

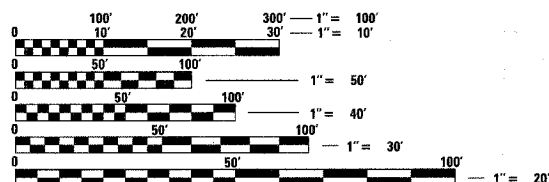
TR ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
227	98-11120-00-BR	JEFFERSON	35	1

CONTRACT NO. 95437

**INDEX OF SHEETS**  
SEE SHEET 2

**STANDARDS**  
SEE SHEET 2

DESIGN CLASSIFICATION: LOCAL ROAD (RURAL)  
ADT<sub>2005</sub> : 550  
ADT<sub>2025</sub> : 650  
DESIGN SPEED - 40 MPH



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.  
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
1-800-892-0123

**CONTRACT NO. 95437**



*Gary L. Hahn* 5/24/05  
GARY L. HAHN  
CENTRALIA, ILLINOIS  
ILLINOIS LICENSED PROFESSIONAL  
ENGINEER NO. 62-42606  
EXPIRES NOV. 30, 2005

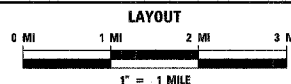
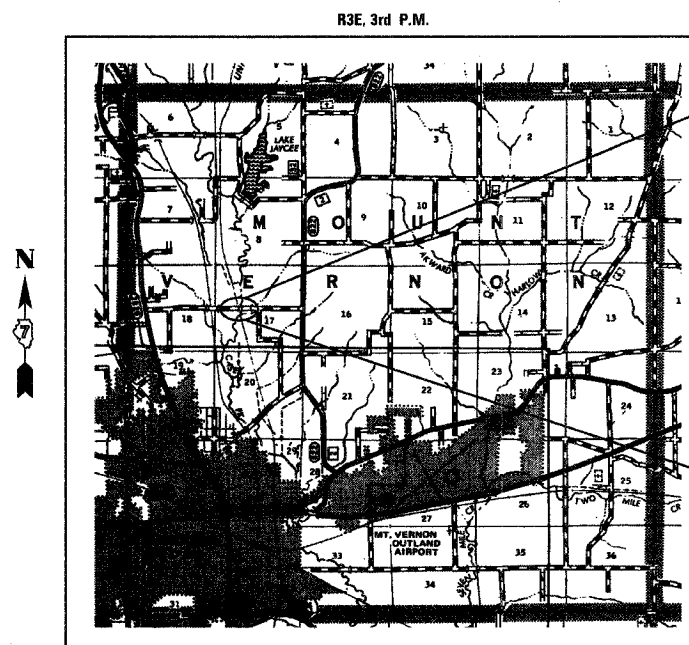
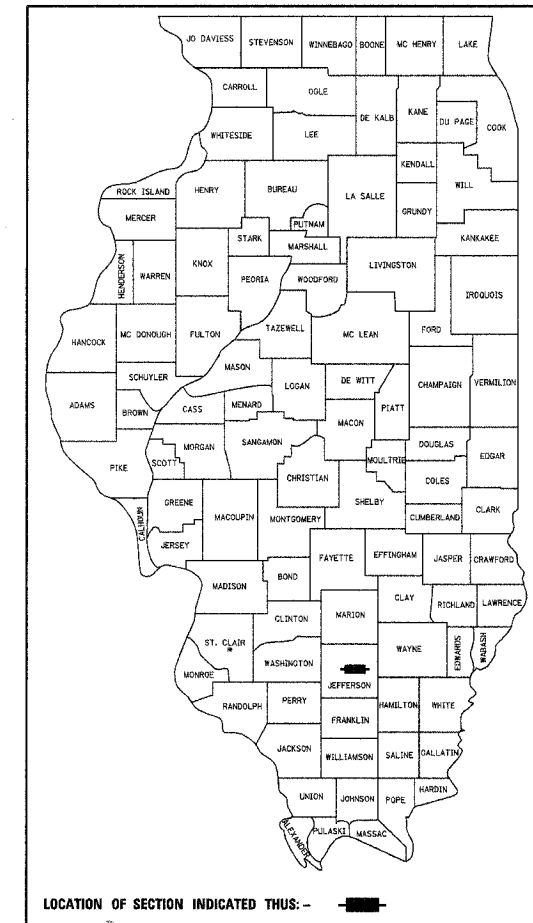
*Gary L. Hahn* 5/24/05  
GARY L. HAHN  
CENTRALIA, ILLINOIS  
ILLINOIS LICENSED STRUCTURAL  
ENGINEER NO. 81-4853  
EXPIRES NOV. 30, 2006

**RHUTASEL and ASSOCIATES, INC.**  
CONSULTING ENGINEERS • LAND SURVEYORS  
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS  
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

**PLANS FOR PROPOSED  
FEDERAL - AID BRIDGE REPLACEMENT  
AND REHABILITATION PROGRAM**

**TR 227 (GREEN ROAD)  
SECTION 98-11120-00-BR  
PROJECT BROS-081(43)  
OVER UP RR AND CASEY FORK  
JEFFERSON COUNTY  
C-97-015-05**



GROSS LENGTH = 2309.97 FT. (0.437 MI.)  
NET LENGTH = 2309.97 FT. (0.437 MI.)

**BEGIN SECTION**  
STA. 24 + 66.67

SECTION 98-11120-00-BR

INCLUDES THE CONSTRUCTION OF A SINGLE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE CARRYING TR 227 OVER AN OVERFLOW FOR CASEY FORK. 81'-6" BK. TO BK. OF ABUTMENTS. NO EXISTING STRUCTURE NO. PROPOSED STRUCTURE NO. 041-3733

AND THE CONSTRUCTION OF A FOUR (4) SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE CARRYING TR 227 OVER THE UP RR AND CASEY FORK. 301'-10" BK. TO BK. OF ABUTMENTS. 15° AHEAD RIGHT SKEW. EXISTING STRUCTURE NO. 041-3094 PROPOSED STRUCTURE NO. 041-9928

AND THE CONSTRUCTION OF A SINGLE SPAN STEEL GIRDER AND PRECAST CONCRETE SLAB BRIDGE CARRYING A FIELD ACCESS ROAD OVER CASEY FORK. 72'-2" BK. TO BK. OF ABUTMENTS.

**END SECTION**  
STA. 47 + 76.64

APPROVED *May 25, 2005*  
*Steve Schuck*  
COUNTY ENGINEER

ACCEPTANCE OF THIS PROJECT IS BASED ON THE MINIMUM DESIGN CRITERIA FOR A FEDERAL-AID BRIDGE REPLACEMENT AND REHABILITATION PROGRAM.

PASSED *6/8, 2005*  
*Maurice Kastl*  
DISTRICT ENGINEER OF LOCAL ROADS AND STREETS

APPROVED *6/8, 2005*  
*Charles M. Reed*  
DEPUTY DIRECTOR OF HIGHWAYS  
REGION FOUR ENGINEER

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

Sheet  
1  
of 35  
Job No. 52303

PLOT DATE: 05/24/2005

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	2
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 98A37				

INDEX OF SHEETS

1. COVER SHEET
2. SUMMARY OF QUANTITIES
3. TYPICAL SECTIONS
- 4.-6. PLAN AND PROFILE OF ROADWAY
- 7.-13. CROSS SECTIONS OF ROADWAY
- 14.-15. CROSS SECTIONS OF RAILROAD
- 16.-18. EROSION CONTROL PLAN
19. GENERAL PLAN AND ELEVATION OVERFLOW BRIDGE
20. PPCDB OVERFLOW BRIDGE
21. STEEL RAILING, TYPE S1 DETAILS OVERFLOW BRIDGE
22. ABUTMENT DETAILS OVERFLOW BRIDGE
23. GENERAL PLAN AND ELEVATION MAIN STRUCTURE
24. GENERAL DATA MAIN STRUCTURE
- 25.-26. PPCDB MAIN STRUCTURE
27. STEEL RAILING, TYPE S1 DETAILS (SPECIAL) MAIN STRUCTURE
28. RAIL POST SPACING MAIN STRUCTURE
29. ABUTMENT DETAILS MAIN STRUCTURE
30. PIER DETAILS MAIN STRUCTURE
31. GENERAL PLAN AND ELEVATION FIELD ENTRANCE BRIDGE
32. ABUTMENT DETAILS FIELD ENTRANCE BRIDGE
33. STEEL FRAMING DETAILS FIELD ENTRANCE BRIDGE
34. ANCHOR BOLT DETAILS FIELD ENTRANCE BRIDGE
35. PRECAST CONCRETE BRIDGE SLAB DETAILS FIELD ENTRANCE BRIDGE

STANDARDS ARE INCLUDED IN PLANS AFTER SHEET NO. 35

- |           |   |
|-----------|---|
| 000001-04 | STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS  |
| 280001-02 | TEMPORARY EROSION CONTROL SYSTEMS   |
| 515001-02 | NAME PLATE FOR BRIDGES  |
| 542301    | PRECAST REINFORCED CONCRETE FLARED END SECTION  |
| 630001-05 | STEEL PLATE BEAM GUARD RAIL   |
| 630301-03 | SHOULDER WIDENING FOR TYPE 1 GUARDRAIL TERMINALS  |
| 631026-02 | TRAFFIC BARRIER TERMINAL, TYPE 5 & 5A   |
| 635006-02 | REFLECTOR AND TERMINAL MARKER PLACEMENT   |
| 702001-05 | TRAFFIC CONTROL DEVICES   |
| BLR 21-6  | TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS |

SOIL BORINGS (SEE SPECIFICATIONS)

GENERAL NOTES

Centerline profiles refer to the finished surface.

Any reference to a Standard in these plans shall be interpreted to mean the edition as indicated by the sub-number listed in the Index of Sheets or the copy of the Standard included in these plans.

Existing utilities shown are located from surface observations or information provided by the respective utilities and must be considered approximate. There may be others, the exact location of which are unknown and not shown. The Contractor will be responsible for notifying the respective utilities before work is begun. Field marking of underground utilities may be obtained by providing a minimum of 48 hours advance notice through the J.U.L.I.E. system by calling 1-800-892-0123, or by direct contact with non-members of J.U.L.I.E.

The nominal thickness for surface course is shown on the Typical Sections, Standards, Schedules, or Special Details. The constructed thickness of the above item shall not be less than 90 percent of the nominal thickness at any location.

Factors used for quantity calculations are as follows:

- |                            |                    |
|----------------------------|--------------------|
| Porous Granular Embankment | 2.1 tons/cu. yd.   |
| Stone Dumped Riprap        | 130 pounds/cu. ft. |
| Aggregate Courses          | 2.1 tons/cu. yd.   |
| Bituminous Materials       | 0.4 gallon/sq. yd. |

UTILITIES

- |                           |              |
|---------------------------|--------------|
| Water                     |              |
| City of Mount Vernon      | 618-242-5000 |
| Electric                  |              |
| Tri-County Electric Co-Op | 618-244-5151 |
| Sue Echols                |              |

SUMMARY OF QUANTITIES

Location				Bridge	Roadway
				Construct.	Type Code
Code No.	Item	Unit	Quantity	X080	E000
* 20200100	Earth Excavation	Cu Yd	314	-	314
20300100	Channel Excavation	Cu Yd	2324	2324	-
* 20400800	Furnished Excavation	Cu Yd	72155	-	72155
* 20700110	Porous Granular Embankment	Ton	159	159	-
* 21001000	Geotechnical Fabric for Ground Stabilization	Sq Yd	4403	-	4403
* 25001000	Seeding, Class 2 (Special)	Acre	3.9	-	3.9
28000250	Temporary Erosion Control Seeding	Pound	1560	-	1560
28000300	Temporary Ditch Checks	Each	6	-	6
28000400	Perimeter Erosion Barrier	Foot	4940	-	4940
28000500	Inlet and Pipe Protection	Each	2	-	2
* 28100807	Stone Dumped Riprap, Class A4	Ton	820	820	-
* 35101400	Aggregate Base Course, Type B	Ton	2054	-	2054
* 40200800	Aggregate Surface Course, Type B	Ton	188	-	188
40300100	Bituminous Materials (Prime Coat)	Gallon	1937	-	1937
40300300	Bituminous Materials (Cover and Seal Coats)	Gallon	5283	-	5283
40300500	Cover Coat Aggregate	Ton	110	-	110
40300600	Seal Coat Aggregate	Ton	55	-	55
* 42001400	Bridge Approach Pavement (Special)	Sq Yd	100.8	100.8	-
* 50100100	Removal of Existing Structures	Each	1	1	-
50300225	Concrete Structures	Cu Yd	301.0	301.0	-
* 50400605	Precast Prestressed Concrete Deck Beams (33" Depth)	Sq Ft	9122	9122	-
* 50500105	Furnishing and Erecting Structural Steel	L Sum	1	1	-
50800105	Reinforcement Bars	Pound	41950	41950	-
50900205	Steel Railing, Type S1	Foot	164	164	-
50901305	Steel Railing, Type S1 (Special)	Foot	604	604	-
51201600	Furnishing Steel Piles HP12x53	Foot	1242	1242	-
51201610	Furnishing Steel Piles HP12x63	Foot	2297	2297	-
51202700	Driving Steel Piles	Foot	3539	3539	-
51203600	Test Pile Steel HP12x53	Each	3	3	-
51203610	Test Pile Steel HP12x63	Each	1	1	-
* 51205200	Temporary Sheet Piling	Sq Ft	920	920	-
51500100	Name Plates	Each	2	2	-
54213663	Precast Reinforced Concrete Flared End Sections 18"	Each	4	-	4
542A0223	Pipe Culverts, Class A, Type 1 18"	Foot	52	-	52
63000000	Steel Plate Beam Guard Rail, Type A	Foot	1612.5	-	1612.5
63100075	Traffic Barrier Terminal, Type 5A	Each	8	-	8
63100167	Traffic Barrier Terminal Type 1, Special (Tangent)	Each	6	-	6
67100100	Mobilization	L Sum	1	-	1
78201000	Terminal Marker - Direct Applied	Each	6	-	6
* XX005977	Controlled Low-Strength Materials (CLSM)	Cu Yd	21.6	21.6	-
* Z0048665	Railroad Protective Liability Insurance	L Sum	1	1	-
* XX006333	Setting Precast Concrete Bridge Slabs	L Sum	1	1	-

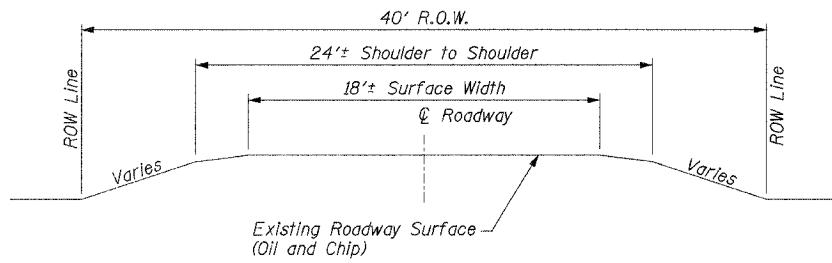
\* See Special Provisions

**SUMMARY OF QUANTITIES**  
**PROPOSED BRIDGE OVER**  
**UNION PACIFIC RAILROAD AND CASEY FORK**  
**TR 227 (GREEN ROAD)**  
**SECTION 98-11120-00-BR**  
**JEFFERSON COUNTY, ILLINOIS**

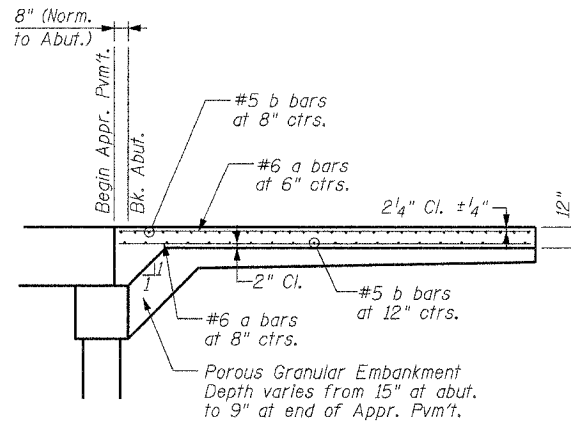
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Job No. 52303

06/24/2005

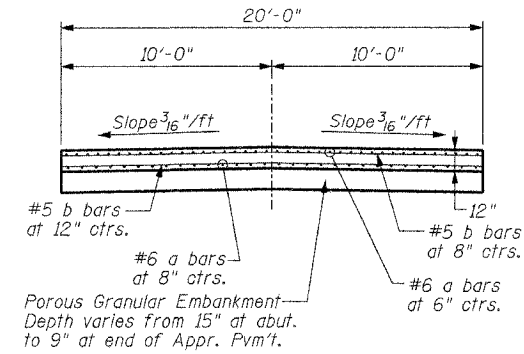
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	3
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 95437				



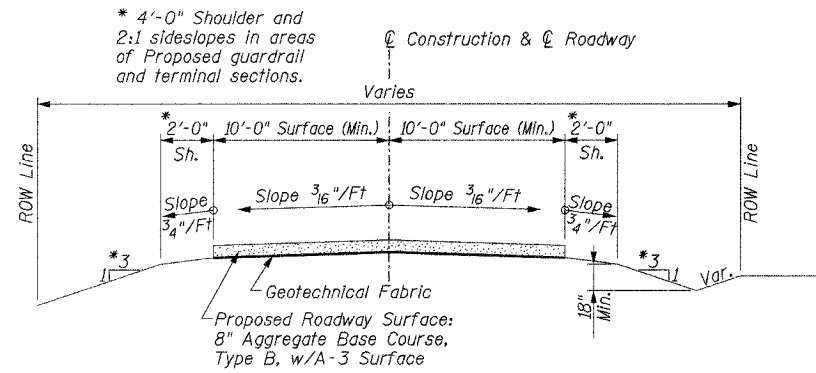
**TYPICAL SECTION  
EXISTING APPROACH ROADWAY**



**LONGITUDINAL SECTION**

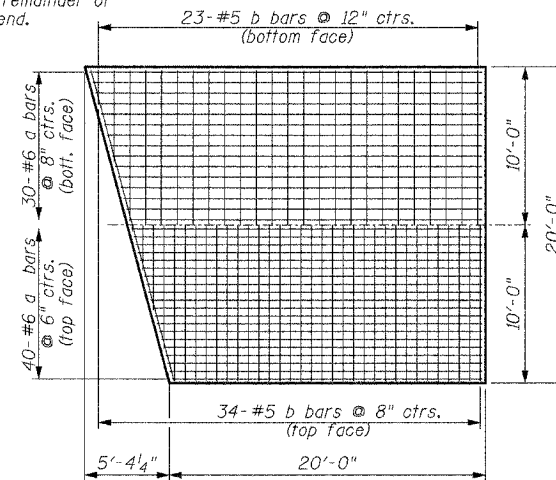


**TRANSVERSE SECTION**



**TYPICAL SECTION  
PROPOSED APPROACH ROADWAY**

Order b bars full length. Cut to fit skew and use remainder of bars in opposite end.

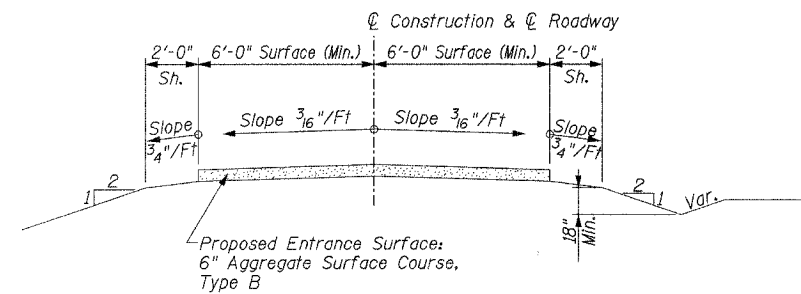


**PLAN  
BRIDGE APPROACH PAVEMENT (SPECIAL)**

**BILL OF MATERIALS  
ONE APPROACH PAVEMENT**

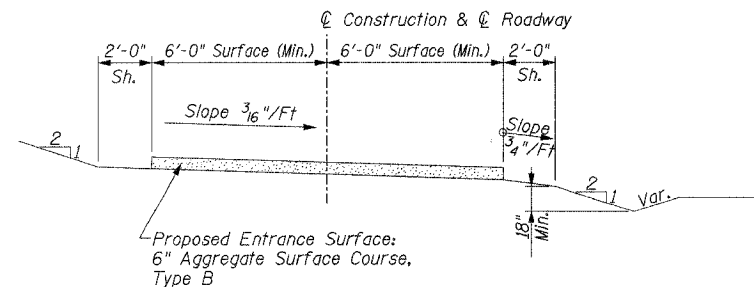
BAR	NO.	SIZE	LENGTH	SHAPE
a	70	#6	25'-0"	—
b	57	#5	19'-6"	—
Bridge Approach Pavement (Special)			Sq. Yd.	50.4
Class SI Concrete *			Cu. Yd.	16.8
Reinforcement *			Pound	3790

\* Not a pay item: For Information only  
(See Special Provisions)



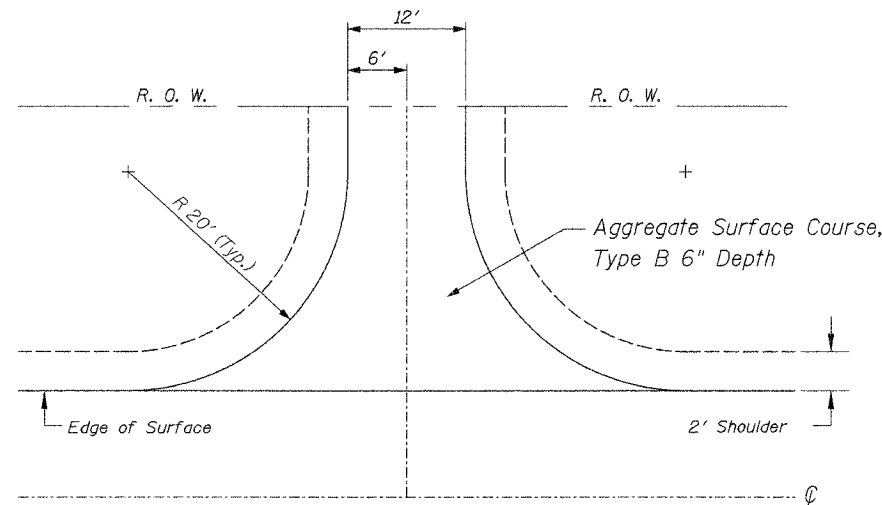
**TYPICAL SECTION  
PROPOSED ENTRANCE ROADWAY**

Rt. Sta. 29+18  
Rt. Sta. 29+65  
Lt. Sta. 47+75



**TYPICAL SECTION  
PROPOSED ENTRANCE ROADWAY**

Lt. Sta. 42+00



**TYPICAL ENTRANCE**

**GUARDRAIL SCHEDULE**

LOCATION	TRF BARR TERM TY 5A (EACH)	STEEL PLATE BEAM GUARD RAIL, TYPE A (FOOT)	TRF BARR TERM TY 1, SP. (TAN.) (EACH)
Lt. & Rt., Sta. 30+37.75 to Sta. 30+87.75	-	-	2
Lt. & Rt., Sta. 30+87.75 to Sta. 31+01.00	2	-	-
Lt. & Rt., Sta. 31+83.00 to Sta. 31+96.25	2	-	-
Lt., Sta. 31+96.25 to Sta. 37+10.70	-	514.45	-
Rt., Sta. 31+96.25 to Sta. 37+17.14	-	520.89	-
Lt., Sta. 37+10.70 to Sta. 37+23.95	1	-	-
Rt., Sta. 37+17.14 to Sta. 37+30.39	1	-	-
Lt., Sta. 40+25.95 to Sta. 40+39.20	1	-	-
Rt., Sta. 40+32.39 to Sta. 40+45.64	1	-	-
Lt., Sta. 40+39.20 to Sta. 40+89.20	-	50	-
Rt., Sta. 40+45.64 to Sta. 44+20.64	-	375	-
Lt., Sta. 40+89.20 to Sta. 41+39.20	-	-	1
Lt., Sta. 42+20.64 to Sta. 42+70.64	-	-	1
Lt., Sta. 42+70.64 to Sta. 44+20.64	-	150	-
Lt. & Rt., Sta. 44+20.64 to Sta. 44+70.64	-	-	2
<b>Total</b>	<b>8</b>	<b>1610.34</b>	<b>6</b>

**TYPICAL SECTIONS  
PROPOSED BRIDGE OVER  
UNION PACIFIC RAILROAD AND CASEY FORK  
TR 227 (GREEN ROAD)  
SECTION 98-11120-00-BR  
JEFFERSON COUNTY, ILLINOIS**

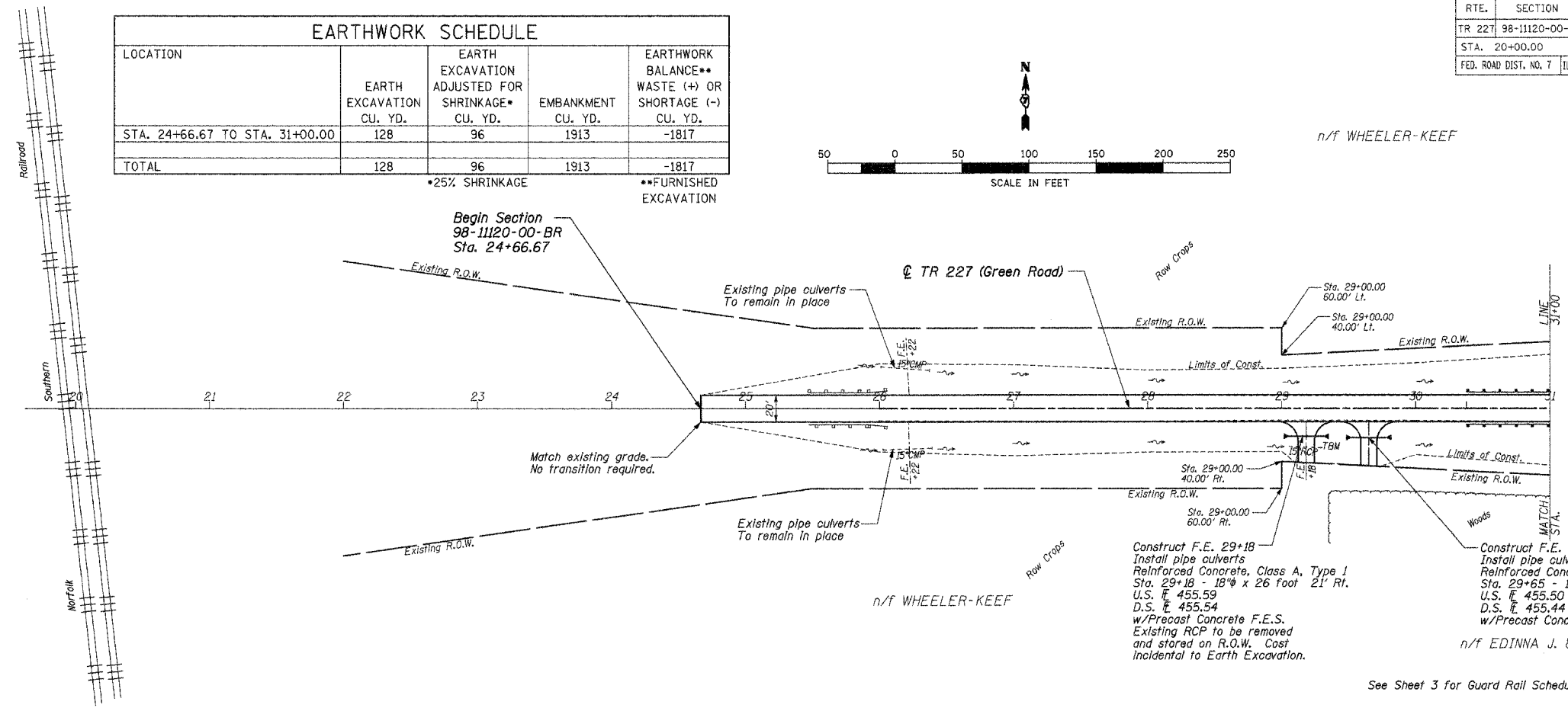
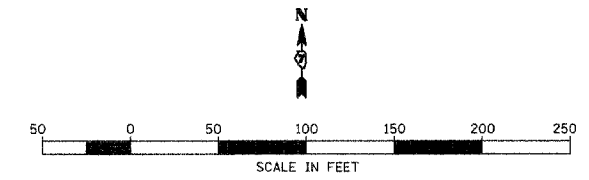
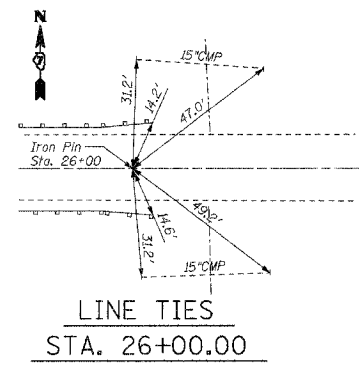
Sheet  
3  
of 35  
Job No. 52303

05/24/2005

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	4
STA. 20+00.00 TO STA. 31+00.00		FED. AID PROJECT		
FED. ROAD DIST. NO. 7		ILLINOIS		
CONTRACT NO. 95437				

EARTHWORK SCHEDULE				
LOCATION	EARTH EXCAVATION CU. YD.	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE* CU. YD.	EMBANKMENT CU. YD.	EARTHWORK BALANCE** WASTE (+) OR SHORTAGE (-) CU. YD.
STA. 24+66.67 TO STA. 31+00.00	128	96	1913	-1817
TOTAL	128	96	1913	-1817

\*25% SHRINKAGE      \*\*FURNISHED EXCAVATION

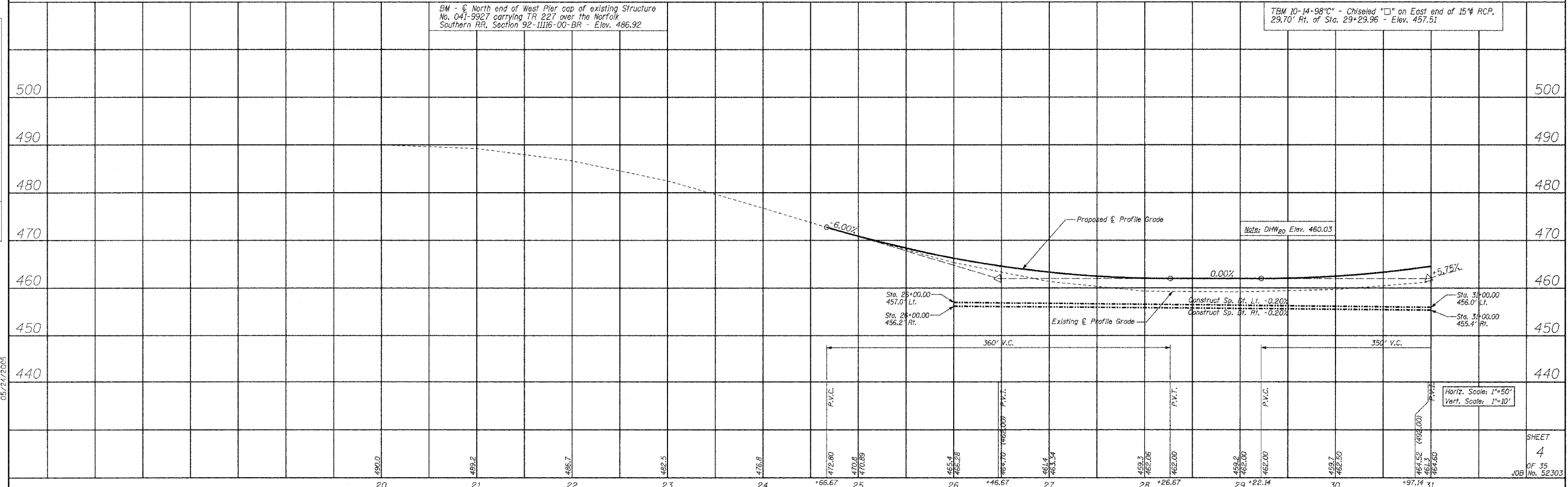


The Existing Right of Way shown hereon has been protracted from existing records and is to be used for reference purposes only. Furthermore, no complete survey of said R.O.W. is implied by this drawing.

See Sheet 3 for Guard Rail Schedule.

BM - C North end of West Pier cap of existing Structure No. 041-9927 carrying TR 227 over the Norfolk Southern RR, Section 92-1116-00-BR - Elev. 486.92

TBM 10-14-98" - Chiseled "□" on East end of 15" RCP, 29.70' Rt. of Sta. 29+29.96 - Elev. 457.51



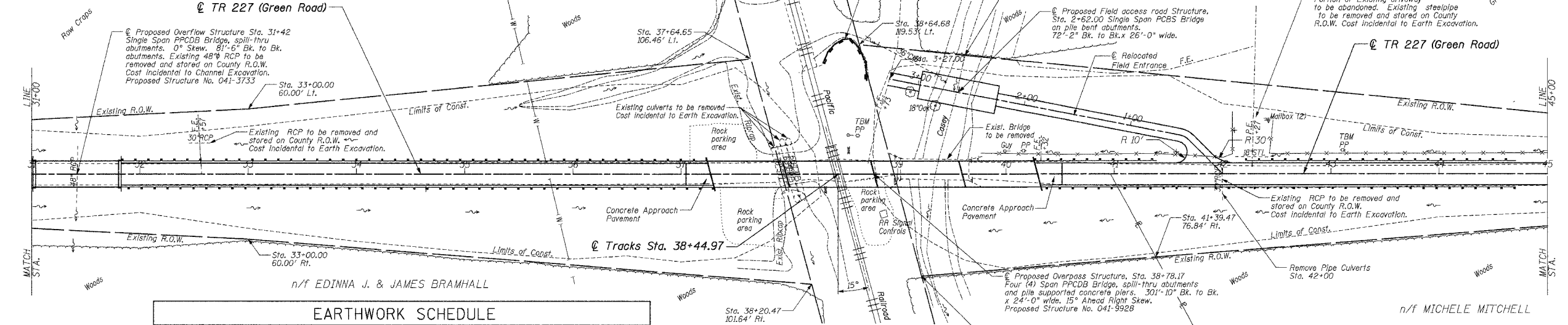
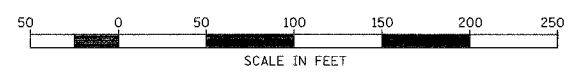
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DATE  
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NO. 100  
NO. 100

PROFILE  
SERVED BY  
DATE  
NO. 100  
NO. 100  
NO. 100

05/24/2005

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	5
STA. 31+00.00		TO STA. 45+00.00		
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				
CONTRACT NO. 95437				

Existing Structure: Three span bridge with timber deck, abutments, piers and wingwalls and steel stringers. 63' L x 18' W adjacent to at grade railroad crossing (UPRR Milepost 273.1300 and USDOT #377450). Existing Structure No. 041-3094



LOCATION	EARTH EXCAVATION			EARTHWORK BALANCE**	
	CU. YD.	ADJUSTED FOR SHRINKAGE*	EMBANKMENT CU. YD.	WASTE (+) OR SHORTAGE (-)	CU. YD.
STA. 31+00.00 TO STA. 37+78.00	83	63	39752	-39689	
STA. 39+00.00 TO STA. 45+00.00	91	68	29868	-29800	
TOTAL	174	131	69620	-69489	

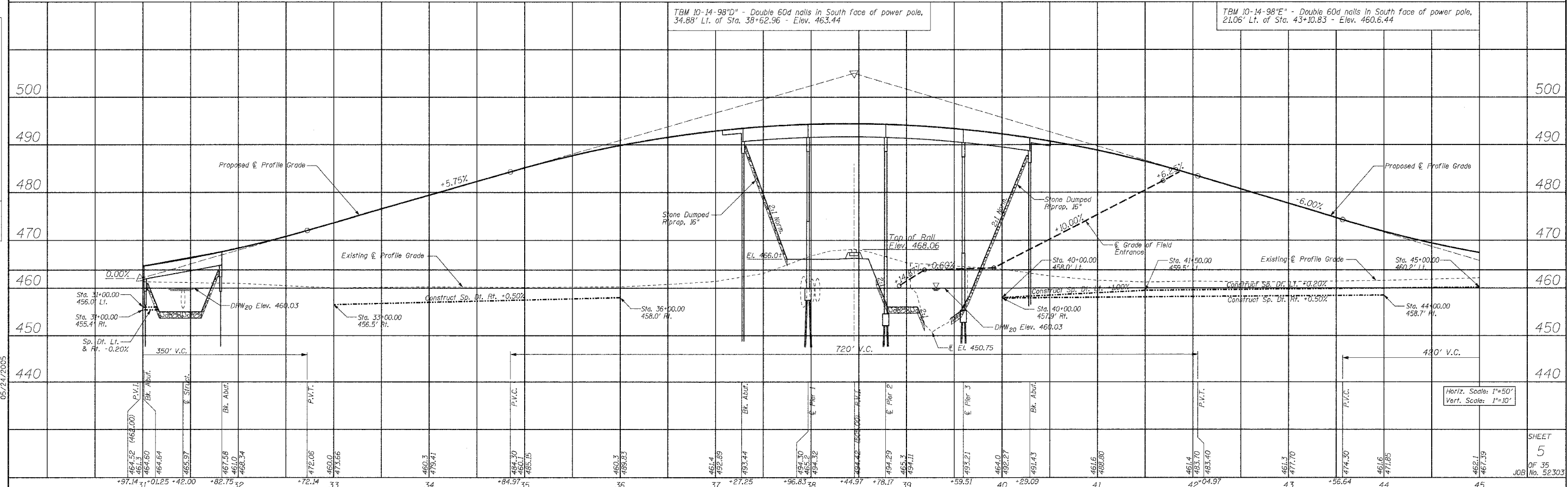
\*25% SHRINKAGE      \*\*FURNISHED EXCAVATION

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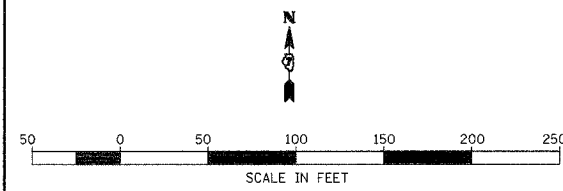
See Sheet 3 for Guard Rail Schedule.

DATE	
BY	
REVISION	
NO.	
DATE	
BY	
REVISION	
NO.	

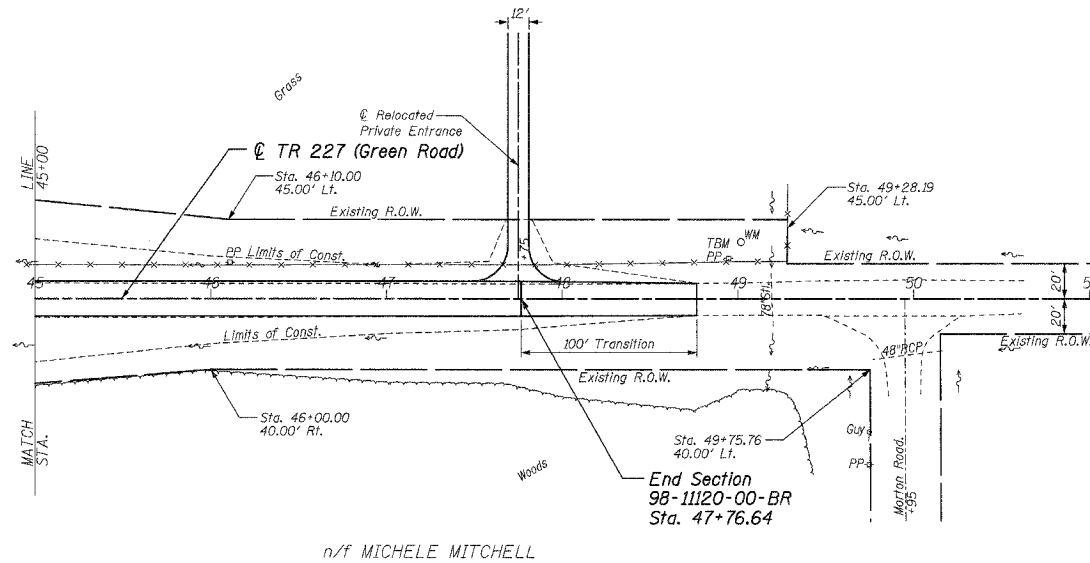
DATE	
BY	
REVISION	
NO.	
DATE	
BY	
REVISION	
NO.	



RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	6
STA. 45+00.00 TO STA. 51+00.00				
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 95437				



n/f JOHN T. & JUDY HAYES

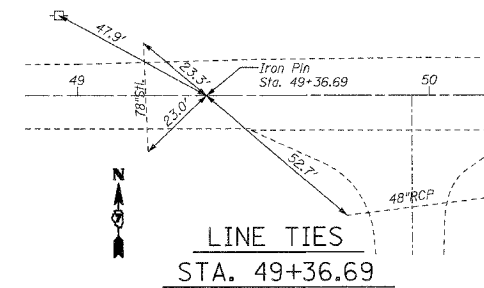


n/f MICHELE MITCHELL

The Existing Right of Way shown hereon has been protracted from existing records and is to be used for reference purposes only. Furthermore, no complete survey of said R.O.W. is implied by this drawing.

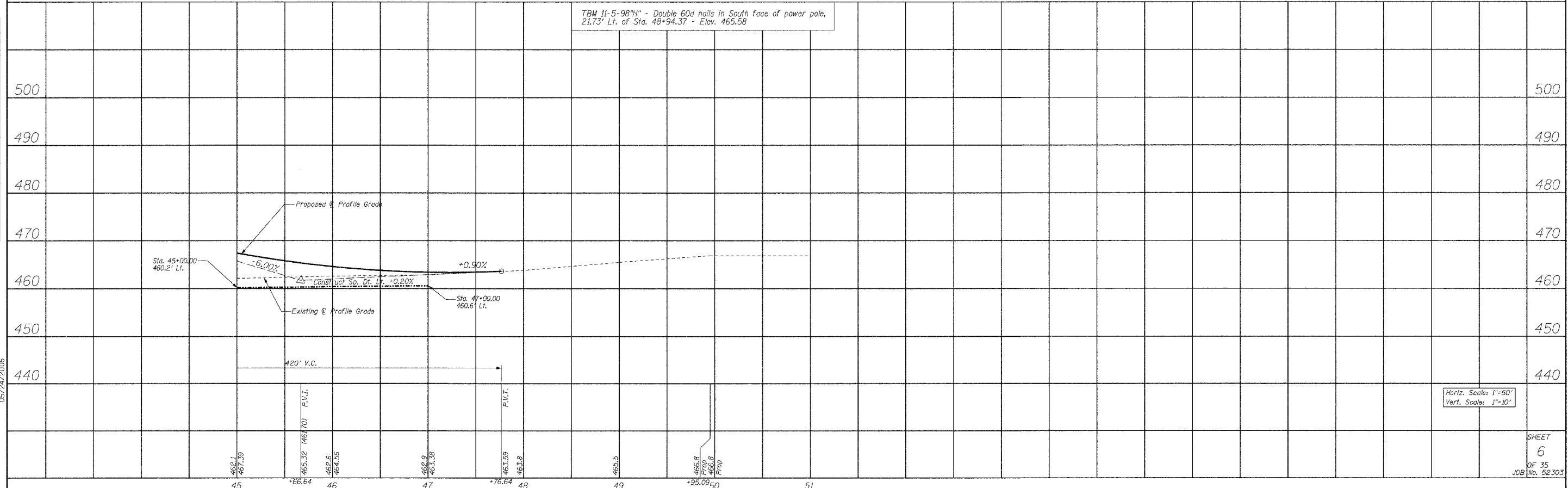
LOCATION	EARTH EXCAVATION CU. YD.	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE* CU. YD.	EMBANKMENT CU. YD.	EARTHWORK BALANCE** WASTE (+) OR SHORTAGE (-) CU. YD.
STA. 45+00.00 TO STA. 47+76.64	12	9	858	-849
TOTAL	12	9	858	-849

\*25% SHRINKAGE  
\*\*FURNISHED EXCAVATION



DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_  
 ALIGNED: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 NO. \_\_\_\_\_

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_  
 GRADES CHECKED: \_\_\_\_\_  
 STRUCTURE NOTATIONS OK'D: \_\_\_\_\_  
 NO. \_\_\_\_\_



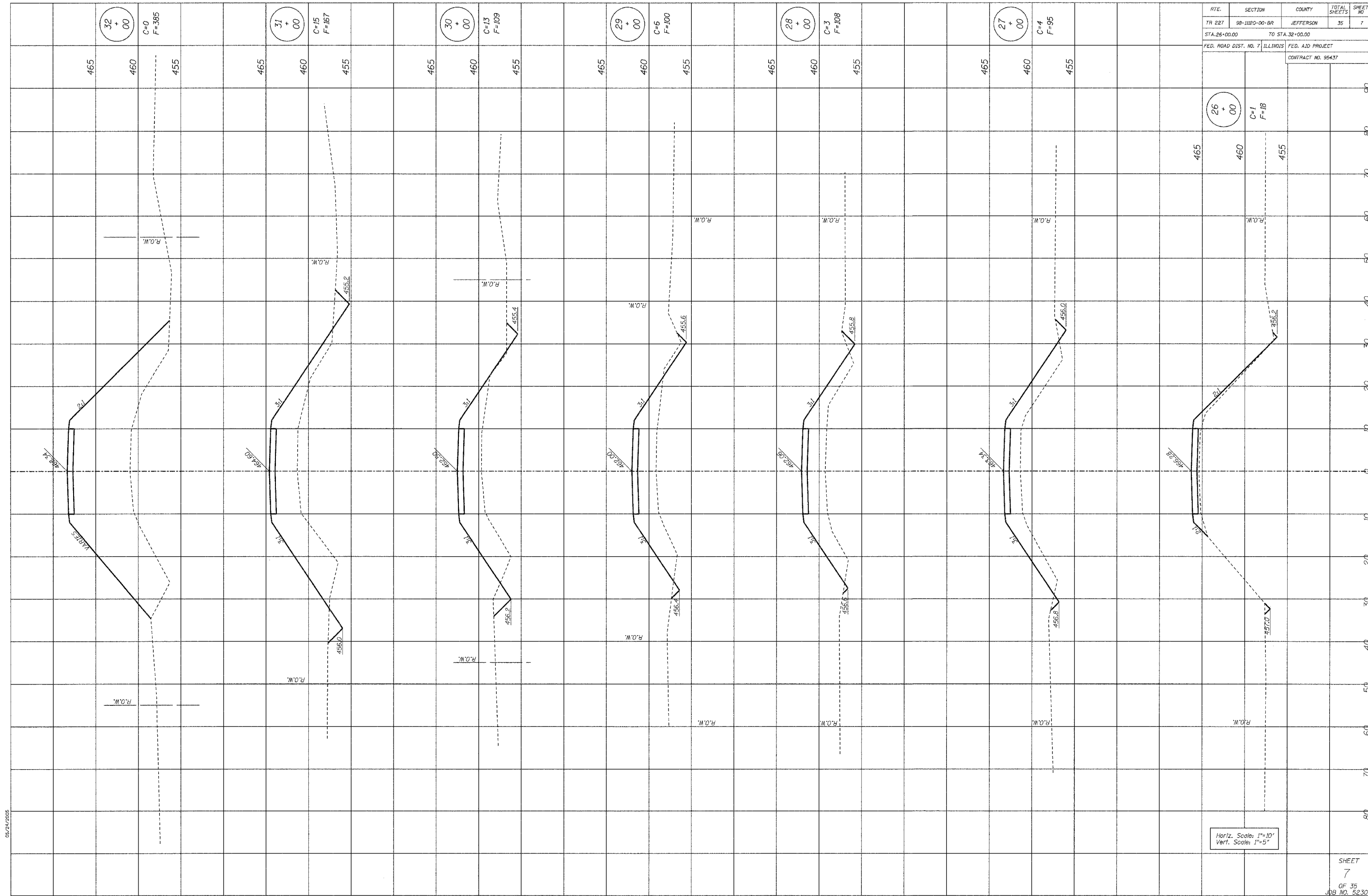
TBM 11-5-98 "H" - Double 60d nails in South face of power pole, 21.73' Lt. of Sta. 48+94.37 - Elev. 465.58

Horiz. Scale: 1"=50'  
 Vert. Scale: 1"=10'

SHEET 6 OF 35  
 JOB No. 52303

FINISH SURVEYED  
 SURVEY PLOTTED  
 NOTE BOOK TEMPLATE  
 NO. \_\_\_\_\_  
 BY \_\_\_\_\_  
 DATE \_\_\_\_\_  
 AREAS CHECKED \_\_\_\_\_

ORIGINAL SURVEYED  
 SURVEY PLOTTED  
 NOTE BOOK TEMPLATE  
 NO. \_\_\_\_\_  
 BY \_\_\_\_\_  
 DATE \_\_\_\_\_  
 AREAS CHECKED \_\_\_\_\_



05/24/2005

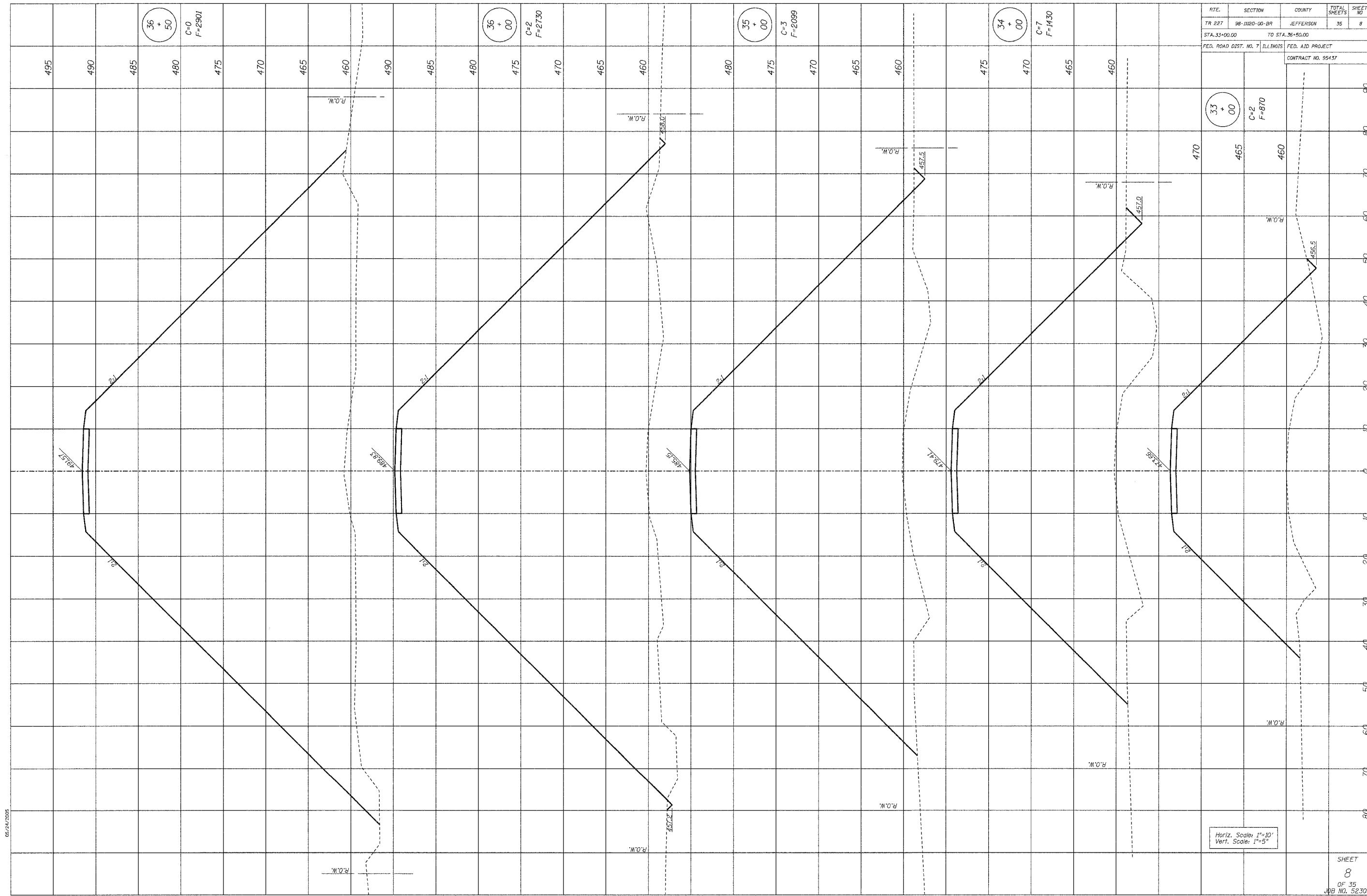
Horiz. Scale: 1"=10'  
 Vert. Scale: 1"=5'

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	7
STA. 26+00.00 TO STA. 32+00.00				
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				
CONTRACT NO. 95437				

SHEET  
 7  
 OF 35  
 JOB NO. 52303

FINAL SURVEY PLOTTED DATE  
 SURVEYED BY  
 PLOTTED BY  
 TEMPLATE NO.  
 NOTE BOOK NO.  
 AREAS CHECKED

ORIGINAL SURVEY PLOTTED DATE  
 SURVEYED BY  
 PLOTTED BY  
 TEMPLATE NO.  
 NOTE BOOK NO.  
 AREAS CHECKED

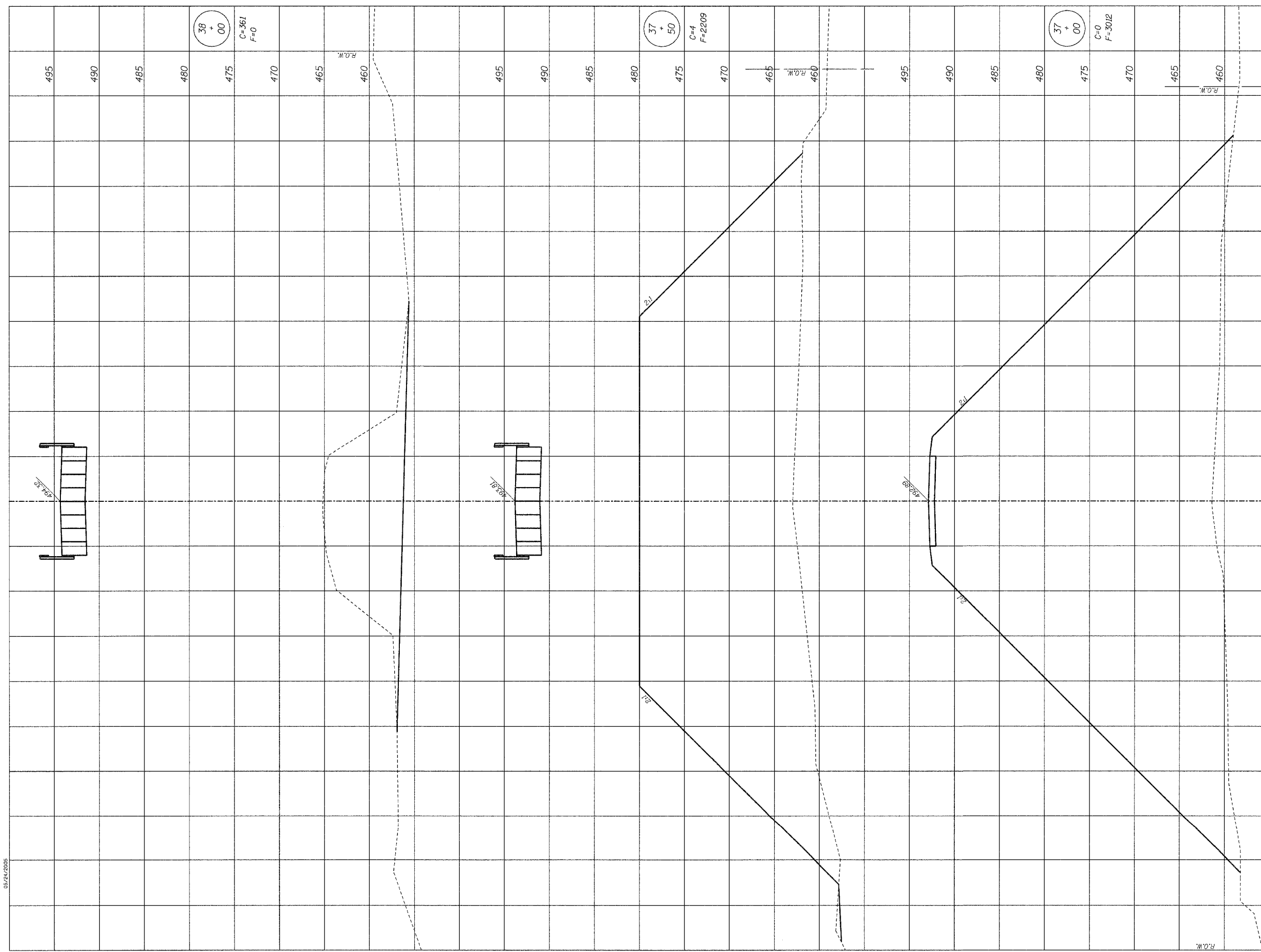


05/24/2005

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	8
STA. 33+00.00 TO STA. 36+50.00		FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT		
		CONTRACT NO. 55437		



ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	9
STA. 37+00.00 TO STA. 38+00.00				
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 95437				



Horiz. Scale: 1"=10'  
Vert. Scale: 1"=5'

SHEET  
9  
OF 35  
JOB NO. 52303

FINAL SURVEY	DATE
NO.	

ORIGINAL SURVEY	DATE
NO.	

05/24/2005

FINAL SURVEY PLOTTED TEMPLATE AREAS CHECKED

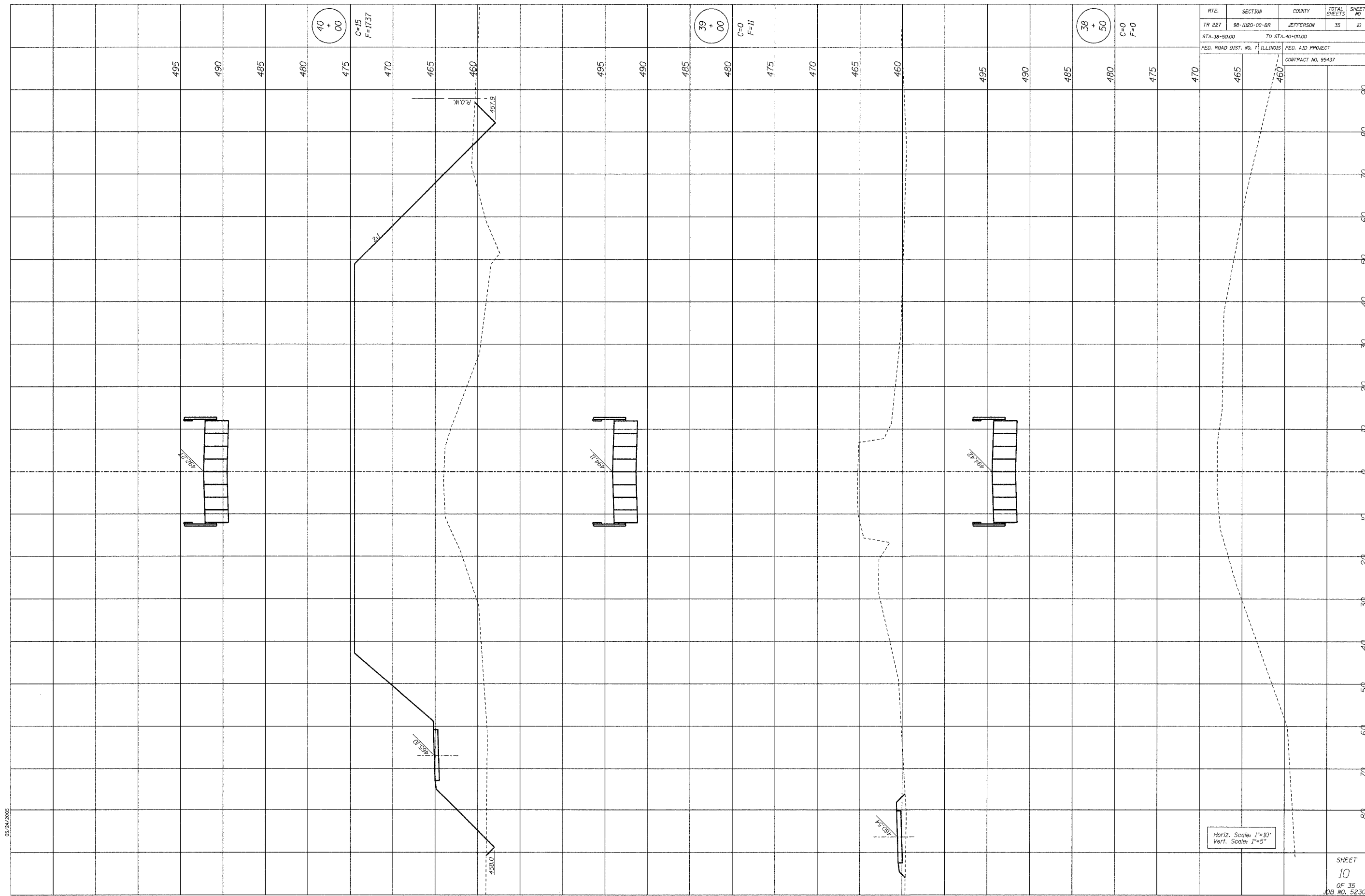
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NO. \_\_\_\_\_

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BY: \_\_\_\_\_ DATE: \_\_\_\_\_

NO. \_\_\_\_\_



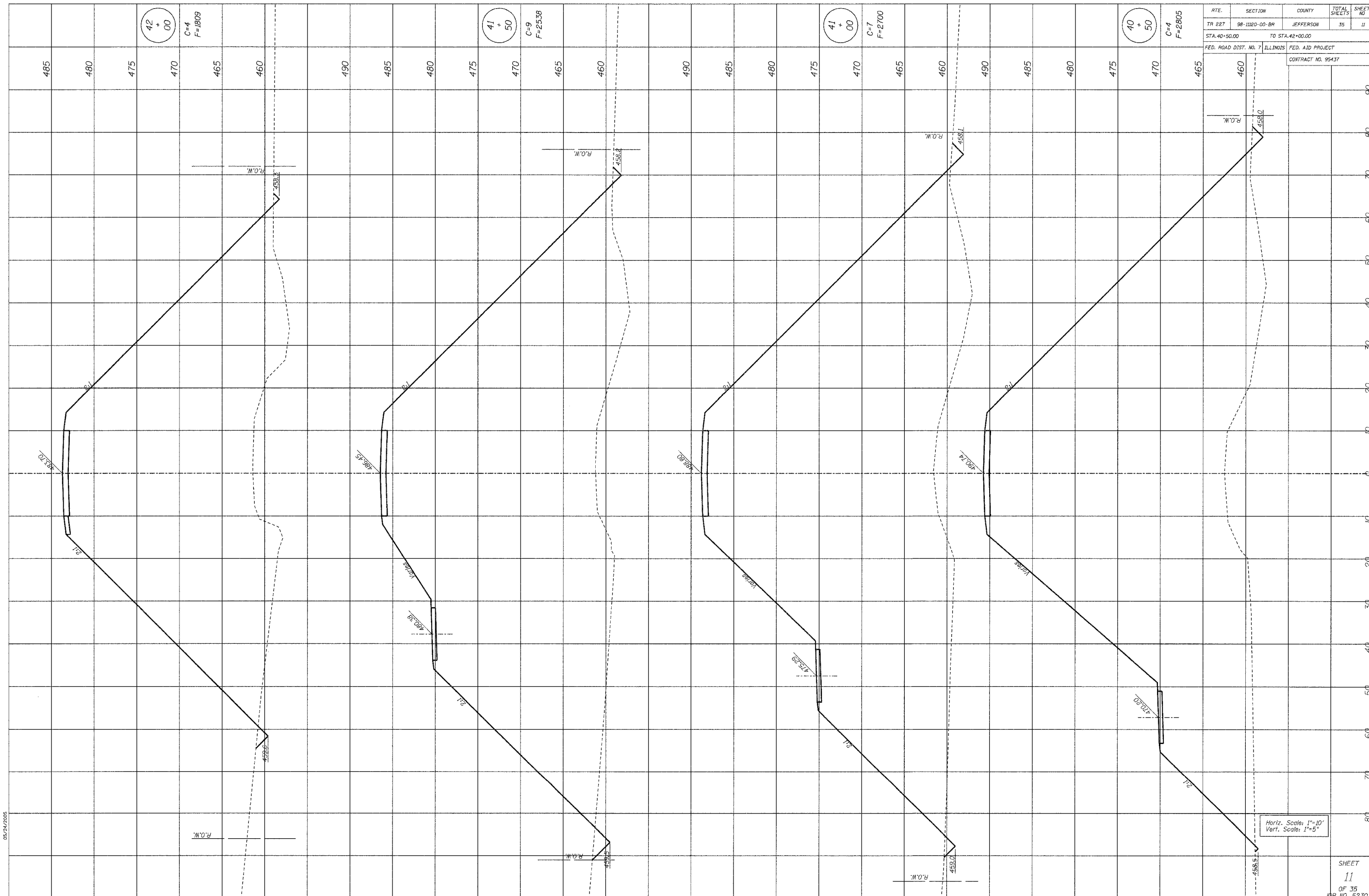
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Vert. Scale: 1"=5'

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	10
STA. 38+50.00 TO STA. 40+00.00				
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				
CONTRACT NO. 95437				

05/24/2005

FINAL SURVEYED SURVEYED  
 SHEET PLOTTED  
 NOTE BOOK TEMPLATE  
 NO. AREAS CHECKED

ORIGINAL SURVEYED SURVEYED  
 SHEET PLOTTED  
 NOTE BOOK TEMPLATE  
 NO. AREAS CHECKED



ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	11
TO STA. 42+00.00				
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				
CONTRACT NO. 95437				

42 + 00  
 C=4  
 F=1809

41 + 50  
 C=9  
 F=2338

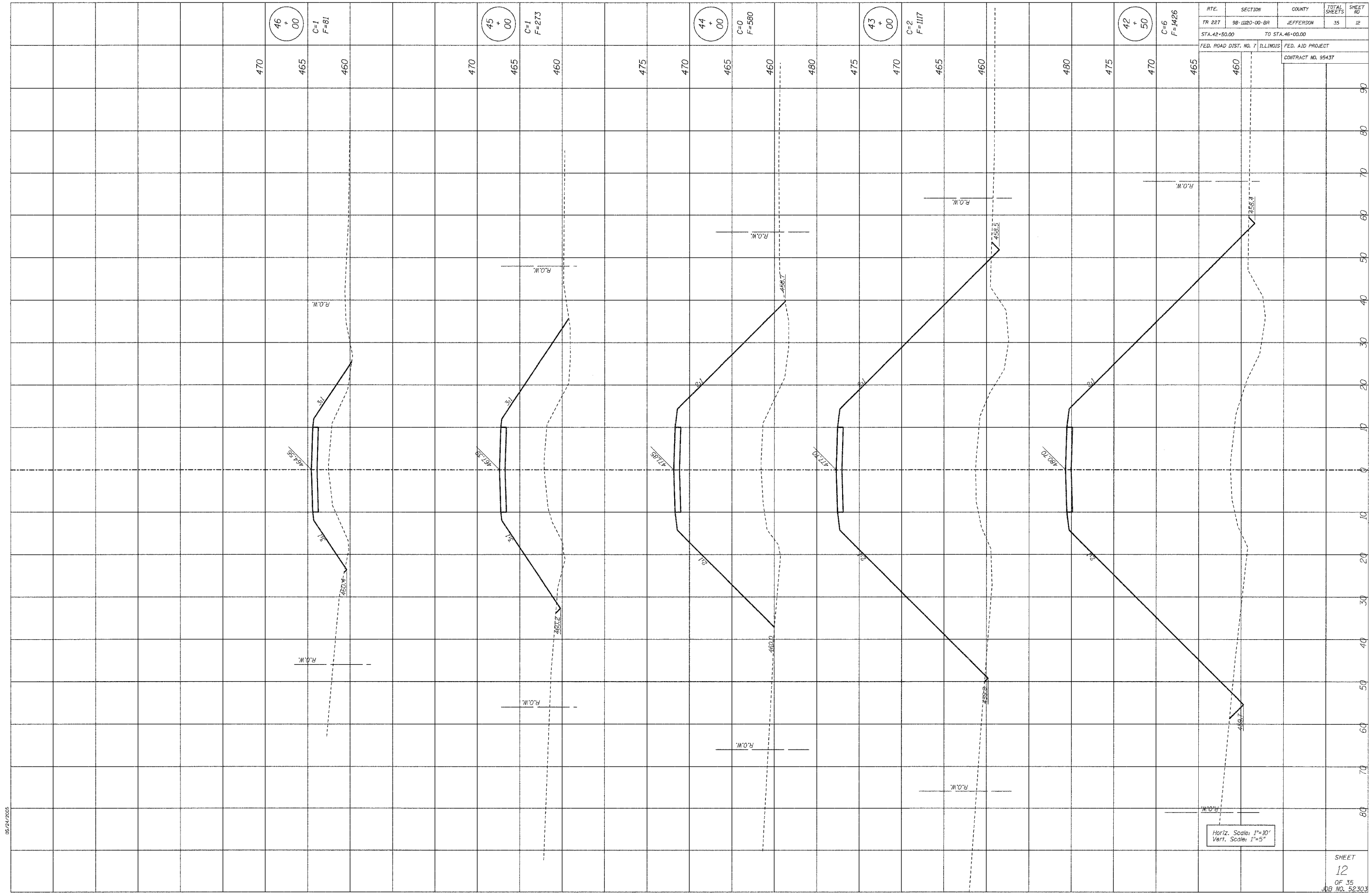
41 + 00  
 C=7  
 F=2700

40 + 50  
 C=4  
 F=2805

05/24/2005

FINAL SURVEY SURVEYED PLOTTED NOTE BOOK NO. \_\_\_\_\_ BY \_\_\_\_\_ DATE \_\_\_\_\_  
 SURVEYED PLOTTED TEMPLATE AREAS CHECKED

ORIGINAL SURVEY SURVEYED PLOTTED NOTE BOOK NO. \_\_\_\_\_ BY \_\_\_\_\_ DATE \_\_\_\_\_  
 SURVEYED PLOTTED TEMPLATE AREAS CHECKED



Horiz. Scale: 1"=10'  
 Vert. Scale: 1"=5'

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	12
STA. 42+50.00 TO STA. 46+00.00				
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				
CONTRACT NO. 95437				

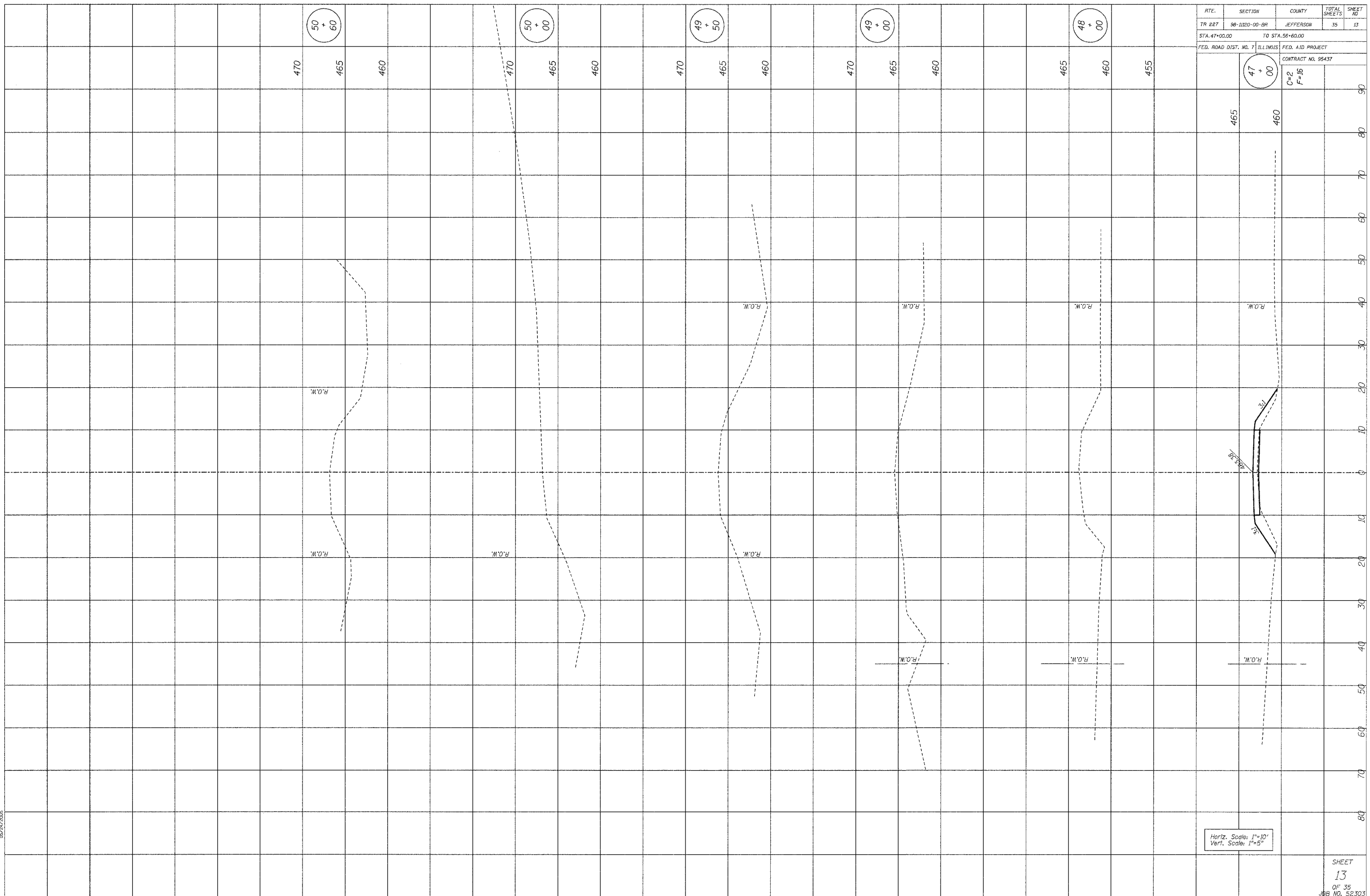
05/24/2005

SHEET  
 12  
 OF 35  
 JOB NO. 52303

FINAL SURVEY PLOTTED  
 NOTE BOOK NO. \_\_\_\_\_  
 TEMPLATE AREAS CHECKED

ORIGINAL SURVEY PLOTTED  
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DATE \_\_\_\_\_ BY \_\_\_\_\_

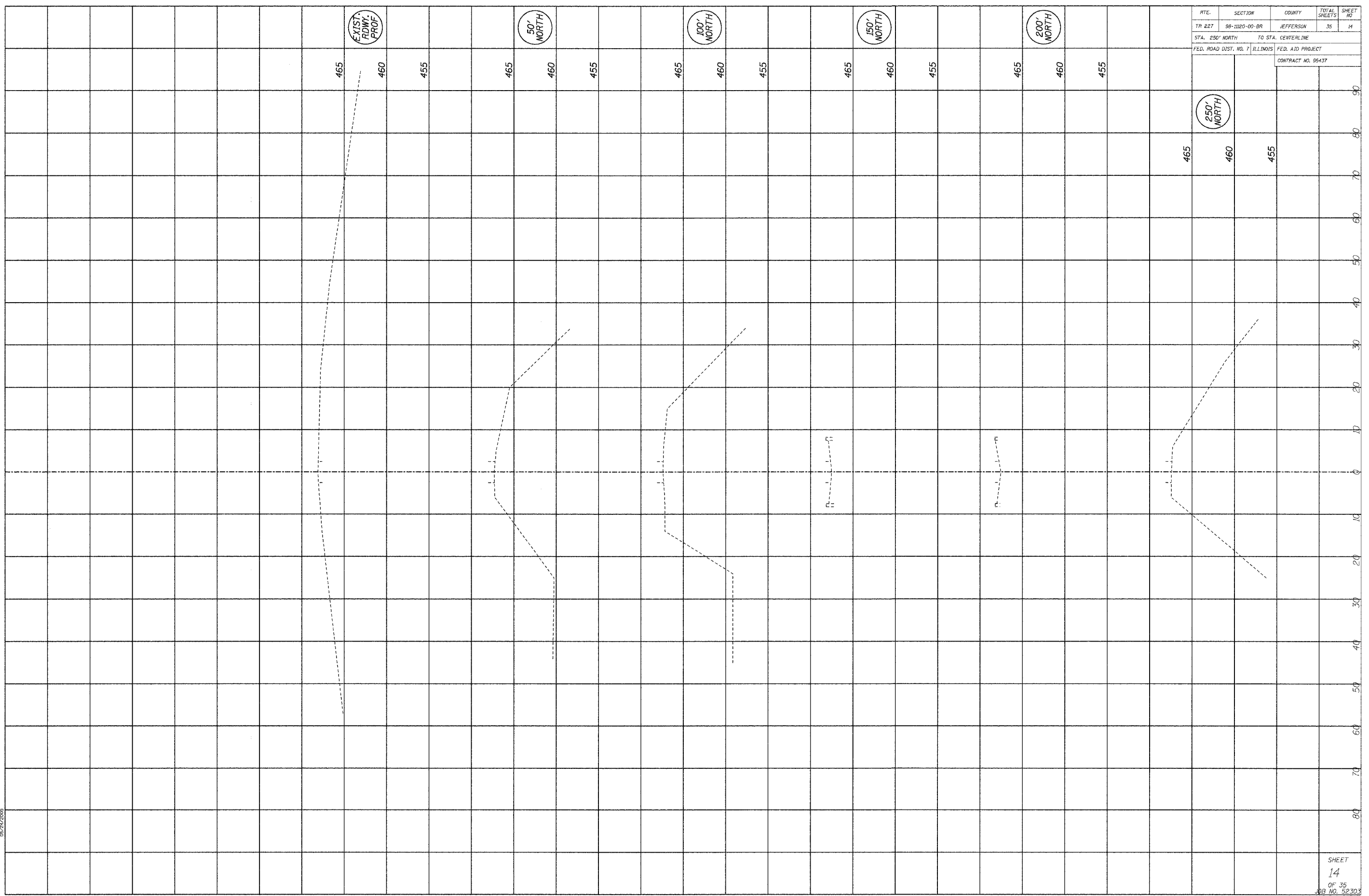


ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	13
STA. 47+00.00 TO STA. 56+60.00				
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				
CONTRACT NO. 95437				
C=2 F=16				

05/24/2005

FINAL SURVEY DATE  
 SURVEYED BY  
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 TEMPLATE AREAS CHECKED

ORIGINAL SURVEY DATE  
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 NOTE BOOK NO.  
 TEMPLATE AREAS CHECKED

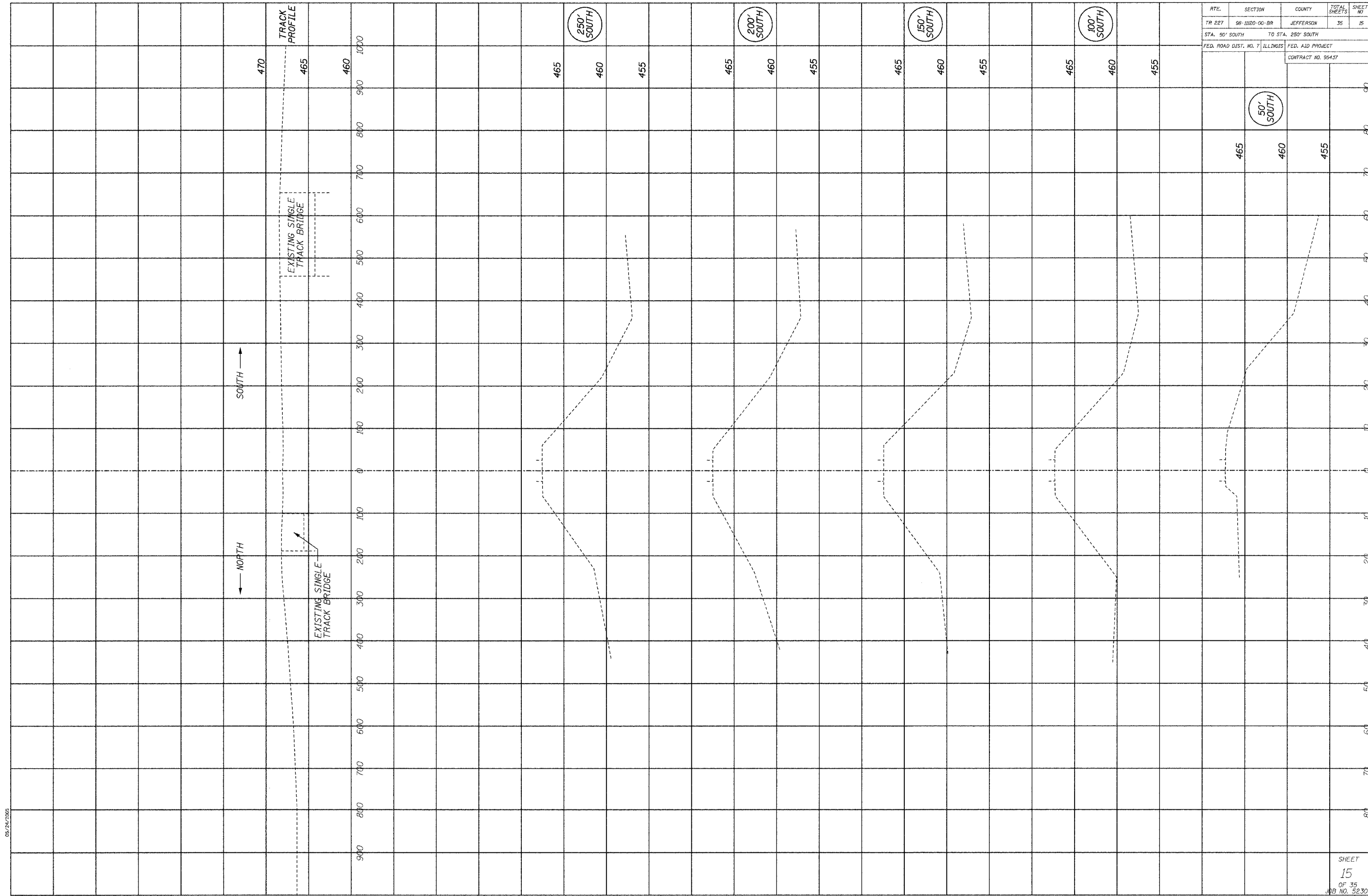


ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	14
STA. 250' NORTH		TO STA. CENTERLINE		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 95437				

05/24/2005

DATE \_\_\_\_\_ BY \_\_\_\_\_  
 SURVEYED \_\_\_\_\_  
 PLOTTED \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_  
 TEMPLATE \_\_\_\_\_  
 AREAS CHECKED \_\_\_\_\_

DATE \_\_\_\_\_ BY \_\_\_\_\_  
 ORIGINAL SURVEY \_\_\_\_\_  
 PLOTTED \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_  
 TEMPLATE \_\_\_\_\_  
 AREAS CHECKED \_\_\_\_\_



RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	15
STA. 90' SOUTH		TO STA. 250' SOUTH		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 95457				

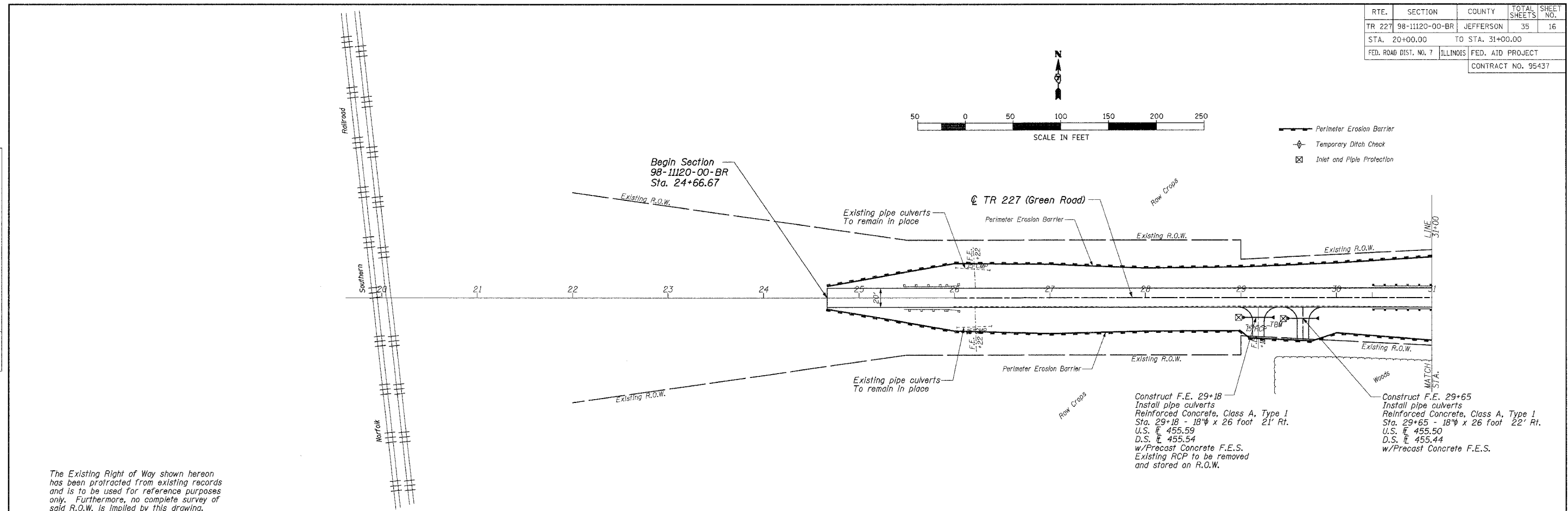
05/24/2005

SHEET  
15  
OF 35  
JOB NO. 52303

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	16
STA. 20+00.00	TO STA. 31+00.00			
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		
CONTRACT NO. 95437				

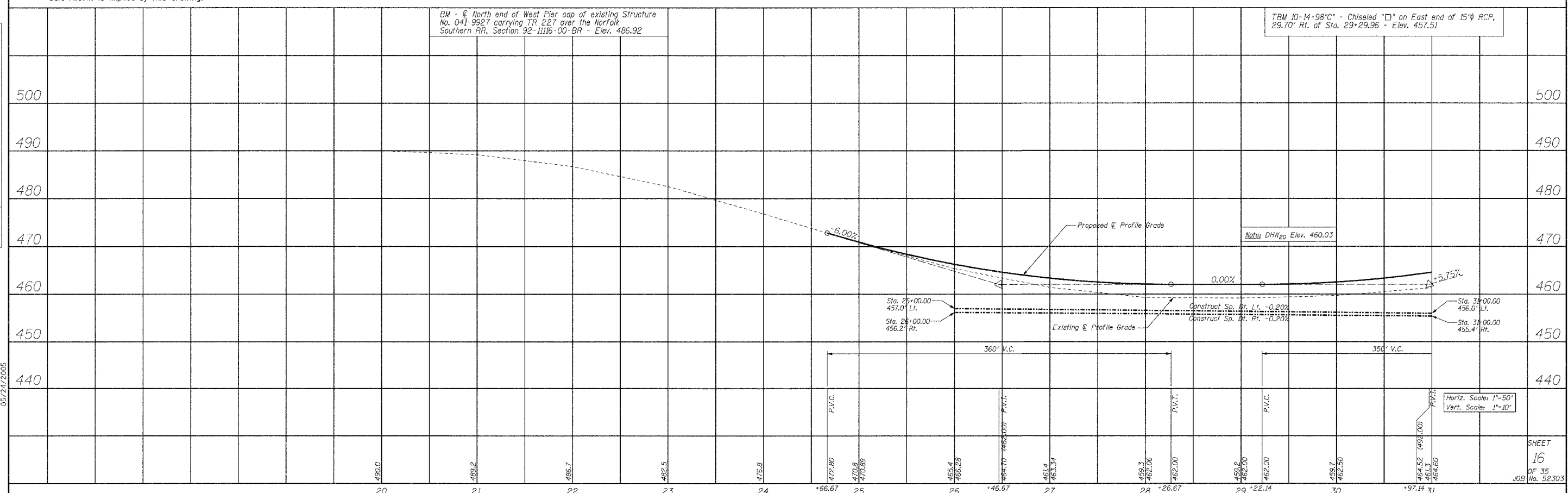
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SURVEYED		
NOTE BOOK		
NO.		
ALIGNED		
CHECKED		
FILE NAME		

PROFILE	DATE	BY
SURVEYED		
NOTE BOOK		
NO.		
CHECKED		
STRUCTURE		
NOTATION		



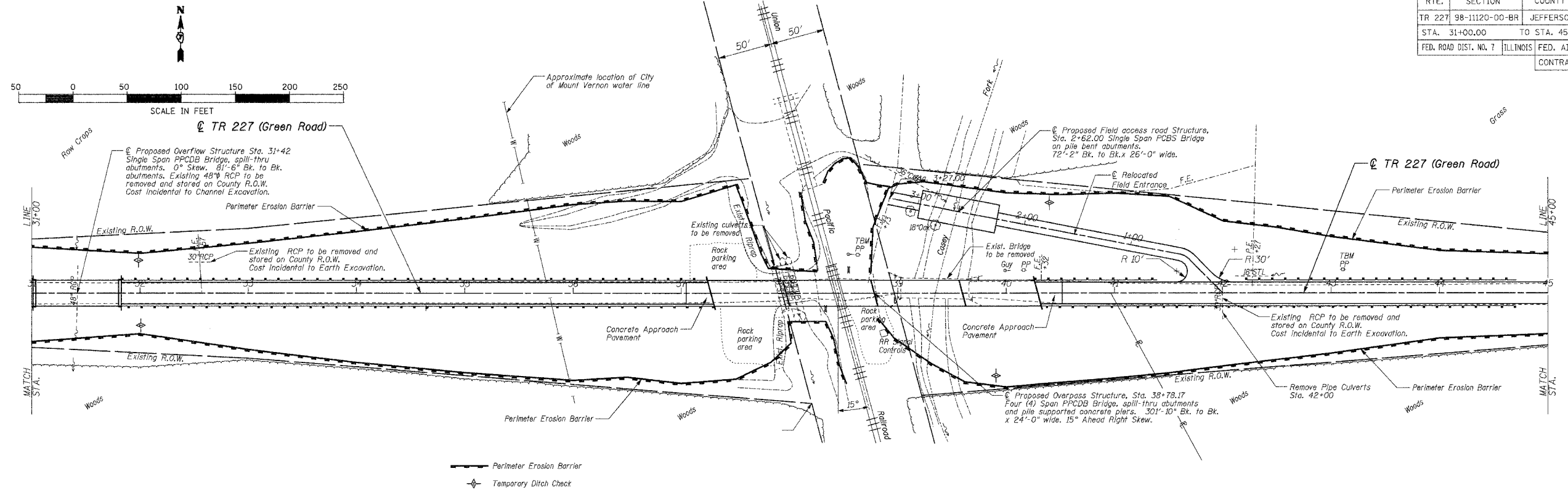
Construct F.E. 29+18  
Install pipe culverts  
Reinforced Concrete, Class A, Type 1  
Sta. 29+18 - 18" x 26 foot 21' Rt.  
U.S.  $\bar{E}$  455.59  
D.S.  $\bar{E}$  455.54  
w/Precast Concrete F.E.S.  
Existing RCP to be removed  
and stored on R.O.W.

Construct F.E. 29+65  
Install pipe culverts  
Reinforced Concrete, Class A, Type 1  
Sta. 29+65 - 18" x 26 foot 22' Rt.  
U.S.  $\bar{E}$  455.50  
D.S.  $\bar{E}$  455.44  
w/Precast Concrete F.E.S.



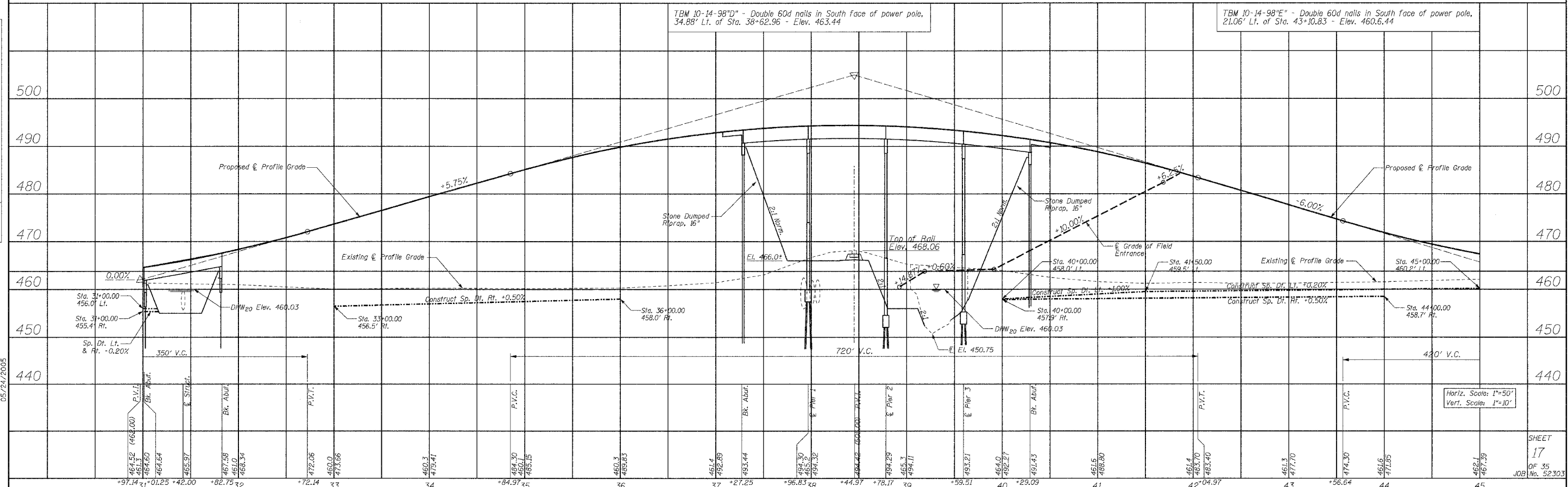


RTE.	SECTION	COUNTY	TOTAL SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35
STA. 31+00.00		TO STA. 45+00.00	
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT	
CONTRACT NO. 95437			

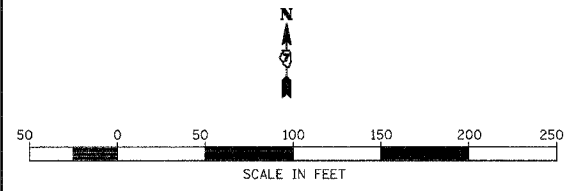


PLAN	DATE
BY	
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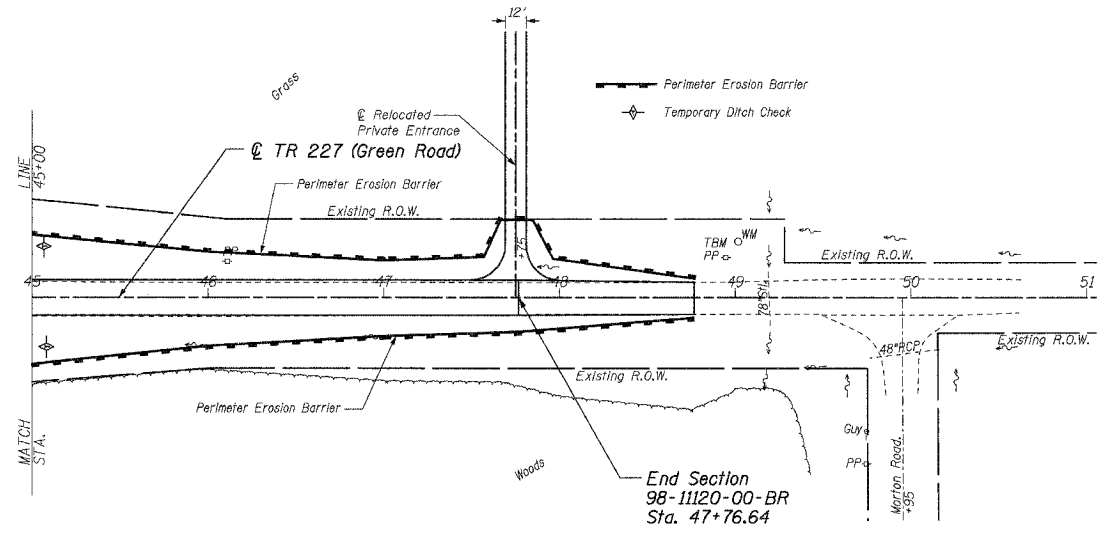
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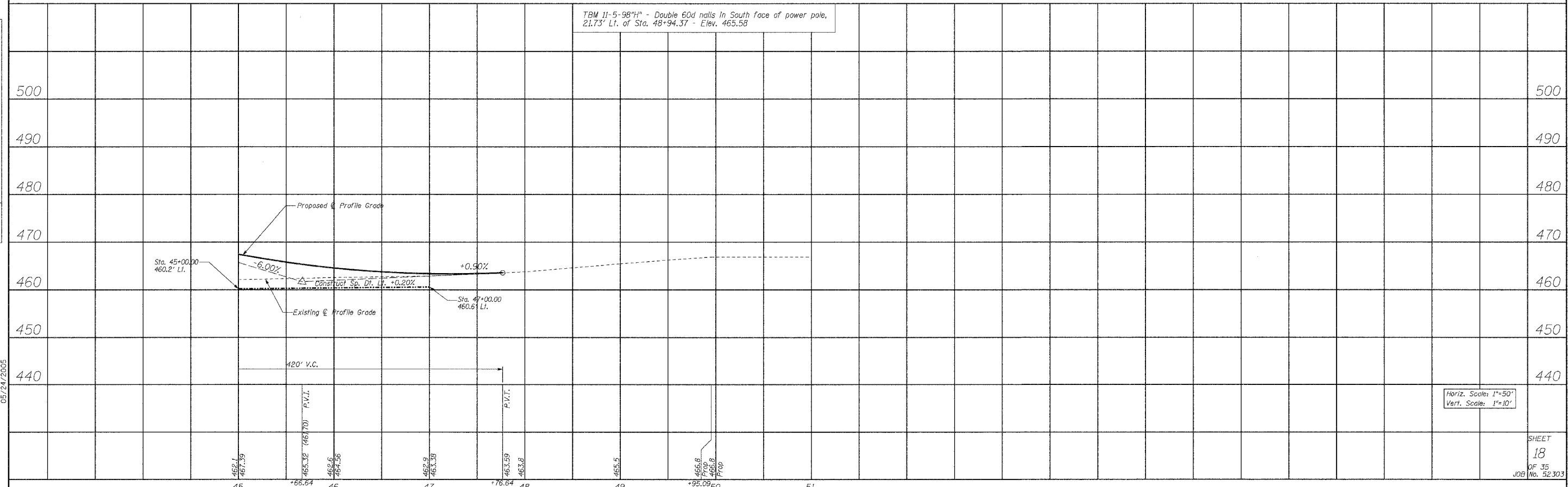
RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	18
STA. 45+00.00		TO STA. 51+00.00		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 95437				



DATE	BY
DATE	BY
DATE	BY



DATE	BY
DATE	BY
DATE	BY



TBM 10-14-98"C - Chiseled square on East end of 15" RCP,  
29.70' Rt. of Sta. 29+29.96 - Elev. 457.51

TBM 10-14-98"D - Double 60d nails in South face of power pole,  
34.88' Lt. of Sta. 38+62.96 - Elev. 463.44

Existing Structure: 48" RCP culvert x 52' long,  
To be removed and stored on County  
R.O.W. Cost incidental to Channel  
Excavation.

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	19
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		
CONTRACT NO. 95437				

**BILL OF MATERIAL (BRIDGE ONLY)**

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu Yd	-	1148	1148
Stone Dumped Riprap, Class A4	Ton	-	270	270
Concrete Structures	Cu Yd	-	18.4	18.4
PPCDB (33" Depth)	Sq Ft	1924	-	1924
Steel Railing, Type S-1	Foot	164	-	164
Reinforcement Bars	Pound	-	2700	2700
Furnishing Steel Piles HP12x53	Foot	-	352	352
Driving Steel Piles	Foot	-	352	352
Test Pile Steel HP12x53	Each	-	1	1
Name Plates	Each	-	1	1
Controlled Low-Strength Materials (CLSM)	Cu Yd	-	21.6	21.6

**GENERAL NOTES**

See Section 502 of the Standard Specifications for Structure Excavation.  
The Contractor shall drive one (1) Steel HP12x53 Test Pile in a permanent location at the East Abutment as directed by the Engineer before ordering the remainder of the piles.  
Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-53 grade 60.  
Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.  
Channel excavation shall be excavated as shown within the limits of the proposed bridge, then tapered to the toe of the proposed embankment as directed by the Engineer. If the Engineer deems the material satisfactory, it may be used to construct the roadway embankment.  
See Specifications for soil borings.  
Do not scale these drawings.  
In addition to all other requirements of section 512 of the Standard Specifications, splices for Steel H-piles shall develop the full capacity of the steel's cross sectional area of the pile for tension, shear and bending forces. One approved method of achieving this requirement is full penetration butt welding of the entire cross section. Other types of splices meeting the full capacity requirement may be allowed subject to the approval of the Engineer. Any proposal by the Contractor to use an alternate splice method must include adequate documentation demonstrating that the full tension, shear and bending capacities will be met. Appropriate welder qualifications will be required for the positions and processes used in splicing all piles. Nondestructive testing of completed welds will be limited to visual inspection.

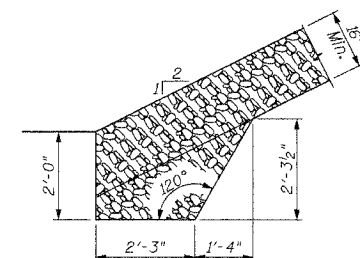
**OVERFLOW TO CASEY FORK  
BUILT 200 BY  
JEFFERSON COUNTY  
SEC. 98-11120-00-BR  
LOADING HS 20  
STRUCTURE NO. 041-3733**

**NAME PLATE**

(See State Standard 515001 for details)

**PROFILE GRADE  
ACROSS STRUCTURE**

Along Centerline of Roadway

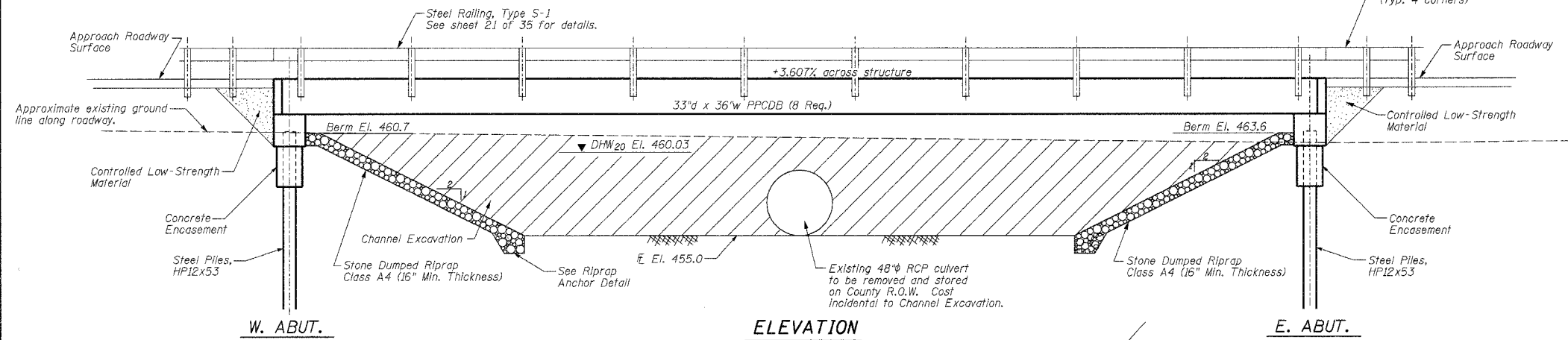


**RIPRAP ANCHOR DETAIL**

**GENERAL PLAN AND ELEVATION  
PROPOSED OVERFLOW BRIDGE  
FOR CASEY FORK**

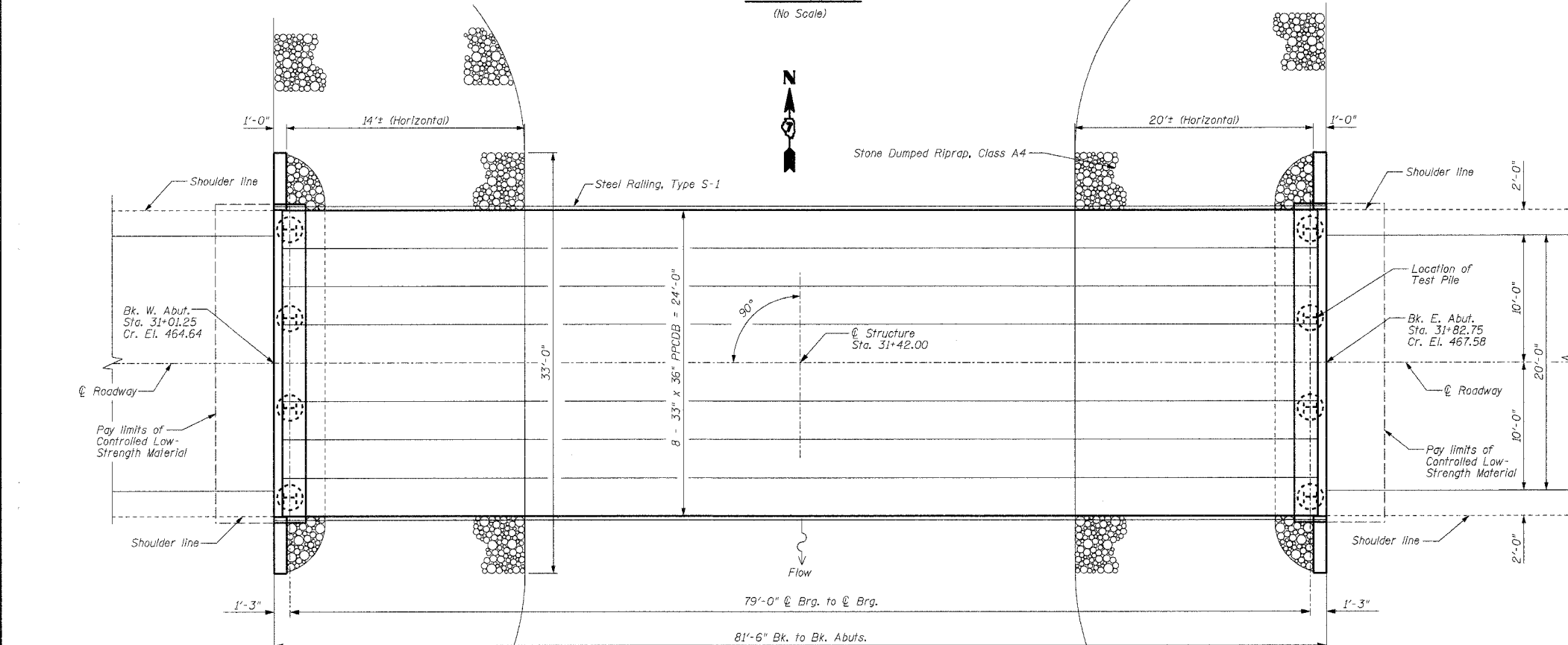
TR 227 / STA. 31+42.00  
SECTION 98-11120-00-BR  
JEFFERSON COUNTY, ILLINOIS

Sheet  
19  
of 35  
Job No. 52303



**ELEVATION**

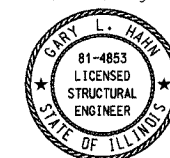
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**PLAN**

(No Scale)

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



Gary L. Hahn 5/25/05

**SEISMIC DESIGN**

Seismic Performance Category (SPC) = B  
Bedrock Acceleration Coefficient (A) = 0.10g  
Site Coefficient (S) = 1.5

**DESIGN SPECIFICATIONS**

AASHTO - 2002 17th Edition

**LOADING HS 20-44**

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

**DESIGN STRESSES**

FIELD UNITS  
 $f'_c = 3,500$  psi  
 $f_y = 60,000$  psi

**PRECAST PRESTRESSED UNITS**

$f'_c = 6,000$  psi  
 $f'_{ci} = 5,000$  psi  
 $f'_s = 270,000$  psi ( $1/2$ "  $\phi$  strands/Low Relaxation)  
 $f'_{si} = 202,500$  psi ( $1/2$ "  $\phi$  strands/Low Relaxation)

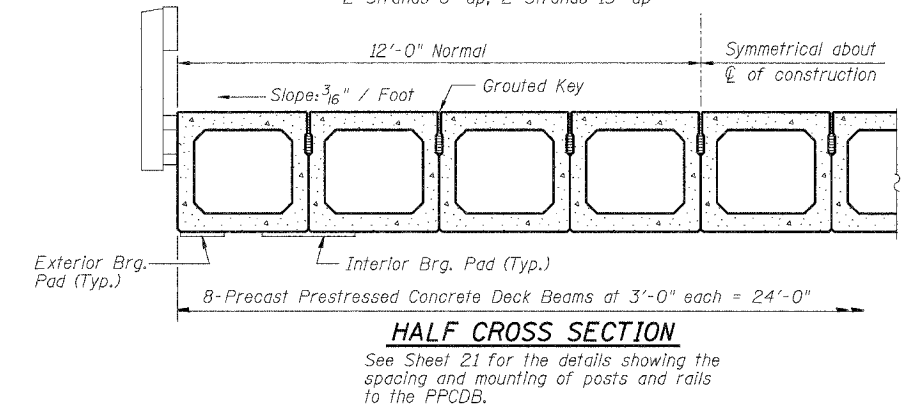
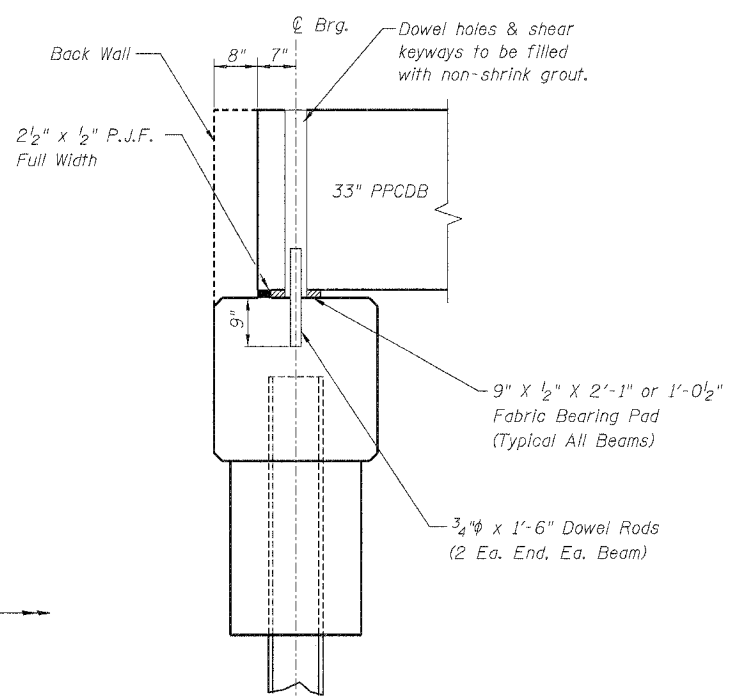
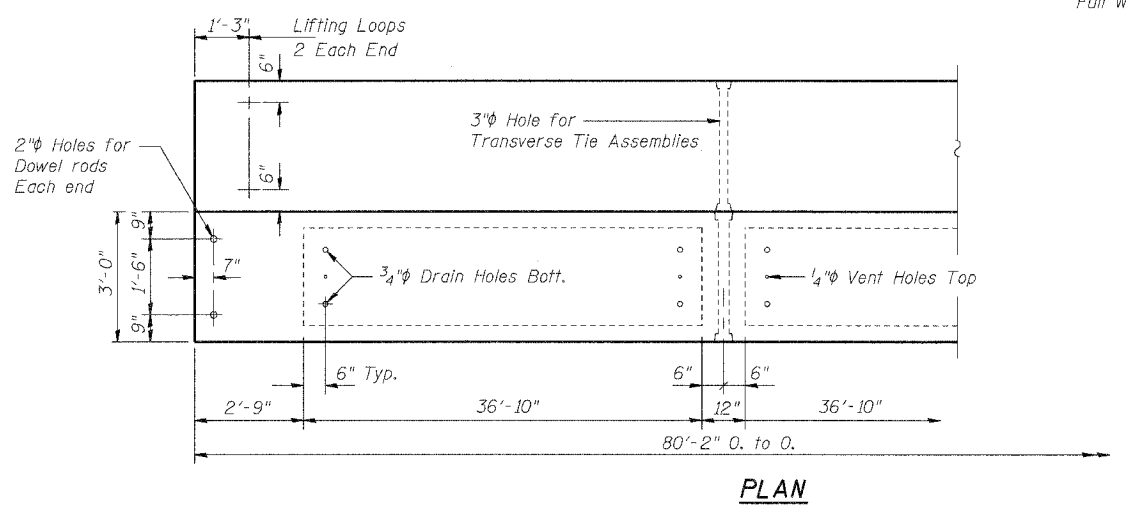
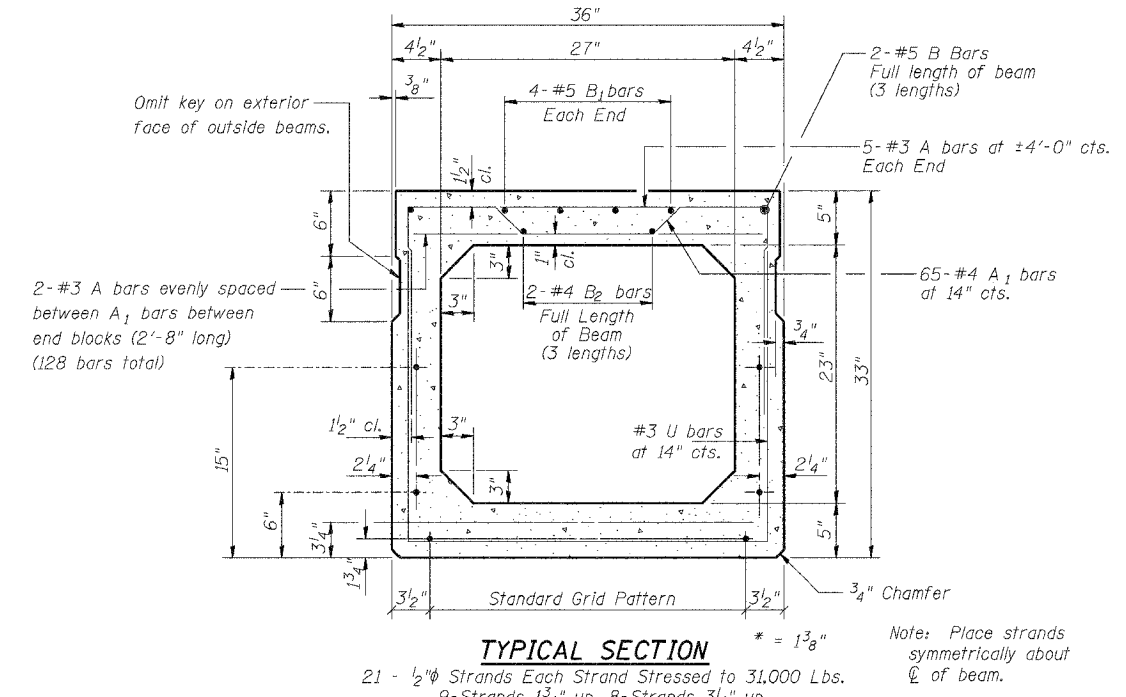
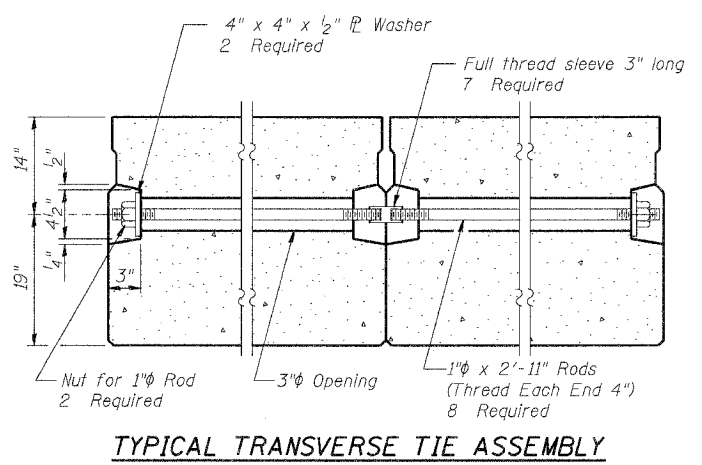
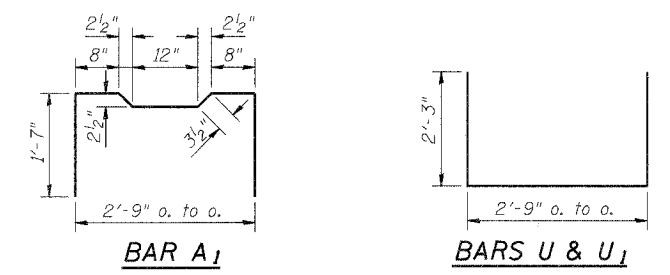
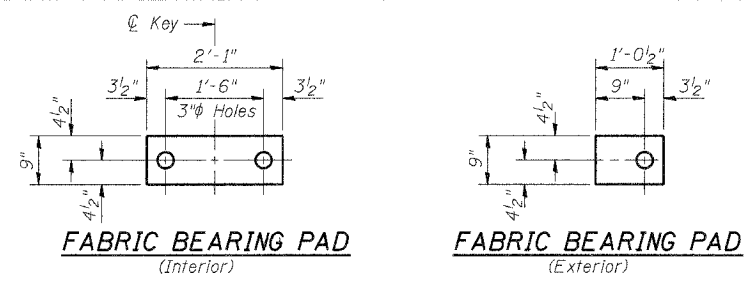
**WATERWAY DATA**

See Sheet 24 of 35

RHUTASEL and ASSOCIATES, INC.  
CONSULTING ENGINEERS • LAND SURVEYORS  
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS

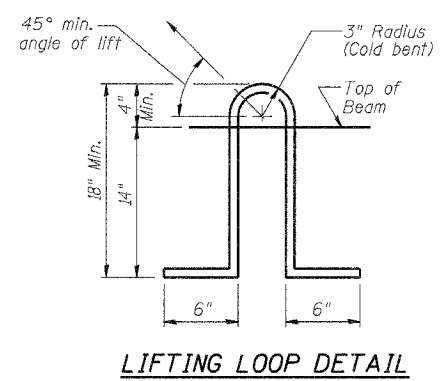
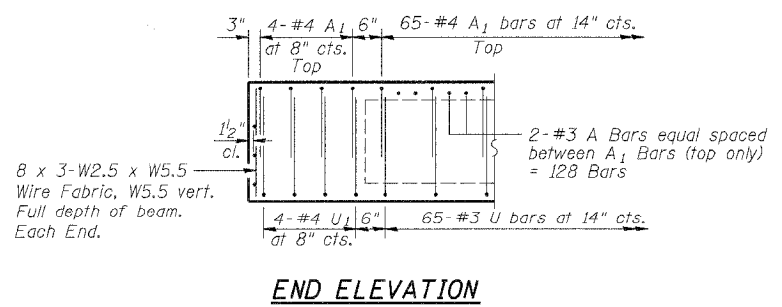
05/24/2005

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	20
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 95437				



**BILL OF MATERIAL FOR ONE BEAM**

Bar	No.	Size	Length	Shape
A	138	#3	2'-8"	—
A <sub>1</sub>	73	#4	6'-1"	—
B	6	#5	28'-6"	—
B <sub>1</sub>	8	#5	16'-3"	—
B <sub>2</sub>	6	#4	28'-3"	—
U	65	#3	7'-3"	—
U <sub>1</sub>	8	#4	7'-3"	—
Precast Prestressed Concrete Deck Beams	Sq Ft		240.50	
Reinforcement Bars	Pound		1080	
Total Weight Each Beam	Pound		53000	



**NOTES**

Prestressing steel shall be uncoated high strength, Low-relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. Lifting loops shall be 3 - 1/2" - 270 ksi strands, as shown.

The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place.

Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53 Grade 60.

The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/8" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.

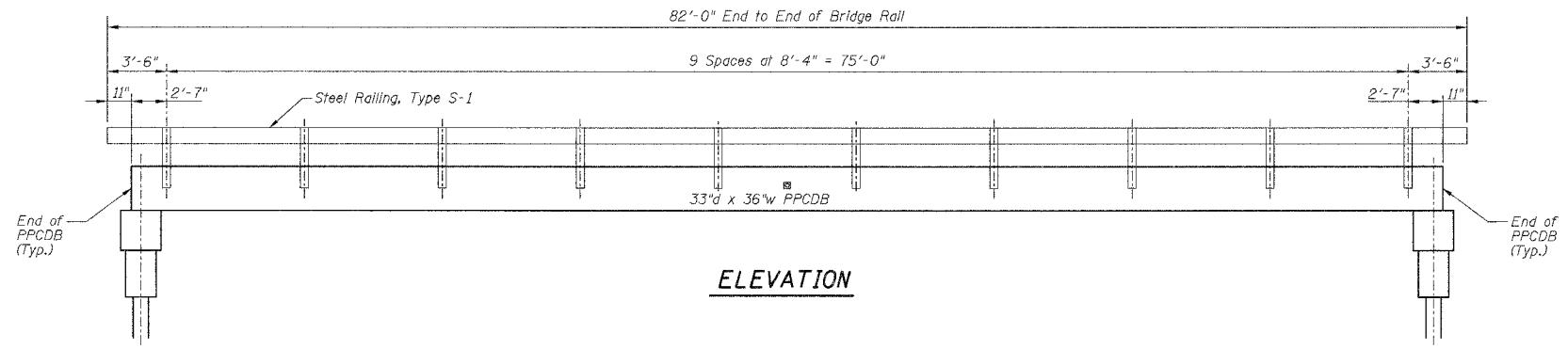
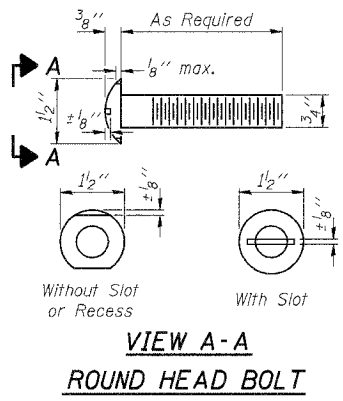
Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key.

Required Release Strength, f'ci, shall be 5000 p.s.i. (minimum).

Low-relaxation strands are required.

**PRECAST PRESTRESSED CONCRETE DECK BEAM DETAILS PROPOSED OVERFLOW BRIDGE FOR CASEY FORK TR 227 / STA. 31+42.00 SECTION 98-11120-00-BR JEFFERSON COUNTY, ILLINOIS**

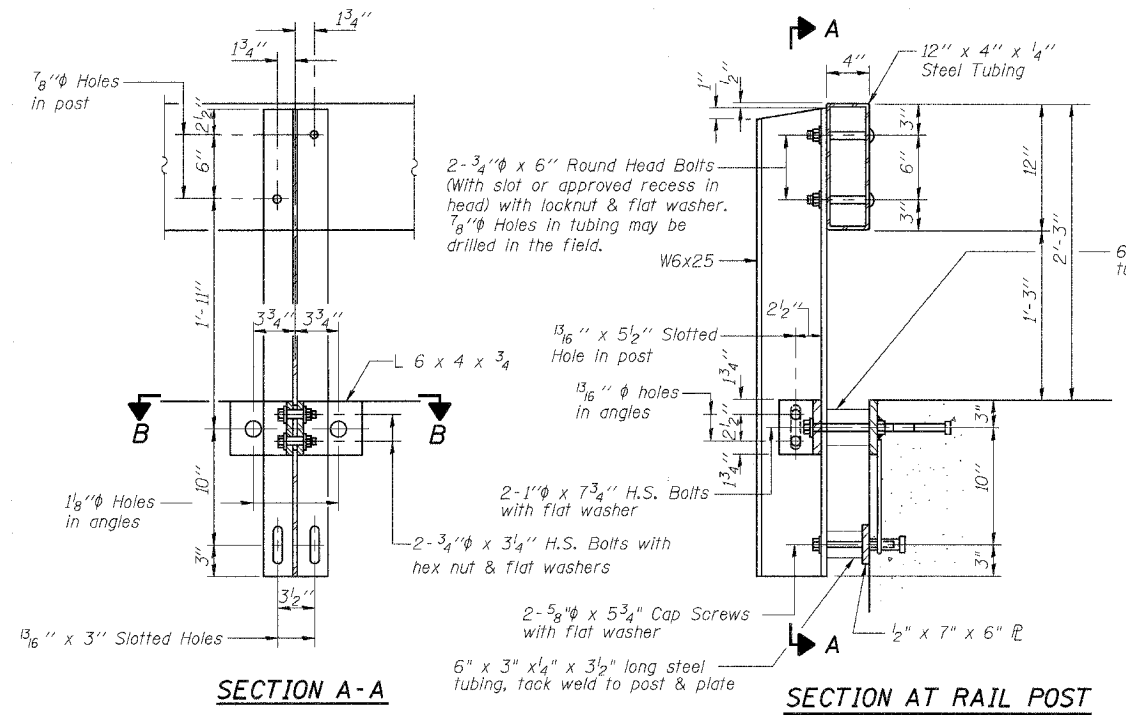
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	21
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT		
CONTRACT NO. 95437				



**ELEVATION**

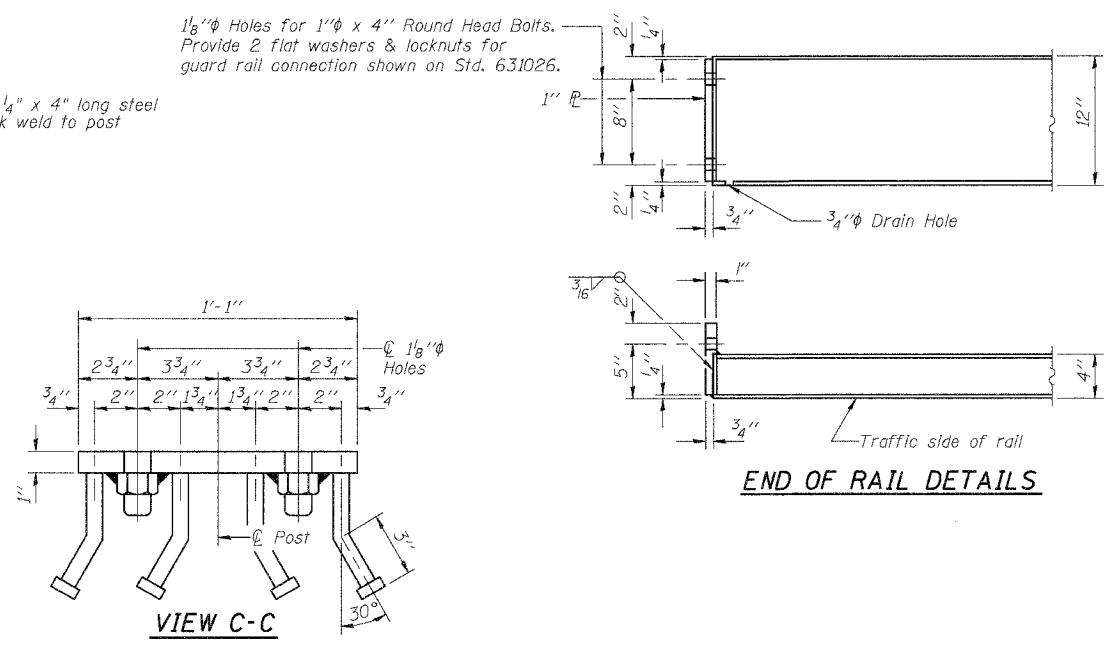
**NOTES**

- Hollow structural steel tubing shall conform to the requirements of ASTM designation A-500 Grade B Structural Steel Tubing and shall meet the longitudinal CVN requirements of 15 ft-lbs at 0° F.
- All other steel shapes and plates shall conform to the requirements of AASHTO M-270 Grade 36 except posts and angles shall conform to AASHTO M-270, Grade 50.
- Bolts, cap screws, and nuts shall conform to the requirement of ASTM designation A-307 except for high strength bolts, nuts and washers noted which shall conform to AASHTO M-164.
- All bolts, nuts, cap screws, washers and lock washers shall be galvanized in accordance with AASHTO M-232.
- All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with AASHTO M-111 and ASTM A-385. Galvanized rail shall not be painted.
- Railing shall be in accordance with Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for STEEL RAILING, TYPE S-1.
- All field drilled holes shall be coated with an approved zinc rich paint before erection.
- The lower portion of the post flange in contact with concrete shall receive two coats of asphalt paint conforming to Section 760.07 Type II or place 1/2" fabric bearing pad between the post and concrete.
- The 3/4" high strength bolts used to connect the 6 x 4 x 3/4 angles to the post shall be tightened in accordance with Article 505.04(f)(2) of the Standard Specifications. The 1" high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/2 turn. The 5/8" cap screws in bottom of posts shall be tightened to a snug fit only.



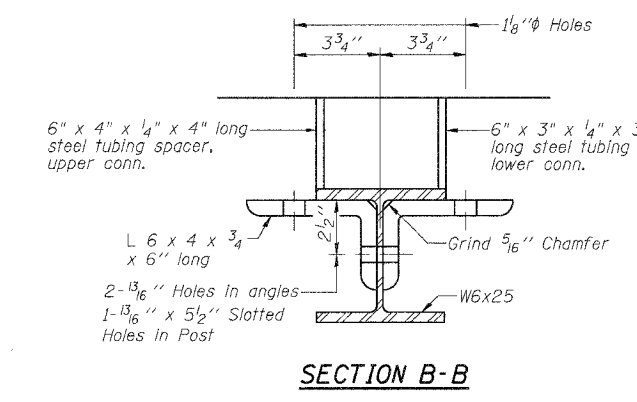
**SECTION A-A**

**SECTION AT RAIL POST**

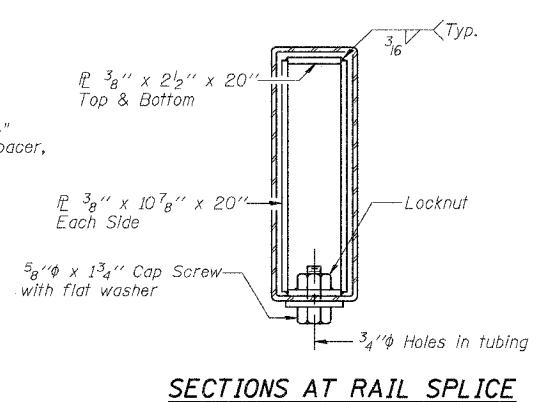


**END OF RAIL DETAILS**

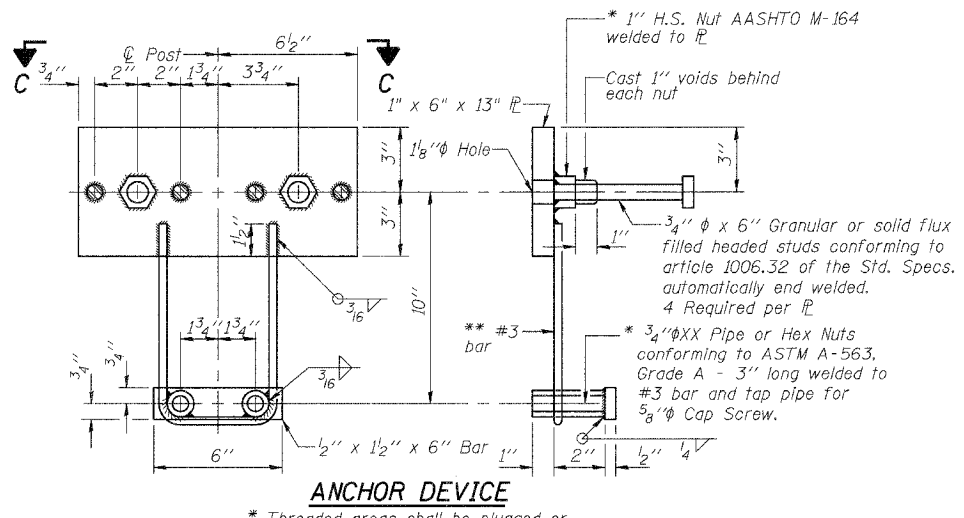
**VIEW C-C**



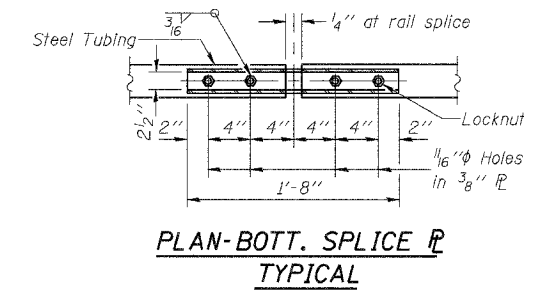
**SECTION B-B**



**SECTIONS AT RAIL SPLICE**



**ANCHOR DEVICE**



**PLAN-BOTT. SPLICE R TYPICAL**

**BILL OF MATERIAL**

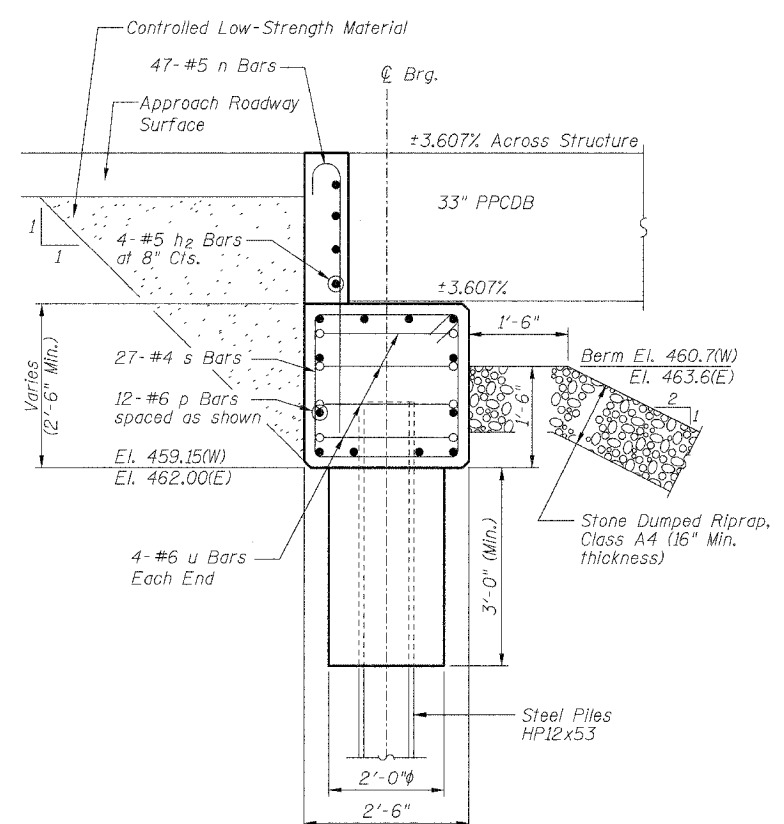
Item	Unit	Quantity
Steel Railing, Type S1	Foot	164

**STEEL RAILING, TYPE S1 DETAILS  
PROPOSED OVERFLOW BRIDGE  
FOR CASEY FORK  
TR 227 / STA. 31+42.00  
SECTION 98-11120-00-BR  
JEFFERSON COUNTY, ILLINOIS**

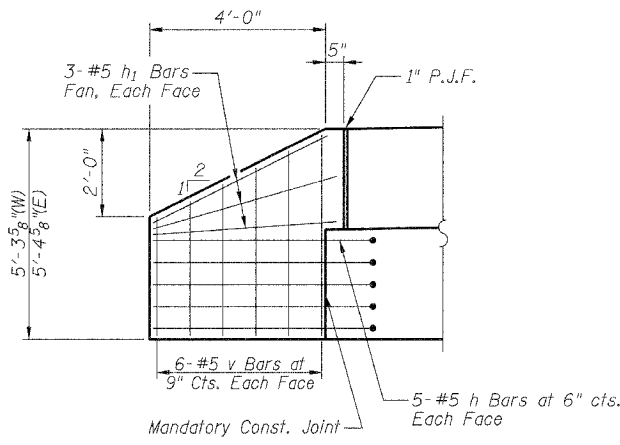
05/24/2005

\* Threaded areas shall be plugged or blocked off during casting of beam.  
\*\* Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".

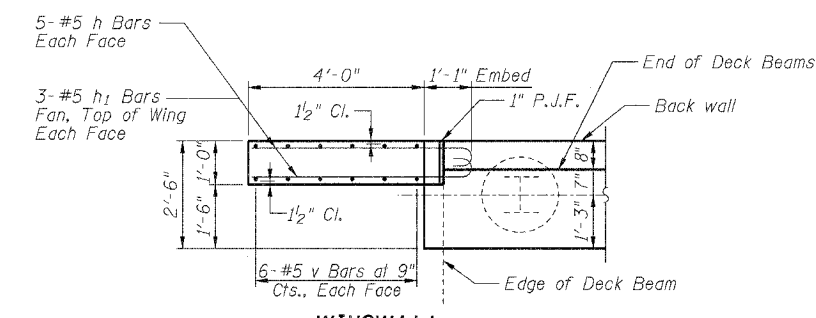
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	22
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT		
CONTRACT NO. 95437				



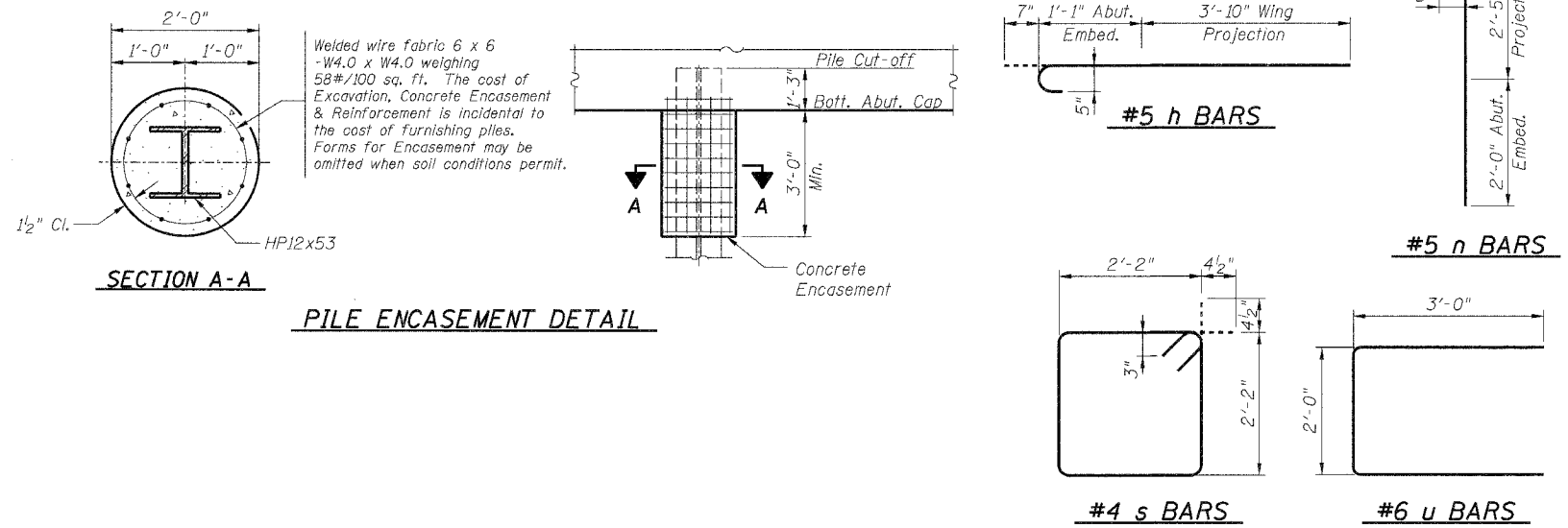
**SECTION THRU ABUTMENT**  
Normal to Abutment



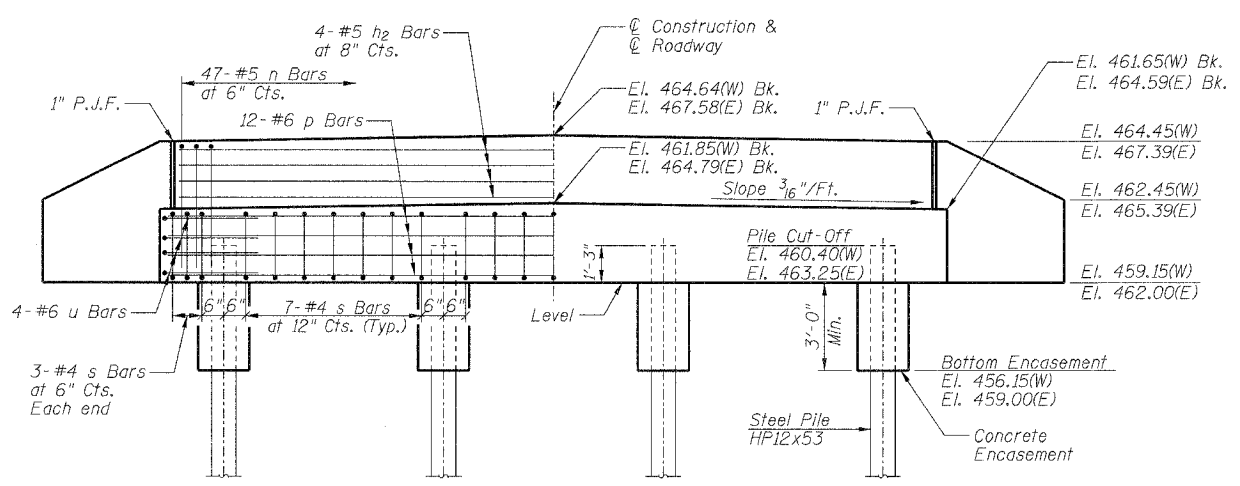
**ELEVATION OF WINGWALL**



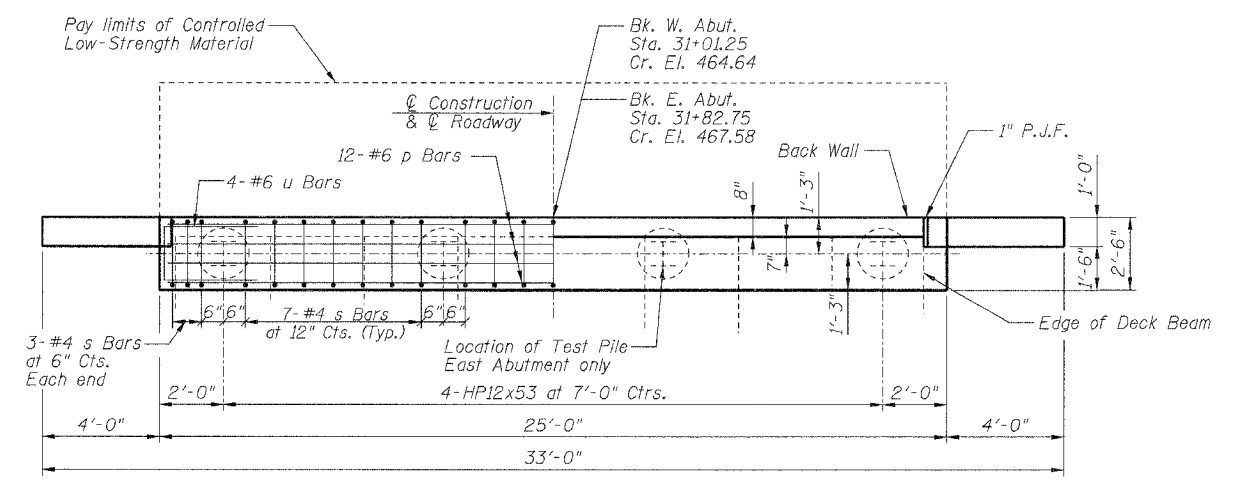
**WINGWALL CONNECTION DETAIL**



**PILE ENCASUREMENT DETAIL**



**ELEVATION**



**PLAN**

**PILE DATA**

Type:

West Abutment	HP12x53
East Abutment	HP12x53

Number Required:

West Abutment	4
East Abutment	3 + 1 Test Pile

Capacity: Drive to Refusal (Do not overdrive)

Estimated Length:

West Abutment	49 foot
East Abutment	52 foot

Total Estimated Length: (Does not include Test Pile)

Steel HP12x53	352 foot
---------------	----------

**BILL OF MATERIALS**  
**ONE ABUTMENT w/ WINGWALLS**

Bar	No.	Size	Length	Shape
h	20	#5	5'-6"	
h1	12	#5	4'-6"	
h2	4	#5	23'-8"	
n	47	#5	5'-0"	
p	12	#6	24'-8"	
s	27	#4	9'-5"	
u	8	#6	8'-0"	
v	24	#5	5'-0"	CUT IN FIELD
Concrete Structures			Cu Yd	9.2
Reinforcement Bars			Pound	1350

**GENERAL NOTES**

- All exposed edges shall have standard 3/4" chamfer, unless otherwise noted.
- All clearances between reinforcement bars and form surface shall be 2", unless otherwise noted.
- Space reinforcement in cap to miss PPCDB dowel rods.
- The Contractor shall drive one (1) Steel HP12x53 Test Pile in a permanent location at the East Abutment as directed by the Engineer before ordering the remainder of the piles.
- (W) = West Abutment.
- (E) = East Abutment.

**ABUTMENT DETAILS**  
**PROPOSED OVERFLOW BRIDGE**  
**FOR CASEY FORK**  
**TR 227 / STA. 31+42.00**  
**SECTION 98-11120-00-BR**  
**JEFFERSON COUNTY, ILLINOIS**

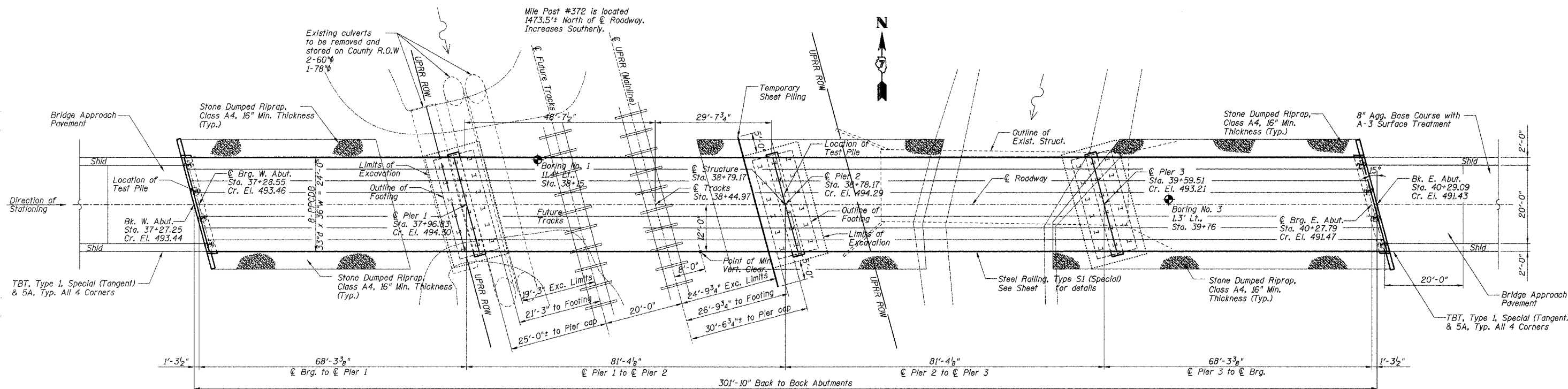
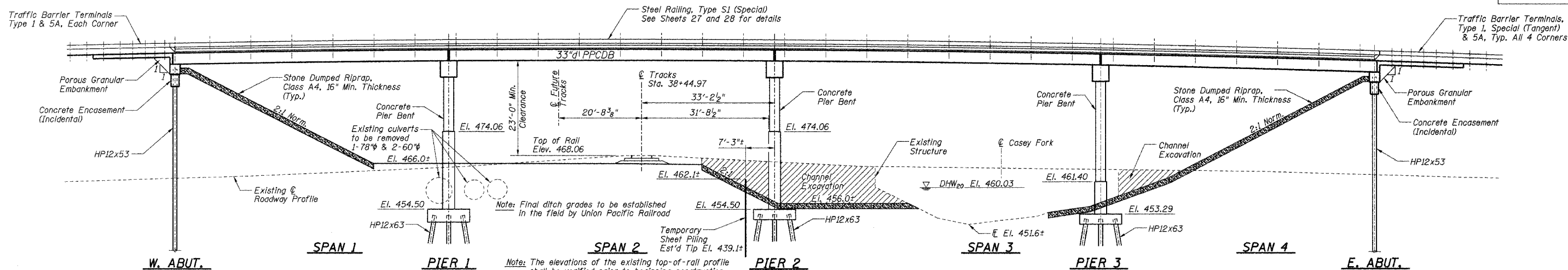
05/24/2005

TBM 10-14-98"D" - Double 60d nails in South face of power pole, 34.88' Lt. of Sta. 38+62.96 - Elev. 463.44

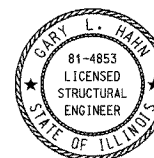
TBM 10-14-98"E" - Double 60d nails in South face of power pole, 21.06' Lt. of Sta. 43+10.83 - Elev. 460.64

Existing Structure: Three span bridge with timber deck, abutments, piers and wingwalls and steel stringers, 63'L x 18'W adjacent to at-grade railroad crossing (UPRR Milepost 273.13CC and USDOT #167745C)

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	23
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT		
CONTRACT NO. 95437				



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



GARY L. HAHN  
81-4853  
LICENSED  
STRUCTURAL  
ENGINEER  
CENTRALIA, ILLINOIS  
ENGINEER NO. 81-4853  
EXPIRES NOV. 30, 2006

**GENERAL PLAN AND ELEVATION**  
**PROPOSED BRIDGE OVER**  
**UNION PACIFIC RAILROAD AND CASEY FORK**  
**TR 227 (GREEN ROAD)**  
**SECTION 98-11120-00-BR**  
**JEFFERSON COUNTY, ILLINOIS**

Sheet  
23  
of 35  
Job No. 52303

**WATERWAY DATA**  
See Sheet 24 of 35

**SEISMIC DESIGN**

Seismic Performance Category (SPC) = B  
Bedrock Acceleration Coefficient (A) = 0.10g  
Site Coefficient (S) = 1.5

**DESIGN SPECIFICATIONS**

AASHTO - 2002 17th Edition

**LOADING HS 20-44**

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

**DESIGN STRESSES**

**FIELD UNITS**

$f'_c = 3,500$  psi  
 $f_y = 60,000$  psi

**PRECAST PRESTRESSED UNITS**

Spans 1 and 4  
 $f'_c = 5,000$  psi  
 $f'_{ci} = 4,000$  psi  
 $f'_s = 270,000$  psi ( $\frac{1}{2}$ " strands)  
 $f'_{si} = 189,000$  psi ( $\frac{1}{2}$ " strands)

**PRECAST PRESTRESSED UNITS**

Spans 2 and 3  
 $f'_c = 6,000$  psi  
 $f'_{ci} = 5,000$  psi  
 $f'_s = 270,000$  psi ( $\frac{1}{2}$ " strands)(Low Relaxation)  
 $f'_{si} = 202,500$  psi ( $\frac{1}{2}$ " strands)(Low Relaxation)

05/24/2005

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	24
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT		
CONTRACT NO. 95437				

### GENERAL NOTES

See Section 502 of the Standard Specifications for Structural Excavation.

The Contractor shall drive one (1) Steel HP12x53 Test Pile in a permanent location at the East Abutment and one (1) Steel HP12x63 Test Pile in a permanent location at Pier No. 2 as directed by the Engineer before ordering the remainder of the piles.

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

Channel excavation shall be excavated as shown within the limits of the proposed bridge, then tapered to the existing channel at the ROW line. If the Engineer deems the material satisfactory, it may be used to construct the roadway embankment.

Reinforcement Bars shall conform to AASHTO M-31, M-42, or M-53, Grade 60 requirements.

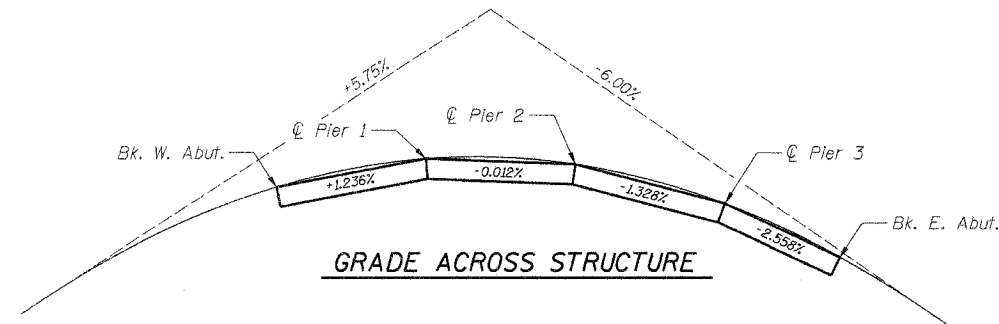
See Specifications for Soil Borings.

Do not scale these drawings.

In addition to all other requirements of section 512 of the Standard Specifications, splices for Steel H-piles shall develop the full capacity of the steel's cross sectional area of the pile for tension, shear and bending forces. One approved method of achieving this requirement is full penetration butt welding of the entire cross section. Other types of splices meeting the full capacity requirement may be allowed subject to the approval of the Engineer. Any proposal by the Contractor to use an alternate splice method must include adequate documentation demonstrating that the full tension, shear and bending capacities will be met. Appropriate welder qualifications will be required for the positions and processes used in splicing all piles. Nondestructive testing of completed welds will be limited to visual inspection.

### BILL OF MATERIAL (BRIDGE ONLY)

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu Yd	-	1152	1152
Porous Granular Embankment	Ton	-	99	99
Stone Dumped Riprap, Class A4	Ton	-	550	550
Removal of Existing Structures	Each	-	-	1
Concrete Structures	Cu Yd	-	259.6	259.6
Precast Prestressed Concrete Deck Beams (33" Depth)	Sq Ft	7198	-	7198
Reinforcement Bars	Pound	-	36030	36030
Steel Railing, Type S1 (Special)	Foot	604	-	604
Furnishing Steel Piles HP12x53	Foot	-	544	544
Furnishing Steel Piles HP12x63	Foot	-	2297	2297
Driving Steel Piles	Each	-	2871	2841
Test Pile Steel HP12x53	Each	-	1	1
Test Pile Steel HP12x63	Each	-	1	1
Temporary Sheet Piling	Sq Ft	-	920	920
Names Plates	Each	-	1	1

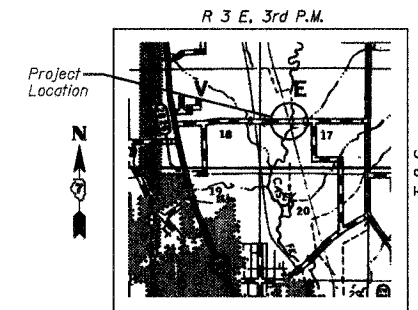


GRADE ACROSS STRUCTURE

UNION PACIFIC RR AND CASEY FORK  
 BUILT 200 BY  
 JEFFERSON COUNTY  
 SEC. 98-11120-00-BR  
 LOADING HS-20  
 STRUCTURE NO. 041-9928

### NAME PLATE

(See State Standard 515001 for details)



LOCATION SKETCH

### WATERWAY DATA

Drainage Area = 34.20 Sq. Mi. Low Grade Elev. 462.00 @ Sta. 29+00

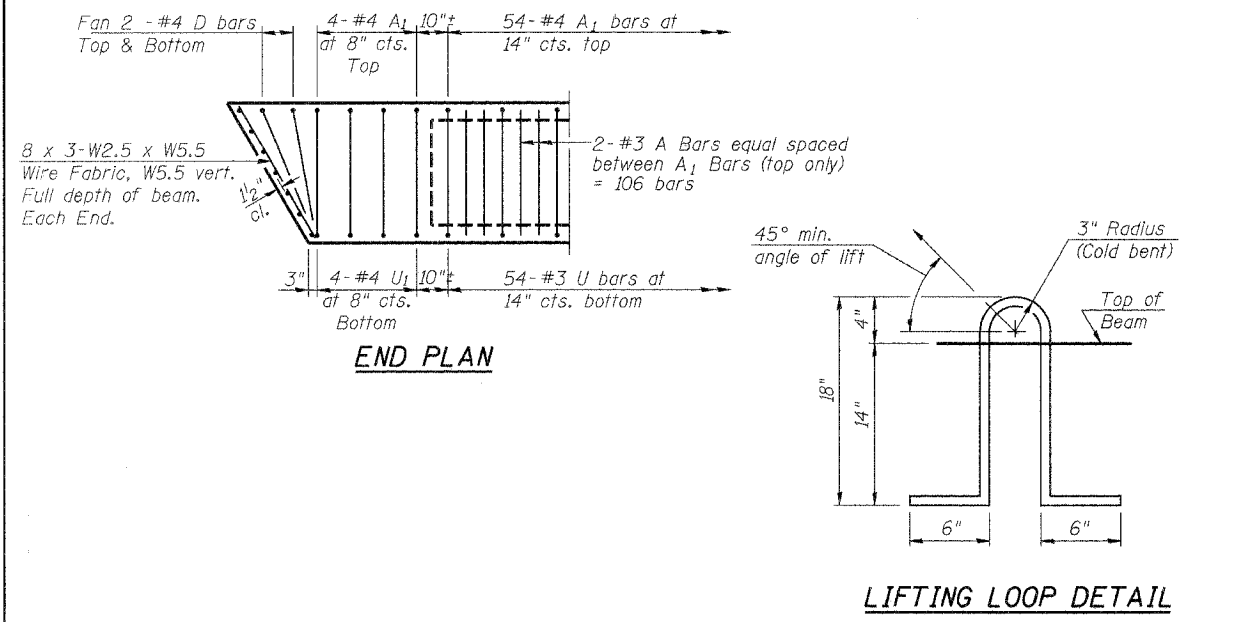
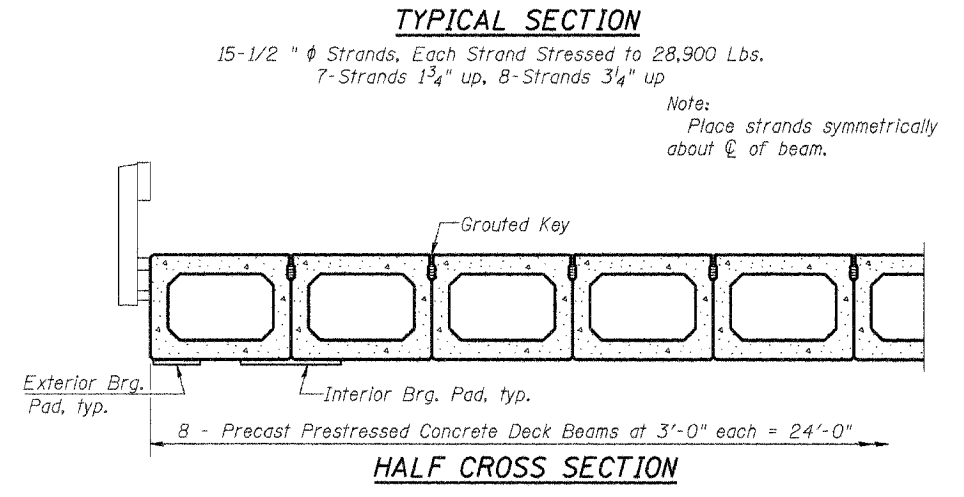
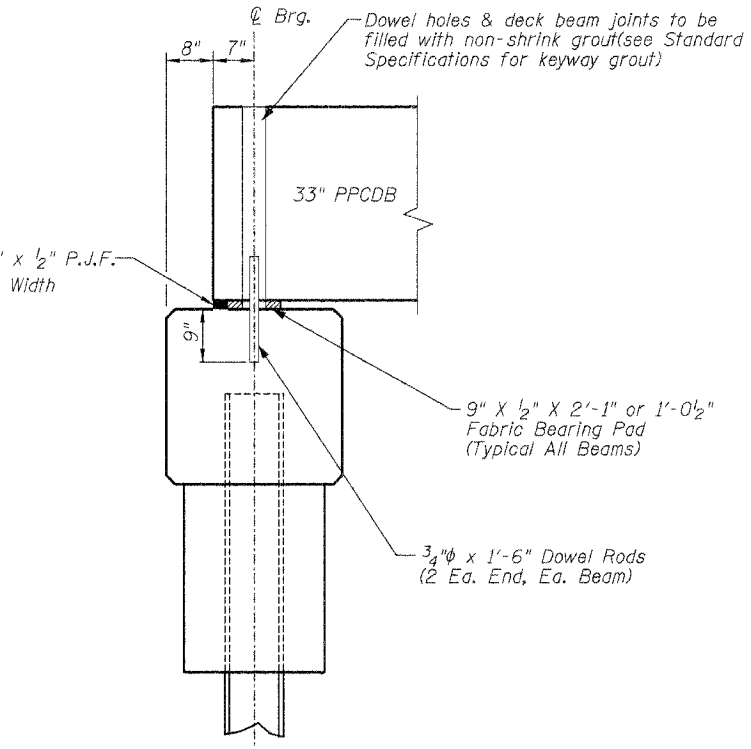
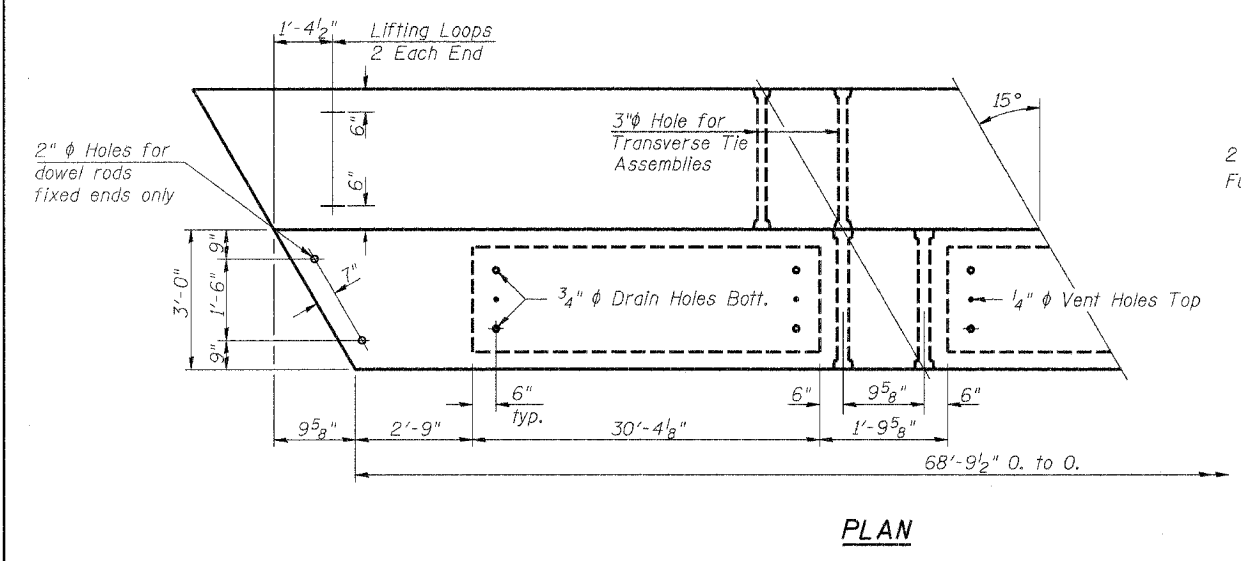
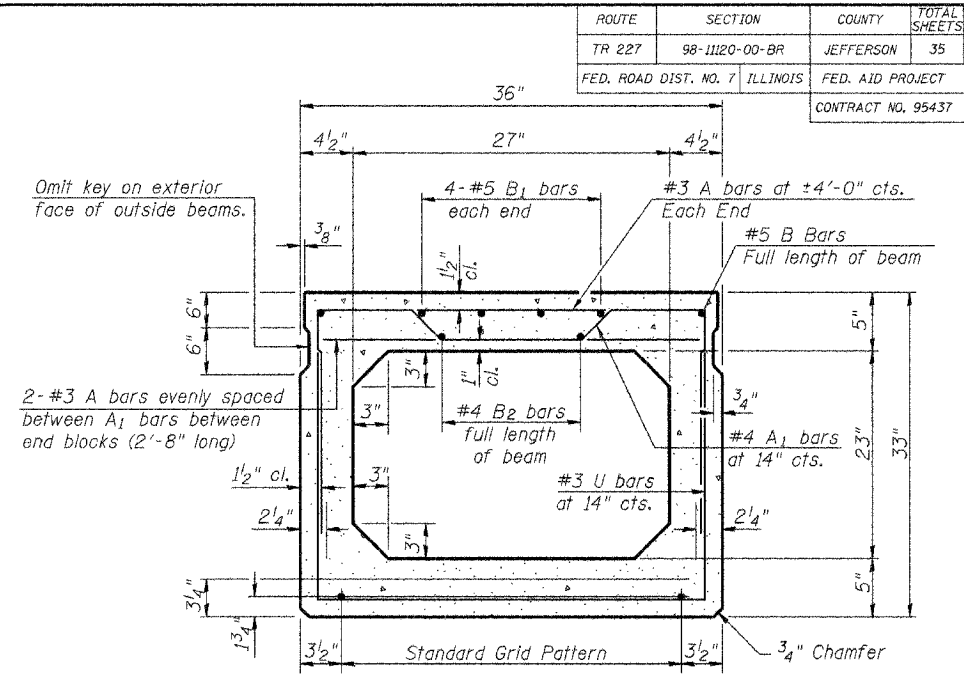
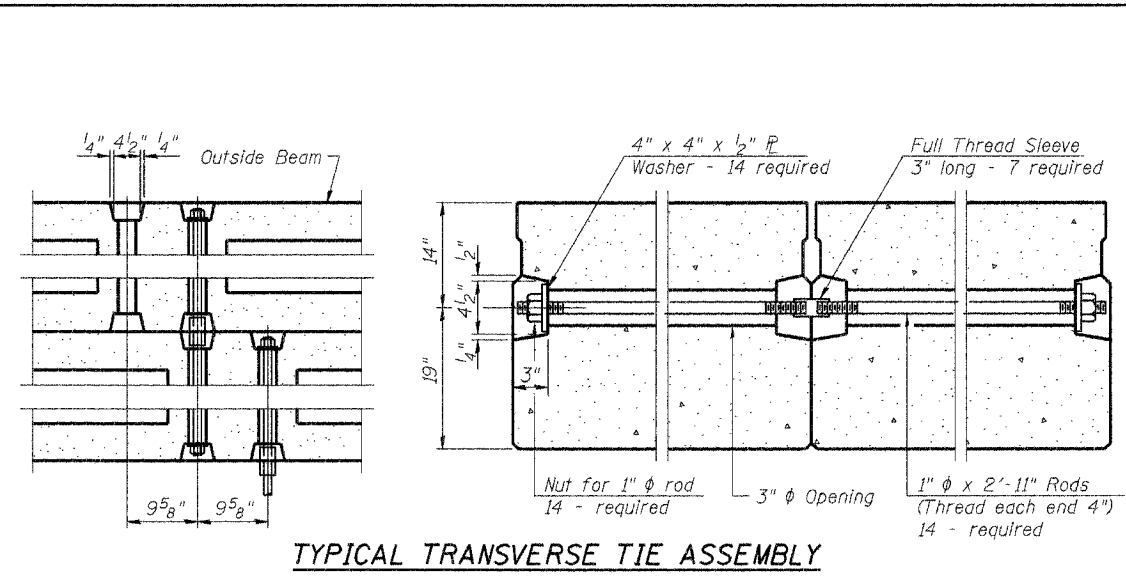
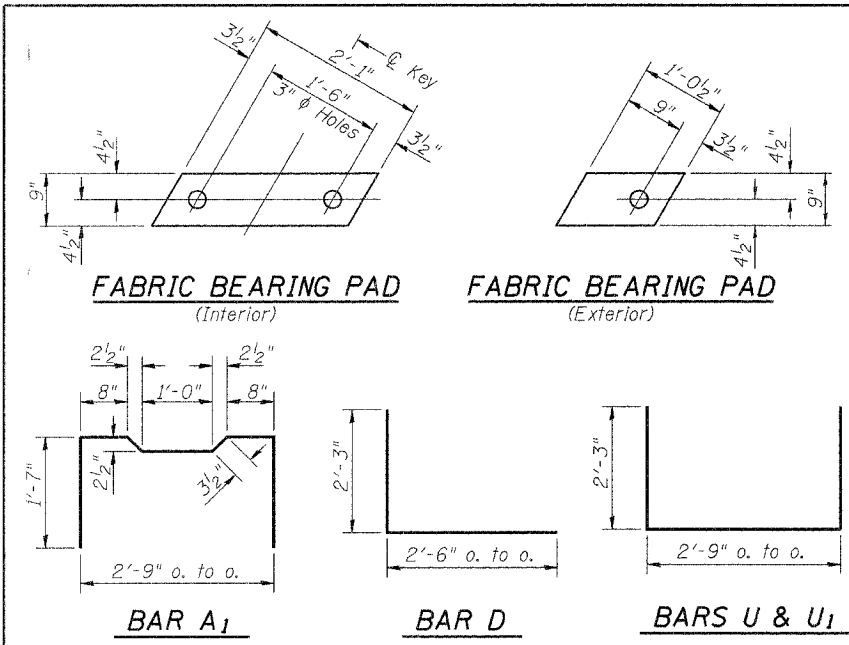
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Natural H.W.E.		Head - Ft.		Headwater El.	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	20	3538	392	766	460.06	0.54	0.50	460.57	460.53	
Base	100	4920	436	868	460.62	0.45	0.64	461.07	461.26	
Max. Calc.	500	6173	472	947	461.09	0.38	0.78	461.47	461.87	

GENERAL DATA  
 PROPOSED BRIDGE OVER  
 UNION PACIFIC RAILROAD AND CASEY FORK  
 TR 227 (GREEN ROAD)  
 SECTION 98-11120-00-BR  
 JEFFERSON COUNTY, ILLINOIS

Sheet  
24  
of 35  
Job No. 52303

05/24/2005





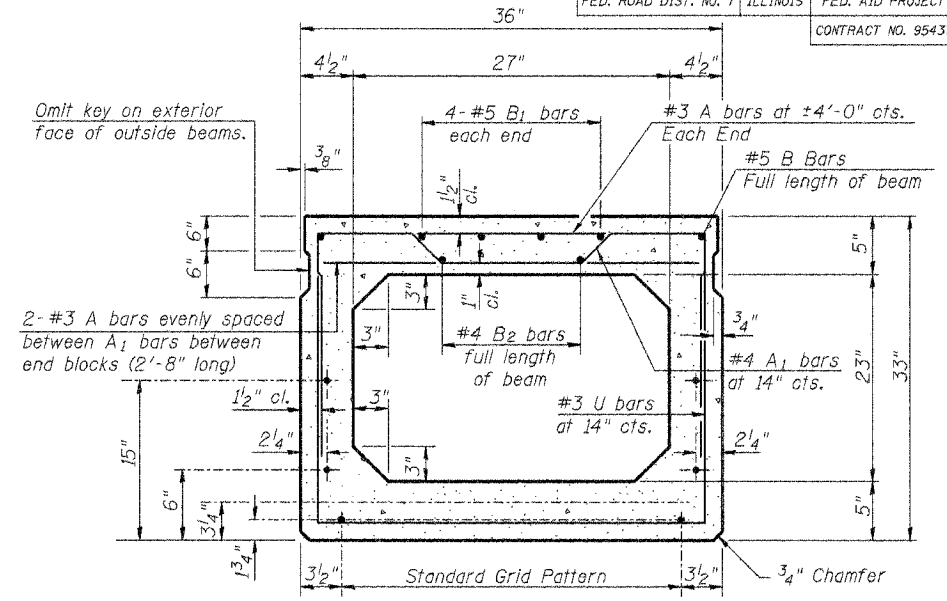
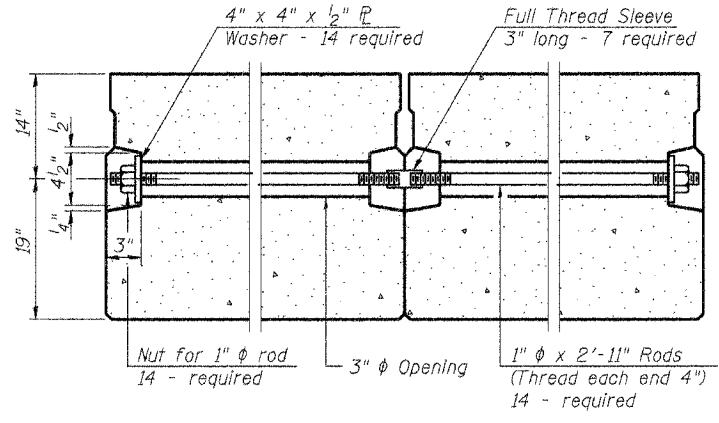
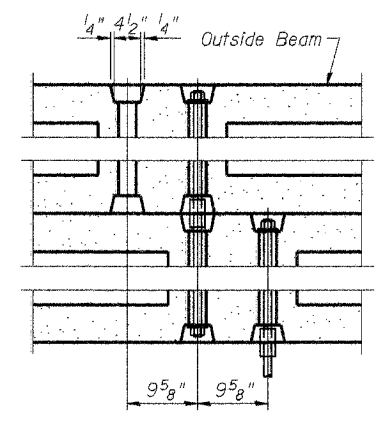
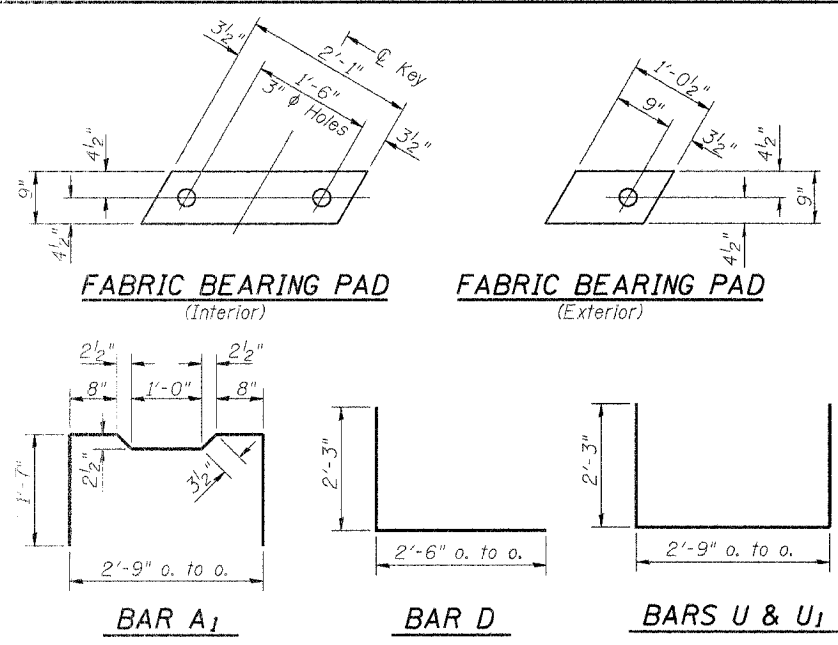
**RESTRAINED BEARING ABUTMENT NOTES**

Prestressing steel shall be uncoated high strength, stress-relieved 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. Lifting loops shall be 3 - 1/2" phi - 270 ksi strands, as shown. The 1" phi rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place. Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53 Grade 60. The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/8" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing. Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key. Required Release Strength, f'ci, shall be 4000 p.s.i. (minimum). An equal substitution of low-relaxation strands for the stressed-relieved strands will be permitted. However, the initial prestressing force shall be the same as for the stress-relieved strands. (28,900 lbs.)

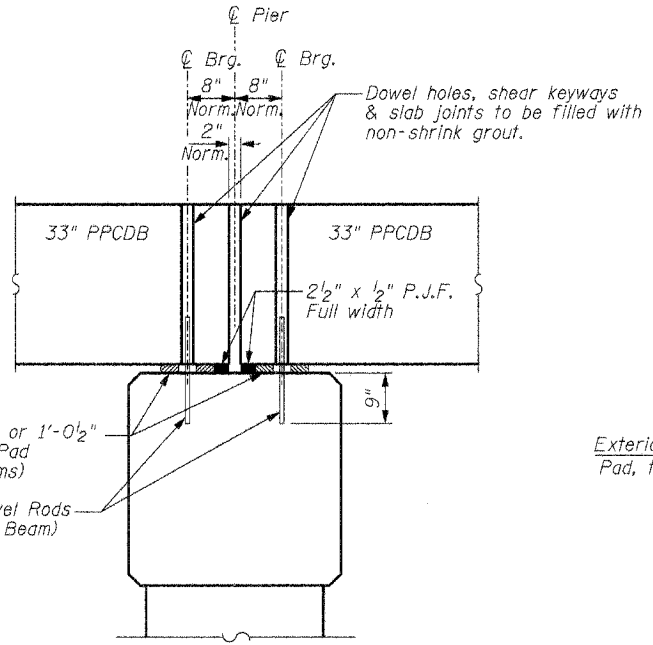
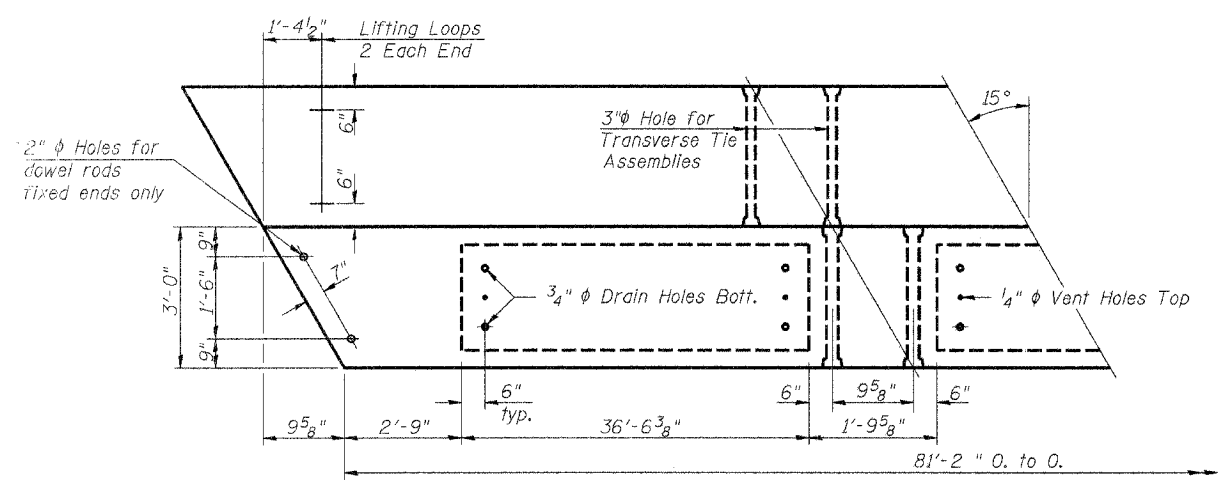
**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape	
A	114	#3	2'-8"	—	
A1	62	#4	6'-1"	U	
B	4	#5	35'-9"	—	
B1	8	#5	13'-9"	—	
B2	4	#4	35'-9"	—	
D	8	#4	4'-9"	U	
U	54	#3	7'-3"	U	
U1	8	#4	7'-3"	U	
Precast Prestressed Conc. Deck Beams				Sq. Ft.	207
Reinforcement Bars				Pound	940
Total Weight Ea. Beam				Pound	47000

**SPAN 1 OR 4**  
**PRECAST PRESTRESSED CONCRETE DECK BEAM DETAILS**  
**PROPOSED BRIDGE OVER UNION PACIFIC RAILROAD AND CASEY FORK TR 227 (GREEN ROAD) SECTION 98-1120-00-BR JEFFERSON COUNTY, ILLINOIS**

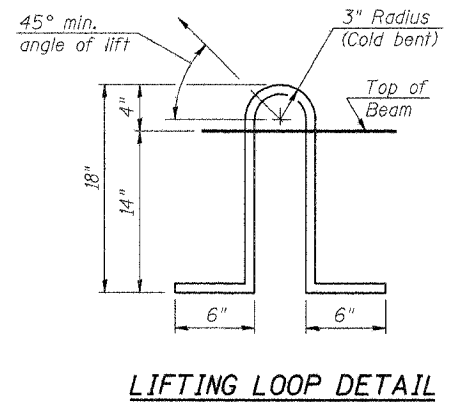
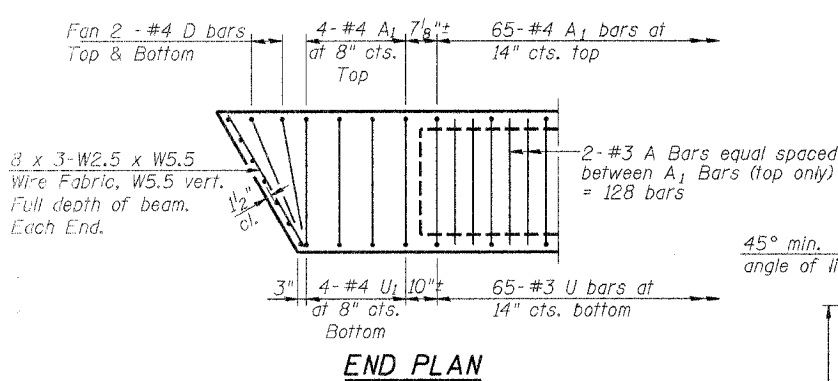


**TYPICAL SECTION**  
 21 - 1/2" φ Strands Each Strand Stressed to 31,000 Lbs.  
 9-Strands 1 3/4" up, 8-Strands 3/4" up  
 2-Strands 6" up, 2-Strands 15" up  
 Note:  
 Place strands symmetrically about centerline of beam.



**NOTES**

Prestressing steel shall be uncoated high strength, Low-relaxation 7-wire strand, Grade 270.  
 The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.  
 Lifting loops shall be 3 - 1/2" φ - 270 ksi strands, as shown.  
 The 1" φ rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place.  
 Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53 Grade 60.  
 The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/8" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.  
 Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key.  
 Required Release Strength, f'ci, shall be 5000 p.s.i. (minimum).  
 Low-relaxation strands are required.



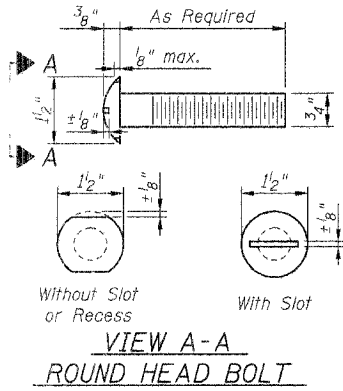
**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
A	138	#3	2'-8"	—
A <sub>1</sub>	73	#4	6'-1"	⌊
B	6	#5	29'-0"	—
B <sub>1</sub>	8	#5	16'-3"	—
B <sub>2</sub>	6	#4	29'-0"	—
D	8	#4	4'-9"	⌊
U	65	#3	7'-3"	⌊
U <sub>1</sub>	8	#4	7'-3"	⌊
Precast Prestressed Conc. Deck Beams			Sq. Ft.	244
Reinforcement Bars			Pound	1110
Total Weight Ea. Beam			Pound	54550

**SPAN 2 OR 3**  
**PRECAST PRESTRESSED CONCRETE DECK BEAM DETAILS**  
**PROPOSED BRIDGE OVER UNION PACIFIC RAILROAD AND CASEY FORK TR 227 (GREEN ROAD) SECTION 98-11120-00-BR JEFFERSON COUNTY, ILLINOIS**

Sheet 26 of 35  
 Job No. 52303

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	27
FED. ROAD DIST. NO. 7	ILLINOIS	FEDERAL AID PROJECT		
CONTRACT NO. 95437				



SEE SHEET 28 OF 35 FOR RAIL POST SPACING

NOTES

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

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

Bolts, cap screws, and nuts shall conform to the requirement of ASTM designation A-307 except for High Strength bolts, nuts and washers noted which shall conform to AASHTO M-164.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized in accordance with AASHTO M-232.

All posts, railing, rail splices, end sections, anchor devices and angles shall be galvanized after shop fabrication in accordance with AASHTO M-111 and ASTM A-385. Galvanized rail shall not be painted.

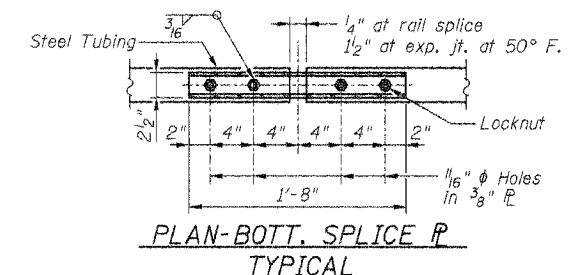
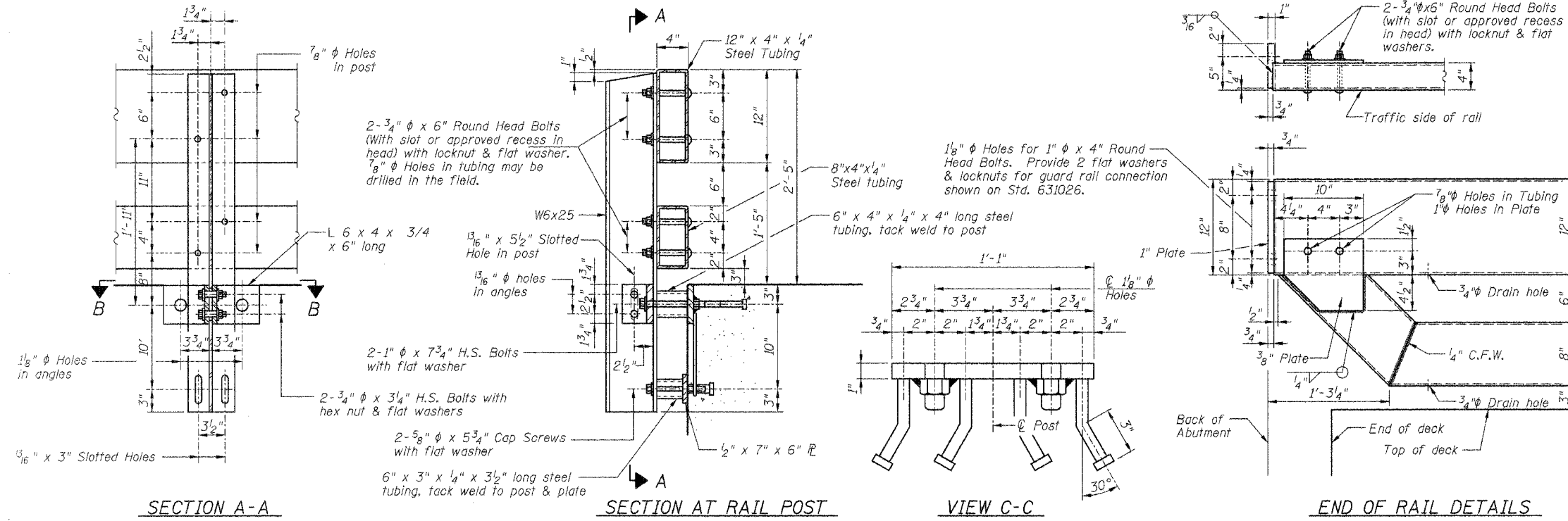
Railing shall be in accordance with Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for STEEL RAILING, TYPE S1 (SPECIAL).

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

Any steel shape in contact with concrete shall receive two coats of asphalt paint conforming to Section 1060.07 Type II or place 1/8 inch fabric bearing pad between the steel and concrete.

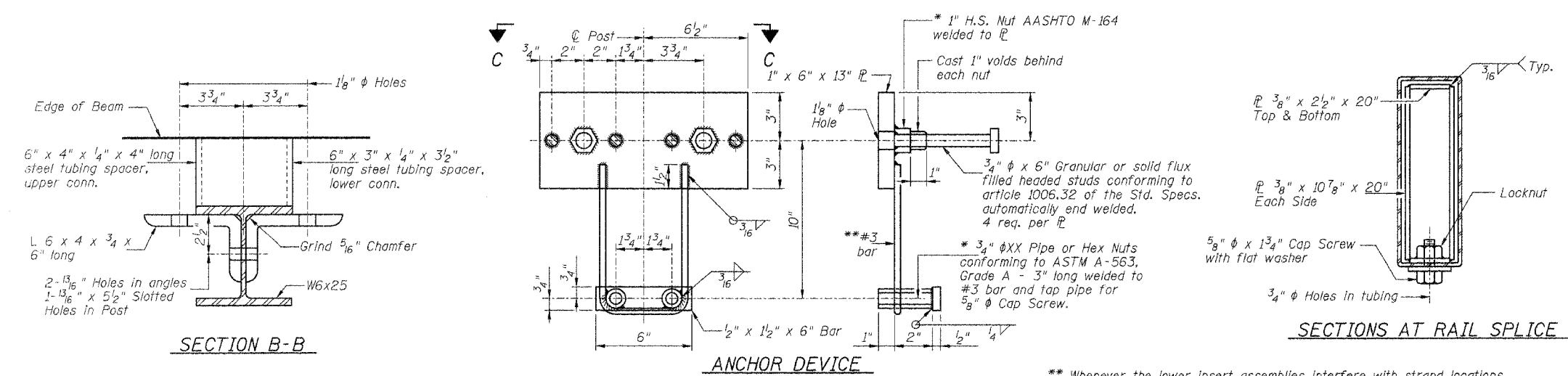
The 3/4 inch high strength bolts used to connect the 6 x 4 x 3/4 angles to the post shall be tightened in accordance with Article 505.04(F)(2) of the Standard Specifications. The 1 inch High Strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional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

For Multi-span bridges, sufficient 1/4 x 6 x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost incidental to steel railing.



BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S1 (Special)	Foot	604

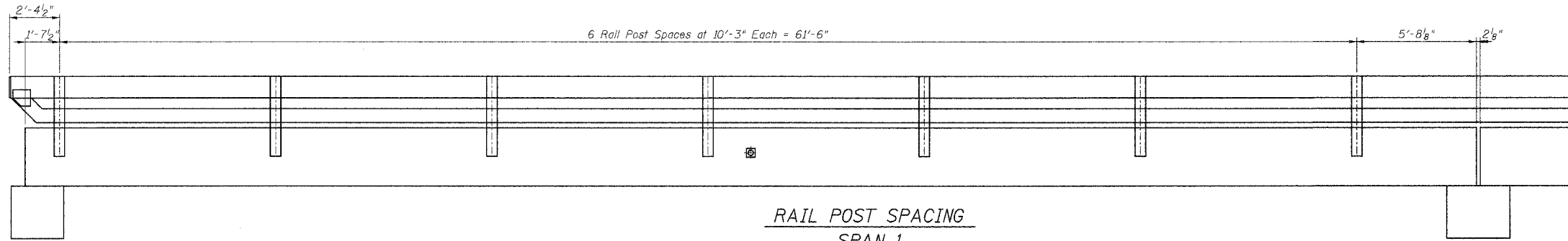


\*\* Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2 inch.

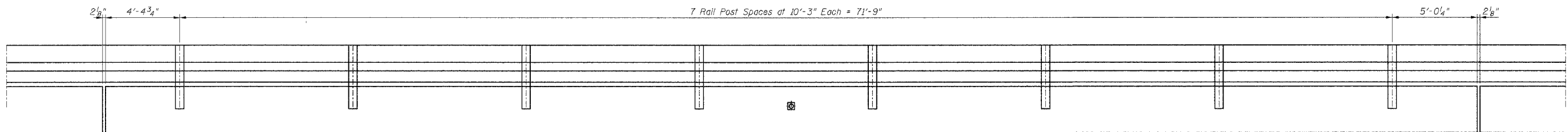
\* Threaded areas shall be plugged or blocked off during casting of beam.

TYPE S1 (SPECIAL) STEEL RAILING DETAILS  
PROPOSED BRIDGE OVER  
UNION PACIFIC RAILROAD AND CASEY FORK  
TR 227 (GREEN ROAD)  
SECTION 98-11120-00-BR  
JEFFERSON COUNTY, ILLINOIS

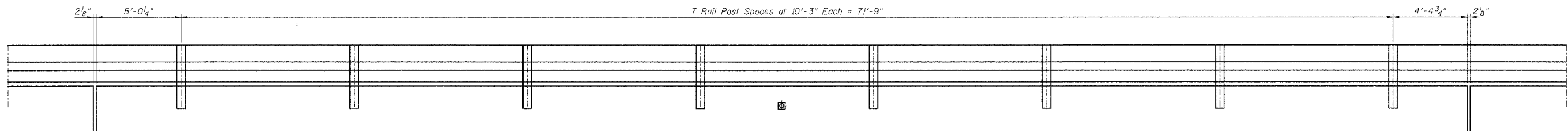
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	28
FED. ROAD DIST. NO. 7	ILLINOIS	FEDERAL AID PROJECT		
CONTRACT NO. 95437				



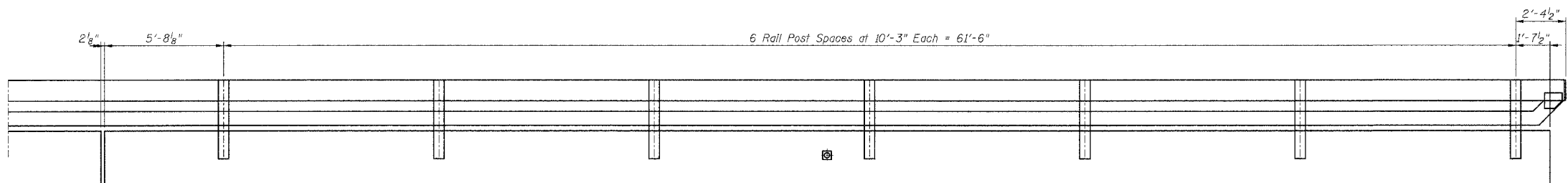
RAIL POST SPACING  
SPAN 1  
(Looking North)



RAIL POST SPACING  
SPAN 2  
(Looking North)



RAIL POST SPACING  
SPAN 3  
(Looking North)



RAIL POST SPACING  
SPAN 4  
(Looking North)

RAILING POST SPACING  
PROPOSED BRIDGE OVER  
UNION PACIFIC RAILROAD AND CASEY FORK  
TR 227 (GREEN ROAD)  
SECTION 98-11120-00-BR  
JEFFERSON COUNTY, ILLINOIS

05/24/2005

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	29
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT	CONTRACT NO. 95437	

**PILE DATA**

Type:  
 West Abutment Steel HP12x53  
 East Abutment Steel HP12x53

Number Required:  
 West Abutment 3+1 Test Pile  
 East Abutment 4

Capacity: Drive to Refusal

Estimated Length:  
 West Abutment 80 foot  
 East Abutment 76 foot

Total Estimated Length:  
 (Does not include Test Pile)  
 Steel HP12x53 544 foot

**BILL OF MATERIALS**  
**ONE ABUTMENT w/ WINGWALLS**

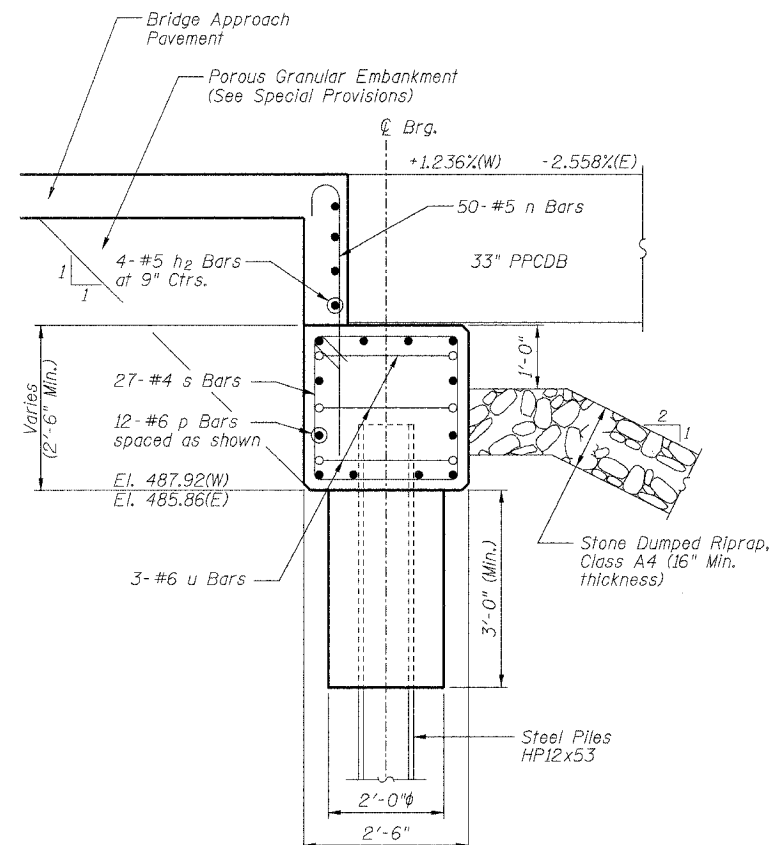
Bar	No.	Size	Length	Shape
h	20	#5	5'-6"	U
h <sub>1</sub>	12	#5	4'-3"	—
h <sub>2</sub>	4	#5	24'-6"	—
n	50	#5	5'-3"	—
p	12	#6	25'-6"	—
s	22	#4	9'-5"	□
u	6	#6	8'-3"	□
v	24	#5	5'-0"	CUT IN FIELD
Concrete Structures			Cu. Yd.	9.3
Reinforcement Bars			Pound	1340

**GENERAL NOTES**

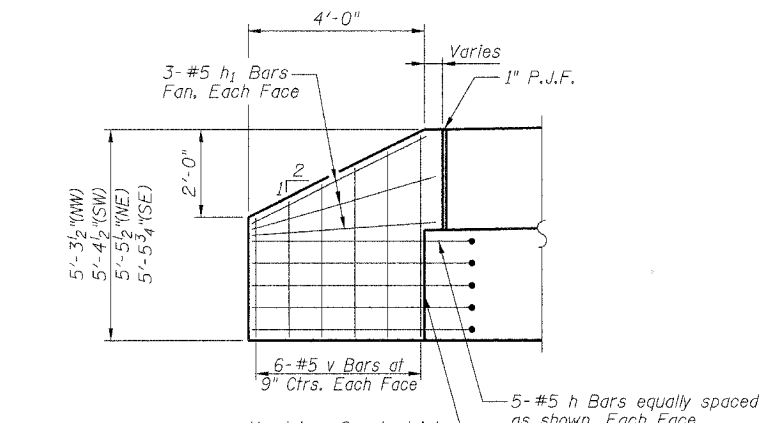
All exposed edges shall have standard 3/4" chamfer, unless otherwise noted.

All clearances between reinforcement bars and form surface shall be 2", unless otherwise noted.

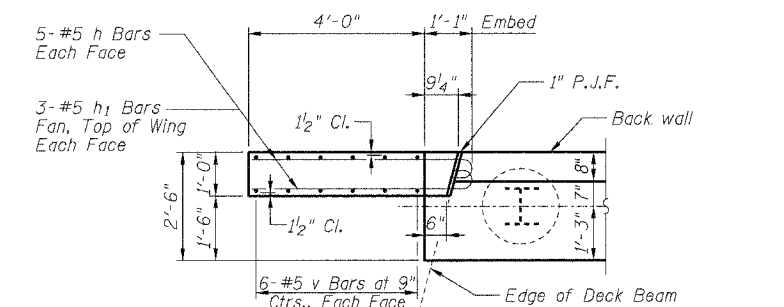
The Contractor shall drive one (1) Steel HP12x53 Test Pile in a permanent location at the West Abutment as directed by the Engineer before ordering the remainder of the piles.



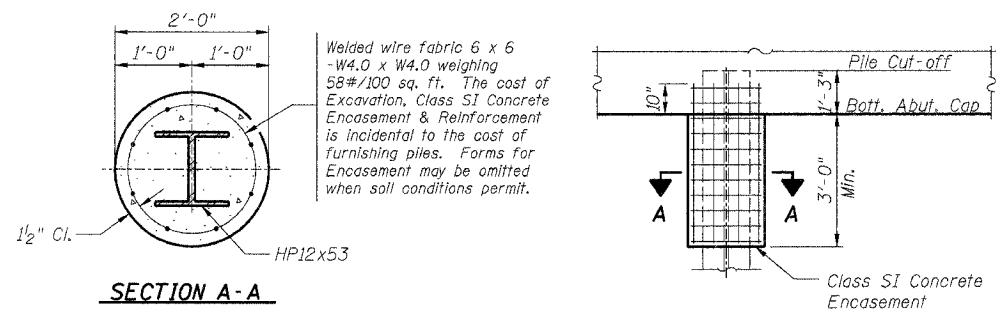
**SECTION THRU ABUTMENT**  
 Normal to Abutment



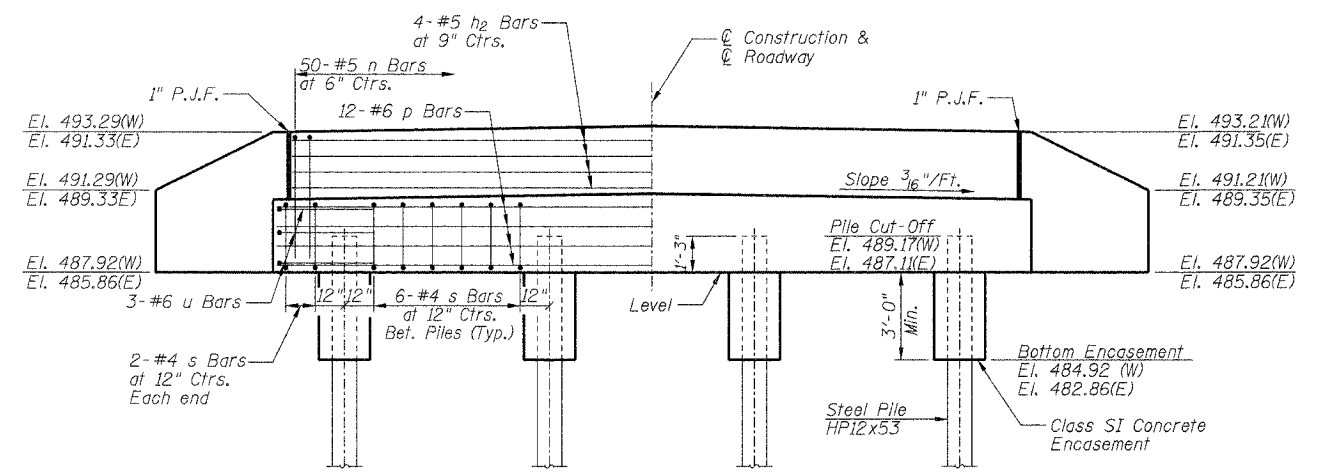
**ELEVATION OF WINGWALL**



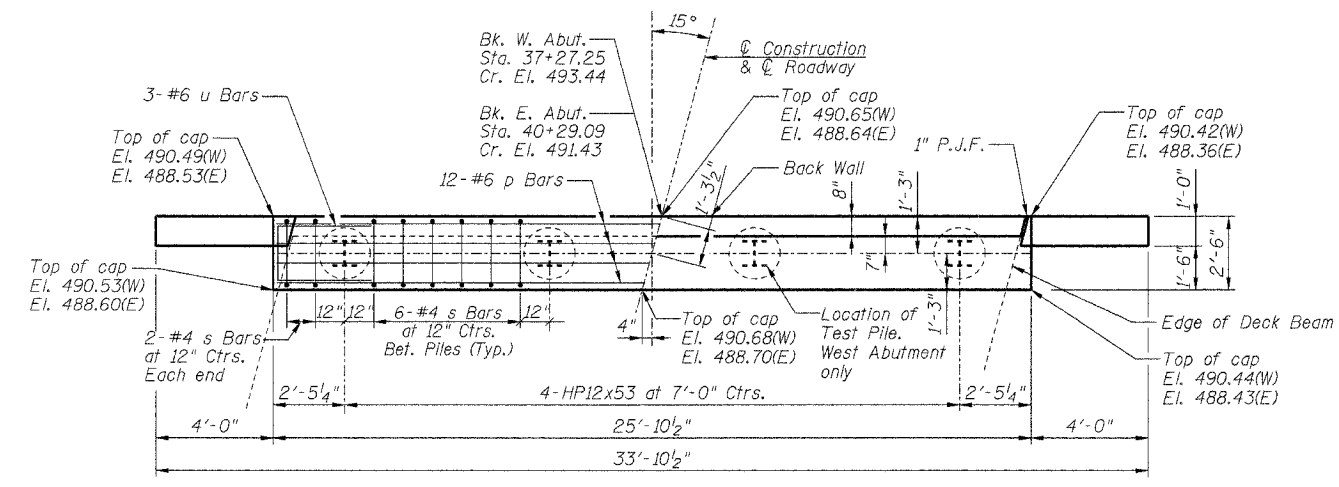
**WINGWALL CONNECTION DETAIL**



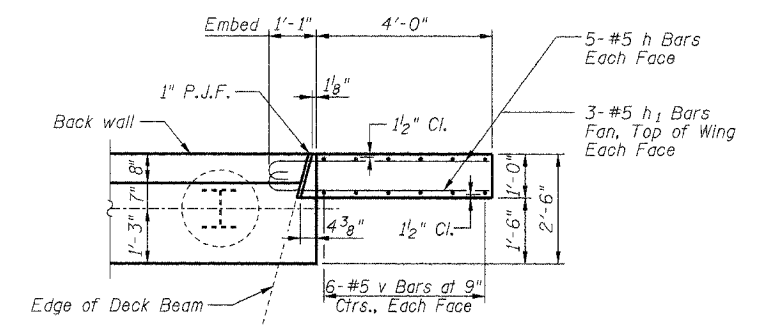
**SECTION A-A**  
**PILE ENCASEMENT DETAIL**



**ELEVATION**



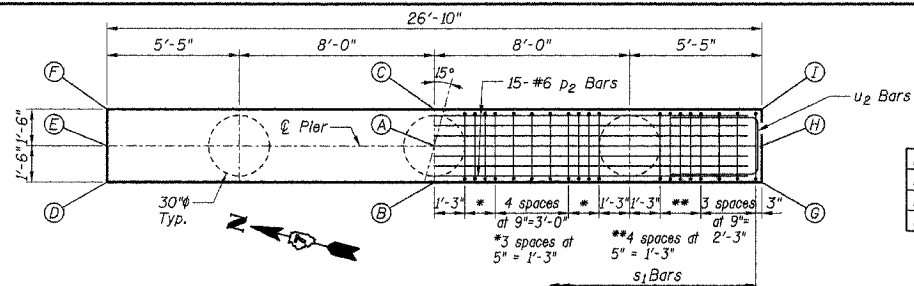
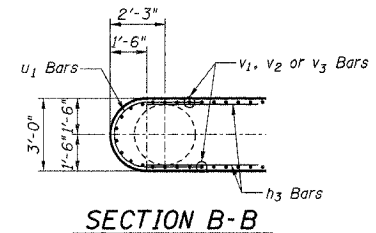
**PLAN**



**WINGWALL CONNECTION DETAIL**

**ABUTMENT DETAILS**  
**PROPOSED BRIDGE OVER**  
**UNION PACIFIC RAILROAD AND CASEY FORK**  
**TR 227 (GREEN ROAD)**  
**SECTION 98-11120-00-BR**  
**JEFFERSON COUNTY, ILLINOIS**

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-1120-00-BR	JEFFERSON	35	30
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 95437				

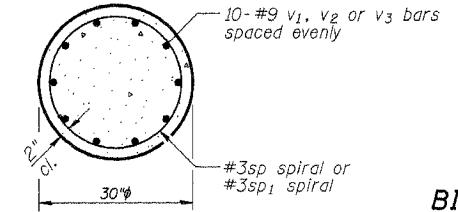
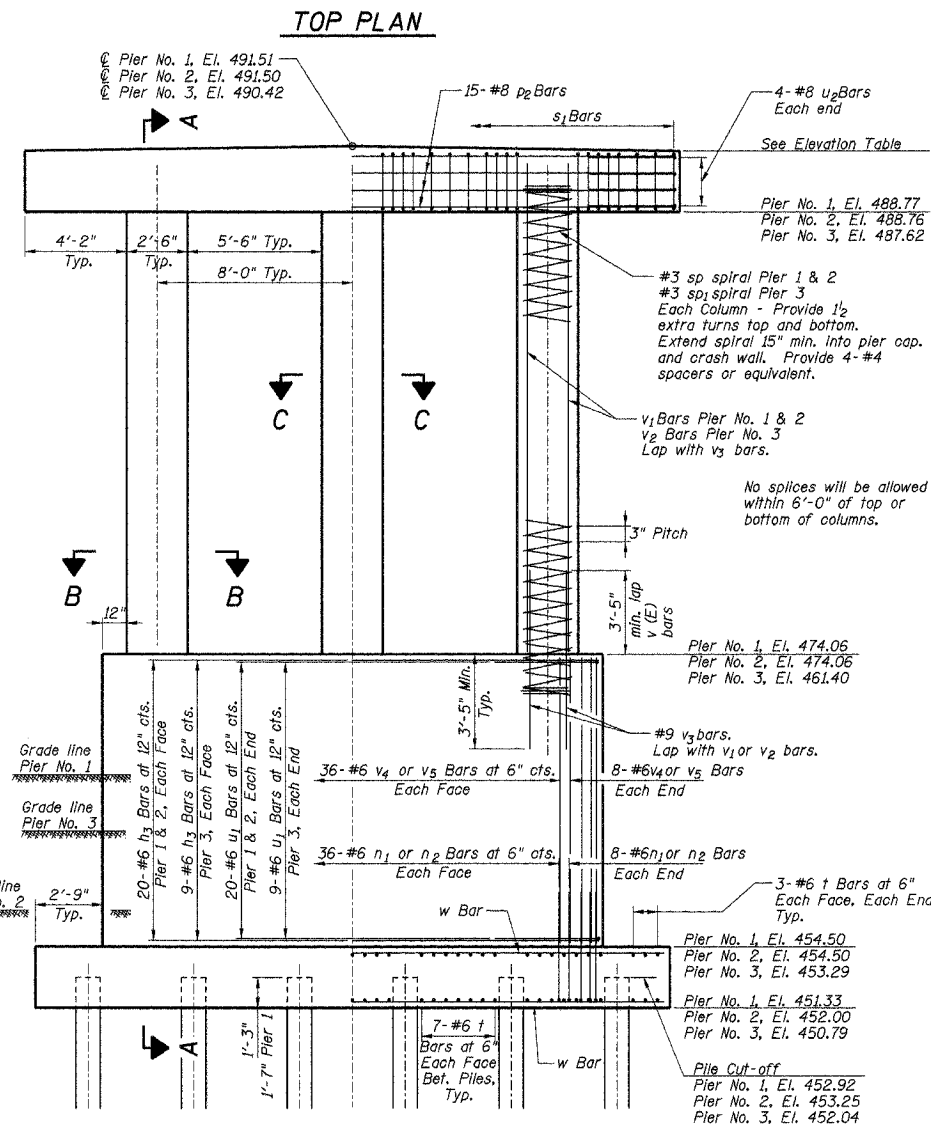
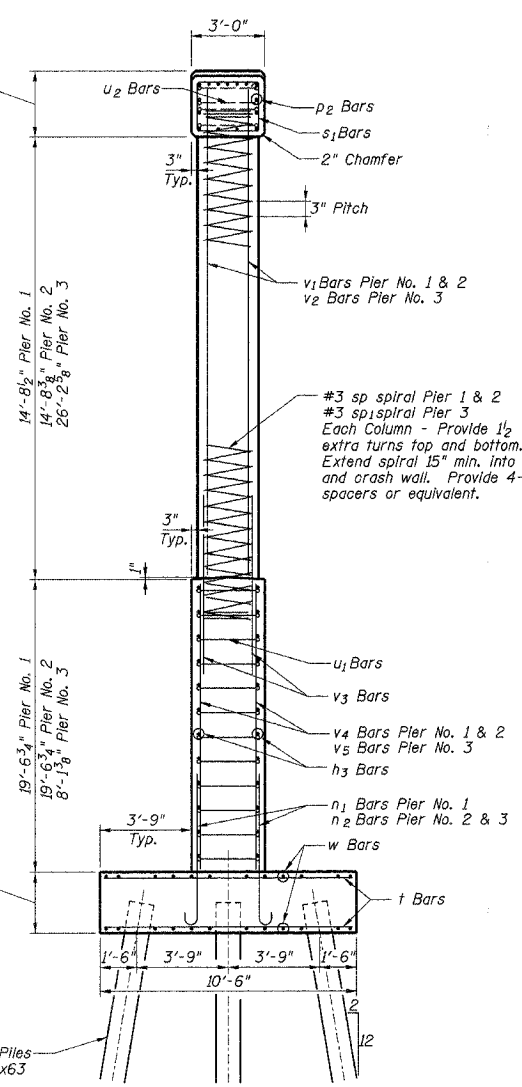


**TOP OF PIER CAP ELEVATIONS**

Location	A	B	C	D	E	F	G	H	I
Pier No. 1	491.51	491.49	491.51	491.27	491.28	491.28	491.36	491.38	491.38
Pier No. 2	491.50	491.50	491.48	491.32	491.32	491.29	491.27	491.27	491.26
Pier No. 3	490.42	490.44	490.38	490.31	490.29	490.25	490.16	490.15	490.12

**PILE DATA**

Type: Steel HP12x63  
 Number Required:  
 Pier No. 1 18  
 Pier No. 2 17+1 Test Pile  
 Pier No. 3 18  
 Capacity: Drive to Refusal  
 Estimated Length:  
 Pier No. 1 43 foot  
 Pier No. 2 43 foot  
 Pier No. 3 44 foot  
 Total Estimated Length: 2297 foot  
 (Does not include Test Pile)  
 Steel HP12x53



**BILL OF MATERIAL PIER NO. 1 OR 2**

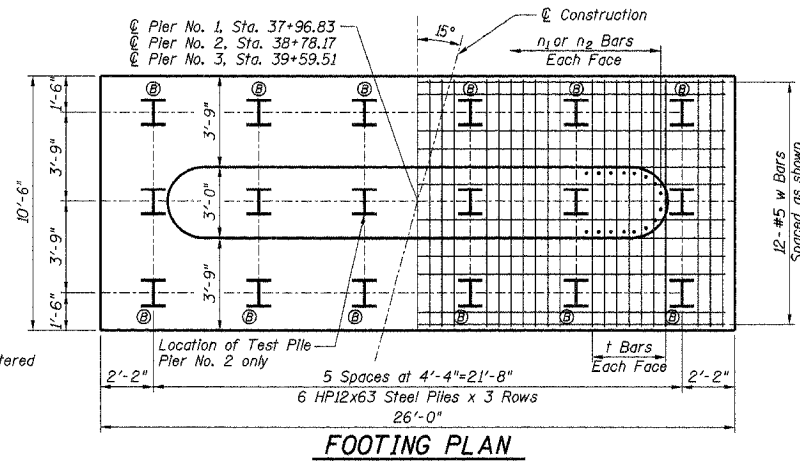
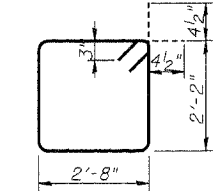
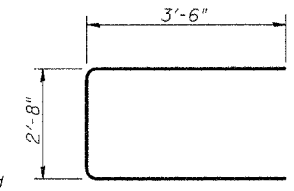
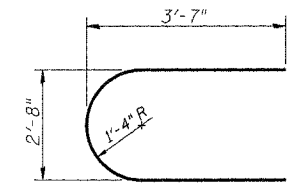
Bar	No.	Size	Length	Shape
h3	20	#6	17'-6"	—
n1	82	#6	6'-0"	U
p2	15	#8	26'-6"	—
s1	38	#4	10'-5"	□
t	82	#6	10'-2"	—
u1	40	#8	9'-8"	U
u2	8	#6	11'-5"	U
v1	30	#9	16'-10"	—
v3	30	#9	7'-0"	—
v4	88	#6	19'-9"	—
w	24	#5	25'-8"	—
sp	3	#3	17'-4"	W

**BILL OF MATERIAL PIER NO. 3**

Bar	No.	Size	Length	Shape
h3	9	#6	17'-6"	—
n2	82	#6	5'-3"	U
p2	15	#8	26'-6"	—
s1	38	#4	10'-5"	□
t	82	#6	10'-2"	—
u1	18	#8	9'-8"	U
u2	8	#6	11'-5"	U
v2	30	#9	28'-6"	—
v3	30	#9	7'-0"	—
v5	88	#6	8'-3"	—
w	24	#5	25'-8"	—
sp	3	#3	17'-4"	W

Concrete Structures		Cu. Yd.	
Pier 1		91.1	
Pier 2		84.4	
Reinforcement Bars		Pound	
Piers 1 or 2		11390	

Concrete Structures		Cu. Yd.	
Pier 3		65.5	
Reinforcement Bars		Pound	
Pier 3		10570	



**GENERAL NOTES**

Space cap reinforcement to miss dowel rods.  
 Minimum lap for spirals = 18"  
 \*\*Length is height of spiral.  
 All exposed edges shall have standard 3/4" chamfer, unless otherwise noted.  
 All clearances between reinforcement bars and form surface shall be 2", unless otherwise noted.  
 The Contractor shall drive one (1) Steel HP12x63 Test Pile in a permanent location at Pier No. 2 as directed by the Engineer before ordering the remainder of the piles.

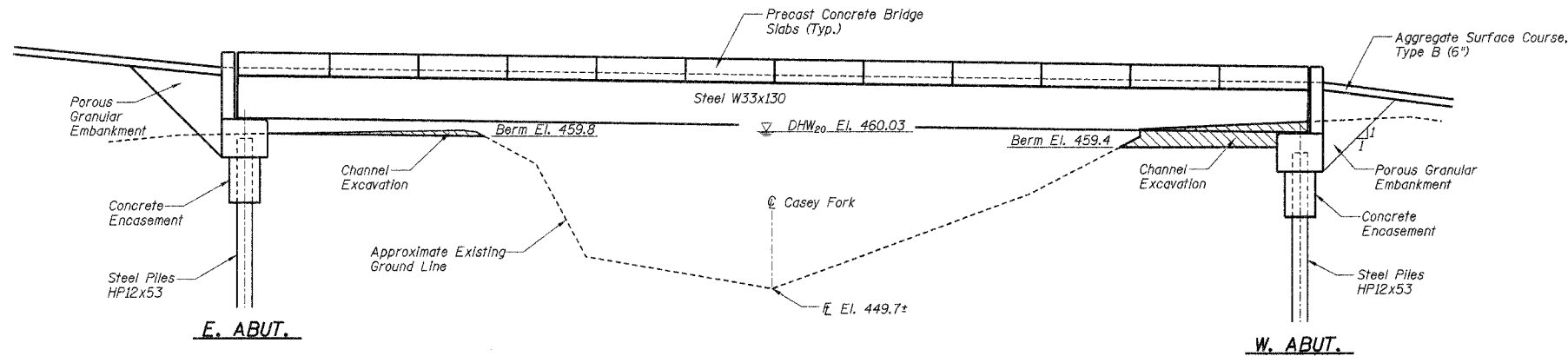
**PIER DETAILS**  
**PROPOSED BRIDGE OVER**  
**UNION PACIFIC RAILROAD AND CASEY FORK**  
**TR 227 (GREEN ROAD)**  
**SECTION 98-1120-00-BR**  
**JEFFERSON COUNTY, ILLINOIS**  
 Sheet 30 of 35  
 Job No. 52303

TBM 10-14-98"D" - Double 60d nails in South face of power pole, 34.88' Lt. of Sta. 38+62.96 - Elev. 463.44

TBM 10-14-98"E" - Double 60d nails in South face of power pole, 21.06' Lt. of Sta. 43+10.83 - Elev. 460.644

Proposed Structure: The precast concrete bridge slabs and steel girders were salvaged from a recent Jefferson County Highway Department project.

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	31
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 95437				



**ELEVATION**  
(No Scale)

**BILL OF MATERIAL (BRIDGE ONLY)**

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu Yd	-	24	24
Porous Granular Embankment	Ton	-	60	60
Concrete Structures	Cu Yd	-	23.0	23.0
Setting Precast Concrete Bridge Slabs	L Sum	1	-	1
Furnishing and Erecting Structural Steel	L Sum	-	1	1
Reinforcement Bars	Pound	-	3220	3220
Furnishing Steel Piles HP 12x53	Foot	-	346	346
Driving Steel Piles	Foot	-	346	346
Test Pile Steel HP12x53	Each	-	1	1

**GENERAL NOTES**

See Section 502 of the Standard Specifications for Structure Excavation.

The Contractor shall drive one (1) Steel HP12x53 Test Pile in a permanent location at the West Abutment as directed by the Engineer before ordering the remainder of the piles.

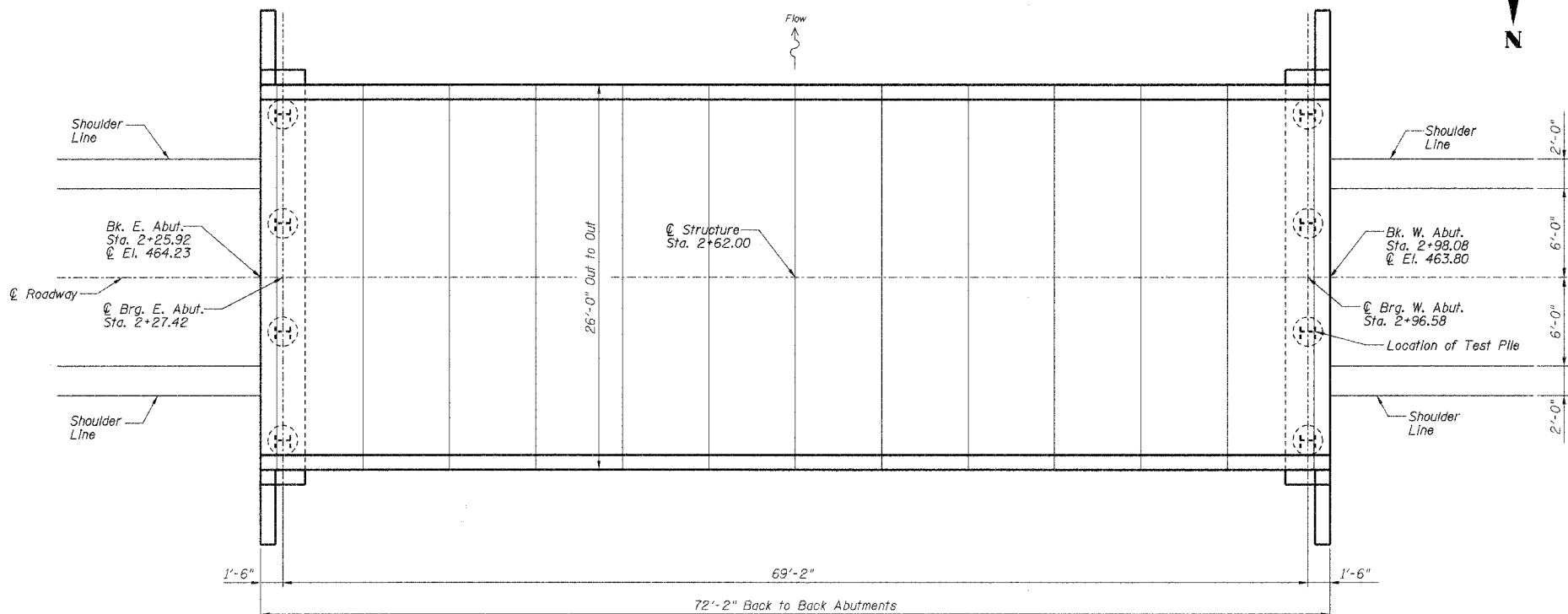
Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-53 grade 60.

Channel excavation shall be excavated as shown within the limits of the proposed bridge, then tapered to the ends of the wingwalls as directed by the Engineer. If the Engineer deems the material satisfactory, it may be used to construct the roadway embankment.

See Specifications for Soil Borings.

Do not scale these drawings.

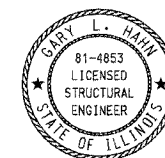
In addition to all other requirements of section 512 of the Standard Specifications, splices for Steel H-piles shall develop the full capacity of the steel's cross sectional area of the pile for tension, shear and bending forces. One approved method of achieving this requirement is full penetration butt welding of the entire cross section. Other types of splices meeting the full capacity requirement may be allowed subject to the approval of the Engineer. Any proposal by the Contractor to use an alternate splice method must include adequate documentation demonstrating that the full tension, shear and bending capacities will be met. Appropriate welder qualifications will be required for the positions and processes used in splicing all piles. Nondestructive testing of completed welds will be limited to visual inspection.



**PLAN**  
(No Scale)

**GRADE ACROSS STRUCTURE**

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



GARY L. HAHN  
CENTRALIA, ILLINOIS  
ILLINOIS LICENSED STRUCTURAL ENGINEER NO. 81-4853  
EXPIRES NOV. 30, 2006

**GENERAL PLAN AND ELEVATION  
PROPOSED FIELD ROAD BRIDGE  
OVER CASEY FORK  
STA. 2+62.00  
SECTION 98-11120-00-BR  
JEFFERSON COUNTY, ILLINOIS**

Sheet  
31  
of 35  
Job No. 52303

**WATERWAY DATA**  
See Sheet 24 of 35

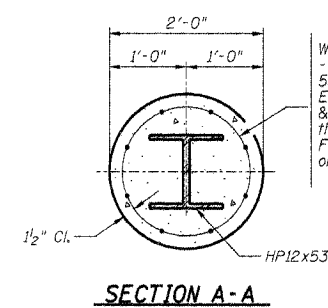
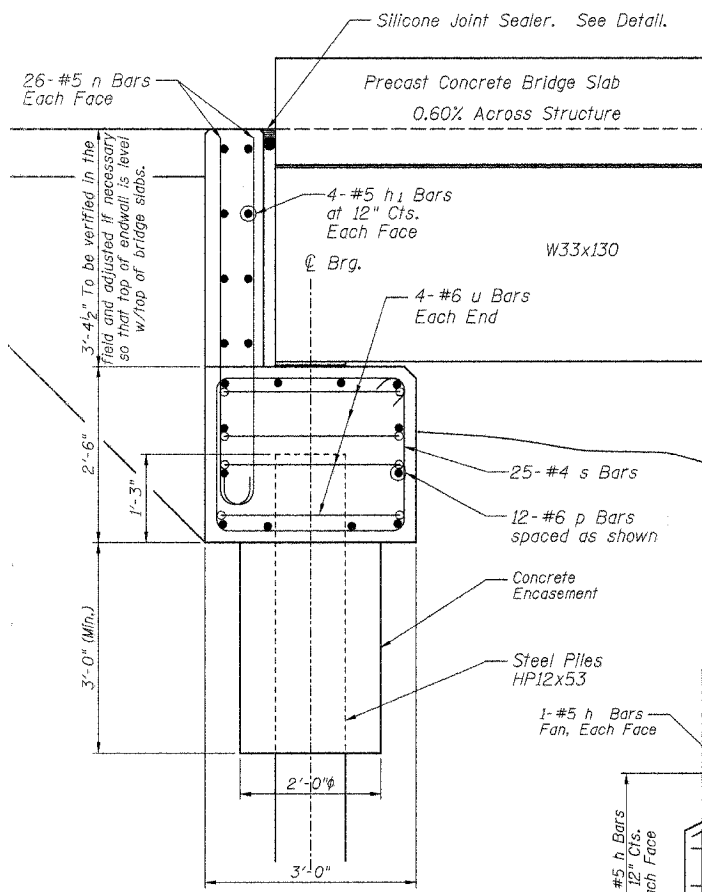
**DESIGN STRESSES**  
FIELD UNITS  
F<sub>c</sub> = 3,500 psi  
f<sub>y</sub> = 60,000 psi

**DESIGN SPECIFICATIONS**  
AASHTO - 2002 17th Edition

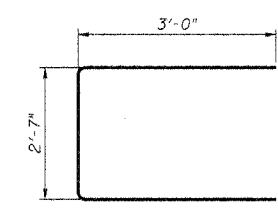
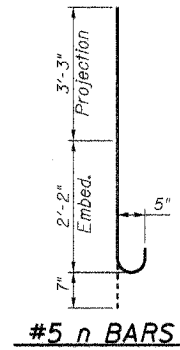
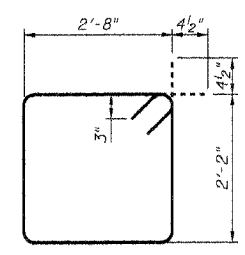
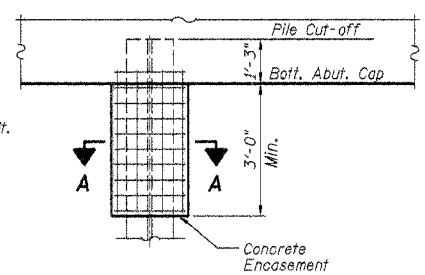
**SEISMIC DESIGN**  
Seismic Performance Category (SPC) = B  
Bedrock Acceleration Coefficient (A) = 0.10g  
Site Coefficient (S) = 1.5

**DESIGN LOADING HS 15-44**  
No allowance for future wearing surface.

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	32
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT		
CONTRACT NO.				



**PILE ENCASEMENT DETAIL**



**PILE DATA**

Type:  
 West Abutment HP12x53  
 East Abutment HP12x53

Number Required:  
 West Abutment 4  
 East Abutment 3 + 1 Test Pile

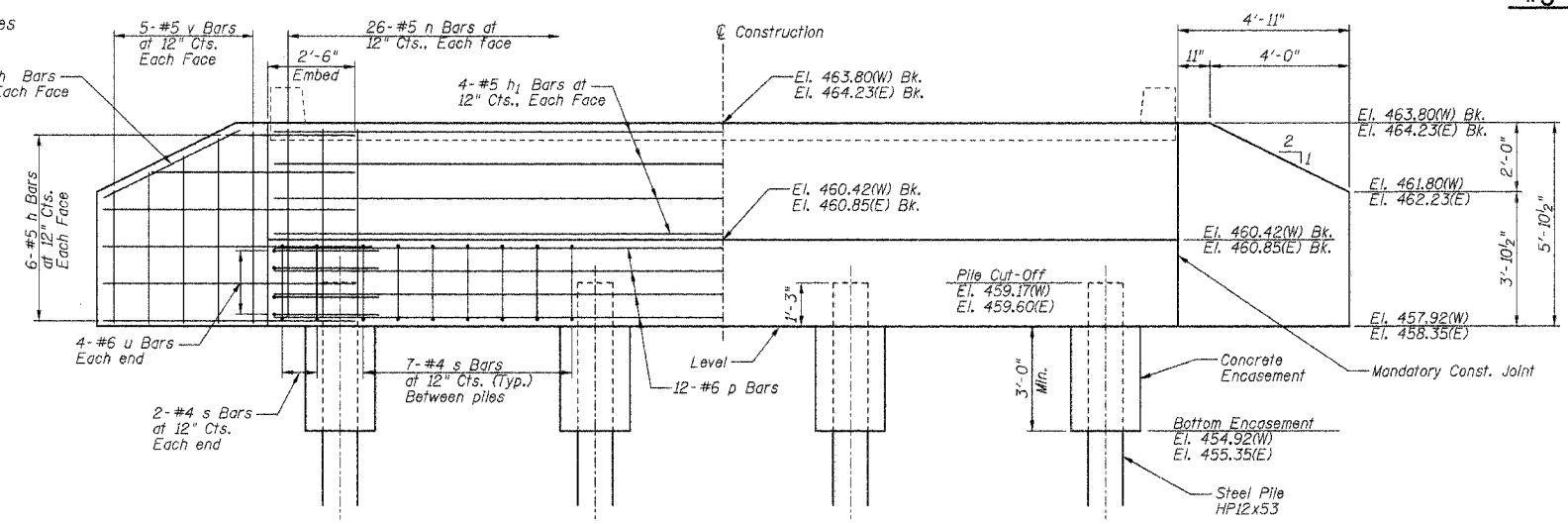
Capacity: Drive to Refusal (Do not overdrive)

Estimated Length:  
 West Abutment 49 foot  
 East Abutment 50 foot

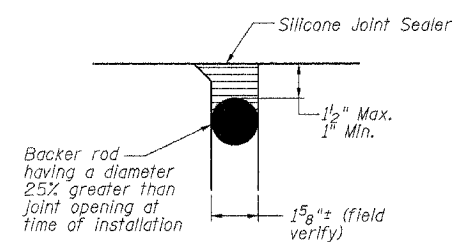
Total Estimated Length:  
 (Does not include Test Pile)  
 Steel HP12x53 346 foot

**BILL OF MATERIALS ONE ABUTMENT w/ WINGWALLS**

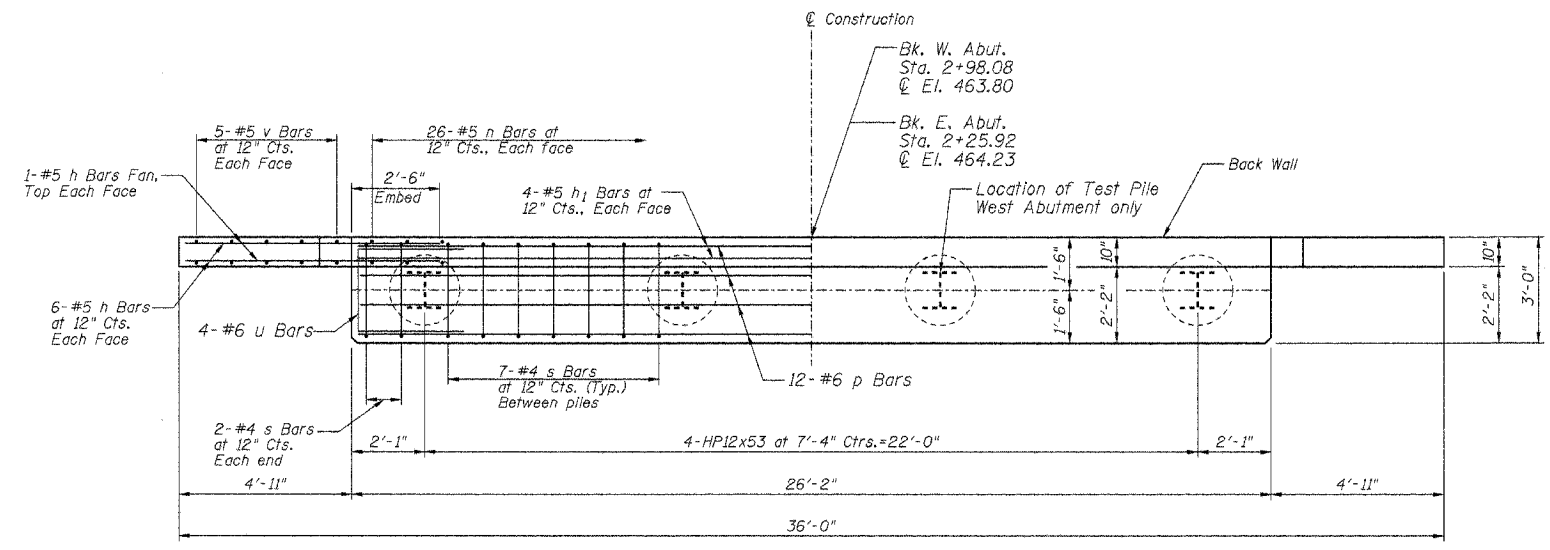
Bar	No.	Size	Length	Shape
h	28	#5	7'-3"	CUT IN FIELD
h <sub>1</sub>	8	#5	25'-10"	
n	52	#5	6'-0"	
p	12	#6	25'-10"	
s	25	#4	10'-5"	
u	8	#6	8'-7"	
v	20	#5	5'-6"	CUT IN FIELD
Concrete Structures			Cu Yd	11.5
Reinforcement Bars			Pound	1610



**ELEVATION**



**SILICONE JOINT SEALER**  
See Special Provisions



**PLAN**

**GENERAL NOTES**

All exposed edges shall have standard 3/4" chamfer, unless otherwise noted.

The Contractor shall drive one (1) Steel HP12x53 Test Pile in a permanent location at the West Abutment as directed by the Engineer before ordering the remainder of the piles.

All clearances between reinforcement bars and form surface shall be 2", unless otherwise noted.

Space reinforcement in cap to miss PPCDB anchor bolts.

(W) = West Abutment.  
 (E) = East Abutment.

**ABUTMENT DETAILS**  
**PROPOSED FIELD ROAD BRIDGE**  
**OVER CASEY FORK**  
**STA. 2+62.00**  
**SECTION 98-11120-00-BR**  
**JEFFERSON COUNTY, ILLINOIS**

Sheet 32 of 35  
 Job No. 52303



ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	33
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT		
CONTRACT NO. 95437				

**GENERAL NOTES**

Fasteners shall be high strength bolts. Bolts  $\frac{3}{4}$ " $\phi$ , open holes  $\frac{15}{16}$ " $\phi$ , unless otherwise noted.

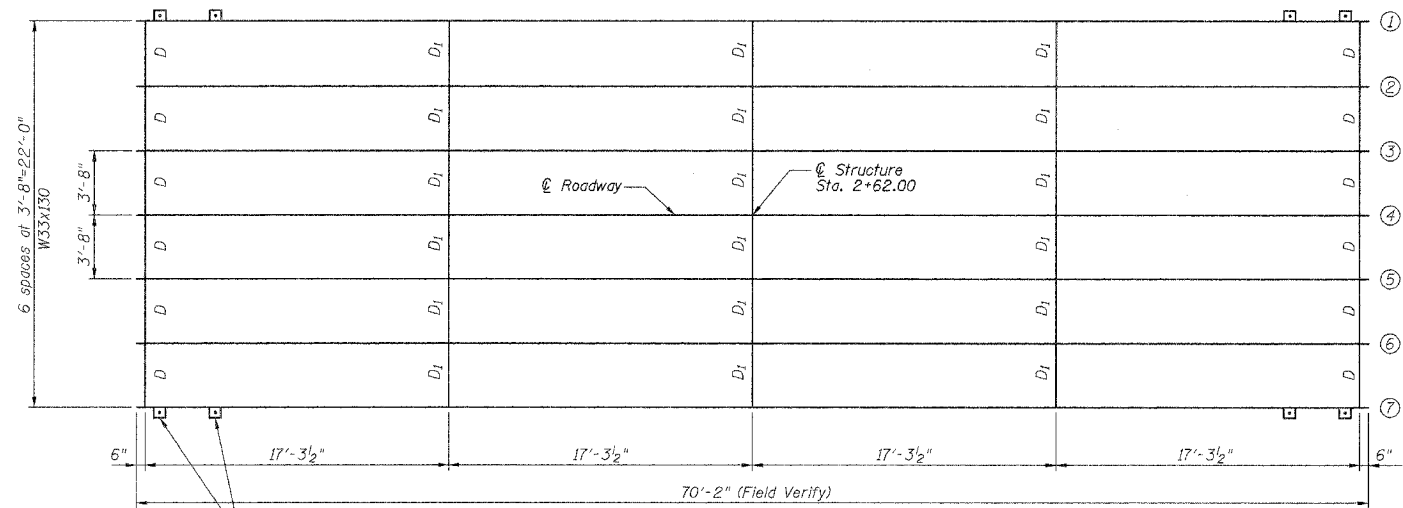
Calculated weight of Structural Steel to be furnished by the Contractor = 5000 pound. (AASHTO M270, Grade 36)

Existing W33x130 steel girders Furnished By Others. Calculated weight of existing W33x130 steel girders Furnished By Others = 63,860 pounds. Diaphragms, anchor bolts, elastomeric neoprene bearing pads, shim plates and all erection by the Contractor. See Special Provisions.

Anchor bolts shall be set before bolting diaphragms over supports.

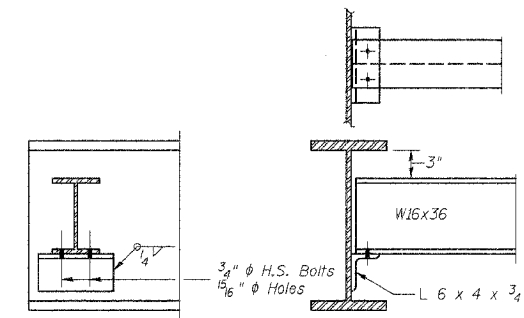
Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of  $\frac{1}{8}$  inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two  $\frac{1}{8}$ " adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims.

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



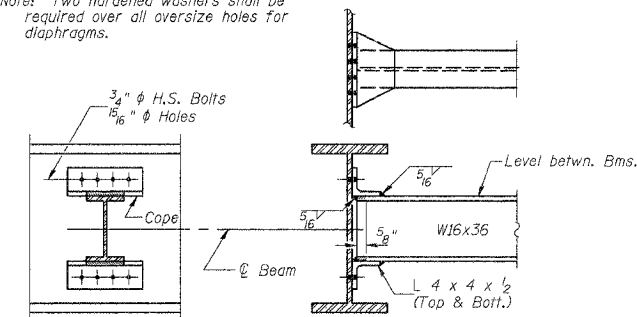
Existing plates for Precast Concrete Bridge Slab connection. Typical each end of the 2 exterior steel beams. Existing plates welded to top flange of existing exterior steel beams.

**PLAN VIEW**

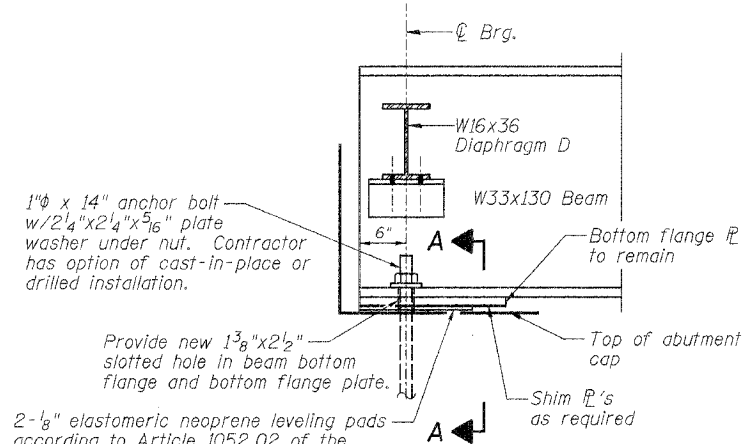


**DIAPHRAGM D**  
(12 Required)

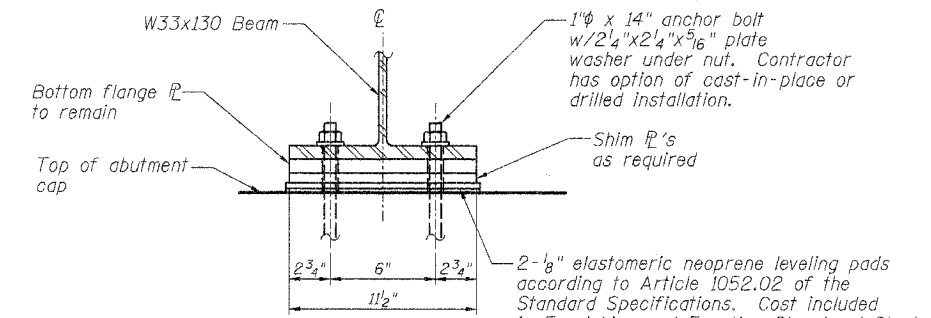
Note: Two hardened washers shall be required over all oversize holes for diaphragms.



**DIAPHRAGM D1**  
(18 Required)



**END OF BEAM ELEVATION**



**SECTION A-A**

**STEEL FRAMING DETAILS**  
**PROPOSED FIELD ROAD BRIDGE**  
**OVER CASEY FORK**  
**STA. 2+62.00**  
**SECTION 98-11120-00-BR**  
**JEFFERSON COUNTY, ILLINOIS**

Sheet  
33  
of 35  
Job No. 52303

06/24/2005

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	34
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT		
CONTRACT NO. 95437				

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

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.

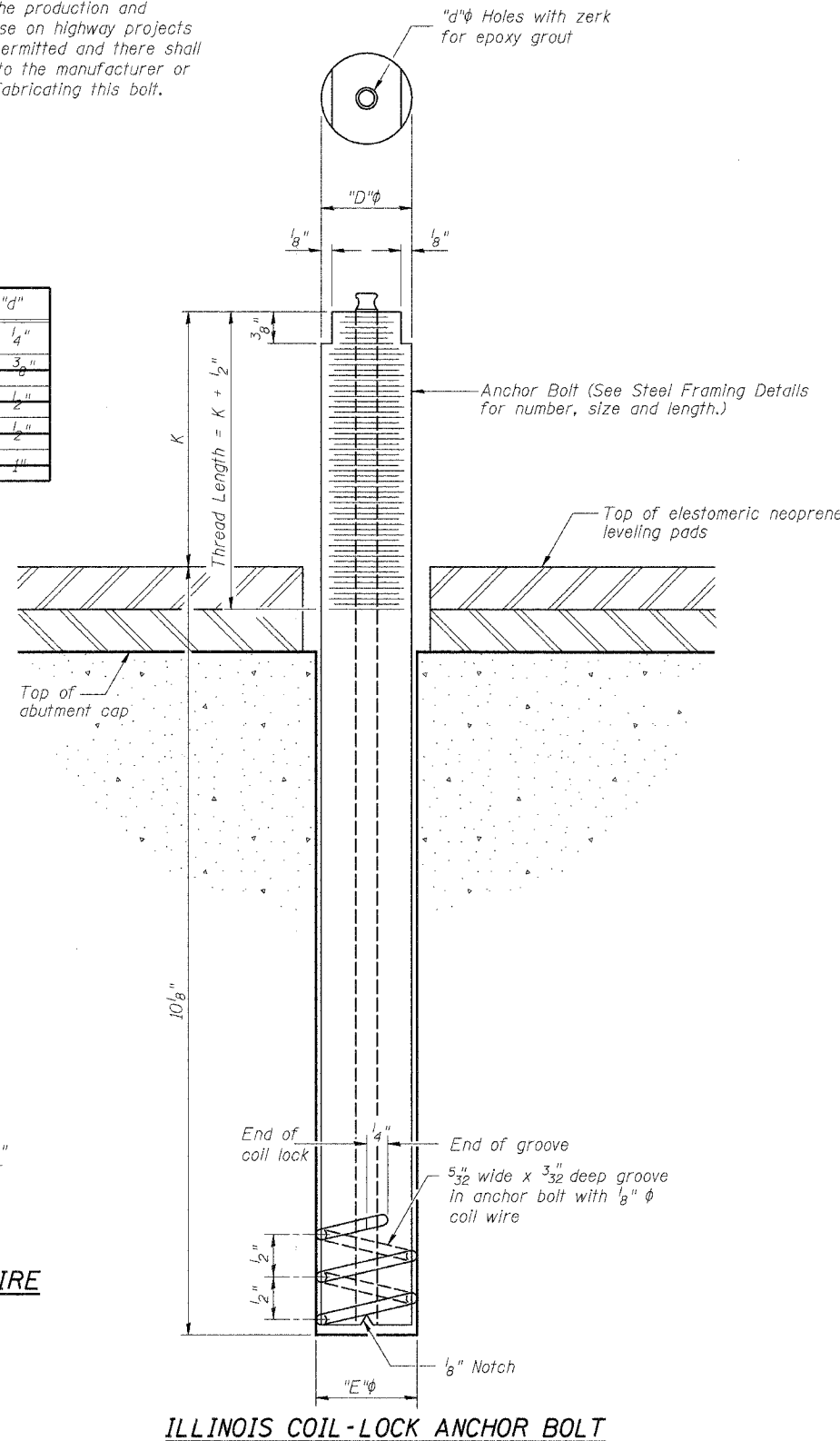
**MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT**

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

**GENERAL NOTES**

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

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



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

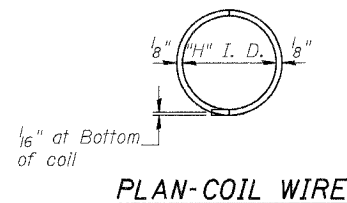
1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through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

**ALTERNATE ANCHOR BOLTS**

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures.  
The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:  
1. A threaded rod stud with nut and washer of the type specified.  
2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

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

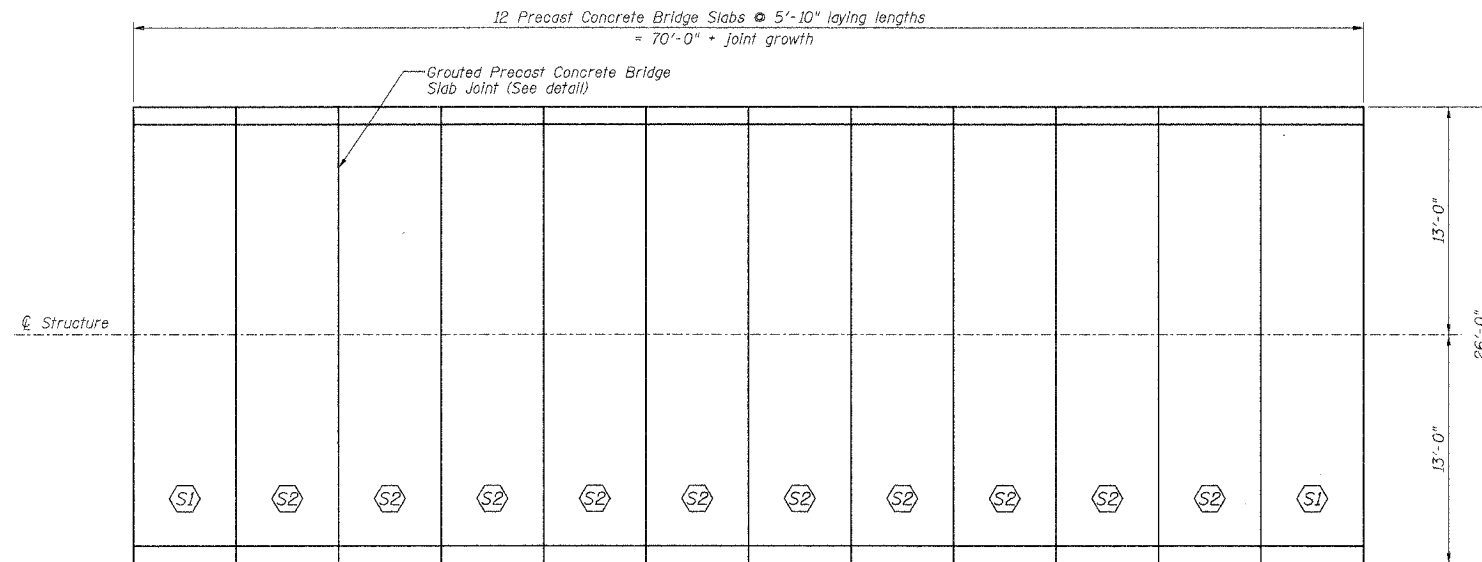
ASTM F 1554 Grade 105, ASTM A 449 and AASHTO M 314 Grade 105 anchor bolts may be substituted for the anchor bolts shown above.



**ILLINOIS COIL-LOCK ANCHOR BOLT**

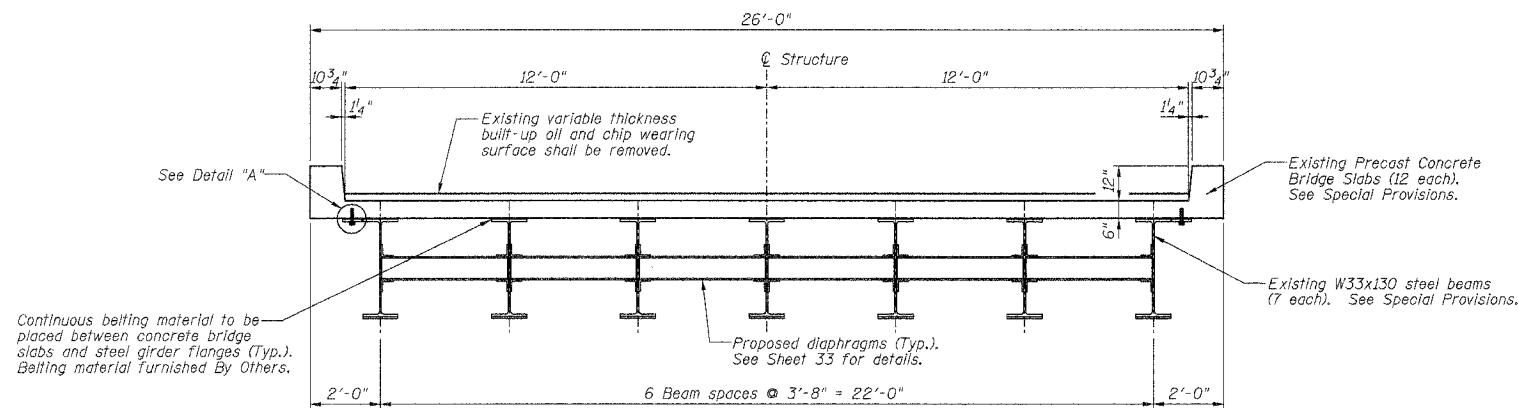
**ANCHOR BOLT DETAILS**  
**PROPOSED FIELD ROAD BRIDGE**  
**OVER CASEY FORK**  
**STA. 2+62.00**  
**SECTION 98-11120-00-BR**  
**JEFFERSON COUNTY, ILLINOIS**

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 227	98-11120-00-BR	JEFFERSON	35	35
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT		
CONTRACT NO. 95437				



**PLAN VIEW**

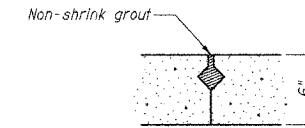
Note: (S1) Slabs have inserts cast in underside of slab for connection to W33x130 steel beams. See Detail A.



**CROSS SECTION THRU BRIDGE**

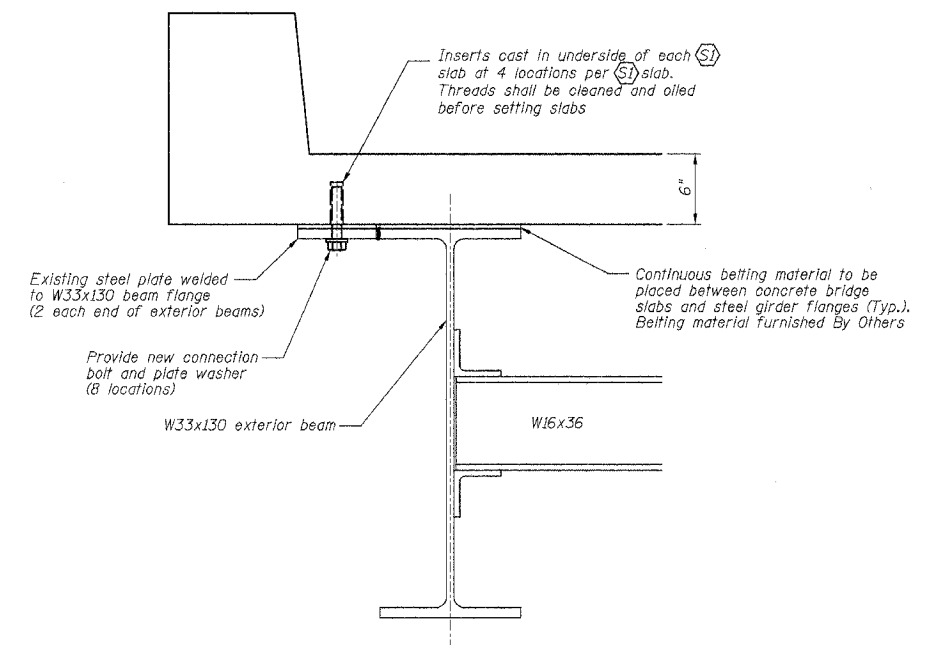
**EXISTING CONCRETE BRIDGE SLAB DATA**

Number: 12 each  
 Laying Length: 5'-10"  
 Weight per bridge slab: 13,100 lbs (does not include existing built-up oil and chip wearing surface)



**EXISTING PRECAST CONCRETE BRIDGE SLAB JOINT DETAIL**

Note: Existing grout keyway joint shall be cleaned prior to setting slabs.



**DETAIL "A"**

**PRECAST CONCRETE BRIDGE SLAB DETAILS**  
**PROPOSED FIELD ROAD BRIDGE**  
**OVER CASEY FORK**  
**STA. 2+62.00**  
**SECTION 98-11120-00-BR**  
**JEFFERSON COUNTY, ILLINOIS**

Sheet  
 35  
 of 35  
 Job No. 52303

05/24/2005