1-20-06 Letting, Item 85

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 272	04-18117-00-BR	FAYETTE	10	1
FED. ROAD DIST. NO. 7	ILLINOIS	FEDERAL AID PROJECT		
		CONTRACT NO. 95442		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED FEDERAL – AID BRIDGE REPLACEMENT AND REHABILITATION PROGRAM

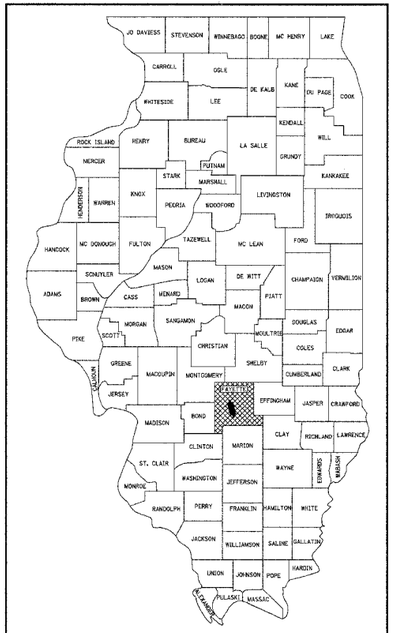
TR 272
SECTION 04–18117–00–BR
PROJECT NO. BROS–051(71)
FAYETTE COUNTY
OVER SANDY RUN
C–97–001–06

INDEX OF SHEETS

STANDARDS ARE INCLUDED IN PLANS AFTER SHEET NO. 10

000001-04	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
280001-02	TEMPORARY EROSION CONTROL SYSTEMS
515001-02	NAME PLATE FOR BRIDGES
630001-05	STEEL PLATE BEAM GUARDRAIL
630301-03	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) 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)



LOCATION OF SECTION INDICATED THUS: –

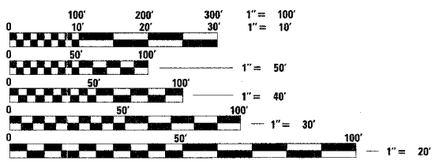
APPROVED _____, 20____
10-12-05
COUNTY ENGINEER

PASSED 10-31, 20 05
DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS

RELEASING FOR BID BASED ON LIMITED REVIEW 10-31, 20 05
DEPUTY DIRECTOR OF HIGHWAYS, REGION FOUR ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

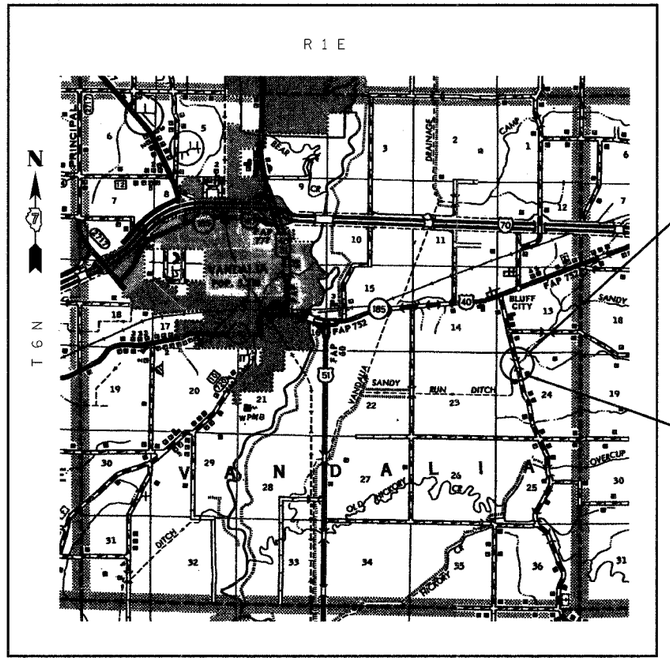
DESIGN CLASSIFICATION: MINOR COLLECTOR
ADT$_{2004}$: 600
ADT$_{2024}$: 800
DESIGN SPEED - 50 MPH



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 LOCATING INFORMATION FOR EXCAVATORS
1–800–892–0123 Website: http://www.illinois1call.com

CONTRACT NUMBER: 95442



SECTION 04-18117-00-BR

INCLUDES THE CONSTRUCTION OF A THREE (3) SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE CARRYING TR 272 OVER SANDY RUN, 97'-8½" BK TO BK ABUTMENTS. 15° AH. RT. SKEW. EXISTING STRUCTURE NO. 026-3274 PROPOSED STRUCTURE NO. 026-3426

LOCATION: NEAR THE NW CORNER, NE ¼, NW ¼, SECTION 24, T6N, R1E, 3RD P.M.
NET LENGTH OF PROJECT: 203.62 FT = 0.039 MI

GARY L. HAHN
62-42606
LICENSED PROFESSIONAL ENGINEER
STATE OF ILLINOIS

Gary L. Hahn 10.05.05
GARY L. HAHN
CENTRALIA, ILLINOIS
ILLINOIS LICENSED PROFESSIONAL ENGINEER NO. 62-42606
EXPIRES NOV. 30, 2005

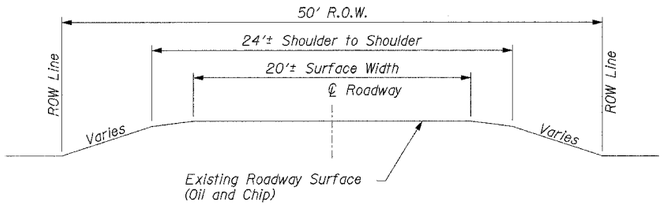
GARY L. HAHN
81-4853
LICENSED STRUCTURAL ENGINEER
STATE OF ILLINOIS

Gary L. Hahn 10.05.05
GARY L. HAHN
CENTRALIA, ILLINOIS
ILLINOIS LICENSED STRUCTURAL ENGINEER NO. 81-4853
EXPIRES NOV. 30, 2006

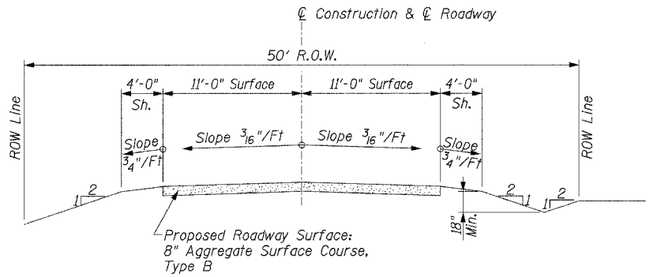
RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

10/07/2005

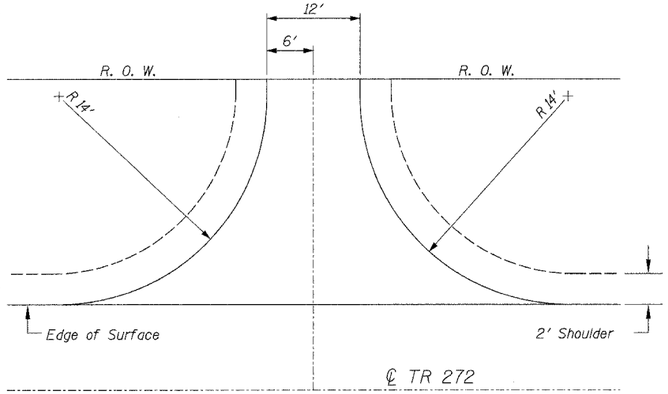
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 272	04-18117-00-BR	FAYETTE	10	2
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		
		CONTRACT NO. 95442		



TYPICAL SECTION
EXISTING APPROACH ROADWAY



TYPICAL SECTION
PROPOSED APPROACH ROADWAY



Aggregate Surface Course, Type B 6" Depth
Lt., Sta. 10+70 - 10 Tons (Included in Summary of Quantities)

TYPICAL FIELD ENTRANCE

SUMMARY OF QUANTITIES

	Location				Bridge Sta. 9+51.14 to Sta. 10+48.86	Road Sta. 8+98.19 - 9+51.14 10+48.86 - 11+01.81
					Construct. Type Code	
	Code No.	Item	Unit	Quantity	X080-2A	E000
	20300100	CHANNEL EXCAVATION	CU YD	2.10	2.10	-
*	20700110	POROUS GRANULAR EMBANKMENT	TON	42	42	-
*	25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.1	-	0.1
*	28100807	STONE DUMPED RIPRAP, CLASS A4	TON	425	425	-
*	40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	124	-	124
*	50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1	1	-
	50300225	CONCRETE STRUCTURES	CU YD	35.8	35.8	-
	50400305	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	SQ FT	2688	2688	-
	50800105	REINFORCEMENT BARS	POUND	4240	4240	-
	50900205	STEEL RAILING, TYPE S1	FOOT	196	196	-
**	51201600	FURNISHING STEEL PILES HP12X53	FOOT	975	975	-
**	51202700	DRIVING STEEL PILES	FOOT	975	975	-
**	51203600	TEST PILE STEEL HP12X53	EACH	1	1	-
	51204315	CONCRETE ENCASEMENT	CU YD	16.5	16.5	-
	51500100	NAME PLATES	EACH	1	1	-
	63000000	STEEL PLATE BEAM GUARD RAIL, TYPE A	FOOT	25	-	25
	63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	3	-	3
	63100167	TRAFFIC BARRIER TERMINAL, TYPE 1, SPECIAL (TANGENT)	EACH	3	-	3
	67100100	MOBILIZATION	L SUM	1	-	-
	78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	3	-	3

* See Special Provisions

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

GENERAL NOTES

Centerline profiles refer to the finished surface.

All Earthwork shall be considered incidental to Aggregate Surface Course, Type B, and no additional compensation will be allowed.

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 Surface Course	2.1 tons/cu. yd.

UTILITIES

Electric: Ameren IP
P.O. Box 2522
Decatur, Illinois 62525
Phone: 1-800-892-7715

Telephone: SBC Midwest
203 Goethe Street
Collinsville, Illinois 62234
Attn: Jerry Strubhart
Phone: 1-618-346-6433

SUMMARY OF QUANTITIES AND TYPICAL SECTIONS PROPOSED BRIDGE CARRYING TR 272 OVER SANDY RUN SECTION 04-18117-00-BR FAYETTE COUNTY, ILLINOIS

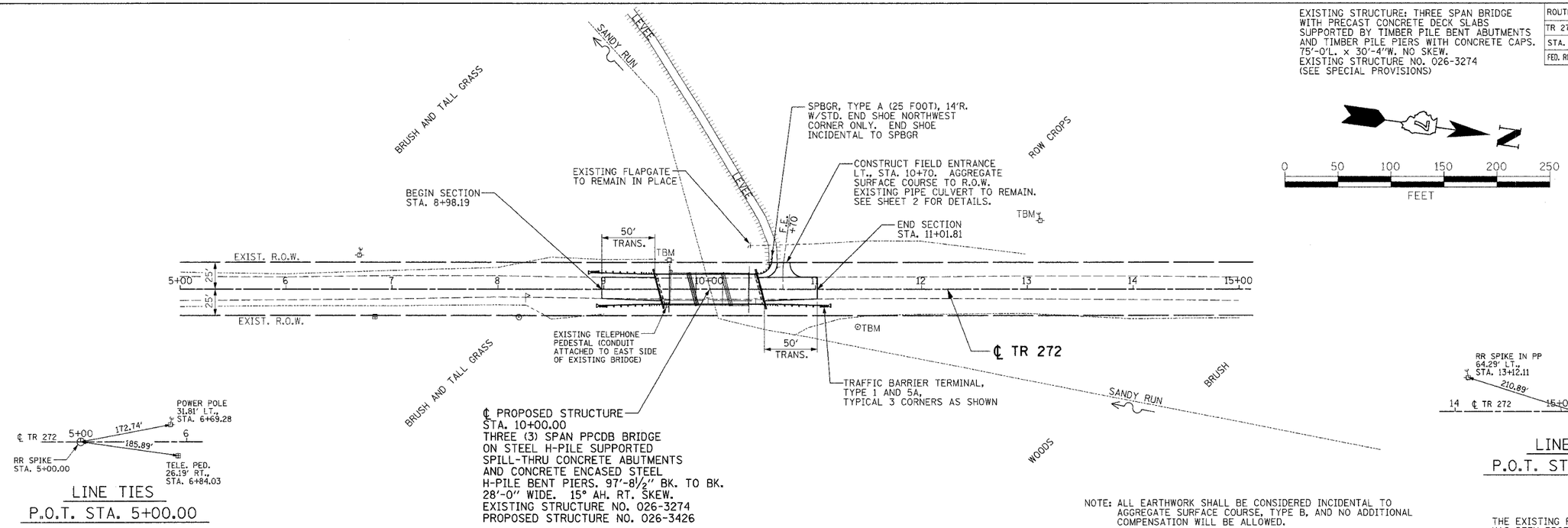
Sheet 2 of 10
Job No. 51004

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

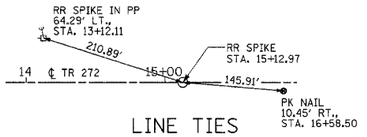
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 272	04-18117-00-BR	FAYETTE	10	3
STA. 5+00.00	TO STA. 19+00.00			
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		
		CONTRACT NO. 95442		

EXISTING STRUCTURE: THREE SPAN BRIDGE WITH PRECAST CONCRETE DECK SLABS SUPPORTED BY TIMBER PILE BENT ABUTMENTS AND TIMBER PILE PIERS WITH CONCRETE CAPS. 75'-0"L. × 30'-4"W. NO SKEW. EXISTING STRUCTURE NO. 026-3274 (SEE SPECIAL PROVISIONS)

PLAN — SURVEYED / PLOTTED / ALIGNMENT CHECKED / GRADES CHECKED / R.O.W. STAKED / CADD FILE NAME / NOTE BOOK NO. / BY / DATE



LINE TIES
P.O.T. STA. 5+00.00



LINE TIES
P.O.T. STA. 15+12.97

NOTE: ALL EARTHWORK SHALL BE CONSIDERED INCIDENTAL TO AGGREGATE SURFACE COURSE, TYPE B, AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

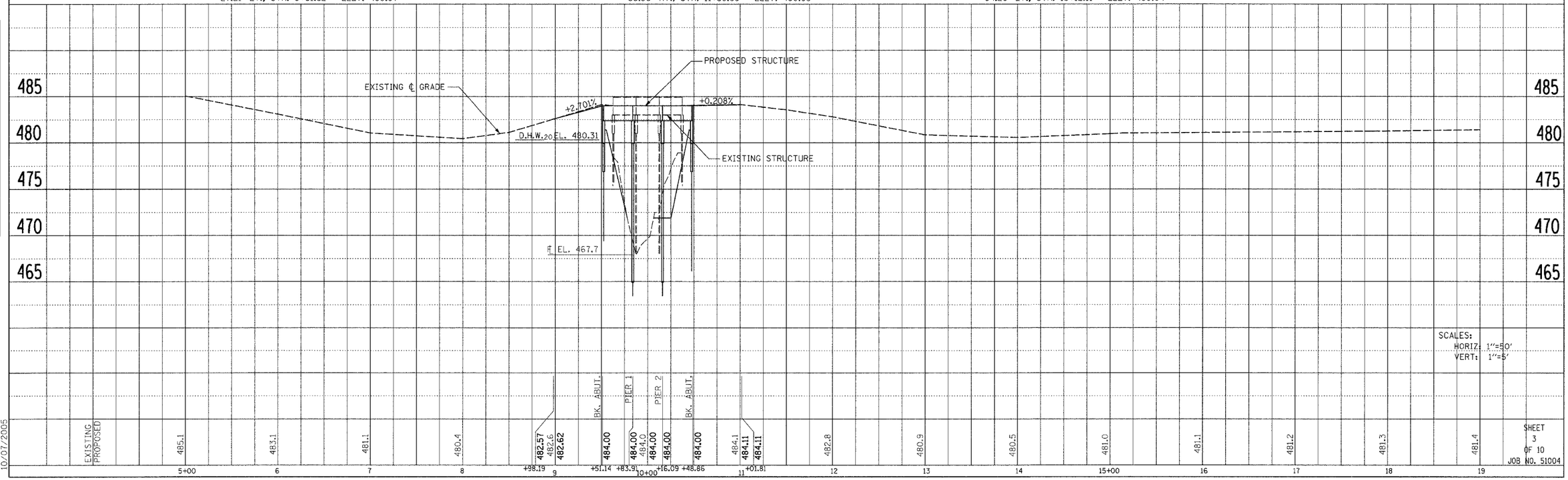
THE EXISTING RIGHT OF WAY SHOWN HEREON HAS BEEN PROTRACTED FROM EXISTING RECORDS AND IS TO BE USED FOR REFERENCE PURPOSES ONLY. FURTHERMORE, NO COMPLETE SURVEY OF SAID R.O.W. IS IMPLIED BY THIS DRAWING.

TBM 9/10/04"C" - RR SPIKE IN EAST FACE OF POWER POLE, 27.21' LT., STA. 9+61.82 - ELEV. 480.87

TBM 09/10/04"B" - RR SPIKE IN WEST FACE BOXELDER CLUMP, 35.50' RT., STA. 11+39.88 - ELEV. 480.98

TBM 09/10/04"A" - RR SPIKE IN SOUTH FACE OF POWER POLE, 64.29' LT., STA. 13+12.11 - ELEV. 480.04

PROFILE — SURVEYED / PLOTTED / GRADES CHECKED / R.O.W. STAKED / STRUCTURE MDT&NS CHKD / NOTE BOOK NO. / BY / DATE

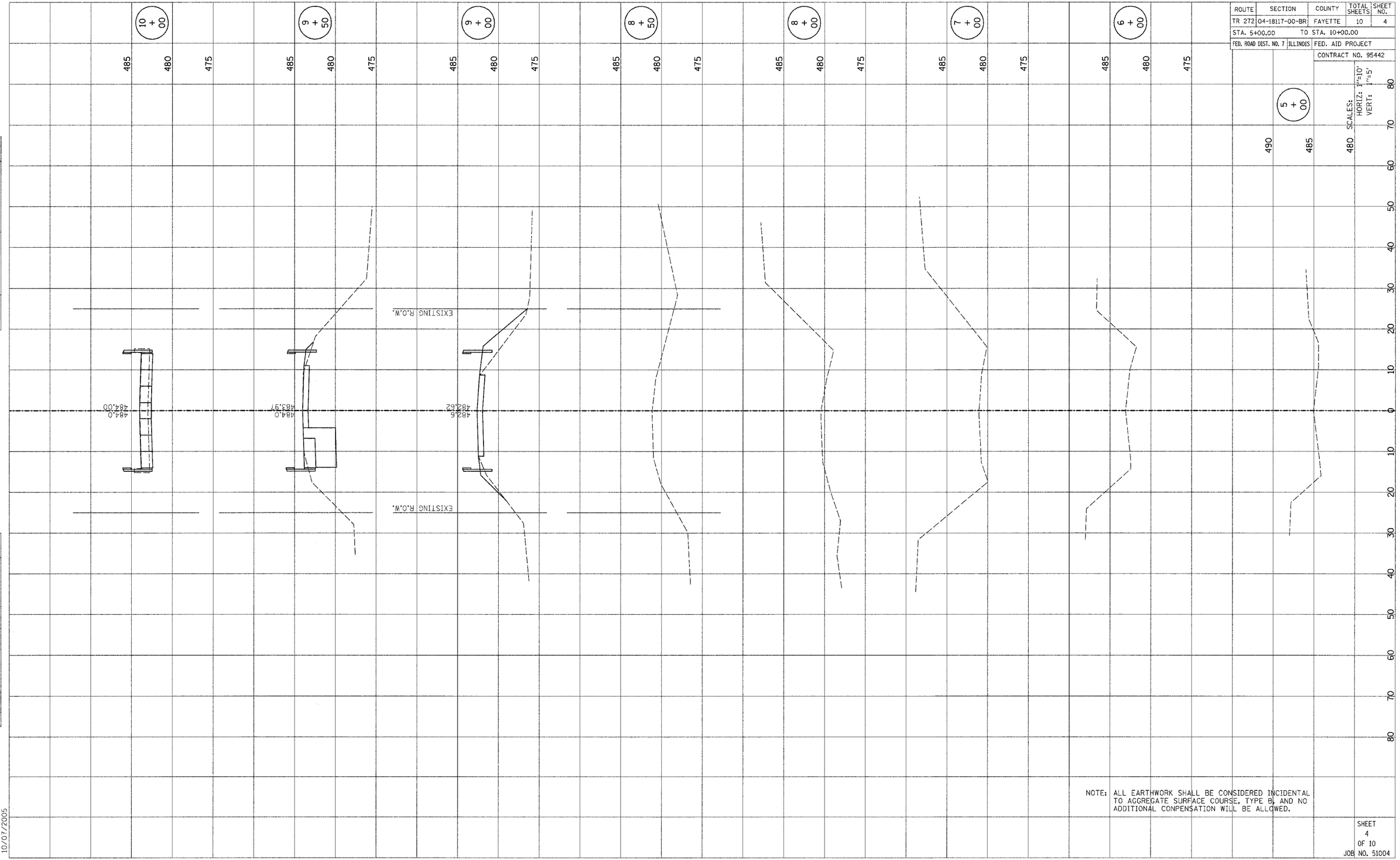


PLAN AND PROFILE OF ROADWAY BRIDGE OVER SANDY RUN
TR 272 SECTION 04-18117-00-BR FAYETTE COUNTY

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 272	04-18117-00-BR	FAYETTE	10	4
STA. 5+00.00	TO STA. 10+00.00			
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 95442

SCALES: HORIZ: 1"=10'
VERT: 1"=5'



NOTE: ALL EARTHWORK SHALL BE CONSIDERED INCIDENTAL TO AGGREGATE SURFACE COURSE, TYPE B, AND NO ADDITIONAL CONPENSATION WILL BE ALLOWED.

SHEET 4 OF 10
JOB NO. 51004

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

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

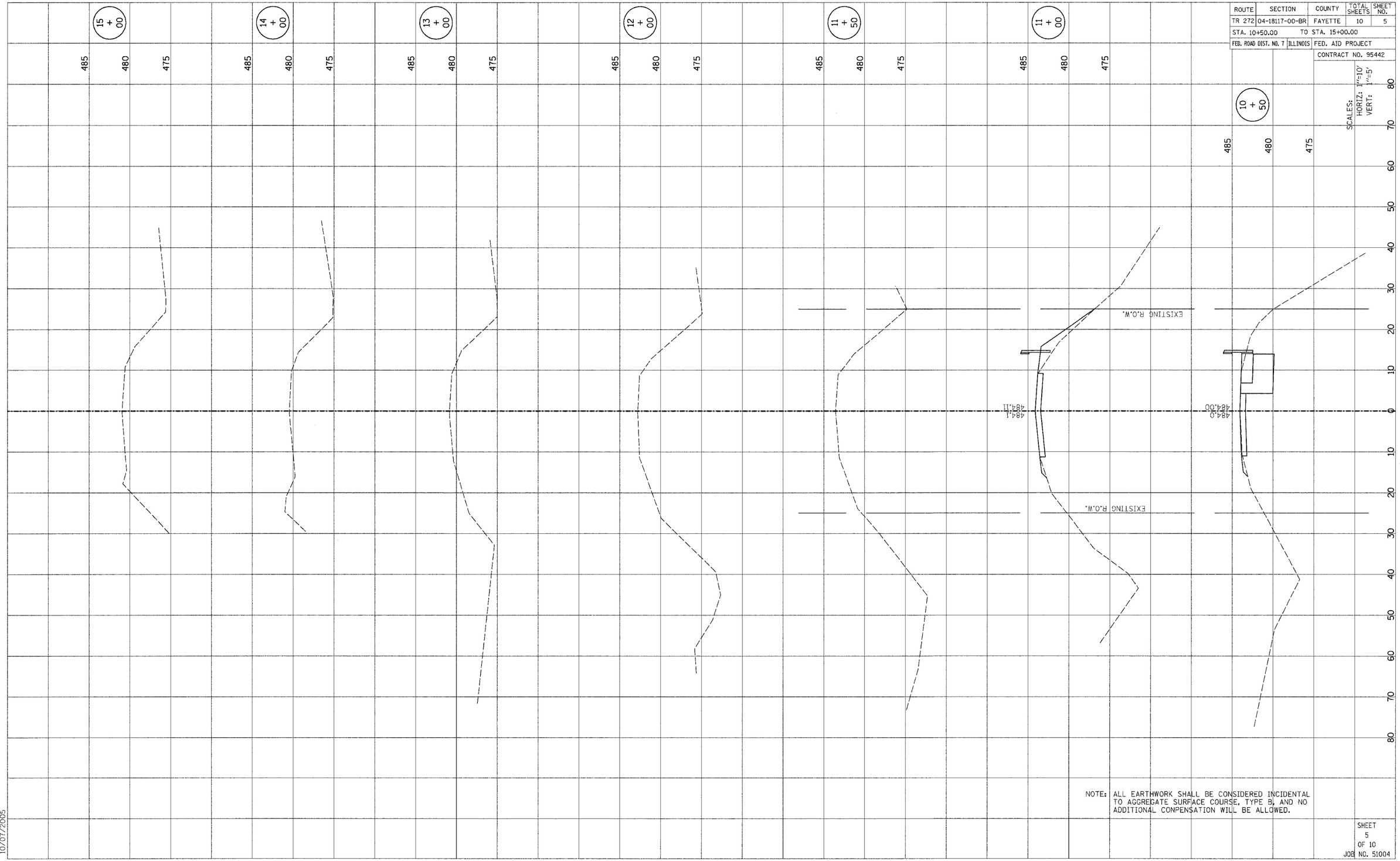
10/01/2005

CROSS SECTIONS OF ROADWAY BRIDGE OVER SANDY RUN
TR 272 SECTION 04-18117-00-BR FAYETTE COUNTY

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 272	04-18117-00-BR	FAYETTE	10	5
STA. 10+50.00	TO STA. 15+00.00			
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 95442

SCALES: HORIZ: 1"=10'
VERT: 1"=5'



NOTE: ALL EARTHWORK SHALL BE CONSIDERED INCIDENTAL TO AGGREGATE SURFACE COURSE, TYPE B, AND NO ADDITIONAL CONPENSATION WILL BE ALLOWED.

SHEET 5 OF 10
JOB NO. 51004

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

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

10/07/2005

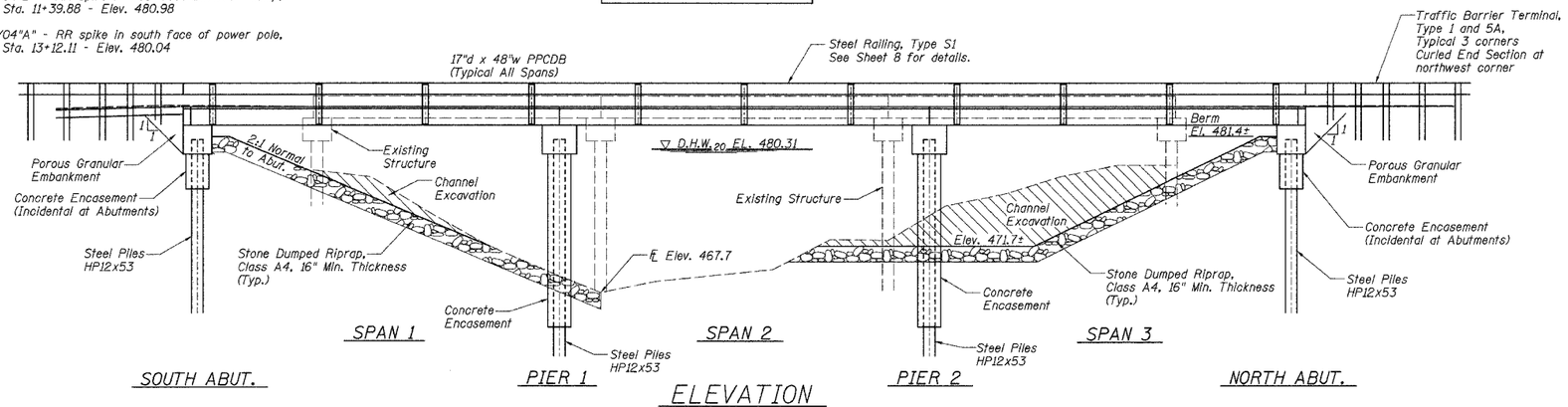
CROSS SECTIONS OF ROADWAY BRIDGE OVER SANDY RUN
TR 272 SECTION 04-18117-00-BR FAYETTE COUNTY

TBM 09/10/04"C" - RR spike in east face of power pole.
27.21' Lt., Sta. 9+61.82 - Elev. 480.87

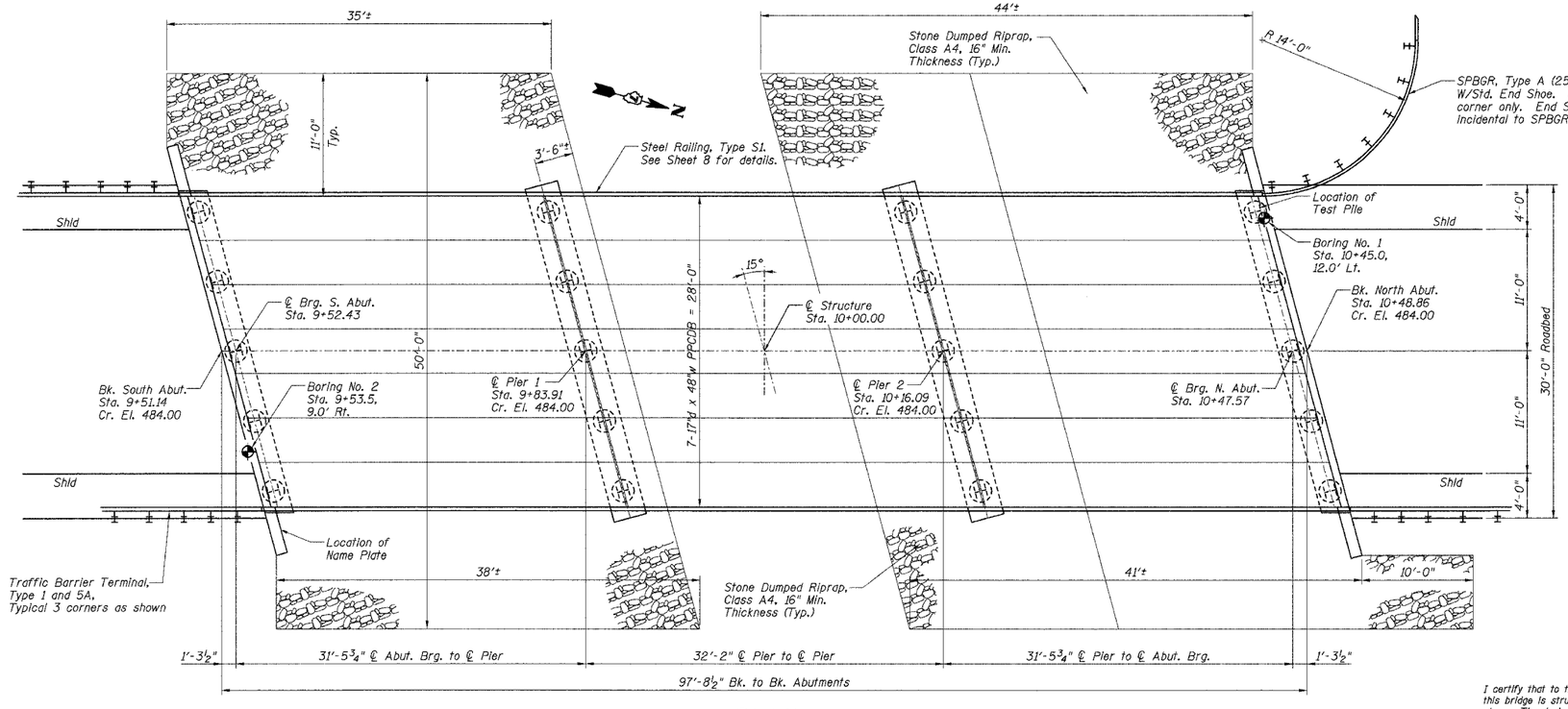
TBM 09/10/04"B" - RR spike in west face boxelder clump.
35.50' Rt., Sta. 11+39.88 - Elev. 480.98

TBM 09/10/04"A" - RR spike in south face of power pole.
64.29' Lt., Sta. 13+12.11 - Elev. 480.04

Note: Telephone conduit located on east side of existing bridge.



ELEVATION



PLAN

WATERWAY DATA

Drainage Area = 17.0 Sq. Mi. Low Grade Elev. 480.4 ℄ Sta. 8+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Natural H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	20	3258	530	633	480.31	0.36	0.15	480.67	480.46
Base	100	4815	638	753	481.44	0.72	0.37	482.16	481.81
Max. Calc.	500	6315	683	786	482.16	1.04	0.68	483.20	482.84

SEISMIC DESIGN

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coeffecient (A) = 0.08g
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 = 5,000 psi
f'_{ci} = 4,000 psi
f'_s = 270,000 psi (½"ϕ strands)
f'_{si} = 189,000 psi (½"ϕ strands)

Bk. South Abut. Sta. 9+51.14 Cr. El. 484.00	℄ Pier 1 Sta. 9+83.91 Cr. El. 484.00	℄ Pier 2 Sta. 10+16.09 Cr. El. 484.00	Bk. North Abut. Sta. 10+48.86 Cr. El. 484.00
0.00%	0.00%	0.00%	
Span 1	Span 2	Span 3	

GRADE ON STRUCTURE

Existing Structure: Three span bridge with precast concrete deck slabs supported by timber pile bent abutments and timber pile piers with concrete caps. 75'-0"L. x 30'-4"W. No skew. Existing Structure No. 026-3274 (See Special Provisions).

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 272	04-18117-00-BR	FAYETTE	10	6
FED. ROAD DIST. NO. 7	ILLINOIS	FEDERAL AID PROJECT		
		CONTRACT NO. 95442		

BILL OF MATERIALS (BRIDGE ONLY)

ITEM	UNIT	SUB	SUPER	TOTAL
CHANNEL EXCAVATION	CU YD	210	-	210
POROUS GRANULAR EMBANKMENT	TON	42	-	42
STONE DUMPED RIPRAP, CLASS A4	TON	425	-	425
REMOVAL OF EXISTING STRUCTURES	EACH	-	-	1
CONCRETE STRUCTURES	CU YD	35.8	-	35.8
PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	SQ FT	-	2688	2688
REINFORCEMENT BARS	POUND	4240	-	4240
STEEL RAILING, TYPE S1	FOOT	-	196	196
FURNISHING STEEL PILES HP 12x53	FOOT	975	-	975
DRIVING STEEL PILES	FOOT	975	-	975
TEST PILE STEEL HP12x53	EACH	1	-	1
CONCRETE ENCASEMENT	CU YD	16.5	-	16.5
NAME PLATES	EACH	1	-	1

GENERAL NOTES

See Section 502 of the Standard Specifications for Structure Excavation.

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.

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

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

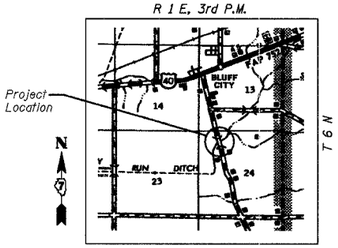
The abutment and pier bearing seat surfaces for the precast prestressed concrete deck beams shall be adjusted by shimming to assure firm and even bearing. As required, ⅛" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.

See Specifications for Soil Borings.

Do not scale these drawings.

SANDY RUN
BUILT 200_ BY
FAYETTE COUNTY
PROJECT NO. BROS-051(71)
SEC. 04-18117-00-BR
LOADING HS-20
STRUCTURE NO. 026-3426

NAME PLATE
(See State Standard 515001 for details)



LOCATION SKETCH

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
STATE OF ILLINOIS

Gary L. Hahn 10-05-05

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

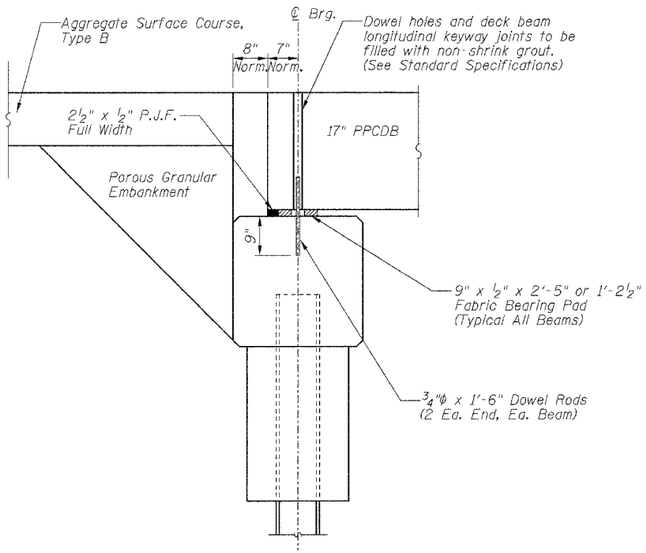
GENERAL PLAN AND ELEVATION
PROPOSED BRIDGE CARRYING TR 272 OVER SANDY RUN
SECTION 04-18117-00-BR
FAYETTE COUNTY, ILLINOIS

Sheet 6 of 10
Job No. 51004

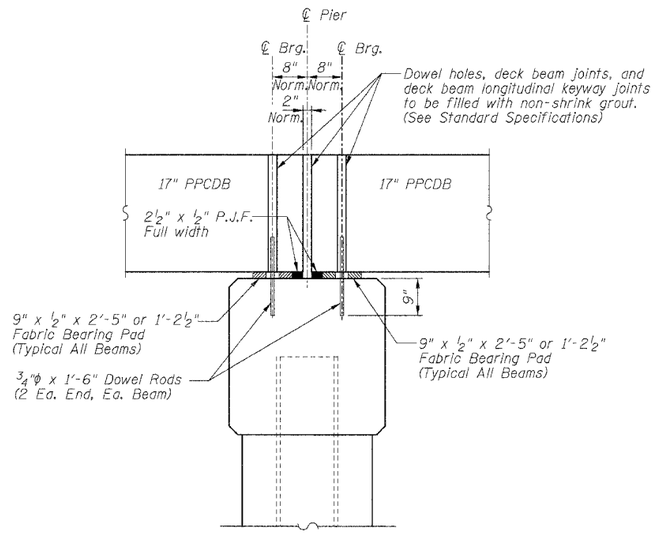
10/07/2005

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

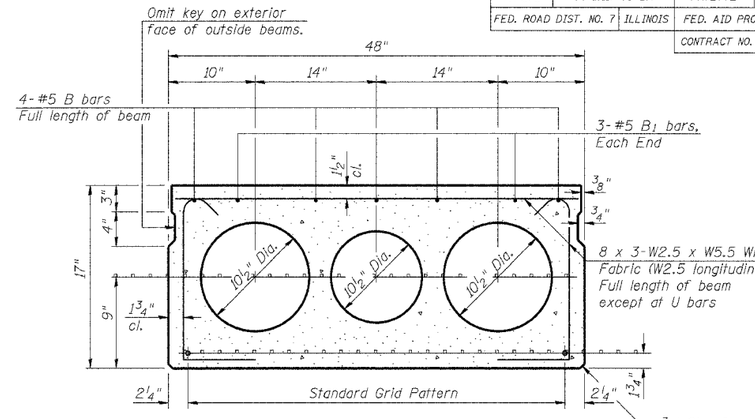
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 272	04-18117-00-BR	FAYETTE	10	7
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		
		CONTRACT NO. 95442		



RESTRAINED BEARING
ABUTMENT



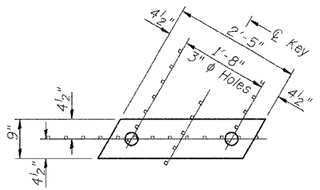
RESTRAINED BEARING
PIER



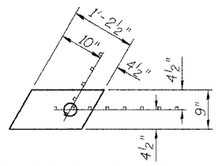
TYPICAL SECTION

9 - ½" ϕ Strands, Each Strand Stressed to 28,900 Lbs.
9 - Strands 1¾" up

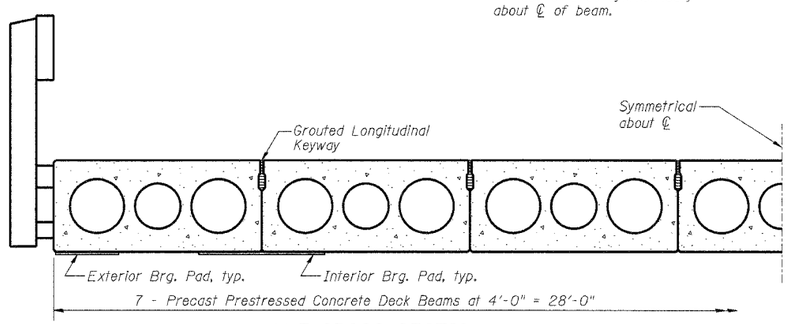
Note:
Place strands symmetrically about ℄ of beam.



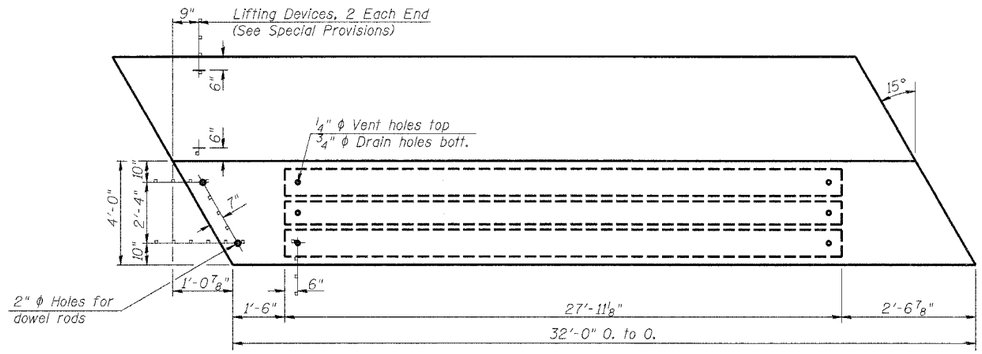
FABRIC BEARING PAD
(Interior)



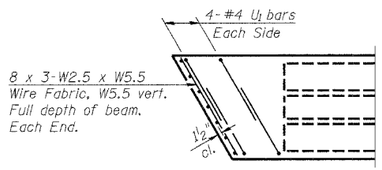
FABRIC BEARING PAD
(Exterior)



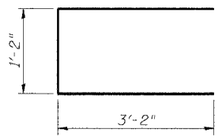
HALF CROSS SECTION



PLAN



END PLAN



BAR U1

BILL OF MATERIAL
FOR ONE BEAM

Bar	No.	Size	Length	Shape
B	4	#5	31'-8"	——
B1	6	#5	6'-6"	——
U1	16	#4	7"-6"	⊏
Precast Prestressed Conc. Deck Bms.			Sq. Ft.	128
* Reinforcement Bars			Pound	255
Total Weight			Pound	19,660

* Does not include WWF weight

NOTES

Prestressing steel shall be uncoated high strength, stress-relieved 7-wire strand, Grade 270.

The nominal diameter shall be ½" and the nominal cross-sectional area shall be 0.153 sq. in.

See Special Provisions for lifting devices.

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

The bearing seat surfaces for the precast prestressed concrete deck beams shall be adjusted by shimming to assure firm and even bearing. As required, ⅛" 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.

An equal substitution of the low-relaxation strands for the stress-relieved strands will be permitted. However, all strands shall be stressed to a maximum of 28,900 pounds per strand.

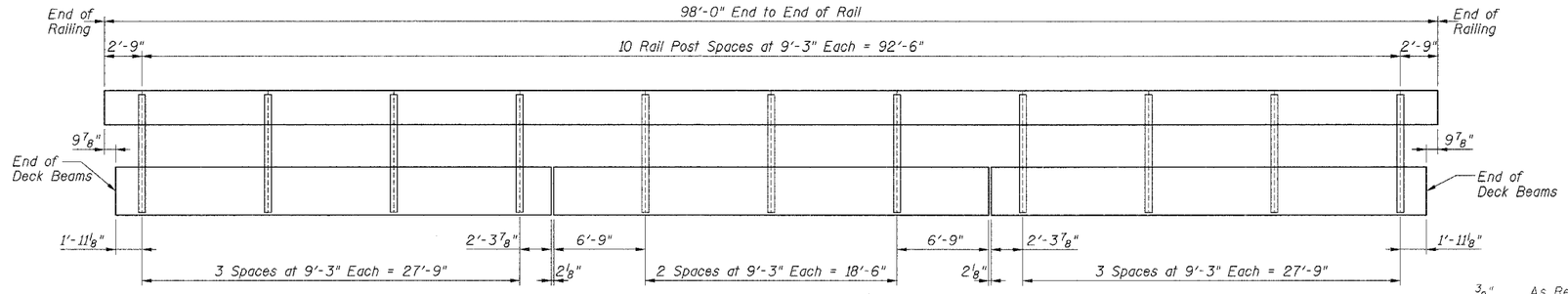
PRECAST PRESTRESSED CONCRETE DECK BEAM DETAILS
PROPOSED BRIDGE CARRYING TR 272 OVER SANDY RUN
SECTION 04-18117-00-BR
FAYETTE COUNTY, ILLINOIS

Sheet 7 of 10
Job No. 51004

10/01/2005

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

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 272	04-18117-00-BR	FAYETTE	10	8
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		
		CONTRACT NO. 95442		



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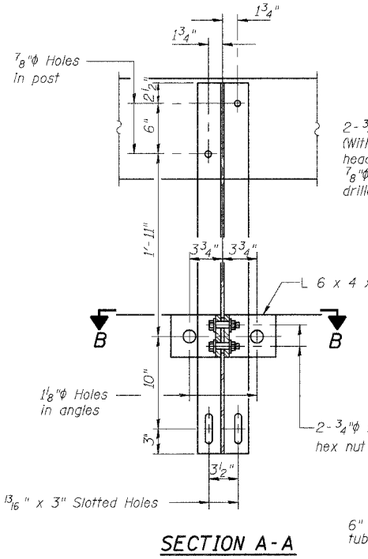
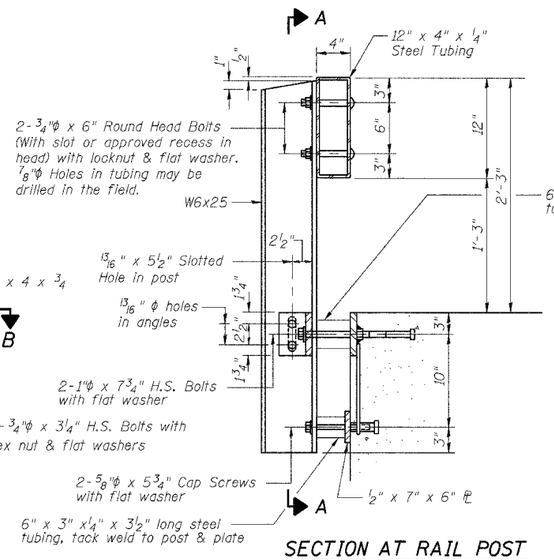
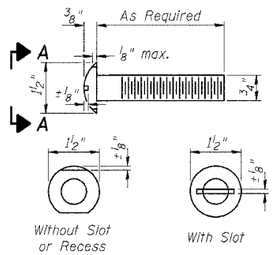


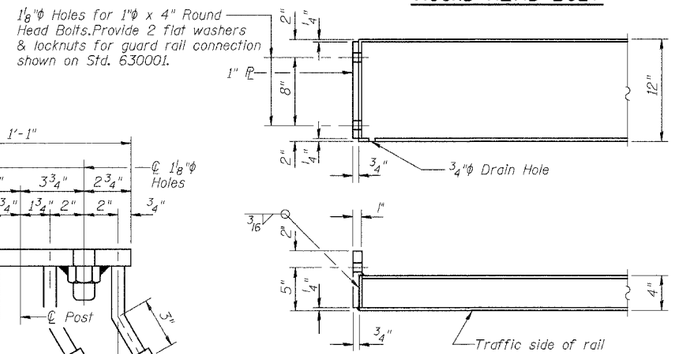
SECTION A-A



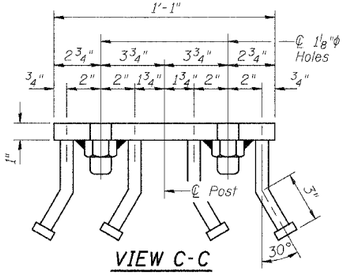
SECTION AT RAIL POST



VIEW A-A
ROUND HEAD BOLT

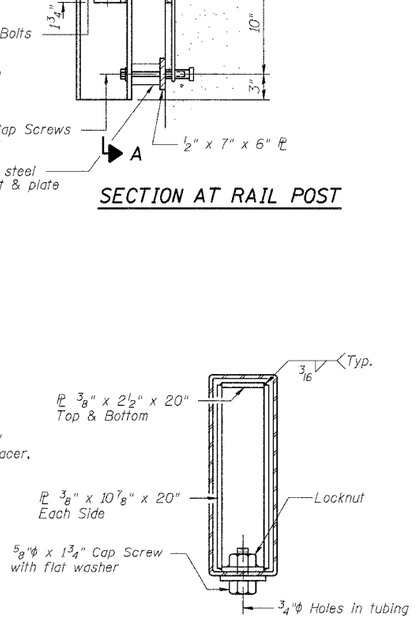


END OF RAIL DETAILS

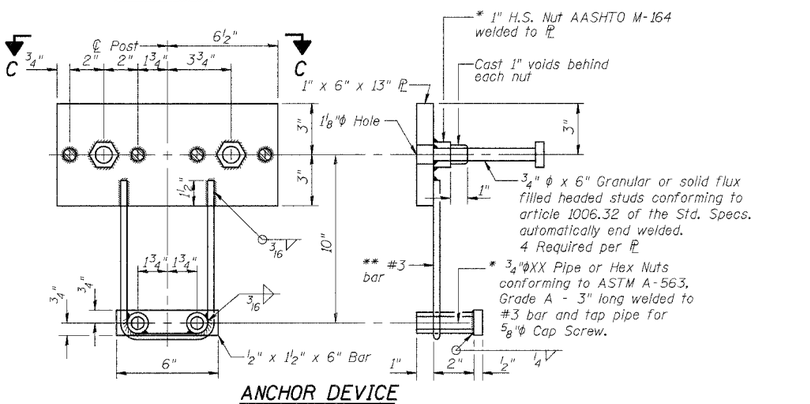


VIEW C-C

SECTION B-B



SECTIONS AT RAIL SPLICE



ANCHOR DEVICE

* 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".

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.

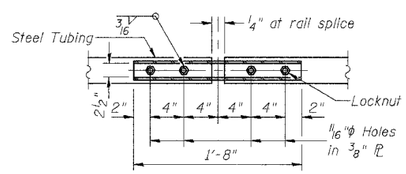
Railing shall be in accordance with Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for STEEL RAILING, TYPE S1.

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 1060.07 Type II or place 1/8" fabric bearing pad between the post and concrete.

The 3/4"φ 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"φ 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"φ cap screws in bottom of posts shall be tightened to a snug fit only.

For Multi-span bridges, sufficient 1/4"x6"x1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost incidental to steel railing.



PLAN-BOTT. SPLICE PL TYPICAL

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S1	Foot	196

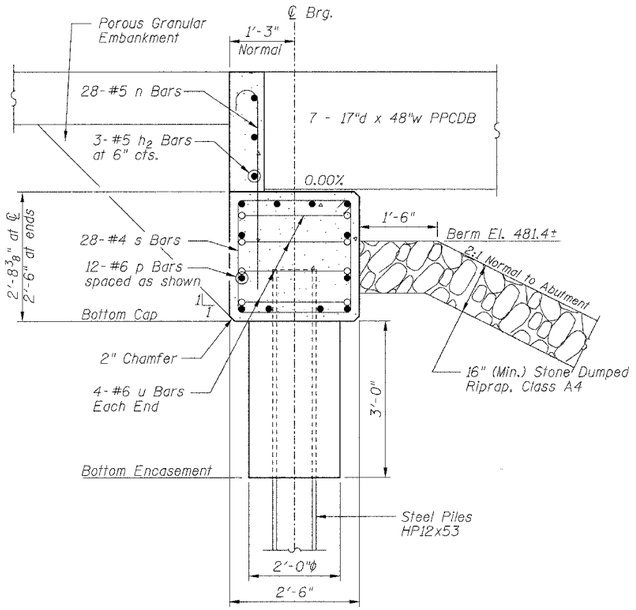
STEEL RAILING, TYPE S1 DETAILS
PROPOSED BRIDGE CARRYING TR 272 OVER SANDY RUN SECTION 04-18117-00-BR FAYETTE COUNTY, ILLINOIS

Sheet 8 of 10
Job No. 51004

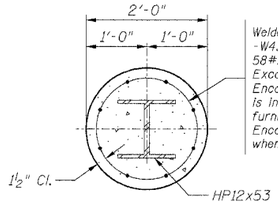
10/07/2005

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

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 272	04-18117-00-BR	FAYETTE	10	9
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		
		CONTRACT NO. 95442		

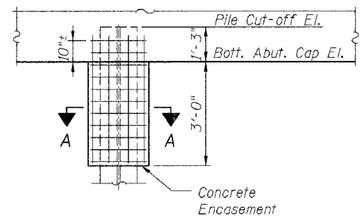


SECTION THRU ABUTMENT

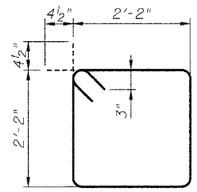


SECTION A-A

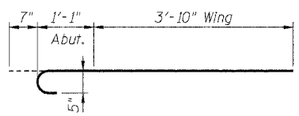
Welded wire fabric 6 x 6 - W4.0 x W4.0 weighing 58#/100 sq. ft. The cost of Excavation, Concrete Encasement & Reinforcement is incidental to the cost of furnishing piles. Forms for Encasement may be omitted when soil conditions permit.



PILE ENCASEMENT DETAIL



#4 s BARS



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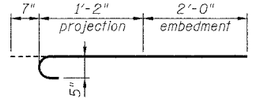

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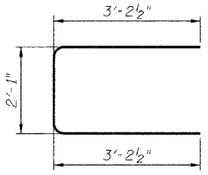


#6 u BARS

PILE DATA

Type:
South Abutment Steel HP12x53
North Abutment Steel HP12x53

Estimated Capacity:
South Abutment 46 Ton
North Abutment 46 Ton

Estimated Length:
South Abutment 43 Foot
North Abutment 50 Foot

Number Required:
South Abutment 5
North Abutment 4+1 Test Pile

Total Estimated Length:
(Does not include Test Pile)
Steel HP12x53 415 Foot

Drive to 46 Ton capacity per pile

GENERAL NOTES

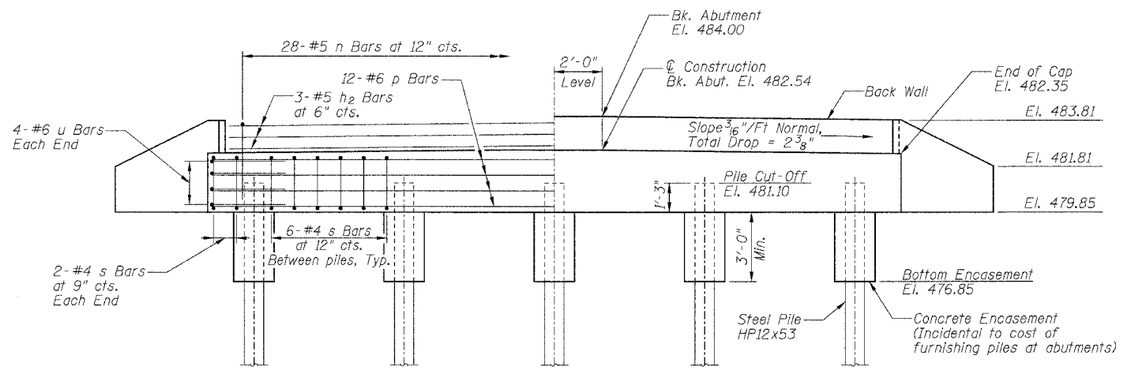
All exposed edges shall have standard ¾" chamfer, unless otherwise noted.

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

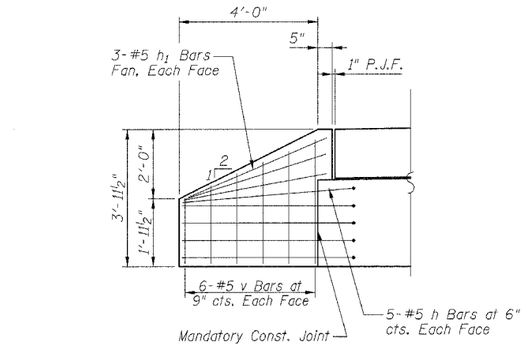
Space reinforcement in cap to miss PPCDB dowel rods.

BILL OF MATERIALS
ONE ABUTMENT w/ WINGWALLS

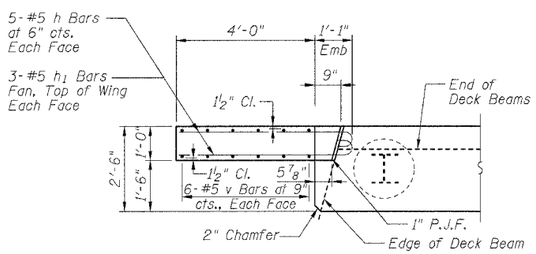
Bar	No.	Size	Length	Shape
h	20	#5	5'-6"	
h_1	12	#5	4'-6"	
h_2	3	#5	28'-8"	
n	28	#5	3'-9"	
p	12	#6	28'-8"	
s	28	#4	9'-5"	
u	8	#6	8'-6"	
v	24	#5	3'-9"	CUT IN FIELD
Concrete Structures		Cu. Yd.	9.2	
Reinforcement Bars		Pound	1280	



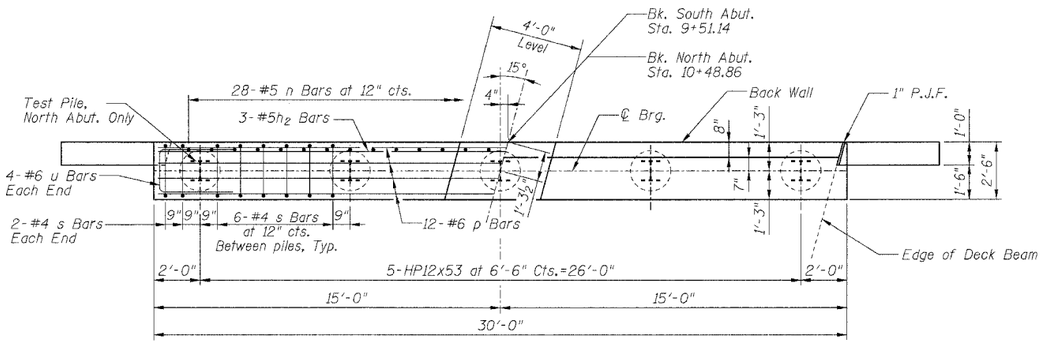
ELEVATION



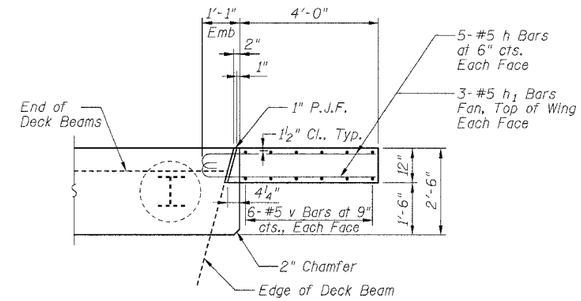
ELEVATION OF WINGWALL



WINGWALL CONNECTION DETAIL



PLAN



WINGWALL CONNECTION DETAIL

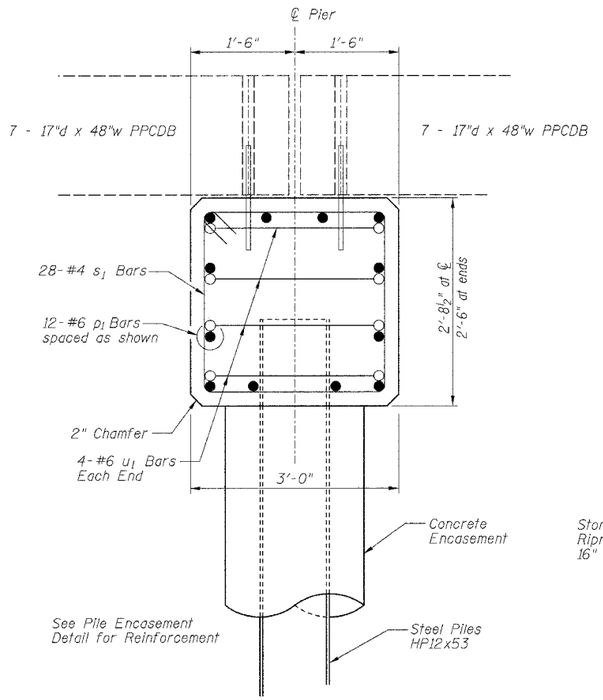
ABUTMENT DETAILS
PROPOSED BRIDGE CARRYING TR 272 OVER SANDY RUN
SECTION 04-18117-00-BR
FAYETTE COUNTY, ILLINOIS

Sheet 9 of 10
Job No. 51004

10/07/2005

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

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 272	04-18117-00-BR	FAYETTE	10	10
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		
		CONTRACT NO. 95442		



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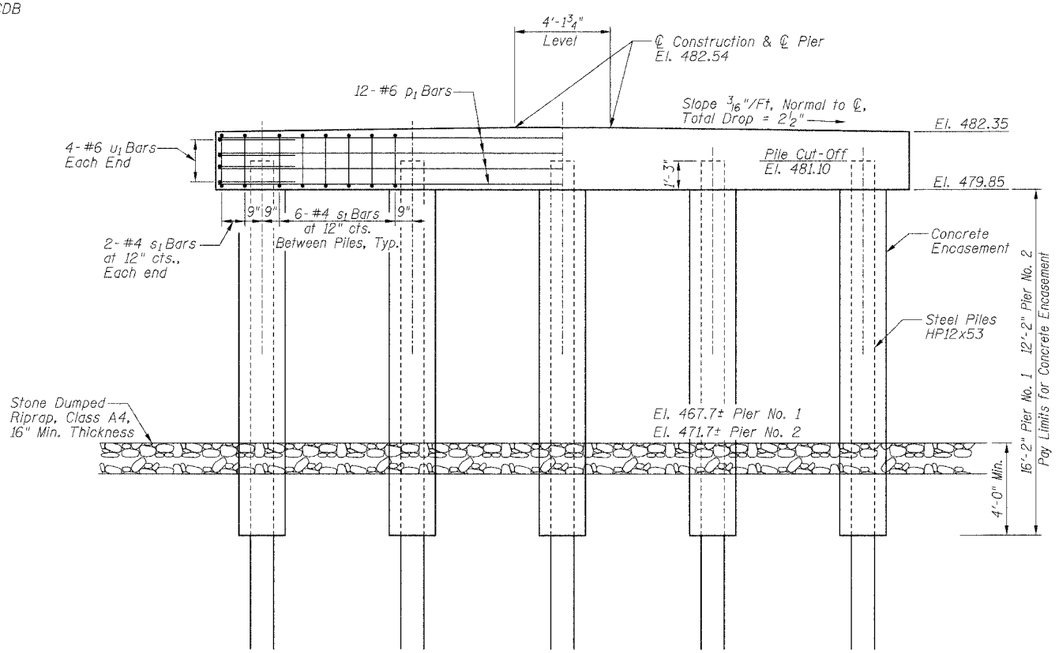

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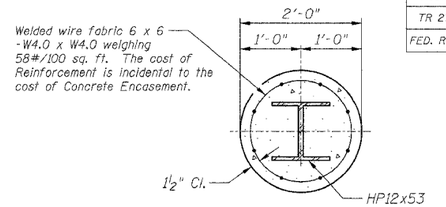
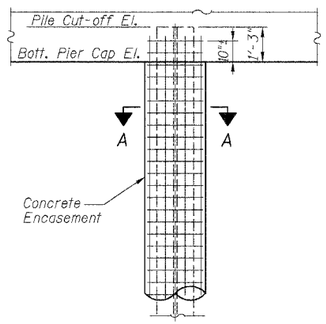


SECTION A-A



PILE ENCASEMENT DETAIL

PILE DATA

Type:
- Pier No. 1 — Steel HP12x53
- Pier No. 2 — Steel HP12x53

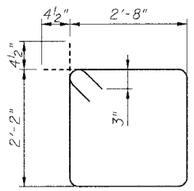
Estimated Capacity:
- Pier No. 1 — 76 Ton
- Pier No. 2 — 76 Ton

Estimated Length:
- Pier No. 1 — 56 Foot
- Pier No. 2 — 56 Foot

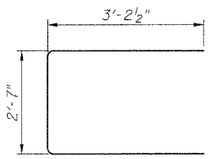
Number Required:
- Pier No. 1 — 5
- Pier No. 2 — 5

Total Estimated Length:
- Steel HP12x53 — 560 Foot

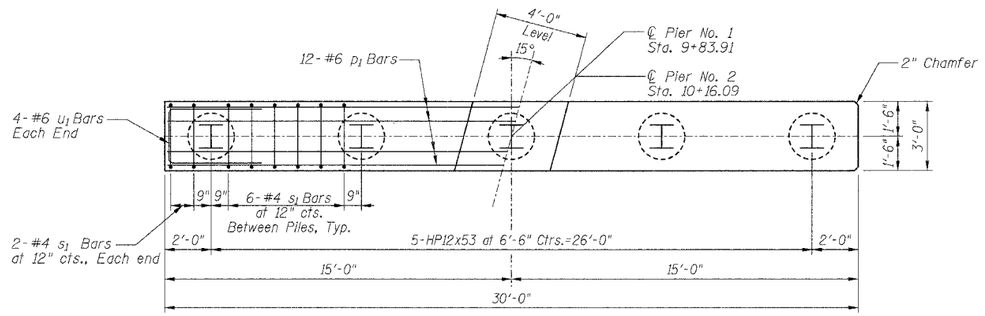
Drive to 76 Ton capacity per pile



#4 s_1 BARS



#6 u_1 BARS



PLAN

BILL OF MATERIALS
ONE PIER

Bar	No.	Size	Length	Shape
p_1	12	#6	29'-8"	
s_1	28	#4	10'-5"	
u_1	8	#6	9'-0"	
Concrete Structures			Cu. Yd.	8.7
Concrete Encasement (Pier 1)			Cu. Yd.	9.4
Concrete Encasement (Pier 2)			Cu. Yd.	7.1
Reinforcement Bars			Pound	840

GENERAL NOTES

All exposed edges shall have 2" chamfer, unless otherwise noted.

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

Space reinforcement in cap to miss PPCDB dowel rods.

10/07/2005

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

PIER DETAILS
PROPOSED BRIDGE CARRYING TR 272 OVER SANDY RUN SECTION 04-18117-00-BR FAYETTE COUNTY, ILLINOIS