

ROUTE NO.	SECTION	COUNTY	STATION	SHEET	SHEET NO.
FAP 0525		WINNEBAGO	157	101	44
FED. ROAD DIST. NO. 7					ILLINOIS
• 02-00518-00-BR					

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

ROLLED THREAD DOWEL BAR



**** ONE PIECE**

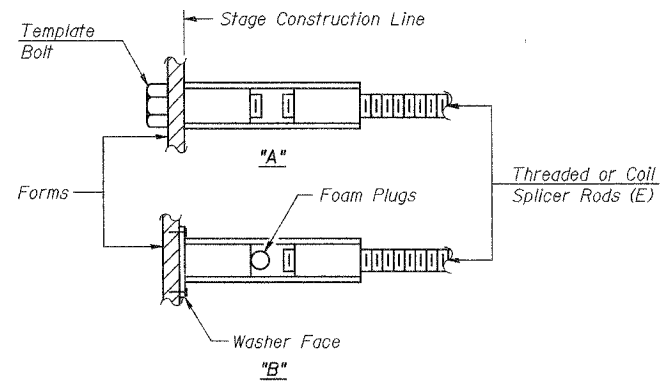
Wire Connector



WELDED SECTIONS

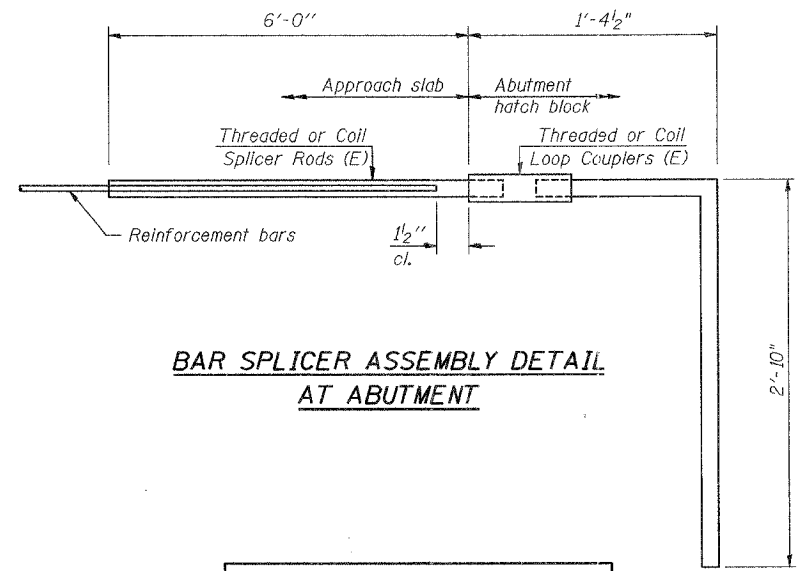
BAR SPLICER ASSEMBLY ALTERNATIVES

** 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.



BAR SPLICER ASSEMBLY DETAIL AT ABUTMENT

Bar Splicer for #5 bar	
Min. Capacity = 23.0 kips - tension	
Min. Pull-out Strength = 9.2 kips - tension	
No. Required = 82	

NOTES

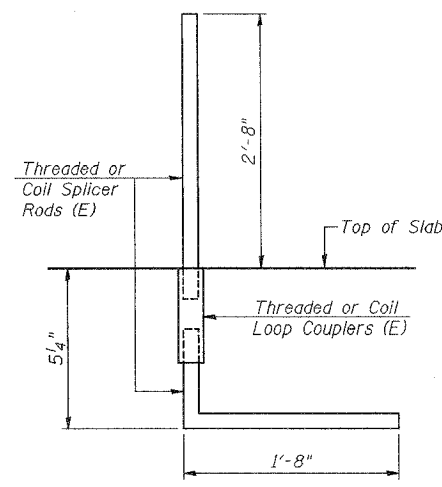
Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
 Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
 All reinforcement bars shall be lapped and tied to the 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 (Tension in kips) = $1.25 \times f_y \times A_t$
- Minimum *Pull-out Strength (Tension in kips) = $1.25 \times f_{s_{allow}} \times A_t$

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

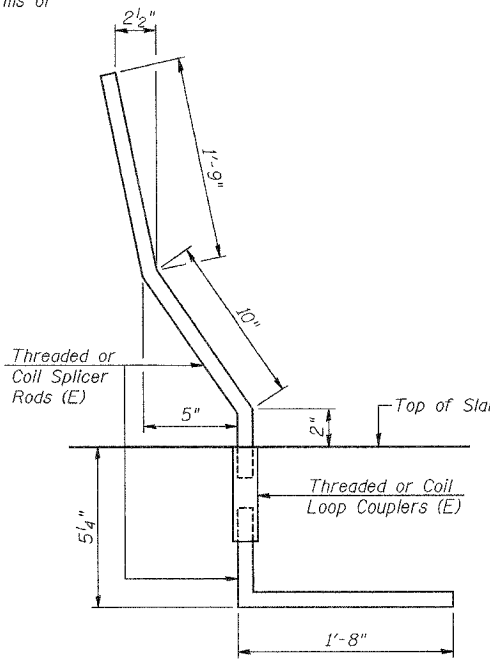
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	5.9
#5	2'-0"	23.0	9.2
#6	2'-7"	33.1	13.3
#7	3'-5"	45.1	18.0
#8	4'-6"	58.9	23.6

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."



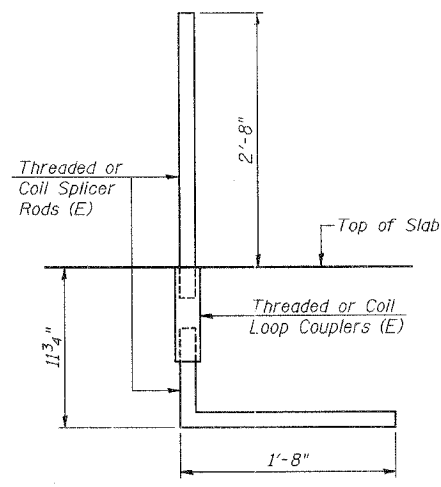
TYPE I BAR SPLICER ASSEMBLY

Bar Size	No. Assemblies Required	Location
#4	455	S. Parapet on Bridge, Outside Face



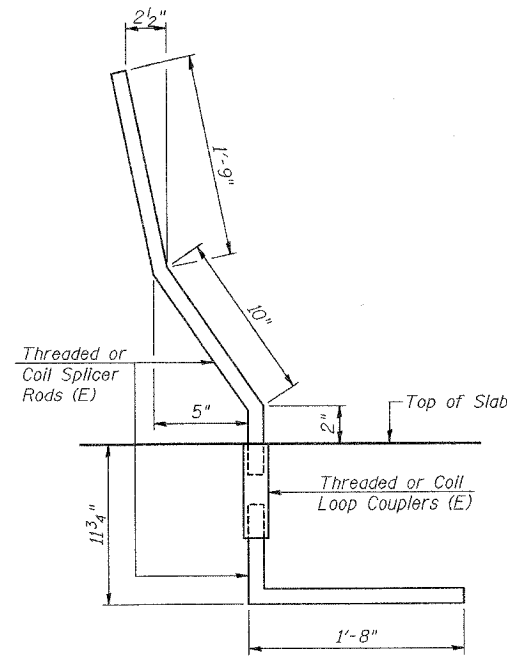
TYPE II BAR SPLICER ASSEMBLY

Bar Size	No. Assemblies Required	Location
#5	455	S. Parapet on Bridge, Inside Face



TYPE III BAR SPLICER ASSEMBLY

Bar Size	No. Assemblies Required	Location
#4	73	S. Parapet on Approach, Outside Face



TYPE IV BAR SPLICER ASSEMBLY

Bar Size	No. Assemblies Required	Location
#5	73	S. Parapet on Approach, Inside Face

Corporate License Number 184-001-084

BAR SPLICER ASSEMBLY DETAILS

EASTBOUND HARRISON AVENUE
 OVER UP & CC&P RAILROAD
 F.A.P. ROUTE 0525
 SECTION 02-00518-00-BR
 ROCKFORD, ILLINOIS
 STATION 95+72.00
 STRUCTURE NO. 101-6111

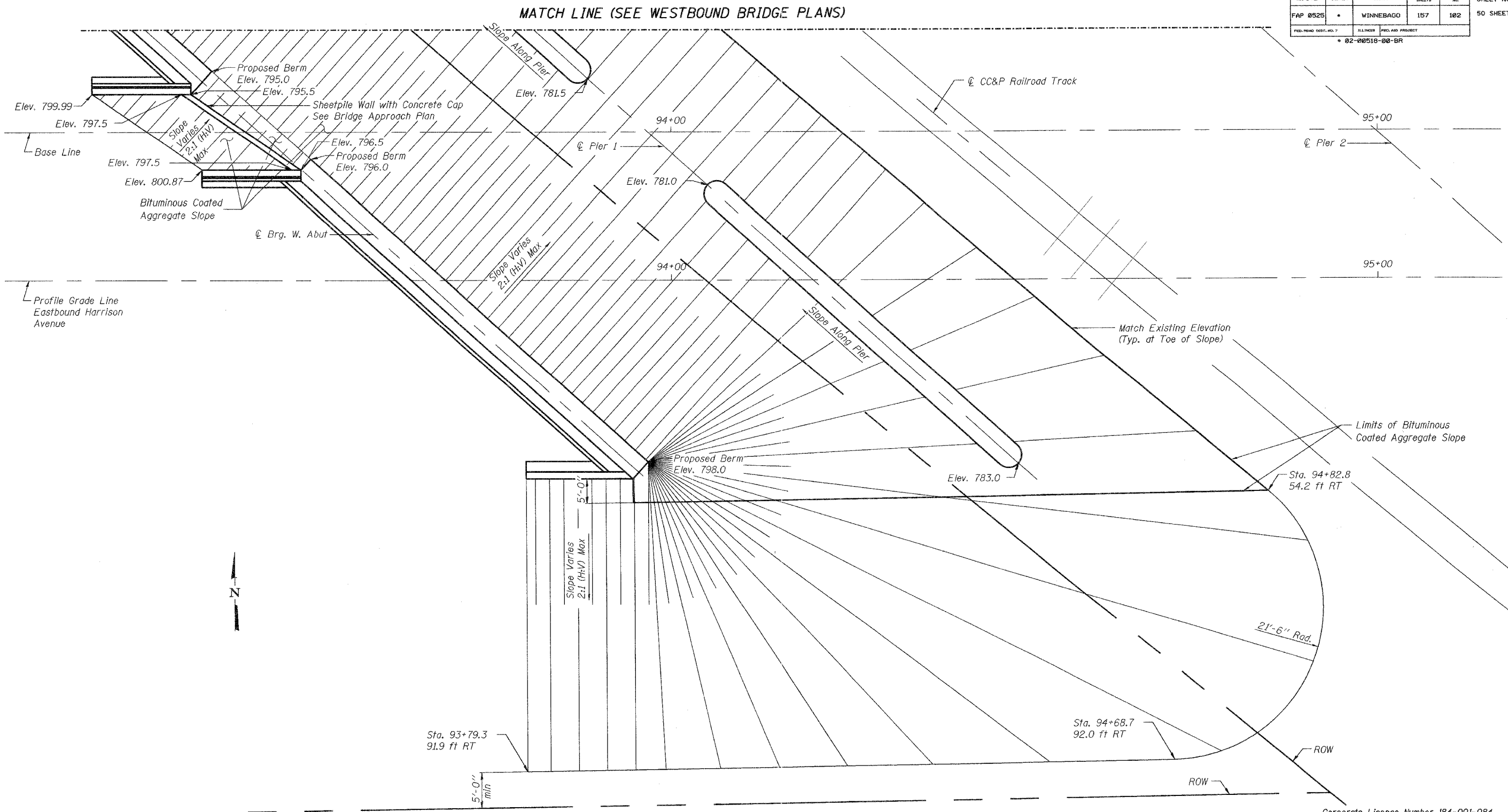
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HANSON

JOB NO. 03R1751
 DATE 12/14/06

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 LAYOUT: JKR 02/01/06
 DRAWN: MWM/JKR 07/24/06
 REVIEWED: FLN 08/05/06
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ROUTE NO.	SECTION	CONVEY	STATION	SHEET	SHEET NO. 45 50 SHEETS
FAP 0525	*	WINNEBAGO	157	102	
<small>FED. ROAD DIST. NO. 7</small> <small>ILLINOIS</small> <small>PRELIM PROJECT</small> <small>* 02-00518-00-BR</small>					



PLAN

NOTES
 Stationing and offset are defined with respect to the Base Line.

Corporate License Number 184-001-084

WEST SLOPEWALL

EASTBOUND HARRISON AVENUE
 OVER UP & CC&P RAILROAD
 F.A.P. ROUTE 0525
 SECTION 02-00518-00-BR
 ROCKFORD, ILLINOIS
 STATION 95+72.00
 STRUCTURE NO. 101-6111

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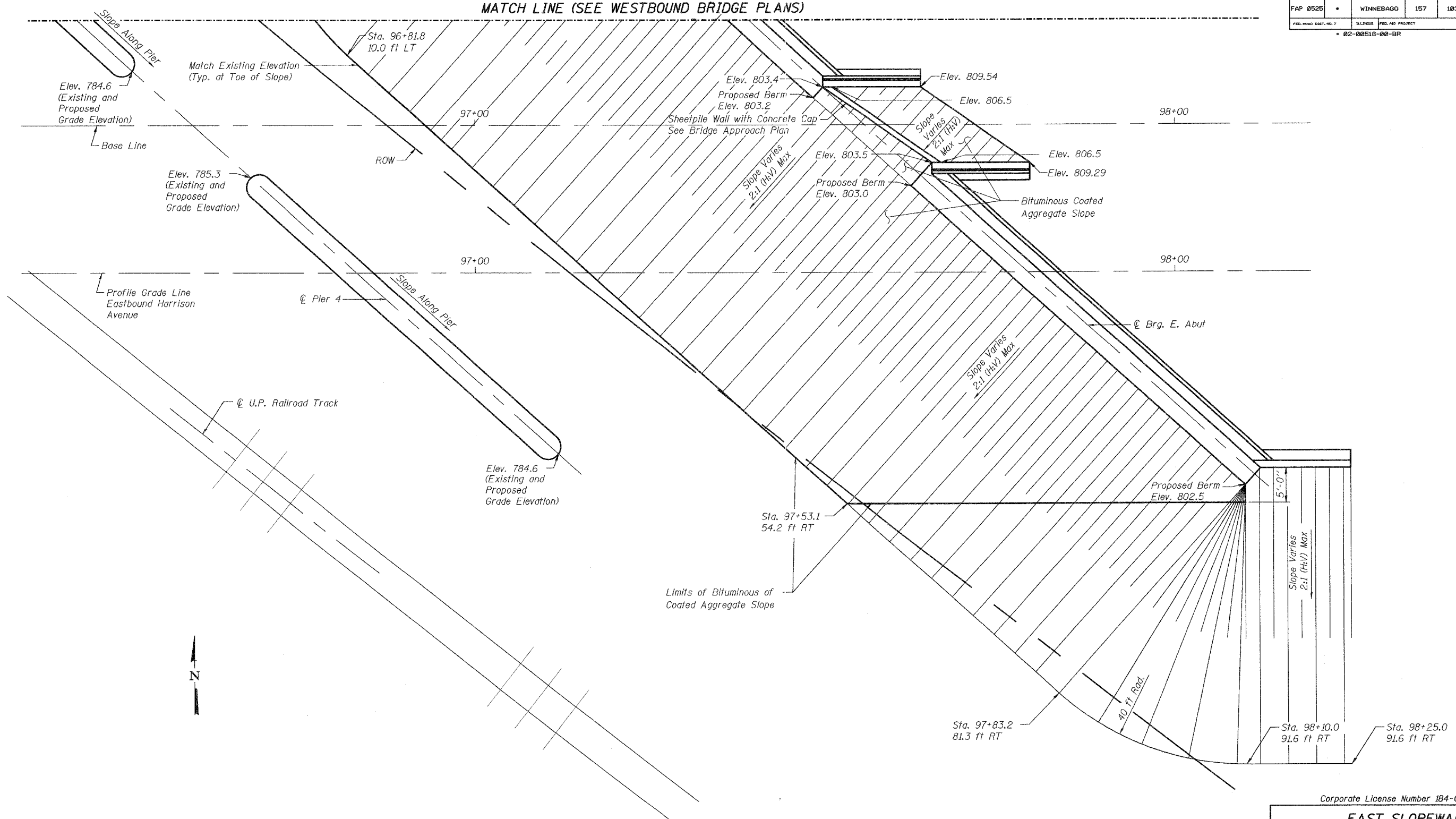
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DATE 12/14/06

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 LAYOUT JWR 05/20/06
 DRAWN JWR 07/25/06
 REVIEWED J.F.N. 08/29/06

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 46
FAP 0525	*	WINNEBAGO	157	103	50 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT	
* 02-00518-00-BR					

MATCH LINE (SEE WESTBOUND BRIDGE PLANS)



NOTES

Stationing and offset are defined with respect to the Base Line.

PLAN

Corporate License Number 184-001-084

EAST SLOPEWALL

EASTBOUND HARRISON AVENUE
 OVER UP & CC&P RAILROAD
 F.A.P. ROUTE 0525
 SECTION 02-00518-00-BR
 ROCKFORD, ILLINOIS
 STATION 95+72.00
 STRUCTURE NO. 101-6111

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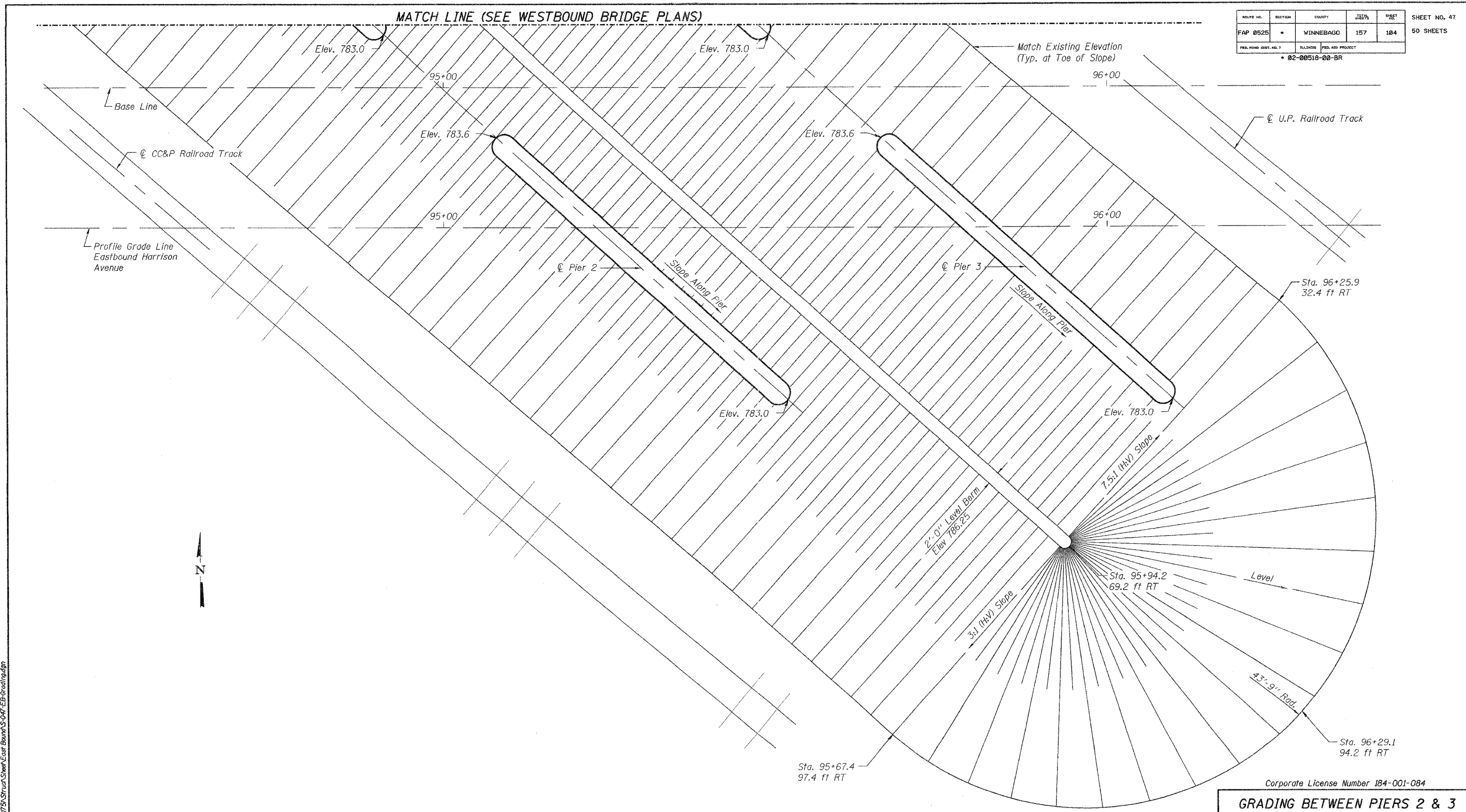
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12/14/06

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LAYOUT	JMR	07/07/06
DRAWN	JMR	07/25/06
REVIEWED	FLM	08/05/06

ROUTE NO.	SECTION	COUNTY	POST MILE	SHEET	SHEET NO. 47
FAP 0525		WINNEBAGO	157	104	50 SHEETS
FED. ROAD DIST. NO. 7		FED. AID PROJECT			
02-00518-00-BR					



PLAN

NOTES

Stationing and offset are defined with respect to the Base Line.

Corporate License Number 184-001-084

GRADING BETWEEN PIERS 2 & 3

EASTBOUND HARRISON AVENUE
OVER UP & CC&P RAILROAD
F.A.P. ROUTE 0525
SECTION 02-00518-00-BR
ROCKFORD, ILLINOIS
STATION 95+72.00
STRUCTURE NO. 101-6111

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HANSON

DATE: 12/14/06

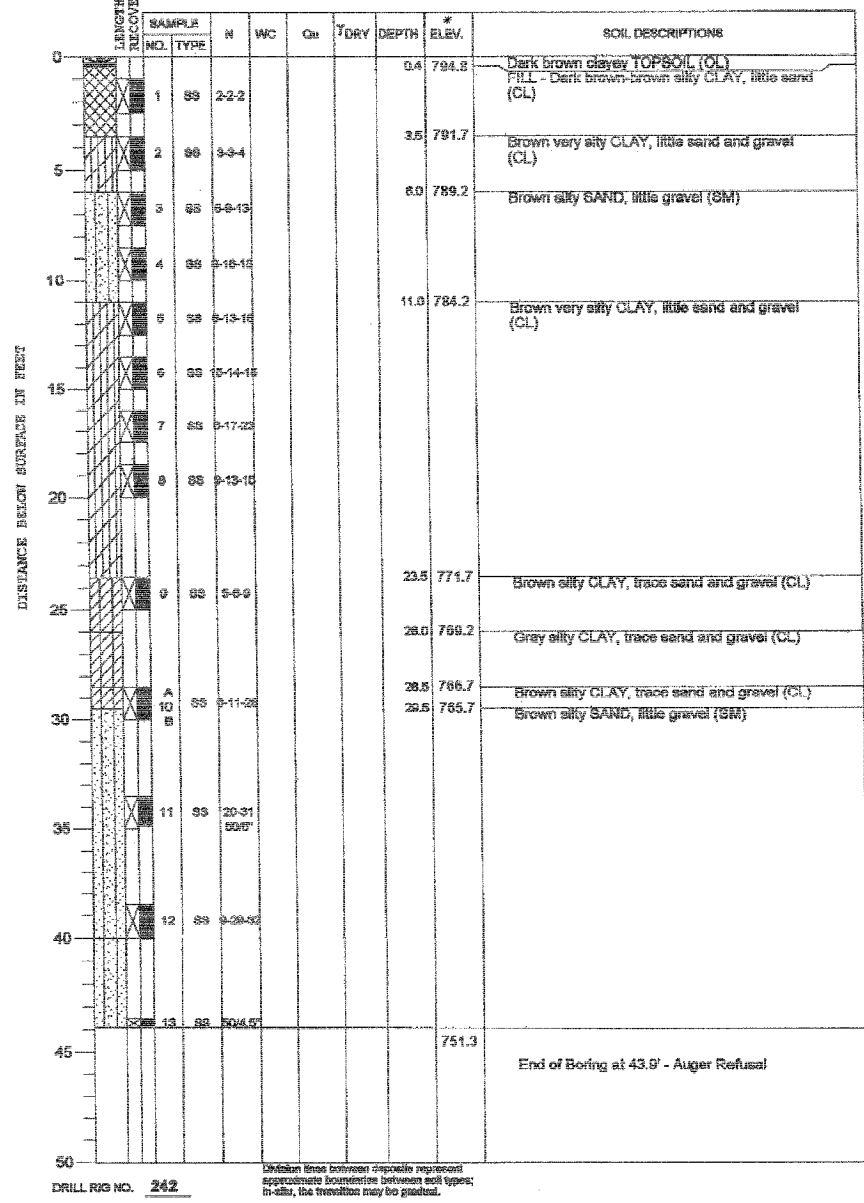
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 DRAWN: JKR 10/7/06/06
 REVIEWED: FLN 10/9/06/06

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO.
FAP 0525	*	WINNEBAGO	157	105
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
* 02-00518-00-BR				

PROJECT **Harrison Avenue Bridge over UP and CN Railroads, Rockford, Illinois**
 CLIENT **Hanson Professional Services, Inc., 1525 S. Sixth St., Springfield, IL 62703**
 BORING **B-1** DATE STARTED **3-4-04** DATE COMPLETED **3-4-04** JOB **L-59,708**



ELEVATIONS WATER TABLE
 GROUND SURFACE **795.2 *** WHILE DRILLING **DRY**
 END OF BORING **751.3 *** AT END OF BORING **DRY**
 24 HOURS

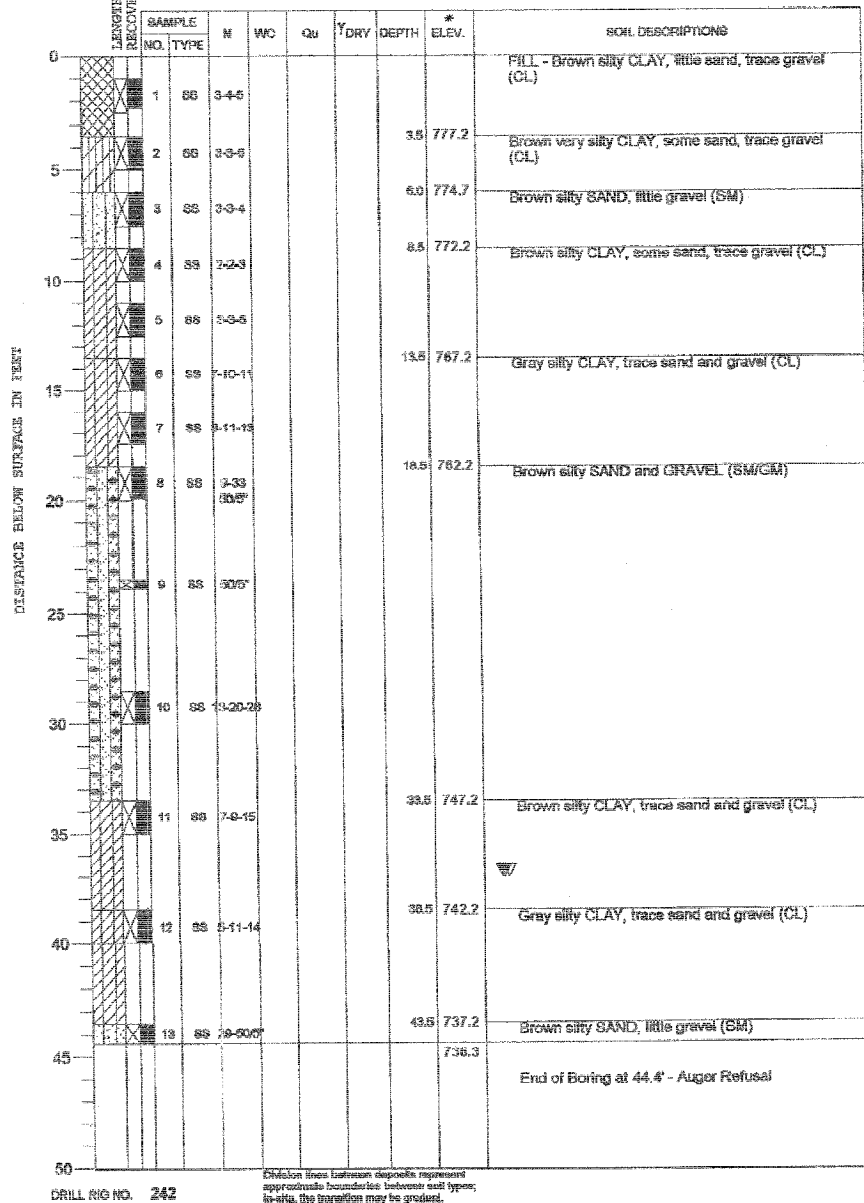


BORING LOG #1

PROJECT **Harrison Avenue Bridge over UP and CN Railroads, Rockford, Illinois**
 CLIENT **Hanson Professional Services, Inc., 1525 S. Sixth St., Springfield, IL 62703**
 BORING **B-2** DATE STARTED **3-2-04** DATE COMPLETED **3-2-04** JOB **L-59,708**



ELEVATIONS WATER TABLE
 GROUND SURFACE **780.7 *** WHILE DRILLING **37'**
 END OF BORING **736.3 *** AT END OF BORING **37'**
 24 HOURS



BORING LOG #2

* - All elevations provided by Hanson Professional Services Inc.

Corporate License Number 184-001-084

BORING LOGS #1 & #2

EASTBOUND HARRISON AVENUE
 OVER UP & CC&P RAILROAD
 F.A.P. ROUTE 0525
 SECTION 02-00518-00-BR
 ROCKFORD, ILLINOIS
 STATION 95+72.00
 STRUCTURE NO. 101-6111

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JOB NO. 03R1751
 DATE 12/14/06

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LAYOUT	05/20/05
DRAWN	09/06/05
REVIEWED	08/05/06
NGM	
FLN	

ROUTE NO.	SECTION	COUNTY	DATE	SHEET NO.	SHEET NO. 49 50 SHEETS
FAP 0525	*	WINNEBAGO	157	106	
FED. ROAD DIST. NO. 7					
ILLINOIS		FED. AID PROJECT			
* 02-00518-00-BR					

PROJECT Harrison Avenue Bridge over UP and CN Railroads, Rockford, Illinois
 CLIENT Hanson Professional Services, Inc., 1525 S. Sixth St., Springfield, IL 62703
 BORING B-3 DATE STARTED 3-2-04 DATE COMPLETED 3-2-04 JOB L-59,708



ELEVATIONS WATER TABLE
 GROUND SURFACE 794.5 * WHILE DRILLING DRY
 END OF BORING 735.1 * AT END OF BORING DRY
 24 HOURS DRY

DEPTH	ELEV.	SOIL DESCRIPTIONS
0		FILL - Light brown clayey SILT, little sand (ML)
1.5	793.0	Dark brown clayey SILT, little sand (ML)
3.5	791.0	Brown very silty CLAY, little sand and gravel (CL)
5		
7		
10		
15		
18.0	778.5	Brown silty CLAY, trace sand and gravel (CL)
23.5	771.0	Brown silty SAND and GRAVEL (SM/GM)
25		
30		
35		
40		
43.5	751.0	Brown silty CLAY, trace sand and gravel (CL)
48.5	746.0	Gray silty CLAY, trace sand and gravel (CL)
58.5	736.0	Brown silty SAND, some gravel (SM)
735.1		End of Boring at 59.4' - Auger Refusal

BORING LOG #3

PROJECT Harrison Avenue Bridge over UP and CN Railroads, Rockford, Illinois
 CLIENT Hanson Professional Services, Inc., 1525 S. Sixth St., Springfield, IL 62703
 BORING B-4 DATE STARTED 3-3-04 DATE COMPLETED 3-3-04 JOB L-59,708



ELEVATIONS WATER TABLE
 GROUND SURFACE 789.3 * WHILE DRILLING DRY
 END OF BORING 744.9 * AT END OF BORING DRY
 24 HOURS DRY

DEPTH	ELEV.	SOIL DESCRIPTIONS
0		FILL - Brown very silty CLAY, little sand (CL)
3.0	785.8	Brown silty CLAY, little sand and gravel (CL)
8.5	780.8	Brown silty SAND and GRAVEL (SM/GM)
16.0	773.0	Brown silty SAND, trace gravel (SM)
21.0	768.3	Brown silty SAND and GRAVEL (SM/GM)
33.5	755.8	Brown silty SAND (SM)
38.0	751.3	Brown silty SAND, little gravel (SM)
744.9		End of Boring at 44.4' - Auger Refusal

BORING LOG #4

PROJECT Harrison Avenue Bridge over UP and CN Railroads, Rockford, Illinois
 CLIENT Hanson Professional Services, Inc., 1525 S. Sixth St., Springfield, IL 62703
 BORING B-5 DATE STARTED 3-4-04 DATE COMPLETED 3-4-04 JOB L-59,708



ELEVATIONS WATER TABLE
 GROUND SURFACE 786.5 * WHILE DRILLING DRY
 END OF BORING 741.5 * AT END OF BORING DRY
 24 HOURS DRY

DEPTH	ELEV.	SOIL DESCRIPTIONS
0		Brown very silty CLAY, little sand and gravel (CL)
13.5	773.0	Gray silty CLAY, trace sand and gravel (CL)
16.0	770.5	Brown very silty CLAY, little sand, trace gravel (CL)
17.0	769.5	Brown silty SAND, little gravel (SM)
33.5	753.0	Light brown silty SAND, little gravel (SM)
43.5	743.0	Brown silty CLAY, trace sand and gravel (CL)
741.5		End of Boring at 45.0'

BORING LOG #5

Corporate License Number 184-001-084

BORING LOGS #3, #4 & #5

EASTBOUND HARRISON AVENUE
 OVER UP & CC&P RAILROAD
 F.A.P. ROUTE 0525
 SECTION 02-00518-00-BR
 ROCKFORD, ILLINOIS
 STATION 95+72.00
 STRUCTURE NO. 101-6111

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JOB NO. 03R1751

DATE 12/14/06

* - All elevations provided by Hanson Professional Services Inc.

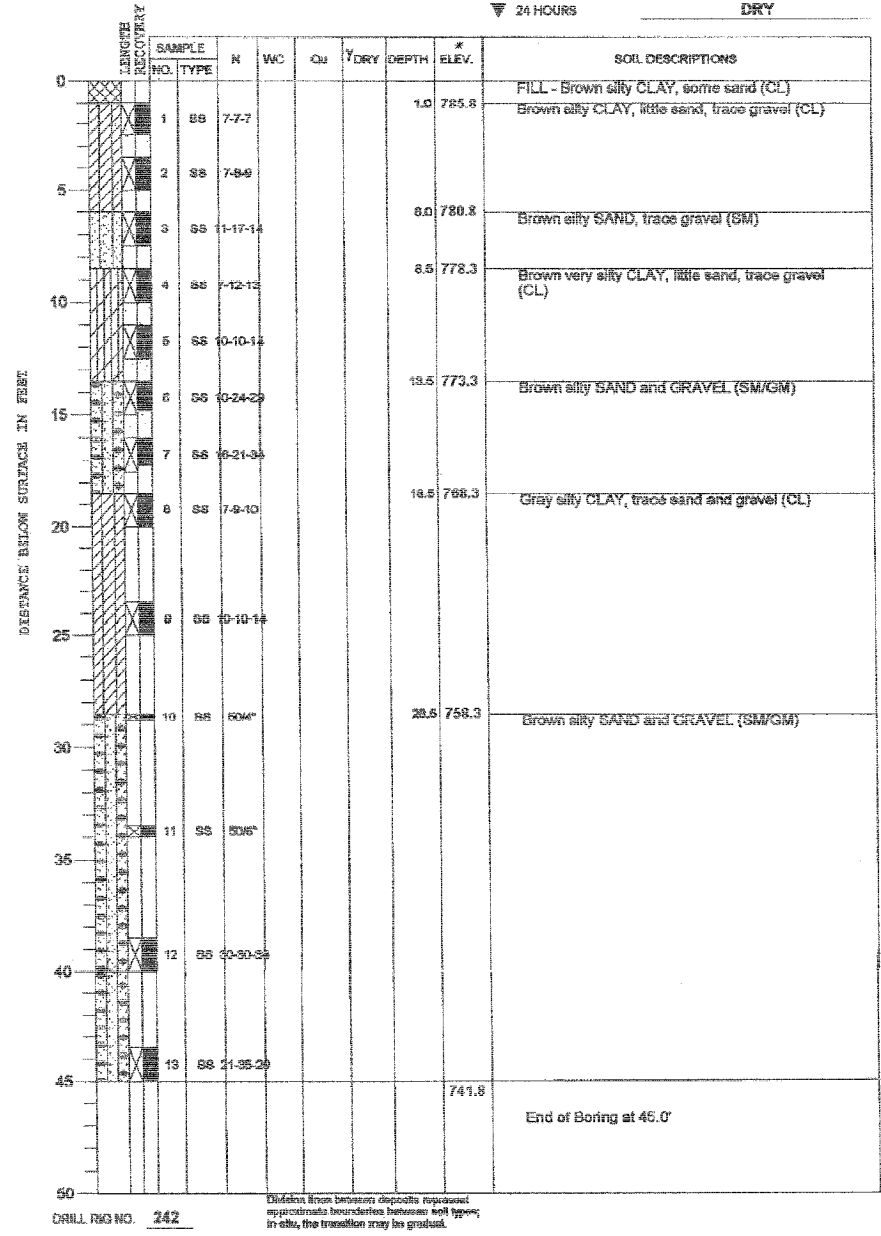
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LAYOUT	05/20/05
DRAWN	09/06/05
REVIEWED	09/06/05

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 50
FAP 0525	*	WINNEBAGO	157	107	50 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. ROAD PROJECT		
* 02-00518-00-BR					

PROJECT **Harrison Avenue Bridge over UP and CN Railroads, Rockford, Illinois**
 CLIENT **Hanson Professional Services, Inc., 1525 S. Sixth St., Springfield, IL 62763**
 BORING **B-6** DATE STARTED **3-3-04** DATE COMPLETED **3-3-04** JOB **L-59,708**

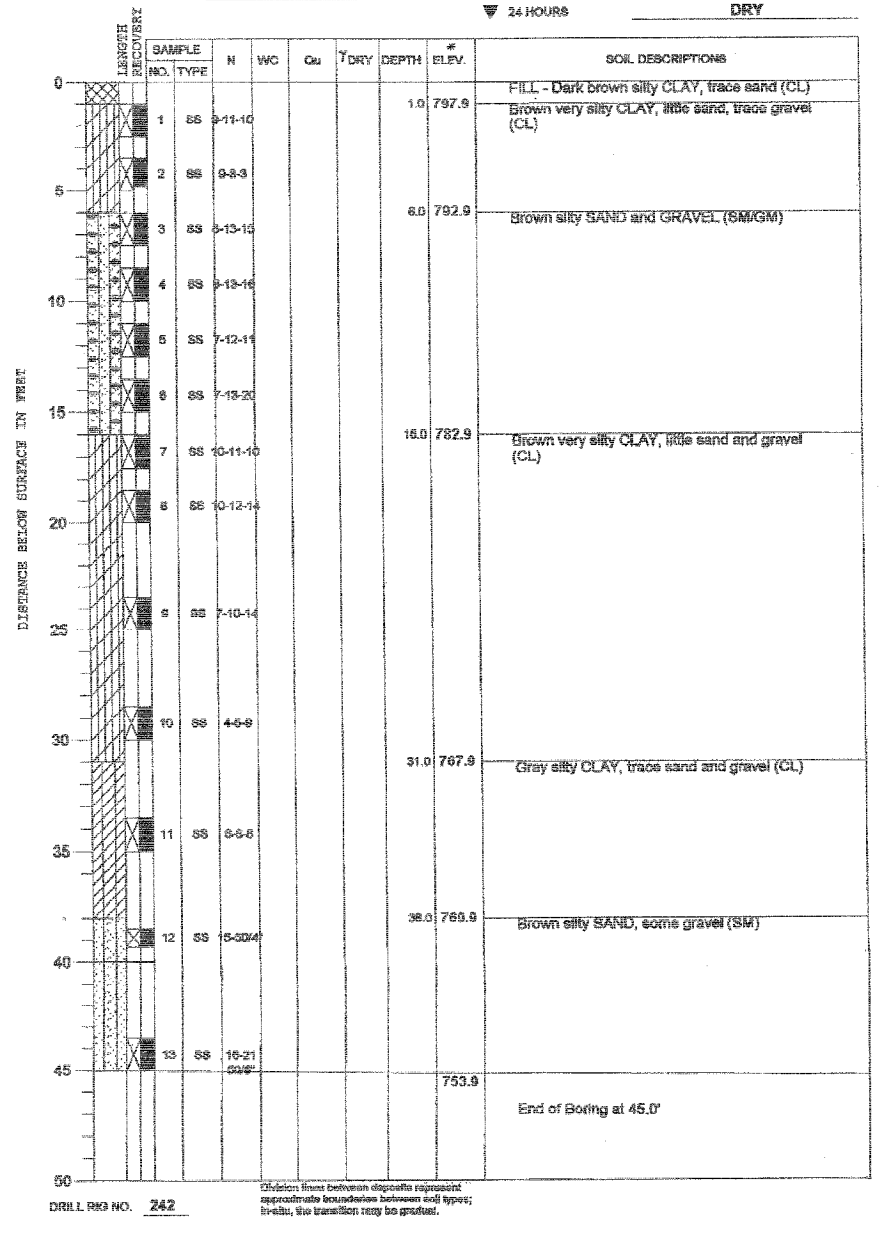
ELEVATIONS		WATER TABLE
GROUND SURFACE 786.8 *	▽ WHILE DRILLING	DRY
END OF BORING 741.8 *	▽ AT END OF BORING	DRY
	▽ 24 HOURS	DRY



BORING LOG #6

PROJECT **Harrison Avenue Bridge over UP and CN Railroads, Rockford, Illinois**
 CLIENT **Hanson Professional Services, Inc., 1525 S. Sixth St., Springfield, IL 62763**
 BORING **B-7** DATE STARTED **3-3-04** DATE COMPLETED **3-3-04** JOB **L-59,708**

ELEVATIONS		WATER TABLE
GROUND SURFACE 798.9 *	▽ WHILE DRILLING	DRY
END OF BORING 753.9 *	▽ AT END OF BORING	DRY
	▽ 24 HOURS	DRY



BORING LOG #7

* - All elevations provided by Hanson Professional Services Inc.

BORING LOGS #6 & #7
 Corporate License Number 184-001-084

**EASTBOUND HARRISON AVENUE
 OVER UP & CC&P RAILROAD
 F.A.P. ROUTE 0525
 SECTION 02-00518-00-BR
 ROCKFORD, ILLINOIS
 STATION 95+72.00
 STRUCTURE NO. 101-6111**

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HANSON
 JOB NO. **03R1751**
 DATE **12/14/06**

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LAYOUT	MGM	05/20/05
DRAWN	MGM	09/06/05
REVIEWED	FLN	08/05/06

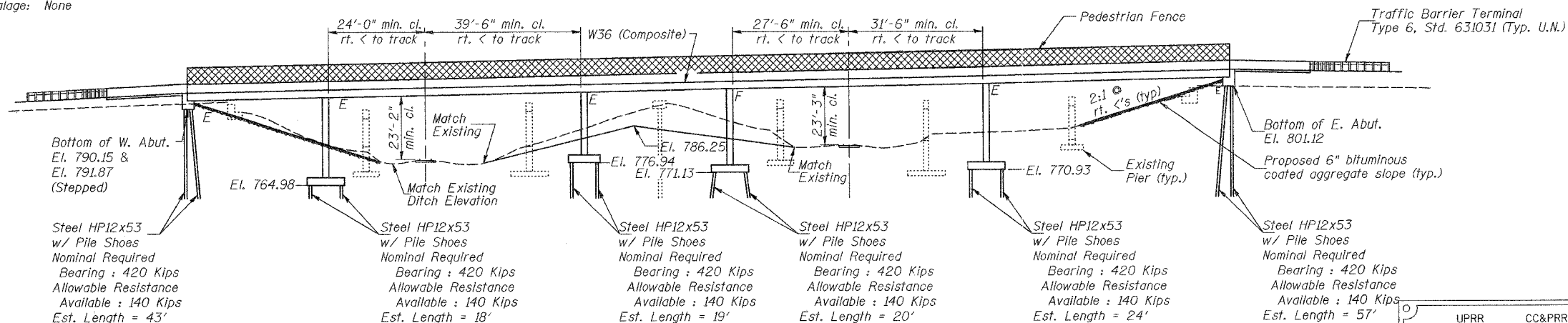
ROUTE NO.	SECTION	COUNTY	STATION	SHEET NO.
FAP 0525		WINNEBAGO	157	108
PROJECT NO. 02-00518-00-BR				

Bench Mark: Standard tablet on top of the East end of the Northwest concrete wingwall of the Westbound Harrison Ave. bridge. NAVD88 Elevation 801.03.

Existing Structure: S.N. 101-0097 consists of a continuous three-span and four span structure with a common center abutment and was built in 1955. The existing structure is about 387 feet long and 36 feet wide. The superstructure consists of six composite wide flange (27 inch deep) beams with cover plates over the piers, which support a 7-inch thick reinforced concrete deck with a bituminous overlay. The substructure consists of pile bent abutments and reinforced concrete multi-column piers founded on spread footings. The existing structure shall be removed to at least 1 ft below the proposed elevation of subgrade or ground surface, within the area of construction. All portions of existing structures below this elevation interfere in any way with the new construction, shall be removed. Westbound Harrison Avenue will be closed and traffic will be detoured on to Eastbound Harrison Avenue during construction.

Notes:
Drains and Inlets shall be located clear of all diaphragms.

Salage: None



ELEVATION
(Westbound Bridge - Looking North)

UPRR CC&PRR
BUILT _____ BY
CITY OF ROCKFORD
SEC. 02-00518-00-BR
F.A.P. RT. 0525 STA. 95+25.35
STR. NO. 101-6109 LOADING HS20

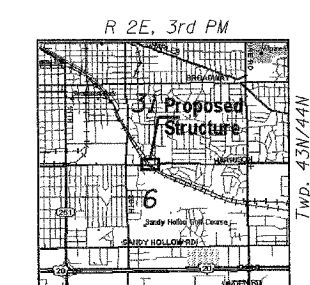
NAME PLATE
SEE STD. 515001
(SEE SHEET 13 OF 50 FOR LOCATION)

DESIGN SPECIFICATIONS
2002 AASHTO Standard Specifications for Highway Bridges.
1999 AASHTO Guide for the development of Bicycle Facilities.

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

DESIGN STRESSES
FIELD UNITS
 $f'_c = 3,500$ psi
 $f_y = 60,000$ psi (reinforcement)
 $f_y = 36,000$ psi (structural steel)
AASHTO M270 Gr. 36
 $f_y = 50,000$ psi (structural steel)
AASHTO M270 Gr. 50

SEISMIC DATA
Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 0.03g
Site Coefficient (S) = 1.0



LOCATION SKETCH

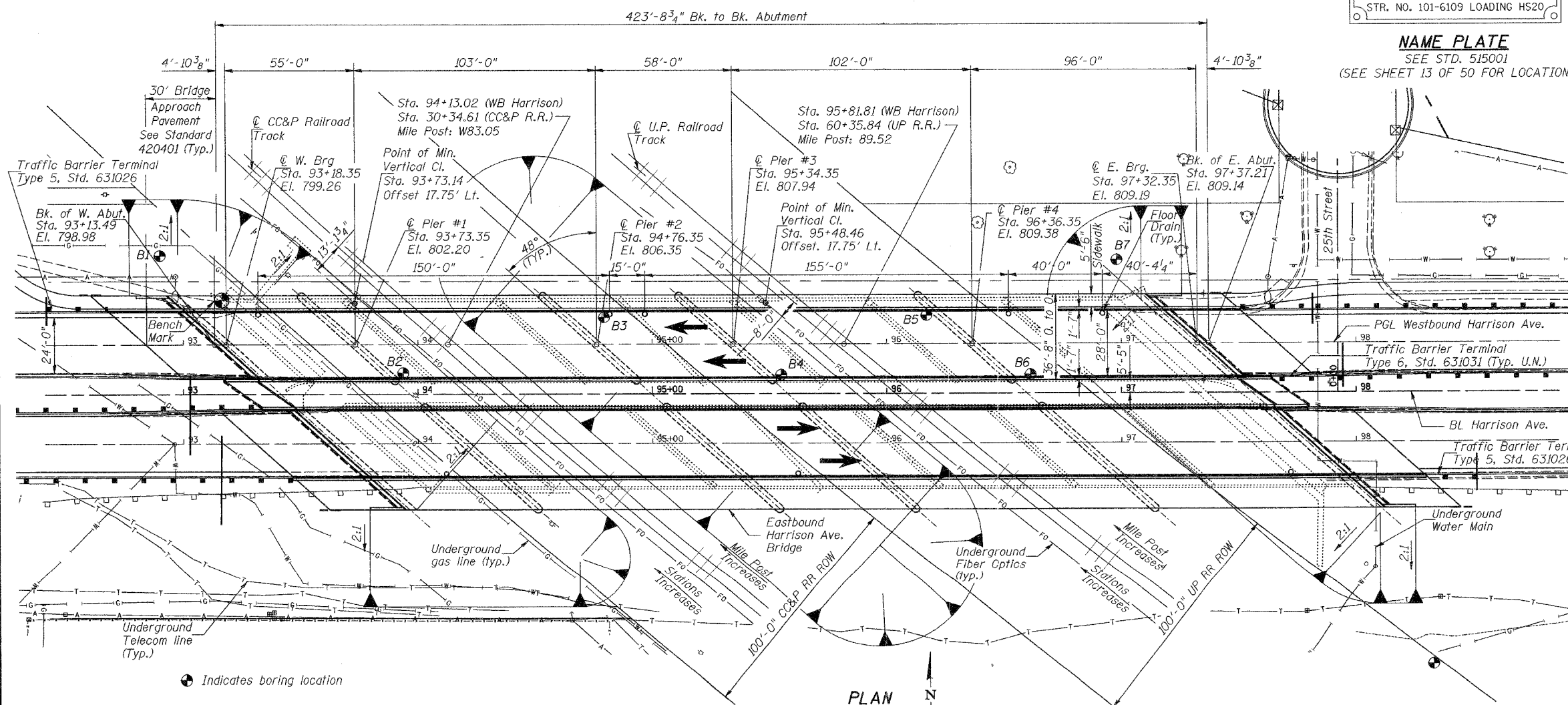
FRANCIS L. NIXON
REGISTERED PROFESSIONAL ENGINEER
STATE OF ILLINOIS
081-004900
DATE SIGNED: 12/14/06
LIC. EXP. DATE: 11/30/2008

"I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current 'AASHTO Standard Specifications for Highway Bridges.'"

Corporate License Number 184-001-084

GENERAL PLAN & ELEVATION
WESTBOUND HARRISON AVENUE
OVER UP & CC&P RAILROAD
F.A.P. ROUTE 0525
SECTION 02-00518-00-BR
ROCKFORD, ILLINOIS
STATION 95+25.35
STRUCTURE NO. 101-6109

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JOB NO. 03R1751
DATE 12/14/06



PLAN

Indicates boring location

LAYOUT: FILM 08/29/06
 DRAWN: MCM 08/20/06
 REVISIONS: FILM 08/24/06

ROUTE NO.	SECTION	COUNTY	DATE	SHEET NO.
FAP 0525	*	WINNEBAGO	157	109
SHEET NO. 2				
50 SHEETS				
* 02-00518-00-BR				

GENERAL NOTES

- Fasteners shall be high strength bolts (AASHTO M 164, Type 1 or 2). Bolts 7/8" φ, open holes 15/16" φ, unless otherwise noted.
- Calculated weight of Structural Steel = 432,705 lbs (AASHTO M270 Grade 50)
Calculated weight of Structural Steel = 41,195 lbs (AASHTO M270 Grade 36)
- Field welding of construction accessories will not be permitted to beams or girders.
- Anchor bolts shall be set before bolting diaphragms over supports.
- The structural steel bearing plates of the Elastomeric Bearing Assembly shall conform to the requirements of AASHTO M 270 Grade 50.
- 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, webs and all splice plate material except fill plates.
- Reinforcement bars shall conform to the requirements of AASHTO M 31, M 42 or M 53 Grade 60.
- Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price for the work.
- The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.
- 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 1/2" adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims. (For Type I Elastomeric Bearings, two 1/2" adjusting shims shall be provided for each bearing and placed as detailed).
- The contractor shall drive 1 steel HP 12x53 test pile in a permanent location at each abutment and each pier as directed by the Engineer before ordering the remainder of piles. The steel H-Piles shall be according to AASHTO M270 Grade 50. The test piles shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.
- The concrete for bridge floors finished according to Article 503.16 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.
- Concrete Sealer shall be applied to the seat area of the abutments.
- Protective coat shall be applied to the entire top surface of the bridge deck, top surface of bridge approach, the top surface of the bridge sidewalk, the top and inside face of the concrete parapet near the roadway median and the top and both faces of the concrete parapet along the north side of the bridge.
- 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:
 - At least 72 hours shall have elapsed from the end of the previous pour.
 - The concrete strength shall have attained a minimum flexural strength of 650 psi or a minimum compressive strength of 3500 psi.
- The organic zinc rich primer/epoxy/urethane paint system shall be used for painting of new structural steel except where otherwise noted. The entire system shall be shop applied, with the exception that masked off connection surfaces, field installed fasteners and damaged areas shall be touched up in the field. The color of the final finish coat for all steel surfaces shall be gray, Munsell No. 5B 7/L. See Special Provision for Cleaning and Painting New Metal Structures.
- Floor drains shall be located clear of all diaphragms. If adjustments to the drain locations are required, the drain shall be adjusted away from the nearest pier/abutment.
- 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.

- If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06 of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.
- Demolition, falsework and shoring shall meet the Union Pacific (UP) and Chicago Central & Pacific (CC&P) railroad requirements and shall be reviewed and approved by the UPRR & CC&RR.
- The proposed bridge structure will not change the quantity and/or characteristic of flow in the railway's ditches.

INDEX OF SHEETS

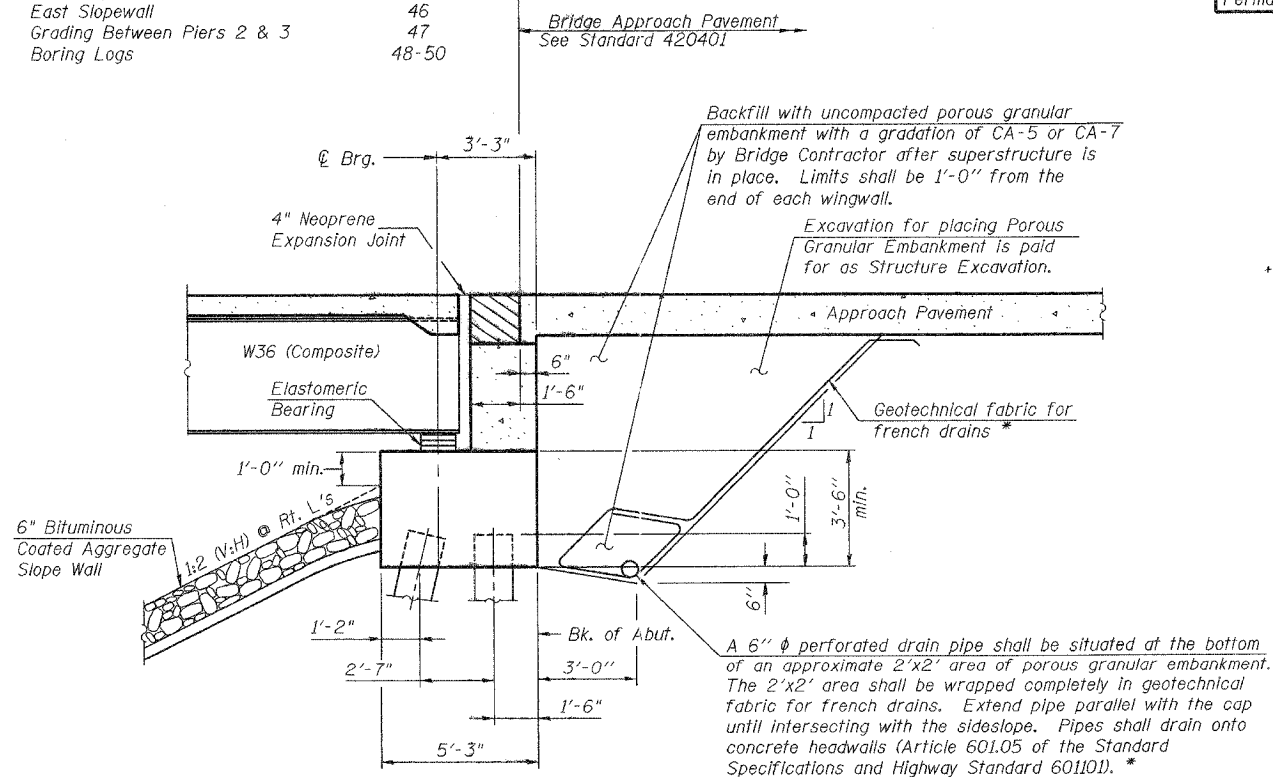
TITLE	SHEET #
General Plan & Elevation	1
General Notes & Details	2
Pier Excavation Protection Plan	3-4
Protective Shield	5
Top of Slab Elevations	6-9
Superstructure	10-11
Superstructure Details	12-16
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Parapet Steel Railing	18
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Structural Steel Framing Plan	22
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Bearing Details	26-28
Anchor Bolt Details	29
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Grading Between Piers 2 & 3	47
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West Rail		East Rail	
Station	Elevation	Station	Elevation
26+19.76	777.08	26+19.85	776.95
27+21.36	776.59	27+21.57	776.45
28+25.84	776.14	28+25.36	776.05
29+24.38	775.70	29+23.68	775.63
29+88.23	775.38	29+88.24	775.29
30+82.51	774.83	30+82.58	774.74
31+03.43	774.32	31+86.06	774.22
32+89.05	773.80	32+87.89	773.67
33+86.26	773.35	33+85.69	773.25

EXISTING TOP OF RAIL ELEVATIONS CC&P R.R.

West Rail		East Rail	
Station	Elevation	Station	Elevation
56+42.51	781.93	56+42.81	781.86
57+35.39	781.55	57+35.41	781.49
58+40.71	781.25	58+40.95	781.18
59+38.16	781.10	59+37.71	780.97
60+10.65	780.91	60+10.57	780.78
60+80.42	780.74	60+79.92	780.83
61+70.81	780.51	61+70.65	780.43
62+60.36	780.15	62+60.18	780.04
63+59.19	779.41	63+58.67	779.34

EXISTING TOP OF RAIL ELEVATIONS UP R.R.



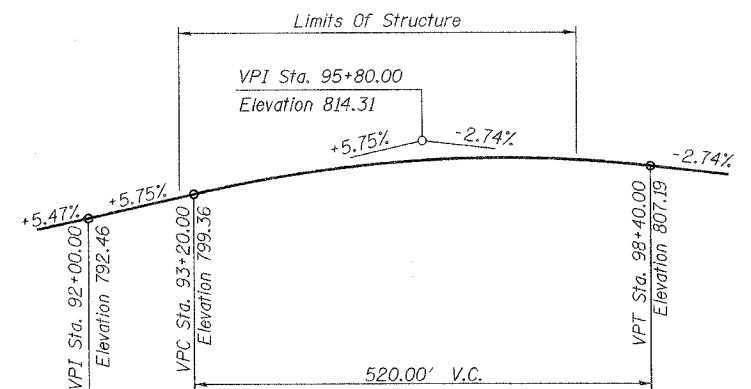
* Included in the cost of Porous Granular Embankment.

SECTION THRU ABUTMENT

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

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment	Cu. Yd.	-	182	182
Removal of Existing Structures - No. 1	Each	-	-	1
Slopewall Removal	Sq. Yd.	0	0	0
Structure Excavation	Cu. Yd.	-	1,888	1,888
Floor Drains	Each	5	-	5
Neoprene Expansion Joint 4"	Foot	107	-	107
Concrete Structures	Cu. Yd.	-	798.3	798.3
Concrete Superstructure	Cu. Yd.	513.1	-	513.1
Bridge Deck Grooving	Sq. Yd.	1205	-	1205
Concrete Encasement	Cu. Yd.	-	7.8	7.8
Protective Coat	Sq. Yd.	2381	-	2381
Elastomeric Bearing Assembly, Type I	Each	5	-	5
Elastomeric Bearing Assembly, Type II	Each	15	-	15
Furnishing and Erecting Structural Steel - Bridge No. 1	L. Sum	1	-	1
Stud Shear Connectors	Each	4760	-	4760
Reinforcement Bars, Epoxy Coated	Pound	123,290	109,230	232,520
Furnishing Steel Piles, HP 12x53	Foot	-	2,509	2,509
Driving Piles	Foot	-	2,509	2,509
Test Pile Steel HP 12x53	Each	-	6	6
Pile Shoes	Each	-	100	100
Name Plates	Each	1	-	1
Concrete Sealer	Sq. Ft.	-	356	356
HLMR Bearings, Guided Exp, 300k	Each	5	-	5
Bar Splicers	Each	1124	-	1124
Parapet Railing	Foot	475	-	475
Pedestrian Railing	Foot	439	-	439
Bridge Fence Railing (Sidewalk)	Foot	442	-	442
Bituminous Coated Aggregate Slopewall, 6"	Sq. Yd.	-	732	732
Protective Shield	Sq. Yd.	1038	-	1038
Drainage System	L. Sum	0.5	-	0.5
Structure Excavation Protection for Pile Bents, No. 1	Each	-	1	1
Structure Excavation Protection for Pile Bents, No. 2	Each	-	1	1
Structure Excavation Protection for Pile Bents, No. 3	Each	-	1	1
Anchor Bolts, 1"	Each	40	-	40
Anchor Bolts, 1 1/4"	Each	20	-	20
Anchor Bolts, 1 1/2"	Each	20	-	20
Permanent Survey Markers, Type 1	Each	1	-	1



PROFILE GRADE

Corporate License Number 184-001-084

GENERAL NOTES & DETAILS

**WESTBOUND HARRISON AVENUE
OVER UP & CC&P RAILROAD
F.A.P. ROUTE 0525
SECTION 02-00518-00-BR
ROCKFORD, ILLINOIS
STATION 95+25.35
STRUCTURE NO. 101-6109**

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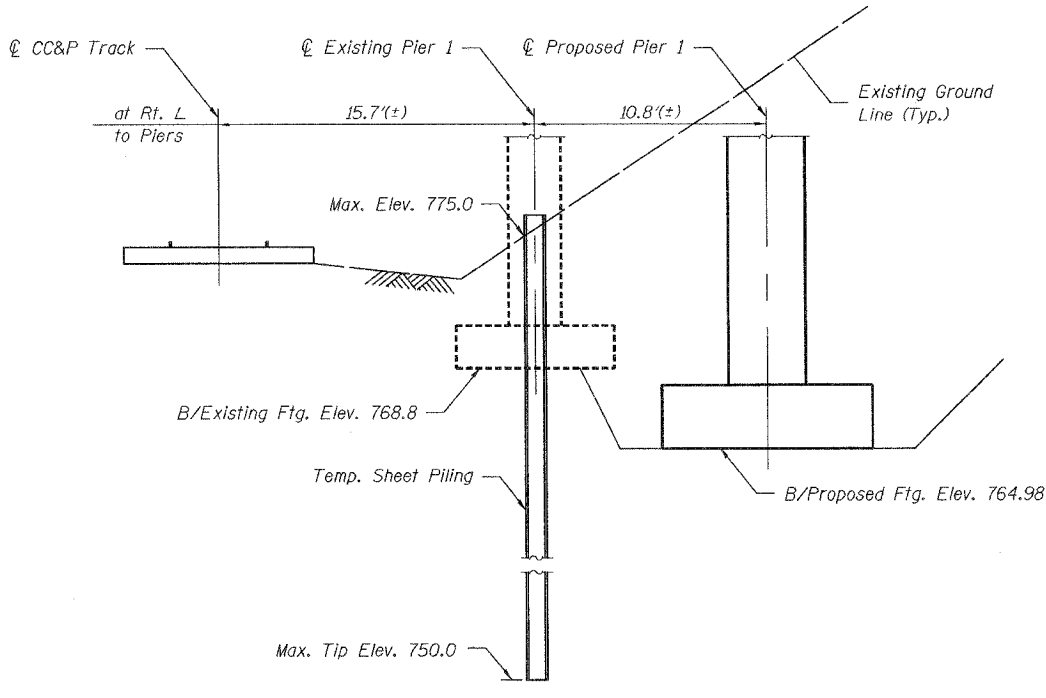
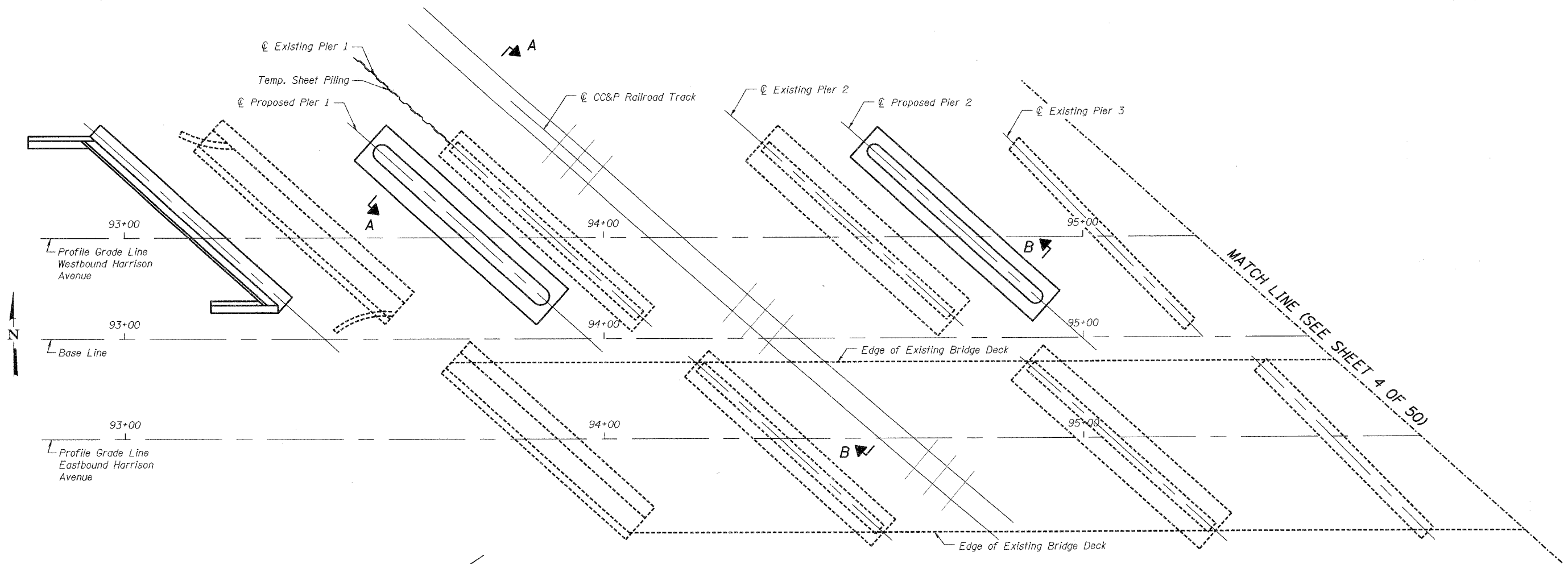


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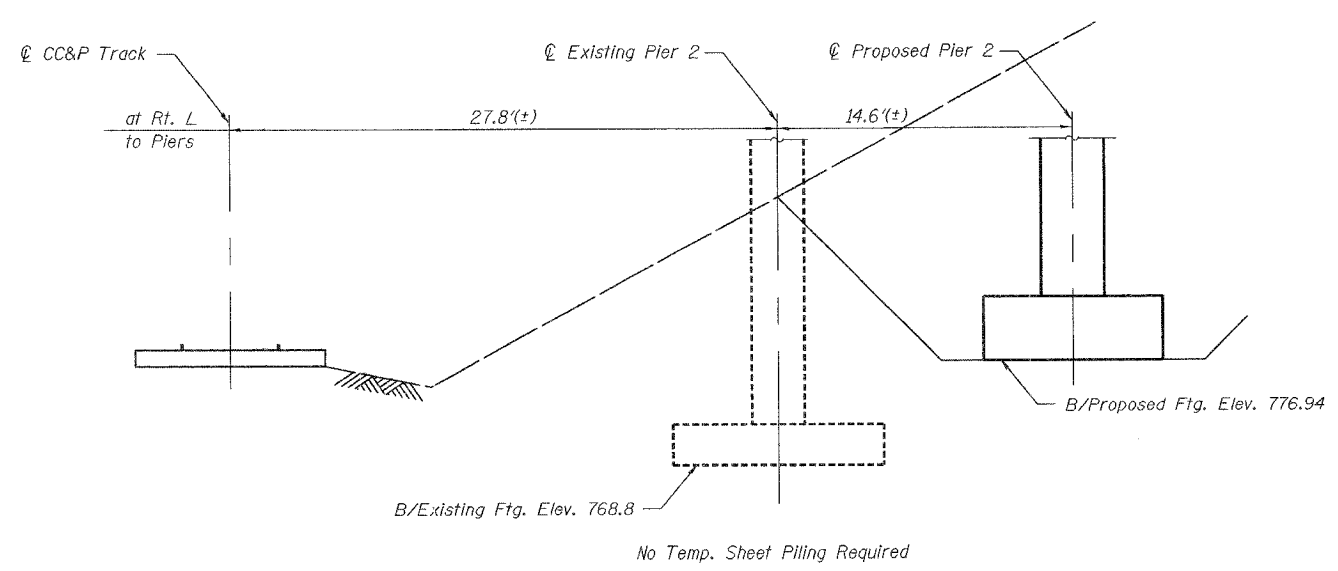
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 DRAWN
 REVIEWED

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FAP 0525	*	WINNEBAGO	157	110	50 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		
* 02-00518-00-BR					



SECTION A-A
(Structure Excavation Production for Pile Bents, No. 1)

PLAN



SECTION B-B

Corporate License Number 184-001-084

PIER EXCAVATION PROTECTION PLAN

WESTBOUND HARRISON AVENUE
OVER UP & CC&P RAILROAD
F.A.P. ROUTE 0525
SECTION 02-00518-00-BR
ROCKFORD, ILLINOIS
STATION 95+25.35
STRUCTURE NO. 101-6109

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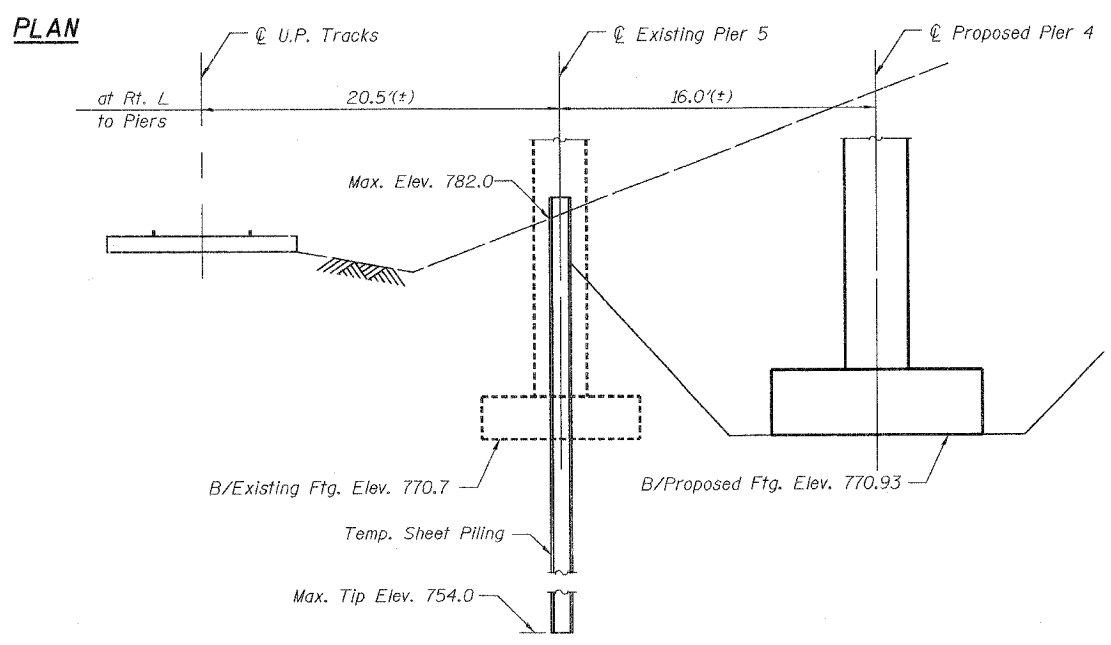
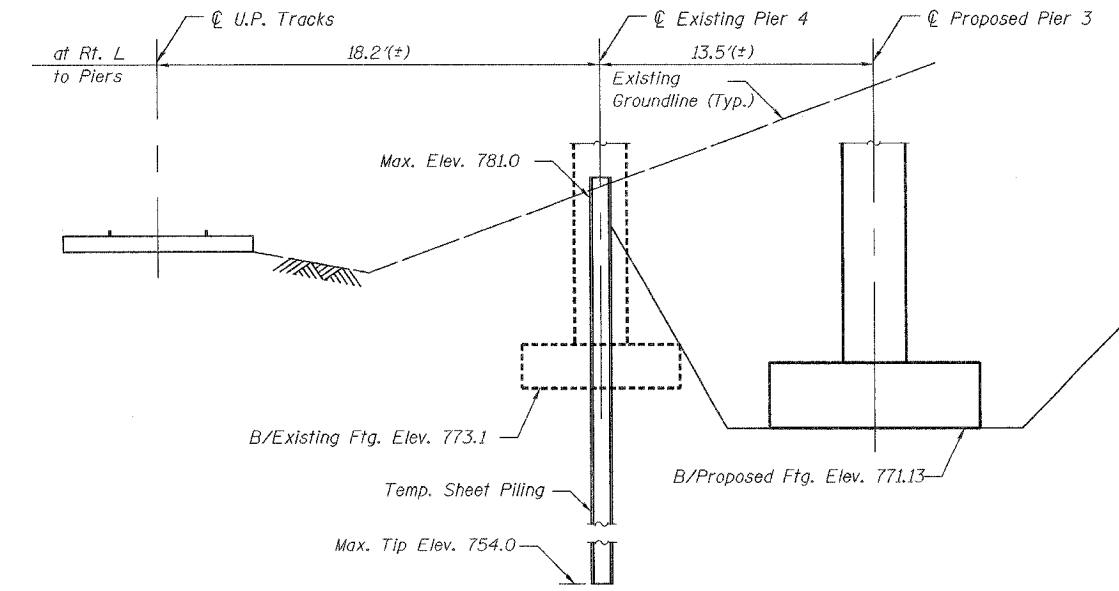
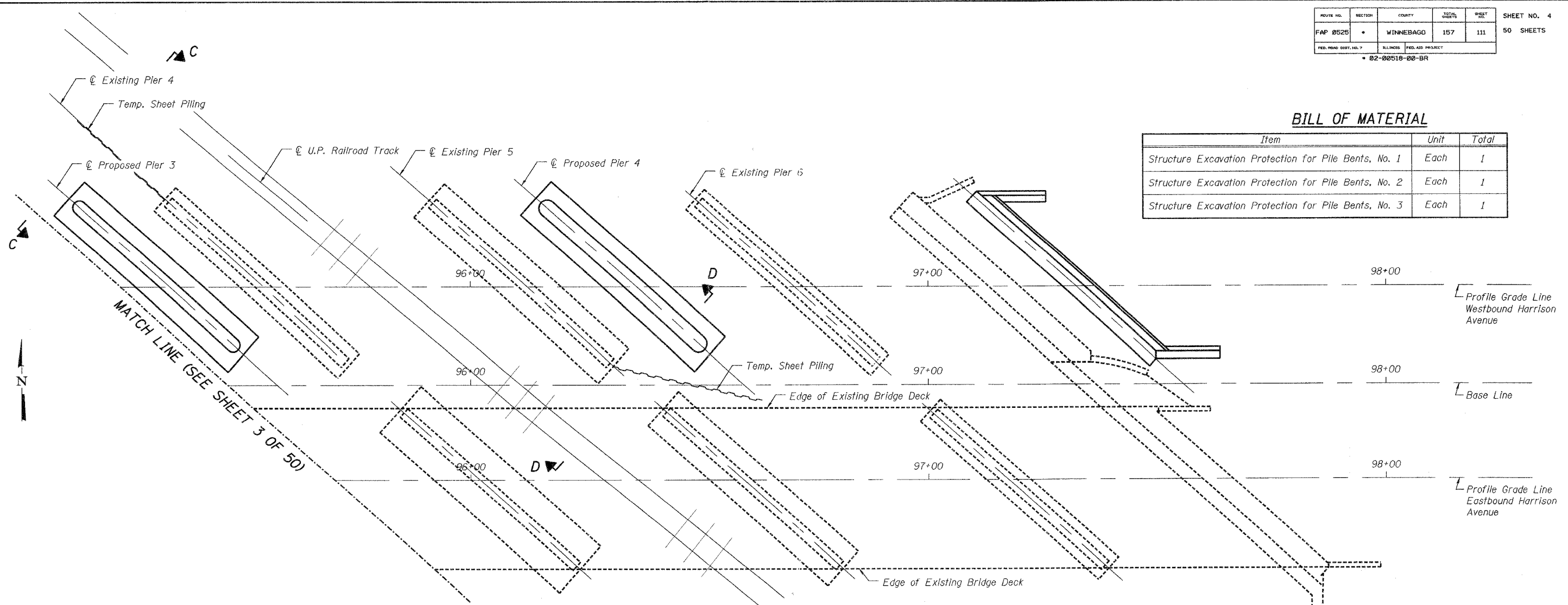
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DATE 12/14/06

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 DRAWN 07/18/06
 REVIEWED SHK 08/02/06

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO.
FAP 0525	•	WINNEBAGO	157	111	50 SHEETS
FED. ROAD DIST. DIST. 7 ILLINOIS FED. AID PROJECT					
• 02-00518-00-BR					

BILL OF MATERIAL

Item	Unit	Total
Structure Excavation Protection for Pile Bents, No. 1	Each	1
Structure Excavation Protection for Pile Bents, No. 2	Each	1
Structure Excavation Protection for Pile Bents, No. 3	Each	1



PLAN

SECTION C-C

(Structure Excavation Protection for Pile Bents, No. 2)

SECTION D-D

(Structure Excavation Protection for Pile Bents, No. 3)

Corporate License Number 184-001-084

PIER EXCAVATION PROTECTION PLAN

WESTBOUND HARRISON AVENUE
 OVER UP & CC&P RAILROAD
 F.A.P. ROUTE 0525
 SECTION 02-00518-00-BR
 ROCKFORD, ILLINOIS
 STATION 95+25.35
 STRUCTURE NO. 101-6109

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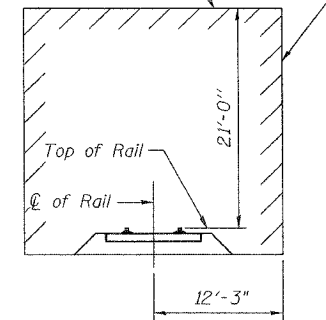
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 DRAWN JKR 07/18/06
 REVIEWED SMK 09/02/06

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET	SHEET NO.
FAP 0525		WINNEBAGO	157	112	50 SHEETS
FEDERAL AID DIST. NO. 7 PLAN NO. PROJECT • 02-00518-00-BR					

No construction activities or other obstructions may be placed within these limits.



MINIMUM CONSTRUCTION CLEARANCES
(Normal to Railroad)

NOTES

The protective shield shall extend perpendicular from the railroad tracks at least 18 feet beyond the centerline of tracks.

The quantity of Protective Shield represents the quantity for four installations and removals, which are one installation and removal for deck and superstructure removal over UP railroad tracks, one installation and removal for deck and superstructure removal over CC&P railroad tracks, one installation and removal for proposed deck construction over UP railroad tracks, and one installation and removal for proposed deck construction over CC&P railroad tracks. Each installation of Protective Shield shall be measured for payment. Removal of Protective Shield shall not be measured for payment.

The Protective Shield shall be designed for a live load not less than 200 pounds per square foot.

If the Contractor intends to use cantilever forming brackets on the exterior beams for the protective shield, the beams shall be adequately braced to prevent twisting.

BILL OF MATERIAL

Item	Unit	Total
Protective Shield	Sq. Yd.	1038

Corporate License Number 184-001-084

PROTECTIVE SHIELD

**WESTBOUND HARRISON AVENUE
OVER UP & CC&P RAILROAD
F.A.P. ROUTE 0525
SECTION 02-00518-00-BR
ROCKFORD, ILLINOIS
STATION 95+25.35
STRUCTURE NO. 101-6109**

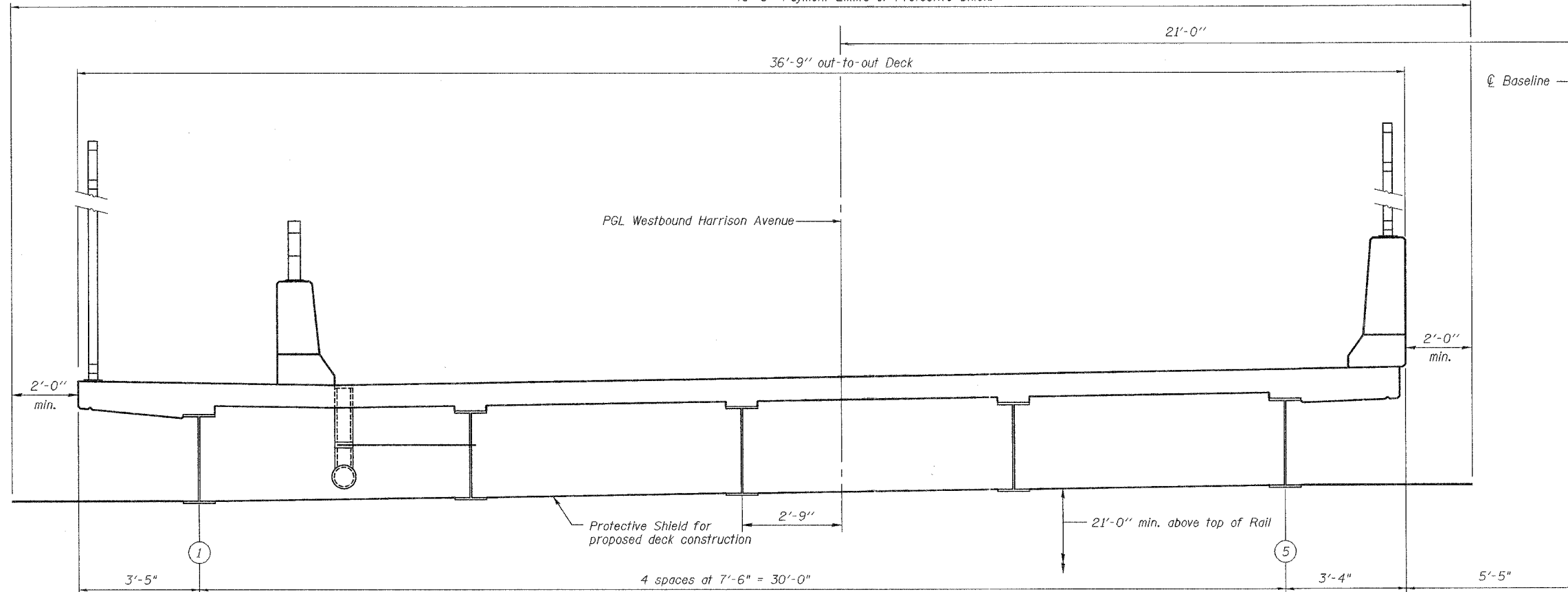
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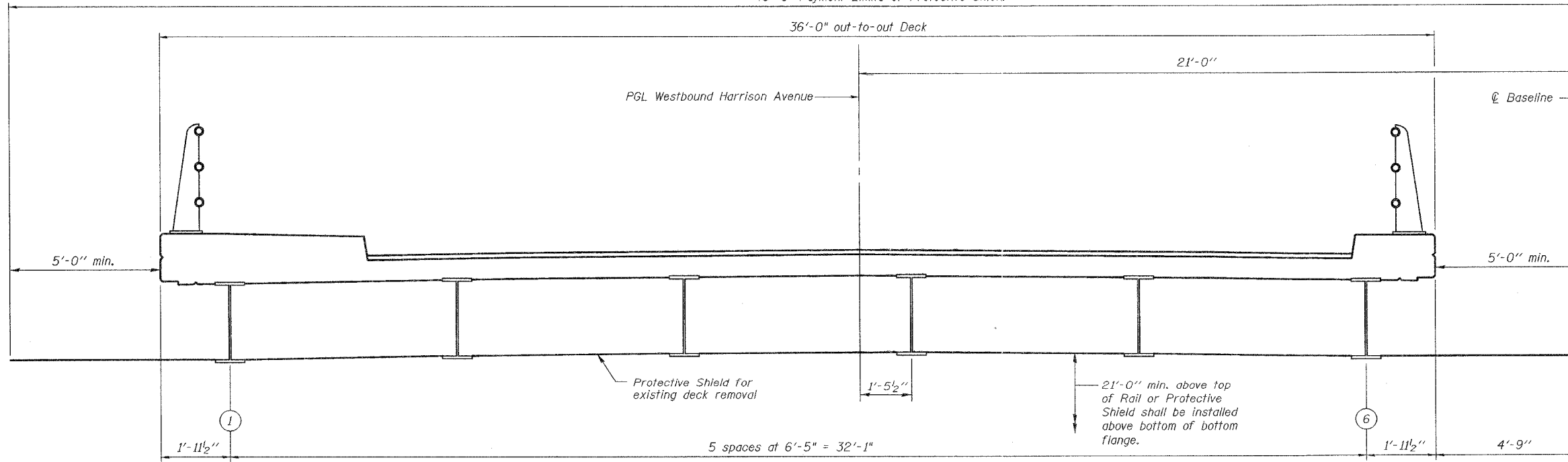
40'-9" Payment Limits of Protective Shield



PROPOSED WESTBOUND CROSS SECTION

Looking East

46'-0" Payment Limits of Protective Shield

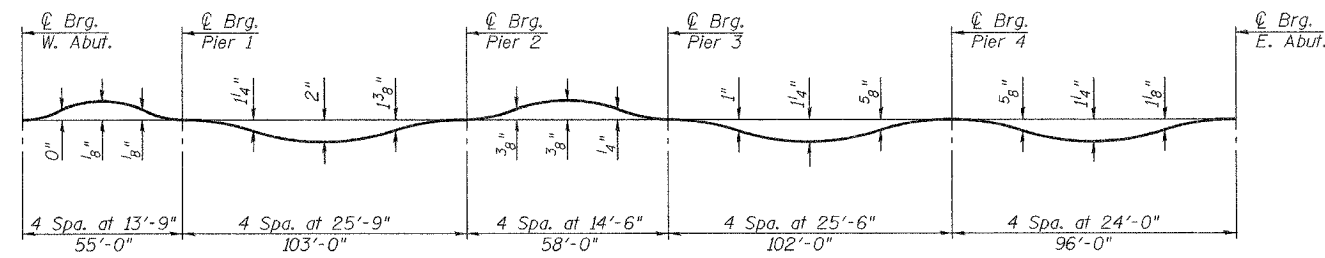


EXISTING WESTBOUND CROSS SECTION

Looking East

10/17/06 JKR 07/17/06
 12/14/06 JKR 07/18/06
 12/14/06 ELK 08/02/06
 12/14/06 ELK 08/02/06

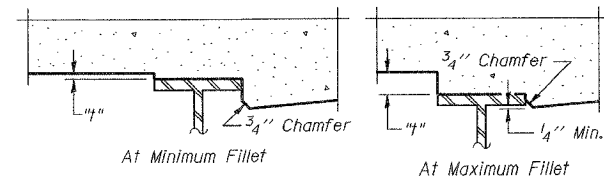
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FAP 0525	*	WINNEBAGO	157	113	50 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		
* 02-00518-00-BR					



DEAD LOAD DEFLECTION DIAGRAM

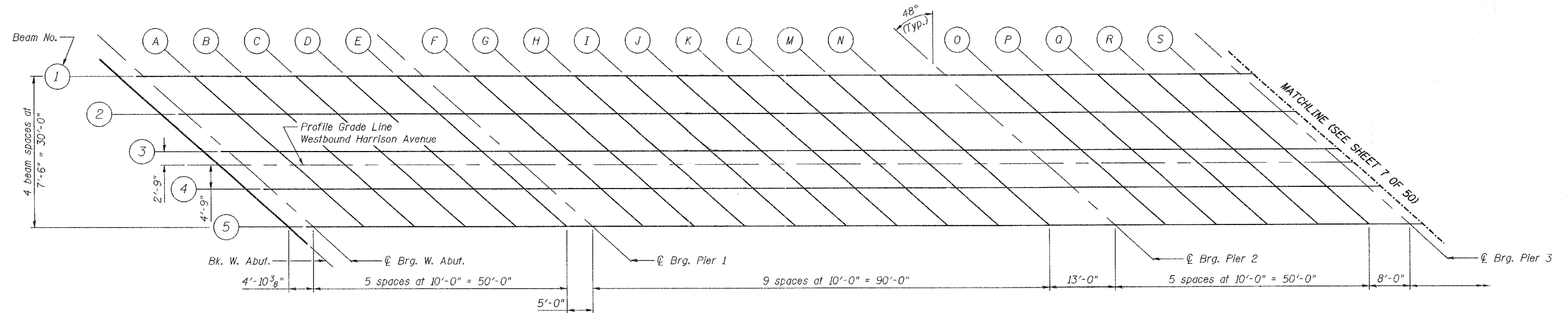
(Includes weight of concrete only.)

Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on Sheets 7 thru 9 of 50.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown on Sheets 7-9 of 50. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on Sheets 7-9 of 50, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS



DIAGRAMMATIC PLAN - TOP OF CONCRETE ELEVATIONS

NOTES:

- All offsets are measured from the profile grade line.
- Negative (-) offsets are offsets to the left of the profile grade line while looking upstation.
- All dimensions are in feet (ft.) except as noted.

Corporate License Number 184-001-084

TOP OF SLAB ELEVATIONS

WESTBOUND HARRISON AVENUE
OVER UP & CC&P RAILROAD
F.A.P. ROUTE 0525
SECTION 02-00518-00-BR
ROCKFORD, ILLINOIS
STATION 95+25.35
STRUCTURE NO. 101-6109

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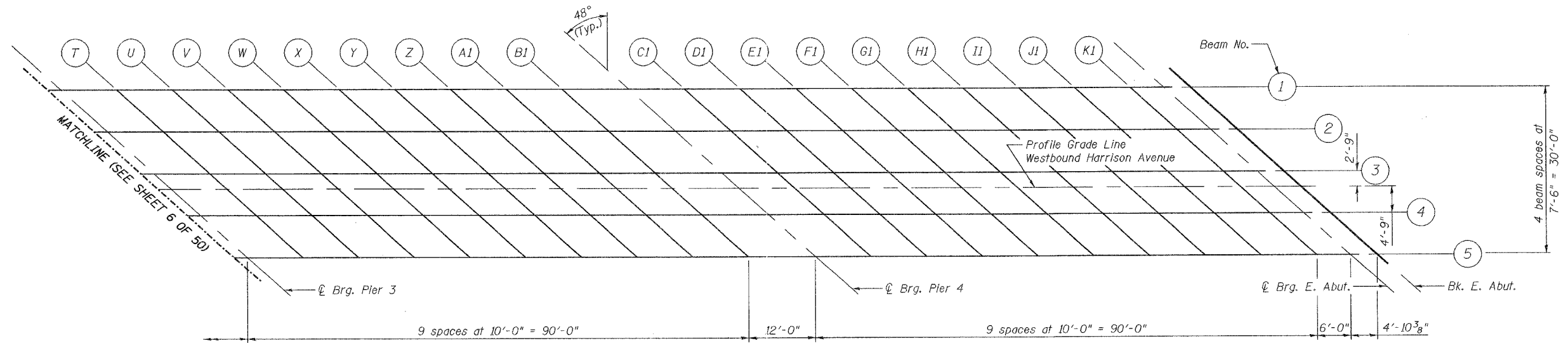


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DRAWN	MGM	09/09/05
REVIEWED	FLN	08/02/06

ROUTE NO.	DIRECTION	COUNTY	SECTION	SHEET	SHEET NO.
FAP 0525	+	WINNEBAGO	157	114	50 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT	
02-00518-00-BR					



DIAGRAMMATIC PLAN - TOP OF CONCRETE ELEVATIONS

PROFILE GRADE LINE
PROPOSED WESTBOUND HARRISON AVENUE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	93+13.49	0.000	798.986	798.986
☉ Brg. W. Abut.	93+18.35	0.000	799.265	799.265
A	93+28.35	0.000	799.834	799.831
B	93+38.35	0.000	800.388	800.379
C	93+48.35	0.000	800.925	800.910
D	93+58.35	0.000	801.445	801.427
E	93+68.35	0.000	801.949	801.943
☉ Brg. Pier 1	93+73.35	0.000	802.195	802.195
F	93+83.35	0.000	802.675	802.725
G	93+93.35	0.000	803.138	803.238
H	94+03.35	0.000	803.586	803.727
I	94+13.35	0.000	804.016	804.189
J	94+23.35	0.000	804.431	804.635
K	94+33.35	0.000	804.829	805.015
L	94+43.35	0.000	805.211	805.370
M	94+53.35	0.000	805.576	805.701
N	94+63.35	0.000	805.925	805.996
☉ Brg. Pier 2	94+76.35	0.000	806.355	806.355
O	94+86.35	0.000	806.667	806.644
P	94+96.35	0.000	806.962	806.927
Q	95+06.35	0.000	807.241	807.204
R	95+16.35	0.000	807.503	807.473
S	95+26.35	0.000	807.750	807.734

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ Brg. Pier 3	95+34.35	0.000	807.935	807.935
T	95+44.35	0.000	808.152	808.193
U	95+54.35	0.000	808.353	808.434
V	95+64.35	0.000	808.537	808.646
W	95+74.35	0.000	808.705	808.827
X	95+84.35	0.000	808.856	808.992
Y	95+94.35	0.000	808.992	809.102
Z	96+04.35	0.000	809.111	809.192
AI	96+14.35	0.000	809.213	809.267
BI	96+24.35	0.000	809.300	809.329
☉ Brg. Pier 4	96+36.35	0.000	809.382	809.382
CI	96+46.35	0.000	809.432	809.458
DI	96+56.35	0.000	809.466	809.518
EI	96+66.35	0.000	809.484	809.565
FI	96+76.35	0.000	809.486	809.597
GI	96+86.35	0.000	809.471	809.606
HI	96+96.35	0.000	809.440	809.566
II	97+06.35	0.000	809.392	809.511
JI	97+16.35	0.000	809.328	809.406
KI	97+26.35	0.000	809.248	809.277
☉ Brg. E. Abut.	97+32.35	0.000	809.192	809.192
Bk. E. Abut.	97+37.21	0.000	809.142	809.142

NOTES:

All offsets are measured from the profile grade line.

Negative (-) offsets are offsets to the left of the profile grade line while looking upstation.

All dimensions are in feet (ft.) except as noted.

Corporate License Number 184-001-084

TOP OF SLAB ELEVATIONS

WESTBOUND HARRISON AVENUE
OVER UP & CC&P RAILROAD
F.A.P. ROUTE 0525
SECTION 02-00518-00-BR
ROCKFORD, ILLINOIS
STATION 95+25.35
STRUCTURE NO. 101-6109

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LAYOUT	09/08/05
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REVIEWED	FLN

Beam 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	92+93.78	-17.750	797.639	797.639
⊕ Brg. W. Abut.	92+98.64	-17.750	797.918	797.918
A	93+08.64	-17.750	798.493	798.490
B	93+18.64	-17.750	799.068	799.060
C	93+28.64	-17.750	799.637	799.623
D	93+38.64	-17.750	800.190	800.172
E	93+48.64	-17.750	800.726	800.720
⊕ Brg. Pier 1	93+53.64	-17.750	800.988	800.988
F	93+63.64	-17.750	801.500	801.548
G	93+73.64	-17.750	801.996	802.091
H	93+83.64	-17.750	802.475	802.611
I	93+93.64	-17.750	802.938	803.104
J	94+03.64	-17.750	803.385	803.580
K	94+13.64	-17.750	803.815	803.993
L	94+23.64	-17.750	804.229	804.382
M	94+33.64	-17.750	804.627	804.747
N	94+43.64	-17.750	805.008	805.076
⊕ Brg. Pier 2	94+56.64	-17.750	805.479	805.479
O	94+66.64	-17.750	805.823	805.801
P	94+76.64	-17.750	806.151	806.117
Q	94+86.64	-17.750	806.462	806.426
R	94+96.64	-17.750	806.756	806.727
S	95+06.64	-17.750	807.035	807.020
⊕ Brg. Pier 3	95+14.64	-17.750	807.246	807.246
T	95+24.64	-17.750	807.495	807.534
U	95+34.64	-17.750	807.728	807.806
V	95+44.64	-17.750	807.944	808.050
W	95+54.64	-17.750	808.145	808.262
X	95+64.64	-17.750	808.328	808.458
Y	95+74.64	-17.750	808.496	808.602
Z	95+84.64	-17.750	808.647	808.725
A1	95+94.64	-17.750	808.782	808.834
B1	96+04.64	-17.750	808.900	808.929
⊕ Brg. Pier 4	96+16.64	-17.750	809.021	809.021
C1	96+26.64	-17.750	809.104	809.128
D1	96+36.64	-17.750	809.170	809.220
E1	96+46.64	-17.750	809.220	809.297
F1	96+56.64	-17.750	809.254	809.361
G1	96+66.64	-17.750	809.271	809.400
H1	96+76.64	-17.750	809.272	809.394
I1	96+86.64	-17.750	809.257	809.370
J1	96+96.64	-17.750	809.225	809.300
K1	97+06.64	-17.750	809.177	809.205
⊕ Brg. E. Abut.	97+12.64	-17.750	809.140	809.140
Bk. E. Abut.	97+17.50	-17.750	809.106	809.106

Beam 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	93+02.11	-10.250	798.118	798.118
⊕ Brg. W. Abut.	93+06.97	-10.250	798.397	798.397
A	93+16.97	-10.250	798.972	798.969
B	93+26.97	-10.250	799.543	799.534
C	93+36.97	-10.250	800.099	800.084
D	93+46.97	-10.250	800.638	800.620
E	93+56.97	-10.250	801.160	801.154
⊕ Brg. Pier 1	93+61.97	-10.250	801.416	801.416
F	93+71.97	-10.250	801.914	801.964
G	93+81.97	-10.250	802.396	802.495
H	93+91.97	-10.250	802.862	803.003
I	94+01.97	-10.250	803.311	803.484
J	94+11.97	-10.250	803.744	803.948
K	94+21.97	-10.250	804.161	804.347
L	94+31.97	-10.250	804.561	804.721
M	94+41.97	-10.250	804.945	805.070
N	94+51.97	-10.250	805.313	805.384
⊕ Brg. Pier 2	94+64.97	-10.250	805.767	805.767
O	94+74.97	-10.250	806.097	806.074
P	94+84.97	-10.250	806.411	806.376
Q	94+94.97	-10.250	806.708	806.672
R	95+04.97	-10.250	806.990	806.959
S	95+14.97	-10.250	807.254	807.239
⊕ Brg. Pier 3	95+22.97	-10.250	807.455	807.455
T	95+32.97	-10.250	807.690	807.731
U	95+42.97	-10.250	807.909	807.991
V	95+52.97	-10.250	808.112	808.222
W	95+62.97	-10.250	808.299	808.421
X	95+72.97	-10.250	808.469	808.604
Y	95+82.97	-10.250	808.623	808.733
Z	95+92.97	-10.250	808.760	808.842
A1	96+02.97	-10.250	808.882	808.935
B1	96+12.97	-10.250	808.987	809.016
⊕ Brg. Pier 4	96+24.97	-10.250	809.091	809.091
C1	96+34.97	-10.250	809.160	809.186
D1	96+44.97	-10.250	809.213	809.264
E1	96+54.97	-10.250	809.249	809.330
F1	96+64.97	-10.250	809.269	809.381
G1	96+74.97	-10.250	809.273	809.408
H1	96+84.97	-10.250	809.260	809.387
I1	96+94.97	-10.250	809.231	809.350
J1	97+04.97	-10.250	809.186	809.264
K1	97+14.97	-10.250	809.124	809.154
⊕ Brg. E. Abut.	97+20.97	-10.250	809.080	809.080
Bk. E. Abut.	97+25.83	-10.250	809.039	809.039

Beam 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	93+10.44	-2.750	798.753	798.753
⊕ Brg. W. Abut.	93+15.30	-2.750	799.032	799.032
A	93+25.30	-2.750	799.605	799.602
B	93+35.30	-2.750	800.163	800.155
C	93+45.30	-2.750	800.705	800.691
D	93+55.30	-2.750	801.231	801.212
E	93+65.30	-2.750	801.740	801.733
⊕ Brg. Pier 1	93+70.30	-2.750	801.988	801.988
F	93+80.30	-2.750	802.473	802.523
G	93+90.30	-2.750	802.941	803.041
H	94+00.30	-2.750	803.393	803.535
I	94+10.30	-2.750	803.829	804.002
J	94+20.30	-2.750	804.249	804.453
K	94+30.30	-2.750	804.652	804.838
L	94+40.30	-2.750	805.039	805.198
M	94+50.30	-2.750	805.409	805.534
N	94+60.30	-2.750	805.763	805.834
⊕ Brg. Pier 2	94+73.30	-2.750	806.199	806.199
O	94+83.30	-2.750	806.516	806.493
P	94+93.30	-2.750	806.816	806.782
Q	95+03.30	-2.750	807.100	807.063
R	95+13.30	-2.750	807.368	807.337
S	95+23.30	-2.750	807.619	807.603
⊕ Brg. Pier 3	95+31.30	-2.750	807.808	807.808
T	95+41.30	-2.750	808.030	808.071
U	95+51.30	-2.750	808.236	808.317
V	95+61.30	-2.750	808.425	808.535
W	95+71.30	-2.750	808.598	808.720
X	95+81.30	-2.750	808.755	808.890
Y	95+91.30	-2.750	808.895	809.005
Z	96+01.30	-2.750	809.019	809.100
A1	96+11.30	-2.750	809.127	809.180
B1	96+21.30	-2.750	809.218	809.247
⊕ Brg. Pier 4	96+33.30	-2.750	809.306	809.306
C1	96+43.30	-2.750	809.361	809.387
D1	96+53.30	-2.750	809.400	809.452
E1	96+63.30	-2.750	809.423	809.504
F1	96+73.30	-2.750	809.430	809.541
G1	96+83.30	-2.750	809.420	809.555
H1	96+93.30	-2.750	809.394	809.520
I1	97+03.30	-2.750	809.351	809.470
J1	97+13.30	-2.750	809.292	809.370
K1	97+23.30	-2.750	809.217	809.246
⊕ Brg. E. Abut.	97+29.30	-2.750	809.164	809.164
Bk. E. Abut.	97+34.16	-2.750	809.117	809.117

Corporate License Number 184-001-084

TOP OF SLAB ELEVATION TABLES

WESTBOUND HARRISON AVENUE
OVER UP & CC&P RAILROAD
F.A.P. ROUTE 0525
SECTION 02-00518-00-BR
ROCKFORD, ILLINOIS
STATION 95+25.35
STRUCTURE NO. 101-6109

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JOB NO. 03R1751

DATE 12/14/06

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LAYOUT	09/08/05
DRAWN	FLN
REVIEWED	08/02/06

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 9
FAP 0525	*	WINNEBAGO	157	116	50 SHEETS
FED. ROAD DIST. NO. 7		ILL. STATE		FED. AID PROJECT	
* 02-00518-00-BR					

Beam 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	93+18.77	4.750	799.363	799.363
☉ Brg. W. Abut.	93+23.63	4.750	799.642	799.642
A	93+33.63	4.750	800.203	800.199
B	93+43.63	4.750	800.747	800.739
C	93+53.63	4.750	801.275	801.261
D	93+63.63	4.750	801.787	801.769
E	93+73.63	4.750	802.283	802.276
☉ Brg. Pier 1	93+78.63	4.750	802.525	802.525
F	93+88.63	4.750	802.996	803.045
G	93+98.63	4.750	803.451	803.550
H	94+08.63	4.750	803.889	804.030
I	94+18.63	4.750	804.311	804.484
J	94+28.63	4.750	804.717	804.921
K	94+38.63	4.750	805.107	805.293
L	94+48.63	4.750	805.480	805.639
M	94+58.63	4.750	805.837	805.962
N	94+68.63	4.750	806.177	806.248
☉ Brg. Pier 2	94+81.63	4.750	806.596	806.596
O	94+91.63	4.750	806.899	806.876
P	95+01.63	4.750	807.185	807.151
Q	95+11.63	4.750	807.456	807.419
R	95+21.63	4.750	807.710	807.679
S	95+31.63	4.750	807.947	807.931
☉ Brg. Pier 3	95+39.63	4.750	808.126	808.126
T	95+49.63	4.750	808.334	808.375
U	95+59.63	4.750	808.526	808.607
V	95+69.63	4.750	808.702	808.811
W	95+79.63	4.750	808.861	808.984
X	95+89.63	4.750	809.004	809.140
Y	95+99.63	4.750	809.131	809.241
Z	96+09.63	4.750	809.241	809.322
A1	96+19.63	4.750	809.335	809.389
B1	96+29.63	4.750	809.413	809.442
☉ Brg. Pier 4	96+41.63	4.750	809.485	809.485
C1	96+51.63	4.750	809.527	809.552
D1	96+61.63	4.750	809.552	809.604
E1	96+71.63	4.750	809.561	809.642
F1	96+81.63	4.750	809.554	809.666
G1	96+91.63	4.750	809.531	809.665
H1	97+01.63	4.750	809.491	809.618
I1	97+11.63	4.750	809.435	809.553
J1	97+21.63	4.750	809.362	809.440
K1	97+31.63	4.750	809.273	809.303
☉ Brg. E. Abut.	97+37.63	4.750	809.212	809.212
Bk. E. Abut.	97+42.49	4.750	809.158	809.158

Beam 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	93+27.10	12.250	799.955	799.955
☉ Brg. W. Abut.	93+31.96	12.250	800.227	800.227
A	93+41.96	12.250	800.774	800.771
B	93+51.96	12.250	801.305	801.297
C	93+61.96	12.250	801.820	801.806
D	93+71.96	12.250	802.319	802.301
E	93+81.96	12.250	802.801	802.794
☉ Brg. Pier 1	93+86.96	12.250	803.035	803.035
F	93+96.96	12.250	803.493	803.541
G	94+06.96	12.250	803.934	804.030
H	94+16.96	12.250	804.359	804.495
I	94+26.96	12.250	804.768	804.933
J	94+36.96	12.250	805.160	805.356
K	94+46.96	12.250	805.536	805.714
L	94+56.96	12.250	805.895	806.048
M	94+66.96	12.250	806.239	806.359
N	94+76.96	12.250	806.566	806.633
☉ Brg. Pier 2	94+89.96	12.250	806.966	806.966
O	94+99.96	12.250	807.256	807.234
P	95+09.96	12.250	807.529	807.496
Q	95+19.96	12.250	807.785	807.750
R	95+29.96	12.250	808.026	807.996
S	95+39.96	12.250	808.250	808.235
☉ Brg. Pier 3	95+47.96	12.250	808.418	808.418
T	95+57.96	12.250	808.612	808.651
U	95+67.96	12.250	808.791	808.869
V	95+77.96	12.250	808.953	809.058
W	95+87.96	12.250	809.099	809.216
X	95+97.96	12.250	809.228	809.358
Y	96+07.96	12.250	809.341	809.447
Z	96+17.96	12.250	809.438	809.516
A1	96+27.96	12.250	809.518	809.570
B1	96+37.96	12.250	809.582	809.611
☉ Brg. Pier 4	96+49.96	12.250	809.638	809.638
C1	96+59.96	12.250	809.666	809.691
D1	96+69.96	12.250	809.678	809.728
E1	96+79.96	12.250	809.674	809.751
F1	96+89.96	12.250	809.653	809.760
G1	96+99.96	12.250	809.616	809.745
H1	97+09.96	12.250	809.562	809.684
I1	97+19.96	12.250	809.493	809.607
J1	97+29.96	12.250	809.407	809.481
K1	97+39.96	12.250	809.304	809.332
☉ Brg. E. Abut.	97+45.96	12.250	809.235	809.235
Bk. E. Abut.	97+50.82	12.250	809.175	809.175

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DRAWN	12/14/05
REVIEWED	08/02/06

Corporate License Number 184-001-084

TOP OF SLAB ELEVATION TABLES

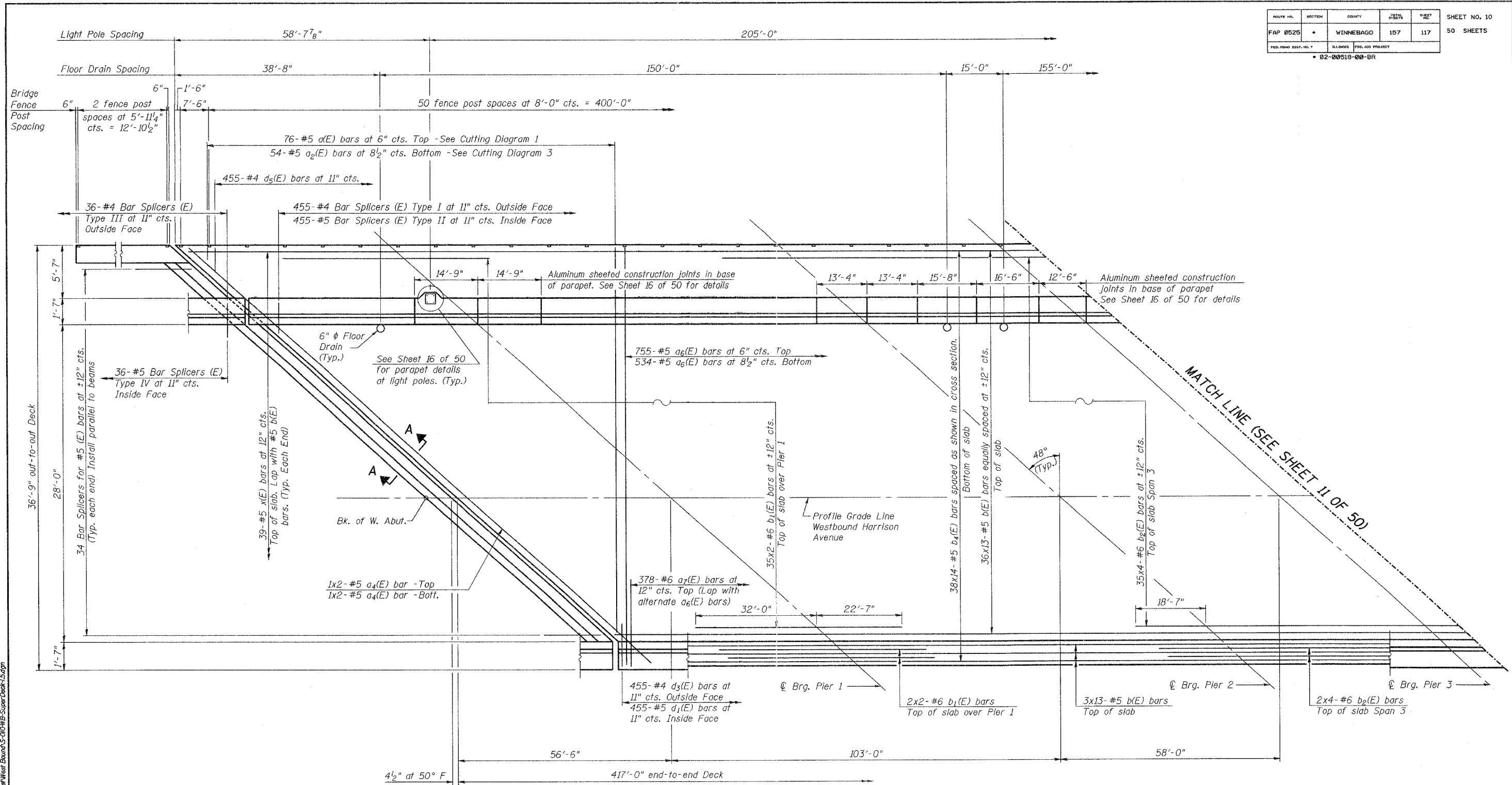
**WESTBOUND HARRISON AVENUE
 OVER UP & CC&P RAILROAD
 F.A.P. ROUTE 0525
 SECTION 02-00518-00-BR
 ROCKFORD, ILLINOIS
 STATION 95+25.35
 STRUCTURE NO. 101-6109**

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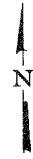
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FED. ROAD DIST. NO. 7		BILLINGS	FED. AID PROJECT		
• 02-00518-00-BR					



MIN. BAR LAP

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

PLAN



NOTES

- Work this sheet with Sheets 11 thru 16 of 50.
- For Section A-A see Sheet 12 of 50.
- Reinforcement bars designated (E) shall be epoxy coated.
- Bar indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
- For details of Pedestrian Fence see Sheets 20 of 50.
- For details and post spacing of Parapet Fence see Sheets 14 & 19 of 50.
- For details and post spacing of Parapet Rail see Sheets 13 & 18 of 50.
- For Superstructure Bill of Material see Sheet 16 of 50.

Corporate License Number 184-001-084

SUPERSTRUCTURE

WESTBOUND HARRISON AVENUE
 OVER UP & CC&P RAILROAD
 F.A.P. ROUTE 0525
 SECTION 02-00518-00-BR
 ROCKFORD, ILLINOIS
 STATION 95+25.35
 STRUCTURE NO. 101-6109

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JOB NO.

03R1751

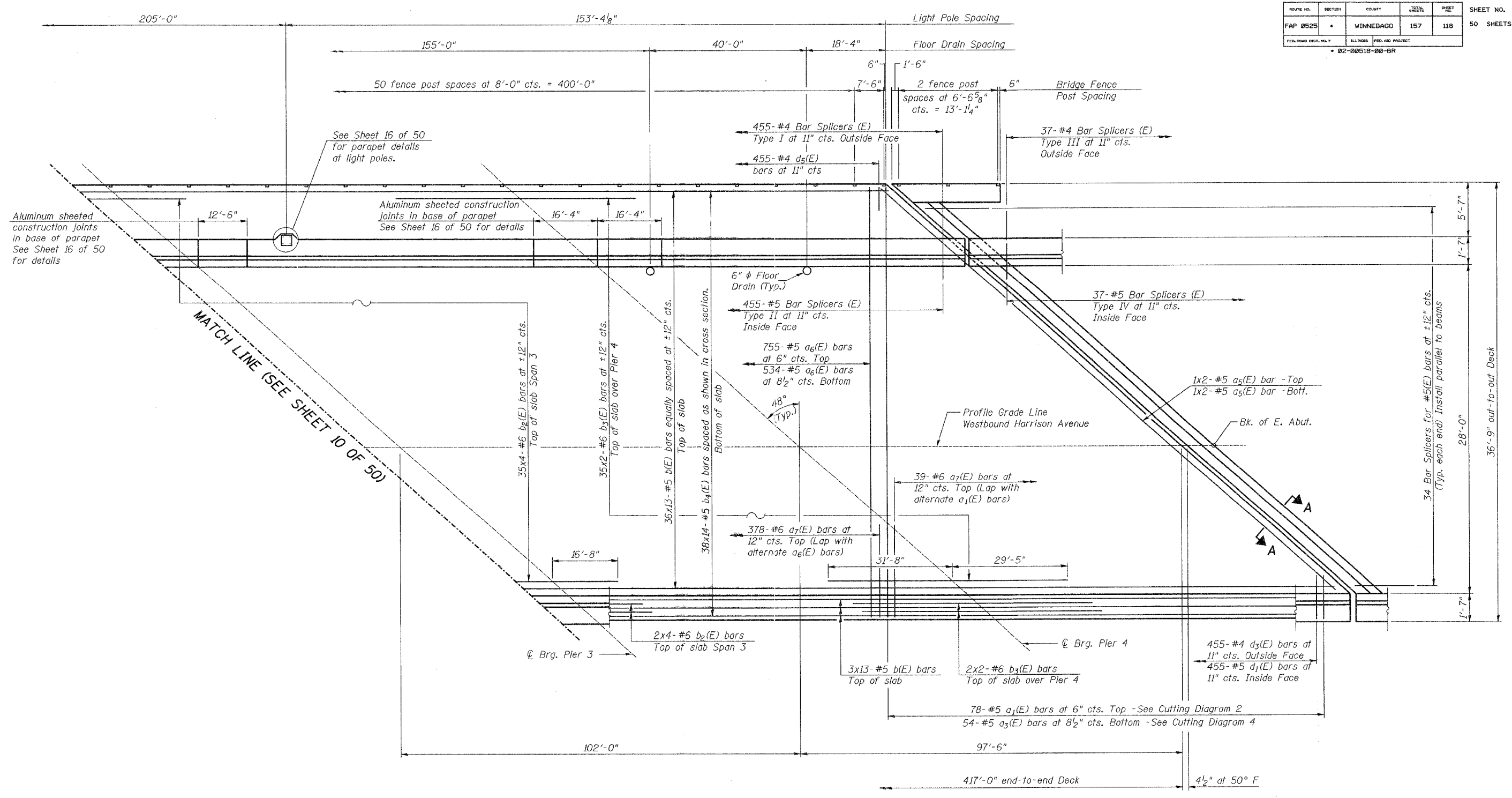
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DRAWN	MMJ/KJR	08/07/06
REVIEWED	FLN	08/02/06

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO.	SHEET NO.
FAP 0525	*	WINNEBAGO	157	118	50 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		
* 02-00518-00-BR					



MIN. BAR LAP
 #5 - 2'-2"
 #6 - 2'-7"



NOTES

Work this sheet with Sheet 10 and Sheets 12 thru 16 of 50.
 For Section A-A see Sheet 12 of 50.
 Reinforcement bars designated (E) shall be epoxy coated.
 Bar indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
 For details of Pedestrian Fence see Sheet 20 of 50.
 For details and post spacing of Parapet Fence see Sheets 14 & 19 of 50.
 For details and post spacing of Parapet Rail see Sheets 13 & 18 of 50.
 For Superstructure Bill of Material see Sheet 16 of 50.

Corporate License Number 184-001-084

SUPERSTRUCTURE

**WESTBOUND HARRISON AVENUE
 OVER UP & CC&P RAILROAD
 F.A.P. ROUTE 0525
 SECTION 02-00518-00-BR
 ROCKFORD, ILLINOIS
 STATION 95+25.35
 STRUCTURE NO. 101-6109**

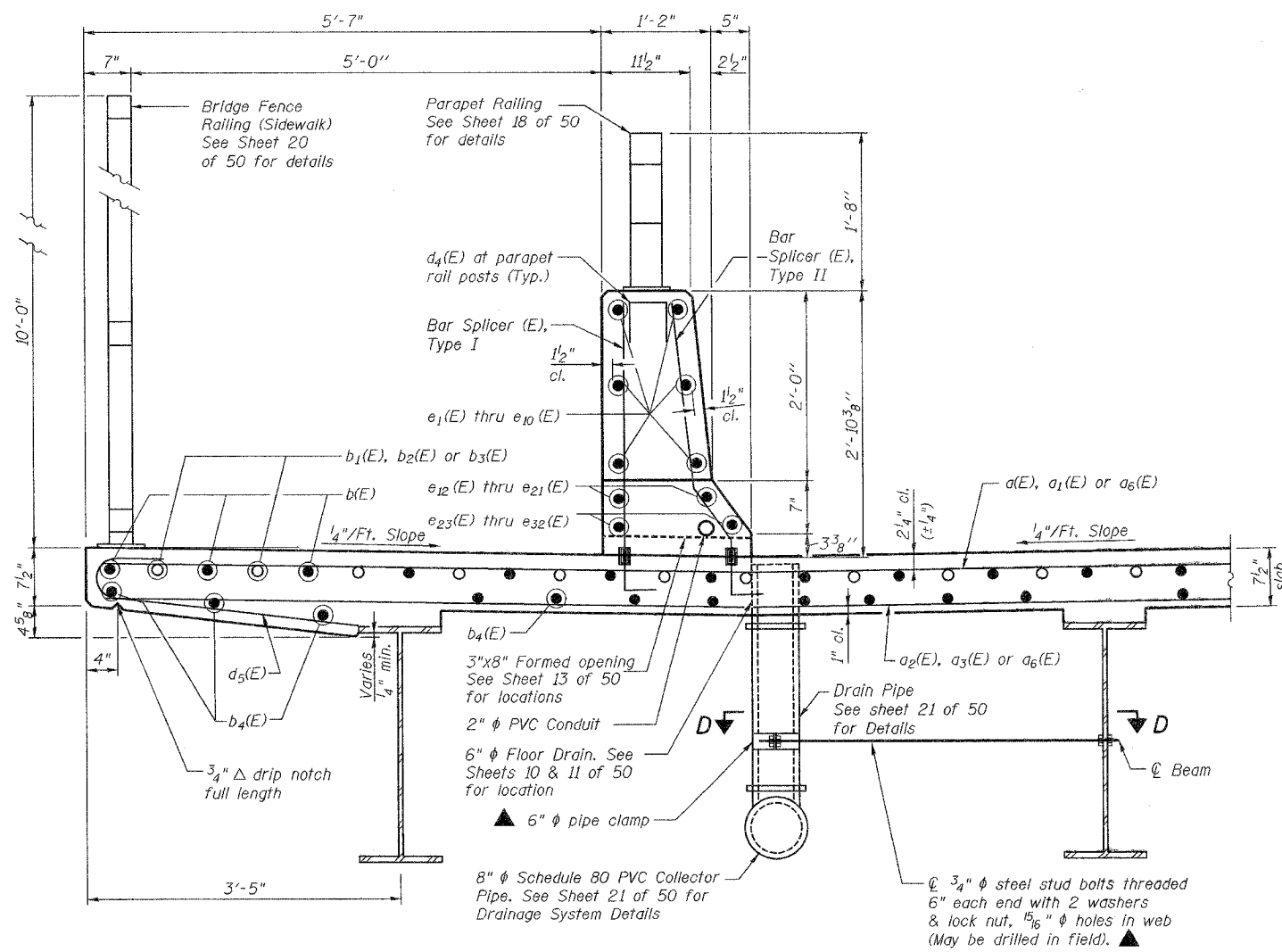
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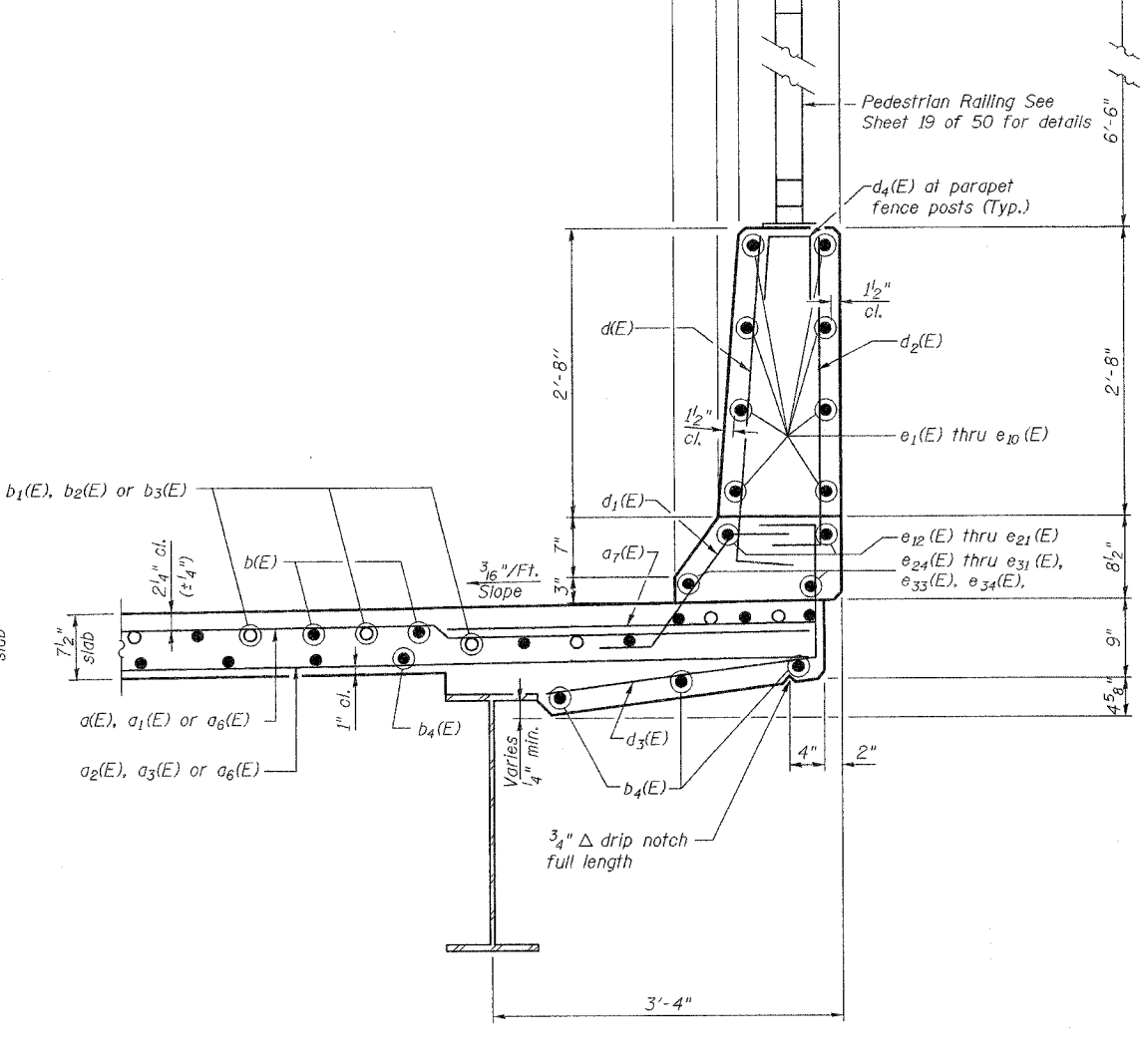
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FAP 0525		WINNEBAGO	157	122	50 SHEETS
FED. ROAD DIST. NO. 7		BLDG. NO.	FED. AID PROJECT		
02-00518-00-BR					



SECTION THRU PARAPET, SIDEWALK & PEDESTRIAN FENCE

(North Edge of Deck shown, Looking East)

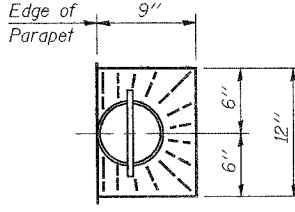


SECTION THRU PARAPET

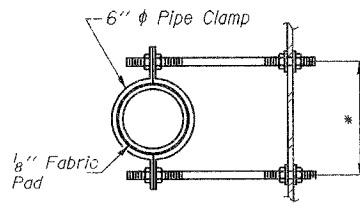
(South Edge of Deck shown, Looking East)

NOTES

Fiberglass rebar shall conform to ASTM D 2996, with short-time rupture strength hoop tension stress of 30,000 psi minimum. For Superstructure Bill of Material, see Sheet 16 of 50. Work this Sheet with Sheets 10 thru 14 and 16 of 50. PVC type material shall be gray in color or painted gray in accordance with PVC manufacturer's recommendations.

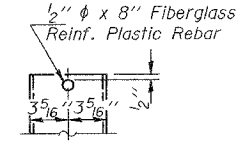


TOP PLAN



SECTION D-D

* Dimension as required by Pipe Clamp



PVC PIPE

Drain and fittings shall be 6" Schedule 80, PVC conforming to ASTM Standard D1785, D2464, D2467

6" DIAMETER FLOOR DRAIN

▲ Cost included in Floor Drains

Corporate License Number 184-001-084

SUPERSTRUCTURE DETAILS

WESTBOUND HARRISON AVENUE
OVER UP & CC&P RAILROAD
F.A.P. ROUTE 0525
SECTION 02-00518-00-BR
ROCKFORD, ILLINOIS
STATION 95+25.35
STRUCTURE NO. 101-6109

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JOB NO.
03R1751
DATE
12/14/06

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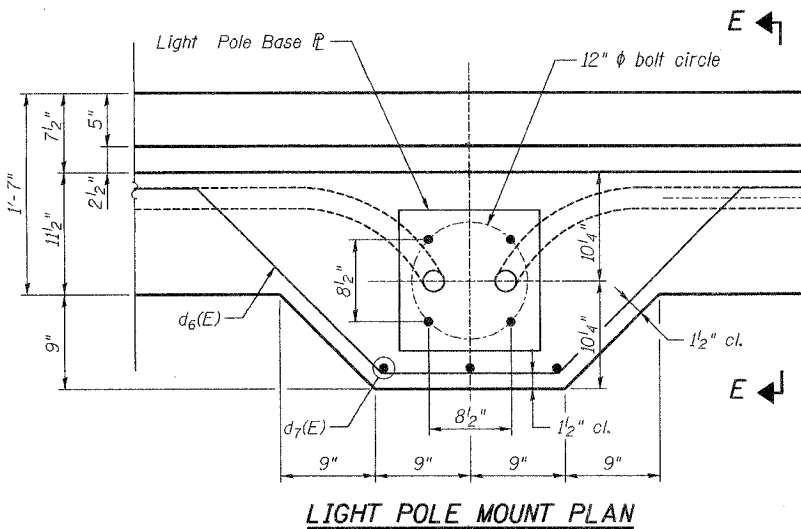
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FAP 0525		WINNEBAGO	157	50
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
• 02-00518-00-BR				

SUPERSTRUCTURE BILL OF MATERIAL

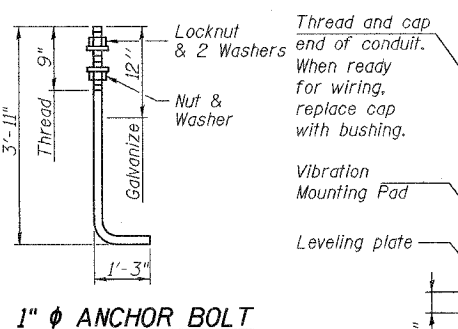
Bar	No.	Size	Length	Shape
a(E)	38	#5	35'-9"	
a ₁ (E)	39	#5	37'-9"	
a ₂ (E)	27	#5	35'-8"	
a ₃ (E)	27	#5	37'-4"	
a ₄ (E)	4	#5	28'-2"	
a ₅ (E)	4	#5	27'-3"	
a ₆ (E)	1289	#5	36'-3"	
a ₇ (E)	417	#6	4'-6"	
b(E)	507	#5	34'-2"	
b ₁ (E)	74	#6	28'-7"	
b ₂ (E)	148	#6	25'-3"	
b ₃ (E)	74	#6	31'-10"	
b ₄ (E)	532	#5	31'-11"	
d(E)	455	#5	3'-8"	
d ₁ (E)	455	#5	2'-5"	
d ₂ (E)	455	#4	3'-8"	
d ₃ (E)	455	#4	3'-11"	
d ₄ (E)	200	#4	2'-1"	
d ₅ (E)	455	#4	4'-5"	
d ₆ (E)	15	#6	9'-4"	
d ₇ (E)	9	#6	4'-6"	
e(E)	12	#4	15'-10"	
e ₁ (E)	42	#4	13'-8"	
e ₂ (E)	28	#4	14'-6"	
e ₃ (E)	56	#4	18'-5"	
e ₄ (E)	28	#4	13'-1"	
e ₅ (E)	14	#4	15'-5"	
e ₆ (E)	14	#4	16'-3"	
e ₇ (E)	28	#4	12'-3"	
e ₈ (E)	56	#4	18'-0"	
e ₉ (E)	28	#4	16'-1"	
e ₁₀ (E)	70	#4	15'-11"	
x(E)	78	#5	4'-1"	

Bar	No.	Size	Length	Shape
e ₁₁ (E)	2	#8	32'-0"	
e ₁₂ (E)	4	#8	41'-6"	
e ₁₃ (E)	8	#8	14'-6"	
e ₁₄ (E)	12	#8	27'-4"	
e ₁₅ (E)	8	#8	13'-1"	
e ₁₆ (E)	4	#8	15'-5"	
e ₁₇ (E)	4	#8	16'-3"	
e ₁₈ (E)	8	#8	12'-3"	
e ₁₉ (E)	12	#8	26'-9"	
e ₂₀ (E)	8	#8	16'-1"	
e ₂₁ (E)	12	#8	29'-6"	
e ₂₂ (E)	2	#5	30'-6"	
e ₂₃ (E)	2	#5	40'-0"	
e ₂₄ (E)	8	#5	14'-6"	
e ₂₅ (E)	12	#5	26'-0"	
e ₂₆ (E)	8	#5	13'-1"	
e ₂₇ (E)	4	#5	15'-5"	
e ₂₈ (E)	4	#5	16'-3"	
e ₂₉ (E)	8	#5	12'-3"	
e ₃₀ (E)	12	#5	25'-5"	
e ₃₁ (E)	8	#5	16'-1"	
e ₃₂ (E)	6	#5	27'-7"	
e ₃₃ (E)	6	#5	28'-1"	
e ₃₄ (E)	2	#5	41'-6"	
e ₃₅ (E)	12	#4	16'-4"	
e ₃₆ (E)	2	#8	32'-11"	
e ₃₇ (E)	2	#5	31'-5"	
x(E)	78	#5	4'-1"	

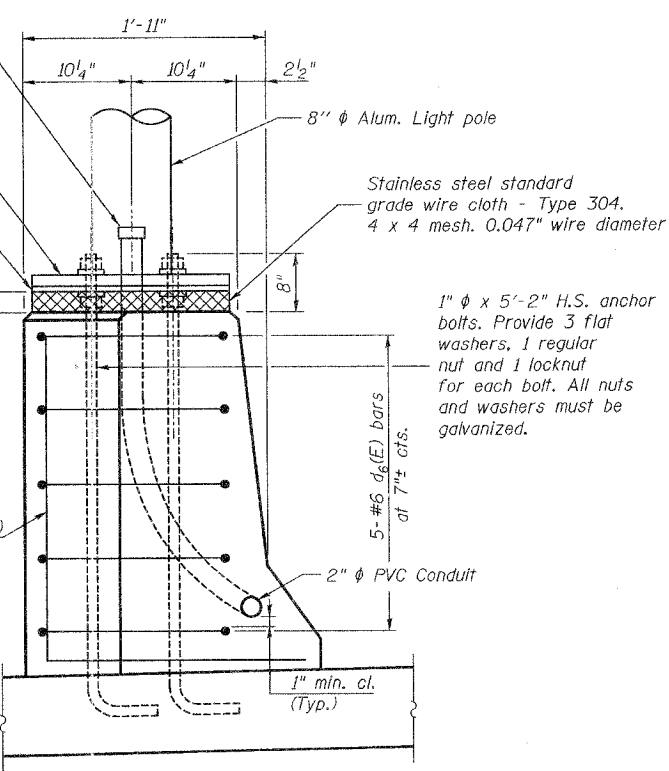
Reinforcement Bars, Epoxy Coated	Pound	123,290
Concrete Superstructure	Cu. Yds.	513.1
Bridge Deck Grooving	Sq. Yds.	1205
Protective Coat	Sq. Yds.	2381
Floor Drains	Each	5



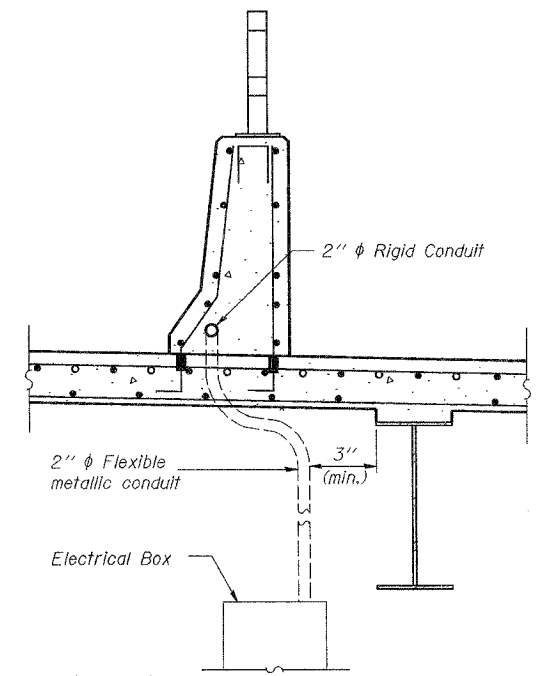
LIGHT POLE MOUNT PLAN



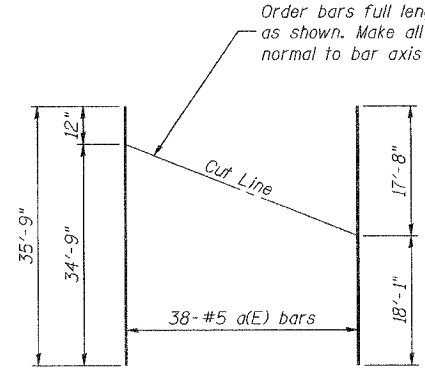
1" ϕ ANCHOR BOLT



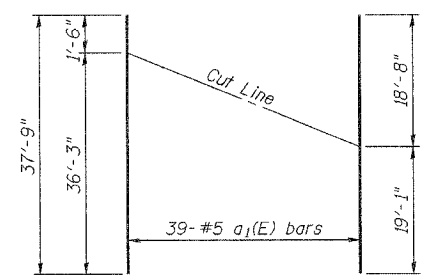
SECTION E-E



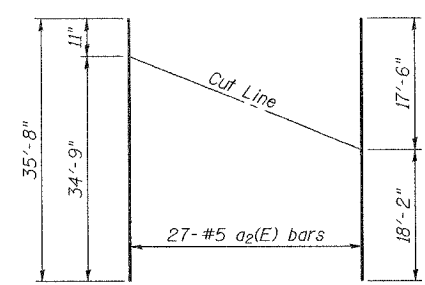
ELECTRICAL BOX - CONDUIT DETAILS



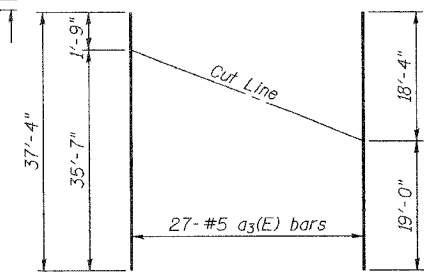
BAR a(E) CUTTING DIAGRAM 1



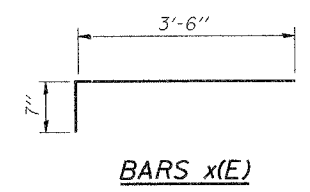
BAR a₁(E) CUTTING DIAGRAM 2



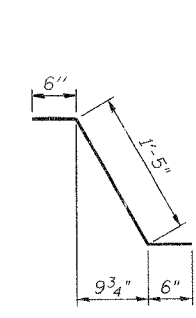
BAR a₂(E) CUTTING DIAGRAM 3



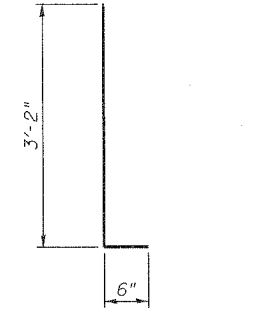
BAR a₃(E) CUTTING DIAGRAM 4



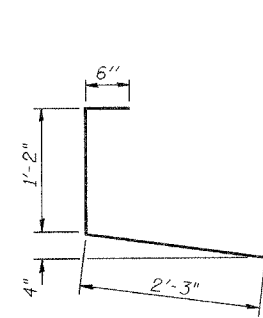
BARS x(E)



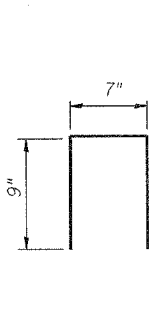
BAR d₁(E)



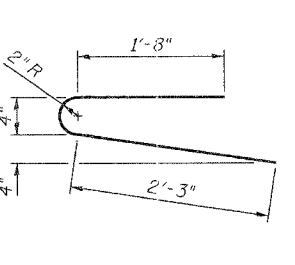
BARS d(E) & d₂(E)



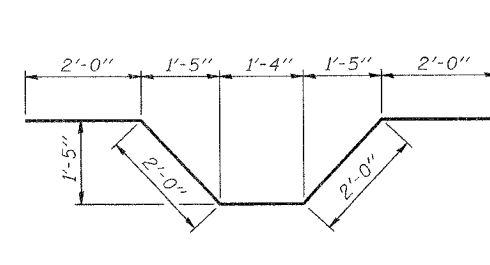
BAR d₃(E)



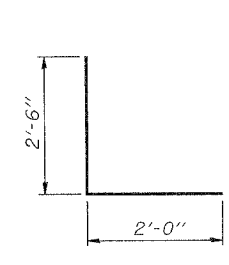
BARS d₄(E)



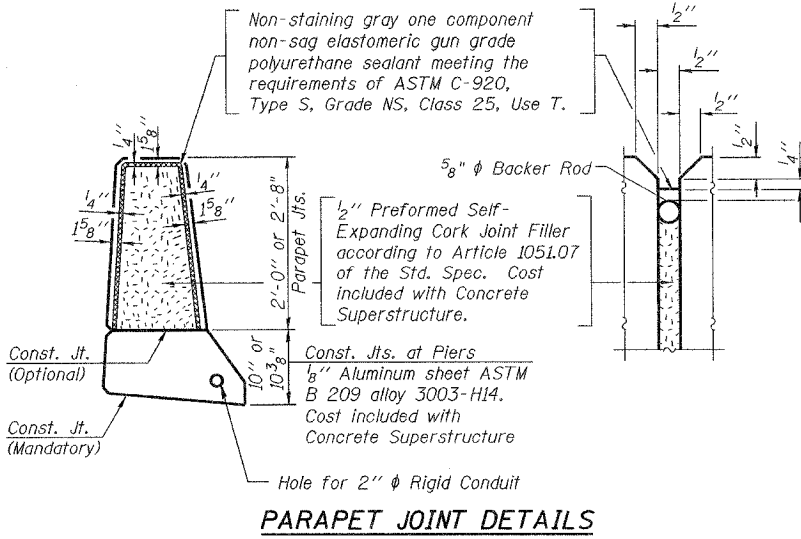
BAR d₅(E)



BAR d₆(E)



BAR d₇(E)



PARAPET JOINT DETAILS

NOTES

Work this sheet with Sheets 10 thru 15 of 50. Bar indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line. For light pole spacing see Sheet 13 of 50. Reinforcement bars designated (E) shall be epoxy coated. Cost of anchor bolts is included with Concrete Superstructure. Conduit shall not be placed in parapet until reinforcement is set.

Corporate License Number 184-001-084

SUPERSTRUCTURE DETAILS

WESTBOUND HARRISON AVENUE
OVER UP & CC&P RAILROAD
F.A.P. ROUTE 0525
SECTION 02-00518-00-BR
ROCKFORD, ILLINOIS
STATION 95+25.35
STRUCTURE NO. 101-6109

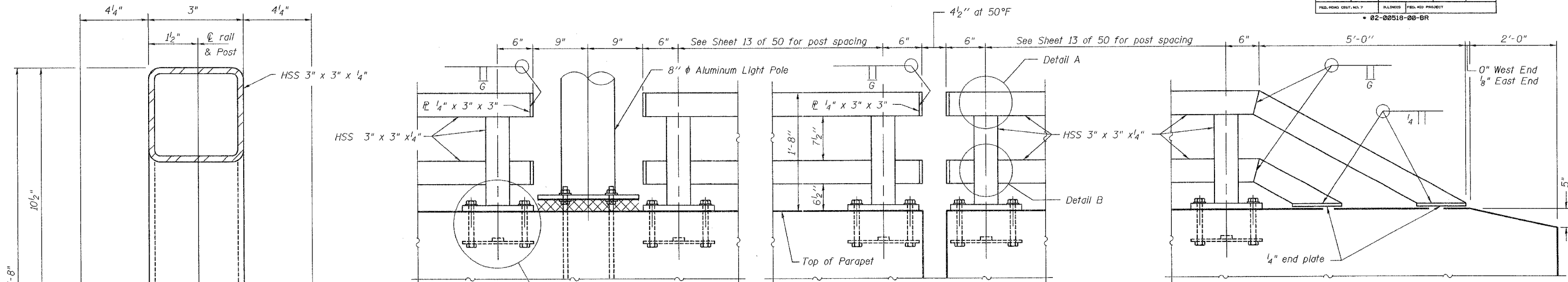
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03R1751
DATE
12/14/06

1/21/06 PJR
 12/13/2006 01/21 PJM
 1/03/06 03/07/06
 04/26/06
 07/12/06
 08/02/06

ROUTE NO.	SECTION	COUNTY	JOB NO.	SHEET NO.	SHEET NO. 18
FAP 0525		WINNEBAGO	157	125	50 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			
02-00518-00-BR					



AT EAST END OF PARAPET
(West End Similar)

AT LIGHT POLE

AT EXPANSION JOINT

PARTIAL ELEVATION OF PARAPET RAILING
(Inside Face)

NOTES

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 Parapet Railing.

Allow structural sections shall conform to the requirements of ASTM designation A 500, Grade B, structural steel tubing.

All other steel shapes and plates shall conform to the requirements of AASHTO M270 Grade 36.

If the option of drilling and epoxy grouting the anchor rods is chosen, the Contractor shall use 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 shall be sealed with pre-measured amounts of the adhesive chemical.

Space reinforcement to miss anchor rods.

All posts, railing, slices, anchor devices, and plates shall be galvanized after shop fabrication according to AASHTO M 111 and ASTM A 385. All bolts, nuts, washers, and anchor rods shall be galvanized according to AASHTO M 232 except stainless steel bolts as noted.

Vent holes for galvanizing shall be placed in the posts and rails at locations that will not allow the accumulation of moisture in the members.

Fabricator shall account for roadway profile in fabricating the railing.

Steel post shims may be used under post where required for alignment.

BILL OF MATERIAL

Item	Unit	Quantity
Parapet Railing	Foot	475

Corporate License Number 184-001-084

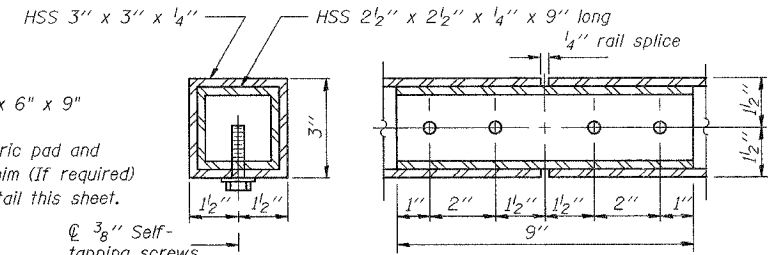
PARAPET STEEL RAILING

WESTBOUND HARRISON AVENUE
OVER UP & CC&P RAILROAD
F.A.P. ROUTE 0525
SECTION 02-00518-00-BR
ROCKFORD, ILLINOIS
STATION 95+25.35
STRUCTURE NO. 101-6109

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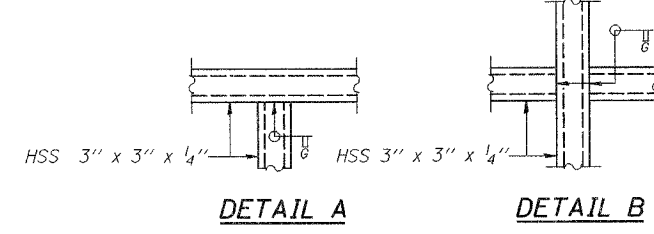


JOB NO.
03R1751
DATE
12/14/06



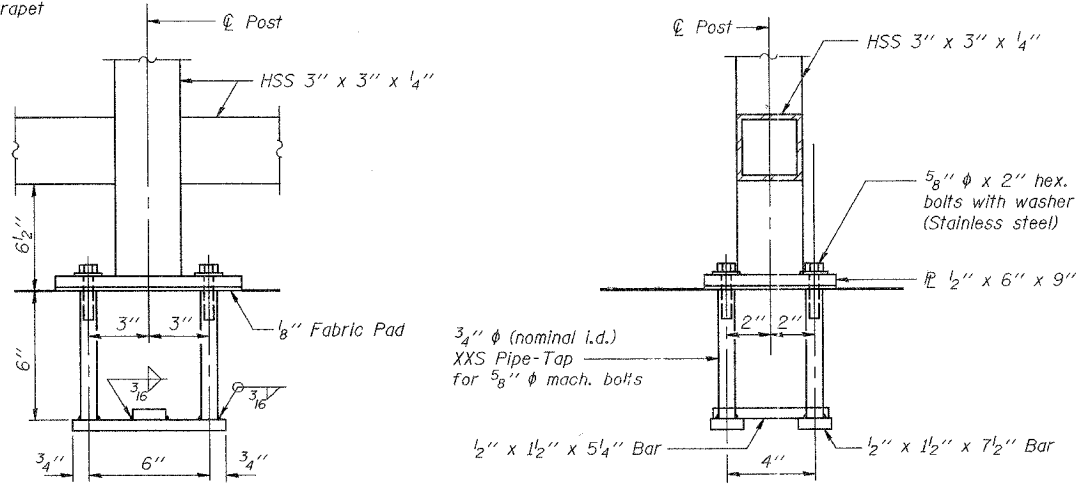
RAIL SPLICE

(Locations must be shown on shop drawings)



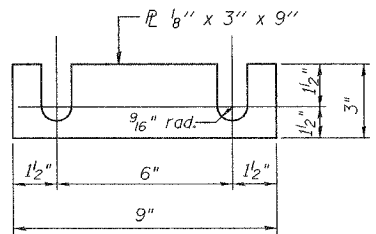
DETAIL A

DETAIL B



ANCHOR BOLT DETAILS

In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and epoxy grouting 5/8\"/>



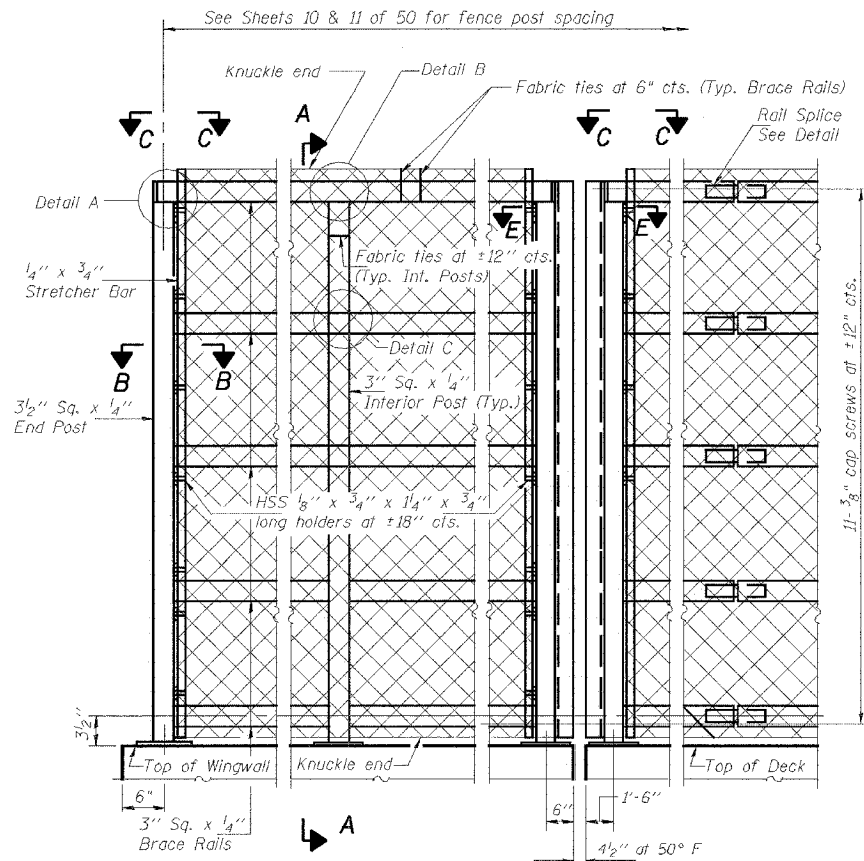
POST SHIM PLATE DETAIL

Shim plates shall be galvanized after shop fabrication according to AASHTO M232.

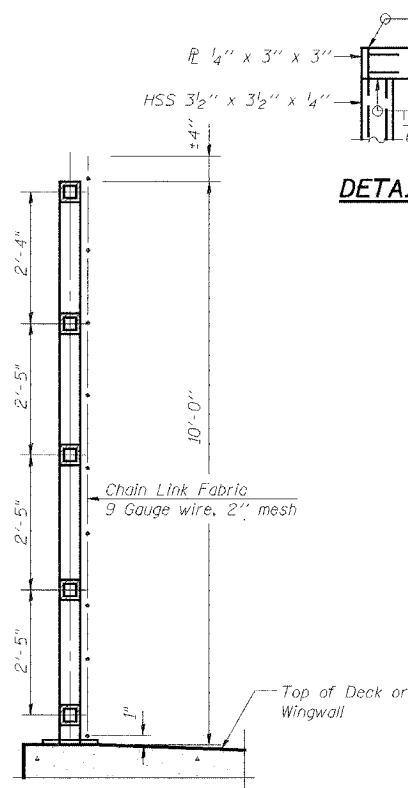
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 R03 Jobs 03R1751/Struct/Sheet/West Bound S-018-WB-Railing/Drawn

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DRAWN	MEM.	07/13/06
REVIEWED	FLN.	08/02/06

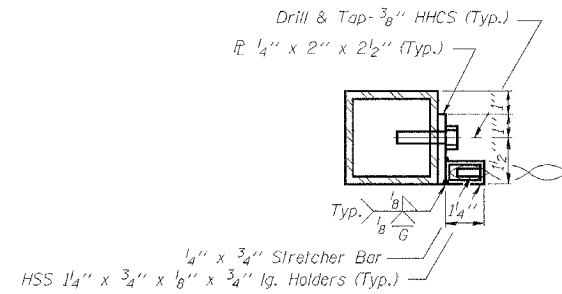
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FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT	
		02-00518-00-BR		85399	



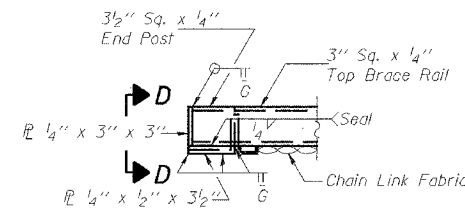
ELEVATION
(Inside Face)
(West End Shown, East End Similar)



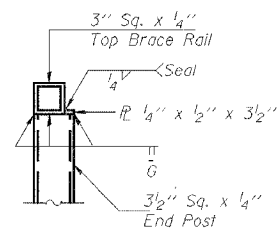
SECTION A-A



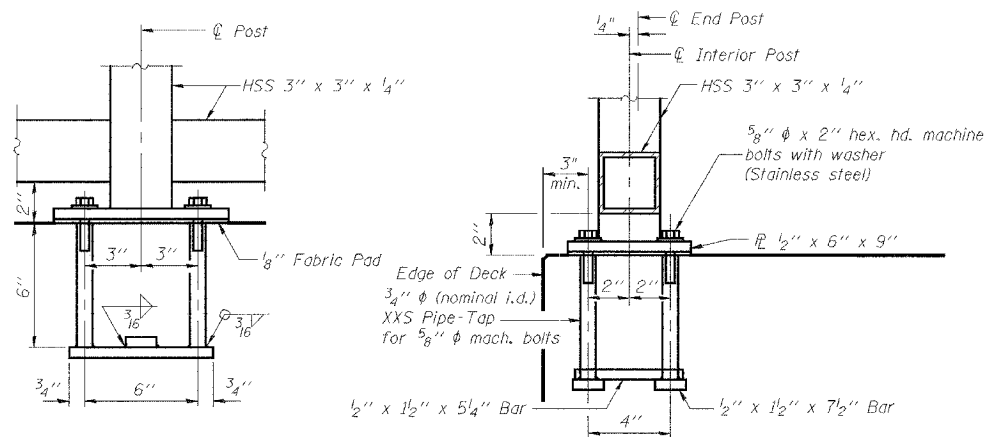
SECTION B-B



VIEW C-C

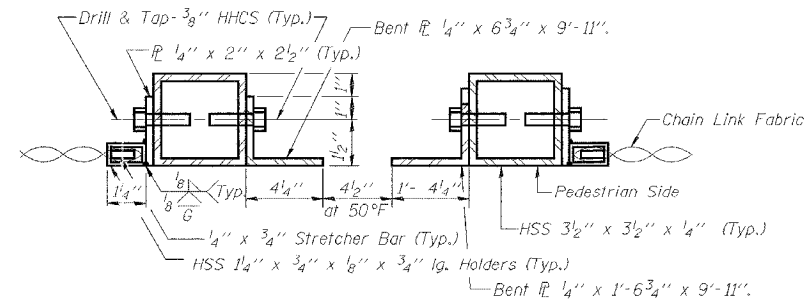
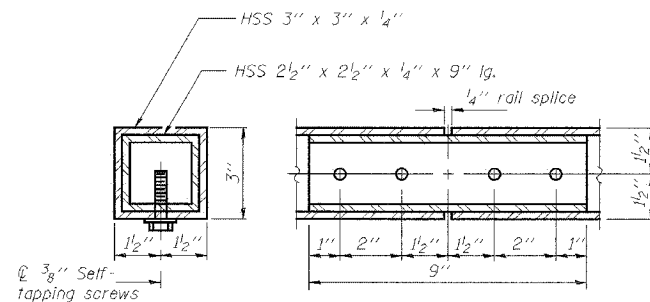
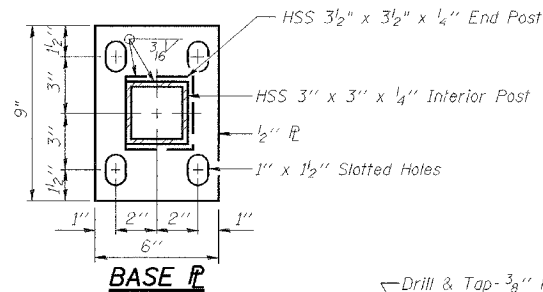


VIEW D-D



ANCHOR BOLT DETAILS

In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and epoxy grouting 3/8" φ anchor rods. Embedment shall be according to the manufacturer's specifications.



SECTION E-E
(At Expansion Joint)

NOTES

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 Bridge Fence Railing (Sidewalk).
The 9 gauge fabric ties shall be according to Article 1006.27(d) of the Standard Specifications.
Installation of the chain link fabric shall be according to Section 664 of the Standard Specifications.
Hollow structural sections shall conform to the requirements of ASTM designation A 500, Grade B, structural steel tubing.
All other steel shapes and plates shall conform to the requirements of AASHTO M 270 Grade 36.
The chain link fabric shall be placed along pedestrian side as shown on Section A-A.
Stretcher bars shall be used at each end of fabric.
A minimum of one complete turn is required at ends of all fabric ties.
If the option of drilling and epoxy grouting the anchor rods is chosen, the Contractor shall use 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 shall be sealed with pre-measured amounts of the adhesive chemical.
Space reinforcement to miss anchor rods.
All posts, railing, splices, anchor devices, and plates shall be galvanized after shop fabrication according to AASHTO M 111 and ASTM A 385. All bolts, nuts, washers, and anchor rods shall be galvanized according to AASHTO M 232 except stainless steel bolts as noted.
Vent holes for galvanizing shall be placed in the posts and rails at locations that will not allow the accumulation of moisture in the members.
The chain link fabric shall conform to the requirements of Article 1006.27(a)(1)a, b or c of the Standard Specifications.

BILL OF MATERIAL

Item	Unit	Quantity
Bridge Fence Railing (Sidewalk)	Foot	442

Corporate License Number 184-001-084

BRIDGE FENCE RAILING (SIDEWALK)

WESTBOUND HARRISON AVENUE
OVER UP & CC&P RAILROAD
F.A.P. ROUTE 0525
SECTION 02-00518-00-BR
ROCKFORD, ILLINOIS
STATION 95+25.35
STRUCTURE NO. 101-6109

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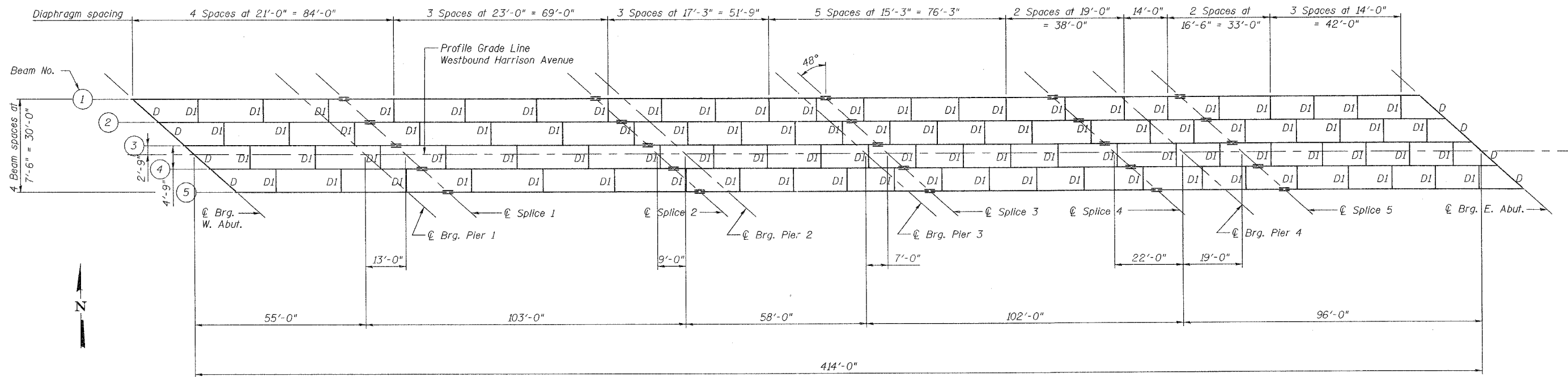


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03R1751

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12/14/06

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 LAYOUT JKR 04/21/06
 DRAWN MCM/JKR 07/13/06
 REVIEWED FLN 08/02/06

ROUTE NO.	SECTION	COUNTY	STATION	SHEET	SHEET NO. 22 50 SHEETS
FAP 0525	*	WINNEBAGO	157	129	
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT	
* 02-00518-00-BR					



FRAMING PLAN

Work this Sheet with Sheets 23 thru 25 of 50.

Corporate License Number 184-001-084

FRAMING PLAN	
WESTBOUND HARRISON AVENUE OVER UP & CC&P RAILROAD F.A.P. ROUTE 0525 SECTION 02-00518-00-BR ROCKFORD, ILLINOIS STATION 95+25.35 STRUCTURE NO. 101-6109	
© Copyright Hanson Professional Services Inc. 2006	JOB NO. 03R1751
DATE 12/14/06	

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LAYOUT	SLS	09/20/05
DRAWN	MWJ/JKR	07/13/06
REVIEWED	FLN	08/02/06

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET	SHEET NO.
FAP 0525	*	WINNEBAGO	157	132	50 SHEETS
FED. ROAD DIST. NO. 7		DISTRICT		FED. AID PROJECT	
* 02-00518-00-BR					

TOP OF BEAM ELEVATIONS

Top of Beam Elevations are given for fabrication only.
Elevations have been adjusted up to account for
Dead Load Deflection.

	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5
⊕ Brg. W. Abut.	797.23	797.71	798.34	798.95	799.54
⊕ Pier 1	800.21	800.64	801.21	801.75	802.26
Splice 1 (W36x210)	800.92	801.33	801.89	802.41	802.90
Splice 1 (W36x170)	800.90	801.31	801.87	802.38	802.88
Splice 2 (W36x170)	804.42	804.72	805.16	805.57	805.95
⊕ Pier 2	804.69	804.98	805.41	805.81	806.18
⊕ Pier 3	806.45	806.66	807.01	807.33	807.62
Splice 3 (W36x170)	806.66	806.86	807.21	807.51	807.80
Splice 4 (W36x170)	808.03	808.14	808.38	808.59	808.77
Splice 4 (W36x280)	808.04	808.15	808.39	808.60	808.78
⊕ Pier 4	808.23	808.30	808.52	808.70	808.85
Splice 5 (W36x280)	808.39	808.44	808.63	808.78	808.91
Splice 5 (W36x210)	808.40	808.44	808.63	808.78	808.91
⊕ Brg. E. Abut.	808.45	808.39	808.48	808.52	808.55

INTERIOR GIRDER MOMENT TABLE

	0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.5 Sp. 3***	Pier 3	0.5 Sp. 4	Pier 4	0.6 Sp. 5
<i>I_s</i> (in ⁴)	13,200	13,200	10,500	10,500	10,500	10,500	10,500	18,900	13,200
<i>I_c</i> (n) (in ⁴)	31,087	-----	26,380	-----	-----	-----	26,380	-----	31,087
<i>I_c</i> (3n) (in ⁴)	22,554	-----	19,276	-----	-----	-----	19,276	-----	22,554
<i>S_s</i> (in ³)	720	720	581	581	581	581	581	1035	720
<i>S_c</i> (n) (in ³)	1008	-----	831	-----	-----	-----	831	-----	1008
<i>S_c</i> (3n) (in ³)	905	-----	750	-----	-----	-----	750	-----	905
<i>ψ</i> (K/ft.)	0.98	1.51	0.94	1.49	1.48	1.50	0.96	1.53	1.00
<i>M_ℓ</i> (K)	37	1191	544	902	167	678	410	1830	609
<i>sℓ</i> (K/ft.)	0.55	-----	0.55	-----	-----	-----	0.55	-----	0.55
<i>Msℓ</i> (K)	42	-----	382	-----	-----	-----	300	-----	368
<i>M_ℓ</i> (K)	413	453	752	417	198	410	736	652	832
<i>M</i> (Imp) (K)	115	113	164	103	54	101	162	146	188
<i>5₃(M_ℓ+I)</i> (K)	880	943	1527	867	420	852	1497	1330	1700
<i>Ma</i> (K)	1247	2774	3189	2300	764	1989	2869	4108	3480
* <i>Mu</i> (K)	4290	-----	3580	-----	-----	-----	3892	-----	4485
<i>fsℓ non-comp</i> (k.s.i.)	0.6	19.9	11.2	18.7	3.4	14.0	8.5	21.2	10.2
<i>fsℓ comp</i> (k.s.i.)	0.6	-----	6.1	-----	-----	-----	4.8	-----	4.9
<i>fs₅(ℓ+I)</i> (k.s.i.)	10.5	15.7	22.1	17.9	8.7	17.6	21.6	15.4	20.3
<i>fs</i> (Overload) (k.s.i.)	11.7	35.6	39.4	36.6	12.1	31.6	34.9	36.6	35.4
** <i>fs</i> (Total) (k.s.i.)	-----	46.3	-----	47.6	15.7	41.1	-----	47.6	-----
<i>VR</i> (K)	65	-----	65	-----	-----	-----	67	-----	64

* Compact, Braced Section
** Non-compact Section
*** Entire Span treated as negative moment region as total negative moments are larger than total positive moments.

INTERIOR GIRDER REACTION TABLE

	W. Abut.	Pier 1	Pier 2	Pier 3	Pier 4	E. Abut.
<i>R_ℓ</i> (K)	20.4	143.1	120.6	104.8	181.6	55.2
<i>R_ℓ</i> (K)	44.3	59.4	58.7	57.6	69.2	48.3
<i>Imp.</i> (K)	12.3	14.8	14.4	14.2	15.5	11.0
<i>R</i> (Total) (K)	77.0	217.3	193.7	176.6	266.3	114.5

I_s and *S_s* are the moment of inertia and section modulus of the steel section used in computing *fs* (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.
Ma (Applied Moment) = 1.3(*M_ℓ* + *Msℓ* + 5₃(*M_ℓ* + *M* (Imp))).
The Plastic Moment capacity (*Mu*) is computed according to AASHTO 10.48.1 and 10.50.1.1.
fs (Overload) is the sum of the stresses due to *M_ℓ* + *Msℓ* + 5₃(*M_ℓ* + *M* (Imp)).
fs (Total) is the sum of the stresses due to 1.3(*M_ℓ* + *Msℓ* + 5₃(*M_ℓ* + *M* (Imp))).

Corporate License Number 184-001-084

STRUCTURAL STEEL DETAILS

WESTBOUND HARRISON AVENUE
OVER UP & CC&P RAILROAD
F.A.P. ROUTE 0525
SECTION 02-00518-00-BR
ROCKFORD, ILLINOIS
STATION 95+25.35
STRUCTURE NO. 101-6109

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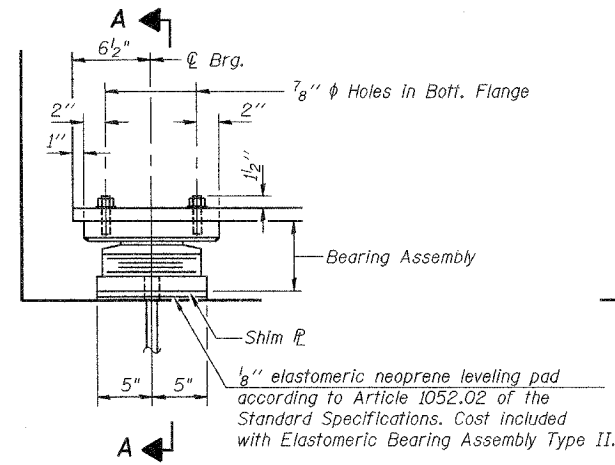
JOB NO. 03R1751

DATE 12/14/06

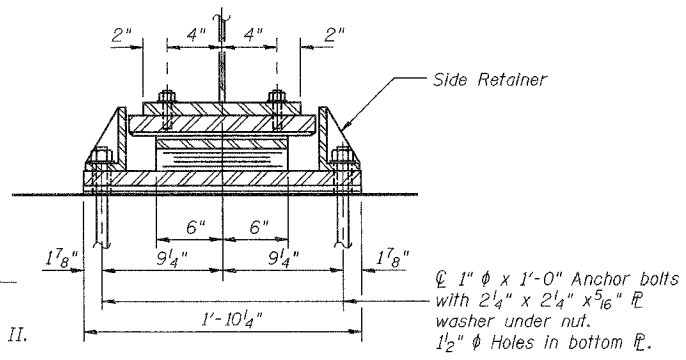
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LAYOUT
DRAWN
REVIEWED

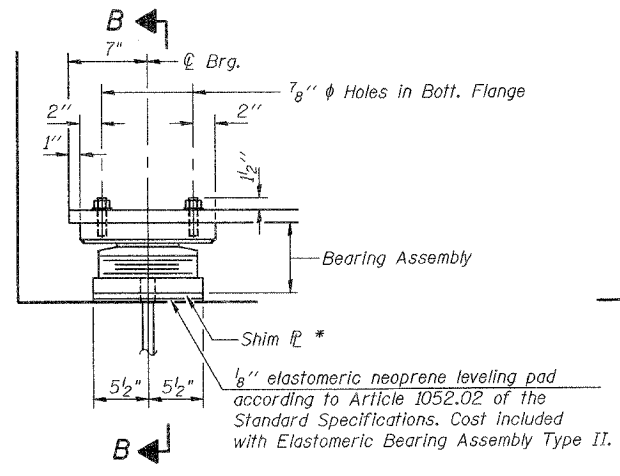
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PROJECT					* 02-00518-00-BR



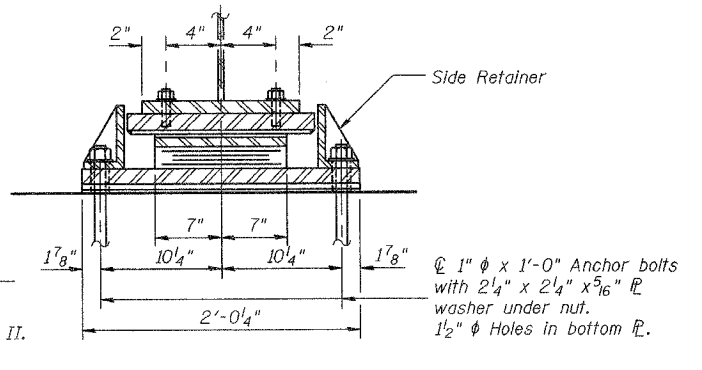
ELEVATION AT W. ABUT.



SECTION A-A



ELEVATION AT E. ABUT.

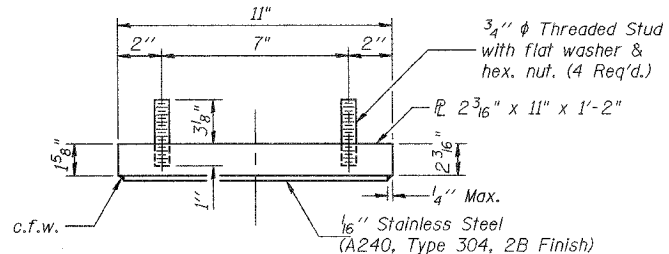


SECTION B-B

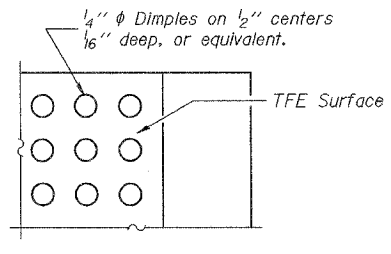
TYPE II ELASTOMERIC EXP. BRG. AT W. ABUT.

* Contractor shall provide additional steel shim(s) as required beneath Beam 1 at East Abutment to result in an elevation difference between top of Beam 1 and top of Beam 2 of 3/4". (Beam 1 is higher). Total estimated shim height = 3/4". (Contractor to field verify) Contractor shall provide additional steel shim(s) as required beneath Beam 4 at East Abutment to result in an elevation difference between top of Beam 4 and top of Beam 3 of 1/2". (Beam 4 is higher). Total estimated shim height = 1/2". (Contractor to field verify) Shim plate(s) shall be the full dimension of the bottom bearing plate. Cost of shims is included with Elastomeric Bearing Assembly Type II.

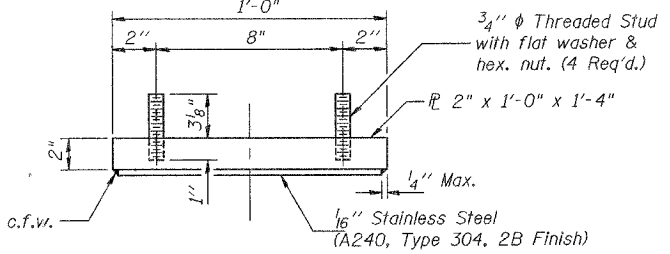
TYPE II ELASTOMERIC EXP. BRG. AT E. ABUT.



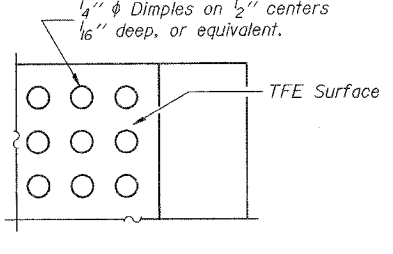
W. ABUT. TOP BEARING ASSEMBLY



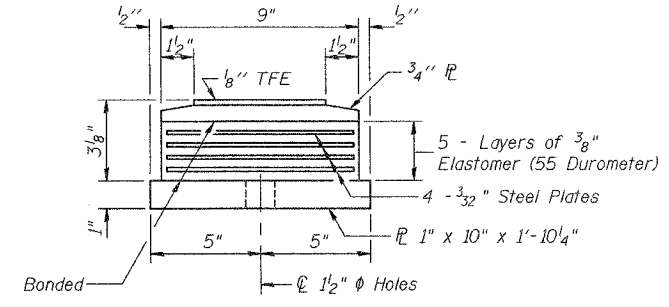
W. ABUT. PLAN-TFE SURFACE



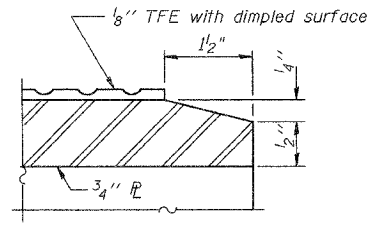
E. ABUT. TOP BEARING ASSEMBLY



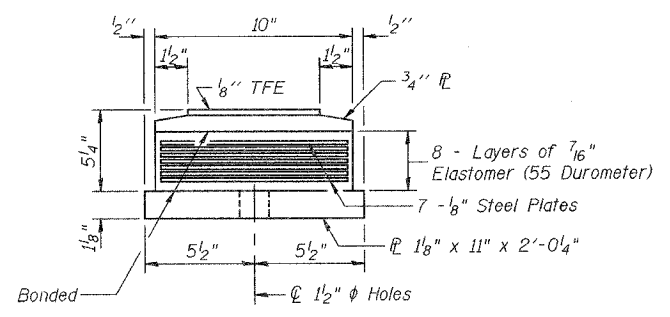
E. ABUT. PLAN-TFE SURFACE



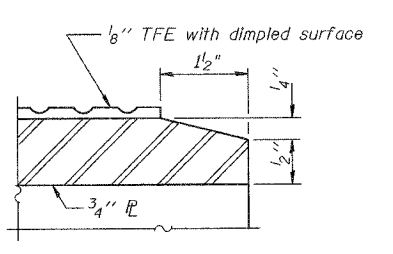
W. ABUT. BOTTOM BEARING ASSEMBLY



W. ABUT. SECTION THRU TFE



E. ABUT. BOTTOM BEARING ASSEMBLY



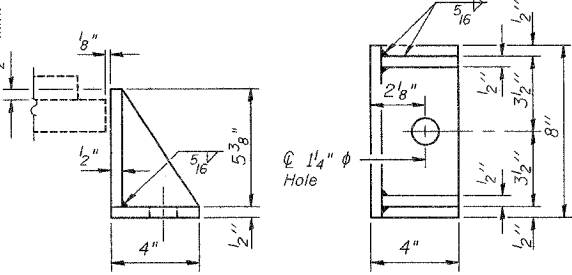
E. ABUT. SECTION THRU TFE

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	10

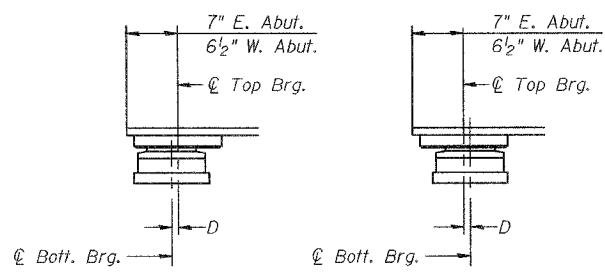
NOTES

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. All structural steel bearing plates for Elastomeric Bearing Assemblies shall be AASHTO M270, Grade 50. Anchor bolts shall be high strength bolts (AASHTO M164, Type 1 or 2). See Sheet 29 of 50 for Anchor Bolt Installation.



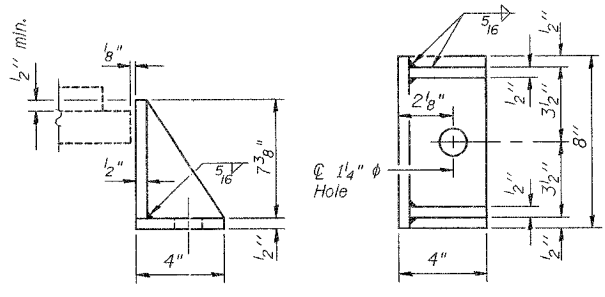
W. ABUT. SIDE RETAINER

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



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.



E. ABUT. SIDE RETAINER

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

Corporate License Number 184-001-084

BEARING DETAILS

WESTBOUND HARRISON AVENUE
OVER UP & CC&P RAILROAD
F.A.P. ROUTE 0525
SECTION 02-00518-00-BR
ROCKFORD, ILLINOIS
STATION 95+25.35
STRUCTURE NO. 101-6109

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JOB NO.

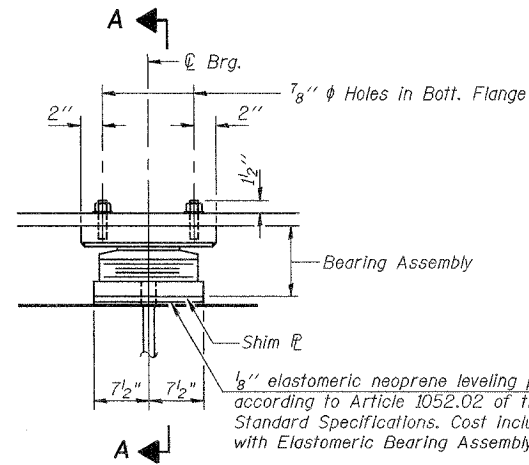
03R1751

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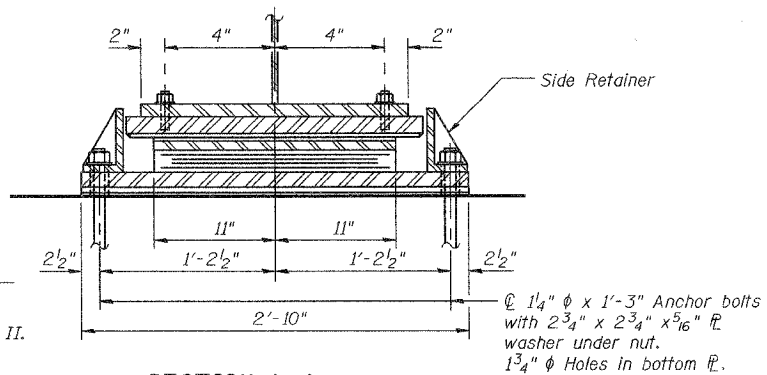
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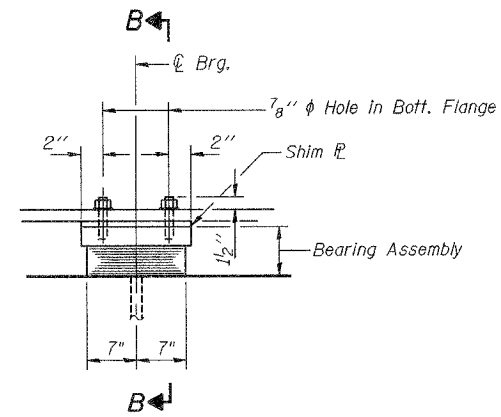
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FED. ROAD DIST. NO. 7		SALES	FED. AID PROJECT		
* 02-00518-00-BR					



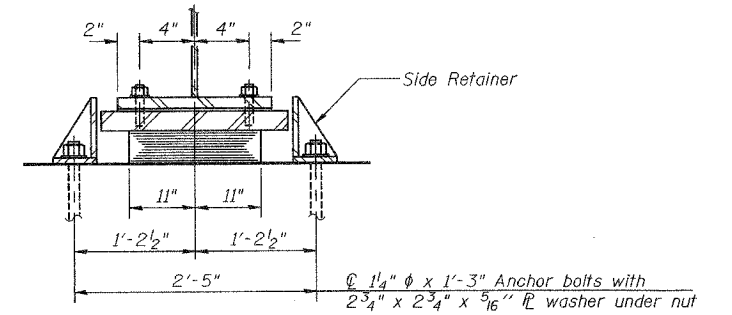
ELEVATION AT PIER 1



SECTION A-A

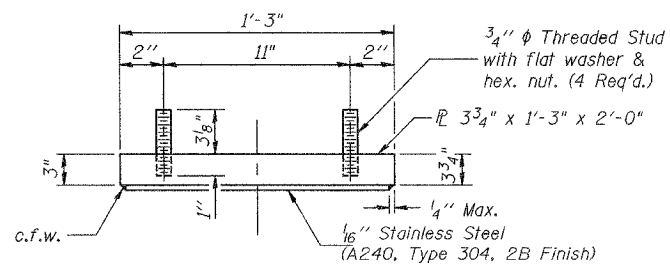


ELEVATION AT PIER 2

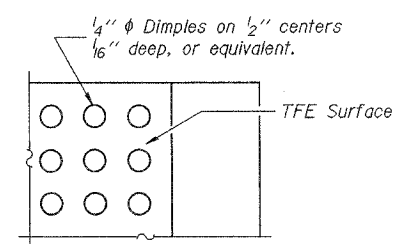


SECTION B-B

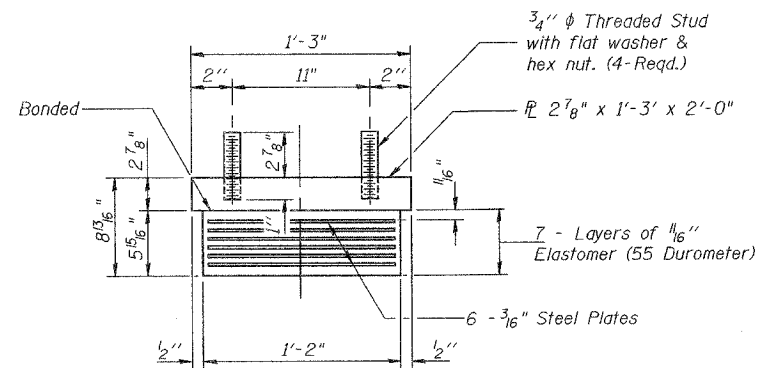
TYPE II ELASTOMERIC EXP. BRG. AT PIER 1



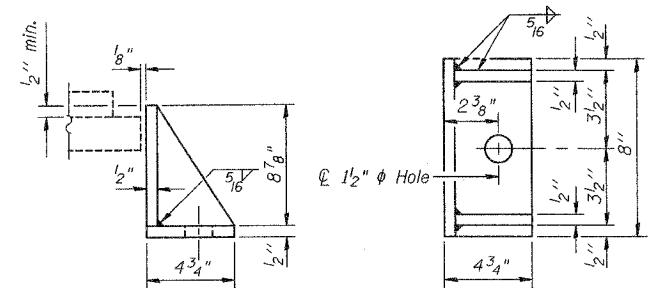
PIER 1 TOP BEARING ASSEMBLY



PIER 1 PLAN-TFE SURFACE



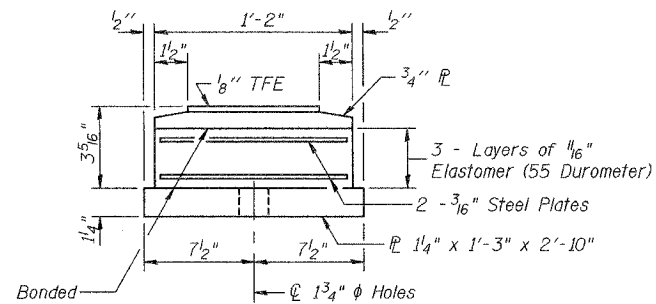
PIER 2 BEARING ASSEMBLY



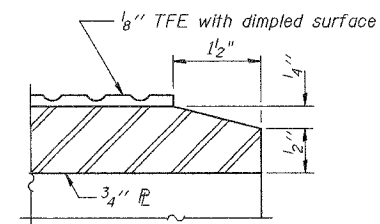
PIER 2 SIDE RETAINER

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

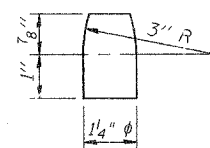
TYPE I ELASTOMERIC EXP. BRG. AT PIER 2



PIER 1 BOTTOM BEARING ASSEMBLY

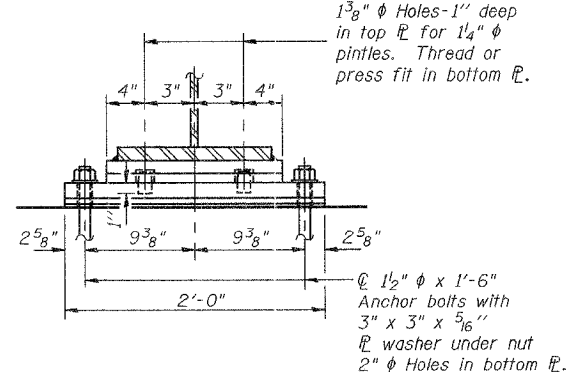


PIER 1 SECTION THRU TFE

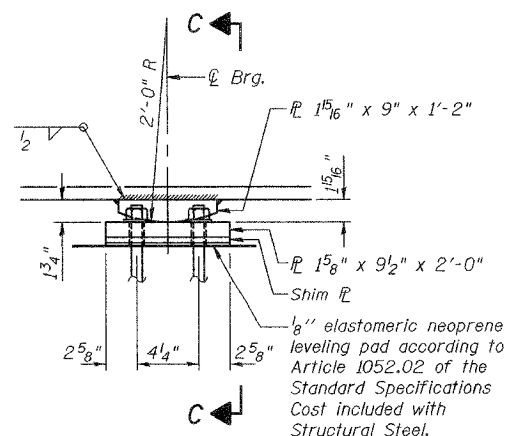


PINTLE

1 3/8" holes - 1" deep in top flange for 1 1/4" pintoles. Thread or press fit in bottom flange.



SECTION C-C



ELEVATION AT PIER 3

FIXED BEARING AT PIER 3

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	5
Elastomeric Bearing Assembly Type II	Each	5

NOTES

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.

All structural steel bearing plates and pintles for low profile fixed bearings and Elastomeric Bearing Assemblies shall be AASHTO M270, Grade 50.

Anchor bolts shall be high strength bolts (AASHTO M164, Type 1 or 2). Shim plates shall not be placed under Type I Elastomeric Bearing Assembly.

Anchor bolts at fixed bearings may be built into the masonry. See Sheet 29 of 50 for Anchor Bolt Installation. See Sheet 26 of 50 for Setting Anchor Bolts at Expansion Bearing detail.

Corporate License Number 184-001-084

BEARING DETAILS

WESTBOUND HARRISON AVENUE
OVER UP & CC&P RAILROAD
F.A.P. ROUTE 0525
SECTION 02-00518-00-BR
ROCKFORD, ILLINOIS
STATION 95+25.35
STRUCTURE NO. 101-6109

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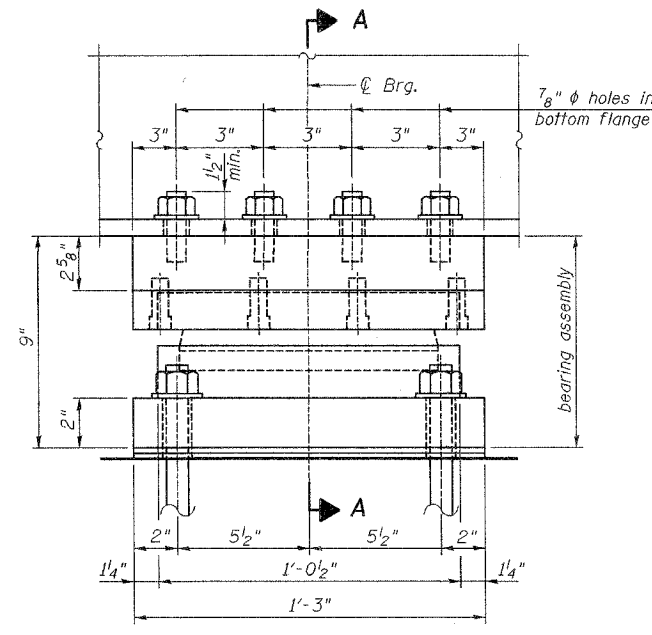


JOB NO. 03R1751

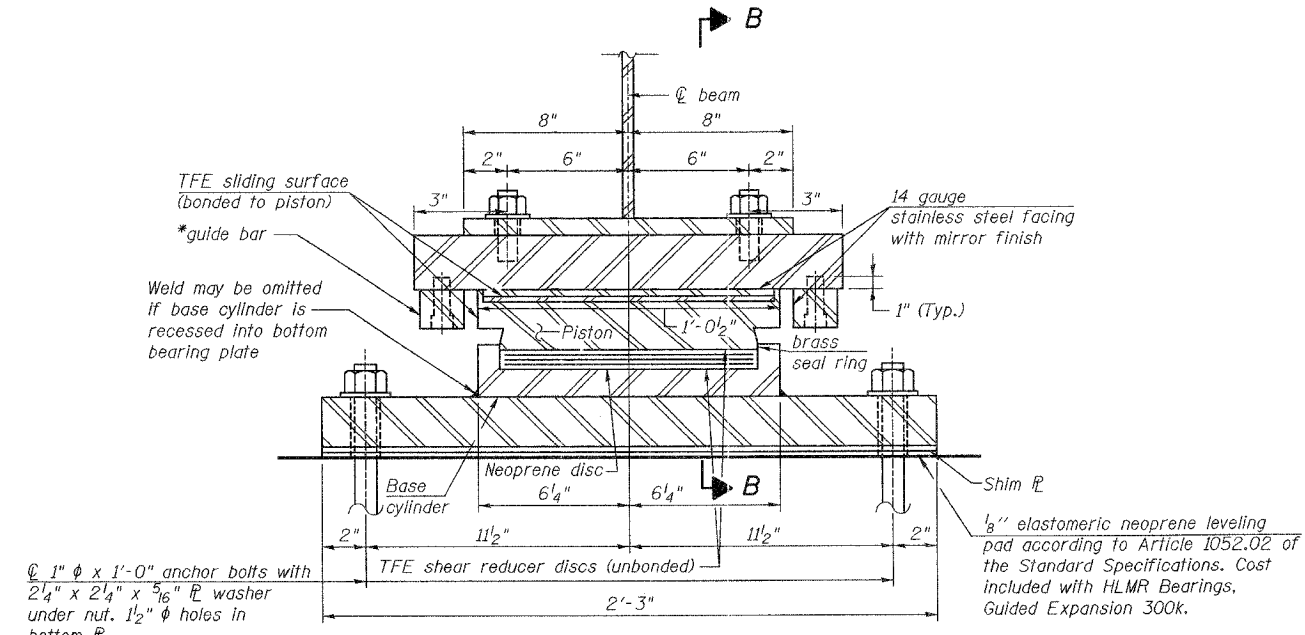
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 REVIEWED FLN 08/02/06

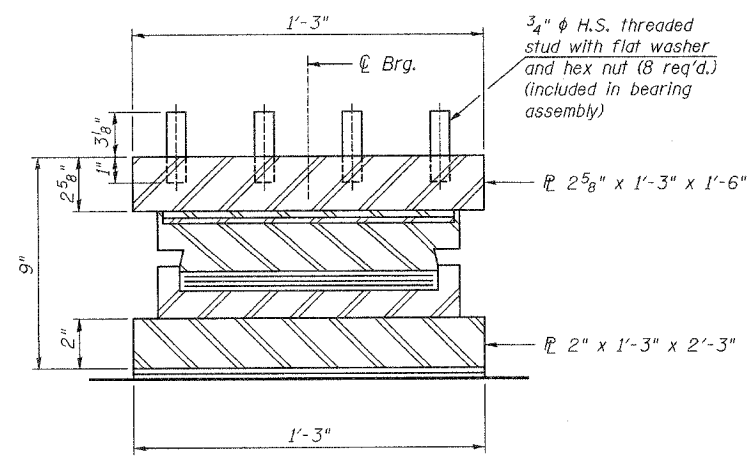
ROUTE NO.	SECTION	COUNTY	SHEET	DATE	SHEET NO.
FAP 0525		WINNEBAGO	157	135	28
FED. ROAD DIST. NO. 7					50 SHEETS
ILLINOIS					
FED. AID PROJECT					
02-00518-00-BR					



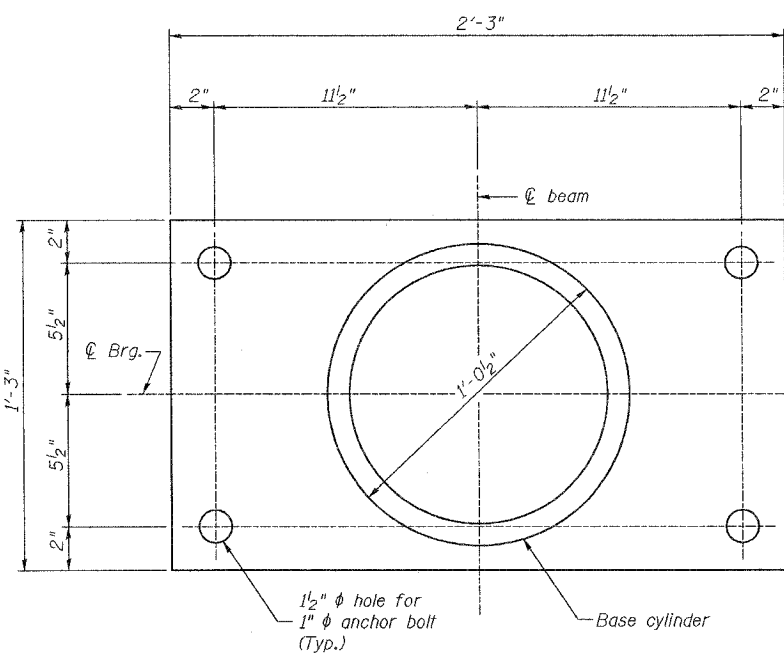
ELEVATION AT PIER 4



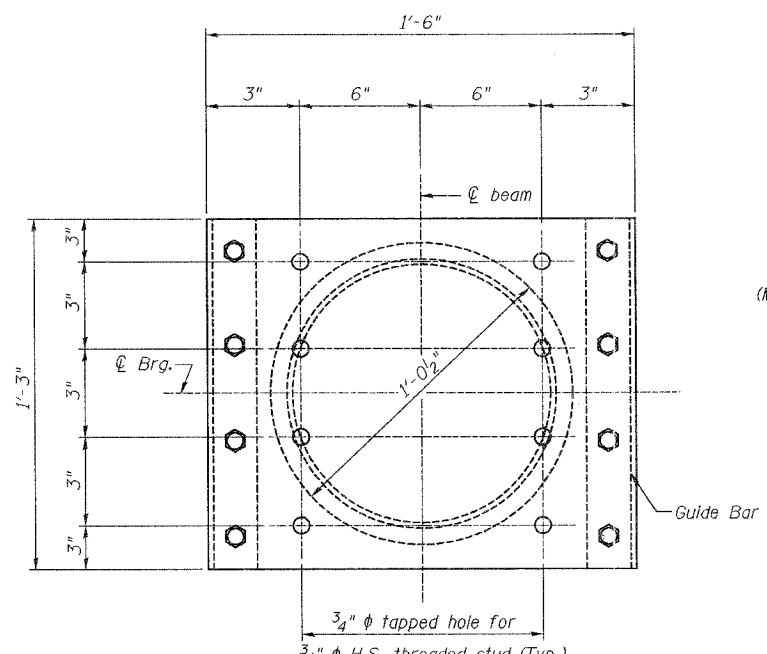
SECTION A-A



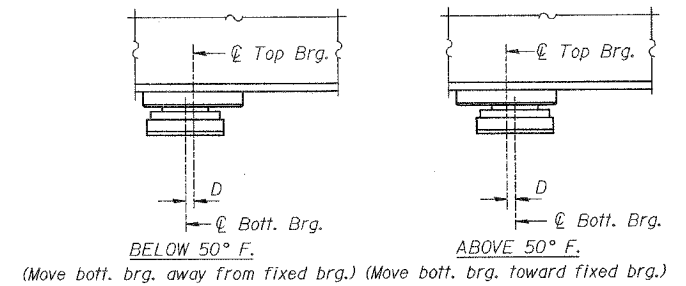
SECTION B-B
(Guide Bar omitted for clarity)



BOTTOM BEARING PLATE AND BASE CYLINDER PLAN



TOP BEARING PLATE AND PISTON PLAN



SETTING ANCHOR BOLTS AT EXP. BRG.
D = 1/8\"/>

* As alternates to the bolted connection shown, the guide bars may be connected to the top bearing plate by groove welds or the guide bars and top bearing plate may be fabricated as a single piece.

Bearing Data	
Vertical Design Load	251 K
Total Required Movement	1 3/8\"/>

BILL OF MATERIAL		
Item	Unit	Total
HLMR Bearings, Guided Expansion 300k	Each	5

NOTES
The plates of the Bearing Assembly shall be AASHTO M270, Grade 50. For Anchor Bolt Installation details see Sheet 29 of 50. The Bearing Assembly shall be capable of transmitting 20% of the vertical design load as a horizontal force in the direction normal to the guide bars. Shim plate(s) shall be the full dimension of the bottom bearing plate. Cost of shims is included with HLMR Bearings, Guided Expansion 300k. Anchor Bolts shall be high strength bolts (AASHTO M164, Type 1 or 2).

GUIDED EXPANSION POT BEARING AT PIER 4

Corporate License Number 184-001-084

BEARING DETAILS
WESTBOUND HARRISON AVENUE
OVER UP & CC&P RAILROAD
F.A.P. ROUTE 0525
SECTION 02-00518-00-BR
ROCKFORD, ILLINOIS
STATION 95+25.35
STRUCTURE NO. 101-6109

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JOB NO. 03R1751
DATE 12/14/06

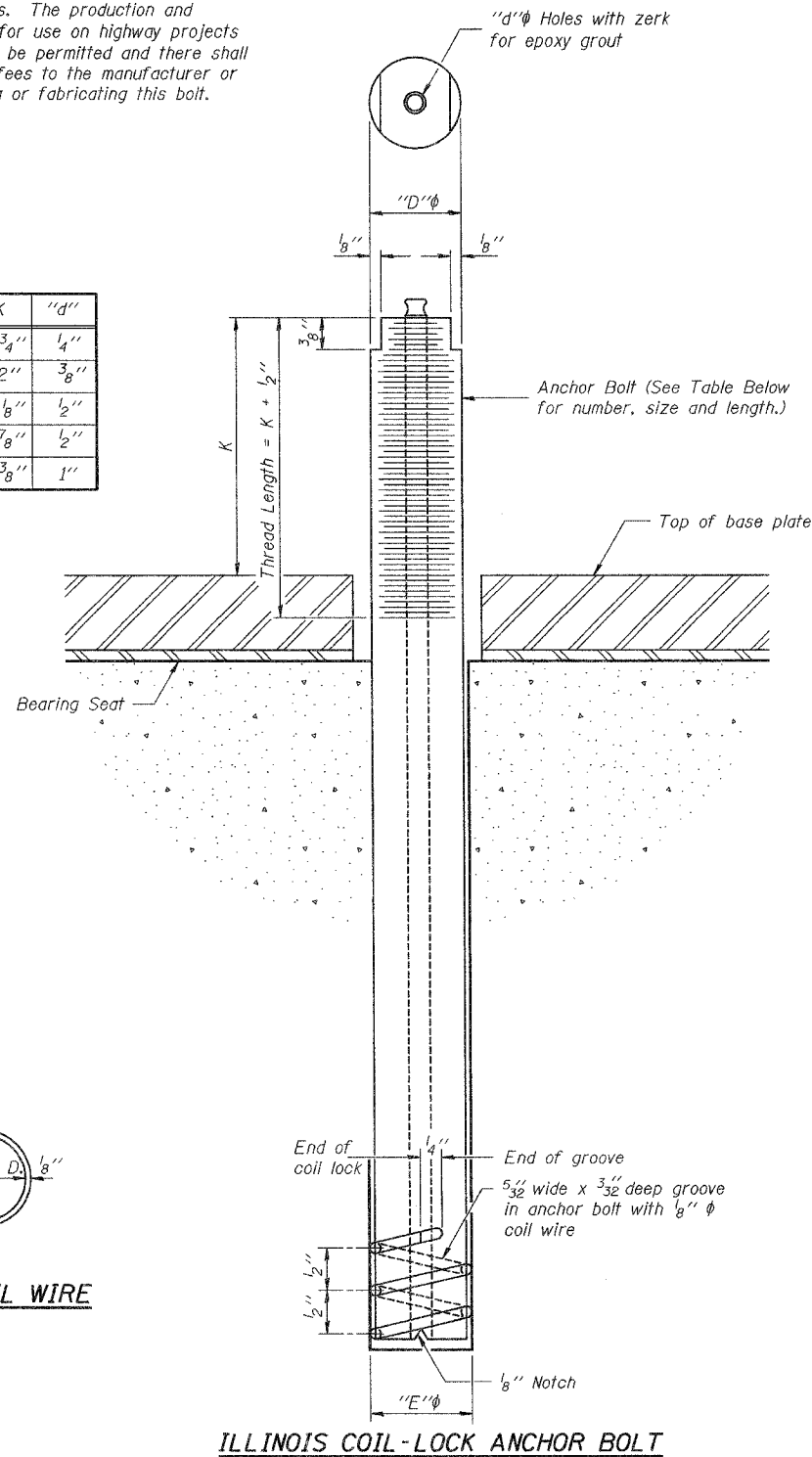
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 LAYOUT JKR 12/14/06
 DRAWN MMJ/JKR 07/13/06
 REVIEWED FLN 08/02/06

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET
FAP 0525	*	WINNEBAGO	157	136
FED. ROAD DIST. NO. 7		PLANING		FED. AID PROJECT
* 02-00518-00-BR				

SHEET NO. 29
50 SHEETS

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

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 884, 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	Size (inch diameter)	Length (inches)*	Quantity
West Abutment	A325	1	12	10
Pier #1	A325	1 1/4	15	10
Pier #2	A325	1 1/4	15	10
Pier #3	A325	1 1/2	18	20
Pier #4	A325	1	12	20
East Abutment	A325	1	12	10

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.

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

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 be paid for at the contract unit price per each for Anchor Bolts, of the diameter specified.

Corporate License Number 184-001-084

ANCHOR BOLT DETAILS

WESTBOUND HARRISON AVENUE
 OVER UP & CC&P RAILROAD
 F.A.P. ROUTE 0525
 SECTION 02-00518-00-BR
 ROCKFORD, ILLINOIS
 STATION 95+25.35
 STRUCTURE NO. 101-6109

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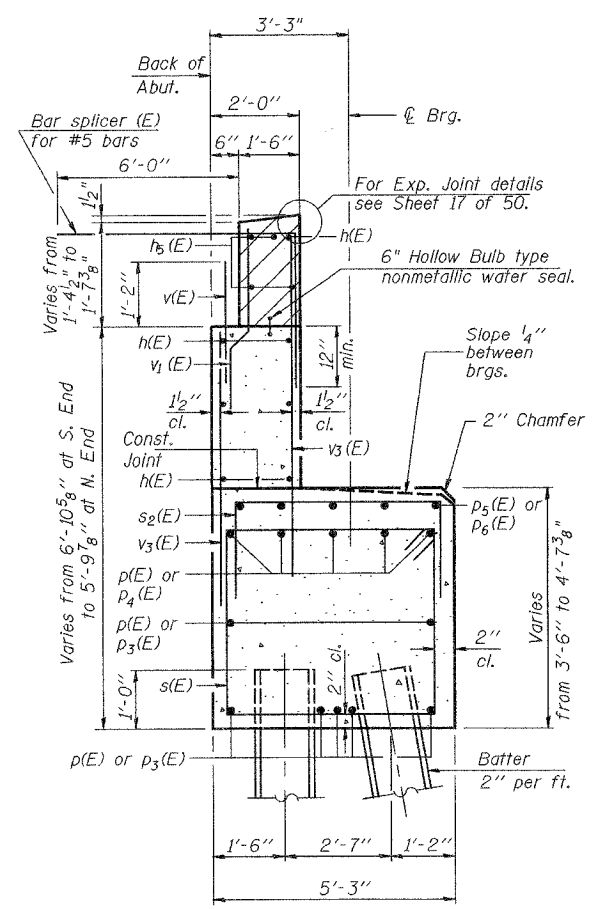
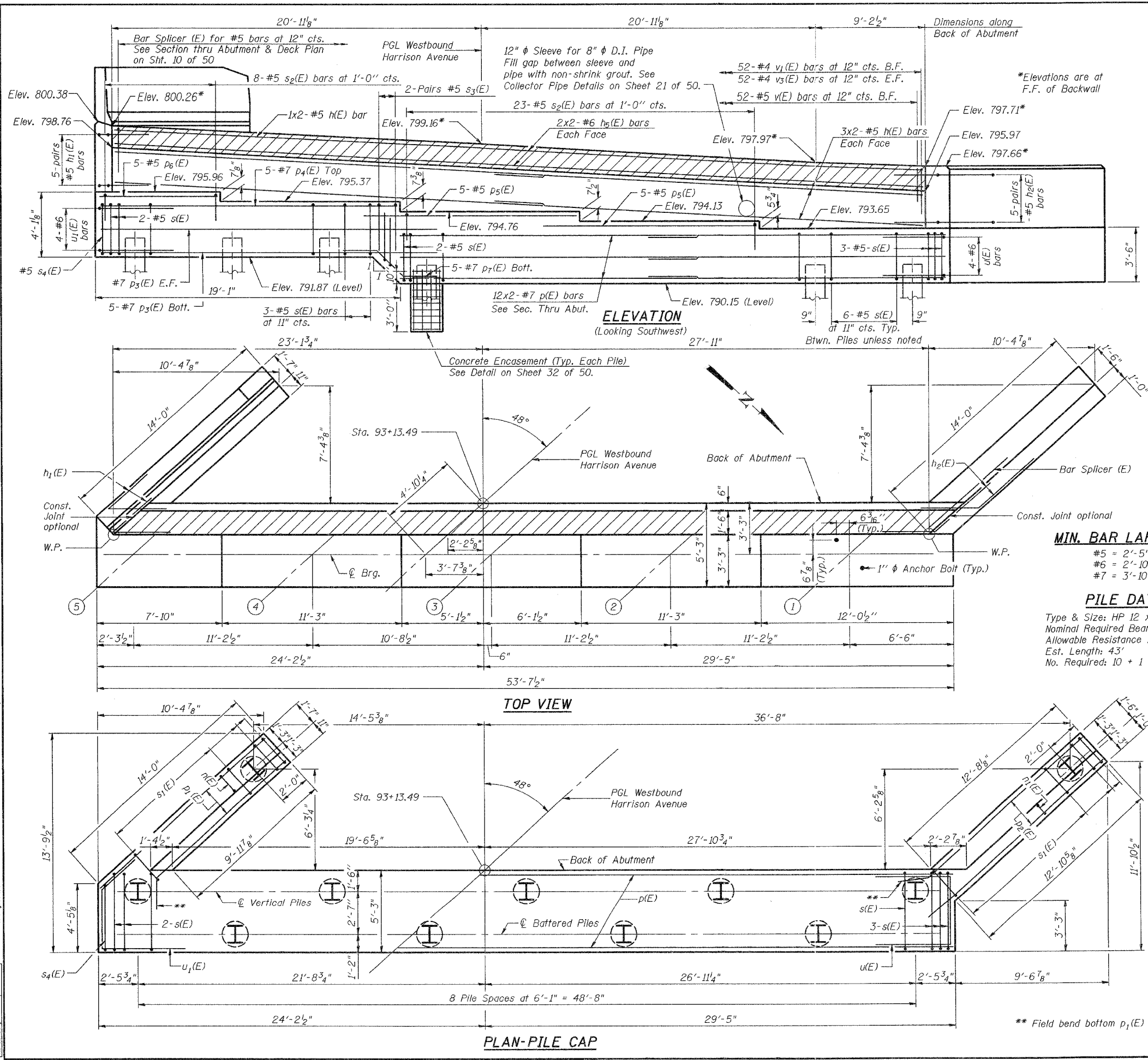


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03R1751
DATE
12/14/06

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LAYOUT	MGH	09/01/05
DRAWN	MGH/JAR	07/13/06
REVIEWED	FLN	08/02/06

ROUTE NO.	SECTION	COUNTY	DISSEMINATION	SHEET NO.
FAP 0525		WINNEBAGO	157 137	50 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		
92-00518-00-BR				



- MIN. BAR LAP (U.N.)**
- #5 = 2'-5"
 - #6 = 2'-10"
 - #7 = 3'-10"

- PILE DATA**
- Type & Size: HP 12 x 53 w/ Pile Shoes
 - Nominal Required Bearing: 420 Kips
 - Allowable Resistance Available: 140 Kips
 - Est. Length: 43'
 - No. Required: 10 + 1 test pile

- 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.
 - Quantity of concrete in end post included with Concrete Superstructure.
 - Work this Sheet with Sheets 31 & 32 of 50.
 - Bars indicated thus 4x2-#5 etc. indicate 4 lines of bars with 2 lengths per line.
 - All edges will have 3/4" chamfer unless noted.
 - For details of Bar Splicers see Sheet 44 of 50.
 - B.F. denotes Back Face.
 - F.F. denotes Front Face.
 - E.F. denoted Each Face.

Corporate License Number 184-001-084

WEST ABUTMENT

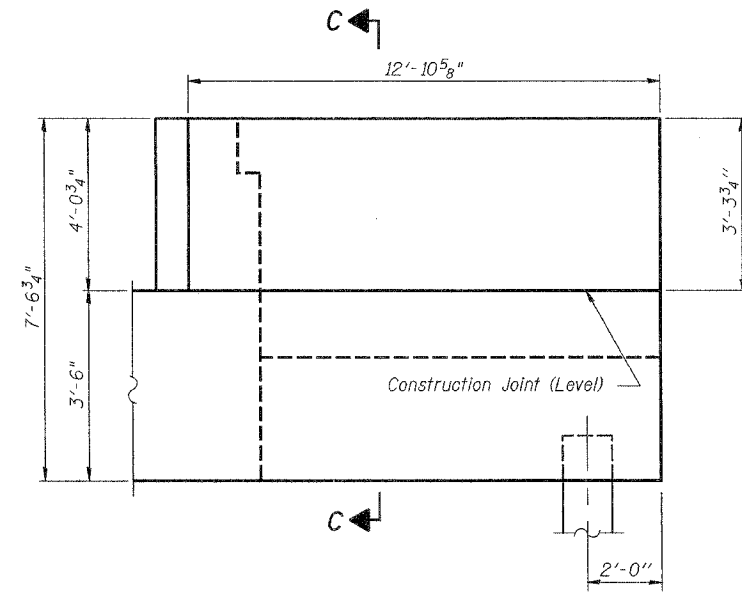
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F.A.P. ROUTE 0525
SECTION 02-00518-00-BR
ROCKFORD, ILLINOIS
STATION 95+25.35
STRUCTURE NO. 101-6109

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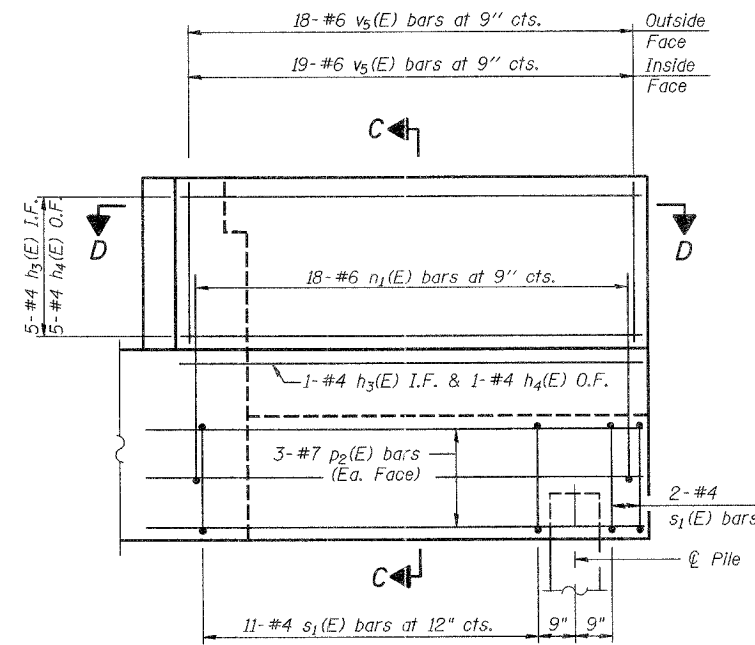
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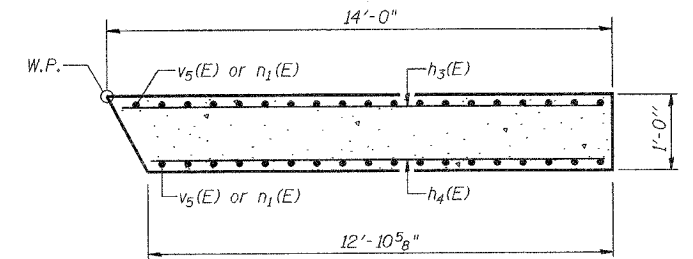
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* 02-00518-00-BR					



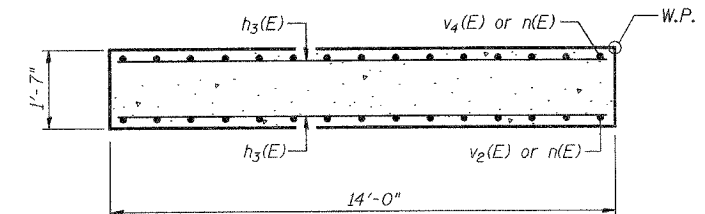
NORTH WING WALL ELEVATION
Showing Dimensions



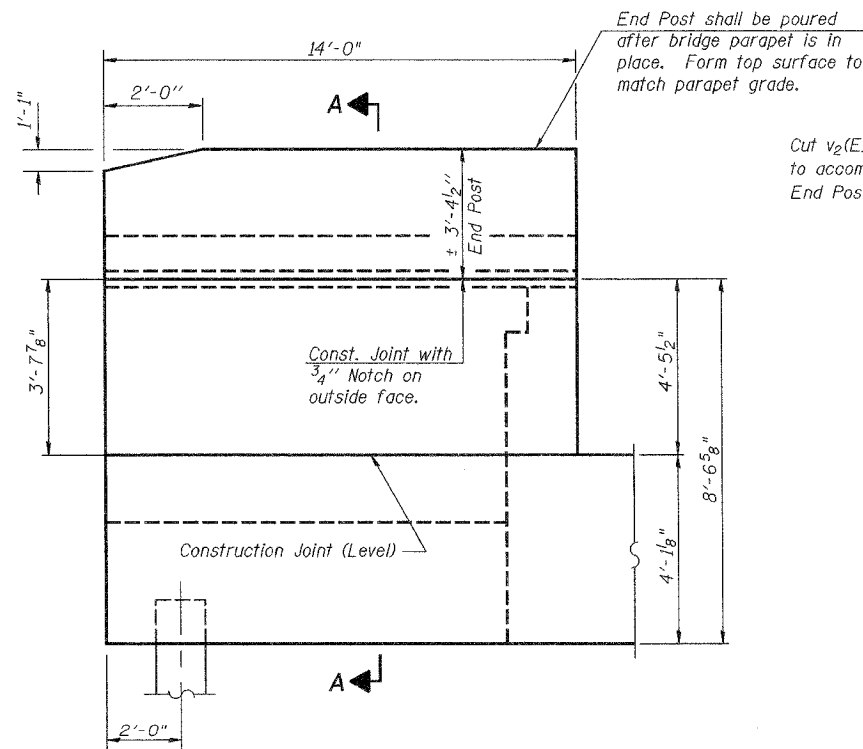
NORTH WING WALL ELEVATION
Showing Reinforcement



SEC. D-D

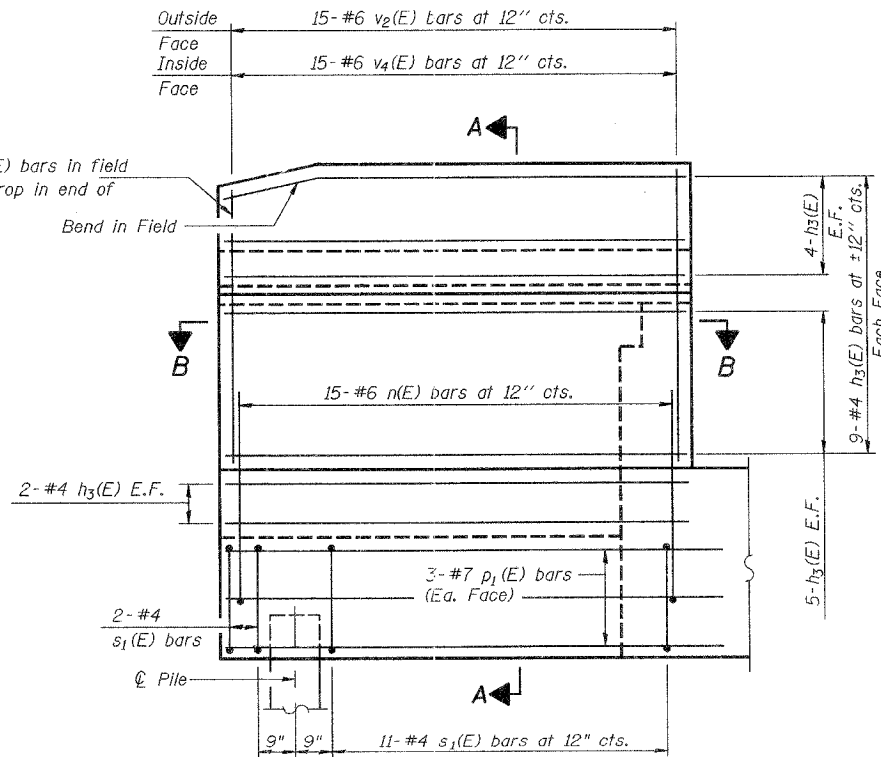


SEC. B-B



SOUTH WING WALL ELEVATION
Showing Dimensions

Cut $v_2(E)$ and $v_4(E)$ bars in field to accommodate drop in end of End Post.



SOUTH WING WALL ELEVATION
Showing Reinforcement

NOTES

Reinforcement bars designated (E) shall be epoxy coated.
Quantity of concrete in end post included with Concrete Superstructure.
Work this Sheet with Sheets 30 & 32 of 50.
All edges have $\frac{3}{4}$ " chamfer unless noted.
O.F. denotes Outside Face.
I.F. denotes Inside Face.
E.F. denotes Each Face.

Corporate License Number 184-001-084

WEST ABUTMENT DETAILS

WESTBOUND HARRISON AVENUE
OVER UP & CC&P RAILROAD
F.A.P. ROUTE 0525
SECTION 02-00518-00-BR
ROCKFORD, ILLINOIS
STATION 95+25.35
STRUCTURE NO. 101-6109

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03R1751

DATE
12/14/06

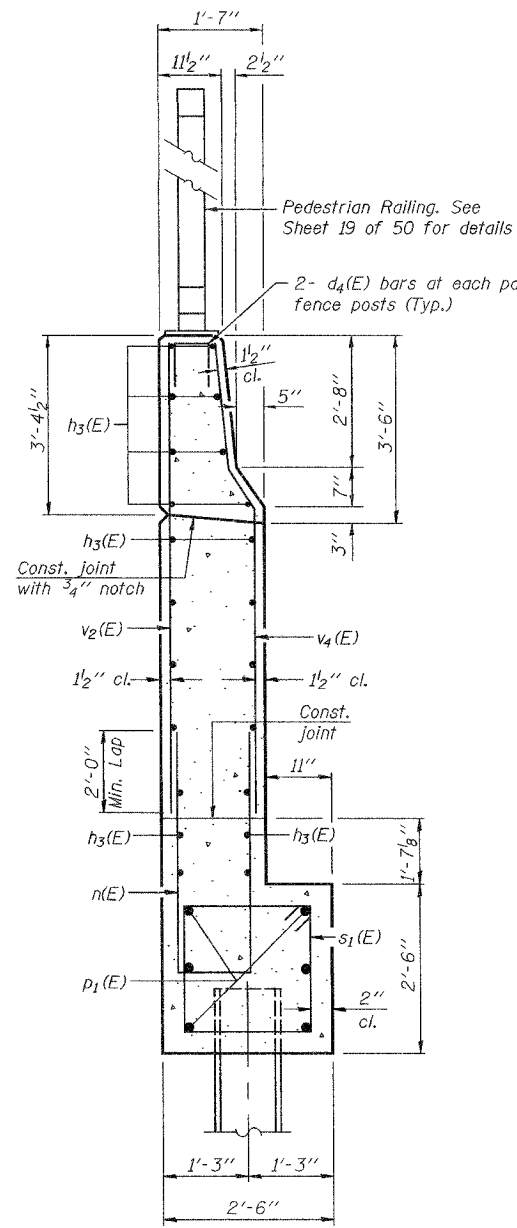
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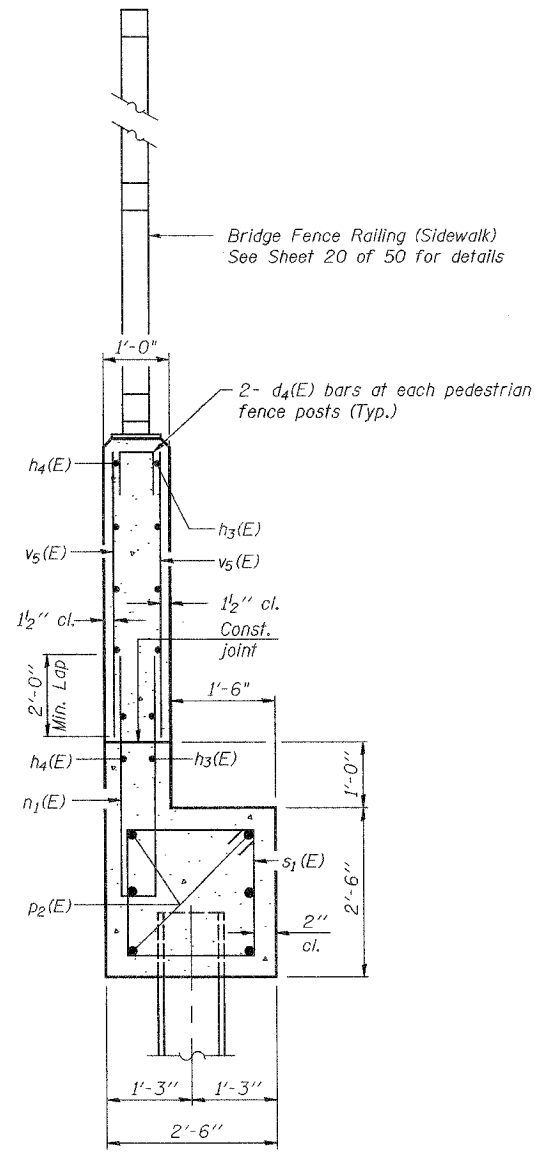
ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO.
FAP 0525	*	WINNEBAGO	157	139
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT
* 02-00518-00-BR				

**WEST ABUTMENT
BILL OF MATERIAL**

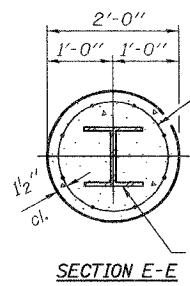
Bar	No.	Size	Length	Shape
d ₄ (E)	12	#4	2'-1"	□
n(E)	14	#5	26'-8"	—
h ₁ (E)	10	#5	6'-3"	∟
h ₂ (E)	10	#5	8'-9"	∟
h ₃ (E)	28	#4	13'-9"	—
h ₄ (E)	6	#4	12'-7"	—
h ₅ (E)	8	#6	26'-11"	—
n(E)	15	#6	13'-0"	—
n ₁ (E)	18	#6	11'-1"	—
p(E)	24	#7	19'-2"	—
p ₁ (E)	6	#7	13'-9"	—
p ₂ (E)	6	#7	15'-9"	—
p ₃ (E)	7	#7	22'-9"	—
p ₄ (E)	5	#7	18'-9"	—
p ₅ (E)	10	#5	12'-6"	—
p ₆ (E)	5	#5	7'-7"	—
p ₇ (E)	5	#7	10'-2"	—
s(E)	52	#5	17'-1"	□
s ₁ (E)	26	#4	9'-5"	□
s ₂ (E)	31	#5	9'-11"	□
s ₃ (E)	4	#5	11'-3"	□
s ₄ (E)	1	#5	15'-9"	□
u(E)	4	#6	13'-9"	∟
u ₁ (E)	4	#6	13'-0"	∟
v(E)	52	#5	2'-6"	—
v ₁ (E)	52	#4	3'-5"	—
v ₂ (E)	15	#6	6'-9"	—
v ₃ (E)	104	#4	5'-3"	—
v ₄ (E)	15	#6	6'-9"	—
v ₅ (E)	37	#6	3'-0"	—
Structure Excavation	Cu. Yd.		163.4	
Concrete Structures	Cu. Yd.		63.5	
Concrete Encasement	Cu. Yd.		3.9	
Reinforcement Bars, Epoxy Coated	Pound		6600	
Furnishing Steel Piles, HP12x53	Foot		430	
Driving Piles	Foot		430	
Test Piles Steel, HP12x53	Each		1	
Pile Shoes	Each		11	
Concrete Sealer	Sq. Ft.		182	
Porous Granular Embankment	Cu. Yd.		92.7	
Anchor Bolts, 1"	Each		10	



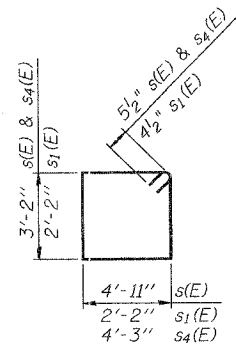
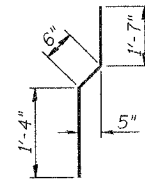
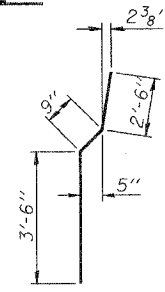
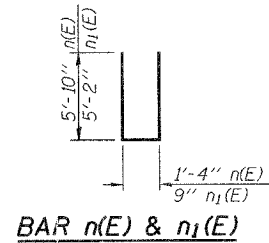
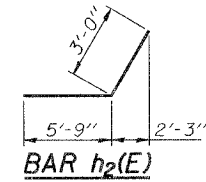
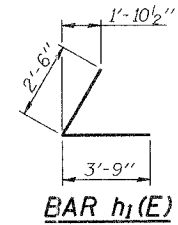
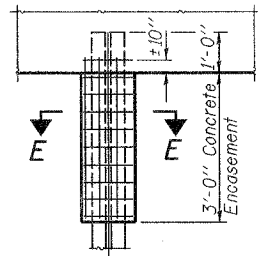
SECTION A-A



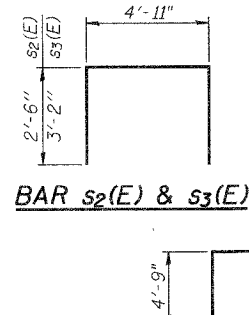
SECTION C-C



PILE ENCASEMENT DETAIL



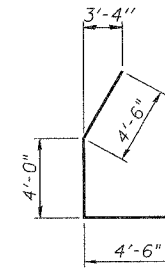
BARS s(E), s₁(E) & s₄(E)



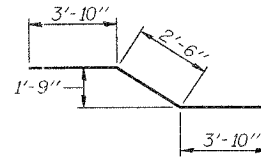
BAR s₂(E) & s₃(E)



BAR u(E)



BAR u₁(E)



BAR p₇(E)

NOTES

Reinforcement bars designated (E) shall be epoxy coated.
Work this Sheet with Sheets 30 & 31 of 50.
See Sheet 16 of 50 for Bar d₄(E) configuration.

Corporate License Number 184-001-084

WEST ABUTMENT DETAILS

WESTBOUND HARRISON AVENUE
OVER UP & CC&P RAILROAD
F.A.P. ROUTE 0525
SECTION 02-00518-00-BR
ROCKFORD, ILLINOIS
STATION 95+25.35
STRUCTURE NO. 101-6109

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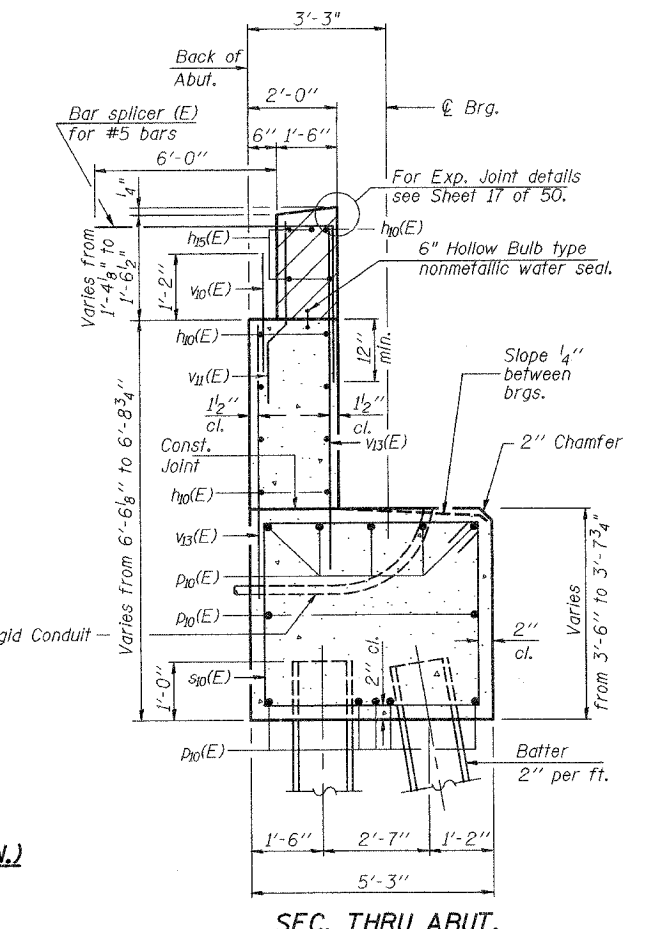
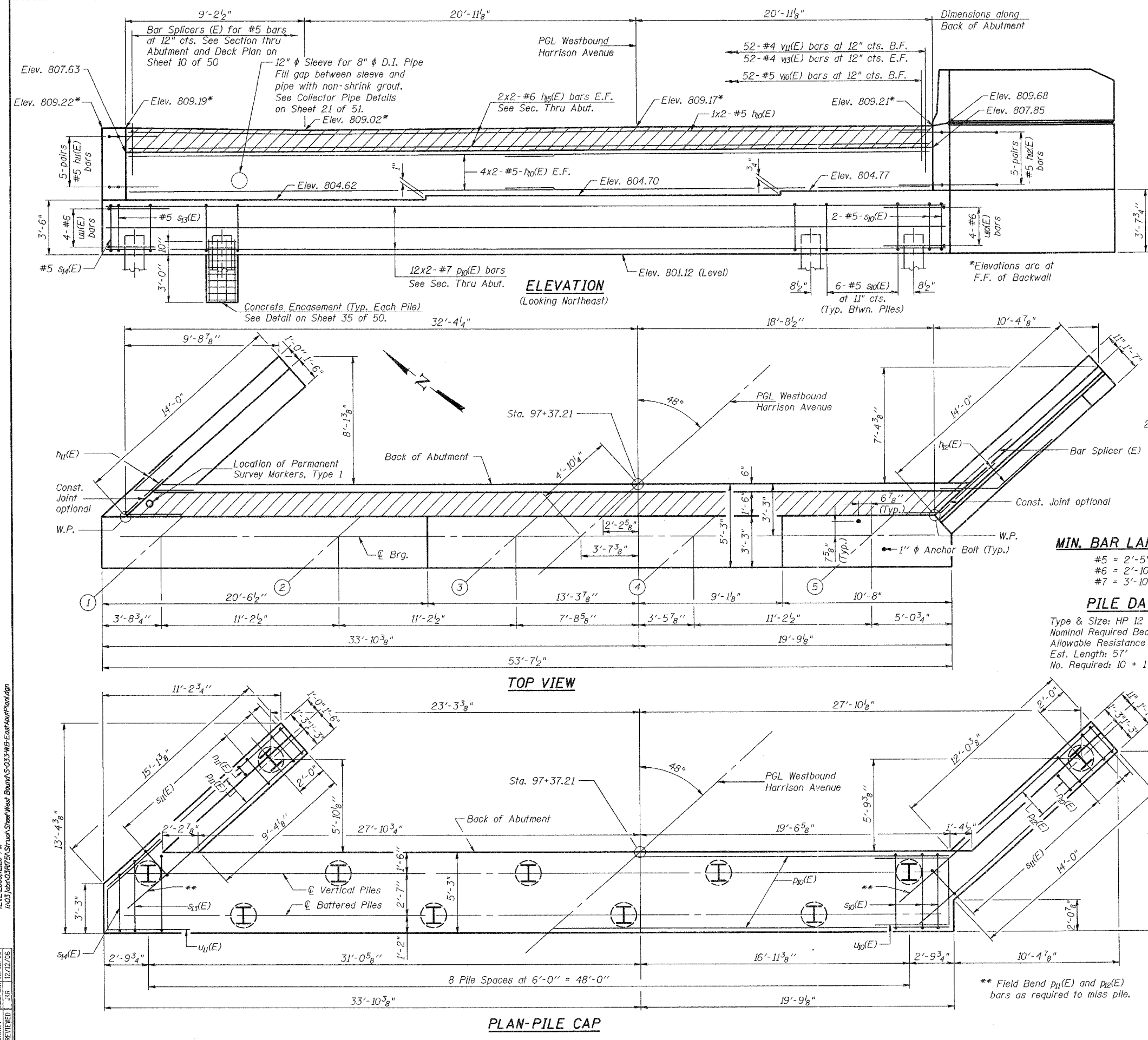
HANSON

JOB NO.
03R1751
DATE
12/14/06

12/28/06 PM
12/12/06 12:28 PM
h03jhs03p1751/Structure/Sheet/West Abutment/02-00518-00-BR

LAYOUT	SMK	7/1/06
DRAWN	MOH/JAR	8/11/06
REVIEWED	JAR	8/11/06

PROJECT NO.	SECTION	COUNTY	SHEET	SHEET NO.
FAP 0525		WINNEBAGO	148	50
SHEETS				



MIN. BAR LAP (U.N.)
 #5 = 2'-5"
 #6 = 2'-10"
 #7 = 3'-10"

PILE DATA
 Type & Size: HP 12 x 53 w/ Pile Shoes
 Nominal Required Bearing : 420 Kips
 Allowable Resistance Available : 140 Kips
 Est. Length: 57'
 No. Required: 10 + 1 test pile

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.
 Quantity of concrete in end post included with Concrete Superstructure.
 Work this Sheet with Sheets 34 & 35 of 50.
 Bars indicated thus 4x2-#5 etc. indicate 4 lines of bars with 2 lengths per line.
 All edges will have 3/4" chamfer unless noted.
 For details of Bar Splicers see Sheet 44 of 50.
 B.F. denotes Back Face.
 F.F. denotes Front Face.
 E.F. denotes Each Face.

Corporate License Number 184-001-084

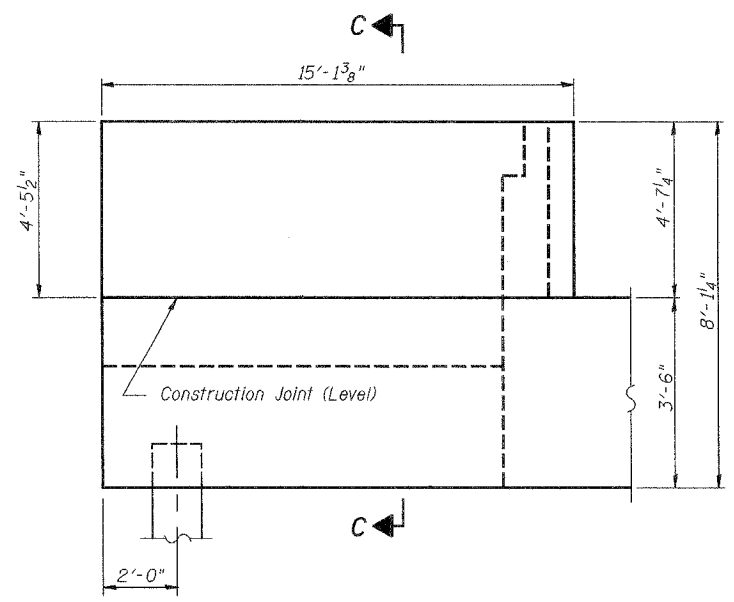
EAST ABUTMENT
WESTBOUND HARRISON AVENUE
OVER UP & CC&P RAILROAD
F.A.P. ROUTE 0525
SECTION 02-00518-00-BR
ROCKFORD, ILLINOIS
STATION 95+25.35
STRUCTURE NO. 101-6109

Copyright Hanson Professional Services Inc. 2006
 03R1751
 12/14/06

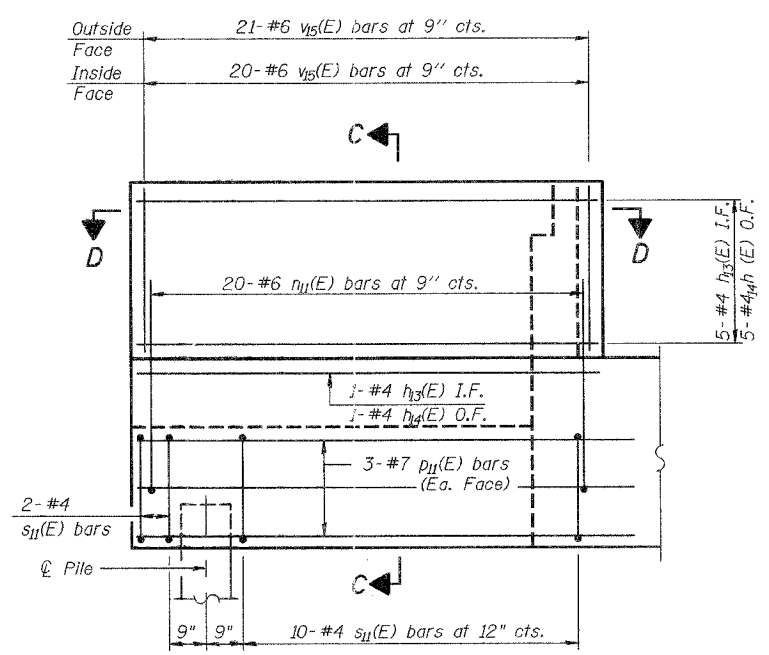
HANSON

12/26/06 PM 07/01/06
 12/26/06 12/26/06
 12/26/06 12/26/06
 12/26/06 12/26/06

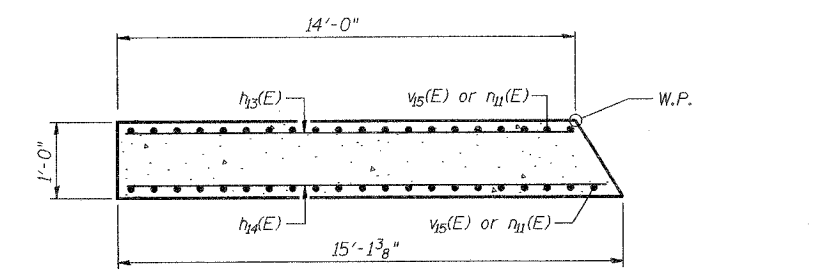
ROUTE NO.	SECTION	COUNTY	SHEET	SHEET	SHEET NO. 34 50 SHEETS
FAP 0525	*	WINNEBAGO	157	141	
FED. ROAD DIST. NO. 7		BILLINGS		FED. AID PROJECT	
* 02-00518-00-BR					



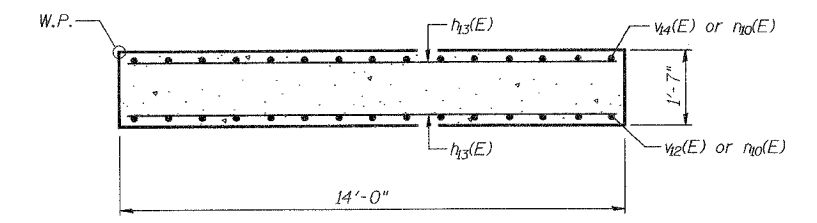
NORTH WING WALL ELEVATION
Showing Dimensions



NORTH WING WALL ELEVATION
Showing Reinforcement

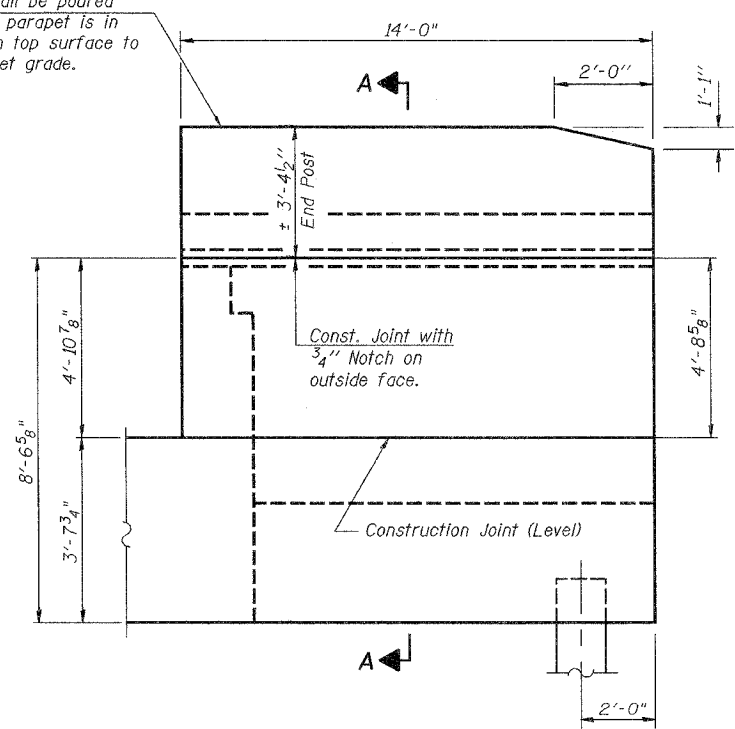


SEC. D-D

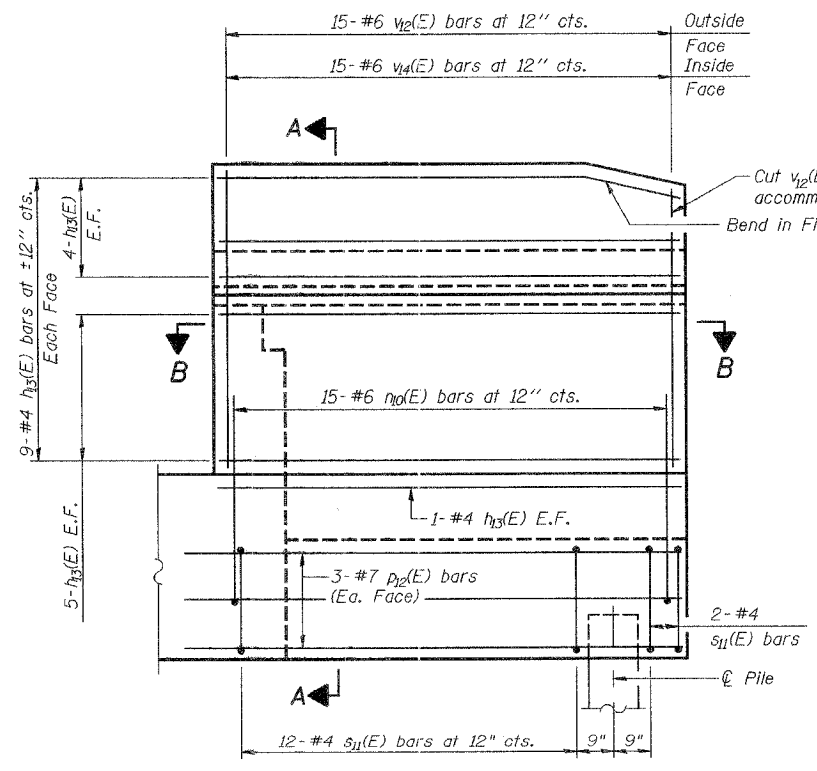


SEC. B-B

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



SOUTH WING WALL ELEVATION
Showing Dimensions



SOUTH WING WALL ELEVATION
Showing Reinforcement

NOTES

Reinforcement bars designated (E) shall be epoxy coated. Quantity of concrete in end post included with Concrete Superstructure. Work this Sheet with Sheets 33 & 35 of 50. All edges have 3/4" chamfer unless noted. O.F. denotes Outside Face. I.F. denotes Inside Face. E.F. denotes Each Face.

Corporate License Number 184-001-084

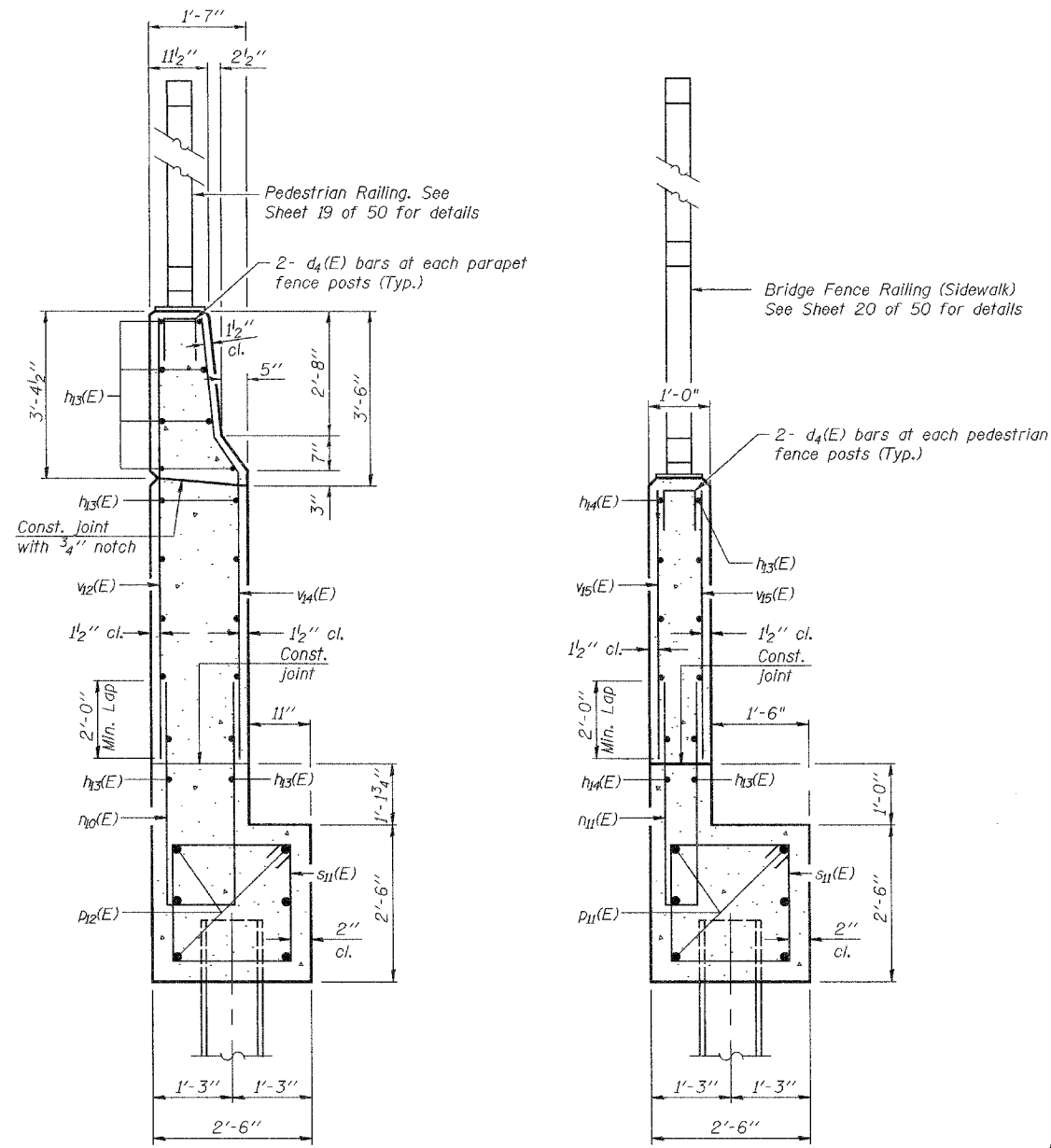
EAST ABUTMENT
WESTBOUND HARRISON AVENUE
OVER UP & CC&P RAILROAD
F.A.P. ROUTE 0525
SECTION 02-00518-00-BR
ROCKFORD, ILLINOIS
STATION 95+25.35
STRUCTURE NO. 101-6109

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DATE: 03R1751
12/14/06

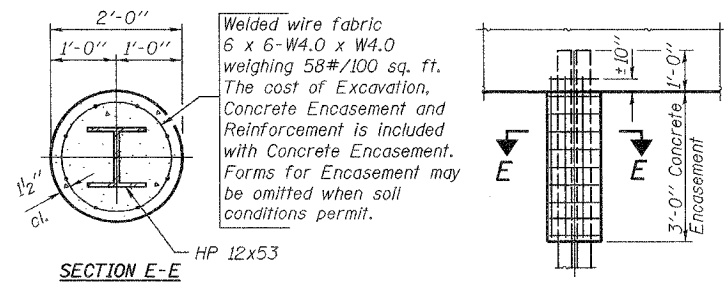
12/23/06 PM 12:23:06 12/22 PM 12/23/06 8/11/06
 R03:job:031751:Struct:West Bound:03-4-WB East:North:Def:2.dgn
 LAYOUT: SMK 7/1/06
 DRAWN: MAM/JKR 8/11/06
 REVIEWED: JKR 8/11/06

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO.
FAP 0525		WINNEBAGO	157	142
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		50 SHEETS
02-00518-00-BR				

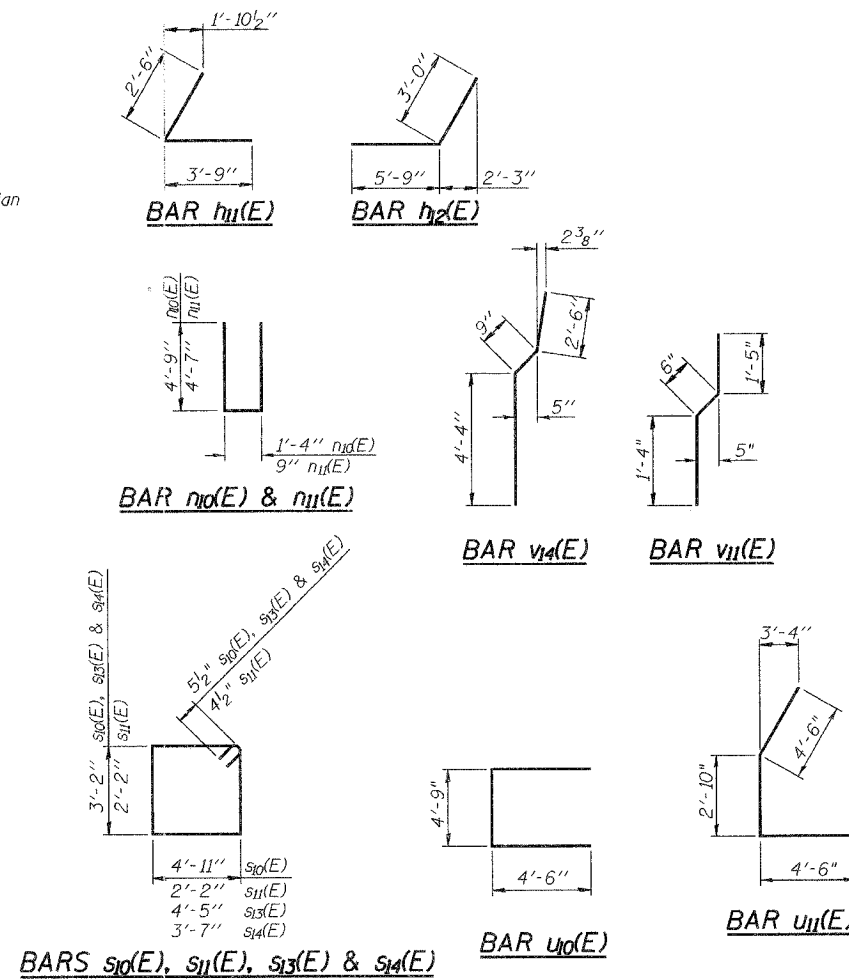


SECTION A-A

SECTION C-C



PILE ENCASEMENT DETAIL



EAST ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d4(E)	12	#4	2'-1"	□
h10(E)	18	#5	26'-8"	—
h11(E)	10	#5	6'-3"	└
h12(E)	10	#5	8'-9"	└
h13(E)	26	#4	13'-9"	—
h14(E)	6	#4	14'-10"	—
h15(E)	8	#6	26'-11"	—
n10(E)	15	#6	10'-10"	—
n11(E)	20	#6	9'-11"	—
D10(E)	24	#7	28'-8"	—
D11(E)	6	#7	14'-9"	—
D12(E)	6	#7	16'-3"	—
s10(E)	50	#5	17'-1"	□
s11(E)	26	#4	9'-5"	□
s12(E)	Not Used			
s13(E)	1	#5	16'-1"	□
s14(E)	1	#5	14'-5"	□
u10(E)	4	#6	13'-9"	—
u11(E)	4	#6	11'-10"	└
v10(E)	52	#5	2'-6"	—
v11(E)	52	#4	3'-3"	—
v12(E)	15	#6	7'-6"	—
v13(E)	104	#4	5'-0"	—
v14(E)	15	#6	7'-7"	—
v15(E)	41	#6	4'-2"	—
Structure Excavation	Cu. Yd.		64.5	
Concrete Structures	Cu. Yd.		61.6	
Concrete Encasement	Cu. Yd.		3.9	
Reinforcement Bars, Epoxy Coated	Pound		6060	
Furnishing Steel Piles, HP12x53	Foot		570	
Driving Piles	Foot		570	
Test Piles Steel, HP12x53	Each		1	
Pile Shoes	Each		11	
Concrete Sealer	Sq. Ft.		174	
Porous Granular Embankment	Cu.Yd.		89.3	
Anchor Bolts, 1"	Each		10	
Permanent Survey Markers, Type 1	Each		1	

NOTES

Reinforcement bars designated (E) shall be epoxy coated.
Work this Sheet with Sheets 33 & 34 of 50.
See Sheet 16 of 50 for Bar d4(E) configuration.

Corporate License Number 184-001-084

EAST ABUTMENT DETAILS
WESTBOUND HARRISON AVENUE
OVER UP & CC&P RAILROAD
F.A.P. ROUTE 0525
SECTION 02-00518-00-BR
ROCKFORD, ILLINOIS
STATION 95+25.35
STRUCTURE NO. 101-6109

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JOB NO. 03R1751

DATE 12/14/06

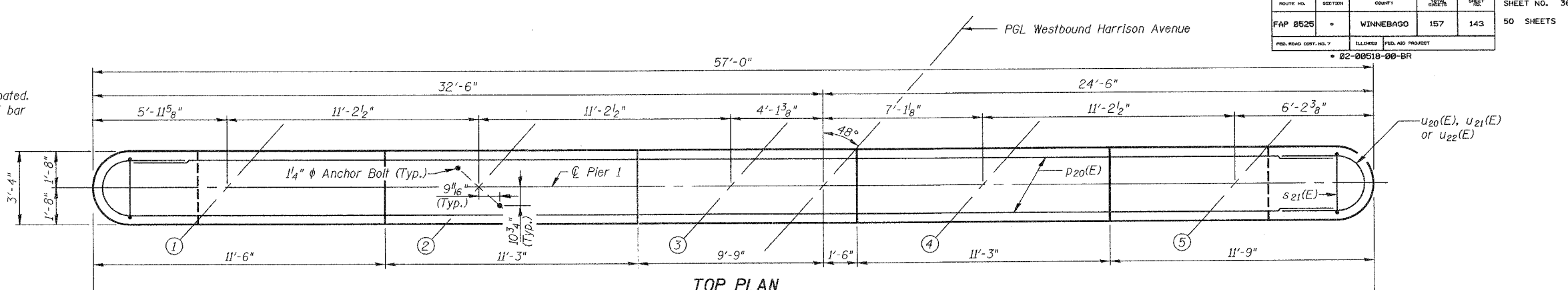
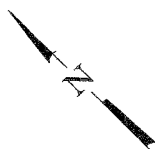
12/8/06 PM 12/12/06 6:12:21 PM P:\03\08518\03R1751\Struct\Steel\West Bound\5-035-WB-EastAbutDet3.dgn

LAYOUT	SMK	7/1/06
DRAWN	MWJ/JAR	8/11/06
REVIEWED	JAR	8/11/06

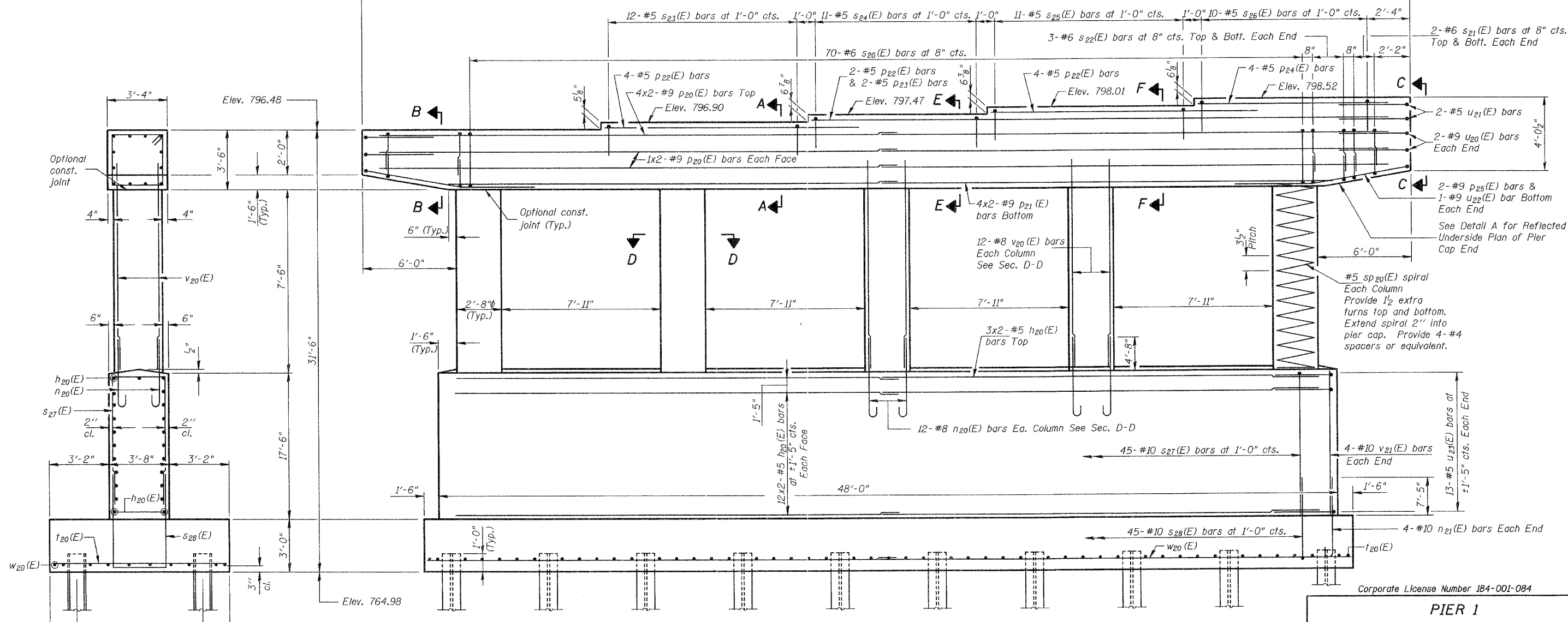
ROUTE NO.	SECTION	COUNTY	SHEET	SHEET
FAP 0525		WINNEBAGO	157	143
FED. ROAD DIST. NO. 7				
ILLINOIS FED. AID PROJECT				
02-00518-00-BR				

NOTES

Space Reinforcement in cap to miss anchor bolts.
 Pour steps monolithically with cap.
 Work this sheet with Sheet 37 of 50.
 Reinforcement Bars designated (E) shall be epoxy coated.
 Bar indicated thus 1x2 - #5 etc. indicates 1 line of bar with 2 lengths per line.



TOP PLAN



ELEVATION
(Looking Northeast)



END VIEW

MINIMUM BAR LAP

- HORIZONTAL**
- #5 - 2'-2" (Bottom of Footing)
- #5 - 3'-0"
- #9 - 8'-1"

Corporate License Number 184-001-084

PIER 1

WESTBOUND HARRISON AVENUE
 OVER UP & CC&P RAILROAD
 F.A.P. ROUTE 0525
 SECTION 02-00518-00-BR
 ROCKFORD, ILLINOIS
 STATION 95+25.35
 STRUCTURE NO. 101-6109

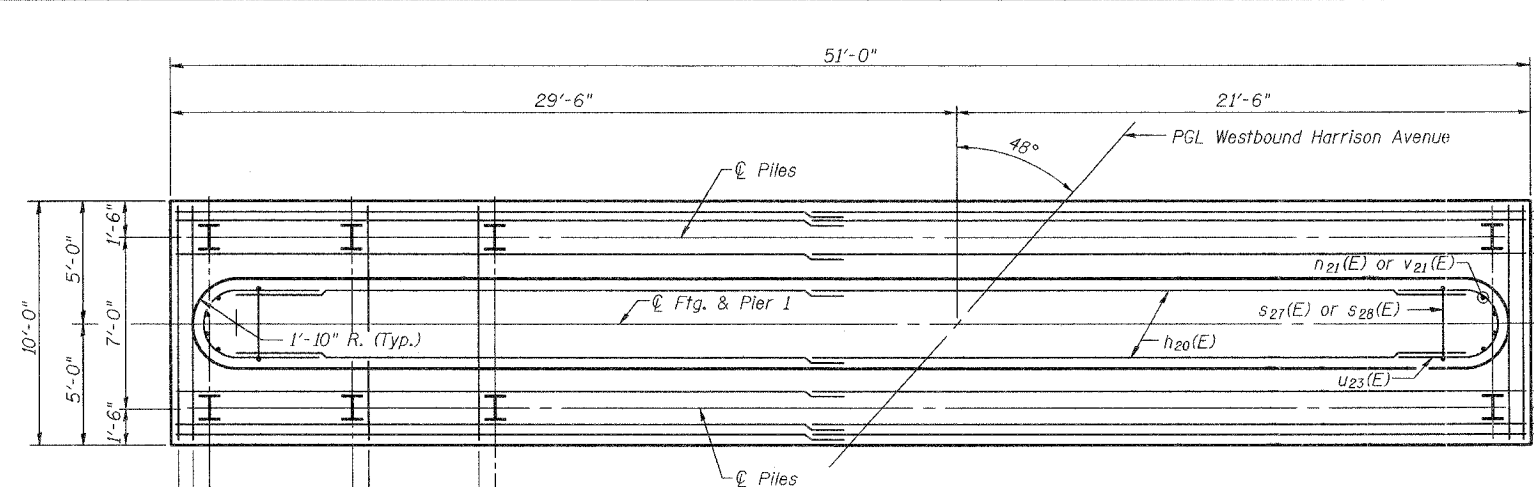
© Copyright Hanson Professional Services Inc. 2006



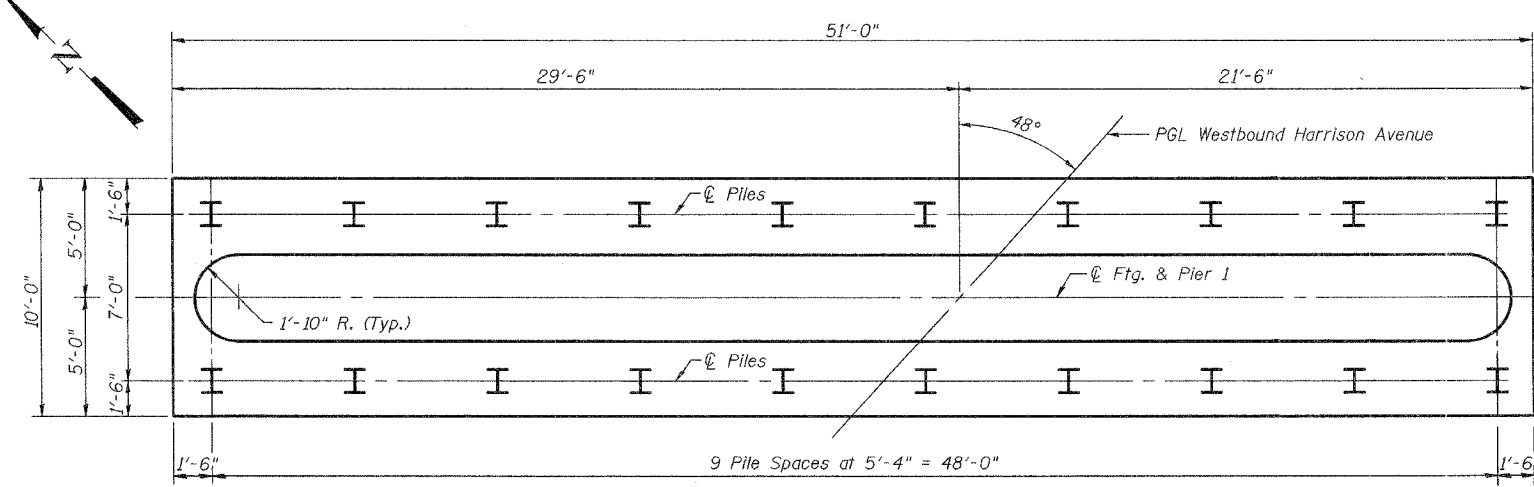
JOB NO. 03R1751

DATE 12/14/06

12/14/06 PM 03/01/06
 12/14/06 PM 03/01/06
 12/14/06 PM 03/01/06
 12/14/06 PM 03/01/06

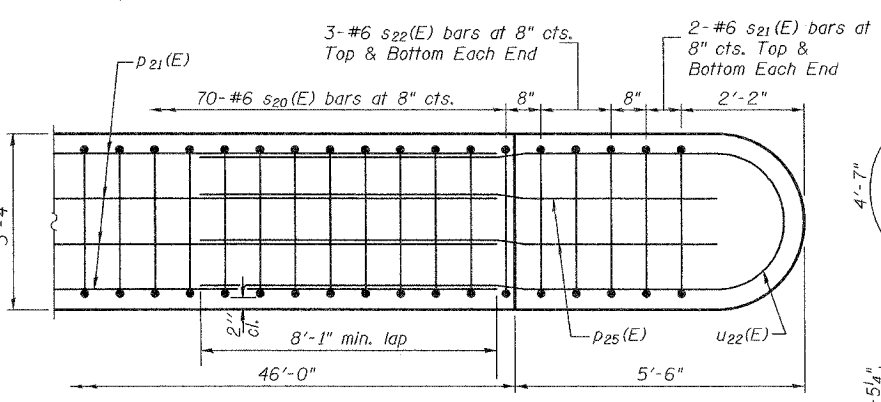


FOOTING REINFORCEMENT PLAN

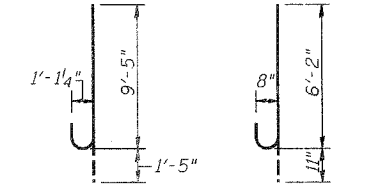


FOOTING PILE PLAN

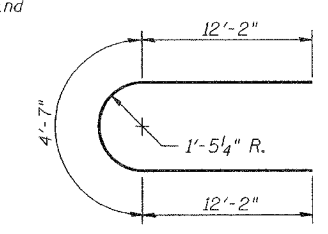
PILE DATA
 Type & Size: HP 12x53 w/ Pile Shoes
 Nominal Required Bearing: 420 Kips
 Allowable Resistance Available: 140 Kips
 Est. Length: 18'
 No. Req'd: 19 + 1 Test Pile



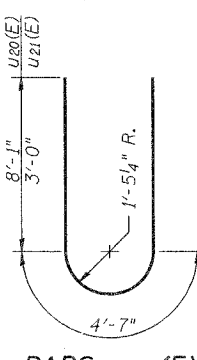
**DETAIL A
 REFLECTED UNDERSIDE PLAN OF PIER CAP END**



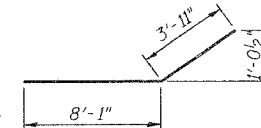
BAR n₂₁(E) BAR n₂₀(E)



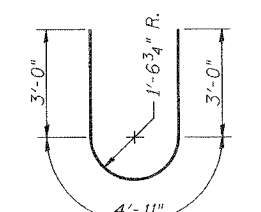
BAR u₂₂(E)



BARS u₂₀(E) & u₂₁(E)



BAR p₂₅(E)



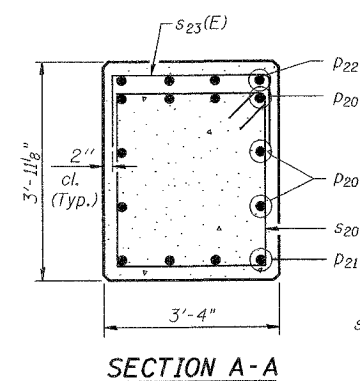
BAR u₂₃(E)

A & B DIMENSIONS

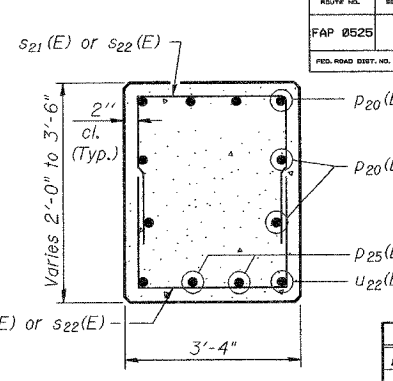
Bar	A	B
s ₂₁ (E)	3'-0"	2'-3"
s ₂₂ (E)	3'-0"	2'-6"
s ₂₃ (E)	3'-0"	2'-2"
s ₂₄ (E)	3'-0"	2'-8"
s ₂₅ (E)	3'-0"	3'-3"
s ₂₆ (E)	3'-0"	3'-9"
s ₂₇ (E)	3'-4"	17'-2"
s ₂₈ (E)	3'-4"	10'-2"

MINIMUM BAR LAP

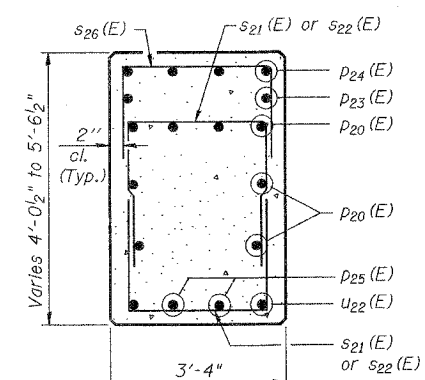
HORIZONTAL
 #5 - 2'-2" (Bottom of Footing)
 #5 - 3'-0"
 #9 - 8'-1"



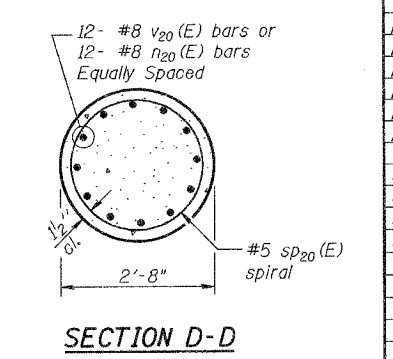
SECTION A-A



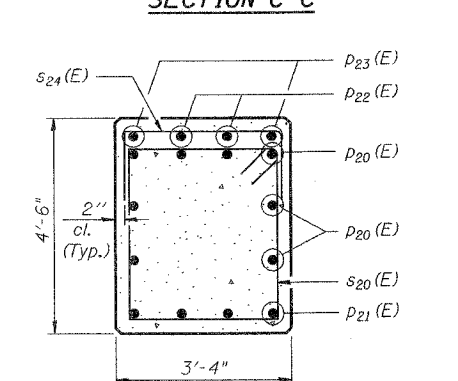
SECTION B-B



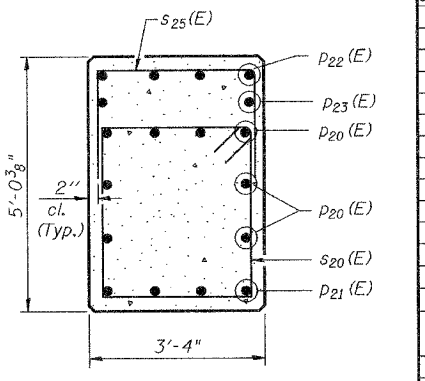
SECTION C-C



SECTION D-D



SECTION E-E



SECTION F-F

PIER 1 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h ₂₀ (E)	54	#5	23'-8"	
n ₂₀ (E)	60	#8	7'-1"	⌋
n ₂₁ (E)	8	#10	10'-10"	⌋
p ₂₀ (E)	16	#9	30'-11"	
p ₂₁ (E)	8	#9	27'-1"	
p ₂₂ (E)	10	#5	14'-3"	
p ₂₃ (E)	2	#5	32'-5"	
p ₂₄ (E)	4	#5	9'-11"	
p ₂₅ (E)	4	#9	12'-0"	
s ₂₀ (E)	70	#6	13'-8"	□
s ₂₁ (E)	8	#6	7'-6"	⌋
s ₂₂ (E)	12	#6	8'-0"	⌋
s ₂₃ (E)	12	#5	7'-4"	⌋
s ₂₄ (E)	11	#5	8'-4"	⌋
s ₂₅ (E)	11	#5	9'-6"	⌋
s ₂₆ (E)	10	#5	10'-6"	⌋
s ₂₇ (E)	45	#10	37'-8"	⌋
s ₂₈ (E)	45	#10	23'-8"	⌋
sp ₂₀ (E)	5	#5	7'-8"	⌋
t ₂₀ (E)	49	#9	9'-8"	⌋
u ₂₀ (E)	4	#9	20'-9"	⌋
u ₂₁ (E)	2	#5	10'-7"	⌋
u ₂₂ (E)	2	#9	28'-11"	⌋
u ₂₃ (E)	26	#5	10'-11"	⌋
v ₂₀ (E)	60	#8	9'-6"	
v ₂₁ (E)	8	#10	17'-2"	
w ₂₀ (E)	20	#5	26'-5"	
Concrete Structures	Cu. Yd.	207.1		
Reinforcement Bars, Epoxy Coated	Pound	25,840		
Structure Excavation	Cu. Yd.	474.3		
Furnishing Steel Piles, HP 12x53	Foot	342		
Driving Piles	Foot	342		
Pile Shoes	Each	20		
Test Pile Steel, HP 12x53	Each	1		
Anchor Bolts, 1 1/4"	Each	10		

NOTES
 Work this sheet with Sheet 36 of 50.
 Reinforcement Bars designated (E) shall be epoxy coated.
 Bar indicated thus 1x2 - #5 etc. indicates 1 line of bar with 2 lengths per line.
 * Length is spiral height.
 Corporate License Number 184-001-084

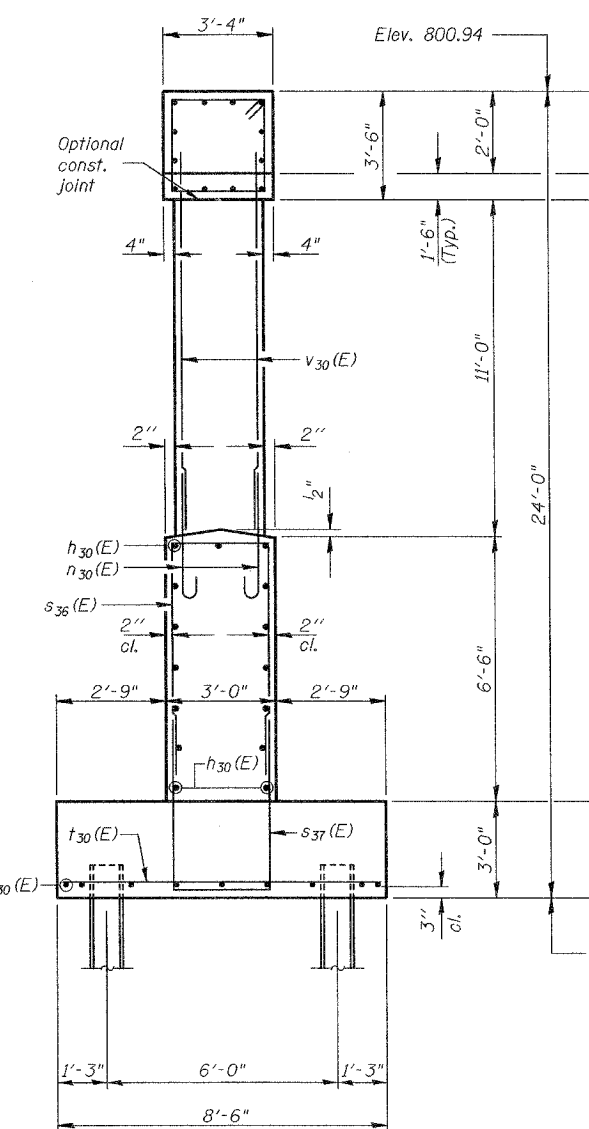
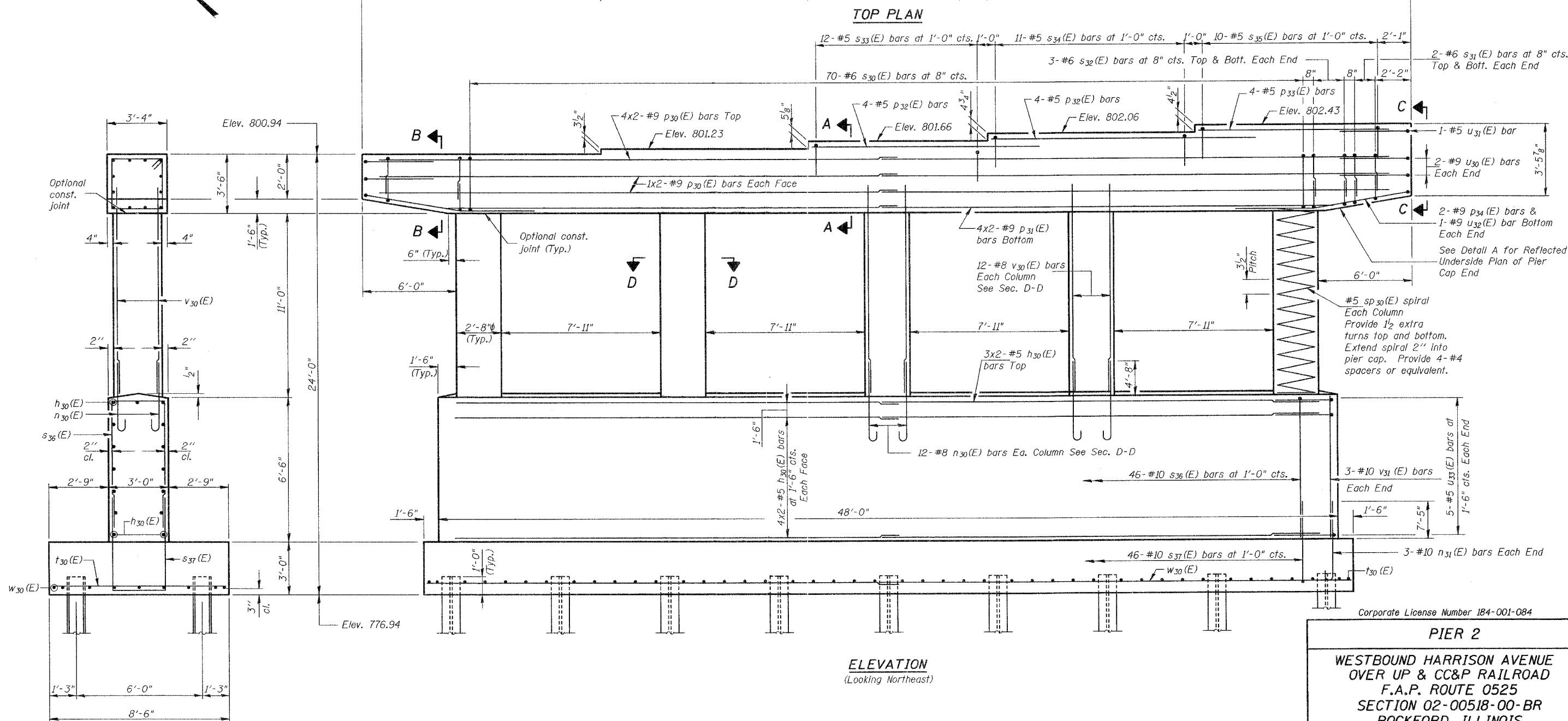
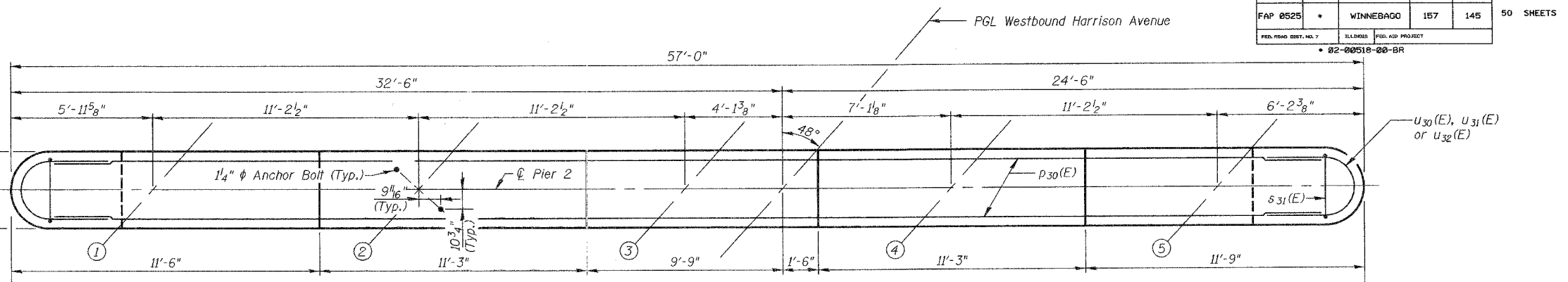
PIER 1 DETAILS
 WESTBOUND HARRISON AVENUE
 OVER UP & CC&P RAILROAD
 F.A.P. ROUTE 0525
 SECTION 02-00518-00-BR
 ROCKFORD, ILLINOIS
 STATION 95+25.35
 STRUCTURE NO. 101-6109

12/16/06 PM 12:26:06 12/16 PM 12/21/06 07:17/06
 IN: 03/03/07/5A:Structural/Steel/Reinf/02-00518-00-BR-Pier-Det.dwg
 LAYOUT: MR: 05/01/06
 DRAWN: MCM/AR: 07/17/06
 REVIEWED: FLN 08/02/06

ROUTE NO.	SECTION	COUNTY	DISTRICT	DATE	SHEET NO.
FAP 0525	*	WINNEBAGO	157	145	50 SHEETS

NOTES

Space Reinforcement in cap to miss anchor bolts
Pour steps monolithically with cap.
Work this sheet with Sheet 39 of 50.
Reinforcement Bars designated (E) shall be epoxy coated.
Bar indicated thus 1x2 - #5 etc. indicates 1 line of bar with 2 lengths per line.



PIER 2
WESTBOUND HARRISON AVENUE OVER UP & CC&P RAILROAD F.A.P. ROUTE 0525 SECTION 02-00518-00-BR ROCKFORD, ILLINOIS STATION 95+25.35 STRUCTURE NO. 101-6109
© Copyright Hanson Professional Services Inc. 2006
DRAWN: JKR 03/01/06 CHECKED: MIM/JKR 07/17/06 REVIEWED: FJM 08/02/06
03R1751

12:55 PM 03/01/06
12:12:00:06:12:15 PM
I:\03\plan\03R1751\Struc\Sheet\West Bound\5-03R-18-Pier 2.dgn

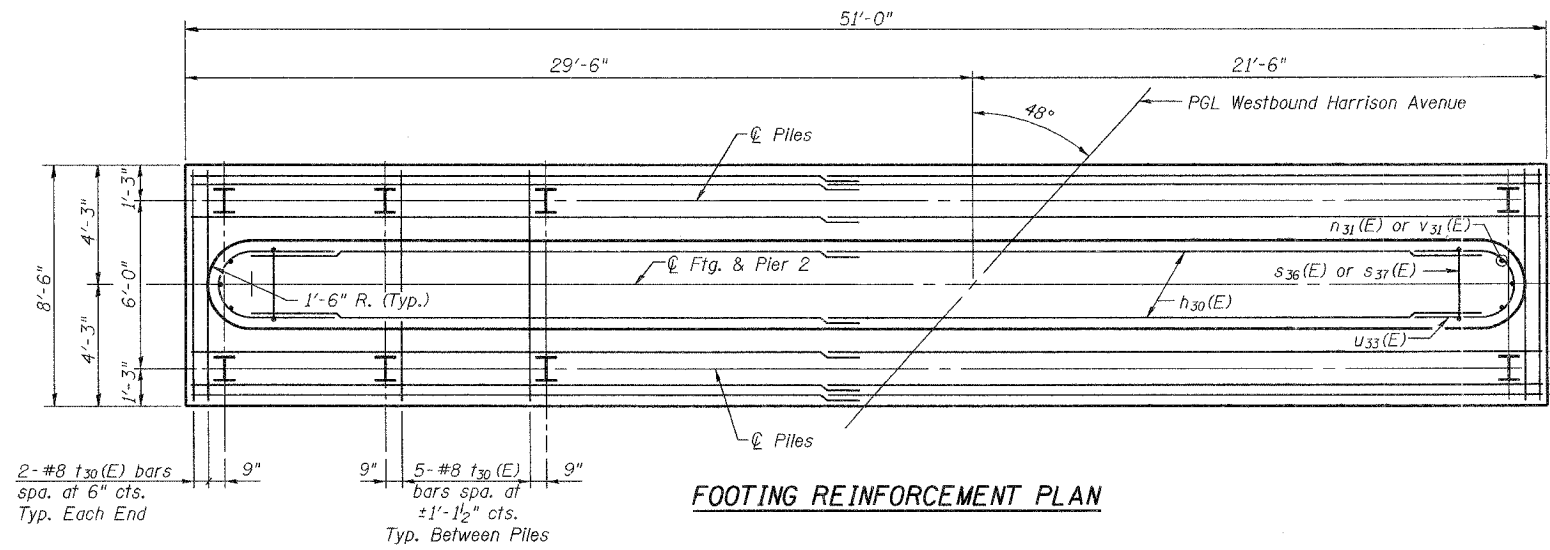
HORIZONTAL
#5 - 2'-2" (Bottom of Footing)
#5 - 3'-0"
#9 - 8'-1"

Corporate License Number 184-001-084

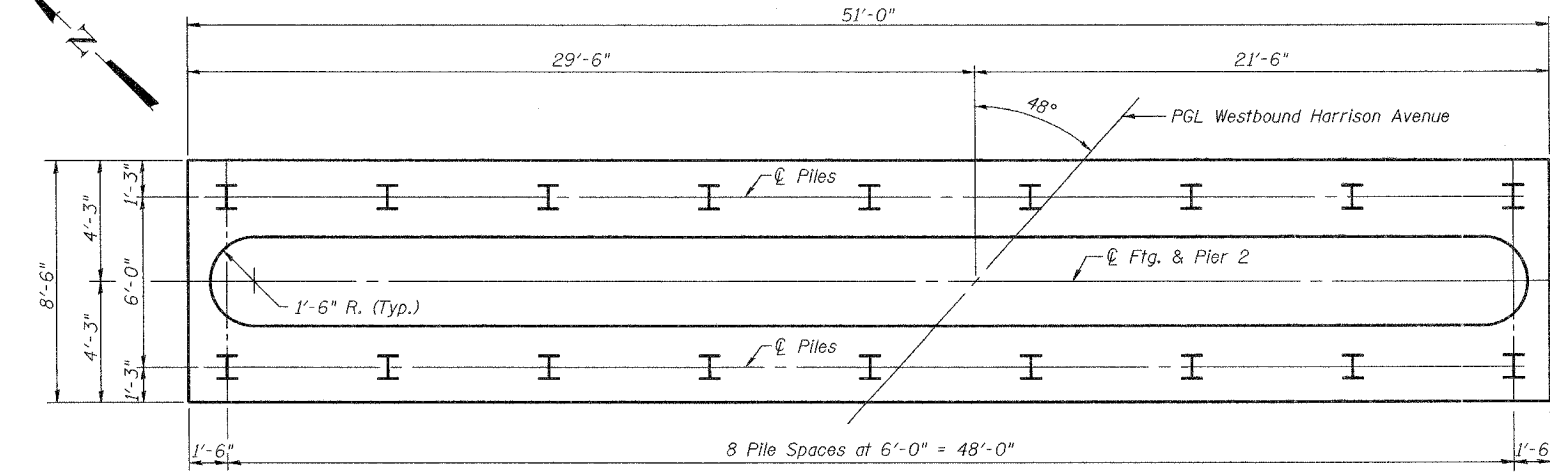
ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO.
FAP 0525		WINNEBAGO	157	46
PIER 2 BILL OF MATERIAL				50 SHEETS

PIER 2 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h_{30}(E)$	22	#5	24'-0"	—
$n_{30}(E)$	60	#8	7'-1"	U
$n_{31}(E)$	6	#10	10'-10"	U
$D_{30}(E)$	16	#9	30'-11"	—
$D_{31}(E)$	8	#9	27'-1"	—
$D_{32}(E)$	8	#5	14'-3"	—
$D_{33}(E)$	4	#5	9'-11"	—
$D_{34}(E)$	4	#9	12'-0"	—
$s_{30}(E)$	70	#6	13'-8"	□
$s_{31}(E)$	8	#6	7'-6"	□
$s_{32}(E)$	12	#6	8'-0"	□
$s_{33}(E)$	12	#5	7'-10"	□
$s_{34}(E)$	11	#5	8'-8"	□
$s_{35}(E)$	10	#5	9'-4"	□
$s_{36}(E)$	46	#10	15'-0"	□
$s_{37}(E)$	46	#10	20'-10"	□
* $sp_{30}(E)$	5	#5	11'-2"	⋈
$t_{30}(E)$	44	#8	8'-2"	—
$U_{30}(E)$	4	#9	20'-9"	U
$U_{31}(E)$	1	#5	10'-7"	U
$U_{32}(E)$	2	#9	28'-11"	U
$U_{33}(E)$	10	#5	9'-11"	U
$v_{30}(E)$	60	#8	13'-0"	—
$v_{31}(E)$	6	#10	6'-2"	—
$w_{30}(E)$	18	#5	26'-5"	—
Concrete Structures	Cu. Yd.	122.2		
Reinforcement Bars, Epoxy Coated	Pound	19,660		
Structure Excavation	Cu. Yd.	251.6		
Furnishing Steel Piles, HP 12x53	Foot	323		
Driving Piles	Foot	323		
Pile Shoes	Each	18		
Test Pile Steel HP 12x53	Each	1		
Anchor Bolts, 1 1/4"	Each	10		

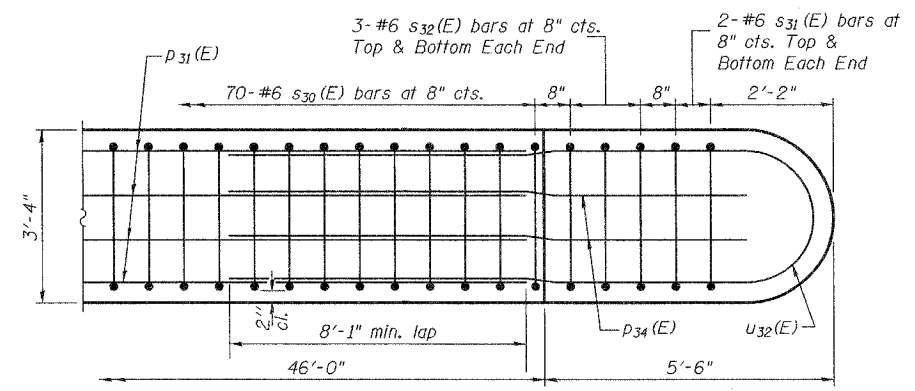


FOOTING REINFORCEMENT PLAN

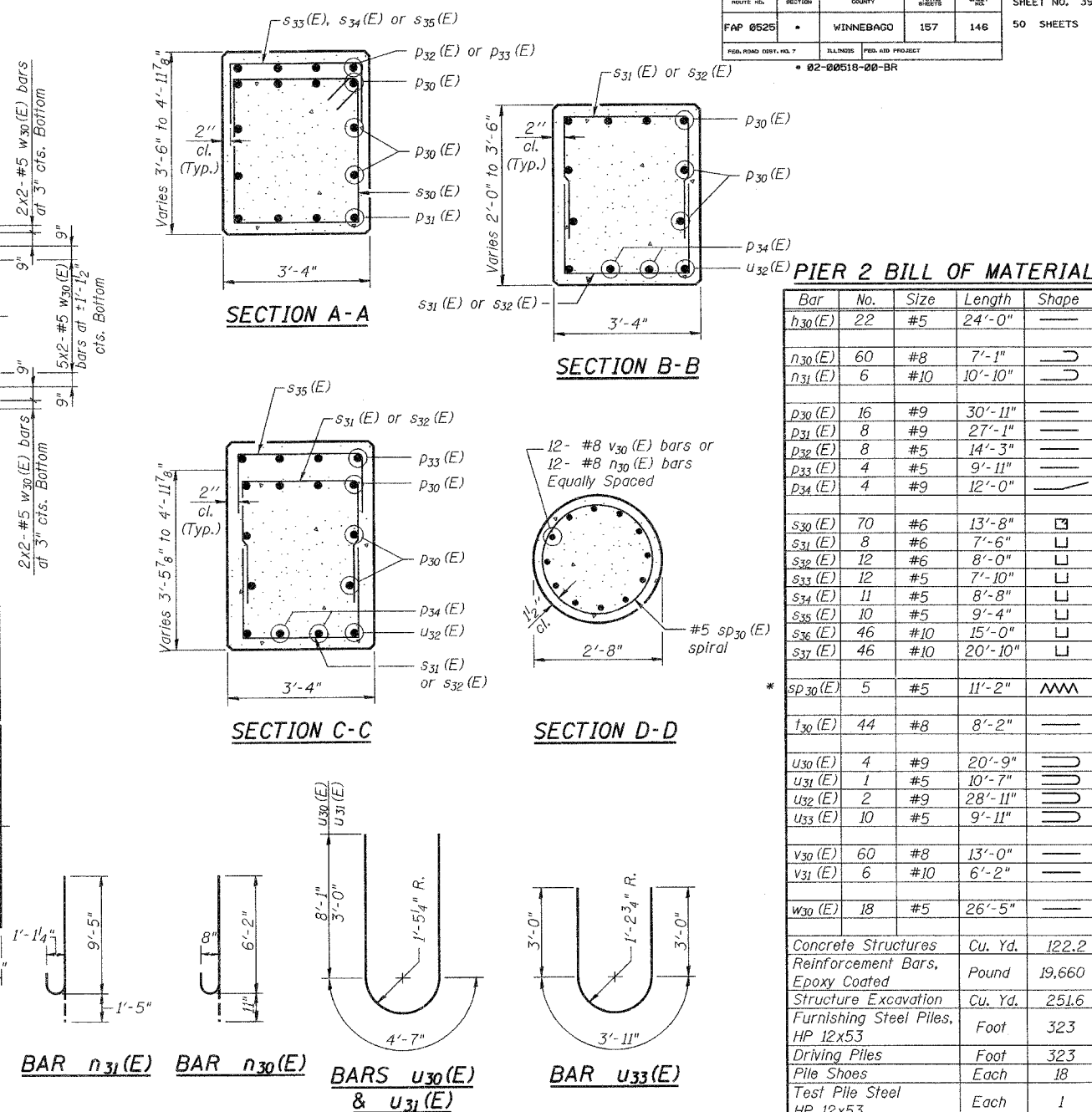


FOOTING PILE PLAN

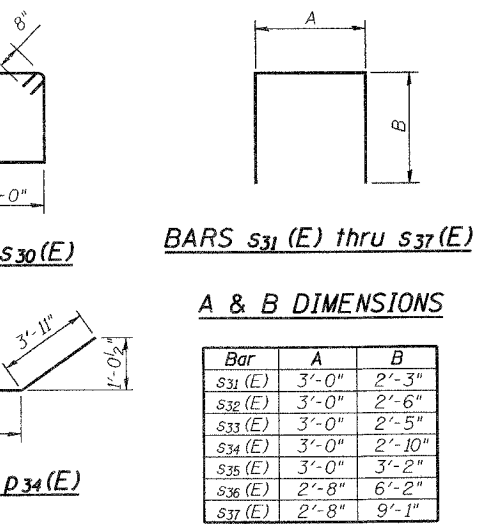
PILE DATA
 Type & Type: HP 12x53 w/ Pile Shoes
 Nominal Required Bearing : 420 Kips
 Allowable Resistance Available : 140 Kips
 Est. Length: 19'
 No. Req'd: 17 + 1 Test Pile



DETAIL A
REFLECTED UNDERSIDE PLAN OF PIER CAP END



SECTION A-A SECTION B-B SECTION C-C SECTION D-D
 BAR $n_{31}(E)$ BAR $n_{30}(E)$ BARS $U_{30}(E)$ & $U_{31}(E)$ BAR $U_{33}(E)$



MINIMUM BAR LAP

HORIZONTAL
 #5 - 2'-2" (Bottom of Footing)
 #5 - 3'-0"
 #9 - 8'-1"

A & B DIMENSIONS

Bar	A	B
$s_{31}(E)$	3'-0"	2'-3"
$s_{32}(E)$	3'-0"	2'-6"
$s_{33}(E)$	3'-0"	2'-5"
$s_{34}(E)$	3'-0"	2'-10"
$s_{35}(E)$	3'-0"	3'-2"
$s_{36}(E)$	2'-8"	6'-2"
$s_{37}(E)$	2'-8"	9'-1"

NOTES

Work this sheet with Sheet 38 of 50.
 Reinforcement Bars designated (E) shall be epoxy coated.
 Bar indicated thus 1x2 - #5 etc. indicates 1 line of bar with 2 lengths per line.
 * Length is spiral height.

Corporate License Number 184-001-084

PIER 2 DETAILS

WESTBOUND HARRISON AVENUE
 OVER UP & CC&P RAILROAD
 F.A.P. ROUTE 0525
 SECTION 02-00518-00-BR
 ROCKFORD, ILLINOIS
 STATION 95+25.35
 STRUCTURE NO. 101-6109

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03R1751

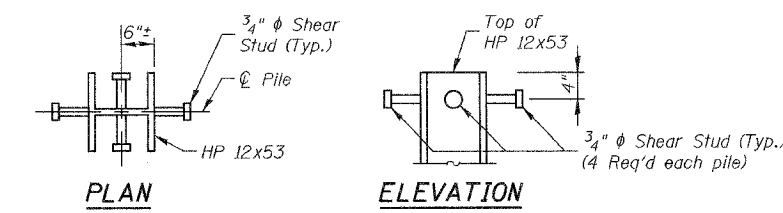
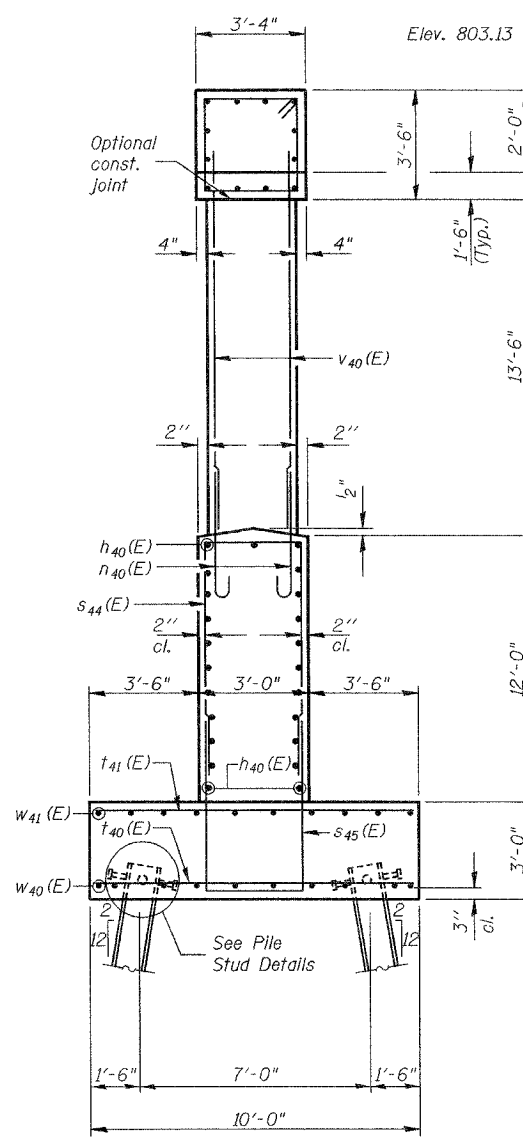
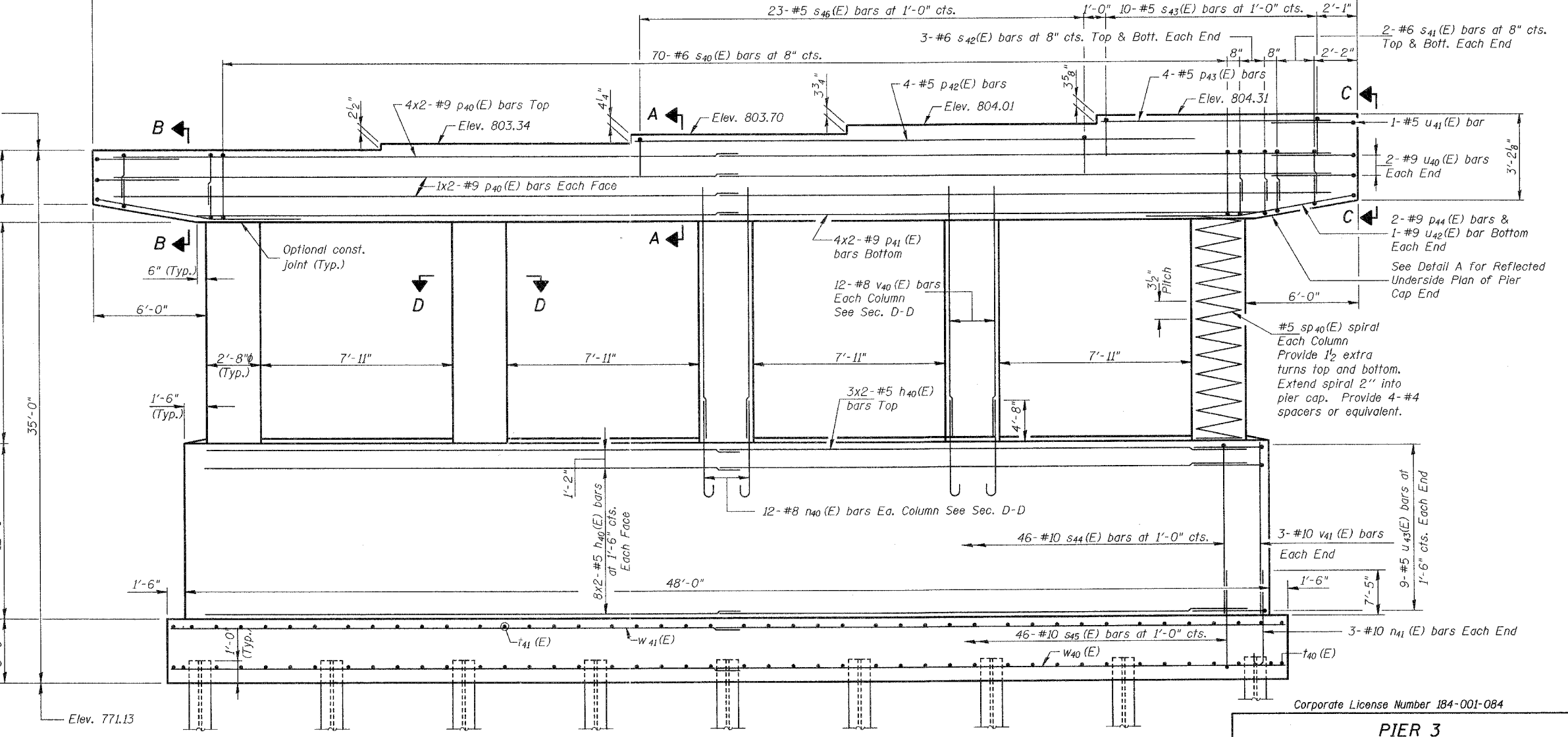
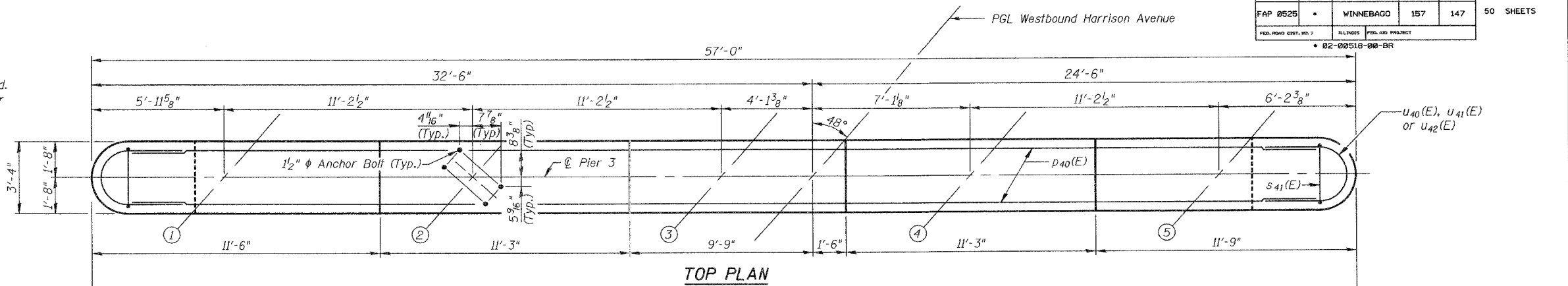
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 LAYOUT JMK 03/01/06
 DRAWN MDM/JRS 07/17/06
 REVIEWED FLN 08/02/06

ROUTE NO.	SECTION	COUNTY	SHEET	SHEETS
FAP 0525	*	WINNEBAGO	157	147
ILLINOIS		FED. AID PROJECT		
* 02-00518-00-BR				

SHEET NO. 40
50 SHEETS

NOTES
Space Reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
Work this sheet with Sheet 41 of 50.
Reinforcement Bars designated (E) shall be epoxy coated.
Bar indicated thus 1x2 - #5 etc. indicates 1 line of bar with 2 lengths per line.
Pile studs shall be installed after piles are driven and cut off to proper elevation.



ELEVATION
(Looking Northeast)

PILE STUD DETAILS

Provide $\frac{3}{4}$ " ϕ granular or solid flux filled headed studs automatically end welded to piling. Cost shall be included with Furnishing Steel Piles, HP 12x53.

MINIMUM BAR LAP

- HORIZONTAL**
- #5 - 2'-2" (Bottom of Footing)
- #5 - 3'-0"
- #9 - 8'-1"

PIER 3

**WESTBOUND HARRISON AVENUE
OVER UP & CC&P RAILROAD
F.A.P. ROUTE 0525
SECTION 02-00518-00-BR
ROCKFORD, ILLINOIS
STATION 95+25.35
STRUCTURE NO. 101-6109**

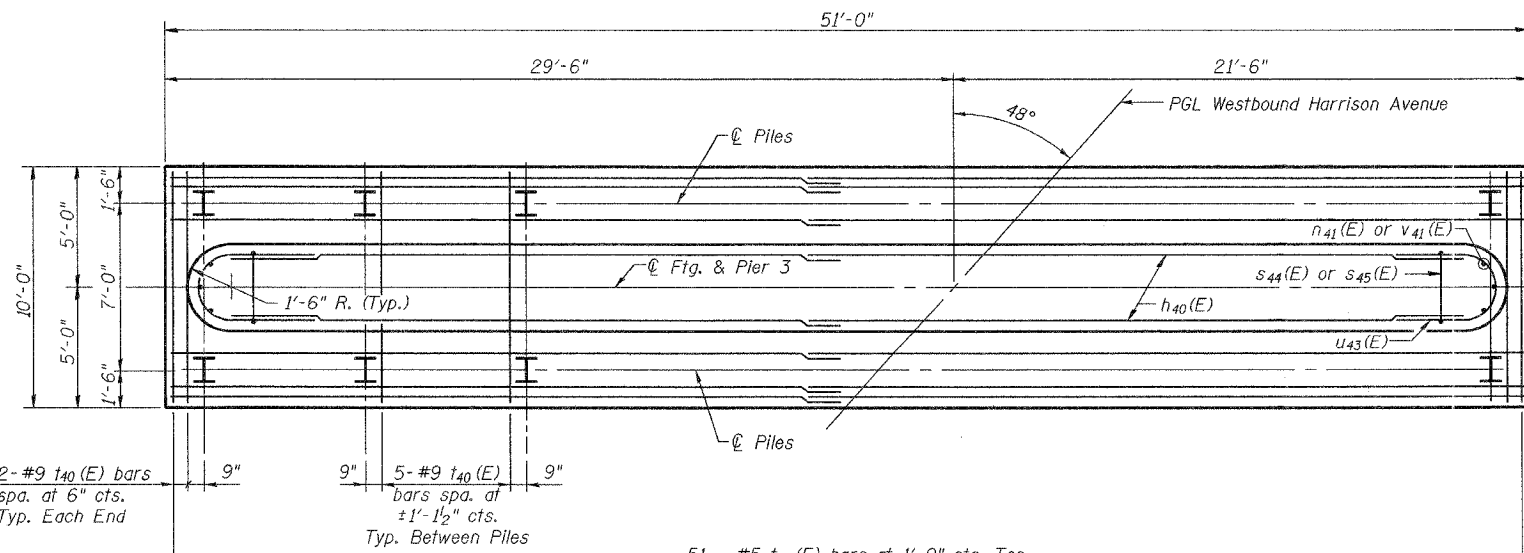
Corporate License Number 184-001-084

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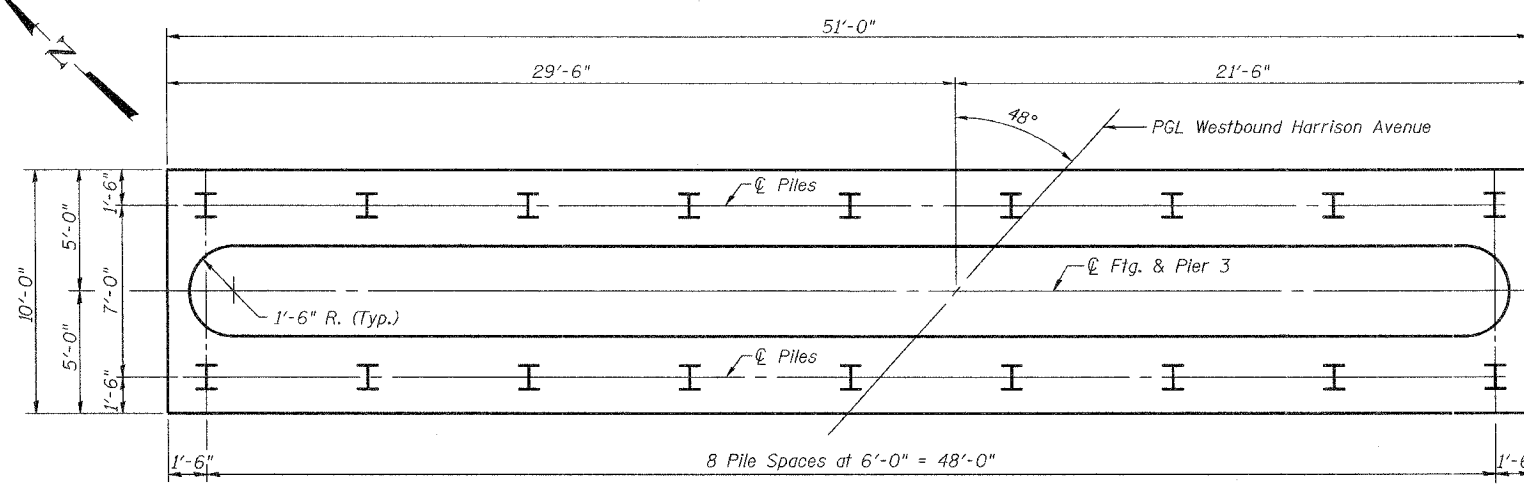
03R1751
DATE 12/14/06

12/15/06 PM 03/01/06
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 12/03/06 10:37:15 Struct Sheet West Bound C-040-WB-Pier 3.dgn
 LAYOUT JHR 03/01/06
 DRAWN MDM/JHR 07/17/06
 REVIEWED FLN 08/02/06

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO.
FAP 0525		WINNEBAGO	157	41
FED. ROAD DIST. NO. 7			ILLINOIS	50 SHEETS
* 02-00518-00-BR				



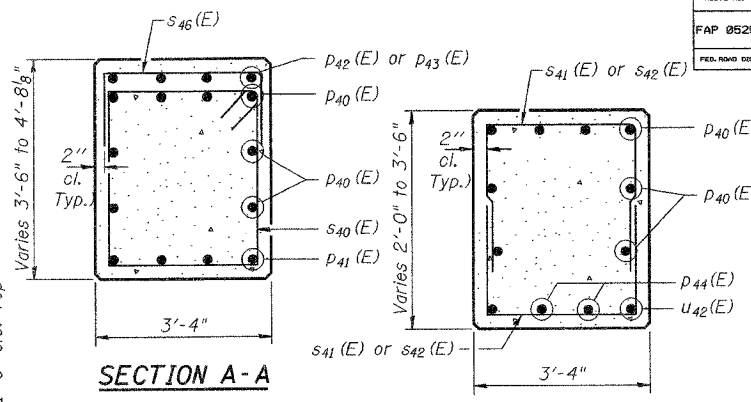
FOOTING REINFORCEMENT PLAN



FOOTING PILE PLAN

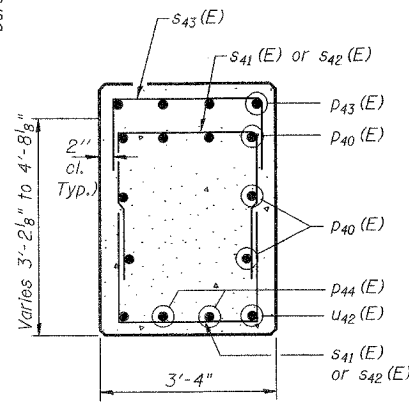
PILE DATA

Type & Size: HP 12x53 w/ Pile Shoes
 Nominal Required Bearing : 420 Kips
 Allowable Resistance Available : 140 Kips
 Est. Length: 20'
 No. Req'd: 17 + 1 Test Pile



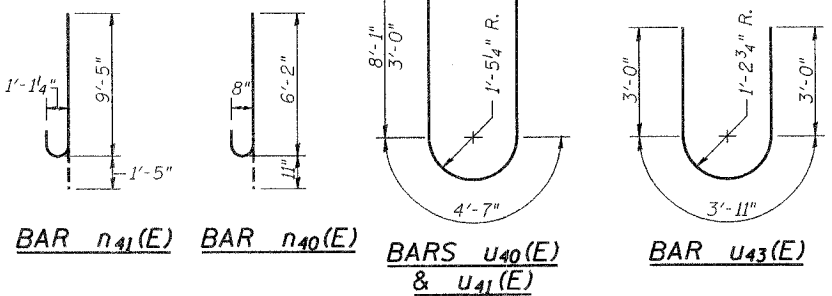
SECTION A-A

SECTION B-B



SECTION C-C

SECTION D-D



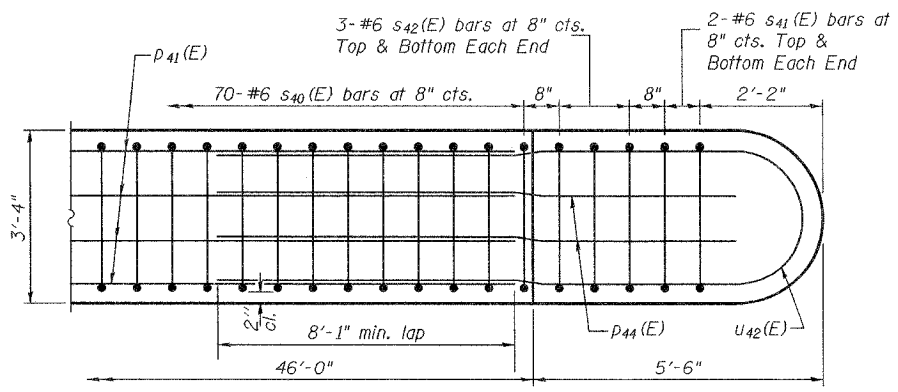
PIER 3 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h40(E)	38	#5	24'-0"	—
n40(E)	60	#8	7'-1"	—
n41(E)	6	#10	10'-10"	—
p40(E)	16	#9	30'-11"	—
p41(E)	8	#9	27'-1"	—
p42(E)	4	#5	25'-6"	—
p43(E)	4	#5	9'-11"	—
p44(E)	4	#9	12'-0"	—
s40(E)	70	#6	13'-8"	□
s41(E)	8	#6	7'-6"	□
s42(E)	12	#6	8'-0"	□
s43(E)	10	#5	8'-10"	□
s44(E)	46	#10	26'-0"	□
s45(E)	46	#10	23'-0"	□
s46(E)	23	#5	7'-6"	□
sp40(E)	5	#5	13'-8"	⌀
t40(E)	44	#9	9'-8"	—
t41(E)	51	#5	9'-8"	—
u40(E)	4	#9	20'-9"	—
u41(E)	1	#5	10'-7"	—
u42(E)	2	#9	28'-11"	—
u43(E)	18	#5	9'-11"	—
v40(E)	60	#8	15'-6"	—
v41(E)	6	#10	11'-8"	—
w40(E)	20	#5	26'-5"	—
w41(E)	20	#5	26'-10"	—
Concrete Structures			Cu. Yd.	161.2
Reinforcement Bars, Epoxy Coated			Pound	25,200
Structure Excavation			Cu. Yd.	495.8
Furnishing Steel Piles, HP 12x53			Foot	340
Driving Piles			Foot	340
Pile Shoes			Each	18
Test Pile Steel HP 12x53			Each	1
Anchor Bolts, 1/2"			Each	20

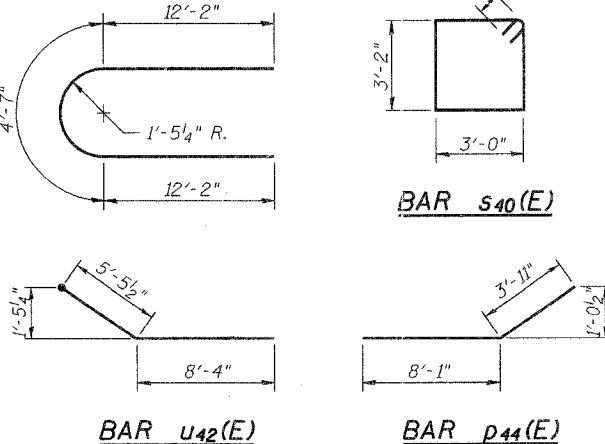
NOTES

Work this sheet with Sheet 40 of 50.
 Reinforcement Bars designated (E) shall be epoxy coated.
 Bar indicated thus 1x2 - #5 etc. indicates 1 line of bar with 2 lengths per line.
 * Length is spiral height.

Corporate License Number 184-001-084



DETAIL A REFLECTED UNDERSIDE PLAN OF PIER CAP END



BAR s40(E)

BARS s41(E) thru s46(E)

MINIMUM BAR LAP

HORIZONTAL

- #5 - 2'-2" (Bottom of Footing)
- #5 - 3'-0"
- #9 - 8'-1"

A & B DIMENSIONS

Bar	A	B
s41(E)	3'-0"	2'-3"
s42(E)	3'-0"	2'-6"
s43(E)	3'-0"	2'-11"
s44(E)	2'-8"	11'-8"
s45(E)	2'-8"	10'-2"
s46(E)	3'-0"	2'-3"

PIER 3 DETAILS
 WESTBOUND HARRISON AVENUE
 OVER UP & CC&P RAILROAD
 F.A.P. ROUTE 0525
 SECTION 02-00518-00-BR
 ROCKFORD, ILLINOIS
 STATION 95+25.35
 STRUCTURE NO. 101-6109

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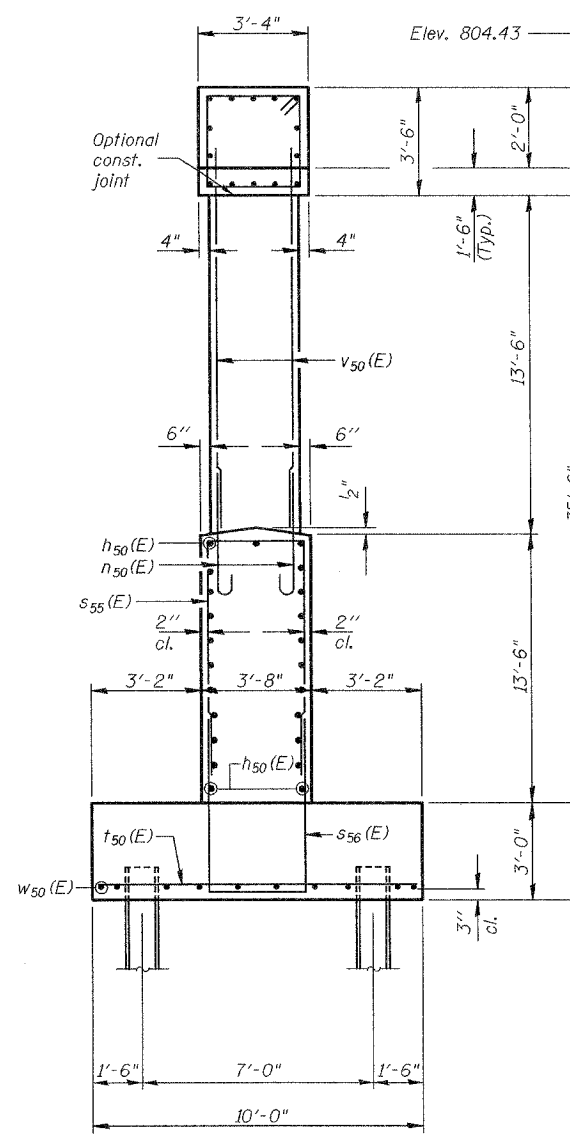
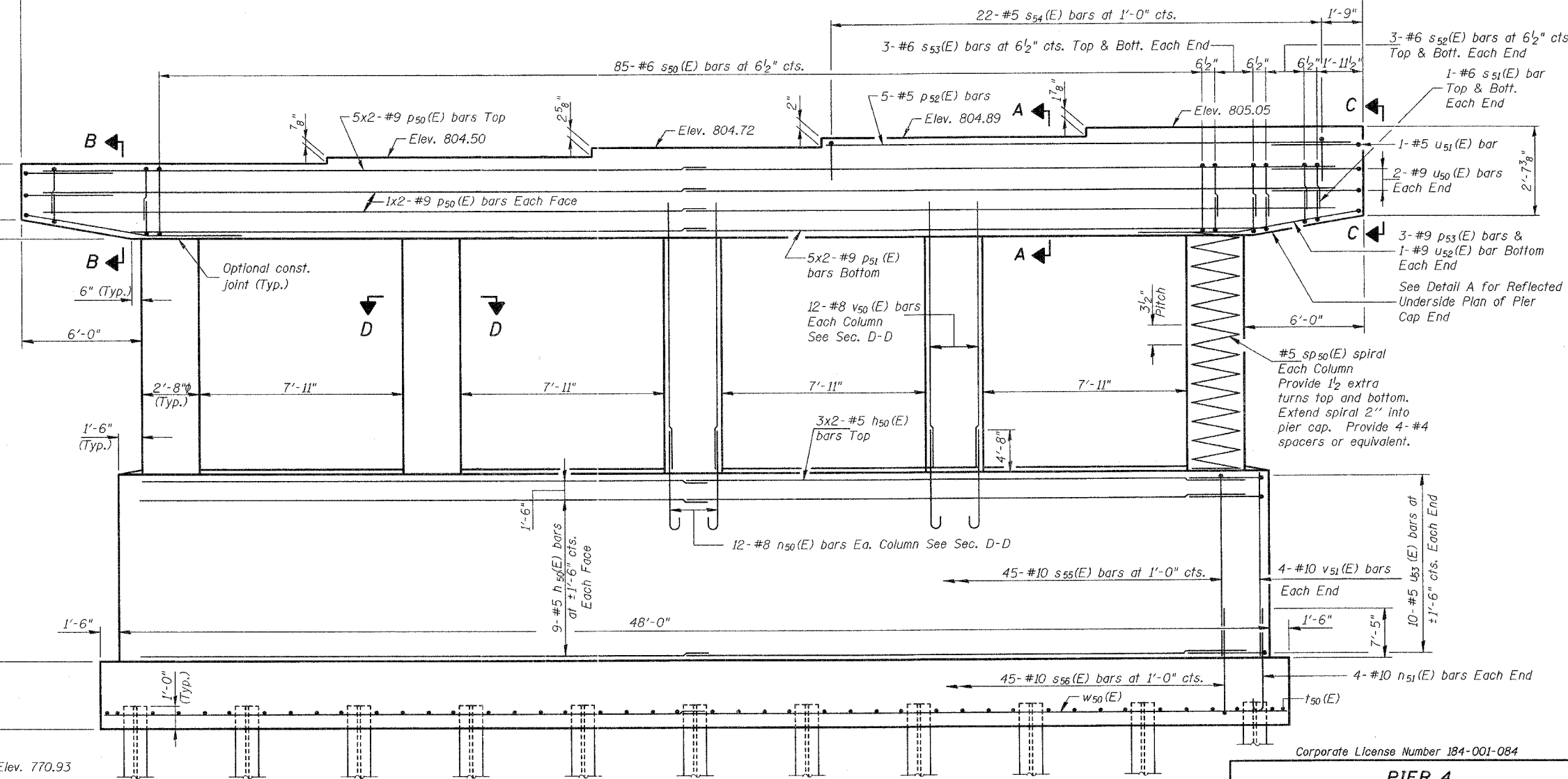
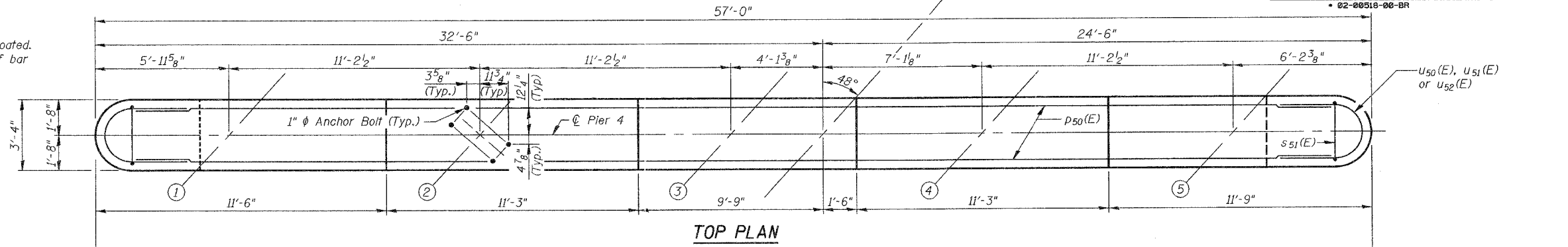
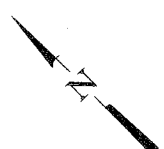
 JOB NO. 03R1751
 DATE 12/14/06

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 LAYOUT JKR 03/01/06
 DRAWN MCM/JKR 01/17/06
 REVIEWED FLN 08/02/06

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO.
FAP 0525	0	WINNEBAGO	157	149
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

NOTES

Space Reinforcement in cap to miss anchor bolts.
 Four steps monolithically with cap.
 Work this sheet with Sheet 43 of 50.
 Reinforcement Bars designated (E) shall be epoxy coated.
 Bar indicated thus 1x2 - #5 etc. indicates 1 line of bar with 2 lengths per line.



ELEVATION
(Looking Northeast)

END VIEW

MINIMUM BAR LAP

- HORIZONTAL**
- #5 - 2'-2" (Bottom of Footing)
 - #5 - 3'-0"
 - #9 - 8'-1"

PIER 4

WESTBOUND HARRISON AVENUE
 OVER UP & CC&P RAILROAD
 F.A.P. ROUTE 0525
 SECTION 02-00518-00-BR
 ROCKFORD, ILLINOIS
 STATION 95+25.35
 STRUCTURE NO. 101-6109

Corporate License Number 184-001-084

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12/03/06 PM
 12/12/2006/12:03 PM
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LAYOUT	JKR	03/01/06
DRAWN	MGM/JAR	07/13/06
REVIEWED	FLN	08/02/06

SHEET NO. 42
 50 SHEETS

JOB NO.
 03R1751

DATE
 12/14/06

ROUTE NO.	SECTION	COUNTY	TOWNSHIP	SHEET NO.	SHEET NO. 43 50 SHEETS
FAP 0525	*	WINNEBAGO	157	150	
FED. ROAD DIST. NO. 7					

PIER 4 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
<i>h</i> ₅₀ (E)	42	#5	23'-8"	—
<i>n</i> ₅₀ (E)	60	#8	7'-1"	U
<i>n</i> ₅₁ (E)	8	#10	10'-10"	U
<i>p</i> ₅₀ (E)	18	#9	30'-11"	—
<i>p</i> ₅₁ (E)	10	#9	27'-1"	—
<i>p</i> ₅₂ (E)	5	#5	21'-2"	—
<i>p</i> ₅₃ (E)	6	#9	12'-0"	—
<i>s</i> ₅₀ (E)	85	#6	13'-8"	□
<i>s</i> ₅₁ (E)	4	#6	7'-4"	U
<i>s</i> ₅₂ (E)	12	#6	7'-8"	U
<i>s</i> ₅₃ (E)	12	#6	8'-6"	U
<i>s</i> ₅₄ (E)	22	#5	7'-4"	U
<i>s</i> ₅₅ (E)	45	#10	29'-8"	U
<i>s</i> ₅₆ (E)	45	#10	23'-8"	U
* <i>sp</i> ₅₀ (E)	5	#5	13'-8"	⋈
<i>i</i> ₅₀ (E)	44	#9	9'-8"	—
<i>u</i> ₅₀ (E)	4	#9	20'-9"	U
<i>u</i> ₅₁ (E)	1	#5	10'-7"	U
<i>u</i> ₅₂ (E)	2	#9	28'-11"	U
<i>u</i> ₅₃ (E)	20	#5	10'-11"	U
<i>v</i> ₅₀ (E)	60	#8	15'-6"	—
<i>v</i> ₅₁ (E)	8	#10	13'-2"	—
<i>w</i> ₅₀ (E)	20	#5	26'-5"	—
Concrete Structures	Cu. Yd.	182.7		
Reinforcement Bars, Epoxy Coated	Pound	25,870		
Structure Excavation	Cu. Yd.	438.4		
Furnishing Steel Piles, HP 12x53	Foot	504		
Driving Piles	Foot	504		
Pile Shoes	Each	22		
Test Pile Steel HP 12x53	Each	1		
Anchor Bolts, 1"	Each	20		

NOTES
 Work this sheet with Sheet 42 of 50.
 Reinforcement Bars designated (E) shall be epoxy coated.
 Bar indicated thus 1x2 - #5 etc. indicates 1 line of bar with 2 lengths per line.
 * Length is spiral height.

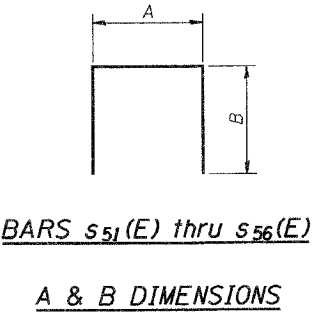
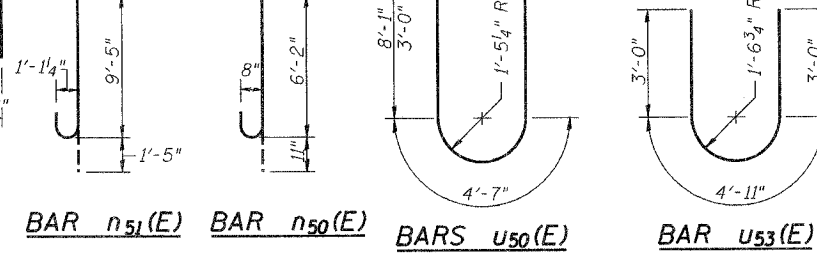
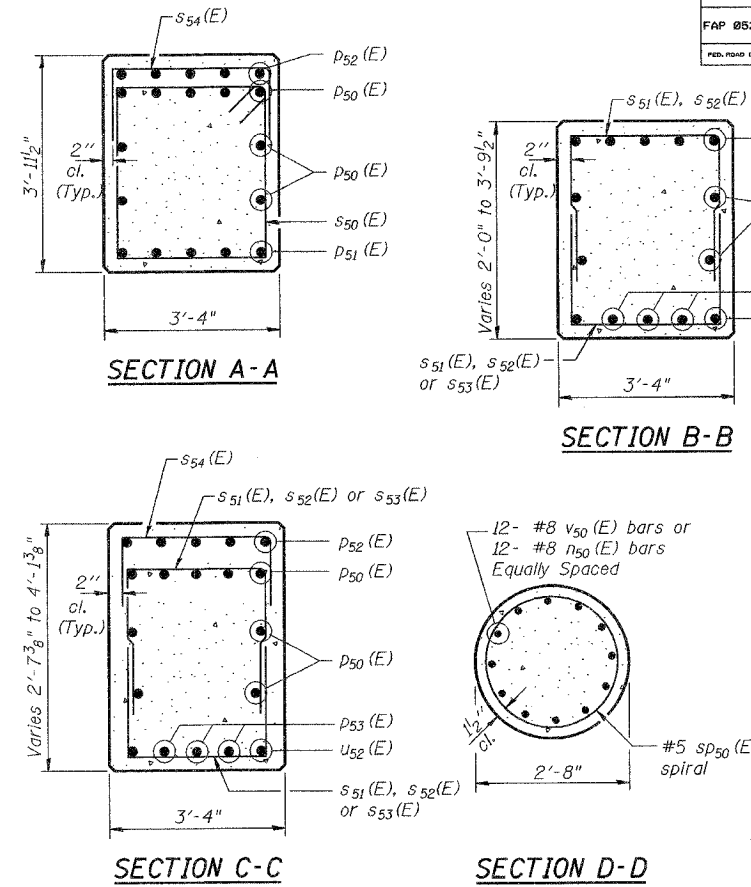
Corporate License Number 184-001-084

PIER 4 DETAILS

WESTBOUND HARRISON AVENUE
 OVER UP & CC&P RAILROAD
 F.A.P. ROUTE 0525
 SECTION 02-00518-00-BR
 ROCKFORD, ILLINOIS
 STATION 95+25.35
 STRUCTURE NO. 101-6109

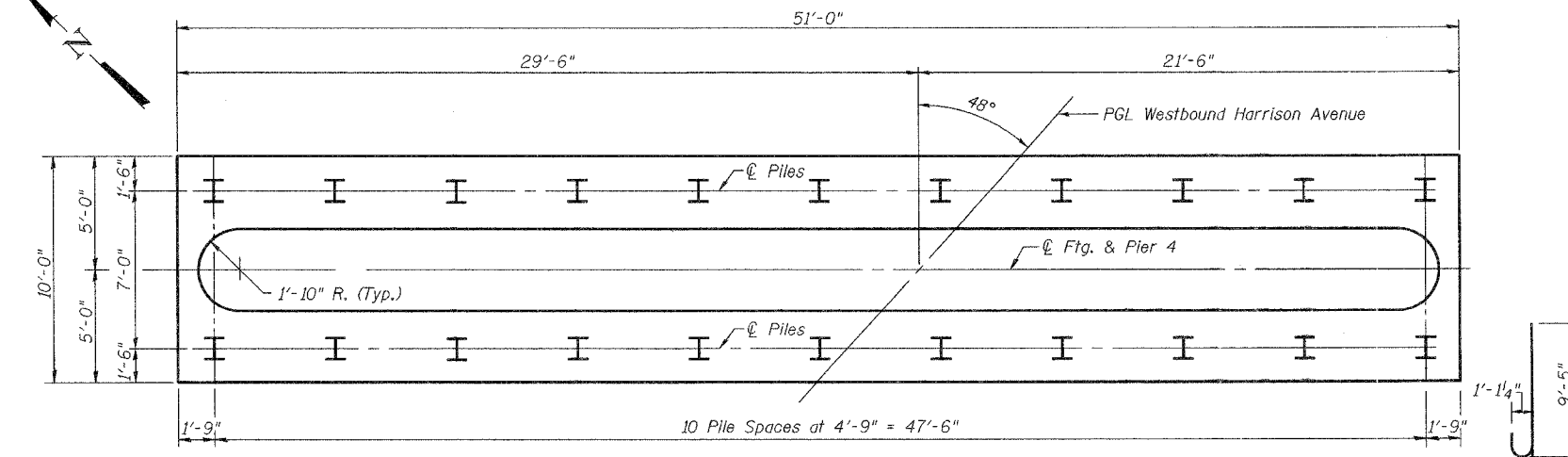
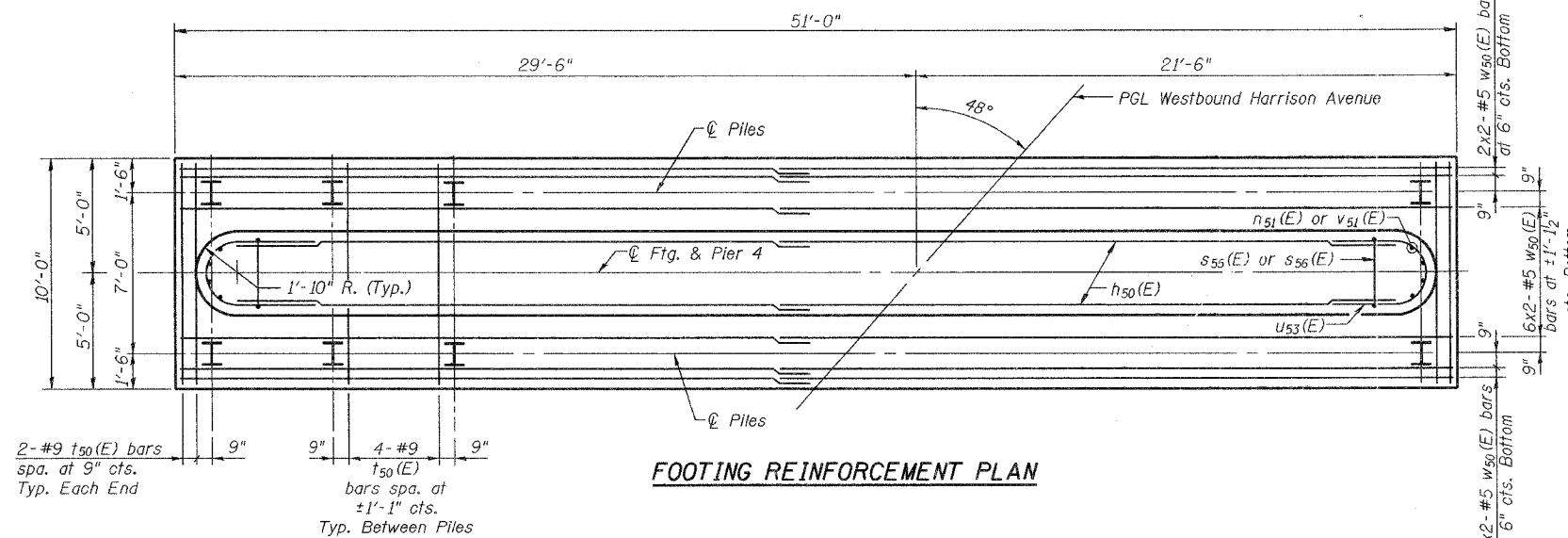
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HANSON

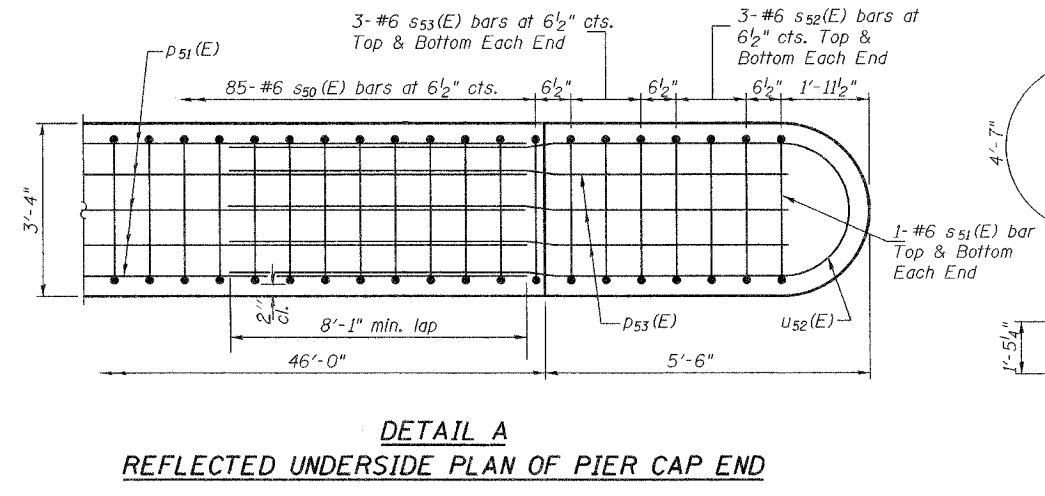


A & B DIMENSIONS

Bar	A	B
<i>s</i> ₅₁ (E)	3'-0"	2'-2"
<i>s</i> ₅₂ (E)	3'-0"	2'-4"
<i>s</i> ₅₃ (E)	3'-0"	2'-9"
<i>s</i> ₅₄ (E)	3'-0"	2'-2"
<i>s</i> ₅₅ (E)	3'-4"	13'-2"
<i>s</i> ₅₆ (E)	3'-4"	10'-2"



PILE DATA
 Type & Size: HP 12x53 w/ Pile Shoes
 Nominal Required Bearing : 420 Kips
 Allowable Resistance Available : 140 Kips
 Est. Length: 24'
 No. Req'd: 21 + 1 Test Pile



12/23/20 PM 03/01/06
 12/23/2006 12:03 PM
 H:\03\proj\03\BR75\Struct\SheetWest\Barr\04-03-WB-Pier-4.dwg
 LAYOUT JKR 03/01/06
 DRAWN MMJ/JKR 07/17/06
 REVIEWED FLN 08/02/06

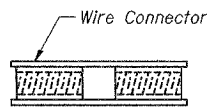
The diameter of this part is the same as the diameter of the bar spliced.

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

ROLLED THREAD DOWEL BAR



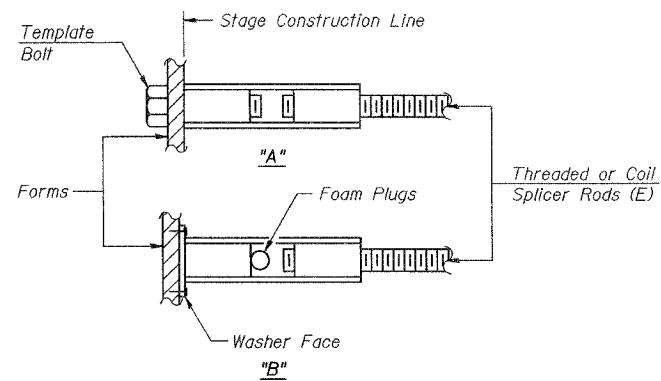
** ONE PIECE



WELDED SECTIONS

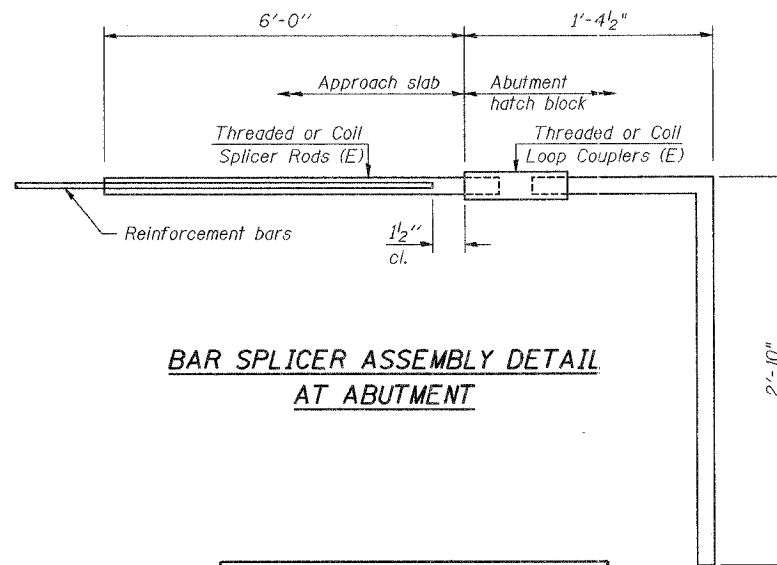
BAR SPLICER ASSEMBLY ALTERNATIVES

** 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.



BAR SPLICER ASSEMBLY DETAIL AT ABUTMENT

Bar Splicer for #5 bar	
Min. Capacity =	23.0 kips - tension
Min. Pull-out Strength =	9.2 kips - tension
No. Required =	68

NOTES

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

- ① Minimum Capacity (Tension in kips) = 1.25 x f_y x A_t
- ② Minimum *Pull-out Strength (Tension in kips) = 1.25 x f_{sallow} x A_t

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

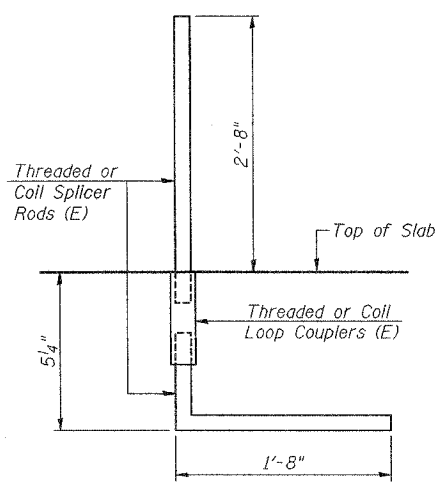
f_{sallow} = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)

A_t = Tensile stress area of lapped reinforcement bars.

* = 28 day concrete

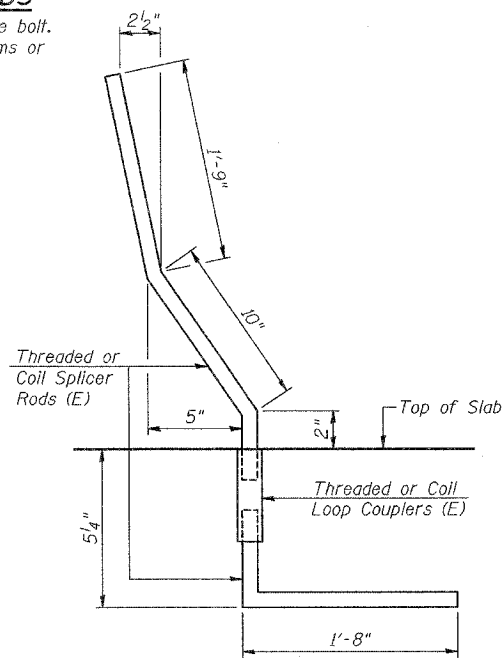
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	5.9
#5	2'-0"	23.0	9.2
#6	2'-7"	33.1	13.3
#7	3'-5"	45.1	18.0
#8	4'-6"	58.9	23.6

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."



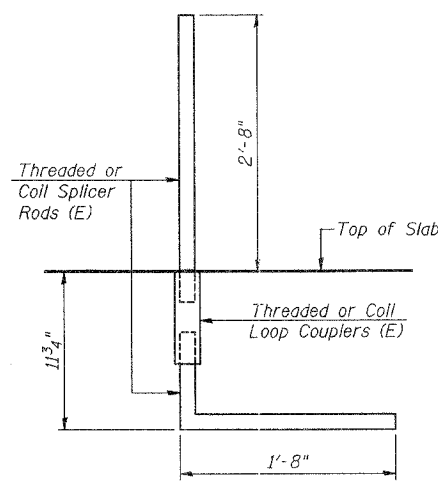
TYPE I BAR SPLICER ASSEMBLY

Bar Size	No. Assemblies Required	Location
#4	455	N. Parapet on Bridge, Outside Face



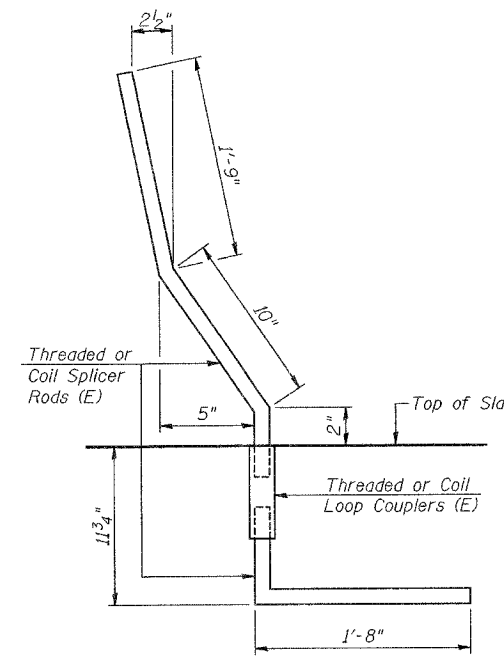
TYPE II BAR SPLICER ASSEMBLY

Bar Size	No. Assemblies Required	Location
#5	455	N. Parapet on Bridge, Inside Face



TYPE III BAR SPLICER ASSEMBLY

Bar Size	No. Assemblies Required	Location
#4	73	N. Parapet on Approach, Outside Face



TYPE IV BAR SPLICER ASSEMBLY

Bar Size	No. Assemblies Required	Location
#5	73	N. Parapet on Approach, Inside Face

Corporate License Number 184-001-084

BAR SPLICER ASSEMBLY DETAILS

WESTBOUND HARRISON AVENUE
 OVER UP & CC&P RAILROAD
 F.A.P. ROUTE 0525
 SECTION 02-00518-00-BR
 ROCKFORD, ILLINOIS
 STATION 95+25.35
 STRUCTURE NO. 101-6109

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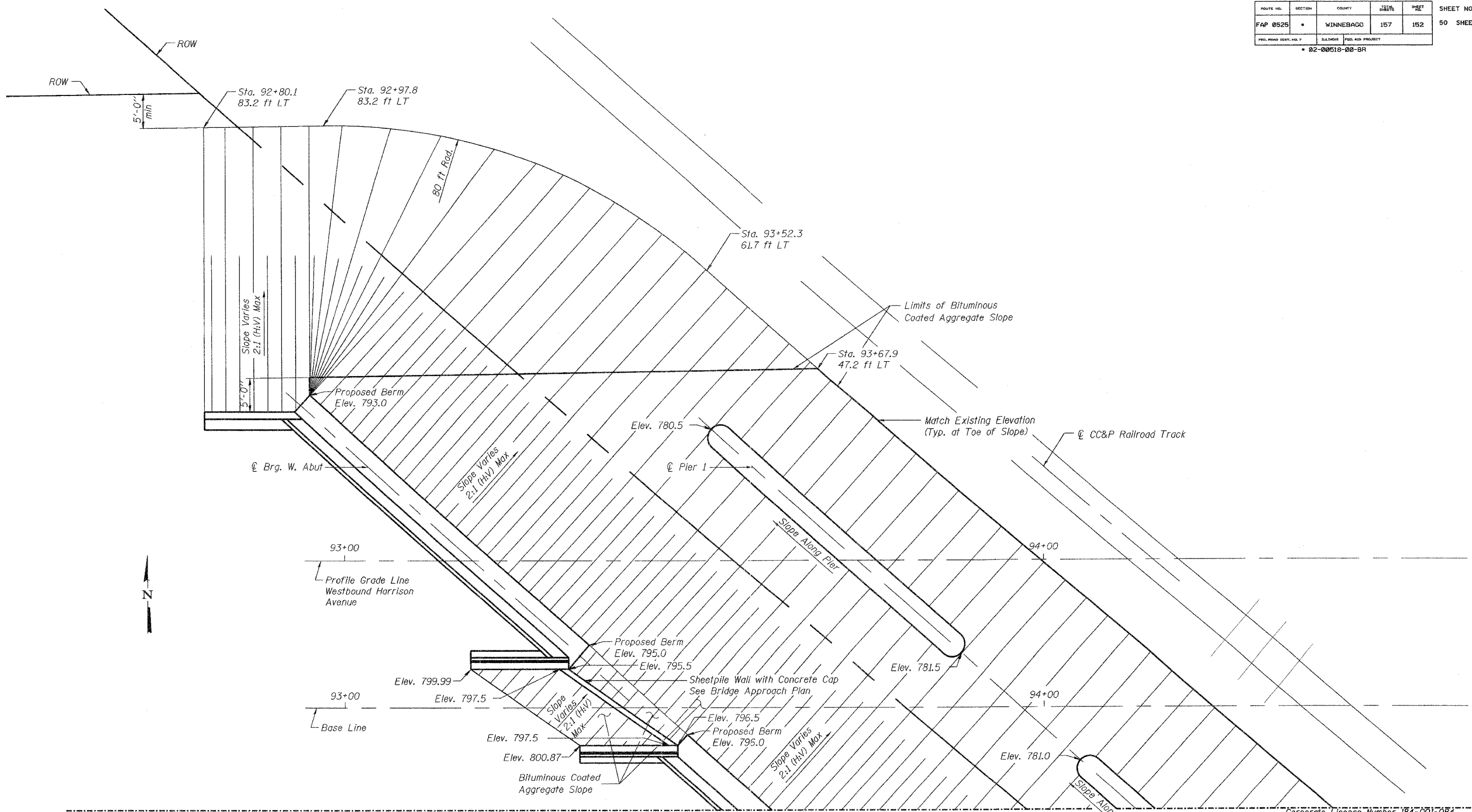


JOB NO. 03R1751

DATE 12/14/06

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 LAYOUT
 DRAWN
 REVIEWED

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET	SHEET NO.
FAP 0525	*	WINNEBAGO	157	152	50 SHEETS
FED. ROAD DIST. NO. 7		BALANCE	FED. AID PROJECT		
* 02-00518-00-BR					



MATCH LINE (SEE EASTBOUND BRIDGE PLANS)

PLAN

NOTES
 Stationing and offset are defined with respect to the Base Line

WEST SLOPEWALL

WESTBOUND HARRISON AVENUE
 OVER UP & CC&P RAILROAD
 F.A.P. ROUTE 0525
 SECTION 02-00518-00-BR
 ROCKFORD, ILLINOIS
 STATION 95+25.35
 STRUCTURE NO. 101-6109

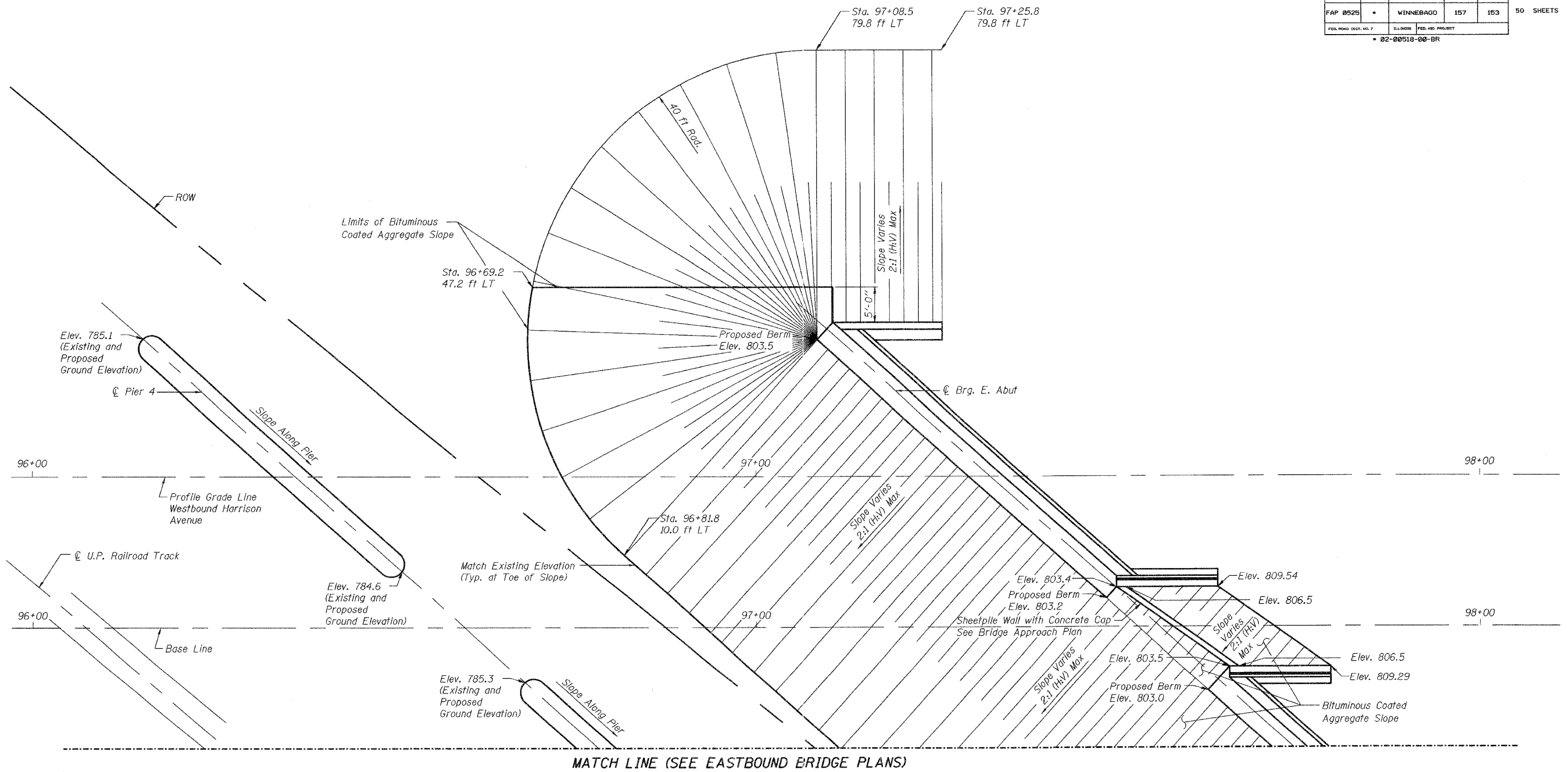
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HANSON

JOB NO. 03R1751
 DATE 12/14/06

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 LAYOUT JKR 06/20/06
 DRAWN JKR 07/17/06
 REVIEWED FLN 08/02/06

ROUTE NO.	SECTION	QUANTITY	TOTAL SHEETS	SHEET	SHEET NO. 46 50 SHEETS
FAP 0525	•	WINNEBAGO	157	153	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT	• 02-00518-00-BR		

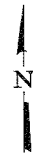


MATCH LINE (SEE EASTBOUND BRIDGE PLANS)

PLAN

NOTES

Stationing and offset defined with respect to the Base Line



Corporate License Number 184-001-084

EAST SLOPEWALL

WESTBOUND HARRISON AVENUE
OVER UP & CC&P RAILROAD
F.A.P. ROUTE 0525
SECTION 02-00518-00-BR
ROCKFORD, ILLINOIS
STATION 95+25.35
STRUCTURE NO. 101-6109

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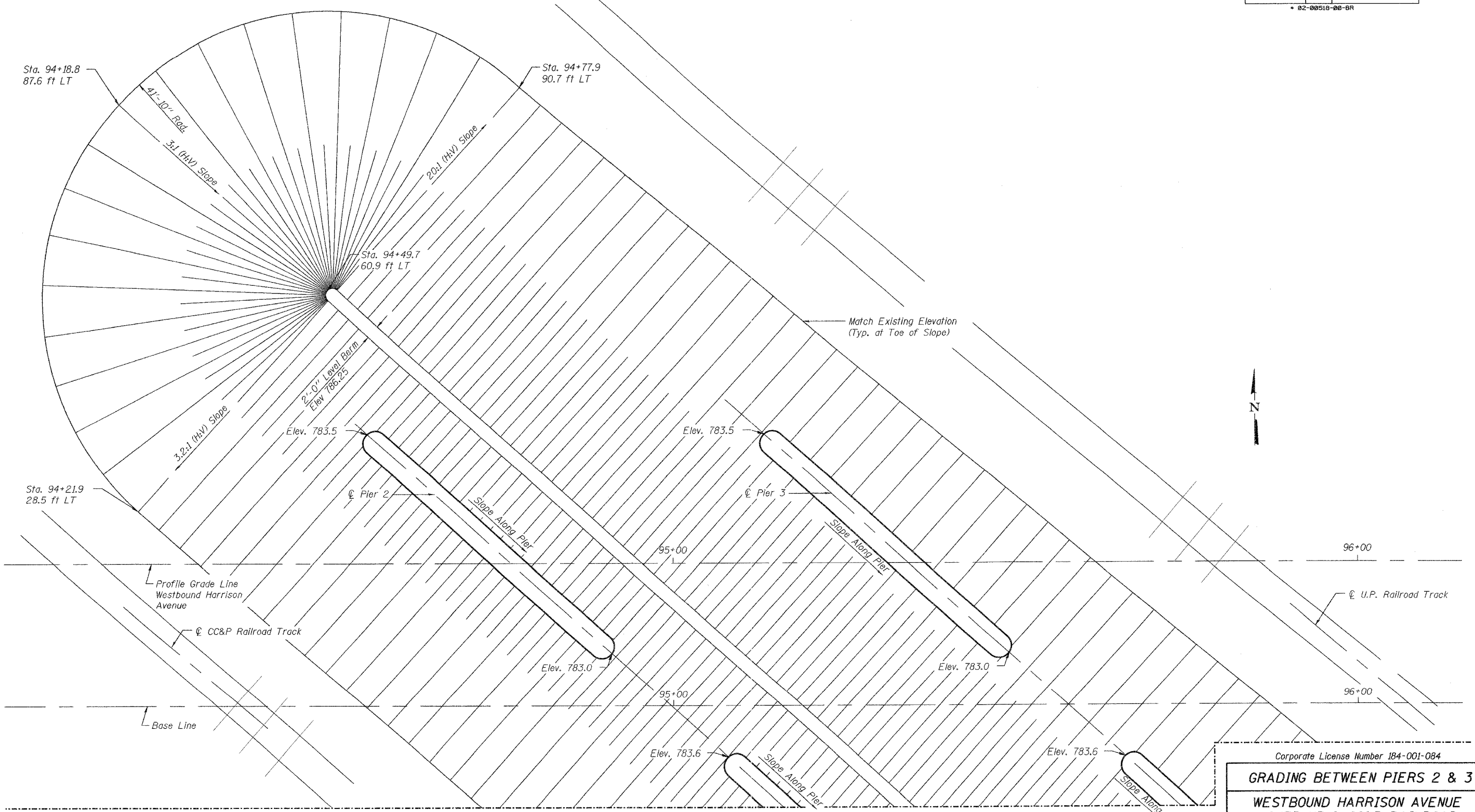
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03R1751

DATE
12/14/06

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LAYOUT	JFR	07/07/06
DRAWN	JFR	07/17/06
REVIEWED	FLN	09/02/06

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET	SHEET NO.
FAP 0525	*	WINNEBAGO	157	154	47
FED. ROAD DIST. NO. 7					ILLINOIS
FED. AID PROJECT					50 SHEETS
* 02-00518-00-BR					



MATCH LINE (SEE EASTBOUND BRIDGE PLANS)

NOTES
 Stationing and offset are defined with respect to the Base Line.

PLAN

Corporate License Number 184-001-084

GRADING BETWEEN PIERS 2 & 3

WESTBOUND HARRISON AVENUE
 OVER UP & CC&P RAILROAD
 F.A.P. ROUTE 0525
 SECTION 02-00518-00-BR
 ROCKFORD, ILLINOIS
 STATION 95+25.35
 STRUCTURE NO. 101-6109

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HANSON

JOB NO. 03R1751
 DATE 12/14/06

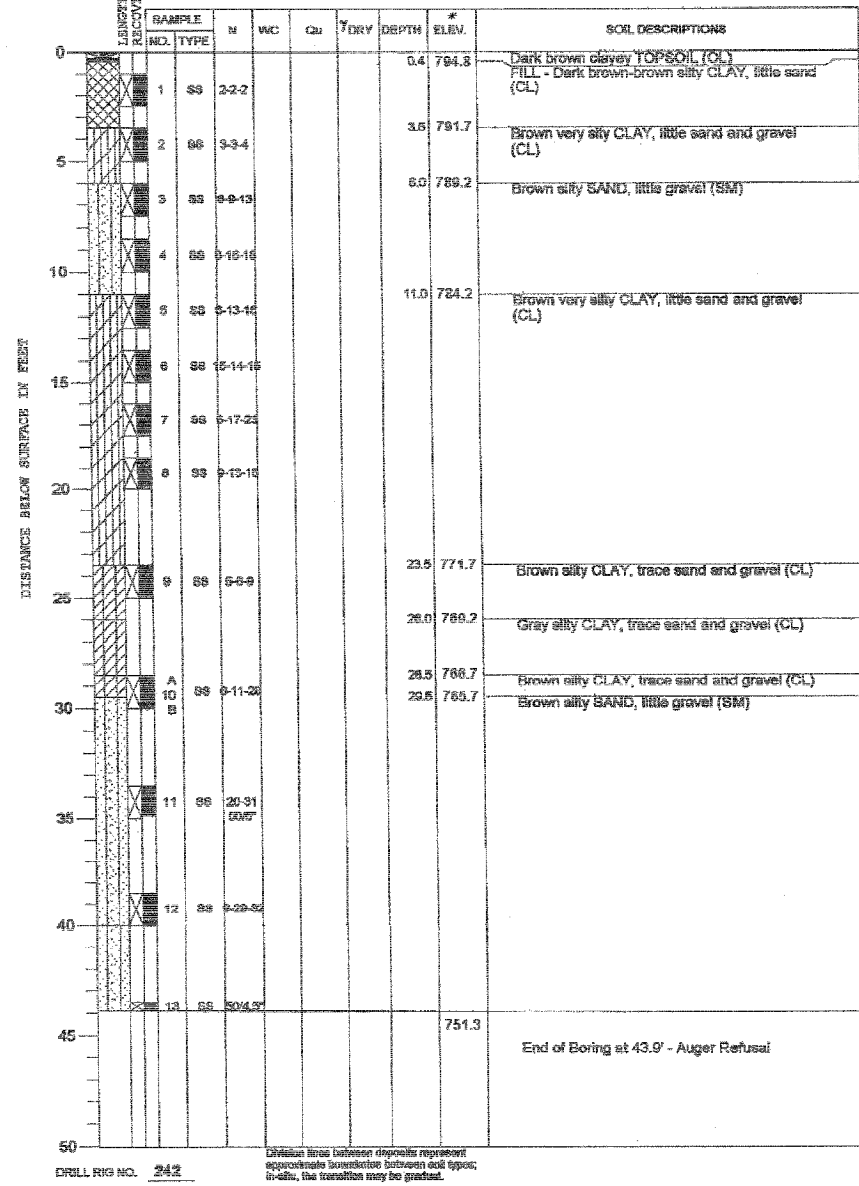
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 DRAWN: JMR 07/17/06
 REVIEWED: FLN 08/02/06

ROUTE NO.	SECTION	COUNTY	TOWNSHIP	RANGE	SHEET
FAP 0525	*	WINNEBAGO	157	155	50 SHEETS
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT					
* 02-00518-00-BR					

PROJECT **Harrison Avenue Bridge over UP and CN Railroads, Rockford, Illinois**
 CLIENT **Hanson Professional Services, Inc., 1525 S. Sixth St., Springfield, IL 62703**
 BORING **B-1** DATE STARTED **3-4-04** DATE COMPLETED **3-4-04** JOB **L-59,708**



ELEVATIONS		WATER TABLE	
GROUND SURFACE	795.2 *	WHILE DRILLING	DRY
END OF BORING	751.3 *	AT END OF BORING	DRY
		24 HOURS	

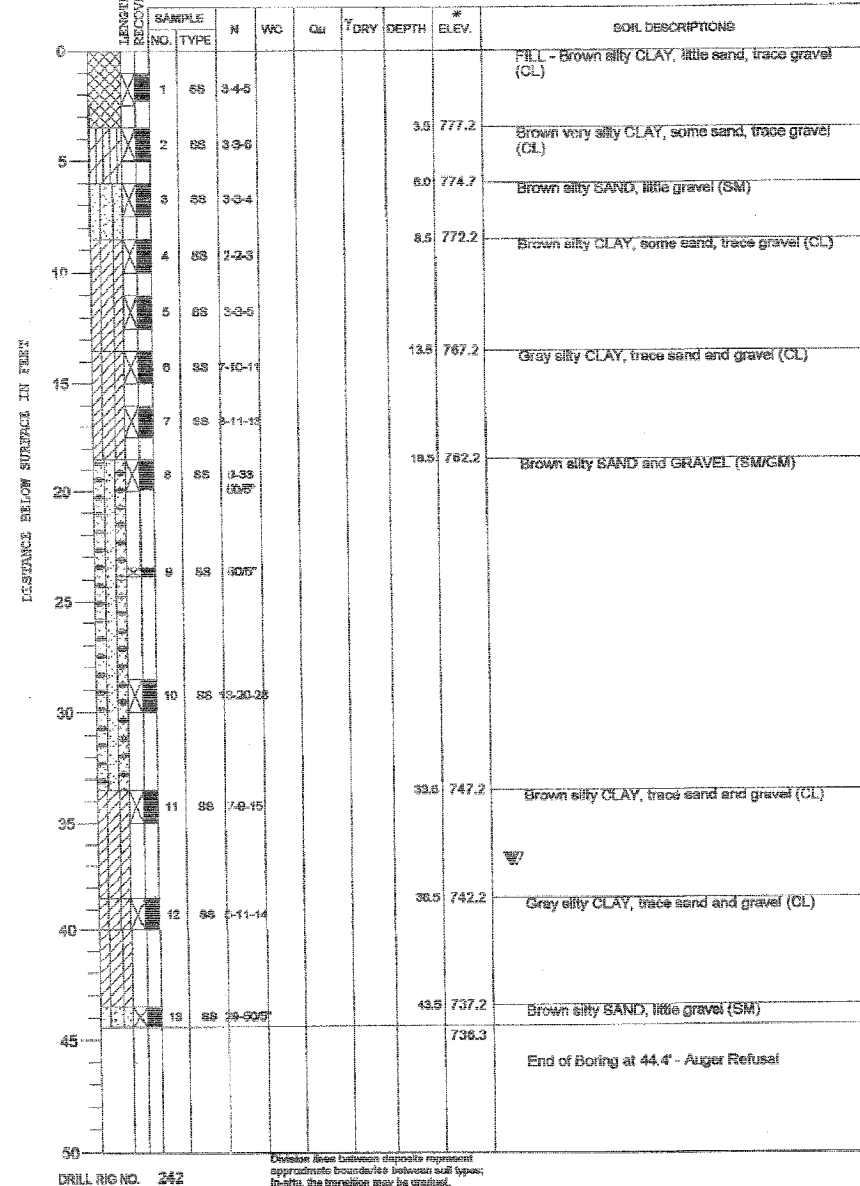


BORING LOG #1

PROJECT **Harrison Avenue Bridge over UP and CN Railroads, Rockford, Illinois**
 CLIENT **Hanson Professional Services, Inc., 1525 S. Sixth St., Springfield, IL 62703**
 BORING **B-2** DATE STARTED **3-2-04** DATE COMPLETED **3-2-04** JOB **L-59,708**



ELEVATIONS		WATER TABLE	
GROUND SURFACE	780.7 *	WHILE DRILLING	37'
END OF BORING	736.3 *	AT END OF BORING	37'
		24 HOURS	37'



BORING LOG #2

* - All elevations provided by Hanson Professional Services Inc.

Corporate License Number 184-001-084

BORING LOGS #1 & #2

**WESTBOUND HARRISON AVENUE
 OVER UP & CC&P RAILROAD
 F.A.P. ROUTE 0525
 SECTION 02-00518-00-BR
 ROCKFORD, ILLINOIS
 STATION 95+25.35
 STRUCTURE NO. 101-6109**

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JOB NO. 03R1751

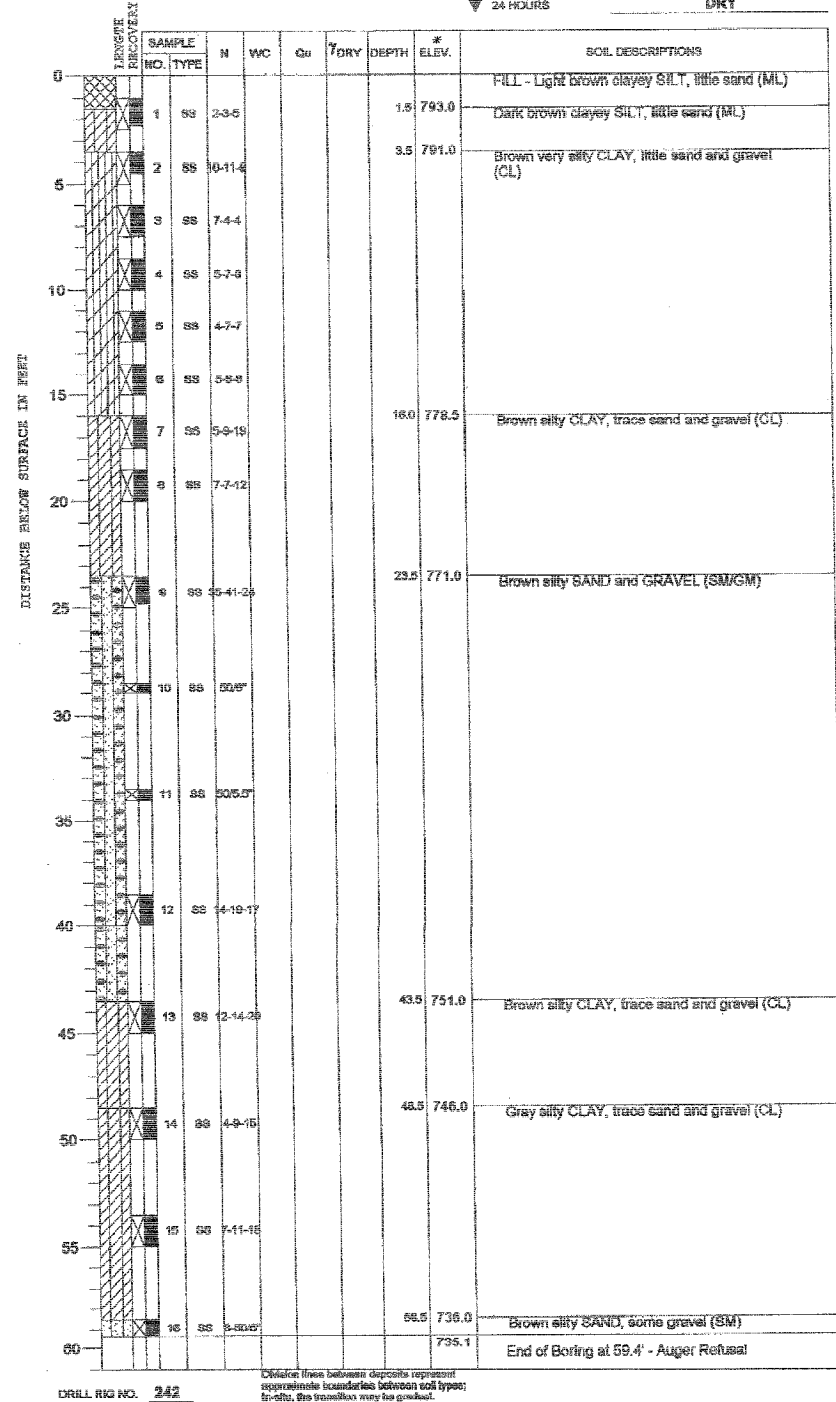
DATE 12/14/06

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LAYOUT	05/20/05
DRAWN	09/06/05
REVIEWED	08/02/06
MGM	
FLN	

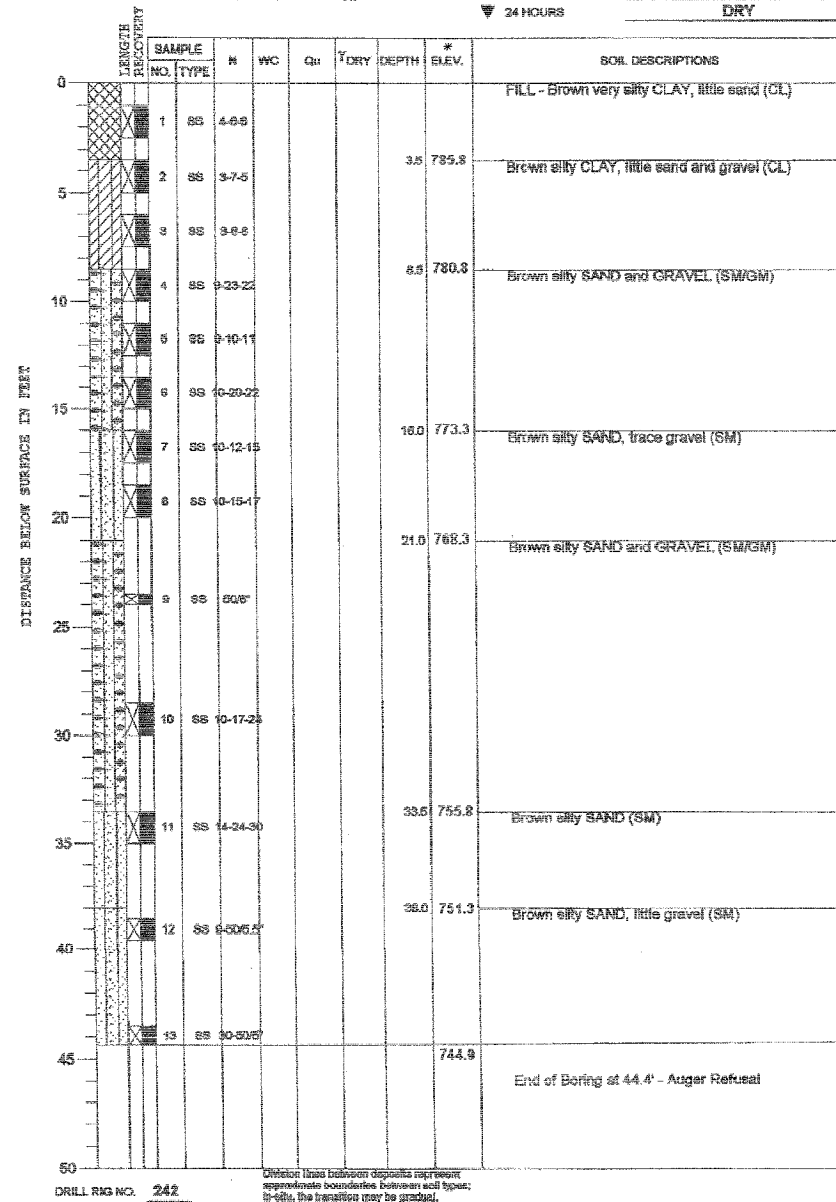
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FAP 0525	*	WINNEBAGO	157	156	
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		
* 02-00518-00-BR					

PROJECT **Harrison Avenue Bridge over UP and CN Railroads, Rockford, Illinois**
 CLIENT **Hanson Professional Services, Inc., 1525 S. Sixth St., Springfield, IL 62703**
 BORING **B-3** DATE STARTED **3-2-04** DATE COMPLETED **3-2-04** JOB **L-59,708**
 ELEVATIONS
 GROUND SURFACE **794.5 *** WATER TABLE **DRY**
 END OF BORING **735.1 *** WHILE DRILLING **DRY**
 AT END OF BORING **DRY**
 24 HOURS **DRY**



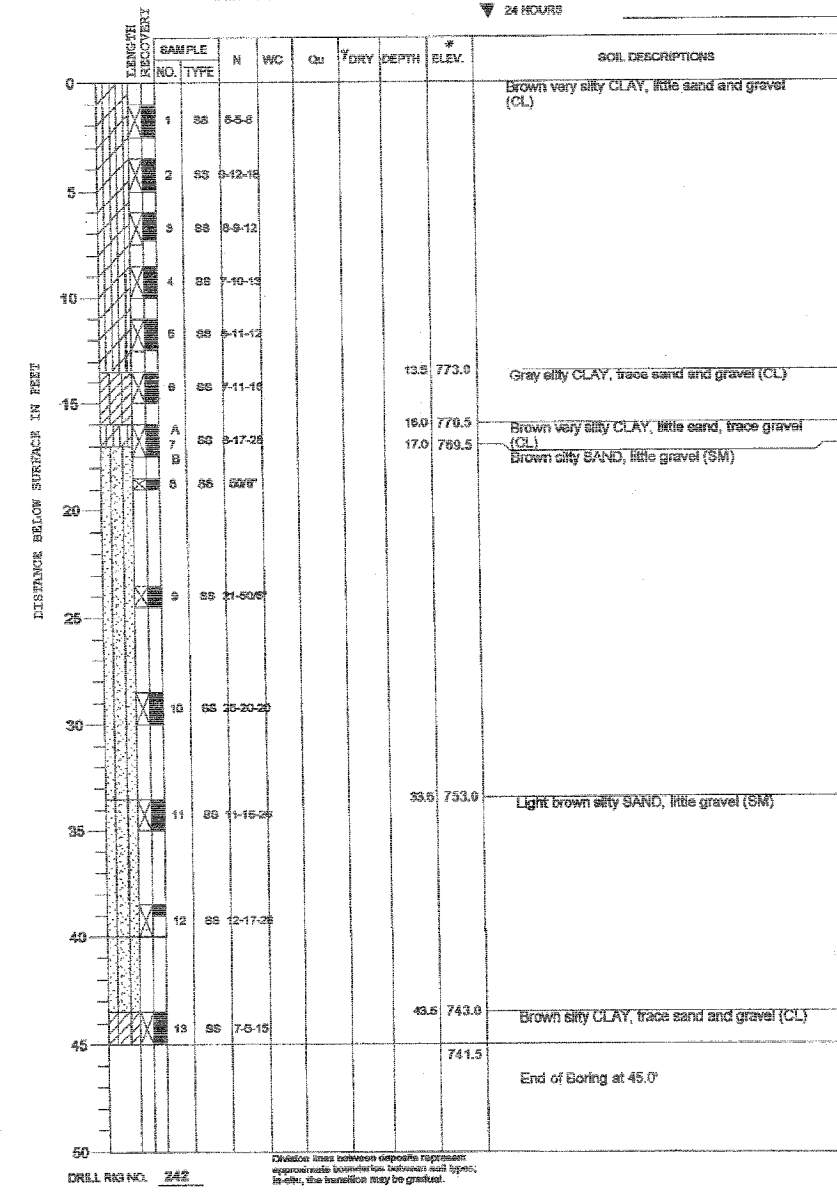
BORING LOG #3

PROJECT **Harrison Avenue Bridge over UP and CN Railroads, Rockford, Illinois**
 CLIENT **Hanson Professional Services, Inc., 1525 S. Sixth St., Springfield, IL 62703**
 BORING **B-4** DATE STARTED **3-3-04** DATE COMPLETED **3-3-04** JOB **L-59,708**
 ELEVATIONS
 GROUND SURFACE **789.3 *** WATER TABLE **DRY**
 END OF BORING **744.9 *** WHILE DRILLING **DRY**
 AT END OF BORING **DRY**
 24 HOURS **DRY**



BORING LOG #4

PROJECT **Harrison Avenue Bridge over UP and CN Railroads, Rockford, Illinois**
 CLIENT **Hanson Professional Services, Inc., 1525 S. Sixth St., Springfield, IL 62703**
 BORING **B-5** DATE STARTED **3-4-04** DATE COMPLETED **3-4-04** JOB **L-59,708**
 ELEVATIONS
 GROUND SURFACE **795.5 *** WATER TABLE **DRY**
 END OF BORING **741.5 *** WHILE DRILLING **DRY**
 AT END OF BORING **DRY**
 24 HOURS **DRY**



BORING LOG #5

147:39 PM 1/23/06 04:07 PM 1/23/06 04:07 PM 1/23/06 04:07 PM

LAYOUT 05/23/06
 DRAWN 03/07/06
 REVISION 03/07/06

* - All elevations provided by Hanson Professional Services Inc.

Corporate License Number 184-001-084

BORING LOGS #3, #4 & #5

**WESTBOUND HARRISON AVENUE
 OVER UP & CC&P RAILROAD
 F.A.P. ROUTE 0525
 SECTION 02-00518-00-BR
 ROCKFORD, ILLINOIS
 STATION 95+25.35
 STRUCTURE NO. 101-6109**

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JOB NO.
03R1751
DATE
12/14/06

ROUTE NO.	SECTION	COUNTY	TOWNSHIP	RANGE	SHEET NO.
FAP 0525	*	WINNEBAGO	157	157	50 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT	
* 02-00518-00-BR					

PROJECT **Harrison Avenue Bridge over UP and CN Railroads, Rockford, Illinois**

CLIENT **Hanson Professional Services, Inc., 1525 S. Sixth St., Springfield, IL 62703**

BORING **B-6** DATE STARTED **3-3-04** DATE COMPLETED **3-3-04** JOB **L-69,709**

ELEVATIONS WATER TABLE

GROUND SURFACE **786.8 *** WHILE DRILLING **DRY**

END OF BORING **741.8 *** AT END OF BORING **DRY**

24 HOURS **DRY**



DEPTH	ELEV.	SOIL DESCRIPTIONS
0.0	785.8	FILL - Brown silty CLAY, some sand (CL) Brown silty CLAY, little sand, trace gravel (CL)
5.0	780.8	Brown silty SAND, trace gravel (SM)
8.5	778.3	Brown very silty CLAY, little sand, trace gravel (CL)
19.5	773.3	Brown silty SAND and GRAVEL (SM/GM)
18.0	768.3	Gray silty CLAY, trace sand and gravel (CL)
28.5	758.3	Brown silty SAND and GRAVEL (SM/GM)
45.0	741.8	End of Boring at 45.0'

BORING LOG #6

PROJECT **Harrison Avenue Bridge over UP and CN Railroads, Rockford, Illinois**

CLIENT **Hanson Professional Services, Inc., 1525 S. Sixth St., Springfield, IL 62703**

BORING **B-7** DATE STARTED **3-3-04** DATE COMPLETED **3-3-04** JOB **L-69,709**

ELEVATIONS WATER TABLE

GROUND SURFACE **798.9 *** WHILE DRILLING **DRY**

END OF BORING **753.9 *** AT END OF BORING **DRY**

24 HOURS **DRY**



DEPTH	ELEV.	SOIL DESCRIPTIONS
0.0	797.9	FILL - Dark brown silty CLAY, trace sand (CL) Brown very silty CLAY, little sand, trace gravel (CL)
6.0	792.9	Brown silty SAND and GRAVEL (SM/GM)
16.0	782.9	Brown very silty CLAY, little sand and gravel (CL)
31.0	767.9	Gray silty CLAY, trace sand and gravel (CL)
38.0	760.9	Brown silty SAND, some gravel (SM)
45.0	753.9	End of Boring at 45.0'

BORING LOG #7

* - All elevations provided by Hanson Professional Services Inc.

Corporate License Number 184-001-084

BORING LOGS #6 & #7

**WESTBOUND HARRISON AVENUE
OVER UP & CC&P RAILROAD
F.A.P. ROUTE 0525
SECTION 02-00518-00-BR
ROCKFORD, ILLINOIS
STATION 95+25.35
STRUCTURE NO. 101-6109**

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JOB NO. **03R1751**
DATE **12/14/06**

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LAYOUT	05/20/05
DRAWN	07/05/05
REVIEWED	08/02/06