

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 119	07-17119-00-BR	MARION	14	1
FEDERAL AID PROJECT		ILLINOIS	PROJECT	

CONTRACT NO. 97452

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

INDEX OF SHEETS

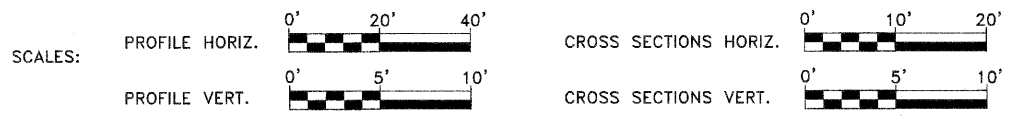
1	COVER SHEET
2	TYPICAL CROSS SECTIONS, GENERAL NOTES, AND SUMMARY OF QUANTITIES
3	PLAN AND PROFILE
4-12	BRIDGE PLANS
13-14	CROSS SECTIONS

STANDARDS

STANDARD 000001-06	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
STANDARD 631026-05	TRAFFIC BARRIER TERMINAL, TYPE 5
STANDARD 635006-03	REFLECTOR AND TERMINAL MARKER PLACEMENT
STANDARD 701901-01	TRAFFIC CONTROL DEVICES
STANDARD B.L.R. 21-8	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

UTILITIES

PHONE:	AT&T 210 N. LOCUST CENTRALIA, IL 62801 ATTN: ART NALL (618)533-3416
CABLE:	FRONTIER COMMUNICATIONS 145 S. HALL ROSEVILLE, IL 61473 ATTN: BILL DANIEL (402)250-1095
POWER:	TRI-COUNTY ELECTRIC 3906 W. BROADWAY MT. VERNON, IL 62864 ATTN: DENNIS IVERS (618)244-5151
WATER:	F M C WATER COMPANY 1305 FERRY DALE RD ODIN, IL 62870 ATTN: JULIA MILANO (618)775-6339



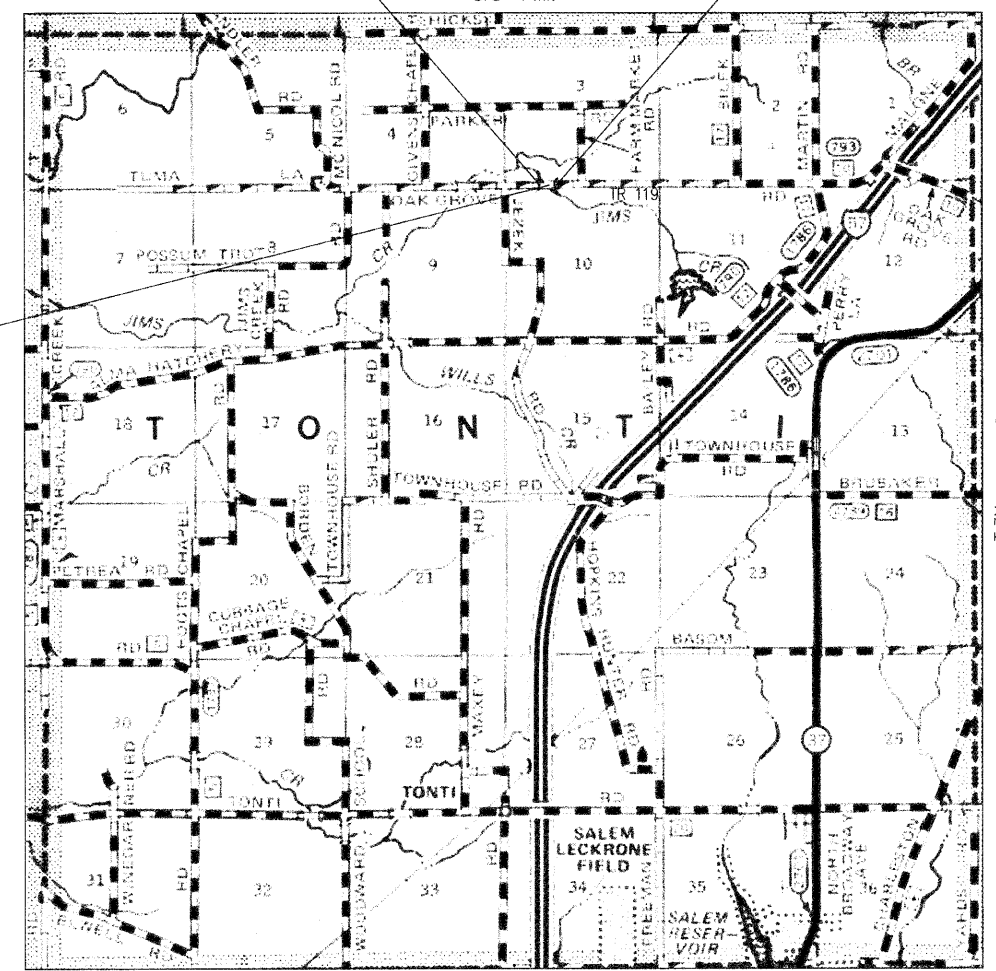
SECTION 07-17119-00-BR PROJECT NO. BROS-0121(055) TONTI ROAD DISTRICT MARION COUNTY JOB NO. C-98-322-10 TR 119



BEGIN SECTION 07-17119-00-BR
STA. 49+09.21

END SECTION 07-17119-00-BR
STA. 50+90.79

STA. 50+00 — CONSTRUCT SINGLE SPAN PRECAST
PRESTRESSED CONCRETE DECK BEAM BRIDGE
(51.58' BK. TO BK. ABUTMENTS) WITH
SPILL-THRU PILE BENT ABUTMENTS
15' SKEW, 24' ROADWAY
EXISTING STRUCTURE NO. 061-3217
PROPOSED STRUCTURE NO. 061-3311



LOCATION MAP
APPROXIMATE SCALE — 1" = 0.58 MILE
LENGTH OF IMPROVEMENTS — 181.58 FEET = 0.034 MILE

APPROVED October 29, 2010
Wm. J. Williams
TONTI ROAD DISTRICT COMMISSIONER

MARION COUNTY
HIGHWAY DEPARTMENT

APPROVED October 29, 2010
James E. ...
MARION COUNTY ENGINEER

PASSED November 5, 2010
...
DISTRICT EIGHT ENGINEER OF
LOCAL ROADS & STREETS

Releasing For
Bid Based on
Limited Review November 5, 2010
...
DEPUTY DIRECTOR OF HIGHWAYS,
REGION FIVE ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRINTED BY AUTHORITY OF THE STATE OF ILLINOIS



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

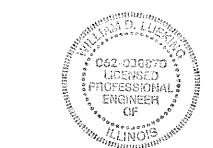
RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS



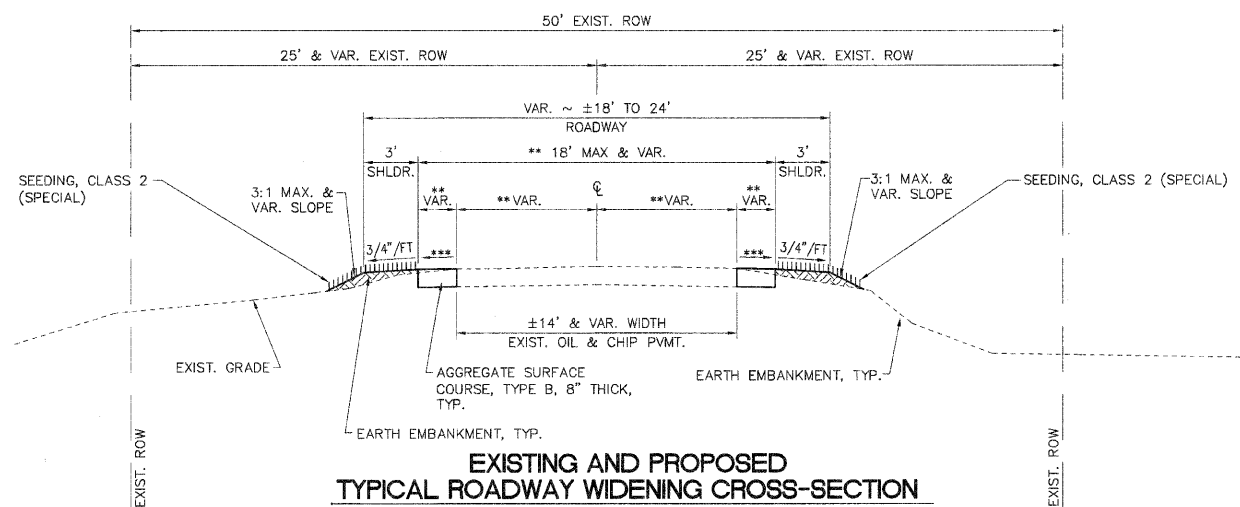
CLASS ROAD: RURAL LOCAL ROAD
A.D.T. = 200
3R

PREPARED FOR:
AECOM

DATE: OCTOBER 27, 2010
RHUTASEL JOB NO. 50910



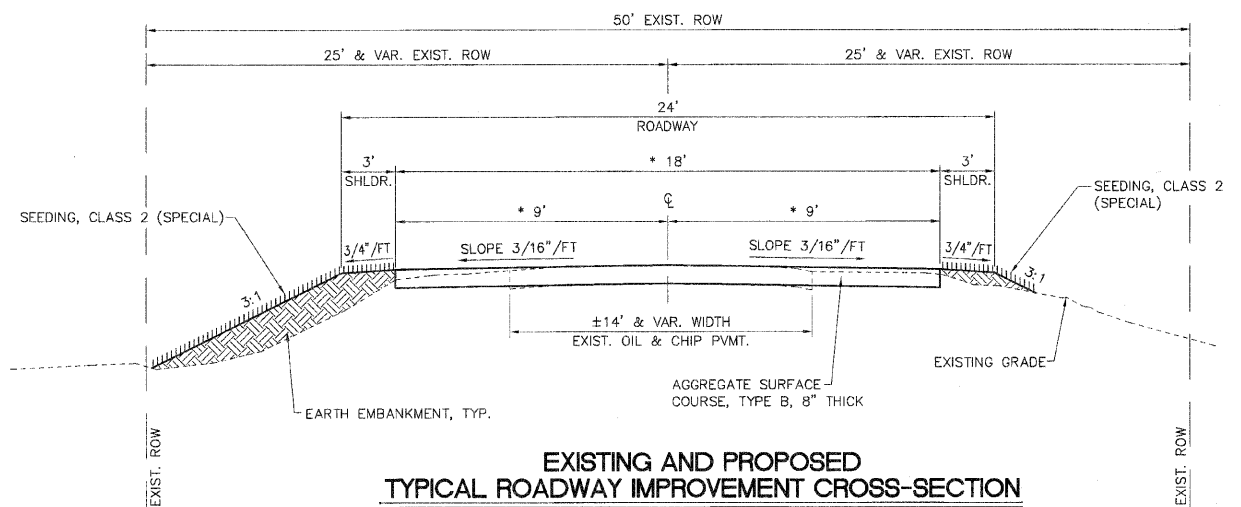
William D. ...
Oct 28, 2010
Lic. Exp. 11/30/2011



**EXISTING AND PROPOSED
TYPICAL ROADWAY WIDENING CROSS-SECTION**

** PAVEMENT WIDENING TRANSITION FROM 14' (EXISTING PAVEMENT WIDTH) AT STA. 49+09.21 TO 18' (PROPOSED PAVEMENT WIDTH) AT STA. 49+69.21 & FROM 18' (PROPOSED PAVEMENT WIDTH) AT STA. 50+30.79 TO 14' (EXISTING PAVEMENT WIDTH) AT STA. 50+90.79

*** SLOPE 3/16"/FT.



**EXISTING AND PROPOSED
TYPICAL ROADWAY IMPROVEMENT CROSS-SECTION**

STA. 49+69.21 TO STA. 50+30.79, BRIDGE OMISSION STA. 49+74.21 TO STA. 50+25.79.

* VERTICAL TRANSITION FROM STA. 49+69.21 TO BRIDGE AND FROM BRIDGE TO 50+30.79.

EXTRA BARS FOR TEST SAMPLES

BAR NO.	NO.	SIZE	LENGTH	SHAPE
S	1	#4	9'-5"	□
u	1	#6	11'-1"	▭
p	1	#7	26'-5"	—

THESE BARS SHALL BE IDENTICAL TO AND DELIVERED WITH THE BARS OF THE SAME MARK LISTED ON THE BRIDGE SHEETS. ONE BAR OF EACH OF THESE MARKS WILL BE SELECTED BY THE ENGINEER TO BE USED AS A TEST SAMPLE. THIS CHART ASSUMES THAT ALL BARS OF THE SAME SIZE ON THE JOB WILL HAVE THE SAME HEAT NUMBERS. IF BARS OF THE SAME SIZE ON THE JOB HAVE DIFFERENT HEAT NUMBERS, THEN THE CONTRACTOR SHALL SUPPLY ADDITIONAL BARS FROM OTHER HEAT NUMBERS FOR SAMPLING BY THE ENGINEER AT NO ADDITIONAL COST.

THE COST TO FURNISH THESE EXTRA BARS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER POUND FOR REINFORCEMENT BARS AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

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. BITUMINOUS SURFACE TREATMENT (A-2) WILL BE COMPLETED BY THE OWNER.
4. NO COMMITMENTS AS OF OCTOBER 27, 2010.

SUMMARY OF QUANTITIES

CODE NO.	ITEM	QUANTITY	UNIT
20200100	EARTH EXCAVATION	15	CU. YD.
20300100	CHANNEL EXCAVATION	256	CU. YD.
28100807	STONE DUMPED RIPRAP, CLASS A4	120	TON
40200800	AGGREGATE SURFACE COURSE, TYPE B	27	TON
50100100	REMOVAL OF EXISTING STRUCTURES	1	EACH
50300225	CONCRETE STRUCTURES	18.4	CU. YD.
50300280	CONCRETE ENCASEMENT	2.1	CU. YD.
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	1200	SQ. FT.
50800105	REINFORCEMENT BARS	2380	POUND
* 50900205	STEEL RAILING, TYPE S1	100	FOOT
51201400	FURNISHING STEEL PILES HP 10x42	291	FOOT
51202305	DRIVING PILES	291	FOOT
51203400	TEST PILE STEEL HP 10x42	1	EACH
51500100	NAME PLATES	1	EACH
542D0217	PIPE CULVERTS, CLASS D, TYPE 1 12"	78	FOOT
67100100	MOBILIZATION	1	L. SUM
* 78201000	TERMINAL MARKER - DIRECT APPLIED	4	EACH
X25010000	SEEDING, CLASS 2 (SPECIAL)	0.1	ACRE

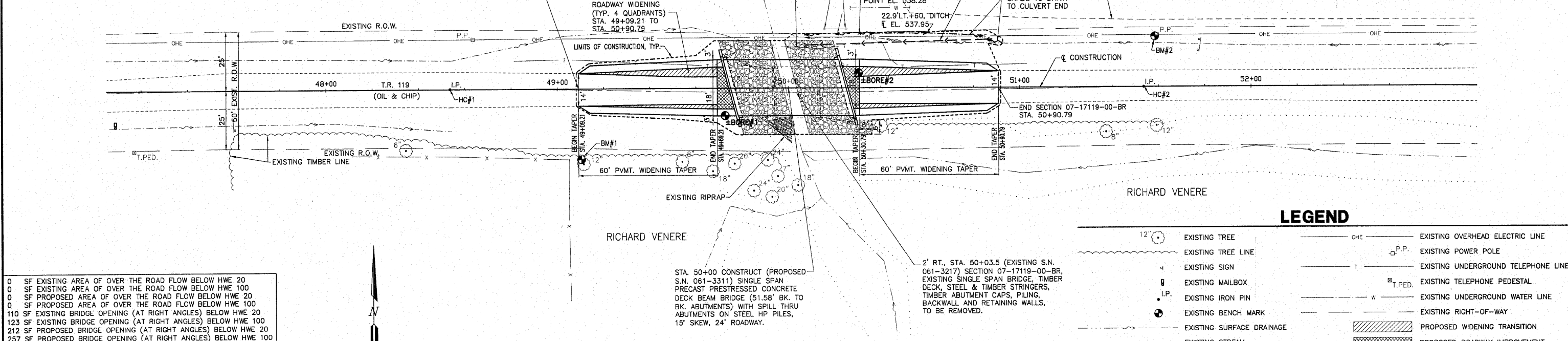
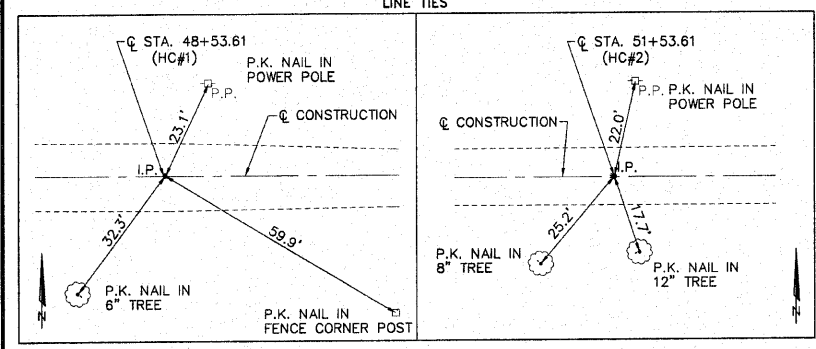
* SPECIALTY ITEM

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 119	07-17119-00-BR	MARION	14	3
FEDERAL AID PROJECT		ILLINOIS	PROJECT	
CONTRACT NO. 97452				

POINT		LOCATION		N. COOR.	E. COOR.
HC#1 (IRON PIN)	Q	STA. 48+53.61		4987.10	4931.60
HC#2 (IRON PIN)	Q	STA. 51+53.61		4987.10	5231.60

POINT		LOCATION		ELEV.
BM#1 (R.R. SPIKE IN 12" TREE)		30.16' RT.	STA. 49+10.44	541.63
BM#2 (R.R. SPIKE IN POWER POLE)		21.20' LT.	STA. 51+58.47	539.78

CONSTRUCT SEEDING, CLASS 2 (SPECIAL)
 STA. 49+19.21 TO STA. 50+80.79 = 0.1 ACRE

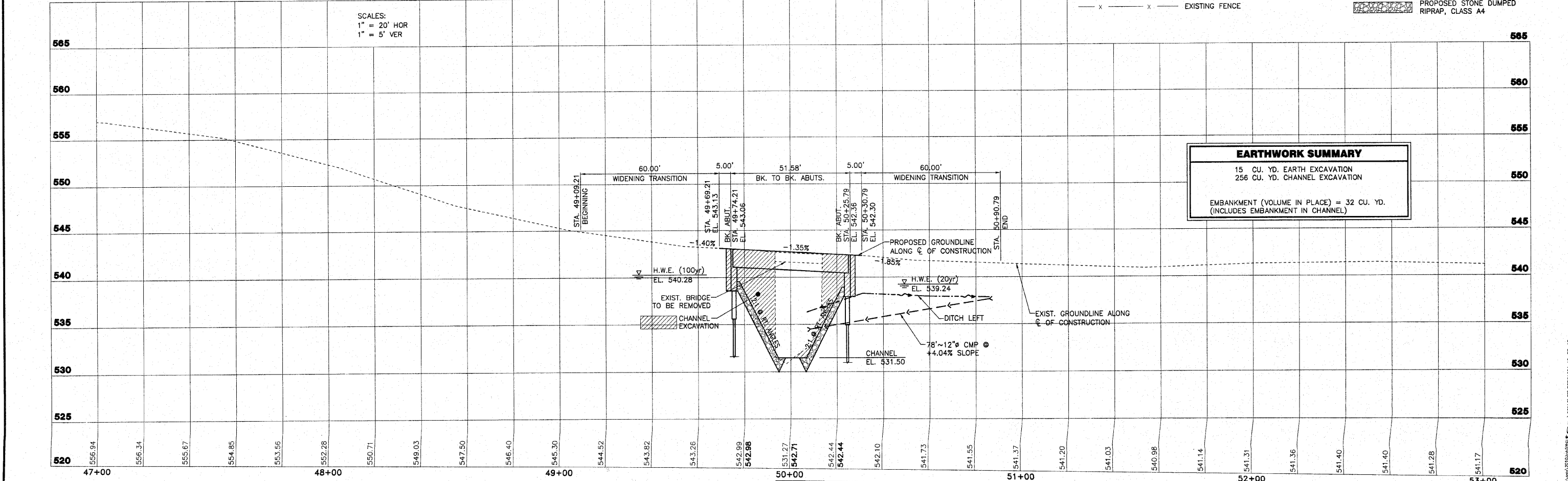


- 0 SF EXISTING AREA OF OVER THE ROAD FLOW BELOW HWE 20
- 0 SF EXISTING AREA OF OVER THE ROAD FLOW BELOW HWE 100
- 0 SF PROPOSED AREA OF OVER THE ROAD FLOW BELOW HWE 20
- 0 SF PROPOSED AREA OF OVER THE ROAD FLOW BELOW HWE 100
- 110 SF EXISTING BRIDGE OPENING (AT RIGHT ANGLES) BELOW HWE 20
- 123 SF EXISTING BRIDGE OPENING (AT RIGHT ANGLES) BELOW HWE 100
- 212 SF PROPOSED BRIDGE OPENING (AT RIGHT ANGLES) BELOW HWE 20
- 257 SF PROPOSED BRIDGE OPENING (AT RIGHT ANGLES) BELOW HWE 100

SCALES:
 1" = 20' HOR
 1" = 5' VER

LEGEND

	EXISTING TREE		EXISTING OVERHEAD ELECTRIC LINE
	EXISTING TREE LINE		EXISTING POWER POLE
	EXISTING SIGN		EXISTING UNDERGROUND TELEPHONE LINE
	EXISTING MAILBOX		EXISTING TELEPHONE PEDESTAL
	EXISTING IRON PIN		EXISTING UNDERGROUND WATER LINE
	EXISTING BENCH MARK		EXISTING RIGHT-OF-WAY
	EXISTING SURFACE DRAINAGE		PROPOSED WIDENING TRANSITION
	EXISTING STREAM		PROPOSED ROADWAY IMPROVEMENT
	EXISTING FENCE		PROPOSED STONE DUMPED RIPRAP, CLASS A4

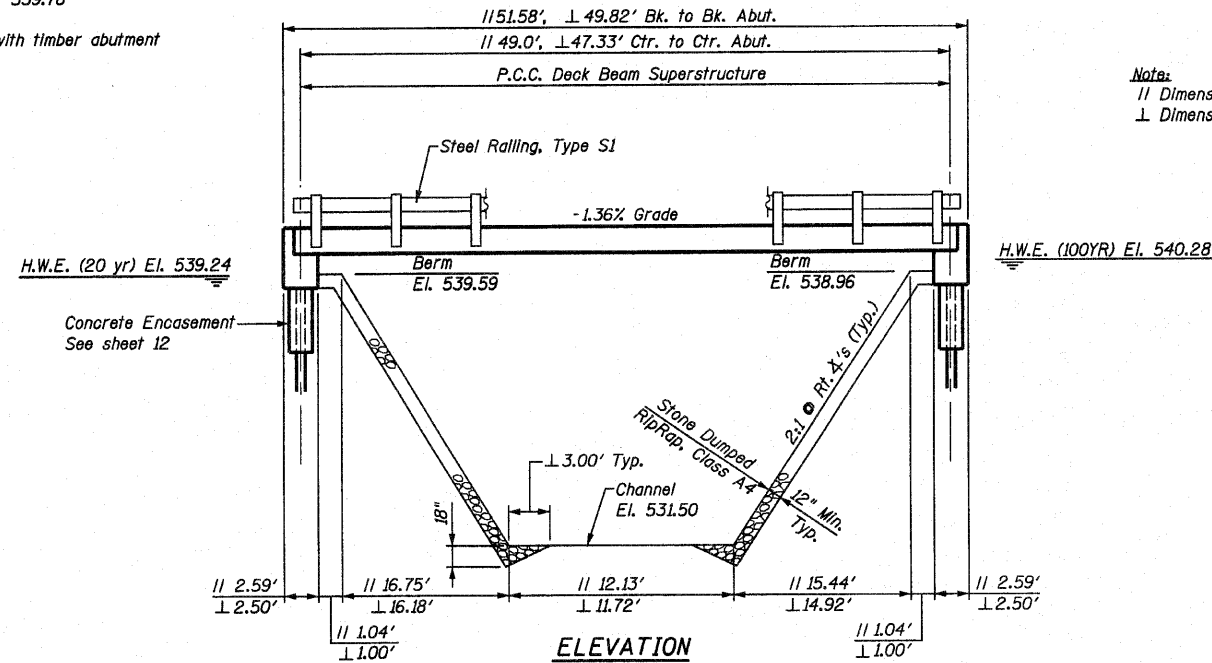


EARTHWORK SUMMARY	
15 CU. YD. EARTH EXCAVATION	
256 CU. YD. CHANNEL EXCAVATION	
EMBANKMENT (VOLUME IN PLACE) = 32 CU. YD. (INCLUDES EMBANKMENT IN CHANNEL)	

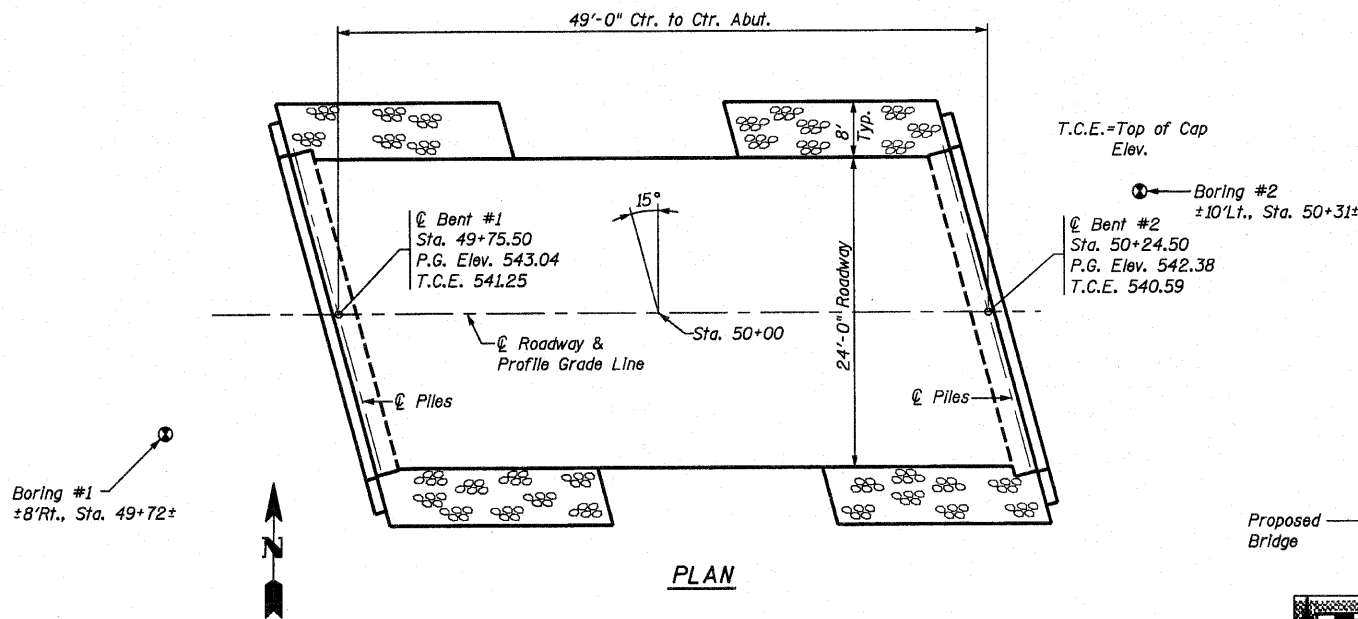
B.M. - B.M. #1, R.R. Spike in 12" Tree, 30.16' RT., STA. 49+10.44, EL. 541.63
 B.M. #2, R.R. Spike in Power Pole, 21.20' LT., STA. 51+58.47, EL. 539.78

Existing Structure - Single span timber deck on steel & timber stringers with timber abutment caps, piling, backwall and retaining walls

Salvage - None



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

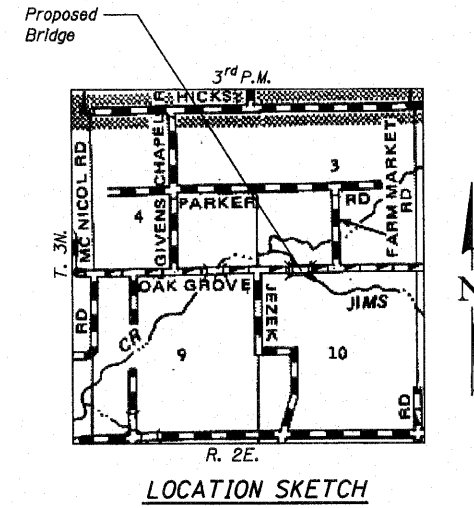


Boring #1
 ±8'Rt., Sta. 49+72±

T.C.E. = Top of Cap Elev.
 Boring #2
 ±10'Lt., Sta. 50+31±
 Bent #2
 Sta. 50+24.50
 P.G. Elev. 542.38
 T.C.E. 540.59

STATION 50+00
 JIMS CREEK
 SEC. 07-17119-00-BR BUILT 201-
 PROJECT NO. BROS-0121 (055)
 MARION COUNTY
 LOADING HL93
 STR. NO. 061-3311

LETTERING FOR NAME PLATE
 Locate Name Plate at Northwest Corner of Bridge (See sheet 12)



ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 119	07-17119-00-BR	MARION	14	4
FED. ROAD DIST. NO.		ILLINOIS	PROJECT	
CONTRACT NO. 97452				

GENERAL NOTES

- The contractor shall drive 1 test pile, as specified, in a permanent location as directed by the Engineer before ordering the remaining piles.
- See Special Provisions for boring logs.
- Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub.		Total
			Piers	Abuts.	
Removal of Existing Structures	Each				1
Concrete Structures	Cu. Yd.		18.4		18.4
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	1200			1200
Steel Railing, Type S-1	Foot	100			100
Reinforcement Bars	Pound		2380		2380
Furnishing Steel Piles HP 10x42	Foot		291		291
Driving Piles	Foot		291		291
Test Pile Steel HP 10x42	Each		1		1
Name Plates	Each		1		1
Concrete Encasement	Cu. Yd.		2.1		2.1



Date: Oct. 27, 2010

Date of License Expiration: 11-30-2010

Signature: *William D. Lueking*

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

DESIGN SPECIFICATIONS

2007 AASHTO LRFD Bridge Design Specifications with 2008 Interims

LOADING HL-93

Allow 50# / Sq. Ft. for Future Wearing Surface.

SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
 Design Spectral Acceleration at 1.0 sec. (S₁) = 18
 Design Spectral Acceleration at 0.2 sec. (S_s) = 48
 Soil Site Class = C

PILE DATA (2-ABUTS.)

Pile Type and Size: Steel Piles, HP10x42
 Nominal Required Bearing: 252 kips
 Allowable Resistance Available: 84 kips
 Estimated Pile Length: 45 Feet Bent #1, 39 Feet Bent #2
 Number of Production Piles: 7
 Number of Test Piles: 1 (located in Bent #1)

WATERWAY INFORMATION

Drainage Area = 2.44 Sq. Mi.		Low Grade Elev. 541.0 @ Sta. 51+60								
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E. Ft.		Head - Ft.		Headwater Elev. - Ft.	
			Exlst.	Prop.	Exlst.	Prop.	Exlst.	Prop.	Exlst.	Prop.
Design Base	20	1300	110	212	539.24	2.8	1.7	542.0	540.9	
Overtopping	100	1970	123	257	540.28	2.1	1.6	542.4	541.9	
Max. Calc.	500	2730	140	280	540.5	2.2	1.7	542.7	542.2	

GENERAL PLAN AND ELEVATION

TR 119
 OVER JIMS CREEK

SECTION 07-17119-00-BR
 MARION COUNTY
 STATION 50+00

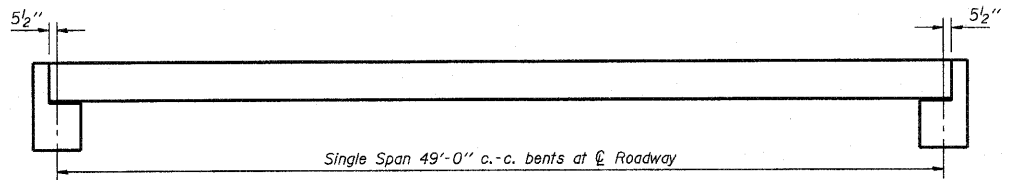
RHUTASEL and ASSOCIATES, INC.
 CONSULTING ENGINEERS & LAND SURVEYORS
 CENTRALIA, ILLINOIS FREEBURG, ILLINOIS

PREPARED FOR
AECOM
 200705604

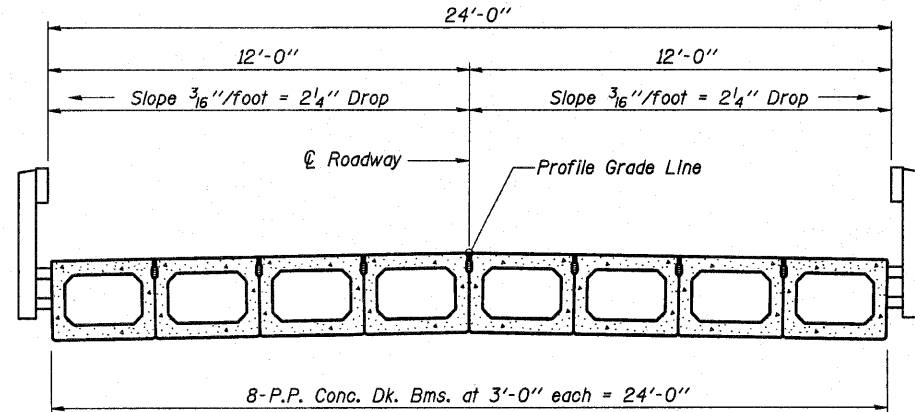
Date: 10/28/2010
 Design: MRQ
 Drawn: BLT
 Job No.: 50910

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO.		ILLINOIS PROJECT		

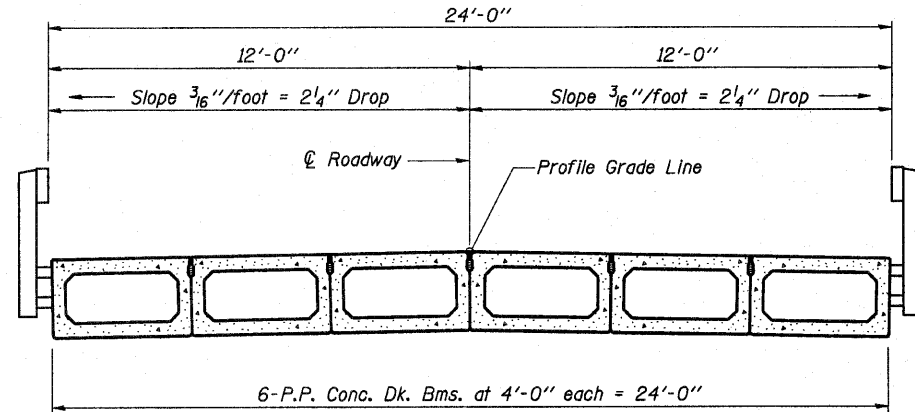
CONTRACT NO. 97452



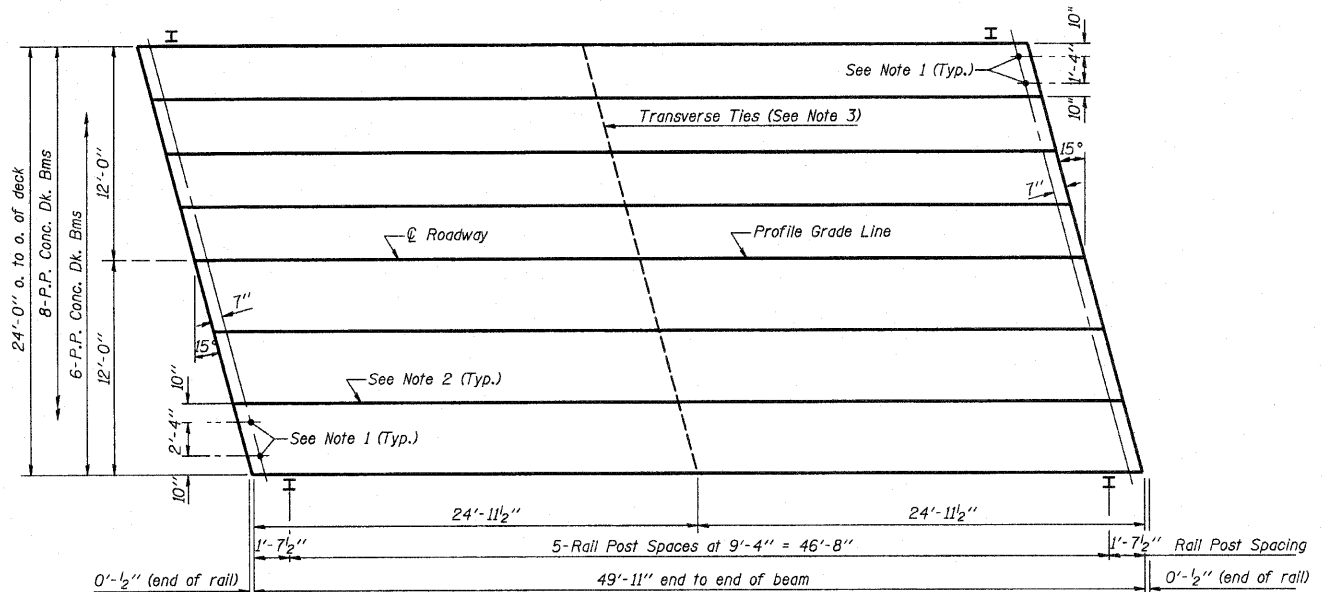
TYPICAL ELEVATION



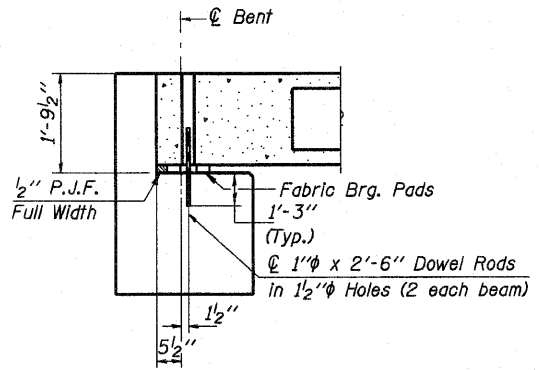
CROSS SECTION



CROSS SECTION



PLAN



SECTION AT ABUTTS.
(Along ϕ Beams)

**BILL OF MATERIAL
QUANTITIES FOR ONE SPAN**

P.P. Conc. Dk. Bm. 21" Dp.	1200 Sq. Ft.
Steel Railing	100 Ft.

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. Longitudinal keys shall be grouted.
3. 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. See shfs. 7 and 9 for additional information.

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

PREPARED FOR:
ASCOM
200705604

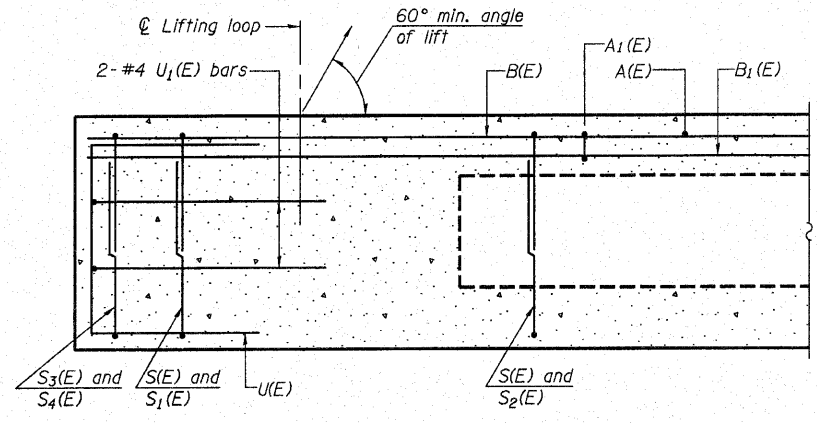
Date: 10/28/2010
Design: MRQ
Drawn: BLT
Job No.: 50910

**P.P.C. DECK BEAM
SUPERSTRUCTURE**

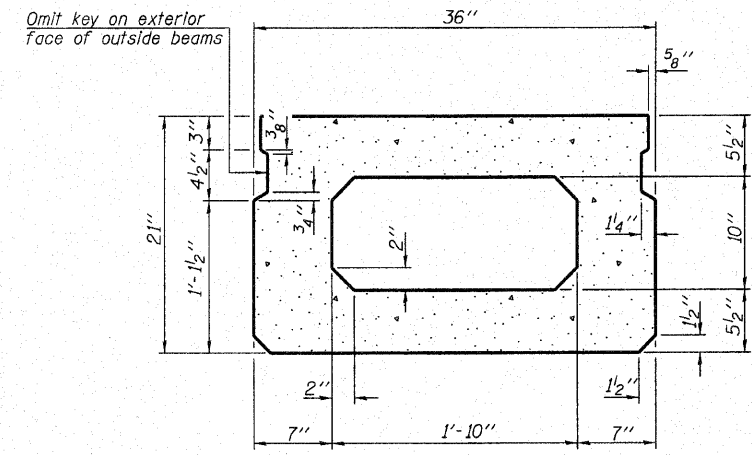
**24' ROADWAY
21" BEAMS
49' SPAN - 15° SKEW**

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 129	07-1719-00-BR	MARION	14	6
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

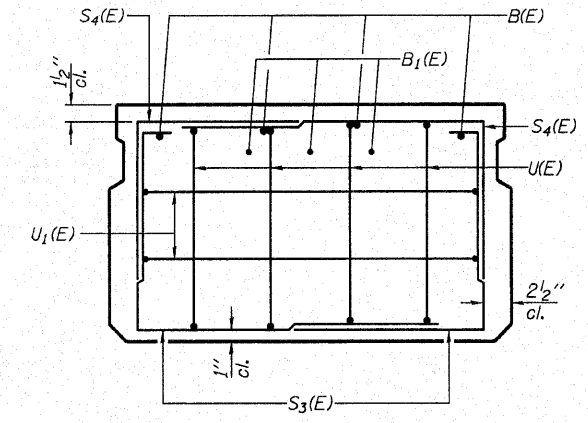
CONTRACT NO. 97452



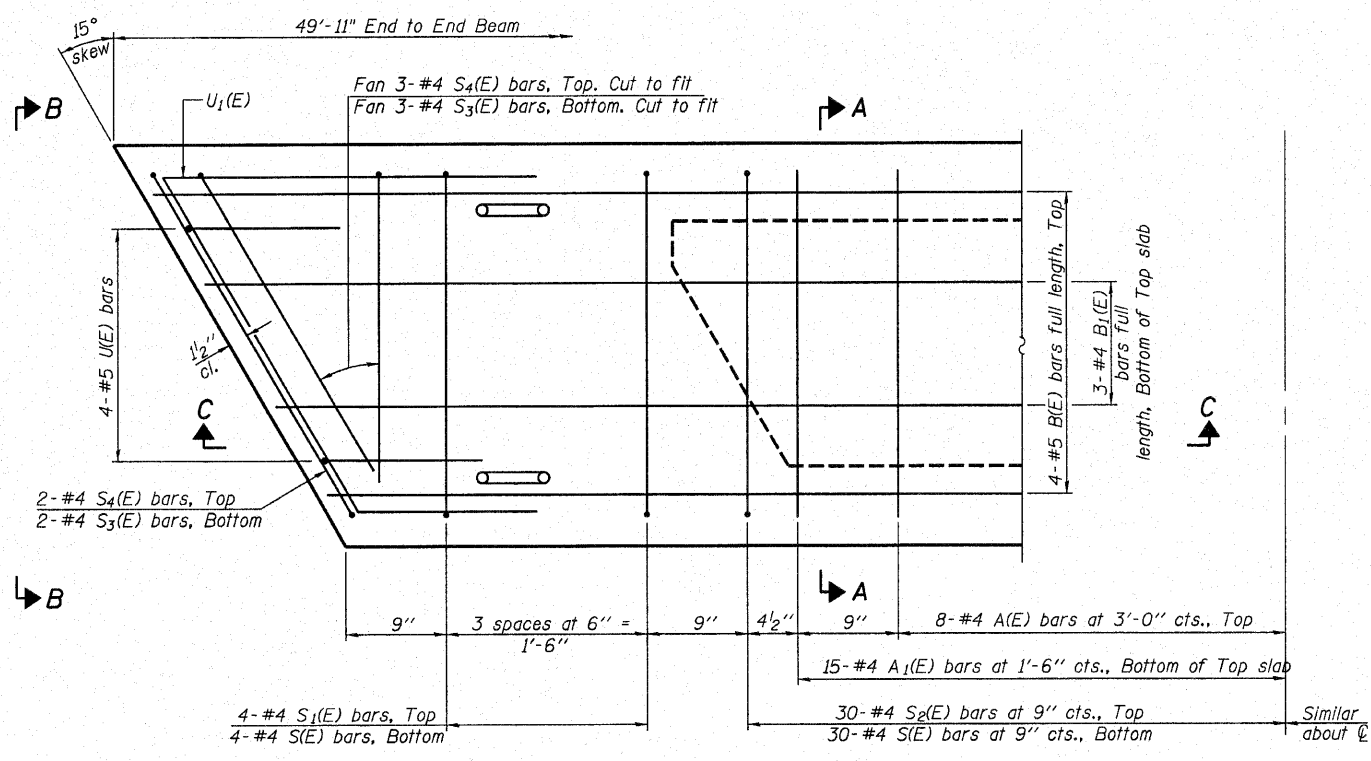
SECTION C-C



SECTION A-A
(Showing dimensions)

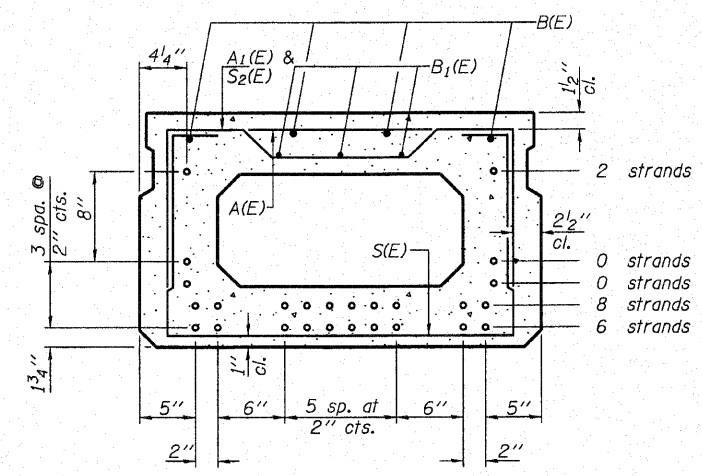


VIEW B-B



PLAN VIEW

Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.



SECTION A-A

(Showing reinforcement and permissible strand locations)

16 - 1/2" Strands
Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

BAR LIST
ONE BEAM ONLY

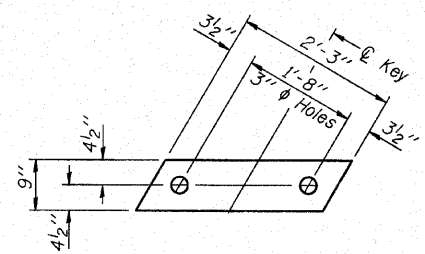
(For information only)

Bar	No.	Size	Length	Shape
A(E)	16	#4	2'-7"	—
A1(E)	30	#4	2'-11"	—
B(E)	4	#5	49'-8"	—
B1(E)	3	#4	49'-8"	—
S(E)	68	#4	6'-5"	⌋
S1(E)	8	#4	4'-11"	⌋
S2(E)	60	#4	5'-2"	⌋
S3(E)	10	#4	4'-6"	⌋
S4(E)	10	#4	3'-9"	⌋
U(E)	8	#5	4'-0"	⌋
U1(E)	4	#4	5'-9"	⌋

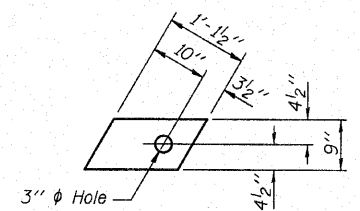
Note: See sheet 7 for additional details.
See sheet 5 for Bill of Material.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 119	07-17119-00-BR	MARION	14	7
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

CONTRACT NO. 97452

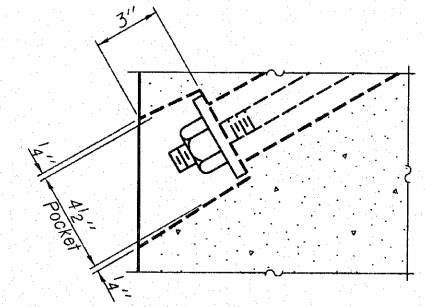


FABRIC BEARING PAD
(Interior)

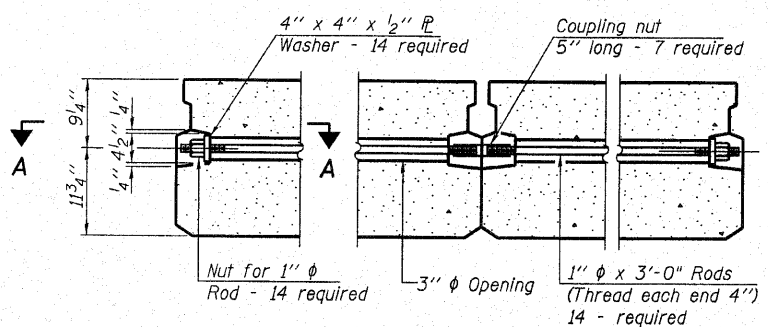


FABRIC BEARING PAD
(Exterior)

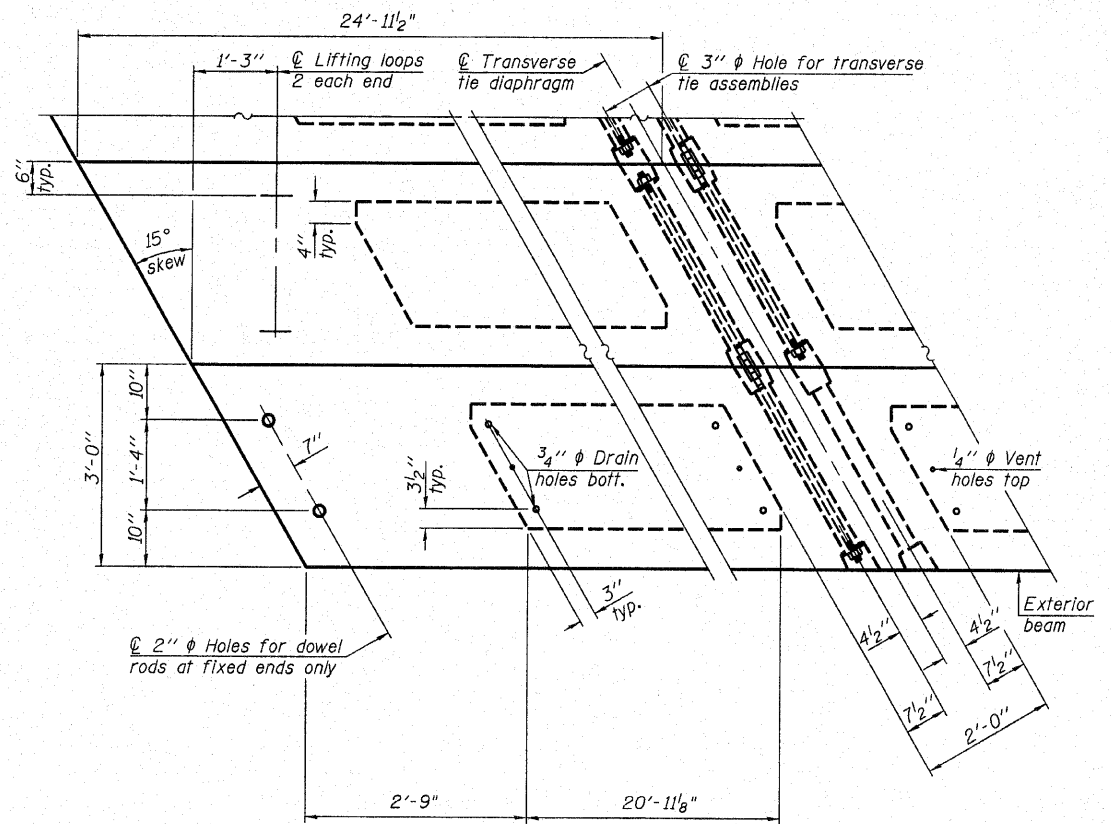
FIXED



SECTION A-A



TYPICAL TRANSVERSE TIE ASSEMBLY



PLAN VIEW

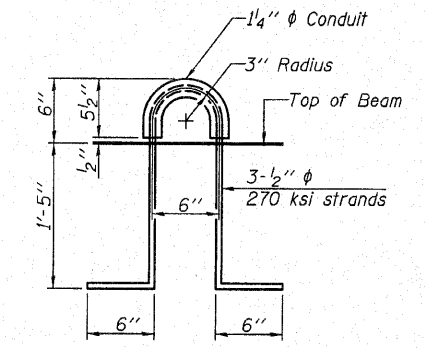
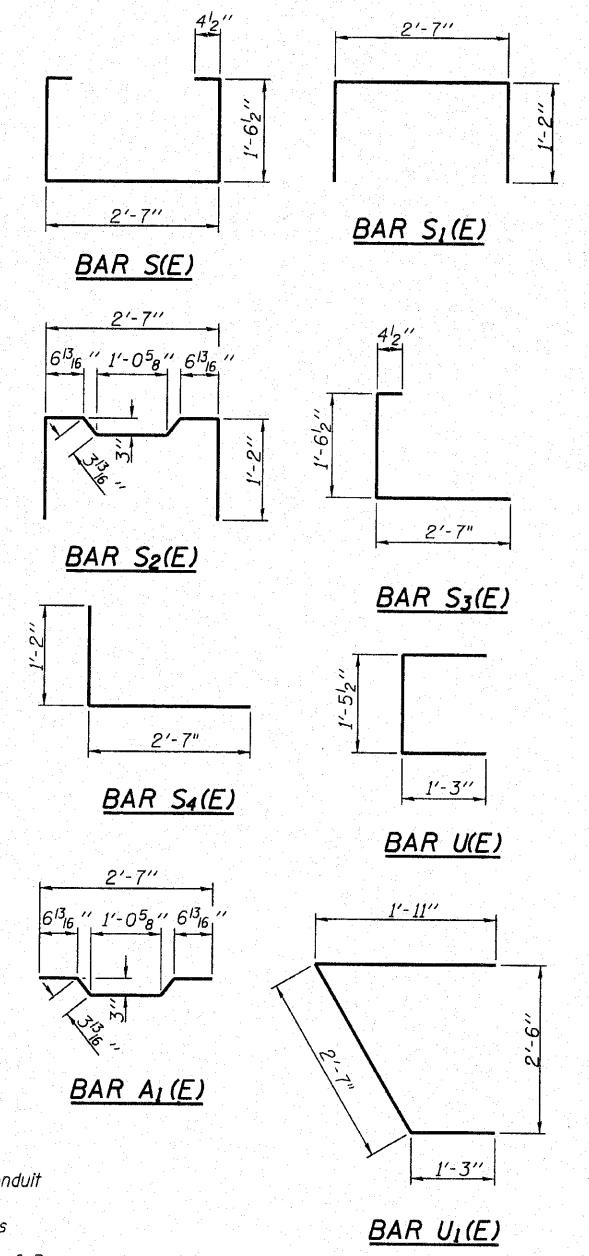
Note: Connect beams in pairs with the transverse tie configuration shown.

DESIGN STRESSES

- $f'_s = 270,000$ p.s.i. ($1/2$ " ϕ Strand)
- $f_{si} = 201,960$ p.s.i. ($1/2$ " ϕ Strand)
- $F_i = 30,900$ lbs per strand
- $f_y = 60,000$ p.s.i. Reinf. bars
- $f'_c = 6,000$ p.s.i.
- $f'_{ci} = 5,000$ p.s.i.

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.
- The 1" ϕ rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.
- Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions).
- Two $1/8$ " fabric adjusting shims of the dimensions of the exterior fabric bearing pad shall be provided for each bearing pad location.
- A minimum $2 1/2$ " ϕ lifting pin shall be used to engage the lifting loops during handling.
- Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.
- Compressive strength of prestressed concrete, f'_c , shall be 6000 psi.
- Compressive strength of prestressed concrete at release, f'_{ci} , shall be 5000 psi.
- Rail post anchor devices shall be cast into outside beam as elsewhere specified.
- 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.

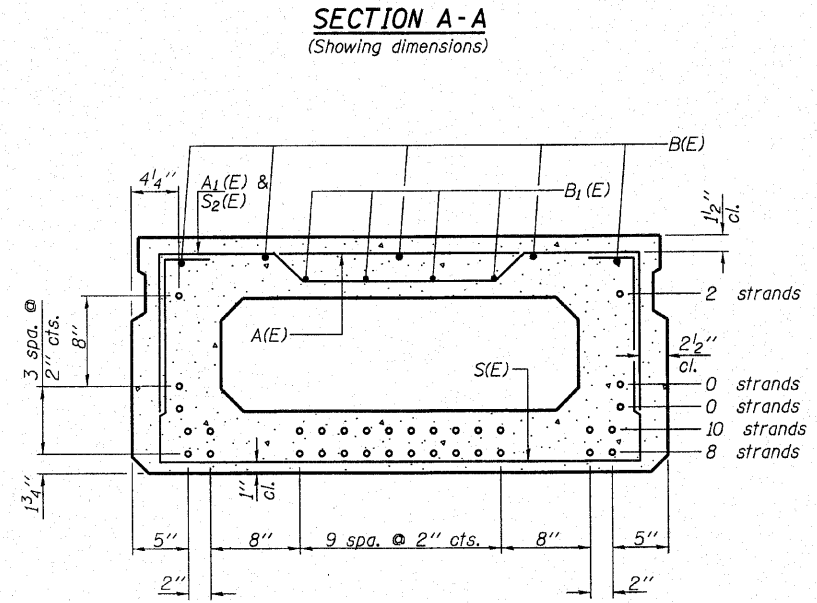
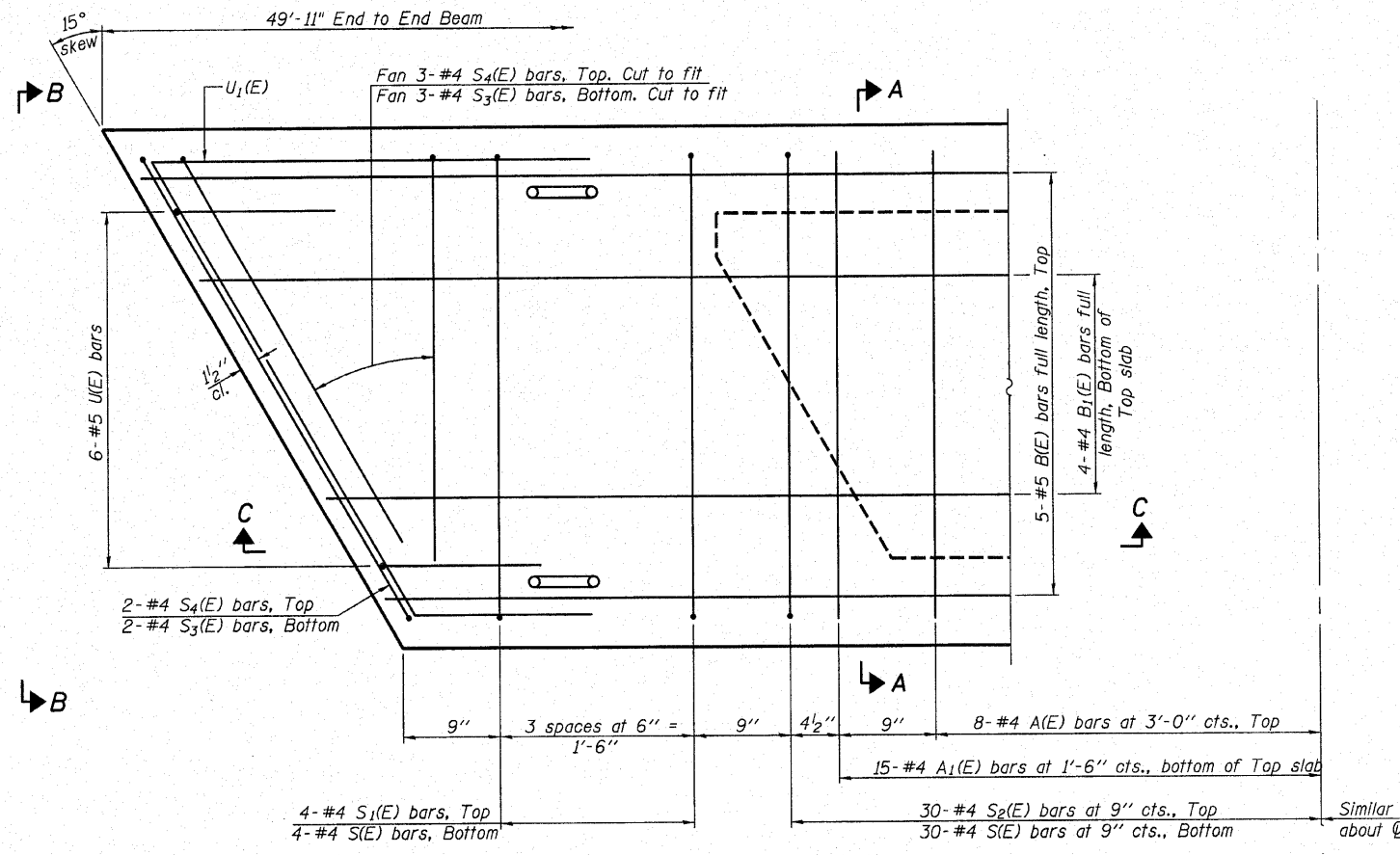
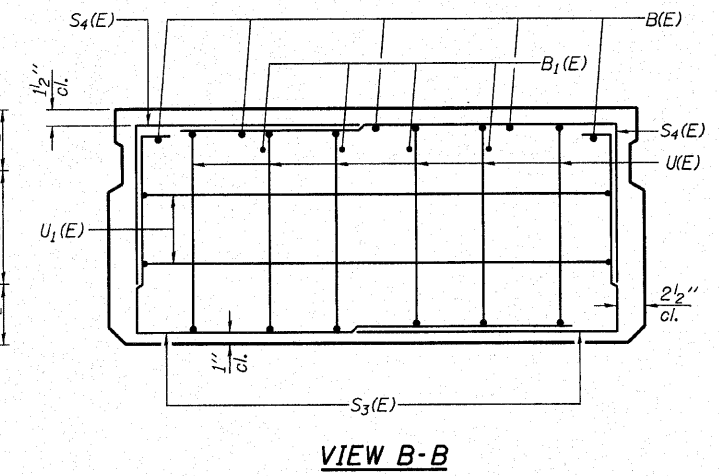
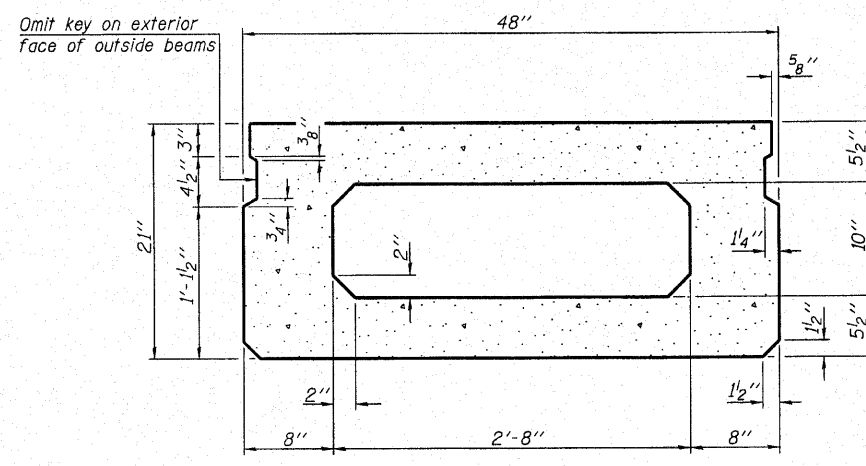
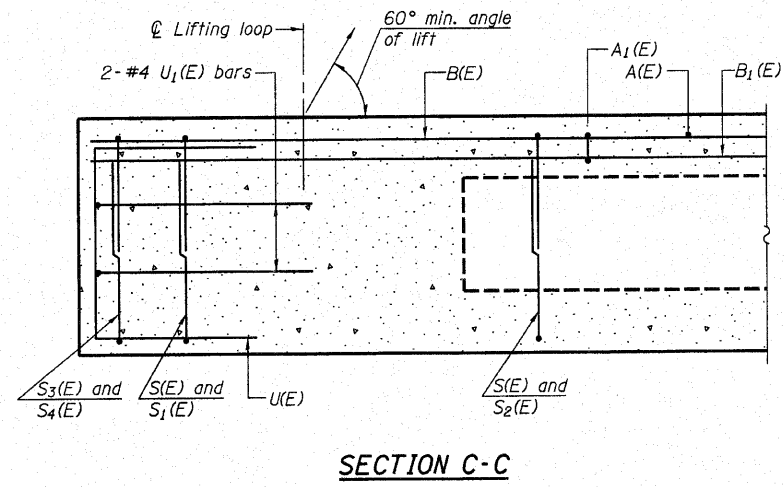


LIFTING LOOP DETAIL

Note: See sheet 5 for Bill of Material.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 118	07-1718-00-BR	MARION	14	8
FED. ROAD DIST. NO.	ILLINOIS PROJECT			

CONTRACT NO. 97452



BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	16	#4	3'-7"	—
A1(E)	30	#4	3'-10"	—
B(E)	5	#5	49'-8"	—
B1(E)	4	#4	49'-8"	—
S(E)	68	#4	7'-5"	U
S1(E)	8	#4	5'-11"	U
S2(E)	60	#4	6'-2"	U
S3(E)	10	#4	5'-7"	U
S4(E)	10	#4	4'-10"	U
U(E)	12	#5	4'-0"	U
U1(E)	4	#4	7'-1"	U

Note: See sheet 9 for additional details.
See sheet 5 for Bill of Material.

PLAN VIEW

Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

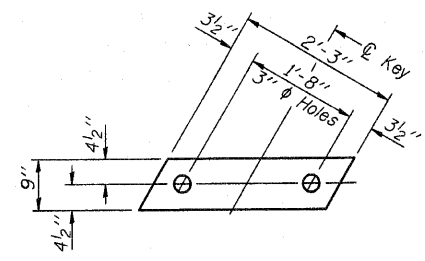
SECTION A-A (Showing reinforcement and permissible strand locations)

20 - 1/2" Strands

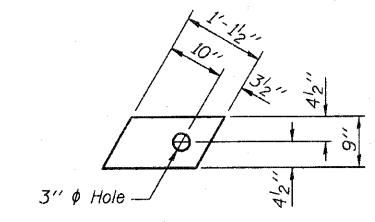
Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 129	07-17129-00-BR	MARION	14	9
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

CONTRACT NO. 97452

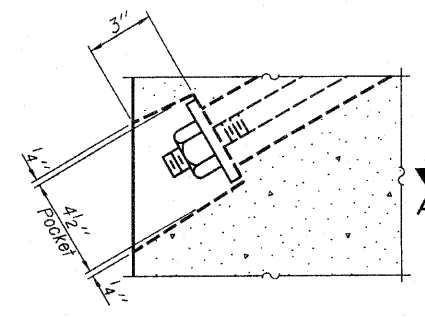


FABRIC BEARING PAD
(Interior)

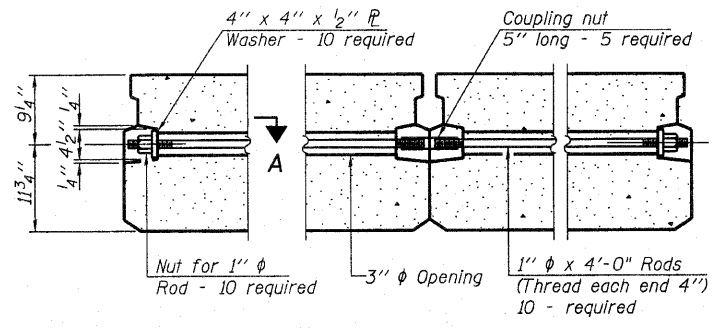


FABRIC BEARING PAD
(Exterior)

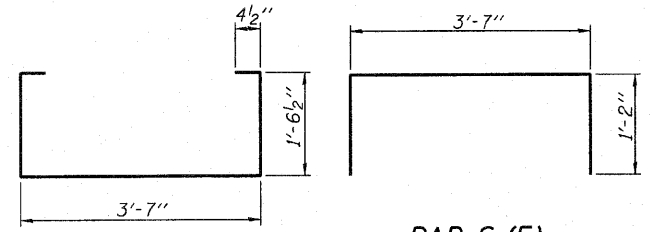
FIXED



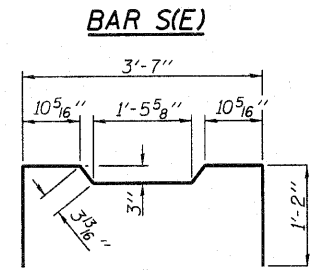
SECTION A-A



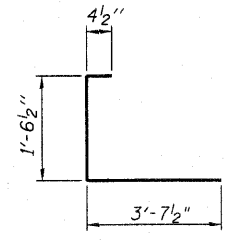
TYPICAL TRANSVERSE TIE ASSEMBLY



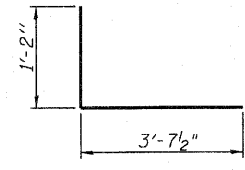
BAR S1(E)



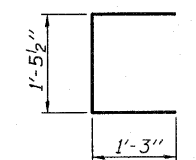
BAR S2(E)



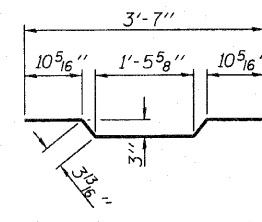
BAR S3(E)



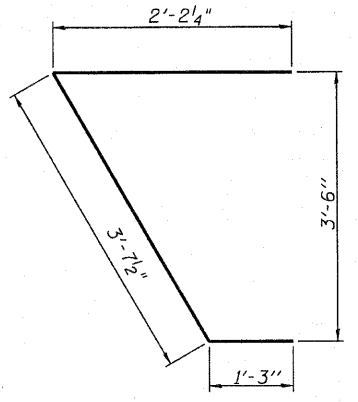
BAR S4(E)



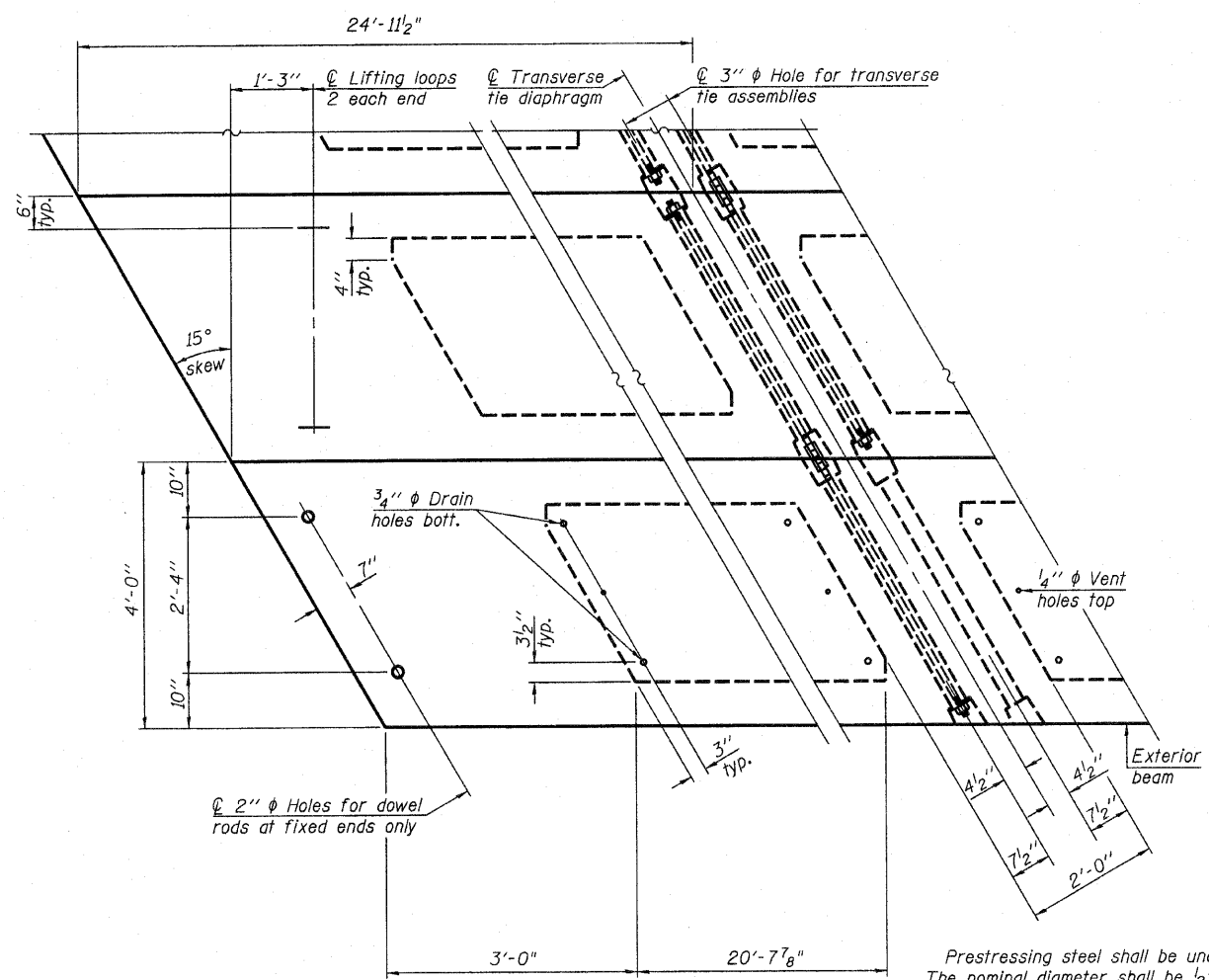
BAR U(E)



BAR A1(E)



BAR U1(E)



PLAN VIEW

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. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.

Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions). Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

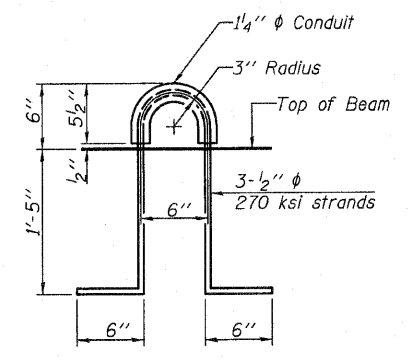
A minimum 2 1/2" lifting pin shall be used to engage the lifting loops during handling. Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.

Compressive strength of prestressed concrete, f'c, shall be 6000 psi.

Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

Rail post anchor devices shall be cast into outside beam as elsewhere specified.

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.



LIFTING LOOP DETAIL

Note: Connect beams in pairs with the transverse tie configuration shown.

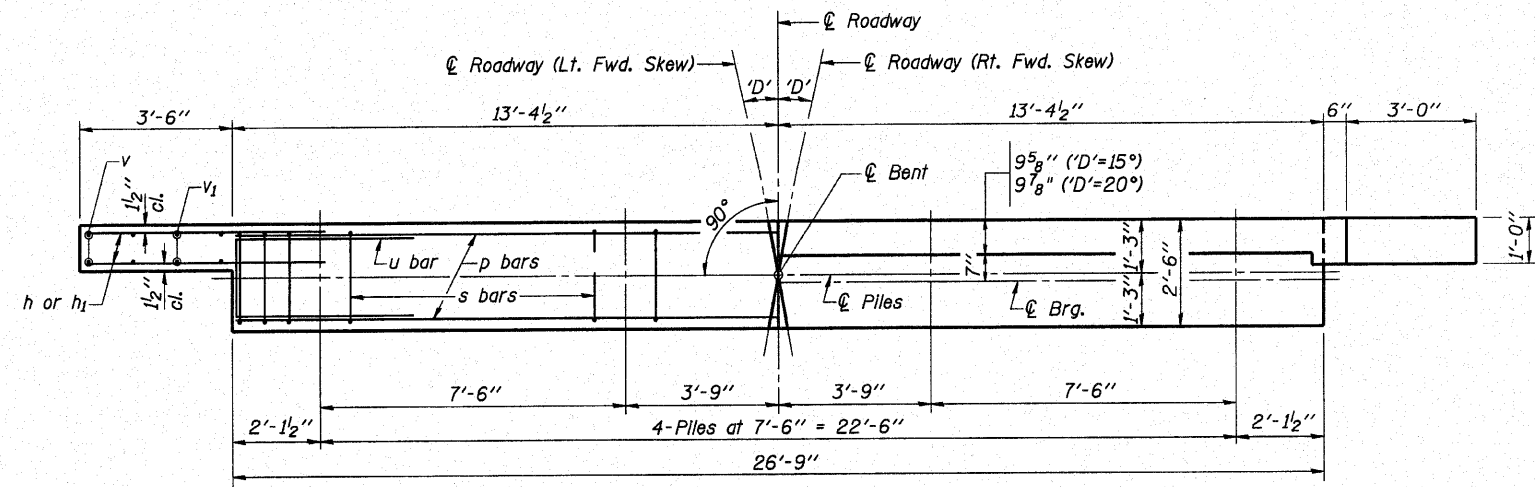
DESIGN STRESSES

- f_s = 270,000 p.s.i. (1/2" phi Strand)
- f_{sl} = 201,960 p.s.i. (1/2" phi Strand)
- F_i = 30,900 lbs per strand
- f_y = 60,000 p.s.i. Reinf. bars
- f'c = 6,000 p.s.i.
- f'ci = 5,000 p.s.i.

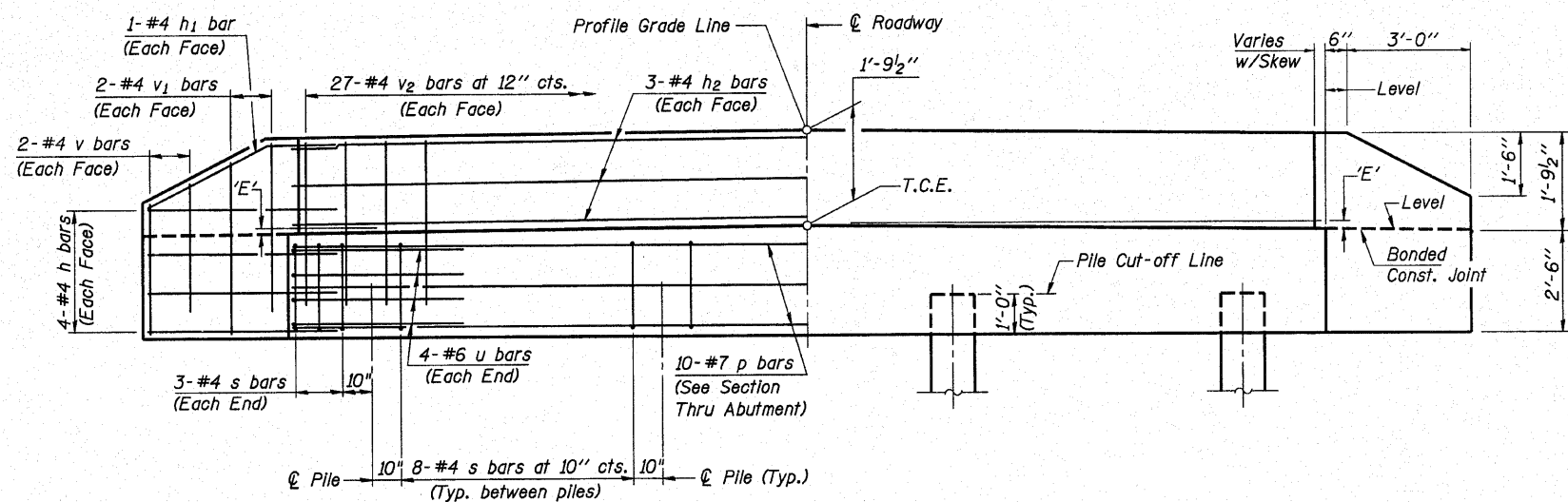
Note: See sheet 5 for Bill of Material.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 118	07-17118-00-BR	MARION	14	10
FED. ROAD DIST. NO.	ILLINOIS PROJECT			

CONTRACT NO. 97452



PLAN
(D'=Designated Skew Angle)



ELEVATION

DIMENSION 'E'

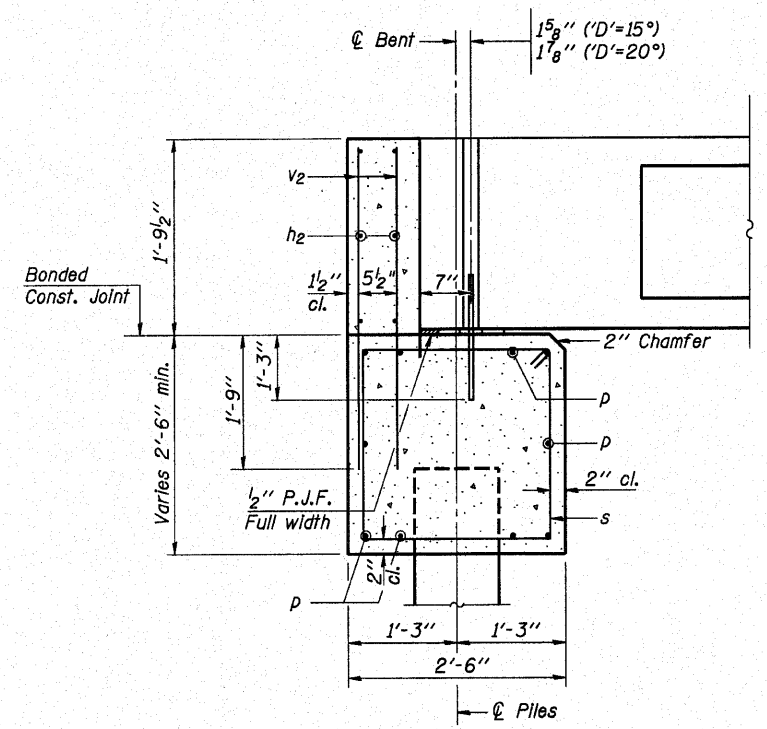
GRADE	'D'=15°		'D'=20°	
	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END
0%	2 3/8"	2 3/8"	2 3/8"	2 3/8"
Over 0% to 1%	2 1/4"	2 5/8"	2 1/8"	2 5/8"
Over 1% to 2%	1 3/4"	3"	1 1/2"	3 1/8"
Over 2% to 3%	1 3/8"	3 1/2"	1"	3 3/4"
Over 3% to 4%	1"	3 7/8"	3/8"	4 1/4"

NOTES

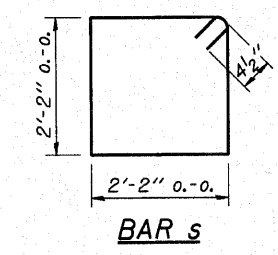
- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31 or M-322, Grade 60.
- Space reinforcement in cap to miss anchor bolts.

DESIGN STRESSES

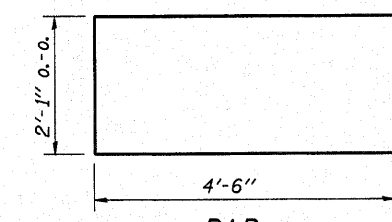
$f'c = 3,500 \text{ psi}$
 $f_y = 60,000 \text{ psi}$



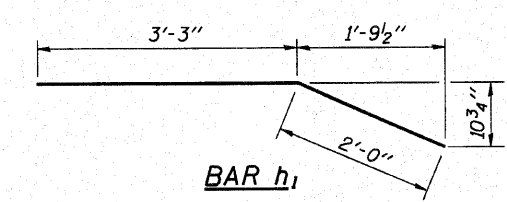
SECTION THRU ABUTMENT
(At Right Angles)



BAR s



BAR u



BAR h1

BILL OF MATERIAL FOR ONE ABUTMENT

Bar	No.	Size	Length	Shape
h	16	#4	5'-0"	—
h1	4	#4	5'-3"	—
h2	6	#4	26'-5"	—
p	10	#7	26'-5"	—
s	30	#4	9'-5"	□
u	8	#6	11'-1"	□
v	8	#4	2'-8"	—
v1	8	#4	3'-8"	—
v2	54	#4	3'-5"	—
Concrete Structures			9.2 Cu. Yds.	
Reinforcement Bars			1190 Lb.	

**P.P.C. DECK BEAMS
PILE BENT ABUTMENT**

24' ROADWAY
21" BEAMS
'D'=15° OR 20°

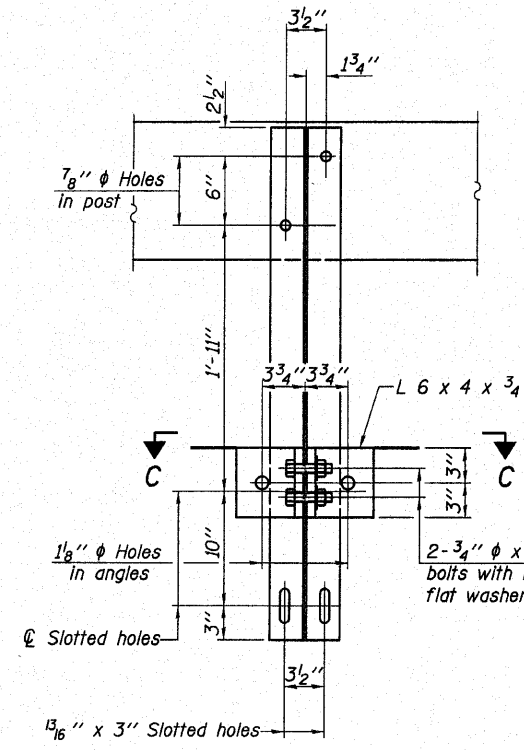
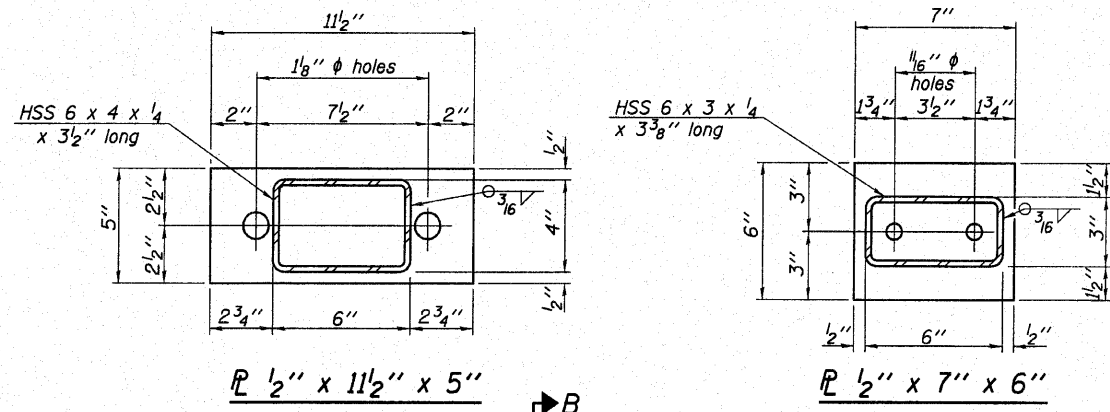
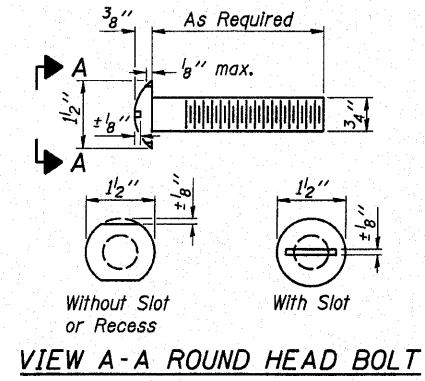
RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS

PREPARED FOR
AECOM
200705604

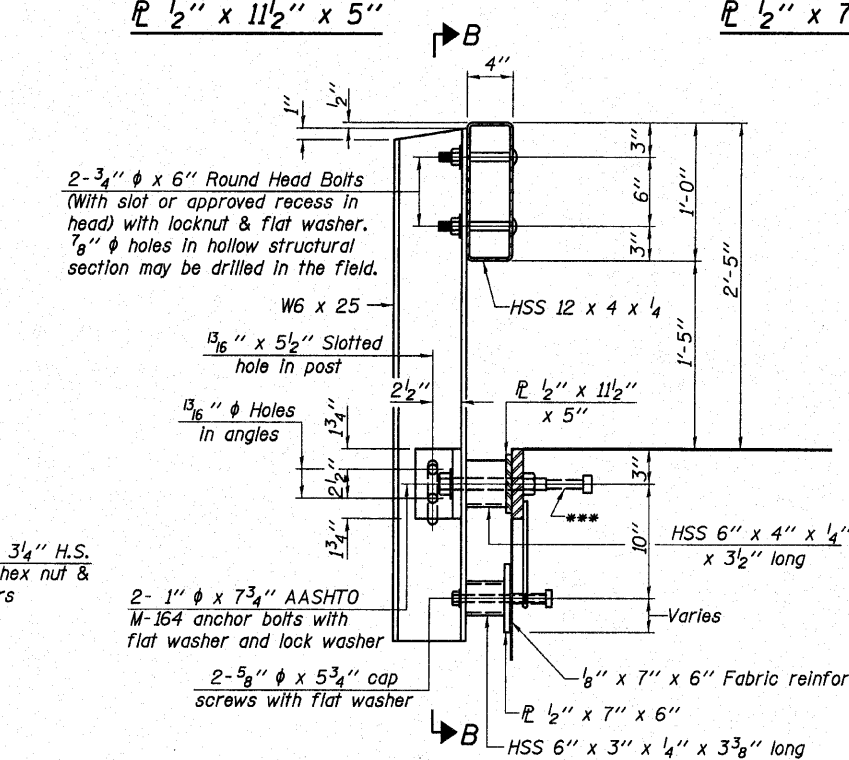
Date: 10/28/2010
Design: MRQ
Drawn: BLT
Job No.: 50910

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 119	07-1719-00-BR	MARION	14	11
FED. ROAD DIST. NO.	ILLINOIS PROJECT			

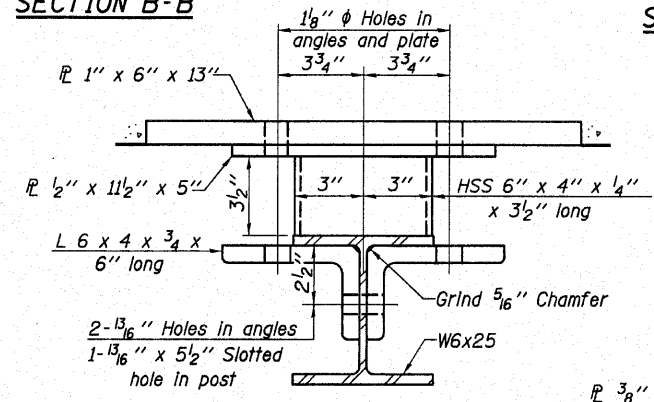
CONTRACT NO. 97452



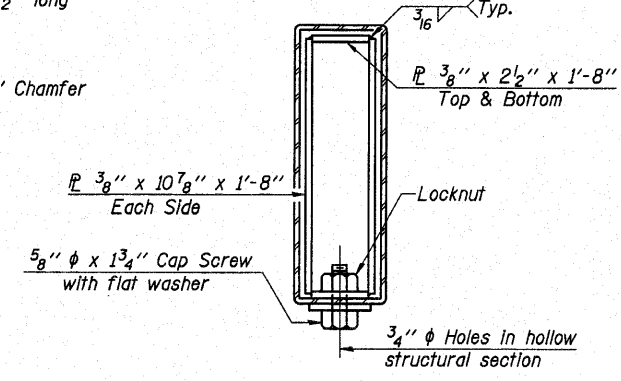
SECTION B-B



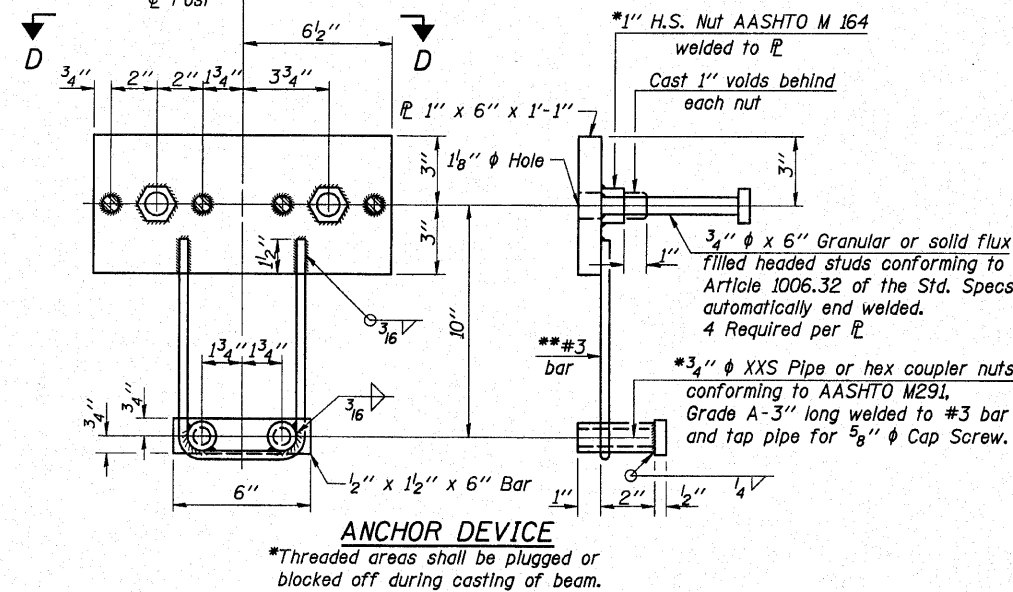
SECTION AT RAILING POST



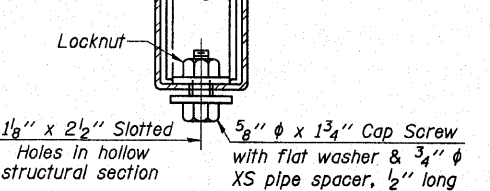
SECTION C-C



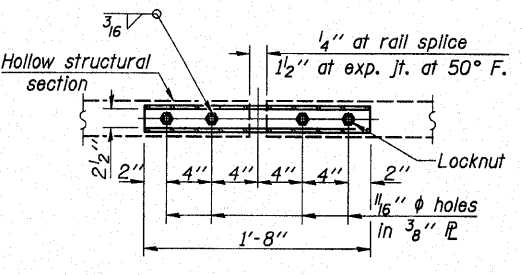
SECTIONS AT RAIL SPLICE



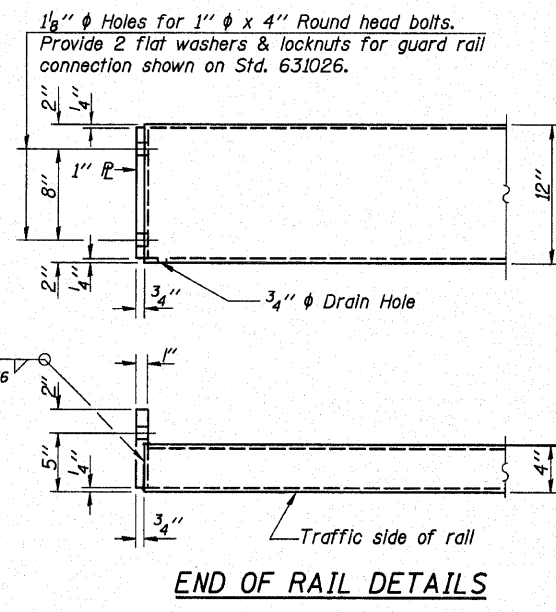
ANCHOR DEVICE



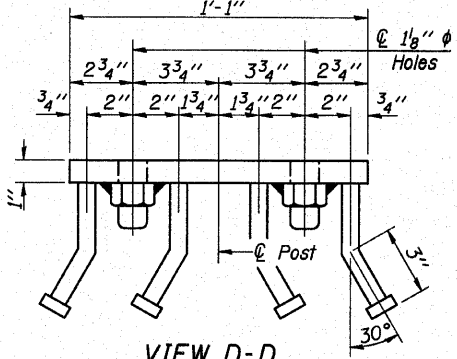
RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTTOM SPLICE R TYPICAL



END OF RAIL DETAILS



VIEW D-D

Notes:
 All field drilled holes shall be coated with an approved zinc rich paint before erection.
 For multi-span bridges, sufficient 1/4 inch x 6 inch x 1-2 inch galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.
 All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.
 *** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.
 The maximum allowable rail post spacing shall be 10'-9". 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'-9" or less.
 See Special Provisions for curled end section.

See sheet 5 Steel Railing Quantities.

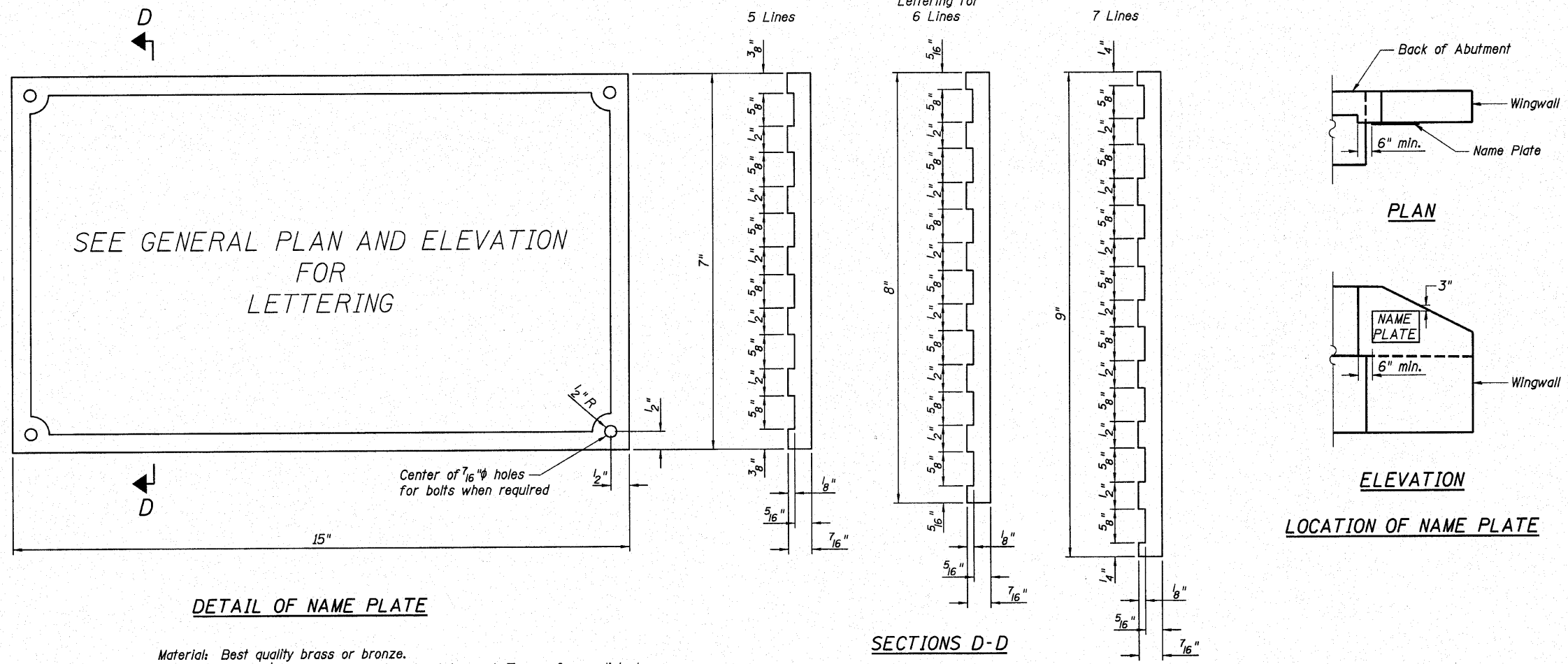
(10'-9" Maximum Post Spacing)

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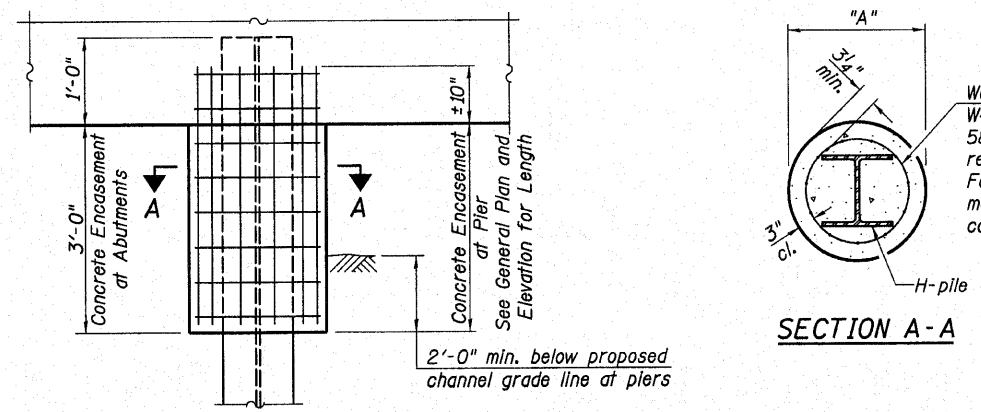
PREPARED FOR:
AECOM
 200705604

Date: 10/28/2010
 Design: MRQ
 Drawn: BLT
 Job No.: 50910

**STEEL RAILING
 TYPE S1**



Material: Best quality brass or bronze.
 Border and 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.



PILE ENCASEMENT

Pile	"A"
HP8	1'-6"
HP10	1'-9"
HP12	2'-0"

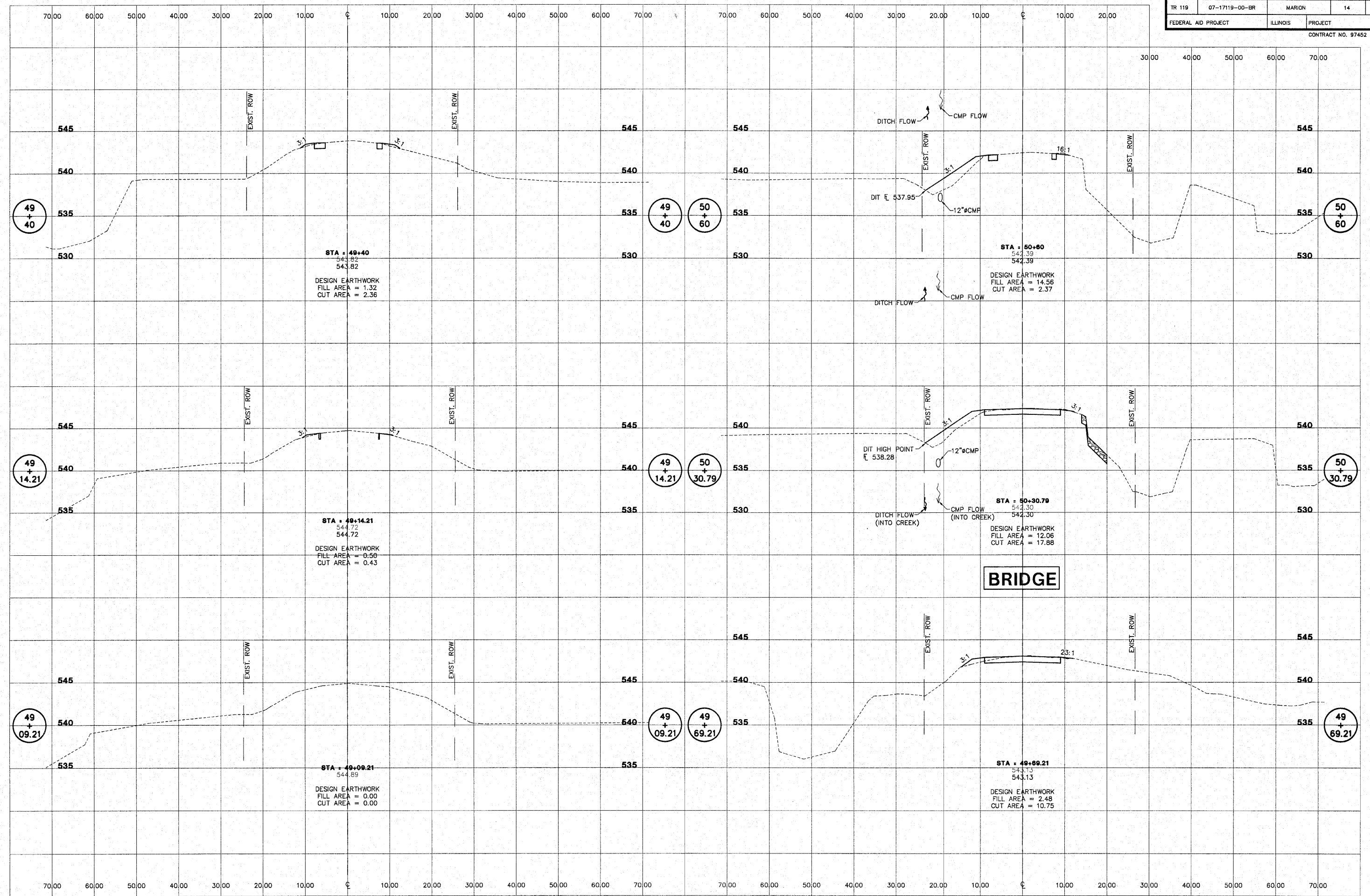
PILE ENCASEMENT QUANTITIES
(Steel Piles)

Pile Size	Item	Unit	Quantity
HP10	Concrete Encasement	Cu Yd.	0.086

Quantities per foot of Encasement.

NAME PLATE & PILE ENCASEMENT DETAILS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 119	07-17119-00-BR	MARION	14	13
FEDERAL AID PROJECT		ILLINOIS		PROJECT
CONTRACT NO. 97452				



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PREPARED FOR:
AECOM
200705604

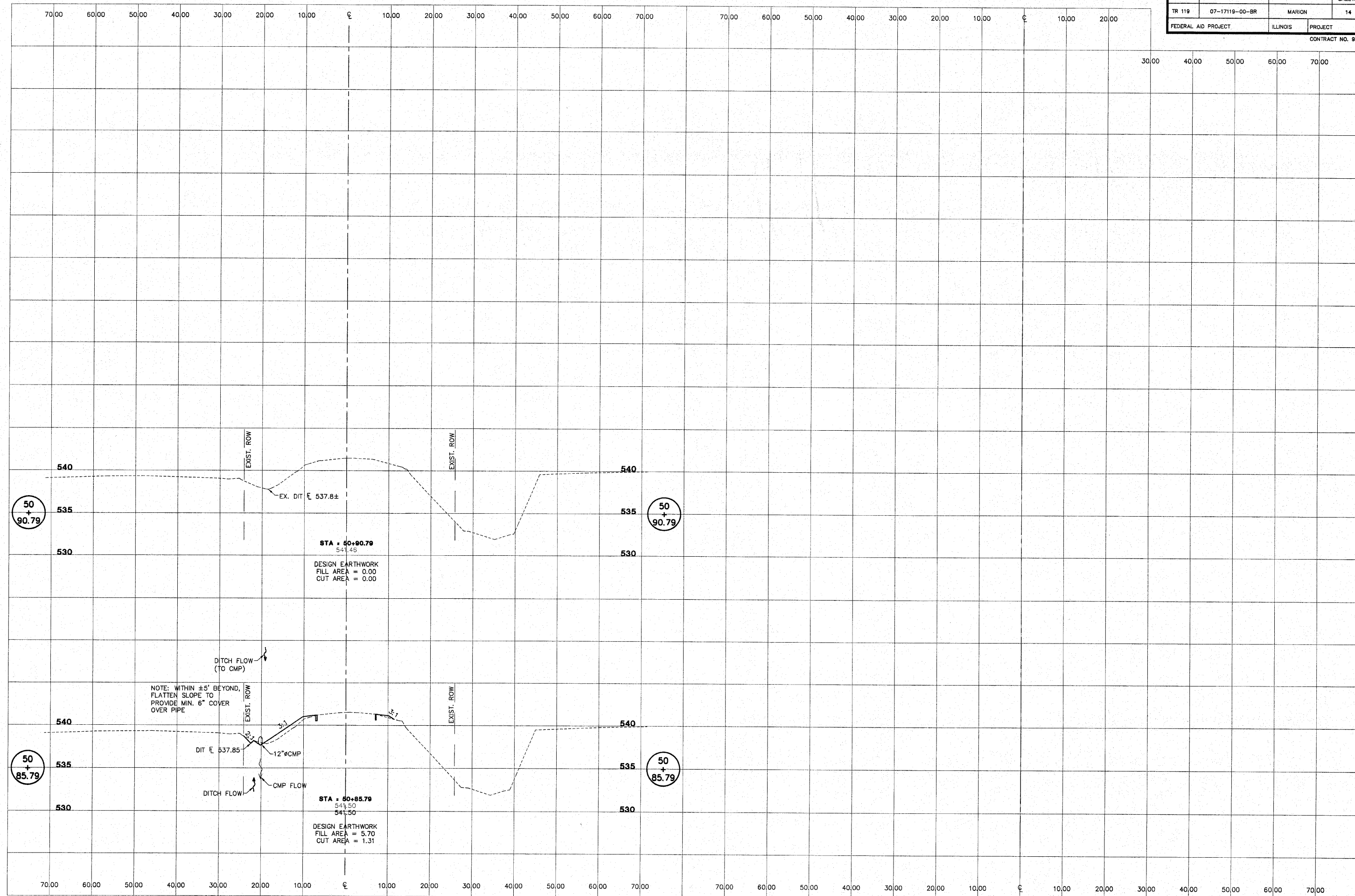
TR 119, SECTION 07-17119-00-BR
TONTI ROAD DISTRICT
MARION COUNTY, ILLINOIS

CROSS SECTIONS
STA. 49+09.21 TO STA. 50+60

SURVEY	JAS	CHECKED	DATE
DESIGN	JMW	APPROVED	10-27-10
DRAWN	JMW	JOB NO.	50910

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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHE. NO.
TR 119	07-17119-00-BR	MARION	14	14
FEDERAL AID PROJECT		ILLINOIS	PROJECT	
CONTRACT NO. 97452				



NOTE: WITHIN ±5' BEYOND,
FLATTEN SLOPE TO
PROVIDE MIN. 6" COVER
OVER PIPE

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PREPARED FOR:
ASCOM
200705604

TR 119, SECTION 07-17119-00-BR
TONTI ROAD DISTRICT
MARION COUNTY, ILLINOIS

CROSS SECTIONS
STA. 50+85.79 TO STA. 50+90.79

SURVEY	JAS	CHECKED	DATE
DESIGN	JMW	APPROVED	10-27-10
DRAWN	JMW		REVIS
			JOB NO.
			50910

10-27-10 10:27-10