

S.B.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	**	SANGAMON	261	101
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
• 7968 (OLD US 36) & 7978 (CAMP BUTLER RD.)				
** 3R (BR, BR-1, BR-2), 19RS-8				

**CONTROLS - EROSION CONTROLS AND SEDIMENT CONTROLS**

Description of Stabilization Practices at the Beginning of Construction:

1. The area between the existing and proposed right-of-way/temporary easement boundaries and limits of the project will be improved and managed for the purposes of controlling erosion within the area, reducing water flow by temporary diversion and minimizing siltation into the construction zone, and establishing vegetative cover which will become permanent vegetation and act as an erosion barrier. Work at the beginning of construction will consist of the following:
  - (a) Areas of existing vegetation (woods and grasslands) outside the proposed construction slope limits shall be identified for preserving and shall be protected from mowing, brush cutting, tree removal and other activities which would be detrimental to their maintenance and development.
  - (b) Dead, diseased, or unsuitable vegetation within the site shall be removed as directed by the Engineer, along with required tree removal.
  - (c) As soon as reasonable access is available (such as trees cleared) to all locations where water drains away from the project, sediment basins, riprap ditch checks, temporary ditch checks, and/or erosion control fence shall be installed as called out in this plan and directed by the Engineer.
  - (d) Bare and sparsely vegetated ground in highly erodible areas as determined by the Engineer shall be temporarily seeded at the beginning of construction where no construction activities are immediately expected as stated in the special provision "Temporary Erosion Control Seeding".
  - (e) Immediately after tree removal is completed in certain areas which are highly erodible areas as determined by the Engineer, the areas shall be temporarily seeded where no construction activities are immediately expected as stated in the special provision "Temporary Erosion Control Seeding".
  - (f) At locations where a significant amount of water drains into the construction zone from outside areas (adjacent landowners), erosion control fence, temporary ditch checks, or riprap ditch checks will be utilized to locally divert water, reduce flow rates, and collect outside siltation inside the right-of-way line. Erosion control items will not be allowed to be installed to cause flooding to upstream private property which could cause crop damages or other undesirable conditions.
2. Establishment of these temporary erosion control measures will have additional benefits to the project. Desirable grass seed will become established in these areas and will spread seeds onto the construction site until permanent seeding/mowing and overseeding can be complete.
3. A third benefit of these filter areas is that they will begin to provide a screen and buffer. They will help protect the construction site from winds and excess sun and mitigate construction noise and dust.

Description of Stabilization Practices During Construction:

1. During roadway construction, areas outside the construction slope limits as outlined previous herein shall be protected from damaging effects of construction. The Contractor shall not use this area for staging (except as designated on the plans or directed by the Engineer), parking of vehicles or construction equipment, storage of materials, or other construction related activities.
  - (a) Within the construction zone, critical areas which have high flows of water as determined by the Engineer shall remain undisturbed until full scale construction is underway to prevent unnecessary soil erosion.
  - (b) Top soil and earth stockpiles shall be temporarily seeded if they are to remain unused for more than fourteen days.
  - (c) As the Contractor constructs a portion of roadway in a fill section, he/she shall follow the following steps as directed by the Engineer:
    - i. Place temporary erosion control systems at locations where water leaves and enters the construction zone
    - ii. Temporary seed highly erodible areas outside the construction slope limits
    - iii. Construct roadside ditches and provide temporary erosion control systems
    - iv. Temporary divert water around proposed culvert locations
    - v. Build necessary embankment at culvert locations and then excavate and place culvert
    - vi. Continue building up the embankment to the proposed grade while at the same time place permanent erosion control such as riprap ditch lining and conduct final shaping to the slopes
  - (d) The Contractor shall immediately follow major earth moving operations with final grading equipment. After the major earth spread operation has moved to a new location, final grading shall be completed within fourteen days. If grading is not completed within fourteen days, all major earth moving operations will be stopped, as directed by the Engineer, until disturbed areas are final graded and seeded.
  - (e) Excavated areas and embankments shall be permanently seeded when final graded. If not, they shall be temporarily seeded as stated in the special provision "Temporary Erosion Control Seeding".

(f) Construction equipment shall be stored and fueled only at designated locations. All necessary measures shall be taken to contain any fuel or pollution run-off in compliance with EPA water quality regulations. Leaking equipment or supplies shall be immediately repaired or removed from the site.

(g) The Resident Engineer shall inspect the project daily during activities and weekly or after large rains during the winter shutdown period. The project shall additionally be inspected by the Construction Field Engineer on a bi-weekly basis to determine that erosion control efforts are in place and effective and if other control work is necessary.

(h) Sediment collected during construction by the various temporary erosion control systems shall be disposed of on the site on a regular basis as directed by the Engineer. The cost of this maintenance will be paid for in accordance with Article 109.04 of the Standard Specifications.

(i) The temporary erosion control systems shall be removed as directed by the Engineer after use is no longer needed or no longer functioning. The costs of this removal shall be included in the unit bid price for the temporary erosion control system. No additional compensation will be allowed.

Description of Structural Practices After Final Grading:

1. Temporary erosion control systems shall be left in place with proper maintenance until permanent erosion control is in place and working properly and all proposed turf areas seeded and established with a proper stand.
2. Once permanent erosion control systems as proposed in the plans are functional and established, temporary items shall be removed, cleaned up, and disturbed turf reseeded. Temporary riprap ditch checks will be allowed to remain in place where approved by the Engineer.

Maintenance after Construction:

1. Construction is complete after acceptance is received at the final inspection.
2. Areas will be inspected on a regular basis by IDOT District 6 Bureau of Operations.
3. Maintenance crews will perform regular mowings to aid in keeping weeds down and establishing a good roadside seed stand.
4. Maintenance crews will also aid in any ditch lining maintenance or in any drainage problems.
5. All maintenance will be conducted at times when weather conditions will not cause site damage.

DOCUMENTATION

1. A report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, date(s) of the inspection, major observations relating to the implementation of this storm water pollution prevention plan, and actions taken in accordance with Section 4.b. shall be made and retained as part of the plan for at least three years after the date of inspection. The report shall be signed in accordance with part VI.G of the general permit.
2. If any violation of the provisions of this plan is identified during the conduct of the construction work covered by this plan, the Resident Engineer or Resident Technician shall complete and file an "Incident of Noncompliance (ION)" report for the identified violation. The Resident Engineer or Resident Technician shall use forms provided by the Illinois Environmental Protection Agency and shall include specific information on the noncompliance, actions which were taken to prevent any further causes of noncompliance, and a statement detailing any environmental impact which may have resulted from the noncompliance. All reports of noncompliance shall be signed by a responsible authority in accordance with Part VI.G. of the general permit. The report of noncompliance shall be mailed to the following address:

Illinois Environmental Protection Agency  
 Division of Water Pollution Control  
 2200 Churchill Road, P.O. Box 19276  
 Springfield, IL 62794-9276  
 Attn: Compliance Assurance Section

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**STORM WATER POLLUTION PREVENTION PLAN**  
 F.A.U. Route 7968 (OLD US 36)  
 F.A.U. Route 7978 (CAMP BUTLER RD.)  
 Section 3R(BR, BR-1, BR-2), 19RS-8  
 SANGAMON COUNTY

SCALE: VERT.      DRAWN BY: CADD  
 HORIZ.              CHECKED BY: RSC  
 DATE: JULY 1, 2005

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 USER NAME = cabrera

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	**	SANGAMON	261	102
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
* 7968 (OLD US 36) & 7978 (CAMP BUTLER RD.)				
** 3R (BR, BR-1, BR-2), 19RS-8				

CONTRACTOR CERTIFICATION STATEMENT

This certification statement is part of the Storm Water Pollution Plan for the project described below in accordance with NPDES Permit No. ILR10 \_\_\_\_\_, issued by the Illinois Environmental Protection Agency on \_\_\_\_\_.

Route: F. A. U. Route 7978      Marked: OLD US 36  
F. A. U. Route 7968      CAMP BUTLER RD.

Section: 3R(BR, BR-1, BR-2), 19RS-8      Project No.: N/A

County: SANGAMON      Contract No.: 72449

I certify under penalty of law that I understand the terms of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

Signature \_\_\_\_\_ Date \_\_\_\_\_

Title \_\_\_\_\_

Name of Firm \_\_\_\_\_

Street Address \_\_\_\_\_

City, State, Zip \_\_\_\_\_

Phone Number \_\_\_\_\_

Note: The above boxed in area shall be filled out by the Contractor after the award of the contract to obtain the required NPDES Permit from IEPA. This is a requirement for this contract.

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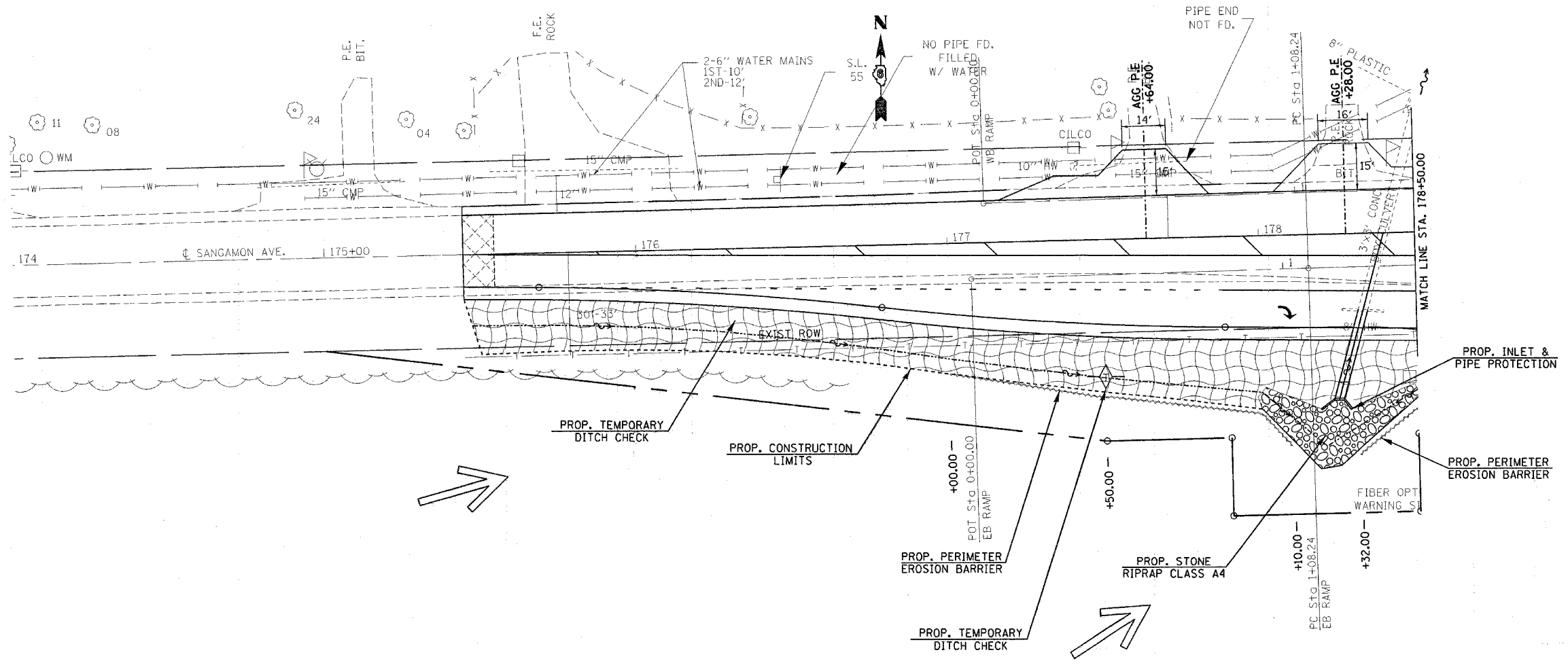
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**STORM WATER POLLUTION PREVENTION PLAN**  
 F.A.U. Route 7968 (OLD US 36)  
 F.A.U. Route 7978 (CAMP BUTLER RD.)  
 Section 3R(BR, BR-1, BR-2), 19RS-8  
 SANGAMON COUNTY

SCALE: VERT. \_\_\_\_\_  
 HORIZ. \_\_\_\_\_  
 DATE: JULY 1, 2005

DRAWN BY: CADD  
 CHECKED BY: RSC

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	**	SANGAMON	261	103
STA. 174+00.00 TO STA. 178+50.00				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				
* 7968 (OLD US 36) & 7978 (CAMP BUTLER RD.)				
** 3R (BR, BR-1, BR-2), 19RS-8				



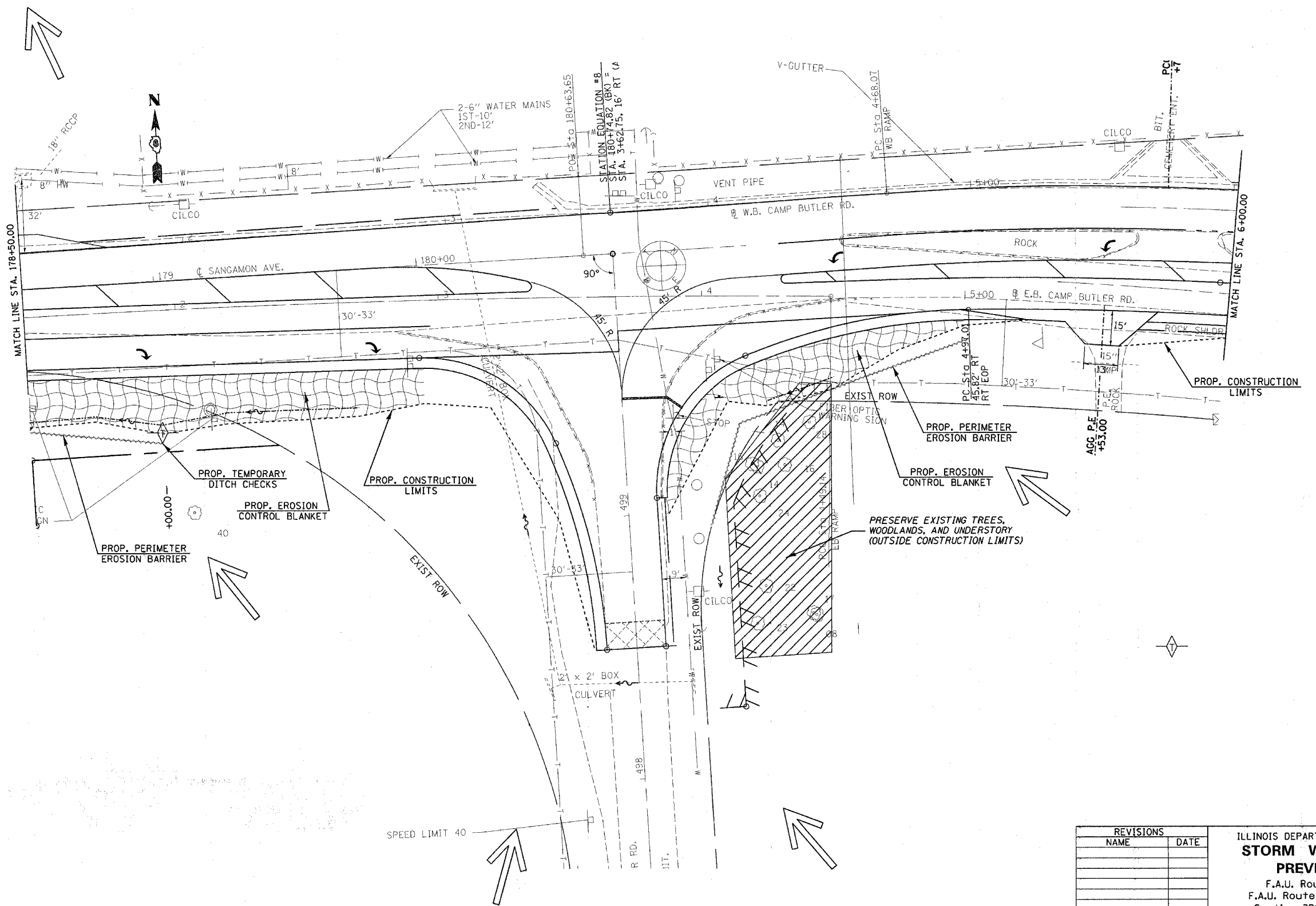
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**STORM WATER POLLUTION PREVENTION PLAN**  
 F.A.U. Route 7968 (OLD US 36)  
 F.A.U. Route 7978 (CAMP BUTLER RD.)  
 Section 3R(BR, BR-1, BR-2), 19RS-8  
 SANGAMON COUNTY

SCALE: VERT.     DRAWN BY: JWC  
 HORIZ.            CHECKED BY: RSC  
 DATE: JULY 1, 2005

**(CAMP BUTLER RD.)**

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	••	SANGAMON	261	104
STA. 178+50.00		TO STA. 6+00.00		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
• 7968 (OLD US 36) & 7978 (CAMP BUTLER RD.)				
•• 3R (BR, BR-1, BR-2), 19RS-8				



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Chain E001

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**STORM WATER POLLUTION PREVENTION PLAN**  
 F.A.U. Route 7968 (OLD US 36)  
 F.A.U. Route 7978 (CAMP BUTLER RD.)  
 Section 3R(BR, BR-1, BR-2), 19RS-8  
 SANGAMON COUNTY

SCALE: VERT.      DRAWN BY: CADD  
 HORIZ.            CHECKED BY: RSC  
 DATE: JULY 1, 2005

**(CAMP BUTLER RD)**

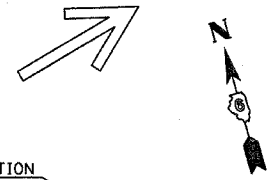
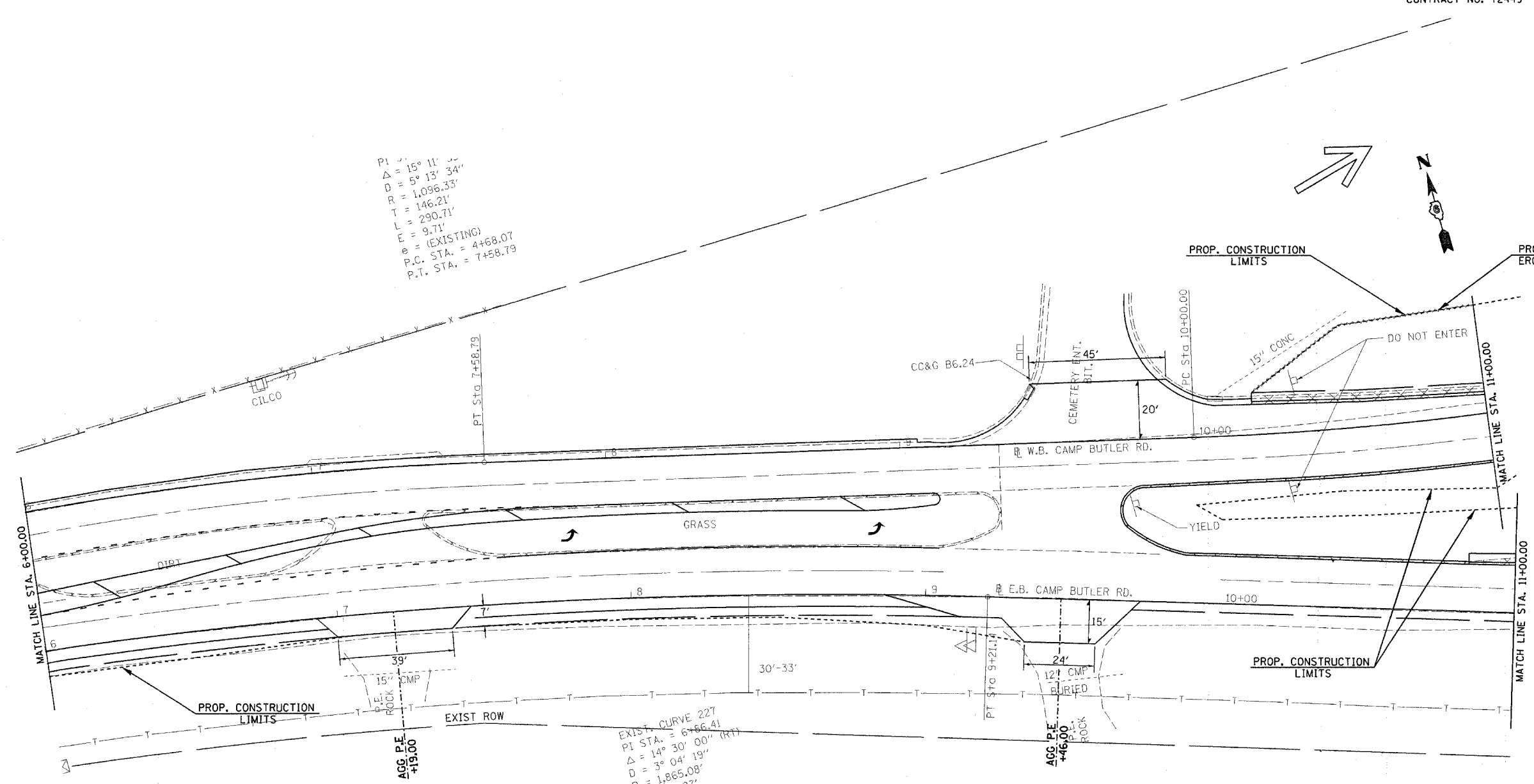
CONTRACT NO. 72449

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	**	SANGAMON	261	105

STA. 6+00.00 TO STA. 11+00.00  
 FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT  
 \* 7968 (OLD US 36) & 7978 (CAMP BUTLER RD.)  
 \*\* 3R (BR, BR-1, BR-2), 19RS-8

PI STA. = 7+58.79  
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 $D = 5^\circ 13' 34''$   
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 $T = 146.21'$   
 $L = 290.71'$   
 $E = 9.71'$   
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 P.T. STA. = 7+58.79

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 P.T. STA. = 9+21.14



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**STORM WATER POLLUTION PREVENTION PLAN**  
 F.A.U. Route 7968 (OLD US 36)  
 F.A.U. Route 7978 (CAMP BUTLER RD.)  
 Section 3R(BR, BR-1, BR-2), 19RS-8  
 SANGAMON COUNTY  
 SCALE: VERT. \_\_\_\_\_  
 HORIZ. \_\_\_\_\_  
 DATE: SEPTEMBER 27, 2005  
 DRAWN BY: JWC  
 CHECKED BY: RSC

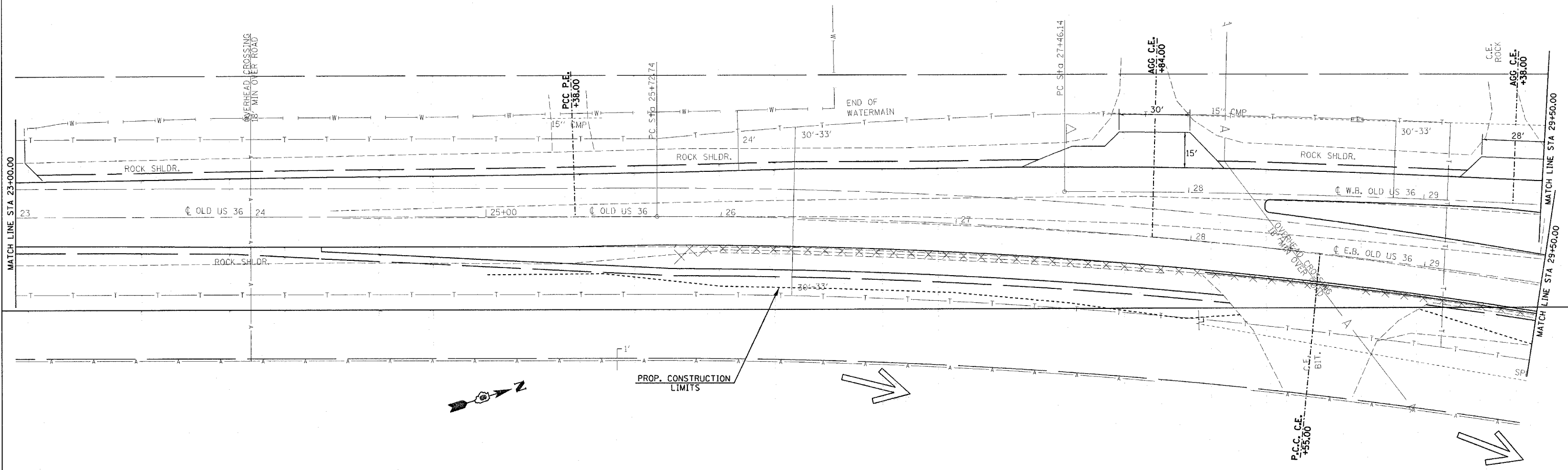
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**(CAMP BUTLER RD)**

CONTRACT NO. 72449

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	••	SANGAMON	261	106
STA. 23+00.00		TO STA. 29+50.00		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
• 7978 (OLD US 36) & 7968 (CAMP BUTLER RD)				
•• 3R1BR, BR-1, BR-2, 19RS-8				



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REVISIONS	
NAME	DATE

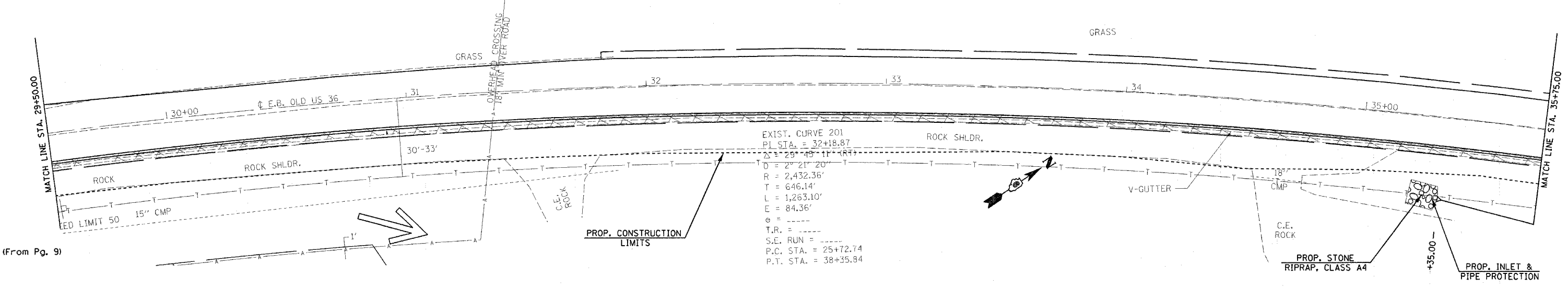
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**STORM WATER POLLUTION PREVENTION PLAN**  
 F.A.U. Route 7968 (OLD US 36)  
 F.A.U. Route 7978 (CAMP BUTLER RD.)  
 Section 3R1BR, BR-1, BR-2, 19RS-8  
 SANGAMON COUNTY

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 HORIZ.      CHECKED BY: RSC  
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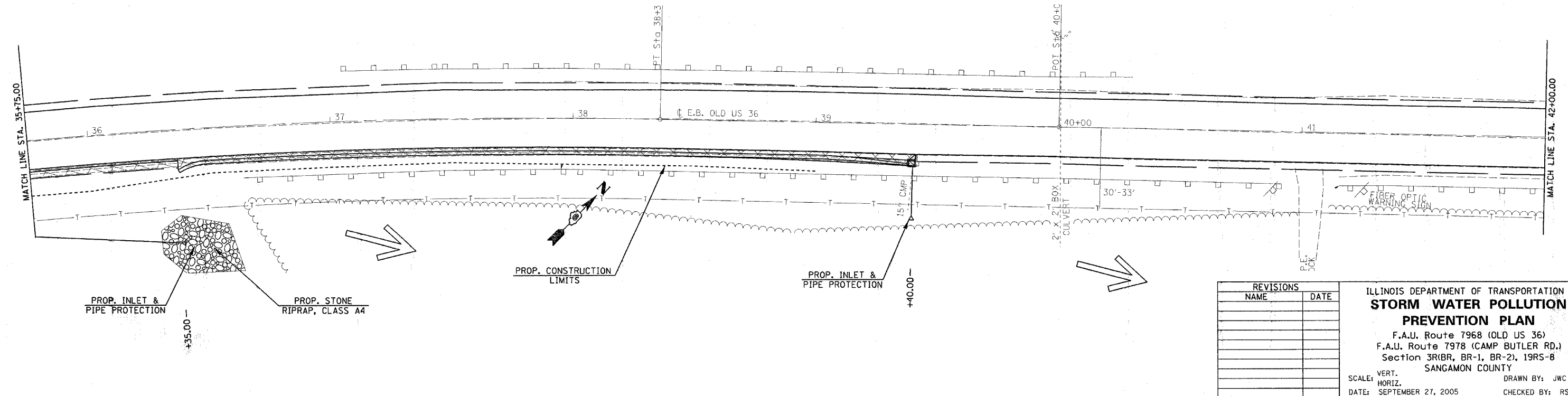
**(E.B. & W.B. OLD US 36)**

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
• 7978 (OLD US 36) & 7968 (CAMP BUTLER RD)		•• 3R1BR, BR-1, BR-2, 19RS-8		

(#14)



(From Pg. 9)



REVISIONS	
NAME	DATE

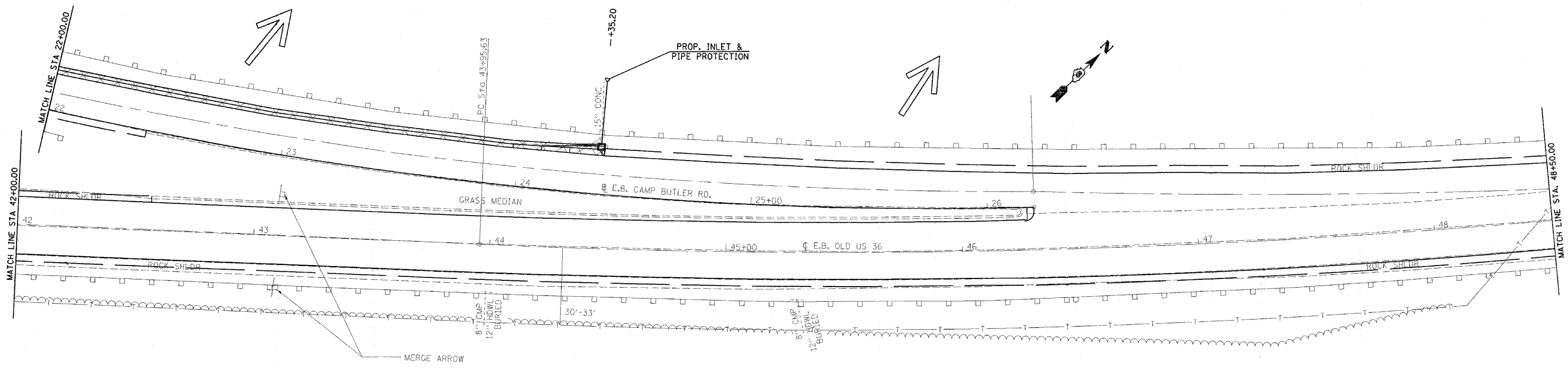
ILLINOIS DEPARTMENT OF TRANSPORTATION  
**STORM WATER POLLUTION PREVENTION PLAN**  
 F.A.U. Route 7968 (OLD US 36)  
 F.A.U. Route 7978 (CAMP BUTLER RD.)  
 Section 3R1BR, BR-1, BR-2, 19RS-8  
 SANGAMON COUNTY  
 VERT. SCALE: DRAWN BY: JWC  
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 DATE: SEPTEMBER 27, 2005

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CONTRACT NO. 72449

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	**	SANGAMON	261	108
STA. ***		TO STA. ***		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
* 7978 (OLD US 36) & 7968 (CAMP BUTLER RD.)				
** 3R1BR, BR-1, BR-2, 19RS-8				
*** E.B. OLD US 36 - STA 42+00.00 TO 55+00.00				
*** E.B. CAMP BUTLER RD. - STA 22+00.00 TO 26+19.40				



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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**STORM WATER POLLUTION PREVENTION PLAN**  
 F.A.U. Route 7968 (OLD US 36)  
 F.A.U. Route 7978 (CAMP BUTLER RD.)  
 Section 3R1BR, BR-1, BR-2, 19RS-8  
 SANGAMON COUNTY

SCALE: VERT.      DRAWN BY: JWC  
 HORIZ.              CHECKED BY: RSC  
 DATE: SEPTEMBER 27, 2005

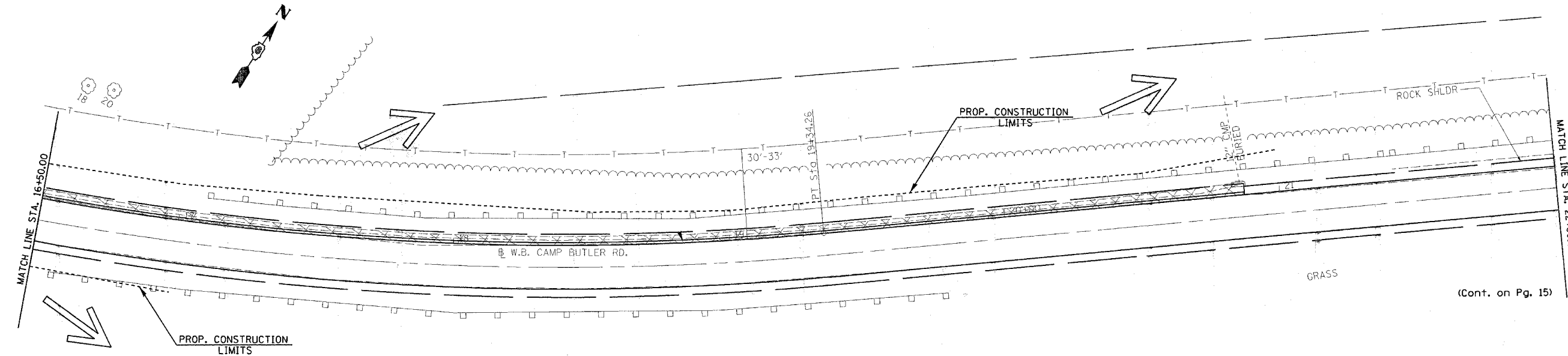
**(E.B. OLD US 36 & E.B. CAMP BUTLER RD.)**

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CONTRACT NO. 72449

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	••	SANGAMON	261	109
STA. 16+50.00 TO STA. 22+00.00				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				
• 7978 (OLD US 36) & 7968 (CAMP BUTLER RD.)				
•• 3R1BR, BR-1, BR-2, 19RS-8				



(Cont. on Pg. 15)

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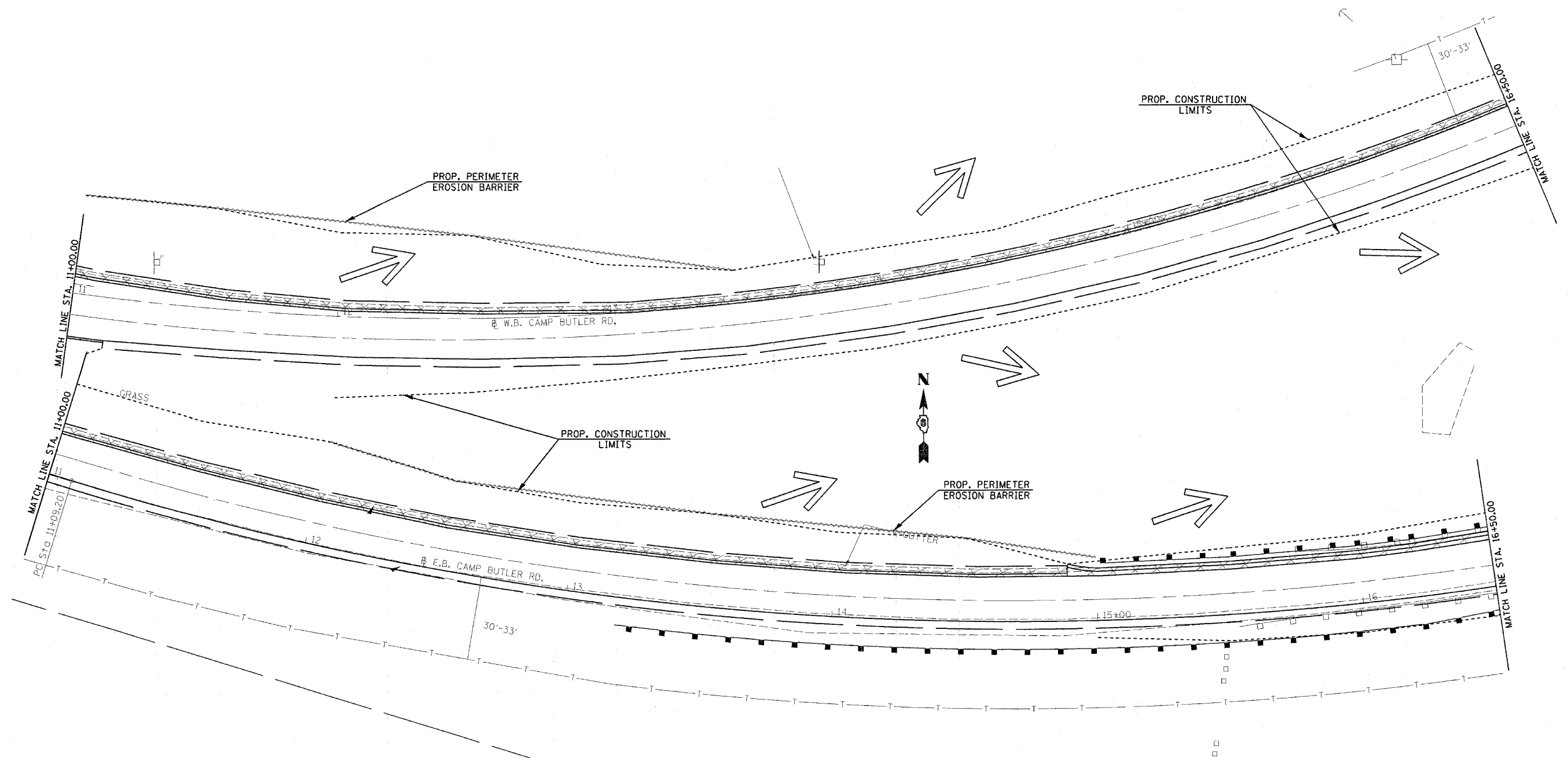
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**STORM WATER POLLUTION PREVENTION PLAN**  
 F.A.U. Route 7968 (OLD US 36)  
 F.A.U. Route 7978 (CAMP BUTLER RD.)  
 Section 3R1BR, BR-1, BR-2, 19RS-8  
 SANGAMON COUNTY

SCALE: VERT.      DRAWN BY: JWC  
 HORIZ.      CHECKED BY: RSC  
 DATE: AUGUST 9, 2005

**(W.B. CAMP BUTLER RD.)**

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	••	SANGAMON	261	110
STA. 11+00.00		TO STA. 16+50.00		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
• 7978 (OLD US 36) & 7968 (CAMP BUTLER RD.)				
•• 3R(BR, BR-1, BR-2), 19RS-8				



PLOT DATE = 11/2/2005  
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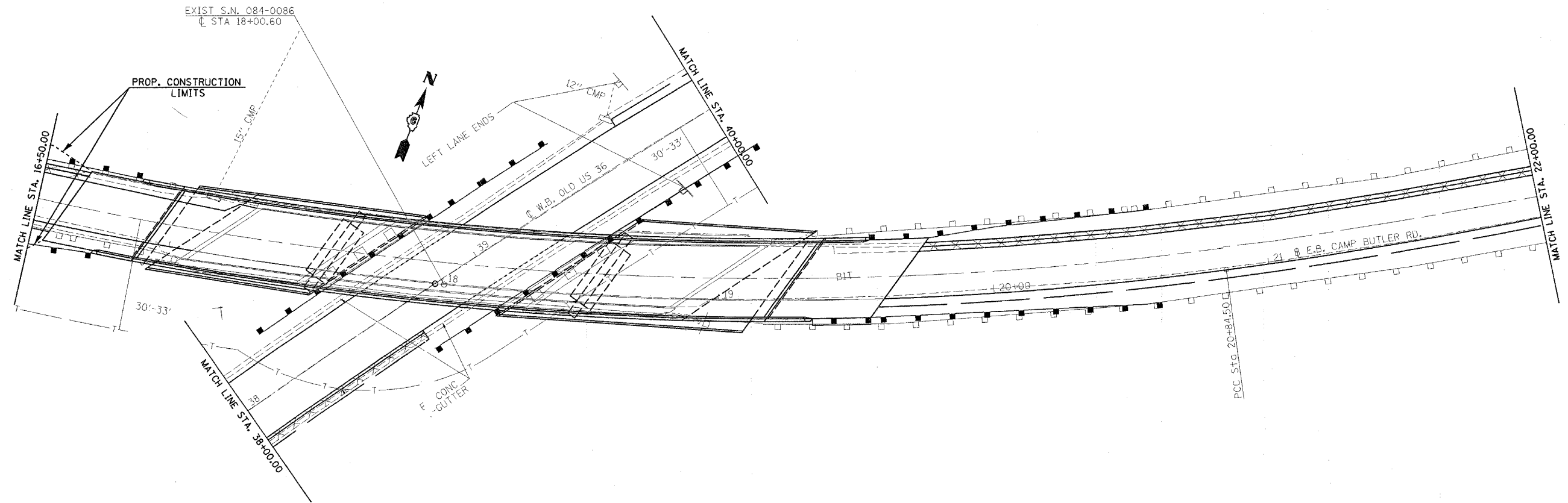
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**STORM WATER POLLUTION PREVENTION PLAN**  
F.A.U. Route 7968 (OLD US 36)  
F.A.U. Route 7978 (CAMP BUTLER RD.)  
Section 3R(BR, BR-1, BR-2), 19RS-8  
SANGAMON COUNTY  
SCALE: VERT. \_\_\_\_\_ DRAWN BY: JWC  
HORIZ. \_\_\_\_\_ CHECKED BY: RSC  
DATE: SEPTEMBER 27, 2005

**(E.B. & W.B. CAMP BUTLER RD)**

CONTRACT NO. 72449

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
.	..	SANGAMON	261	111
STA. ...		TO STA. ...		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
• 7978 (OLD US 36) & 7968 (CAMP BUTLER RD.)				
•• 3R(BR, BR-1, BR-2), 19RS-8				
••• W.B. OLD US 36 - STA 34+00.00 TO STA 40+00.00				
••• E.B. CAMP BUTLER - STA 16+50.00 TO STA 22+00.00				



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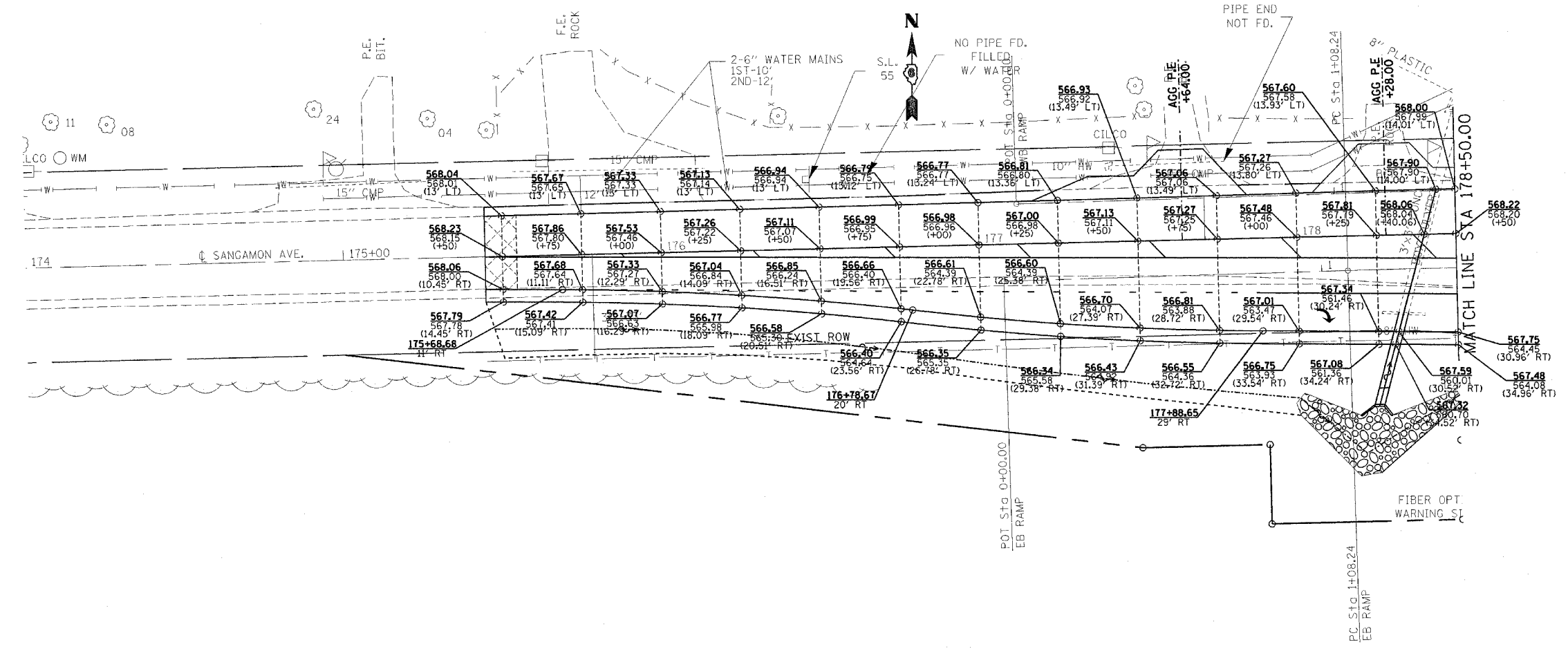
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**STORM WATER POLLUTION PREVENTION PLAN**  
 F.A.U. Route 7968 (OLD US 36)  
 F.A.U. Route 7978 (CAMP BUTLER RD.)  
 Section 3R(BR, BR-1, BR-2), 19RS-8  
 SANGAMON COUNTY

SCALE: VERT.                          DRAWN BY: JWC  
 HORIZ.    CHECKED BY: RSC  
 DATE: SEPTEMBER 27, 2005

**(E.B. & W.B. CAMP BUTLER RD)**

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	**	SANGAMON	261	112
STA. 174+00.00 TO STA. 178+50.00				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				
*7978 (US 36) & 7968 (CAMP BUTLER RD)				
**3R(BR, BR-1, BR-2), 19RS-8				



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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PAVEMENT ELEVATIONS**  
 F.A.U. Route 7978 (US 36) &  
 F.A.U. Route 7968 (CAMP BUTLER RD)  
 Section: 3R(BR, BR-1, BR-2), 19RS-8  
 SANGAMON COUNTY  
 SCALE: VERT. DRAWN BY: JWC  
 HORIZ. CHECKED BY: RSC  
 DATE: MAY 26, 2005

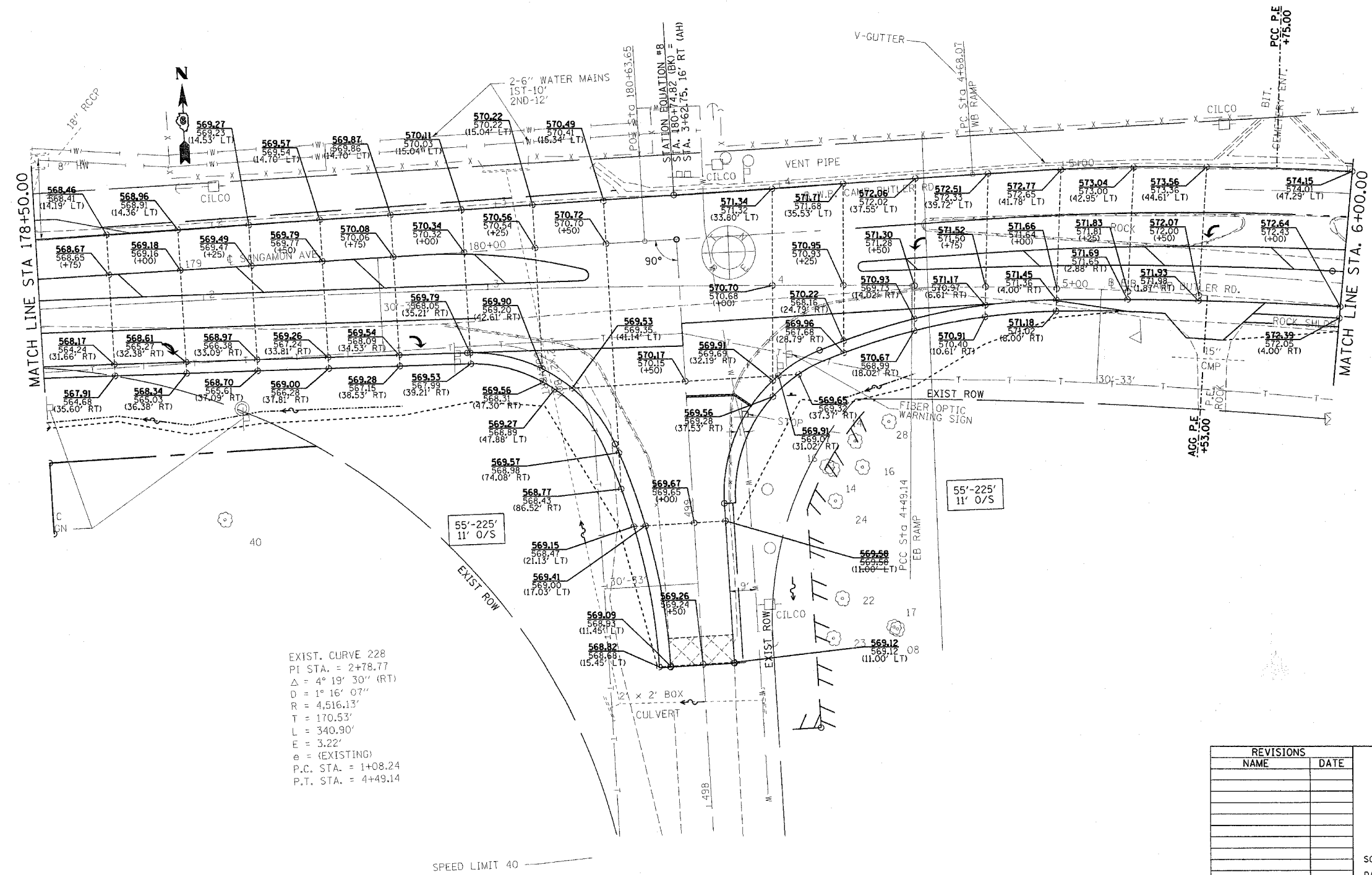
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		SANGAMON	261	113
STA. 178+50.00		TO STA. 6+00.00		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
*7978 (US 36) & 7968 (CAMP BUTLER RD)				
**3R(BR, BR-1, BR-2), 19RS-8				

EXIST. CURVE 228  
 PI STA. = 2+78.77  
 $\Delta = 4^{\circ} 19' 30''$  (RT)  
 $D = 1^{\circ} 16' 07''$   
 $R = 4,516.13'$   
 $T = 170.53'$   
 $L = 340.90'$   
 $E = 3.22'$   
 $e =$   
 $T.R. =$   
 $S.E. RUN =$   
 $P.C. STA. = 1+08.24$   
 $P.T. STA. = 4+49.14$

EXIST. CURVE 228  
 PI STA. = 2+78.77  
 $\Delta = 4^{\circ} 19' 30''$  (RT)  
 $D = 1^{\circ} 16' 07''$   
 $R = 4,516.13'$   
 $T = 170.53'$   
 $L = 340.90'$   
 $E = 3.22'$   
 $e =$   
 $T.R. =$   
 $S.E. RUN =$   
 $P.C. STA. = 1+08.24$   
 $P.T. STA. = 4+49.14$

EXIST. CURVE 221  
 PI STA. = 6+14.29  
 $\Delta = 15^{\circ} 11' 35''$  (RT)  
 $D = 5^{\circ} 13' 34''$   
 $R = 1,096.33'$   
 $T = 146.21'$   
 $L = 290.71'$   
 $E = 9.71'$   
 $e =$   
 $T.R. =$   
 $S.E. RUN =$   
 $P.C. STA. = 4+68.07$   
 $P.T. STA. = 7+58.79$

EXIST. CURVE 221  
 PI STA. = 6+14.29  
 $\Delta = 15^{\circ} 11' 35''$  (RT)  
 $D = 5^{\circ} 13' 34''$   
 $R = 1,096.33'$   
 $T = 146.21'$   
 $L = 290.71'$   
 $E = 9.71'$   
 $e =$   
 $T.R. =$   
 $S.E. RUN =$   
 $P.C. STA. = 4+68.07$   
 $P.T. STA. = 7+58.79$



EXIST. CURVE 228  
 PI STA. = 2+78.77  
 $\Delta = 4^{\circ} 19' 30''$  (RT)  
 $D = 1^{\circ} 16' 07''$   
 $R = 4,516.13'$   
 $T = 170.53'$   
 $L = 340.90'$   
 $E = 3.22'$   
 $e =$  (EXISTING)  
 $P.C. STA. = 1+08.24$   
 $P.T. STA. = 4+49.14$

REVISIONS	
NAME	DATE

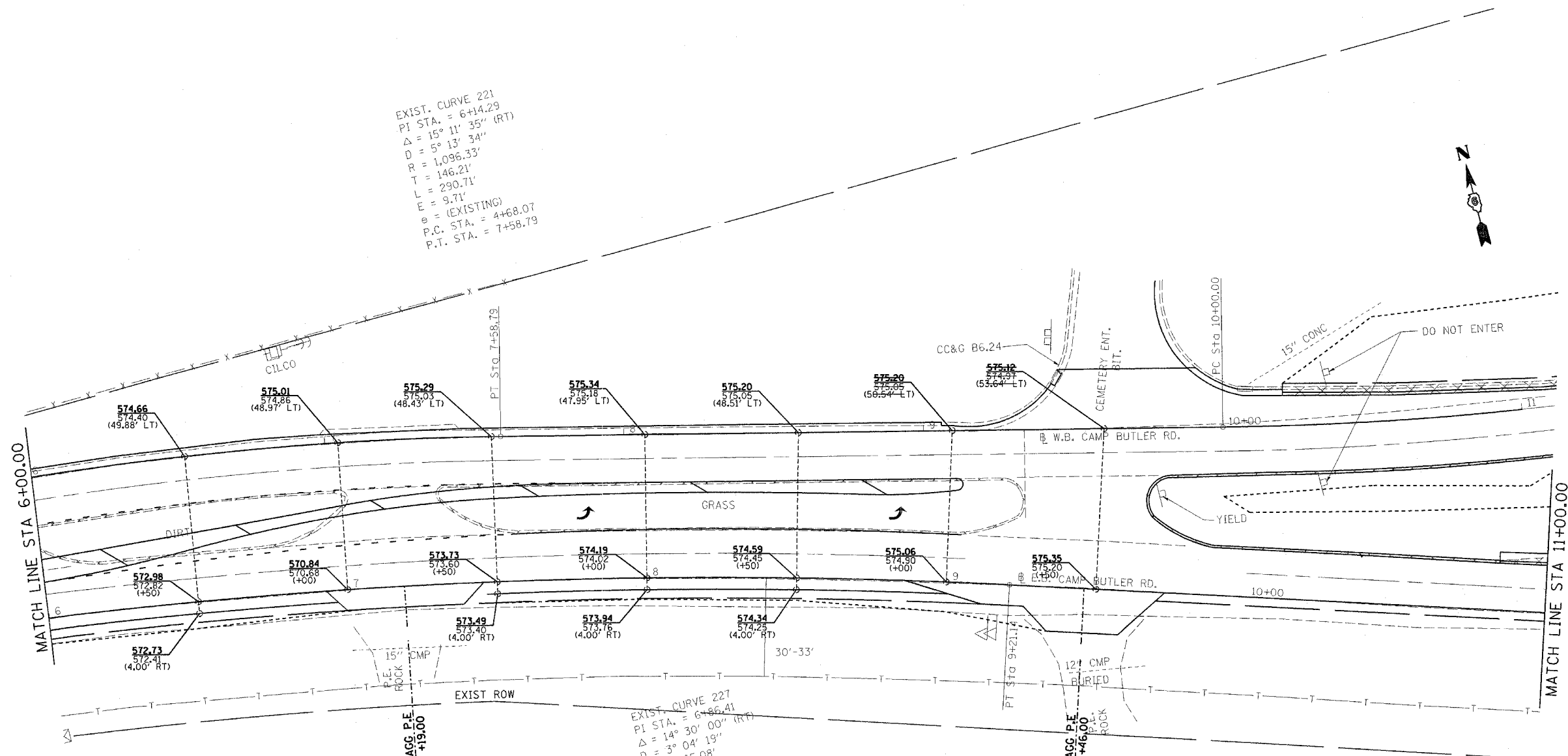
ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PAVEMENT ELEVATIONS**  
 F.A.U. Route 7978 (US 36) &  
 F.A.U. Route 7968 (CAMP BUTLER RD)  
 Section: 3R(BR, BR-1, BR-2), 19RS-8  
 SANGAMON COUNTY  
 SCALE: VERT. \_\_\_\_\_  
 HORIZ. \_\_\_\_\_  
 DATE: MAY 26, 2005  
 DRAWN BY: JWC  
 CHECKED BY: RSC

PLOT DATE = 11/3/2005  
 FILE NAME = c:\projects\d652102\shp\pavementelevation5.dgn  
 PLOT SCALE = 20.0000 / IN.  
 USER NAME = cabrera

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	**	SANGAMON	261	114
STA. 6+00.00		TO STA. 11+00.00		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
		*7978 (US 36) & 7968 (CAMP BUTLER RD)		
		**3R(BR, BR-1, BR-2), 19RS-8		

EXIST. CURVE 221  
 PI STA. = 6+14.29  
 $\Delta = 15^\circ 11' 35''$  (RT)  
 $D = 5^\circ 13' 34''$   
 $R = 1,096.33'$   
 $T = 146.21'$   
 $L = 290.71'$   
 $E = 9.71'$   
 $e =$  (EXISTING)  
 P.C. STA. = 4+68.07  
 P.T. STA. = 7+58.79

EXIST. CURVE 227  
 PI STA. = 6+86.41  
 $\Delta = 14^\circ 30' 00''$  (RT)  
 $D = 3^\circ 04' 19''$   
 $R = 1,865.08'$   
 $T = 237.27'$   
 $L = 472.00'$   
 $E = 15.03'$   
 $e =$  (EXISTING)  
 P.C. STA. = 4+49.14  
 P.T. STA. = 9+21.14



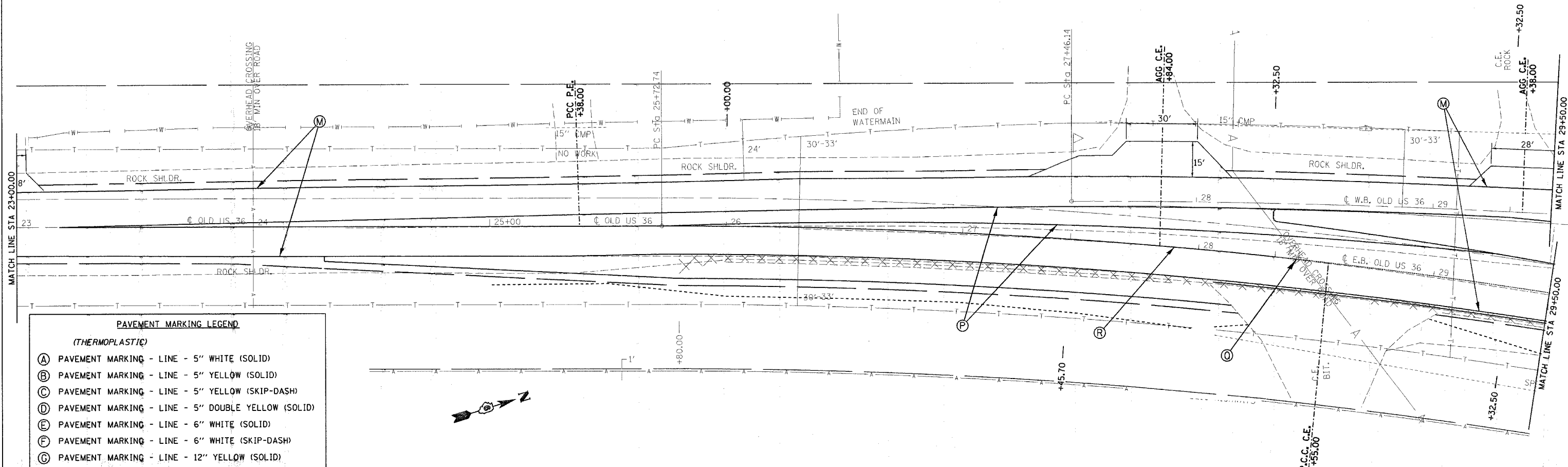
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 USER NAME = ccbrears

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PAVEMENT ELEVATIONS**  
 F.A.U. Route 7978 (US 36) &  
 F.A.U. Route 7968 (CAMP BUTLER RD)  
 Section: 3R(BR, BR-1, BR-2), 19RS-8  
 SANGAMON COUNTY  
 SCALE: VERT.                      DRAWN BY: JWC  
           HORIZ.                    CHECKED BY: RSC  
 DATE: MAY 26, 2005

**(E.B. & W.B. CAMP BUTLER RD)**

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	**	SANGAMON	261	115
STA. 16+75.00		TO STA. 29+50.00		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
• 7978 (OLD US 36) & 7968 (CAMP BUTLER RD.) ** 3R1BR, BR-1, BR-2, 19RS-8				



**PAVEMENT MARKING LEGEND**

*(THERMOPLASTIC)*

- (A) PAVEMENT MARKING - LINE - 5" WHITE (SOLID)
- (B) PAVEMENT MARKING - LINE - 5" YELLOW (SOLID)
- (C) PAVEMENT MARKING - LINE - 5" YELLOW (SKIP-DASH)
- (D) PAVEMENT MARKING - LINE - 5" DOUBLE YELLOW (SOLID)
- (E) PAVEMENT MARKING - LINE - 6" WHITE (SOLID)
- (F) PAVEMENT MARKING - LINE - 6" WHITE (SKIP-DASH)
- (G) PAVEMENT MARKING - LINE - 12" YELLOW (SOLID)

*(PREFORMED PLASTIC, TYPE B)*

- (H) PAVEMENT MARKING - LINE - 5" WHITE (SKIP - DASH)
- (I) PAVEMENT MARKING - LINE - 6" WHITE (SOLID)
- (J) PAVEMENT MARKING - LINE - 6" WHITE (SKIP - DASH)
- (K) PAVEMENT MARKING - LINE - 24" WHITE (SOLID)
- (L) PAVEMENT MARKING - LETTERS & SYMBOLS WHITE (SOLID)

*(PAINT)*

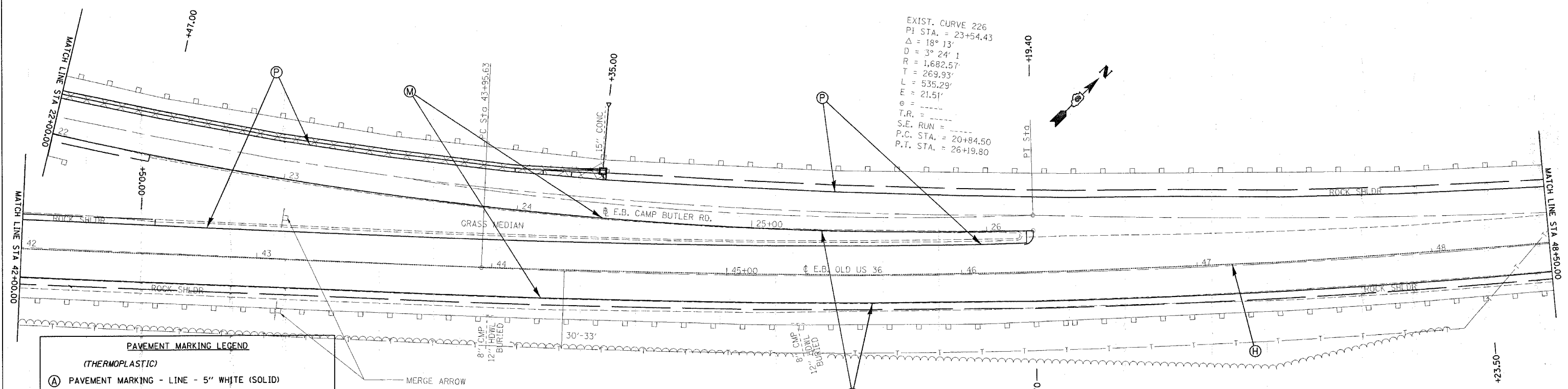
- (M) PAVEMENT MARKING - LINE - 5" WHITE (SOLID)
- (N) PAVEMENT MARKING - LINE - 8" WHITE (SOLID)
- (O) PAVEMENT MARKING - LINE - 5" WHITE (SKIP - DASH)
- (P) PAVEMENT MARKING - LINE - 5" YELLOW (SOLID)
- (Q) PAVEMENT MARKING - LINE - 5" YELLOW (SKIP - DASH)
- (R) PAVEMENT MARKING - LINE - 5" DOUBLE YELLOW (SOLID)

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKING DETAILS**  
 F.A.U. Route 7978 (OLD US 36) &  
 F.A.U. Route 7968 (CAMP BUTLER RD.)  
 Section: 3R1BR, BR-1, BR-2, 19RS-8  
 SANGAMON COUNTY  
 SCALE: VERT.      DRAWN BY: JWC  
           HORIZ.      CHECKED BY: RSC  
 DATE: JULY 20, 2005

PLOT DATE = 11/22/2005  
 FILE NAME = c:\pavement\proj\72449\shp\pavementmarkings0111.dgn  
 PLOT SCALE = 20,00000' / IN.  
 USER NAME = cooju

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	••	SANGAMON	261	116
STA. ***		TO STA. ***		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
• 7978 (US 36) & 7968 (CAMP BUTLER RD.) •• 3R(BR, BR-1, BR-2), 19RS-8 ••• E.B. OLD US 36 - STA 42+00.00 TO 48+50.00 ••• E.B. CAMP BUTLER RD. - STA 22+00.00 TO 26+19.40				



**PAVEMENT MARKING LEGEND**

(THERMOPLASTIC)

- (A) PAVEMENT MARKING - LINE - 5" WHITE (SOLID)
- (B) PAVEMENT MARKING - LINE - 5" YELLOW (SOLID)
- (C) PAVEMENT MARKING - LINE - 5" YELLOW (SKIP-DASH)
- (D) PAVEMENT MARKING - LINE - 5" DOUBLE YELLOW (SOLID)
- (E) PAVEMENT MARKING - LINE - 6" WHITE (SOLID)
- (F) PAVEMENT MARKING - LINE - 6" WHITE (SKIP-DASH)
- (G) PAVEMENT MARKING - LINE - 12" YELLOW (SOLID)

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(PREFORMED PLASTIC, TYPE B)

- (H) PAVEMENT MARKING - LINE - 5" YELLOW (SKIP - DASH)
- (I) PAVEMENT MARKING - LINE - 6" WHITE (SOLID)
- (J) PAVEMENT MARKING - LINE - 6" WHITE (SKIP - DASH)
- (K) PAVEMENT MARKING - LINE - 24" WHITE (SOLID)
- (L) PAVEMENT MARKING - LETTERS & SYMBOLS WHITE (SOLID)

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(PAINT)

- (M) PAVEMENT MARKING - LINE - 5" WHITE (SOLID)
- (N) PAVEMENT MARKING - LINE - 8" WHITE (SOLID)
- (O) PAVEMENT MARKING - LINE - 5" WHITE (SKIP - DASH)
- (P) PAVEMENT MARKING - LINE - 5" YELLOW (SOLID)
- (Q) PAVEMENT MARKING - LINE - 5" YELLOW (SKIP - DASH)
- (R) PAVEMENT MARKING - LINE - 5" DOUBLE YELLOW (SOLID)

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKING DETAILS**  
 F.A.U. Route 7978 (OLD US 36) &  
 F.A.U. Route 7968 (CAMP BUTLER RD.)  
 Section: 3R(BR, BR-1, BR-2), 19RS-8  
 SANGAMON COUNTY  
 SCALE: VERT. \_\_\_\_\_  
 HORIZ. \_\_\_\_\_  
 DATE: JULY 20, 2005  
 DRAWN BY: JWC  
 CHECKED BY: RSC

PLOT DATE  
 FILE NAME  
 PLOT SCALE  
 USER NAME

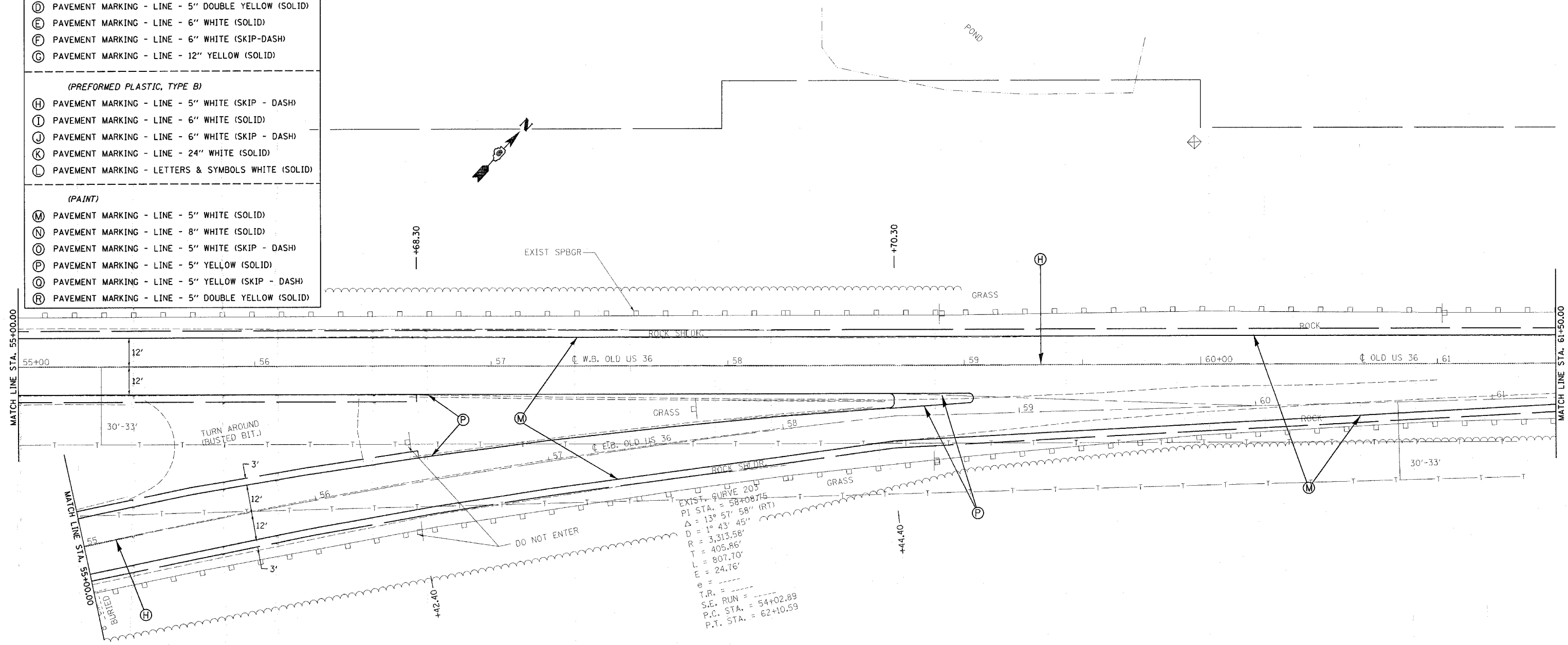
shpavementmarkings00111.dgn  
 Chain: E001



CONTRACT NO. 72449

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	**	SANGAMON	261	117
STA. *** TO STA. ***				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				
* 7978 (OLD US 36) & 7968 (CAMP BUTLER RD.)				
** 3R(BR, BR-1, BR-2), 19RS-8				
*** E.B. OLD US 36 - STA 55+00.00 TO STA 59+50.82				
*** W.B. OLD US 36 - STA 55+00.00 TO STA 61+50.00				

- PAVEMENT MARKING LEGEND**
- (THERMOPLASTIC)*
- (A) PAVEMENT MARKING - LINE - 5" WHITE (SOLID)
  - (B) PAVEMENT MARKING - LINE - 5" YELLOW (SOLID)
  - (C) PAVEMENT MARKING - LINE - 5" YELLOW (SKIP-DASH)
  - (D) PAVEMENT MARKING - LINE - 5" DOUBLE YELLOW (SOLID)
  - (E) PAVEMENT MARKING - LINE - 6" WHITE (SOLID)
  - (F) PAVEMENT MARKING - LINE - 6" WHITE (SKIP-DASH)
  - (G) PAVEMENT MARKING - LINE - 12" YELLOW (SOLID)
- 
- (PERFORMED PLASTIC, TYPE B)*
- (H) PAVEMENT MARKING - LINE - 5" WHITE (SKIP - DASH)
  - (I) PAVEMENT MARKING - LINE - 6" WHITE (SOLID)
  - (J) PAVEMENT MARKING - LINE - 6" WHITE (SKIP - DASH)
  - (K) PAVEMENT MARKING - LINE - 24" WHITE (SOLID)
  - (L) PAVEMENT MARKING - LETTERS & SYMBOLS WHITE (SOLID)
- 
- (PAINT)*
- (M) PAVEMENT MARKING - LINE - 5" WHITE (SOLID)
  - (N) PAVEMENT MARKING - LINE - 8" WHITE (SOLID)
  - (O) PAVEMENT MARKING - LINE - 5" WHITE (SKIP - DASH)
  - (P) PAVEMENT MARKING - LINE - 5" YELLOW (SOLID)
  - (Q) PAVEMENT MARKING - LINE - 5" YELLOW (SKIP - DASH)
  - (R) PAVEMENT MARKING - LINE - 5" DOUBLE YELLOW (SOLID)



PLOT DATE = 11/27/2005  
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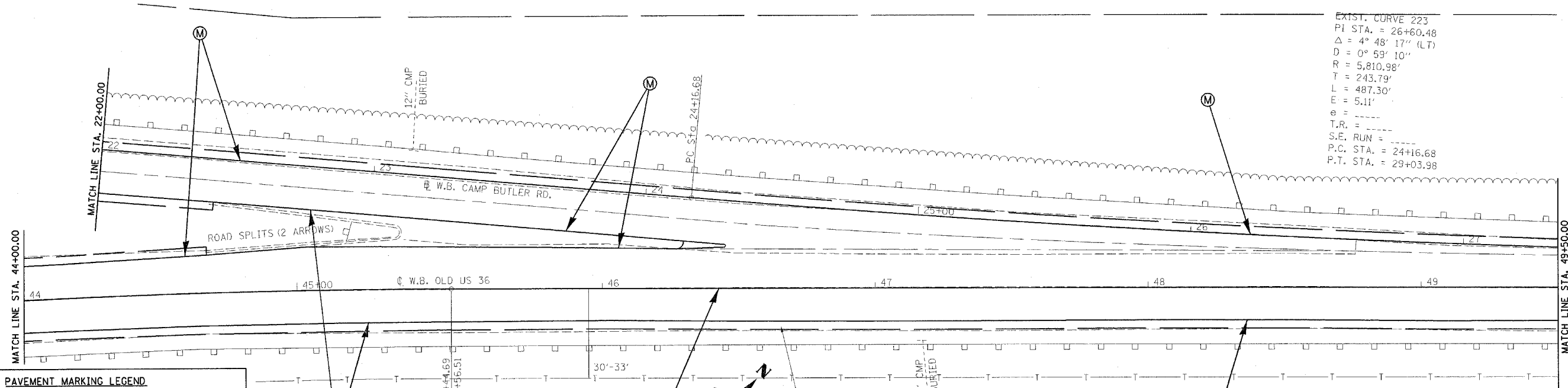
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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKING DETAILS**  
 F.A.U. Route 7978 (OLD US 36) &  
 F.A.U. Route 7968 (CAMP BUTLER RD)  
 Section: 3R(BR, BR-1, BR-2), 19RS-8  
 SANGAMON COUNTY  
 SCALE: VERT. \_\_\_\_\_  
 HORIZ. \_\_\_\_\_  
 DATE: JULY 20, 2005  
 DRAWN BY: JWC  
 CHECKED BY: RSC

**(E.B. & W.B. OLD US 36)**

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	**	SANGAMON	261	118
STA. 6+00.00		TO STA. 11+00.00		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
*7978 (OLD US 36) & 7968 (CAMP BUTLER RD.)				
**3R(BR, BR-1, BR-2), 19RS-8				



EXIST. CURVE 223  
 PI STA. = 26+60.48  
 $\Delta = 4^\circ 48' 17''$  (LT)  
 $D = 0^\circ 59' 10''$   
 $R = 5,810.98'$   
 $T = 243.79'$   
 $L = 487.30'$   
 $E = 5.11'$   
 $e =$   
 $T.R. =$   
 $S.E. RUN =$   
 $P.C. STA. = 24+16.68$   
 $P.T. STA. = 29+03.98$

**PAVEMENT MARKING LEGEND**

(THERMOPLASTIC)

- (A) PAVEMENT MARKING - LINE - 5" WHITE (SOLID)
- (B) PAVEMENT MARKING - LINE - 5" YELLOW (SOLID)
- (C) PAVEMENT MARKING - LINE - 5" YELLOW (SKIP-DASH)
- (D) PAVEMENT MARKING - LINE - 5" DOUBLE YELLOW (SOLID)
- (E) PAVEMENT MARKING - LINE - 6" WHITE (SOLID)
- (F) PAVEMENT MARKING - LINE - 6" WHITE (SKIP-DASH)
- (G) PAVEMENT MARKING - LINE - 12" YELLOW (SOLID)

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(PREFORMED PLASTIC, TYPE B)

- (H) PAVEMENT MARKING - LINE - 5" WHITE (SKIP - DASH)
- (I) PAVEMENT MARKING - LINE - 6" WHITE (SOLID)
- (J) PAVEMENT MARKING - LINE - 6" WHITE (SKIP - DASH)
- (K) PAVEMENT MARKING - LINE - 24" WHITE (SOLID)
- (L) PAVEMENT MARKING - LETTERS & SYMBOLS WHITE (SOLID)

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(PAINT)

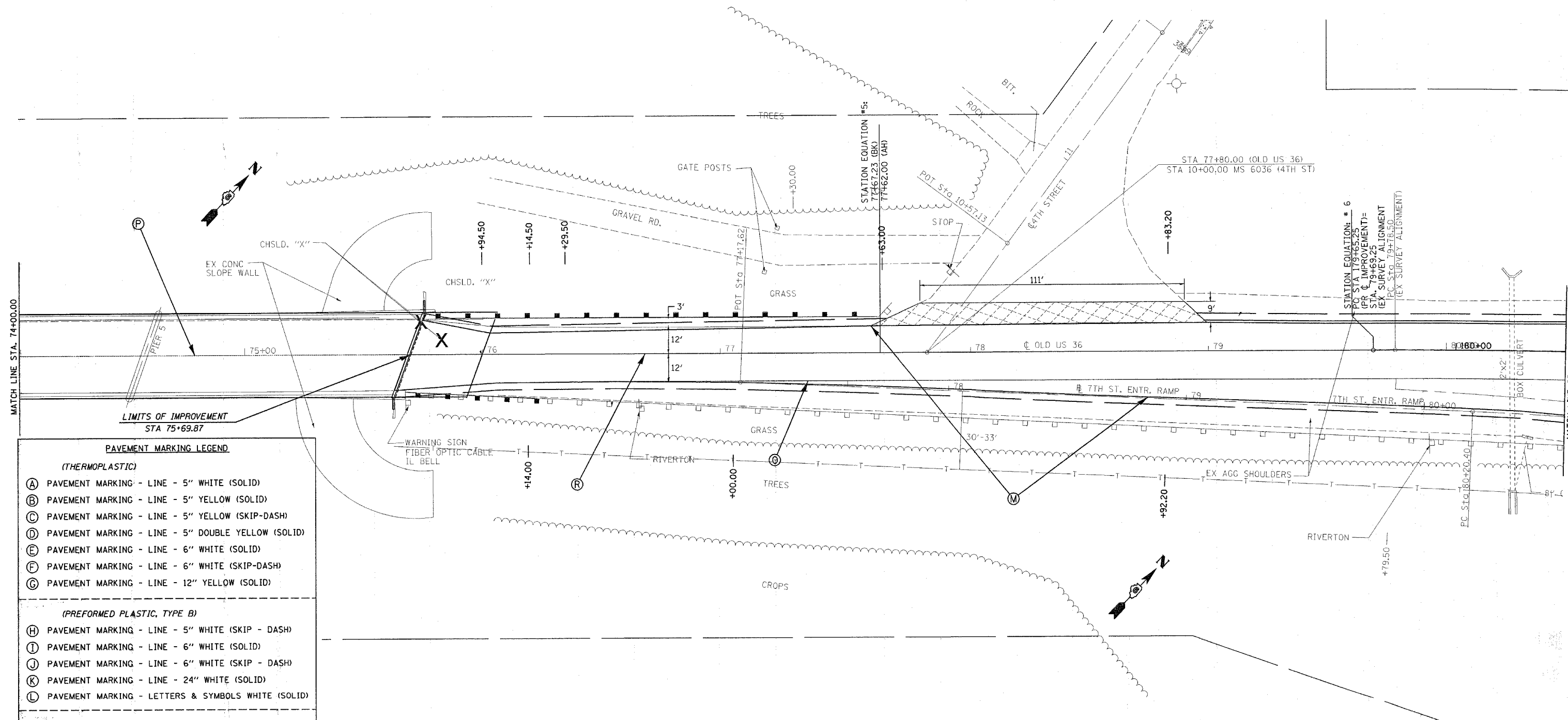
- (M) PAVEMENT MARKING - LINE - 5" WHITE (SOLID)
- (N) PAVEMENT MARKING - LINE - 8" WHITE (SOLID)
- (O) PAVEMENT MARKING - LINE - 5" WHITE (SKIP - DASH)
- (P) PAVEMENT MARKING - LINE - 5" YELLOW (SOLID)
- (Q) PAVEMENT MARKING - LINE - 5" YELLOW (SKIP - DASH)
- (R) PAVEMENT MARKING - LINE - 5" DOUBLE YELLOW (SOLID)

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKING DETAILS**  
 F.A.U. Route 7978 (OLD US 36) &  
 F.A.U. Route 7968 (CAMP BUTLER RD)  
 Section: 3R(BR, BR-1, BR-2), 19RS-8  
 SANGAMON COUNTY  
 SCALE: VERT. \_\_\_\_\_ DRAWN BY: JWC  
 HORIZ. \_\_\_\_\_ CHECKED BY: RSC  
 DATE: JULY 20, 2005

PLOT DATE = 11/3/2005  
 FILE NAME = c:\projects\0652102\shpavementmarking27.dgn  
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 USER NAME = c:\brn\rsr

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	••	SANGAMON	261	119
STA. 74+00.00		TO STA. 180+45.30		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
• 7978 (US 36) & 7968 (CAMP BUTLER RD.)		•• 3R(BR, BR-1, BR-2), 19RS-8		



LIMITS OF IMPROVEMENT  
STA 75+69.87

**PAVEMENT MARKING LEGEND**

(THERMOPLASTIC)

- (A) PAVEMENT MARKING - LINE - 5" WHITE (SOLID)
- (B) PAVEMENT MARKING - LINE - 5" YELLOW (SOLID)
- (C) PAVEMENT MARKING - LINE - 5" YELLOW (SKIP-DASH)
- (D) PAVEMENT MARKING - LINE - 5" DOUBLE YELLOW (SOLID)
- (E) PAVEMENT MARKING - LINE - 6" WHITE (SOLID)
- (F) PAVEMENT MARKING - LINE - 6" WHITE (SKIP-DASH)
- (G) PAVEMENT MARKING - LINE - 12" YELLOW (SOLID)

(PREFORMED PLASTIC, TYPE B)

- (H) PAVEMENT MARKING - LINE - 5" WHITE (SKIP - DASH)
- (I) PAVEMENT MARKING - LINE - 6" WHITE (SOLID)
- (J) PAVEMENT MARKING - LINE - 6" WHITE (SKIP - DASH)
- (K) PAVEMENT MARKING - LINE - 24" WHITE (SOLID)
- (L) PAVEMENT MARKING - LETTERS & SYMBOLS WHITE (SOLID)

(PAINT)

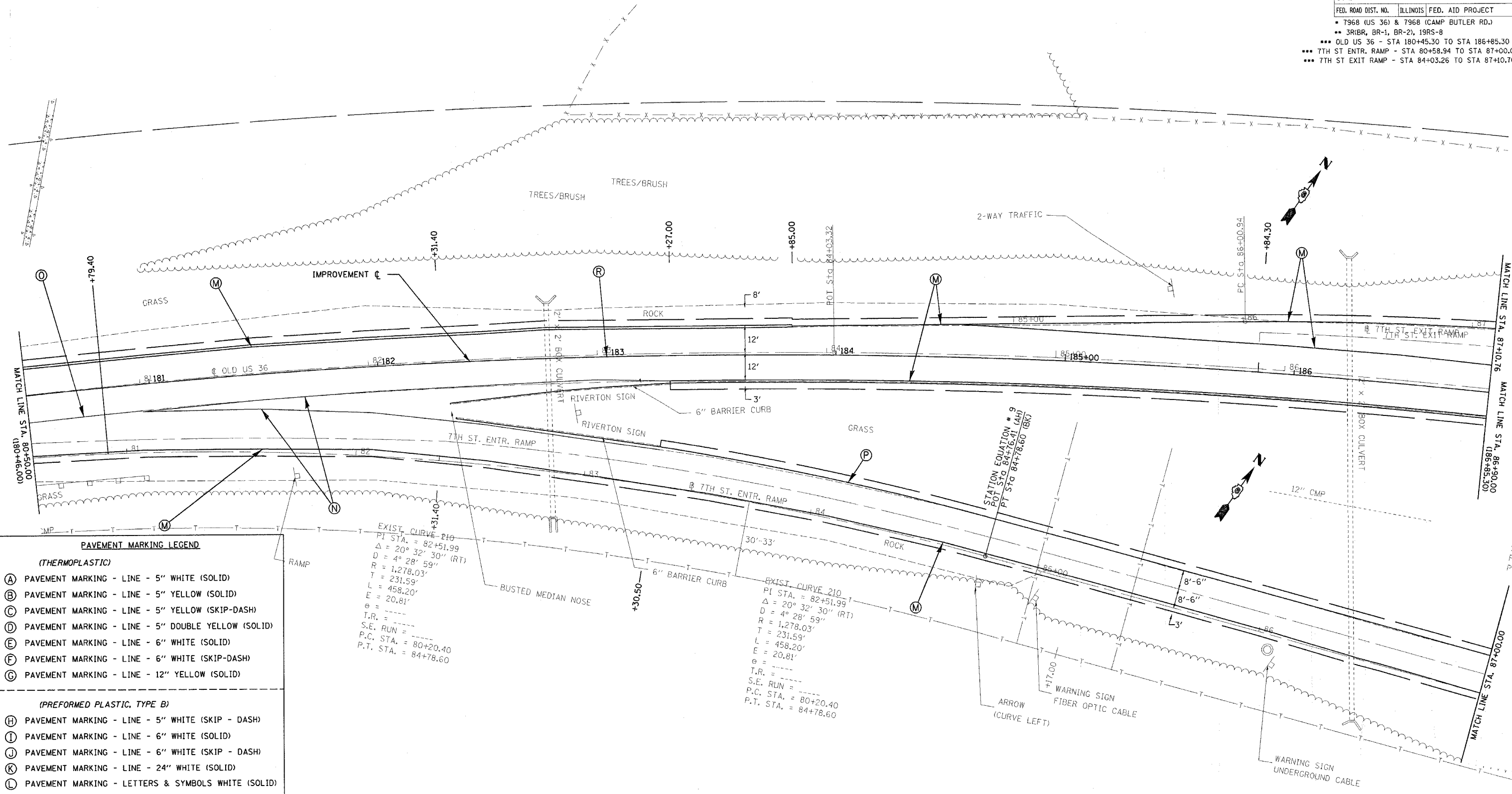
- (M) PAVEMENT MARKING - LINE - 5" WHITE (SOLID)
- (N) PAVEMENT MARKING - LINE - 8" WHITE (SOLID)
- (O) PAVEMENT MARKING - LINE - 5" WHITE (SKIP - DASH)
- (P) PAVEMENT MARKING - LINE - 5" YELLOW (SOLID)
- (Q) PAVEMENT MARKING - LINE - 5" YELLOW (SKIP - DASH)
- (R) PAVEMENT MARKING - LINE - 5" DOUBLE YELLOW (SOLID)

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKING DETAILS**  
F.A.U. Route 7978 (OLD US 36) &  
F.A.U. Route 7968 (CAMP BUTLER RD)  
Section: 3R(BR, BR-1, BR-2), 19RS-8  
SANGAMON COUNTY  
SCALE: VERT. \_\_\_\_\_  
          HORIZ. \_\_\_\_\_  
DATE: JULY 20, 2005  
DRAWN BY: JWC  
CHECKED BY: RSC

PLOT DATE = 11/2/2005  
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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	**	SANGAMON	261	120
STA. ***		TO STA. ***		
FED. ROAD DIST. NO.   ILLINOIS FED. AID PROJECT				
* 7968 (US 36) & 7968 (CAMP BUTLER RD.)				
** 3R(BR, BR-1, BR-2), 19RS-8				
*** OLD US 36 - STA 180+45.30 TO STA 186+85.30				
**** 7TH ST ENTR. RAMP - STA 80+58.94 TO STA 87+00.00				
***** 7TH ST EXIT RAMP - STA 84+03.26 TO STA 87+10.76				



PAVEMENT MARKING LEGEND	
(THERMOPLASTIC)	
A	PAVEMENT MARKING - LINE - 5" WHITE (SOLID)
B	PAVEMENT MARKING - LINE - 5" YELLOW (SOLID)
C	PAVEMENT MARKING - LINE - 5" YELLOW (SKIP-DASH)
D	PAVEMENT MARKING - LINE - 5" DOUBLE YELLOW (SOLID)
E	PAVEMENT MARKING - LINE - 6" WHITE (SOLID)
F	PAVEMENT MARKING - LINE - 6" WHITE (SKIP-DASH)
G	PAVEMENT MARKING - LINE - 12" YELLOW (SOLID)
(PREFORMED PLASTIC, TYPE B)	
H	PAVEMENT MARKING - LINE - 5" WHITE (SKIP - DASH)
I	PAVEMENT MARKING - LINE - 6" WHITE (SOLID)
J	PAVEMENT MARKING - LINE - 6" WHITE (SKIP - DASH)
K	PAVEMENT MARKING - LINE - 24" WHITE (SOLID)
L	PAVEMENT MARKING - LETTERS & SYMBOLS WHITE (SOLID)
(PAINT)	
M	PAVEMENT MARKING - LINE - 5" WHITE (SOLID)
N	PAVEMENT MARKING - LINE - 8" WHITE (SOLID)
O	PAVEMENT MARKING - LINE - 5" WHITE (SKIP - DASH)
P	PAVEMENT MARKING - LINE - 5" YELLOW (SOLID)
Q	PAVEMENT MARKING - LINE - 5" YELLOW (SKIP - DASH)
R	PAVEMENT MARKING - LINE - 5" DOUBLE YELLOW (SOLID)

EXIST. CURVE 210  
 PI STA. = 82+51.99  
 $\Delta$  = 20° 32' 30" (RT)  
 D = 4° 28' 59"  
 R = 1,278.03'  
 T = 231.59'  
 L = 458.20'  
 E = 20.81'  
 e = ----  
 T.R. = ----  
 S.E. RUN = ----  
 P.C. STA. = 80+20.40  
 P.T. STA. = 84+78.60

EXIST. CURVE 210  
 PI STA. = 82+51.99  
 $\Delta$  = 20° 32' 30" (RT)  
 D = 4° 28' 59"  
 R = 1,278.03'  
 T = 231.59'  
 L = 458.20'  
 E = 20.81'  
 e = ----  
 T.R. = ----  
 S.E. RUN = ----  
 P.C. STA. = 80+20.40  
 P.T. STA. = 84+78.60

REVISIONS	
NAME	DATE

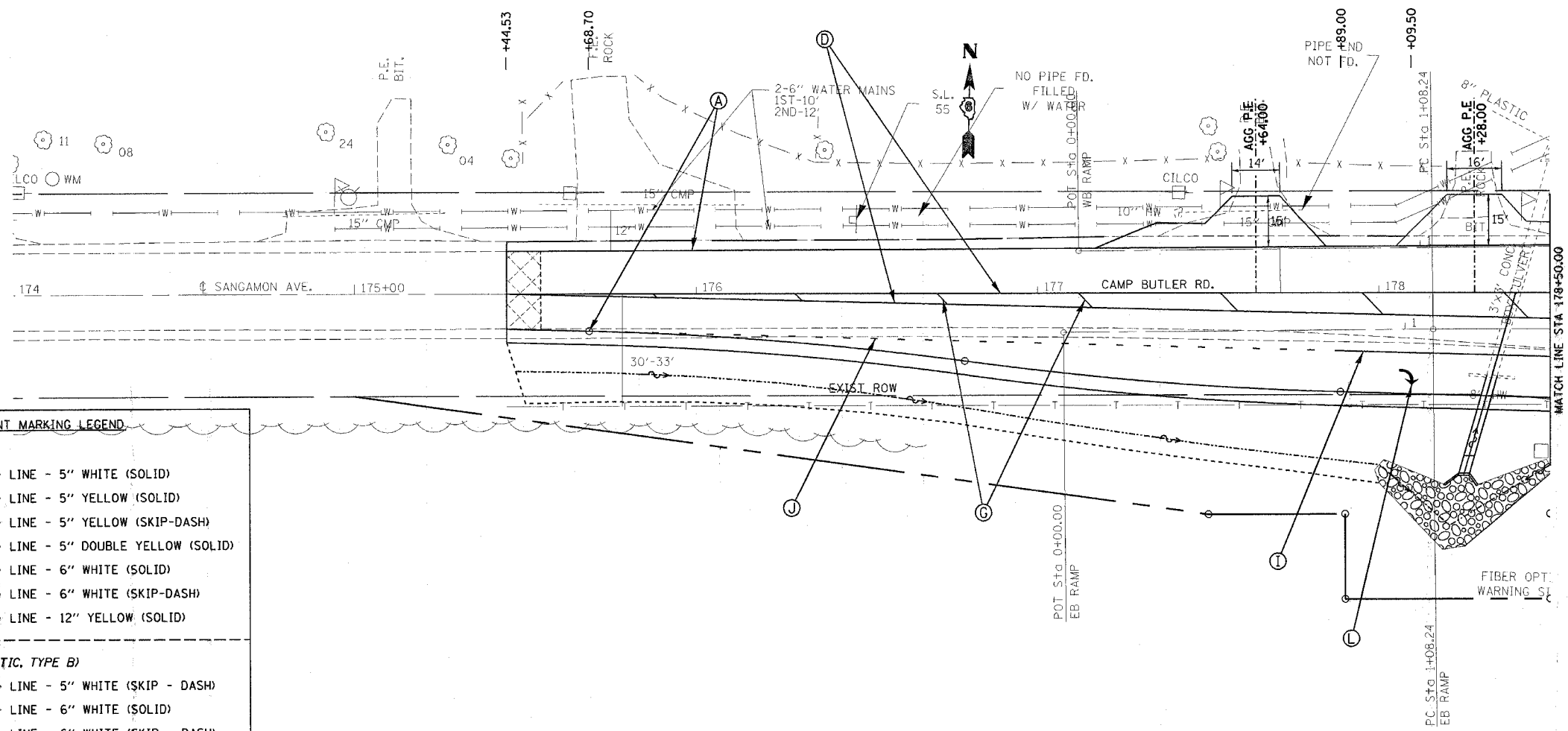
ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKING DETAILS**  
 F.A.U. Route 7978 (OLD US 36) &  
 F.A.U. Route 7968 (CAMP BUTLER RD)  
 Section: 3R(BR, BR-1, BR-2), 19RS-8  
 SANGAMON COUNTY  
 VERT. SCALE: HORIZ.  
 DATE: JULY 20, 2005  
 DRAWN BY: JWC  
 CHECKED BY: RSC

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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	**	SANGAMON	261	122
STA. 174+00.00		TO STA. 178+50.00		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
*7978 (OLD US 36) & 7968 (CAMP BUTLER RD)				
**3R(BR, BR-1, BR-2), 19RS-8				



**PAVEMENT MARKING LEGEND**

*(THERMOPLASTIC)*

- (A) PAVEMENT MARKING - LINE - 5" WHITE (SOLID)
- (B) PAVEMENT MARKING - LINE - 5" YELLOW (SOLID)
- (C) PAVEMENT MARKING - LINE - 5" YELLOW (SKIP-DASH)
- (D) PAVEMENT MARKING - LINE - 5" DOUBLE YELLOW (SOLID)
- (E) PAVEMENT MARKING - LINE - 6" WHITE (SOLID)
- (F) PAVEMENT MARKING - LINE - 6" WHITE (SKIP-DASH)
- (G) PAVEMENT MARKING - LINE - 12" YELLOW (SOLID)

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*(PERFORMED PLASTIC, TYPE B)*

- (H) PAVEMENT MARKING - LINE - 5" WHITE (SKIP - DASH)
- (I) PAVEMENT MARKING - LINE - 6" WHITE (SOLID)
- (J) PAVEMENT MARKING - LINE - 6" WHITE (SKIP - DASH)
- (K) PAVEMENT MARKING - LINE - 24" WHITE (SOLID)
- (L) PAVEMENT MARKING - LETTERS & SYMBOLS WHITE (SOLID)

---

*(PAINT)*

- (M) PAVEMENT MARKING - LINE - 5" WHITE (SOLID)
- (N) PAVEMENT MARKING - LINE - 8" WHITE (SOLID)
- (O) PAVEMENT MARKING - LINE - 5" WHITE (SKIP - DASH)
- (P) PAVEMENT MARKING - LINE - 5" YELLOW (SOLID)
- (Q) PAVEMENT MARKING - LINE - 5" YELLOW (SKIP - DASH)
- (R) PAVEMENT MARKING - LINE - 5" DOUBLE YELLOW (SOLID)

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKING DETAILS**  
 F.A.U. Route 7978 (OLD US 36) &  
 F.A.U. Route 7968 (CAMP BUTLER RD)  
 Section: 3R(BR, BR-1, BR-2), 19RS-8  
 SANGAMON COUNTY

SCALE: VERT. \_\_\_\_\_  
 HORIZ. \_\_\_\_\_  
 DATE: JULY 20, 2005

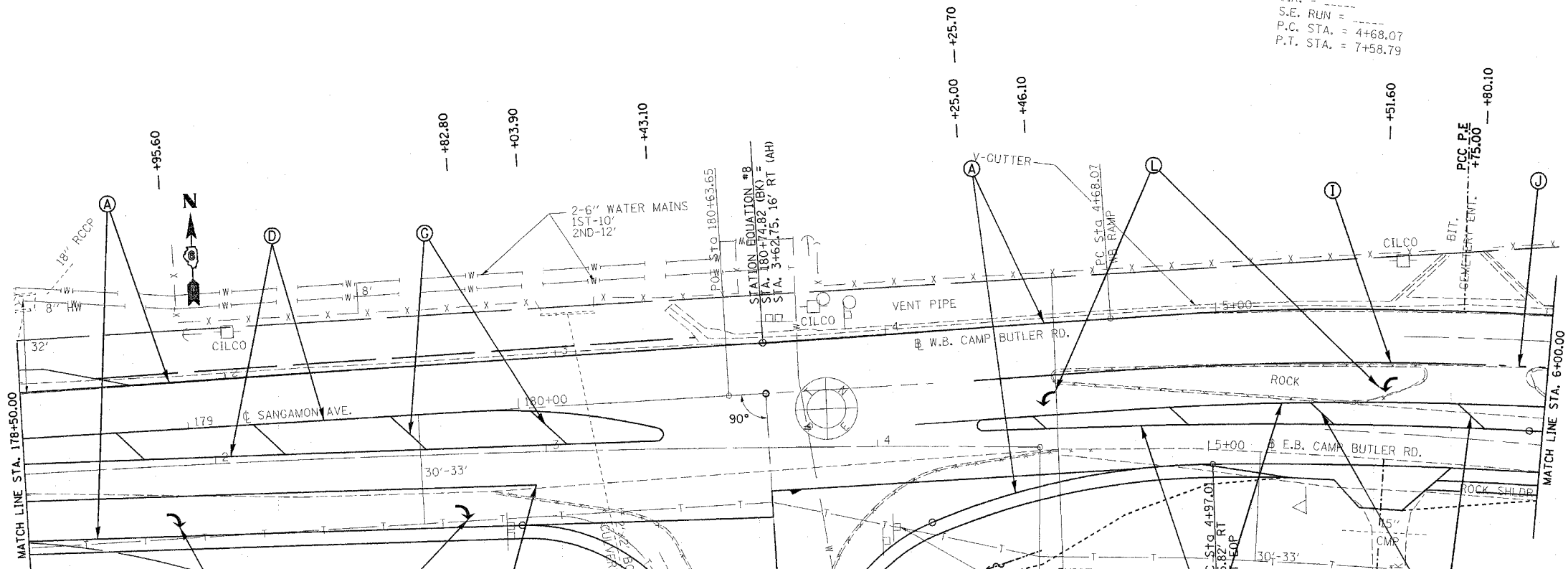
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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	**	SANGAMON	261	123

STA. 178+50.00 TO STA. 6+00.00  
 FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT  
 \*7978 (OLD US 36) & 7968 (CAMP BUTLER RD)  
 \*\*3R(BR, BR-1, BR-2), 19RS-8

EXIST. CURVE 221  
 PI STA. = 6+14.29  
 $\Delta = 15^\circ 11' 35''$  (RT)  
 $D = 5^\circ 13' 34''$   
 $R = 1,096.33'$   
 $T = 146.21'$   
 $L = 290.71'$   
 $E = 9.71'$   
 $e =$   
 $T.R. =$   
 $S.E. RUN =$   
 P.C. STA. = 4+68.07  
 P.T. STA. = 7+58.79



PAVEMENT MARKING LEGEND	
(THERMOPLASTIC)	
(A)	PAVEMENT MARKING - LINE - 5" WHITE (SOLID)
(B)	PAVEMENT MARKING - LINE - 5" YELLOW (SOLID)
(C)	PAVEMENT MARKING - LINE - 5" YELLOW (SKIP-DASH)
(D)	PAVEMENT MARKING - LINE - 5" DOUBLE YELLOW (SOLID)
(E)	PAVEMENT MARKING - LINE - 6" WHITE (SOLID)
(F)	PAVEMENT MARKING - LINE - 6" WHITE (SKIP-DASH)
(G)	PAVEMENT MARKING - LINE - 12" YELLOW (SOLID)
(PREFORMED PLASTIC, TYPE B)	
(H)	PAVEMENT MARKING - LINE - 5" WHITE (SKIP - DASH)
(I)	PAVEMENT MARKING - LINE - 6" WHITE (SOLID)
(J)	PAVEMENT MARKING - LINE - 6" WHITE (SKIP - DASH)
(K)	PAVEMENT MARKING - LINE - 24" WHITE (SOLID)
(L)	PAVEMENT MARKING - LETTERS & SYMBOLS WHITE (SOLID)
(PAINT)	
(M)	PAVEMENT MARKING - LINE - 5" WHITE (SOLID)
(N)	PAVEMENT MARKING - LINE - 8" WHITE (SOLID)
(O)	PAVEMENT MARKING - LINE - 5" WHITE (SKIP - DASH)
(P)	PAVEMENT MARKING - LINE - 5" YELLOW (SOLID)
(Q)	PAVEMENT MARKING - LINE - 5" YELLOW (SKIP - DASH)
(R)	PAVEMENT MARKING - LINE - 5" DOUBLE YELLOW (SOLID)

EXIST. CURVE 228  
 PI STA. = 2+78.77  
 $\Delta = 4^\circ 19' 30''$  (RT)  
 $D = 1^\circ 16' 07''$   
 $R = 4,516.13'$   
 $T = 170.53'$   
 $L = 340.90'$   
 $E = 3.22'$   
 $e =$  (EXISTING)  
 P.C. STA. = 1+08.24  
 P.T. STA. = 4+49.14

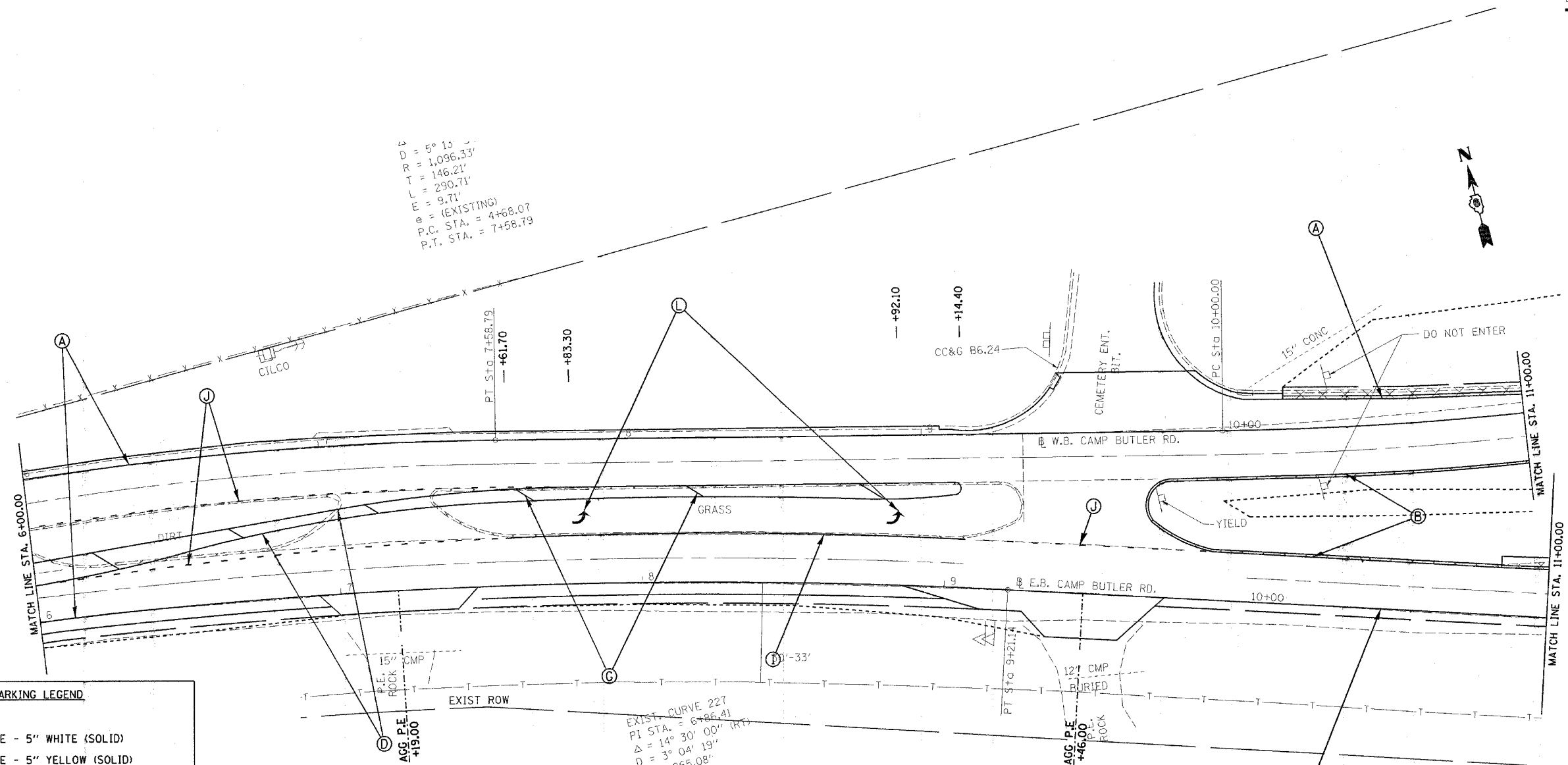
55'-225'  
 11' O/S  
 PROP. CURVE RTE EOP  
 PI STA. = 6+93.51, 34.80' RT  
 $\Delta = 15^\circ 34' 56''$  (LT)  
 $D =$   
 $R = 1,383.80'$   
 $T = 189.34'$   
 $L = 376.34'$   
 $E = 12.89'$   
 $e =$  MATCH EXISTING  
 P.C. STA. = 4+97.01, 45.82' RT  
 P.T. STA. = 8+84.56, 49' RT

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKING DETAILS**  
 F.A.U. Route 7978 (OLD US 36) &  
 F.A.U. Route 7968 (CAMP BUTLER RD)  
 Section: 3R(BR, BR-1, BR-2), 19RS-8  
 SANGAMON COUNTY  
 VERT. SCALE: HORIZ.  
 DATE: JULY 20, 2005  
 DRAWN BY: JWC  
 CHECKED BY: RSC

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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	**	SANGAMON	262	124
STA. 6+00.00		TO STA. 11+00.00		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
*7978 (OLD US 36) & 7968 (CAMP BUTLER RD)				
**3R(BR, BR-1, BR-2), 19RS-8				



$\Delta = 5^\circ 15'$   
 $R = 1,096.33'$   
 $T = 146.21'$   
 $L = 290.71'$   
 $E = 9.71'$   
 $e = \text{(EXISTING)}$   
 $P.C. STA. = 4+68.07$   
 $P.T. STA. = 7+58.79$

EXIST. CURVE 227  
 $PI STA. = 6+86.41$   
 $\Delta = 14^\circ 30' 00''$   
 $D = 3^\circ 04' 19''$   
 $R = 1,865.08'$   
 $T = 237.27'$   
 $L = 472.00'$   
 $E = 15.03'$   
 $e = \text{(EXISTING)}$   
 $P.C. STA. = 4+49.14$   
 $P.T. STA. = 9+21.14$

**PAVEMENT MARKING LEGEND**

*(THERMOPLASTIC)*

- (A) PAVEMENT MARKING - LINE - 5" WHITE (SOLID)
- (B) PAVEMENT MARKING - LINE - 5" YELLOW (SOLID)
- (C) PAVEMENT MARKING - LINE - 5" YELLOW (SKIP-DASH)
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- (F) PAVEMENT MARKING - LINE - 6" WHITE (SKIP-DASH)
- (G) PAVEMENT MARKING - LINE - 12" YELLOW (SOLID)

*(PREFORMED PLASTIC, TYPE B)*

- (H) PAVEMENT MARKING - LINE - 5" WHITE (SKIP - DASH)
- (I) PAVEMENT MARKING - LINE - 6" WHITE (SOLID)
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- (L) PAVEMENT MARKING - LETTERS & SYMBOLS WHITE (SOLID)

*(PAINT)*

- (M) PAVEMENT MARKING - LINE - 5" WHITE (SOLID)
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- (R) PAVEMENT MARKING - LINE - 5" DOUBLE YELLOW (SOLID)

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKING DETAILS**  
 F.A.U. Route 7978 (OLD US 36) &  
 F.A.U. Route 7968 (CAMP BUTLER RD)  
 Section: 3R(BR, BR-1, BR-2), 19RS-8  
 SANGAMON COUNTY  
 SCALE: VERT. \_\_\_\_\_  
 HORIZ. \_\_\_\_\_  
 DATE: JULY 20, 2005  
 DRAWN BY: JWC  
 CHECKED BY: RSC

PLOT DATE = 11/22/2005  
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 USER NAME = jwc



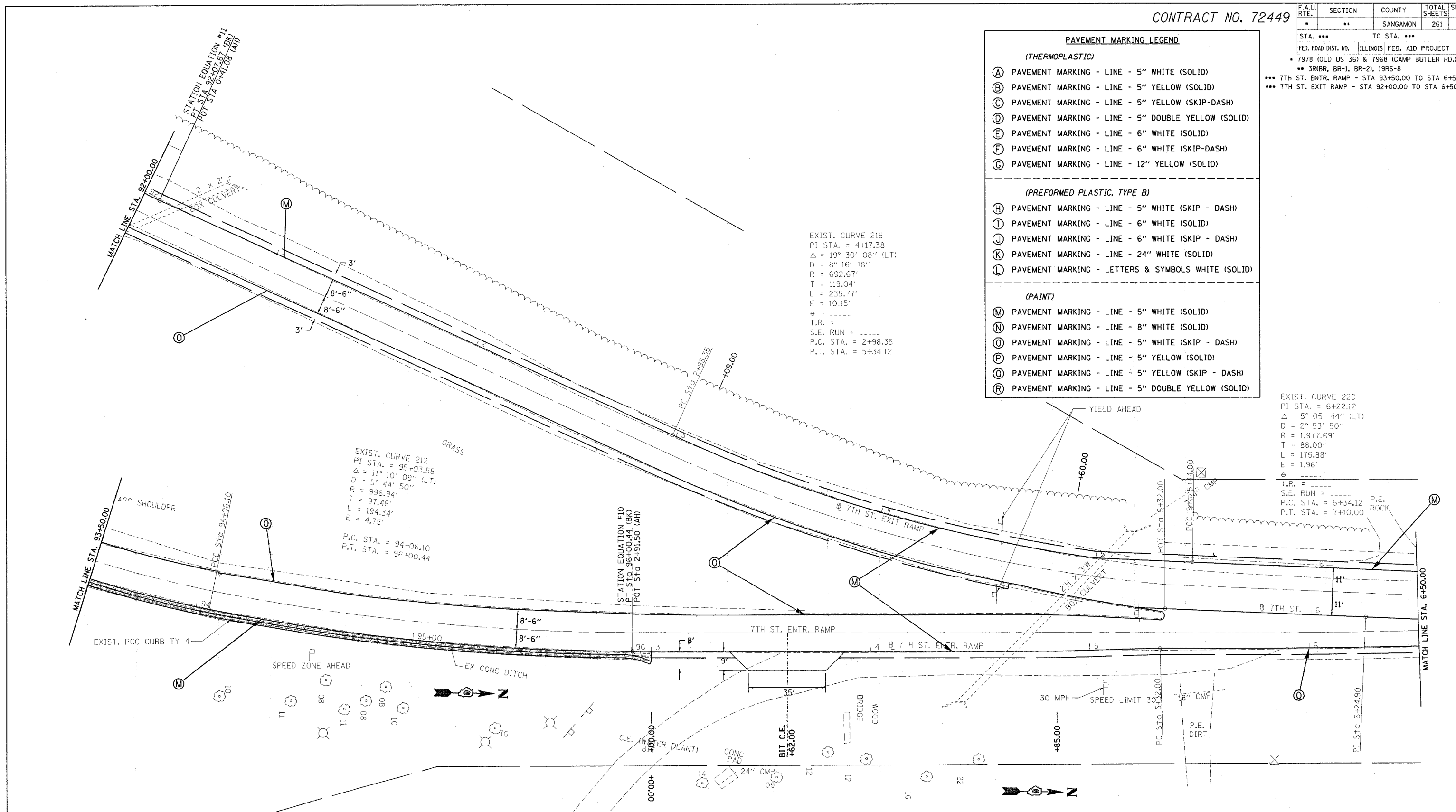
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
..	..	SANGAMON	261	125

STA. ...	TO STA. ...
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT
• 7978 (OLD US 36) & 7968 (CAMP BUTLER RD.) • 3R(BR, BR-1, BR-2), 19RS-8 ••• 7TH ST. ENTR. RAMP - STA 93+50.00 TO STA 6+50.00 ••• 7TH ST. EXIT RAMP - STA 92+00.00 TO STA 6+50.00	

PAVEMENT MARKING LEGEND	
<i>(THERMOPLASTIC)</i>	
(A)	PAVEMENT MARKING - LINE - 5" WHITE (SOLID)
(B)	PAVEMENT MARKING - LINE - 5" YELLOW (SOLID)
(C)	PAVEMENT MARKING - LINE - 5" YELLOW (SKIP-DASH)
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<i>(PAINT)</i>	
(M)	PAVEMENT MARKING - LINE - 5" WHITE (SOLID)
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(P)	PAVEMENT MARKING - LINE - 5" YELLOW (SOLID)
(Q)	PAVEMENT MARKING - LINE - 5" YELLOW (SKIP - DASH)
(R)	PAVEMENT MARKING - LINE - 5" DOUBLE YELLOW (SOLID)

EXIST. CURVE 219  
 PI STA. = 4+17.38  
 $\Delta = 19^\circ 30' 08''$  (LT)  
 $D = 8^\circ 16' 18''$   
 $R = 692.67'$   
 $T = 119.04'$   
 $L = 235.77'$   
 $E = 10.15'$   
 $e = \text{---}$   
 $T.R. = \text{---}$   
 $S.E. \text{ RUN} = \text{---}$   
 $P.C. \text{ STA.} = 2+98.35$   
 $P.T. \text{ STA.} = 5+34.12$

EXIST. CURVE 220  
 PI STA. = 6+22.12  
 $\Delta = 5^\circ 05' 44''$  (LT)  
 $D = 2^\circ 53' 50''$   
 $R = 1,977.69'$   
 $T = 88.00'$   
 $L = 175.88'$   
 $E = 1.96'$   
 $e = \text{---}$   
 $T.R. = \text{---}$   
 $S.E. \text{ RUN} = \text{---}$   
 $P.C. \text{ STA.} = 5+34.12$   
 $P.T. \text{ STA.} = 7+10.00$



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKING DETAILS**  
 F.A.U. Route 7978 (OLD US 36) &  
 F.A.U. Route 7968 (CAMP BUTLER RD)  
 Section: 3R(BR, BR-1, BR-2), 19RS-8  
 SANGAMON COUNTY  
 SCALE: VERT. \_\_\_\_\_ DRAWN BY: JWC  
 HORIZ. \_\_\_\_\_ CHECKED BY: RSC  
 DATE: JULY 20, 2005

**(7TH ST. ENT/EXIT RAMP)**

PLOT DATE = 11/27/2005  
 FILE NAME = s:\pavement\mktg\652102\shpavementmktg\02238.dgn  
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 USER NAME = coxj

Bench Mark: Disk T-36 at S.W. Corner of Existing Structure (Corps of Engr. 1963 Chicago District)  
 NAVD '88 = 546.93 Ft.

Existing Structure: S.N. 084-0052, originally built in 1956 as F.A. Route 49, Section 19B. The existing structure is six spans with two three-span continuous, non-composite, riveted built-up plate girder units supported on pile bent abutments and solid wall piers. The back to back of abutments measures 777'-8 3/4" and the out to out bridge width measures 35'-8".  
 The contractor shall remove and replace the existing deck.  
 Traffic is to be detoured during construction.

Salvage: None

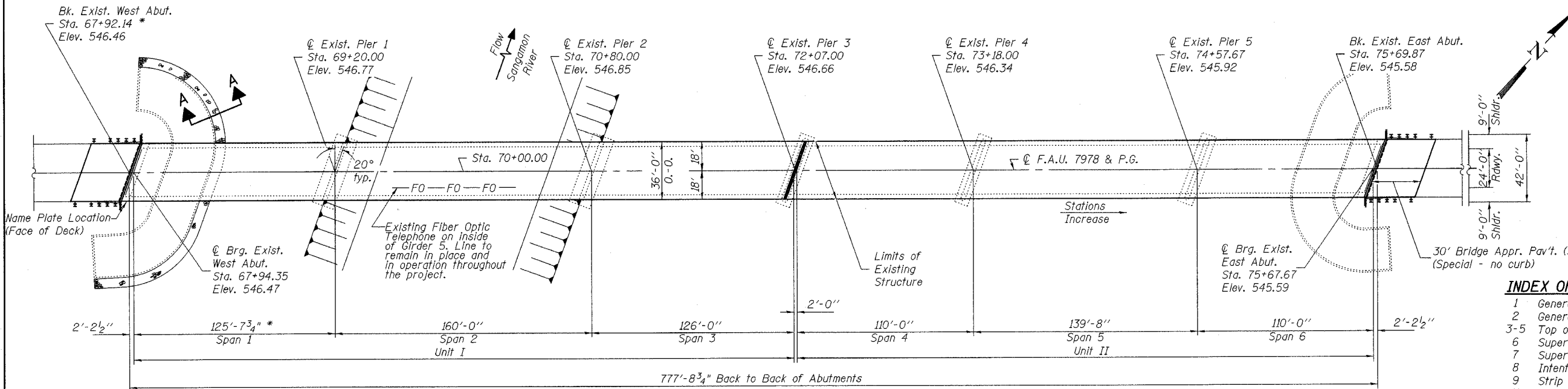
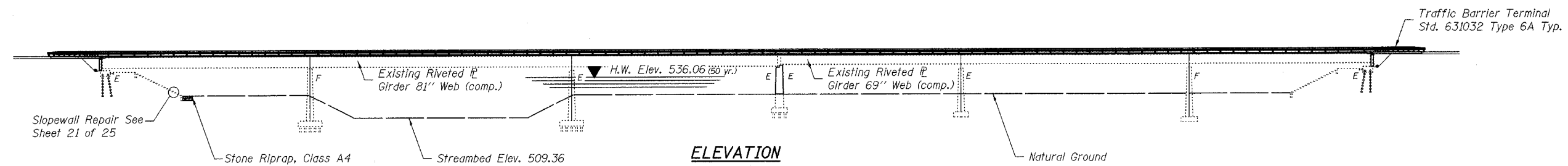
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 1
7978	BR-1	SANGAMON	261	126	25 SHEETS
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-		

Contract #72449

STATION 70+00.00  
 REBUILT 20\_\_ BY  
 STATE OF ILLINOIS  
 F.A.U. RTE. 7978 SECTION BR-1  
 LOADING HS20  
 STR. NO. 084-0052

**NAME PLATE**  
 See Std. 515001

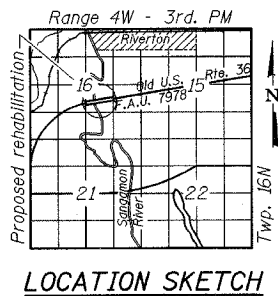
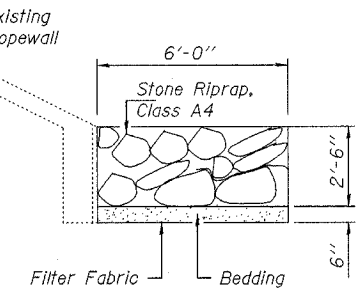
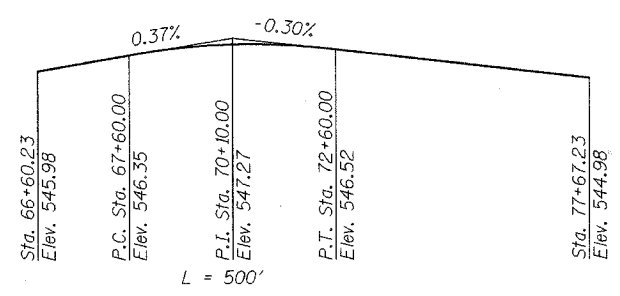
**APPROVED**  
 FOR STRUCTURAL ADEQUACY ONLY  
*Patricia C. Anderson*  
 ENGINEER OF BRIDGES AND STRUCTURES



**INDEX OF SHEETS**

- 1 General Plan
- 2 General Notes and Total Bill of Material
- 3-5 Top of Slab Elevations
- 6 Superstructure
- 7 Superstructure Details
- 8 Intentionally Blank
- 9 Strip Seal Expansion Joint Assembly
- 10 Finger Plate Details
- 11 Type SM Steel Bridge Rail
- 12-13 Framing Plans
- 14 Structural Steel Repair at Pier 3
- 15 Pier 3 Diaphragm Details
- 16 West Abutment Bearing Stiffeners and Diaphragm Details
- 17 East and West Abutment Bearing Details
- 18 Pier 3 Unit II Bearing Details
- 19 Pier 3 Unit I Bearing Details
- 20 Abutment and Pier 3 Concrete Removal
- 21 Concrete Repair Details
- 22 Abutments
- 23 Pier 3
- 24 Anchor Bolt Details
- 25 Bar Splicer Assembly Details

\* Note: The existing length of span 1 is being reduced to 125'-7 3/4" due to the existing west abutment being constructed approximately 4 1/4" east of the original intended location.



*Sheila Kimlinger* 9/8/05  
 Sheila J. Kimlinger, S.E. Date:  
 Structural Engineer License No. 081-005283  
 Expiration Date: 11/30/2006

**DESIGN SPECIFICATIONS**  
 2002 AASHTO

**SEISMIC DATA**  
 Seismic Performance Category (SPC) = A  
 Bedrock Acceleration Coefficient (A) = 0.048g  
 Site Coefficient (S) = 1.2

**LOADING HS20-44**  
 Allow 50#/sq. ft. for future wearing surface.

**DESIGN STRESSES**

New Construction  
 $f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (Reinforcement)  
 $f_y = 36,000$  psi (Structural Steel)

Existing Construction  
 $f'_c = 1,400$  psi (Superstructure)  
 800 psi (Substructure)  
 $f_y = 40,000$  psi (Reinforcement)  
 $f_y = 33,000$  psi (Structural Steel)

ILLINOIS DEPARTMENT OF TRANSPORTATION

**GENERAL PLAN**  
 OLD U.S. ROUTE 36 OVER  
 SANGAMON RIVER  
 F.A.U. ROUTE 7978  
 SECTION BR-1  
 SANGAMON COUNTY  
 STA. 70+00.00  
 STRUCTURE NUMBER 084-0052

DATE: MARCH 2005  
 DRAWN BY: NJV  
 CHECKED BY: PBB

Contract #72449

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Concrete Deck	Each	1		1
Structure Excavation	Cu. Yd.		192.7	192.7
Bridge Deck Grooving	Sq. Yd.	3,085		3,085
Protective Coat	Sq. Yd.	3,331		3,331
Concrete Structures	Cu. Yd.		146.6	146.6
Concrete Superstructure	Cu. Yd.	770.7		770.7
Steel Bridge Rail Type SM	Foot	1552		1552
Elastomeric Bearing Assembly, Type 1	Each		10	10
Elastomeric Bearing Assembly, Type 2	Each		5	5
Elastomeric Bearing Assembly, Type 3	Each		5	5
Structural Steel Removal	Pound	17,520		17,520
Concrete Removal	Cu. Yd.		157.8	157.8
Jack and Remove Existing Bearings	Each		20	20
Bridge Seat Sealer	Sq. Ft.		207	207
Furnishing and Erecting Structural Steel	L Sum	0.07		0.07
Reinforcement Bars, Epoxy Coated	Pound	214,290	9,480	223,770
Stud Shear Connectors	Each	6,480		6,480
Stone Riprap, Class A4	Sq. Yd.		133	133
Filter Fabric	Sq. Yd.		133	133
Preformed Joint Strip Seal, 4"	Foot	76.6		76.6
Name Plates	Each	1		1
Slopewall Repair	Sq. Yd.		6.4	6.4
Temporary Support System	Each		2	2
Formed Concrete Repair (Depth < 5")	Sq. Ft.		460	460
Porous Granular Embankment (Special)	Cu. Yd.		158	158
Bar Splicers	Each	78		78
Controlled Low Strength Material	Cu. Yd.		3.2	3.2

**GENERAL NOTES**

Fasteners shall be high strength bolts AASHTO M 164, Type 1 or 2. Bolts 3/4", open holes 13/16", unless otherwise noted.

Calculated weight of structural steel = 16,884 lbs. (Gr 50), 20,449 lbs. (Gr 36)

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

Roadway expansion guards shall be assembled in the proper position with the ends in place and shall be left assembled for shop inspection.

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

All new Structural Steel shall be shop painted with an inorganic zinc rich primer, per AASHTO M300, Type 1. Cost included in cost of Furnishing and Erecting Structural Steel.

The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the web doubler plates.

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

Slope wall repair areas shall be reinforced with welded wire fabric, 6" x 6" - W4.0 x W4.0, weighing 58 lbs. per 100 sq. ft. Welded wire fabric shall lap the existing fabric a minimum of 6".

All construction joints shall be bonded.

Plan dimensions and details relative to existing Structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Prior to pouring the new concrete deck, all loose rust, loose mill scale, and other loose potentially detrimental foreign material shall be removed from the surfaces of the beams or girders in contact with concrete. The cost of this work will be included in the pay item covering removal of the existing concrete. All heavy rust and other tightly adhered potentially detrimental foreign matter shall also be removed from the surfaces of the beams or girders in contact with concrete. Tightly adhered paint may remain unless otherwise noted. This removal shall be accomplished by methods that will not damage the steel. The cost of this work will be paid for according to Article 109.04.

All existing construction accessories welded to the top flange over the pier(s) between the quarter points of the beams or girders shall be removed. The remaining weld shall be ground smooth and inspected for cracks using magnetic particle testing. Any cracks that cannot be removed by grinding approximately 1/4 inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of this work will be paid for according to Article 109.04.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Shims shall be provided for each bearing as noted.

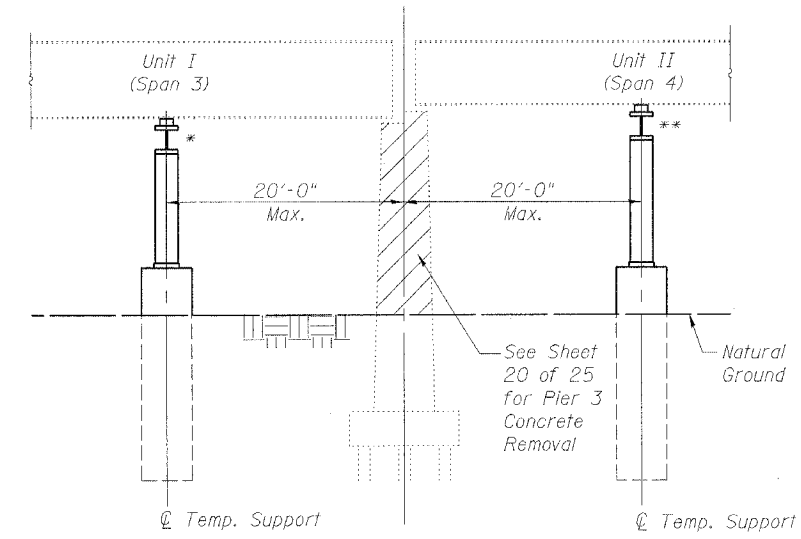
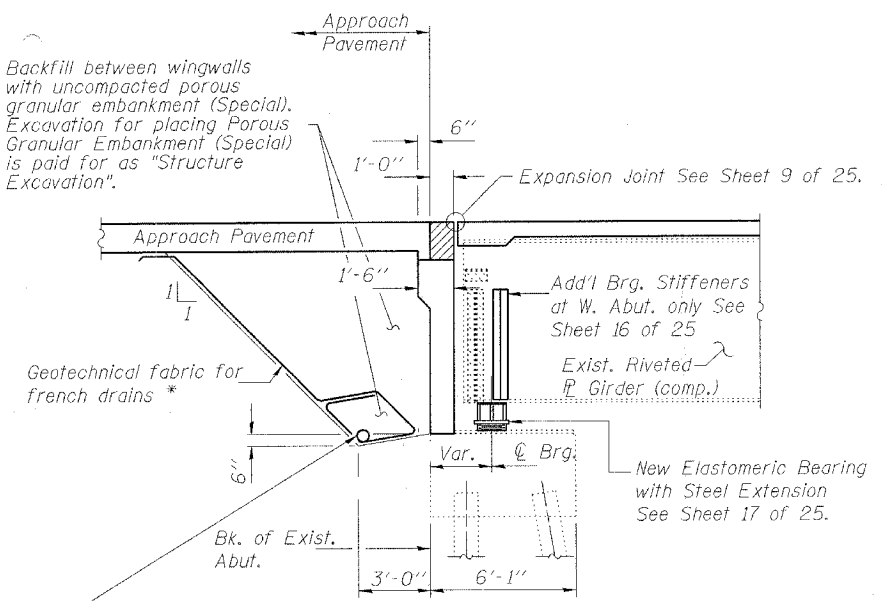
Bridge Seat Sealer shall be applied to the seat area of Pier 3.

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 requirements 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.

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

Removal of existing bridge rails is included in the cost of "Removal of Existing Concrete Deck."



**TEMPORARY SUPPORT LOCATIONS AT PIER 3**  
(@ Rt. L's)

Unfactored Reactions

- \* 22k Dead Load/Girder plus 34k Lateral Wind Load (Total for 5 Girders)
- \*\* 18k Dead Load/Girder plus 30k Lateral Wind Load (Total for 5 Girders)

**SUGGESTED SEQUENCE FOR TEMPORARY SUPPORT PLACEMENT**

Provide Temporary Support Systems for Pier 3 Concrete Removal. Contractor to submit design calculations and drawing for approval. A seal from a Structural Engineer in the State of Illinois is required. See Sheet 18 and 19 of 25 for notes on Jacking Existing Superstructure.

At a minimum, the existing deck on Spans 3 and 4 shall be removed prior to jacking.

The existing beams shall be jacked in accordance with the special provision Jack and Remove Existing Bearings.

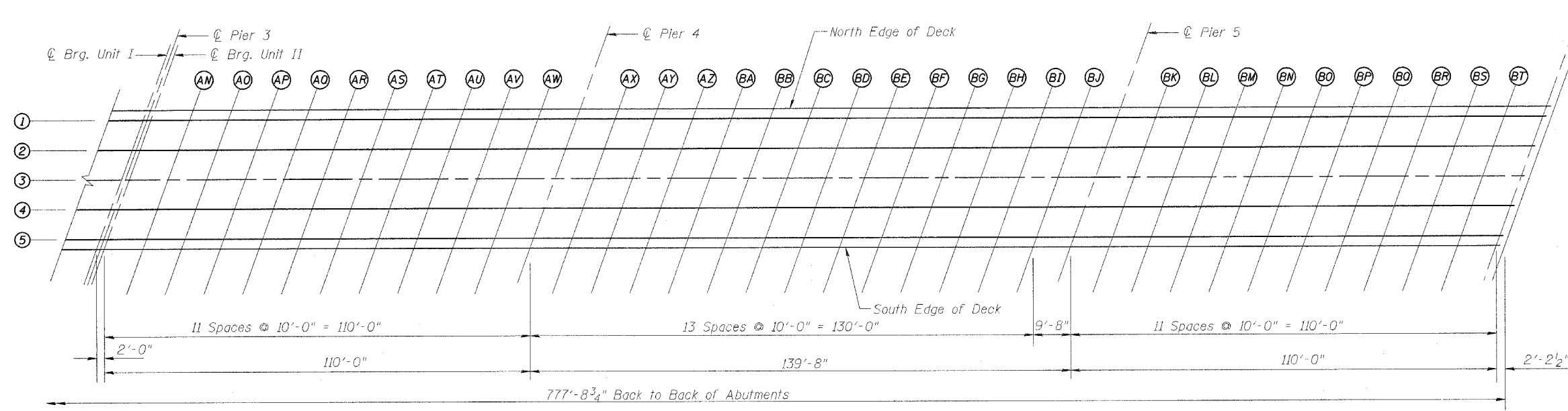
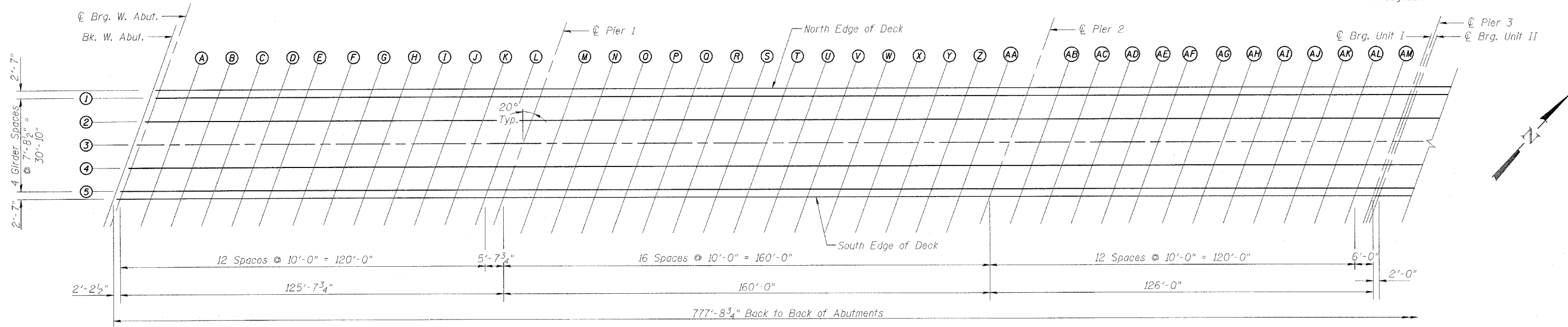
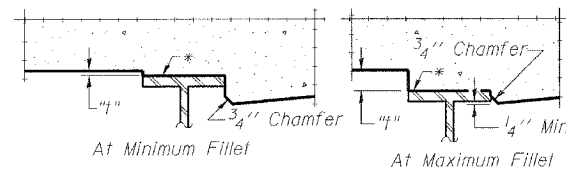
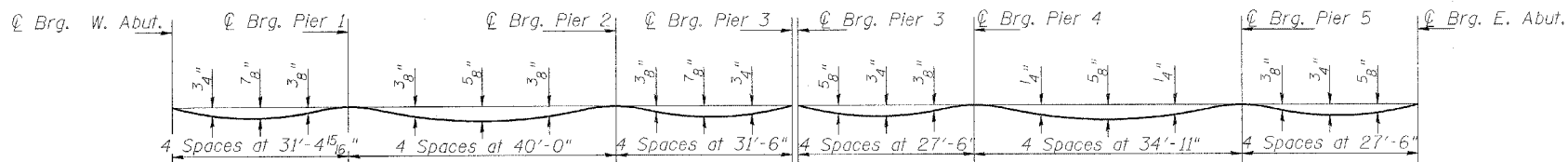
Pier 3 shall be rebuilt and bearings set prior to taking elevations of the top flanges.

**SECTION THRU ABUTMENT**  
(@ Rt. L's)

\* Included in the Cost of Porous Granular Embankment (Special)

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**GENERAL NOTES & TOTAL BILL OF MATERIAL**  
 OLD U.S. ROUTE 36 OVER  
 SANGAMON RIVER  
 F.A.U. ROUTE 797B  
 SECTION BR-1  
 SANGAMON COUNTY  
 STA. 70+00.00  
 STRUCTURE NUMBER 084-0052

DATE: JAN. 2005  
 DRAWN BY: NJV  
 CHECKED BY: PBB

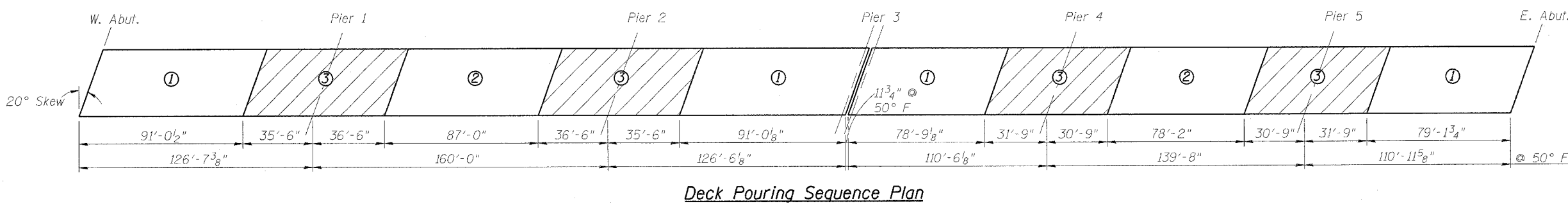


**DECK POURING SEQUENCE NOTES**

- Deck pours shall be stopped at the Transverse Bonded Construction Joints in the deck Pouring Sequence as shown. The next pour shall not be made until requirements 1 & 2 below 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 p.s.i. or a minimum compressive strength of 3,500 p.s.i.
  3. Deflections indicated in the Dead Load Deflection Diagram and in the Top of Slab Elevation Tables account for composite sections during the deck pouring sequence.
- If the contractor wishes to change the sequence, plan revisions and design computations shall be submitted to the Engineer for review and approval. The calculations shall be prepared and sealed by a licensed structural engineer in Illinois.

**NOTES:**

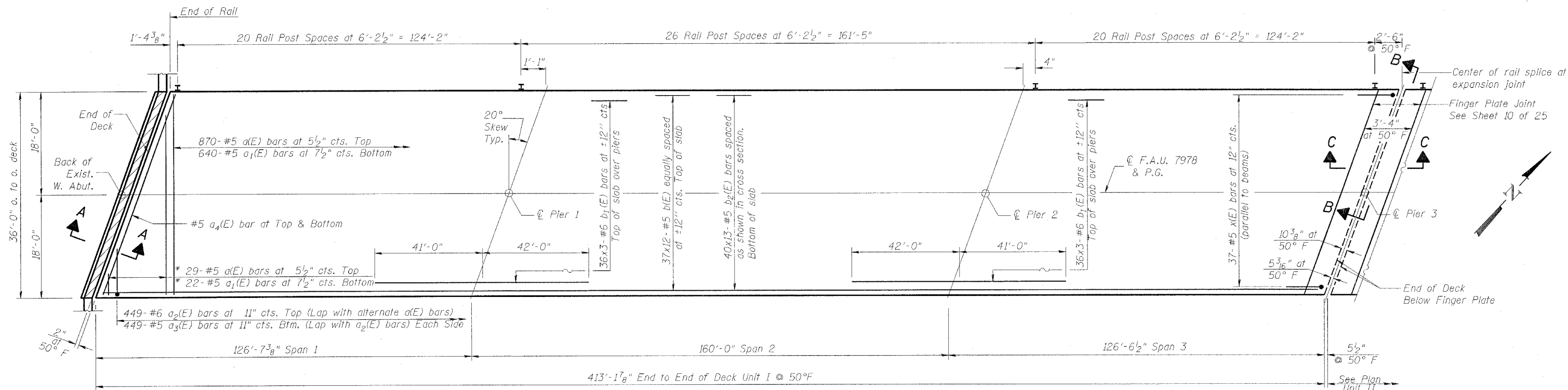
Work this sheet with Sheets 4 and 5 of 25



ILLINOIS DEPARTMENT OF TRANSPORTATION  
TOP OF SLAB ELEVATIONS 1 OF 3  
OLD U.S. ROUTE 36 OVER  
SANGAMON RIVER  
F.A.U. ROUTE 7978  
SECTION BR-1  
SANGAMON COUNTY  
STA. 70+00.00  
STRUCTURE NUMBER 084-0052







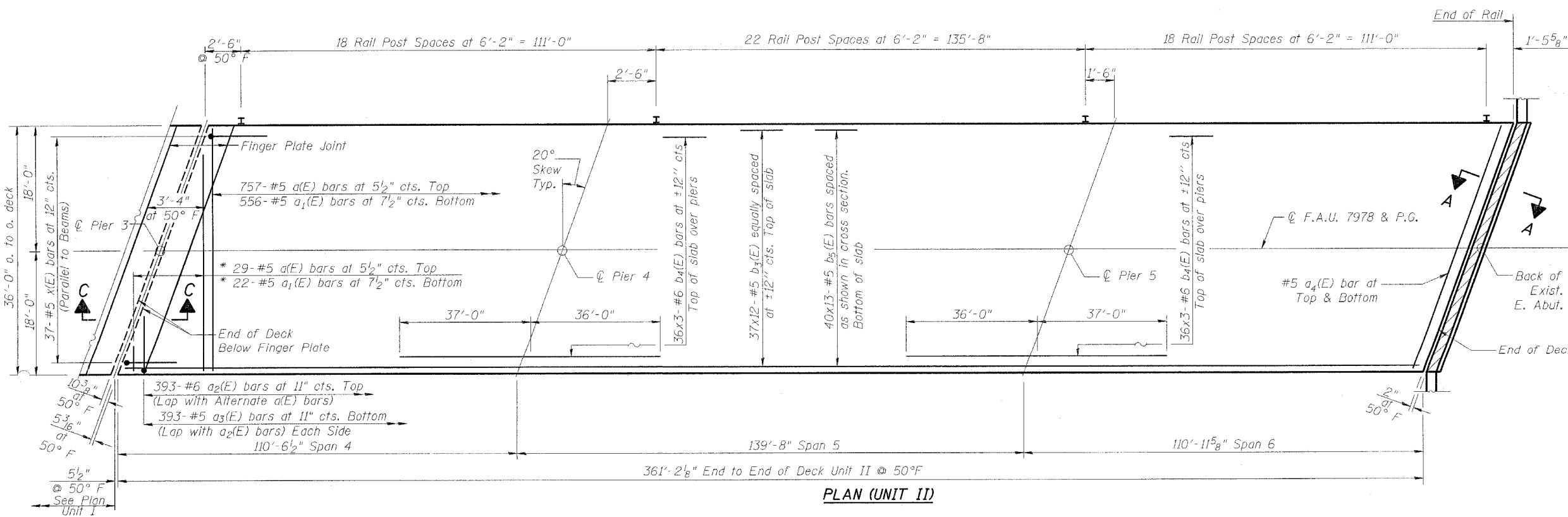
PLAN (UNIT I)

**MIN BAR LAPS**

#5 bars = 1'-8"  
#6 bars = 2'-0"

**NOTES:**

- Work this Sheet with Sheet 7 of 25.
- See Sheet 7 of 25 for superstructure details, cross section, Section A-A and Bill of Material.
- See Sheet 10 of 25 for Section B-B and Section C-C and Finger Plate Details.
- Reinforcement bars designated (E) shall be epoxy coated.
- Bars indicated thus 36 x 2-#6 etc. indicates 36 lines of bars with 2 lengths per line.



PLAN (UNIT II)

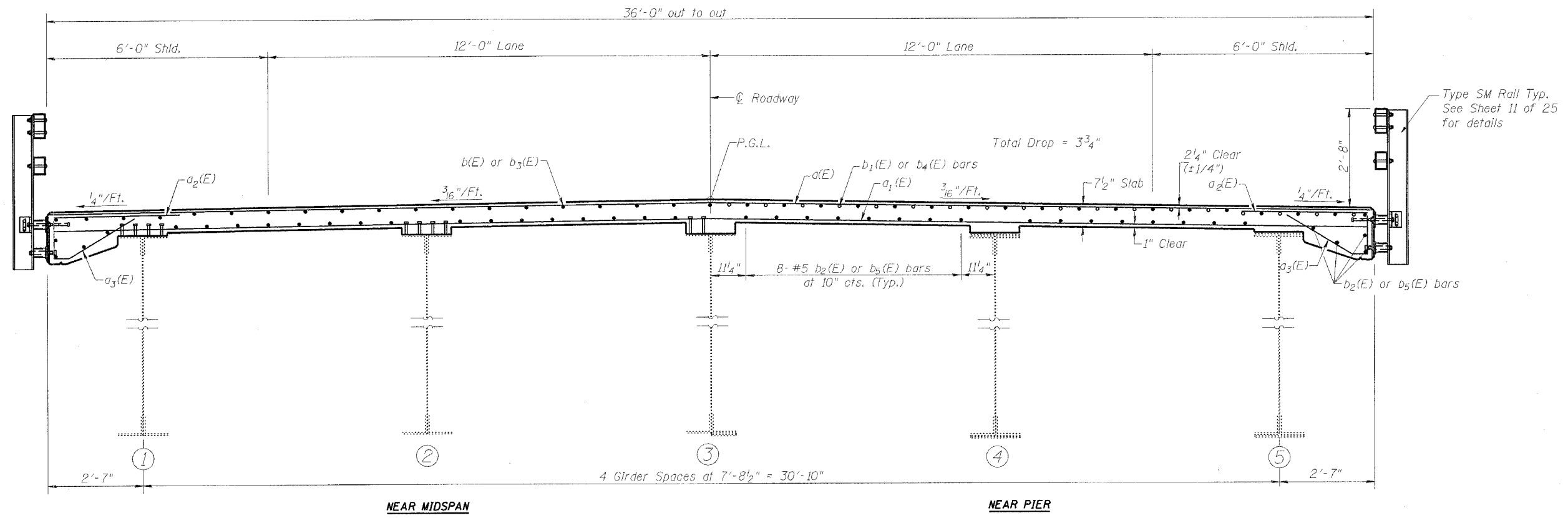
\* Order a(E) & a<sub>1</sub>(E) bars full length.  
Cut to fit skew and use remainder  
of bars in opposite end.

ILLINOIS DEPARTMENT OF TRANSPORTATION

**SUPERSTRUCTURE**  
**OLD U.S. ROUTE 36 OVER**  
**SANGAMON RIVER**  
**F.A.U. ROUTE 7978**  
**SECTION BR-1**  
**SANGAMON COUNTY**  
**STA. 70+00.00**  
**STRUCTURE NUMBER 084-0052**

DATE: MARCH 2005

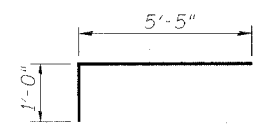
DRAWN BY: NJV  
CHECKED BY: PBB



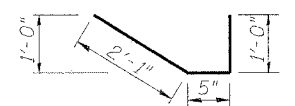
**CROSS SECTION**  
(Looking East)

**SUPERSTRUCTURE  
BILL OF MATERIAL**

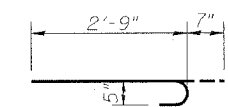
BAR NO.	SIZE	LENGTH	SHAPE	
a(E)	1685	#5	35'-6"	
a <sub>1</sub> (E)	1240	#5	35'-8"	
a <sub>2</sub> (E)	1684	#6	6'-5"	
a <sub>3</sub> (E)	1684	#5	3'-6"	
a <sub>4</sub> (E)	4	#5	37'-11"	
b(E)	444	#5	35'-11"	
b <sub>1</sub> (E)	216	#6	29'-0"	
b <sub>2</sub> (E)	520	#5	33'-4"	
b <sub>3</sub> (E)	444	#5	31'-7"	
b <sub>4</sub> (E)	216	#6	25'-8"	
b <sub>5</sub> (E)	520	#5	29'-4"	
x(E)	74	#5	3'-4"	
Reinforcement Bars, Epoxy Coated			Pound	214,290
Concrete Superstructure			Cu. Yd.	770.7
Bridge Deck Grooving			Sq. Yd.	3085
Protective Coat			Sq. Yd.	3331



**BAR a<sub>2</sub>(E)**



**BAR a<sub>3</sub>(E)**



**BAR x(E)**

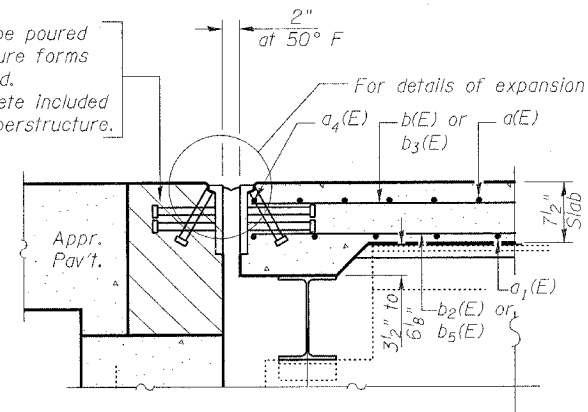
**NOTES:**

Reinforcement bars designated (E) shall be epoxy coated.  
Work this sheet with Sheet 6 of 25.

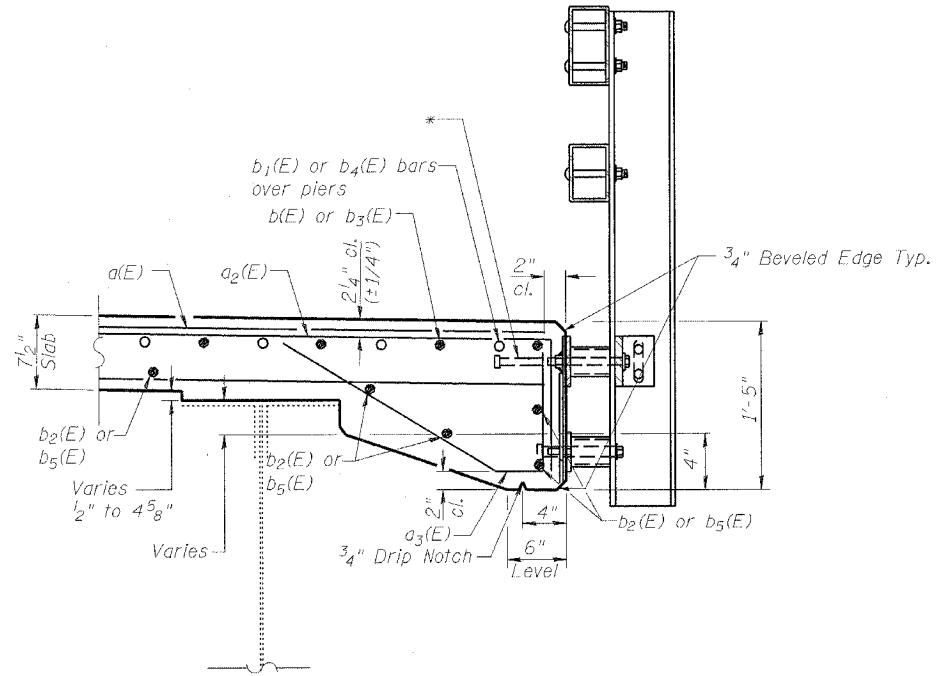
\* Reinforcement bars in the top of the deck may be placed with 1/2 inch minimum clearance in the area of the rail post anchor devices. The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.

Protective Coat shall be applied to the entire deck surface including sides.

Hatched area to be poured after superstructure forms have been removed. Quantity of concrete included with Concrete Superstructure.  
For details of expansion joints, See sheet 9 of 25.



**SECTION A-A**  
Dim's at Rt. L's



**SECTION THRU EDGE OF SLAB**



ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
7978	BR-1	SANGAMON	261	133
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SHEET NO. 8

25 SHEETS

Contract #72449

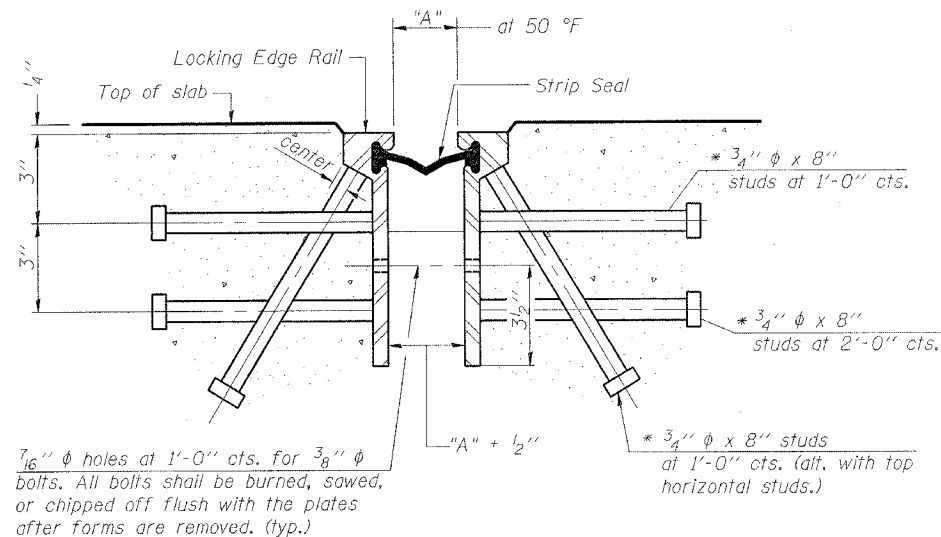
*"Intentionally Blank"*

ILLINOIS DEPARTMENT OF TRANSPORTATION

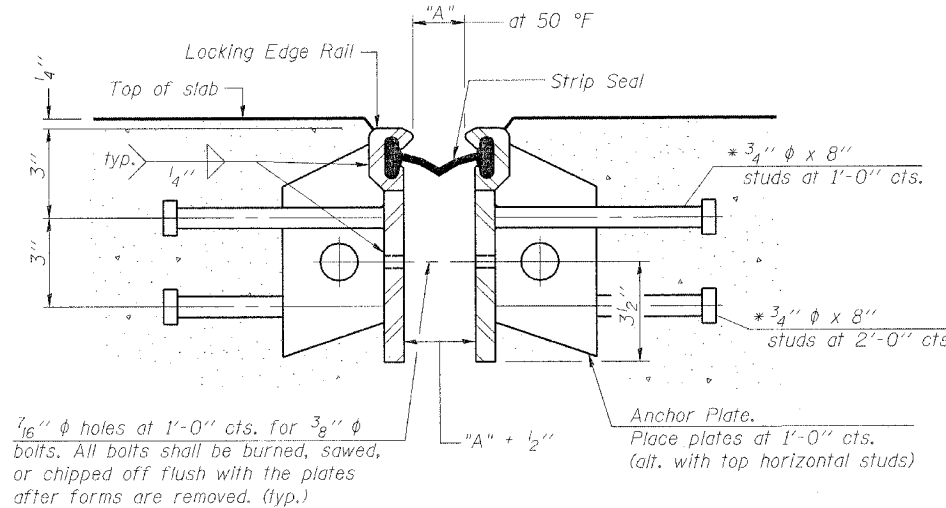
OLD U.S. ROUTE 36 OVER  
 SANGAMON RIVER  
 F.A.U. ROUTE 7978  
 SECTION BR-1  
 SANGAMON COUNTY  
 STA. 70+00.00  
 STRUCTURE NUMBER 084-0052

DATE: JAN. 2005

DRAWN BY: NJV  
 CHECKED BY: PBB



**SECTION THRU ROLLED RAIL EXP. JOINT**



**SECTION THRU WELDED RAIL EXP. JOINT**

**GENERAL 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.

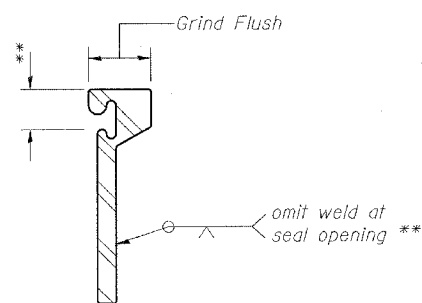
The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed.

Locking Edge Rails may be spliced at slope discontinuities and stage construction joints.

The manufacturer's recommended installation methods shall be followed.

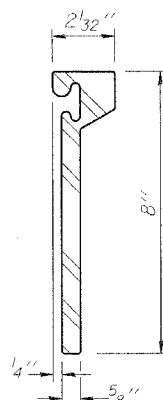
The strip seal joint shall have a rated movement equal to 4".

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

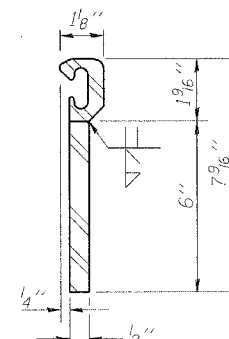


**LOCKING EDGE RAIL SPLICE**

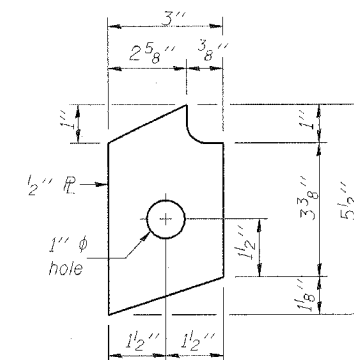
The inside of the locking edge rail groove shall be free of weld residue.



**ROLLED (EXTRUDED) RAIL**



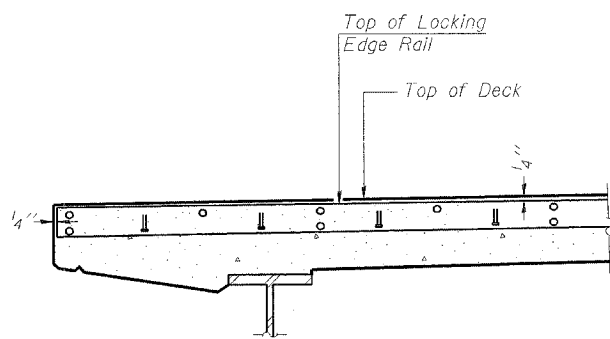
**WELDED RAIL**



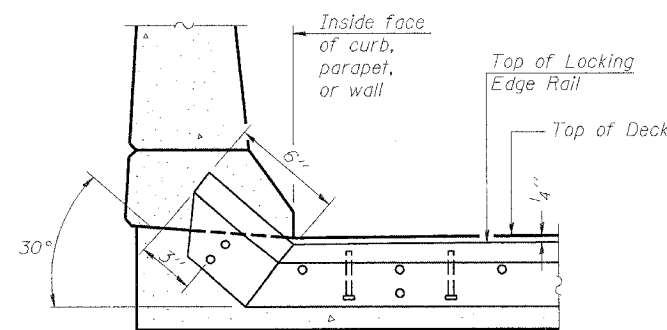
**ANCHOR PLATE**  
(for welded rail)

Location	"A" at 50° F	Length	Rolled Rail Option		Welded Rail Option	
			No. of studs	No. of studs	No. of Anchor Plates	
W. Abut.	2"	38.3	194	118	76	
E. Abut.	2"	38.3	194	118	76	

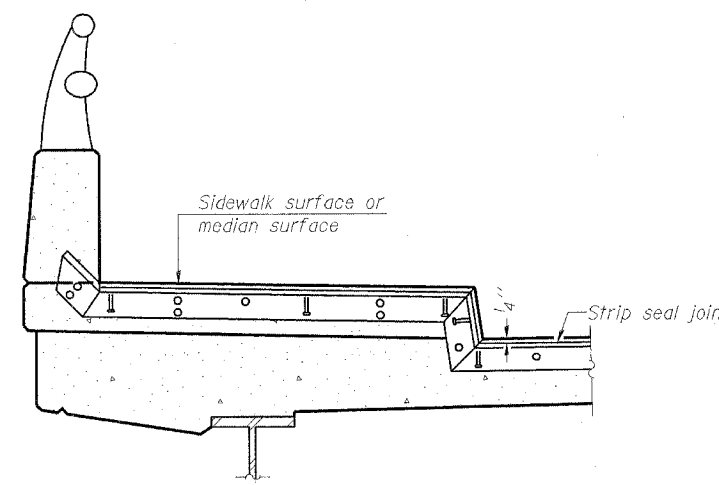
**LOCKING EDGE RAILS**



**AT EDGE OF DECK WITH NO PARAPET**



**AT CURB, PARAPET, OR WALL**



**AT SIDEWALK OR MEDIAN\***

**TYPICAL END TREATMENTS**

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

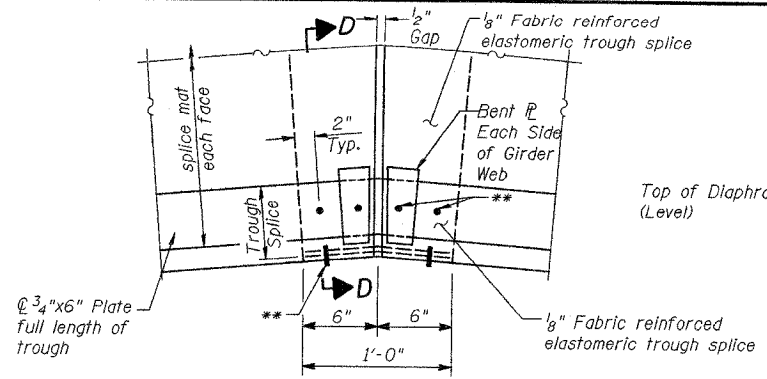
**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Preformed Joint Strip Seal, 4"	Foot	76.6

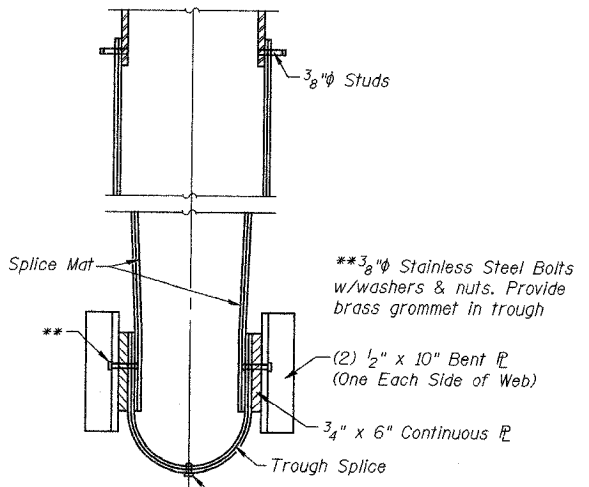
ILLINOIS DEPARTMENT OF TRANSPORTATION  
STRIP SEAL EXPANSION JOINT ASSEMBLY  
OLD U.S. ROUTE 36 OVER  
SANGAMON RIVER  
F.A.U. ROUTE 7978  
SECTION BR-1  
SANGAMON COUNTY  
STA. 70+00.00  
STRUCTURE NUMBER 084-0052

DATE: JAN. 2005

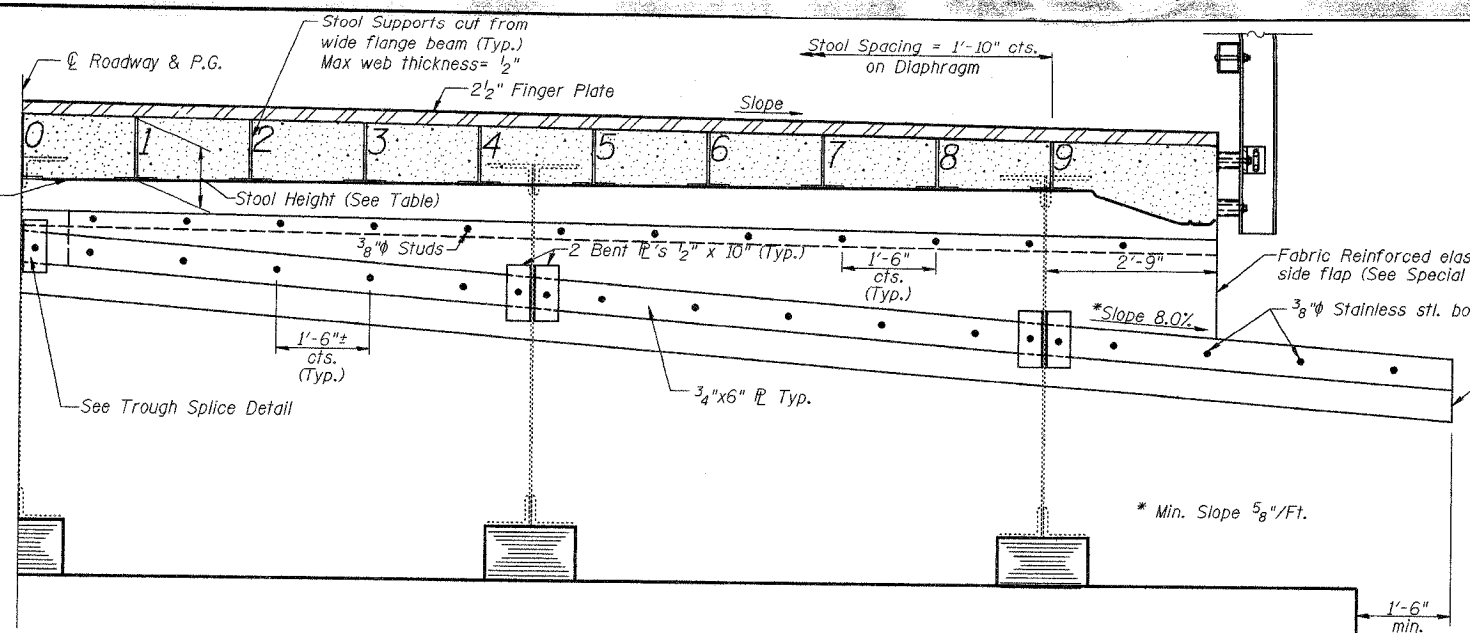
DRAWN BY: NJV  
CHECKED BY: PBB



**TROUGH SPLICE DETAIL**



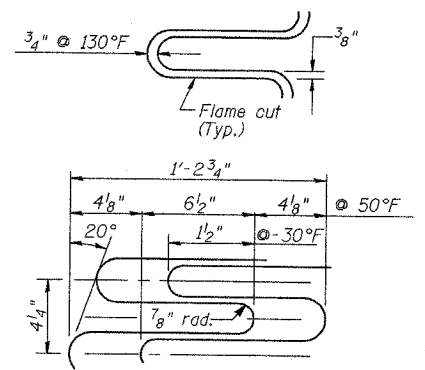
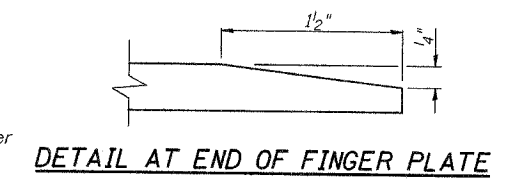
**SECTION D-D**



**SECTION B-B (Along Skew)**

**STOOL HEIGHTS (in.)**

#	UNIT I		UNIT II	
	NORTH	SOUTH	NORTH	SOUTH
0	13 <sup>5</sup> / <sub>16</sub>	-	12 <sup>5</sup> / <sub>16</sub>	-
1	13	13	11 <sup>5</sup> / <sub>8</sub>	12
2	12 <sup>5</sup> / <sub>8</sub>	12 <sup>1</sup> / <sub>8</sub>	11 <sup>5</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>8</sub>
3	12 <sup>5</sup> / <sub>16</sub>	12 <sup>3</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>4</sub>	11 <sup>5</sup> / <sub>8</sub>
4	11 <sup>5</sup> / <sub>8</sub>	12 <sup>1</sup> / <sub>8</sub>	10 <sup>5</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>8</sub>
5	11 <sup>5</sup> / <sub>8</sub>	11 <sup>3</sup> / <sub>4</sub>	10 <sup>3</sup> / <sub>8</sub>	10 <sup>3</sup> / <sub>4</sub>
6	11 <sup>1</sup> / <sub>4</sub>	11 <sup>1</sup> / <sub>2</sub>	10 <sup>1</sup> / <sub>4</sub>	10 <sup>1</sup> / <sub>8</sub>
7	10 <sup>5</sup> / <sub>8</sub>	11 <sup>3</sup> / <sub>8</sub>	9 <sup>5</sup> / <sub>8</sub>	10 <sup>3</sup> / <sub>8</sub>
8	10 <sup>1</sup> / <sub>2</sub>	10 <sup>3</sup> / <sub>4</sub>	9 <sup>1</sup> / <sub>8</sub>	9 <sup>3</sup> / <sub>4</sub>
9	10	10 <sup>5</sup> / <sub>16</sub>	9	9 <sup>5</sup> / <sub>16</sub>

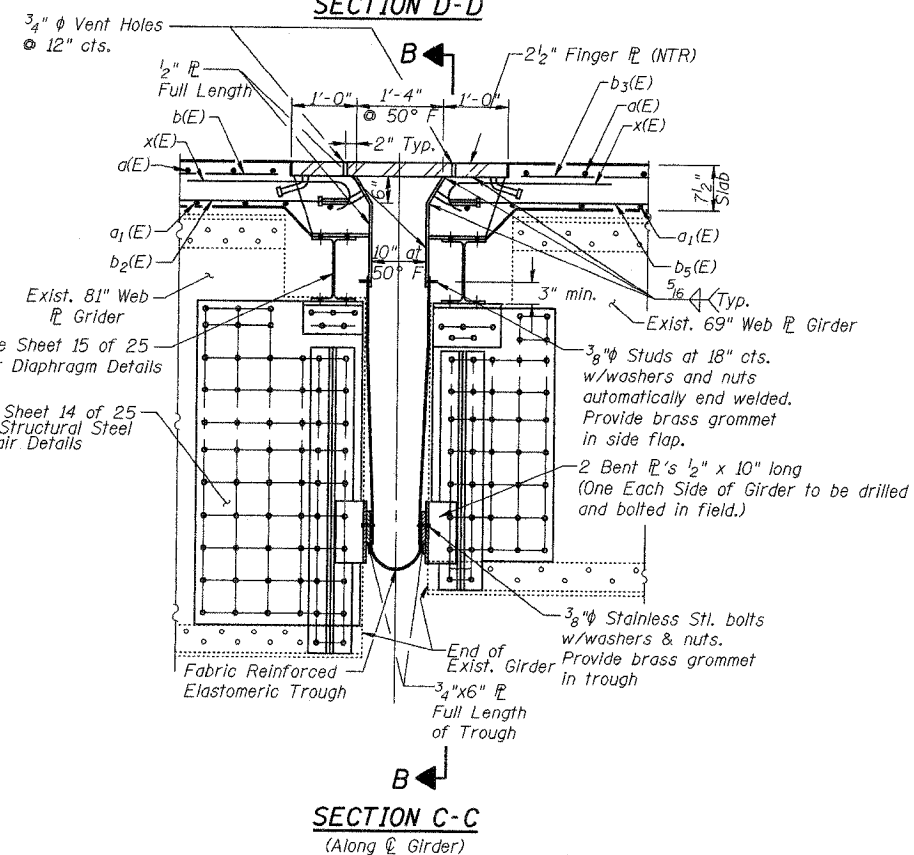


**FINGER DETAILS**  
**FINGER PLATE DESIGN DATA**

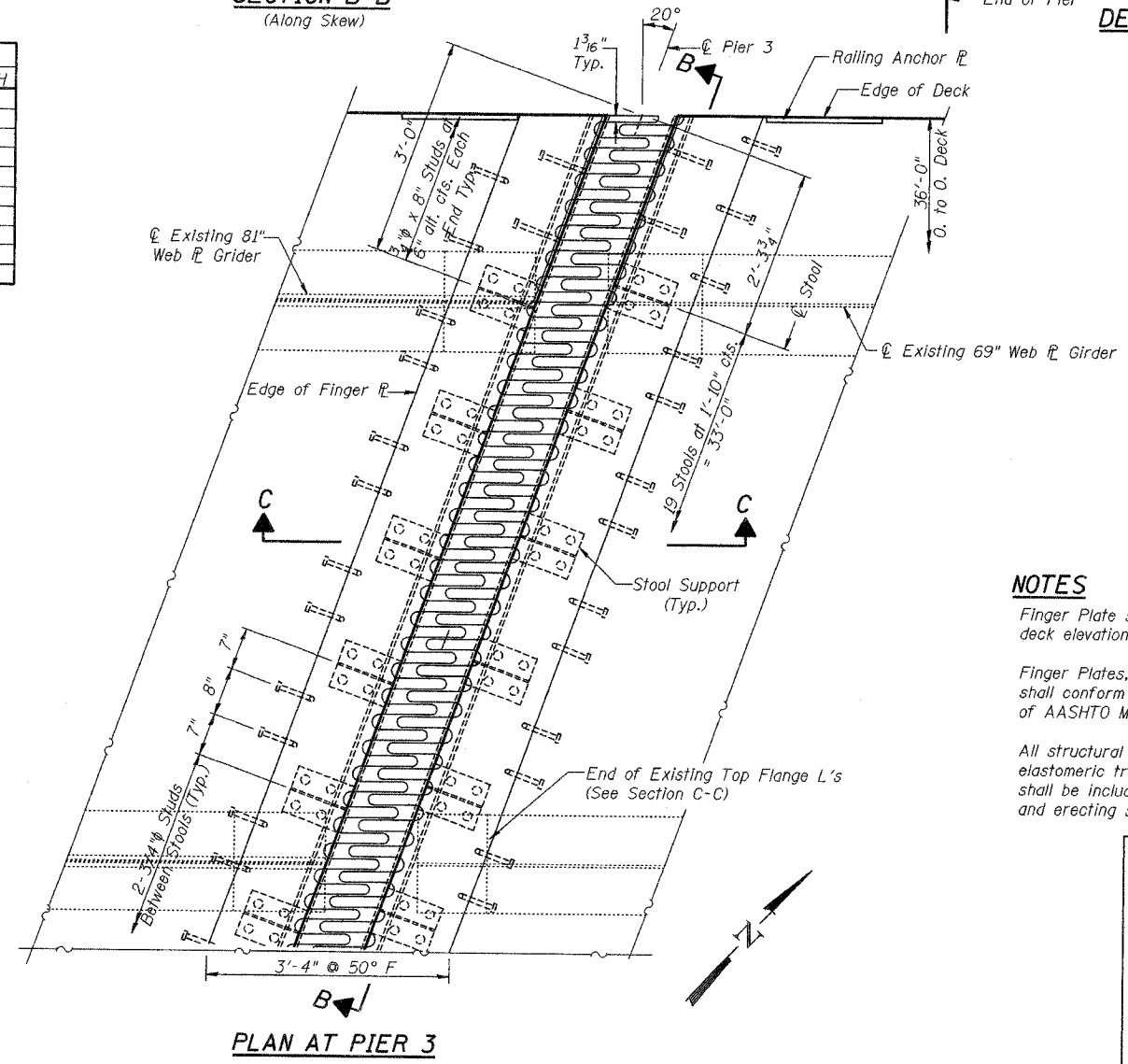
Expansion Length = 537'-8"  
Total Movement = 6'-3.4"  
(for 50°F ± 80°F)

**NOTES**

- Finger Plate shall be fabricated to match deck elevations at Pier 3 along skew.
- Finger Plates, Stools and Trough Plates shall conform to the requirements of AASHTO M 270 Grade 50.
- All structural steel, fabric reinforced elastomeric trough, and accessories shall be included in the cost of furnishing and erecting structural steel.



**SECTION C-C (Along Girders)**

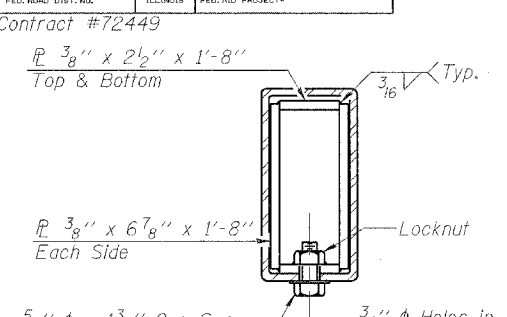
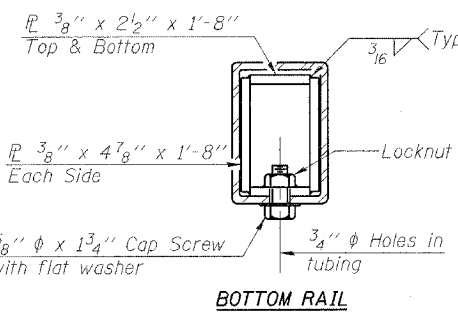
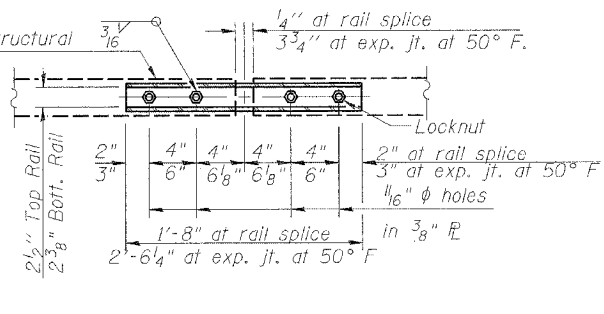
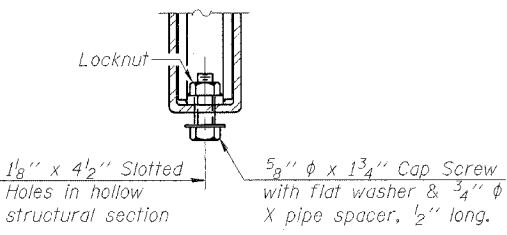
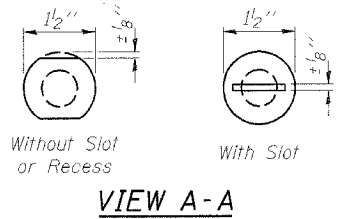
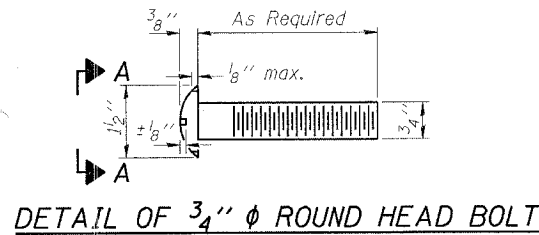


**PLAN AT PIER 3**

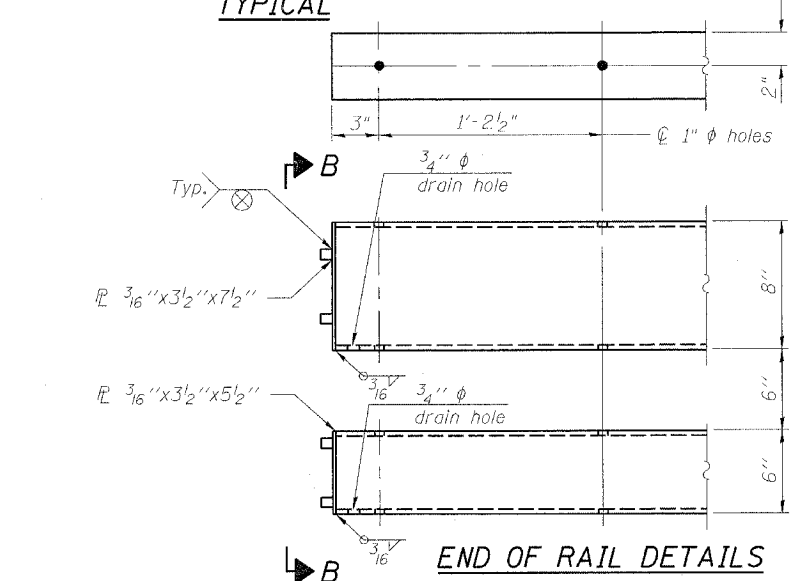
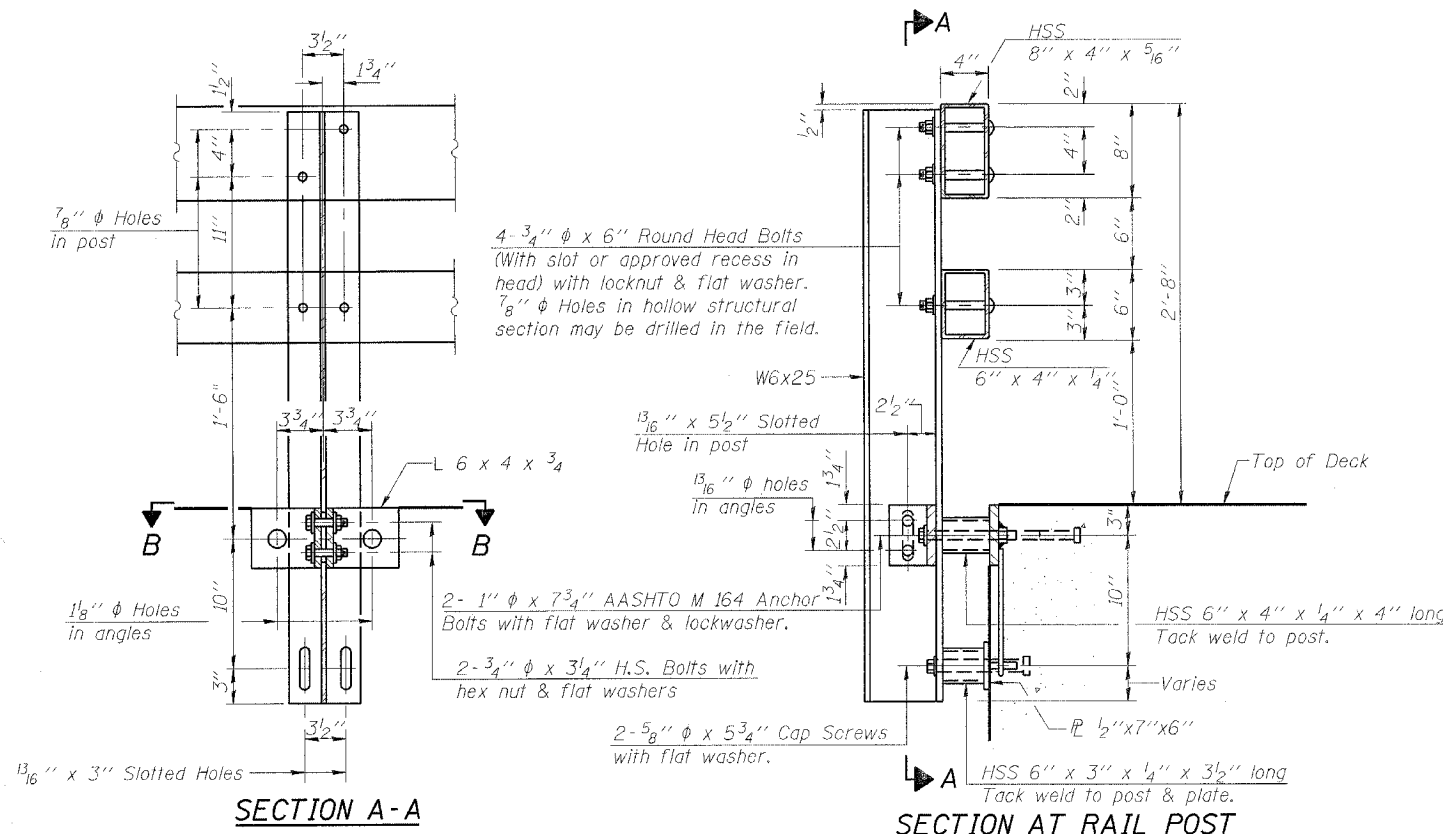
ILLINOIS DEPARTMENT OF TRANSPORTATION

**FINGER PLATE DETAILS**  
**OLD U.S. ROUTE 36 OVER**  
**SANGAMON RIVER**  
**F.A.U. ROUTE 7978**  
**SECTION BR-1**  
**SANGAMON COUNTY**  
**STA. 70+00.00**  
**STRUCTURE NUMBER 084-0052**

DATE: JAN. 2005 DRAWN BY: NJV CHECKED BY: PBB



**SECTIONS AT RAIL SPLICE**



**NOTES**

Hollow structural sections shall conform to the requirements of ASTM designation A 500 Grade B Structural Steel Tubing and shall meet the longitudinal CVN requirements of 15 ft-lbs at 0° F.

All other steel shapes and plates shall conform to the requirements of AASHTO M 270 Grade 36 except posts and angles shall conform to AASHTO M 270, Grade 50.

Bolts, cap screws, and nuts shall conform to the requirements of ASTM designation A 307 except for high strength bolts, nuts and washers noted which shall conform to AASHTO M 164.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized according to AASHTO M 232.

All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication according to AASHTO M 111 and ASTM A 385. Galvanized rail shall not be painted.

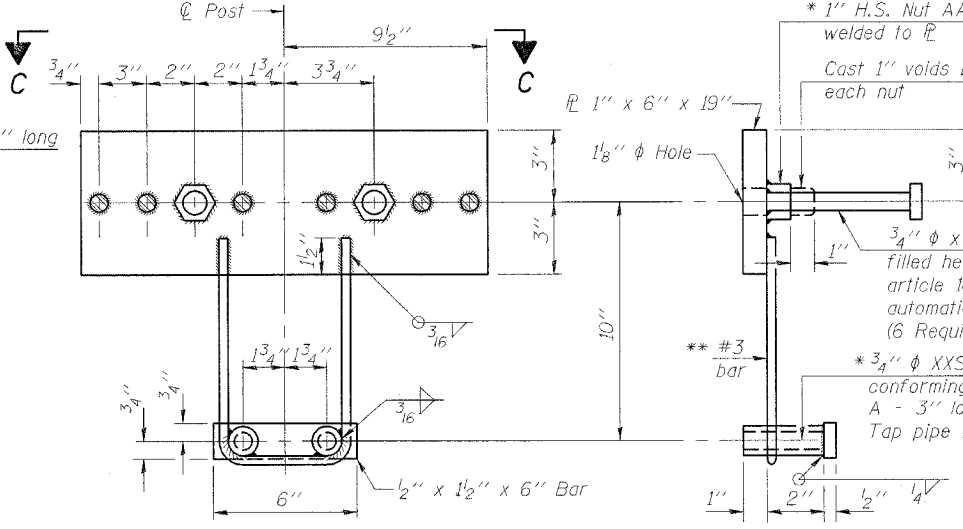
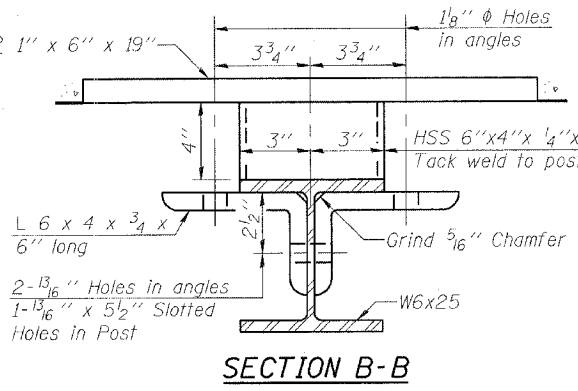
Railing shall be according to Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for Steel Bridge Rail, Type SM.

All field drilled holes shall be coated with an approved zinc rich paint before erection.

For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Bridge Rail, Type SM.

The 1/2" x 7" x 6" plates that come in contact with concrete shall receive two coats of asphalt paint conforming to Section 1060.07 Type II or place 1/8" fabric bearing pads between the plates and concrete.

The 3/4" high strength bolts used to connect the 6 x 4 x 3/4 angles to the post shall be tightened according to Article 505.04(f)(2) of the Standard Specifications. The 1" high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/8 turn. The 5/8" cap screws in bottom of posts shall be tightened to a snug fit only.

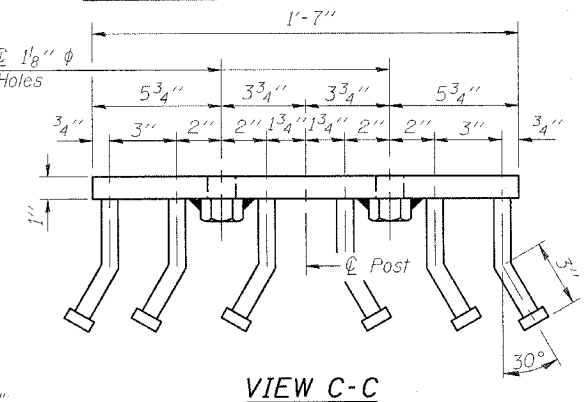
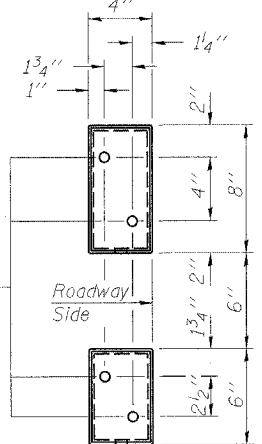


\* 1" H.S. Nut AASHTO M 164 welded to P  
Cast 1" voids behind each nut

@ - 5/8" reduced base welded studs. Provide 4 - 5/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032

3/4" x 6" Granular or solid flux filled headed studs conforming to article 1006.32 of the Std. Specs. automatically end welded. (6 Required per P)

\* 3/4" XXS Pipe or Hex Coupler Nuts conforming to AASHTO M291, Grade A - 3" long welded to #3 bar and Tap pipe for 5/8" Cap Screw.



**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Steel Bridge Rail, Type SM	Foot	1552

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**TYPE SM STEEL BRIDGE RAIL**  
 OLD U.S. ROUTE 36 OVER  
 SANGAMON RIVER  
 F.A.U. ROUTE 797B  
 SECTION BR-1  
 SANGAMON COUNTY  
 STA. 70+00.00  
 STRUCTURE NUMBER 084-0052

(6'-3" Maximum Post Spacing)

\* Threaded areas shall be plugged or blocked off during the deck pour. Galvanized after fabrication.

\*\* Whenever the lower insert assemblies interfere with deck reinforcing the #3 bars shall be cut and adjusted in order allow raising and lowering of the lower inserts. Max adjustment not to exceed 1/2".

	0.4 Sp. 1 0.6 Sp. 3	Piers	0.5 Sp. 2
$I_s$	(in <sup>4</sup> ) 74941	130885	74941
$I_c$	(in <sup>4</sup> ) 147685		147685
$I_c$ (3n)	(in <sup>4</sup> ) 111715		111715
$S_s$	(in <sup>3</sup> ) 1839	3116	1839
$S_c$ (n)	(in <sup>3</sup> ) 2324		2324
$S_c$ (3n)	(in <sup>3</sup> ) 2136		2136
$Z$	(in <sup>3</sup> )		
$\bar{p}$	(k/ft.) 1.150	1.570	1.150
$M\bar{p}$	(k) 1168	3392	1116
$s\bar{p}$	(k/ft.) 0.420		0.420
$M_s\bar{p}$	(k) 474		526
$M\bar{t}$	(k) 1176	1266	1204
$M$ (Imp)	(k) 234	237	211
$\bar{s}_3[M\bar{t} + M(\text{Imp})]$	(k) 2350	2505	2359
$M_a$	(k) 5190	7666	5201
$M_u$	(k) 5936		5936
$f_s\bar{p}$ non-comp (k.s.i.)	7.7	13.1	7.3
$f_s\bar{p}$ (comp) (k.s.i.)	2.7		3.0
$f_s\bar{s}_3(M\bar{t} + \text{Imp})$ (k.s.i.)	12.2	9.7	12.2
$f_s$ (Overload) (k.s.i.)	22.6	22.8	22.5
$f_s$ (Total) (k.s.i.)		29.6	
VR	(k) 61.4		58.7

	Abut.	Pier 1 or 2	Pier 3
$R\bar{p}$	(k) 72.1	251.2	74.0
$R\bar{t}$	(k) 45.9	92.8	45.9
Imp.	(k) 9.1	11.3	9.1
$R$ (Total)	(k) 127.1	355.3	129.0

$I_s$  and  $S_s$  are the moment of inertia and section modulus of the steel section used in computing  $f_s$  (Total & Overload).  
 $I_c$  and  $S_c$  are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.  
 $I_c$  (3n) and  $S_c$  (3n) are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (see AASHTO 10.38)  
 VR is the maximum Live Load + Impact shear range in span.  
 $M_a$  (Applied Moment) =  $1.3[M\bar{p} + M_s\bar{p} + \bar{s}_3(M\bar{t} + M(\text{Imp}))]$ .  
 The Plastic Moment capacity ( $M_u$ ) is computed according to AASHTO 10.48.1 and 10.50.1.1.  
 $f_s$  (Overload) is the sum of the stresses due to  $M\bar{p} + M_s\bar{p} + \bar{s}_3(M\bar{t} + M(\text{Imp}))$ .  
 $f_s$  (Total) (Non-compact section) is the sum of the stresses due to  $1.3[M\bar{p} + M_s\bar{p} + \bar{s}_3(M\bar{t} + M(\text{Imp}))]$ .  
 $R\bar{p}$  at Pier 3 includes Finger Joint weight.

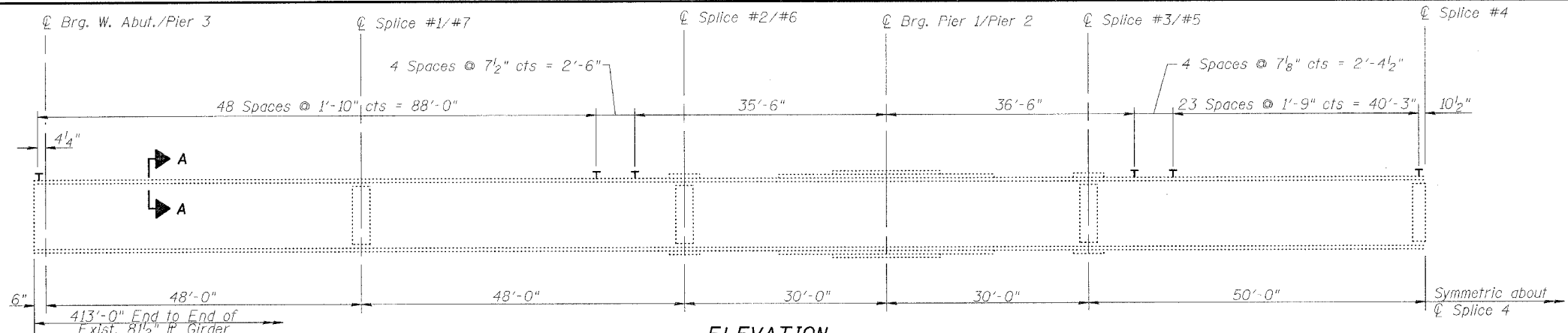
**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Structural Steel Removal	Pound	17,520
Furnishing & Erecting Structural Steel	L Sum	1

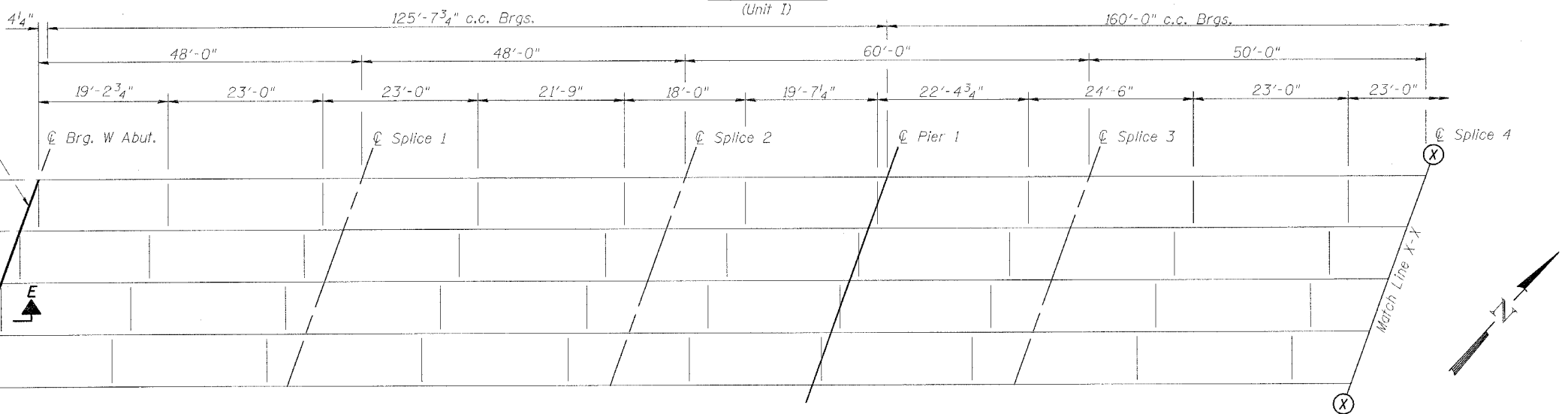
ILLINOIS DEPARTMENT OF TRANSPORTATION

**FRAMING PLAN UNIT I**  
 OLD U.S. ROUTE 36 OVER  
 SANGAMON RIVER  
 F.A.U. ROUTE 7978  
 SECTION BR-1  
 SANGAMON COUNTY  
 STA. 70+00.00  
 STRUCTURE NUMBER 084-0052

DATE: JAN. 2005  
 DRAWN BY: NJV  
 CHECKED BY: PBB



**ELEVATION**  
(Unit I)



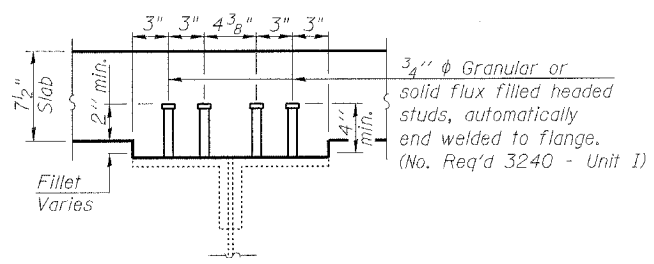
**FRAMING PLAN**  
(Unit I)

**NOTES:**

- Two hardened washers shall be required over all oversize holes at diaphragms.
- The cost of removing the existing diaphragms and Finger Joint to be included in the cost of Structural Steel Removal.
- The cost of the replacement diaphragms, hardware and painting to be included in the cost of Furnishing and Erecting Structural Steel. Cost of Field Drilling Holes in Beams included in the cost of Furnishing and Erecting Structural Steel.
- Existing dimensions to be field verified prior to ordering of material.
- See Sheet 16 of 25 for Section E-E.
- See Sheet 14 of 25 for Section C-C.

**DIAPHRAGM REPLACEMENT:**

- 1 Bottom L3 1/2"x3 1/2"x5/16"
  - 2 Bottom L 3 1/2"x3 1/2"x5/16" and South Gusset Plates Top & Bottom
  - 3 Top, Bottom and X-Brace L3 1/2"x3 1/2"x5/16" Including all 5/16" Gusset Plates.
- (See Sheet 16 of 25 for Diaphragm Details)



**SECTION A-A**

INTERIOR GIRDER MOMENT TABLE				
	0.4 Sp. 1	0.6 Sp. 3	Piers	0.5 Sp. 2
$I_s$	(in <sup>4</sup> )	50326	81932	50326
$I_c$ (n)	(in <sup>4</sup> )	100935		100935
$I_c$ (3n)	(in <sup>4</sup> )	76837		76837
$S_s$	(in <sup>3</sup> )	1448	2292	1448
$S_c$ (n)	(in <sup>3</sup> )	1807		1807
$S_c$ (3n)	(in <sup>3</sup> )	1677		1677
$\bar{D}$	(k/ft.)	1.100	1.520	1.100
$M\bar{D}$	(k)	852	2483	829
$s\bar{D}$	(k/ft.)	0.420		0.420
$M_s\bar{D}$	(k)	363		410
$M\bar{L}$	(k)	1007	990	1036
$M$ (Imp)	(k)	215	199	195
$5_s[M\bar{L} + M(\text{Imp})]$	(k)	2037	1982	2052
$M_a$	(k)	4228	5805	4278
$M_u$	(k)	4659		4662
$f_s\bar{D}$ non-comp (k.s.i.)		7.1	13.0	6.9
$f_s\bar{D}$ (comp) (k.s.i.)		2.6		3.0
$f_s\bar{D}_3$ (L + Imp) (k.s.i.)		13.6	10.4	13.7
$f_s$ (Overload) (k.s.i.)		23.3	23.4	23.6
$f_s$ (Total) (k.s.i.)			30.4	
$VR$	(k)	61.2		53.1

INTERIOR GIRDER REACTION TABLE				
	Pier 3	Pier 4 or 5	Abut.	
$R\bar{D}$	(k)	63.0	212.5	61.1
$R\bar{L}$	(k)	45.3	83.3	45.3
Imp.	(k)	9.6	11.1	9.6
$R$ (Total)	(k)	117.9	306.9	116.0

$I_s$  and  $S_s$  are the moment of inertia and section modulus of the steel section used in computing  $f_s$  (Total & Overload).  
 $I_c$  and  $S_c$  are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.  
 $I_c$  and  $S_c$  are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (see AASHTO 10.38)  
 $VR$  is the maximum Live Load + Impact shear range in span.  
 $M_a$  (Applied Moment) =  $1.3[M\bar{D} + M_s\bar{D} + 5_s(M\bar{L} + M(\text{Imp}))]$ .  
The Plastic Moment capacity ( $M_u$ ) is computed according to AASHTO 10.48.1 and 10.50.1.1.  
 $f_s$  (Overload) is the sum of the stresses due to  $M\bar{D} + M_s\bar{D} + 5_s(M\bar{L} + M(\text{Imp}))$ .  
 $f_s$  (Total) (Non-compact section) is the sum of the stresses due to  $1.3[M\bar{D} + M_s\bar{D} + 5_s(M\bar{L} + M(\text{Imp}))]$ .  
 $R\bar{D}$  at Pier 3 includes Finger Joint weight.

**DIAPHRAGM REPLACEMENT:**

- 1 Bottom L3 1/2"x3 1/2"x5/16"
  - 2 Bottom L 3 1/2"x3 1/2"x5/16" and bottom 5/16" Gusset Plates.
- (See Sheet 16 of 25 for Diaphragm Details)

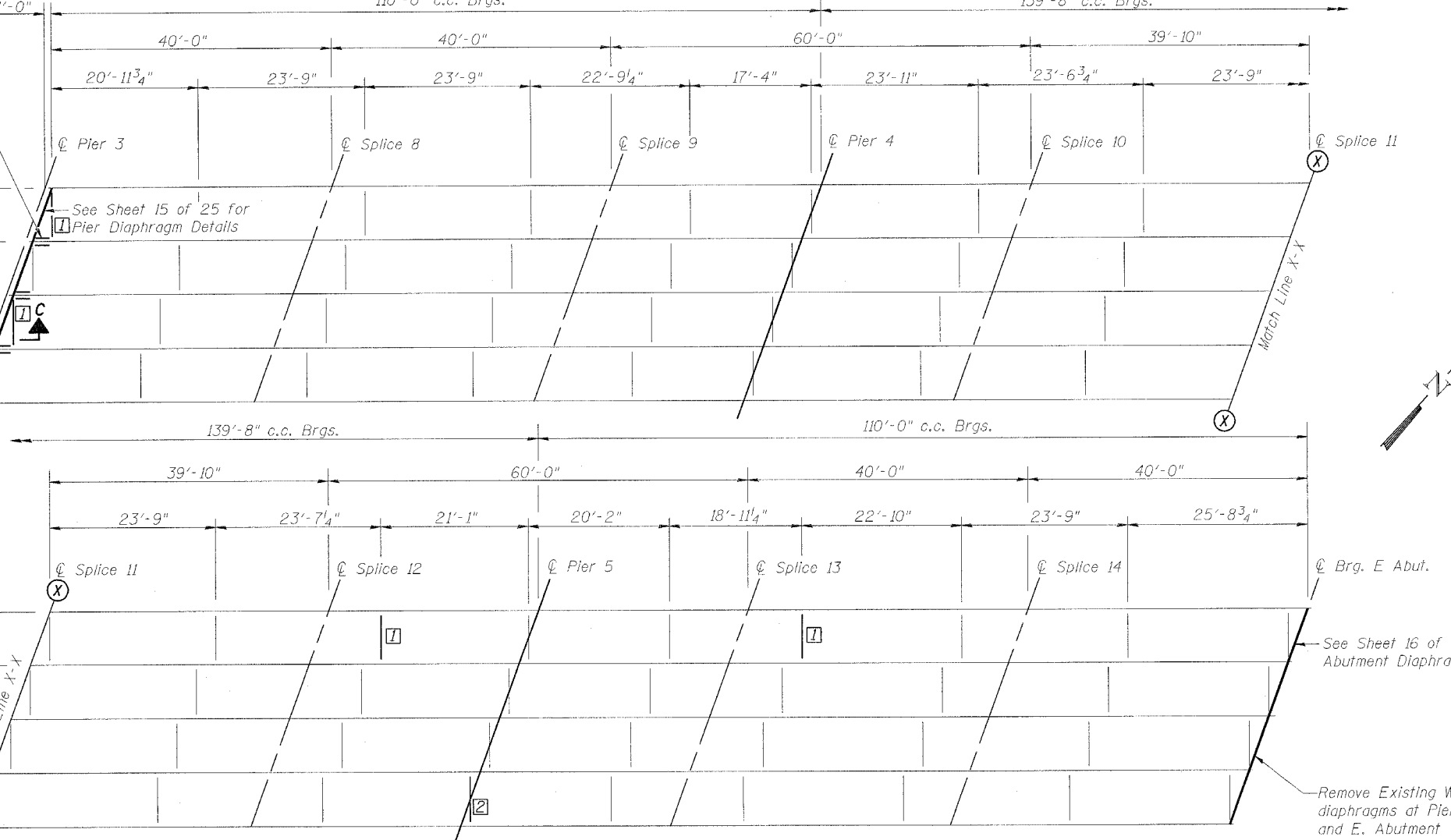
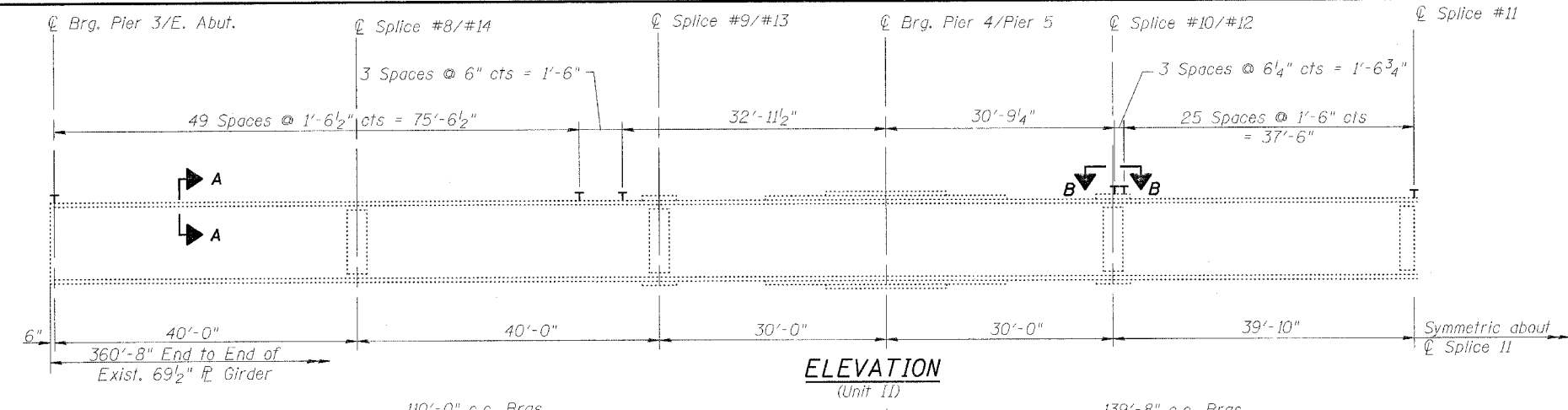
ILLINOIS DEPARTMENT OF TRANSPORTATION

**FRAMING PLAN UNIT II**

OLD U.S. ROUTE 36 OVER  
SANGAMON RIVER  
F.A.U. ROUTE 7978  
SECTION BR-1  
SANGAMON COUNTY  
STA. 70+00.00  
STRUCTURE NUMBER 084-0052

DRAWN BY: NJV  
CHECKED BY: PBB

DATE: JAN. 2005



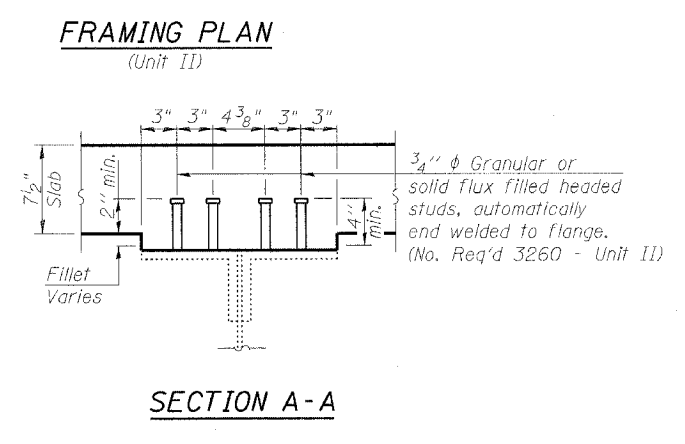
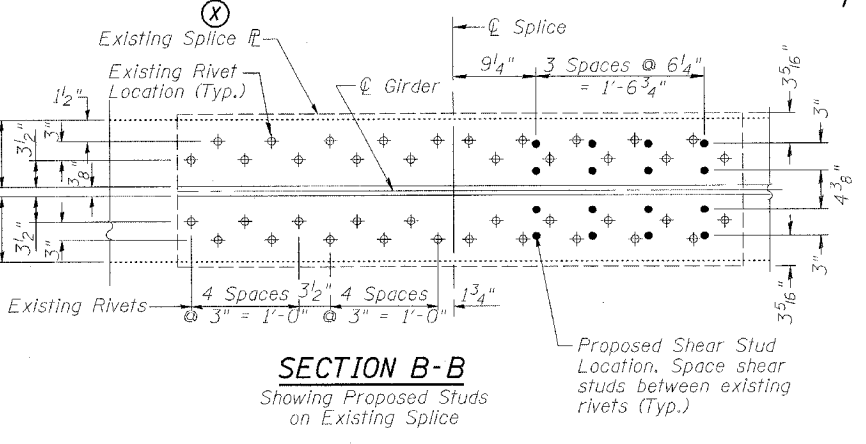
See Sheet 14 of 25 for Section C-C and Structural Steel Repair (3 Loc. Unit II)

See Sheet 15 of 25 for Pier Diaphragm Details

Existing Cross Frames at Pier 3 to be removed, stored, and re-erected upon completion of Structural Repairs. Cost included with Furnishing and Erecting Structural Steel.

See Sheet 16 of 25 for Abutment Diaphragm Details

Remove Existing WF diaphragms at Pier 3 and E. Abutment



**NOTES:**

Two hardened washers shall be required over all oversize holes at diaphragms.

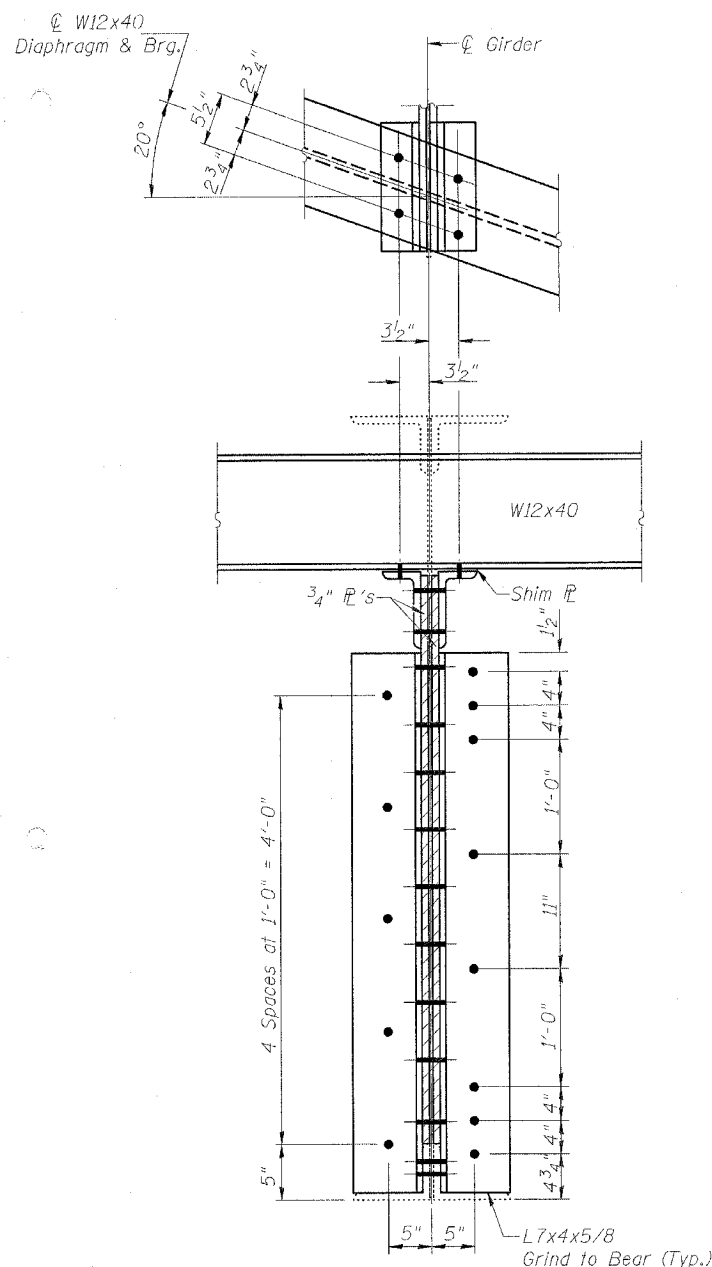
The cost of removing the existing diaphragms and Finger Joint to be included in the cost of Structural Steel Removal.

The cost of the replacement diaphragms, hardware and painting to be included in the cost of Furnishing and Erecting Structural Steel. Cost of Field Drilling Holes in Beams included in the cost of Furnishing and Erecting Structural Steel.

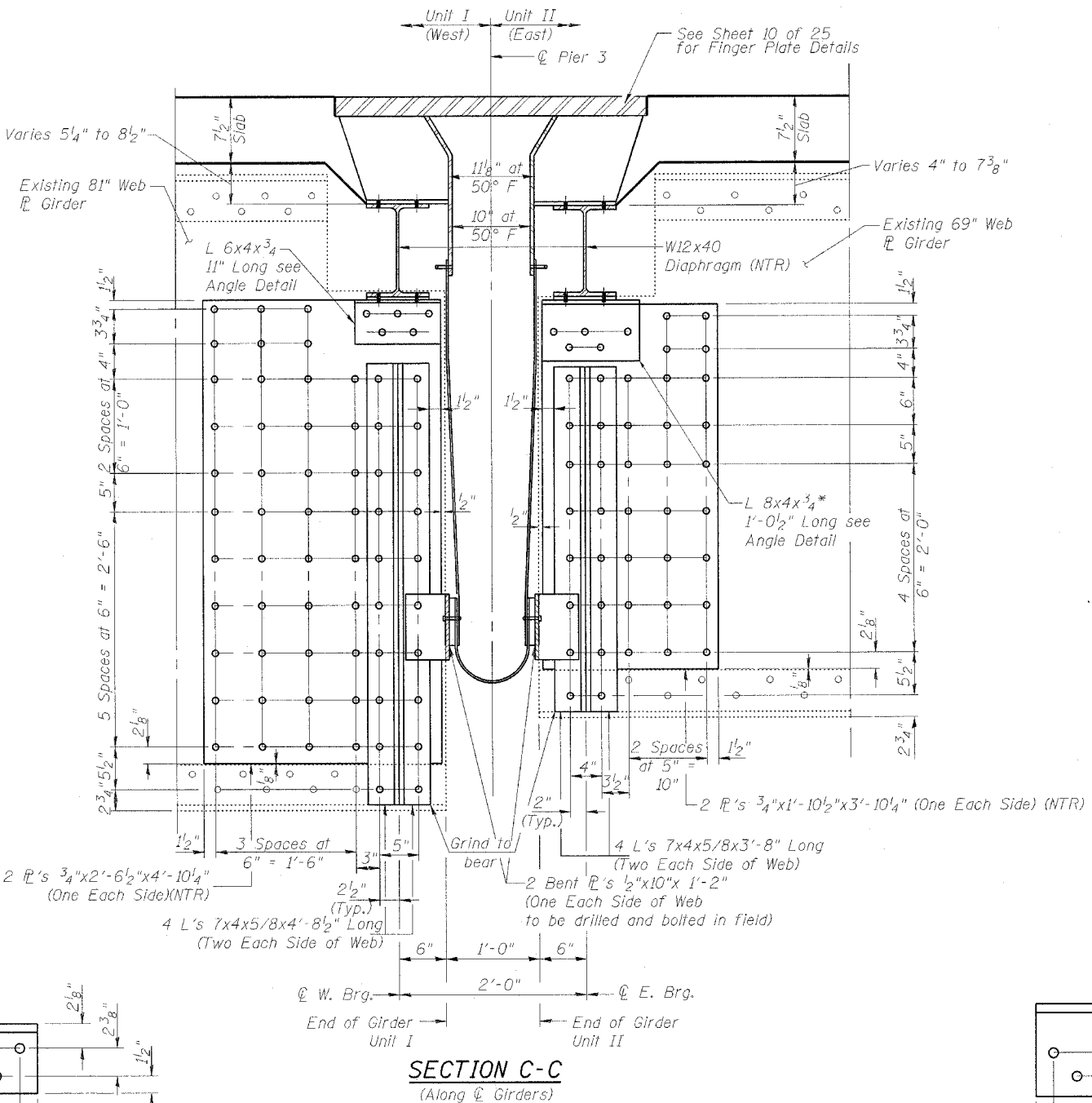
Existing dimensions to be field verified prior to ordering of material.

See Sheet 14 of 25 for Section C-C.

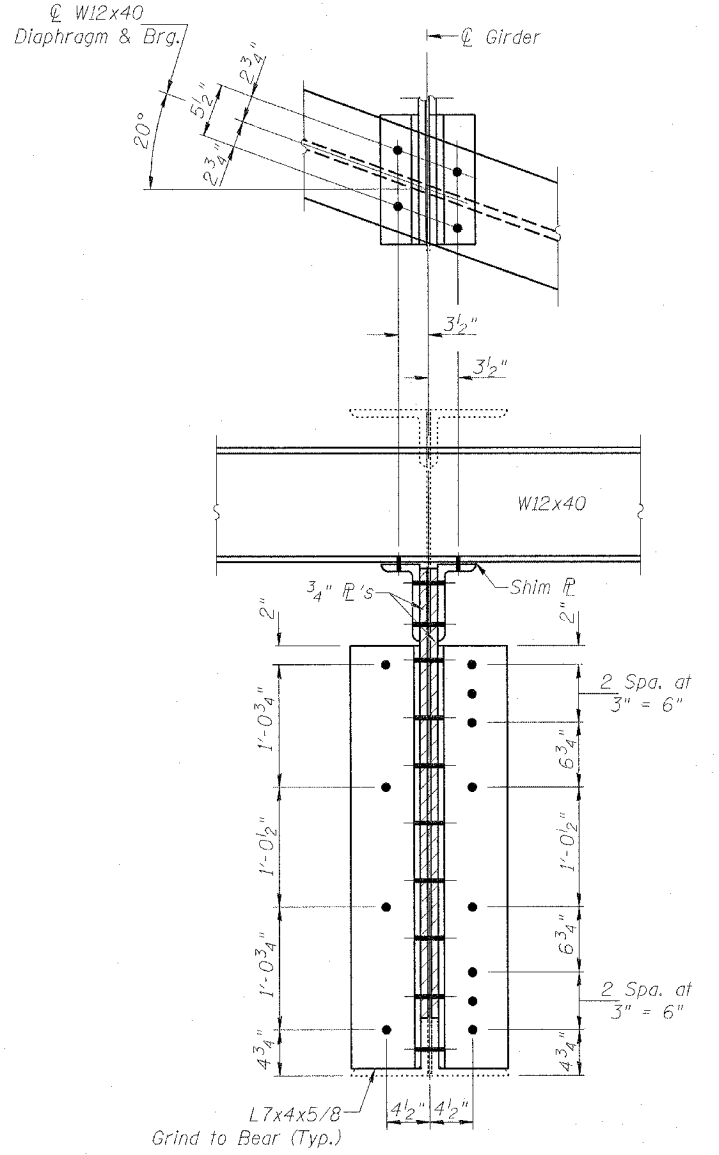
See Sheet 12 of 25 for Bill of Material



**END VIEW  
UNIT I**  
(Looking West)

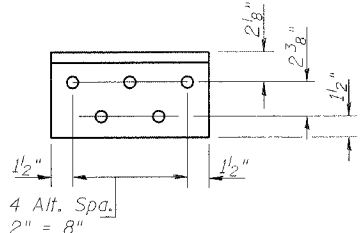


**SECTION C-C**  
(Along Girders)

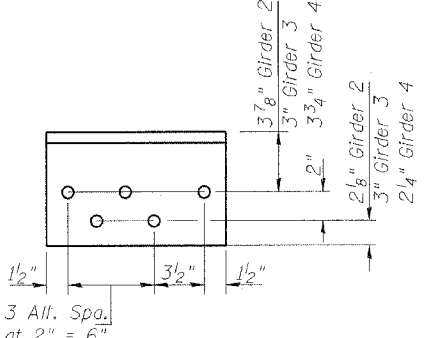


**END VIEW  
UNIT II**  
(Looking East)

**NOTES:**  
Existing bolts shall not be reused.  
Structural Steel Repair applies to Unit I and Unit II Girders 2, 3 and 4 only.  
At all repair locations, the bolted stiffeners, fill plates and seat angles attached to the existing plate girder web shall be removed. Cost included in cost of Structural Steel Removal.  
On Unit I, existing welds that connect the diaphragm seat angle to the girder shall be removed using the air-arc method. Grind smooth all weld material remaining on the web.



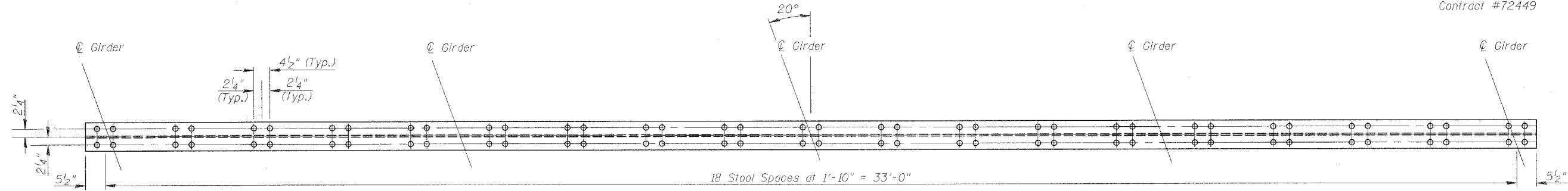
**ANGLE DETAIL  
UNIT I**  
(6 Req'd.)



**\* ANGLE DETAIL  
UNIT II**  
(6 Req'd.)

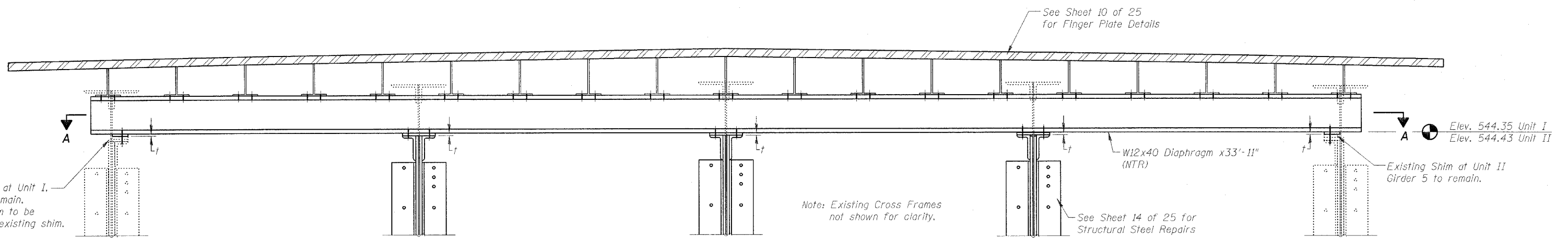
\*The location of the existing web holes from the existing diaphragm support L's shall be field verified and transferred to the proposed web plates and angles for Unit II Girders 2-4.

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**STRUCTURAL STEEL REPAIR AT PIER 3**  
OLD U.S. ROUTE 36 OVER  
SANGAMON RIVER  
F.A.U. ROUTE 7978  
SECTION BR-1  
SANGAMON COUNTY  
STA. 70+00.00  
STRUCTURE NUMBER 084-0052  
DATE: JAN. 2005  
DRAWN BY: NJV  
CHECKED BY: PBB

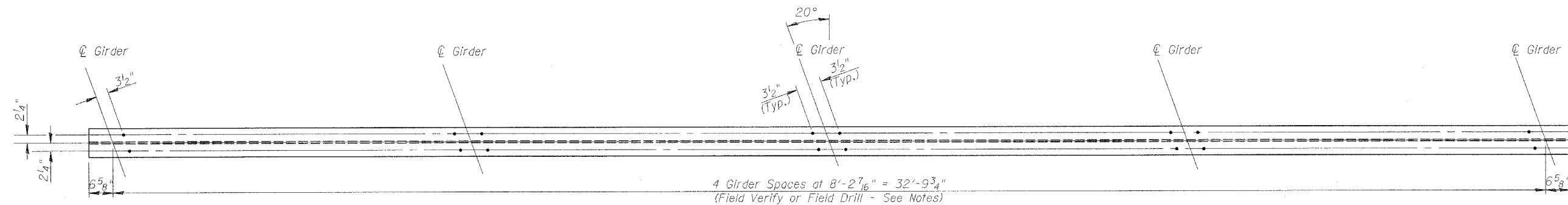


**TOP VIEW**

(Showing Diaphragm Top Flange)



**ELEVATION**



**SECTION A-A**

(Showing Diaphragm Bottom Flange)

**NOTES:**

Fasteners shall be high strength bolts.

Holes in top flange of Diaphragm for Stool connection shall be 1 5/16"  $\phi$ , fasteners shall be 7/8"  $\phi$  H.S. Bolts.

Holes in bottom flange of Diaphragm shall be 1"  $\phi$ , fasteners shall be 7/8"  $\phi$  H.S. Bolts. Two hardened washers shall be required.

Existing bolts shall not be reused.

Contractor has option of field verifying girder locations or field drilling 1"  $\phi$  Holes in bottom flange after the diaphragm and finger joint assembly has been set.

The diaphragm and finger joint assembly shall be shop fabricated and shipped as an assembled unit.

Shim Plate Thickness "t" (in.)					
Girder #	1	2	3	4	5
Unit I	-	-	-	-	1/4
Unit II	1 1/2"	5/8"	1/2"	-	-

Provide in addition to shims listed in table, one 1/4" normal shim, one 1/8" shim and one 1/16" shim for height adjustment at each beam. Cost included with Furnishing and Erecting Structural Steel.

ILLINOIS DEPARTMENT OF TRANSPORTATION

**PIER 3 DIAPHRAGM DETAILS**

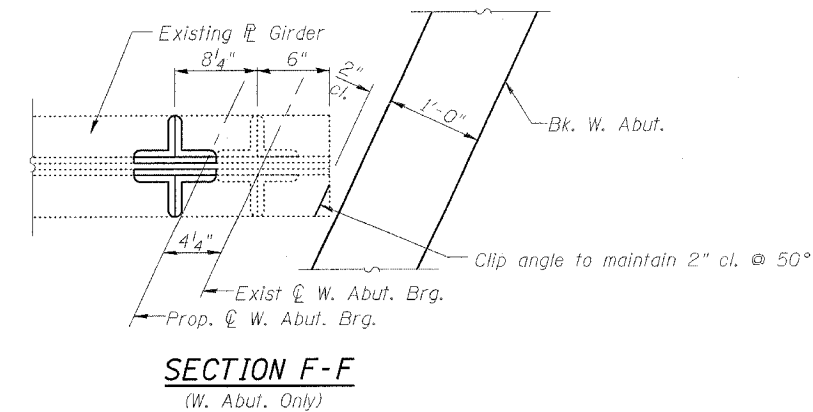
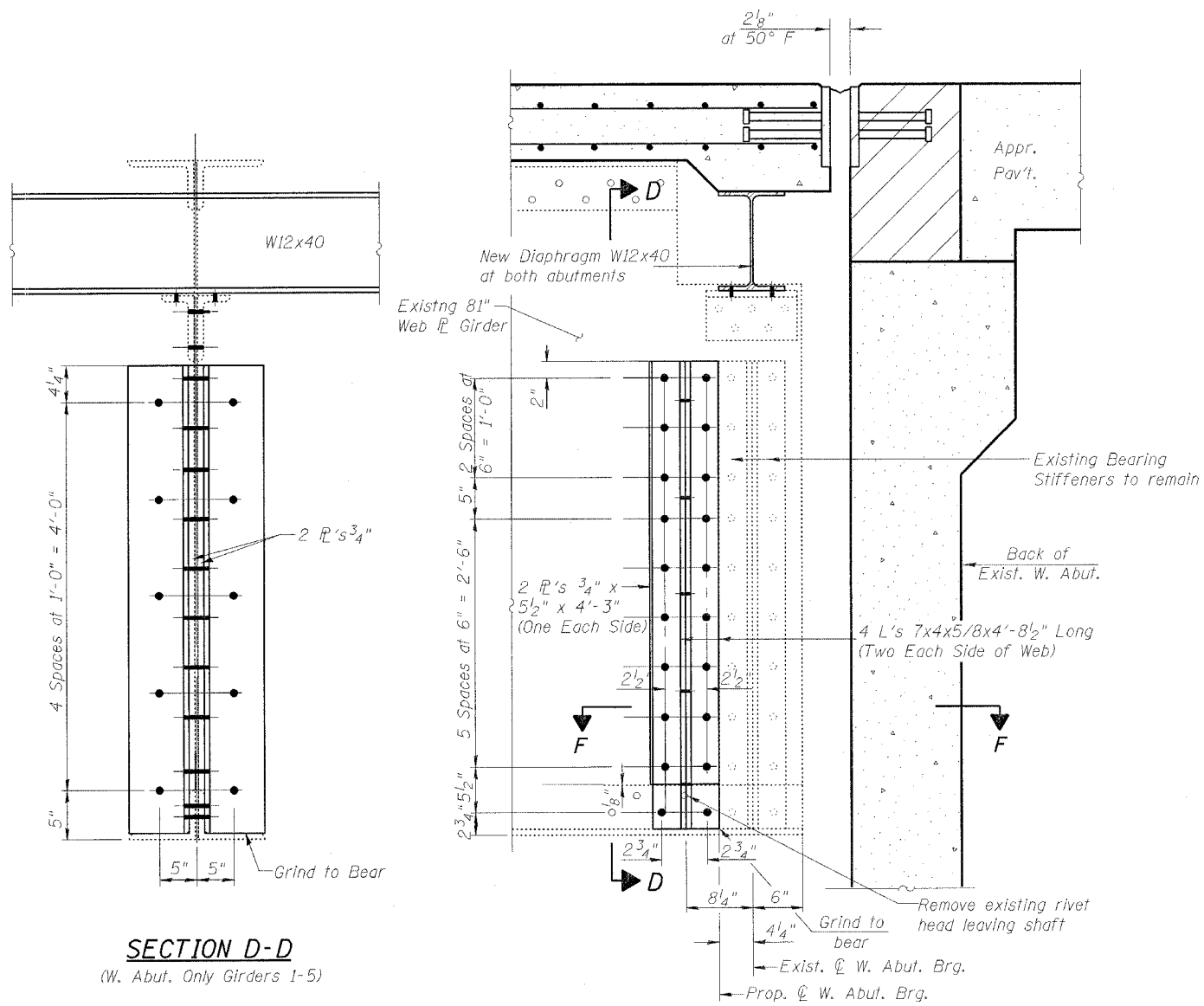
OLD U.S. ROUTE 36 OVER  
SANGAMON RIVER  
F.A.U. ROUTE 7978  
SECTION BR-1  
SANGAMON COUNTY  
STA. 70+00.00  
STRUCTURE NUMBER 084-0052

DATE: JAN. 2005

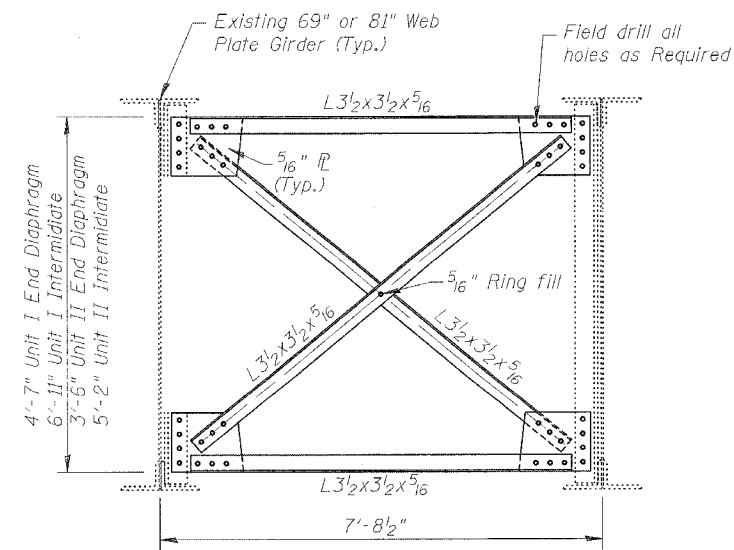
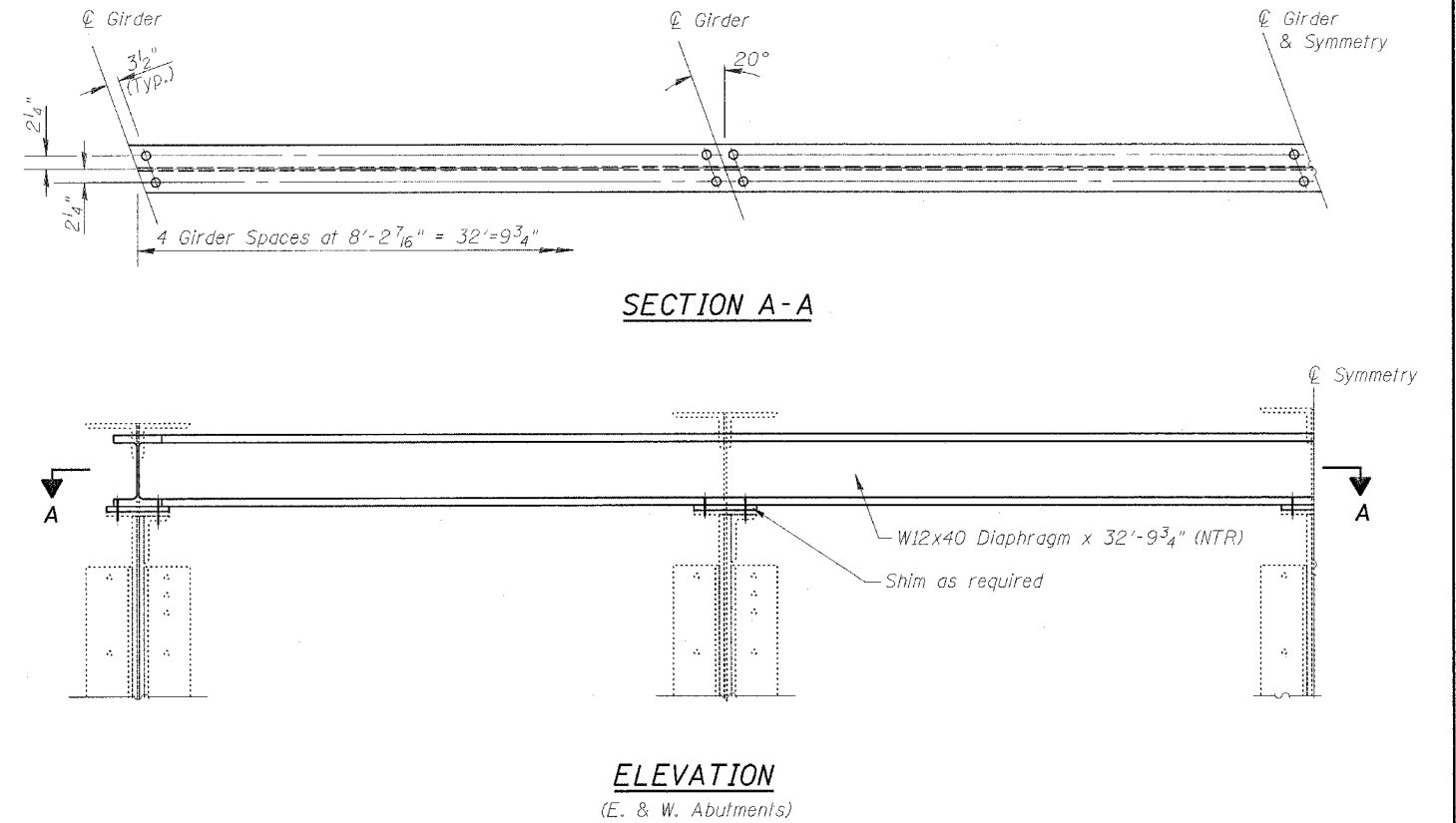
DRAWN BY: NJV  
CHECKED BY: PBB



**WEST ABUTMENT BEARING STIFFENERS**



**EAST & WEST ABUTMENT DIAPHRAGM DETAILS**



**INTERMEDIATE DIAPHRAGM DETAILS**

See Sheets 12 and 13 of 25 for member replacement locations

**NOTES:**

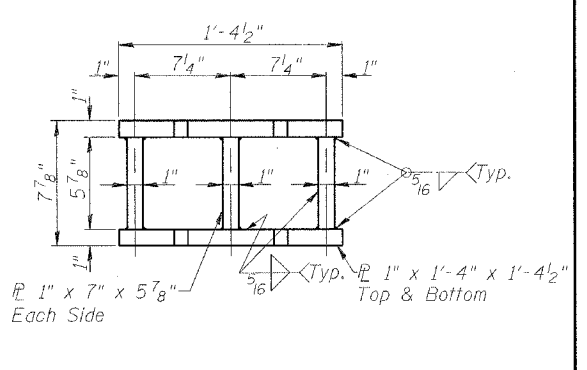
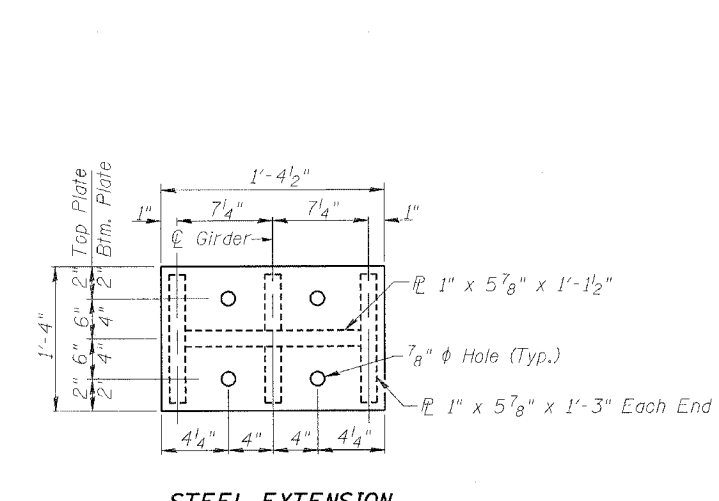
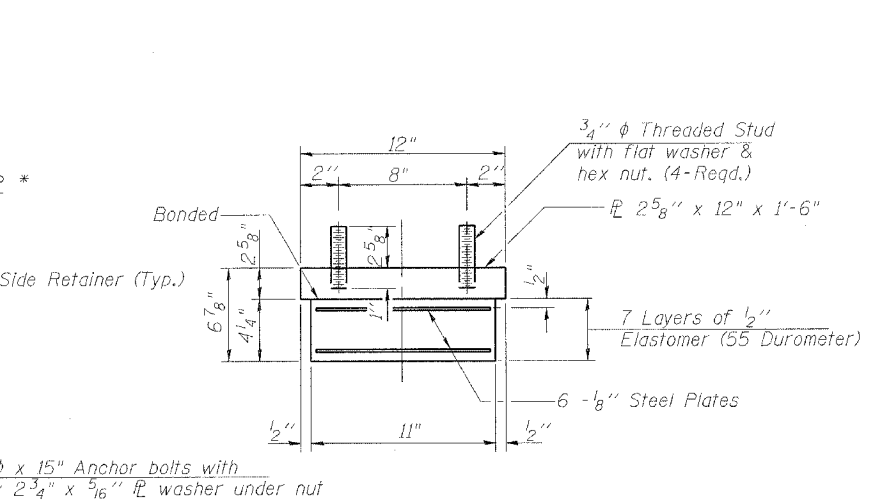
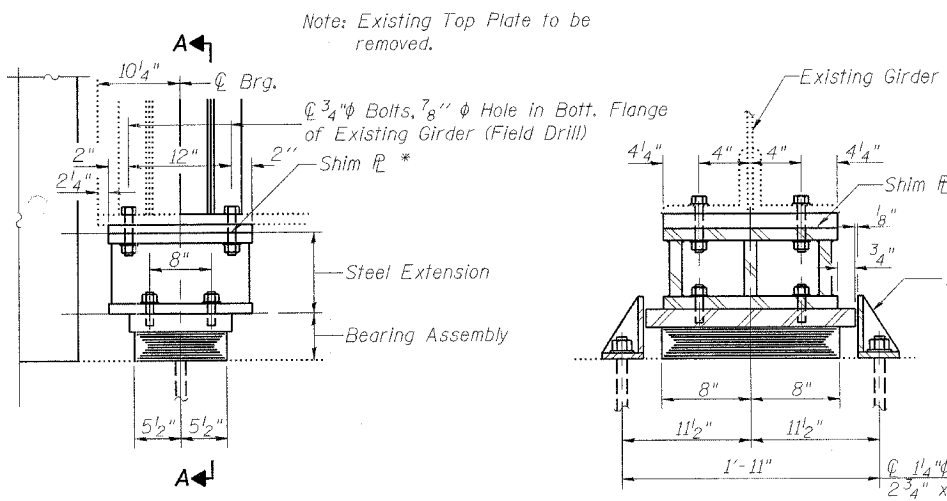
- Fasteners shall be high strength bolts.
- Holes in bottom flange of Diaphragm shall be 1"  $\phi$ . Fasteners shall be 7/8"  $\phi$  H.S. Bolts. Two hardened washers shall be required.
- Existing bolts shall not be reused.
- Contractor has option of field verifying girder locations or field drilling 1"  $\phi$  Holes in bottom flange after the diaphragm has been set.
- Provide one 1/4" normal shim, one 1/8" shim and one 1/16" shim for height adjustment at each beam. Cost included with Furnishing and Erecting Structural Steel.

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**WEST ABUTMENT BEARING STIFFENERS & DIAPHRAGM DETAILS**  
 OLD U.S. ROUTE 36 OVER  
 SANGAMON RIVER  
 F.A.U. ROUTE 7978  
 SECTION BR-1  
 SANGAMON COUNTY  
 STA. 70+00.00  
 STRUCTURE NUMBER 084-0052

DATE: JAN. 2005

DRAWN BY: NJV  
 CHECKED BY: PBB

Contract #72449



**ELEVATION**

**SECTION A-A**

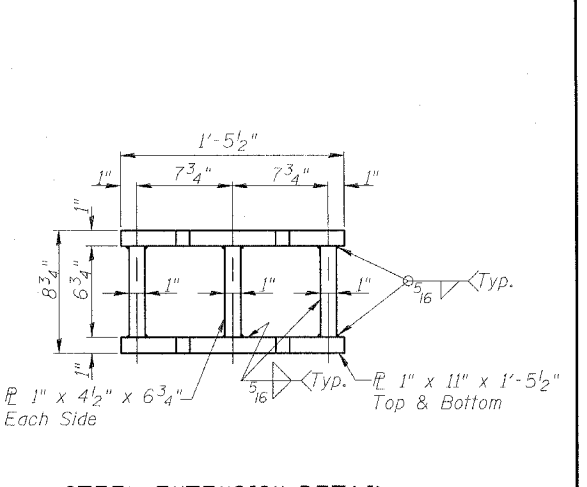
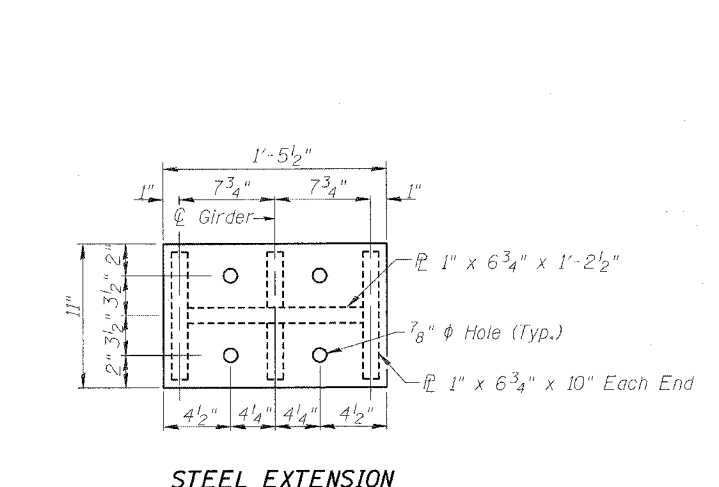
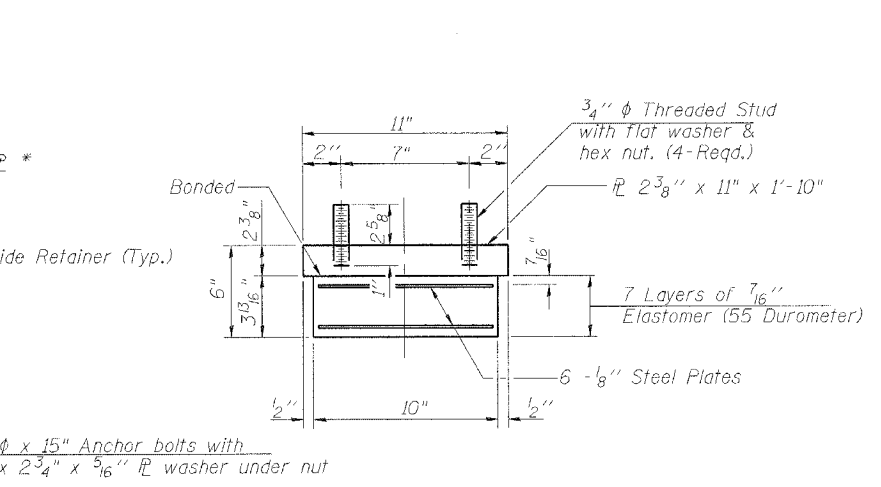
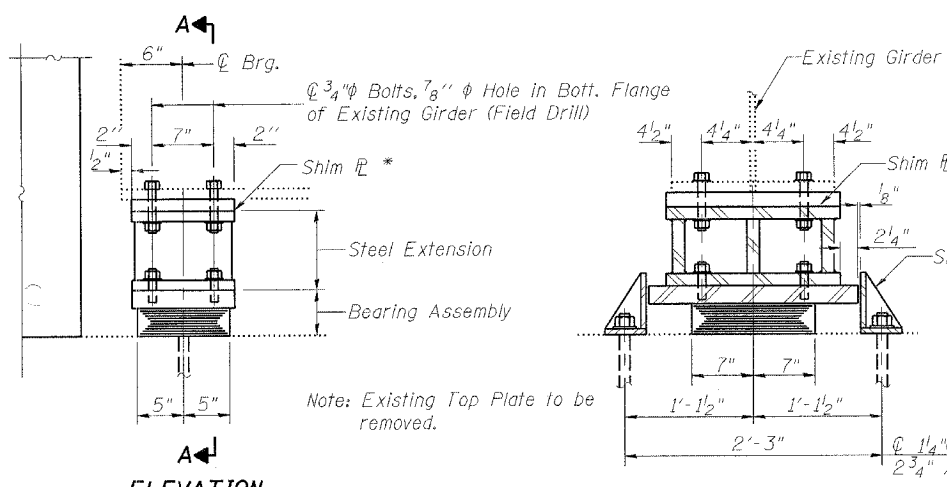
**BEARING ASSEMBLY**

**STEEL EXTENSION  
PLAN TOP AND BOTTOM PLATE**

**STEEL EXTENSION DETAIL**  
Weight included with Structural Steel.

**TYPE I ELASTOMERIC EXP. BRG. - WEST ABUT.**

Note: Prop. Brg. is 4 1/4" East of Cent. Exist. Brg.  
See "Existing Bearing Removal" this sheet and Sheet 16 of 25 for details.



**ELEVATION**

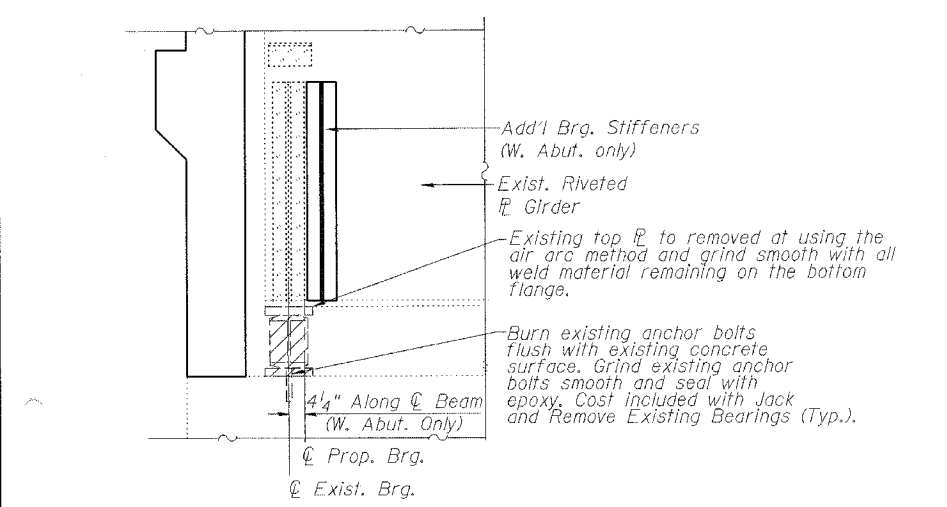
**SECTION A-A**

**BEARING ASSEMBLY**

**STEEL EXTENSION  
PLAN TOP AND BOTTOM PLATE**

**STEEL EXTENSION DETAIL**  
Weight included with Structural Steel.

**TYPE I ELASTOMERIC EXP. BRG. - EAST ABUT.**



**EXISTING BEARING REMOVAL**

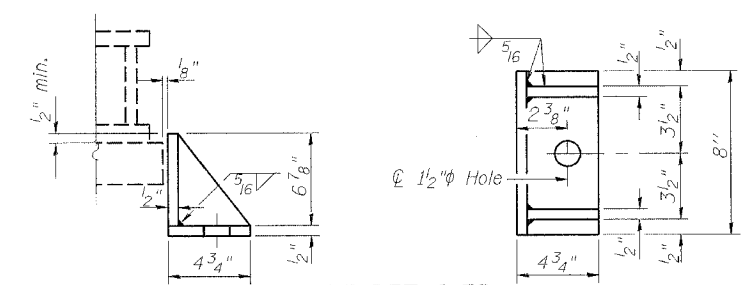
Hatched areas indicate removal of existing bearing.  
(West Abutment Shown, East Abutment and Pier 3 Similar)

**JACKING EXISTING SUPERSTRUCTURE**

- The Contractor shall submit for approval by the Engineer, plans for jacking existing superstructure prior to commencing any work at the bearings. This submittal shall be sealed by a licensed structural engineer in Illinois.
- Jacking and removing existing bearings shall be done after existing deck removal is completed and before the new deck is poured.
- All Girders at the abutments shall be lifted simultaneously 3/4" to replace existing bearings. Care shall be taken such that the relative elevation between adjacent girders does not vary by more than 1/4" from their original relative elevations.
- The maximum dead load reaction with deck removed (per bearing) at the West Abutment is 22 kips and at the East Abutment is 18 kips.
- The minimum jack capacity shall be 17 tons.
- The new structural steel and bearings shall be in place and the jacks shall be lowered before the new concrete deck is poured.

Shim Plate Thickness "t" (in.)					
Girder #	1	2	3	4	5
W. Abut.	-	2 1/8	2 5/8	1 5/8	1/8
E. Abut.	-	-	1	1/4	1/4

\* In addition to shims listed on the table, provide one 1/4" shim, one 1/8" shim, and one 1/16" shim for height adjustment. Weight included with Structural Steel.



**SIDE RETAINER**

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

**NOTES:**

- See Sheet 24 of 25 for Anchor Bolt installation.
- Shim plates shall not be placed under Bearing Assembly.
- Cost of Field Drilling holes in existing beams included in Cost of Furnishing and Erecting Structural Steel.

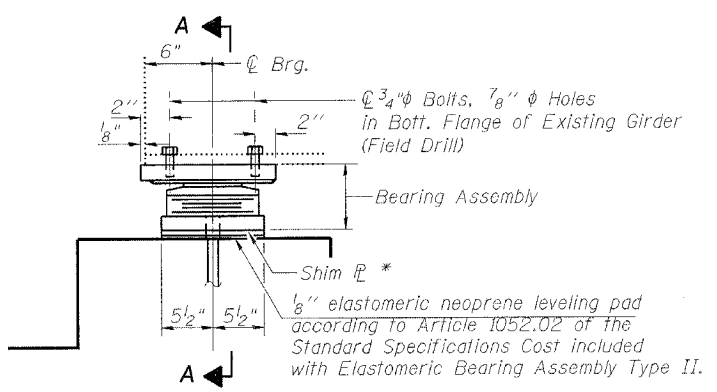
**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Elastomeric Bearing Assembly Type I	Each	10
Jack and Remove Existing Bearings	Each	10

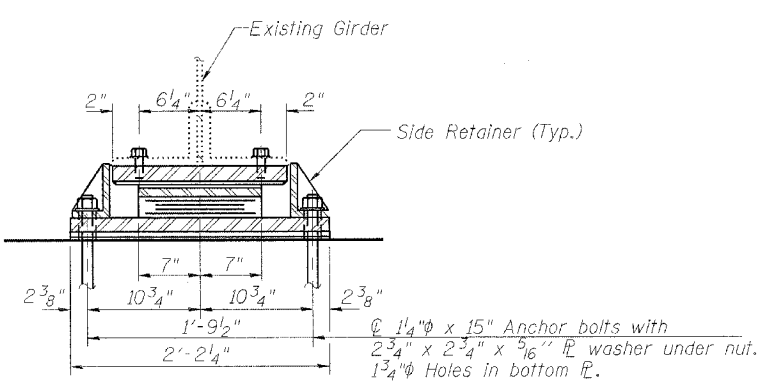
ILLINOIS DEPARTMENT OF TRANSPORTATION  
EAST & WEST ABUTMENT  
BEARING DETAILS  
OLD U.S. ROUTE 36 OVER  
SANGAMON RIVER  
F.A.U. ROUTE 7978  
SECTION BR-1  
SANGAMON COUNTY  
STA. 70+00.00  
STRUCTURE NUMBER 084-0052

DATE: JAN. 2005  
DRAWN BY: NJV  
CHECKED BY: PBB

Note: Existing Top Plate to be removed.

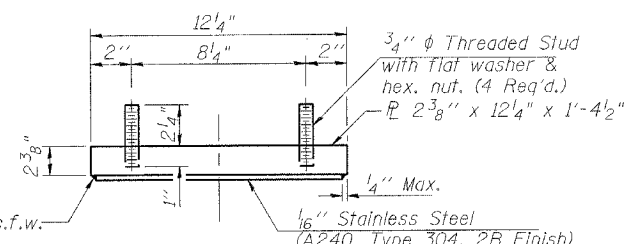


**ELEVATION AT PIER 3**

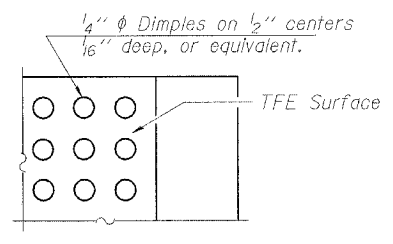


**SECTION A-A**

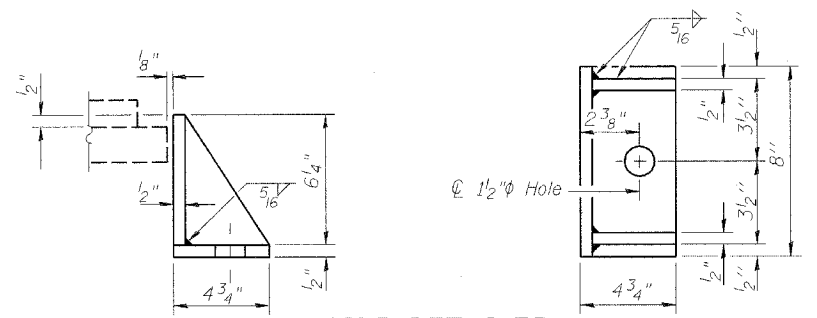
**TYPE II ELASTOMERIC EXP. BRG.**



**TOP BEARING ASSEMBLY**



**PLAN-TFE SURFACE**



**SIDE RETAINER**

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

Shim Plate Thickness "t" (in.)					
Girder #	1	2	3	4	5
Pier 3 (Unit II)	-	-	3/4	1/2	-

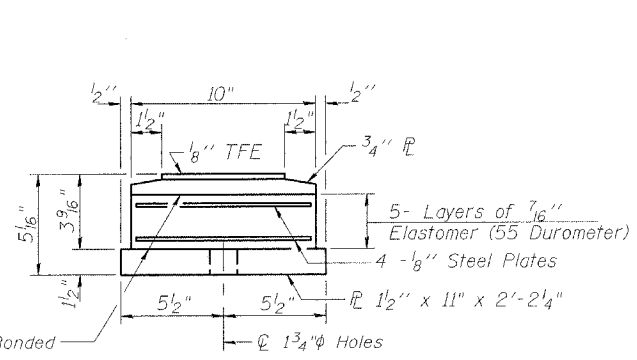
\* In addition to shims listed on the table, provide one 1/4" shim, one 1/8" shim, and one 1/16" shim for height adjustment. Weight included with Structural Steel.

**NOTES:**

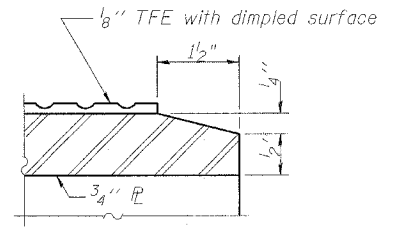
See sheet 24 of 25 for Anchor Bolt installation.

Cost of Field Drilling Holes in Existing Girders included in cost of Furnishing and Erecting Structural Steel.

For Existing Bearing Removal See Sheet 17 of 25.



**BOTTOM BEARING ASSEMBLY**

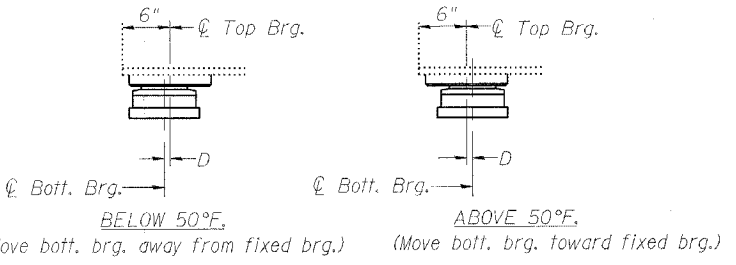


**SECTION THRU TFE**

The 1/8" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces. Bonding of 1/8" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

**JACKING EXISTING SUPERSTRUCTURE**

- All Unit II Girders at Pier 3 shall be lifted simultaneously 3/4" to replace existing bearings and to repair Pier 3. Care shall be taken such that the relative elevation between adjacent girders does not vary by more than 1/4" from their original relative elevations.
- The maximum dead load reaction with deck removed on Span 4 is 18 kips per bearing.
- The minimum jack capacity shall be 15 tons.
- See Sheet 2 of 25 for Temporary Support Requirements.



**SETTING ANCHOR BOLTS AT PIER 3**

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

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Elastomeric Bearing Assembly Type II	Each	5
Jack and Remove Existing Bearings	Each	5

ILLINOIS DEPARTMENT OF TRANSPORTATION

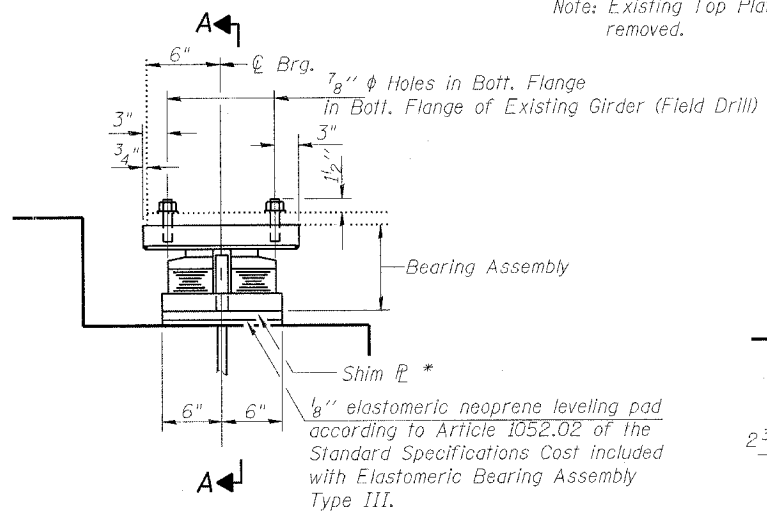
PIER 3 UNIT II BEARING DETAILS

OLD U.S. ROUTE 36 OVER  
SANGAMON RIVER  
F.A.U. ROUTE 7978  
SECTION BR-1  
SANGAMON COUNTY  
STA. 70+00.00  
STRUCTURE NUMBER 084-0052

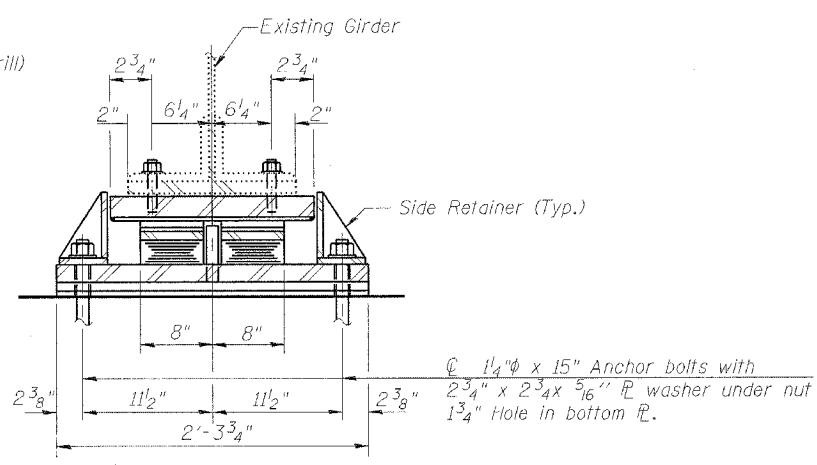
DATE: JAN. 2005

DRAWN BY: NJV  
CHECKED BY: PBB

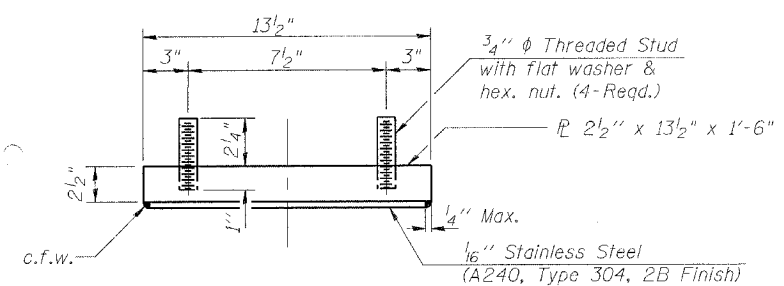
Note: Existing Top Plate to be removed.



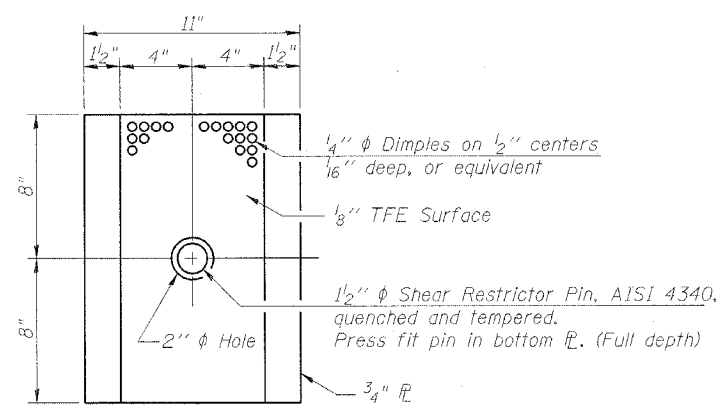
**ELEVATION AT PIER 3**  
**TYPE III ELASTOMERIC EXP. BRG.**



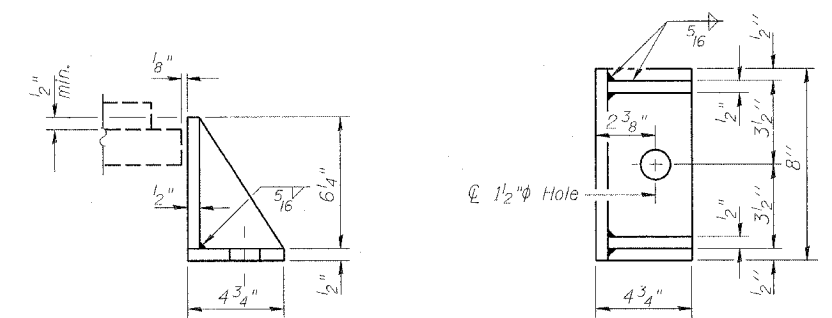
**SECTION A-A**



**TOP BEARING ASSEMBLY**



**PLAN-TFE ELASTOMERIC BRG.**



**SIDE RETAINER**

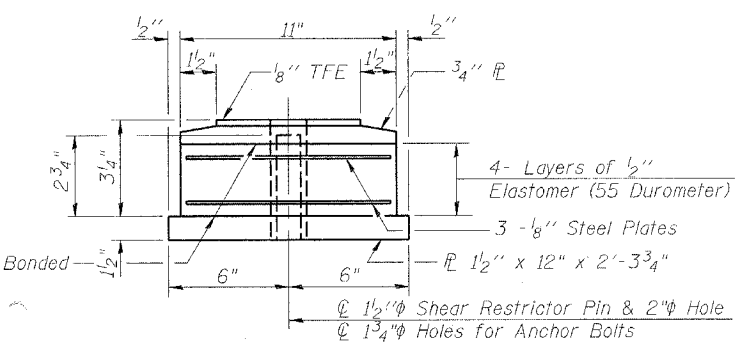
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.

Shim Plate Thickness "t" (in.)					
Girder #	1	2	3	4	5
Pier 3 (Unit I)	-	-	5/8	1/2	-

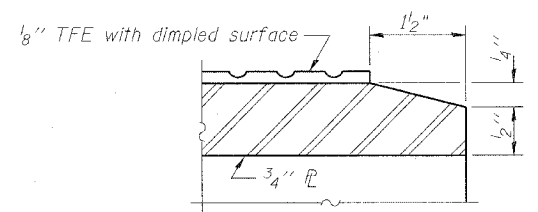
\* In addition to shims listed on the table, provide one 1/4" shim, one 1/8" shim, and one 1/16" shim for height adjustment. Weight included with Structural Steel.

**JACKING EXISTING SUPERSTRUCTURE**

- All Unit I Girders at Pier 3 shall be lifted simultaneously 3/4" to replace existing bearings. Care shall be taken such that the relative elevation between adjacent girders does not vary by more than 1/4" from their original relative elevations.
- The maximum dead load reaction with deck removed on Span 3 is 22 kips per bearing.
- The minimum jack capacity shall be 17 tons.
- See Sheet 2 of 25 for Temporary Support Requirements.

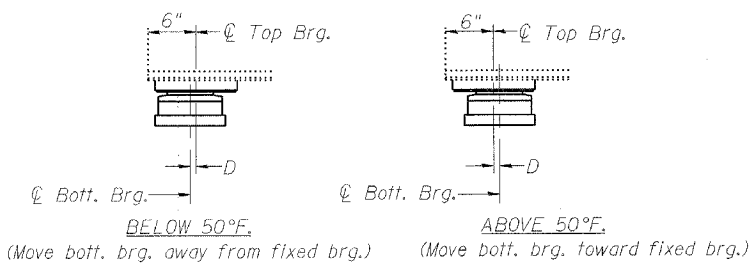


**BOTTOM BEARING ASSEMBLY**



**SECTION THRU TFE**

The 1/8" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces. Bonding of 1/8" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



**SETTING ANCHOR BOLTS AT PIER 3**

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

**NOTES:**

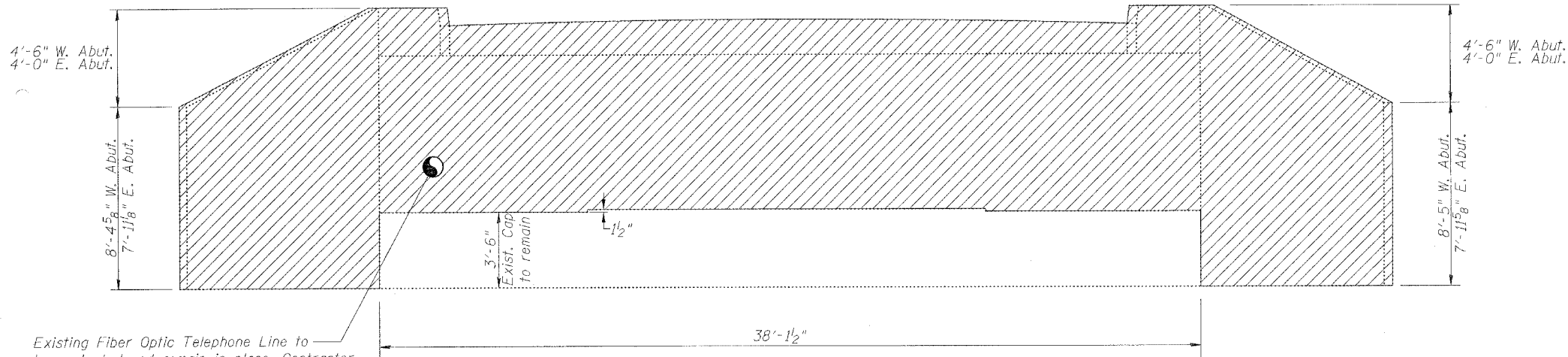
See sheet 24 of 25 for Anchor Bolt installation.  
Cost of Field Drilling Holes in Existing Beams included in cost of Furnishing and Erecting Structural Steel.  
For Existing Bearing Removal See Sheet 17 of 25.

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Elastomeric Bearing Assembly Type III	Each	5
Jack and Remove Existing Bearings	Each	5

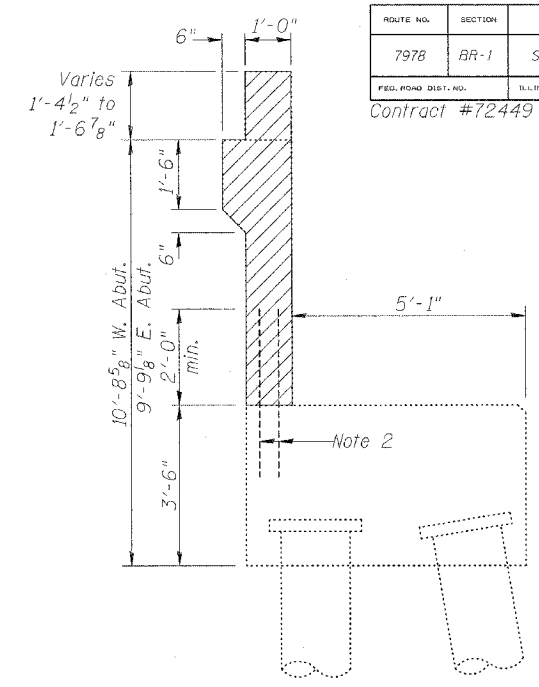
ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PIER 3 UNIT I BEARING DETAILS**  
OLD U.S. ROUTE 36 OVER  
SANGAMON RIVER  
F.A.U. ROUTE 7978  
SECTION BR-1  
SANGAMON COUNTY  
STA. 70+00.00  
STRUCTURE NUMBER 084-0052

DATE: JAN. 2005  
DRAWN BY: NJV  
CHECKED BY: PBB

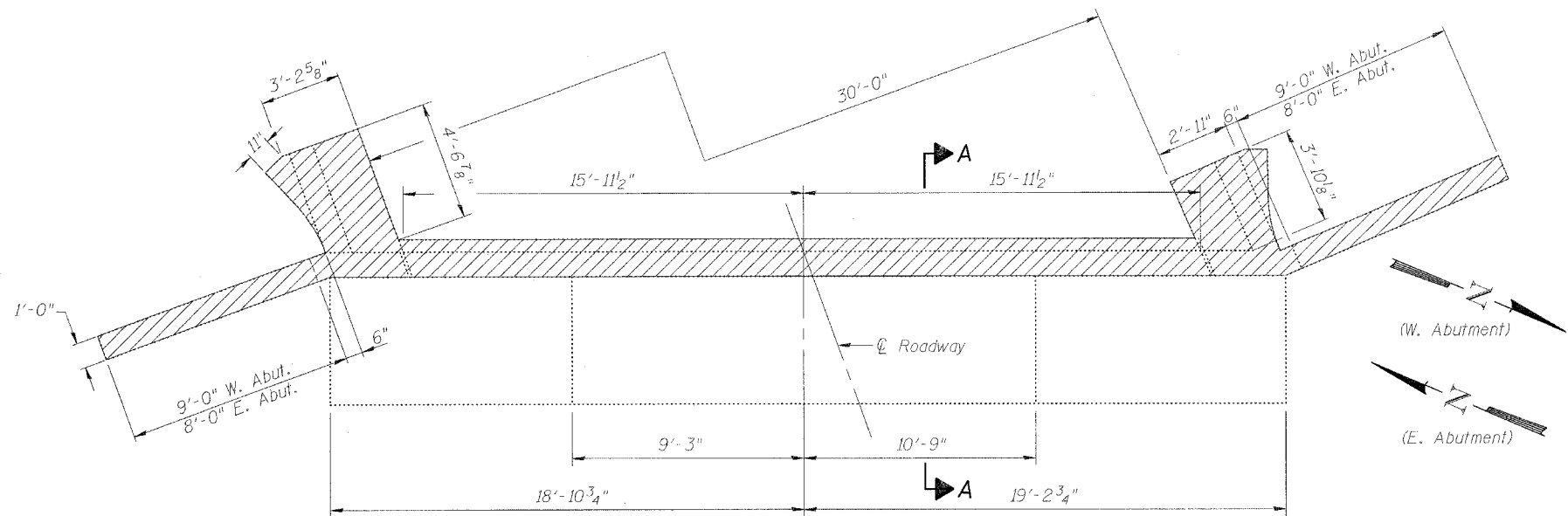


Existing Fiber Optic Telephone Line to be protected and remain in place. Contractor to temporarily support as required during construction. Cost included in cost of Concrete Removal. (Typ. both Abutts.)

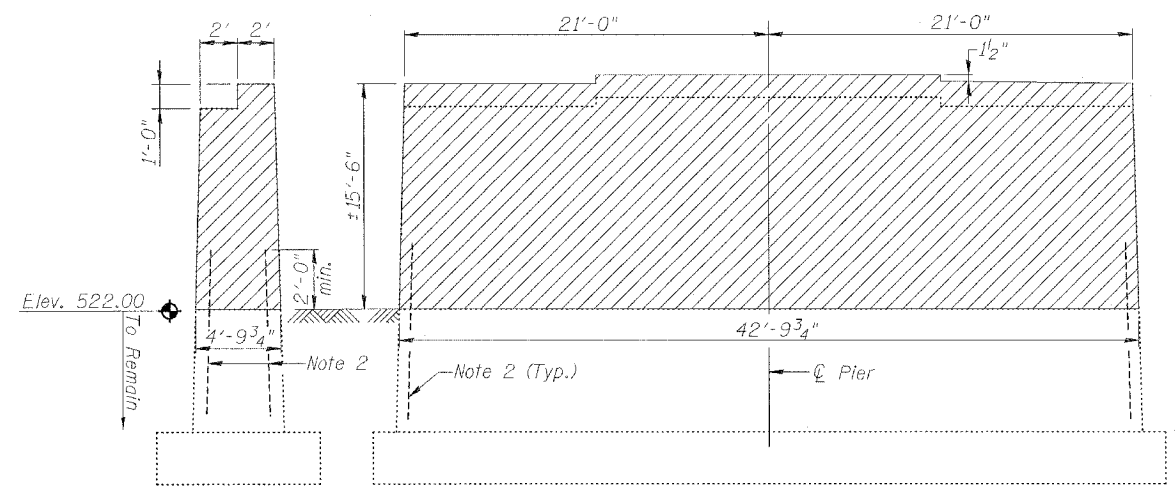
**ELEVATION OF ABUTMENT**  
W. Abut. Looking West (Shown)  
E. Abut. Looking East (Opposite hand)



**SECTION A-A**  
(Dimensions @ Rt <'s)

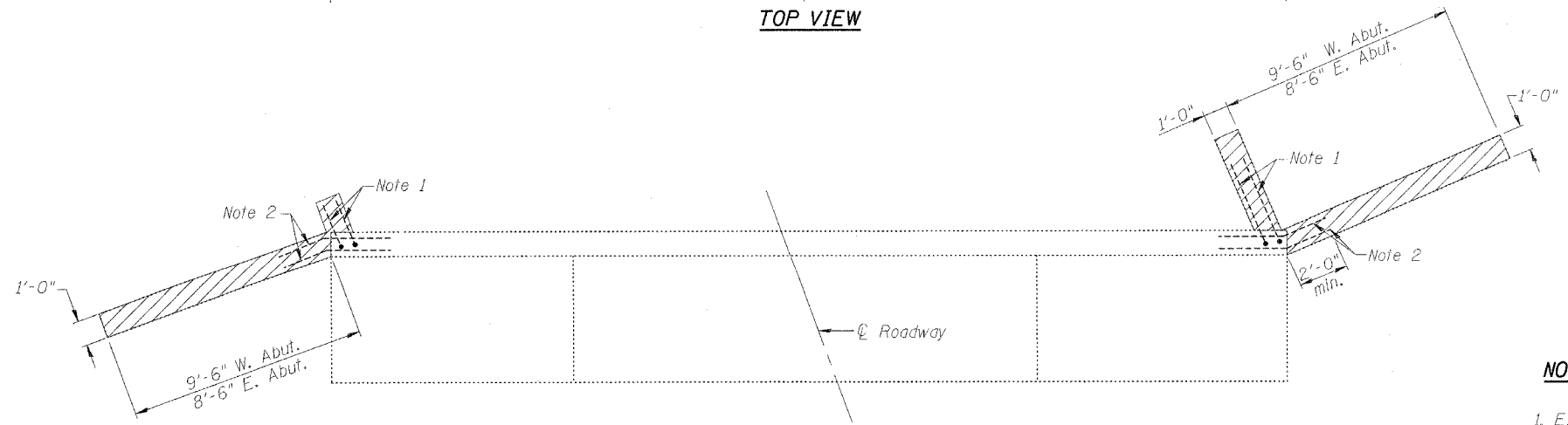


**TOP VIEW**



**SECTION AT PIER 3**  
(Looking North)

**ELEVATION AT PIER 3**  
(Looking East)



**PLAN - PILE CAP**

**LEGEND**  
Concrete Removal

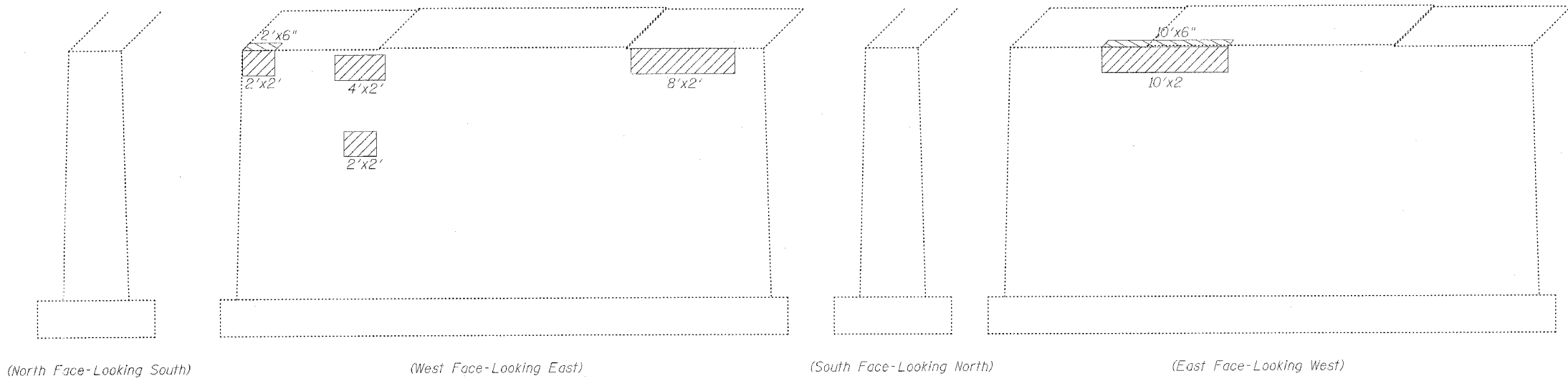
- NOTES:**
- Existing Reinforcement not extending into new concrete shall be cut off flush and covered with a 2" layer of cement grout. Cost included with "Concrete Removal".
  - Existing reinforcement extending into new construction shall be cleaned, straightened and incorporated into the new construction. Cost included with Concrete Removal.

**BILL OF MATERIAL**

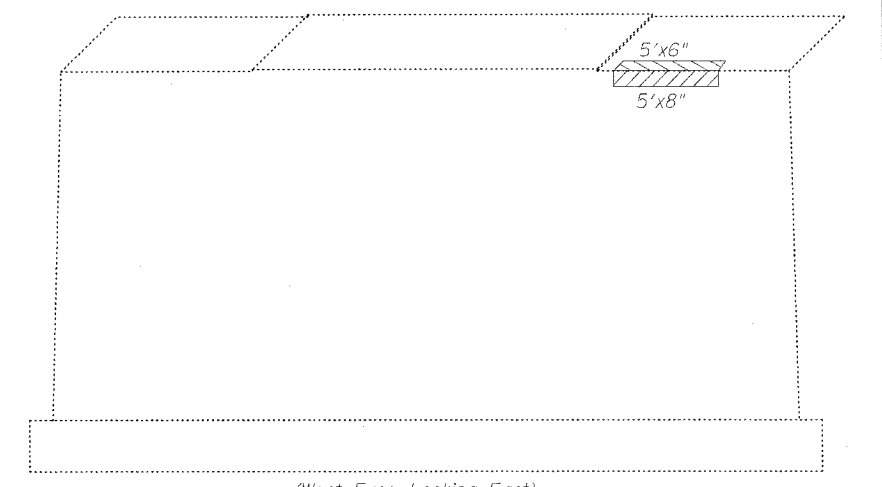
ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	157.8

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**ABUTMENT & PIER 3 CONCRETE REMOVAL**  
OLD U.S. ROUTE 36 OVER  
SANGAMON RIVER  
F.A.U. ROUTE 7978  
SECTION BR-1  
SANGAMON COUNTY  
STA. 70+00.00  
STRUCTURE NUMBER 084-0052

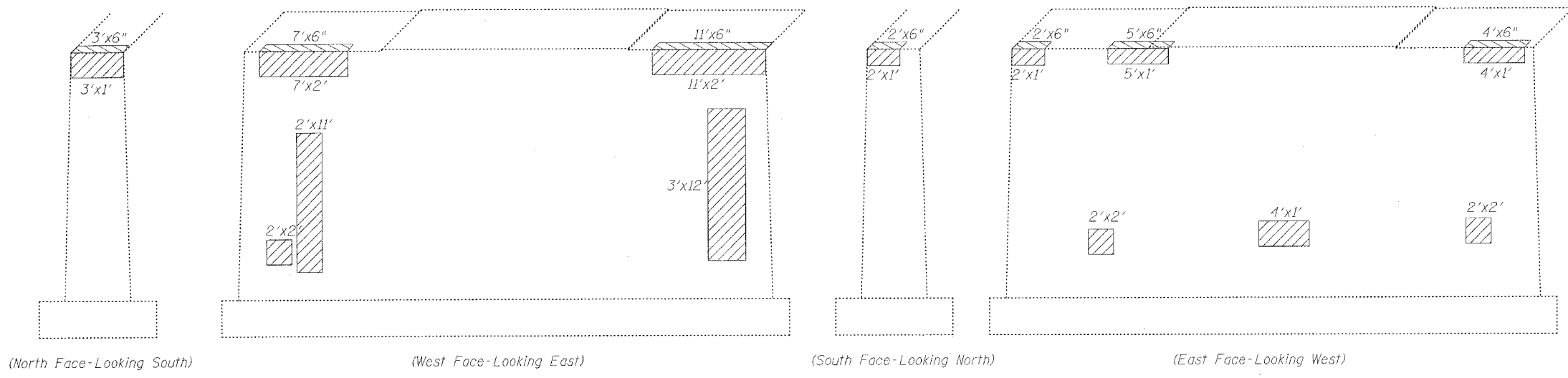
DATE: JAN. 2005  
DRAWN BY: NJV  
CHECKED BY: PBB



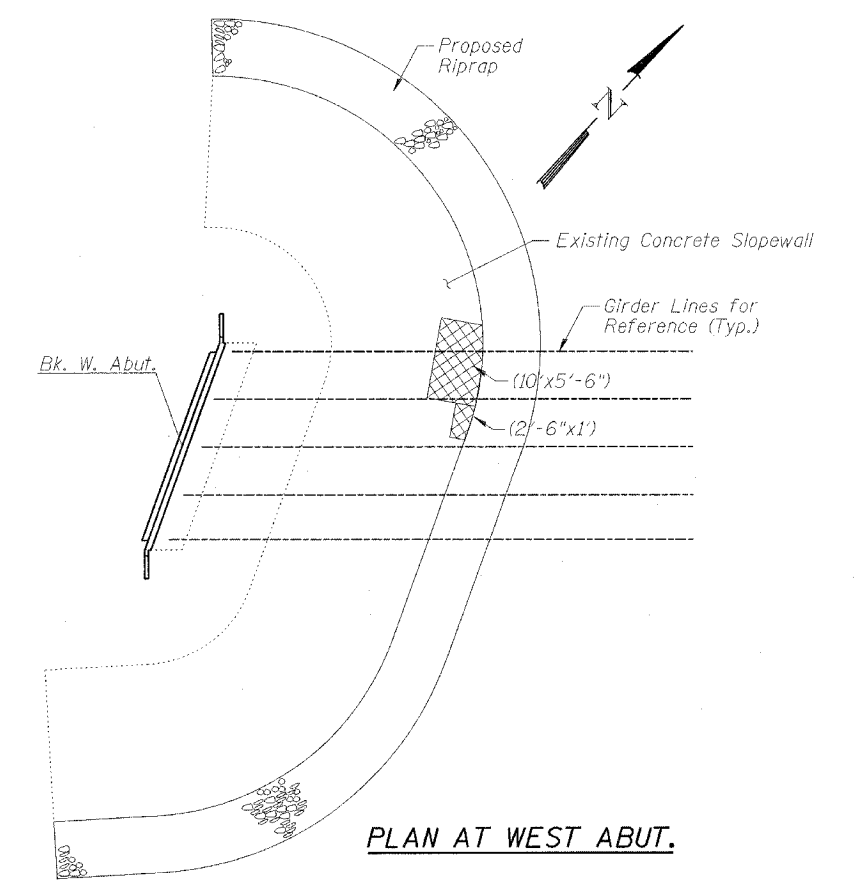
**PIER 2 ELEVATION**



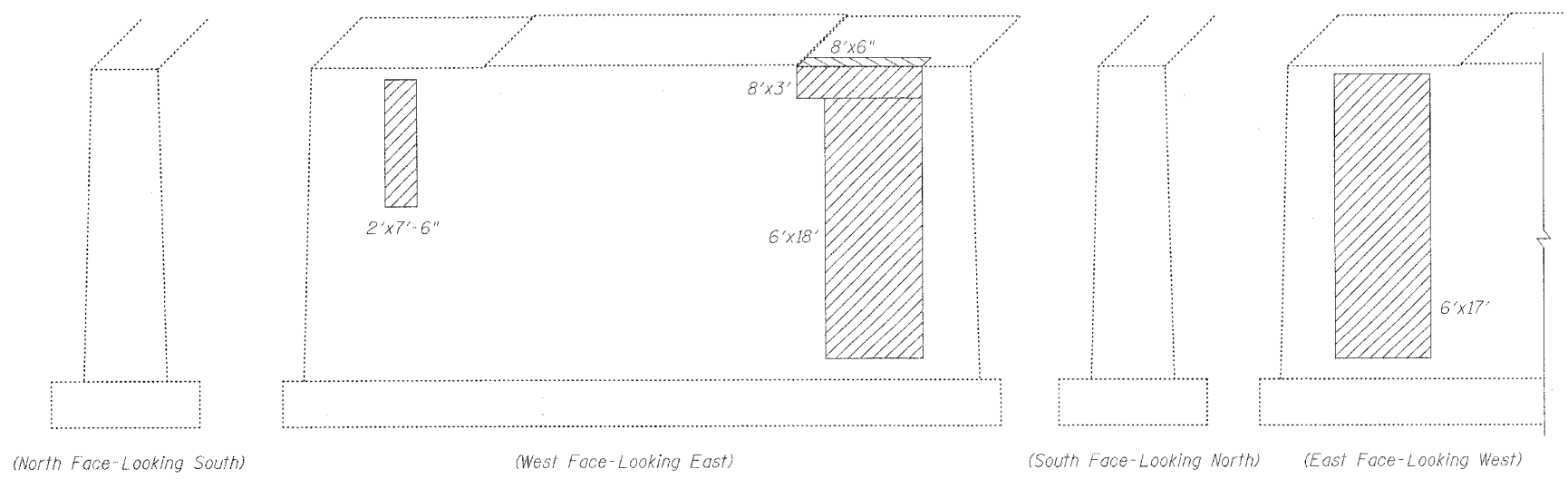
**PIER 1 ELEVATION**



**PIER 4 ELEVATION**



**PLAN AT WEST ABUT.**



**PIER 5 ELEVATION**

**BILL OF MATERIAL**

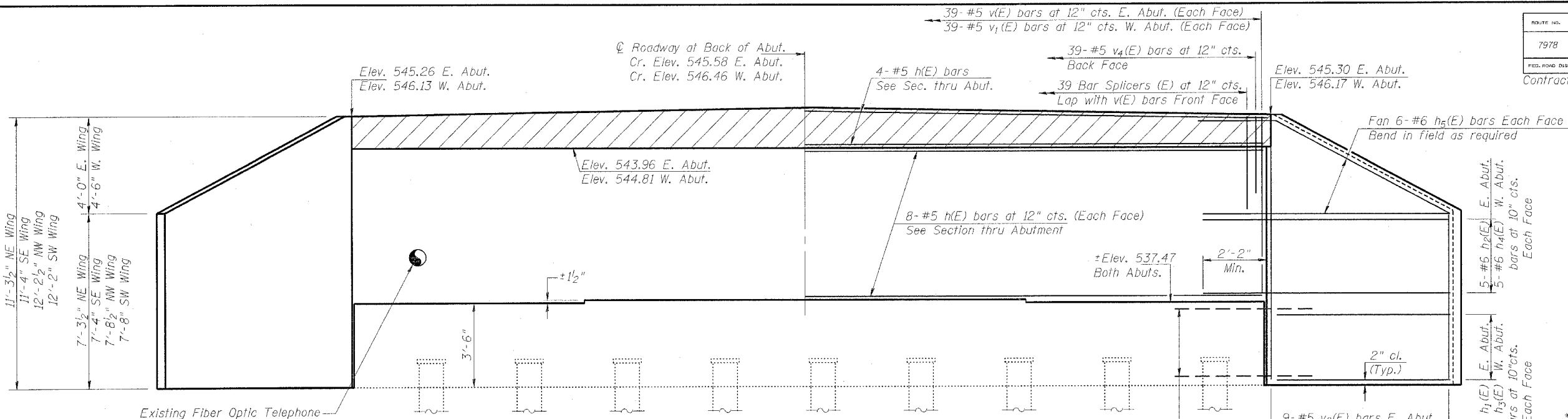
ITEM	UNIT	QUANTITY
Formed Concrete Repair (Depth ≤ 5")	Sq. Ft.	460
Slopewall Repair	Sq. Yd.	6.4
Controlled Low-Strength Material	Cu. Yd.	3.2

**LEGEND**

- Formed Concrete Repair (Depth ≤ 5")
- Slopewall Repair

Note: Pier 1 and Abutments do not have any repairs.

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**CONCRETE REPAIR DETAILS**  
 OLD U.S. ROUTE 36 OVER  
 SANGAMON RIVER  
 F.A.U. ROUTE 797B  
 SECTION BR-1  
 SANGAMON COUNTY  
 STA. 70+00.00  
 STRUCTURE NUMBER 084-0052  
 DATE: JAN. 2005  
 DRAWN BY: NJV  
 CHECKED BY: PBB

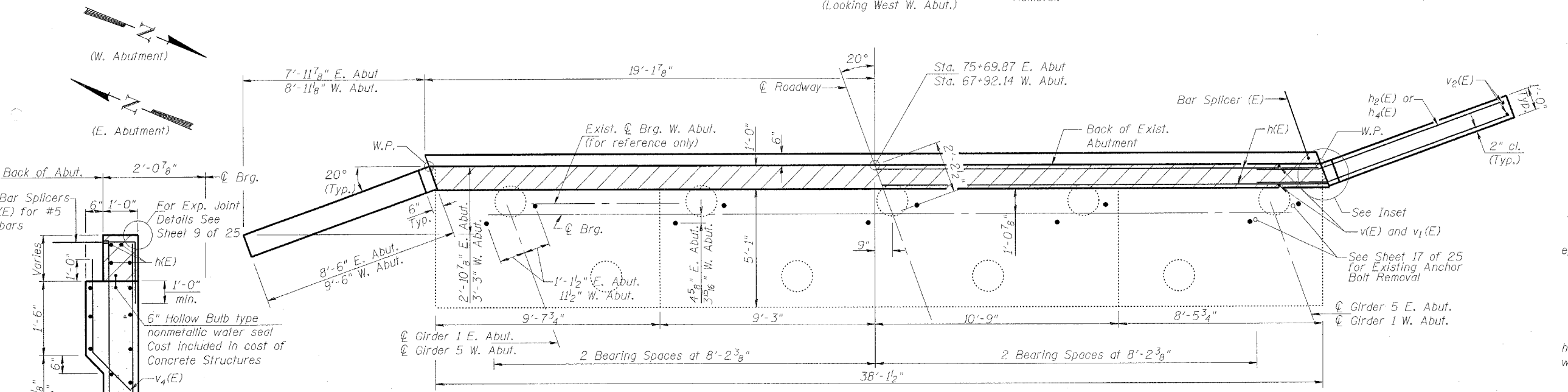


**ELEVATION**  
(Looking East E. Abut.)  
(Looking West W. Abut.)

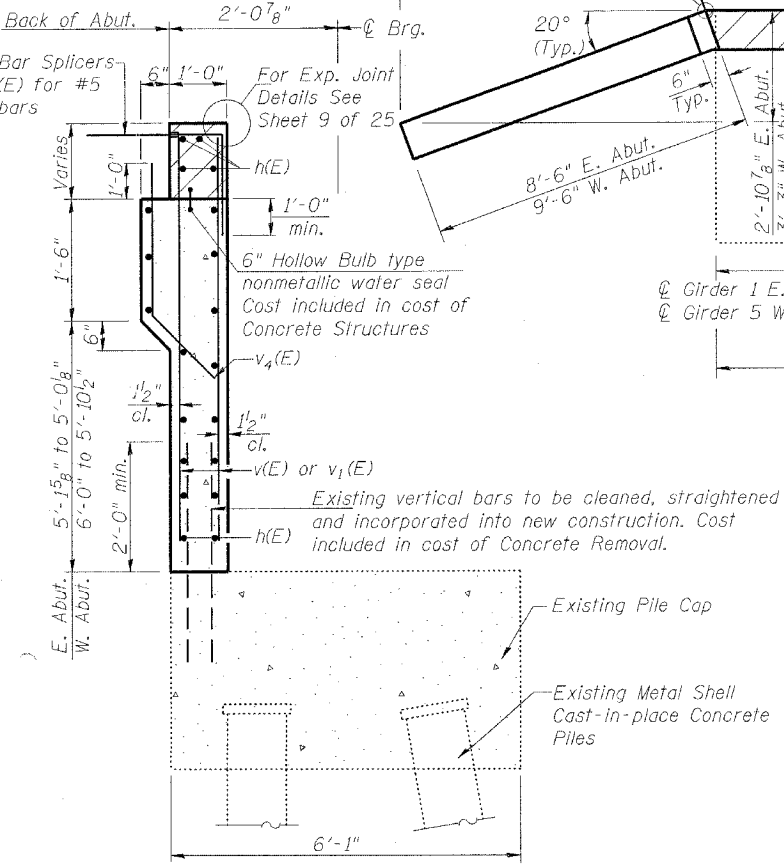
**BILL OF MATERIAL**  
(BOTH ABUTMENTS)

BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	40	#5	38'-0"	—
h <sub>1</sub> (E)	20	#6	8'-2"	—
h <sub>2</sub> (E)	20	#6	10'-6"	—
h <sub>3</sub> (E)	20	#6	9'-2"	—
h <sub>4</sub> (E)	20	#6	11'-6"	—
h <sub>5</sub> (E)	48	#6	12'-6"	—
v(E)	78	#5	7'-8"	—
v <sub>1</sub> (E)	78	#5	8'-6"	—
v <sub>2</sub> (E)	18	#5	18'-0"	—
v <sub>3</sub> (E)	20	#5	19'-2"	—
v <sub>4</sub> (E)	78	#5	4'-0"	—
Structure Excavation			Cu. Yd.	192.7
Concrete Structures			Cu. Yd.	35.2
Reinforcement Bars, Epoxy Coated			Pound	6050
Bar Splicers			Each	78

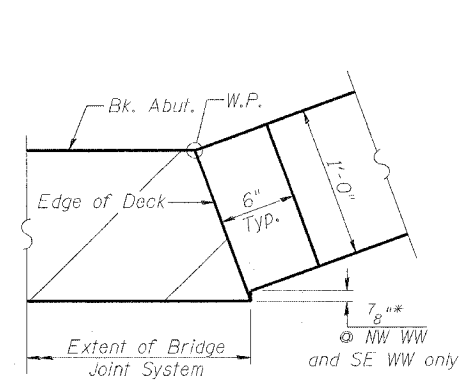
\*\*\* W. Abut. = 96.9 Cu Yd  
E. Abut. = 95.8 Cu Yd



**PLAN**

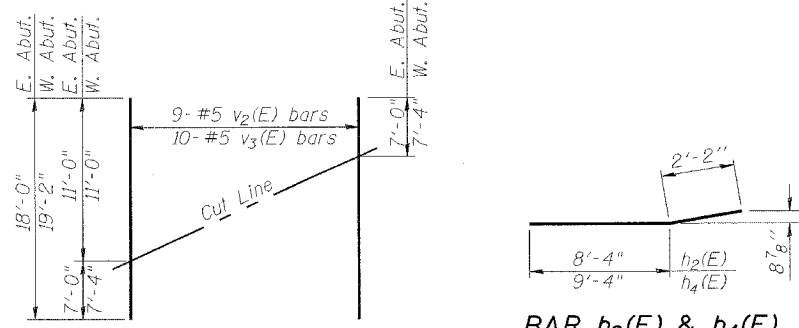


**SECTION THRU ABUTMENT**  
Dim's at Rt. L's



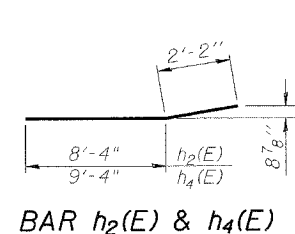
**INSET**

\* Applies only to hatch block

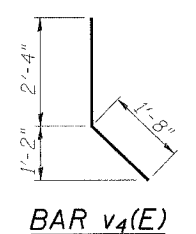


**FIELD CUTTING DIAGRAM**

\*\* Order v<sub>2</sub>(E) and v<sub>3</sub>(E) full length. Cut as shown and use remainder of bars in opposite face.



**BAR h<sub>2</sub>(E) & h<sub>4</sub>(E)**



**BAR v<sub>4</sub>(E)**

**MIN BAR LAPS**

#5 bars = 1'-8"  
#6 bars = 2'-0"

**NOTES:**

- Reinforcement bars designated (E) shall be epoxy coated.
- For details of Bar Splicers, see Sheet 25 of 25.
- All edges have 3/4" chamfer except as noted.
- Hatched area to be poured after superstructure forms have been removed. Quantity of concrete included with Concrete Superstructure on Sheet 7 of 25.
- NW Wing indicates the North West Wingwall.
- All reinforcement and dimensions are symmetric about centerline unless otherwise indicated.

ILLINOIS DEPARTMENT OF TRANSPORTATION

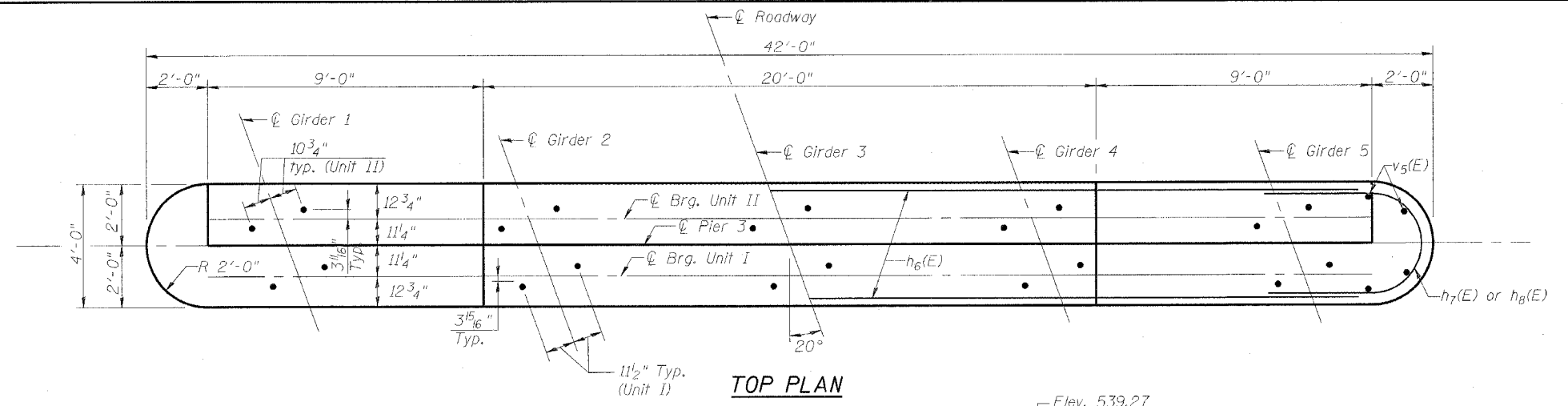
**ABUTMENTS**  
OLD U.S. ROUTE 36 OVER  
SANGAMON RIVER  
F.A.U. ROUTE 7978  
SECTION BR-1  
SANGAMON COUNTY  
STA. 70+00.00  
STRUCTURE NUMBER 084-0052

DATE: JAN. 2005

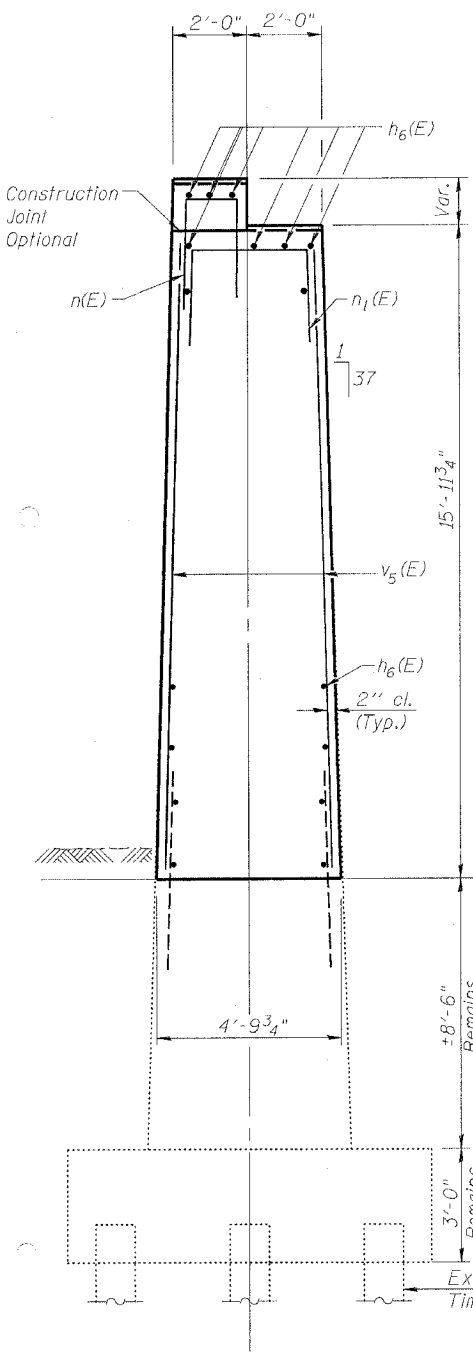
DRAWN BY: NJV  
CHECKED BY: PBB

**BILL OF MATERIAL**

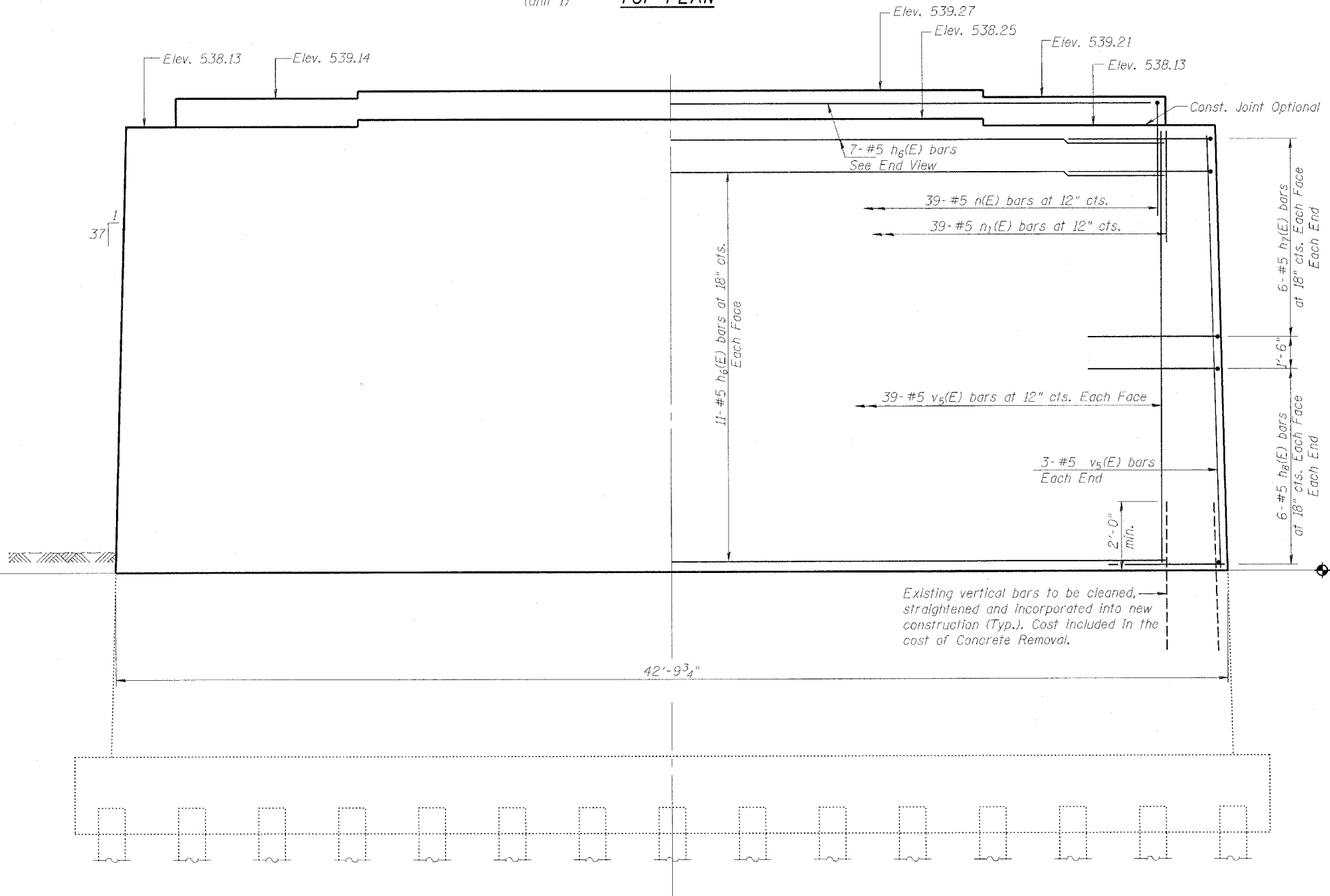
BAR	NO.	SIZE	LENGTH	SHAPE
$h_6(E)$	29	#5	37'-8"	—
$h_7(E)$	24	#5	6'-1"	U
$h_8(E)$	24	#5	6'-7"	U
$v_5(E)$	84	#5	16'-0"	—
$n(E)$	39	#5	7'-0"	—
$n_1(E)$	39	#5	7'-0"	—
Concrete Structures			Cu. Yd.	111.4
Reinforcement Bars, Epoxy Coated			Pound	3430
Bridge Seat Sealer			Sq. Ft.	207



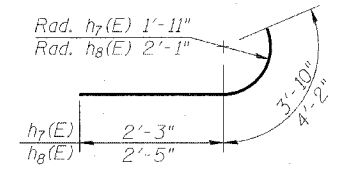
**TOP PLAN**



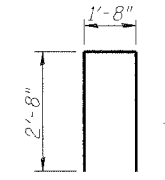
**SECTIONAL VIEW**  
(Looking South)



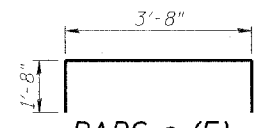
**ELEVATION**  
(Looking East)



**BARS  $h_7(E)$  &  $h_8(E)$**



**BARS  $n(E)$**



**BARS  $n_1(E)$**

- NOTES:**
- Reinforcement Bars designated (E) shall be epoxy coated.
  - All reinforcement and dimensions are symmetric about  $\varnothing$  unless otherwise indicated.
  - Space reinforcement in cap to miss anchor bolts.
  - Pour steps monolithically with cap.

**MIN BAR LAPS**  
#5 bars = 1'-8"

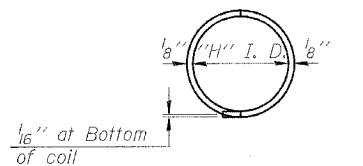
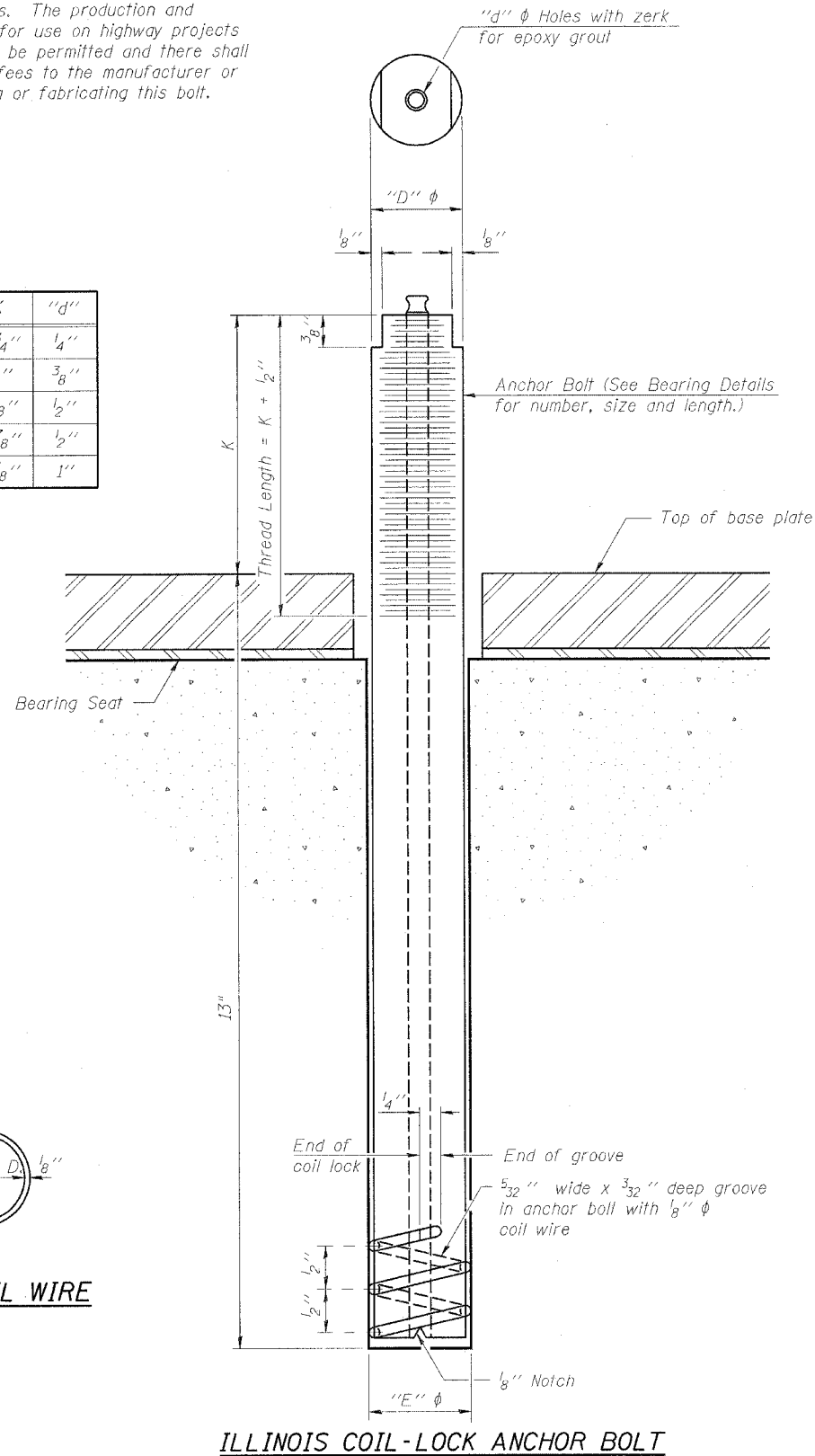
ILLINOIS DEPARTMENT OF TRANSPORTATION  
**PIER 3**  
OLD U.S. ROUTE 36 OVER  
SANGAMON RIVER  
F.A.U. ROUTE 7978  
SECTION BR-1  
SANGAMON COUNTY  
STA. 70+00.00  
STRUCTURE NUMBER 084-0052

DATE: JAN. 2005  
DRAWN BY: NJV  
CHECKED BY: PBB



The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

D	E	H	K	"d"
1"	1 1/8"	1 3/16"	1 3/4"	1/4"
1 1/4"	1 3/8"	1 1/16"	2"	3/8"
1 1/2"	1 5/8"	1 5/16"	2 1/8"	1/2"
2"	2 1/8"	1 13/16"	2 7/8"	1/2"
2 1/2"	2 5/8"	2 5/16"	3 3/8"	1"



PLAN-COIL WIRE

ILLINOIS COIL-LOCK ANCHOR BOLT

### MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A 519, Grade 1026, CW and supplied with hexagonal nuts and cut washers.

The coil wire shall be made of any suitable soft steel wire. The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed. The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C 881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

### INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

### ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures.

- The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:
1. A threaded rod stud with nut and washer of the type specified.
  2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

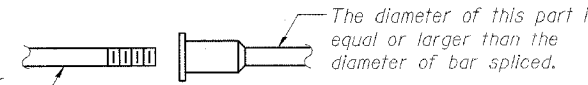
Location	Type
W. Abut.	A307
E. Abut.	A307
Pier 3	A307

ASTM F 1554 Grade 105, ASTM A 449 and AASHTO M 314 Grade 105 anchor bolts may be substituted for the anchor bolts shown above.

### GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or according to the manufacturer's recommendation after beams or girders have been erected and adjusted. Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming. The anchor bolts, furnished and installed and including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for Furnishing and Erecting Structural Steel.

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

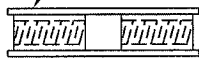


**ROLLED THREAD DOWEL BAR**



**\*\* ONE PIECE**

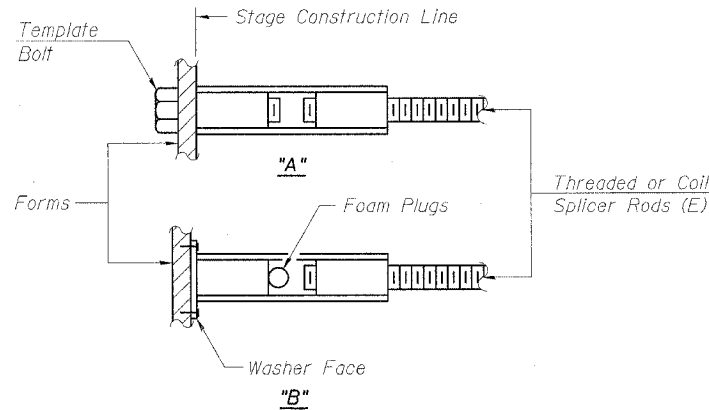
Wire Connector



**WELDED SECTIONS**

**BAR SPLICER ASSEMBLY ALTERNATIVES**

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



**INSTALLATION AND SETTING METHODS**

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

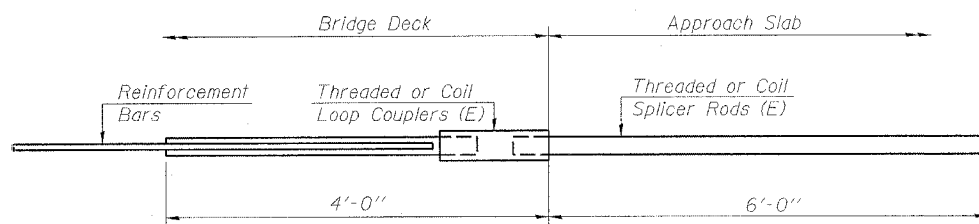
**NOTES**

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

- Minimum Capacity =  $1.25 \times f_y \times A_t$   
(Tension in kips)
  - Minimum \*Pull-out Strength =  $1.25 \times f_{s,allow} \times A_t$   
(Tension in kips)
- Where  $f_y$  = Yield strength of lapped reinforcement bars in ksi.  
 $f_{s,allow}$  = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)  
 $A_t$  = Tensile stress area of lapped reinforcement bars.  
 \* = 28 day concrete

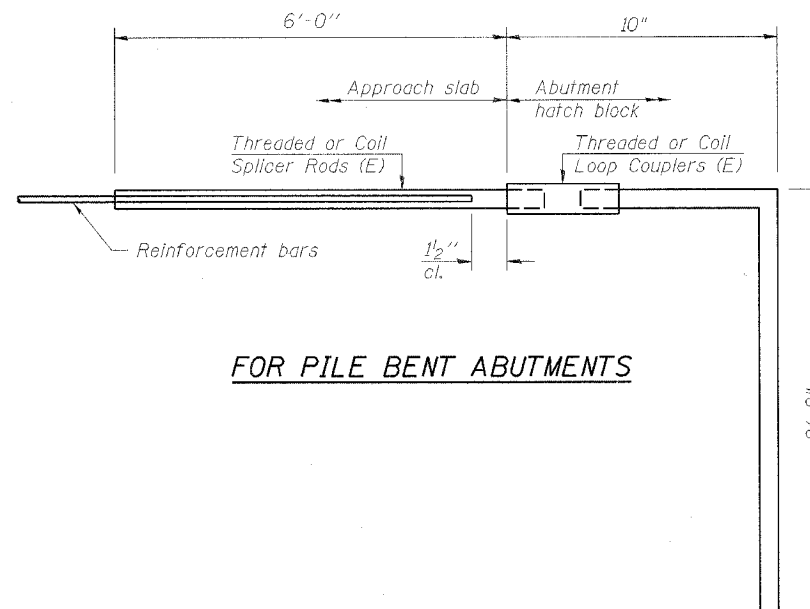
BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	5.9
#5	2'-0"	23.0	9.2
#6	2'-7"	33.1	13.3
#7	3'-5"	45.1	18.0
#8	4'-6"	58.9	23.6
#9	5'-9"	75.0	30.0
#10	7'-3"	95.0	38.0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

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



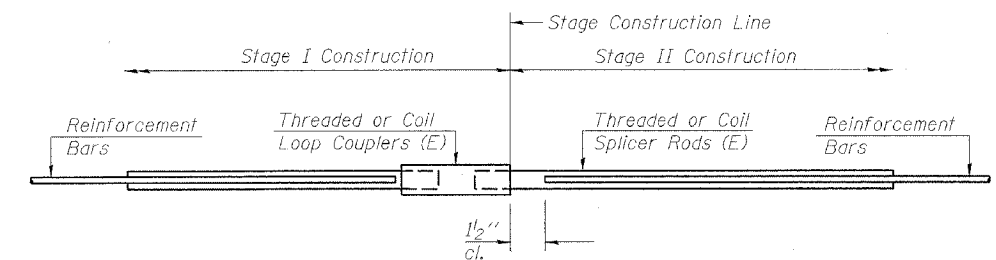
**FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS**

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



**FOR PILE BENT ABUTMENTS**

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required = 78



**STANDARD**

Bar Size	No. Assemblies Required	Location

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**BAR SPLICER ASSEMBLY DETAILS**  
 OLD U.S. ROUTE 36 OVER  
 SANGAMON RIVER  
 F.A.U. ROUTE 797B  
 SECTION BR-1  
 SANGAMON COUNTY  
 STA. 70+00.00  
 STRUCTURE NUMBER 084-0052

DATE: JAN. 2005

DRAWN BY: NJV  
 CHECKED BY: PBB

Bench Mark: Chiseled square at S.E. corner of existing structure. NAVD '88 = 588.22'.

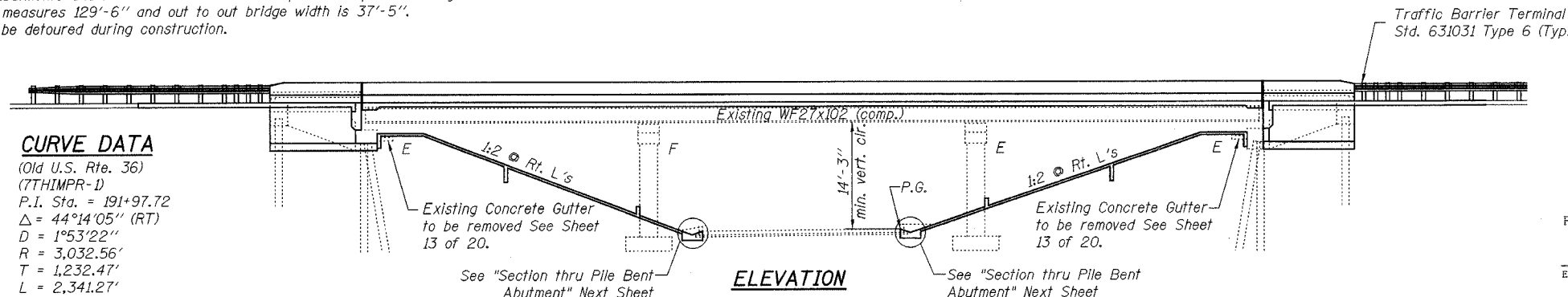
Existing Structure: S.N. 084-0053, originally built in 1958 as F.A. Route 49, Section 19X-2HB. The existing structure is a three span continuous, non-composite, rolled steel girder structure on pile bent abutments and three-column hammerhead piers on spread footings. The back to back of abutments measures 129'-6" and out to out bridge width is 37'-5". Traffic is to be detoured during construction.

No salvage.

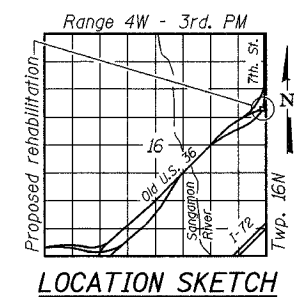
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7978	BR-2	SANGAMON	261	151	
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		Contract #72449

**CURVE DATA**

(Old U.S. Rte. 36)  
(7TH IMPR-D)  
P.I. Sta. = 191+97.72  
 $\Delta = 44^\circ 14' 05''$  (RT)  
 $D = 1^\circ 53' 22''$   
 $R = 3,032.56'$   
 $T = 1,232.47'$   
 $L = 2,341.27'$   
 $E = 240.88'$   
 $e = .028$   
P.C. Sta. = 179+65.25  
P.T. Sta. = 203+06.52



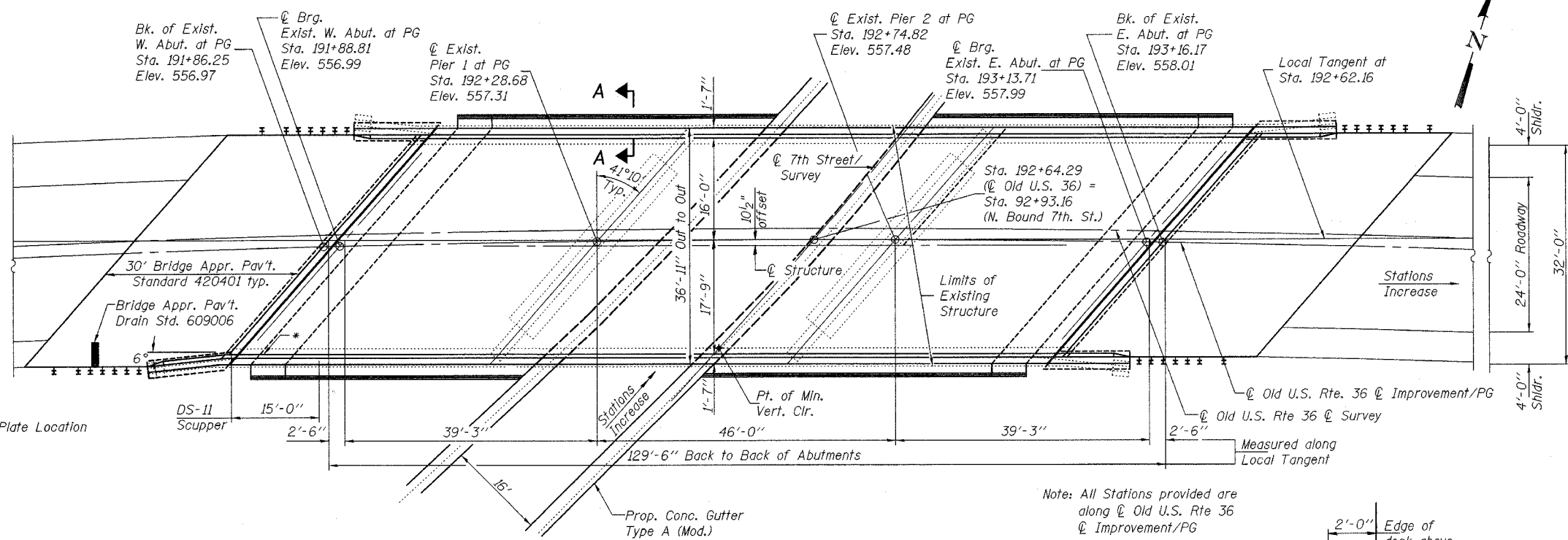
**APPROVED**  
FOR STRUCTURAL ADEQUACY ONLY  
*Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES



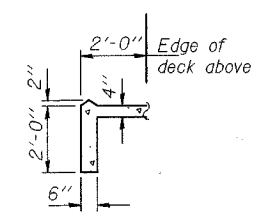
STATION 192+62.16  
REBUILT 20... BY  
STATE OF ILLINOIS  
F.A.U. RTE. 7978 SECTION BR-2  
LOADING HS20  
STR. NO. 084-0053

**NAME PLATE**  
See Std. 515001

- INDEX OF SHEETS**
- 1 General Plan
  - 2 General Notes & Total Bill of Material
  - 3-4 Top of Slab Elevations
  - 5 Superstructure
  - 6 Superstructure Details
  - 7 Intentionally Blank
  - 8 Strip Seal Expansion Joint Assembly
  - 9 Intentionally Blank
  - 10 Framing Plan
  - 11 W. Abutment Bearing Details
  - 12 E. Abutment Bearing Details
  - 13 Abutment Concrete Removal
  - 14 Concrete Repair Details
  - 15 West Abutment
  - 16 East Abutment
  - 17 Abutment Details
  - 18 Anchor Bolt Details
  - 19 Bar Splicer Assembly Details
  - 20 Cantilever Framing Brackets



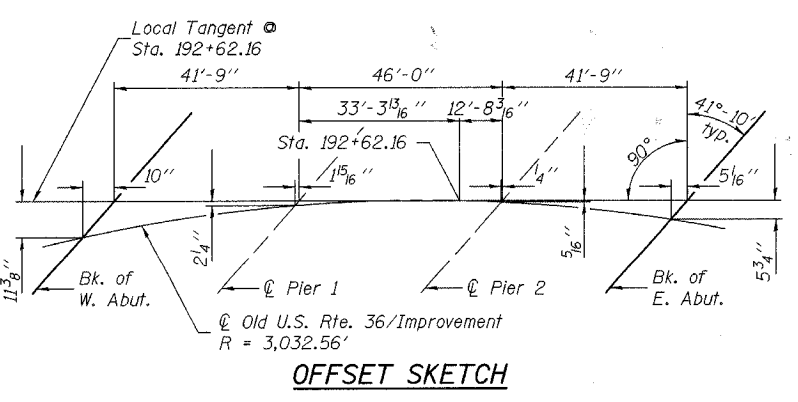
Note: All Stations provided are along  $\text{\textcircled{C}}$  Old U.S. Rte 36  $\text{\textcircled{C}}$  Improvement/PG



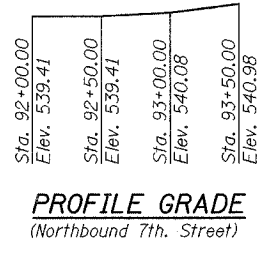
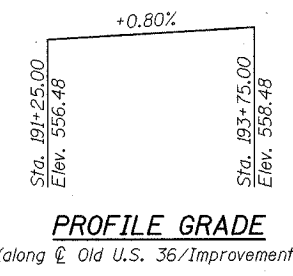
**SECTION A-A**



*Sheila Kiplinger* 9/8/05  
Sheila J. Kiplinger, S.E. Date  
Structural Engineer License No. 081-005283  
Expiration Date: 11/30/2006



**OFFSET SKETCH**



**DESIGN SPECIFICATIONS**  
2002 AASHTO

**SEISMIC DATA**  
Seismic Performance Category (SPC) = A  
Bedrock Acceleration Coefficient (A) = 0.048g  
Site Coefficient (S) = 1.2

**LOADING HS20-44**  
Allow 50#/sq. ft. for future wearing surface.

**DESIGN STRESSES**

**FIELD UNITS**  
New Construction  
 $f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (Reinforcement)  
 $f_y = 36,000$  psi (Str. Steel-M270 Gr. 36)

Existing Construction  
 $f'_c = 3,500$  psi  
 $f_y = 40,000$  psi (Reinforcement)  
 $f_y = 33,000$  psi (Structural Steel)

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**GENERAL PLAN**  
OLD U.S. ROUTE 36 OVER  
N.B. 7TH STREET RAMP  
F.A.U. ROUTE 7978  
**SECTION BR-2**  
SANGAMON COUNTY  
STA. 192+62.16  
STRUCTURE NUMBER 084-0053  
DRAWN BY: NJV  
CHECKED BY: PBB  
DATE: JAN. 2005

### GENERAL NOTES

Fasteners shall be high strength bolts AASHTO M164 Type 1 or 2. Bolts  $\frac{3}{4}$ " $\phi$ , open holes  $\frac{13}{16}$ " $\phi$ , unless otherwise noted.

Reinforcement Bars shall conform to the requirements of AASHTO M31 or M322 Grade 60.

Calculated weight of structural steel = 5,630 lbs.

All new structural steel shall be shop painted with an inorganic zinc rich primer, per AASHTO M300, Type 1.

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

Slope wall shall be reinforced with welded wire fabric, 6"x6"-W4.0xW4.0, weighing 58 lbs. per 100 sq. ft.

All construction joints shall be bonded.

Plan dimensions and details relative to existing Structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of material. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price for the work.

The concrete for bridge floors finished according to Article 503.17 of the Standard Specifications, shall be placed and compacted parallel to the skew in uniform increments along centerline of bridge. The finishing machine, when required, shall be set parallel to the skew for striking off and screeding the concrete.

Prior to pouring the new concrete deck, all loose rust, loose mill scale, and other loose potentially detrimental foreign material shall be removed from the surfaces of the beams or girders in contact with concrete. The cost of this work will be included in the pay item covering removal of the existing concrete. All heavy rust and other tightly adhered potentially detrimental foreign matter shall also be removed from the surfaces of the beams or girders in contact with concrete. Tightly adhered paint may remain unless otherwise noted. This removal shall be accomplished by methods that will not damage the steel. The cost of this work will be paid for according to Article 109.04.

All existing construction accessories welded to the top flange over the piers between the quarter points of the beams or girders shall be removed. The remaining weld shall be ground smooth and inspected for cracks using magnetic particle testing. Any cracks that cannot be removed by grinding approximately  $\frac{1}{4}$ " deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of this work will be paid for according to Article 109.04.

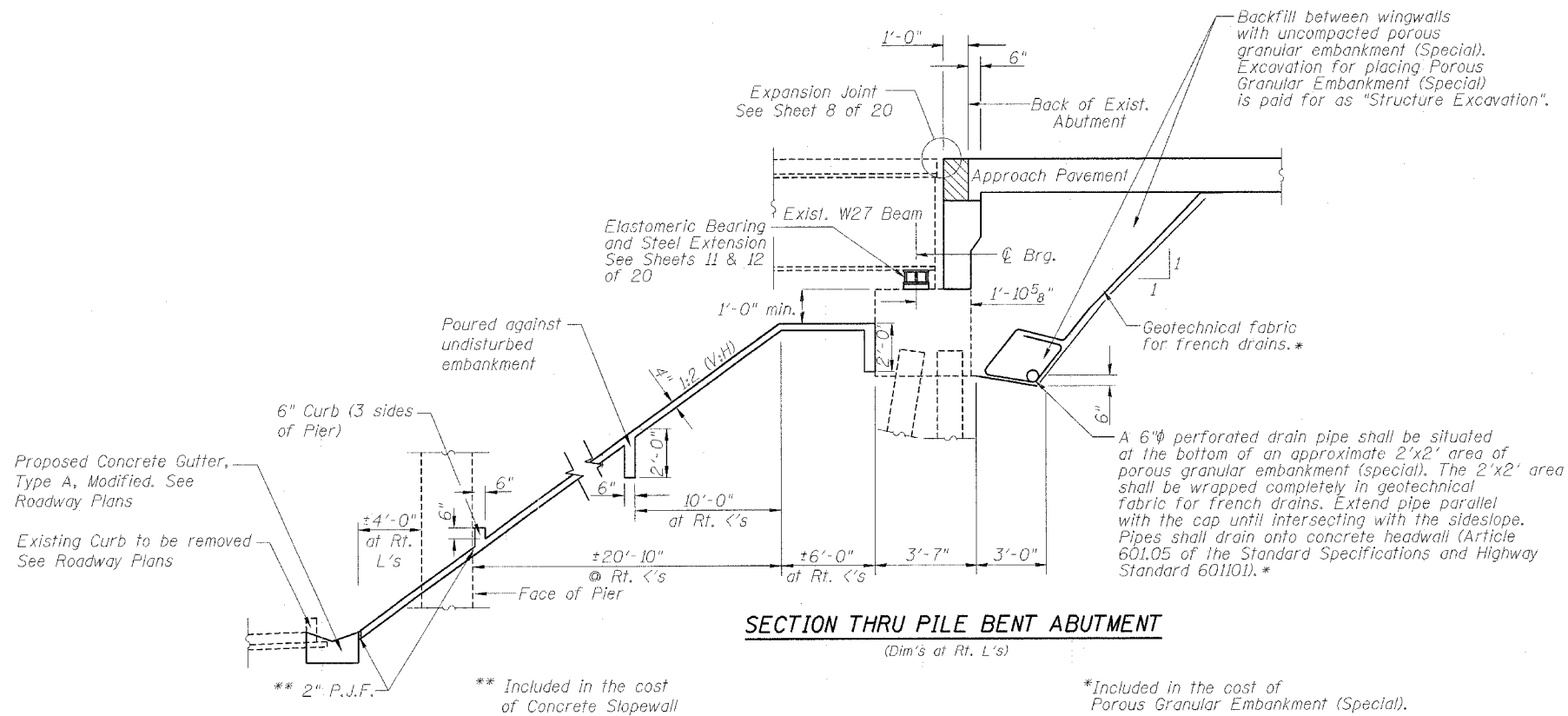
The cost of removing existing bridge rail shall be included in the cost of Removal of Existing Concrete Deck.

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

Cleaning and painting of the existing structural steel shall be as specified in the Special Provision for "Cleaning and Painting Existing Steel Structures". All existing steel shall be cleaned per Near White Blast Cleaning per SSPC-SP10. The organic zinc / epoxy / urethane paint system shall be used. The color of the final finish coat shall be Gray, Munsell No 5B 7/1 for all interior steel surfaces and Interstate Green 7.5G 4/8 for the exterior and bottom flange of the fascia beams.

Four monitors for TSP Lead monitoring will be required for this project.

The removal and disposal of the existing slope wall shall be included in the cost for Slope Wall 4 Inch.

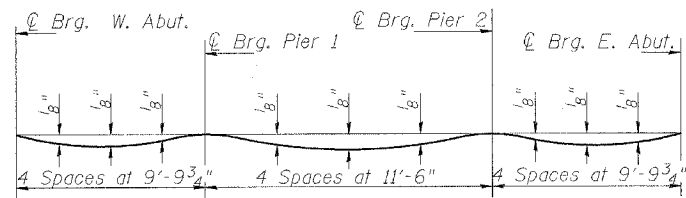


### TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Concrete Deck	Each	1		1
Structure Excavation	Cu. Yd.		260.2	260.2
Bridge Deck Grooving	Sq. Yd.	445		445
Protective Coat	Sq. Yd.	601		601
Concrete Structures	Cu. Yd.		46.2	46.2
Concrete Superstructure	Cu. Yd.	156.0		156.0
Elastomeric Bearing Assembly, Type 1	Each	6		6
Elastomeric Bearing Assembly, Type 2	Each	6		6
Structural Steel Removal	Pound	2988		2988
Concrete Removal	Cu. Yd.		32.3	32.3
Jack and Remove Existing Bearings	Each	12		12
Furnishing and Erecting Structural Steel	L. Sum	0.02		0.02
Reinforcement Bars, Epoxy Coated	Pound	34210	6380	40590
Stud Shear Connectors	Each	1998		1998
Preformed Joint Strip Seal, 4"	Foot	91.6		91.6
Slope Wall 4"	Sq. Yd.		406.6	406.6
Bar Splicers	Each		92	92
Formed Concrete Repair (Depth < 5")	Sq. Ft.		24	24
Epoxy Crack Sealing	Foot		28	28
Porous Granular Embankment (Special)	Cu. Yd.		142	142
Cleaning and Painting Existing Structure	L. Sum	1		1
Containment and Disposal of Lead	L. Sum	1		1
Paint Cleaning Residues	L. Sum	1		1
Name Plates	Each	1		1

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**GENERAL NOTES & TOTAL  
 BILL OF MATERIAL**  
 OLD U.S. ROUTE 36 OVER  
 N.B. 7TH STREET RAMP  
 F.A.U. ROUTE 7978  
 SECTION BR-2  
 SANGAMON COUNTY  
 STA. 192+62.16  
 STRUCTURE NUMBER 084-0053

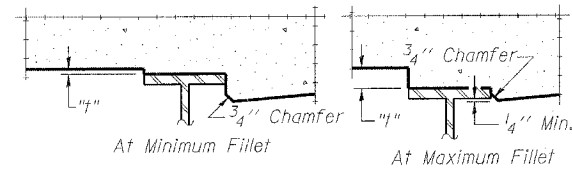
Contract #72449



**DEAD LOAD DEFLECTION DIAGRAM**

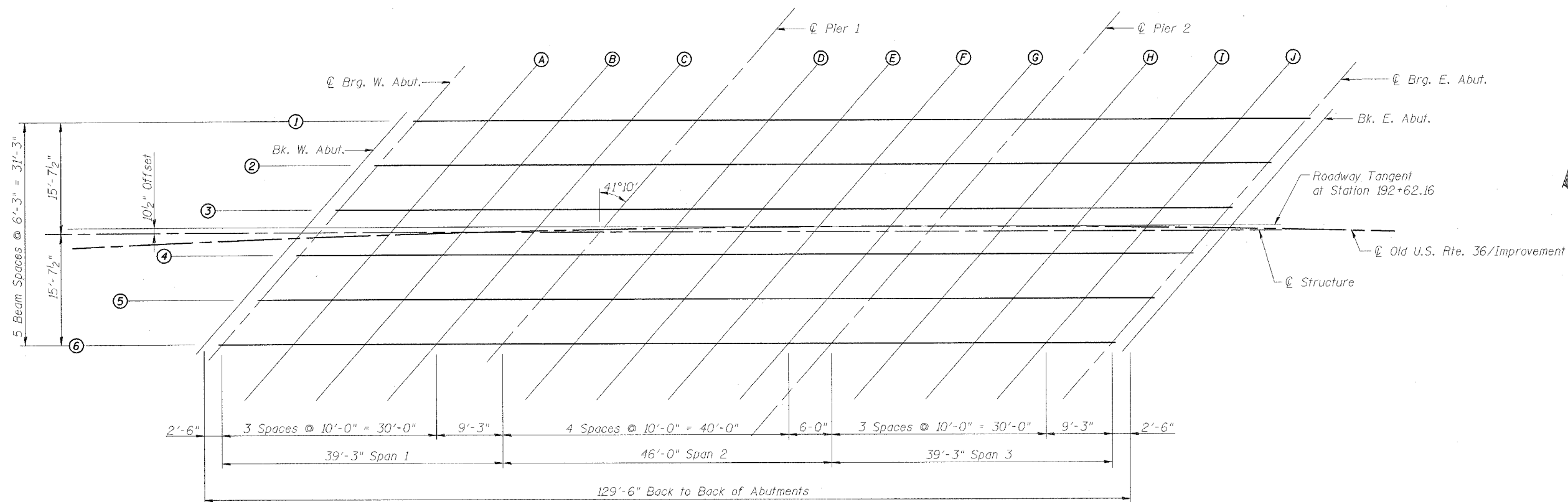
(Includes weight of concrete only)

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 Sheet 4 of 20.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on Sheet 4 of 20, minus slab thickness, equals the fillet heights "t" above top flange of beams.

**FILLET HEIGHTS**



**PLAN**

**NOTES:**

Work this sheet with Sheet 4 of 20

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 TOP OF SLAB ELEVATIONS 1 OF 2  
 OLD U.S. ROUTE 36 OVER  
 N.B. 7TH STREET RAMP  
 F.A.U. ROUTE 7978  
 SECTION BR-2  
 SANGAMON COUNTY  
 STA. 192+62.16  
 STRUCTURE NUMBER 084-0053

DATE: JAN. 2005  
 DRAWN BY: NJV  
 CHECKED BY: PBB

**BEAM 1**

Location	Station	Offset	Theoretical Grade Elevation	Theoretical Grade Elevation Adjusted For Dead Load Deflection
Bk. W. Abut.	192+00.30	15.38 LT	557.52	557.52
Cl. Brg.	192+02.79	15.33 LT	557.53	557.53
A	192+12.73	15.16 LT	557.61	557.62
B	192+22.68	15.01 LT	557.68	557.69
C	192+32.63	14.89 LT	557.76	557.77
Cl. Pier 1	192+41.84	14.82 LT	557.83	557.83
D	192+51.79	14.77 LT	557.91	557.91
E	192+61.74	14.75 LT	557.99	558.00
F	192+71.69	14.77 LT	558.07	558.08
G	192+81.64	14.81 LT	558.15	558.15
Cl. Pier 2	192+87.62	14.86 LT	558.20	558.20
H	192+97.57	14.96 LT	558.28	558.29
I	193+07.52	15.09 LT	558.37	558.38
J	193+17.46	15.26 LT	558.45	558.46
Cl. Brg.	193+26.67	15.44 LT	558.53	558.53
Bk. E. Abut.	193+29.15	15.49 LT	558.55	558.55

**BEAM 2**

Location	Station	Offset	Theoretical Grade Elevation	Theoretical Grade Elevation Adjusted For Dead Load Deflection
Bk. W. Abut.	191+94.72	9.25 LT	557.30	557.30
Cl. Brg.	191+97.22	9.20 LT	557.32	557.32
A	192+07.18	9.00 LT	557.39	557.40
B	192+17.15	8.84 LT	557.47	557.48
C	192+27.12	8.70 LT	557.54	557.55
Cl. Pier 1	192+36.35	8.61 LT	557.61	557.61
D	192+46.32	8.54 LT	557.69	557.69
E	192+56.29	8.51 LT	557.77	557.78
F	192+66.26	8.50 LT	557.85	557.86
G	192+76.24	8.53 LT	557.93	557.93
Cl. Pier 2	192+82.22	8.57 LT	557.98	557.98
H	192+92.19	8.65 LT	558.06	558.07
I	193+02.16	8.77 LT	558.15	558.16
J	193+12.13	8.91 LT	558.23	558.24
Cl. Brg.	193+21.35	9.08 LT	558.31	558.31
Bk. E. Abut.	193+23.84	9.13 LT	558.33	558.33

**BEAM 3**

Location	Station	Offset	Theoretical Grade Elevation	Theoretical Grade Elevation Adjusted For Dead Load Deflection
Bk. W. Abut.	191+89.13	3.13 LT	557.08	557.08
Cl. Brg.	191+91.62	3.07 LT	557.10	557.10
A	192+01.61	2.86 LT	557.18	557.19
B	192+11.60	2.67 LT	557.25	557.26
C	192+21.59	2.52 LT	557.33	557.34
Cl. Pier 1	192+30.83	2.41 LT	557.40	557.40
D	192+40.83	2.33 LT	557.47	557.47
E	192+50.82	2.27 LT	557.55	557.56
F	192+60.81	2.25 LT	557.63	557.64
G	192+70.80	2.26 LT	557.71	557.71
Cl. Pier 2	192+76.80	2.29 LT	557.76	557.76
H	192+86.79	2.35 LT	557.84	557.85
I	192+96.78	2.45 LT	557.93	557.94
J	193+06.77	2.58 LT	558.01	558.02
Cl. Brg.	193+16.01	2.73 LT	558.09	558.09
Bk. E. Abut.	193+18.51	2.77 LT	558.11	558.11

**ROADWAY TANGENT**

Location	Station	Offset	Theoretical Grade Elevation	Theoretical Grade Elevation Adjusted For Dead Load Deflection
Bk. W. Abut.	191+87.11	0.93 LT	557.01	557.01
Cl. Brg.	191+89.61	0.87 LT	557.02	557.02
A	191+99.60	0.65 LT	557.1	557.11
B	192+09.60	0.46 LT	557.17	557.18
C	192+19.60	0.30 LT	557.25	557.26
Cl. Pier 1	192+28.84	0.18 LT	557.32	557.32
D	192+38.84	0.09 LT	557.4	557.40
E	192+48.84	0.03 LT	557.47	557.48
F	192+58.84	0.00 LT	557.55	557.56
G	192+68.84	0.01 LT	557.63	557.63
Cl. Pier 2	192+74.84	0.03 LT	557.68	557.68
H	192+84.84	0.09 LT	557.76	557.77
I	192+94.84	0.18 LT	557.85	557.86
J	193+04.84	0.30 LT	557.93	557.94
Cl. Brg.	193+14.09	0.45 LT	558.01	558.01
Bk. E. Abut.	193+16.59	0.49 LT	558.03	558.03

**C STRUCTURE**

Location	Station	Offset	Theoretical Grade Elevation	Theoretical Grade Elevation Adjusted For Dead Load Deflection
Bk. W. Abut.	191+86.32	0.07 LT	556.98	556.98
Cl. Brg.	191+88.82	0.01 LT	556.99	556.99
A	191+98.82	0.21 RT	557.07	557.08
B	192+08.82	0.41 RT	557.14	557.15
C	192+18.82	0.57 RT	557.22	557.23
Cl. Pier 1	192+28.07	0.68 RT	557.29	557.29
D	192+38.07	0.78 RT	557.37	557.37
E	192+48.07	0.84 RT	557.44	557.45
F	192+58.08	0.87 RT	557.52	557.53
G	192+68.08	0.87 RT	557.60	557.60
Cl. Pier 2	192+74.08	0.85 RT	557.65	557.65
H	192+84.08	0.80 RT	557.73	557.74
I	192+94.09	0.71 RT	557.82	557.83
J	193+04.09	0.59 RT	557.90	557.91
Cl. Brg.	193+13.34	0.44 RT	557.98	557.98
Bk. E. Abut.	193+15.84	0.40 RT	558.00	558.00

**BEAM 4**

Location	Station	Offset	Theoretical Grade Elevation	Theoretical Grade Elevation Adjusted For Dead Load Deflection
Bk. W. Abut.	191+83.51	2.98 RT	556.87	556.87
Cl. Brg.	191+86.01	3.05 RT	556.89	556.89
A	191+96.02	3.28 RT	556.96	556.97
B	192+06.03	3.48 RT	557.03	557.04
C	192+16.04	3.65 RT	557.11	557.12
Cl. Pier 1	192+25.30	3.78 RT	557.18	557.18
D	192+35.31	3.88 RT	557.26	557.26
E	192+45.32	3.95 RT	557.33	557.34
F	192+55.34	3.99 RT	557.41	557.42
G	192+65.35	4.00 RT	557.49	557.49
Cl. Pier 2	192+71.36	3.99 RT	557.54	557.54
H	192+81.37	3.94 RT	557.62	557.63
I	192+91.38	3.86 RT	557.71	557.72
J	193+01.39	3.75 RT	557.79	557.80
Cl. Brg.	193+10.65	3.61 RT	557.87	557.87
Bk. E. Abut.	193+13.16	3.57 RT	557.89	557.89

**BEAM 5**

Location	Station	Offset	Theoretical Grade Elevation	Theoretical Grade Elevation Adjusted For Dead Load Deflection
Bk. W. Abut.	191+77.87	9.08 RT	556.65	556.65
Cl. Brg.	191+80.37	9.15 RT	556.67	556.67
A	191+90.40	9.40 RT	556.74	556.75
B	192+00.43	9.62 RT	556.82	556.83
C	192+10.46	9.81 RT	556.89	556.90
Cl. Pier 1	192+19.74	9.95 RT	556.96	556.96
D	192+29.77	10.08 RT	557.04	557.04
E	192+39.80	10.17 RT	557.12	557.13
F	192+49.84	10.23 RT	557.19	557.20
G	192+59.87	10.25 RT	557.27	557.27
Cl. Pier 2	192+65.89	10.25 RT	557.32	557.32
H	192+75.93	10.22 RT	557.40	557.41
I	192+85.96	10.16 RT	557.49	557.50
J	192+95.99	10.06 RT	557.57	557.58
Cl. Brg.	193+05.27	9.95 RT	557.65	557.65
Bk. E. Abut.	193+07.78	9.91 RT	557.67	557.67

**BEAM 6**

Location	Station	Offset	Theoretical Grade Elevation	Theoretical Grade Elevation Adjusted For Dead Load Deflection
Bk. W. Abut.	191+72.20	15.17 RT	556.44	556.44
Cl. Brg.	191+74.71	15.25 RT	556.45	556.45
A	191+84.76	15.52 RT	556.53	556.54
B	191+94.81	15.76 RT	556.60	556.61
C	192+04.86	15.96 RT	556.67	556.68
Cl. Pier 1	192+14.16	16.12 RT	556.74	556.74
D	192+24.21	16.26 RT	556.82	556.82
E	192+34.26	16.37 RT	556.90	556.91
F	192+44.32	16.45 RT	556.98	556.99
G	192+54.37	16.49 RT	557.06	557.06
Cl. Pier 2	192+60.41	16.50 RT	557.10	557.10
H	192+70.46	16.49 RT	557.18	557.19
I	192+80.51	16.45 RT	557.27	557.28
J	192+90.57	16.37 RT	557.35	557.36
Cl. Brg.	192+99.87	16.27 RT	557.43	557.43
Bk. E. Abut.	193+02.38	16.24 RT	557.45	557.45

**NOTES:**

Work this sheet with Sheet 3 of 20

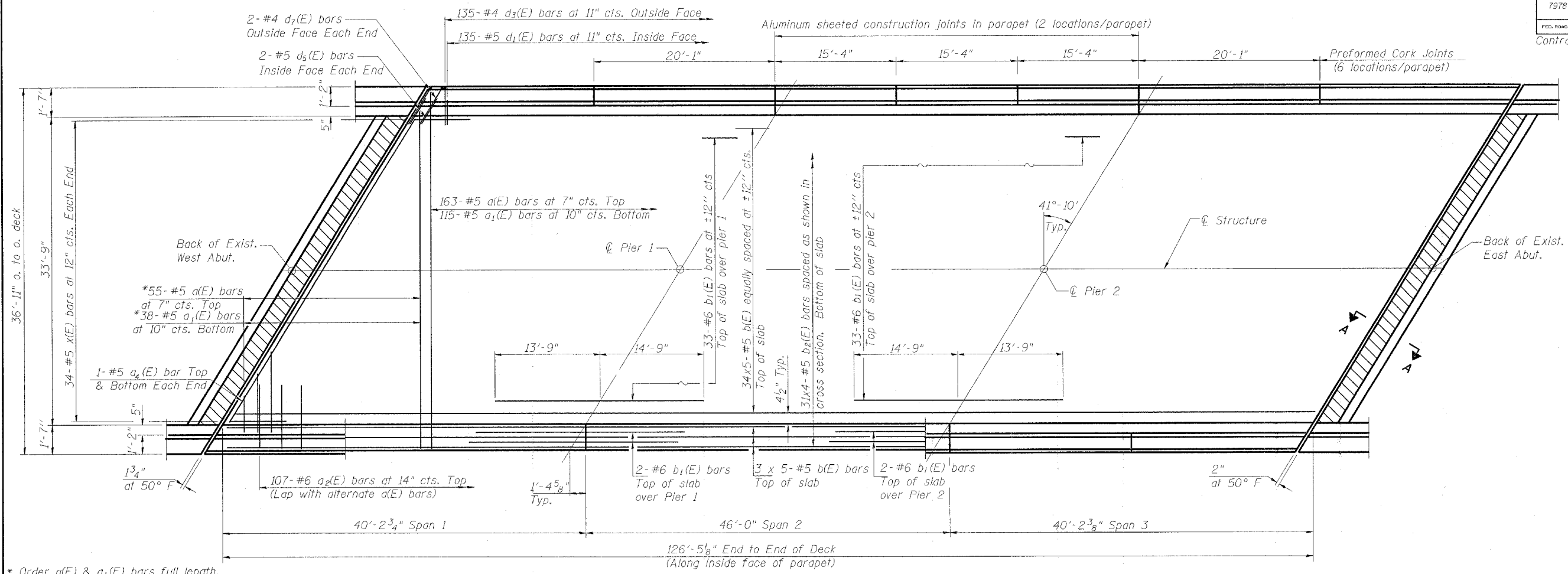
ILLINOIS DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS 2 OF 2

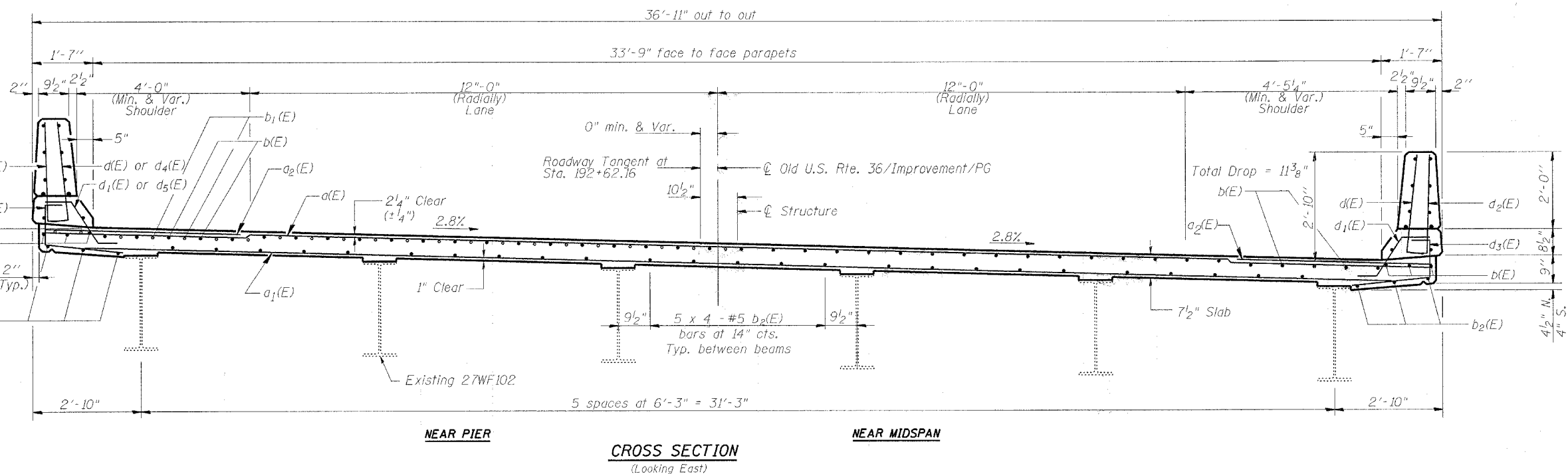
OLD U.S. ROUTE 36 OVER  
N.B. 7TH STREET RAMP  
F.A.U. ROUTE 797B  
SECTION BR-2  
SANGAMON COUNTY  
STA. 192+62.16  
STRUCTURE NUMBER 084-0053

DATE: JAN. 2005

DRAWN BY: NJV  
CHECKED BY: PBB



\* Order a(E) & a<sub>1</sub>(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.



**MIN BAR LAPS**

#5 bars = 1'-8"

#6 bars = 2'-0"

**NOTES:**

Work this Sheet with Sheet 6 of 20.

See Sheet 6 of 20 for superstructure details, Section A-A, parapet reinforcement and Bill of Material.

Reinforcement bars designated (E) shall be epoxy coated.

Bars indicated thus 31 x 4-#5 etc. indicates 31 lines of bars with 4 lengths per line.

ILLINOIS DEPARTMENT OF TRANSPORTATION

**SUPERSTRUCTURE**

OLD U.S. ROUTE 36 OVER N.B. 7TH STREET RAMP

F.A.U. ROUTE 7978

SECTION BR-2

SANGAMON COUNTY

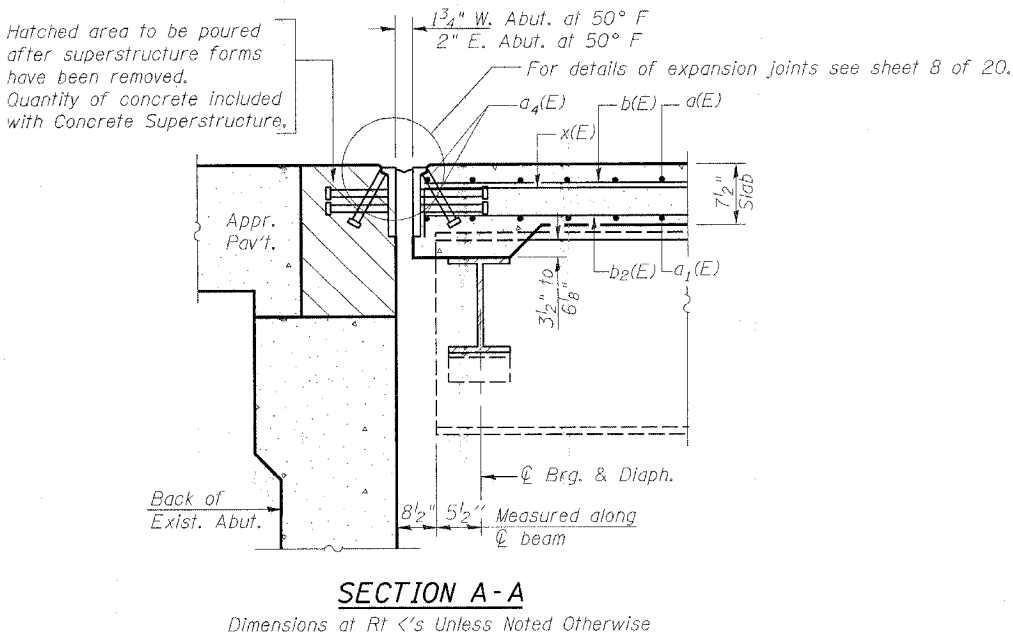
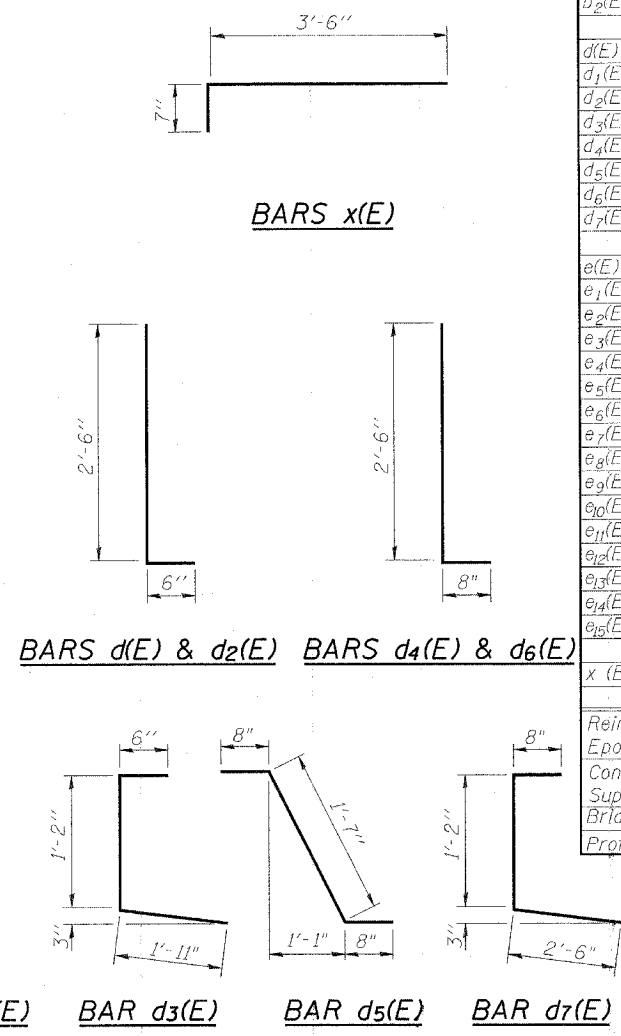
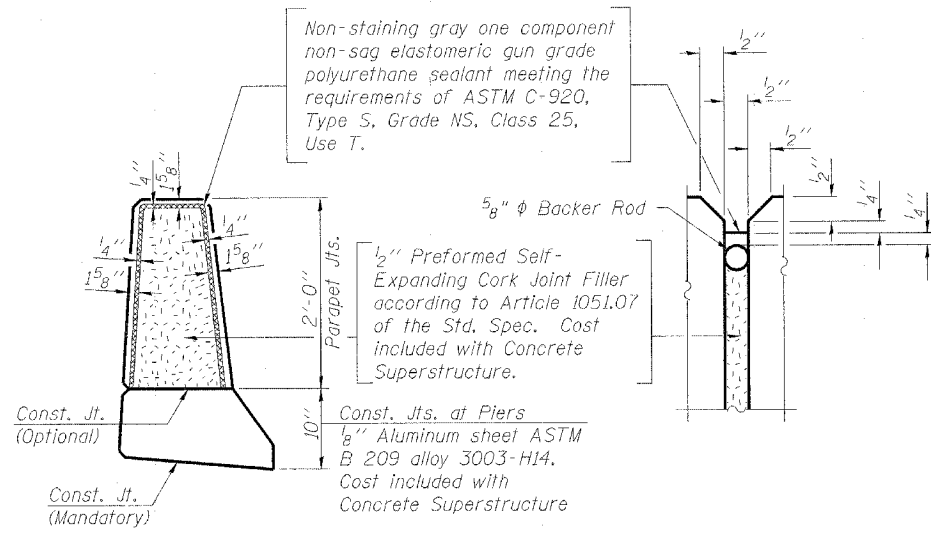
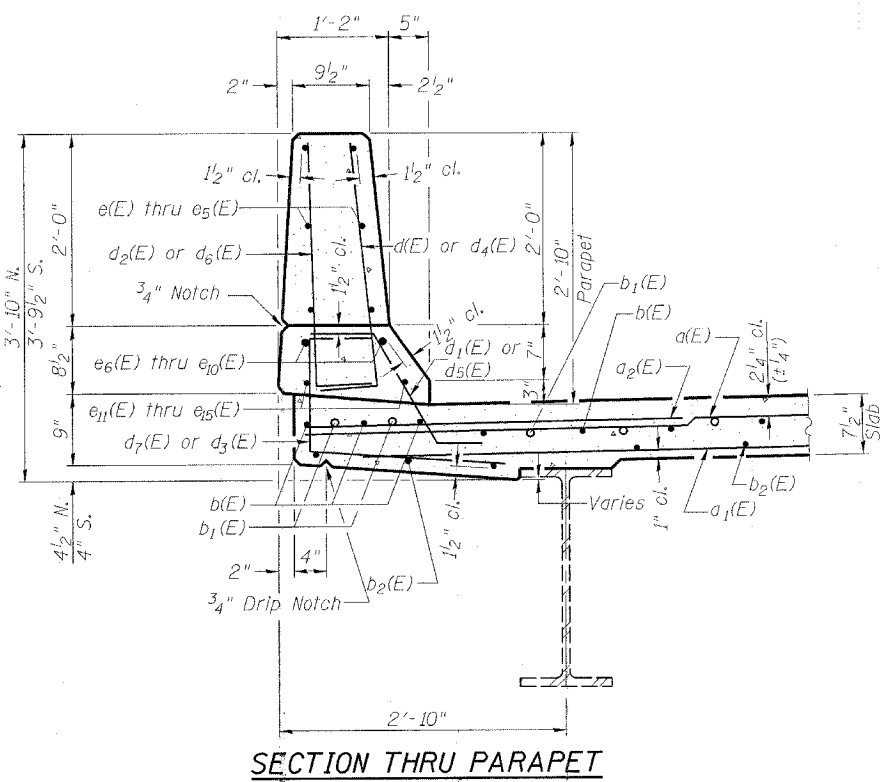
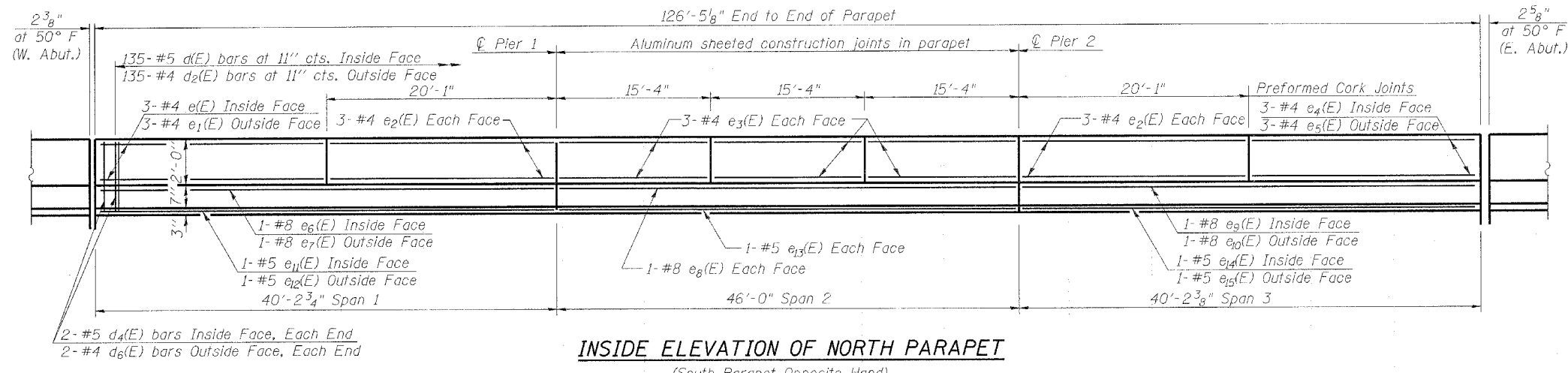
STA. 192+62.16

STRUCTURE NUMBER 084-0053

DATE: JAN. 2005

DRAWN BY: NUJ

CHECKED BY: PBB



**SUPERSTRUCTURE  
BILL OF MATERIAL**

BAR NO.	SIZE	LENGTH	SHAPE
a(E)	218	#5	36'-3"
a <sub>1</sub> (E)	153	#5	34'-0"
a <sub>2</sub> (E)	214	#6	4'-6"
a <sub>3</sub> (E)	8	#5	1'-6"
a <sub>4</sub> (E)	4	#5	45'-2"
b(E)	200	#5	26'-7"
b <sub>1</sub> (E)	74	#6	28'-6"
b <sub>2</sub> (E)	124	#5	32'-9"
d(E)	270	#5	3'-0"
d <sub>1</sub> (E)	270	#5	2'-5"
d <sub>2</sub> (E)	270	#4	3'-0"
d <sub>3</sub> (E)	270	#4	3'-7"
d <sub>4</sub> (E)	8	#5	3'-2"
d <sub>5</sub> (E)	8	#5	2'-11"
d <sub>6</sub> (E)	8	#4	3'-2"
d <sub>7</sub> (E)	8	#4	4'-4"
e(E)	6	#4	19'-1"
e <sub>1</sub> (E)	6	#4	18'-8"
e <sub>2</sub> (E)	24	#4	19'-9"
e <sub>3</sub> (E)	36	#4	15'-0"
e <sub>4</sub> (E)	6	#4	20'-3"
e <sub>5</sub> (E)	6	#4	20'-9"
e <sub>6</sub> (E)	2	#8	39'-3"
e <sub>7</sub> (E)	2	#8	38'-9"
e <sub>8</sub> (E)	4	#8	45'-8"
e <sub>9</sub> (E)	2	#8	40'-3"
e <sub>10</sub> (E)	2	#8	40'-10"
e <sub>11</sub> (E)	2	#5	39'-9"
e <sub>12</sub> (E)	2	#5	38'-9"
e <sub>13</sub> (E)	4	#5	45'-8"
e <sub>14</sub> (E)	2	#5	39'-10"
e <sub>15</sub> (E)	2	#5	40'-10"
x(E)	68	#5	4'-1"
Reinforcement Bars, Epoxy Coated	Pound	34,210	
Concrete Superstructure	Cu. Yd.	156.0	
Bridge Deck Grooving	Sq. Yd.	445	
Protective Coat	Sq. Yd.	601	

**NOTES:**  
Reinforcement bars designated (E) shall be epoxy coated.  
Work this sheet with Sheet 5 of 20.

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**SUPERSTRUCTURE DETAILS**  
OLD U.S. ROUTE 36 OVER  
N.B. 7TH STREET RAMP  
F.A.U. ROUTE 7978  
SECTION BR-2  
SANGAMON COUNTY  
STA. 192+62.16  
STRUCTURE NUMBER 084-0053  
DRAWN BY: NJV  
CHECKED BY: PBB  
DATE: JAN. 2005



ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
797B	BR-2	SANGAMON	261	157
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SHEET NO. 7

20 SHEETS

Contract #72449

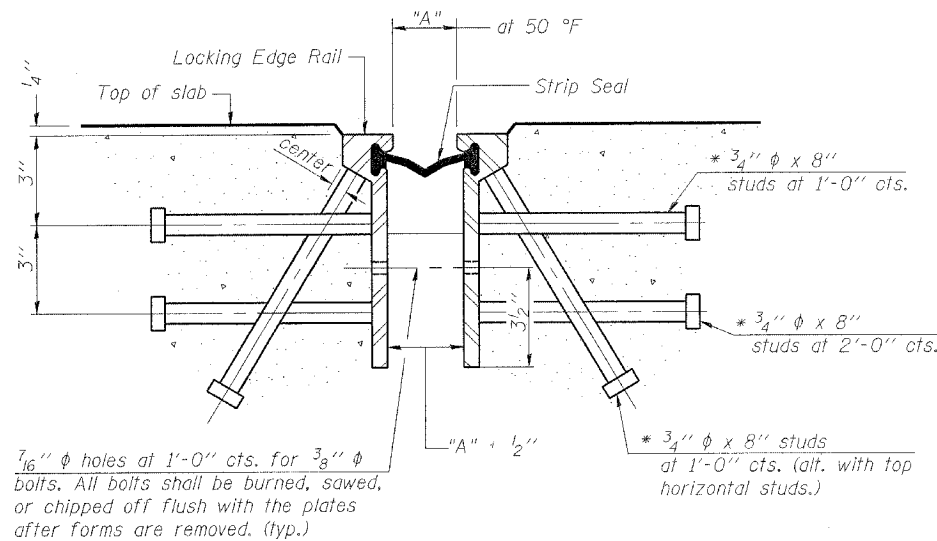
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ILLINOIS DEPARTMENT OF TRANSPORTATION

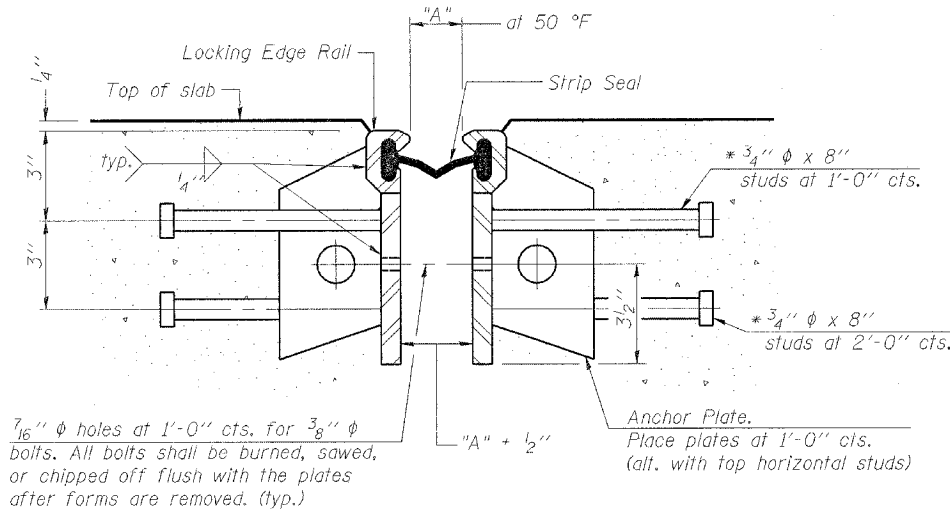
OLD U.S. ROUTE 36 OVER  
 N.B. 7TH STREET RAMP  
 F.A.U. ROUTE 797B  
 SECTION BR-2  
 SANGAMON COUNTY  
 STA. 192+62.16  
 STRUCTURE NUMBER 084-0053

DATE: JAN. 2005

DRAWN BY: NJV  
 CHECKED BY: PBB



**SECTION THRU ROLLED RAIL EXP. JOINT**

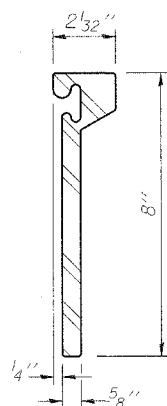


**SECTION THRU WELDED RAIL EXP. JOINT**

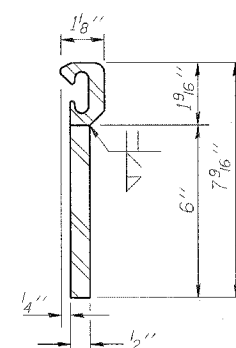
**NOTES:**

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.  
 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 strip seal joint shall have a rated movement equal to 4".

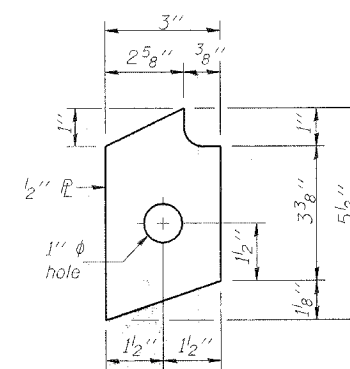
\* Granular or solid Flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



**ROLLED (EXTRUDED) RAIL**



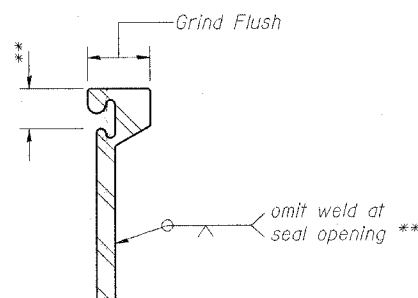
**WELDED RAIL**



**ANCHOR PLATE**  
(for welded rail)

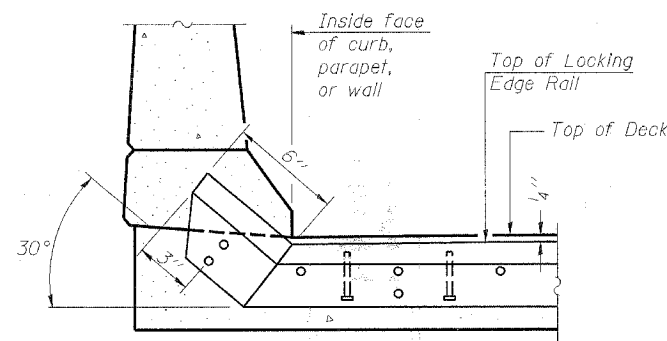
Location	"A" at 50° F	Length	Rolled Rail Option		Welded Rail Option	
			No. of studs	No. of studs	No. of Anchor Plates	
W. Abut.	1 3/4"	45.8	236	146	92	
E. Abut.	2"	45.8	236	146	92	

**LOCKING EDGE RAILS**

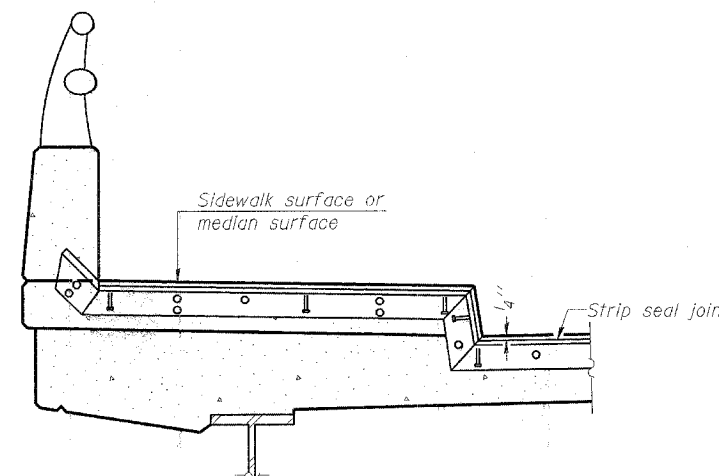


**LOCKING EDGE RAIL SPLICE**

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



**AT CURB, PARAPET, OR WALL**



**AT SIDEWALK OR MEDIAN\***

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

**TYPICAL END TREATMENTS**

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Preformed Joint Strip Seal, 4"	Foot	91.6

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**STRIP SEAL EXPANSION JOINT ASSEMBLY**  
 OLD U.S. ROUTE 36 OVER N.B. 7TH STREET RAMP  
 F.A.U. ROUTE 7978  
 SECTION BR-2  
 SANGAMON COUNTY  
 STA. 192+62.16  
 STRUCTURE NUMBER 084-0053

DATE: JAN. 2005

DRAWN BY: NJV  
 CHECKED BY: PBB

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 9
7978	BR-2	SANGAMON	261	159	20 SHEETS
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

Contract #72449

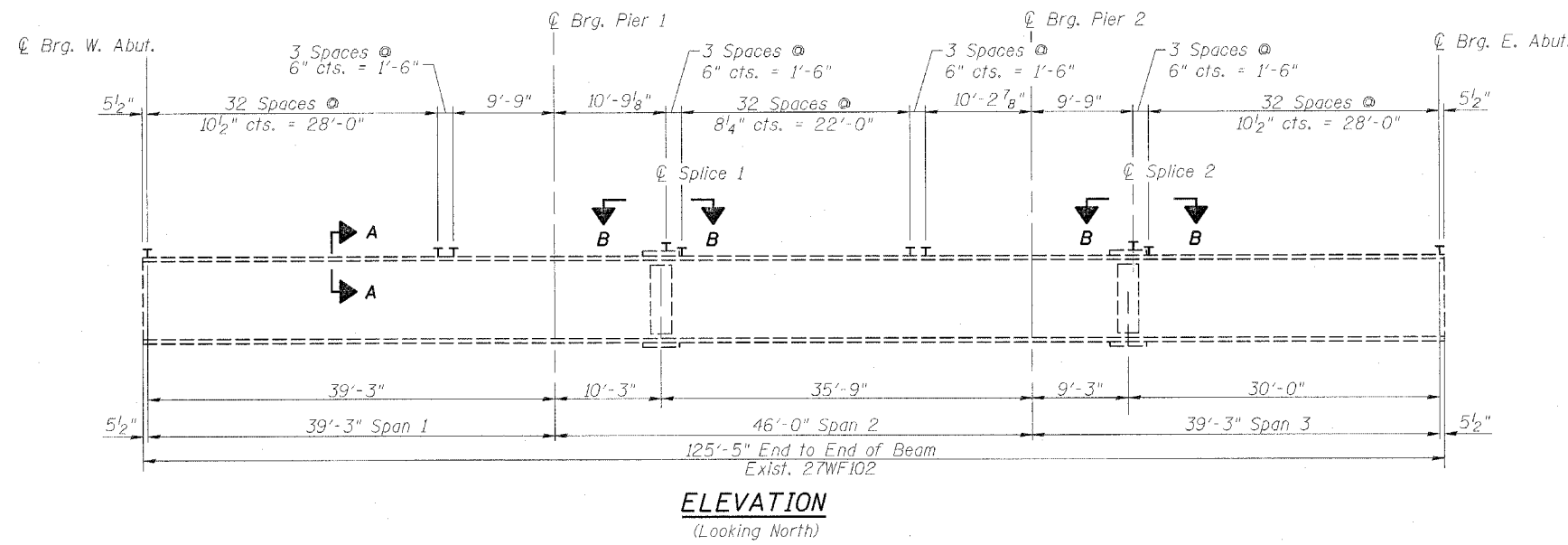
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ILLINOIS DEPARTMENT OF TRANSPORTATION

OLD U.S. ROUTE 36 OVER  
 N.B. 7TH STREET RAMP  
 F.A.U. ROUTE 7978  
 SECTION BR-2  
 SANGAMON COUNTY  
 STA. 192+62.16  
 STRUCTURE NUMBER 084-0053

DATE: JAN. 2005

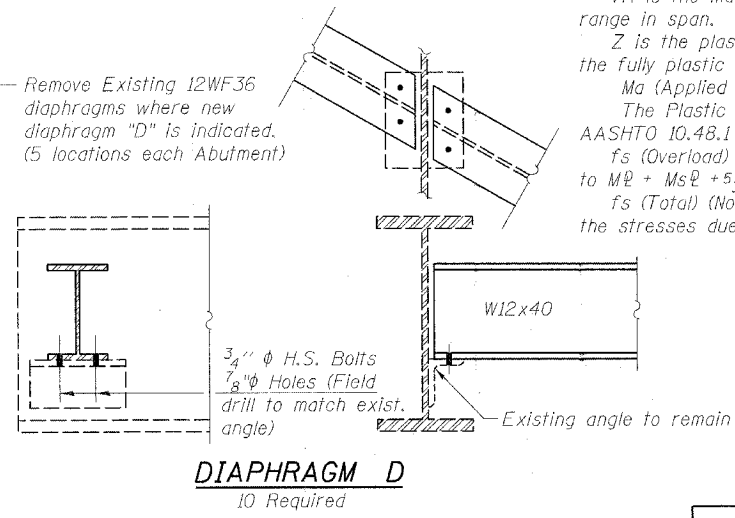
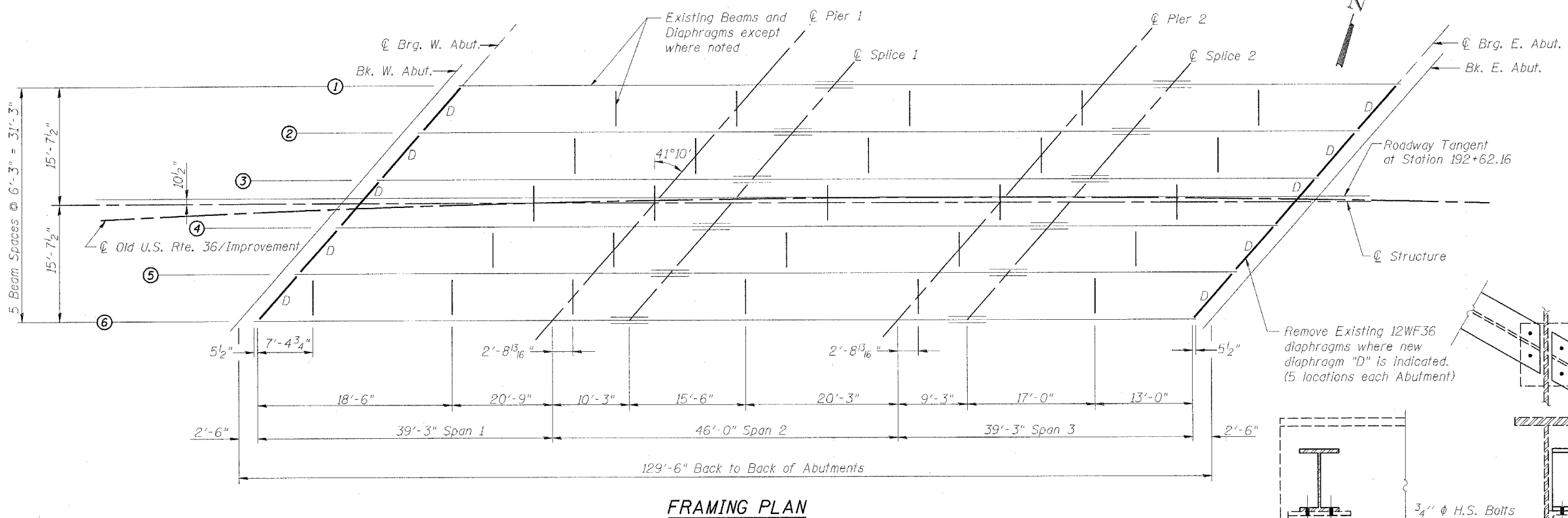
DRAWN BY: NJV  
 CHECKED BY: PBB



	0.4 Sp. 1	0.6 Sp. 3	Piers	0.5 Sp. 2
$I_s$	(in <sup>4</sup> ) 3620		3620	3620
$I_c$ (n)	(in <sup>4</sup> ) 9976			9976
$I_c$ (3n)	(in <sup>4</sup> ) 7395			7395
$S_s$	(in <sup>3</sup> ) 267		267	267
$S_c$ (n)	(in <sup>3</sup> ) 395			395
$S_c$ (3n)	(in <sup>3</sup> ) 358			358
$\psi$	(k/ft.) 0.729		1.160	0.729
$M\psi$	(k) 83		194	62
$s\psi$	(k/ft.) 0.431			0.431
$M_s\psi$	(k) 55			53
$M\psi$	(k) 213		116	215
$M$ (Imp)	(k) 64		34	62
$\psi_3[M\psi + M(Imp)]$	(k) 462		250	462
$M_a$	(k) 780		557	750
$M_u$	(k) 1042			1042
$f_s\psi$ non-comp (k.s.i.)	3.8		8.8	2.8
$f_s\psi$ (comp) (k.s.i.)	1.9			1.8
$f_s\psi_3(\psi + Imp)$ (k.s.i.)	14.1		11.3	14.1
$f_s$ (Overload) (k.s.i.)	19.8		20.1	18.7
$f_s$ (Total) (k.s.i.)	41.2		26.1	
VR	(k)			34.2

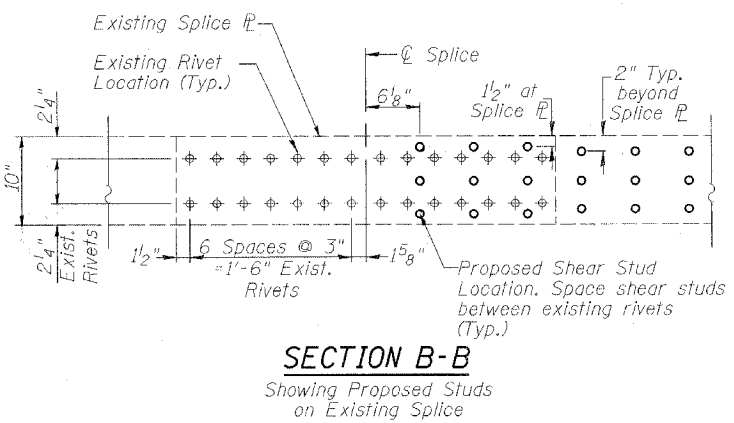
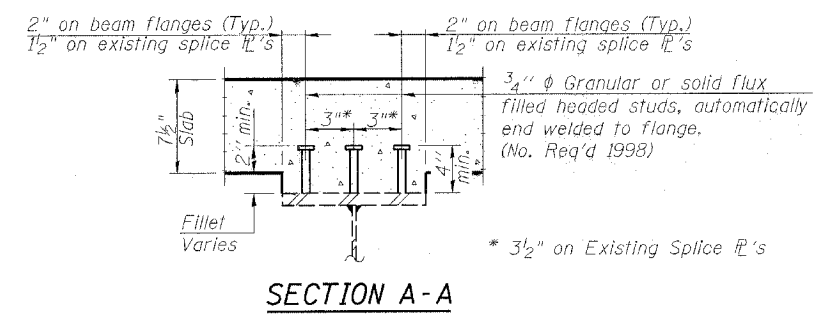
	Abut.	Pier
$R\psi$	(k) 17.9	54.3
$R\psi$	(k) 30.0	36.3
Imp.	(k) 9.0	8.6
$R$ (Total)	(k) 56.9	99.2

$I_s$  and  $S_s$  are the moment of inertia and section modulus of the steel section used in computing  $f_s$  (Total & Overload).  
 $I_c(n)$  and  $S_c(n)$  are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.  
 $I_c(3n)$  and  $S_c(3n)$  are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (see AASHTO 10.38)  
 VR is the maximum Live Load + Impact shear range in span.  
 $Z$  is the plastic section modulus used to determine the fully plastic moments in the non-composite areas.  
 $M_a$  (Applied Moment) =  $1.3[M\psi + Ms\psi + \psi_3(M\psi + M(Imp))]$ .  
 The Plastic Moment capacity ( $M_u$ ) is computed according to AASHTO 10.48.1 and 10.50.1.1.  
 $f_s$  (Overload) is the sum of the stresses due to  $M\psi + Ms\psi + \psi_3(M\psi + M(Imp))$ .  
 $f_s$  (Total) (Non-compact section) is the sum of the stresses due to  $1.3[M\psi + Ms\psi + \psi_3(M\psi + M(Imp))]$ .



**BILL OF MATERIAL**

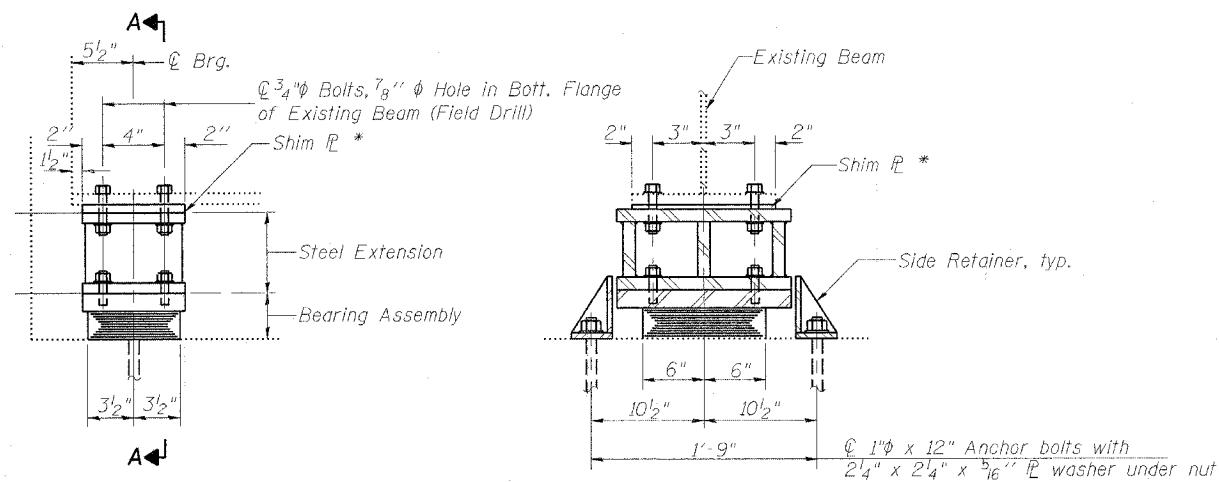
ITEM	UNIT	QUANTITY
Structural Steel Removal	Pound	2988



**NOTES:**  
 Two hardened washers shall be required over all oversize holes for diaphragms.  
 See Genral Notes, Sheet 2 of 20 for priming of new diaphragms. Top coat on new diaphragms to be included with "Cleaning and Painting Steel Bridge".  
 The cost of the replacement diaphragms, hardware and priming to be included in the cost of Furnishing and Erecting Structural Steel. The cost of Field Drilling Holes in Beams to be included in the cost of Furnishing and Erecting Structural Steel.  
 Existing dimensions to be field verified prior to ordering of material.

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**FRAMING PLAN**  
 OLD U.S. ROUTE 36 OVER  
 N.B. 7TH STREET RAMP  
 F.A.U. ROUTE 7978  
 SECTION BR-2  
 SANGAMON COUNTY  
 STA. 192+62.16  
 STRUCTURE NUMBER 084-0053  
 DATE: JAN. 2005  
 DRAWN BY: NJV  
 CHECKED BY: PBB

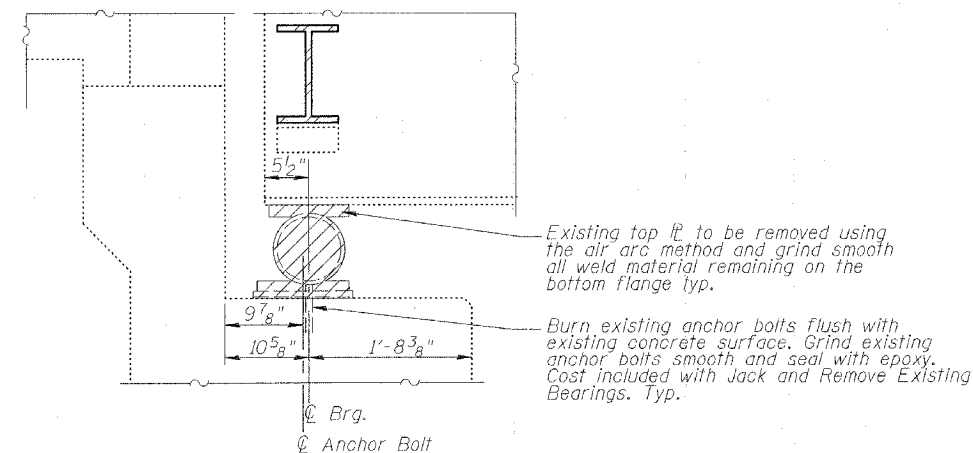
Contract #72449



ELEVATION AT ABUT.

SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.

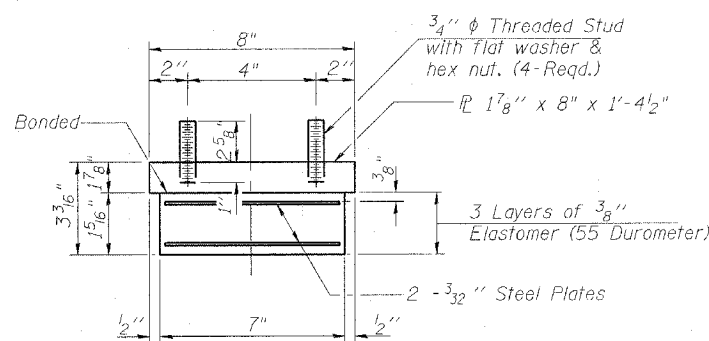


EXISTING BEARING REMOVAL

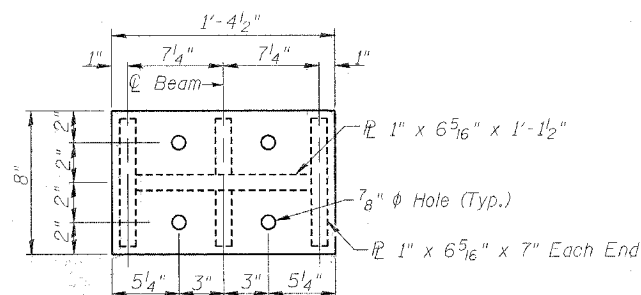
Hatched areas indicate removal of existing bearing.

JACKING EXISTING SUPERSTRUCTURE

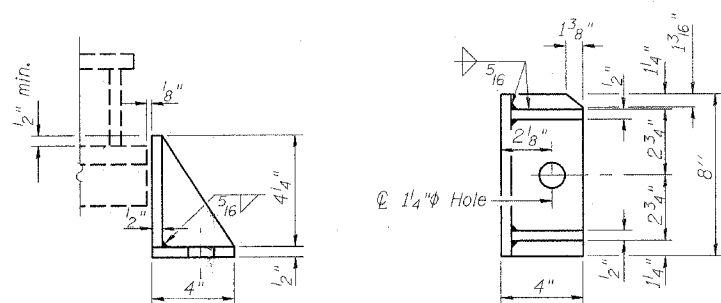
1. The Contractor shall submit for approval by the Engineer, plans for jacking existing superstructure prior to commencing any work at the bearings. This submittal shall be sealed by a licensed structural engineer in Illinois.
2. Jacking and removing existing bearings shall be done after existing deck removal is completed and before the new deck is poured.
3. All Beams at the abutments shall be lifted simultaneously 1/4" to replace existing bearings. Care shall be taken such that the relative elevation between adjacent beams does not vary by more than 1/8" from their original relative elevations.
4. The maximum dead load reaction with deck removed (per bearing) at the Abutments is 1840 lbs.
5. The minimum jack capacity shall be 2 tons.
6. The new structural steel and bearings shall be in place and the jacks shall be lowered before the new concrete deck is poured.



BEARING ASSEMBLY

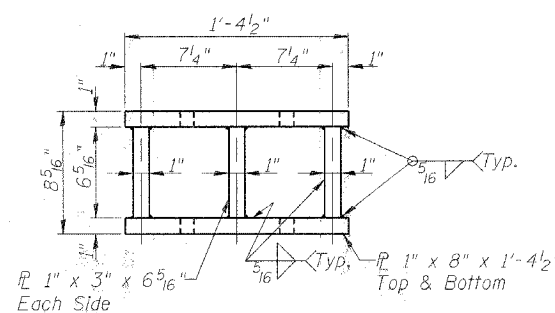


PLAN TOP AND BOTTOM PLATE



SIDE RETAINER

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



STEEL EXTENSION DETAIL

Weight included with Structural Steel.

Beam #	6	5	4	3	2	1
W. Abut.	3/8	5/8	5/8	1/2	1/2	-

\* In addition to shims listed on the table above, provide one 1/4" shim, one 1/8" shim, and one 1/16" shim for height adjustment. Weight included with Structural Steel.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Elastomeric Bearing Assembly Type I	Each	6
Jack and Remove Existing Bearings	Each	6

NOTES:

- See Sheet 18 of 20 for Anchor Bolt installation.
- Shim plates shall not be placed under Bearing Assembly.
- Cost of Field Drilling holes in existing beams included in cost of Furnishing and Erecting Structural Steel.

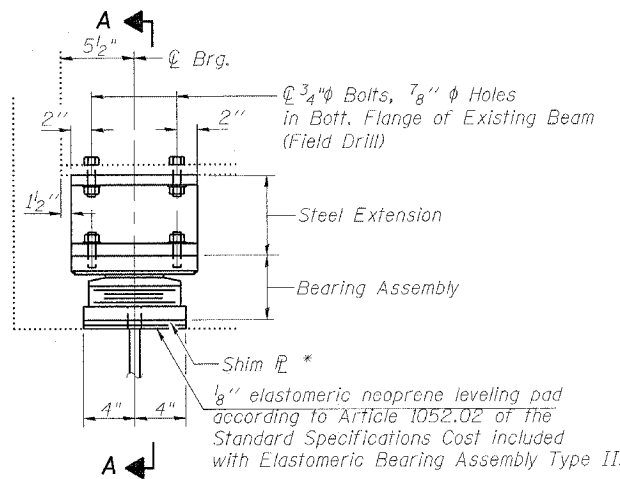
ILLINOIS DEPARTMENT OF TRANSPORTATION

W. ABUTMENT BEARING DETAILS

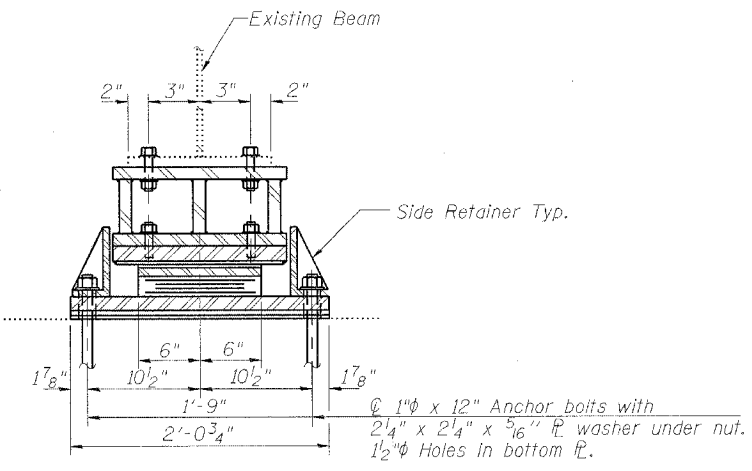
OLD U.S. ROUTE 36 OVER  
N.B. 7TH STREET RAMP  
F.A.U. ROUTE 7978  
SECTION BR-2  
SANGAMON COUNTY  
STA. 192+62.16  
STRUCTURE NUMBER 084-0053

DATE: JAN. 2005

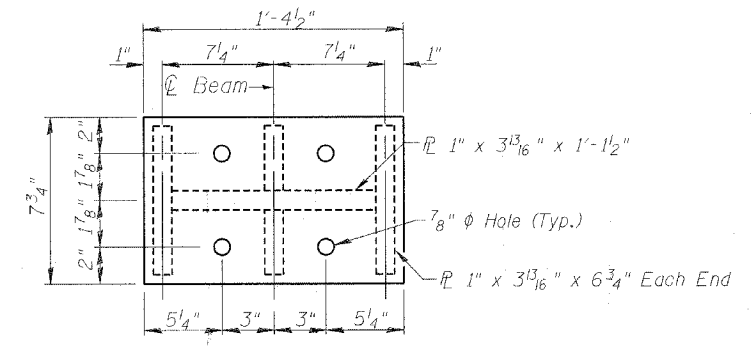
DRAWN BY: NJV  
CHECKED BY: PBB



**ELEVATION AT ABUT.**

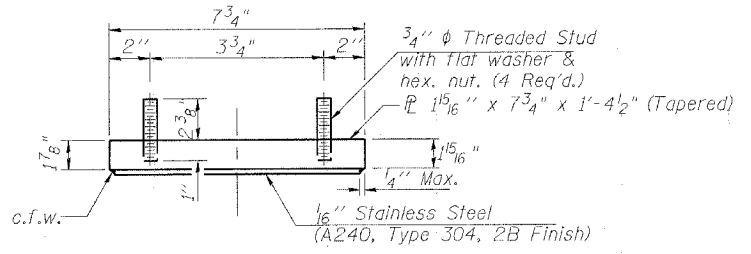


**SECTION A-A**

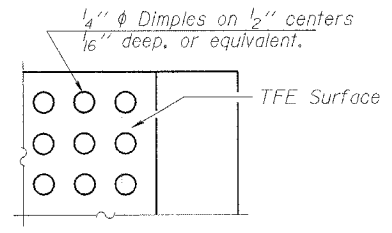


**PLAN TOP AND BOTTOM PLATE**

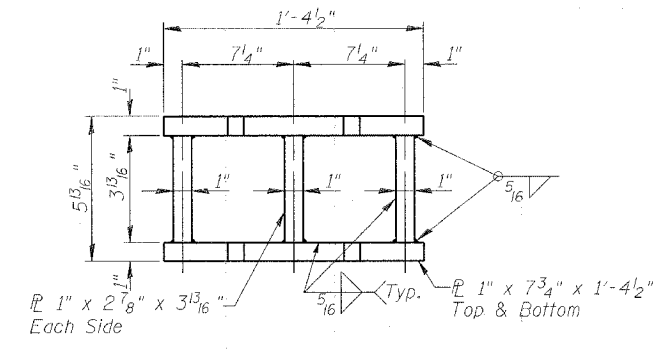
**TYPE II ELASTOMERIC EXP. BRG.**



**TOP BEARING ASSEMBLY**

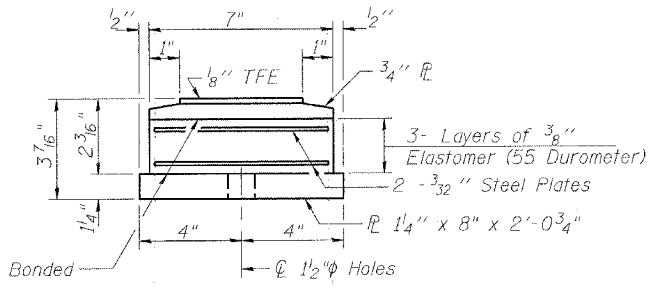


**PLAN-TFE SURFACE**

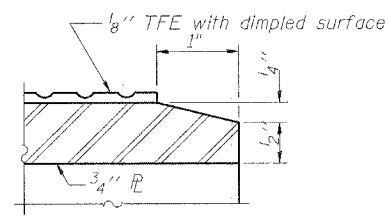


**STEEL EXTENSION DETAIL**

Weight included with Structural Steel



**BOTTOM BEARING ASSEMBLY**



**SECTION THRU TFE**

The 1/8" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces. Bonding of 1/8" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

**NOTES:**

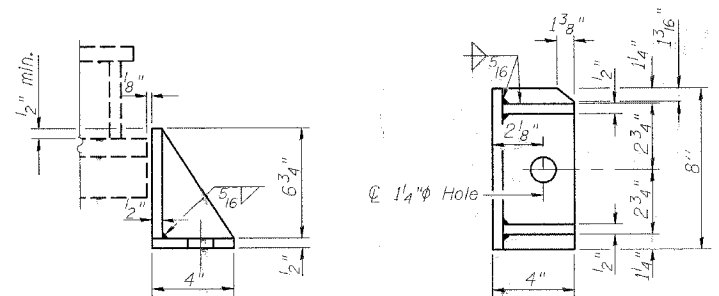
- See Existing Bearing Removal Detail Sheet 11 of 20.
- See Jacking Existing Superstructure notes Sheet 11 of 20.
- The top bearing assembly shall be installed with the thicker edge of tapered plate oriented towards the East.
- See sheet 18 of 20 For Anchor Bolt installation.
- Cost of Field Drilling Holes in Existing Beams included in cost of Furnishing and Erecting Structural Steel.

Shim Plate Thickness "t" (in.)						
Beam #	1	2	3	4	5	6
E. Abut.	3/8	-	-	1/8	1/4	7/8

\* In addition to shims listed on the table above, provide one 1/4" shim, one 1/8" shim, and one 1/16" shim for height adjustment. Weight included with Structural Steel.

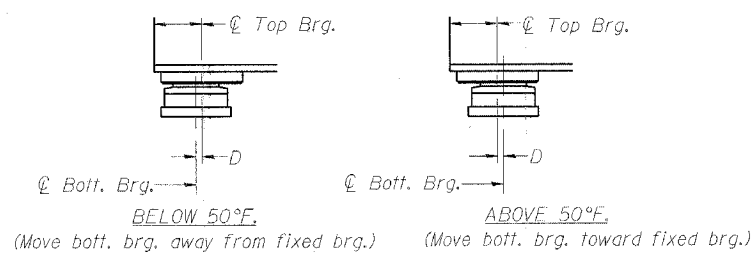
**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Elastomeric Bearing Assembly Type II	Each	6
Jack and Remove Existing Bearings	Each	6



**SIDE RETAINER**

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



**SETTING ANCHOR BOLTS AT E. ABUTMENT**

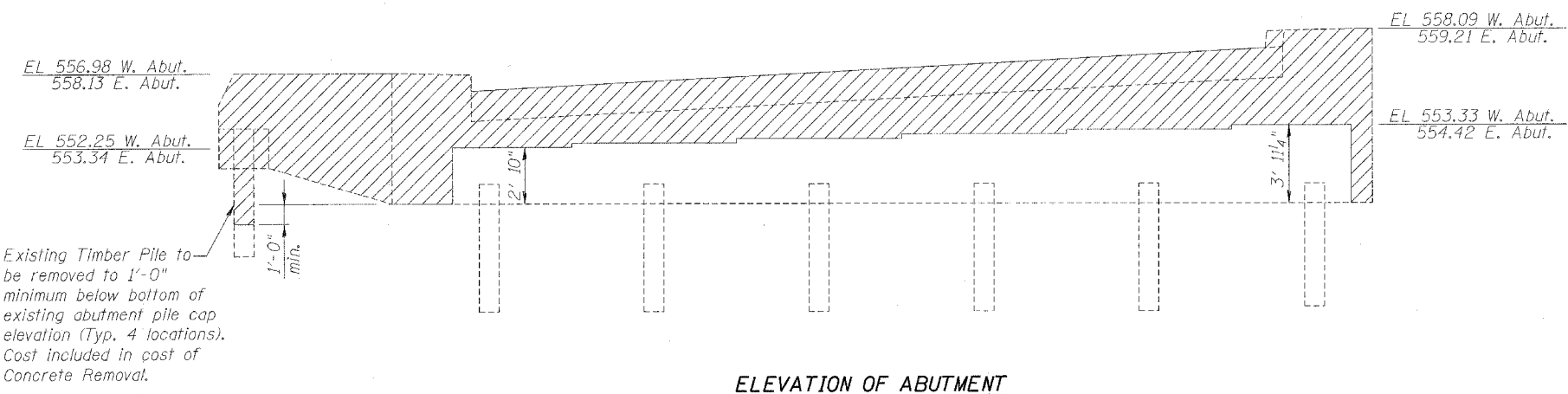
D=1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

ILLINOIS DEPARTMENT OF TRANSPORTATION

**E. ABUTMENT BEARING DETAILS**

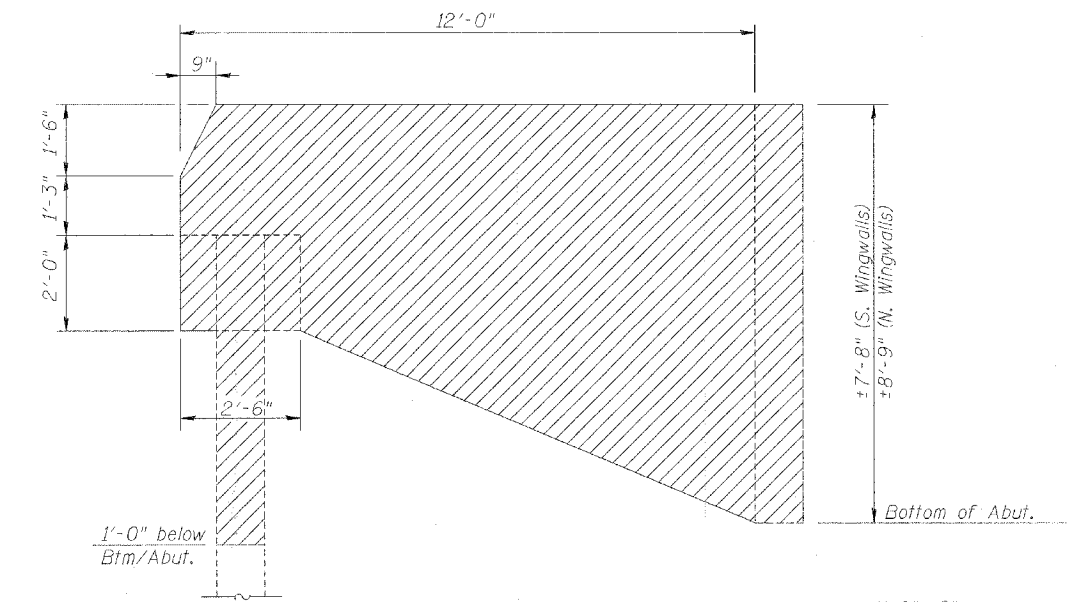
OLD U.S. ROUTE 36 OVER  
N.B. 7TH STREET RAMP  
F.A.U. ROUTE 7978  
SECTION BR-2  
SANGAMON COUNTY  
STA. 192+62.16  
STRUCTURE NUMBER 084-0053

DATE: JAN. 2005 DRAWN BY: NJV CHECKED BY: PBB

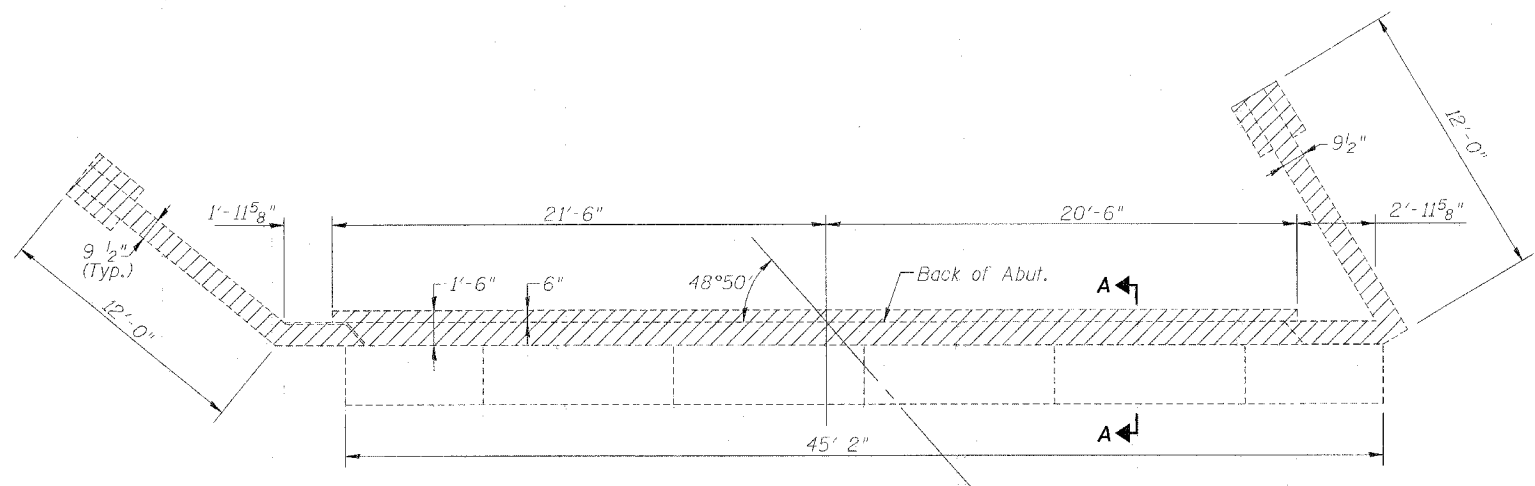


Existing Timber Pile to be removed to 1'-0" minimum below bottom of existing abutment pile cap elevation (Typ. 4 locations). Cost included in cost of Concrete Removal.

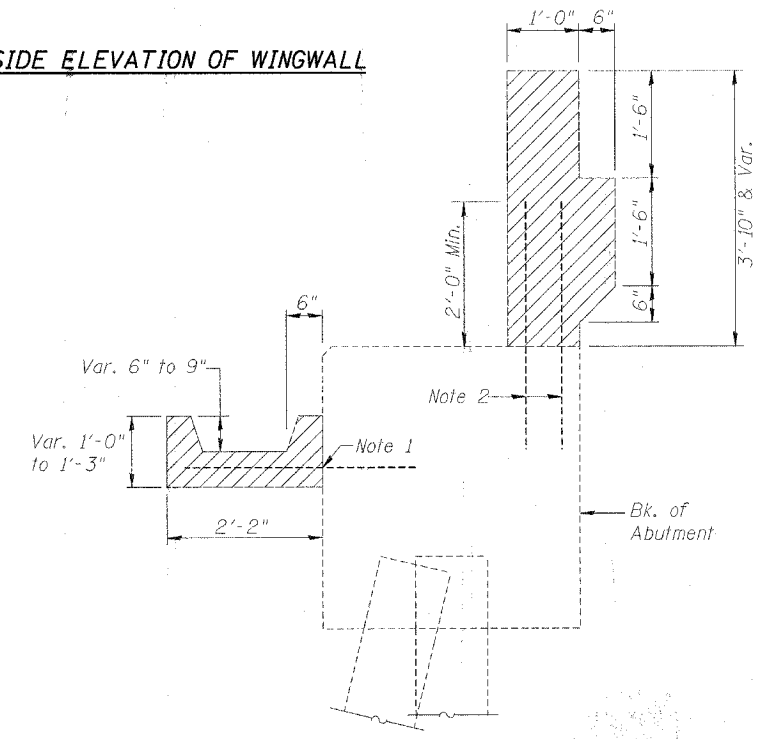
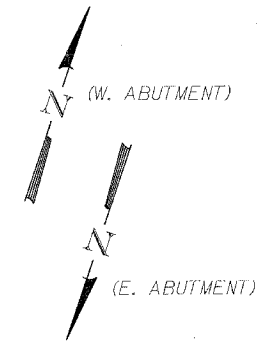
**ELEVATION OF ABUTMENT**  
W. Abut. Looking West (Shown)  
E. Abut. Looking East (Opposite hand)



**OUTSIDE ELEVATION OF WINGWALL**



**TOP VIEW**  
(W. Abut. Shown)  
(E. Abut. Similar)

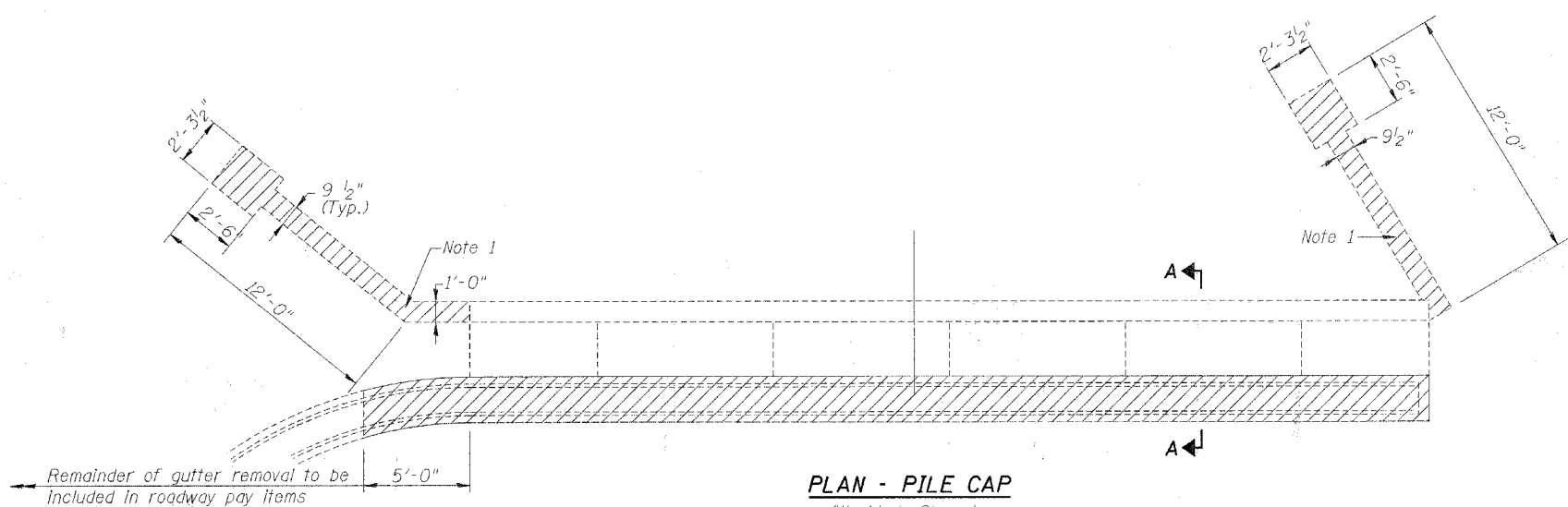


**Section A-A**  
(Dimensions @ Rt <'s)

**LEGEND**  
Concrete Removal

**NOTES:**

- Existing Reinforcement shall be cut off flush with face of abutment and covered with a 2" layer of cement grout. Cost included with "Concrete Removal".
- Existing reinforcement extending into new construction shall be cleaned, straightened and incorporated into the new construction. Cost included with Concrete Removal.
- Hatched areas indicate Concrete Removal.



**PLAN - PILE CAP**  
(W. Abut. Shown)  
(E. Abut. Similar)

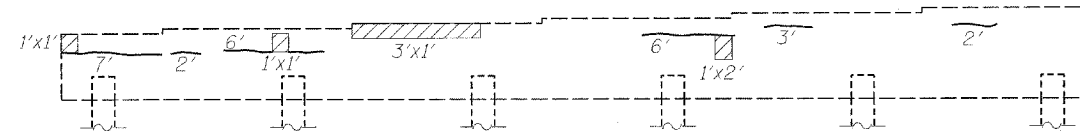
**BILL OF MATERIAL**  
(2 Abutments)

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	32.3

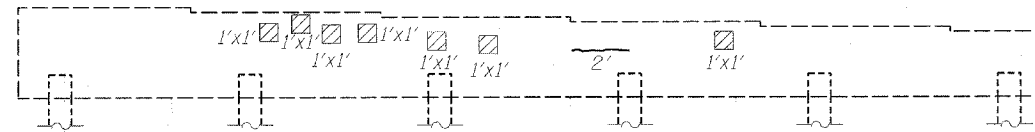
ILLINOIS DEPARTMENT OF TRANSPORTATION  
**ABUTMENT CONCRETE REMOVAL**  
OLD U.S. ROUTE 36 OVER  
N.B. 7TH STREET RAMP  
F.A.U. ROUTE 7978  
SECTION BR-2  
SANGAMON COUNTY  
STA. 192+62.16  
STRUCTURE NUMBER 084-0053  
DRAWN BY: NJV  
CHECKED BY: PBB

DATE: JAN. 2005

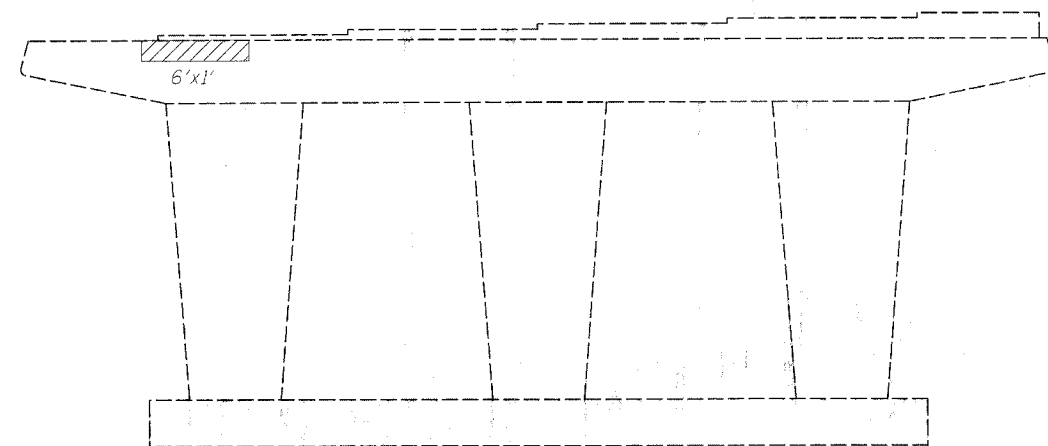
Contract #72449



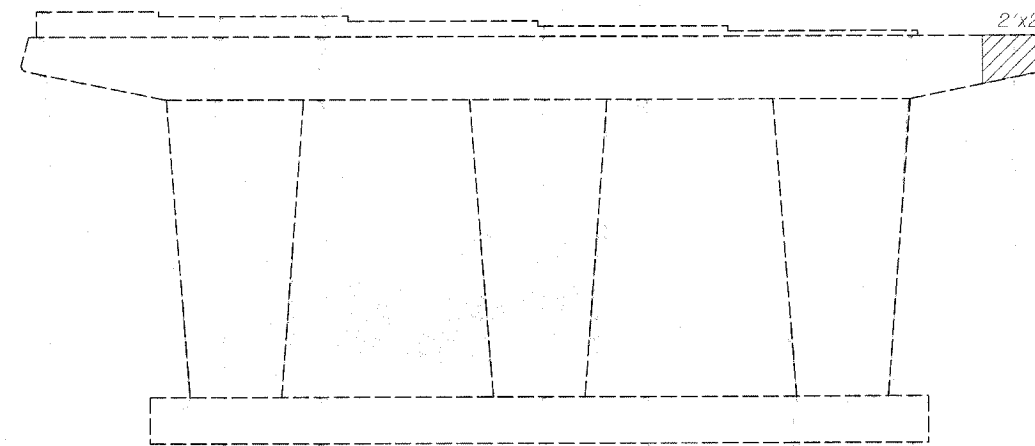
**WEST ABUT. ELEVATION**  
(Looking West)



**EAST ABUT. ELEVATION**  
(Looking East)



**PIER 1 ELEVATION**  
(East Face-Looking West)



**PIER 2 ELEVATION**  
(West Face-Looking East)

**BILL OF MATERIAL**  
(Total for Substructure)

ITEM	UNIT	QUANTITY
Formed Concrete Repair (Depth ≤ 5")	Sq. Ft.	24
Epoxy Crack Sealing	Foot	28

**LEGEND**

- Formed Concrete Repair (Depth ≤ 5")
- Epoxy Crack Sealing

ILLINOIS DEPARTMENT OF TRANSPORTATION

CONCRETE REPAIR DETAILS

OLD U.S. ROUTE 36 OVER

N.B. 7TH STREET RAMP

F.A.U. ROUTE 7978

SECTION BR-2

SANGAMON COUNTY

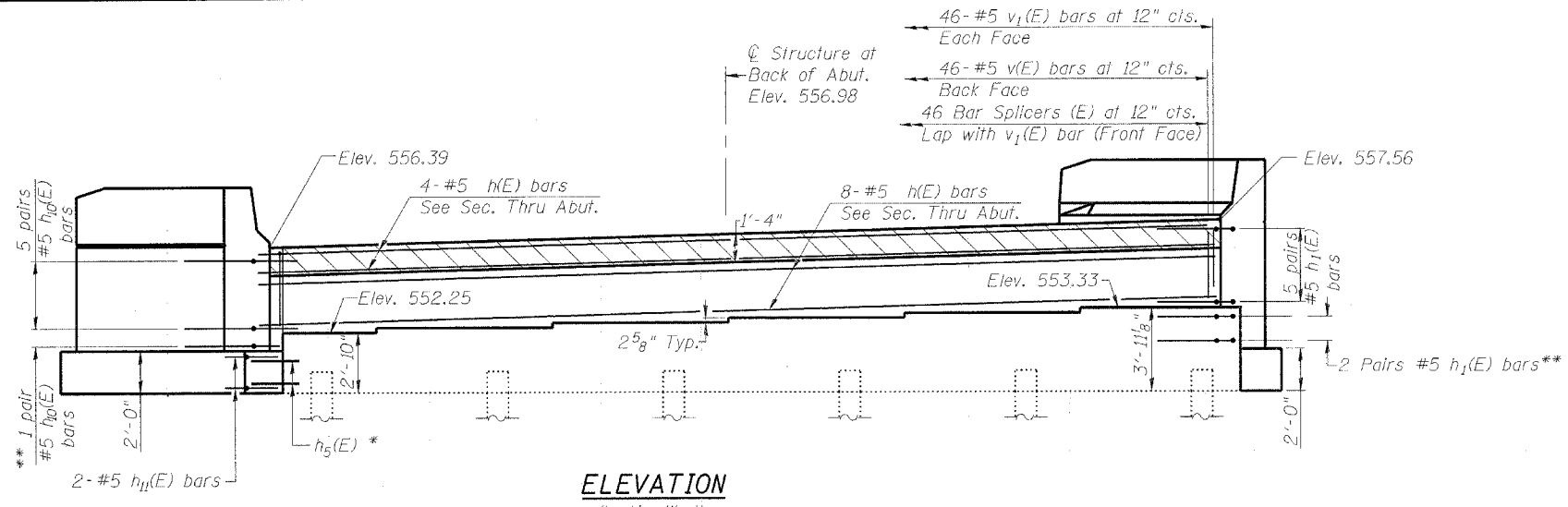
STA. 192+62.16

STRUCTURE NUMBER 084-0053

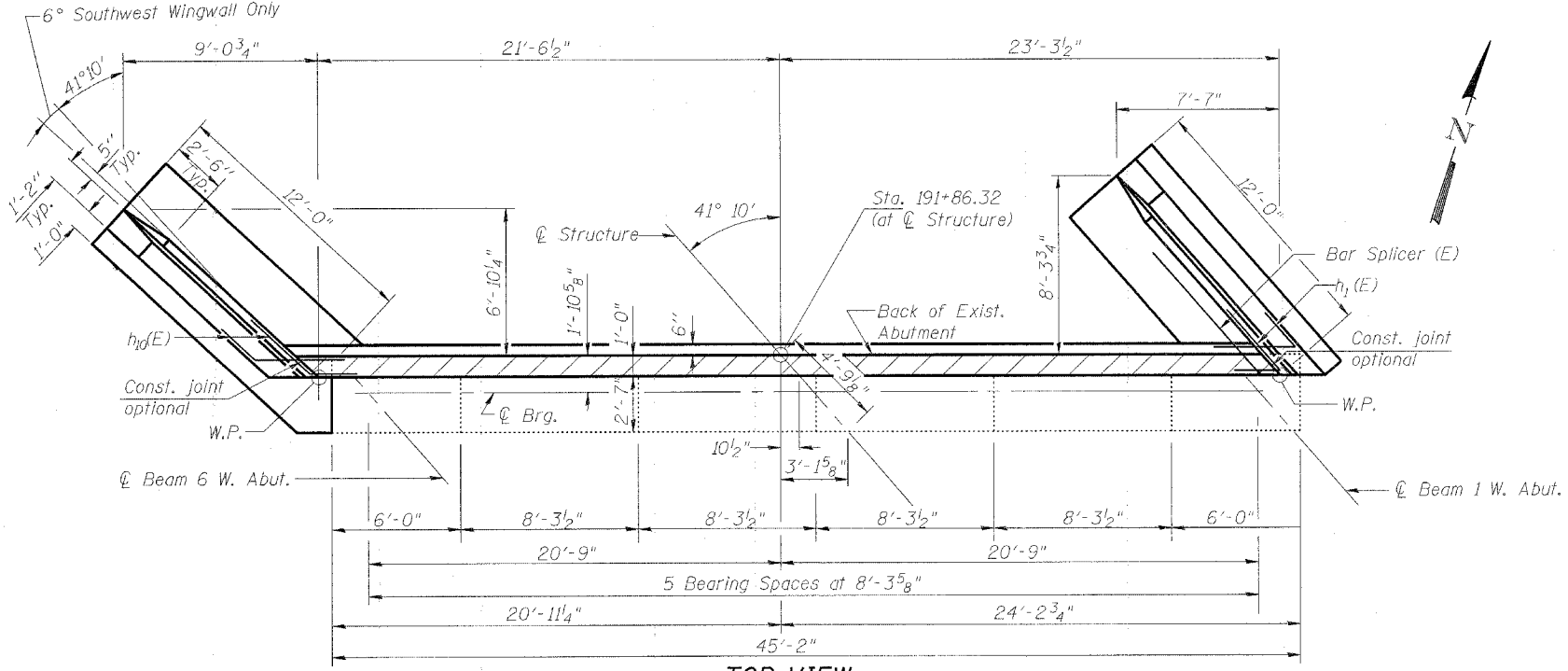
DATE: JAN. 2005

DRAWN BY: NJV  
CHECKED BY: PBB

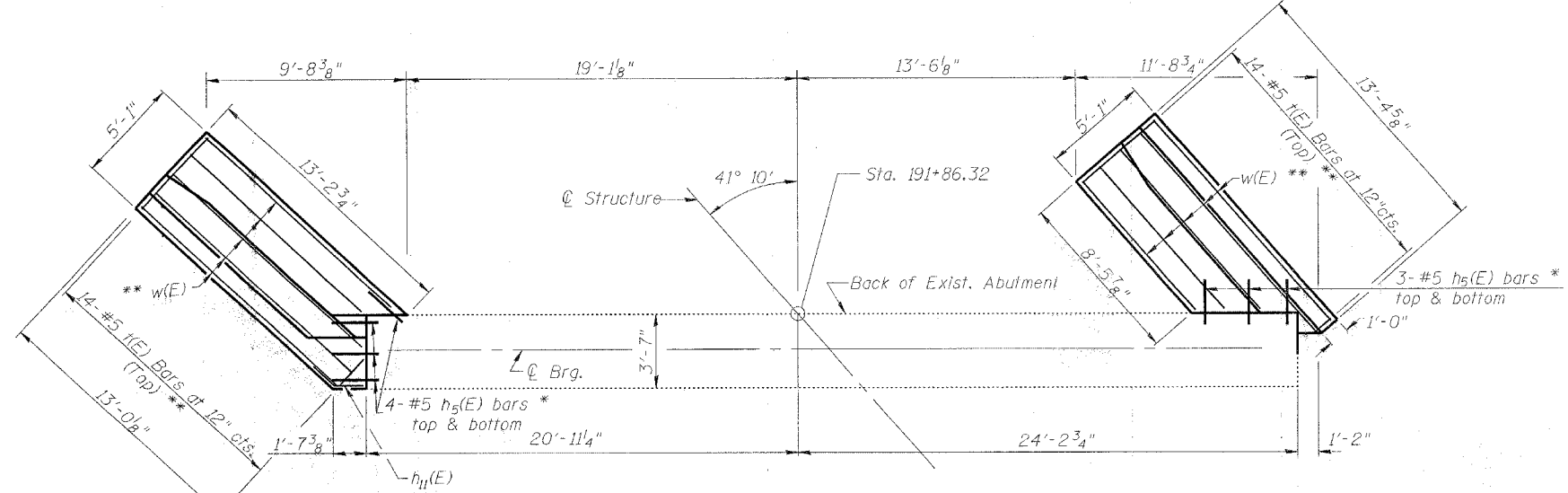




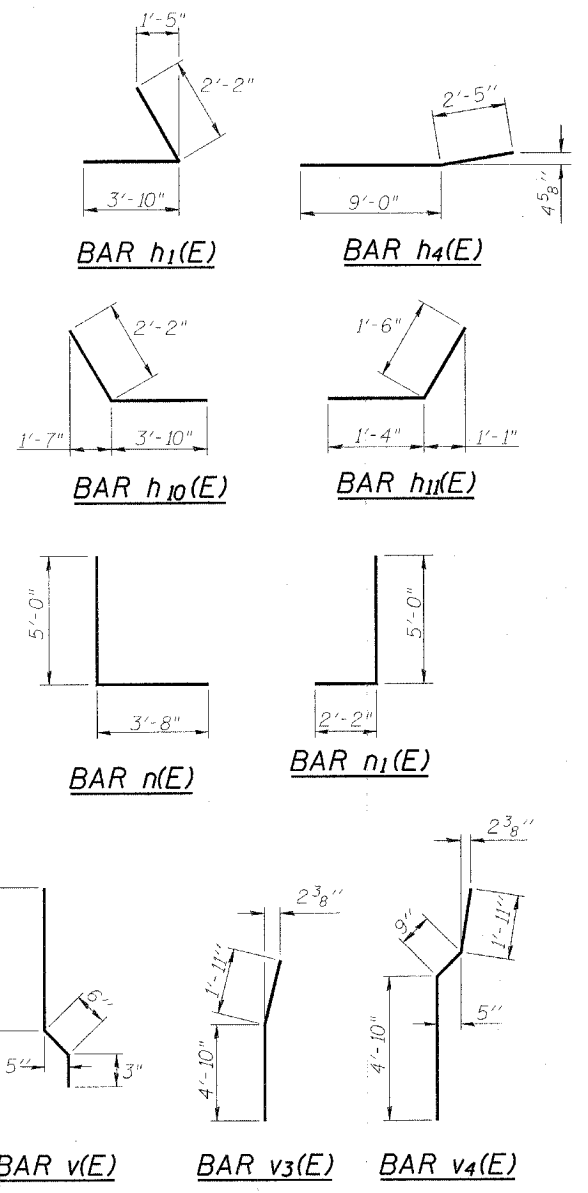
**ELEVATION**  
(Looking West)



**TOP VIEW**



**PLAN-PILE CAP**  
(Wing Wall dowels not shown for clarity)



**BILL OF MATERIAL (WEST ABUT.)**

BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	12	#5	44'-6"	—
h1(E)	14	#5	6'-0"	└
h3(E)	10	#4	10'-4"	—
h4(E)	16	#4	11'-5"	—
h5(E)	14	#5	2'-3"	—
h7(E)	10	#4	13'-0"	—
h8(E)	2	#4	11'-1"	—
h9(E)	2	#4	12'-2"	—
h10(E)	12	#5	6'-0"	└
h11(E)	2	#5	2'-10"	└
n(E)	26	#6	8'-8"	└
n1(E)	26	#6	7'-2"	└
k(E)	28	#5	4'-7"	—
v(E)	46	#5	3'-5"	└
v1(E)	92	#5	3'-9"	—
v2(E)	26	#6	7'-5"	—
v3(E)	6	#6	6'-9"	└
v4(E)	20	#6	7'-6"	└
w(E)	20	#5	12'-10"	—
Structure Excavation		Cu. Yd.	129.9	
Concrete Structures		Cu. Yd.	23.1	
Reinforcement Bars, Epoxy Coated		Pound	3190	
Bar Splicers		Each	46	

**NOTES:**

- Work this Sheet with Sheet 17 of 20.
- Reinforcement bars designated (E) shall be epoxy coated.
- Quantity of concrete in end post Included with Concrete Superstructure on Sheet 6 of 20.
- See Sheet 19 of 20 for details of Bar Splicers.
- See Sheet 17 of 20 for Wing Wall Elevations and Section Thru Abutment.
- All edges have 3/4" chamfer except as noted.
- Hatched area to be poured after superstructure forms have been removed. Quantity of concrete included with Concrete Superstructure on Sheet 6 of 20.
- \* Epoxy grout h5(E) bars in 7" (Min.) drilled holes according to Art. 584 of the Standard Specifications. Cost included with "Concrete Structures".
- \*\* Reinforcement shall be cut off to maintain 1 1/2" cover at existing structure and be epoxy coated. Cost included in cost of Reinforcement Bars, Epoxy Coated.

**MIN BAR LAPS**  
#5 bars = 1'-8"  
#6 bars = 2'-0"

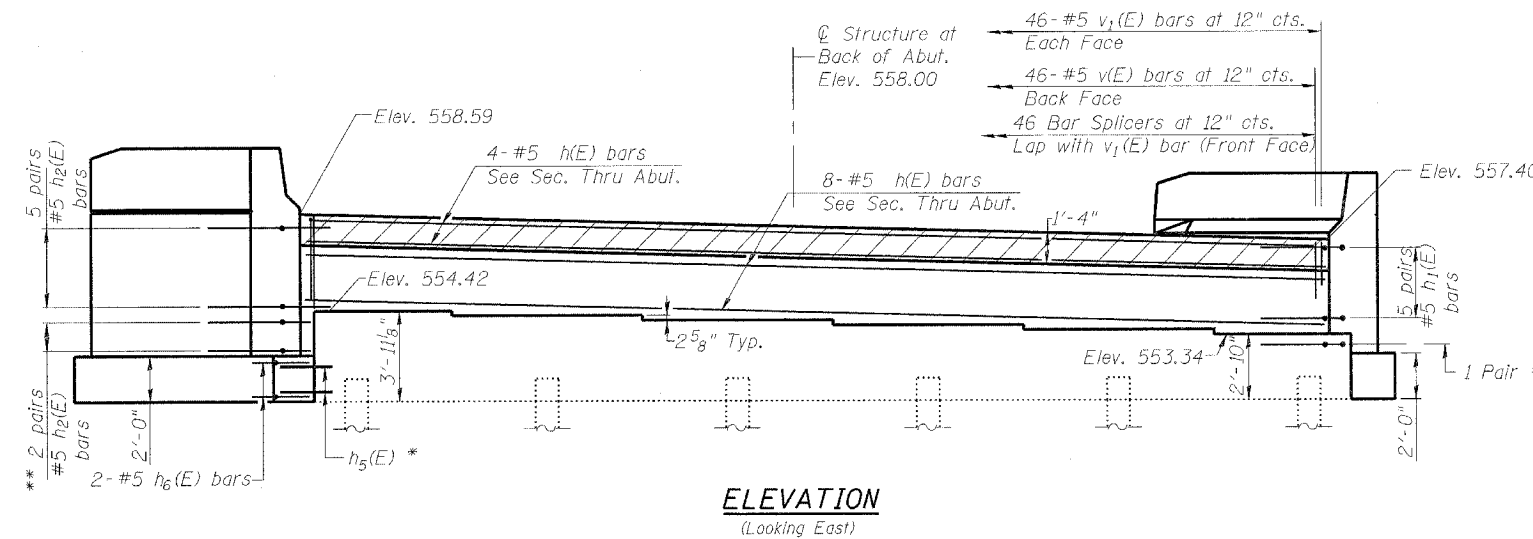
ILLINOIS DEPARTMENT OF TRANSPORTATION  
**WEST ABUTMENT**  
OLD U.S. ROUTE 36 OVER  
N.B. 7TH STREET RAMP  
F.A.U. ROUTE 7978  
SECTION BR-2  
SANGAMON COUNTY  
STA. 192+62.16  
STRUCTURE NUMBER 084-0053  
DRAWN BY: NUJ  
CHECKED BY: PBB

**BILL OF MATERIAL (EAST ABUT.)**

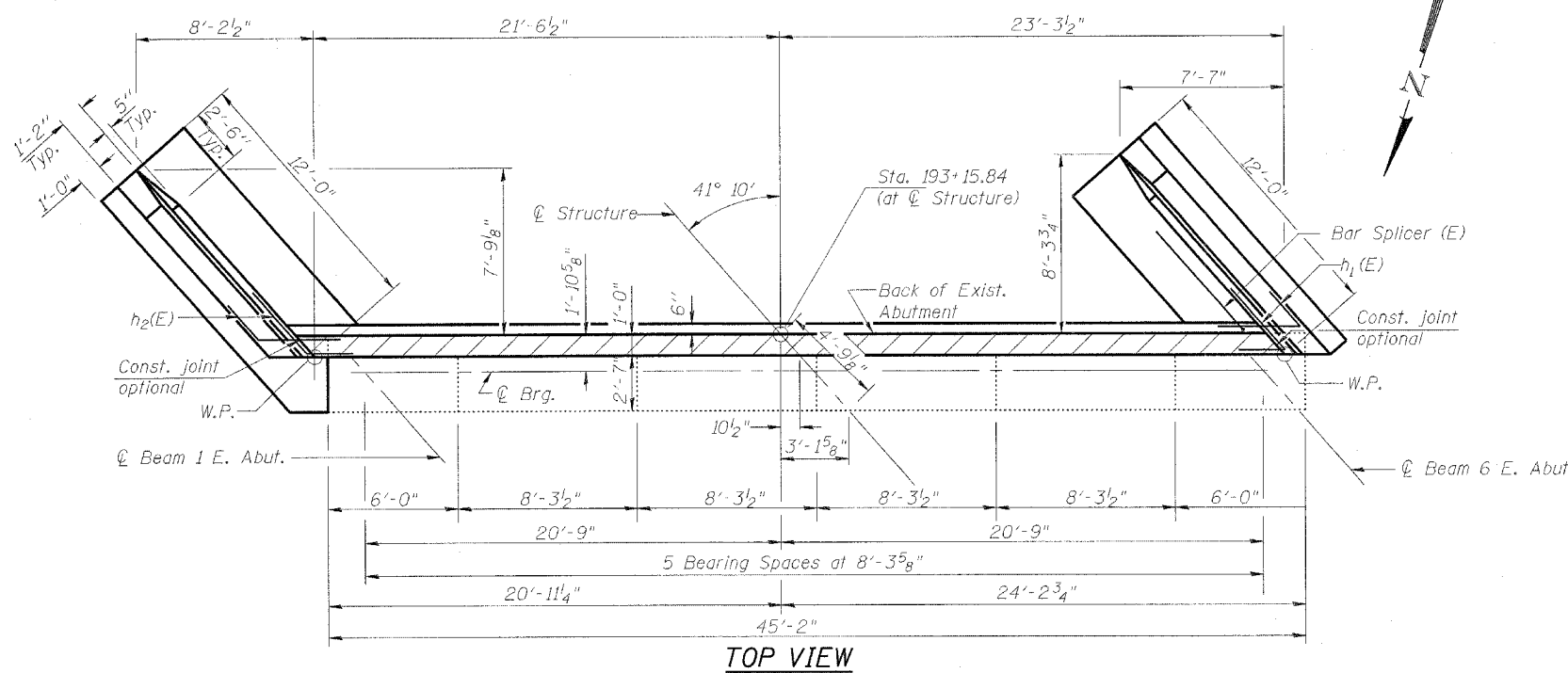
BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	12	#5	44'-6"	—
h <sub>1</sub> (E)	14	#5	6'-0"	—
h <sub>2</sub> (E)	12	#5	6'-0"	—
h <sub>3</sub> (E)	10	#4	10'-4"	—
h <sub>4</sub> (E)	16	#4	11'-5"	—
h <sub>5</sub> (E)	14	#5	2'-3"	—
h <sub>6</sub> (E)	2	#5	3'-0"	—
h <sub>7</sub> (E)	10	#4	13'-0"	—
h <sub>8</sub> (E)	2	#4	11'-1"	—
h <sub>9</sub> (E)	2	#4	12'-2"	—
n(E)	26	#6	8'-8"	—
n <sub>1</sub> (E)	26	#6	7'-2"	—
r(E)	28	#5	4'-7"	—
v(E)	46	#5	3'-5"	—
v <sub>1</sub> (E)	92	#5	3'-9"	—
v <sub>2</sub> (E)	26	#6	7'-5"	—
v <sub>3</sub> (E)	6	#6	6'-9"	—
v <sub>4</sub> (E)	20	#6	7'-6"	—
w(E)	20	#5	12'-10"	—
Structure Excavation		Cu. Yd.	130.3	
Concrete Structures		Cu. Yd.	23.1	
Reinforcement Bars, Epoxy Coated		Pound	3190	
Bar Splicers		Each	46	

**NOTES:**

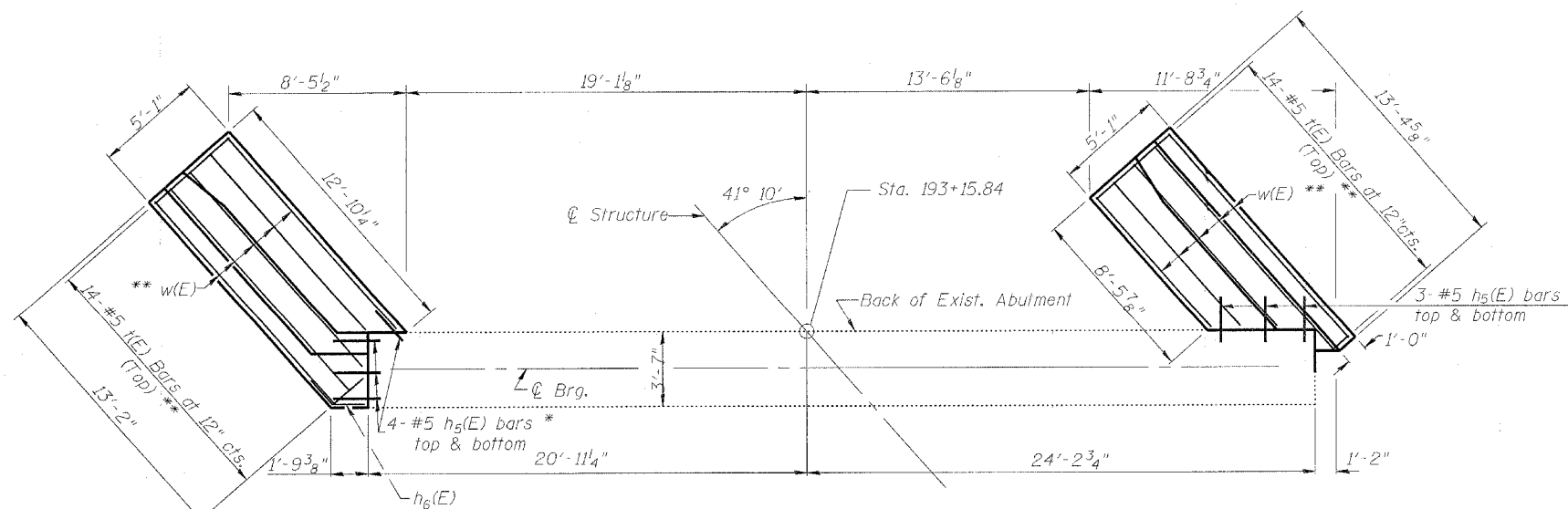
- Work this Sheet with Sheet 17 of 20.
- Reinforcement bars designated (E) shall be epoxy coated.
- Quantity of concrete in end post included with Concrete Superstructure on Sheet 6 of 20.
- See Sheet 19 of 20 for details of Bar Splicers.
- See Sheet 17 of 20 for Wing Wall Elevations and Section Thru Abutment.
- All edges have 3/4" chamfer except as noted.
- Hatched area to be poured after superstructure forms have been removed. Quantity of concrete included with Concrete Superstructure on Sheet 6 of 20.
- \* Epoxy grout h<sub>5</sub>(E) bars in 7" (Min.) drilled holes according to Art. 584 of the Standard Specifications. Cost included with "Concrete Structures".
- \*\* Reinforcement shall be cut off to maintain 1/2" cover at existing structure and be epoxy coated. Cost included in cost of Reinforcement Bars, Epoxy Coated.



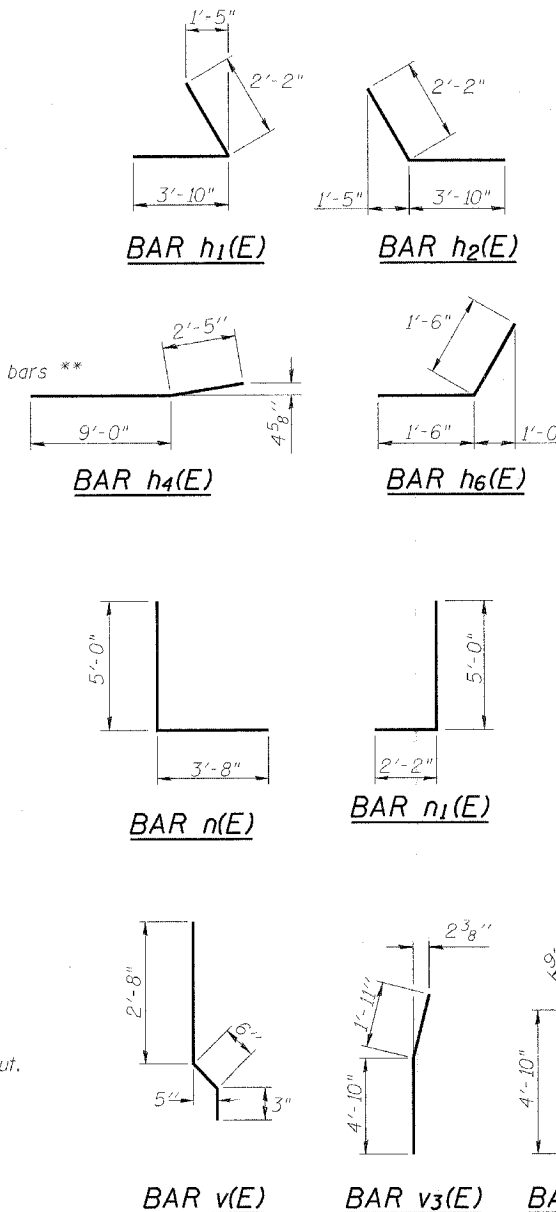
**ELEVATION**  
(Looking East)



**TOP VIEW**



**PLAN-PILE CAP**  
(Wing Wall dowels not shown for clarity)



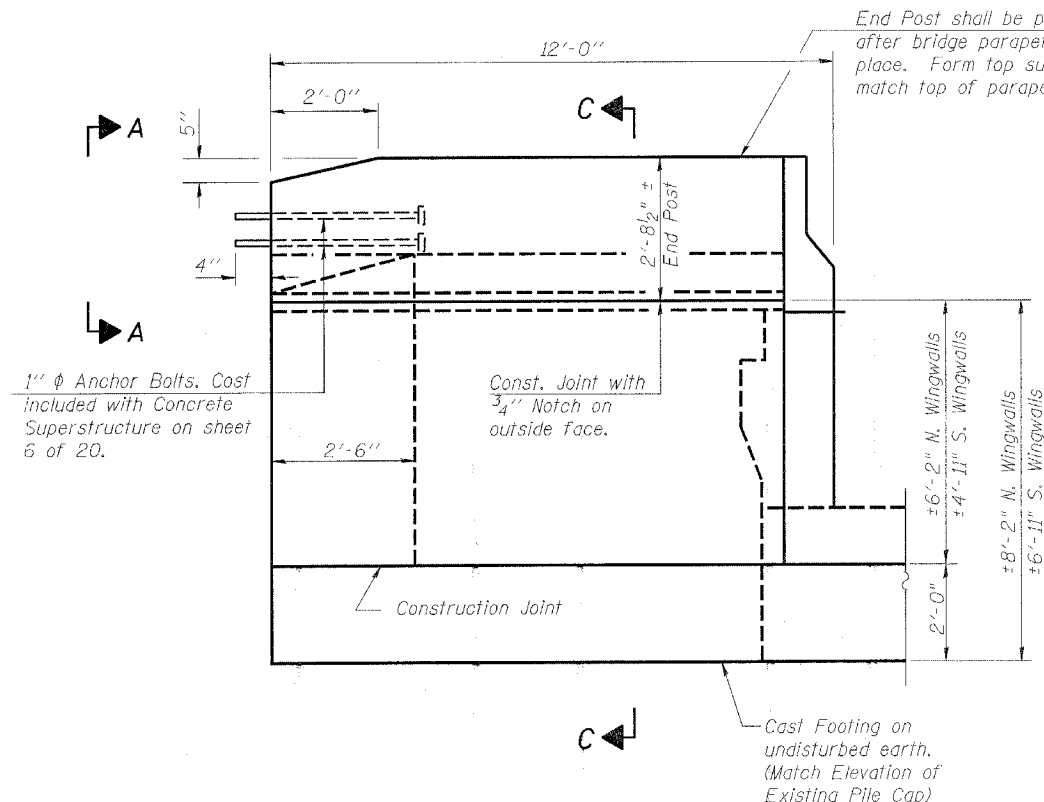
**MIN BAR LAPS**  
#5 bars = 1'-8"  
#6 bars = 2'-0"

ILLINOIS DEPARTMENT OF TRANSPORTATION

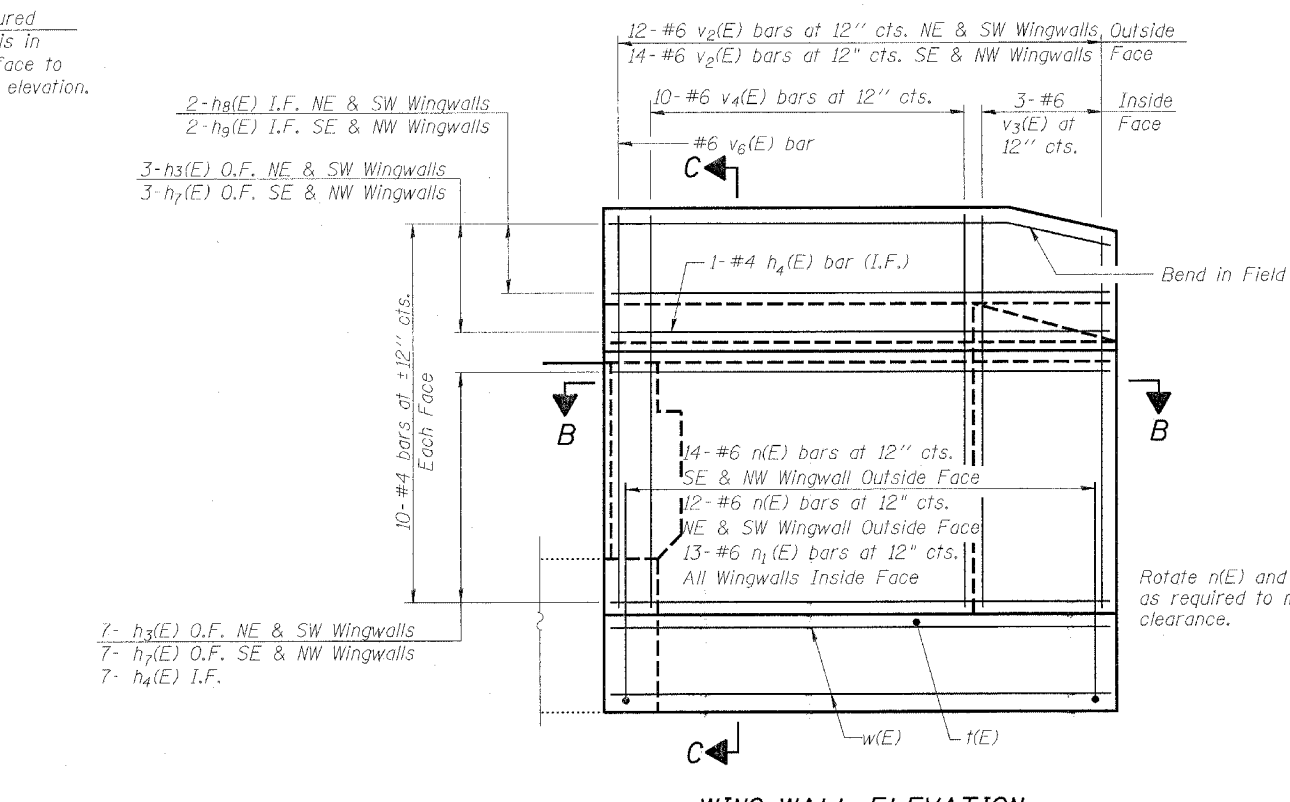
**EAST ABUTMENT**  
OLD U.S. ROUTE 36 OVER  
N.B. 7TH STREET RAMP  
F.A.U. ROUTE 7978  
SECTION BR-2  
SANGAMON COUNTY  
STA. 192+62.16  
STRUCTURE NUMBER 084-0053

DATE: JAN. 2005

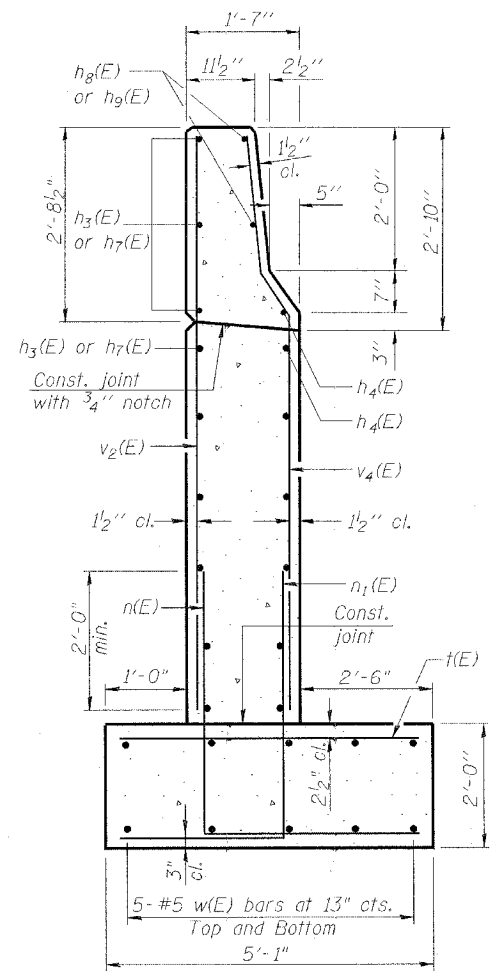
DRAWN BY: NJV  
CHECKED BY: PBB



**WING WALL ELEVATION**  
Showing Dimensions

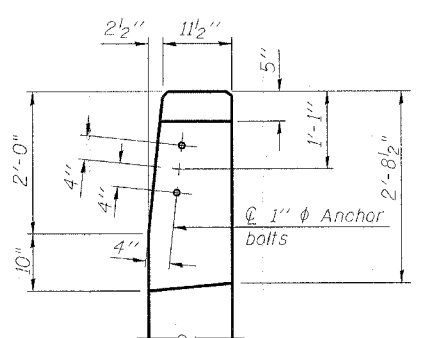


**WING WALL ELEVATION**  
Showing Reinforcement

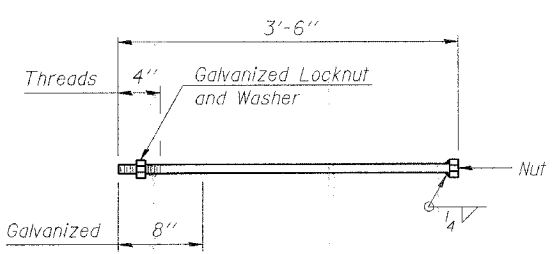


**SECTION C-C**

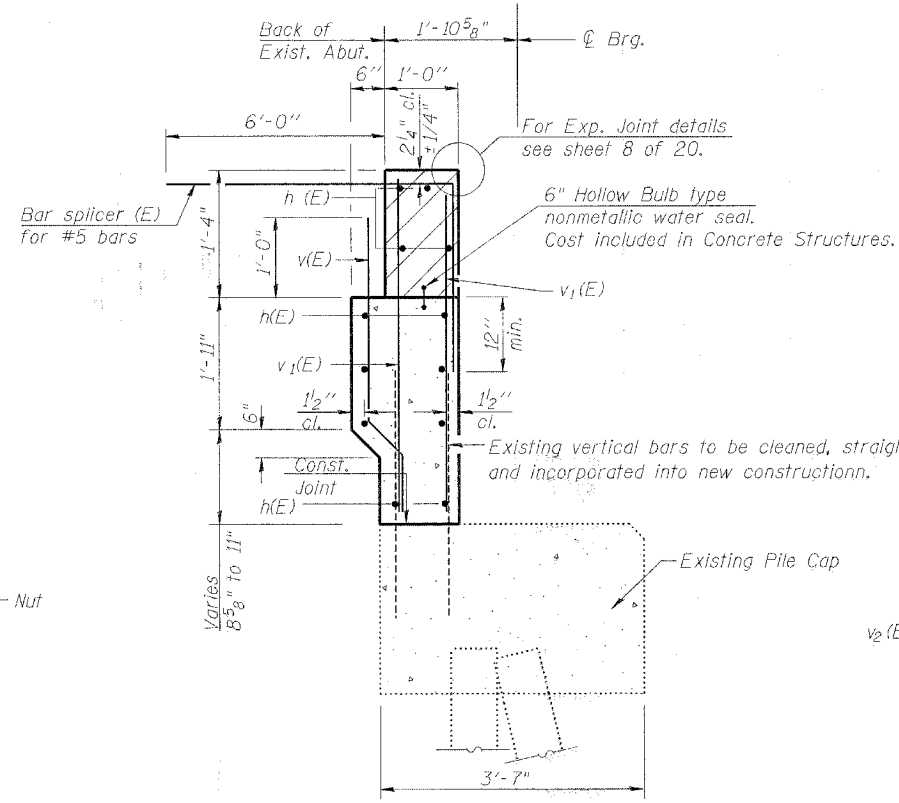
**MIN BAR LAPS**  
#5 bars = 1'-8"  
#6 bars = 2'-0"



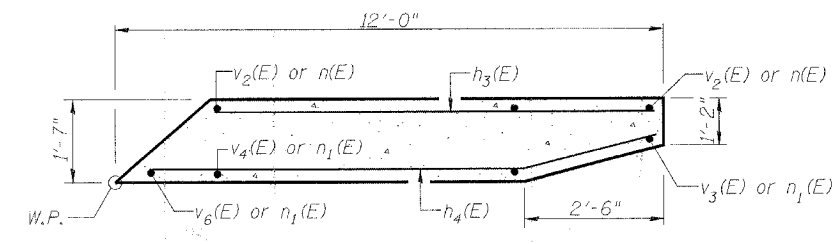
**VIEW A-A**



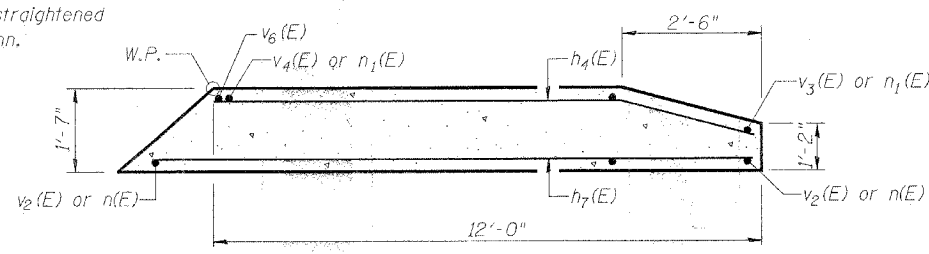
**1" φ ANCHOR BOLT**



**SEC. THRU ABUT.**  
Dims at Rt. L's



**SEC. B-B**  
NE & SW Wingwall



**SEC. B-B**  
SE & NW Wingwall

**NOTES:**  
Work this Sheet with Sheets 15 & 16 of 20.  
Hatched area to be poured after superstructure forms have been removed. Quantity of concrete included with Concrete Superstructure on Sheet 6 of 20.  
Reinforcement bars designated (E) shall be epoxy coated.  
Quantity of concrete in end post included with Concrete Superstructure on sheet 6 of 20.  
"SE Wingwall" indicates the South East Wingwall.

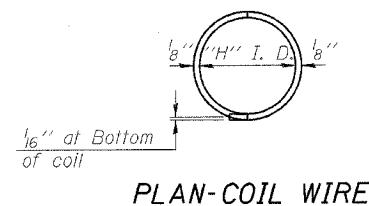
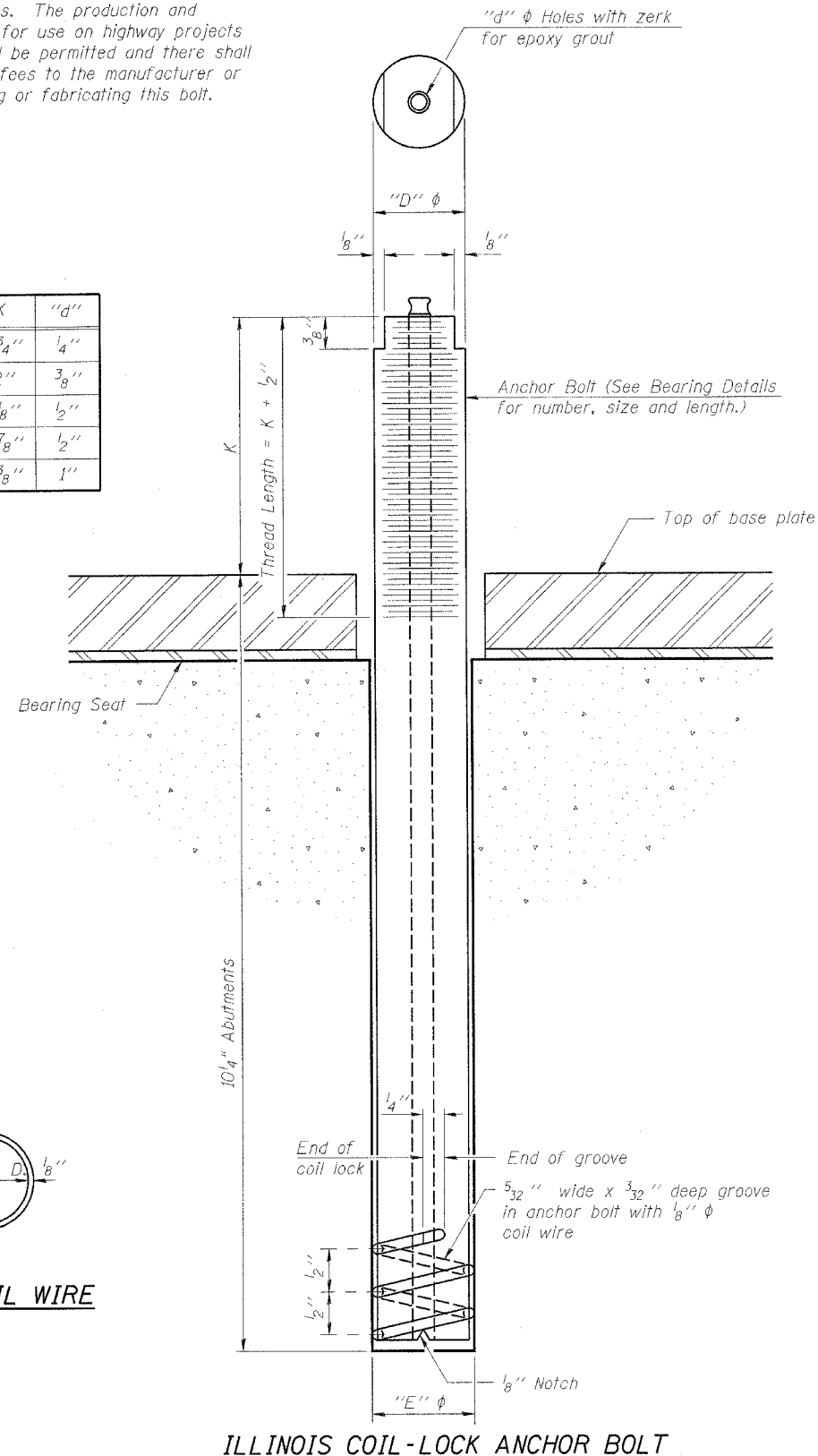
ILLINOIS DEPARTMENT OF TRANSPORTATION

**ABUTMENT DETAILS**  
OLD U.S. ROUTE 36 OVER  
N.B. 7TH STREET RAMP  
F.A.U. ROUTE 797B  
SECTION BR-2  
SANGAMON COUNTY  
STA. 192+62.16  
STRUCTURE NUMBER 084-0053

DATE: JAN. 2005  
DRAWN BY: NJV  
CHECKED BY: PBB

The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

D	E	H	K	"d"
1"	1 1/8"	1 3/16"	1 3/4"	1/4"
1 1/4"	1 3/8"	1 1/16"	2"	3/8"
1 1/2"	1 5/8"	1 5/16"	2 1/8"	1/2"
2"	2 1/8"	1 13/16"	2 7/8"	1/2"
2 1/2"	2 5/8"	2 5/16"	3 3/8"	1"



### MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A 519, Grade 1026, CW and supplied with hexagonal nuts and cut washers.  
 The coil wire shall be made of any suitable soft steel wire.  
 The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.  
 The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C 881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

### INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

### ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures.

- The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:
1. A threaded rod stud with nut and washer of the type specified.
  2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

Location	Type
W. Abut.	A307
E. Abut.	A307

ASTM F 1554 Grade 105, ASTM A 449 and AASHTO M 314 Grade 105 anchor bolts may be substituted for the anchor bolts shown above.

### GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or according to the manufacturer's recommendation after beams or girders have been erected and adjusted.  
 Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.  
 The anchor bolts, furnished and installed and including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for Furnishing and Erecting Structural Steel.

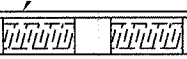
The diameter of this part is equal or larger than the diameter of bar spliced.

**ROLLED THREAD DOWEL BAR**



**\*\* ONE PIECE**

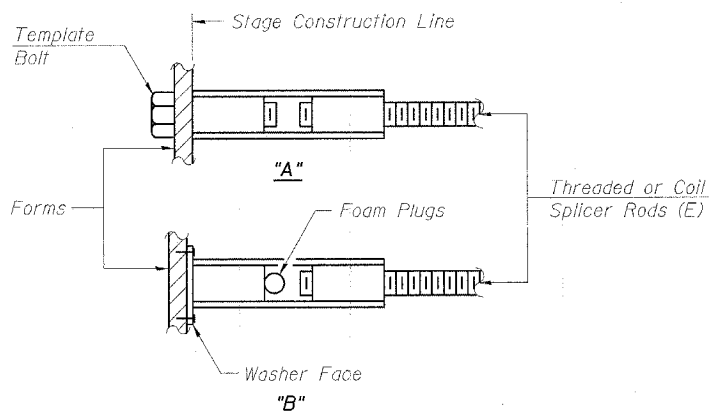
Wire Connector



**WELDED SECTIONS**

**BAR SPLICER ASSEMBLY ALTERNATIVES**

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



**INSTALLATION AND SETTING METHODS**

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

**NOTES**

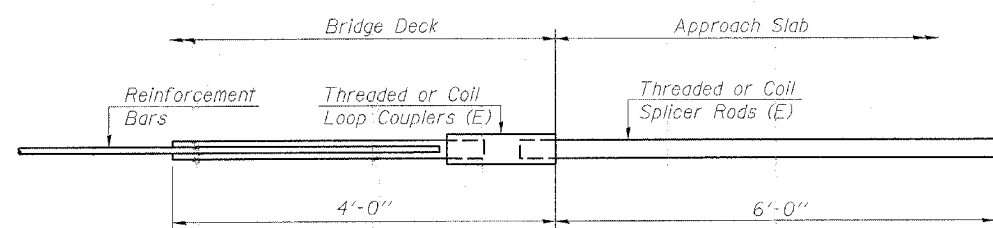
Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.  
 Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.  
 All reinforcement bars shall be lapped and tied to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

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

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

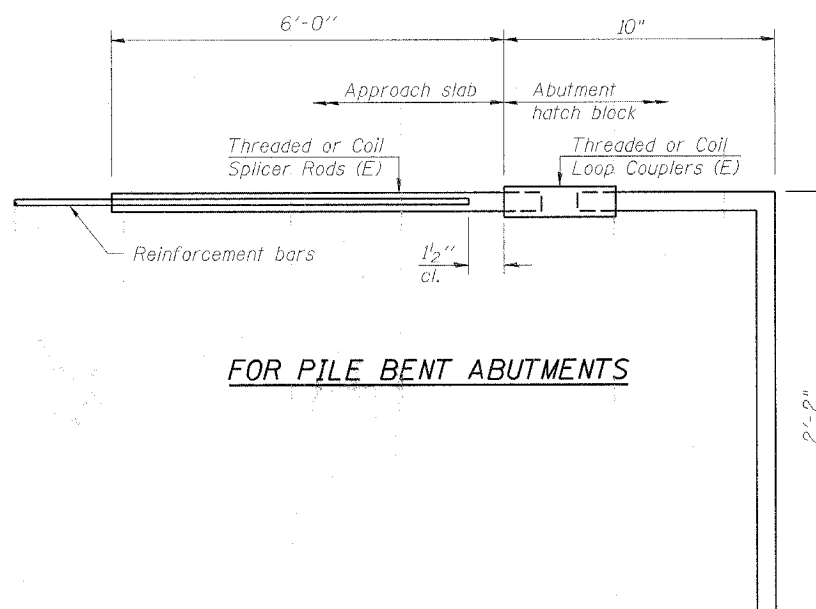
BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	5.9
#5	2'-0"	23.0	9.2
#6	2'-7"	33.1	13.3
#7	3'-5"	45.1	18.0
#8	4'-6"	58.9	23.6
#9	5'-9"	75.0	30.0
#10	7'-3"	95.0	38.0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

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



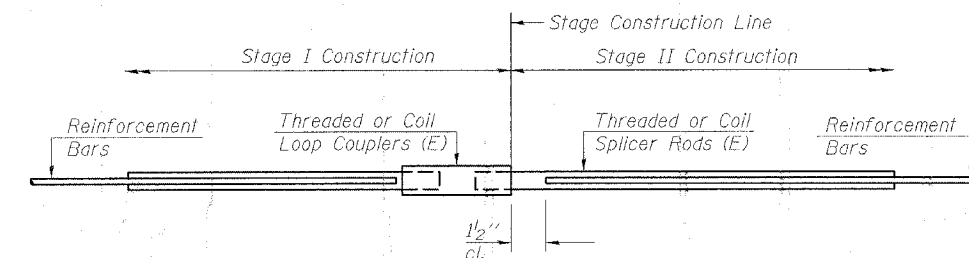
**FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS**

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



**FOR PILE BENT ABUTMENTS**

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required = 92 (Abuts)



**STANDARD**

Bar Size	No. Assemblies Required	Location

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

OLD U.S. ROUTE 36 OVER  
 N.B. 7TH STREET RAMP  
 F.A.U. ROUTE 797B  
 SECTION BR-2  
 SANGAMON COUNTY  
 STA. 192+62.16  
 STRUCTURE NUMBER 084-0053

DATE: JAN. 2005  
 DRAWN BY: NUJ  
 CHECKED BY: PBB

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET TOTAL
7978	BR-2	SANGAMON	261	170
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 20

20 SHEETS

Contract #72449

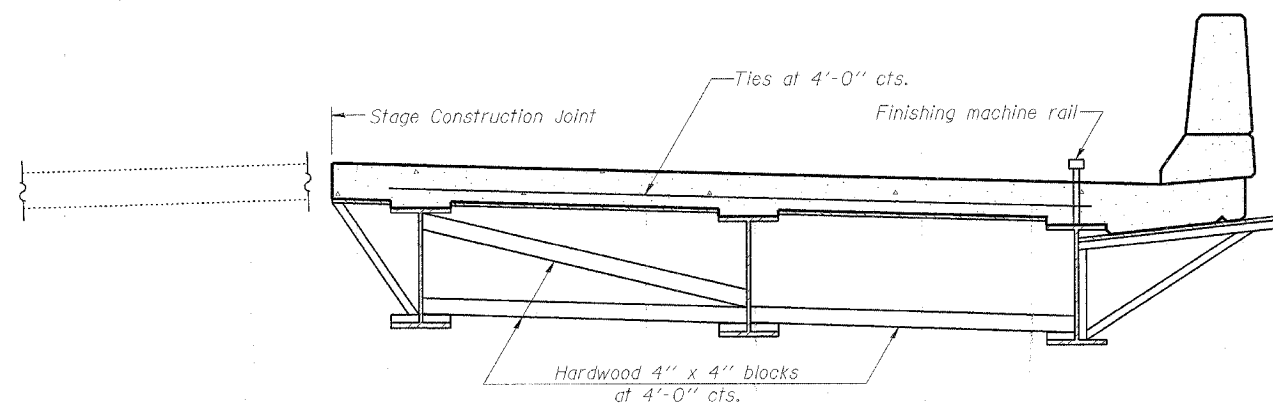
**NOTES:**

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

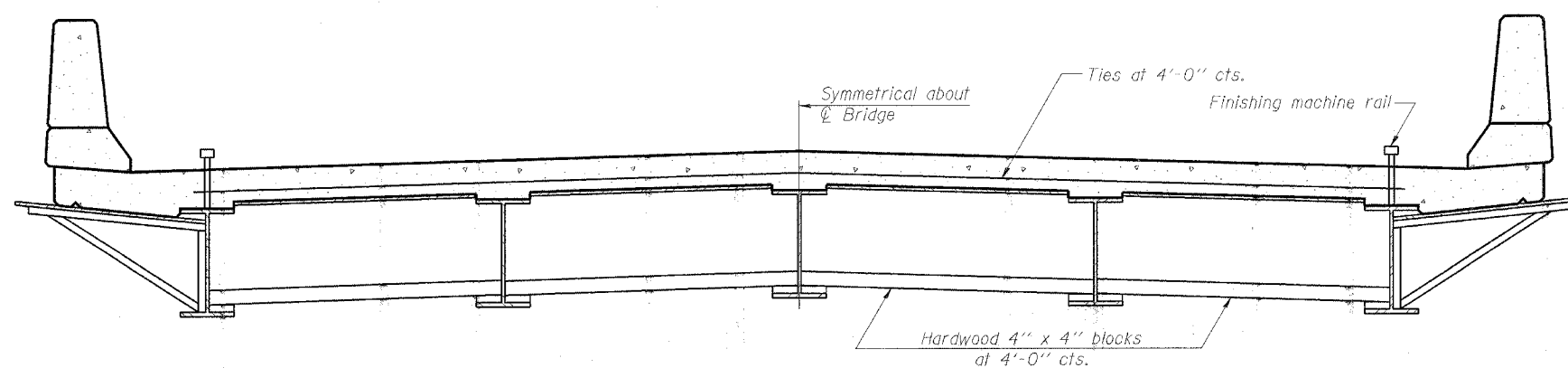
The finishing machine rails shall be placed on the top flange of the exterior beams.

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

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



**FORM BRACES FOR  
STAGE CONSTRUCTION**



**FORM BRACES FOR  
STANDARD CONSTRUCTION**

SB-1

10-22-04

BLANK, WESSELINK, COOK & ASSOCIATES

ENGINEERS - CONSULTANTS

DECATUR, ILLINOIS

ILLINOIS DEPARTMENT OF TRANSPORTATION

**CANTILEVER FORMING BRACKETS**

OLD U.S. ROUTE 36 OVER

N.B. 7TH STREET RAMP

F.A.U. ROUTE 7978

SECTION BR-2

SANGAMON COUNTY

STA. 192+62.16

STRUCTURE NUMBER 084-0053

DATE: JAN. 2005

DRAWN BY: NJV  
CHECKED BY: PBB

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAU 7968	#	SANGAMON	261	171
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract #72449 \*SECTION 3R(BR, BR-1, BR-2)19RS-8

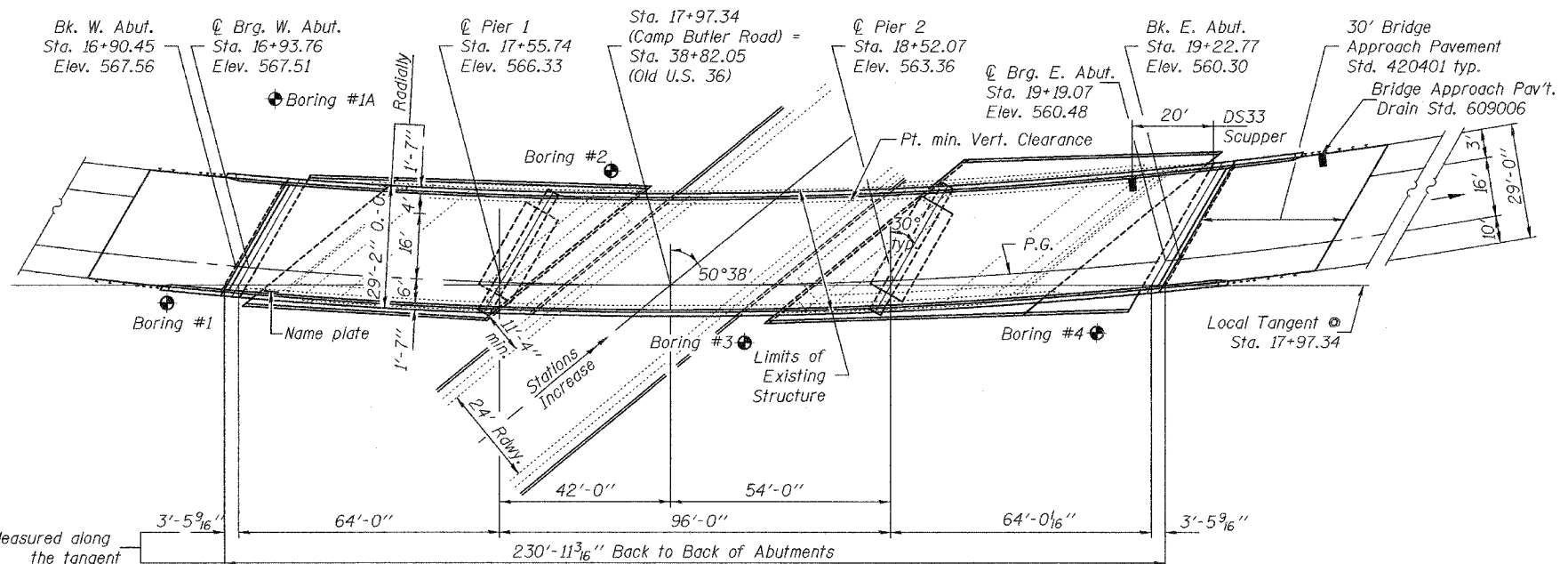
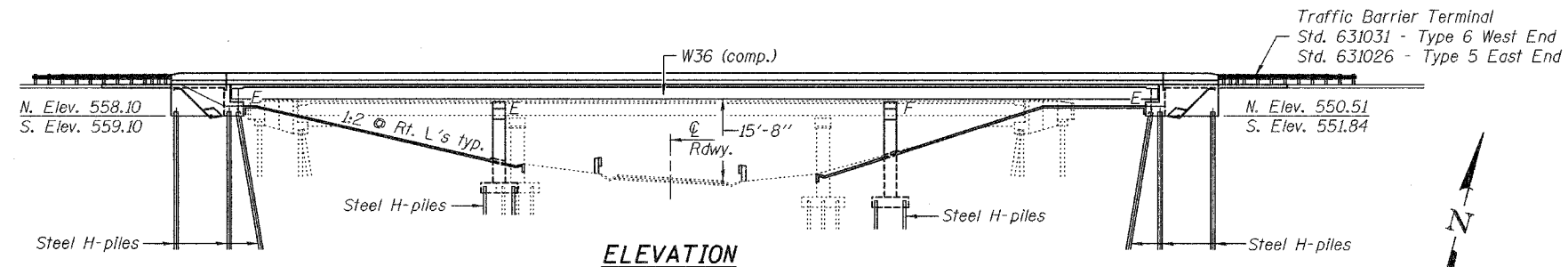
Bench Mark: Chiseled square on headwall of 2'x2' box culvert along north side of Old U.S. 36 west bound lanes; approximately 200' east of existing structure. Elevation NAVD '88 = 539.66.

Existing Structure: S.N. 084-0086, originally built in 1958 as F.A. Route 49, Section 19X-2-HB-1. The existing structure consists of 3 simple span rolled steel beams placed on chords supported on pile bent abutments and 3 column piers on pile supported footings. The back to back abutment measures 180'-6" and the out to out of deck is 28'-0". The structure is to be removed and replaced. Traffic is to be detoured. (Both Camp Butler Road and W.B. Old US Rt. 36 will be closed during construction.)

No salvage

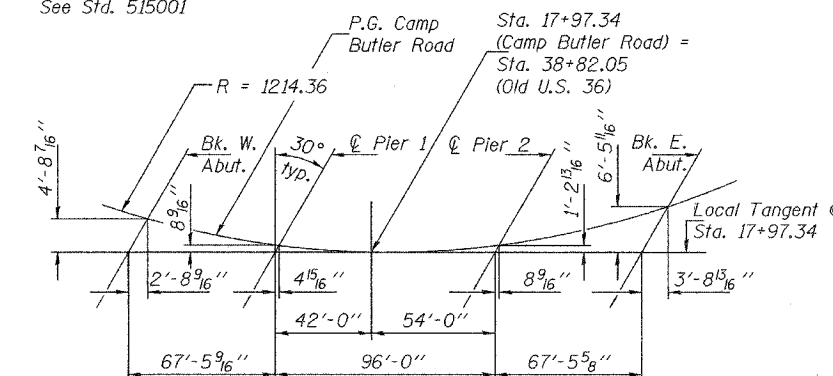
INDEX OF SHEETS

1. General Plan
2. General Data
3. Footing Layout
4. Slopewall Details
- 5-6. Top of Slab Elevations
7. Superstructure
- 8-9. Superstructure Details
10. Strip Seal Expansion Joint
11. Drainage Scupper, DS-33
12. Structural Steel
- 13-14. Structural Steel Details
- 15-16. Expansion Bearing Details
17. Fixed Bearing Details
18. Anchor Bolt Details
19. West Abutment
20. West Abutment Details
21. West Abutment Wingwall Details
22. East Abutment
23. East Abutment Details
24. East Abutment Wingwall Details
25. Pier 1
26. Pier 1 Footing Plan
27. Pier 2
28. Pier 2 Footing Plan
29. Existing Substructure Conflict
30. Bar Splicer Assembly Details
- 31-33. Boring Logs



STATION 17+97.34  
BUILT 20 BY  
STATE OF ILLINOIS  
FAS ROUTE 631 - SECTION 3R(BR, BR-1, BR-2)19RS-8  
LOADING HS20-44  
STR. NO. 084-0518

NAME PLATE  
See Std. 515001



OFFSET SKETCH

LOADING HS20-44  
Allow 50#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS

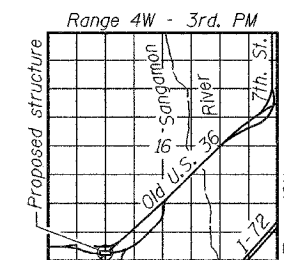
2002 AASHTO  
2003 AASHTO Guide Specification for  
Horizontally Curved Bridges

DESIGN STRESSES

FIELD UNITS  
 $f_c = 3,500$  psi  
 $f_y = 60,000$  psi (reinforcement)  
 $f_y = 50,000$  psi (M270 Grade 50)

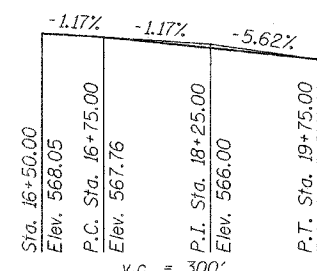
SEISMIC DATA

Seismic Performance Category (SPC) = A  
Bedrock Acceleration Coefficient (A) = 0.05g  
Site Coefficient (S) = 1.0

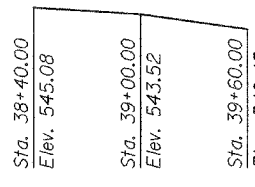


LOCATION SKETCH

GENERAL PLAN  
CAMP BUTLER ROAD OVER  
WESTBOUND OLD U.S. ROUTE 36  
F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518



PROFILE GRADE  
(Eastbound Camp Butler Road)



PROFILE GRADE  
(Westbound Old U.S. 36)

CURVE DATA

(Camp Butler Road)  
D = 46°01'00"  
R = 1,214.36'  
T = 515.67'  
L = 975.30'  
E = 104.95'  
S.E. = .0771'  
P.C. Sta. = 11+09.20  
P.T. Sta. = 20+84.50

CURVE DATA

(Old U.S. 36)  
D = 17°29'37"  
R = 3,348.31'  
T = 515.17'  
L = 1,022.31'  
E = 39.40'  
S.E. = .024  
P.C. Sta. = 35+34.20  
P.T. Sta. = 45+56.51

DESIGNED [Signature]  
CHECKED [Signature]  
DRAWN BECKY M. LEACH  
CHECKED [Signature]

December 26, 2005  
EXAMINED [Signature]  
PASSED [Signature]



EXPIRES 11-30-2006

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAU 7968	#	SANGAMON	261	172
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

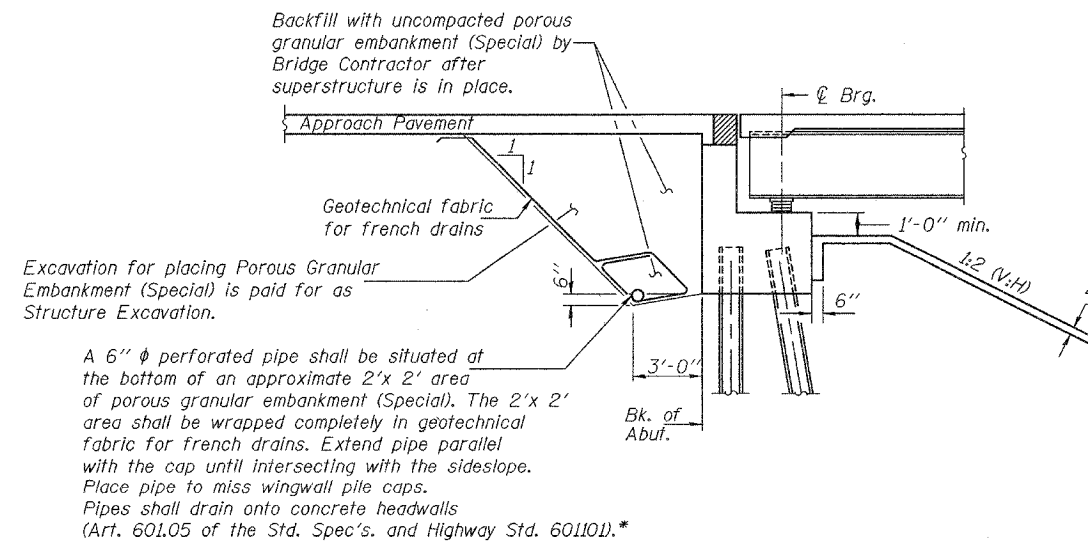
SHEET NO. 2  
33 SHEETS  
Contract #72449 \*SECTION 3R(BR, BR-1, BR-2)19RS-8

**GENERAL NOTES**

Fasteners shall be high strength bolts. Bolts  $7/8"$   $\phi$ , open holes  $15/16"$   $\phi$ , unless otherwise noted.  
 Calculated weight of Structural Steel = 231,370 lb.  
 Field welding of construction accessories will not be permitted to beams.  
 Anchor bolts shall be set before bolting diaphragms over supports.  
 The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the wide flange beams, diaphragms, connection plates and all splice plate materials.  
 Reinforcement bars shall conform to the requirements of AASHTO M 31 or M 322 Grade 60.  
 Slope wall shall be reinforced with welded wire fabric, 6" x 6" - W4.0 x W4.0, weighing 58 lbs. per 100 sq. ft.  
 Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of  $1/8$  inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two  $1/8"$  adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims.  
 The Contractor shall drive one HP12x53 test pile in a permanent location at each abutment and one HP12x74 test pile in a permanent location at each pier as directed by the Engineer before ordering the remainder of piles.  
 Bridge Seat Sealer shall be applied to the seat area of the East and West Abutments.  
 The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.  
 All Construction joints shall be bonded.  
 The Contractor shall submit the procedure for blocking the floating bearings to the Engineer for approval prior to erecting the structural steel.  
 Before starting work, the Contractor shall submit a procedure for erecting the beams, which details the proposed method to keep the beams vertical, to the Engineer for approval prior to initiating steel erection. See Article 505.08 of the Standard Specifications.  
 The Inorganic zinc rich primer/Acrylic/Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final coat for all interior steel surfaces shall be gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Interstate Green, Munsell No. 7.5G 4/8. See Special Provision "Cleaning and Painting New Metal Structures".  
 Removal and disposal of the existing slope wall shall not be paid for separately but shall be included in the unit bid price for Removal of Existing Structures.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment (Special)	Cu. Yd.		131	131
Removal of Existing Structures	Each			1
Structure Excavation	Cu. Yd.		552	552
Driving Steel Piles	Foot		2378	2378
Preformed Joint Strip Seal 4"	Foot	63		63
Concrete Structures	Cu. Yd.		217.2	217.2
Concrete Superstructure	Cu. Yd.	226.2		226.2
Bridge Deck Grooving	Sq. Yd.	607.0		607.0
Protective Coat	Sq. Yd.	848.3		848.3
Furnishing and Erecting Structural Steel	L. Sum	0.91		0.91
Stud Shear Connectors	Each	3380		3380
Reinforcement Bars, Epoxy Coated	Pound	51170	37580	88750
Slope Wall, 4"	Sq. Yd.		676	676
Name Plates	Each	1		1
Furnishing Steel Piles HP12x53	Foot		981	981
Test Pile Steel HP12x53	Each		2	2
Furnishing Steel Piles HP12x74	Foot		1397	1397
Test Pile Steel HP12x74	Each		2	2
Bridge Seat Sealer	Sq. Ft.		183.3	183.3
Drainage Scuppers, DS-33	Each	1		1
Floating Bearings, Guided Expansion, 75 K	Each	10		10
Floating Bearings, Guided Expansion, 200 K	Each	5		5
Floating Bearings, Fixed, 200 K	Each	5		5
Bar Splicers	Each		64	64



**SECTION THRU ABUTMENTS**

(Dimensions  $\odot$  Rt. L's)

\*Included in the cost of Porous Granular Embankment (Special)

**GENERAL DATA**  
 F.A.U. ROUTE 7968  
 SECTION 3R(BR, BR-1, BR-2)19RS-8  
 SANGAMON COUNTY  
 STATION 17+97.34  
 STRUCTURE NO. 084-0518

DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH <i>htd</i>
CHECKED	JWM/GRA

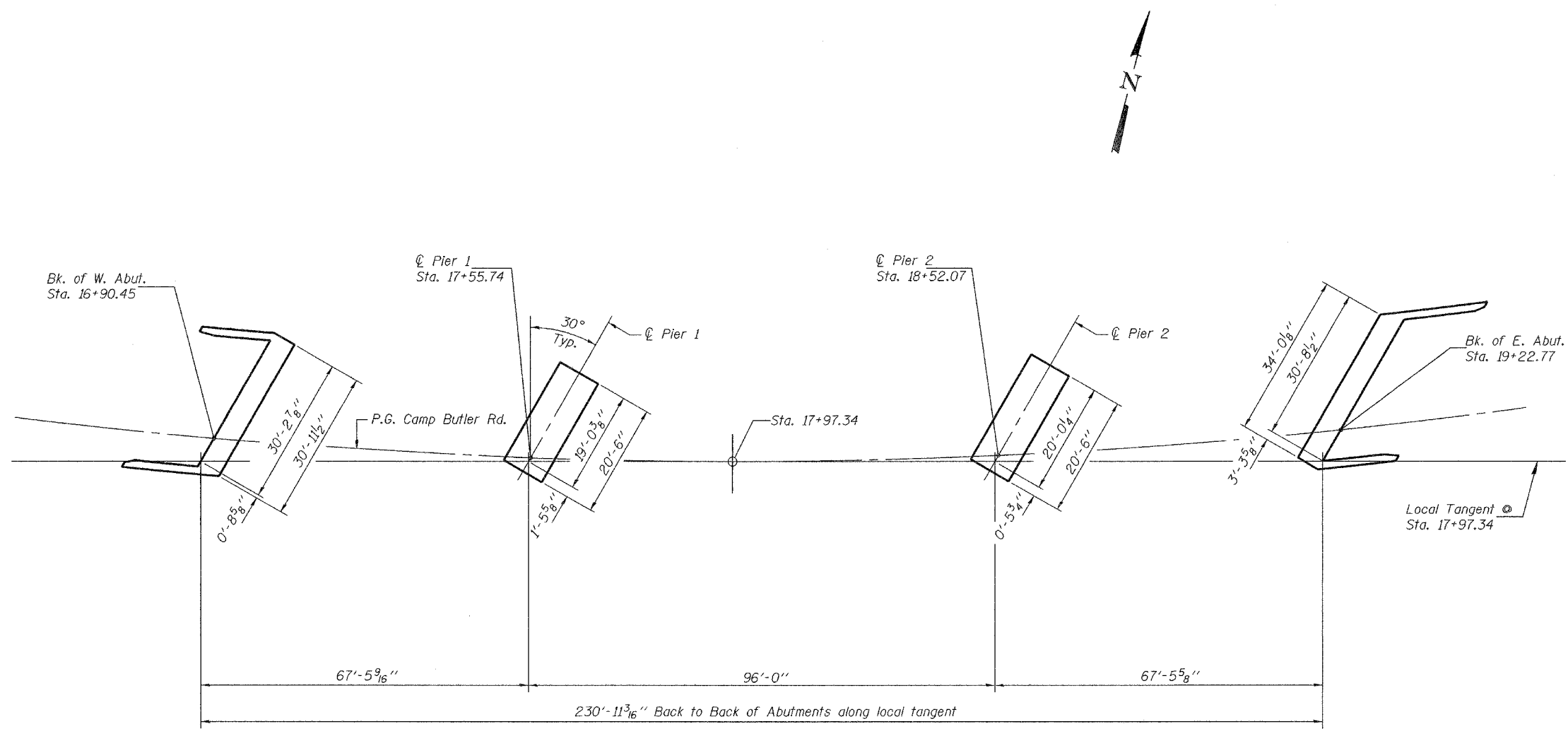
December 1, 2005  
 EXAMINED *Thomas J. Demagalabi*  
 ENGINEER OF BRIDGE DESIGN  
 PASSED *Ralph E. Anderson*  
 ENGINEER OF BRIDGES AND STRUCTURES



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	LENS	SHEET	SHEET NO. 3
FAU 7968	#	SANGAMON	261	173	33 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

Contract #72449 \*SECTION 3R(BR, BR-1, BR-2)19RS-8



FOOTING LAYOUT

DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH <i>htd</i>
CHECKED	JWM/GRA

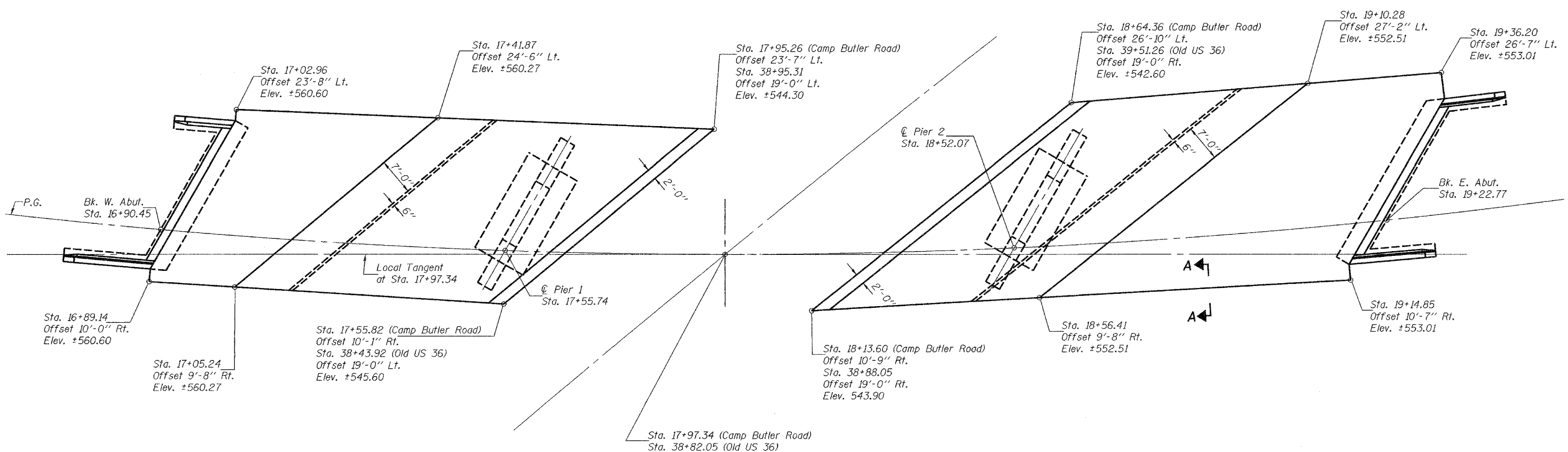
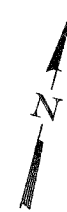
December 1, 2005  
 EXAMINED *Thomas J. Damagalki*  
 PASSED *Ronald E. Anderson*  
ENGINEER OF BRIDGE DESIGN  
 ENGINEER OF BRIDGES AND STRUCTURES

FOOTING LAYOUT  
F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518

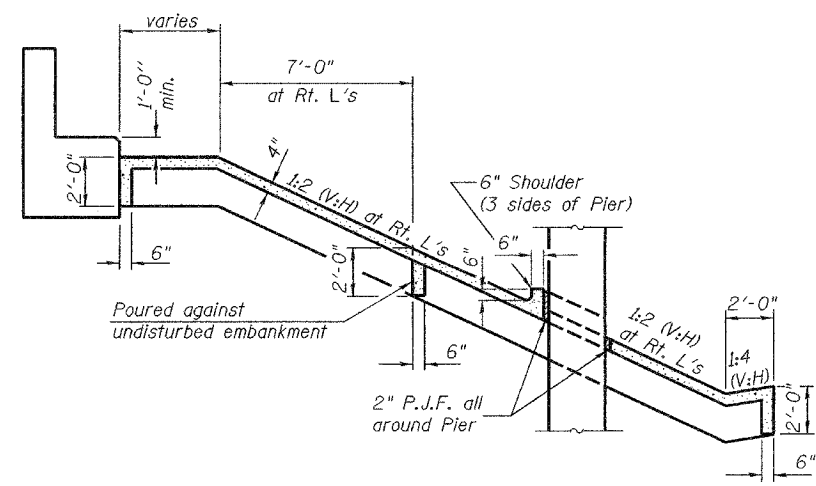
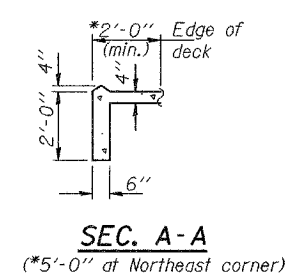
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 4 33 SHEETS
FAU 7968	*	SANGAMON	261	174	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

Contract #72449 \*SECTION 3R(BR, BR-1, BR-2)19RS-8



Note: Offsets are measured radially with respect to P.G. Line



**SLOPE WALL DETAILS**  
F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518

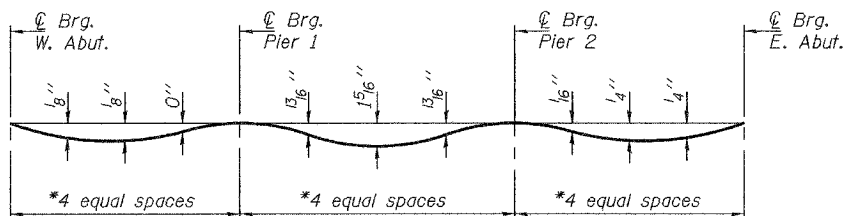
DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH
CHECKED	JWM/GRA

December 1, 2005  
EXAMINED *Thomas J. Demagalli*  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGE DESIGN  
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 5
FAU 7968	*	SANGAMON	261	175	33 SHEETS
FED. ROAD DIST. NO. 7	BLINDS	FED. AID PROJECT			

Contract #72449 \*SECTION 3R(BR, BR-1, BR-2)19RS-8

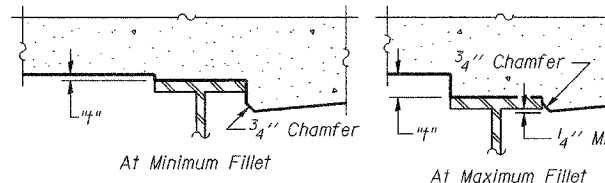


\*See sheet 12 of 33 for span dimensions.

**DEAD LOAD DEFLECTION DIAGRAM**

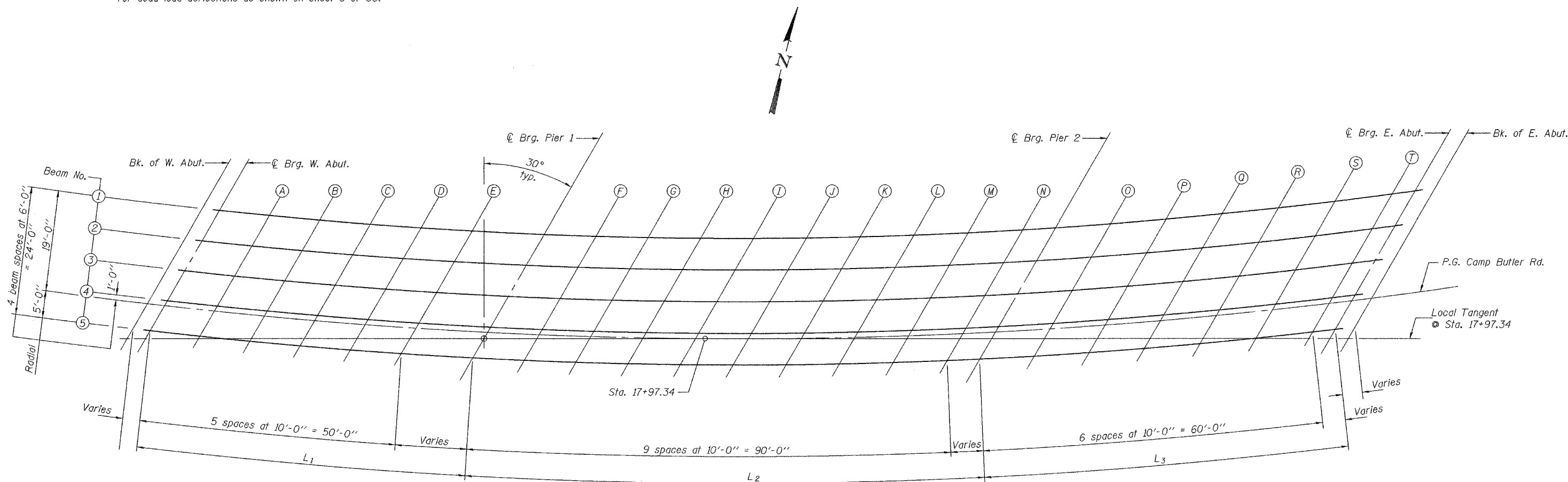
(Includes weight of concrete only.)

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 sheet 6 of 33.



To determine "I": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown on sheet 6 of 33. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheet 6 of 33, minus slab thickness, equals the fillet heights "I" above top flange of beams.

**FILLET HEIGHTS**



**PLAN**

Notes: See sheet 12 of 33 for span dimensions.  
Horizontal dimensions are given along  $\phi$  of individual beams.

DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH
CHECKED	JWM/GRA

EXAMINED	December 1, 2005
PASSED	Thomas J. Domagala ENGINEER OF BRIDGE DESIGN
	Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES

**TOP OF SLAB ELEVATIONS**  
F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAU 7968	*	SANGAMON	261	176
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract #72449 \*SECTION 3R(BR, BR-1, BR-2)19RS-8

SHEET NO. 6  
33 SHEETS

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	1699.449	-19.000	565.962	565.962
€ Brg. W. Abut.	1702.824	-19.000	565.909	565.909
A	1712.983	-19.000	565.741	565.749
B	1723.142	-19.000	565.557	565.569
C	1733.301	-19.000	565.358	565.368
D	1743.460	-19.000	565.143	565.148
E	1753.619	-19.000	564.914	564.914
€ Brg. Pier 1	1766.043	-19.000	564.612	564.612
F	1776.202	-19.000	564.348	564.376
G	1786.361	-19.000	564.069	564.124
H	1796.520	-19.000	563.775	563.852
I	1806.679	-19.000	563.465	563.559
J	1816.837	-19.000	563.140	563.246
K	1826.996	-19.000	562.800	562.889
L	1837.155	-19.000	562.445	562.516
M	1847.314	-19.000	562.074	562.120
N	1857.473	-19.000	561.688	561.706
€ Brg. Pier 2	1864.447	-19.000	561.414	561.414
O	1874.606	-19.000	561.002	561.004
P	1884.765	-19.000	560.574	560.581
Q	1894.924	-19.000	560.132	560.147
R	1905.083	-19.000	559.674	559.693
S	1915.241	-19.000	559.201	559.220
T	1925.400	-19.000	558.712	558.721
€ Brg. E. Abut.	1933.020	-19.000	558.336	558.336
Bk. of E. Abut.	1936.811	-19.000	558.145	558.145

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	1696.573	-13.000	566.467	566.467
€ Brg. W. Abut.	1699.928	-13.000	566.416	566.416
A	1710.036	-13.000	566.253	566.261
B	1720.144	-13.000	566.075	566.086
C	1730.252	-13.000	565.881	565.891
D	1740.361	-13.000	565.672	565.677
E	1750.469	-13.000	565.449	565.449
€ Brg. Pier 1	1762.749	-13.000	565.156	565.156
F	1772.857	-13.000	564.899	564.926
G	1782.965	-13.000	564.626	564.681
H	1793.074	-13.000	564.339	564.415
I	1803.182	-13.000	564.036	564.130
J	1813.290	-13.000	563.718	563.823
K	1823.398	-13.000	563.384	563.473
L	1833.506	-13.000	563.036	563.107
M	1843.615	-13.000	562.673	562.719
N	1853.723	-13.000	562.294	562.312
€ Brg. Pier 2	1860.487	-13.000	562.032	562.032
O	1870.595	-13.000	561.628	561.630
P	1880.704	-13.000	561.209	561.215
Q	1890.812	-13.000	560.775	560.790
R	1900.920	-13.000	560.325	560.344
S	1911.028	-13.000	559.861	559.880
T	1921.137	-13.000	559.381	559.389
€ Brg. E. Abut.	1928.555	-13.000	559.019	559.019
Bk. of E. Abut.	1932.316	-13.000	558.833	558.833

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	1693.729	-7.000	566.971	566.971
€ Brg. W. Abut.	1697.063	-7.000	566.922	566.922
A	1707.121	-7.000	566.764	566.772
B	1717.179	-7.000	566.591	566.602
C	1727.237	-7.000	566.402	566.413
D	1737.295	-7.000	566.199	566.204
E	1747.353	-7.000	565.981	565.981
€ Brg. Pier 1	1759.493	-7.000	565.698	565.698
F	1769.551	-7.000	565.447	565.474
G	1779.609	-7.000	565.180	565.236
H	1789.667	-7.000	564.899	564.976
I	1799.725	-7.000	564.603	564.697
J	1809.783	-7.000	564.292	564.397
K	1819.841	-7.000	563.965	564.054
L	1829.899	-7.000	563.624	563.695
M	1839.957	-7.000	563.268	563.314
N	1850.015	-7.000	562.897	562.915
€ Brg. Pier 2	1856.575	-7.000	562.646	562.646
O	1866.633	-7.000	562.250	562.252
P	1876.691	-7.000	561.839	561.846
Q	1886.749	-7.000	561.413	561.429
R	1896.807	-7.000	560.972	560.991
S	1906.865	-7.000	560.516	560.535
T	1916.923	-7.000	560.045	560.053
€ Brg. E. Abut.	1924.145	-7.000	559.697	559.697
Bk. of E. Abut.	1927.878	-7.000	559.515	559.515

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	1690.916	-1.000	567.473	567.473
€ Brg. W. Abut.	1694.230	-1.000	567.426	567.426
A	1704.239	-1.000	567.273	567.281
B	1714.247	-1.000	567.105	567.116
C	1724.255	-1.000	566.922	566.932
D	1734.263	-1.000	566.724	566.728
E	1744.272	-1.000	566.512	566.512
€ Brg. Pier 1	1756.273	-1.000	566.237	566.237
F	1766.281	-1.000	565.992	566.020
G	1776.290	-1.000	565.732	565.787
H	1786.298	-1.000	565.457	565.534
I	1796.306	-1.000	565.167	565.262
J	1806.314	-1.000	564.863	564.968
K	1816.323	-1.000	564.543	564.631
L	1826.331	-1.000	564.209	564.280
M	1836.339	-1.000	563.860	563.905
N	1846.347	-1.000	563.496	563.513
€ Brg. Pier 2	1852.710	-1.000	563.257	563.257
O	1862.718	-1.000	562.868	562.870
P	1872.727	-1.000	562.465	562.471
Q	1882.735	-1.000	562.047	562.063
R	1892.743	-1.000	561.614	561.633
S	1902.751	-1.000	561.166	561.185
T	1912.760	-1.000	560.704	560.712
€ Brg. E. Abut.	1919.791	-1.000	560.370	560.370
Bk. of E. Abut.	1923.496	-1.000	560.191	560.191

PROFILE GRADE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	1690.450	0.000	567.557	567.557
€ Brg. W. Abut.	1693.761	0.000	567.509	567.509
A	1703.761	0.000	567.357	567.365
B	1713.761	0.000	567.190	567.202
C	1723.761	0.000	567.008	567.018
D	1733.761	0.000	566.811	566.816
E	1743.761	0.000	566.600	566.600
€ Brg. Pier 1	1755.740	0.000	566.327	566.327
F	1765.740	0.000	566.083	566.110
G	1775.740	0.000	565.824	565.879
H	1785.740	0.000	565.550	565.627
I	1795.740	0.000	565.261	565.355
J	1805.740	0.000	564.958	565.063
K	1815.740	0.000	564.639	564.727
L	1825.740	0.000	564.306	564.377
M	1835.740	0.000	563.958	564.003
N	1845.740	0.000	563.595	563.613
€ Brg. Pier 2	1852.070	0.000	563.358	563.358
O	1862.070	0.000	562.971	562.973
P	1872.070	0.000	562.569	562.575
Q	1882.070	0.000	562.152	562.168
R	1892.070	0.000	561.721	561.740
S	1902.070	0.000	561.274	561.293
T	1912.070	0.000	560.813	560.821
€ Brg. E. Abut.	1919.070	0.000	560.481	560.481
Bk. of E. Abut.	1922.771	0.000	560.303	560.303

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	1688.134	5.000	567.974	567.974
€ Brg. W. Abut.	1691.428	5.000	567.928	567.928
A	1701.387	5.000	567.780	567.788
B	1711.346	5.000	567.617	567.629
C	1721.305	5.000	567.439	567.449
D	1731.264	5.000	567.247	567.251
E	1741.223	5.000	567.040	567.040
€ Brg. Pier 1	1753.090	5.000	566.774	566.774
F	1763.049	5.000	566.535	566.563
G	1773.008	5.000	566.281	566.336
H	1782.967	5.000	566.012	566.089
I	1792.926	5.000	565.729	565.823
J	1802.885	5.000	565.431	565.536
K	1812.844	5.000	565.118	565.236
L	1822.803	5.000	564.790	564.861
M	1832.762	5.000	564.448	564.493
N	1842.721	5.000	564.091	564.109
€ Brg. Pier 2	1848.891	5.000	563.863	563.863
O	1858.850	5.000	563.482	563.484
P	1868.809	5.000	563.087	563.093
Q	1878.768	5.000	562.676	562.692
R	1888.727	5.000	562.252	562.271
S	1898.686	5.000	561.812	561.831
T	1908.645	5.000	561.358	561.365
€ Brg. E. Abut.	1915.490	5.000	561.037	561.037
Bk. of E. Abut.	1919.167	5.000	560.862	560.862

DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH
CHECKED	JMM/GRA

December 1, 2005  
EXAMINED *Thomas J. Namagalki*  
PASSED *Ralph E. Anderson*

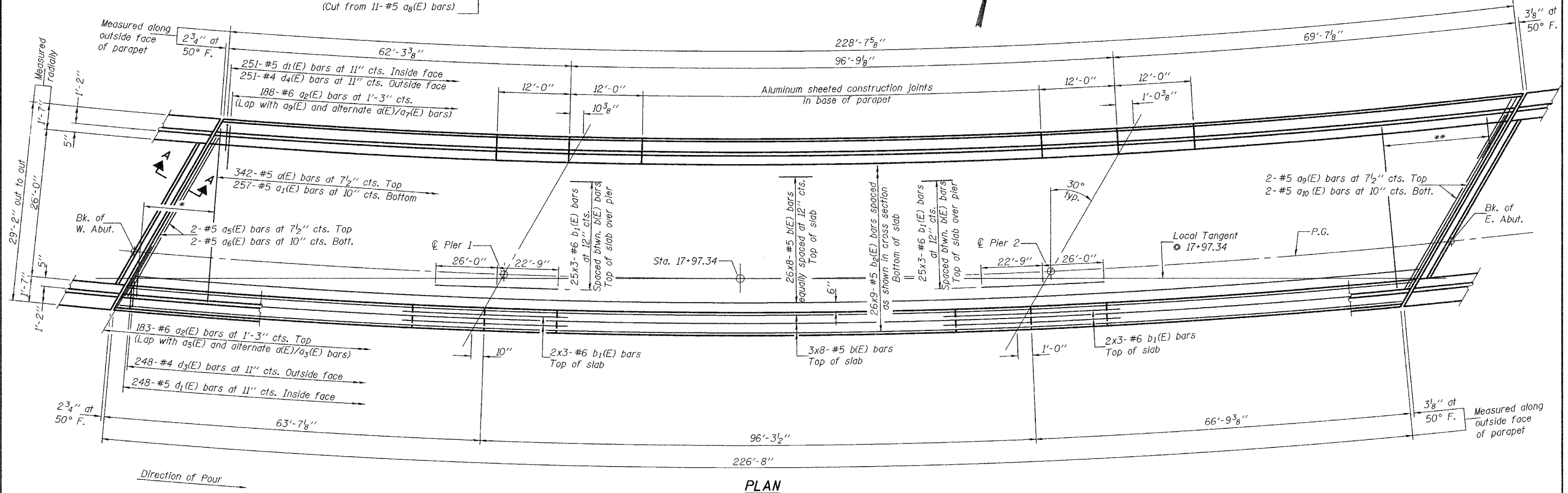
TOP OF SLAB ELEVATIONS  
F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.	SHEET NO.
FAU 7968	*	SANGAMON	261	171	33 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT	
Contract #72449		SECTION 3R(BR, BR-1, BR-2)19RS-8			

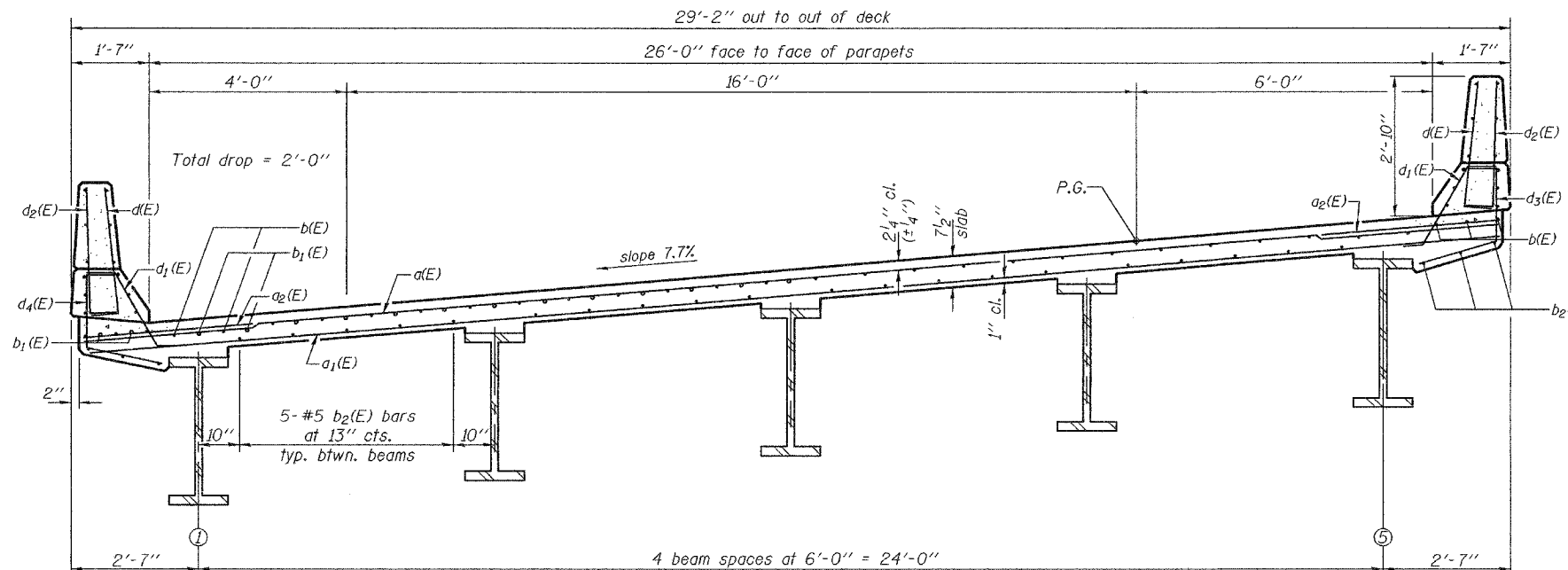
\*20-#5 bars at 7 1/2" cts. Top  
(Cut from 10-#5 a3(E) bars)  
\*14-#5 bars at 10" cts. Bottom  
(Cut from 7-#5 a4(E) bars)  
\*\*30-#5 bars at 7 1/2" cts. Top  
(Cut from 15-#5 a7(E) bars)  
\*\*22-#5 bars at 10" cts. Bottom  
(Cut from 11-#5 a8(E) bars)

See field cutting diagrams  
on sheet 9 of 33.



PLAN

Notes:  
See sheet 9 of 33 for superstructure details and Bill of Material.  
Reinforcement bars designated (E) shall be epoxy coated.  
Bars indicated thus 25 x 3-#5 etc. indicates 25 lines of bars with 3 lengths per line.  
See sheet 8 of 33 for parapet reinforcement.  
Place transverse bars radially. Place longitudinal bars parallel to beams.  
The Contractor shall be required to pour the deck starting at the West Abutment and proceed toward the East Abutment. See Plan View for direction of pour.



CROSS SECTION  
(Looking East)  
(Horizontal dimensions measured radially)

MIN. BAR LAPS  
#5 bar = 1'-8"  
#6 bar = 2'-0"

DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH
CHECKED	JWM/GRA

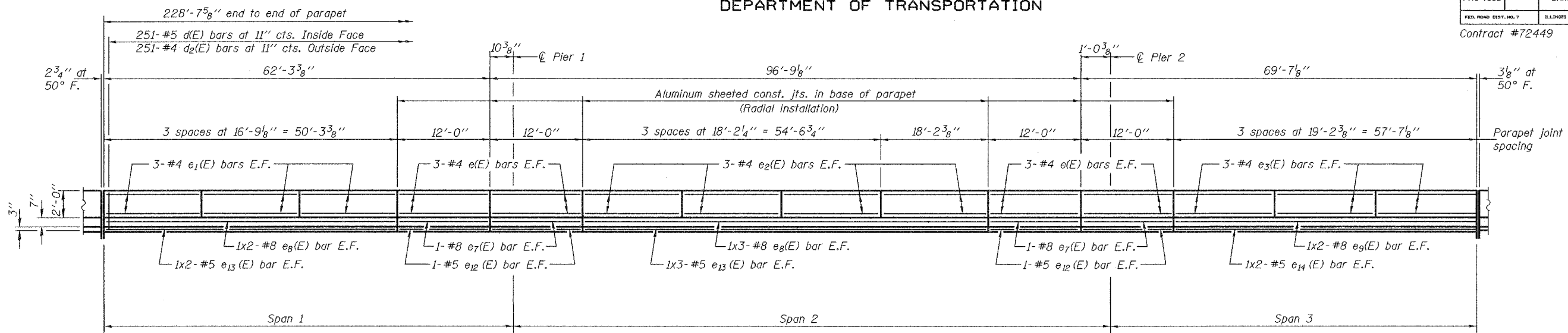
December 1, 2005  
EXAMINED *Thomas J. Domagala*  
PASSED *Ralph E. Anderson*

SUPERSTRUCTURE  
F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

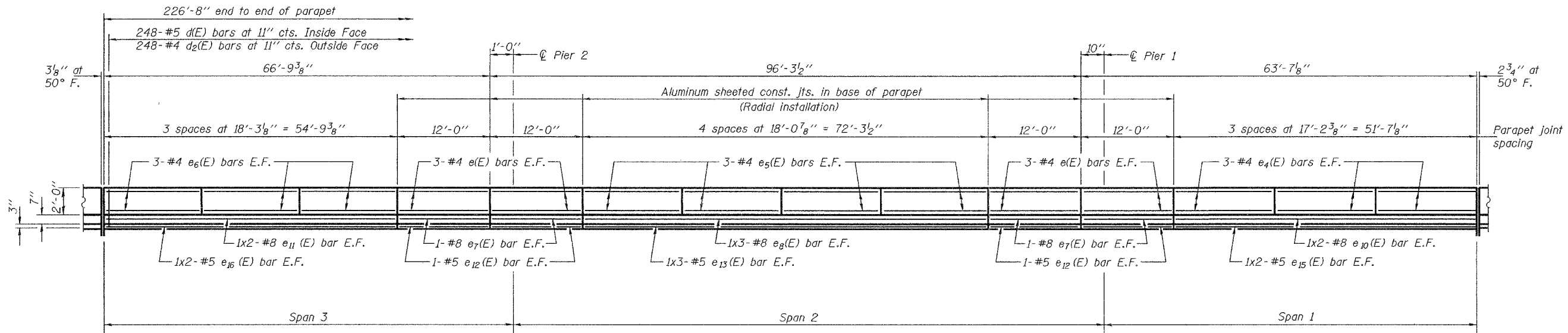
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 8 33 SHEETS
FAU 7968	*	SANGAMON	261	178	
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT			

Contract #72449 \*SECTION 3R(BR, BR-1, BR-2)19RS-8



**INSIDE ELEVATION OF NORTH PARAPET**

Looking North  
Horizontal dimensions are along outside face of parapet



**INSIDE ELEVATION OF SOUTH PARAPET**

Looking South  
Horizontal dimensions are along outside face of parapet

**MIN. BAR LAPS**

#5 bar = 1'-8"  
#8 bar = 3'-5"

Notes: Reinforcement bars shall not pass thru aluminum sheets.  
Reinforcement bars designated (E) shall be epoxy coated.  
Bars indicated thus 1 x 3-#5 etc. indicates 1 line of bars with 3 lengths per line.  
See sheet 9 of 33 for parapet joint details.

DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH
CHECKED	JWM/GRA

December 1, 2005  
EXAMINED *Thomas J. Domagala*  
PASSED *Ralph E. Anderson*

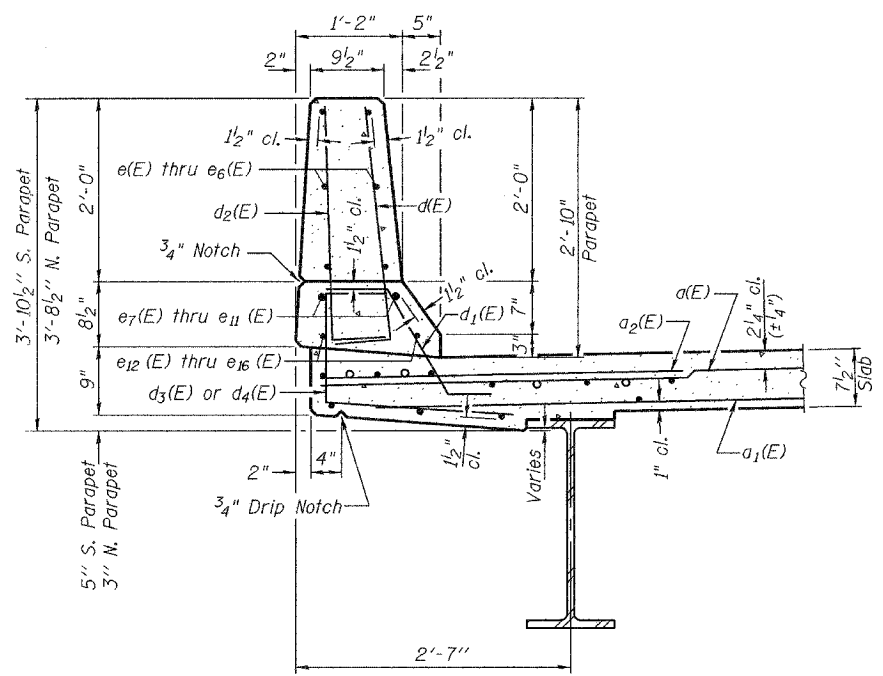
S-1-D 10-22-04

**SUPERSTRUCTURE DETAILS**  
F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518

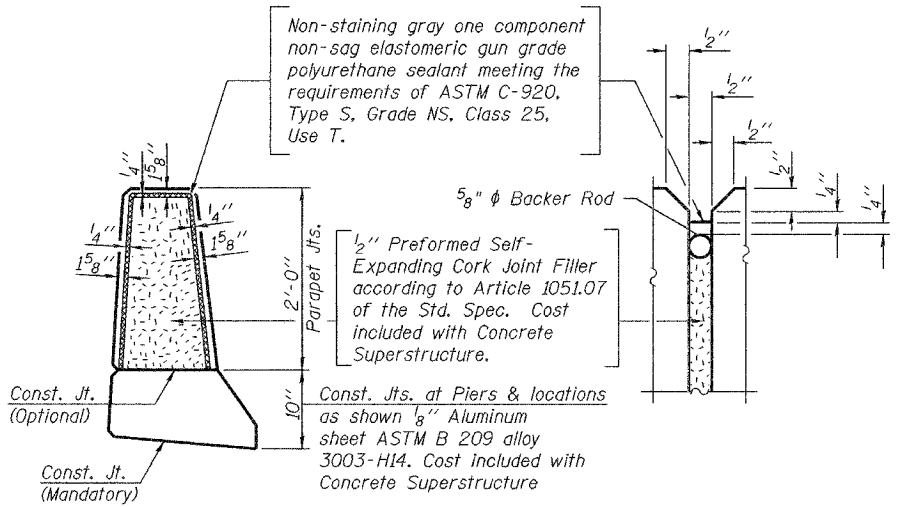
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET	SHEET NO. 9
FAU 7968	#	SANGAMON	241	179	33 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			

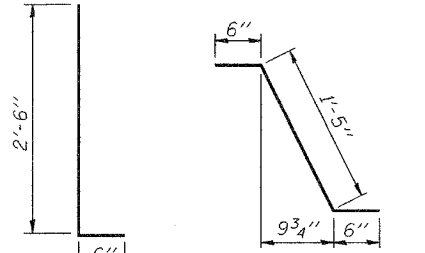
Contract #72449 \*SECTION 3R(BR, BR-1, BR-2)19RS-8



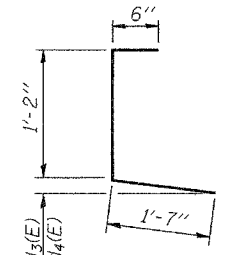
SECTION THRU PARAPET



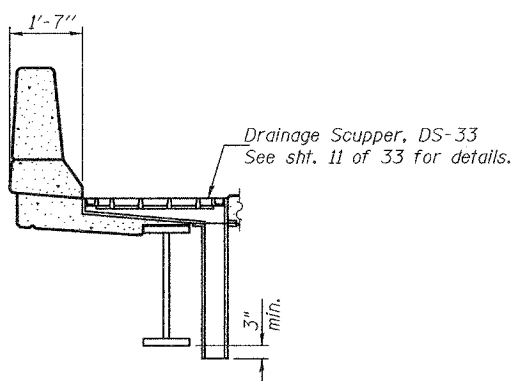
PARAPET JOINT DETAILS



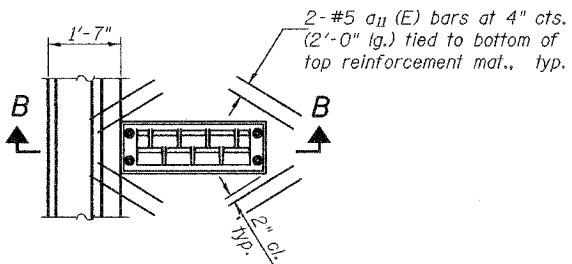
BARS d1(E) & d2(E)



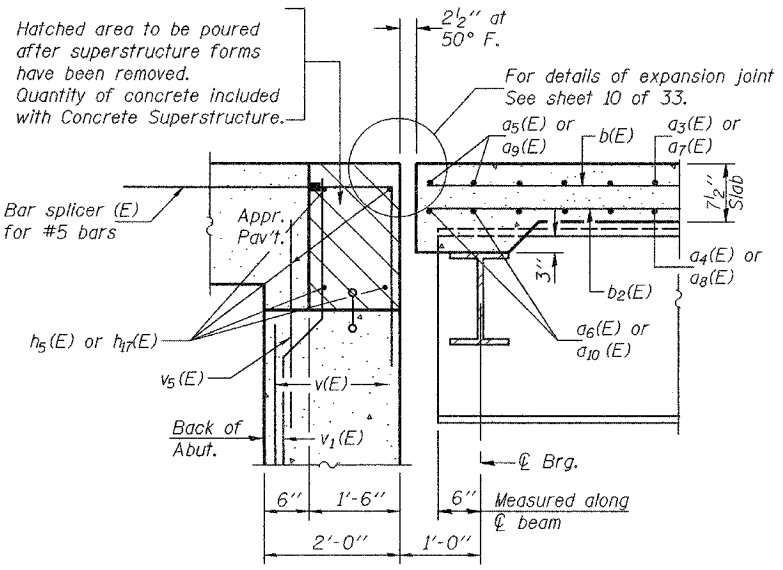
BARS d3(E) & d4(E)



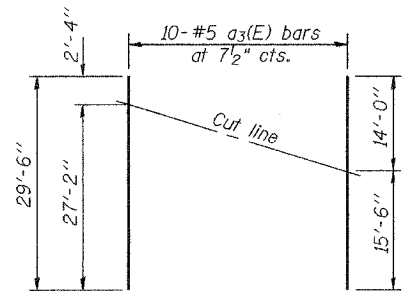
SECTION B-B



PLAN

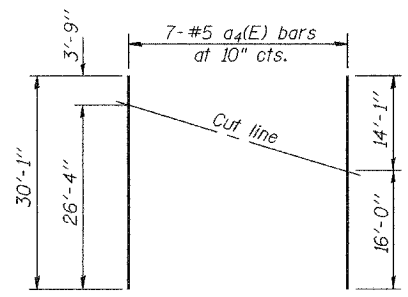


SECTION A-A



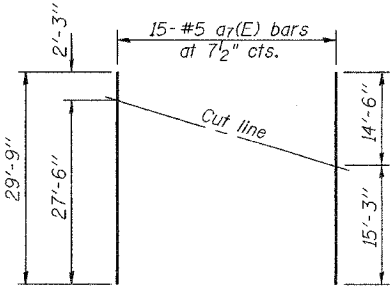
FIELD CUTTING DIAGRAM

Order a3(E) full length. Cut as shown and use remainder of bars in same end of deck.



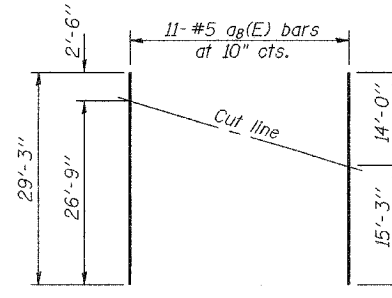
FIELD CUTTING DIAGRAM

Order a4(E) full length. Cut as shown and use remainder of bars in same end of deck.



FIELD CUTTING DIAGRAM

Order a7(E) full length. Cut as shown and use remainder of bars in same end of deck.



FIELD CUTTING DIAGRAM

Order a8(E) full length. Cut as shown and use remainder of bars in same end of deck.

SUPERSTRUCTURE  
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	342	#5	28'-6"	—
a1(E)	257	#5	27'-9"	—
a2(E)	371	#6	4'-6"	—
a3(E)	10	#5	29'-6"	—
a4(E)	7	#5	30'-1"	—
a5(E)	2	#5	31'-6"	—
a6(E)	2	#5	30'-8"	—
a7(E)	15	#5	29'-9"	—
a8(E)	11	#5	29'-3"	—
a9(E)	2	#5	35'-3"	—
a10(E)	2	#5	34'-3"	—
a11(E)	8	#5	2'-0"	—
b(E)	256	#5	30'-0"	—
b1(E)	174	#6	17'-7"	—
b2(E)	234	#5	27'-0"	—
d(E)	499	#5	3'-0"	—
d1(E)	499	#5	2'-5"	—
d2(E)	499	#4	3'-0"	—
d3(E)	248	#4	3'-3"	—
d4(E)	251	#4	3'-3"	—
e(E)	48	#4	11'-9"	—
e1(E)	18	#4	16'-6"	—
e2(E)	24	#4	17'-11"	—
e3(E)	18	#4	18'-11"	—
e4(E)	18	#4	16'-11"	—
e5(E)	24	#4	17'-9"	—
e6(E)	18	#4	18'-0"	—
e7(E)	16	#8	11'-9"	—
e8(E)	16	#8	26'-9"	—
e9(E)	4	#8	30'-5"	—
e10(E)	4	#8	27'-5"	—
e11(E)	4	#8	29'-0"	—
e12(E)	16	#5	11'-9"	—
e13(E)	16	#5	25'-10"	—
e14(E)	4	#5	29'-6"	—
e15(E)	4	#5	26'-6"	—
e16(E)	4	#5	28'-1"	—
Reinforcement Bars, Epoxy Coated		Pound	51,170	
Concrete Superstructure		Cu. Yds.	226.2	

Reinforcement bars designated (E) shall be epoxy coated.

SUPERSTRUCTURE DETAILS  
F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518

Notes: Cut longitudinal reinforcement to miss drainage scupper. For location of drainage scupper, see sheet 1 of 33.

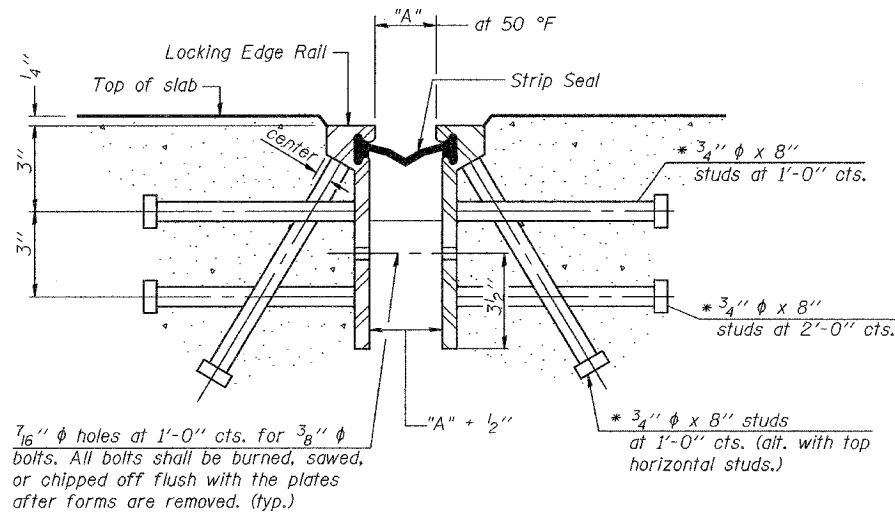
DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH
CHECKED	JWM/GRA

December 1, 2005  
EXAMINED *Thomas J. Domagalaki*  
PASSED *Ralph E. Anderson*

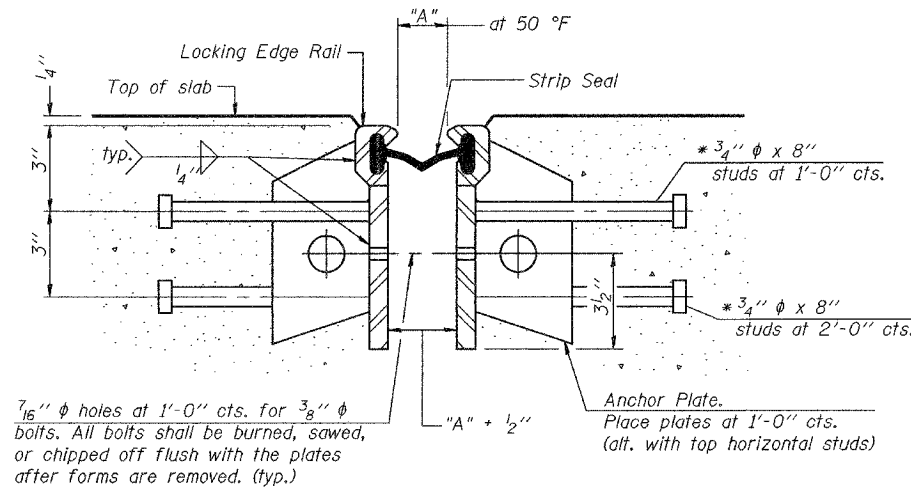
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 10
FAU 7968	*	SANGAMON	261	180	33 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			

Contract #72449 \*SECTION 3R(BR, BR-1, BR-2)19RS-8



SECTION THRU ROLLED RAIL EXP. JOINT

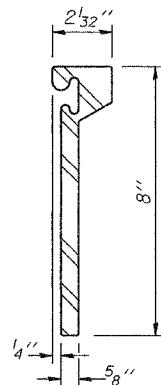


SECTION THRU WELDED RAIL EXP. JOINT

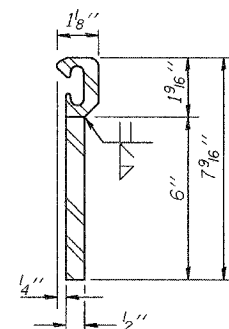
GENERAL NOTES

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.  
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 strip seal joint shall have a rated movement equal to 4".

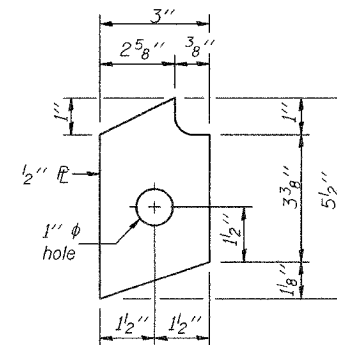
\* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



ROLLED (EXTRUDED) RAIL



WELDED RAIL

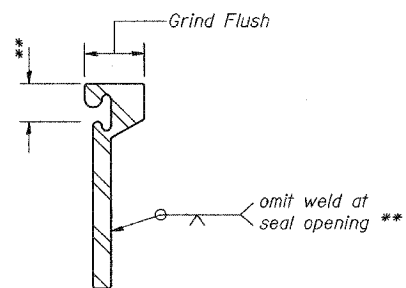


ANCHOR PLATE

(for welded rail)

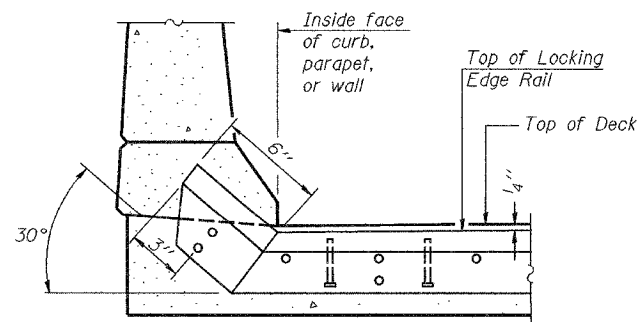
Location "A" at 50°F	Length	Rolled Rail Option		Welded Rail Option	
		No. of studs	No. of studs	No. of Anchor Plates	No. of Anchor Plates
W. Abut.	2"	29'-9"	158	100	58
E. Abut.	2"	33'-2"	172	108	64

LOCKING EDGE RAILS

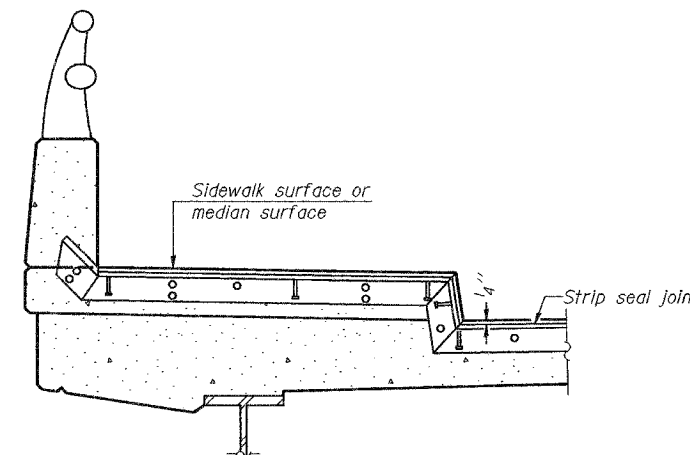


LOCKING EDGE RAIL SPLICE

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



AT CURB, PARAPET, OR WALL



AT SIDEWALK OR MEDIAN\*

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

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint	Foot	63
Strip Seal, 4"		

STRIP SEAL EXPANSION JOINT  
F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518

DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH
CHECKED	JWM/GRA

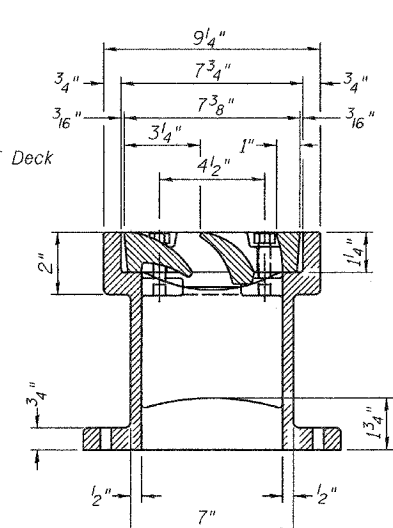
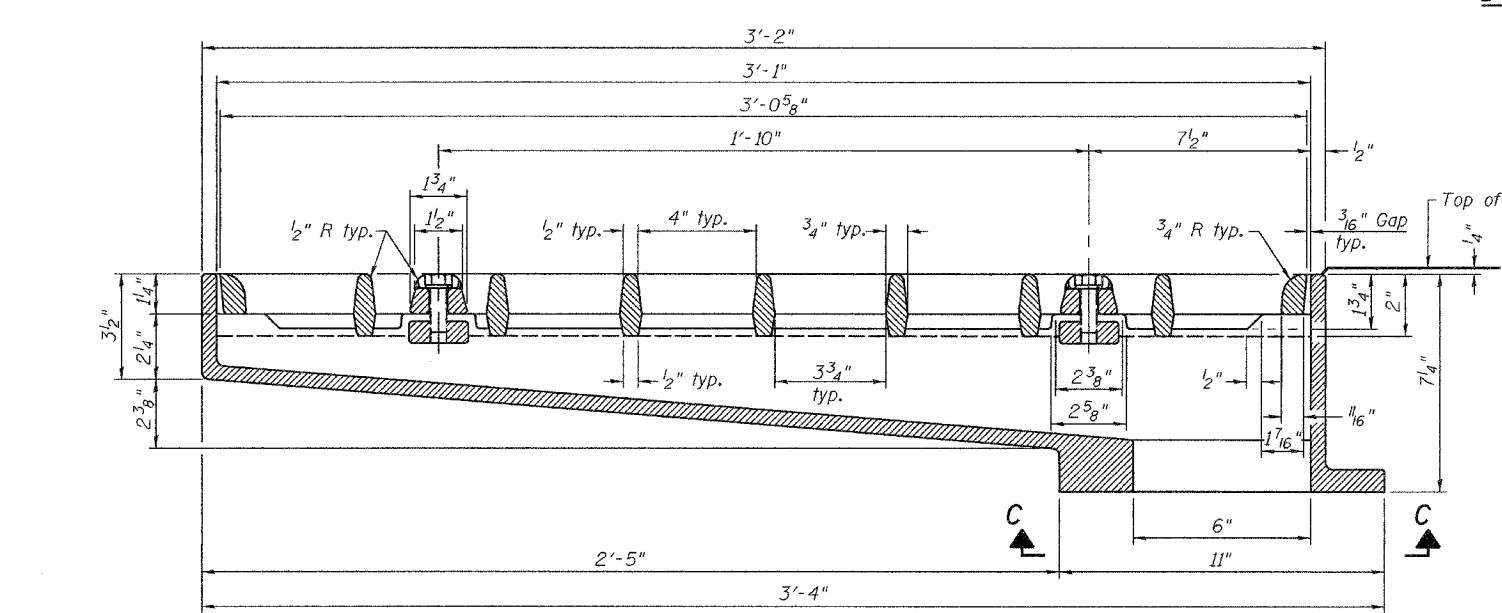
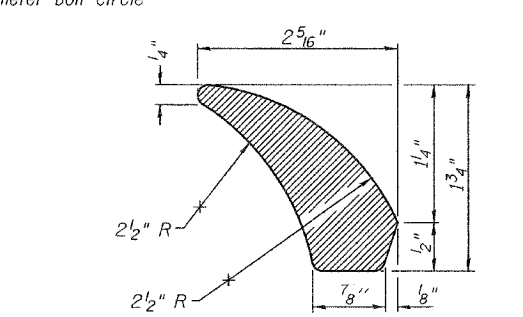
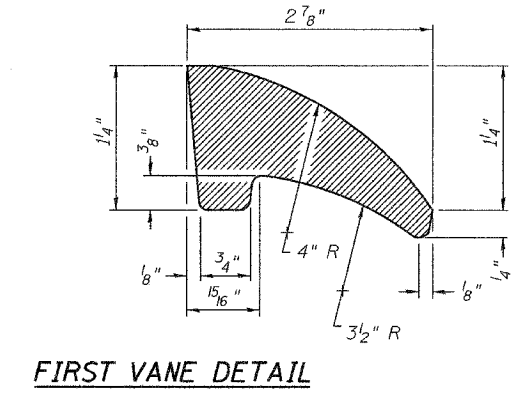
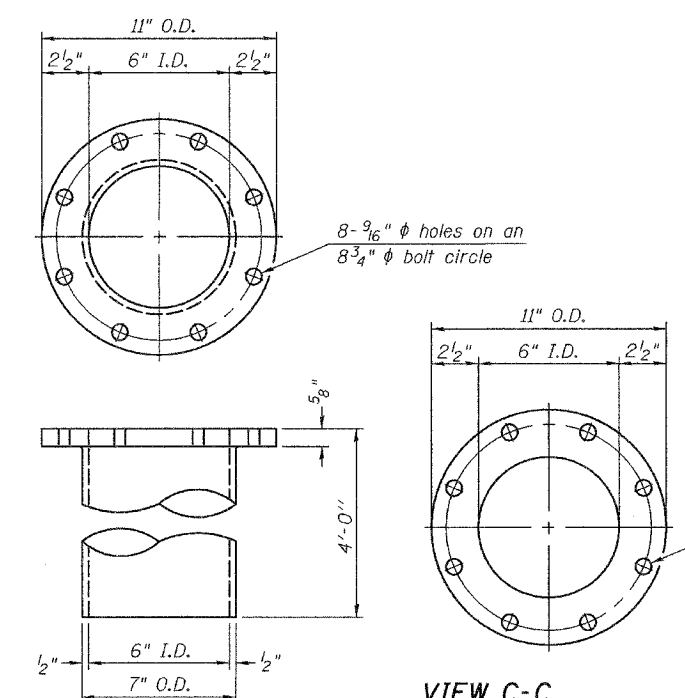
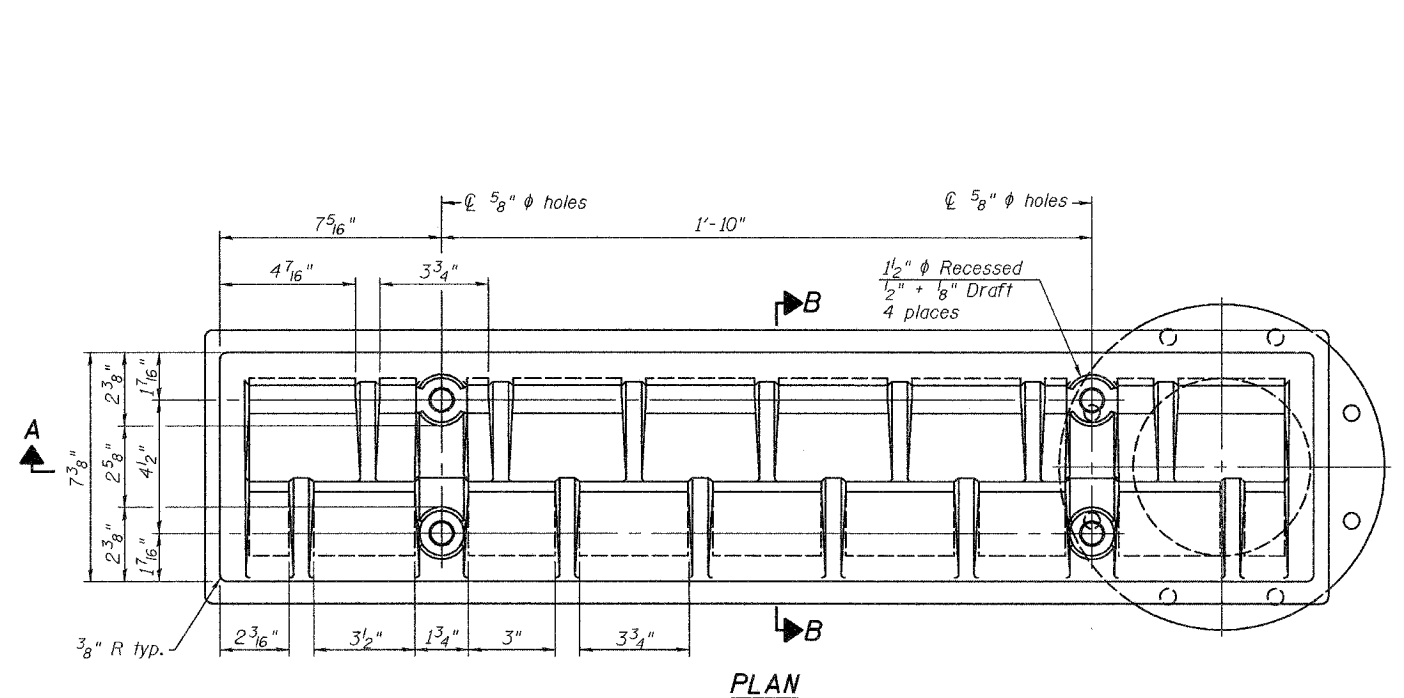
EXAMINED	Thomas J. Damagalki	December 1, 2005
PASSED	Ralph E. Anderson	



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET	SHEET NO. 11
FAU 7968	*	SANGAMON	261	181	33 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

Contract #72449 \*SECTION 3R(BR, BR-1, BR-2)19RS-8



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.

The grate, frame and downspout shall be galvanized according to AASHTO M 111 and ASTM A 385. Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.

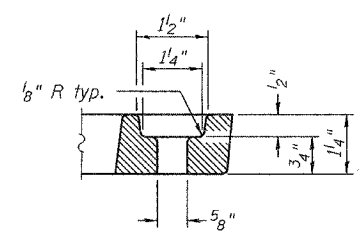
As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.

Structural steel weldments of equal sections and of the same configuration may be substituted for cast iron. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval.

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-33.

See sheet 9 of 33 for scupper location relative to parapet.



BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-33	Each	1

DRAINAGE SCUPPER, DS-33  
F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518

DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH hid
CHECKED	JWM/GRA

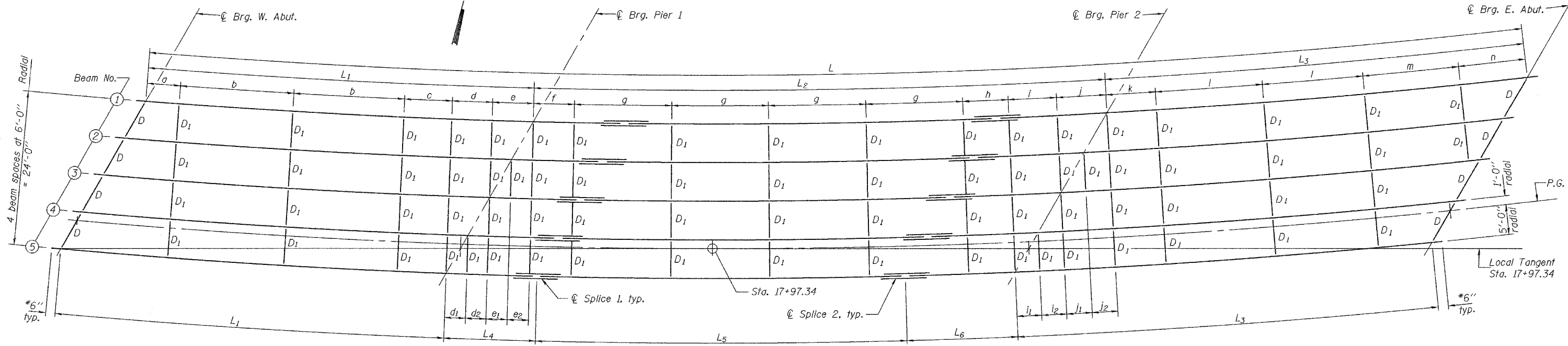
8/1/2000

December 1, 2005

EXAMINED *Thomas J. Domagala*  
PRINCIPAL ENGINEER OF BRIDGE DESIGN

PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



PLAN

All beams are W36x160 M 270, Grade 50 (NTR).

\*Measured along  $\bar{C}$  beam

TABLE OF "L" DIMENSIONS

Beam No.	Radius (ft.)	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	L <sub>6</sub>
1	1195.36	226'-7 <sup>3</sup> / <sub>8</sub> "	62'-2 <sup>3</sup> / <sub>4</sub> "	96'-10 <sup>3</sup> / <sub>8</sub> "	67'-6"	17'-3 <sup>1</sup> / <sub>4</sub> "	61'-6"	18'-1 <sup>1</sup> / <sub>8</sub> "
2	1201.36	226'-2 <sup>3</sup> / <sub>8</sub> "	62'-1 <sup>3</sup> / <sub>4</sub> "	96'-8 <sup>5</sup> / <sub>16</sub> "	67'-4 <sup>1</sup> / <sub>16</sub> "	17'-4 <sup>3</sup> / <sub>16</sub> "	61'-6"	17'-10 <sup>1</sup> / <sub>16</sub> "
3	1207.36	225'-9 <sup>1</sup> / <sub>4</sub> "	62'-0 <sup>15</sup> / <sub>16</sub> "	96'-6 <sup>1</sup> / <sub>4</sub> "	67'-2 <sup>3</sup> / <sub>16</sub> "	17'-3 <sup>3</sup> / <sub>16</sub> "	61'-8"	17'-7 <sup>1</sup> / <sub>8</sub> "
4	1213.36	225'-4 <sup>1</sup> / <sub>2</sub> "	61'-11 <sup>7</sup> / <sub>8</sub> "	96'-4 <sup>5</sup> / <sub>16</sub> "	67'-0 <sup>5</sup> / <sub>16</sub> "	17'-8 <sup>1</sup> / <sub>8</sub> "	61'-4"	17'-4 <sup>3</sup> / <sub>16</sub> "
5	1219.36	224'-11 <sup>13</sup> / <sub>16</sub> "	61'-11"	96'-2 <sup>5</sup> / <sub>16</sub> "	66'-10 <sup>1</sup> / <sub>2</sub> "	17'-5"	61'-8"	17'-1 <sup>5</sup> / <sub>16</sub> "

TABLE OF OFFSET DIMENSIONS

Beam No.	Brg. W. Abut.		Brg. Pier 1		Brg. Splice 1		Brg. Splice 2		Brg. Pier 2		Brg. E. Abut.	
	X	Y	X	Y	X <sub>1</sub>	Y <sub>1</sub>	X <sub>2</sub>	Y <sub>2</sub>	X	Y	X	Y
1	2'-1 <sup>1</sup> / <sub>16</sub> "	3'-7 <sup>7</sup> / <sub>16</sub> "	0'-2 <sup>3</sup> / <sub>4</sub> "	0'-4 <sup>3</sup> / <sub>4</sub> "	13'-6 <sup>7</sup> / <sub>16</sub> "	0'-0 <sup>15</sup> / <sub>16</sub> "	47'-11 <sup>3</sup> / <sub>8</sub> "	0'-11 <sup>9</sup> / <sub>16</sub> "	1'-0 <sup>5</sup> / <sub>8</sub> "	1'-9 <sup>7</sup> / <sub>8</sub> "	4'-3 <sup>5</sup> / <sub>8</sub> "	7'-5 <sup>7</sup> / <sub>16</sub> "
2	2'-2 <sup>3</sup> / <sub>4</sub> "	3'-10 <sup>3</sup> / <sub>8</sub> "	0'-3 <sup>3</sup> / <sub>8</sub> "	0'-5 <sup>7</sup> / <sub>8</sub> "	16'-10 <sup>7</sup> / <sub>16</sub> "	0'-1 <sup>7</sup> / <sub>16</sub> "	44'-7 <sup>7</sup> / <sub>16</sub> "	0'-9 <sup>15</sup> / <sub>16</sub> "	0'-11 <sup>1</sup> / <sub>4</sub> "	1'-7 <sup>1</sup> / <sub>2</sub> "	4'-0 <sup>9</sup> / <sub>16</sub> "	7'-0 <sup>1</sup> / <sub>16</sub> "
3	2'-4 <sup>1</sup> / <sub>2</sub> "	4'-1 <sup>3</sup> / <sub>8</sub> "	0'-4 <sup>1</sup> / <sub>16</sub> "	0'-7 <sup>1</sup> / <sub>16</sub> "	20'-4 <sup>3</sup> / <sub>8</sub> "	0'-2 <sup>1</sup> / <sub>16</sub> "	41'-3 <sup>1</sup> / <sub>2</sub> "	0'-8 <sup>1</sup> / <sub>2</sub> "	0'-9 <sup>15</sup> / <sub>16</sub> "	1'-5 <sup>1</sup> / <sub>4</sub> "	3'-9 <sup>9</sup> / <sub>16</sub> "	6'-6 <sup>15</sup> / <sub>16</sub> "
4	2'-6 <sup>5</sup> / <sub>16</sub> "	4'-4 <sup>1</sup> / <sub>16</sub> "	0'-4 <sup>13</sup> / <sub>16</sub> "	0'-8 <sup>9</sup> / <sub>16</sub> "	23'-4 <sup>9</sup> / <sub>16</sub> "	0'-2 <sup>1</sup> / <sub>16</sub> "	37'-11 <sup>5</sup> / <sub>8</sub> "	0'-7 <sup>1</sup> / <sub>2</sub> "	0'-8 <sup>3</sup> / <sub>4</sub> "	1'-3 <sup>3</sup> / <sub>8</sub> "	3'-6 <sup>1</sup> / <sub>16</sub> "	6'-1 <sup>15</sup> / <sub>16</sub> "
5	2'-8 <sup>1</sup> / <sub>8</sub> "	4'-7 <sup>5</sup> / <sub>8</sub> "	0'-5 <sup>5</sup> / <sub>8</sub> "	0'-9 <sup>1</sup> / <sub>16</sub> "	27'-0 <sup>1</sup> / <sub>8</sub> "	0'-3 <sup>9</sup> / <sub>16</sub> "	34'-7 <sup>3</sup> / <sub>4</sub> "	0'-5 <sup>15</sup> / <sub>16</sub> "	0'-7 <sup>5</sup> / <sub>8</sub> "	1'-1 <sup>3</sup> / <sub>16</sub> "	3'-3 <sup>15</sup> / <sub>16</sub> "	5'-9 <sup>3</sup> / <sub>16</sub> "

\*\*TOP OF BEAM ELEVATIONS

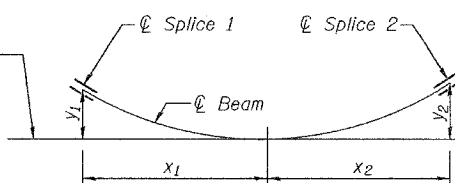
Location	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5
Brg. W. Abut.	565.242	565.749	566.255	566.759	567.261
Brg. Pier 1	563.833	564.376	564.917	565.457	566.001
Brg. Splice 1	563.442	563.993	564.545	565.086	565.647
Brg. Splice 2	561.415	562.012	562.605	563.197	563.779
Brg. Pier 2	560.623	561.245	561.863	562.478	563.084
Brg. E. Abut.	557.669	558.352	559.030	559.703	560.370

\*\*For fabrication only.

\*TABLE OF a thru n DIMENSIONS

Beam No.	a	b	c	d	d <sub>1</sub>	d <sub>2</sub>	e	e <sub>1</sub>	e <sub>2</sub>	f	g	h	i	i <sub>1</sub>	i <sub>2</sub>	j	J <sub>1</sub>	J <sub>2</sub>	k	l	m	n
1	6'-5 <sup>3</sup> / <sub>4</sub> "	17'-6"	8'-0"	6'-3 <sup>5</sup> / <sub>8</sub> "	-	-	6'-5 <sup>3</sup> / <sub>8</sub> "	-	-	9'-2 <sup>5</sup> / <sub>8</sub> "	16'-0 <sup>1</sup> / <sub>16</sub> "	8'-1 <sup>3</sup> / <sub>16</sub> "	7'-6 <sup>3</sup> / <sub>4</sub> "	-	-	7'-9"	-	-	8'-0"	16'-0"	16'-0"	11'-6"
2	9'-4 <sup>1</sup> / <sub>2</sub> "	17'-7 <sup>1</sup> / <sub>16</sub> "	8'-0 <sup>1</sup> / <sub>2</sub> "	6'-4"	-	-	-	3'-2 <sup>5</sup> / <sub>8</sub> "	3'-3 <sup>1</sup> / <sub>8</sub> "	9'-3 <sup>3</sup> / <sub>16</sub> "	16'-1 <sup>1</sup> / <sub>16</sub> "	8'-1 <sup>1</sup> / <sub>16</sub> "	7'-7 <sup>1</sup> / <sub>4</sub> "	-	-	-	3'-10 <sup>7</sup> / <sub>16</sub> "	3'-11"	8'-0 <sup>1</sup> / <sub>2</sub> "	16'-0 <sup>15</sup> / <sub>16</sub> "	16'-0 <sup>15</sup> / <sub>16</sub> "	7'-1 <sup>1</sup> / <sub>16</sub> "
3	12'-3 <sup>1</sup> / <sub>4</sub> "	17'-8 <sup>1</sup> / <sub>8</sub> "	8'-0 <sup>15</sup> / <sub>16</sub> "	6'-4 <sup>3</sup> / <sub>8</sub> "	-	-	-	3'-2 <sup>7</sup> / <sub>8</sub> "	3'-3 <sup>5</sup> / <sub>16</sub> "	9'-3 <sup>3</sup> / <sub>4</sub> "	16'-2 <sup>5</sup> / <sub>8</sub> "	8'-2 <sup>3</sup> / <sub>16</sub> "	7'-7 <sup>1</sup> / <sub>16</sub> "	-	-	-	3'-10 <sup>1</sup> / <sub>16</sub> "	3'-11 <sup>1</sup> / <sub>4</sub> "	8'-0 <sup>15</sup> / <sub>16</sub> "	16'-1 <sup>15</sup> / <sub>16</sub> "	16'-1 <sup>15</sup> / <sub>16</sub> "	2'-9 <sup>1</sup> / <sub>2</sub> "
4	15'-1 <sup>15</sup> / <sub>16</sub> "	17'-9 <sup>3</sup> / <sub>16</sub> "	8'-1 <sup>7</sup> / <sub>16</sub> "	-	3'-2 <sup>3</sup> / <sub>16</sub> "	3'-2 <sup>5</sup> / <sub>8</sub> "	6'-6 <sup>9</sup> / <sub>16</sub> "	-	-	9'-4 <sup>1</sup> / <sub>4</sub> "	16'-3 <sup>5</sup> / <sub>8</sub> "	8'-2 <sup>5</sup> / <sub>8</sub> "	-	3'-9 <sup>13</sup> / <sub>16</sub> "	3'-10 <sup>3</sup> / <sub>8</sub> "	7'-10 <sup>3</sup> / <sub>8</sub> "	-	-	8'-1 <sup>7</sup> / <sub>16</sub> "	16'-2 <sup>7</sup> / <sub>8</sub> "	14'-8 <sup>3</sup> / <sub>8</sub> "	-
5	18'-0 <sup>5</sup> / <sub>8</sub> "	17'-10 <sup>3</sup> / <sub>16</sub> "	8'-1 <sup>15</sup> / <sub>16</sub> "	-	3'-2 <sup>3</sup> / <sub>8</sub> "	3'-2 <sup>13</sup> / <sub>16</sub> "	6'-6 <sup>15</sup> / <sub>16</sub> "	-	-	9'-4 <sup>13</sup> / <sub>16</sub> "	16'-4 <sup>9</sup> / <sub>16</sub> "	8'-3 <sup>1</sup> / <sub>8</sub> "	-	3'-10"	3'-10 <sup>9</sup> / <sub>16</sub> "	7'-10 <sup>7</sup> / <sub>8</sub> "	-	-	8'-1 <sup>15</sup> / <sub>16</sub> "	16'-3 <sup>7</sup> / <sub>8</sub> "	10'-5 <sup>3</sup> / <sub>8</sub> "	-

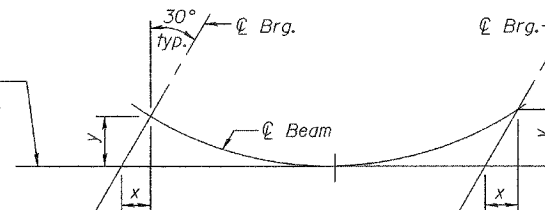
Tangent to beam at Sta. 17+97.34 (parallel to Local Tangent at Sta. 17+97.34)



SPLICE OFFSET DETAIL

x<sub>1</sub> & x<sub>2</sub> dimensions are parallel to the respective beam tangent at Sta. 17+97.34.  
y<sub>1</sub> & y<sub>2</sub> dimensions are at right angles to the respective beam tangent at Sta. 17+97.34.

Tangent to beam at Sta. 17+97.34 (parallel to Local Tangent at Sta. 17+97.34)



BRG. OFFSET DETAIL

x & y dimensions are given from the respective local tangent of each beam at Sta. 17+97.34.

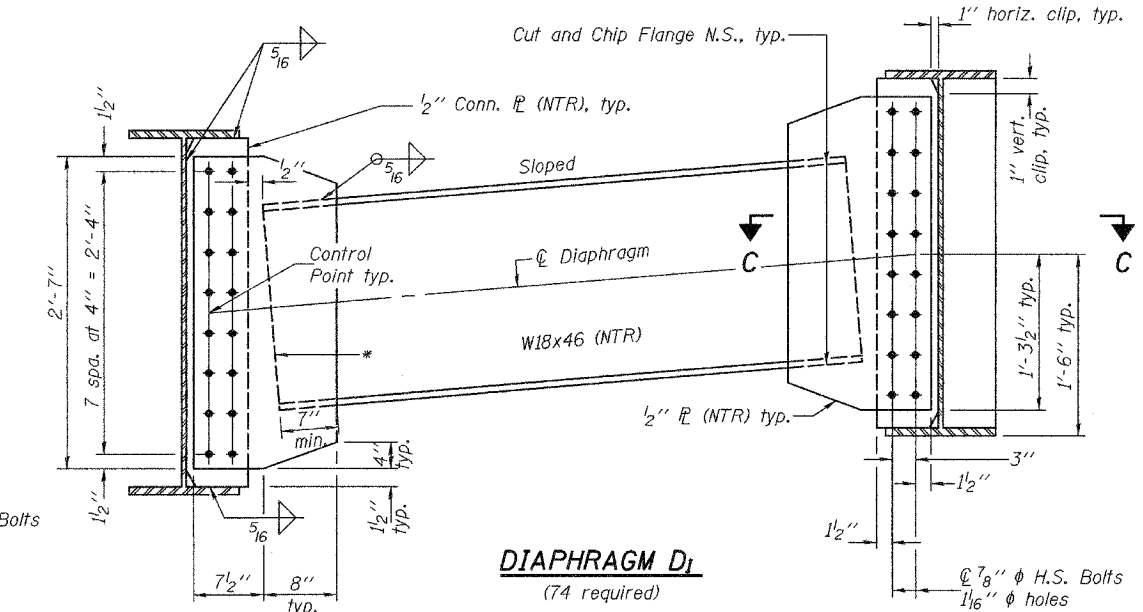
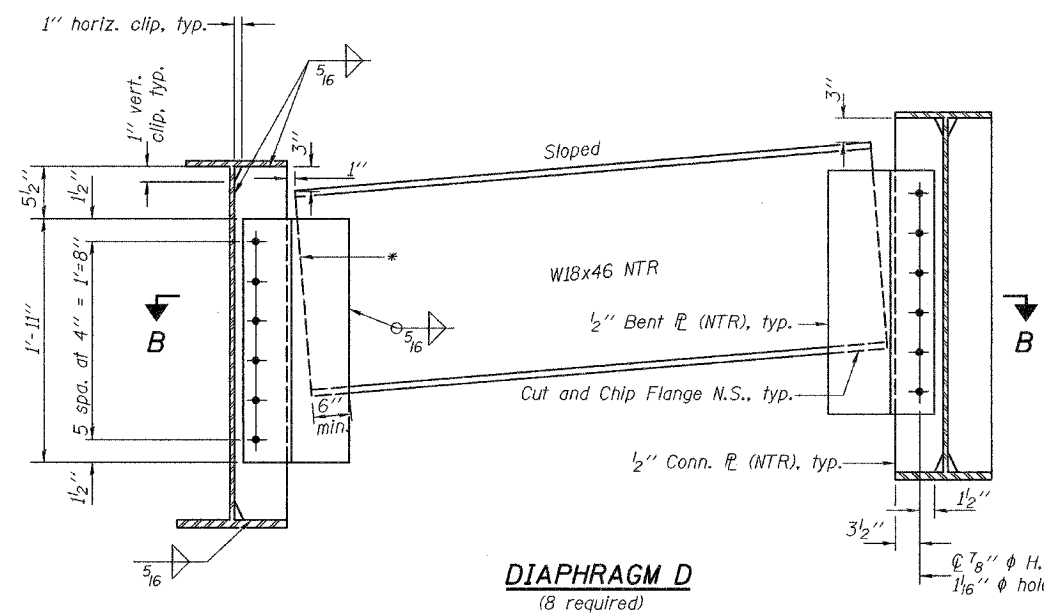
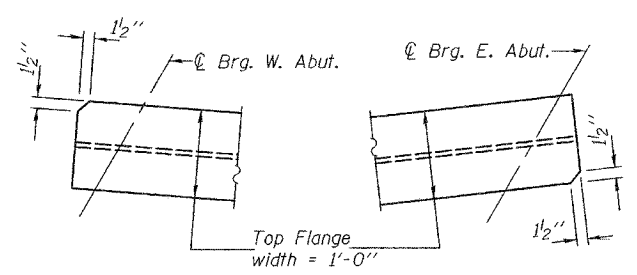
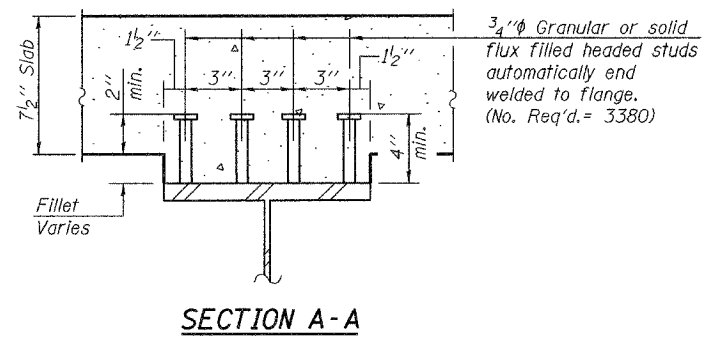
DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH
CHECKED	JWM/GRA

EXAMINED	December 1, 2005
THOMAS J. DOMAGALSKI	PRINCIPAL ENGINEER OF BRIDGE DESIGN
PASSED	PAUL E. ANDERSON
	ENGINEER OF BRIDGES AND STRUCTURES

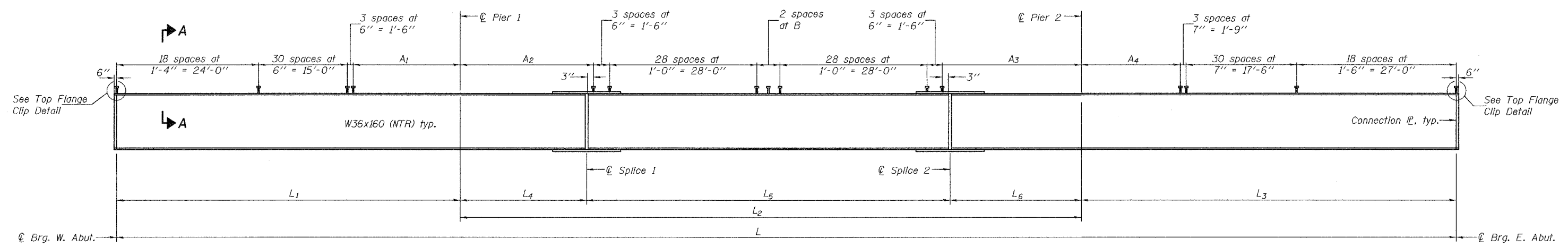
STRUCTURAL STEEL  
F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAU 7968	#	SANGAMON	261	133
FED. ROAD DIST. NO. 7	BALANCE		FED. AID PROJECT	
	Contract #72449		SECTION 3R(BR, BR-1, BR-2)19RS-8	



\*End of Diaphragm may be cut "square" or parallel to Connection PL.

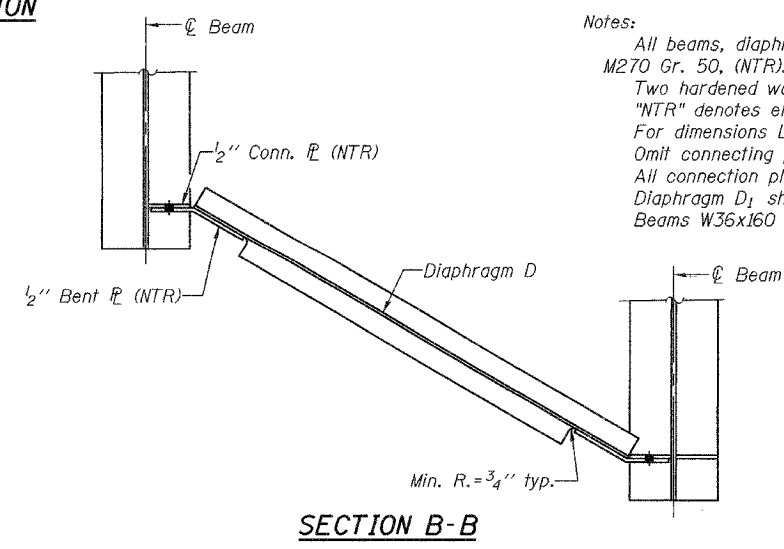
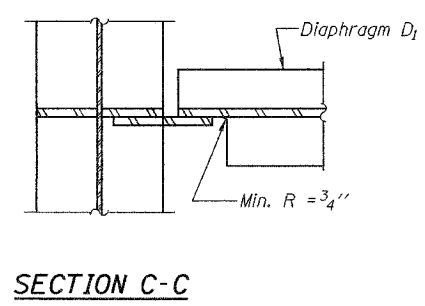


**TABLE OF A1 thru A4 DIMENSIONS**

	A1	A2	A3	A4
Beam 1	21'-8 3/4"	17'-6 1/4"	18'-4 1/8"	21'-3"
Beam 2	21'-7 3/4"	17'-7 3/16"	18'-1 1/16"	21'-1 1/16"
Beam 3	21'-6 13/16"	17'-6 3/16"	17'-10 1/8"	20'-11 3/16"
Beam 4	21'-5 7/8"	17'-11 1/8"	17'-7 3/16"	20'-9 5/16"
Beam 5	21'-5"	17'-8"	17'-4 5/16"	20'-7 1/2"

**TABLE OF "B" DIMENSIONS**

	B
Beam 1	1'-0"
Beam 2	1'-0"
Beam 3	1'-1"
Beam 4	11"
Beam 5	1'-1"



Notes:

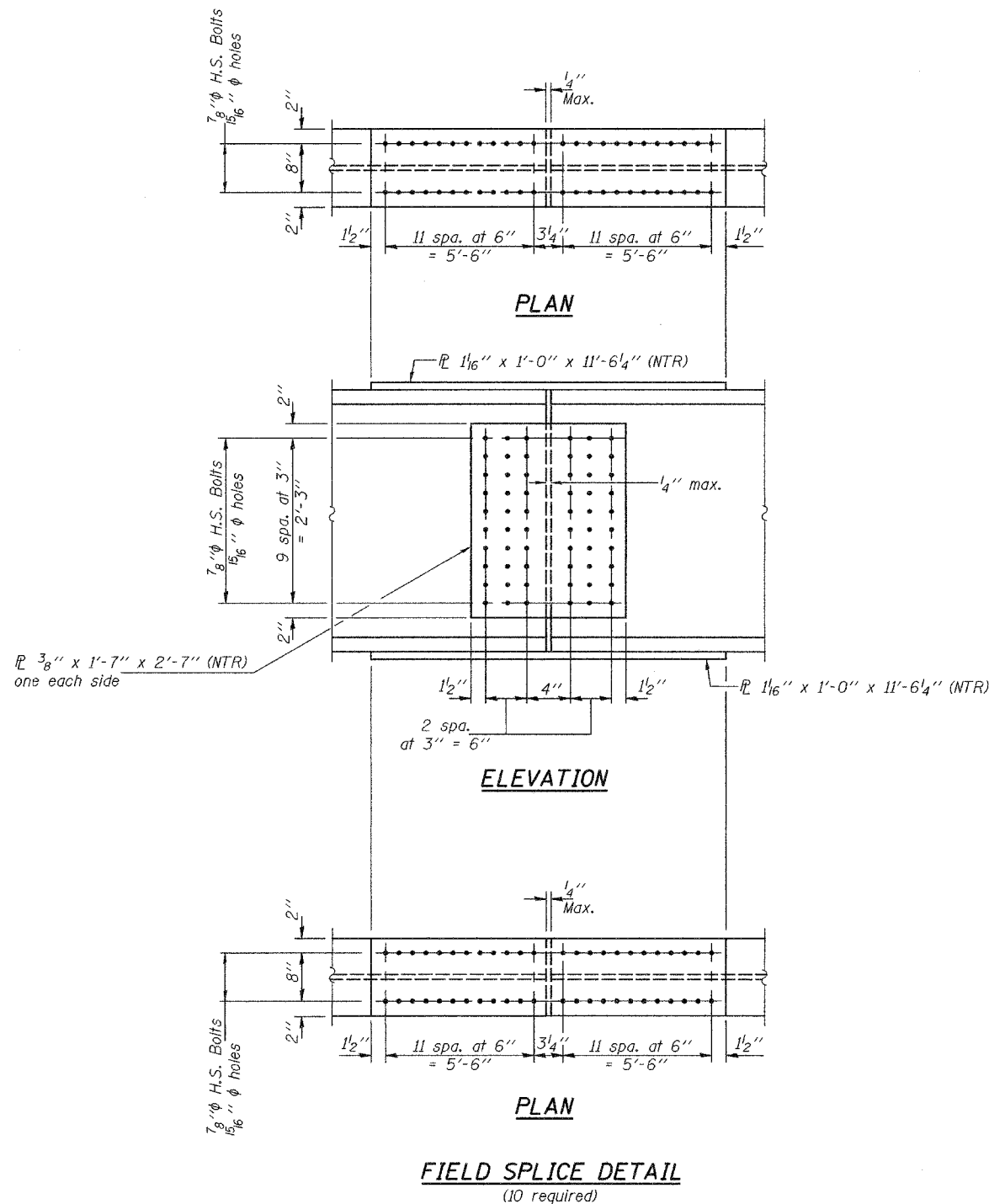
- All beams, diaphragms, Bent plates, and diaphragm connection plates shall be AASHTO M270 Gr. 50, (NTR).
- Two hardened washers shall be required over all oversized holes for diaphragms.
- "NTR" denotes elements to which notch toughness requirements are applicable.
- For dimensions L thru L6 see sheet 12 of 33.
- Omit connecting plates on exterior side of exterior beams.
- All connection plates shall be placed radially.
- Diaphragm D1 shall be placed radially.
- Beams W36x160 shall be fabricated to their respective radii.

DESIGNED J. Mann  
CHECKED G. Ahanchi  
DRAWN BECKY M. LEACH  
CHECKED JWM/GRA

December 1, 2005  
EXAMINED Thomas J. Demagala  
PASSED Ralph E. Anderson

**STRUCTURAL STEEL DETAILS**  
F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**INTERIOR GIRDER MOMENT TABLE**

		0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.6 Sp. 3
$I_s$	(in <sup>4</sup> )	9750	9750	9750	9750	9750
$I_c$ (n)	(in <sup>4</sup> )	22651	-	22651	-	22651
$I_c$ (3n)	(in <sup>4</sup> )	16440	-	16440	-	16440
$S_s$	(in <sup>3</sup> )	542	542	542	542	542
$S_c$ (n)	(in <sup>3</sup> )	753	-	753	-	753
$S_c$ (3n)	(in <sup>3</sup> )	676	-	676	-	676
$S_f$	(in <sup>3</sup> )	24.5	24.5	24.5	24.5	24.5
$\phi$	(k/ft.)	0.71	1.2	0.71	1.2	0.71
$M\phi$	(k)	140.7	818.6	363.2	867.8	185
$s\phi$	(k/ft.)	0.51	-	0.51	-	0.51
$M_s\phi$	(k)	96.4	-	223.4	-	117.3
$M_L$	(k)	351.8	369.2	460.4	390.6	388.7
$M$ (Imp)	(k)	88	73.8	115.1	78.1	97.2
$S_3[M_L + M$ (Imp)]	(k)	733	738.3	959.2	781.2	809.8
$M_a$	(k)	1261	2024	2010	2144	1446
$M_{b\phi}$	(k)	2.9	1.4	5.2	1.7	8.3
$f_s\phi$ non-comp	(k.s.i.)	3.1	18.1	8	19.2	4.1
$f_s\phi$ (comp)	(k.s.i.)	1.7	-	4	-	2.1
$f_s^{S_3}(\phi + Imp)$	(k.s.i.)	11.7	16.3	15.3	17.3	12.9
$f_\phi$	(k.s.i.)	1.4	0.7	2.5	0.8	4.1
$f_s$ (Overload)	(k.s.i.)	16.5	34.4	27.3	36.5	19.1
$f_s$ (Total)	(k.s.i.)	21.5	44.7	35.5	47.5	24.8
$F_{cr}$ (Overload)	(k.s.i.)	47.5	40	47.5	40	47.5
$VR$	(k)	23.7	-	20.1	-	27.4
$F_{cr}$	(k.s.i.)	49.5	48.3	49.2	48.2	48.6

**INTERIOR GIRDER REACTION TABLE**

		W. Abut.	Pier 1	Pier 2	E. Abut.
$R\phi$	(k)	22.8	115.9	117	26.1
$R_L$	(k)	40.3	70.5	67.1	45.3
$Imp.$	(k)	12.1	17.6	16.8	13.6
$R$ (Total)	(k)	75.2	204	200.9	85

$I_s$  and  $S_s$  are the moment of inertia and section modulus of the steel section used in computing  $f_s$  (Total and Overload).

$I_c$  (n) &  $S_c$  (n) are the moment of inertia and section modulus of the composite section used in computing stresses due to live load.

$I_c$  (3n) and  $S_c$  (3n) are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads (See AASHTO 10.38).

$S_f$  is the section modulus for one flange plate for lateral flange bending.

$M\phi$  - Moment due to dead loads on non-composite section.

$M_s\phi$  - Moment due to dead loads on composite section.

$M_L$  - Moment due to live load on non-composite or composite section.

$M$  (Imp) - Moment due to live load impact on non-composite or composite section.

$M_a$  (Applied Moment) =  $1.3 [M\phi + M_s\phi + \frac{5}{8} (M_L + M$  (Imp))].

$M_{b\phi}$  is the lateral bending moment for one flange plate (factored).

$f_s$  (Overload) is the sum of the stresses due to  $M\phi + M_s\phi + \frac{5}{8} (M_L + M$  (Imp)).

$f_\phi$  is the calculated normal stress at the edge of the flange due to lateral bending (factored).

$f_s$  (Total) is the sum of the stresses due to  $1.3 [M\phi + M_s\phi + \frac{5}{8} (M_L + M$  (Imp))].

$F_{cr}$  (Overload) is the critical average flange stress at overload computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges Section 9.5.

$VR$  is the maximum  $\phi$  + impact shear range in span.

$F_{cr}$  is the critical average flange stress computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges Sections 5.2, 5.3 and 5.4.

$M_L$  and  $R_L$  includes the effects of centrifugal force and superelevation.

Note: "NTR" denotes elements to which notch toughness requirements are applicable.

DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH
CHECKED	JWM/GRA

December 1, 2005

EXAMINED *Thomas J. Namagallaki*  
ENGINEER OF BRIDGE DESIGN

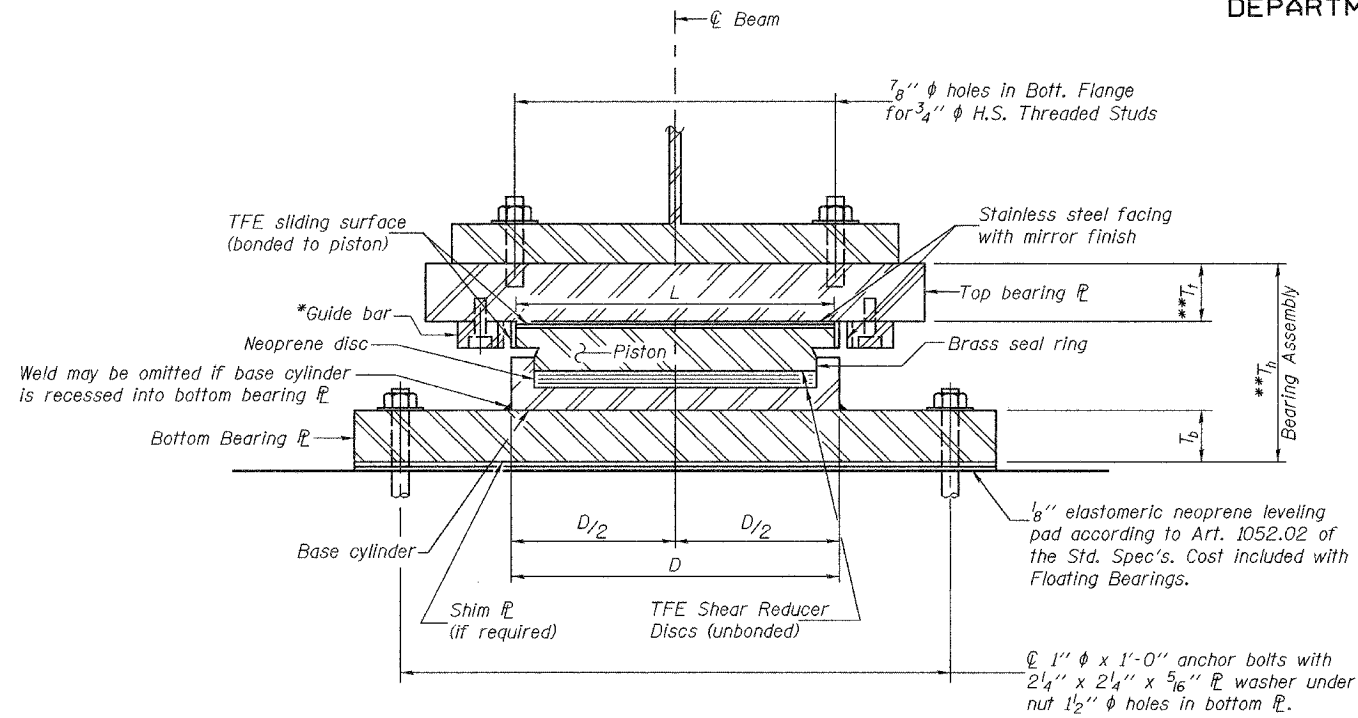
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

**STRUCTURAL STEEL DETAILS**  
F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	STATION	SHEET NO.	SHEET NO. 15
FAU 7968	*	SANGAMON	2.61	185	33 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

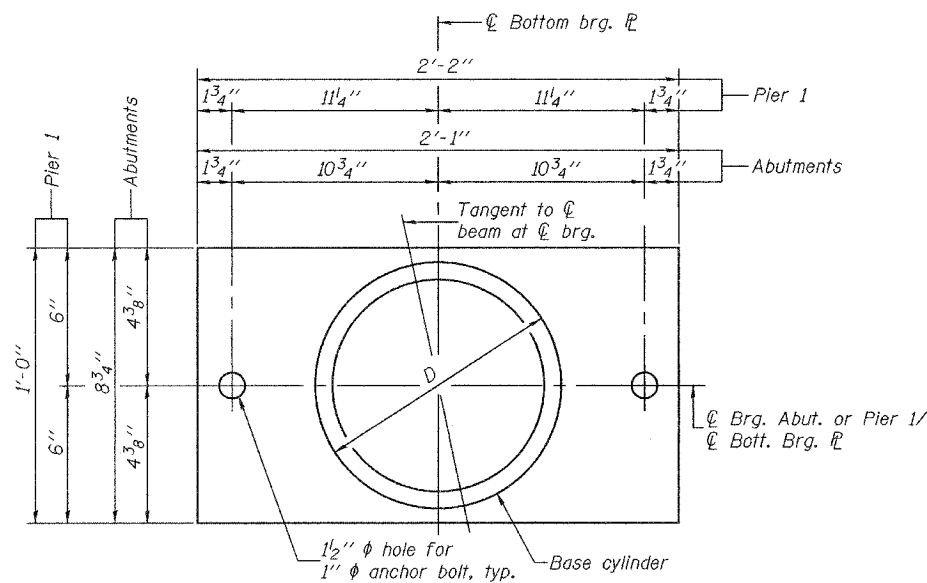
Contract #72449 \*SECTION 3R(BR, BR-1, BR-2)19RS-8



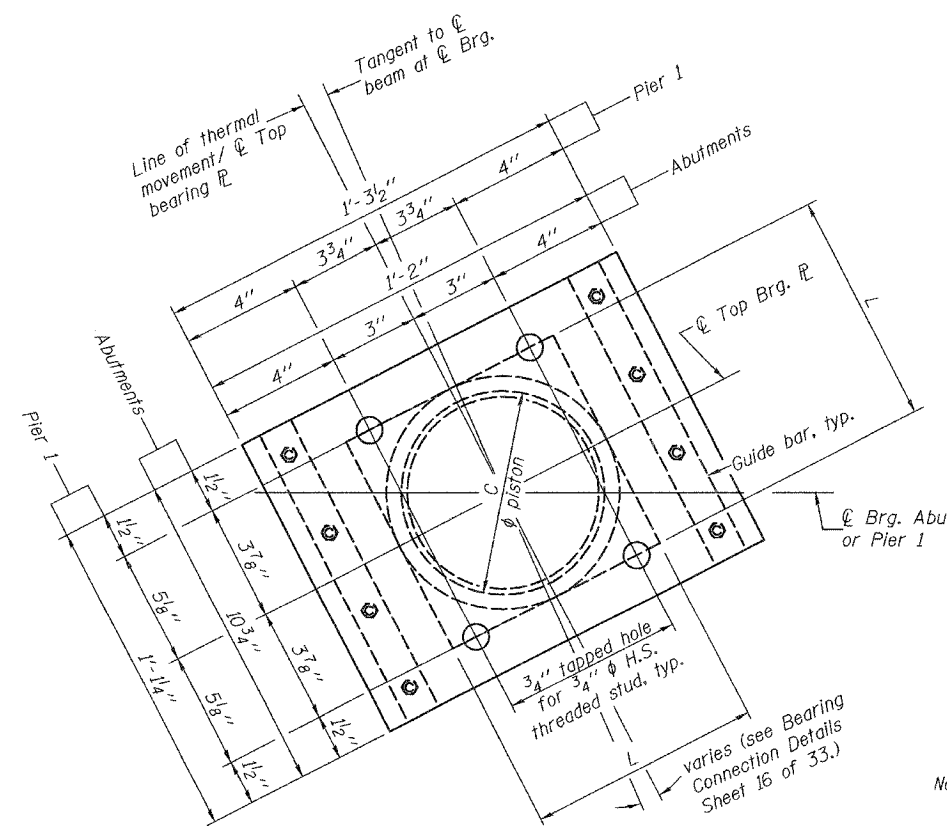
**GUIDED EXPANSION FLOATING BEARING  
ABUTMENTS AND PIER 1**

	W. Abut.	Pier 1	E. Abut.
Vertical Design Load	72 kip	187 kip	72 kip
Total Required Movement	2"	1 1/4"	1"
L	6 3/4"	10"	6 3/4"
D	6 3/4"	10"	6 3/4"
C	5 1/4"	8 1/2"	5 1/4"
**T <sub>t</sub>	1 5/8"	2 1/4"	1 3/4"
T <sub>b</sub>	2"	2 1/4"	2"
**T <sub>h</sub>	7 5/8"	8 1/2"	7 3/4"

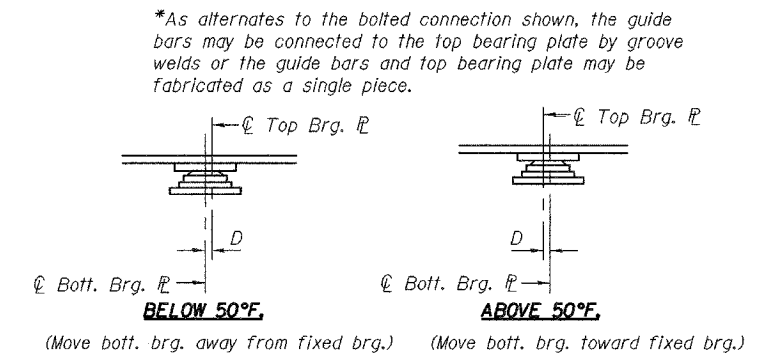
\*\*measured at  $\varnothing$  of bearing  
(See sheet 16 of 33 for Top Bearing  $\varnothing$  taper details).



**BOTTOM BEARING  $\varnothing$  AND  
BASE CYLINDER PLAN**



**TOP BEARING  $\varnothing$  & PISTON PLAN**



**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.

**BILL OF MATERIAL**

Item	Unit	Total
Floating Bearings,	Each	10
Guided Expansion 75 kip		
Floating Bearings,	Each	5
Guided Expansion 200 kip		

**EXPANSION BEARING DETAILS**

F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518

DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH
CHECKED	JWM/GRA

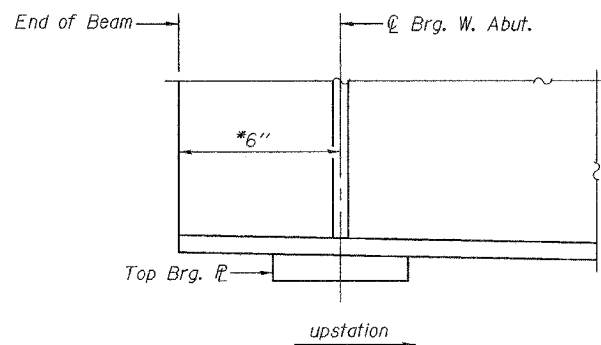
December 1, 2005  
EXAMINED *Thomas J. Damagalki*  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGE DESIGN  
ENGINEER OF BRIDGES AND STRUCTURES

Notes:  
The plates of the Bearing Assembly shall be AASHTO M 270, Grade 50.  
For anchor bolt installation details, see sheet 18 of 33.

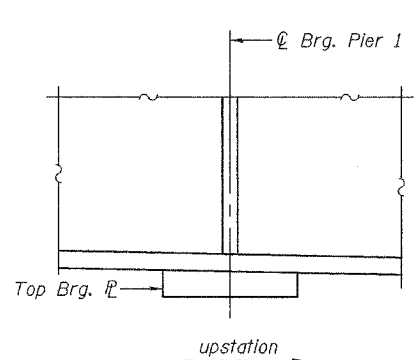
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	POST MILES	SHEET NO.	SHEET NO. 16
FAU 7968	*	SANGAMON	261	186	33 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

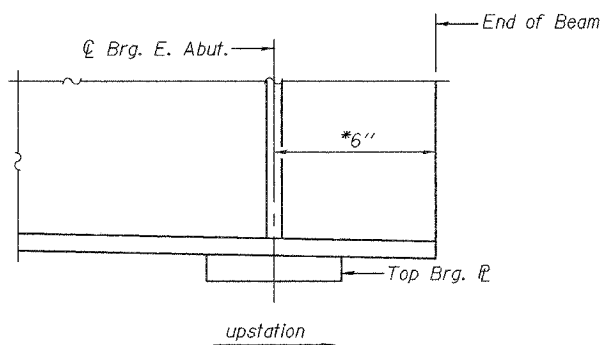
Contract #72449 \*SECTION 3R(BR, BR-1, BR-2)19RS-8



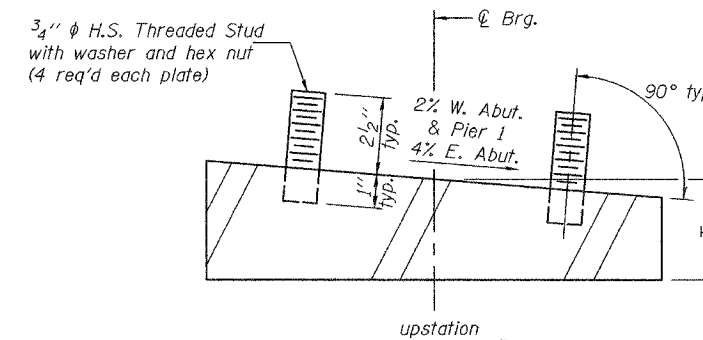
**TOP PLATE TAPER DETAIL  
AT WEST ABUTMENT**



**TOP PLATE TAPER DETAIL AT PIER 1**

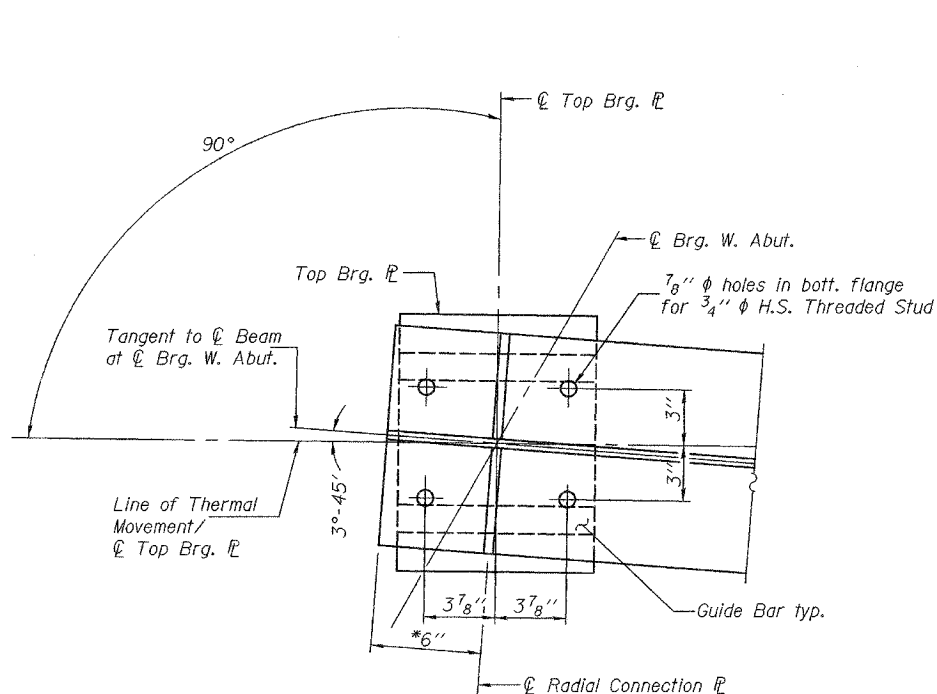


**TOP PLATE TAPER DETAIL  
AT EAST ABUTMENT**

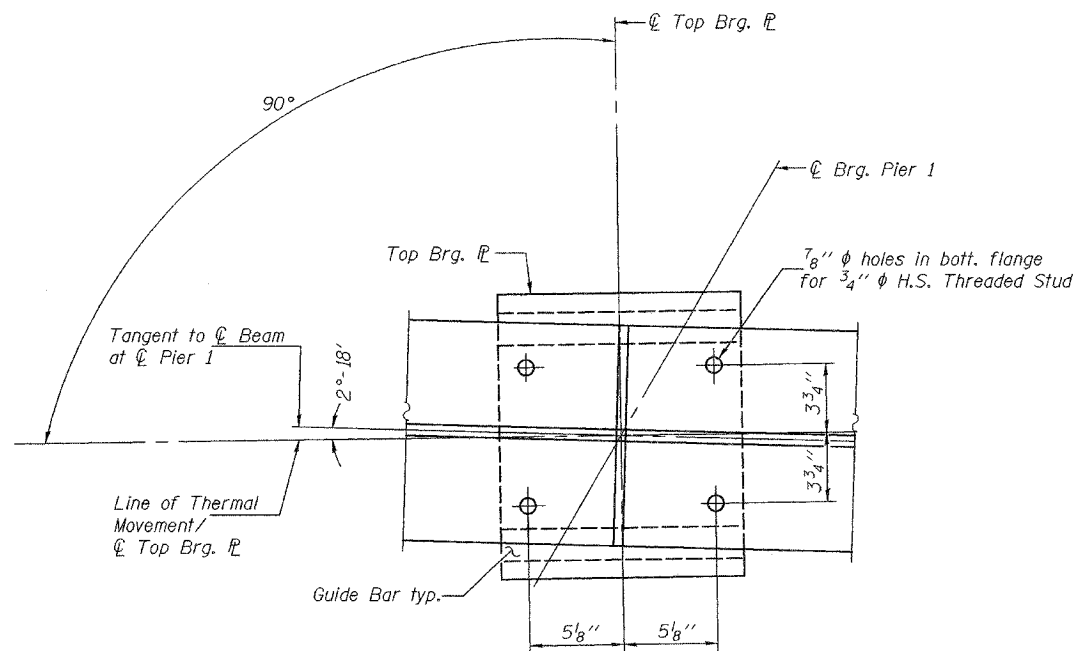


**TOP BEARING PLATE SECTION**

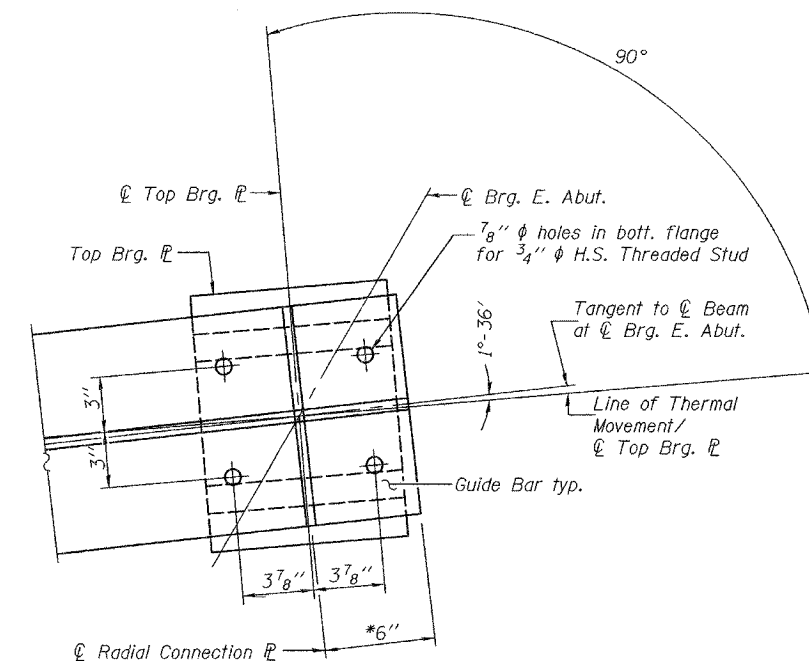
\*measured along CL beam.



**W. ABUTMENT BEARING CONNECTION DETAIL**



**PIER 1 BEARING CONNECTION DETAIL**



**E. ABUTMENT BEARING CONNECTION DETAIL**

DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH
CHECKED	JWM/GRA

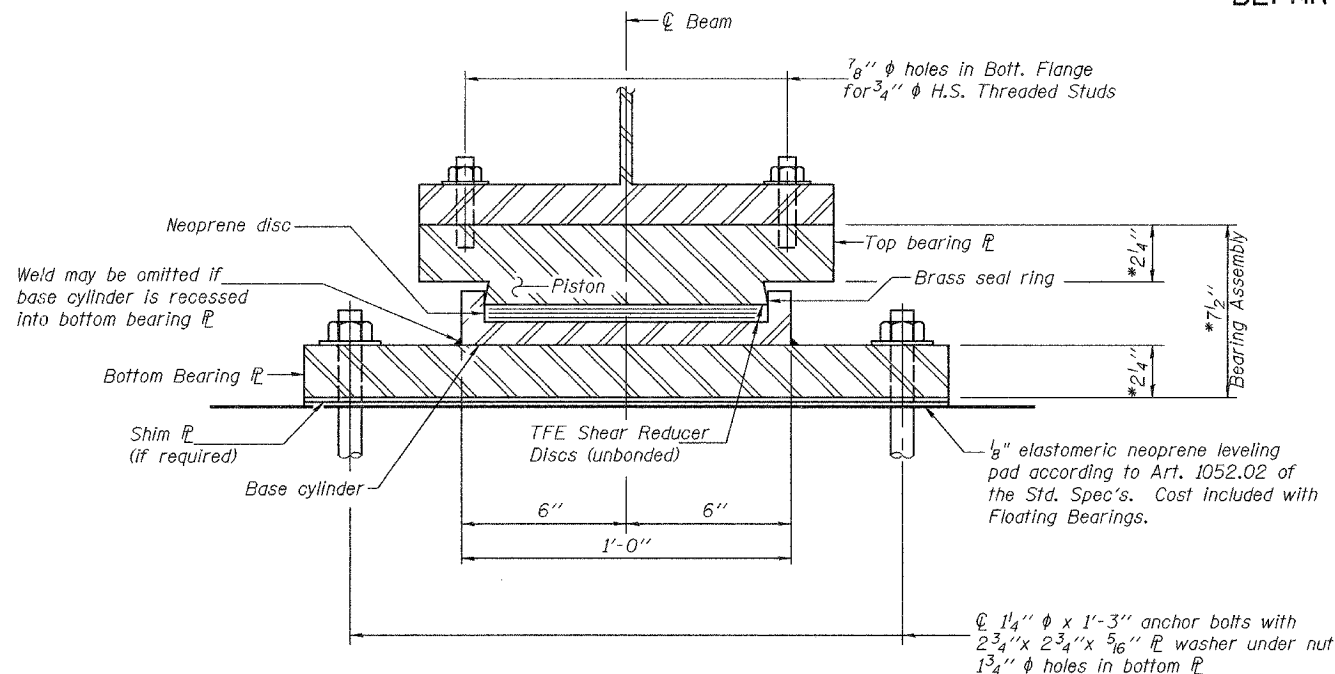
EXAMINED	December 1, 2005
PASSED	Thomas J. Demagalki PROFESSOR OF BRIDGE DESIGN
	Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES

**EXPANSION BEARING DETAILS**  
F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

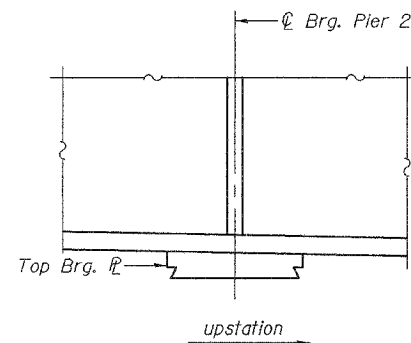
ROUTE NO.	SECTION	COUNTY	LENG. FEET	SHEET NO.	SHEET NO. 17 33 SHEETS
FAU 7968	*	SANGAMON	261	187	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			

Contract #72449 \*SECTION 3R(BR, BR-1, BR-2)19RS-8

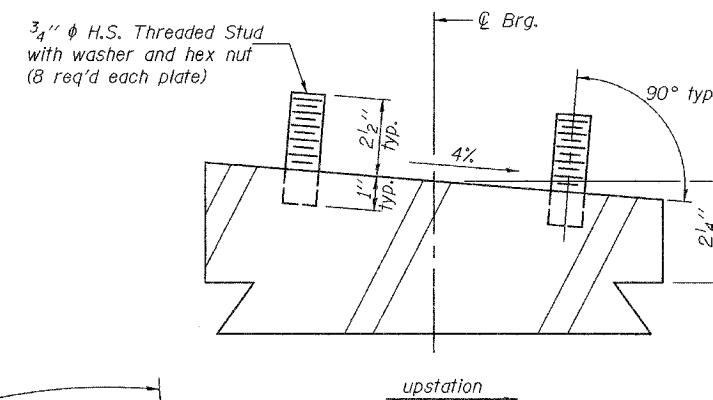


**FIXED FLOATING BEARING  
AT PIER 2**

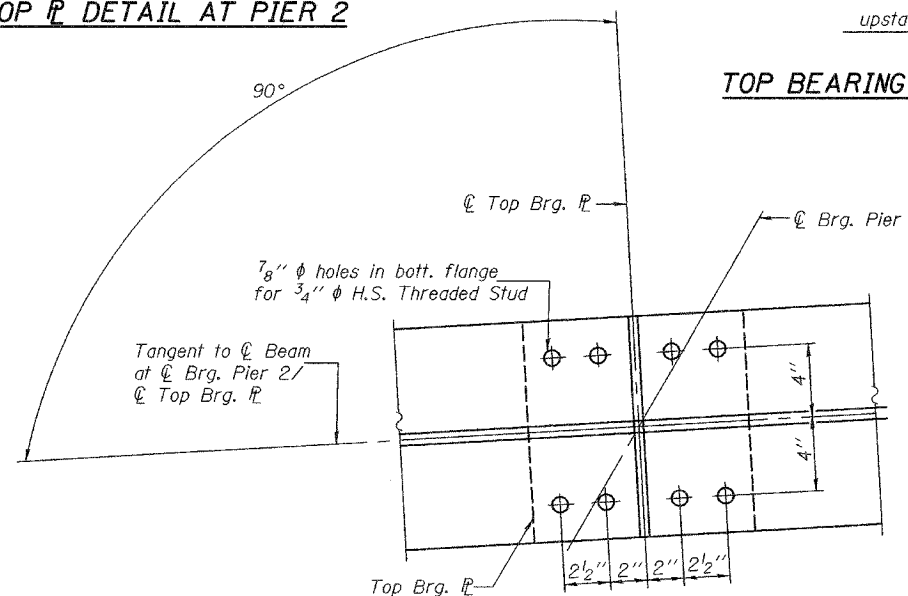
\*measured at  $\varnothing$  of Brg.



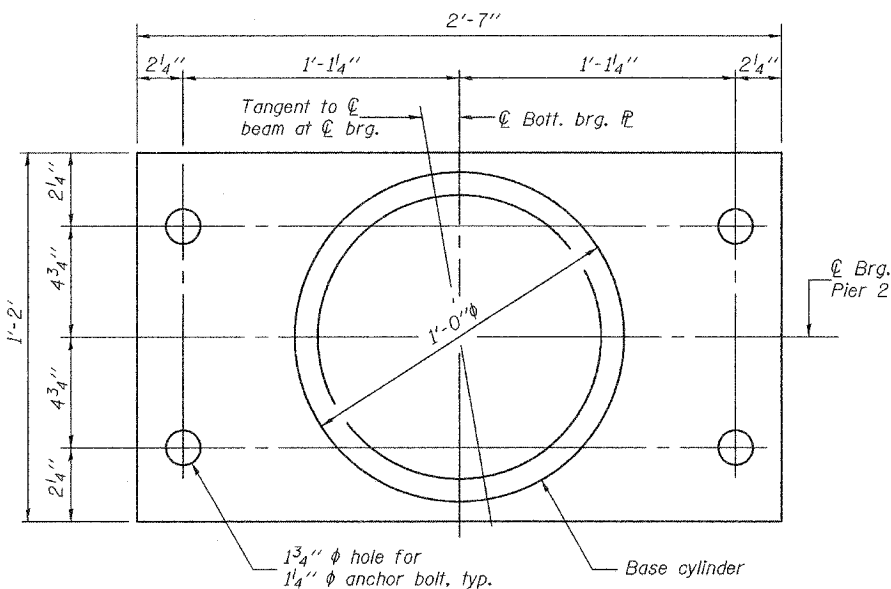
**TOP BRG. DETAIL AT PIER 2**



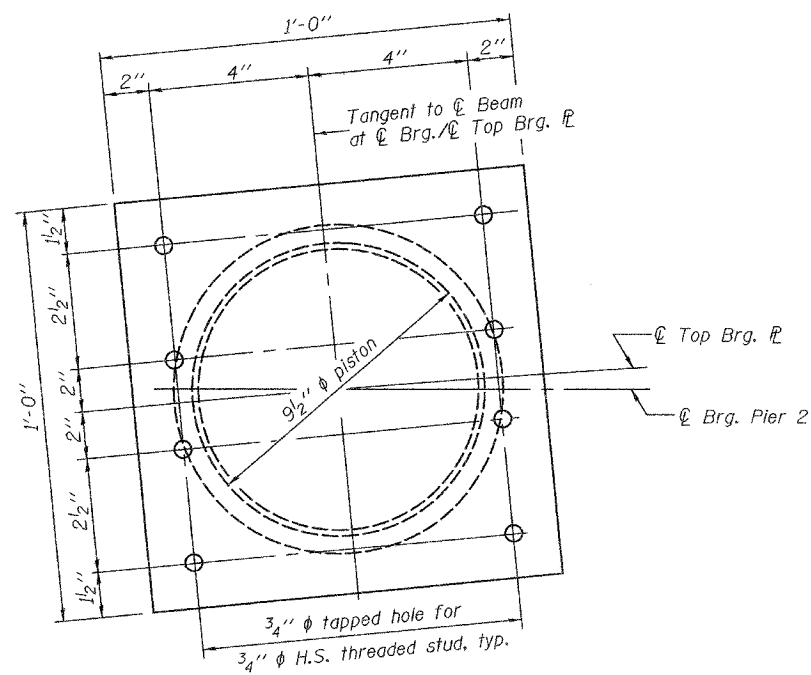
**TOP BEARING BRG. SECTION**



**PIER 2 BEARING CONNECTION DETAIL**



**BOTTOM BEARING BRG. AND  
BASE CYLINDER PLAN**



**TOP BEARING BRG. AND  
PISTON PLAN**

BEARING DATA	
Vertical design load	187 kip
Lateral design load	42.3 kip

**BILL OF MATERIAL**

Item	Unit	Total
Floating Bearings, Fixed 200 kip	Each	5

**FIXED BEARING DETAILS**  
E.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518

DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH
CHECKED	JWM/GRA

December 1, 2005  
EXAMINED *Thomas J. Damagalki*  
PASSED *Ralph E. Anderson*

Notes: The plates of the Bearing Assembly shall be AASHTO M270, Grade 50.  
For anchor bolt installation details, see sheet 18 of 33.

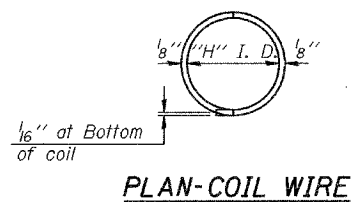
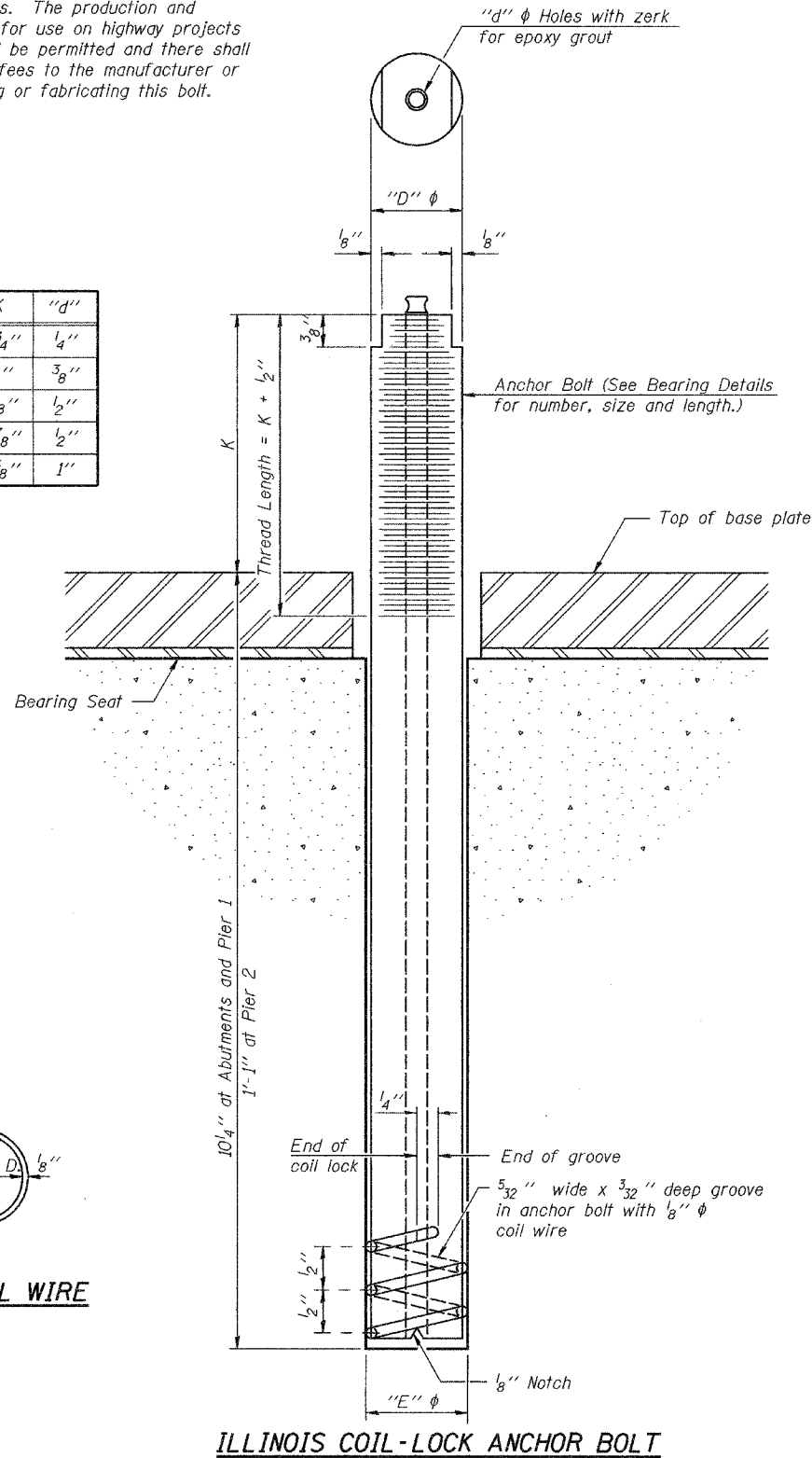
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	ISSUE SHEETS	SHEET	SHEET NO. 18
FAU 7968	*	SANGAMON	261	188	33 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

Contract #72449 \*SECTION 3R(BR, BR-1, BR-2)19RS-8

The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

D	E	H	K	"d"
1"	1 1/8"	1 3/16"	1 3/4"	1/4"
1 1/4"	1 3/8"	1 1/16"	2"	3/8"
1 1/2"	1 5/8"	1 5/16"	2 1/8"	1/2"
2"	2 1/8"	1 3/16"	2 7/8"	1/2"
2 1/2"	2 5/8"	2 5/16"	3 3/8"	1"



**MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT**

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A 519, Grade 1026, CW and supplied with hexagonal nuts and cut washers.  
The coil wire shall be made of any suitable soft steel wire.  
The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.  
The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C 881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

**INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT**

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

**ALTERNATE ANCHOR BOLTS**

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures.

- The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:
1. A threaded rod stud with nut and washer of the type specified.
  2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

Location	Type
Abuts.	A307
Pier 1	A307
Pier 2	A307

ASTM F 1554 Grade 105, ASTM A 449 and AASHTO M 314 Grade 105 anchor bolts may be substituted for the anchor bolts shown above.

**GENERAL NOTES**

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or according to the manufacturer's recommendation after beams or girders have been erected and adjusted.  
Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.  
The anchor bolts, furnished and installed and including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for Furnishing and Erecting Structural Steel.

DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH
CHECKED	JWM/GRA

December 1, 2005  
EXAMINED *Thomas J. Romagosa*  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGE DESIGN  
ENGINEER OF BRIDGES AND STRUCTURES

ABB-1 10-22-04

**ANCHOR BOLT DETAILS  
FOR BEARINGS  
F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518**



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAU 7968	*	SANGAMON	261	189
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT
Contract #72449		*SECTION 3R(BR, BR-1, BR-2)19RS-8		

SHEET NO. 19

33 SHEETS

Notes:

Hatched area to be poured after superstructure forms have been removed. Quantity of concrete included with Concrete Superstructure.

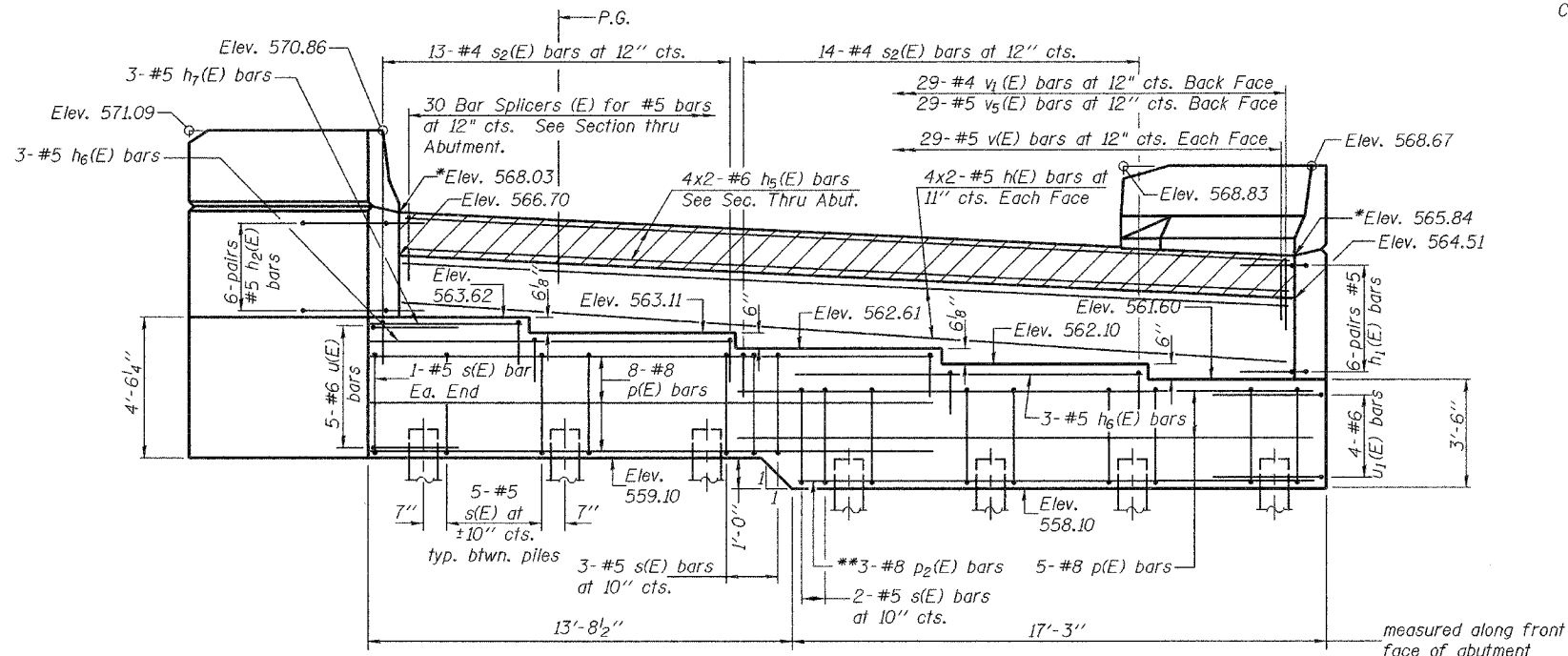
Space reinforcement in cap to miss anchor bolts.

Pour steps monolithically with cap.

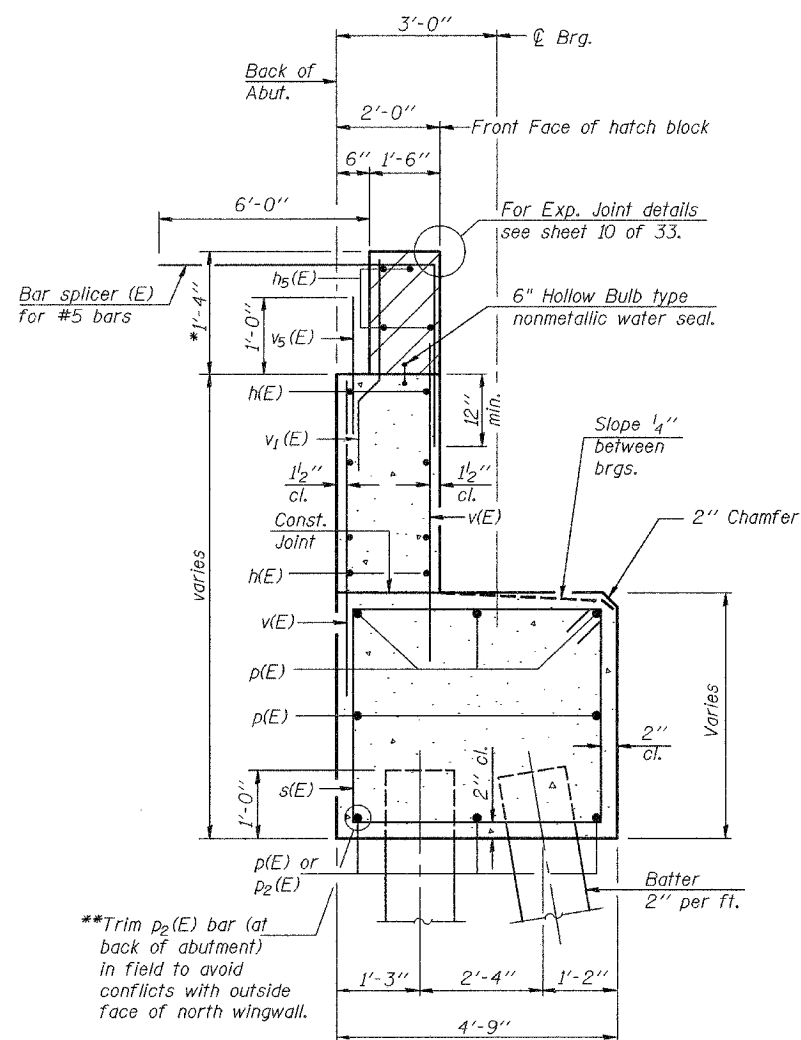
Reinforcement bars designated (E) shall be epoxy coated.

Bars indicated thus 4x2-#6 etc. indicates 4 lines of bars with 2 lengths per line.

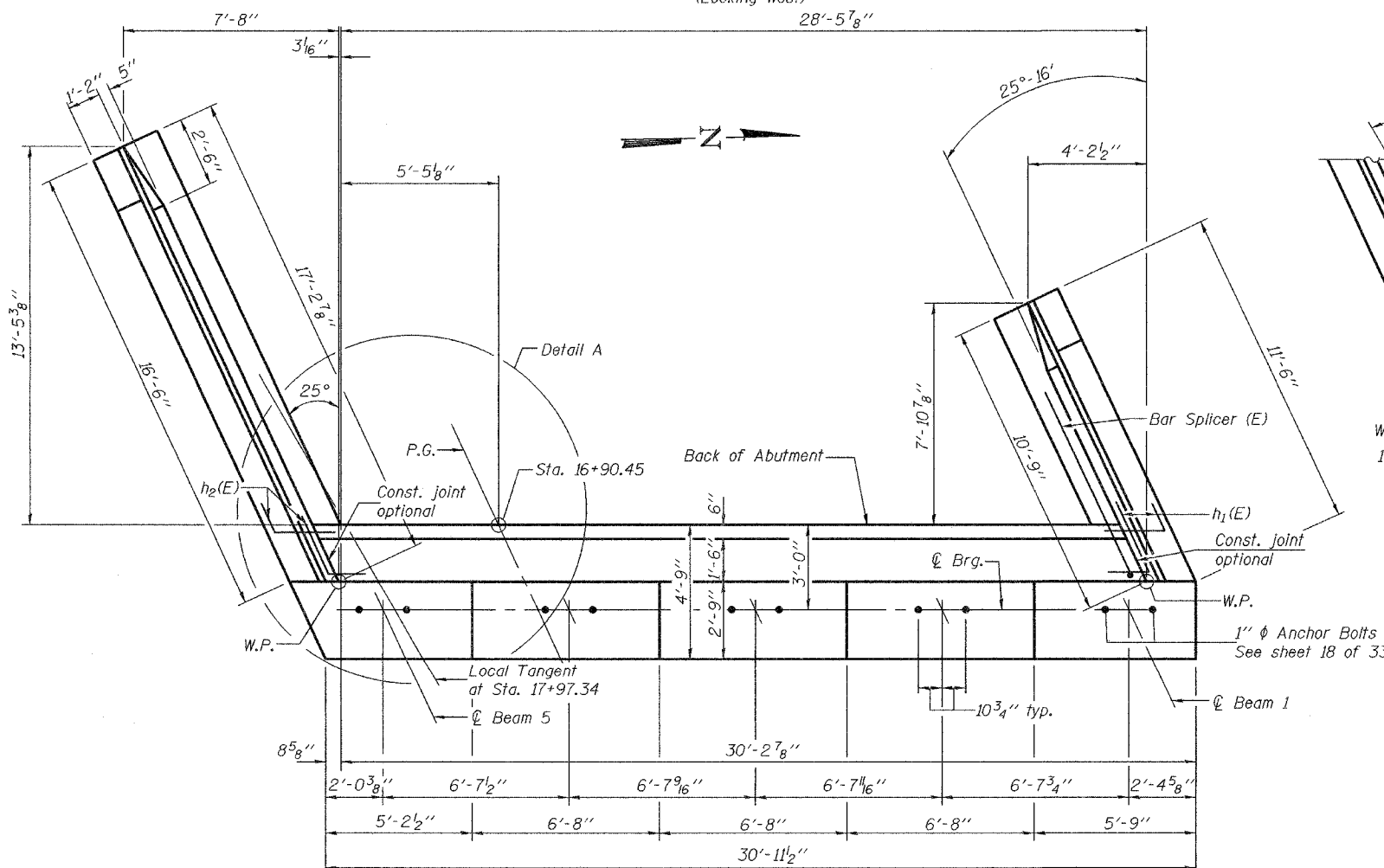
\*At front face of hatch block



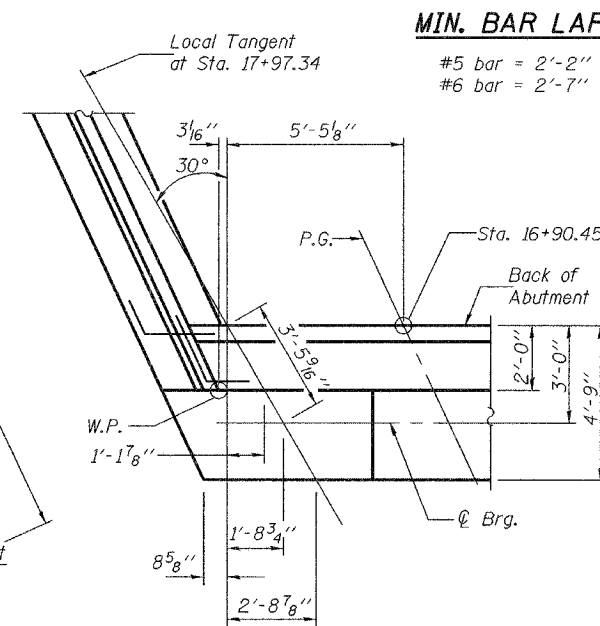
**ELEVATION**  
(Looking West)



**SEC. THRU ABUT.**



**TOP VIEW**



**DETAIL A**

**MIN. BAR LAPS**

#5 bar = 2'-2"  
#6 bar = 2'-7"

**WEST ABUTMENT**

F.A.U. ROUTE 7968

SECTION 3R(BR, BR-1, BR-2)19RS-8

SANGAMON COUNTY

STATION 17+97.34

STRUCTURE NO. 084-0518

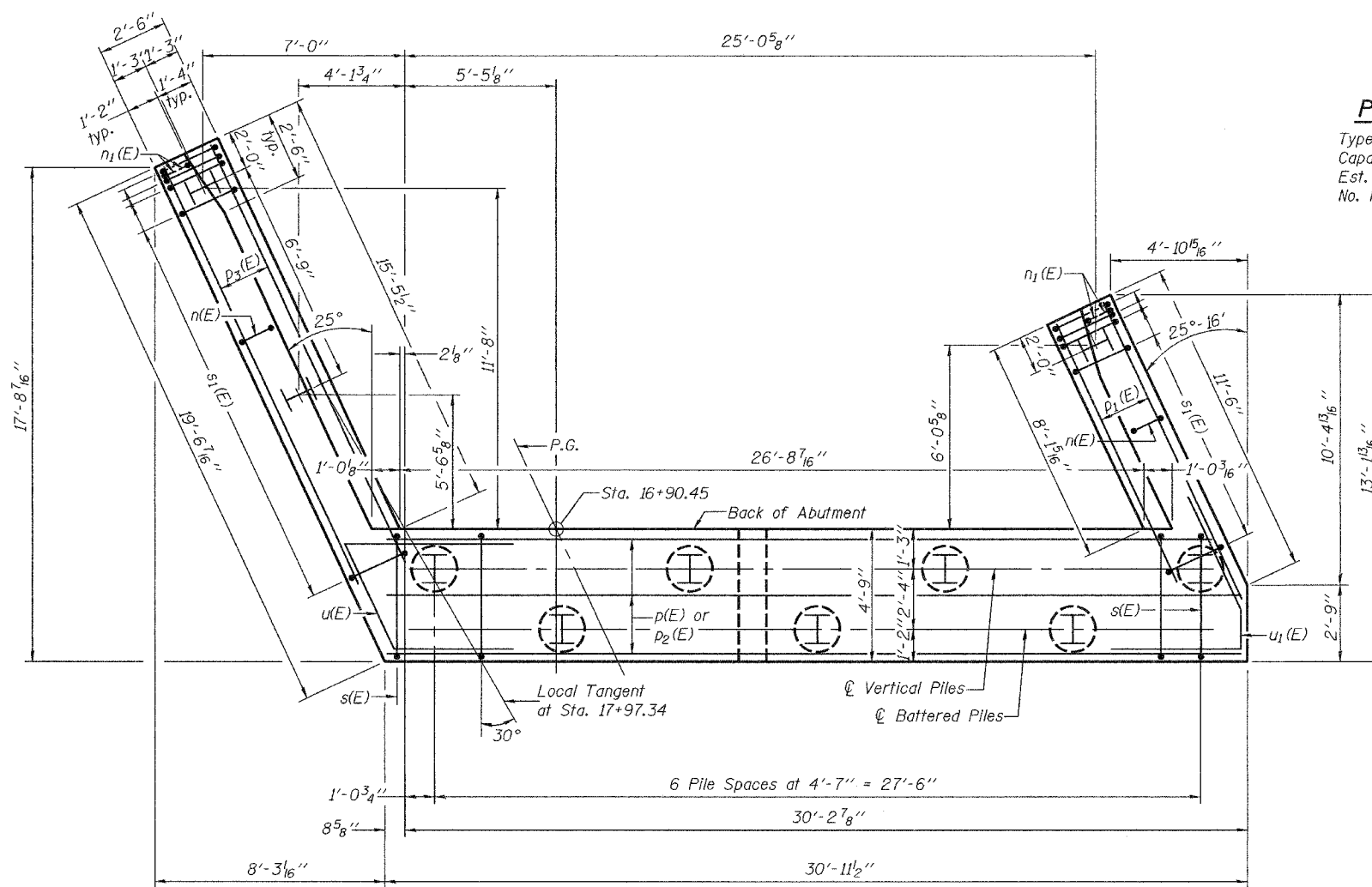
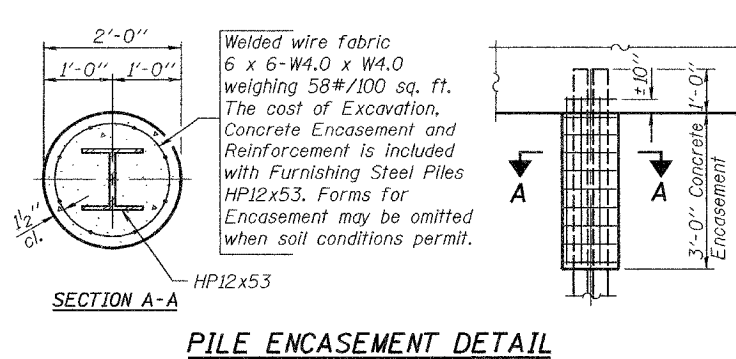
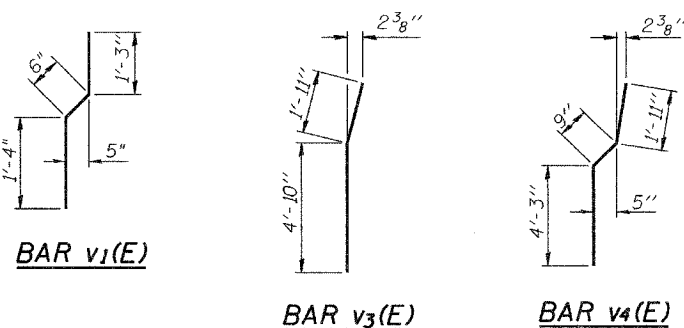
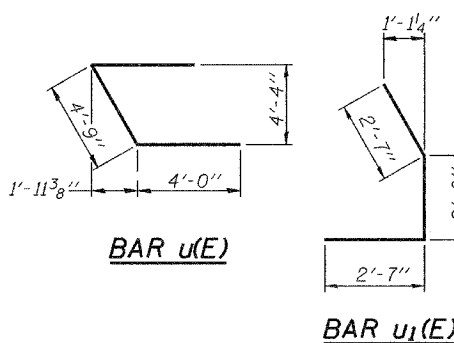
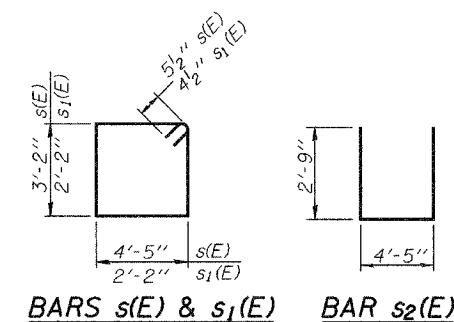
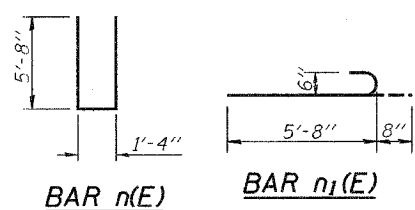
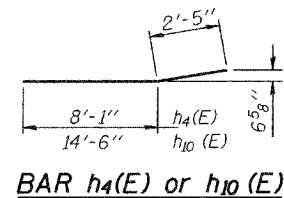
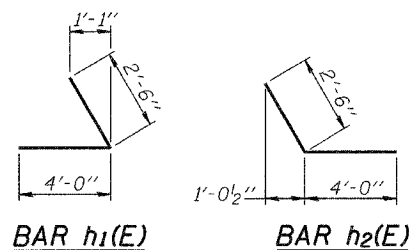
DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH
CHECKED	JWM/GRA

EXAMINED	December 1, 2005
PASSED	Thomas J. Domagala ENGINEER OF BRIDGE DESIGN
	Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	POST MILES	SHEET NO.	SHEET NO. 20
FAU 7968	*	SANGAMON	261	190	33 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

Contract #72449 \*SECTION 3R(BR, BR-1, BR-2)19RS-8



**PILE DATA**

Type: HP12x53  
Capacity: Driven to Refusal  
Est. Length: 27'  
No. Required: 9 + 1 test pile

**WEST ABUTMENT  
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
$h(E)$	16	#5	15'-4"	—
$h_1(E)$	12	#5	6'-6"	L
$h_2(E)$	12	#5	6'-6"	—
$h_3(E)$	9	#4	11'-3"	—
$h_4(E)$	7	#4	10'-6"	—
$h_5(E)$	8	#6	15'-7"	—
$h_6(E)$	6	#5	11'-6"	—
$h_7(E)$	3	#5	4'-11"	—
$h_8(E)$	2	#4	10'-6"	—
$h_9(E)$	9	#4	16'-3"	—
$h_{10}(E)$	7	#4	16'-11"	—
$h_{11}(E)$	2	#4	16'-6"	—
$n(E)$	25	#6	12'-8"	—
$n_1(E)$	12	#6	6'-4"	—
$p(E)$	13	#8	18'-3"	—
$p_1(E)$	6	#7	11'-4"	—
$p_2(E)$	3	#8	17'-0"	—
$p_3(E)$	6	#7	17'-6"	—
$s(E)$	32	#5	16'-1"	—
$s_1(E)$	30	#4	9'-5"	—
$s_2(E)$	27	#4	9'-11"	—
$u(E)$	5	#6	12'-9"	—
$u_1(E)$	4	#6	7'-8"	—
$v(E)$	58	#5	6'-0"	—
$v_1(E)$	29	#4	3'-1"	—
$v_2(E)$	31	#6	6'-6"	—
$v_3(E)$	6	#6	6'-9"	—
$v_4(E)$	25	#6	6'-11"	—
$v_5(E)$	29	#5	3'-2"	—
Structure Excavation		Cu. Yd.	199	
Concrete Structures		Cu. Yd.	43.9	
Reinforcement Bars, Epoxy Coated		Pound	4920	
Furnishing Steel Piles HP12x53		Foot	243	
Test Pile Steel HP12x53		Each	1	
Driving Steel Piles		Foot	243	

Reinforcement bars designated (E) shall be epoxy coated.  
For details of Bar Splicers, see sheet 30 of 33.

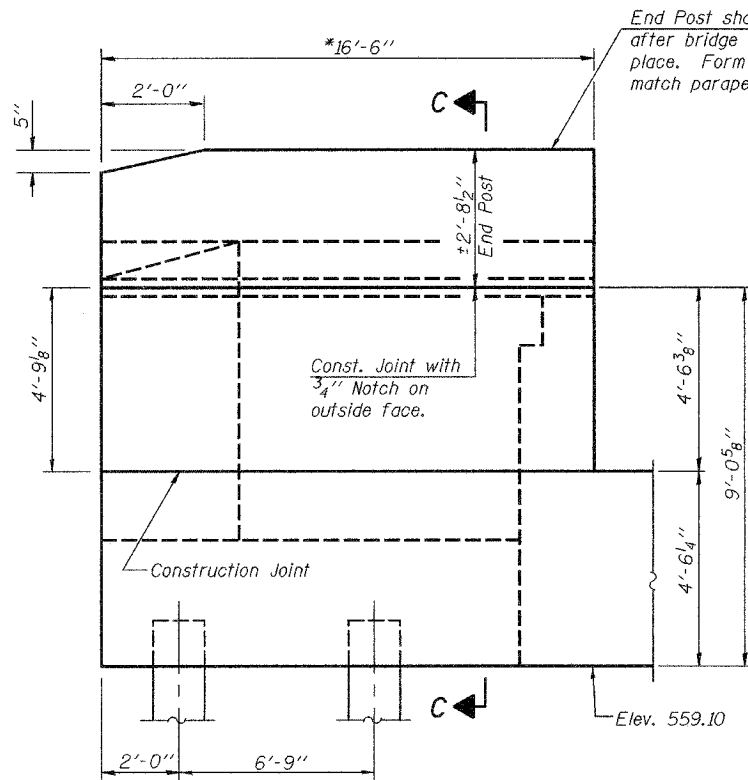
**WEST ABUTMENT DETAILS**  
F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518

DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH
CHECKED	JWM/GRA

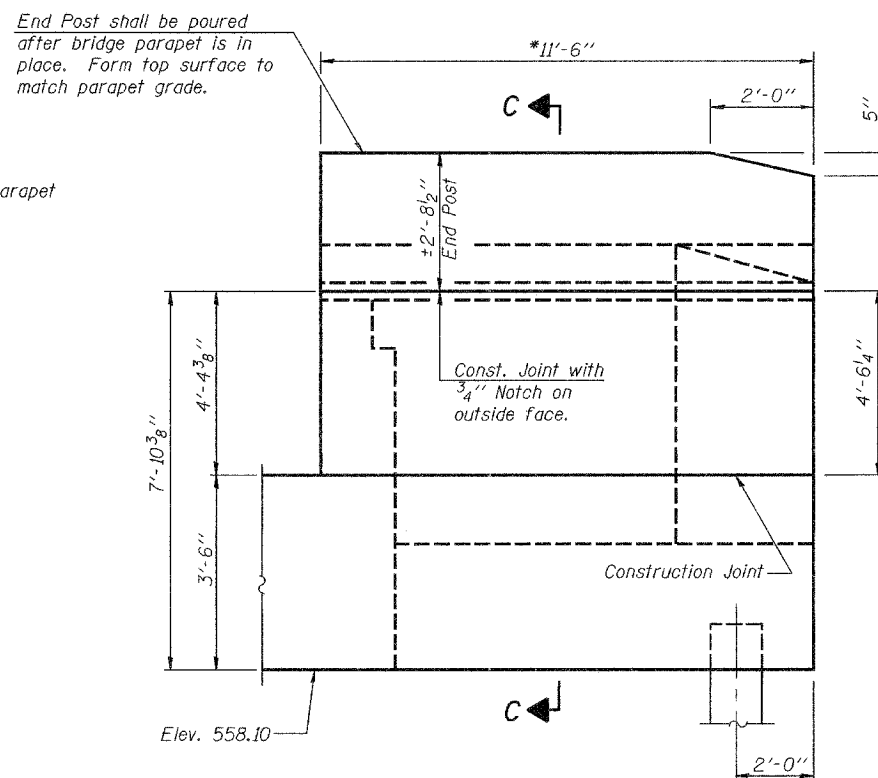
December 1, 2005  
EXAMINED *Thomas J. Domagala*  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGE DESIGN  
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	DATE	SHEET	SHEET NO. 21 33 SHEETS
FAU 7968	*	SANGAMON	2.61	191	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT	Contract #72449 *SECTION 3R(BR, BR-1, BR-2)19RS-8		

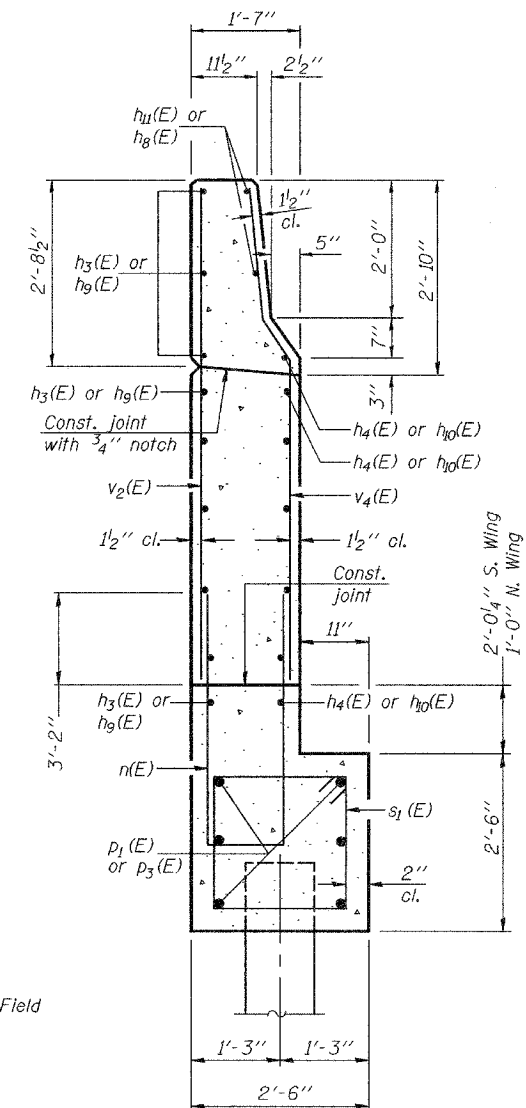


**SOUTH WING WALL ELEVATION**  
Showing Dimensions (Looking North)



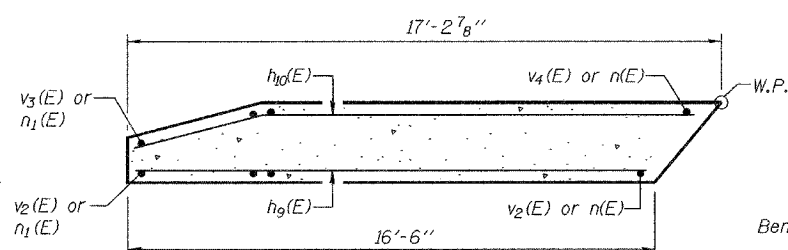
**NORTH WING WALL ELEVATION**  
Showing Dimensions (Looking South)

Notes:  
Quantity of concrete in end post included with Concrete Superstructure on sheet 9 of 33.

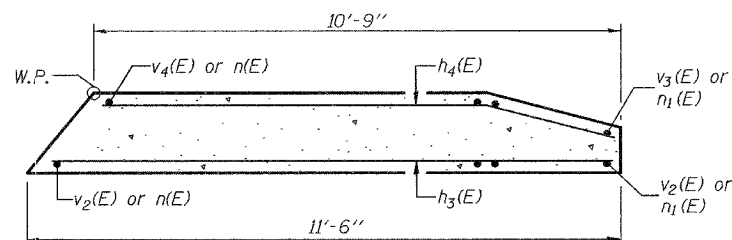


**SECTION C-C**

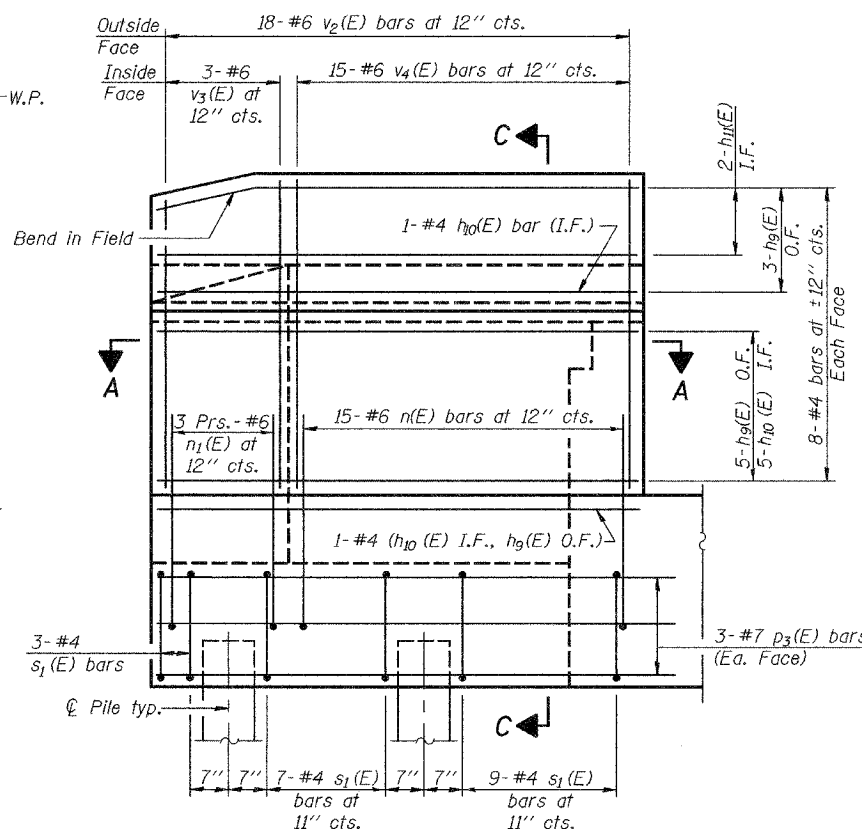
**MIN. BAR LAP**  
#6 bar = 2'-7"



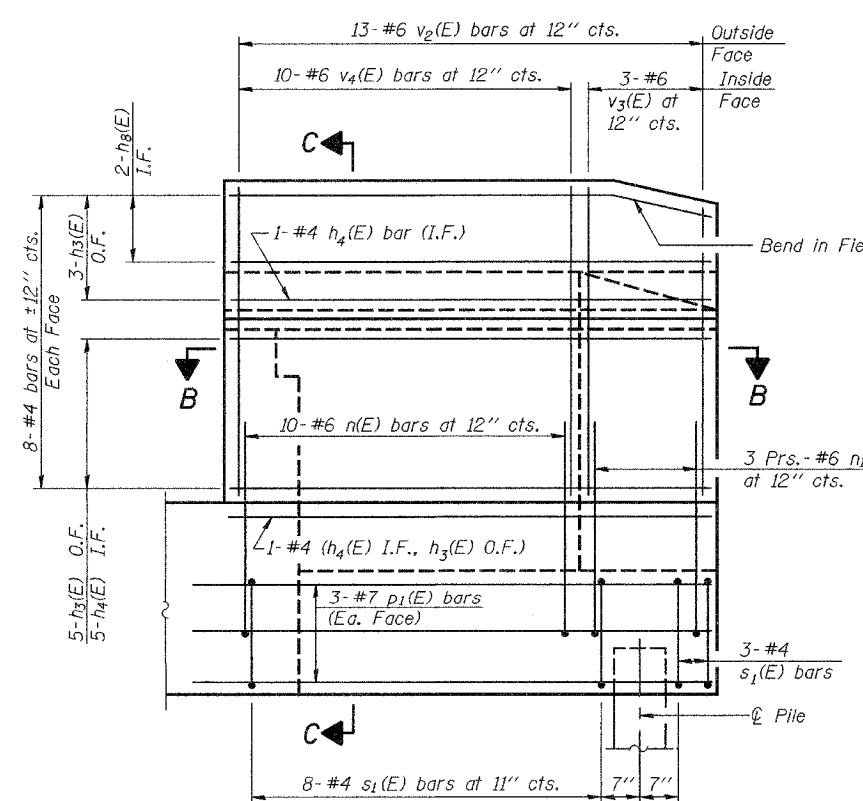
**SEC. A-A**



**SEC. B-B**



**SOUTH WING WALL ELEVATION**  
Showing Reinforcement (Looking North)



**NORTH WING WALL ELEVATION**  
Showing Reinforcement (Looking South)

**WEST ABUTMENT WINGWALL DETAILS**  
F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518

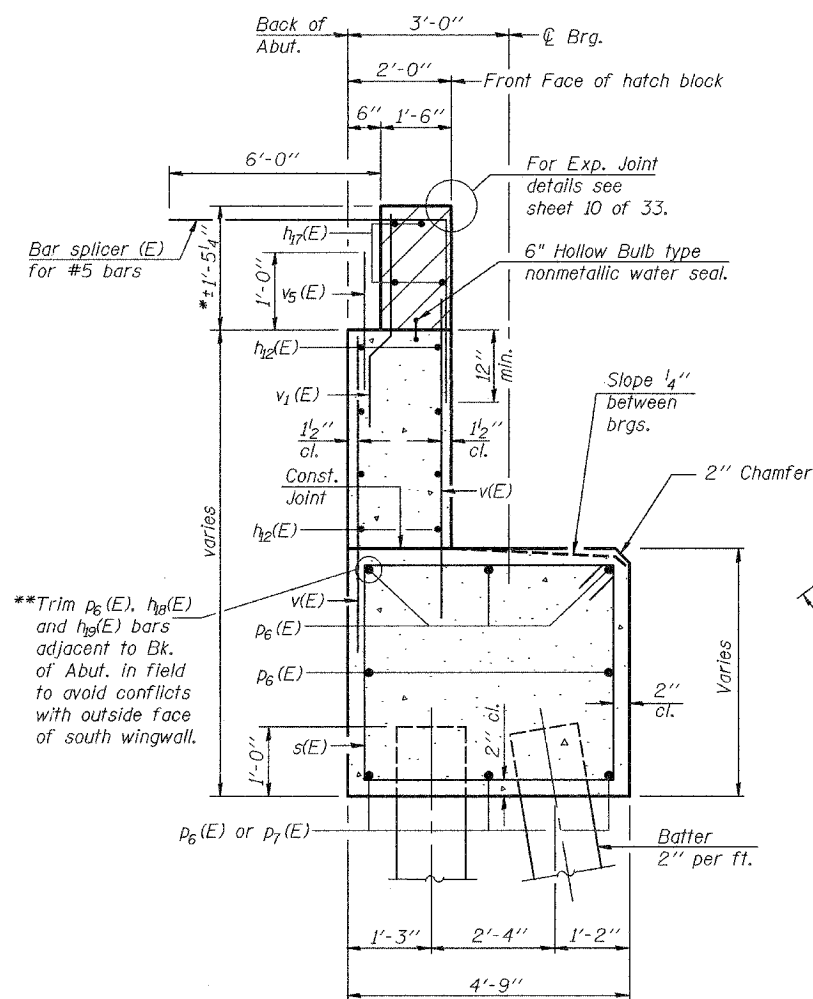
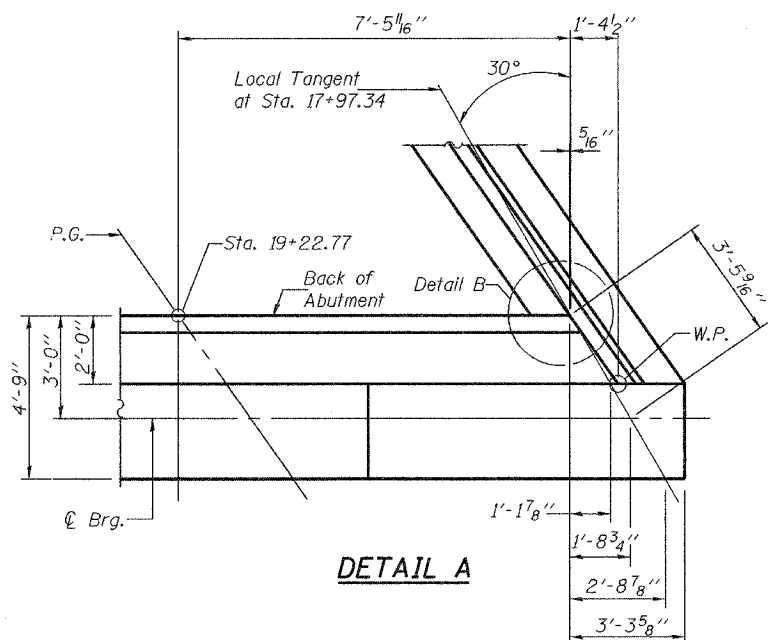
DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH
CHECKED	JWM/GRA

December 1, 2005  
EXAMINED *Thomas J. Domagala*  
ENGINEER OF BRIDGE DESIGN  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

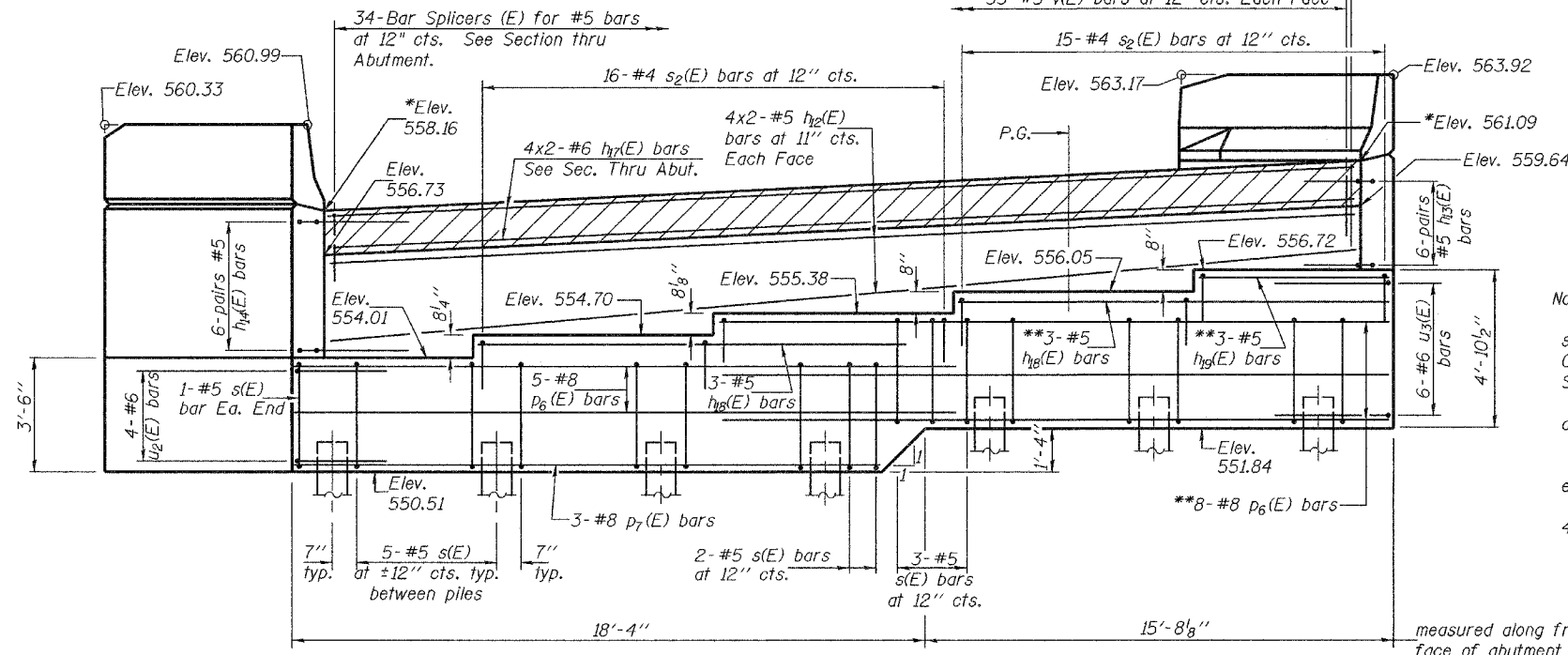
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET	SHEET NO. 22
FAU 7968	*	SANGAMON	261	192	33 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

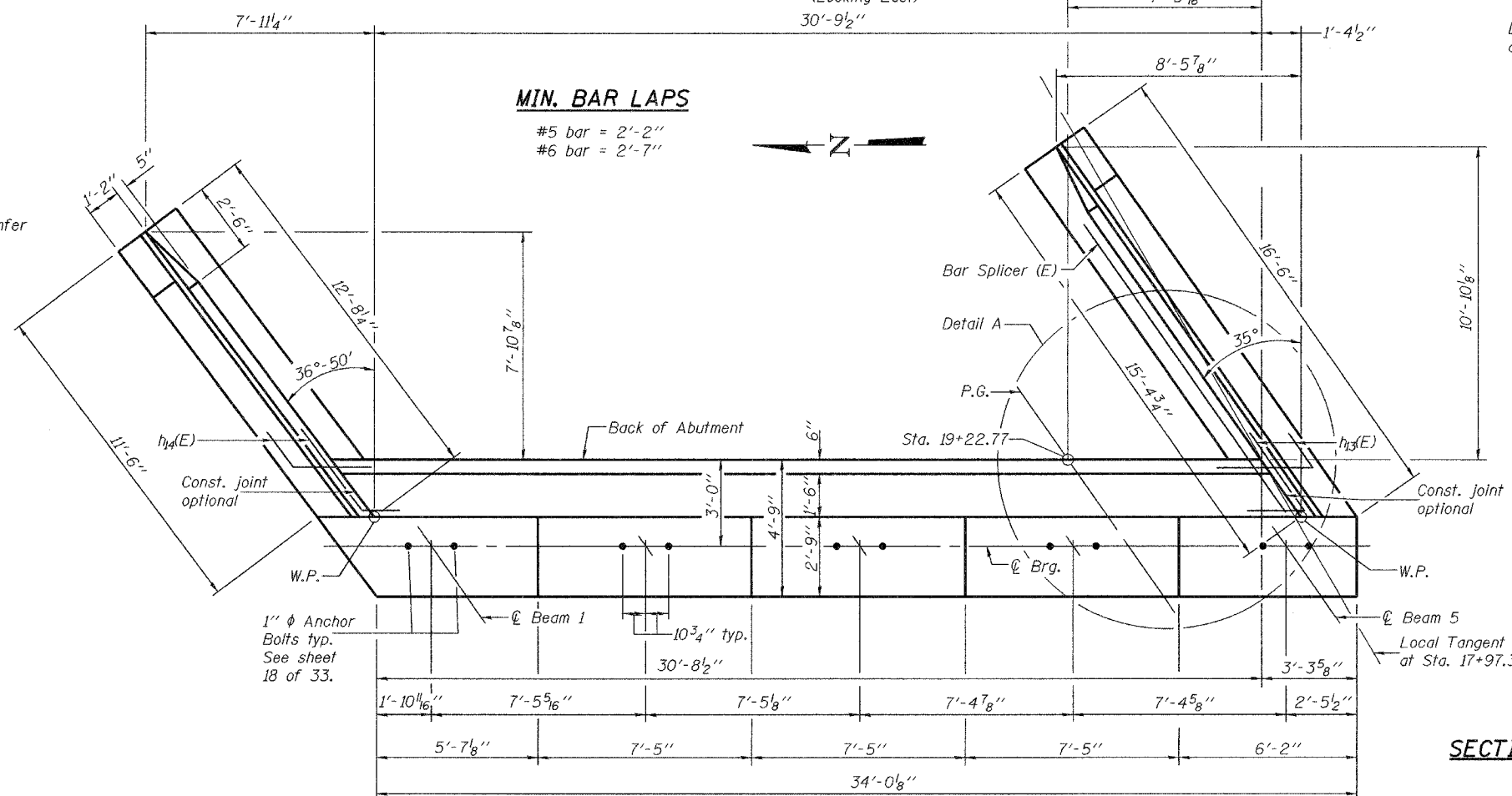
Contract #72449 \*SECTION 3R(BR, BR-1, BR-2)19RS-8



SEC. THRU ABUT.



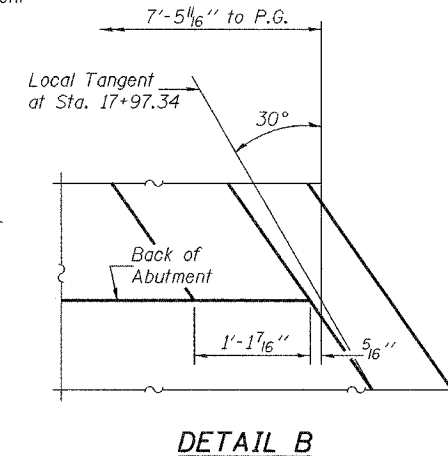
ELEVATION  
(Looking East)



TOP VIEW

\*At Front Face of hatch block

Notes:  
Hatched area to be poured after superstructure forms have been removed. Quantity of concrete included with Concrete Superstructure.  
Space reinforcement in cap to miss anchor bolts.  
Pour steps monolithically with cap. Reinforcement bars designated (E) shall be epoxy coated.  
Bars indicated thus 4x2-#6 etc. indicates 4 lines of bars with 2 lengths per line.



DETAIL B

DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH
CHECKED	JWM/GRA

EXAMINED	Thomas J. Domagalicki ENGINEER OF BRIDGE DESIGN
PASSED	Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES

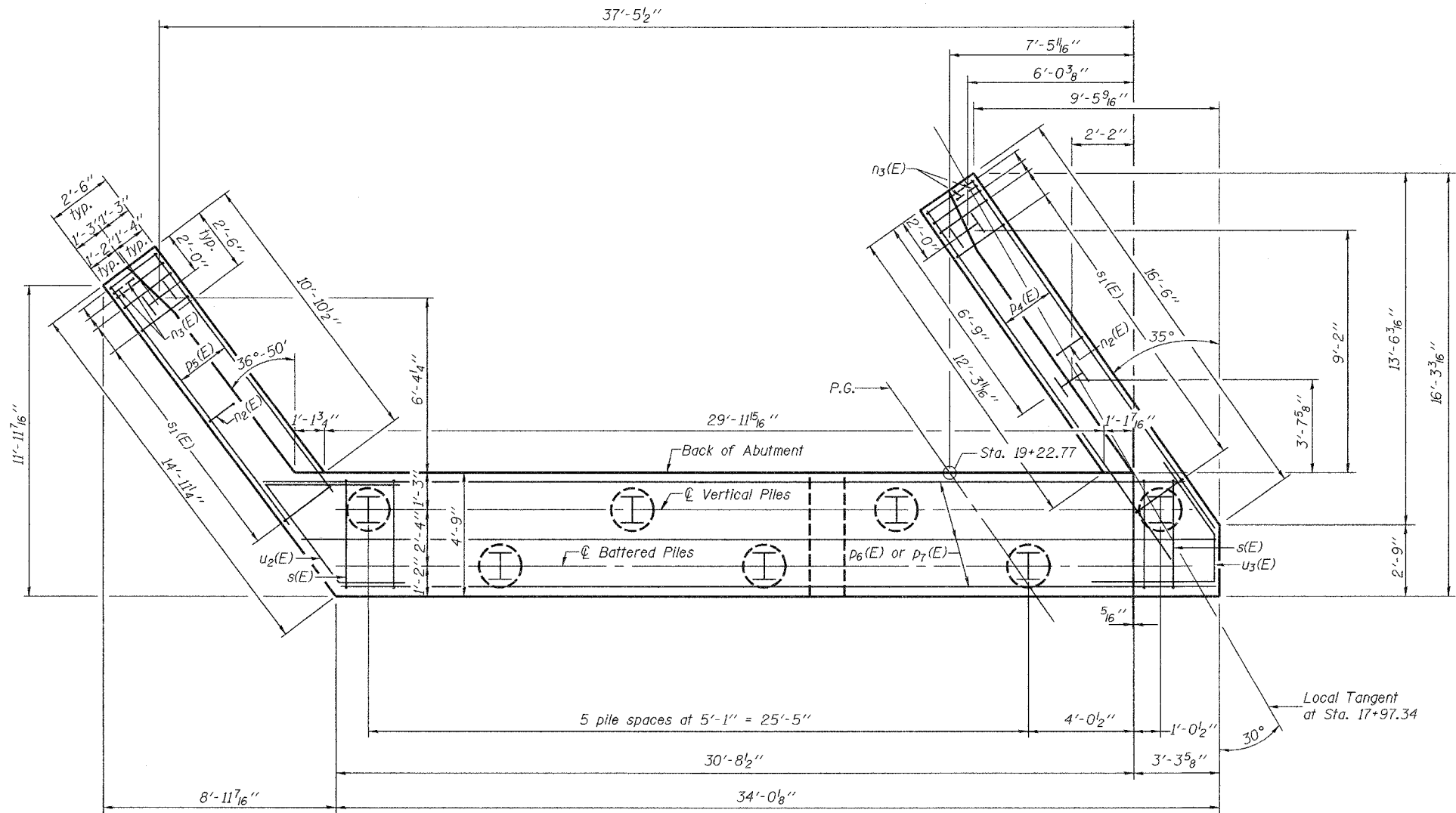
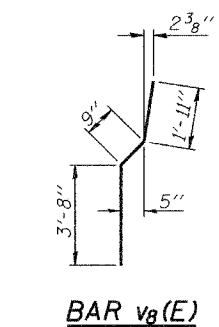
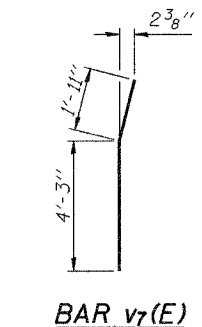
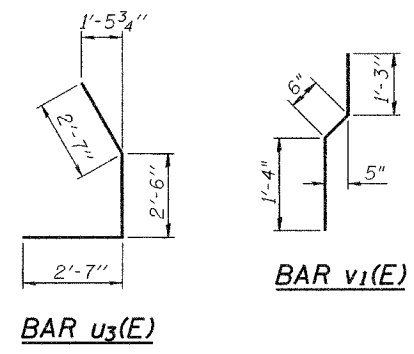
December 1, 2005

EAST ABUTMENT  
F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518

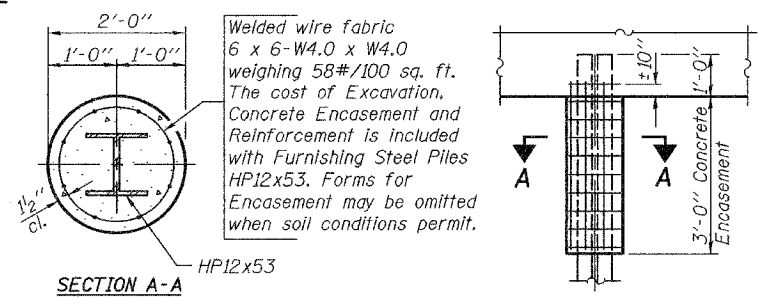
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 23
FAU 7968	*	SANGAMON	261	193	33 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			

Contract #72449 \*SECTION 3R(BR, BR-1, BR-2)19RS-8



PLAN-PILE CAP



PILE ENCASEMENT DETAIL

EAST ABUTMENT  
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h3(E)	9	#4	11'-3"	—
h9(E)	9	#4	16'-3"	—
h20(E)	16	#5	17'-1"	—
h3(E)	12	#5	6'-6"	L
h4(E)	12	#5	6'-6"	J
h5(E)	7	#4	12'-5"	—
h6(E)	2	#4	11'-7"	—
h7(E)	8	#6	17'-3"	—
h8(E)	6	#5	13'-3"	—
h9(E)	3	#5	5'-10"	—
h20(E)	7	#4	15'-1"	—
h21(E)	2	#4	15'-11"	—
n2(E)	25	#6	14'-10"	U
n3(E)	12	#6	7'-5"	U
p4(E)	6	#7	16'-2"	—
p5(E)	6	#7	13'-0"	—
p6(E)	13	#8	20'-8"	—
p7(E)	3	#8	18'-1"	—
s(E)	32	#5	16'-1"	□
s1(E)	31	#4	9'-5"	□
s2(E)	31	#4	9'-11"	□
u2(E)	4	#6	13'-5"	U
u3(E)	6	#6	7'-8"	J
v(E)	66	#5	6'-0"	—
v1(E)	33	#4	3'-1"	—
v5(E)	33	#5	3'-2"	—
v6(E)	31	#6	5'-9"	—
v7(E)	6	#6	6'-2"	—
v8(E)	25	#6	6'-4"	—
Structure Excavation	Cu. Yd.	221		
Concrete Structures	Cu. Yd.	46.9		
Reinforcement Bars, Epoxy Coated	Pound	5240		
Furnishing Steel Piles HP12x53	Foot	738		
Test Pile Steel HP12x53	Each	1		
Driving Steel Piles	Foot	738		

Reinforcement bars designated (E) shall be epoxy coated.  
For details of Bar Splicers, see sheet 30 of 33.

EAST ABUTMENT DETAILS  
F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518

**PILE DATA**  
Type: HP12x53  
Capacity: Driven to Refusal  
Est. Length: 82'  
No. Required: 9 + 1 test pile

DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH
CHECKED	JMM/GRA

December 1, 2005  
EXAMINED *Thomas J. Damagalki*  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

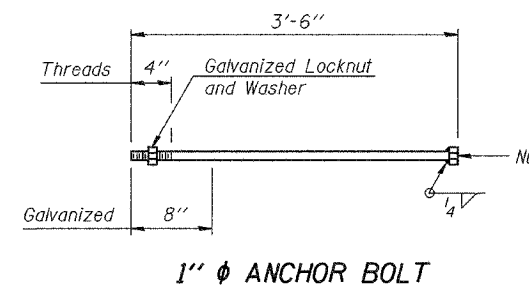
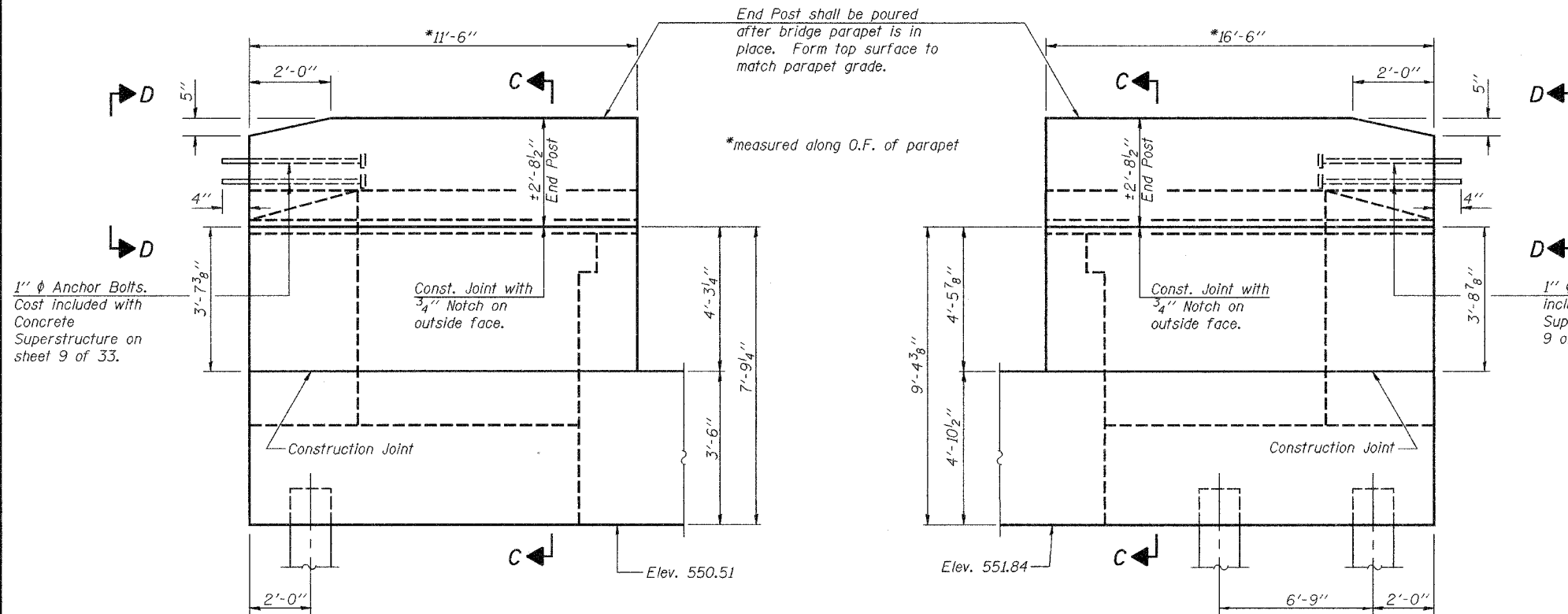
ROUTE NO.	SECTION	COUNTY	DATE	SHEET NO.	SHEET NO. 24 33 SHEETS
FAU 7968	*	SANGAMON	2-6-194	194	
FED. ROAD DIST. NO. 7	BLINDS	FED. AID PROJECT			

Contract #72449 \*SECTION 3R(BR, BR-1, BR-2)19RS-8

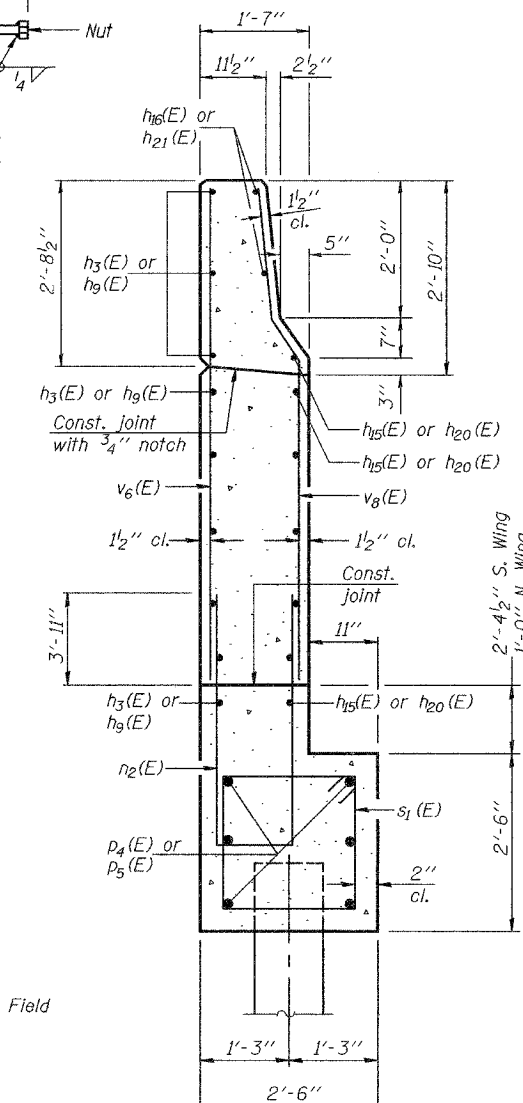
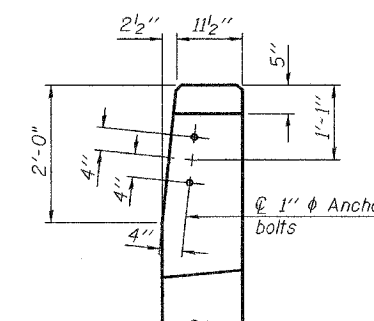
Notes:  
Quantity of concrete in end post included with Concrete Superstructure on sheet 9 of 33.

End Post shall be poured after bridge parapet is in place. Form top surface to match parapet grade.

\*measured along O.F. of parapet



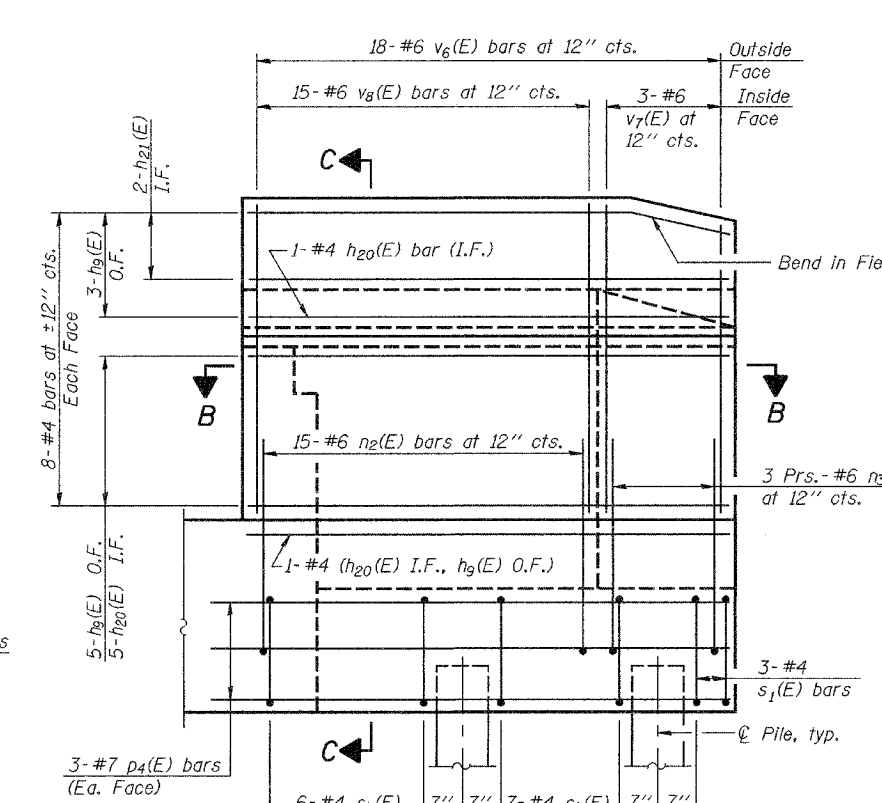
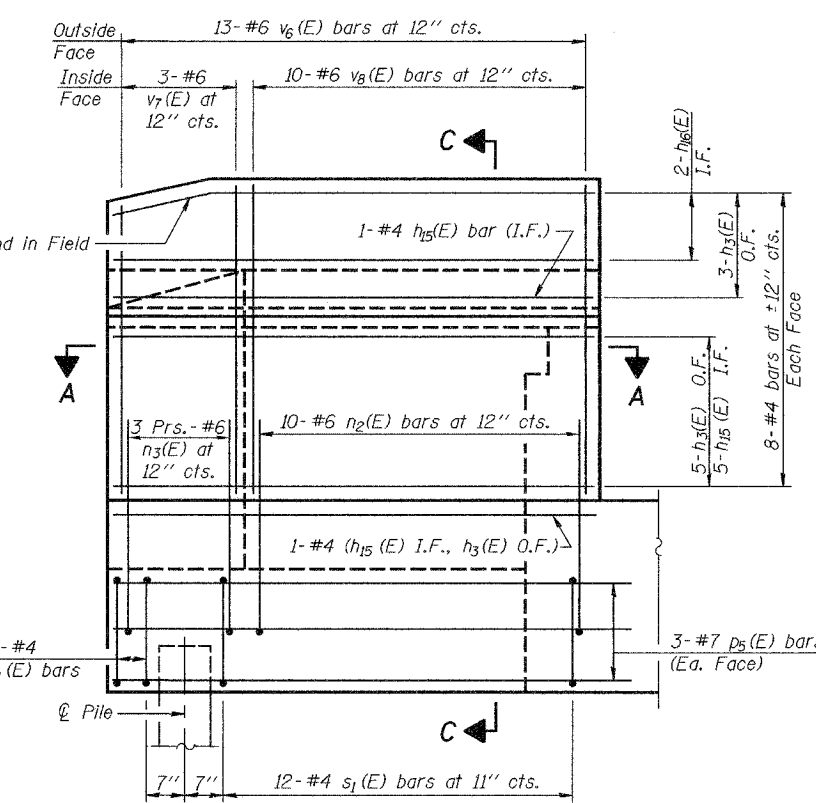
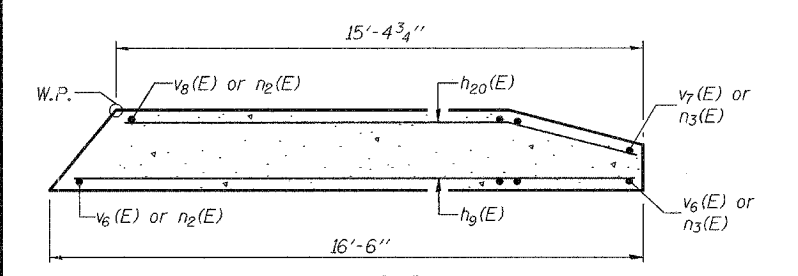
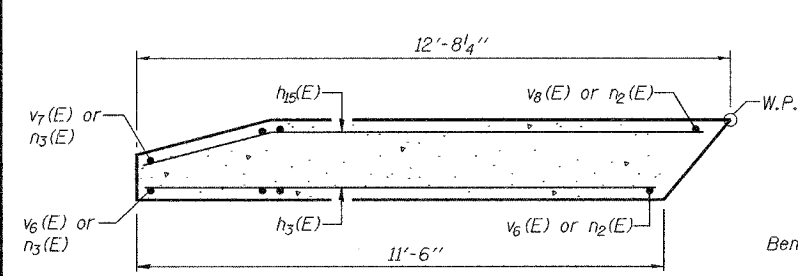
1"  $\phi$  Anchor Bolts. Cost included with Concrete Superstructure on sheet 9 of 33.



**SECTION C-C**

**MIN. BAR LAP**  
#6 bar = 2'-7"

**EAST ABUTMENT WINGWALL DETAILS**  
F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518



**SOUTH WING WALL ELEVATION**  
Showing Reinforcement (Looking North)

DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH
CHECKED	JMM/GRA

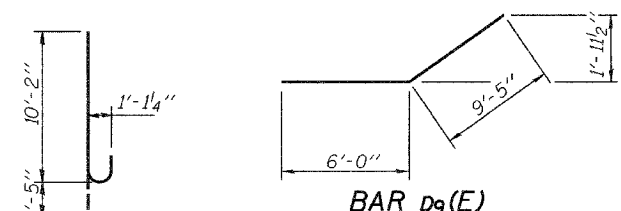
December 1, 2005  
EXAMINED *Thomas J. Domagala*  
PASSED *Ralph E. Anderson*

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAU 7968	*	SANGAMON	261	195
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 25  
33 SHEETS

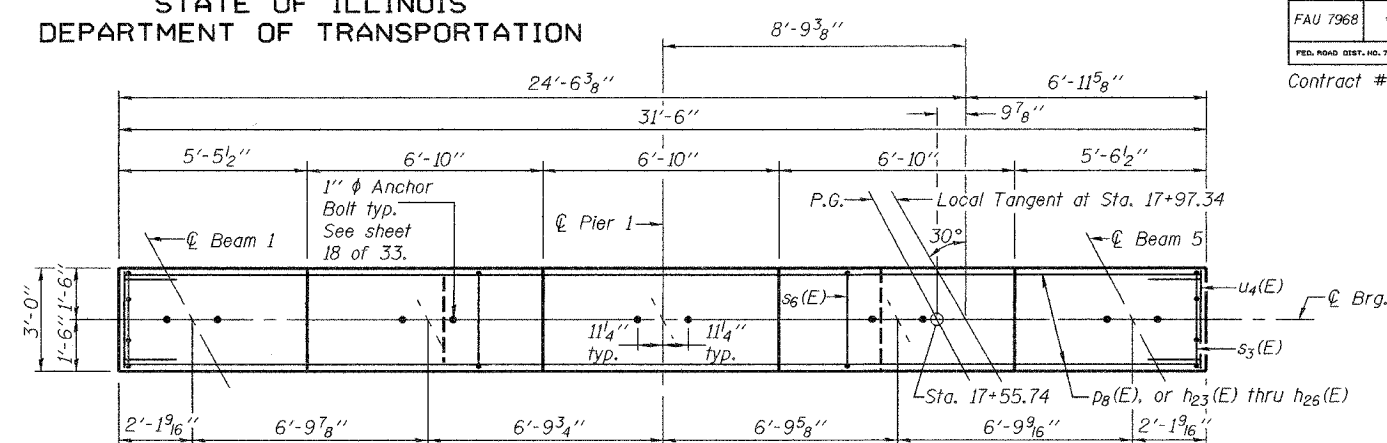
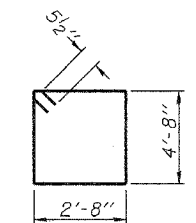
Contract #72449 \*SECTION 3R(BR, BR-1, BR-2)19RS-8



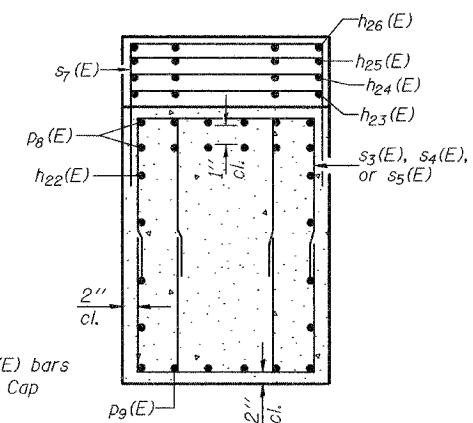
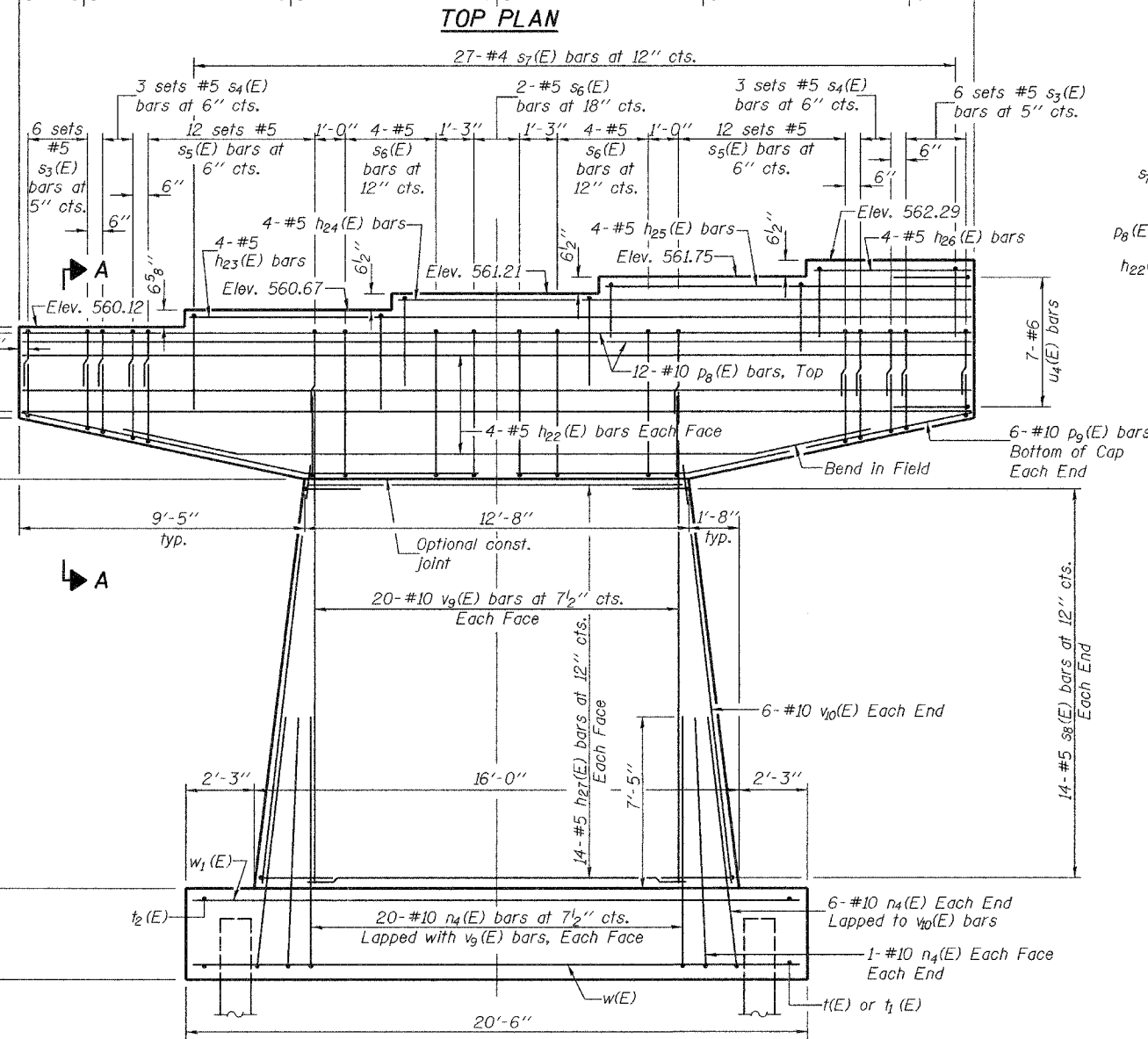
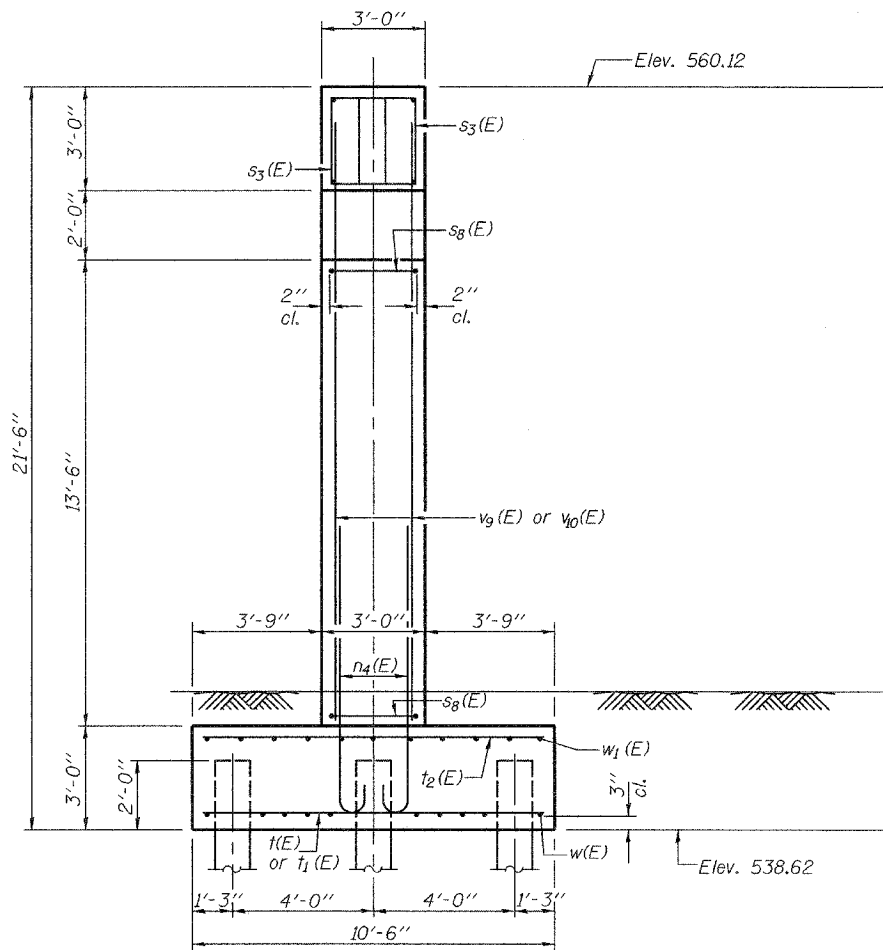
**A & B Dimensions**

Bar	A	B
$u_4(E)$	2'-6"	2'-7"
$s_3(E)$	2'-0"	2'-8"
$s_4(E)$	2'-0"	3'-0"
$s_5(E)$	2'-0"	3'-5"
$s_7(E)$	2'-8"	2'-8"
$s_8(E)$	2'-8"	4'-0"

**BARS  $u_4(E)$ ,  $s_3(E)$ ,  $s_4(E)$ ,  $s_5(E)$ ,  $s_7(E)$ ,  $s_8(E)$**



**MIN BAR LAP**  
#5 bars = 2'-2"  
#10 bars = 7'-3"



DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH
CHECKED	JWM/GRA

December 1, 2005

EXAMINED *Thomas J. Domagala*  
CHIEF OF BRIDGE DESIGN

PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

Notes:  
Space reinforcement in cap to miss anchor bolts.  
Pour steps monolithically with cap.  
Each set of  $s_3(E)$ ,  $s_4(E)$ , and  $s_5(E)$  bars has 4 bars (2 top and 2 bottom) See Section A-A.

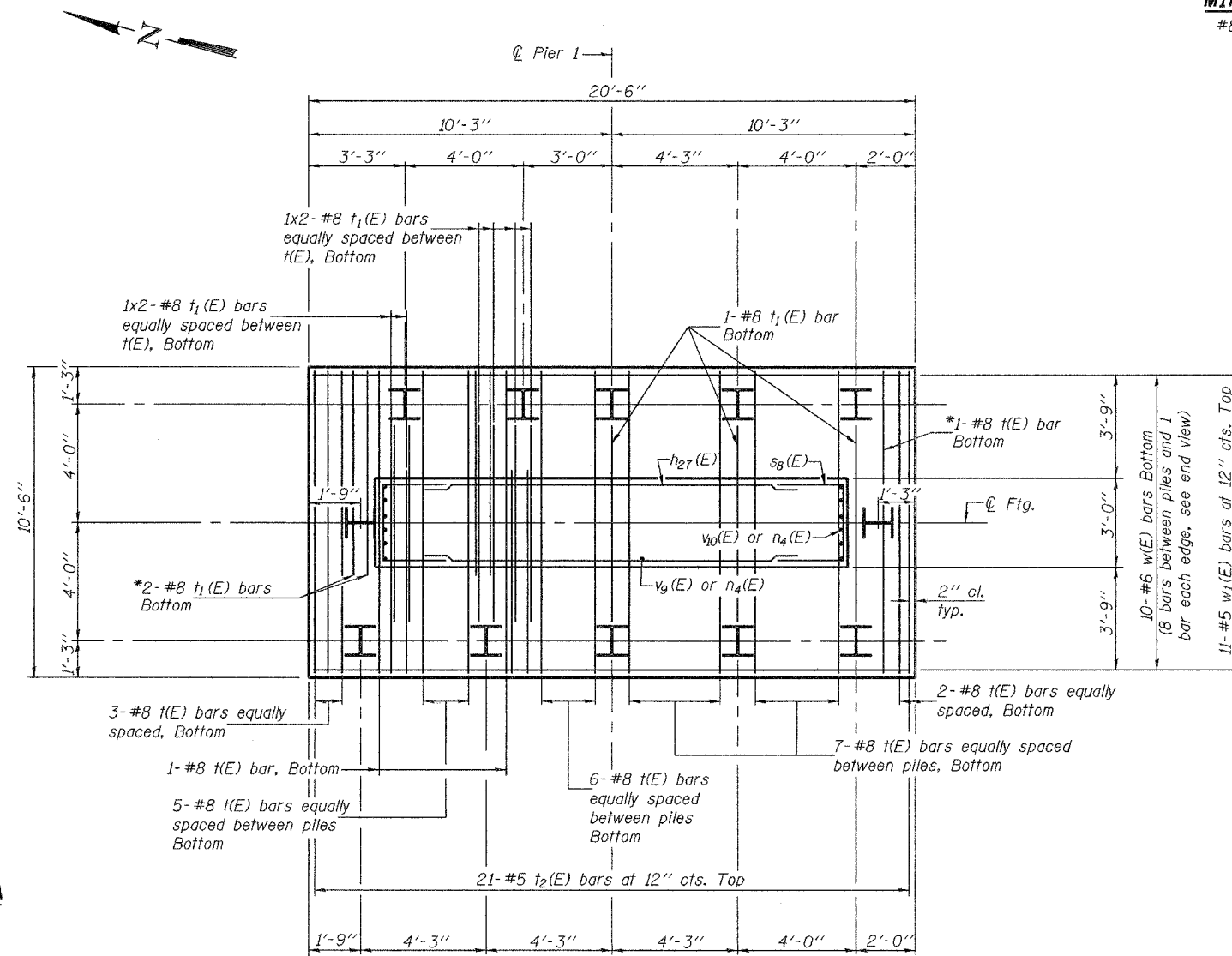
**PIER 1**  
F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET	SHEET NO.
FAU 7968	*	SANGAMON	261	196	33 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT-	

Contract #72449 \*SECTION 3R(BR, BR-1, BR-2)19RS-8

MIN. BAR LAP  
#8 bars = 4'-6"



FOOTING PLAN

\*Field drill 1 1/4"  $\phi$  hole in pile for #8 bar

PILE DATA

Type: HP12x74  
Capacity: Refusal  
Est. Length: 59'  
No. Req'd.: 11 + 1 test pile

PIER 1  
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h22(E)	8	#5	31'-2"	—
h23(E)	4	#5	25'-8"	—
h24(E)	4	#5	18'-10"	—
h25(E)	4	#5	12'-0"	—
h26(E)	4	#5	5'-2"	—
h27(E)	28	#5	12'-0"	—
n4(E)	56	#10	11'-7"	C
p8(E)	12	#10	31'-2"	—
p9(E)	12	#10	15'-5"	—
s3(E)	48	#5	7'-4"	□
s4(E)	24	#5	8'-0"	□
s5(E)	96	#5	8'-10"	□
s6(E)	10	#5	15'-7"	□
s7(E)	27	#4	8'-0"	□
s8(E)	28	#5	10'-8"	□
t(E)	33	#8	10'-2"	—
t1(E)	17	#8	6'-9"	—
t2(E)	21	#5	10'-2"	—
u4(E)	11	#6	7'-8"	—
v9(E)	40	#10	17'-9"	—
v10(E)	12	#10	13'-8"	—
w(E)	10	#6	20'-2"	—
w1(E)	11	#5	20'-2"	—
Structure Excavation		Cu. Yd.	79	
Concrete Structures		Cu. Yd.	64.7	
Reinforcement Bars, Epoxy Coated		Pound	13,980	
Furnishing Steel Piles HP12x74		Foot	649	
Test Pile Steel HP12x74		Each	1	
Driving Steel Piles		Foot	649	

Reinforcement Bars designated (E) shall be epoxy coated.  
Bars indicated thus 2x2-#8 etc. indicates 2 lines of bars with 2 lengths per line.

DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH
CHECKED	JWM/GRA

EXAMINED	December 1, 2005
PASSED	Thomas J. Domagalicki ENGINEER OF BRIDGE DESIGN
	Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES

PIER 1 FOOTING PLAN  
F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518

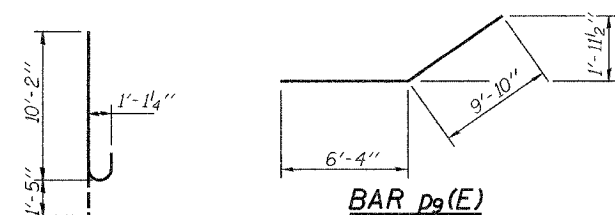


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

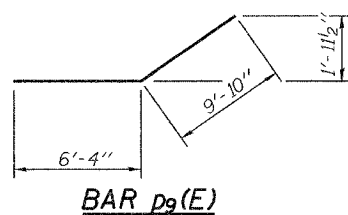
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAU 7968	*	SANGAMON	261	197
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract #72449 \*SECTION 3R(BR, BR-1, BR-2)19RS-8

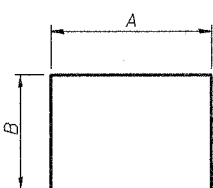
SHEET NO. 27  
33 SHEETS



BAR  $n_4(E)$



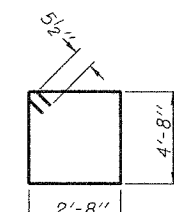
BAR  $p_9(E)$



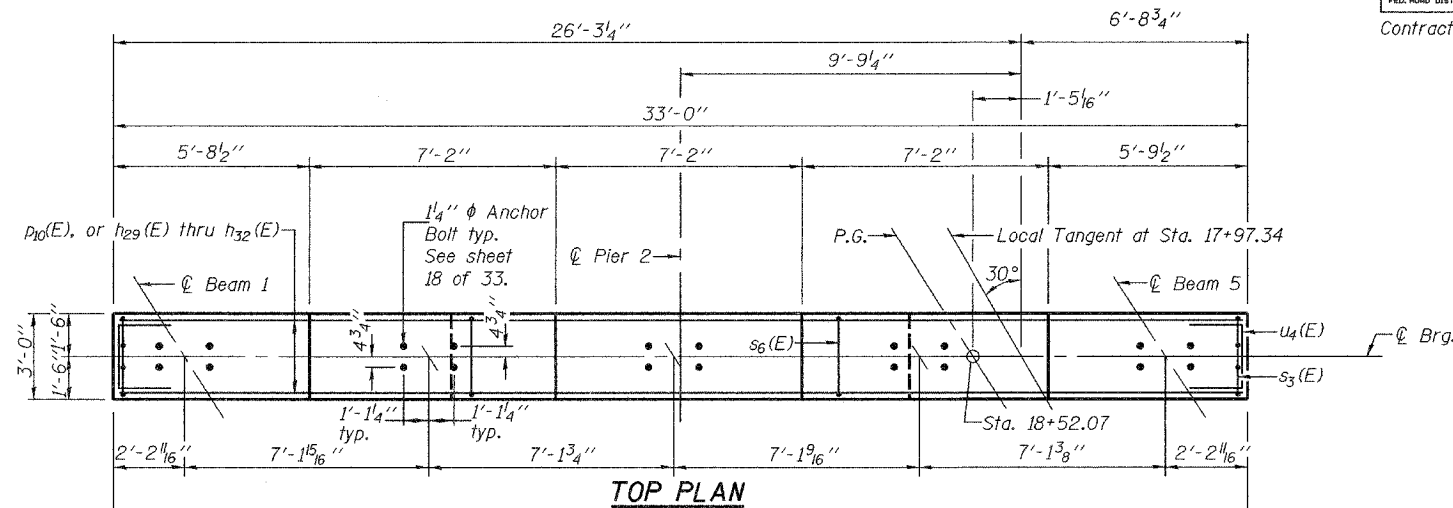
BARS  $u_4(E)$ ,  $s_3(E)$ ,  $s_4(E)$ ,  
 $s_5(E)$ ,  $s_7(E)$ ,  $s_8(E)$

A & B Dimensions

Bar	A	B
$u_4(E)$	2'-6"	2'-7"
$s_3(E)$	2'-0"	2'-8"
$s_4(E)$	2'-0"	3'-0"
$s_5(E)$	2'-0"	3'-5"
$s_8(E)$	2'-8"	4'-0"
$s_9(E)$	2'-8"	3'-0"



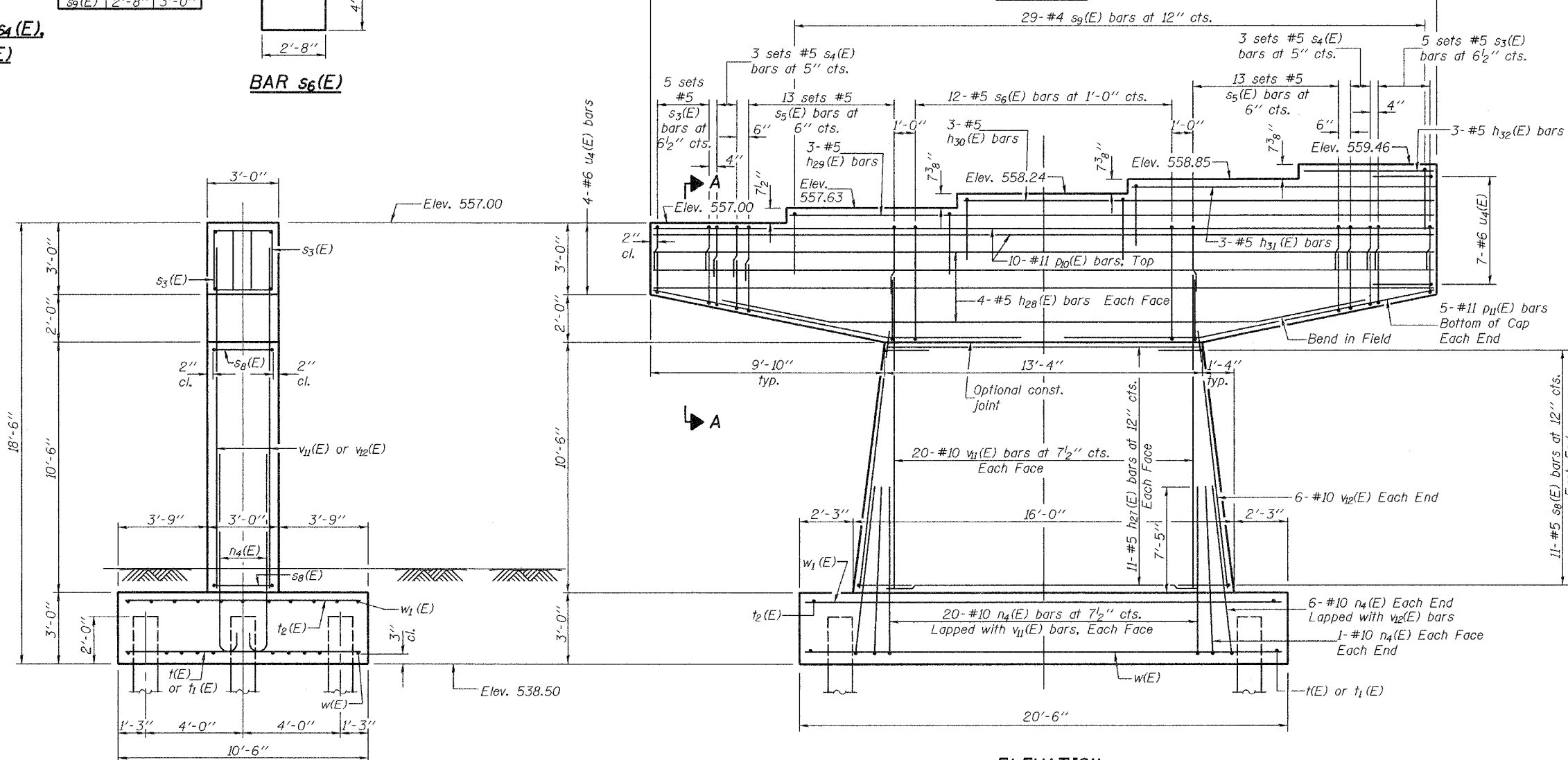
BAR  $s_6(E)$



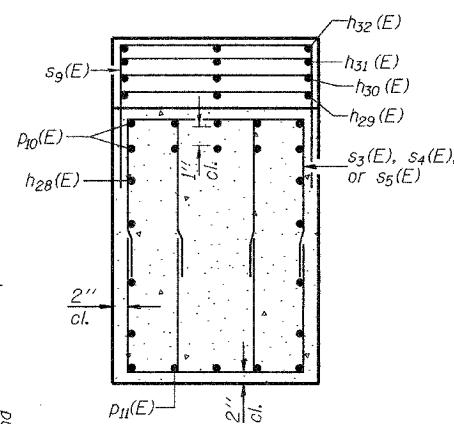
TOP PLAN

MIN BAR LAP

#5 bars = 2'-2"  
#10 bars = 7'-3"



ELEVATION  
(Looking East)



SECTION A-A

END VIEW

DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH
CHECKED	JWM/GRA

December 1, 2005  
EXAMINED *Thomas J. Domagala*  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

Notes:  
Space reinforcement in cap to miss anchor bolts.  
Pour steps monolithically with cap.  
Each set of  $s_3(E)$ ,  $s_4(E)$ , and  $s_5(E)$  bars has 4 bars  
(2 top and 2 bottom) See Section A-A.

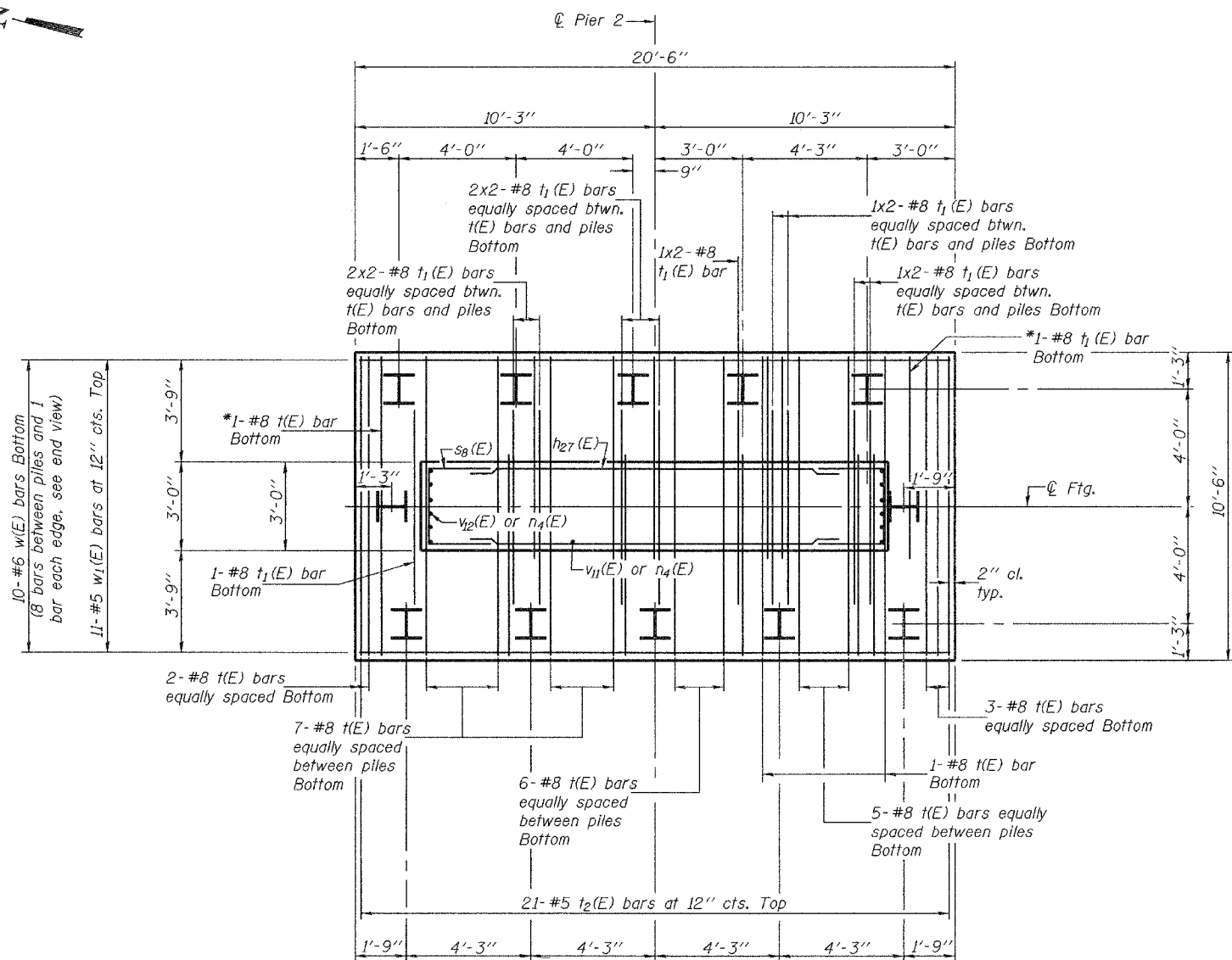
PIER 2  
F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAU 7968	*	SANGAMON	261	198
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

Contract #72449 \*SECTION 3R(BR, BR-1, BR-2)19RS-8

**MIN. BAR LAP**  
#8 bars = 4'-6"



**FOOTING PLAN**

\*Field drill 1 1/4"  $\phi$  hole in pile for #8 bar

**PIER 2  
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h27(E)	22	#5	12'-0"	—
h28(E)	8	#5	32'-8"	—
h29(E)	3	#5	26'-11"	—
h30(E)	3	#5	19'-9"	—
h31(E)	3	#5	12'-7"	—
h32(E)	3	#5	5'-5"	—
n4(E)	56	#10	11'-7"	C
p10(E)	10	#11	32'-8"	—
p11(E)	10	#11	16'-2"	—
s3(E)	40	#5	7'-4"	□
s4(E)	24	#5	8'-0"	□
s5(E)	104	#5	8'-10"	□
s6(E)	12	#5	15'-7"	□
s8(E)	22	#5	10'-8"	□
s9(E)	29	#4	8'-8"	□
t(E)	33	#8	10'-2"	—
t1(E)	20	#8	6'-9"	—
t2(E)	21	#5	10'-2"	—
u4(E)	11	#6	7'-8"	C
v11(E)	40	#10	14'-9"	—
v2(E)	12	#10	10'-8"	—
w(E)	10	#6	20'-2"	—
w1(E)	11	#5	20'-2"	—
Structure Excavation	Cu. Yd.		53	
Concrete Structures	Cu. Yd.		61.7	
Reinforcement Bars, Epoxy Coated	Pound		13,440	
Furnishing Steel Piles HP12x74	Foot		748	
Test Pile Steel HP12x74	Each		1	
Driving Steel Piles	Foot		748	

Reinforcement Bars designated (E) shall be epoxy coated.

Bars indicated thus 2x2-#8 etc. indicates 2 lines of bars with 2 lengths per line.

**PILE DATA**

Type: HP12x74  
Capacity: Refusal  
Est. Length: 68'  
No. Req'd.: 11 + 1 test pile

DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH
CHECKED	JWM/GRA

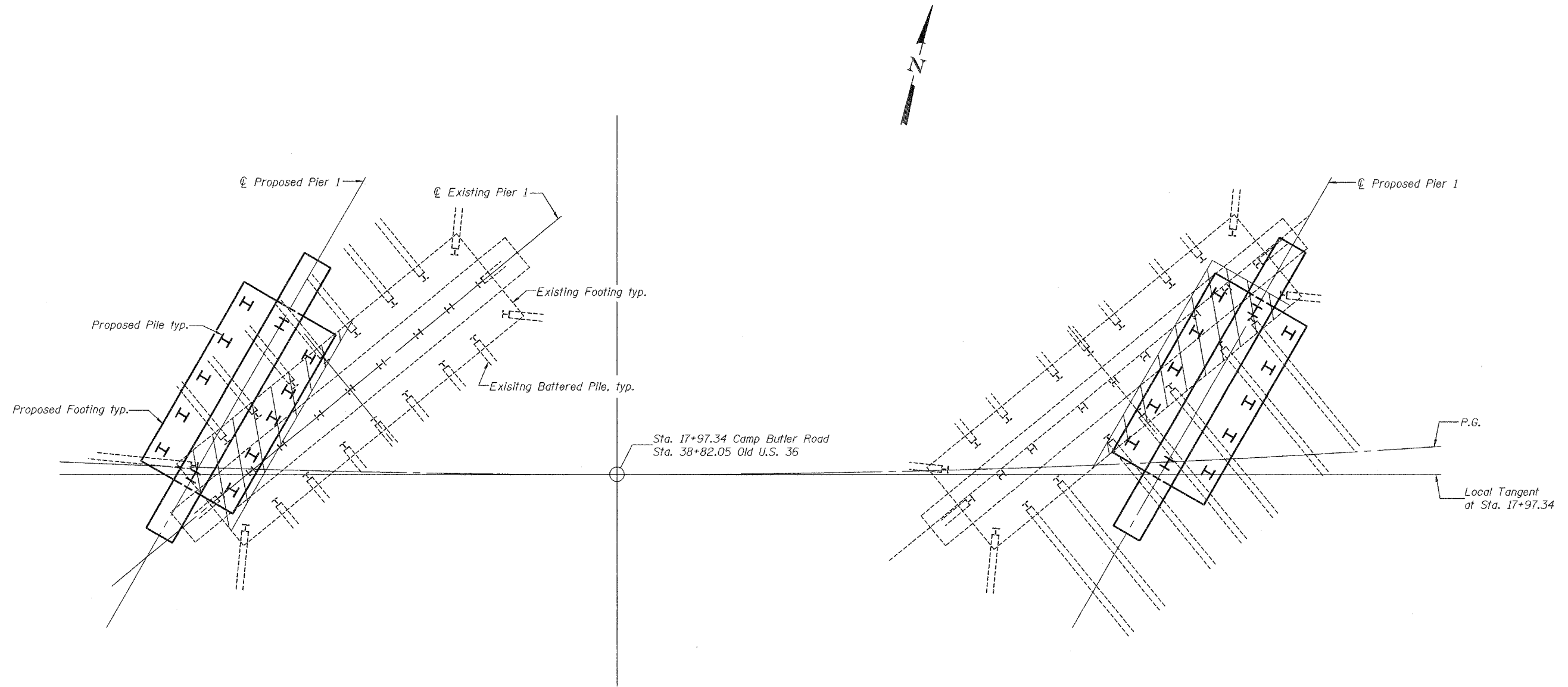
December 1, 2005  
EXAMINED *Thomas J. Demagallibi*  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGE DESIGN  
ENGINEER OF BRIDGES AND STRUCTURES

**PIER 2 FOOTING PLAN**  
F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518

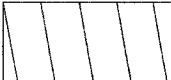
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 29
FAU 7968	*	SANGAMON	261	199	33 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

Contract #72449 \*SECTION 3R(BR, BR-1, BR-2)19RS-8





**PARTIAL PLAN**  
(For Information Only)

 Full depth existing footing removal.  
(Cost included with Removal of Existing Structures).

Notes:

The proposed pile locations were selected to miss the "anticipated" existing pile locations.  
The "anticipated" existing pile locations were taken from the existing plans.  
The proposed pile locations may have to be adjusted to miss the existing piles during pile driving.  
Existing piling within the limits of the proposed footing should be cut off to provide a 6" min. clearance between the bottom of the proposed footing and the existing piling.

DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH
CHECKED	JWM/GRA

EXAMINED	December 1, 2005
PASSED	 PROFESSOR OF BRIDGE DESIGN
	 ENGINEER OF BRIDGES AND STRUCTURES

**EXISTING SUBSTRUCTURE CONFLICT**  
**F.A.U. ROUTE 7968**  
**SECTION 3R(BR, BR-1, BR-2)19RS-8**  
**SANGAMON COUNTY**  
**STATION 17+97.34**  
**STRUCTURE NO. 084-0518**

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAU 7968	*	SANGAMON	261	200
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 30  
33 SHEETS

Contract #72449 \*SECTION 3R(BR, BR-1, BR-2)19RS-8

**NOTES**

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

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

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

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

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

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

Where  $f_y$  = Yield strength of lapped reinforcement bars in ksi.

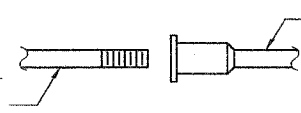
$f_{s,allow}$  = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)

$A_t$  = Tensile stress area of lapped reinforcement bars.

\* = 28 day concrete

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

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



ROLLED THREAD DOWEL BAR



\*\* ONE PIECE

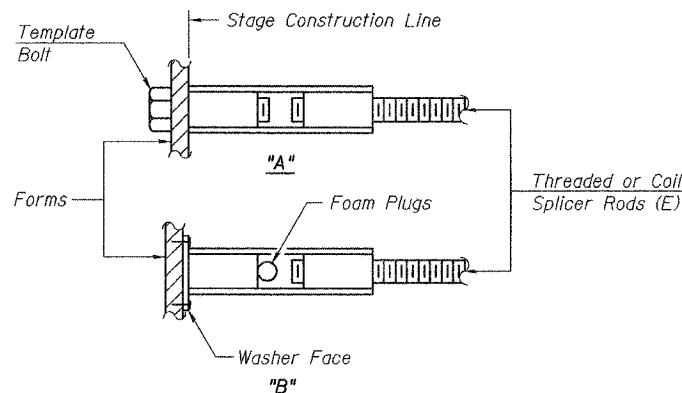
Wire Connector



WELDED SECTIONS

**BAR SPLICER ASSEMBLY ALTERNATIVES**

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

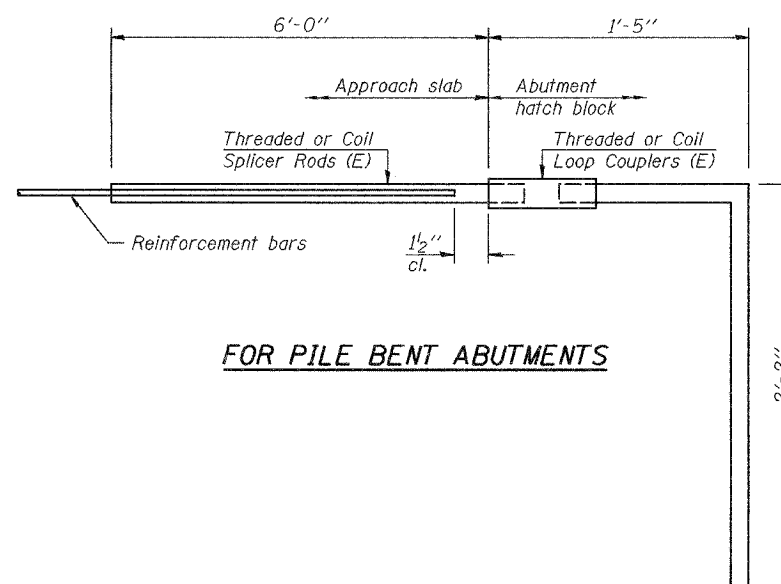


**INSTALLATION AND SETTING METHODS**

"A" : Set bar splicer assembly by means of a template bolt.

"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.

(E) : Indicates epoxy coating.



**FOR PILE BENT ABUTMENTS**

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required = 64

DESIGNED	J. Mann
CHECKED	G. Ahanchi
DRAWN	BECKY M. LEACH
CHECKED	JWM/GRA

EXAMINED	December 1, 2005
PASSED	Thomas J. Demagala ENGINEER OF BRIDGE DESIGN
	Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES

BSD-1 10-22-04

**BAR SPLICER ASSEMBLY DETAILS**  
F.A.U. ROUTE 7968  
SECTION 3R(BR, BR-1, BR-2)19RS-8  
SANGAMON COUNTY  
STATION 17+97.34  
STRUCTURE NO. 084-0518