3-7-08 Letting, Item 114

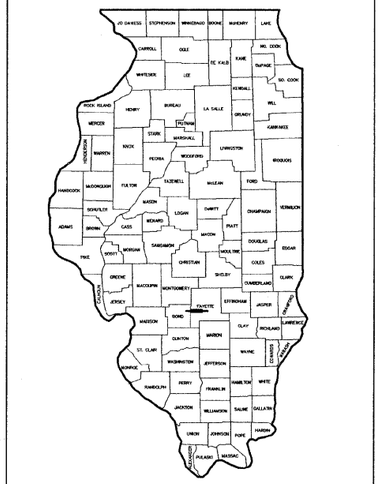
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 78	03-02125-00-BR	FAYETTE	12	1
FED. AID PROJECT NO.		ILLINOIS	PROJECT	

CONTRACT NO. 95540

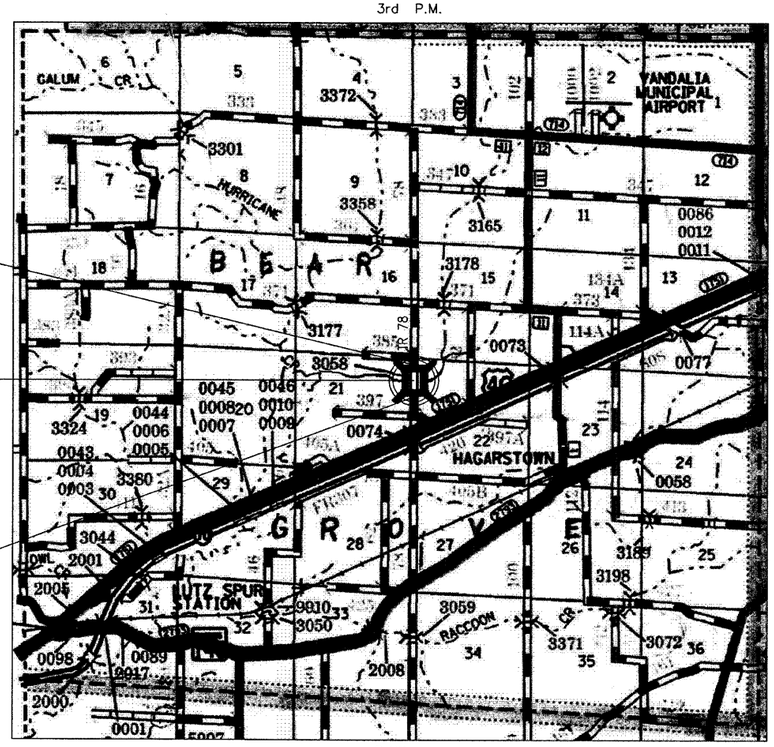
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
HIGHWAY BRIDGE PROGRAM

SCALES: PROFILE HORIZ. 0' 20' 40' | CROSS SECTIONS HORIZ. 0' 10' 20' | PROFILE VERT. 0' 5' 10' | CROSS SECTIONS VERT. 0' 5' 10'

SECTION 03-02125-00-BR
PROJECT NO. BROS-051(80)
BEAR GROVE ROAD DISTRICT
FAYETTE COUNTY
JOB NO. C-97-045-08



INDEX OF SHEETS



END SECTION 03-02125-00-BR
STA. 50+40.77

STA. 50+00 – CONSTRUCT SINGLE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE
(71.54' BK. TO BK. ABUTMENTS) WITH
SPILL-THRU PILE BENT ABUTMENTS
10° SKEW, 24' ROADWAY
EXISTING STRUCTURE NO. 026-3058
PROPOSED STRUCTURE NO. 026-3440

BEGIN SECTION 03-02125-00-BR
STA.49+59.23

LOCATION MAP

APPROXIMATE SCALE – 1" = 0.62 MILE
NET LENGTH OF IMPROVEMENTS – 81.54 FEET = 0.015 MILE
GROSS LENGTH OF IMPROVEMENTS – 181.54 FEET = 0.034 MILE

Call Before You Dig
JULIE
ILLINOIS ONE CALL SYSTEM

48 HOURS PRIOR TO EXCAVATION
CALL J.U.L.I.E.: (811) or 1-800-892-0123

CLASS ROAD: MAJOR COLLECTOR
A.D.T. = 250
SPEED = 40 M.P.H.

APPROVED 12-12, 2007.
COUNTY ENGINEER

PASSED 1-02, 2008.
DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS

Releasing For Bid Based on Limited Review 1-02, 2008.
DEPUTY DIRECTOR OF HIGHWAYS, REGION FOUR ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MICHAEL R. QUANDT
062-042893
LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

MICHAEL R. QUANDT
SIGN: Michael R Quandt
EXP. DATE: 11/30/09

STS CONSULTANTS
2524 South Broadway
Salem, Illinois 62881
PH(618)548-3500
FAX(618)548-5246
IL Design Firm Registration No. 184-001518

DATE: DECEMBER 10, 2007
STS JOB NO. 200701115

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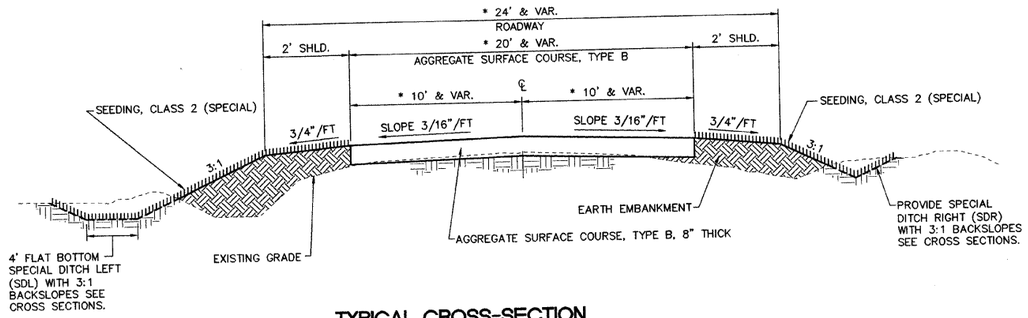
ROUTE NO.	SECTION	COUNTY	SHEETS	NO.
T.R. 78	03-02125-00-BR	FAYETTE	12	2
FED. AID PROJECT NO.		ILLINOIS	PROJECT	

CONTRACT NO. 95540



TYPICAL CROSS-SECTION

* TRANSITION FROM 13.1' EXISTING TO 20' PROPOSED PAVEMENT STA. 49+09.23 TO STA. 49+59.23
* 20' PROPOSED PAVEMENT STA. 49+59.23 TO BRIDGE AND FROM BRIDGE TO STA. 50+40.77
* TRANSITION FROM 20' PROPOSED TO 11.9' EXISTING PAVEMENT STA. 50+40.77 TO STA. 50+90.77

GENERAL NOTES

1. THIS SECTION SHALL BE CONSTRUCTED ACCORDING TO THE PLANS, THE SPECIAL PROVISIONS AND THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" ADOPTED JANUARY 1, 2007.
2. THE SHRINKAGE FACTOR FOR EMBANKMENT IS 25%.
3. EXCEPT FOR TREE REMOVAL AS SHOWN ON THE PLANS, ALL CLEARING AND GRUBBING IS TO BE INCLUDED IN THE UNIT PRICE BID FOR EARTH EXCAVATION.
4. BITUMINOUS SURFACE TREATMENT (A-2) WILL BE COMPLETED BY THE OWNER.

SUMMARY OF QUANTITIES

X081-2A

CODE NO.	ITEM	QUANTITY	UNIT
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	94	UNITS
20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	44	UNITS
20200100	EARTH EXCAVATION	108	CU. YD.
20300100	CHANNEL EXCAVATION	356	CU. YD.
25001000	SEEDING, CLASS 2 (SPECIAL)	0.12	ACRE
28000300	TEMPORARY DITCH CHECKS	4	EACH
28100807	STONE DUMPED RIPRAP, CLASS A4	120	TON
40200800	AGGREGATE SURFACE COURSE, TYPE B	90	TON
50100100	REMOVAL OF EXISTING STRUCTURES	1	EACH
50300225	CONCRETE STRUCTURES	19.2	CU. YD.
50300280	CONCRETE ENCASEMENT	2.58	CU. YD.
50400605	PRECAST PRESTRESSED CONCRETE DECK BEAMS (33" DEPTH)	1680	SQ. FT.
50800105	REINFORCEMENT BARS	2340	POUND
50900205	STEEL RAILING, TYPE S1	140	FOOT
51201400	FURNISHING STEEL PILES HP 10x42	417	FOOT
51202305	DRIVING PILES	417	FOOT
51203400	TEST PILE STEEL HP 10x42	1	EACH
51500100	NAME PLATES	1	EACH
67100100	MOBILIZATION	1	L. SUM

STS CONSULTANTS
2524 South Broadway
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Fax(618)548-5246
IL Design Firm Reg. No. 184-001518

T.R. 78, SECTION 03-02125-00-BR
BEAR GROVE ROAD DISTRICT
FAYETTE COUNTY, ILLINOIS

TYPICAL CROSS SECTION, GENERAL NOTES AND SUMMARY OF QUANTITIES

SURVEY	CHECKED	DATE
JAS		12/10/07
DESIGN JMW	APPROVED	REVISED
DRAWN JMW		JOB NO. 200701115

ROUTE NO.	SECTION	COUNTY	SHEETS	NO.
T.R. 78	03-02125-00-BR	FAYETTE	12	3
FED. AID PROJECT NO.		ILLINOIS	PROJECT	

CONTRACT NO. 95540

CONSTRUCT SEEDING, CLASS 2 (SPECIAL)
STA. 49+09.23 TO STA. 50+90.77 = 0.12 ACRE

NEW ROW
0.12 ACRE

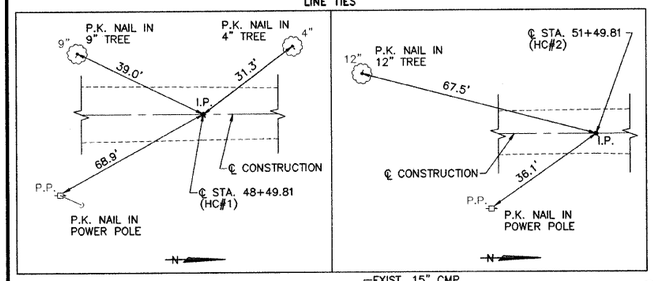
HORIZONTAL CONTROL COORDINATES

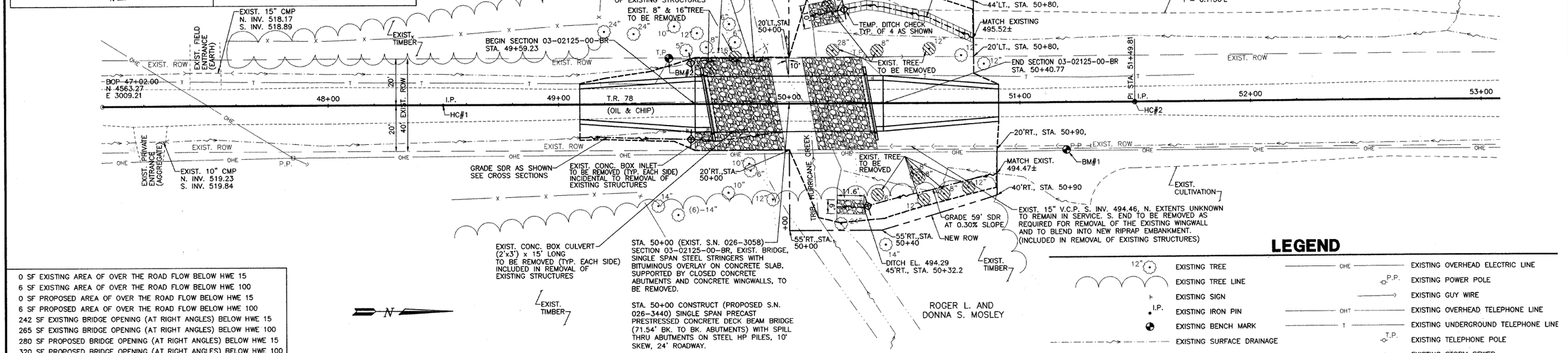
POINT	LOCATION	N. COOR.	E. COOR.	ELEV.
HC#1(IRON PIN)	℄ STA. 48+49.81	4711.08	3009.15	514.50
HC#2(IRON PIN)	℄ STA. 51+49.81	5011.08	3009.03	500.67

BENCH MARK COORDINATES

POINT	LOCATION	ELEV.
BM#1(R.R. SPIKE IN POWER POLE)	RT. 20.54, STA. 51+20.19	498.77
BM#2(R.R. SPIKE IN TELEPHONE POLE)	LT. 19.79, STA. 49+47.89	511.82

LINE TIES

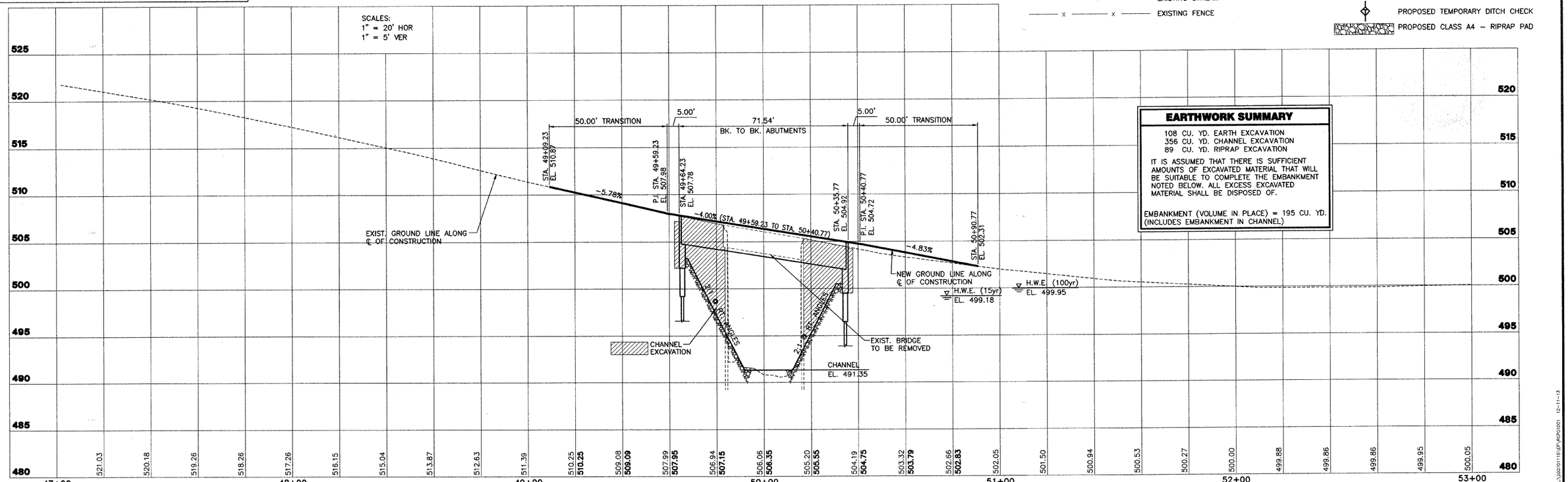




0 SF EXISTING AREA OF OVER THE ROAD FLOW BELOW HWE 15
6 SF EXISTING AREA OF OVER THE ROAD FLOW BELOW HWE 100
0 SF PROPOSED AREA OF OVER THE ROAD FLOW BELOW HWE 15
6 SF PROPOSED AREA OF OVER THE ROAD FLOW BELOW HWE 100
242 SF EXISTING BRIDGE OPENING (AT RIGHT ANGLES) BELOW HWE 15
265 SF EXISTING BRIDGE OPENING (AT RIGHT ANGLES) BELOW HWE 100
280 SF PROPOSED BRIDGE OPENING (AT RIGHT ANGLES) BELOW HWE 15
320 SF PROPOSED BRIDGE OPENING (AT RIGHT ANGLES) BELOW HWE 100

LEGEND

- EXISTING TREE
- EXISTING TREE LINE
- EXISTING SIGN
- EXISTING IRON PIN
- EXISTING BENCH MARK
- EXISTING SURFACE DRAINAGE
- EXISTING STREAM
- EXISTING FENCE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING POWER POLE
- EXISTING GUY WIRE
- EXISTING OVERHEAD TELEPHONE LINE
- EXISTING UNDERGROUND TELEPHONE LINE
- EXISTING TELEPHONE POLE
- EXISTING STORM SEWER
- PROPOSED TEMPORARY DITCH CHECK
- PROPOSED CLASS A4 – RIPRAP PAD



EARTHWORK SUMMARY

108 CU. YD. EARTH EXCAVATION
356 CU. YD. CHANNEL EXCAVATION
89 CU. YD. RIPRAP EXCAVATION

IT IS ASSUMED THAT THERE IS SUFFICIENT AMOUNTS OF EXCAVATED MATERIAL THAT WILL BE SUITABLE TO COMPLETE THE EMBANKMENT NOTED BELOW. ALL EXCESS EXCAVATED MATERIAL SHALL BE DISPOSED OF.

EMBANKMENT (VOLUME IN PLACE) = 195 CU. YD.
(INCLUDES EMBANKMENT IN CHANNEL)

STS CONSULTANTS
2524 South Broadway, P.O. Box 850
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Fax(618)548-5246
IL Design Firm Reg. No. 184-001518

T.R. 78, SECTION 03-02125-00-BR
BEAR GROVE ROAD DISTRICT
FAYETTE COUNTY, ILLINOIS

PLAN AND PROFILE
STA. 47+00 TO STA. 53+00

SURVEY	CHECKED	DATE
JAS		12/10/07
DESIGN	APPROVED	REVISED
MRQ		
DRAWN		JOB NO.
JMW		2007D1115

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B.M. - B.M. #1, R.R. Spike in Power Pole, 20.54' RT., STA. 51+20.19, EL. 498.77
B.M. #2, R.R. Spike in Telephone Pole, 19.79' LT., STA. 49+47.89, EL. 511.82

Existing Structure - Single span steel stringers with bituminous overlay on concrete slab on closed concrete abutments and concrete wingwalls.

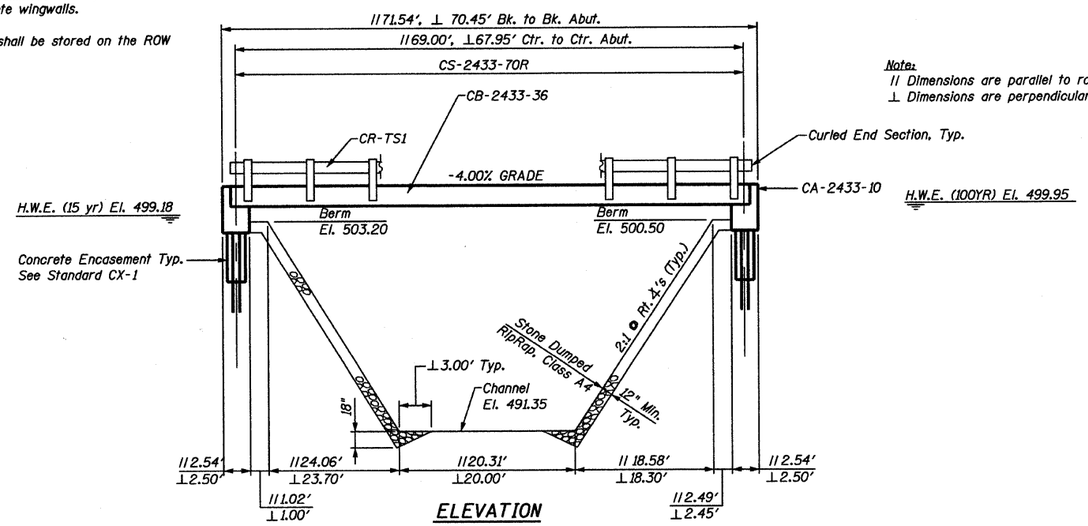
Salvage - Material deemed salvageable by the Engineer shall be stored on the ROW for removal by the County.

Existing Known Utilities - Overhead electric, Telephone

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

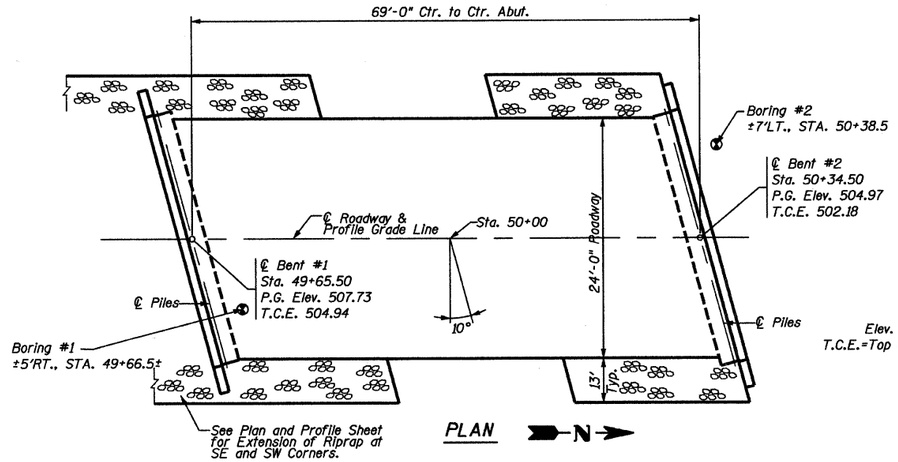
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 78	03-02125-00-BR	FAYETTE	12	4
FED. AID PROJECT NO.		ILLINOIS		

CONTRACT NO. 95540



ELEVATION

Note:
// Dimensions are parallel to roadway
⊥ Dimensions are perpendicular to channel



PLAN ➡N➡

Elev.
T.C.E.=Top of Cap

GENERAL NOTES

1. The contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at the substructures specified or approved by the Engineer before ordering the remaining piles.
2. See Special Provisions for boring logs.
3. A corrosion inhibitor shall be used in the concrete for the precast, prestressed concrete deck beams, according to Article 1020.05(b)(12) of the Standard Specifications.
4. The Waterproofing Membrane System and Bituminous Concrete Surface Course Shown on the Standards Shall Not be Provided.
5. Reinforcement bars shall conform to the requirements of ASTM A706 Grade 60 (IL Modified).

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub. Piers	Sub. Abuts.	Total
Removal of Existing Structures	Each				1
Concrete Structures	Cu. Yd.			19.2	19.2
Precast Prestressed Concrete Deck Beams (33" Depth)	Sq. Ft.	1680			1680
Steel Railing, Type S-1	Foot	140			140
Reinforcement Bars	Pound			2340	2340
Furnishing Steel Piles HP 10x42	Foot			417	417
Driving Piles	Foot			417	417
Test Pile Steel HP 10x42	Each			1	1
Name Plates	Each			1	1
Concrete Encasement	Cu. Yd.			2.58	2.58

The standard detail sheets for this structure were assembled by me or persons under my direct supervision.

Date: 12/12/07

Date of License Expiration : 11/30/09

Signature: Michael R Quandt

MICHAEL R. QUANDT 062-042893 LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

I certify these Standard Bridge Plans for foundation treatment only.

Date: 12/12/07

Date of License Expiration : 11/30/08

Signature: William D Siekpinz

WILLIAM D. SIEKPINZ 4361 REGISTERED STRUCTURAL ENGINEER OF ILLINOIS

INDEX OF SHEETS

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications - 17th ed.

LOADING HS 20-44

Allow 25# / Sq. Ft. for Future Wearing Surface.

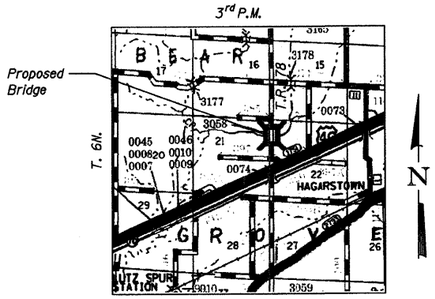
PILE DATA (2-ABUTS.)

Pile Type and Size:	Steel Piles, HP10x42
Nominal Required Bearing:	240 kips
Allowable Resistance Available:	80 kips
Estimated Pile Length:	45 Ft Bent #1, 48 Ft Bent #2
Number of Production Piles:	9
Number of Test Piles:	1 (Located in Bent #2)

STATION 50+00
TRIBUTARY TO HURRICANE CREEK
SEC. 03-02125-00-BR BUILT 20__
PROJECT NO. BROS-051(80)
FAYETTE COUNTY
LOADING HS20
STR. NO. 026-3440

LETTERING FOR NAME PLATE

Locate Name Plate at Northwest Corner of Bridge (See Std. CN)



LOCATION SKETCH

WATERWAY INFORMATION

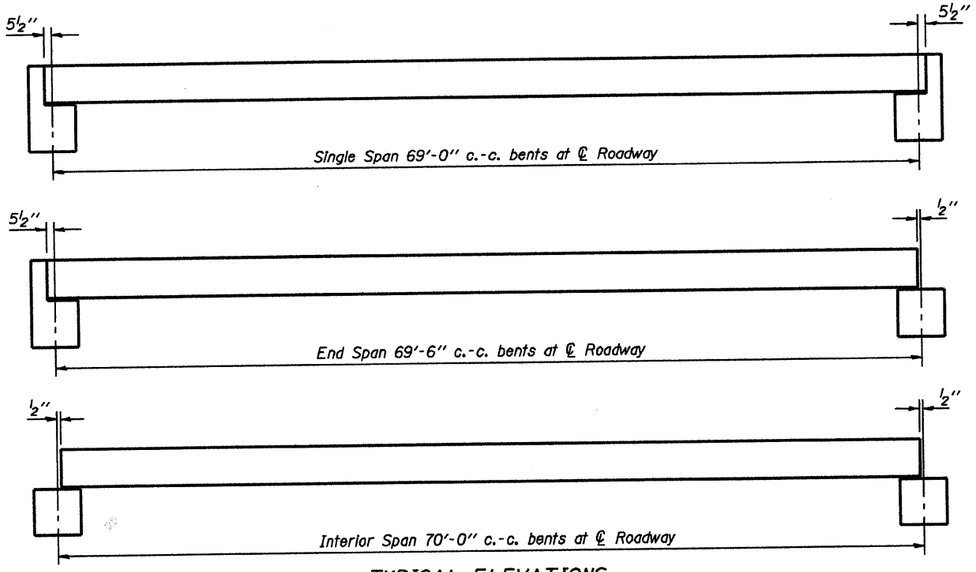
Drainage Area = 8.04 Sq. Mi. Low Grade Elev. 499.86 ◐ Sta. 52+60

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E. Ft.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater Elev. - Ft. Exist.	Headwater Elev. - Ft. Prop.
Design	15	1621	242	280	499.18	N/A	0.56	N/A	499.74
Base	100	2600	265	320	499.95	N/A	1.00	N/A	500.95
Overtopping									
Max. Calc.	500								

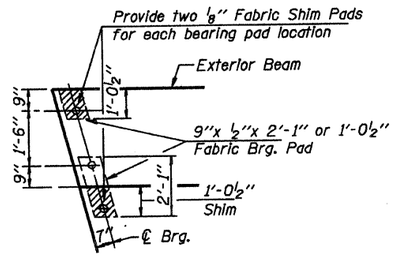
GENERAL PLAN & ELEVATION
T.R. 78
OVER TRIB. TO HURRICANE CREEK
SECTION 03-02125-00-BR
FAYETTE COUNTY
STATION 50+00

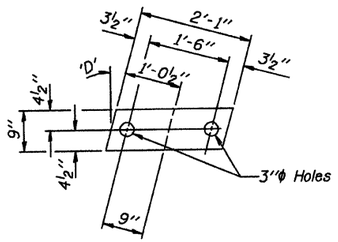
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 78	03-02125-00-BR	FAYETTE	12	5
FED. AID PROJECT NO.		ILLINOIS	PROJECT	

CONTRACT NO. 95540

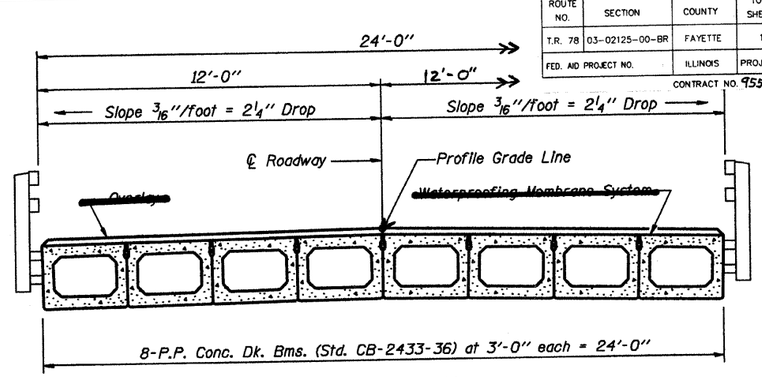


TYPICAL ELEVATIONS

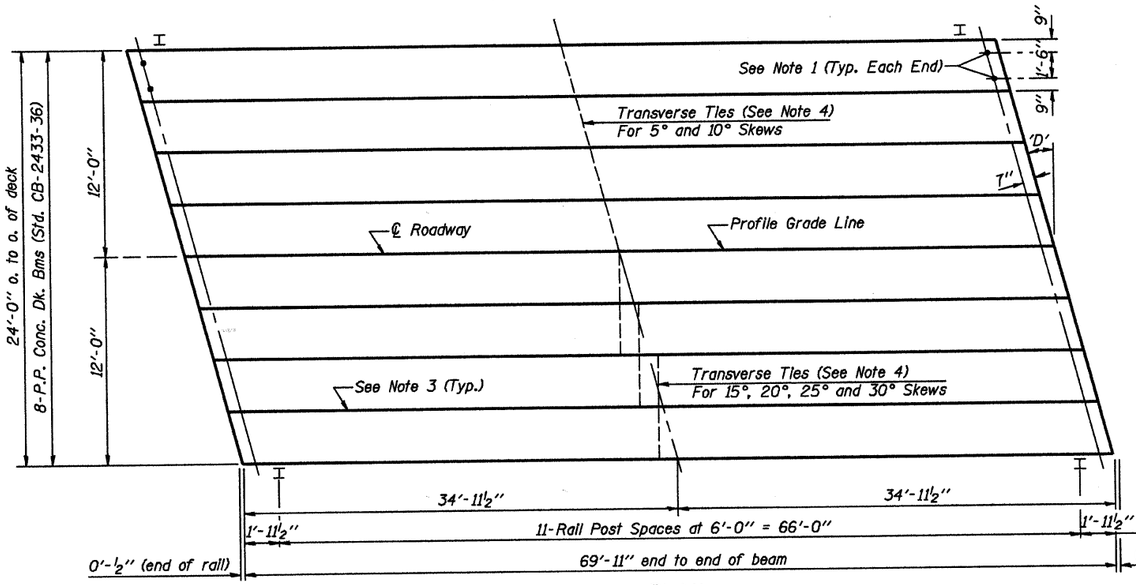




½" FABRIC BRG. PAD DETAILS

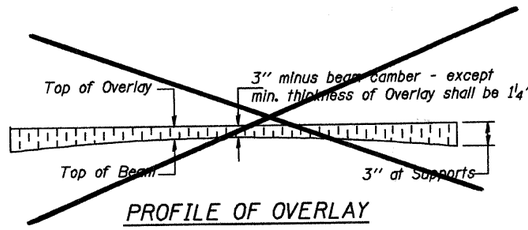


CROSS SECTION



PLAN

('D' = Designated Skew Angle)



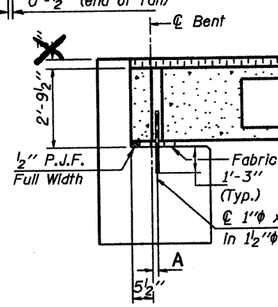
PROFILE OF OVERLAY

DIMENSIONS 'A' AND 'B'

'D'	5°	10°	15°	20°	25°	30°
A	1½"	1⅝"	1¾"	1⅞"	2¼"	2⅝"
B	7½"	7⅝"	7¾"	8"	8¼"	8⅝"

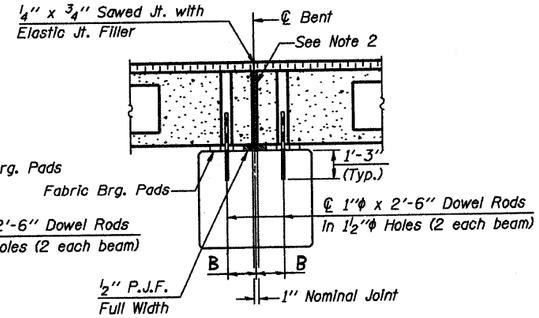
NOTES

1. After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.
2. Nominal 1" joint at ℄ Pier shall be filled with non-shrink grout.
3. Longitudinal keys shall be grouted.
4. 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 outside shall be filled with grout after transverse tie assembly is in place.



SECTION AT ABUTS.

(Along ℄ Beams)



SECTION AT PIERS

(Along ℄ Beams)

QUANTITIES FOR ONE SPAN

P.P. Conc. Dk. Bm. 33" Dp.	1680 Sq. Ft.
Steel Railing	140 Ft.
~~Waterproofing Membrane System~~	~~1680 Sq. Ft.~~
~~Portland Cement Mortar Fairing Course~~	~~168 Ft.~~
~~Note: Quantity of overlay for one span 21.3 Tons~~	

Illinois Department of Transportation

PASSED APRIL 4, 2005
Thomas J. Domagalski
Engineer of Bridge Design
APPROVED APRIL 4, 2005
Ralph E. Anderson
Engineer of Bridges and Structures

ISSUED 4-4-2005

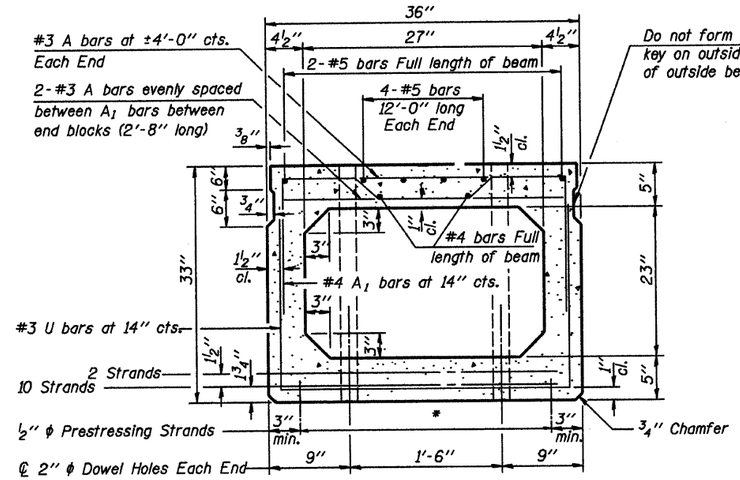
P.P.C. DECK BEAM SUPERSTRUCTURE

24' RDWY.	33" BMS.	70' SPAN	RIGHT

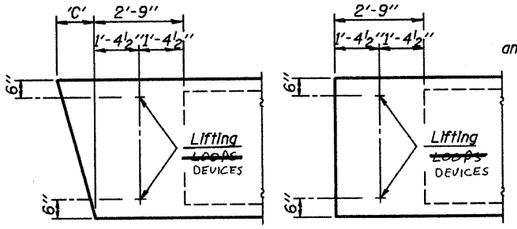
STANDARD CS-2433-70R

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 78	03-02125-00-BR	FAYETTE	12	6
FED. AID PROJECT NO.		ILLINOIS	PROJECT	

CONTRACT NO. 95540

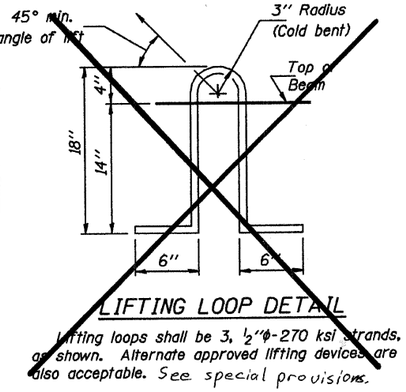


CROSS SECTION
(60' SPAN)



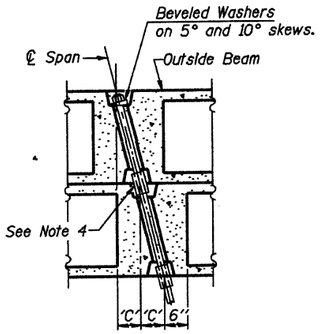
END BLOCK DETAILS

Each beam shall have four Lifting ~~Loops~~ DEVICES two at each end of beam cast in locations shown above. ~~Loops shall be burned off after beams have been erected.~~

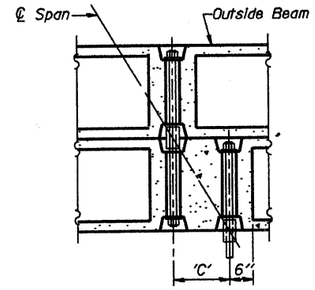


LIFTING LOOP DETAIL

Lifting loops shall be 3, ½"ϕ-270 ksi strands, as shown. Alternate approved lifting devices are also acceptable. See special provisions.



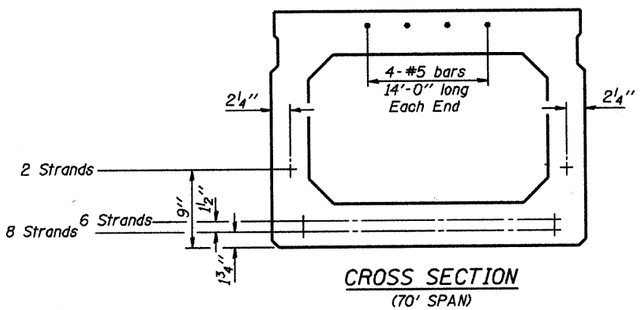
PARTIAL PLAN
TRANSVERSE TIE ASSEMBLY
('D'=0°, 5° and 10°)



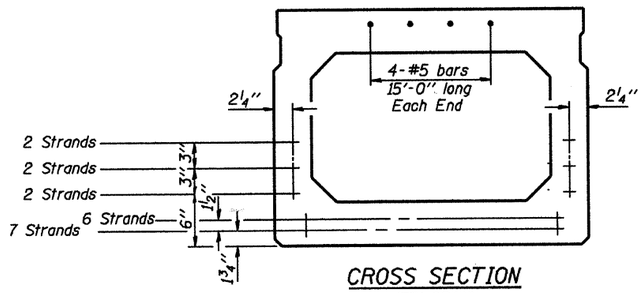
PARTIAL PLAN
TRANSVERSE TIE ASSEMBLY
('D'=15°, 20°, 25° and 30°)

DIMENSION 'C'

Skew Angle 'D'	0°	5°	10°	15°	20°	25°	30°
Dimension 'C' (Inches)	0	3⅛	6⅜	9⅝	13⅛	16¾	20¾



CROSS SECTION
(70' SPAN)

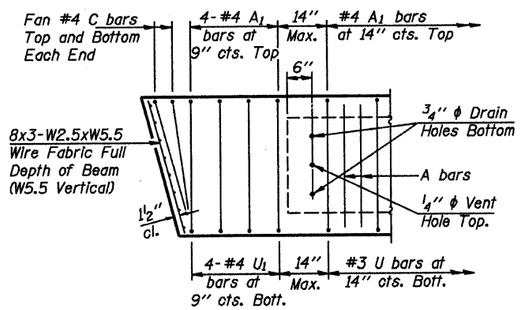


CROSS SECTION
(75' SPAN)

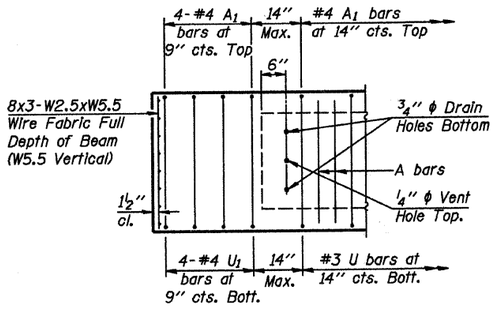
* TRANSVERSE STRAND PLACEMENT GUIDELINES

1. Place strands symmetrically about centerline of beam.
2. The minimum distance from center to center of strands in all directions shall be 2".
3. The minimum clearance from strand to dowel hole shall be ½".
4. The minimum clearance from strand to void shall be 1½".

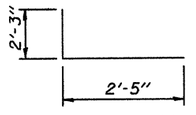
Vertical placement of strands shall not be adjusted to satisfy the above guidelines.



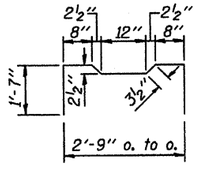
END REINFORCEMENT
(SKEWED)



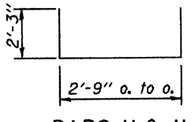
END REINFORCEMENT
(RIGHT ANGLE)



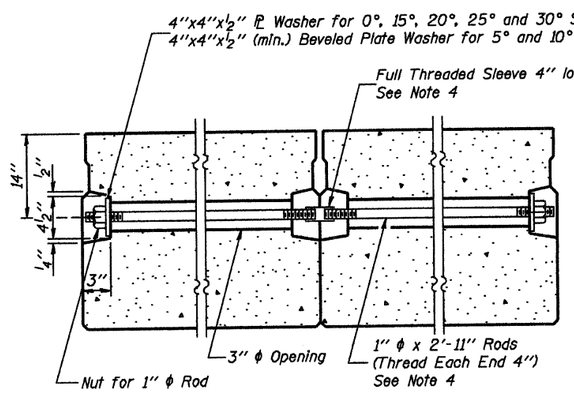
BAR C**



BAR A1



BARS U & U1



SECTION ALONG TRANSVERSE TIE ASSEMBLY

NOTES

1. Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270.
2. The nominal diameter shall be ½" and the nominal cross-sectional area shall be 0.153 square inches.
3. Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-322, Grade 60.
4. On 0°, 5° and 10° skews, alternate appoved transverse tie rods of increased segmental length are acceptable.
5. Rail Post anchor devices shall be cast into outside beam as elsewhere specified.
6. When a Waterproofing Membrane System is specified, the top surface of the beams shall be screeded with a straightedge and finished with a hand float. The finished surface shall be free of depressions or high spots with sharp corners and the top edge of keys shall be rounded or chamfered a minimum of ¼".
7. 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 the top of the beam and the bottom edge of the key.

DESIGN STRESSES

f'_c = 5,000 p.s.i.
f'_{ci} = 4,000 p.s.i.
f'_s = 270,000 p.s.i. (½" ϕ Strand)
f_{si} = 201,960 p.s.i. (½" ϕ Strand)
f_y = 60,000 p.s.i.

MIN. BAR LAP

#4 bars = 1'-4"
#5 bars = 1'-8"

Illinois Department of Transportation

PASSED APRIL 4, 2005
Thomas J. Domagalski
Engineer of Bridge Design
APPROVED APRIL 4, 2005
Ralph E. Anderson
Engineer of Bridges and Structures

ISSUED 4-4-2005

NOTE:
The std. reinf. and dimensions shown on the 60' span cross section is typical for all spans, except as shown.

**NOTE:
The following number of C bars shall be used:

Skew	No.
5° and 10°	1
15° and 20°	2
25° and 30°	3

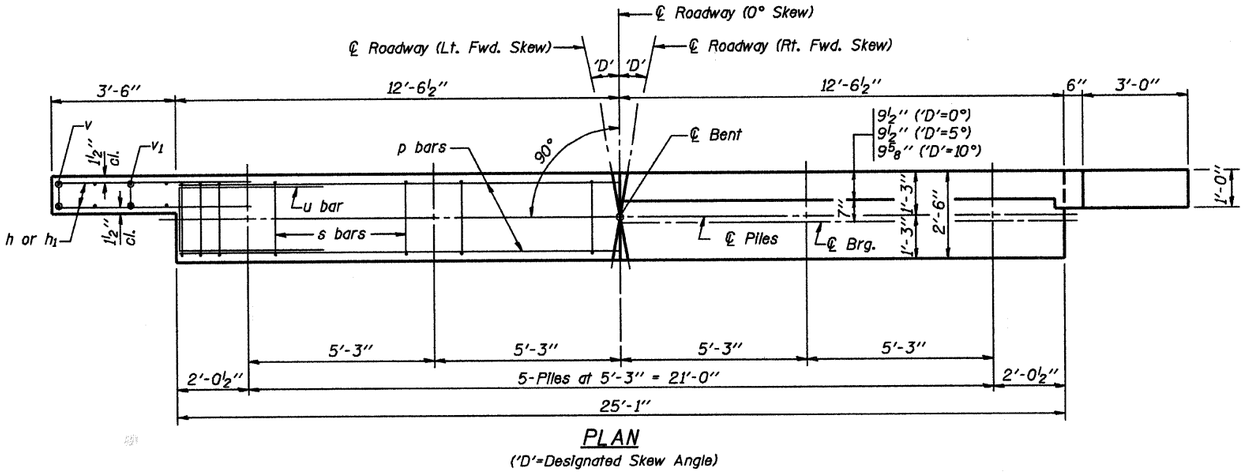
P.P.C. DECK BEAM DETAILS

24' ROADWAY | 33" x 36" BEAMS

STANDARD CB-2433-36

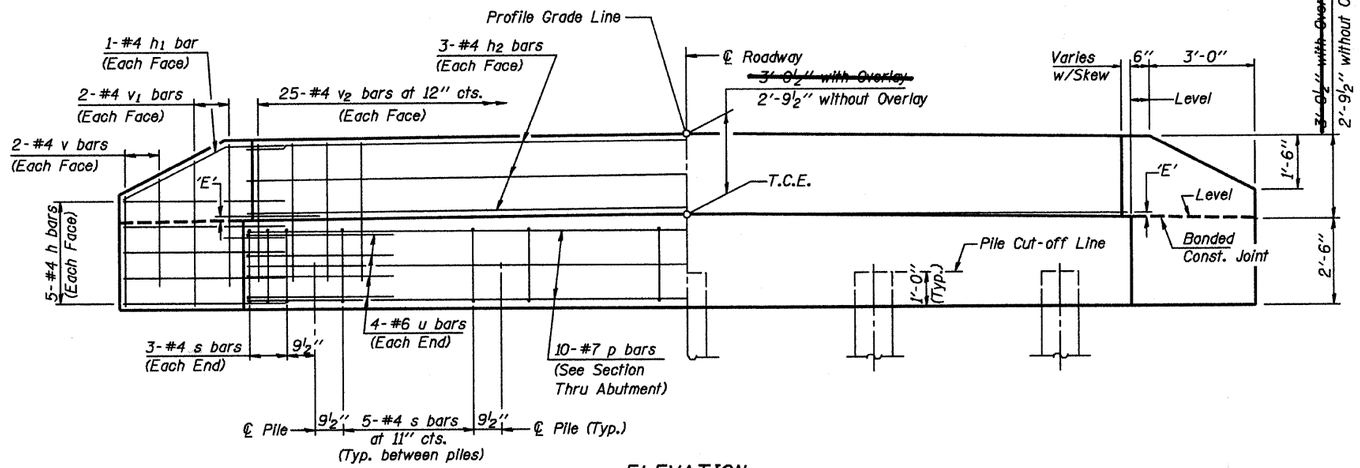
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 78	03-02125-00-BR	FAYETTE	12	7
FED. AID PROJECT NO.		ILLINOIS	PROJECT	

CONTRACT NO. 95540

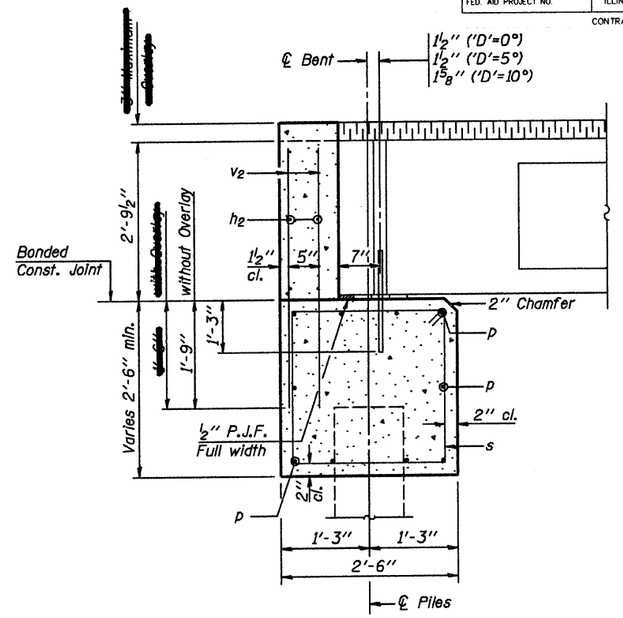


PLAN

('D'=Designated Skew Angle)



ELEVATION



SECTION THRU ABUTMENT

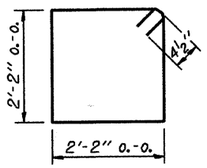
(At Right Angles)

DIMENSION 'E'

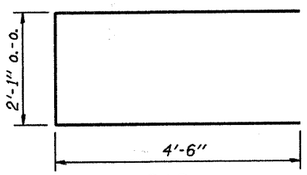
GRADE	'D'=0°		'D'=5°		'D'=10°	
	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END
0%	2⅜"	2⅜"	2⅜"	2⅜"	2⅜"	2⅜"
Over 0% to 1%	2⅜"	2⅜"	2¼"	2⅜"	2⅛"	2½"
Over 1% to 2%	2⅜"	2⅜"	2⅛"	2½"	1⅞"	2¾"
Over 2% to 3%	2⅜"	2⅜"	2"	2⅝"	1⅝"	3"
Over 3% to 4%	2⅜"	2⅜"	1⅞"	2¾"	1⅜"	3¼"

NOTES

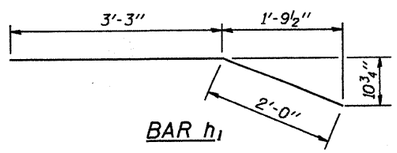
1. The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
2. Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31 or M-322, Grade 60.
3. Space reinforcement in cap to miss anchor bolts.



BAR s



BAR u



BAR h1

BILL OF MATERIAL FOR ONE ABUTMENT

Bar	No.	Size	Length	Shape
h	20	#4	5'-0"	
h1	4	#4	5'-3"	
h2	6	#4	24'-9"	
p	10	#7	24'-9"	
s	26	#4	9'-5"	
u	8	#6	11'-1"	
v	8	#4	3'-8"	
v1	8	#4	4'-8"	
v2	50	#4	4'-5"	
Concrete Structures			9.6 Cu. Yds.	
Reinforcement Bars			1170 Lb.	

~~MAXIMUM PILE LOADS~~

~~SPAN~~	~~TONS~~
60'	36
~~70'~~	~~40~~
75'	41

DESIGN STRESSES

f'c = 3,500 psi
fy = 60,000 psi

Illinois Department of Transportation

PASSED APRIL 4, 2005
Thomas J. Domagalski
Engineer of Bridge Design
APPROVED APRIL 4, 2005
Ralph E. Anderson
Engineer of Bridges and Structures

ISSUED 4-4-2005

P.P.C. DECK BEAMS PILE BENT ABUTMENT

24' RDWY. | 33" BMS. | 'D'=0°, 5° OR 10°

STANDARD CA-2433-10

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 78	03-02125-00-BR	FAYETTE	12	8
FED. AID PROJECT NO.		ILLINOIS	PROJECT	

CONTRACT: 95590

NOTES

Hollow structural steel tubing shall conform to the requirements of ASTM designation A500 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 A307 except for high strength bolts, nuts and washers noted which shall conform to AASHTO M 164.

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

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

Railing shall be according to Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for STEEL RAILING, TYPE S-1.

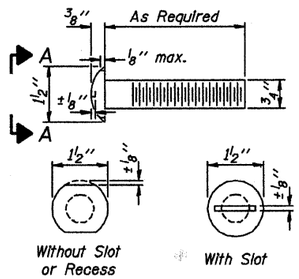
For multi-span bridges, sufficient $\frac{1}{4}$" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with STEEL RAILING, TYPE S-1.

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

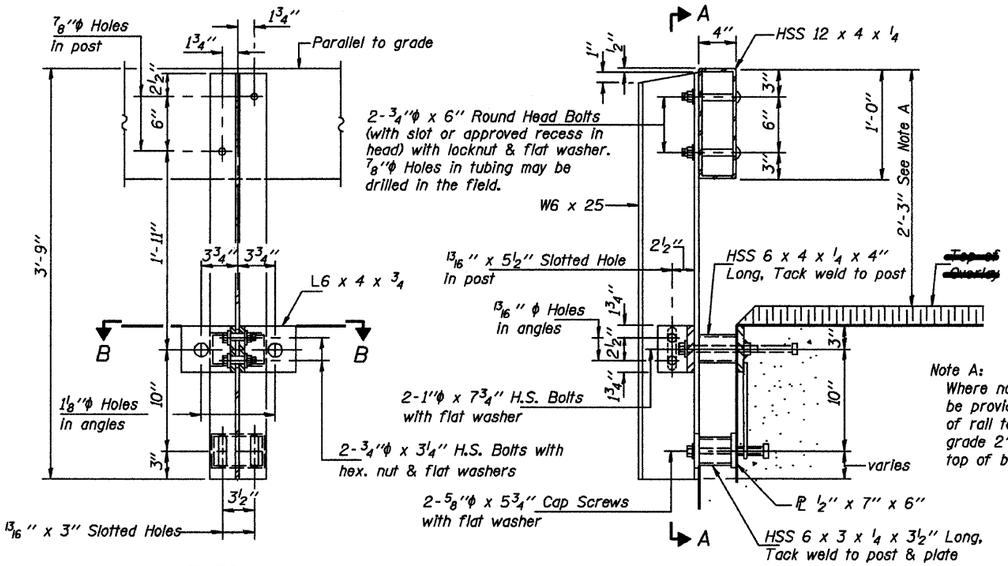
The $\frac{1}{2}$" x 7" x 6" plates that come in contact with concrete shall either receive two coats of asphalt paint conforming to Section 1060.07 Type II, or $\frac{1}{8}$" fabric bearing pads shall be placed between the plates and concrete.

The $\frac{3}{4}$"ϕ high strength bolts used to connect the 6 x 4 x $\frac{3}{4}$ angles to the post shall be tightened according to 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 $\frac{1}{8}$ turn. The $\frac{5}{8}$"ϕ cap screws in bottom of posts shall be tightened to a snug fit only.

The maximum allowable rail post spacing shall be 10'-6". The rail post spacing shown elsewhere in the plans is based on the allowable spacing for another type of rail. When this type of rail is used, the number of posts may be decreased and the post spacing increased to provide equal post spaces of 10'-6" or less.



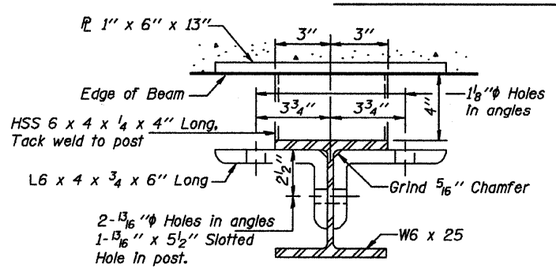
VIEW A-A
ROUND HEAD BOLT



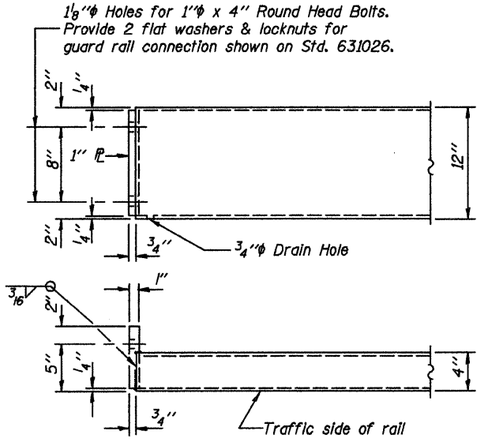
SECTION A-A

SECTION AT RAIL POST

Note A:
Where no overlay is to be provided, adjust top of rail to lay parallel to grade 2'-5" max. above top of beam.

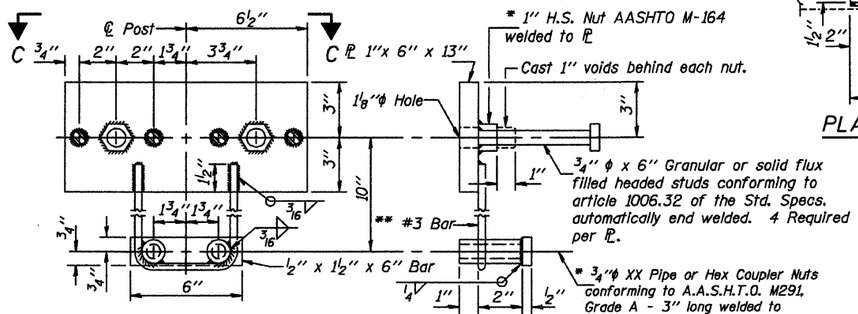


SECTION B-B

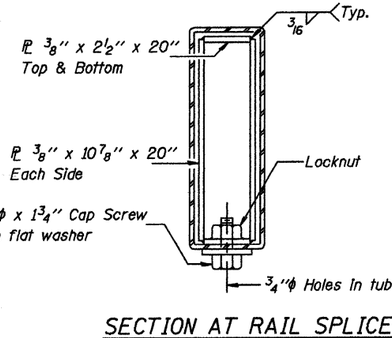


END OF RAIL DETAILS

** 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 $\frac{1}{2}$".

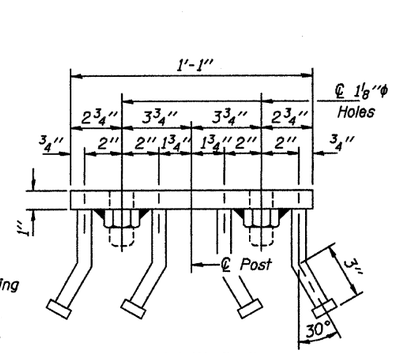


ANCHOR DEVICE

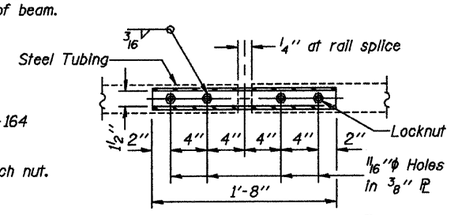


SECTION AT RAIL SPLICE

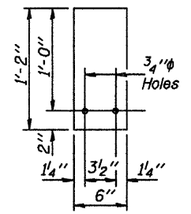
* Threaded areas shall be plugged or blocked off during casting of beam.



VIEW C-C



PLAN-BOTT. SPLICE PL
TYPICAL



1/4" SHIM PLATE

Illinois Department of Transportation

PASSED APRIL 4, 2005
Thomas J. Domagalski
Engineer of Bridge Design
APPROVED APRIL 4, 2005
Ralph E. Anderson
Engineer of Bridges and Structures

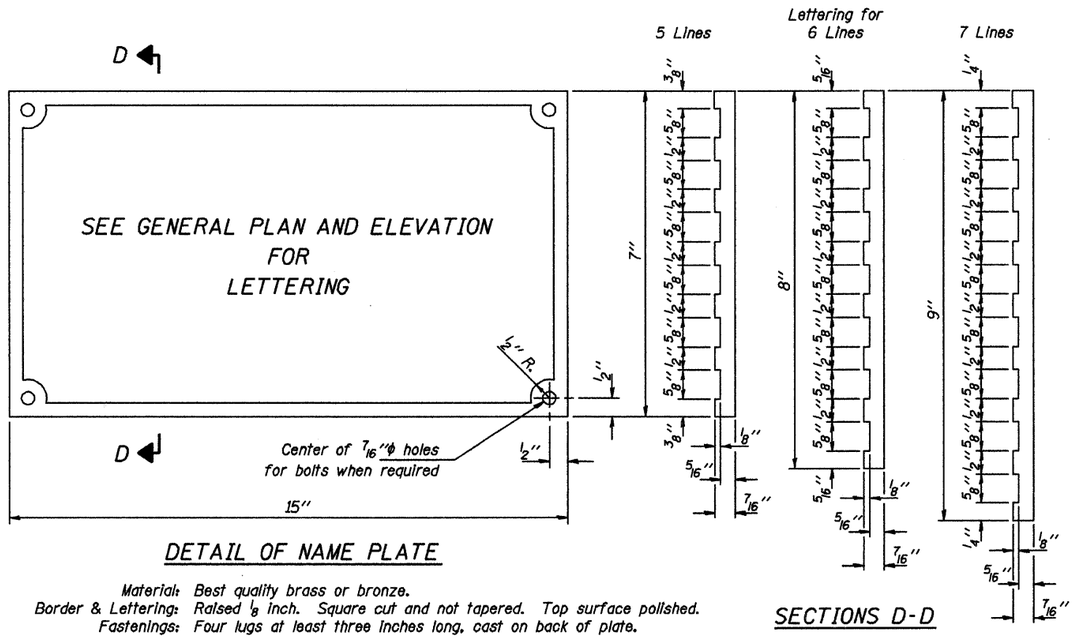
ISSUED 1-1-1981

STEEL RAILING, TYPE S-1

STANDARD CR-TS1

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 78	03-02125-00-BR	FAYETTE	12	9
FED. AID PROJECT NO.		ILLINOIS	PROJECT	

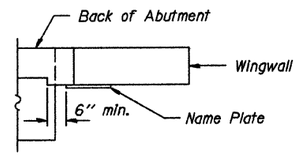
CONTRACT NO. 95540



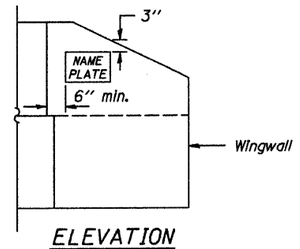
DETAIL OF NAME PLATE

SECTIONS D-D

Material: Best quality brass or bronze.
Border & Lettering: Raised 1/8 inch. Square cut and not tapered. Top surface polished.
Fastenings: Four lugs at least three inches long, cast on back of plate.



PLAN



ELEVATION

LOCATION OF NAME PLATE

Illinois Department of Transportation

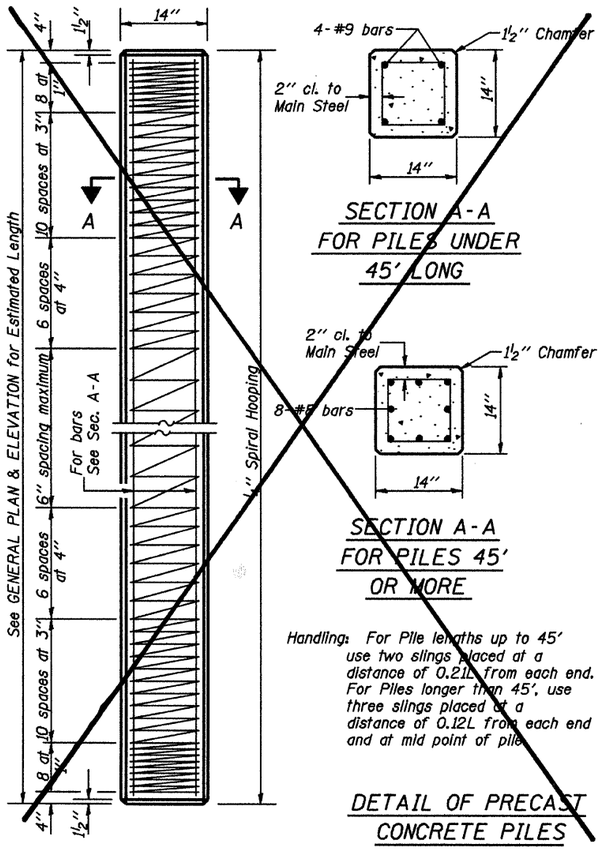
PASSED APRIL 4, 2005
Thomas J. Domagalski
Engineer of Bridge Design
APPROVED APRIL 4, 2005
Ralph E. Anderson
Engineer of Bridges and Structures

ISSUED 7-1-1995

NAME PLATE
STANDARD CN

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 78	03-02125-00-BR	FAYETTE	12	10
FED. AID PROJECT NO.		ILLINOIS	PROJECT	

CONTRACT 95540

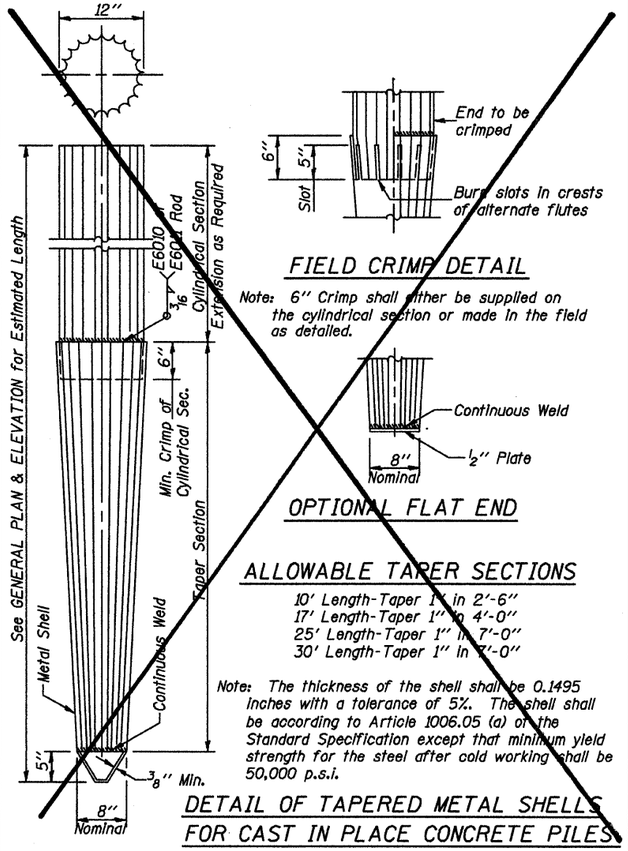


SECTION A-A FOR PILES UNDER 45' LONG

SECTION A-A FOR PILES 45' OR MORE

Handling: For Pile lengths up to 45' use two slings placed at a distance of 0.21L from each end. For Piles longer than 45', use three slings placed at a distance of 0.12L from each end and at mid point of pile.

DETAIL OF PRECAST CONCRETE PILES



FIELD CRIMP DETAIL

Note: 6" Crimp shall either be supplied on the cylindrical section or made in the field as detailed.

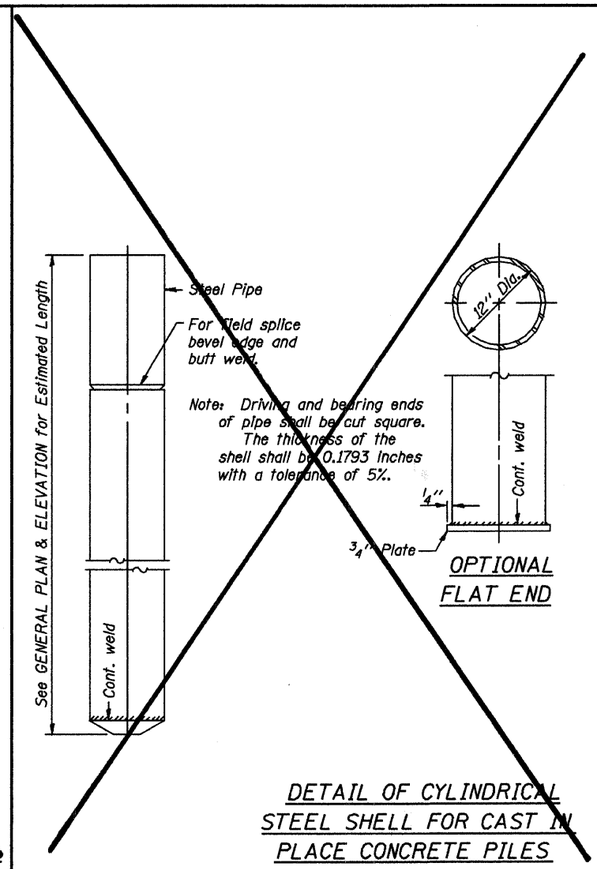
OPTIONAL FLAT END

ALLOWABLE TAPER SECTIONS

10' Length-Taper 1" in 2'-6"
17' Length-Taper 1" in 4'-0"
25' Length-Taper 1" in 7'-0"
30' Length-Taper 1" in 7'-0"

Note: The thickness of the shell shall be 0.1495 inches with a tolerance of 5%. The shell shall be according to Article 1006.05 (a) of the Standard Specification except that minimum yield strength for the steel after cold working shall be 50,000 p.s.i.

DETAIL OF TAPERED METAL SHELLS FOR CAST IN PLACE CONCRETE PILES



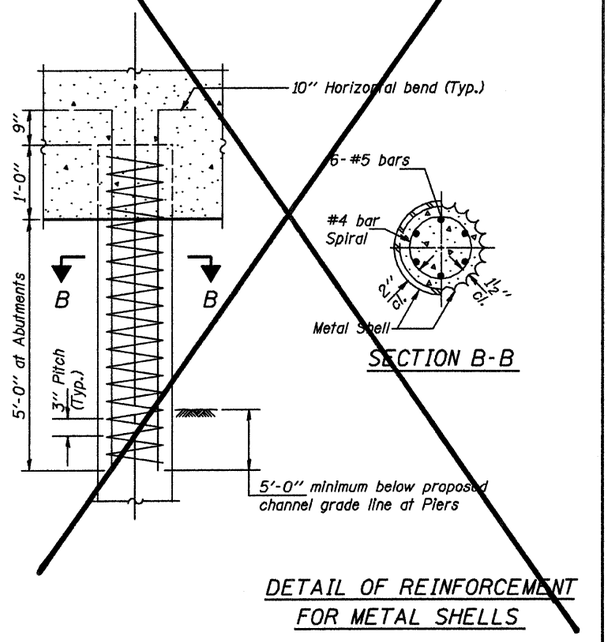
Note: Driving and bearing ends of pipe shall be cut square. The thickness of the shell shall be 0.1793 inches with a tolerance of 5%.

OPTIONAL FLAT END

DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES

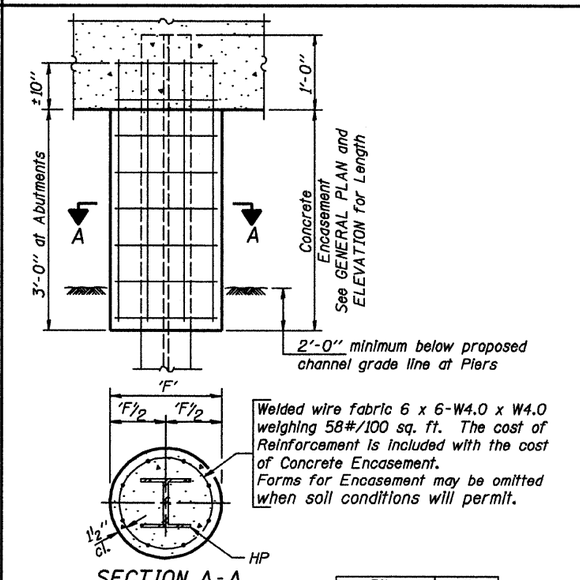
Reinforcement cage shall be omitted when Concrete Encasement is provided.

The cost of Reinforcement is included with the Cost of Furnishing Piles.



SECTION B-B

DETAIL OF REINFORCEMENT FOR METAL SHELLS

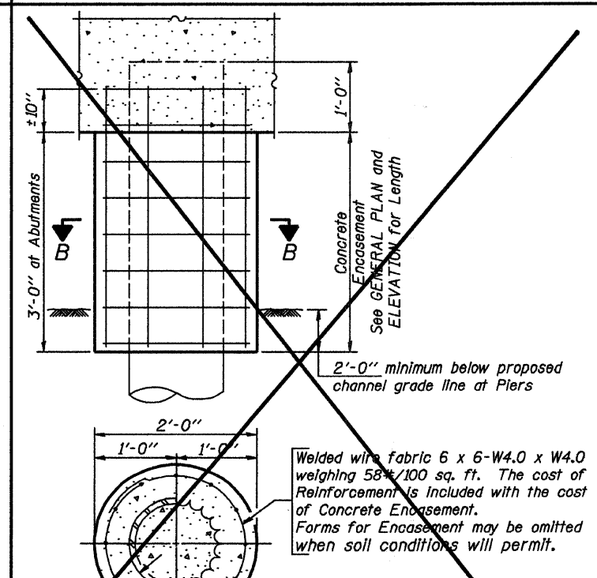


Welded wire fabric 6 x 6-W4.0 x W4.0 weighing 58#/100 sq. ft. The cost of Reinforcement is included with the cost of Concrete Encasement. Forms for Encasement may be omitted when soil conditions will permit.

SECTION A-A

Pile	'F'
~~HP8~~	~~1'-8"~~
HP10	1'-9"
~~HP12~~	~~2'-0"~~

DETAIL OF HP PILE ENCASEMENT



Welded wire fabric 6 x 6-W4.0 x W4.0 weighing 58#/100 sq. ft. The cost of Reinforcement is included with the cost of Concrete Encasement. Forms for Encasement may be omitted when soil conditions will permit.

SECTION B-B

DETAIL OF METAL SHELL PILE ENCASEMENT

QUANTITIES/FT. OF ENCASEMENT

(STEEL PILES)

Pile Size	Item	Quantity
~~HP8~~	~~Concrete Encasement~~	~~0.063 C.Y.~~
HP10	Concrete Encasement	0.086 C.Y.
~~HP12~~	~~Concrete Encasement~~	~~0.110 C.Y.~~

(METAL SHELL PILES)

Pile Size	Item	Quantity
~~12" Dia.~~	~~Concrete Encasement~~	~~0.087 C.Y.~~

Illinois Department of Transportation

PASSED FEBRUARY 1, 2000
Thomas J. Domagalski
Engineer of Bridge Design
APPROVED FEBRUARY 1, 2000
Ralph E. Anderson
Engineer of Bridges and Structures

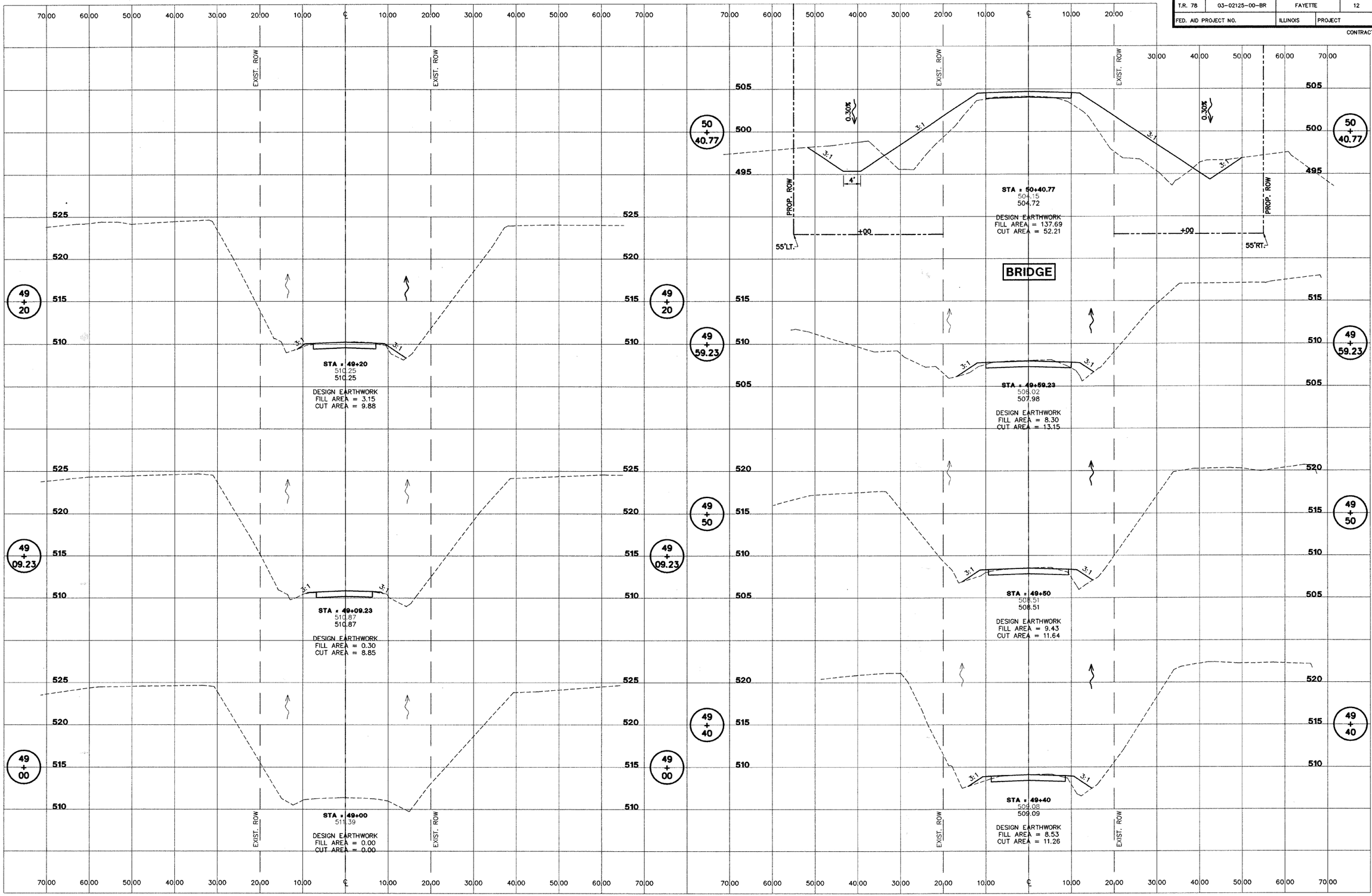
ISSUED 1-1991

PILE DETAILS

STANDARD CX-1

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 78	03-02125-00-BR	FAYETTE	12	11
FED. AID PROJECT NO.		ILLINOIS	PROJECT	

CONTRACT NO. 95540



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IL Design Firm Reg. No. 184-001518

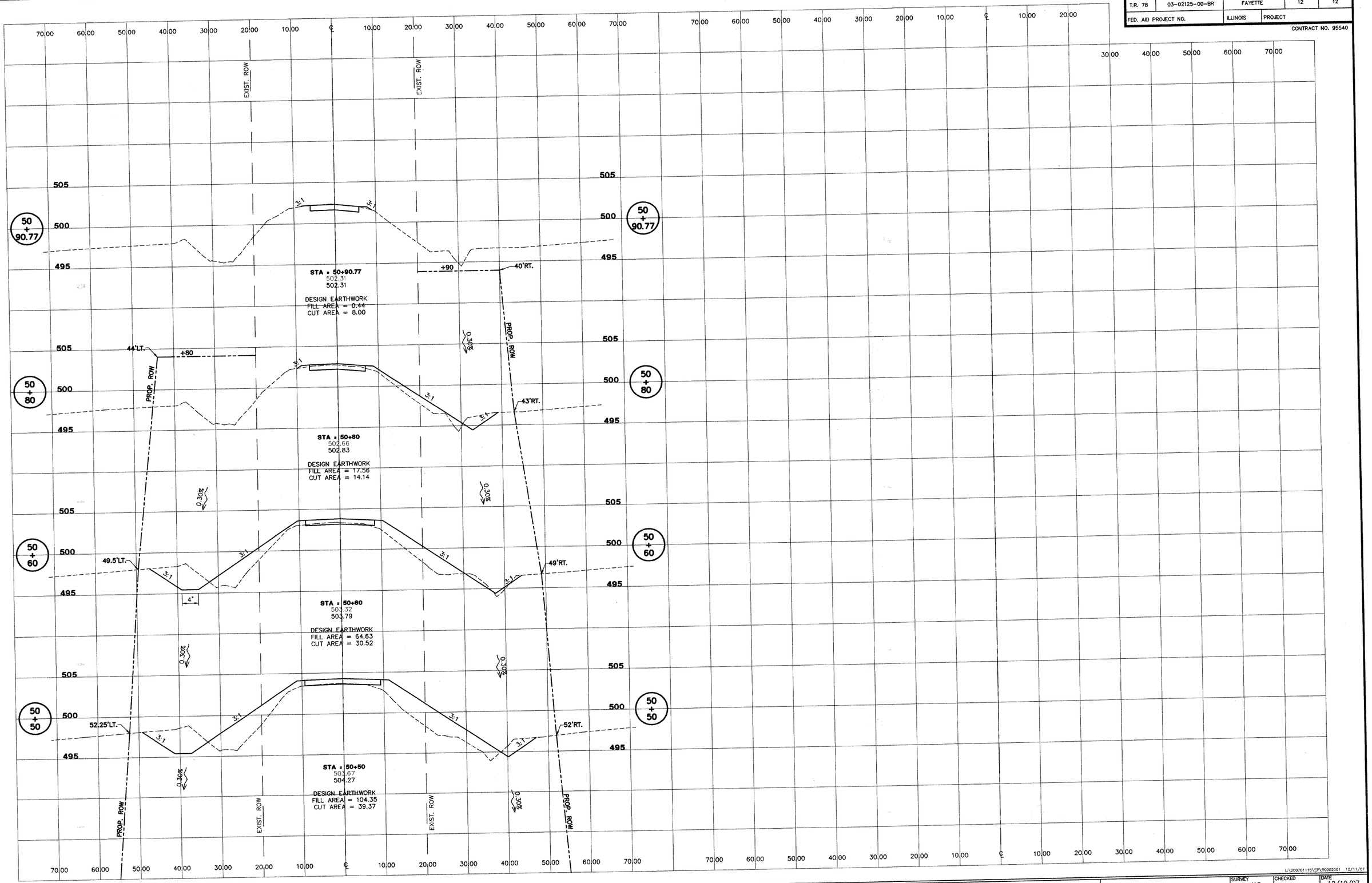
T.R. 78, SECTION 03-02125-00-BR
BEAR GROVE ROAD DISTRICT
FAYETTE COUNTY, ILLINOIS

CROSS SECTIONS
STA. 49+00 TO STA. 50+40.77

SURVEY	CHECKED	DATE
JAS		12/10/07
DESIGN	APPROVED	REVISED
MRQ		
DRAWN		JOB NO.
JMW		200701115

ROUTE NO.	SECTION	COUNTY	SHEETS	NO.
T.R. 78	03-02125-00-BR	FAYETTE	12	12
FED. AID PROJECT NO.		ILLINOIS	PROJECT	

CONTRACT NO. 95540



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STS CONSULTANTS
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T.R. 78, SECTION 03-02125-00-BR
BEAR GROVE ROAD DISTRICT
FAYETTE COUNTY, ILLINOIS

CROSS SECTIONS
STA. 50+40.77 TO STA. 50+90.77

SURVEY	CHECKED	DATE
JAS		12/10/07
DESIGN	APPROVED	REVISED
JMW		
DRAWN		JOB NO.
JMW		200701115