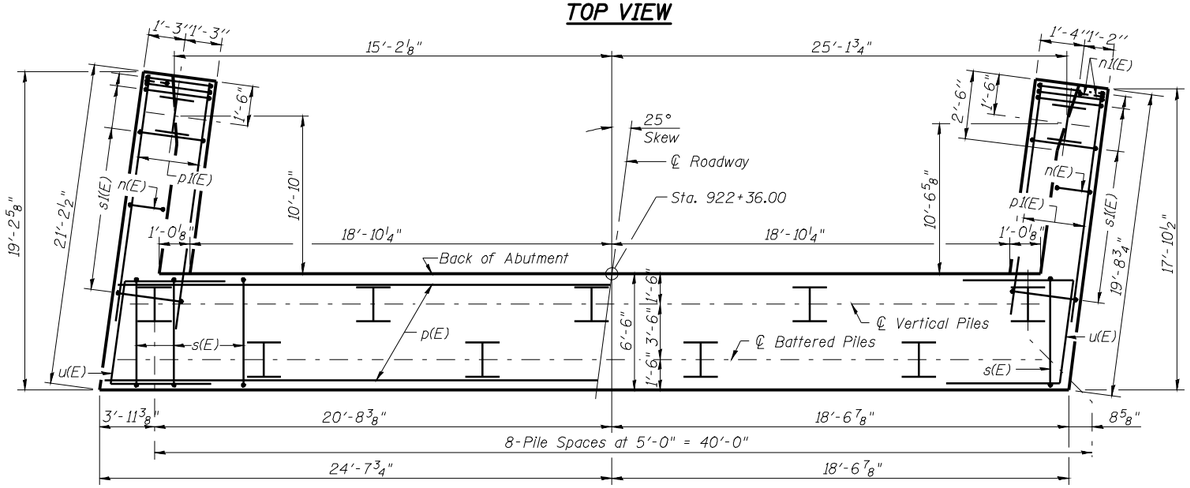
Type:	HP14x89
Nominal Required Bearing:	705 kips
Factored Resistance Available:	220 Kips
Est. Length:	85 Feet
No. Production Piles:	11
No. Test Piles:	None



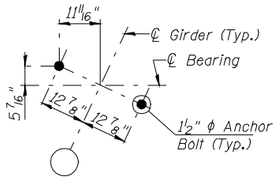
ELEVATION



TOP VIEW



PLAN-PILE CAP



ANCHOR BOLT LAYOUT
(Typical all Girder Locations)

SOUTH ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	20	#5	21'-0"	
h1(E)	12	#5	6'-3"	
h2(E)	12	#5	6'-3"	
h3(E)	26	#4	15'-3"	
h4(E)	18	#4	15'-3"	
h5(E)	6	#6	21'-3"	
h6(E)	6	#4	8'-0"	
h7(E)	20	#5	22'-9"	
n(E)	26	#6	11'-6"	
n1(E)	12	#6	5'-9"	
p(E)	14	#7	42'-10"	
p1(E)	12	#7	16'-0"	
s(E)	72	#5	15'-7"	
s1(E)	34	#4	9'-5"	
u(E)	8	#6	16'-0"	
v(E)	82	#5	9'-0"	
v1(E)	41	#4	3'-2"	
v2(E)	32	#6	8'-7"	
v3(E)	6	#6	8'-7"	
v4(E)	26	#6	8'-8"	
Structure Excavation		Cu. Yd.	193	
Concrete Structures		Cu. Yd.	69.3	
Reinforcement Bars, Epoxy Coated		Pound	7170	
Furnishing Steel Piles, HP14x89		Foot	935	
Driving Piles		Foot	935	
Pile Shoes		Each	11	
Concrete Encasement		Cu. Yd.	6.0	
Concrete Sealer		Sq. Ft.	609	

For details of Bar Splicers, see sheet 70 of 86.
For details of piles and Concrete Encasement, see sheet 71 of 86.

MINIMUM BAR LAPS

#5 bar = 2'-5"
#6 bar = 2'-10"

SOUTH ABUTMENT - PLAN and ELEVATION
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026
DATE 03/27/09

LAYOUT	MNM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

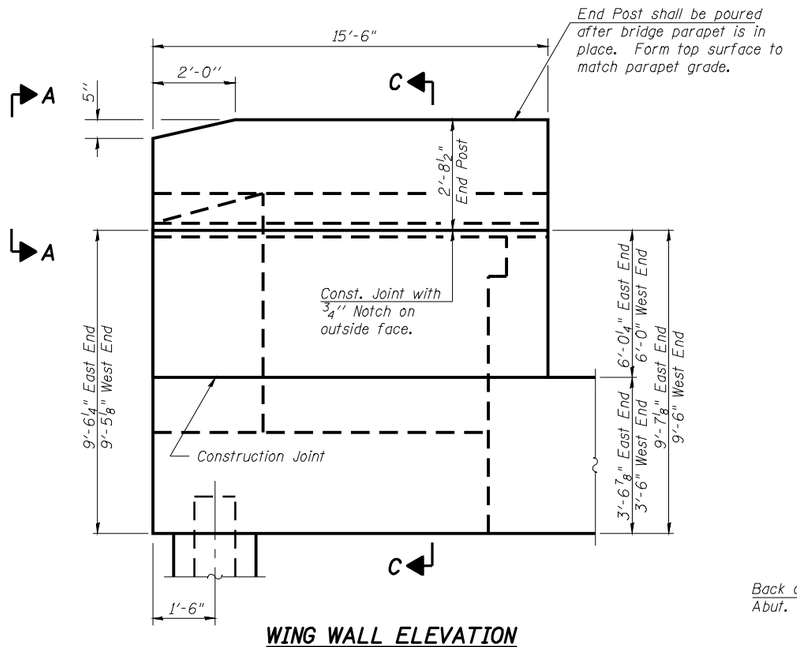
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

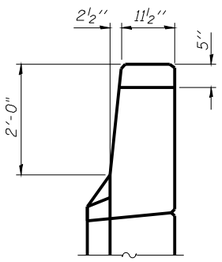
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	191
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 55
86 SHEETS

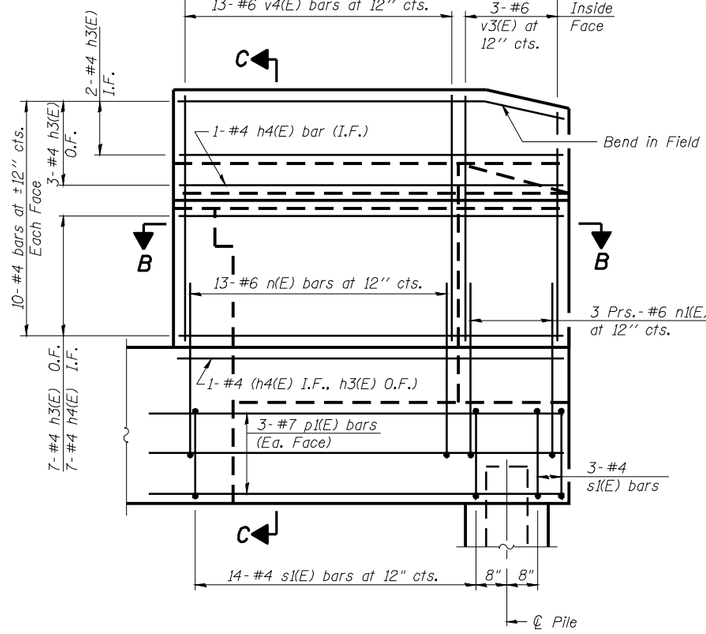
Contract #72A76



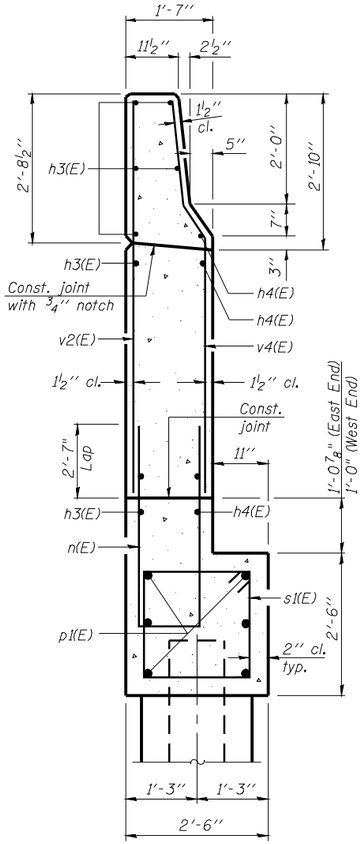
WING WALL ELEVATION
Showing Dimensions



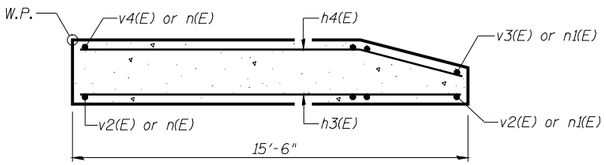
VIEW A-A



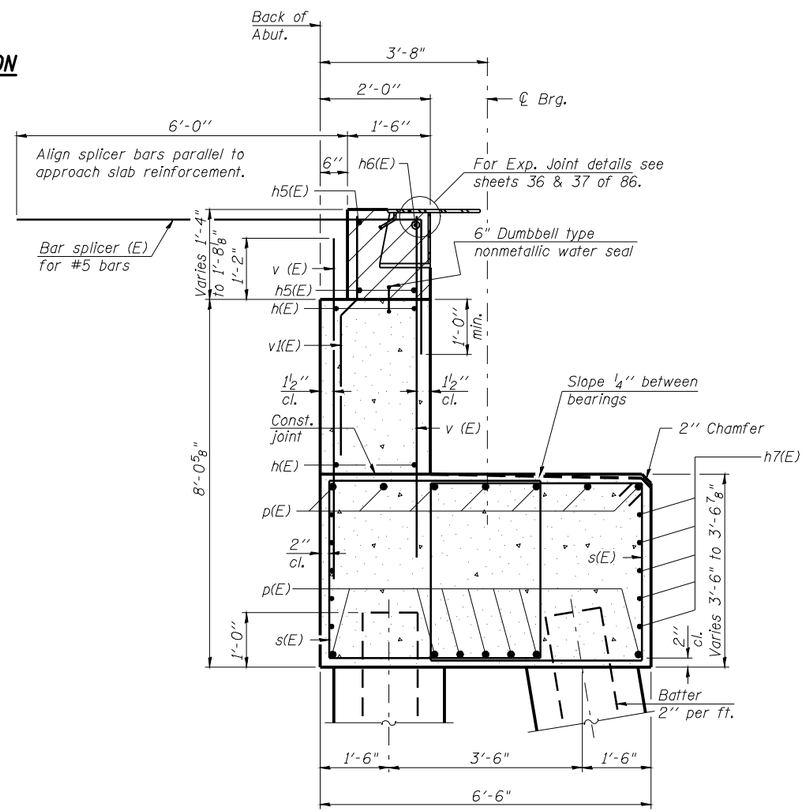
WING WALL ELEVATION
Showing Reinforcement



SECTION C-C



SECTION B-B



SEC. THRU ABUT.

Notes:
Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure.
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
Quantity of concrete in end post included with Concrete Superstructure on sheet 28 of 86.
For Concrete Encasement details, see sheet 71 of 86.

SOUTH ABUTMENT - DETAILS
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026
DATE 03/27/09

LAYOUT	MNM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

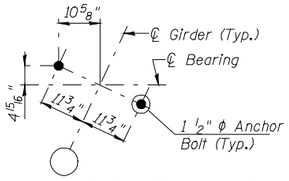
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Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 71 of 86.

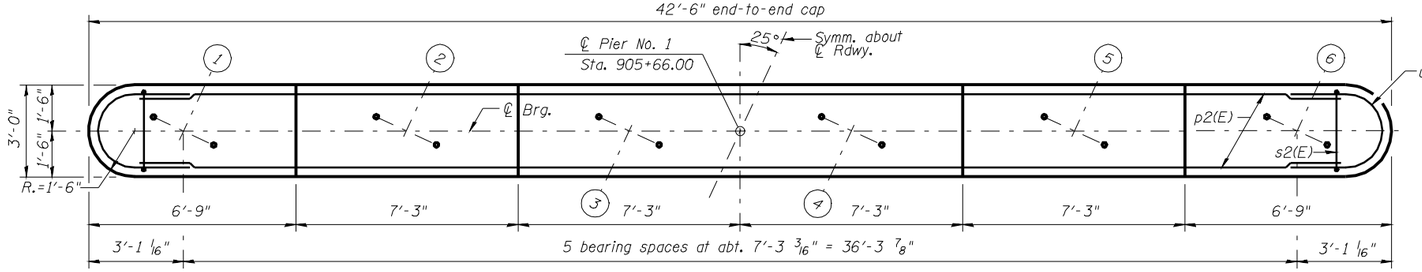
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	192
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 56
86 SHEETS
Contract #72A76

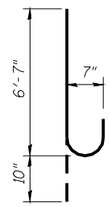
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



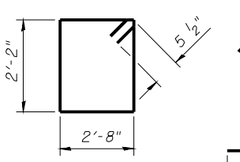
ANCHOR BOLT LAYOUT
(Typical all Girder Locations)



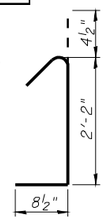
TOP PLAN



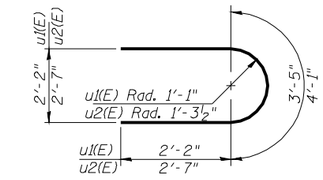
BAR n2(E)



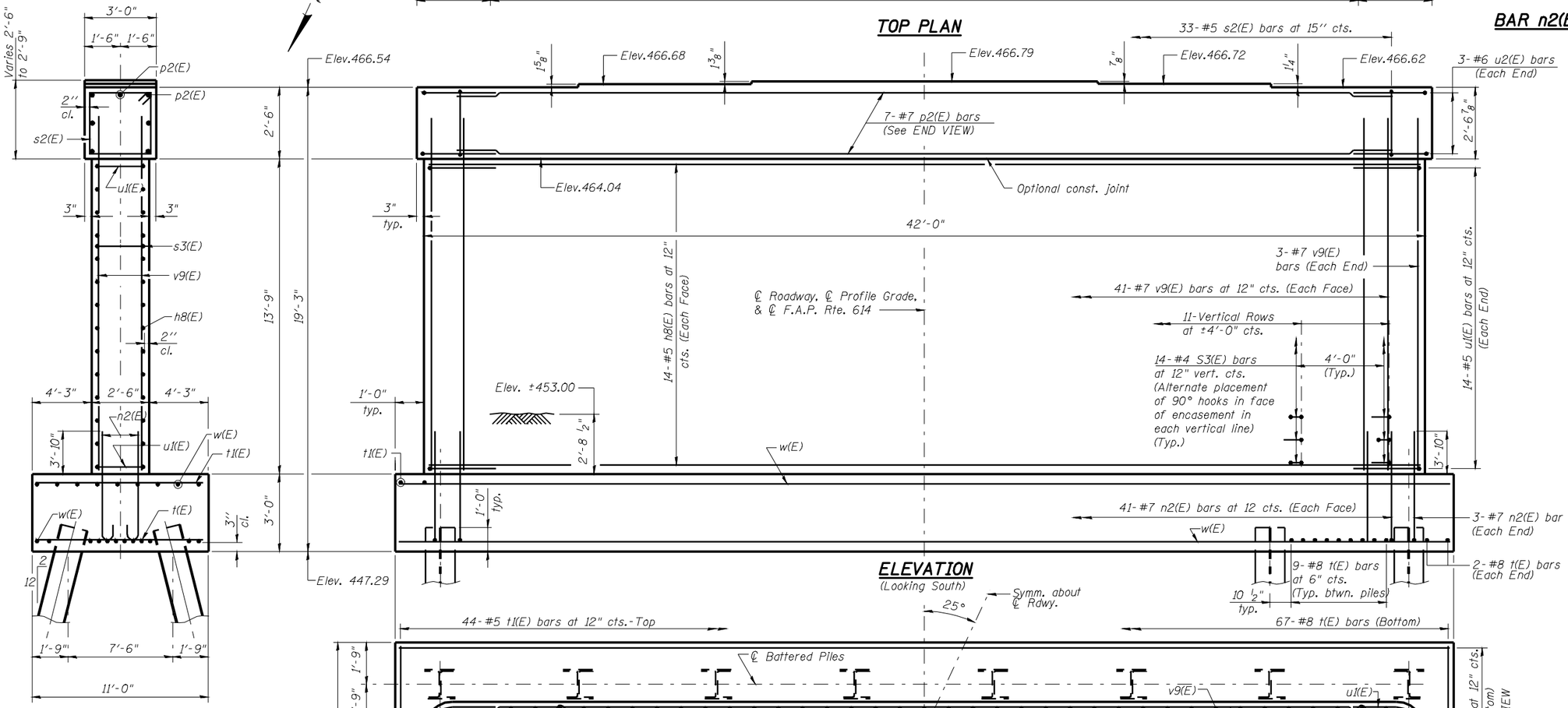
BAR s2(E)



BAR s3(E)

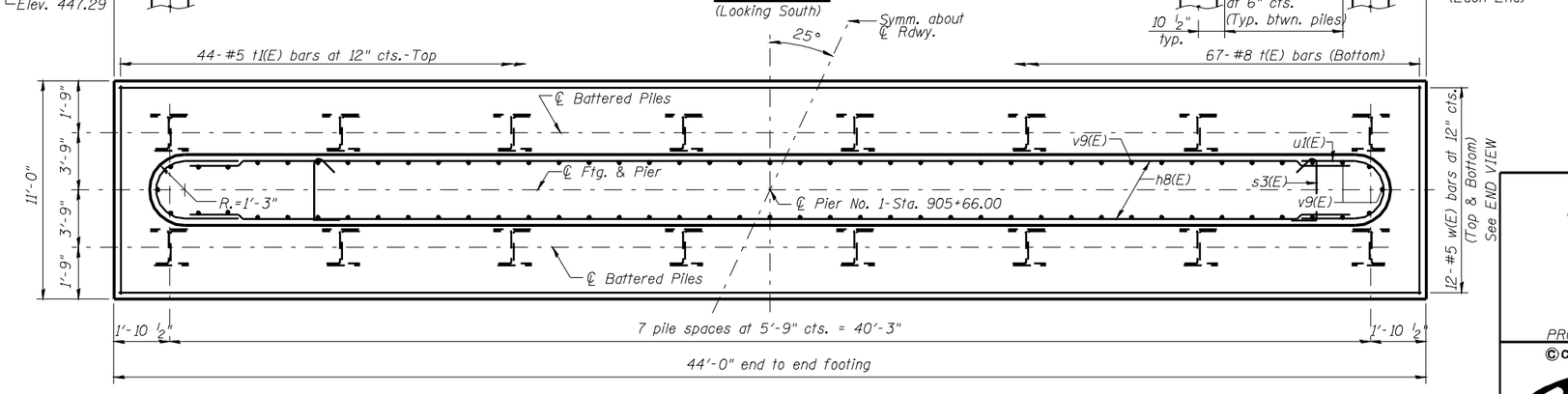


BARS u1(E) & u2(E)



END VIEW

ELEVATION
(Looking South)



FOOTING PLAN

MIN. BAR LAP
#7 bars = 3'-5"

PILE DATA

Type:	HP 14x89
Nominal Required Bearing:	705 kips
Factored Resistance Available:	352 kips
Length:	75 Ft.
No. Production Piles:	16
No. Test Piles:	None

BILL OF MATERIAL - PIER 1

Bar	No.	Size	Length	Shape
h8(E)	28	#5	39'-6"	——
n2(E)	88	#7	7'-5"	⊃
p2(E)	7	#7	39'-6"	——
s2(E)	33	#5	10'-7"	□
s3(E)	154	#4	3'-3"	⊔
t(E)	67	#8	10'-6"	——
t1(E)	44	#5	10'-6"	——
u1(E)	28	#5	7'-9"	⊃
u2(E)	6	#6	9'-3"	⊃
v9(E)	88	#7	15'-9"	——
w(E)	24	#5	43'-6"	——

Structure Excavation	Cu. Yd.	107
Concrete Structures	Cu. Yd.	118.9
Reinforcement Bars, Epoxy Coated	Pound	10340
Furnishing Steel Piles, HP14x89	Foot	1200
Driving Piles	Foot	1200
Pile Shoes	Each	16
Braced Excavation	Cu. Yd.	87

PIER 1 - DETAILS
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026
DATE 03/27/09

LAYOUT	VPT	09/12/08
DRAWN	BWC	09/30/08
REVIEWED	TEH	09/30/08

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Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles and concrete encasement, see sheet 71 of 86.

PIER 2 EXPERIMENTAL PILE DRIVING and TESTING SEQUENCE

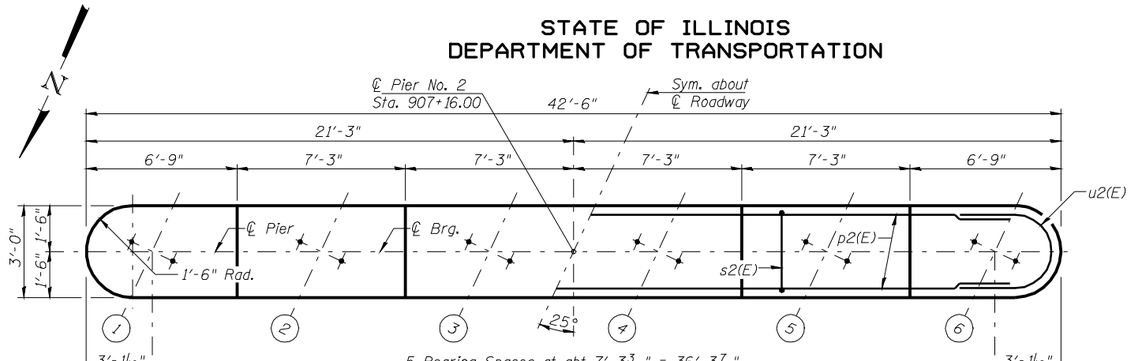
1. With dynamic monitoring, drive pile to a tip elevation of 385.0 ft.
2. Wait a minimum 3 calendar days to allow pile to set-up. Adjacent piles may be driven during this waiting period.
3. Perform the Pile Load Test.
4. Wait a minimum 1 calendar day to allow pile to set-up.
5. Redrive the experimental pile with dynamic monitoring to a minimum driven bearing equal to the nominal required bearing shown in the Pile Data table. The Engineer may require the driven bearing to exceed the nominal required beaing during redriving.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

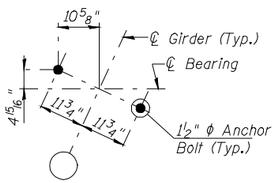
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	193
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 57
86 SHEETS

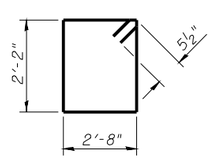
Contract #72A76



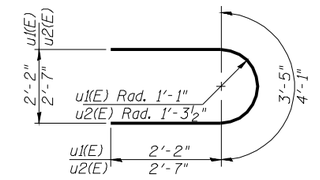
TOP PLAN



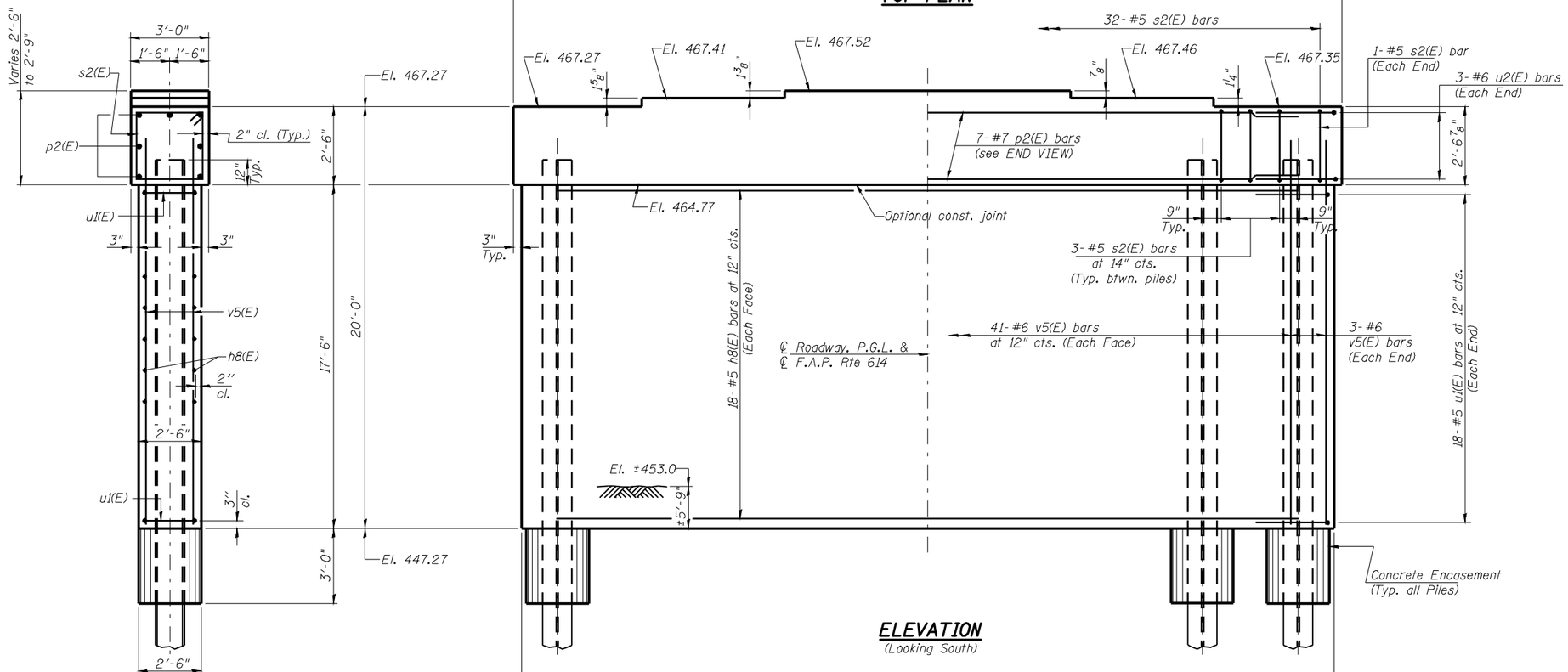
ANCHOR BOLT LAYOUT
(Typical all Girder Locations)



BAR s2(E)



BARS u1(E) & u2(E)



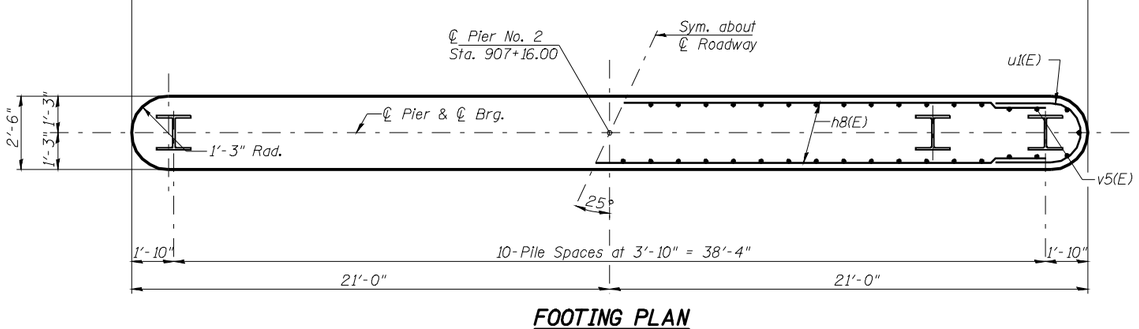
ELEVATION
(Looking South)

END VIEW

PILE DATA

Type:	HP 14x89
Nominal Required Bearing:	705 kips
Factored Resistance Available:	352 kips
Est. Length:	95 Ft.
No. Production Piles:	11 (Includes 1 Experimental Pile)
No. Test Piles:	None

One pile at Pier 2 must be designated as an expermental pile. The contractor may select the experimental pile location within the pier. A pile shoe shall not be attached to the experimental pile.



FOOTING PLAN

BILL OF MATERIAL - PIER 2

Bar	No.	Size	Length	Shape
h8(E)	36	#5	39'-6"	——
p2(E)	7	#7	39'-6"	——
s2(E)	32	#5	10'-7"	□
u1(E)	36	#5	7'-9"	⊃
u2(E)	6	#6	9'-3"	⊃
v5(E)	88	#6	19'-0"	——
Structure Excavation		Cu. Yd.	45	
Concrete Structures		Cu. Yd.	79.5	
Reinforcement Bars, Epoxy Coated		Pound	5290	
Furnishing Steel Piles, HP 14x89		Foot	1045	
Driving Piles		Foot	1045	
Concrete Encasement		Cu. Yd.	6.0	
Pile Shoes		Each	10	
Braced Excavation		Cu. Yd.	63	
Pile Load Test		Each	1	

PIER 2 - DETAILS
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510
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HANSON
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JOB NO. 07S2026
DATE 03/27/09

LAYOUT	VPT	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

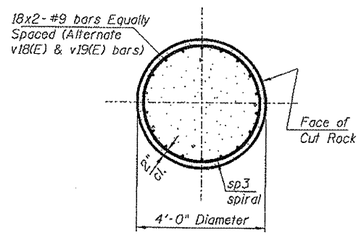
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

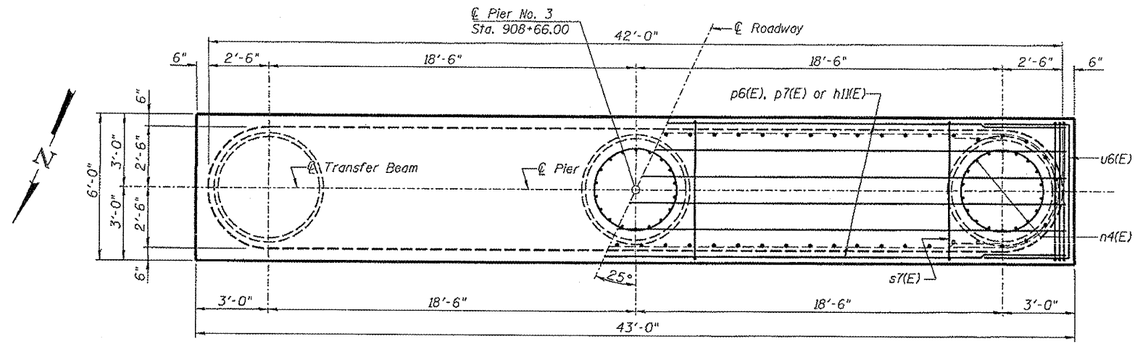
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	194
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 58
86 SHEETS

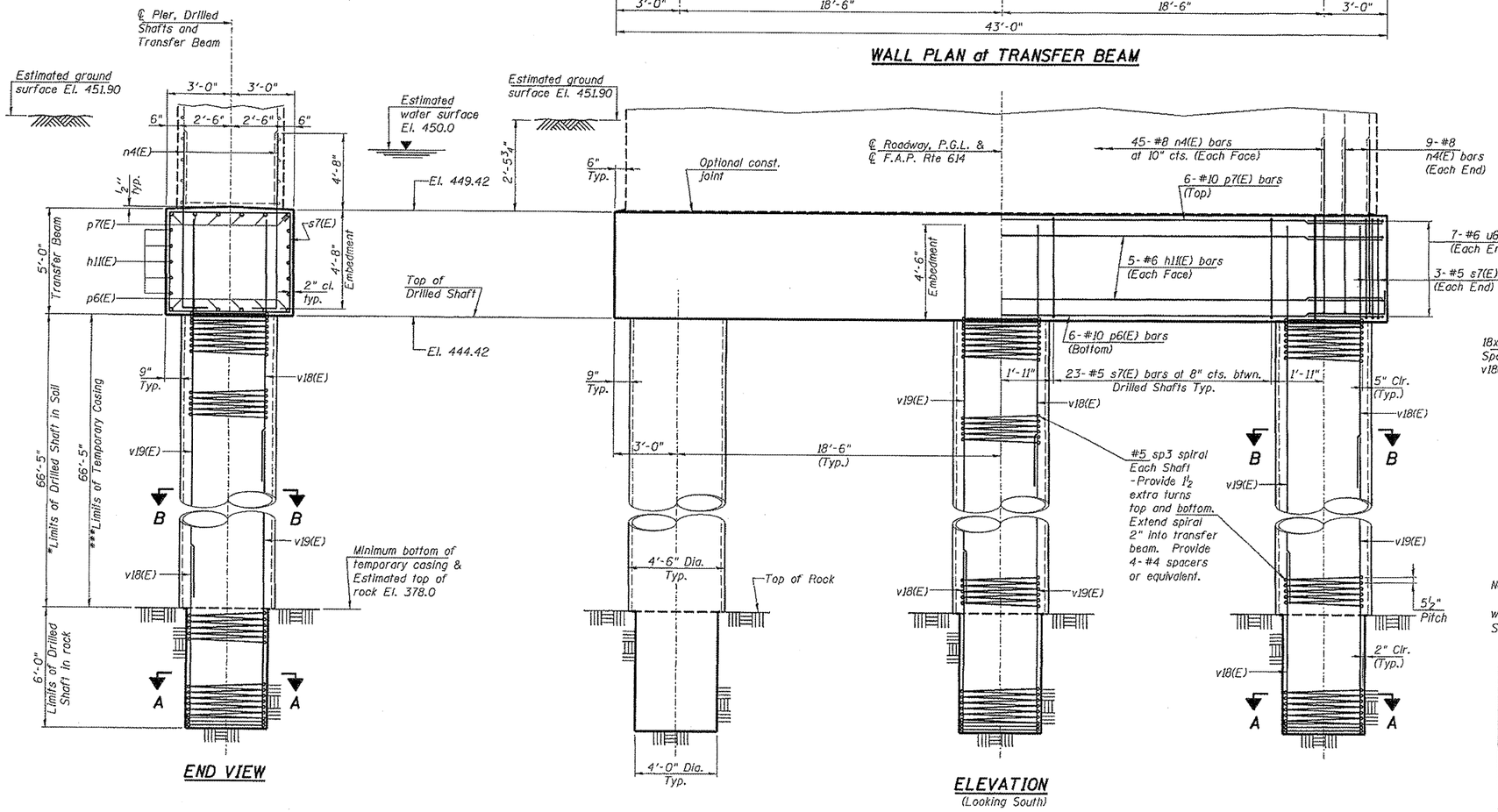
Contract #72A76

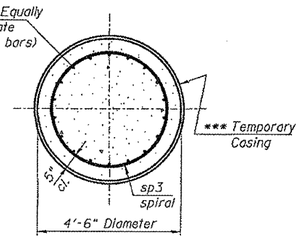


SECTION A-A



WALL PLAN at TRANSFER BEAM





SECTION B-B

* The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

*** Contractor is responsible for determining the casing thickness and the actual tip elevation to be used. See Article 516.06(d) of the Standard Specifications.
If the contractor chooses to use permanent casings at Pier 3, they will not be paid for seperately but shall be included in the cost of Drilled Shaft in Soil.

See Sheet 59 of 86 for bar laps and Bill of Material.

Note Well:
Casings shall not be installed using vibratory methods within 30 feet of any part of an existing foundation.
See the special provisions for Drilled Shaft Casing Installation.

PIER 3 DETAILS - (Sheet 1 of 2)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510
PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026
DATE 03/27/09

LAYOUT	MNM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

09/08/2009
I:\07jobs\07s2026\C-ADS\Struct\Sheet\Master Sheet Files\1209 GSD Master Sheet File.dgn

Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of drilled shafts see sheet 58 of 86.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

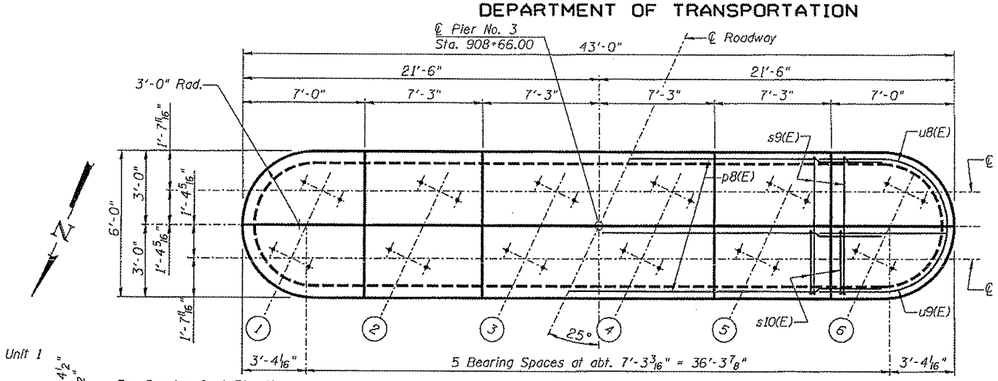
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	195
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 59
86 SHEETS

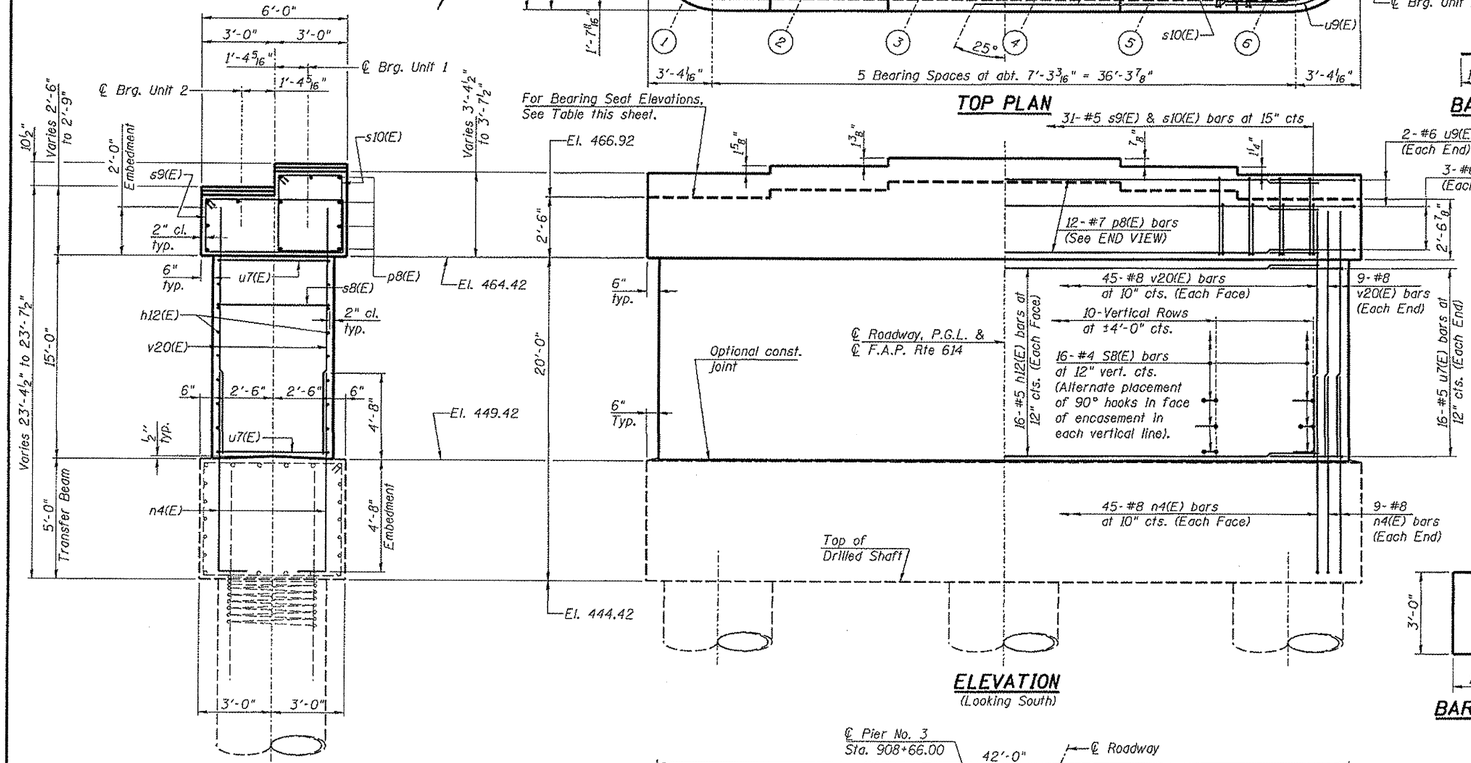
Contract #72A76

BEARING SEAT ELEVATIONS

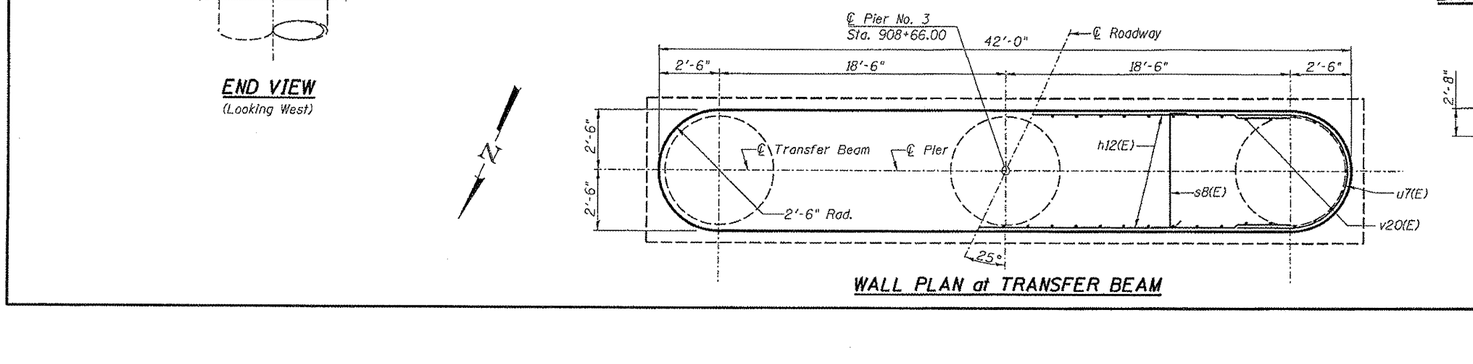
Girder	Unit 1	Unit 2
1	467.80	466.92
2	467.94	467.06
3	468.05	467.17
4	468.05	467.17
5	467.99	467.11
6	467.88	467.00



TOP PLAN

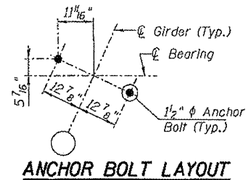


ELEVATION
(Looking South)

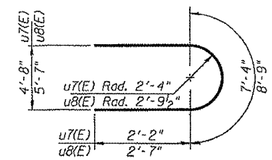


END VIEW
(Looking West)

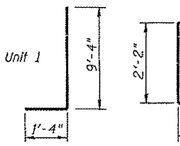
WALL PLAN at TRANSFER BEAM



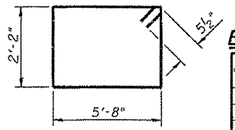
ANCHOR BOLT LAYOUT
(Typical all Girder Locations)



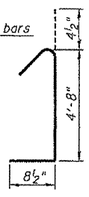
BARS u7(E) & u8(E)



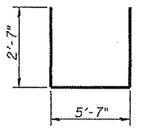
BAR n4(E)



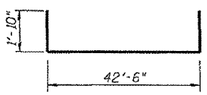
BAR s9(E)



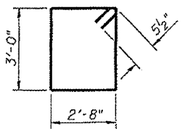
BAR s8(E)



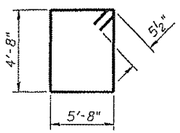
BAR u6(E)



BAR p6(E)



BAR s10(E)



BAR s7(E)

BILL OF MATERIAL - PIER 3

Bar	No.	Size	Length	Shape
h11(E)	10	#6	42'-6"	
h12(E)	32	#5	37'-0"	
n4(E)	108	#8	10'-8"	
p6(E)	6	#10	46'-2"	
p7(E)	6	#10	42'-6"	
p8(E)	12	#7	37'-0"	
s7(E)	52	#5	21'-7"	
s8(E)	160	#4	5'-9"	
s9(E)	31	#5	16'-7"	
s10(E)	31	#5	12'-3"	
** sp3	3	#5	72'-6"	
u6(E)	14	#6	10'-9"	
u7(E)	32	#5	11'-8"	
u8(E)	6	#6	13'-11"	
u9(E)	4	#6	12'-3"	
v18(E)	54	#9	36'-0"	
v19(E)	54	#9	51'-0"	
v20(E)	108	#8	17'-0"	
Concrete Structures			Cu. Yd.	190.1
Reinforcement Bars			Pound	5950
Reinforcement Bars, Epoxy Coated			Pound	32550
Drilled Shaft in Soil			Cu. Yd.	117
Drilled Shaft in Rock			Cu. Yd.	8
Underwater Structure Excavation Protection - Location 1			Each	1
Concrete Sealer			Sq. Ft.	578

**Length is height of spiral.

MINIMUM BAR LAP

#4 bar = 1'-8"
#5 bar = 2'-2"
#6 bar = 2'-7"
#7 bar = 3'-5"
#8 bar = 4'-6"
#9 bar = 5'-9"
#5 Spiral = 2'-6"

PIER 3 DETAILS (Sheet 2 of 2)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510
PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026
DATE 03/27/09

LAYOUT	JMW	03/12/09
DRAWN	Rod	09/30/08
REVIEWED	TSH	09/30/08

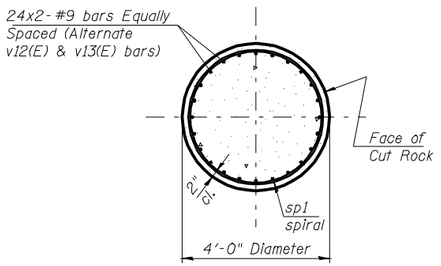
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

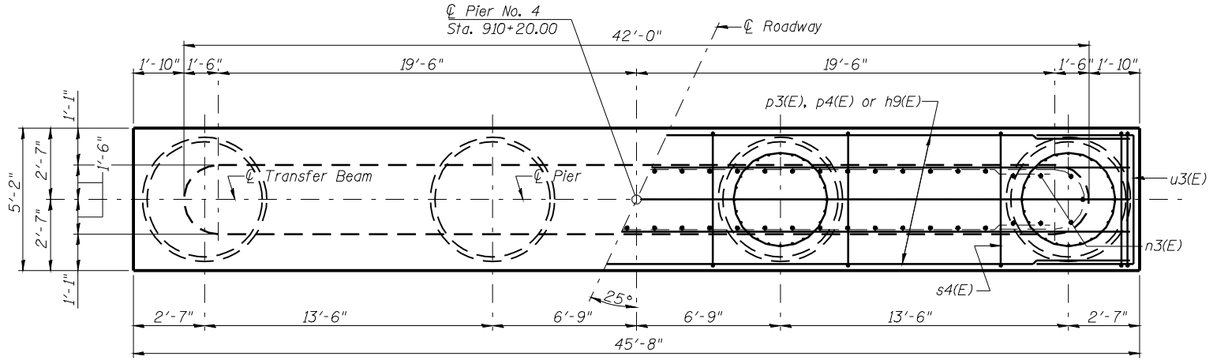
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	196
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 60
86 SHEETS

Contract #72A76



SECTION A-A



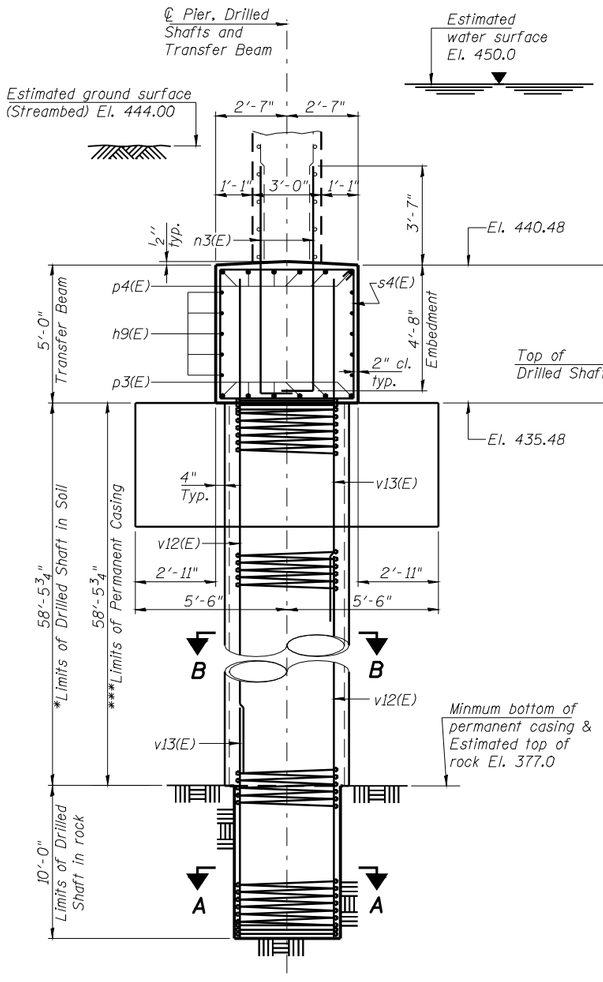
PLAN - TRANSFER BEAM

* The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

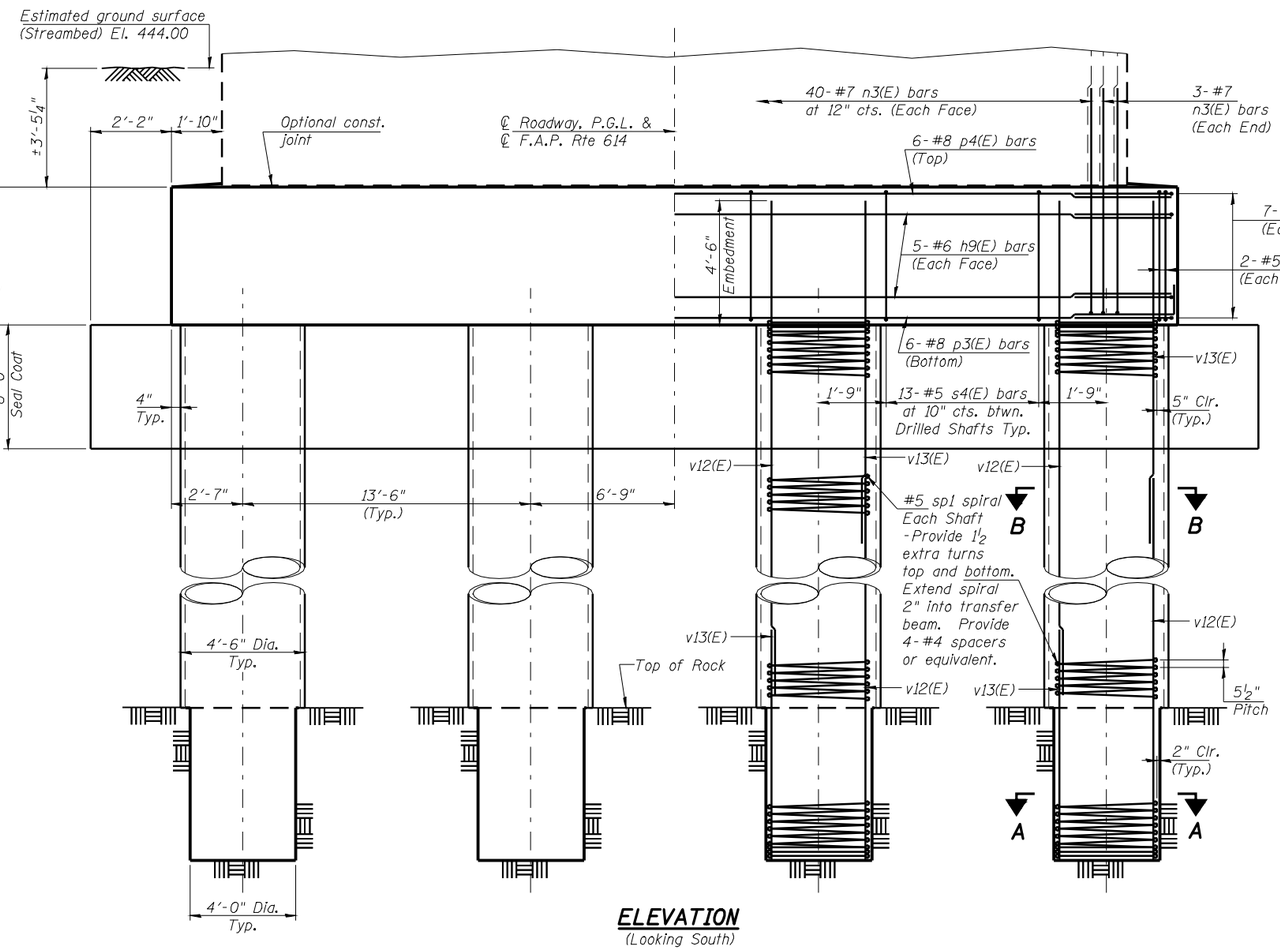
*** Contractor is responsible for determining the casing thickness and the actual tip elevation to be used. See Article 516.06(d) of the Standard Specifications.

Pay limits for the Permanent Casing shall be based on the minimum length shown.

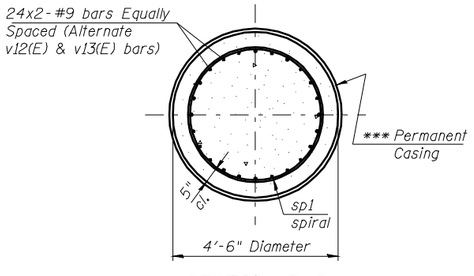
See Sheet 61 of 86 for bar laps & Bill of Material.



END VIEW



ELEVATION
(Looking South)



SECTION B-B

Note Well:
Casings shall not be installed using vibratory methods within 30 feet of any part of an existing foundation. See the special provisions for Drilled Shaft Casing Installation.

PIER 4 - DETAILS (Sheet 1 of 2)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026

DATE 03/27/09

LAYOUT	MNM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

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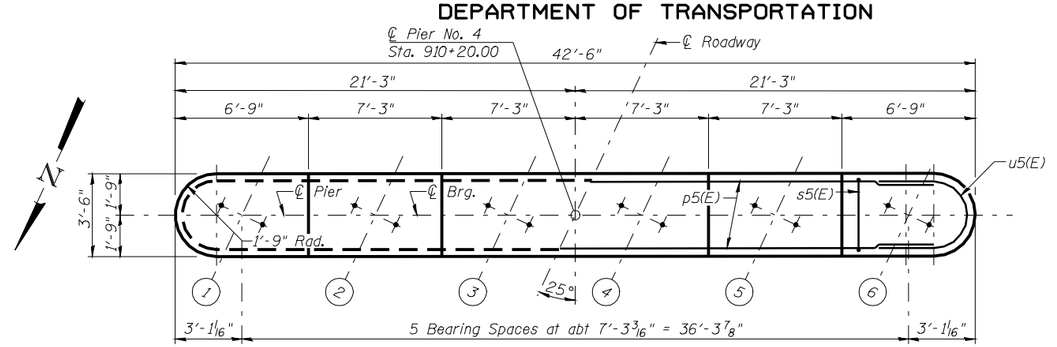
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of drilled shafts see sheet 60 of 86.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

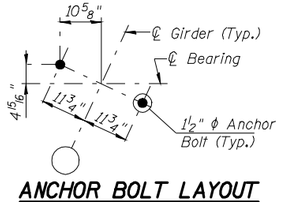
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 61
86 SHEETS

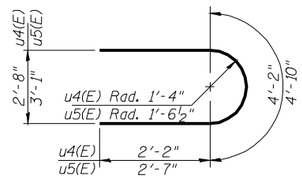
Contract #72A76



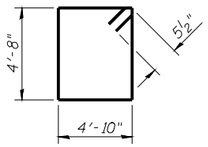
TOP PLAN



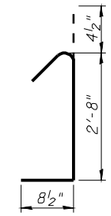
ANCHOR BOLT LAYOUT
(Typical all Girder Locations)



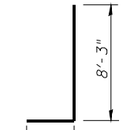
BARS u4(E) & u5(E)



BAR s4(E)



BAR s6(E)

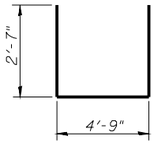


BAR n3(E)

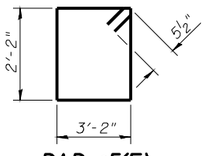
BILL OF MATERIAL - PIER 4

	Bar	No.	Size	Length	Shape
	h9(E)	10	#6	45'-2"	
	h10(E)	50	#5	39'-0"	
	n3(E)	86	#7	9'-5"	
	p3(E)	6	#8	47'-10"	
	p4(E)	6	#8	45'-2"	
	p5(E)	7	#7	39'-0"	
	s4(E)	43	#5	19'-11"	
	s5(E)	32	#5	11'-7"	
	s6(E)	275	#4	3'-9"	
**	sp1	4	#5	69'-0"	
	u3(E)	14	#6	9'-11"	
	u4(E)	50	#5	8'-6"	
	u5(E)	6	#6	10'-0"	
	v12(E)	96	#9	48'-0"	
	v13(E)	96	#9	35'-0"	
	v14(E)	86	#7	26'-9"	
	Concrete Structures		Cu. Yd.	171.8	
	Reinforcement Bars		Pound	7560	
	Reinforcement Bars, Epoxy Coated		Pound	40920	
	Drilled Shaft in Soil		Cu. Yd.	138	
	Drilled Shaft in Rock		Cu. Yd.	19	
	Permanent Casing		Foot	234	
	Cofferdam Excavation		Cu. Yd.	296	
	Cofferdam (Pier 4)		Each	1	
	Seal Coat Concrete		Cu. Yd.	108	

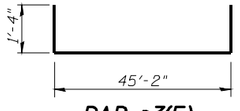
** Length is height of spiral.



BAR u3(E)



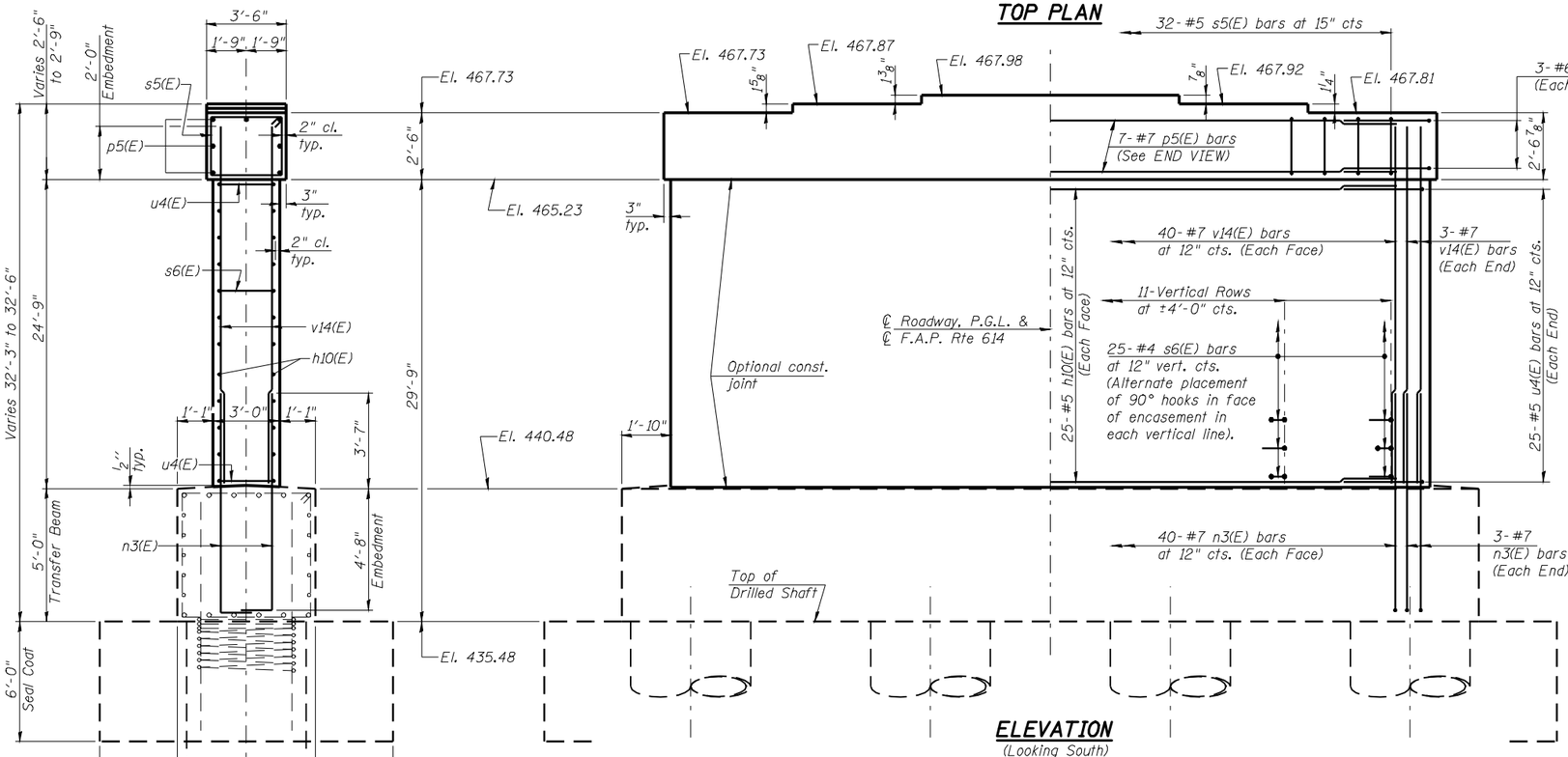
BAR s5(E)



BAR p3(E)

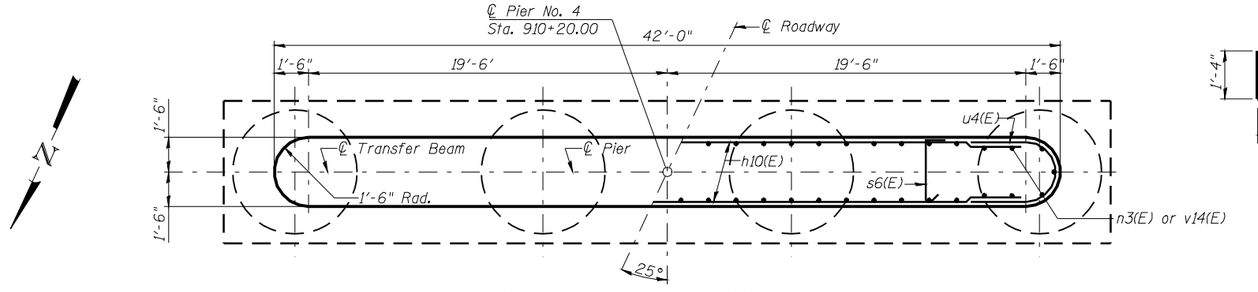
MINIMUM BAR LAP

#4 bar = 1'-8"
#5 bar = 2'-2"
#6 bar = 2'-7"
#7 bar = 3'-5"
#8 bar = 4'-6"
#9 bar = 5'-9"
#5 Spiral = 2'-6"



ELEVATION
(Looking South)

END VIEW



WALL PLAN at TRANSFER BEAM

PIER 4 - DETAILS (Sheet 2 of 2)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026
DATE 03/27/09

LAYOUT	MNM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

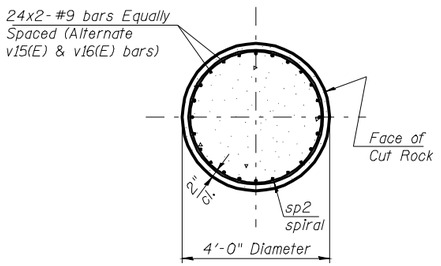
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

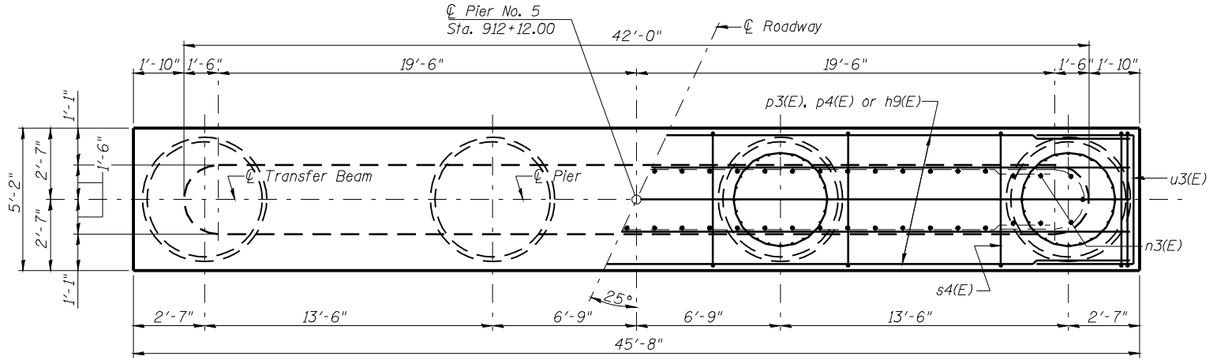
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	198
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 62
86 SHEETS

Contract #72A76



SECTION A-A



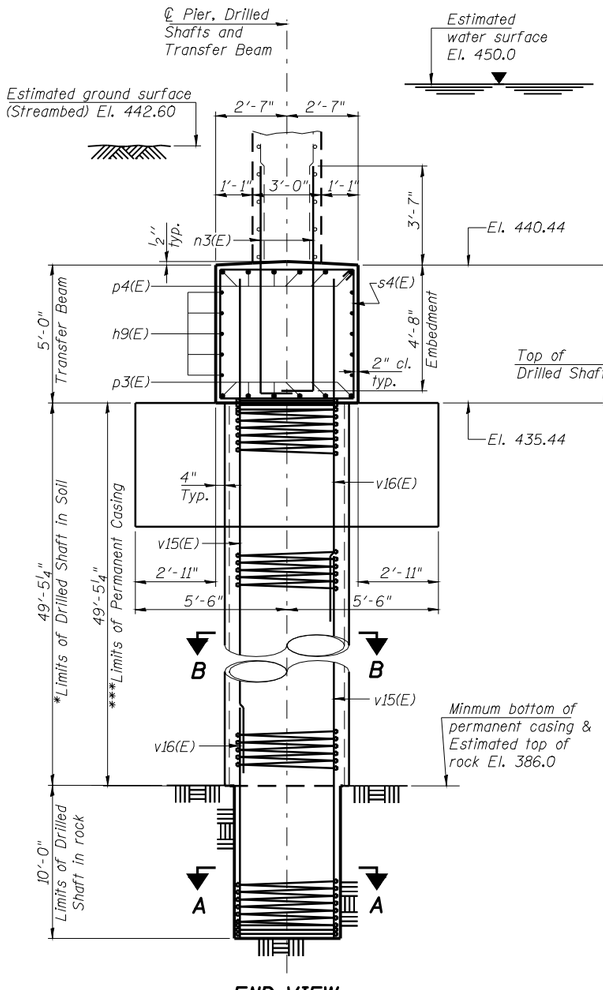
PLAN - TRANSFER BEAM

* The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

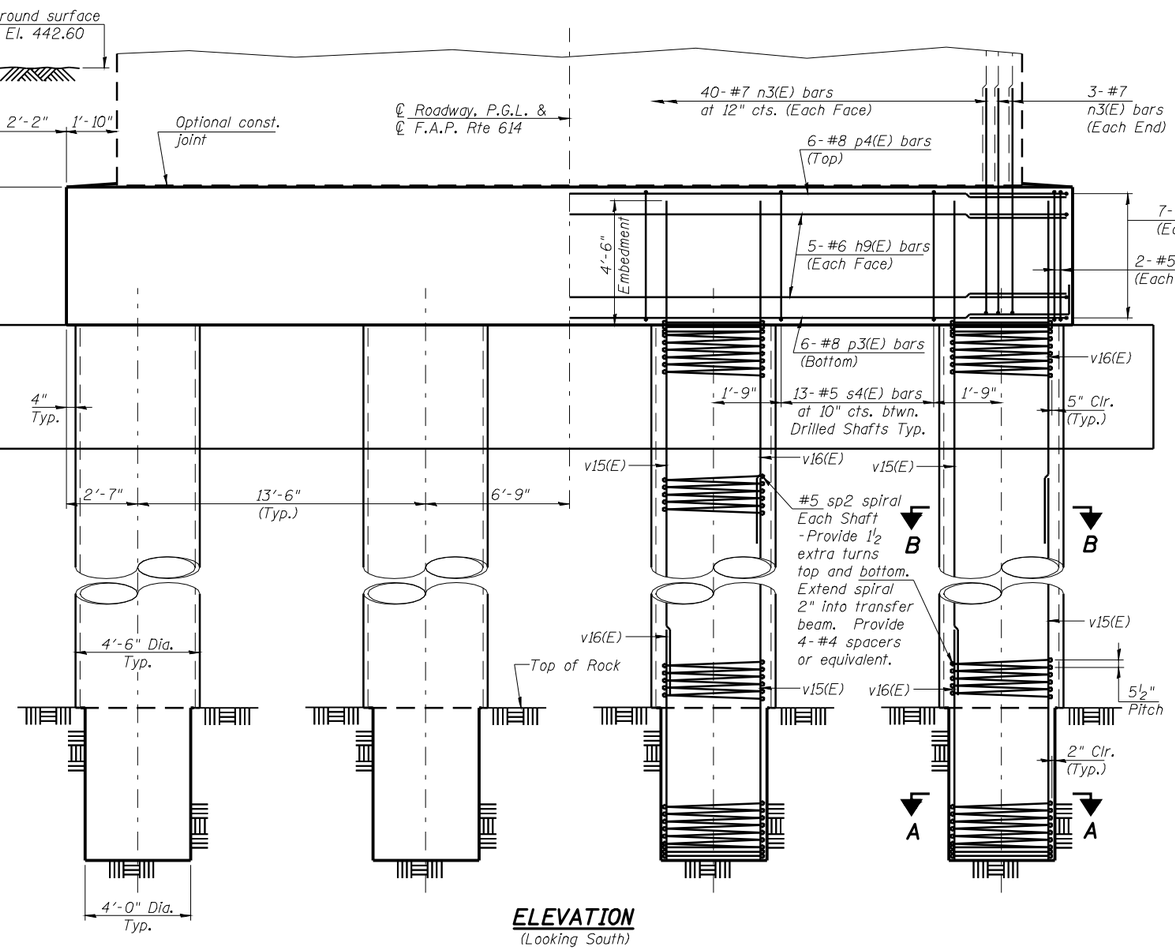
*** Contractor is responsible for determining the casing thickness and the actual tip elevation to be used. See Article 516.06(d) of the Standard Specifications.

Pay limits for the Permanent Casing shall be based on the minimum length shown.

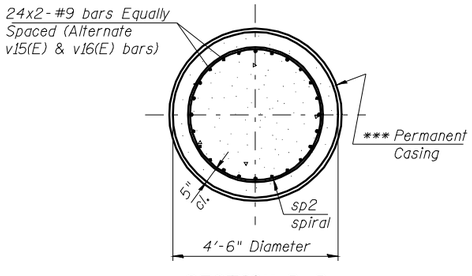
See Sheet 63 of 86 for bar laps & Bill of Material.



END VIEW



ELEVATION
(Looking South)



SECTION B-B

Note Well:
Casings shall not be installed using vibratory methods within 30 feet of any part of an existing foundation. See the special provisions for Drilled Shaft Casing Installation.

PIER 5 - DETAILS (Sheet 1 of 2)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026

DATE 03/27/09

LAYOUT	MNM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

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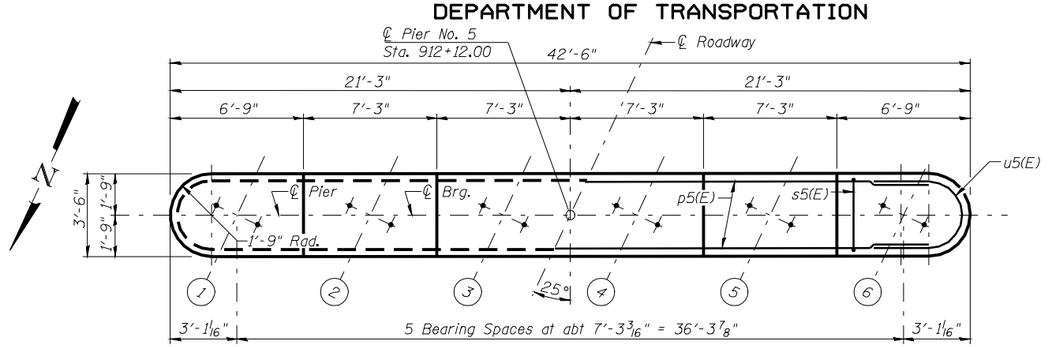
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of drilled shafts see sheet 62 of 86.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

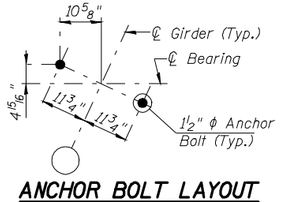
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	199
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 63
86 SHEETS

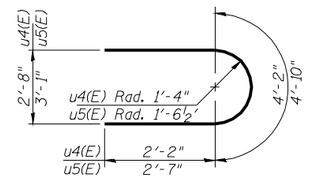
Contract #72A76



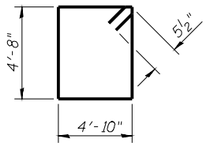
TOP PLAN



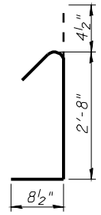
ANCHOR BOLT LAYOUT
(Typical all Girder Locations)



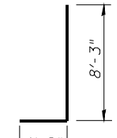
BARS u4(E) & u5(E)



BAR s4(E)



BAR s6(E)

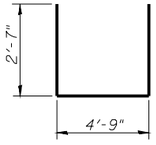


BAR n3(E)

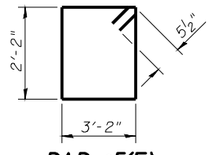
BILL OF MATERIAL - PIER 5

	Bar	No.	Size	Length	Shape
	h9(E)	10	#6	45'-2"	
	h10(E)	52	#5	39'-0"	
	n3(E)	86	#7	9'-5"	
	p3(E)	6	#8	47'-10"	
	p4(E)	6	#8	45'-2"	
	p5(E)	7	#7	39'-0"	
	s4(E)	43	#5	19'-11"	
	s5(E)	32	#5	11'-7"	
	s6(E)	286	#4	3'-9"	
**	sp2	4	#5	60'-5"	
	u3(E)	14	#6	9'-11"	
	u4(E)	52	#5	8'-6"	
	u5(E)	6	#6	10'-0"	
	v15(E)	96	#9	44'-0"	
	v16(E)	96	#9	29'-0"	
	v17(E)	86	#7	27'-9"	

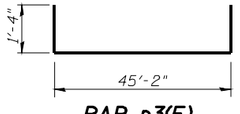
Concrete Structures	Cu. Yd.	176.4
Reinforcement Bars	Pound	6640
Reinforcement Bars, Epoxy Coated	Pound	37960
Drilled Shaft in Soil	Cu. Yd.	117
Drilled Shaft in Rock	Cu. Yd.	19
Permanent Casing	Foot	198
Cofferdam Excavation	Cu. Yd.	299
Cofferdam (Pier 5)	Each	1
Seal Coat Concrete	Cu. Yd.	135



BAR u3(E)



BAR s5(E)

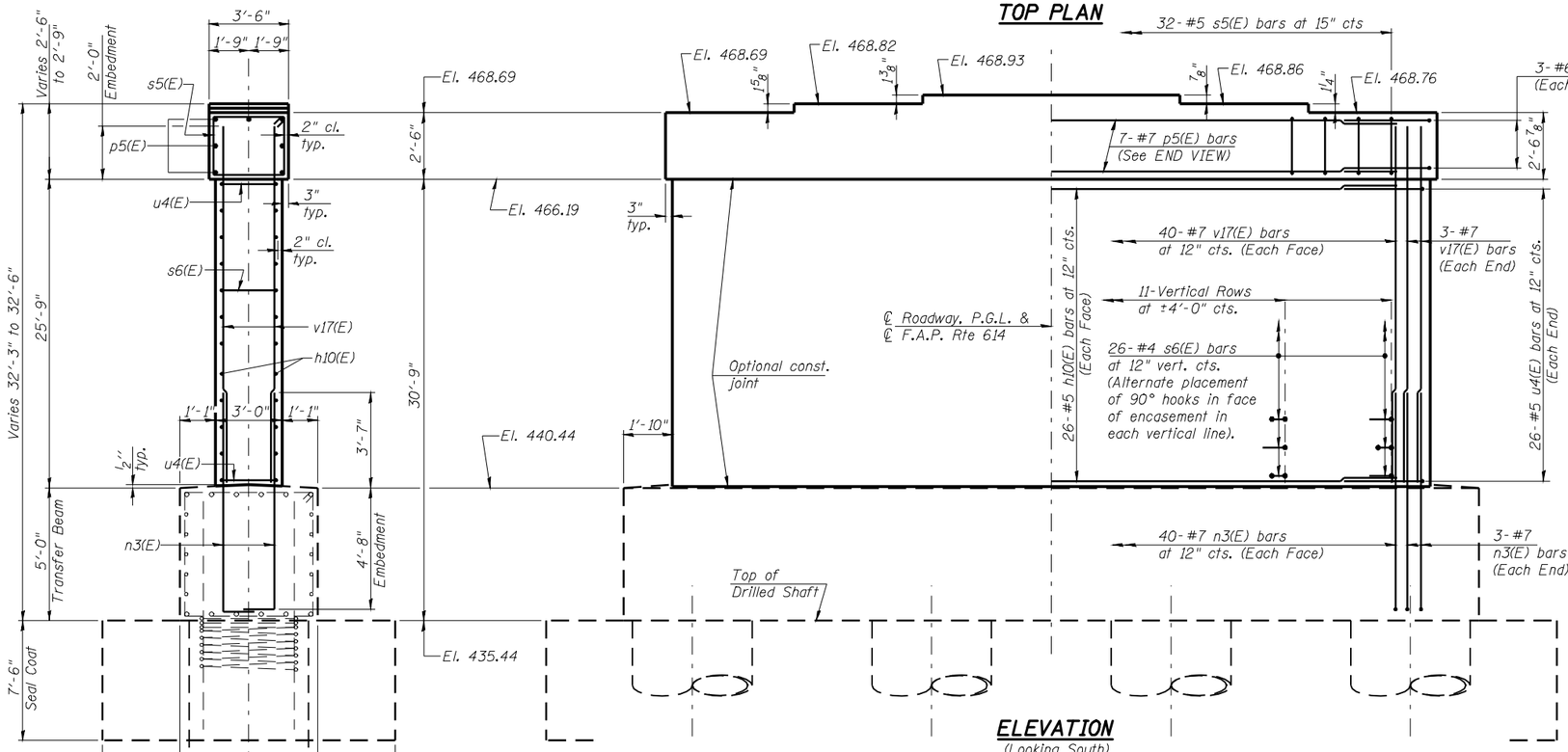


BAR p3(E)

** Length is height of spiral.

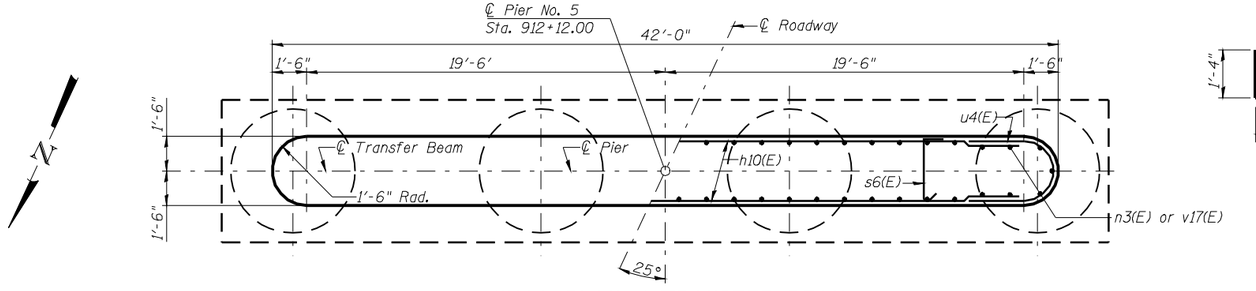
MINIMUM BAR LAP

#4 bar = 1'-8"
#5 bar = 2'-2"
#6 bar = 2'-7"
#7 bar = 3'-5"
#8 bar = 4'-6"
#9 bar = 5'-9"
#5 Spiral = 2'-6"



END VIEW

ELEVATION
(Looking South)



WALL PLAN at TRANSFER BEAM

PIER 5 - DETAILS (Sheet 2 of 2)
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026
DATE 03/27/09

LAYOUT	MMM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

Mon 31-2009 08:03:49 AM
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Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles See Sheet 71 of 86.

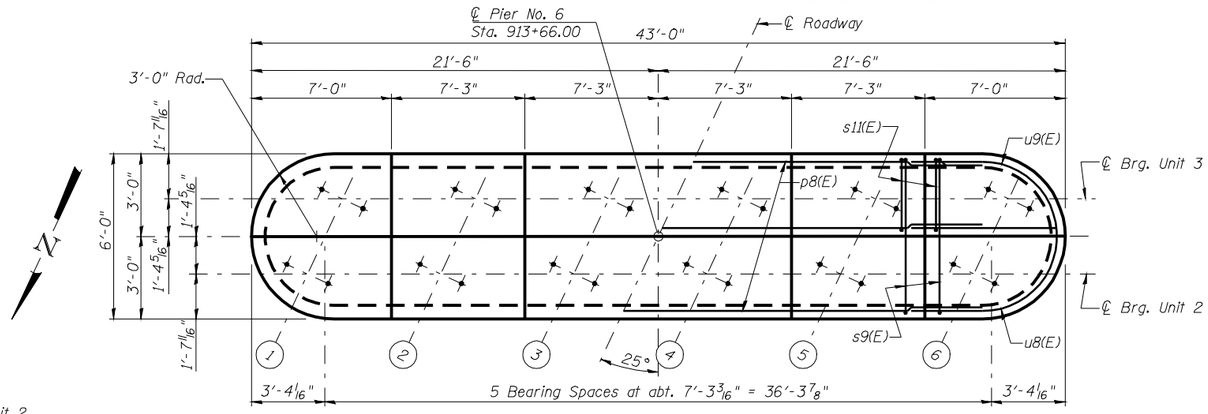
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP Rte 614	144(B-1)	Cass & Mason	351	200
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

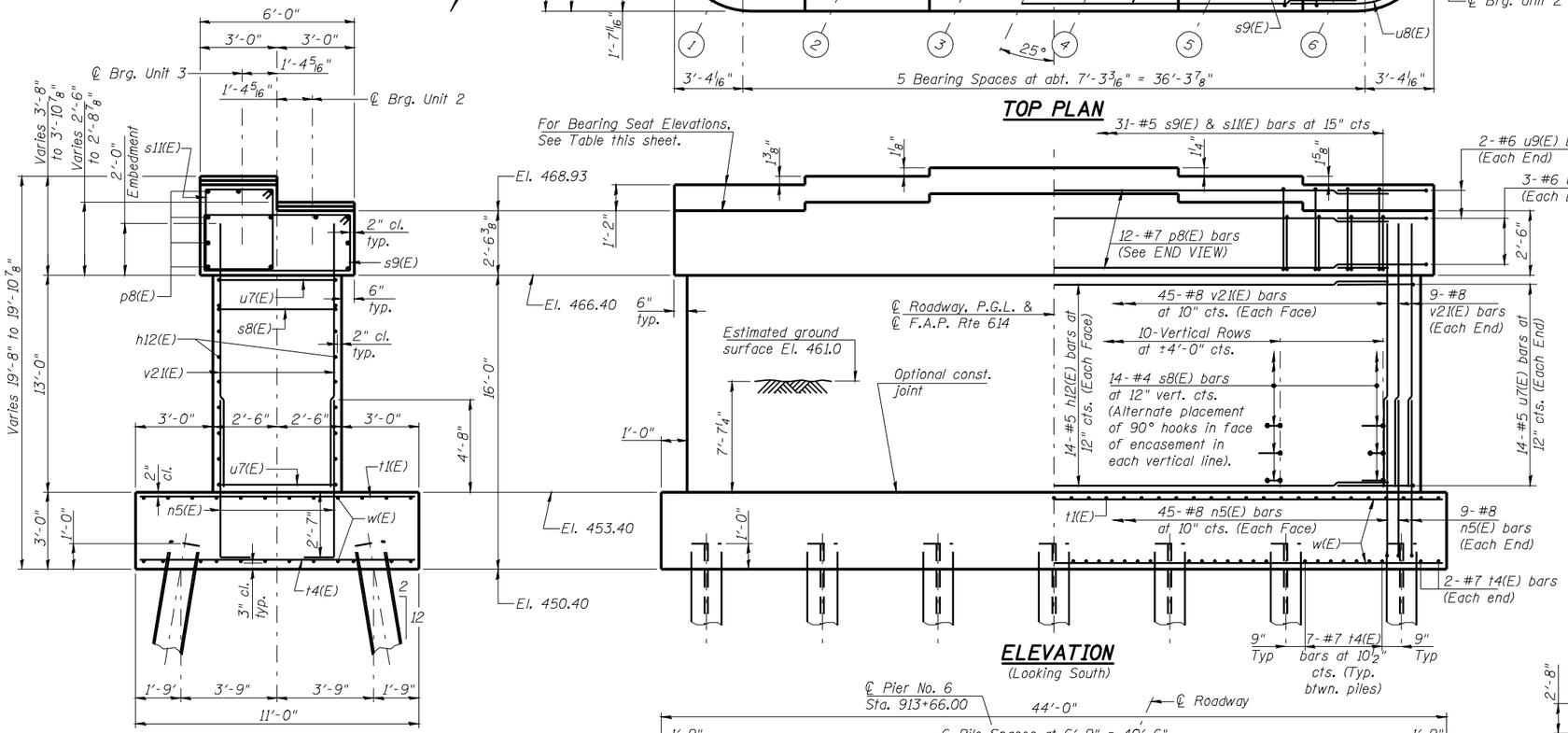
SHEET NO. 64
86 SHEETS
Contract #72A76

BEARING SEAT ELEVATIONS

Girder	Unit 2	Unit 3
1	468.93	470.09
2	469.04	470.20
3	469.13	470.29
4	469.13	470.29
5	469.03	470.19
6	468.90	470.06



TOP PLAN



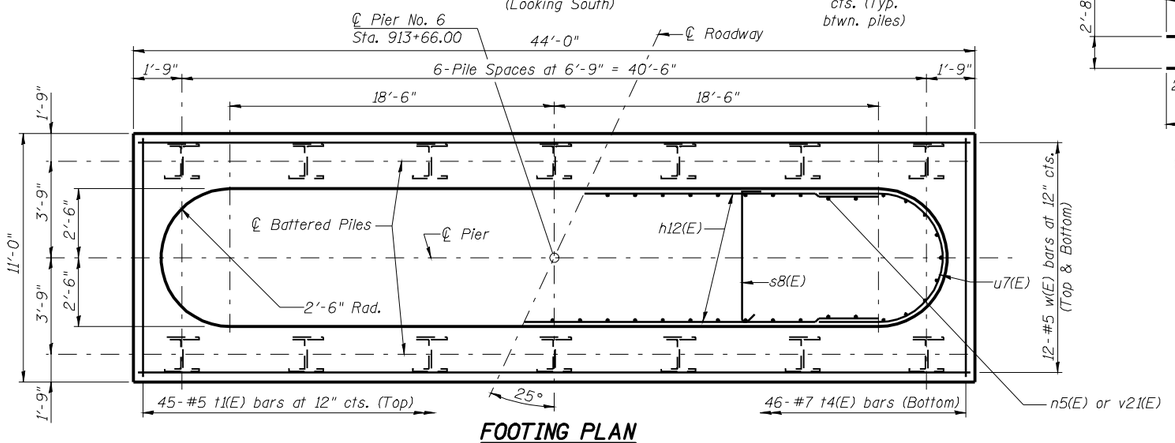
END VIEW
(Looking West)

ELEVATION
(Looking South)

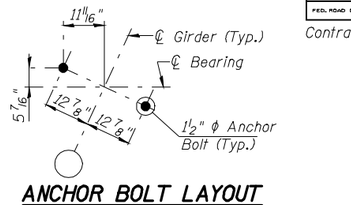
Note Well:
Pier 6 backfill shall be placed and compacted according to Articles 205.04, 205.05, and 205.06 of the Standard Specifications.

PILE DATA

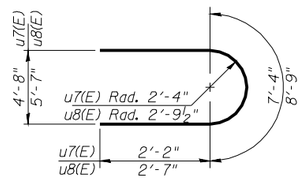
Type:	HP 14x89
Nominal Required Bearing:	705 kips
Factored Resistance Available:	350 kips
Est. Length:	80 Ft.
No. Production Piles:	13
No. Test Piles:	1



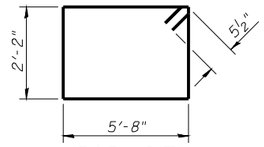
FOOTING PLAN



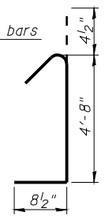
ANCHOR BOLT LAYOUT
(Typical all Girder Locations)



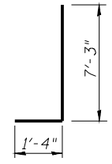
BARS u7(E) & u8(E)



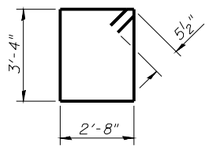
BAR s9(E)



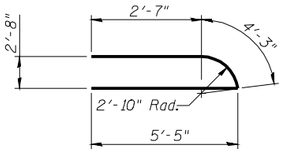
BAR s8(E)



BAR n5(E)



BAR s11(E)



BARS u9(E)

BILL OF MATERIAL - PIER 6

Bar	No.	Size	Length	Shape
h12(E)	28	#5	37'-0"	
n5(E)	108	#8	8'-7"	
p8(E)	12	#7	37'-0"	
s8(E)	140	#4	5'-9"	
s9(E)	31	#5	16'-7"	
s11(E)	31	#5	12'-11"	
t1(E)	45	#5	10'-6"	
t4(E)	46	#7	10'-6"	
u7(E)	28	#5	11'-8"	
u8(E)	6	#6	13'-11"	
u9(E)	4	#6	12'-3"	
v21(E)	108	#8	15'-0"	
w(E)	24	#5	43'-6"	

Structure Excavation	Cu. Yd.	283
Concrete Structures	Cu. Yd.	182.3
Reinforcement Bars, Epoxy Coated	Pound	13390
Furnishing Steel Piles, HP 14x89	Foot	1040
Driving Piles	Foot	1040
Test Pile, HP 14x89	Each	1
Pile Shoes	Each	14
Concrete Sealer	Sq. Ft.	601

MINIMUM BAR LAP

#4 bar = 1'-8"
#5 bar = 2'-2"
#6 bar = 2'-7"
#7 bar = 3'-5"
#8 bar = 4'-6"
#9 bar = 5'-9"

PIER 6 - DETAILS
F.A.P. 614 (IL 78) OVER SANGAMON RIVER
PUBLIC WATERS
CASS & MASON COUNTIES
SECTION 144 (B-1)
STA. 913+26.00
STRUCTURE NUMBER 009-0510
PROFESSIONAL DESIGN FIRM LICENSE #184-001084

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HANSON
Hanson Professional Services Inc.

JOB NO. 07S2026
DATE 03/27/09

LAYOUT	MNM	09/12/08
DRAWN	Rod	09/30/08
REVIEWED	TEH	09/30/08

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