

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
**PLANS FOR PROPOSED
FEDERAL AID PROJECT**

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9304	12-00023-01-BR	MONROE	16	1
FEDERAL AID PROJECT		ILLINOIS	CONTRACT NO. 97524	

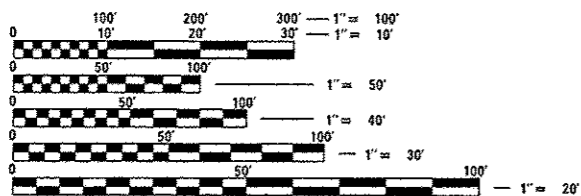
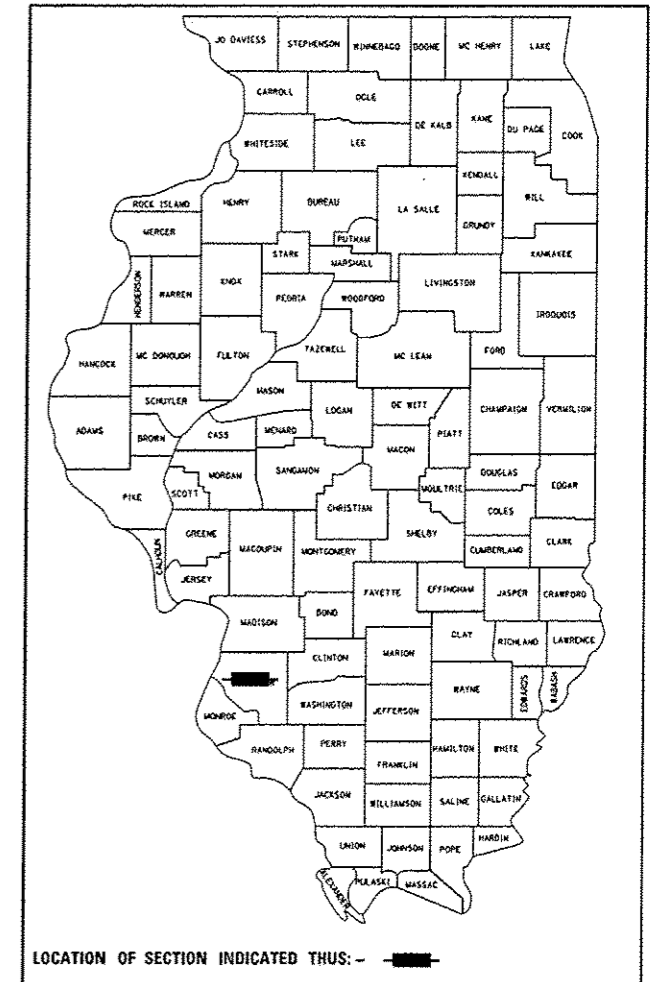
INDEX OF SHEETS

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- 2 GENERAL NOTES AND SUMMARY OF QUANTITIES
- 3 TYPICAL SECTIONS
- 4 PLAN AND PROFILE SHEET
- 5-16 BRIDGE PLANS

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- 001006 DECIMAL OF AN INCH AND OF A FOOT
- 515001-03 NAME PLATE FOR BRIDGES
- 630001-10 STEEL PLATE BEAM GUARDRAIL
- 630301-06 SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
- 631011-09 TRAFFIC BARRIER TERMINAL TYPE 2
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- 701001-02 OFF-RD OPERATIONS, 2L, 2W, MORE THAN 15' AWAY
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- 701901-02 TRAFFIC CONTROL DEVICES
- BLR 21-9 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON LOCAL HIGHWAYS

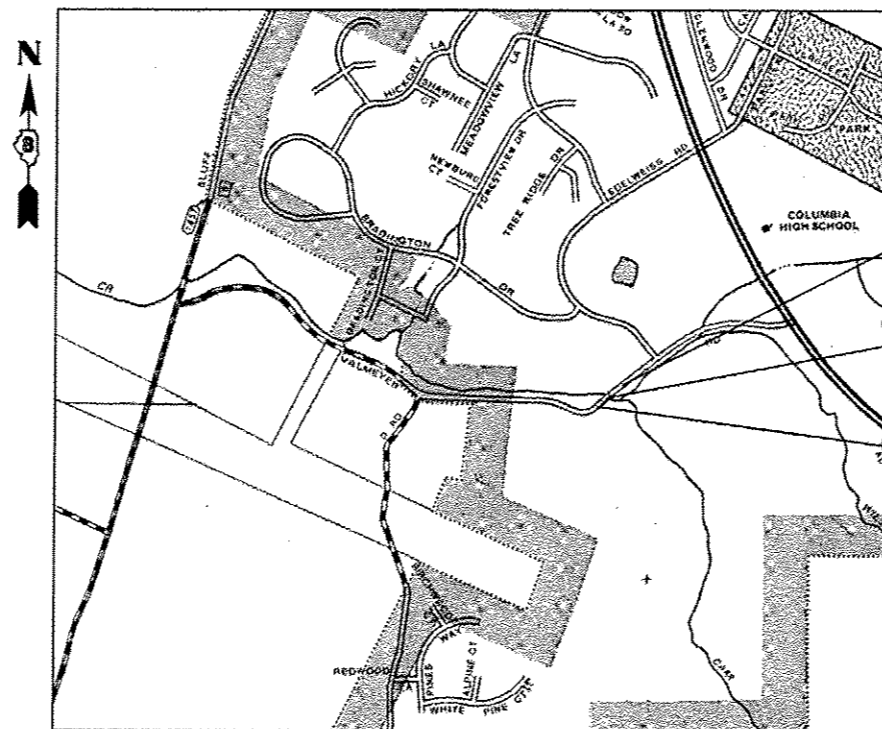
CITY OF COLUMBIA
VALMEYER ROAD OVER CARR CREEK-FAU 9304
SECTION 12-00023-01-BR
PROJECT NO. BRM-5011(395)
MONROE COUNTY
JOB NO. C-98-302-13



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

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

ROADWAY CLASSIFICATION: MINOR ARTERIAL
2013 ADT: 2650
2023 ADT: 2927
DESIGN SPEED 30 MPH



LOCATION MAP
N.T.S.

LENGTH OF PROJECT
GROSS LENGTH = 350.77 FT. = 0.066 MILES
NET LENGTH = 350.77 FT. = 0.066 MILE

END CONSTRUCTION
STA. 21 + 65.77

SN: 067-6002
STA. 20 + 00.00

BEGIN CONSTRUCTION
STA. 18 + 15.00

SHEILA J. KIMLINGER
49175
REGISTERED PROFESSIONAL ENGINEER
OF ILLINOIS
4.8.13
Sheila Kimlinger
SHEILA J. KIMLINGER, P.E. EXPIRATION DATE
LICENSE NO. 062-049175 11-30-2013

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

APPROVED April 8 20 13
Rainie Kuttan
MAYOR
CITY OF COLUMBIA

PASSED April 10 20 13
Yolanda
DISTRICT 8 ENGINEER
LOCAL ROADS & STREETS

RELEASED FOR BID BASED ON LIMITED REVIEW April 10 20 13
Jeffrey K. Benning
DEPUTY DIRECTOR OF HIGHWAYS
REGION FIVE ENGINEER

**PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS**

PREPARED BY:
TWM THOUVENOT, WADE & MOERCHEN, INC.

GENERAL

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. FOR CODED PAY ITEM DESCRIPTIONS, INCLUDED ITEMS, AND ALL MATERIAL SPECIFICATIONS, PLEASE REFER TO THE LATEST EDITION OF THE IDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

THE CONTRACTOR SHALL CONFINE HIS/HER OPERATIONS TO THE AREA LOCATED WITHIN THE CONSTRUCTION LIMIT LINES, AS SHOWN ON PLANS. ANY AREA DISTURBED BEYOND THESE LIMITS SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.

IT IS NOT WARRANTED THAT THIS DOCUMENT CONTAINS COMPLETE INFORMATION REGARDING EASEMENTS, RESERVATIONS, RESTRICTIONS, RIGHT-OF-WAYS, BUILDING LINE SETBACKS, AND OTHER ENCUMBRANCES. FOR COMPLETE INFORMATION, A TITLE OPINION OR COMMITMENT FOR TITLE INSURANCE SHOULD BE OBTAINED AND THOROUGHLY REVIEWED.

THE CORPS OF ENGINEERS PERMIT DOES NOT AUTHORIZE THE CLEARING AND GRUBBING OF MATURE TREES DUE TO THE FEDERALLY ENDANGERED SPECIES, INDIANA BAT (MYOTIS SODALIS).

UTILITIES - LOCATIONS/INFORMATION ON PLANS

UNLESS NOTED OTHERWISE, THE TYPE, SIZE, DEPTH AND LOCATION OF EXISTING WATER MAINS, GAS MAINS, SEWERS, ELECTRIC POWER LINES, TELEPHONE LINES AND OTHER UTILITIES AS DELINEATED ON THE PLANS HAVE BEEN DETERMINED BY REVIEW OF AVAILABLE EXISTING "AS-BUILT" OR RECORD DRAWINGS, FIELD SURVEY OF J.U.L.I.E. MARKED UTILITIES, OR FIELD SURVEY OF ABOVE GROUND SURFACE UTILITY FEATURES. THE OWNER AND ENGINEER HAVE NOT UNDERTAKEN SUBSURFACE EXPLORATORY INVESTIGATIONS TO CONFIRM OR VERIFY THE UTILITIES SHOWN ON THESE PLANS; THEREFORE THEIR EXACT LOCATION, SIZE AND FUNCTION MUST BE CONSIDERED APPROXIMATE. THE EXISTING LOCATION OF ALL FIBER OPTIC, UNDERGROUND ELECTRIC, UNDERGROUND TELEPHONE, CABLE, WATER LINES AND PROPOSED SEWER FORCE MAIN LINES HAVE BEEN APPROXIMATED AT MINIMUM DEPTHS OF 24", 30", 24", 24", 30", AND 30", RESPECTIVELY.

THE ENGINEER AND OWNER FURTHER DO NOT WARRANT THAT ALL UTILITIES HAVE BEEN ILLUSTRATED ON THE DOCUMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONTACTING J.U.L.I.E. FOR FIELD VERIFICATION OF ALL UTILITIES ON THE SITE PRIOR TO COMMENCEMENT OF CONSTRUCTION. IF THE CONTRACTOR DETERMINES THAT SUBSTANTIAL DISCREPANCY EXISTS BETWEEN FIELD VERIFIED UTILITIES AND THESE PLANS WHICH WOULD SIGNIFICANTLY AFFECT THE FUNCTION, COST, OR PERFORMANCE OF THE PROJECT, THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE ENGINEER FOR CLARIFICATION AND PROJECT DIRECTION.

EROSION CONTROL

IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSURE THAT ALL EROSION AND DISPLACED SEDIMENT DOES NOT MIGRATE OFF SITE. IF UNEXPECTED EROSION OR SEDIMENTATION OCCURS, OR IF THE EROSION PLAN STRUCTURES BECOME DAMAGED, THE CONTRACTOR SHALL PROVIDE SUFFICIENT MEASURES TO REPAIR, REPLACE, OR INSTALL EROSION CONTROL STRUCTURES TO INSURE OFF-SITE DAMAGE DOES NOT OCCUR. ANY SEDIMENT OR EROSION DAMAGE WHICH OCCURS OFF-SITE SHALL BE REPAIRED BY THE CONTRACTOR AT HIS/HER EXPENSE.

COMMITMENTS

NONE.

UTILITY OWNERS AND CONTACT INFORMATION

GAS AMEREN ILLINOIS JASON KLEIN (618) 236-4309	ELECTRIC MONROE COUNTY ELECTRIC CO-OPERATIVE ALAN W. WATTLES (618) 939-7171
CABLE TELEVISION CHARTER COMMUNICATIONS (618) 345-8003	CITY OF COLUMBIA RON WILLIAMS (618) 281-4264
TELEPHONE HARRISONVILLE TELEPHONE CO (618) 939-9256	

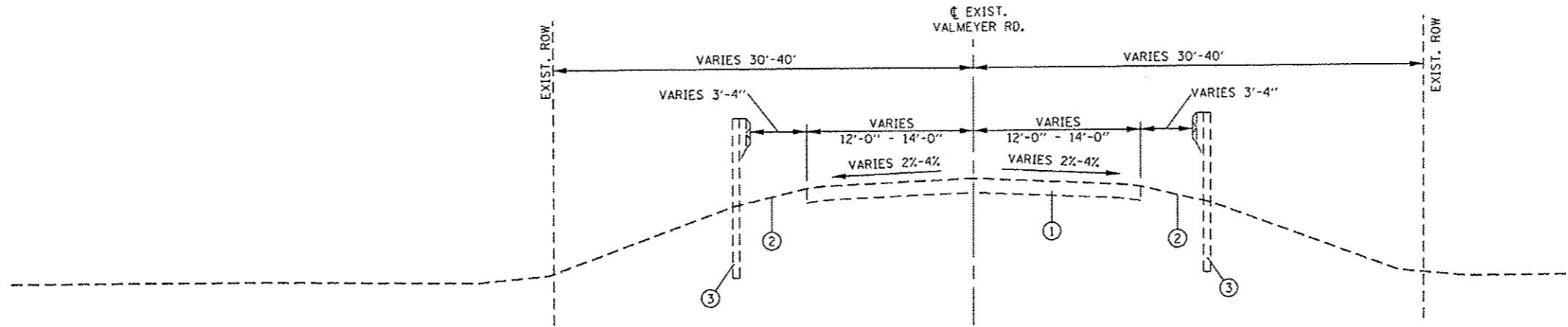
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20300100	CHANNEL EXCAVATION	CU YD	235
28100107	STONE RIPRAP, CLASS A4	SQ YD	608
28200200	FILTER FABRIC	SQ YD	608
40603315	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N70	TON	53
50101500	REMOVAL OF EXISTING SUPERSTRUCTURES	EACH	1
50400305	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	SQ FT	3053
Δ 50901050	STEEL RAILING, TYPE SM	FOOT	227
51500100	NAME PLATES	EACH	1
58100200	WATERPROOFING MEMBRANE SYSTEM	SQ YD	341
58300100	PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	916
Δ 63100045	TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	1
Δ 63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4
Δ 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	3
63200310	GUARDRAIL REMOVAL	FOOT	193
67100100	MOBILIZATION	L SUM	1
70101830	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L SUM	1
Δ 78200410	GUARDRAIL MARKERS, TYPE A	EACH	8
Δ 78200530	BARRIER WALL MARKERS, TYPE C	EACH	6
Δ 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	3
X0327301	RELOCATE EXISTING MAILBOX	EACH	3
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.25

Δ SPECIALTY ITEMS

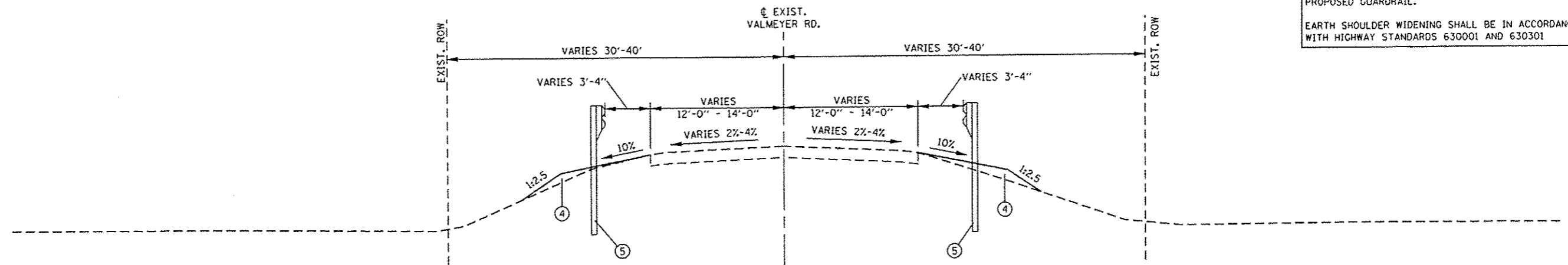
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PLOT SCALE * 40,0000 1/4" = 1'	CHECKED - DATE -	REVISED - REVISED -	SCALE: NONE			SHEET NO. 1 OF 1 SHEETS	STA. TO STA.	CONTRACT NO. 97524		FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT

LEGEND

- ① EXISTING OIL AND CHIP PAVEMENT
- ② EXISTING EARTH SHOULDER
- ③ EXISTING GUARDRAIL
- ④ PROPOSED EARTH SHOULDER
- ⑤ PROPOSED GUARDRAIL



EXISTING TYPICAL SECTION - VALMEYER ROAD
 STA 18+15.00 TO STA 19+47.52 (WEST APPROACH)
 STA 20+51.08 TO STA 21+65.11 (EAST APPROACH)



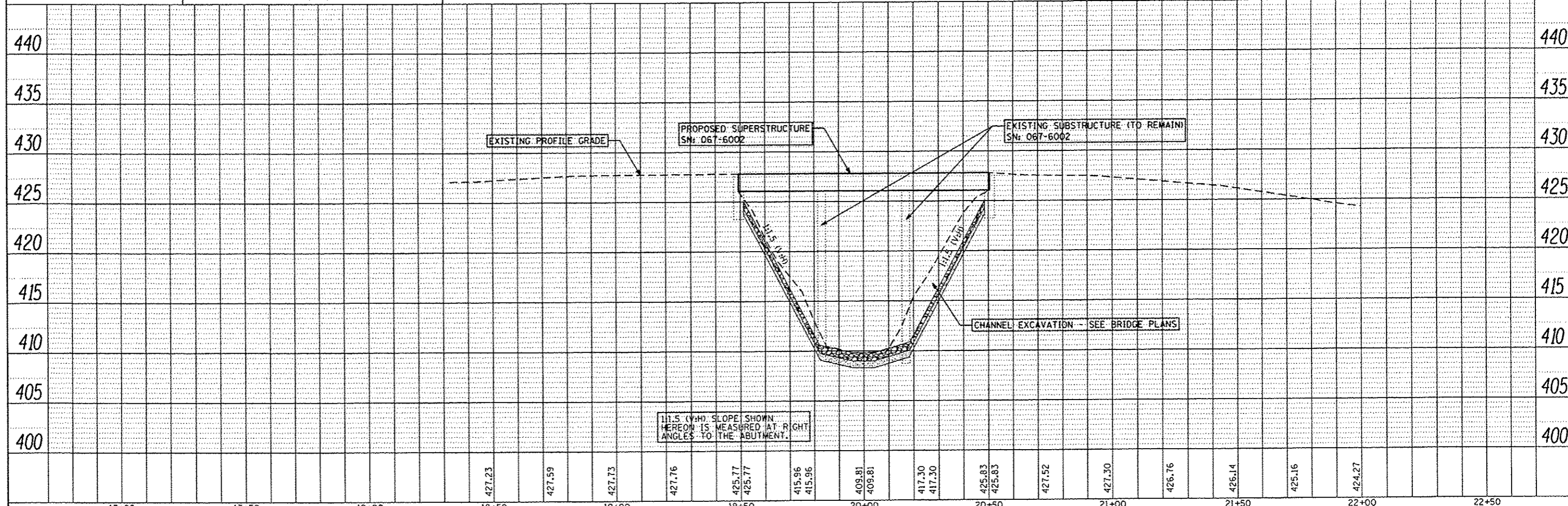
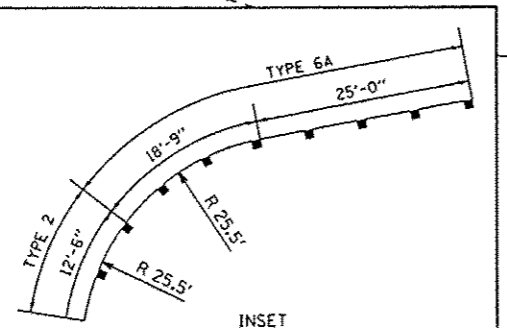
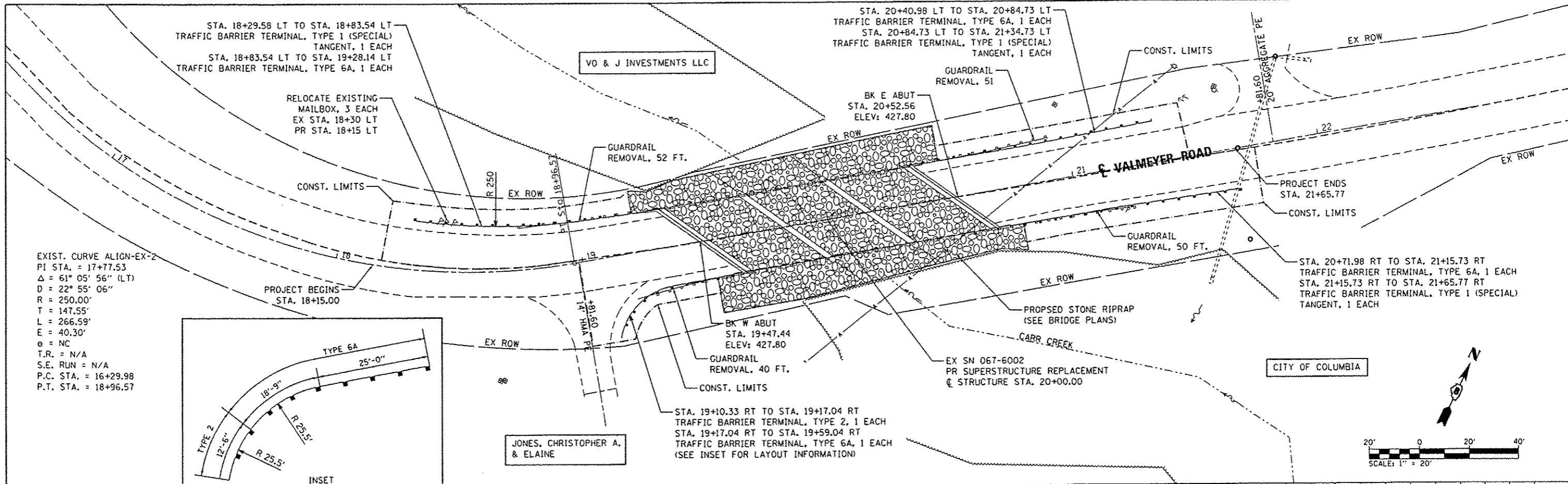
PROPOSED TYPICAL SECTION - VALMEYER ROAD
 STA 18+15.00 TO STA 19+47.52 (WEST APPROACH)
 STA 20+51.08 TO STA 21+65.77 (EAST APPROACH)

NOTES:
 SEE PLAN DETAILS FOR LIMITS OF EXISTING AND PROPOSED GUARDRAIL.
 EARTH SHOULDER WIDENING SHALL BE IN ACCORDANCE WITH HIGHWAY STANDARDS 630001 AND 630301

FILE NAME * 128613-typl.dgn	USER NAME * hostermillar	DESIGNED <i>KMO</i>	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TYPICAL SECTIONS			F.A.U. RTE. 9304	SECTION 12-00023-01-BR	COUNTY MONROE	TOTAL SHEETS 16	SHEET NO. 3	
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	PLOT DATE * 4/8/2013	DATE -	REVISED -		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT								

DATE	
BY	
PLAN	
REVISION	
NO.	
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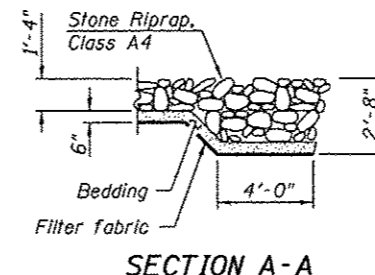
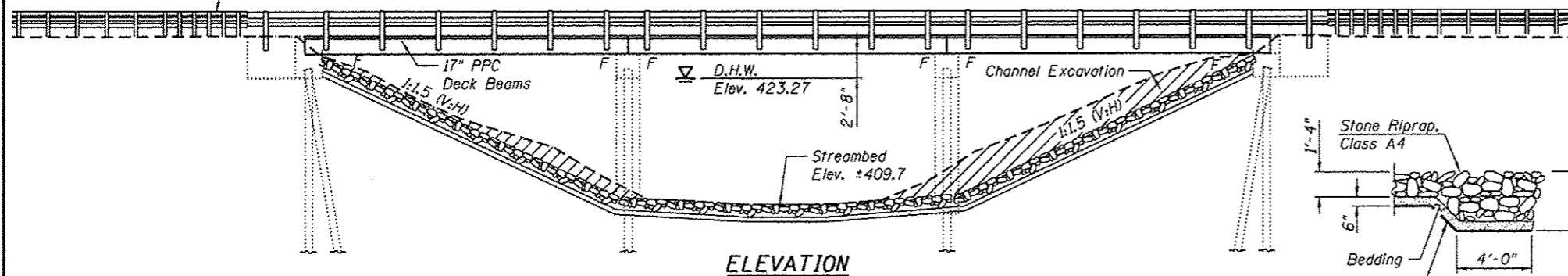


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PLOT SCALE * 48.0000 / in.	CHECKED - SJK	REVISOR -	REVISOR -						CONTRACT NO. 97524				
PLOT DATE * 4/8/2013	DATE - 03-2013	REVISOR -	REVISOR -						ILLINOIS FED. AID PROJECT				

Benchmark:
 Railroad Spike in Power Pole on northerly side of Valmeyer Rd. Approximately 125' northwesterly from N.W. corner of existing abutment. Elevation 425.69.

Existing Structure:
 S.N. 067-6002 was built in 1979. The superstructure is three 33'-0" spans of 3'-9" wide by 1'-9" deep pre-cast channel beams. The abutments are cast in place concrete on a single row of timber piles and the piers are solid wall pile bents with steel H Piles. The existing substructure will be reused and superstructure will be replaced with PPC deck beams. The road will be closed during construction.

No slavage.
 Traffic Barrier Terminal
 Type 6A Std. 631032, typ.



INDEX OF SHEETS

1. General Plan & Elevation
2. Superstructure
3. Steel Railing, Type SM
- 4-5. PPC Deck Beam Details
6. Substructure Details
- 7-12. Existing Bridge Plans

LOADING HL-93
 Allow 50#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS

PROPOSED SUPERSTRUCTURE
 2012 AASHTO LRFD Bridge Design Specifications, 6th Edition

EXISTING SUBSTRUCTURE
 AASHTO Standard Specifications for Highway Bridges, 17th Ed.

DESIGN STRESSES

PRECAST PRESTRESSED UNITS
 f'c = 6,000 psi
 f'ci = 5,000 psi
 fpu = 270,000 psi (low-lax strands)

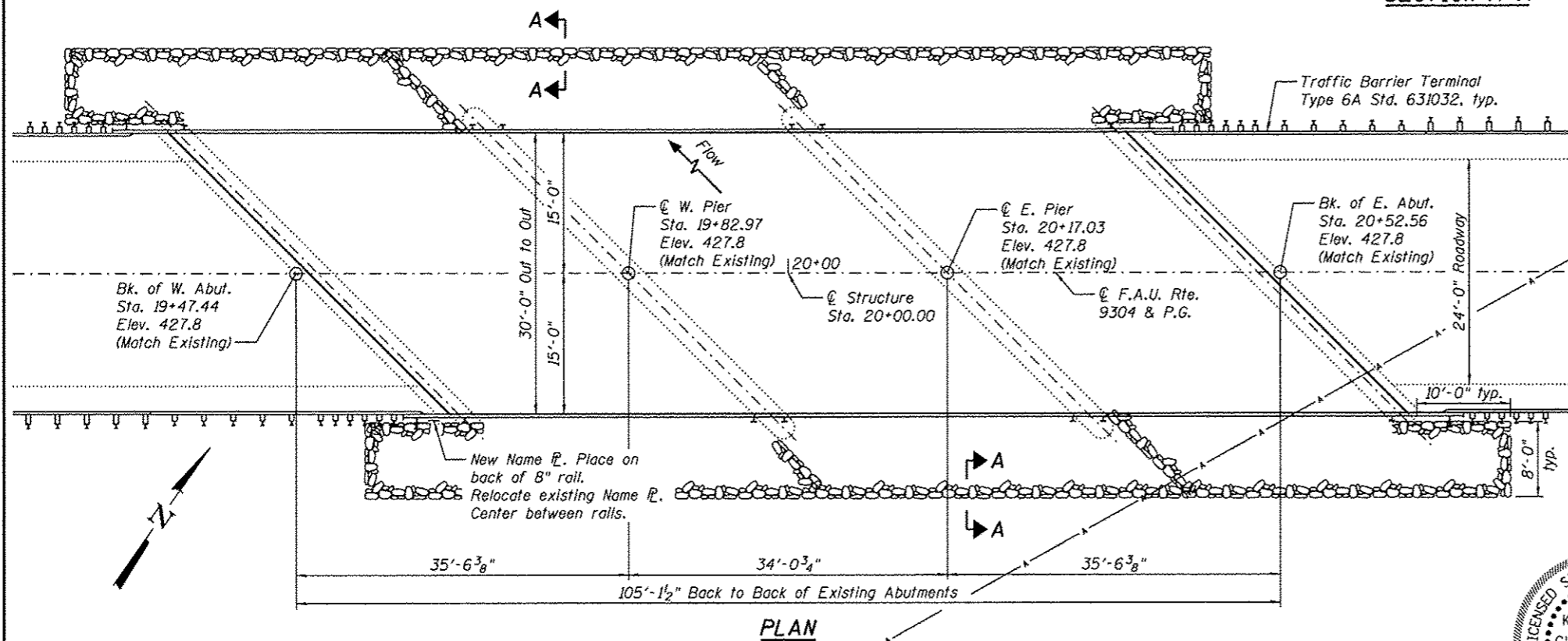
SEISMIC DATA

Seismic Performance Category (SPC) = B
 Bedrock Acceleration Coefficient (A) = 0.11g
 Site Coefficient (S) = 1.0

CARR CREEK
 RE-BUILT 20__ BY
 CITY OF COLUMBIA
 SEC. 78-00023-00-BR
 STATION 20+00
 STR. NO. 067-6002 LOADING HL-93

NAME PLATE

See Std. 515001
 Existing Name Plate shall be cleaned and relocated next to new Name Plate. Cost included with Name Plates. See Special Provisions.

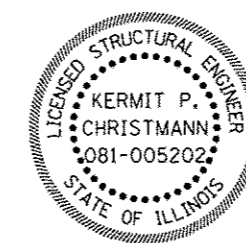


GENERAL NOTES

Reinforcement bars designated (E) shall be epoxy coated.
 Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
 Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

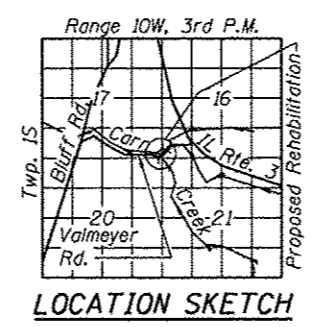
TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.	-	-	235
Stone Riprap, Class A4	Sq. Yd.	-	608	608
Filter Fabric	Sq. Yd.	-	608	608
HMA Surface Course, Mix "C", N70	Tons	53	-	53
Removal of Existing Superstructures	Each	1	-	1
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	3053	-	3053
Steel Railing, Type SM	Foot	227	-	227
Name Plates	Each	-	-	1
Waterproofing Membrane System	Sq. Yd.	341	-	341
Portland Cement Mortar Fairing Course	Foot	916	-	916



Kermit P. Christmann
 EXPIRES 11/30/2014

I certify that to the best of knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. This design is an economical one for the style of structure and complies with requirements of the edition of the AASHTO Bridge Design Specifications listed on the plans.



WATERWAY INFORMATION

Drainage Area = 10.9 sq. mi. Proposed Overtopping Elev. = 423.74 at Sta. 22+51

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Head - Ft.		Headwater El.		
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	
Ten-Year	10	2,590	335.56	424.92	421.41	0.72	0.32	422.13	421.73
Design	30	3,678	439.24	548.44	423.27	0.48	0.39	423.75	423.66
Base	100	5,070	560.82	674.68	425.03	1.03	0.73	426.06	425.76
Prop. Max.	500	7,020	560.82	674.68	427.38	0.00	0.00	427.38	427.38

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevations (ft)			
W. Abut.	W. Pier	E. Pier	E. Abut.
423.96	403.70	403.70	423.96

THOUVENOT, WADE & MOERCHEN, INC.
 SWANSEA • WATERLOO • EDWARDSVILLE • ST. LOUIS • ST. CHARLES



USER NAME: chaldaner	DESIGNED: MJJ	REVISED: -
DESIGNED: MJJ	CHECKED: ALN	REVISED: -
DESIGNED: MJJ	DRAWN: MJJ	REVISED: -
DESIGNED: MJJ	CHECKED: ALN	REVISED: -

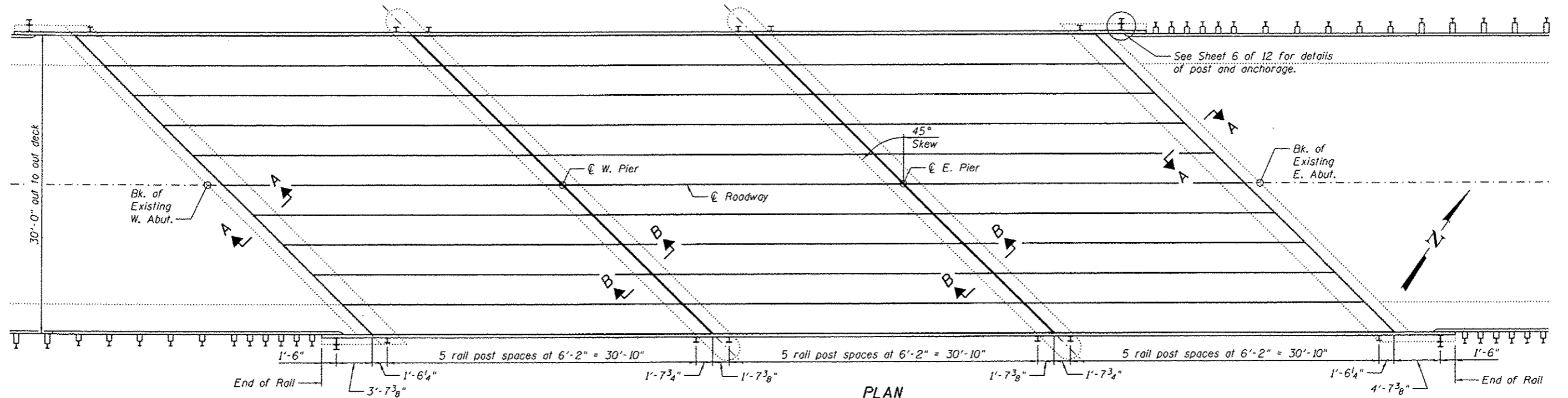
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

GENERAL PLAN
 STRUCTURE NO. 067-6002

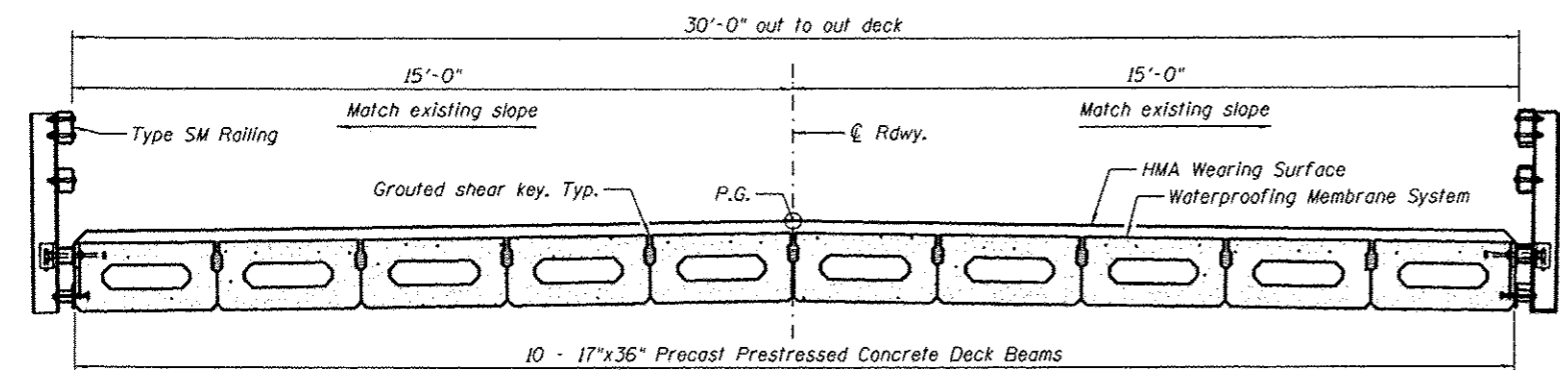
SHEET NO. 1 OF 12 SHEETS

GENERAL PLAN & ELEVATION
 VALMEYER ROAD OVER CARR CREEK
 F.A.U. 9304 - SECTION 78-00023-00-BR
 MONROE COUNTY
 STATION 20+00.00
 STRUCTURE NO. 067-6002

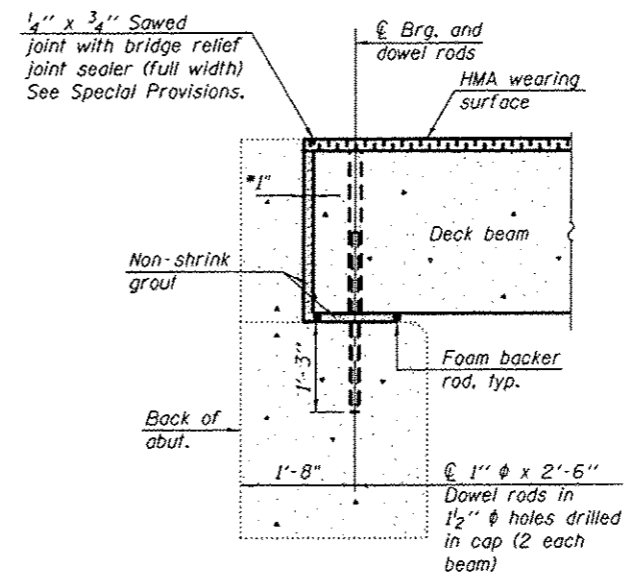
F.A.U. RTE. 9304	SECTION 12-00023-01-BR	COUNTY MONROE	TOTAL SHEETS 16	SHEET NO. 5
ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT			CONTRACT NO. 97524	



PLAN

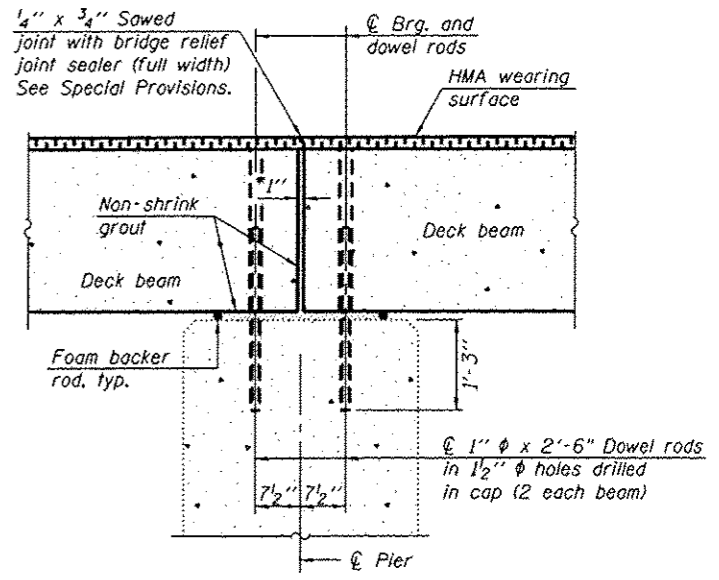


CROSS SECTION
(Looking East)



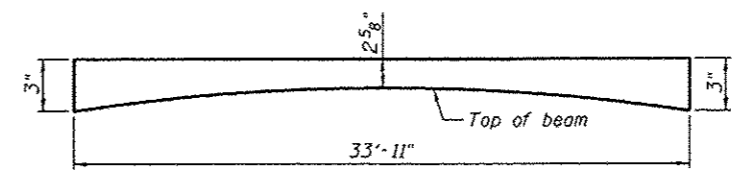
SECTION A-A

(Dimensions are at Rt. L's)
See sheet 6 of 12 for bearing details.
*1" Jt. shall be filled with non-shrink grout. 1" dimension may vary to accommodate tolerance in beam lengths.



SECTION B-B

(Dimensions are at Rt. L's)
See sheet 6 of 12 for bearing details.
*1" Jt. shall be filled with non-shrink grout. 1" dimension may vary to accommodate tolerance in beam lengths.



ANTICIPATED HMA WEARING SURFACE PROFILE
(For information only)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
HMA Wearing Surface	Tons	53

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THOUVENOT,
WADE &
MOERCHEN, INC.

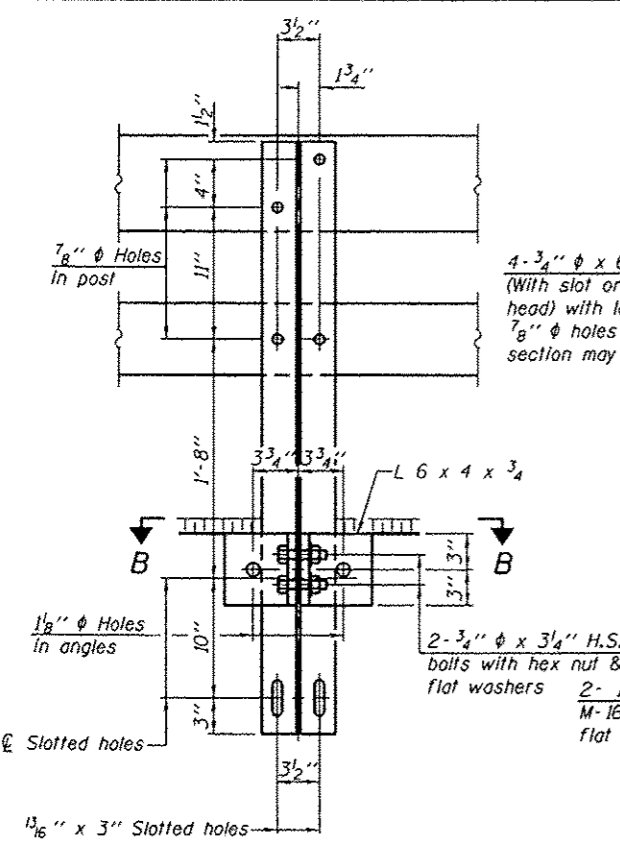


USER NAME: mjoost	DESIGNED: MJJ	REVISED:
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PLLOT DATE: 3/12/2013	DRAWN: MJJ	REVISED:
	CHECKED: ALN	REVISED:

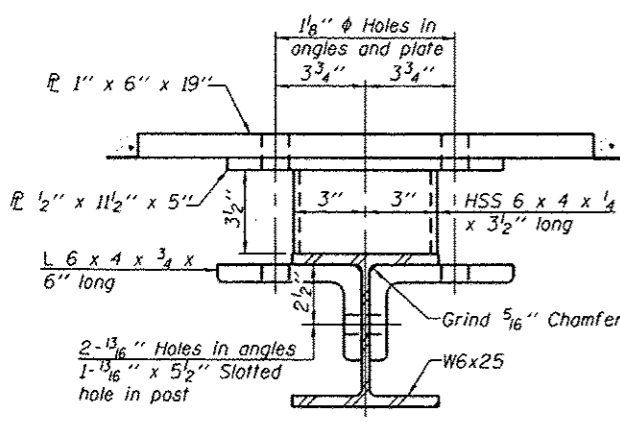
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
STRUCTURE NO. 067-6002
SHEET NO. 2 OF 12 SHEETS

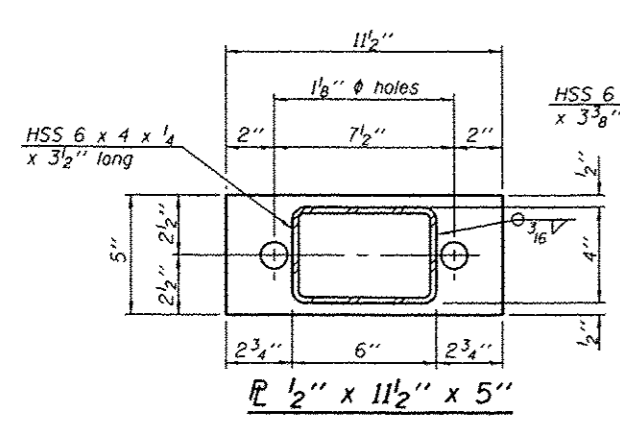
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ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
		CONTRACT NO. 97524		



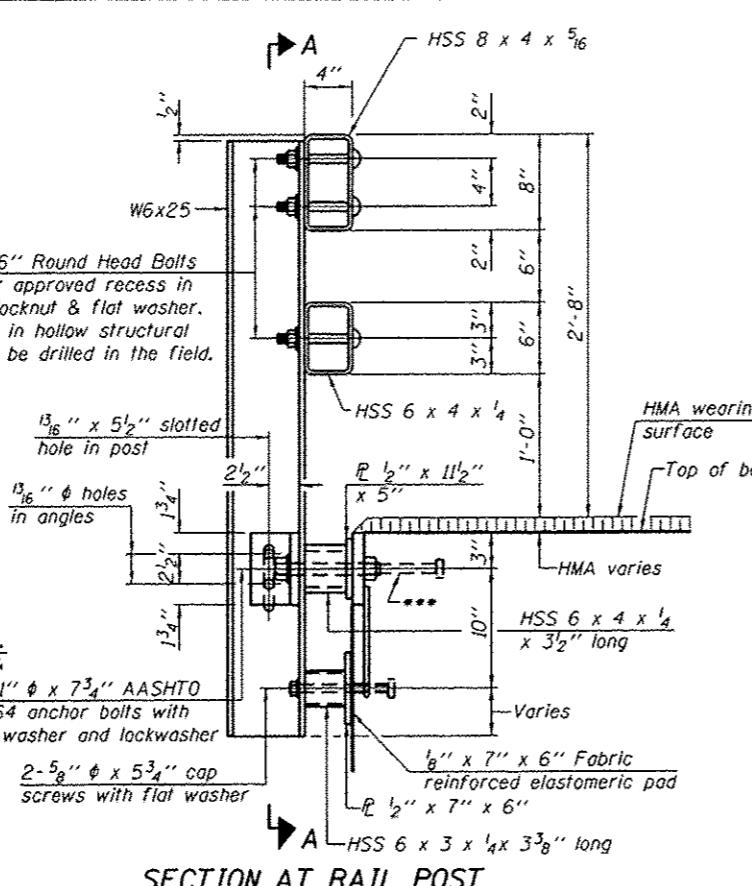
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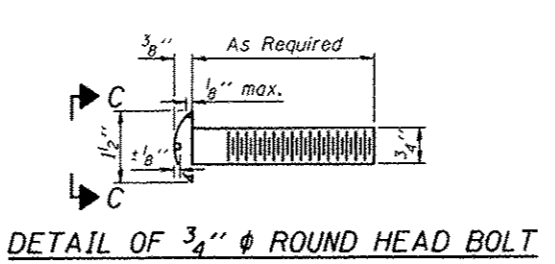
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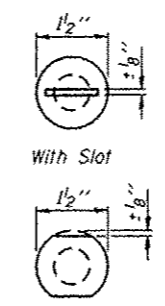
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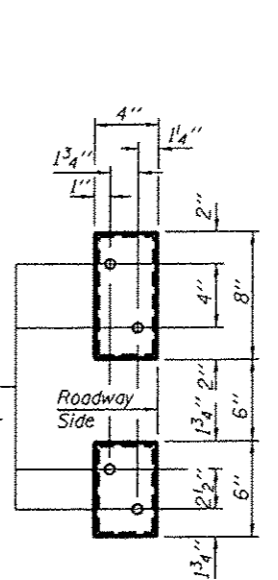
SECTION AT RAIL POST



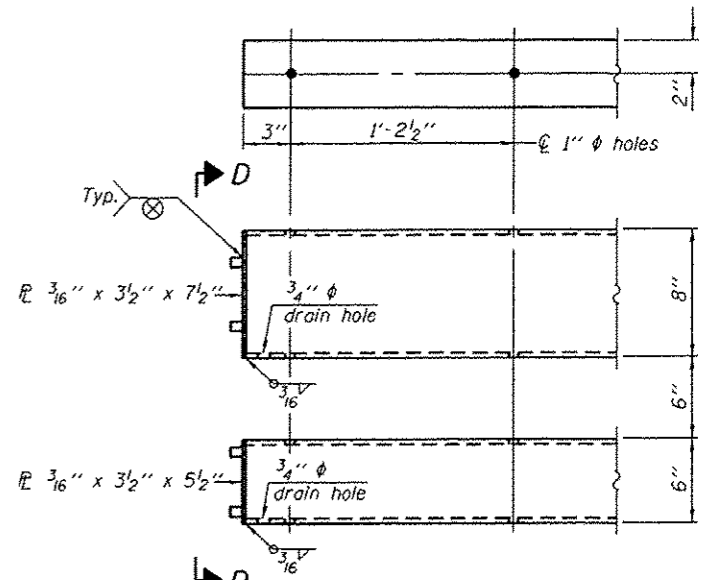
DETAIL OF 3/4" ROUND HEAD BOLT



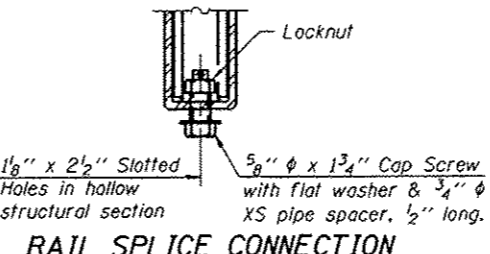
VIEW C-C



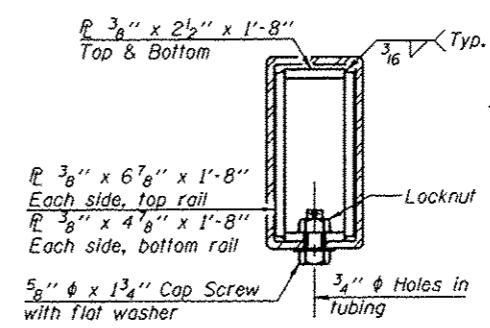
VIEW D-D



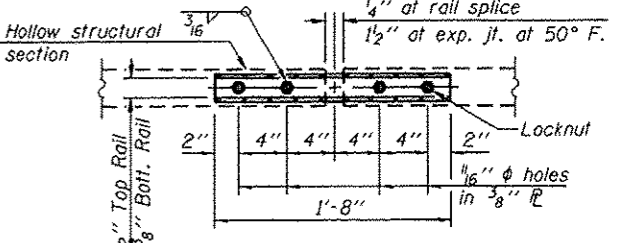
END OF RAIL DETAILS



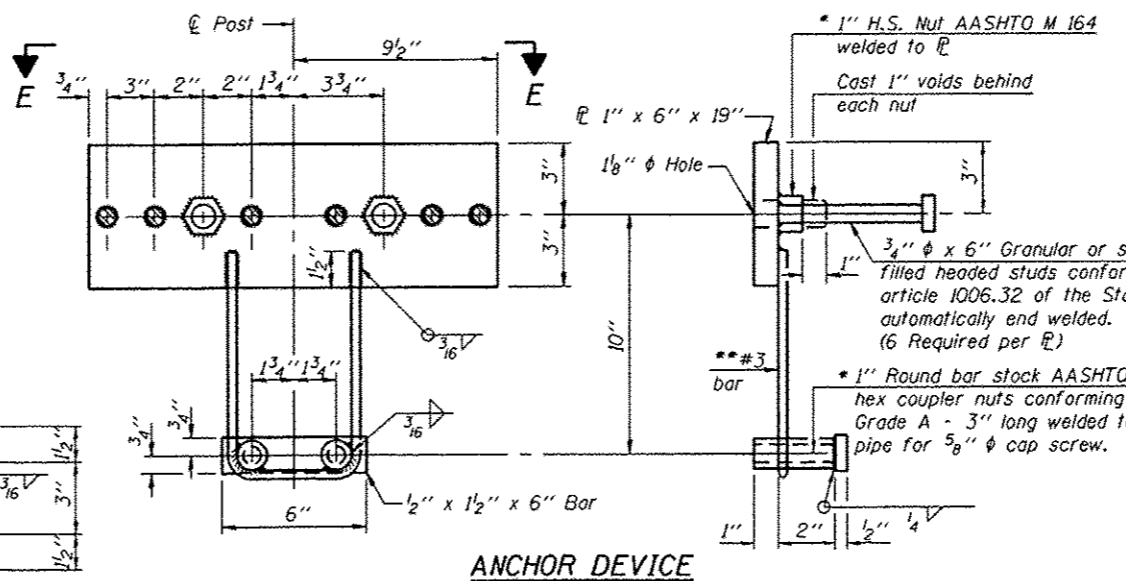
RAIL SPLICE CONNECTION AT EXPANSION JT.



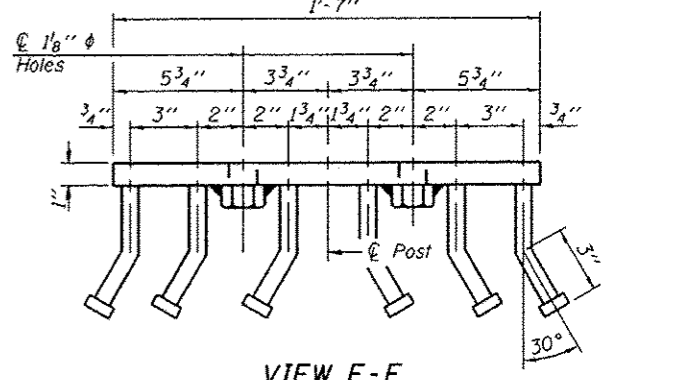
SECTION AT RAIL SPLICE



PLAN-BOTT. SPLICE AT TYPICAL



ANCHOR DEVICE



VIEW E-E

Notes:
 All field drilled holes shall be coated with an approved zinc rich paint before erection.
 For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type SM.
 All steel rail members 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.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type SM	Foot	227

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

** 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".

FILE NAME: P:\1266\314-CAD - DWG\4.3-ST\0676002-97524-803-SM Railing.dwg

R-34HMAWS

7-1-10

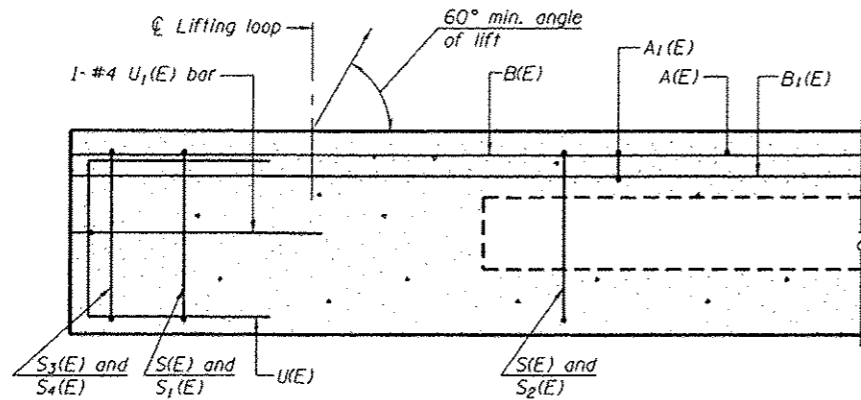
(6'-3" Maximum Post Spacing) (1/4" minimum to 3/8" maximum HMA thickness)

THOUVENOT, WADE & MOERCHEN, INC.	USER NAME = mjoost	DESIGNED - MJJ	REVISED -
TWM		CHECKED - ALN	REVISED -
SWANSEA - WATERLOO - EDWARDSVILLE - ST. LOUIS - ST. CHARLES	PLOT SCALE = 0:2.0000 1' = 1"	DRAWN - MJJ	REVISED -
	PLOT DATE = 3/12/2013	CHECKED - ALN	REVISED -

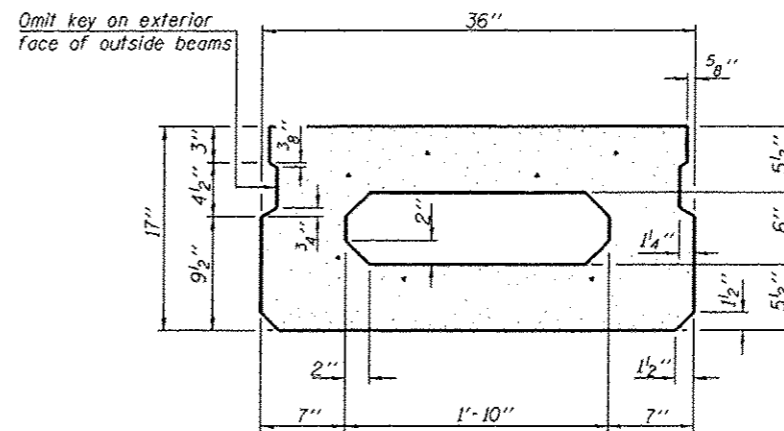
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL RAILING, TYPE SM WITH HOT-MIX ASPHALT WEARING SURFACE
STRUCTURE NO. 067-6002
SHEET NO. 3 OF 12 SHEETS

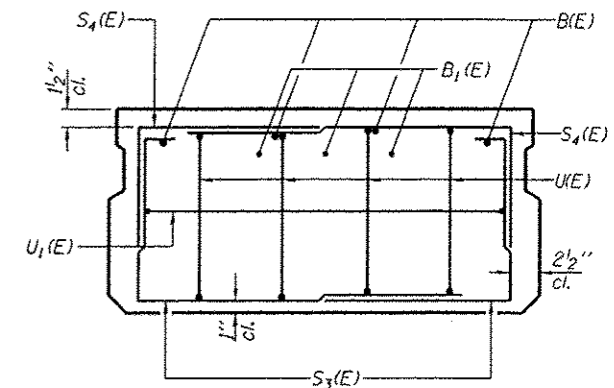
F.A.U. RTE. 9304	SECTION 12-00023-01-BR	COUNTY MONROE	TOTAL SHEETS 16	SHEET NO. 7
ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT				CONTRACT NO. 97524



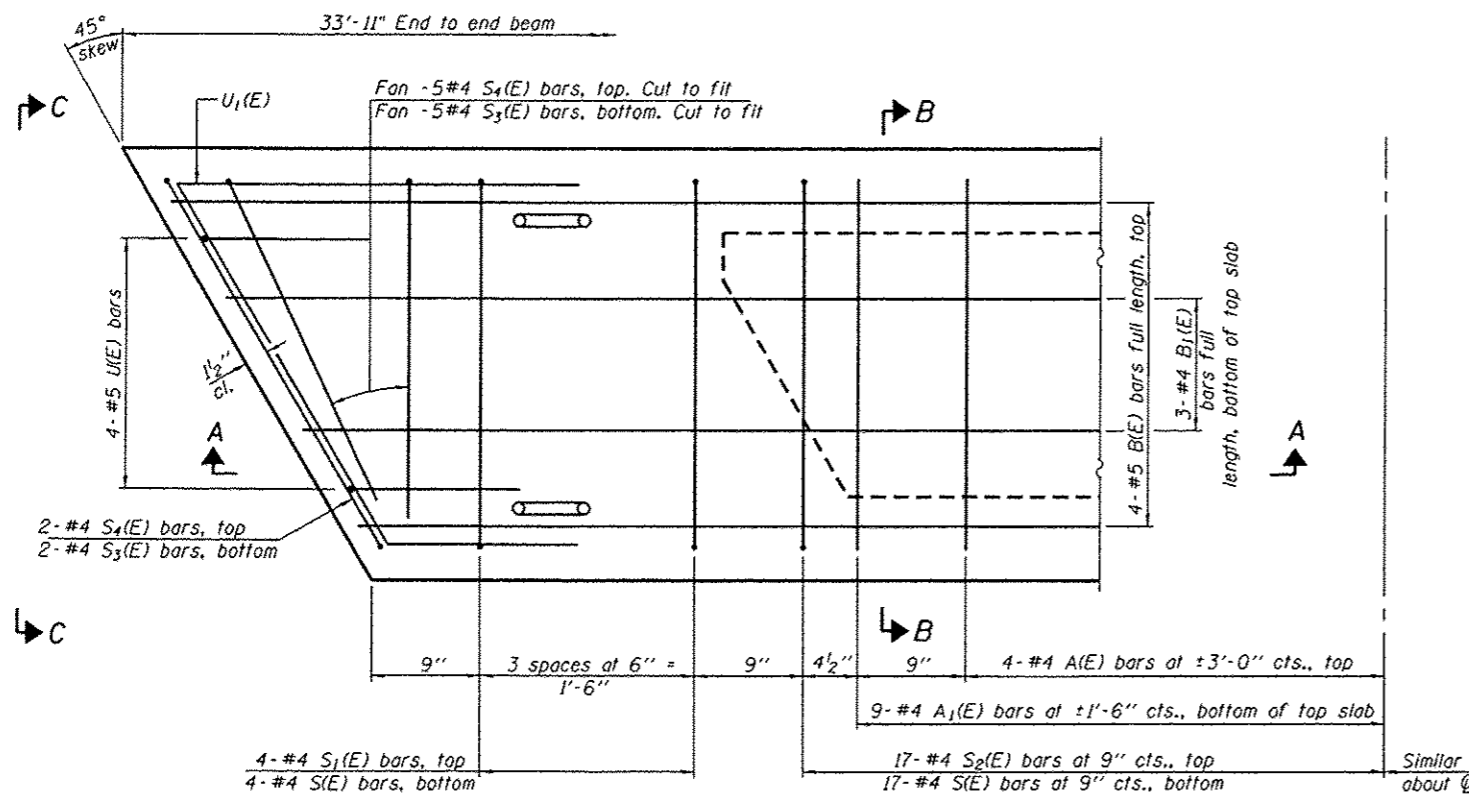
SECTION A-A



SECTION B-B
(Showing dimensions)

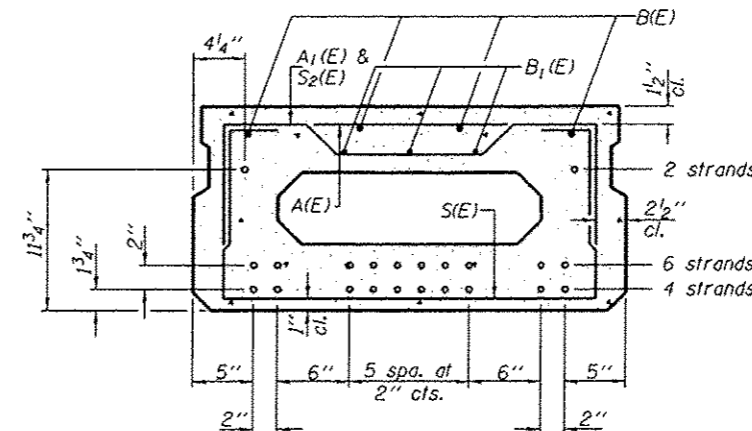


VIEW C-C



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 B-B
(Showing reinforcement and permissible strand locations)

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)	8	#4	2'-7"	—
A1(E)	17	#4	2'-10"	—
B(E)	4	#5	33'-6"	—
B1(E)	3	#4	33'-6"	—
S(E)	42	#4	5'-9"	⌈
S1(E)	8	#4	4'-3"	⌈
S2(E)	34	#4	4'-6"	⌈
S3(E)	14	#4	4'-5"	⌈
S4(E)	14	#4	3'-8"	⌈
U(E)	8	#5	3'-8"	⌈
U1(E)	2	#4	8'-7"	⌈

Note: See sheet 5 of 12 for additional details and Bill of Material.

MINIMUM BAR LAP
#4 bar = 2'-0"
#5 bar = 2'-6"

FILE NAME: F:\128613\4-C600 - 0\0\4\3-ST\18876802-97524-00+PPC Dk Br D11.dgn

PD-1736-R

7-1-10

THOUVENOT,
WADE &
MOERCHEN, INC.
SWANSEA • WATERLOO • EDWARDSVILLE • ST. LOUIS • ST. CHARLES



USER NAME = mjoost
DESIGNED - ALN
CHECKED - MJJ
DRAWN - MJJ
PLOT SCALE = 8x2.0000 1/16"
PLOT DATE = 3/12/2013

DESIGNED - ALN
CHECKED - MJJ
DRAWN - MJJ
CHECKED - ALN

REVISED -
REVISED -
REVISED -
REVISED -

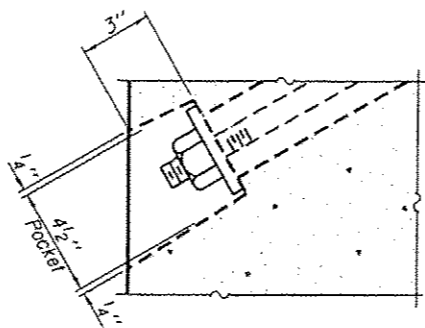
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

17" x 36" PPC DECK BEAM
STRUCTURE NO. 067-6002

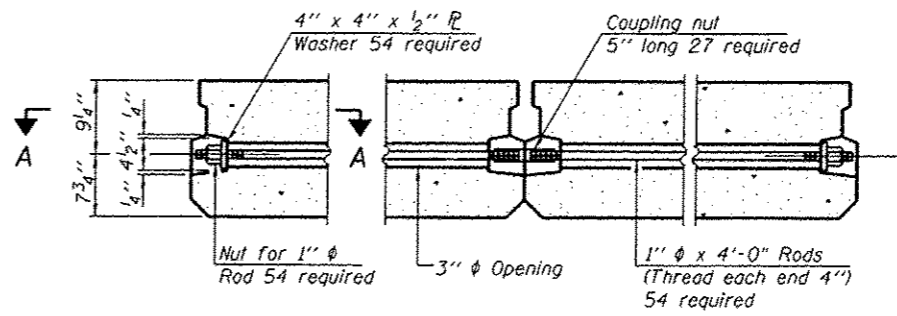
SHEET NO. 4 OF 12 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9304	12-00023-01-BR	MONROE	16	8
ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	

CONTRACT NO. 97524

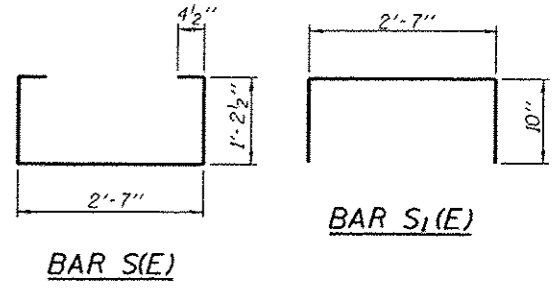


SECTION A-A



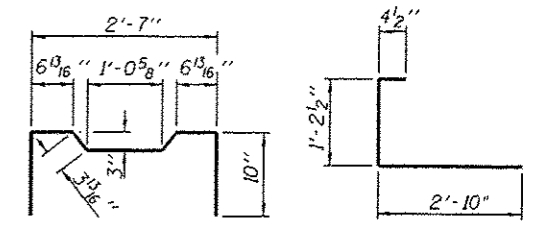
TYPICAL TRANSVERSE TIE ASSEMBLY

No. Req'd is the total for all transverse ties



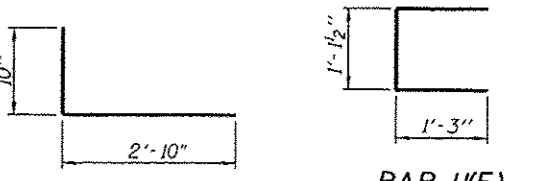
BAR S(E)

BAR S1(E)



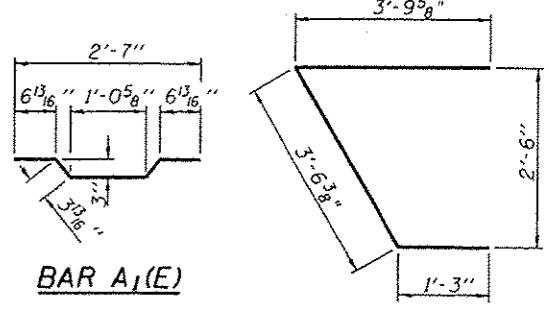
BAR S2(E)

BAR S3(E)



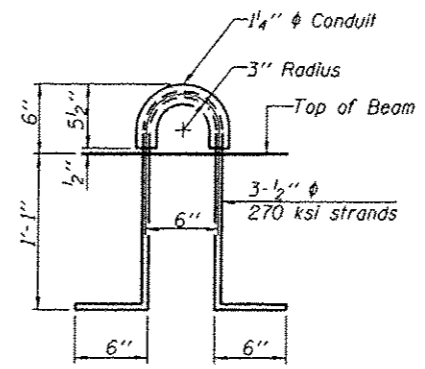
BAR S4(E)

BAR U(E)

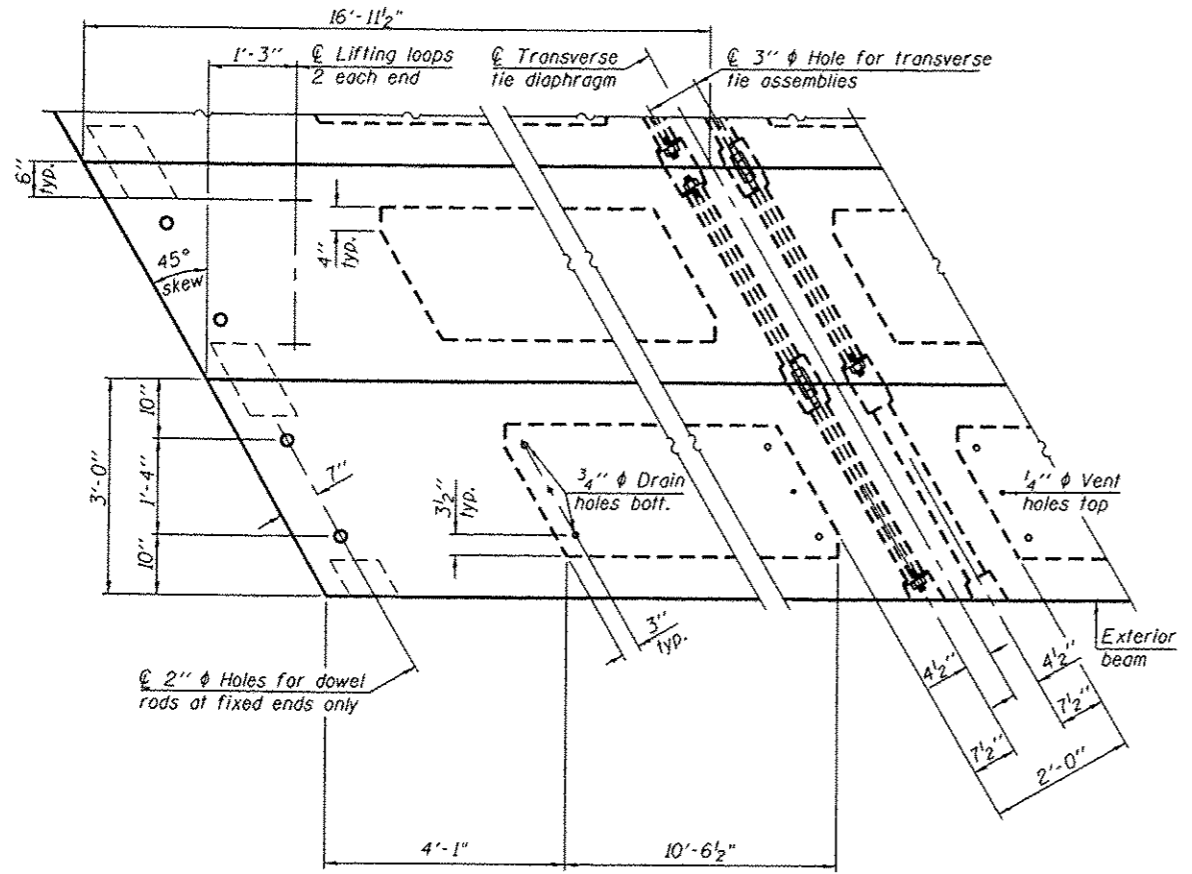


BAR A1(E)

BAR U1(E)



LIFTING LOOP DETAIL



PLAN VIEW

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

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" diameter 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).
- A minimum 2 1/2" diameter 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.

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (17" depth)	Sq. Ft.	305.3
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FILE NAME: P:\120813\1-C1000 - DWG\14-D-31-0676082-97524-005-PPC Dk. Bm. D11.dgn

THOUVENOT, WADE & MOERCHEN, INC.

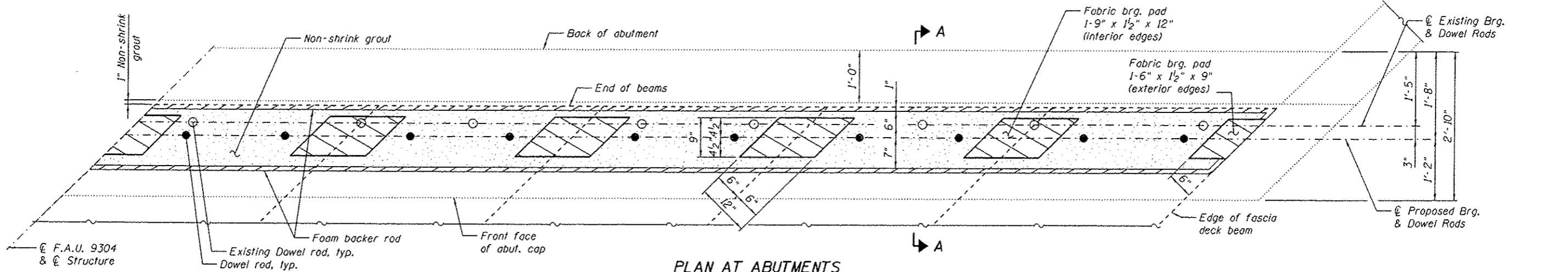
 SWANSEA - WATERLOO - EDWARDSVILLE - ST. LOUIS - ST. CHARLES

USER NAME: mjjoat	DESIGNED: ALN	REVISED:
PLOT SCALE: 0.25000 1" = 10'	CHECKED: MJJ	REVISED:
PLOT DATE: 3/12/2013	DRAWN: MJJ	REVISED:
	CHECKED: ALN	REVISED:

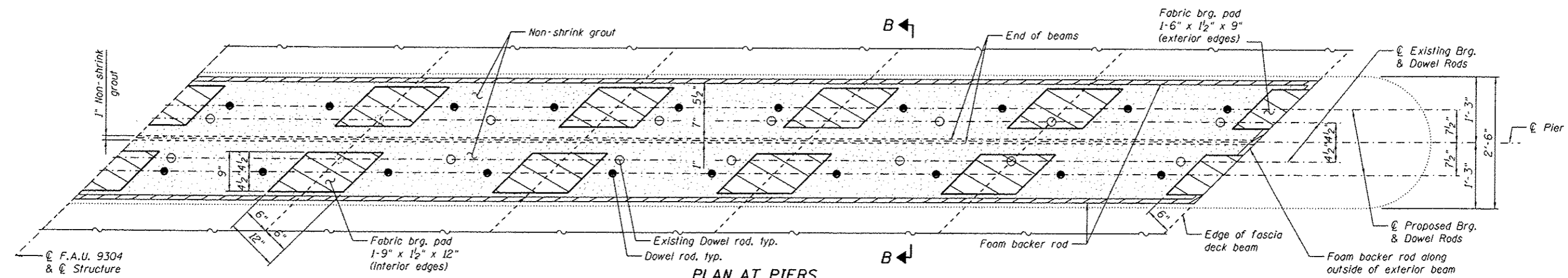
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

17" x 36" PPC DECK BEAM DETAILS
STRUCTURE NO. 067-6002
 SHEET NO. 5 OF 12 SHEETS

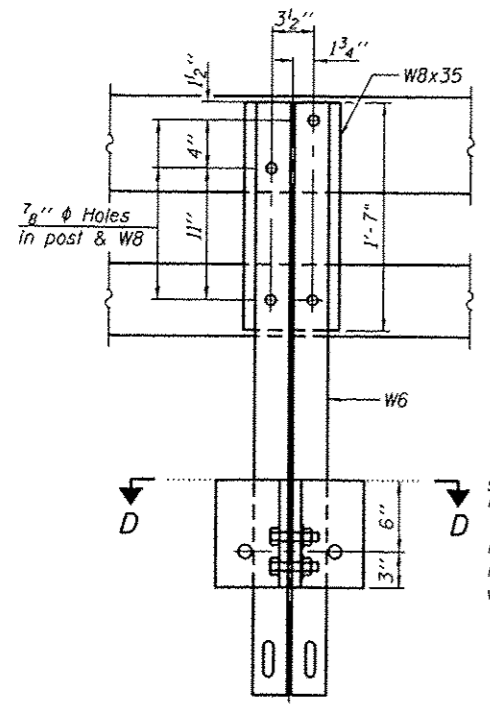
F.A.U. RTE. 9304	SECTION 12-00023-01-BR	COUNTY MONROE	TOTAL SHEETS 16	SHEET NO. 9
ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	



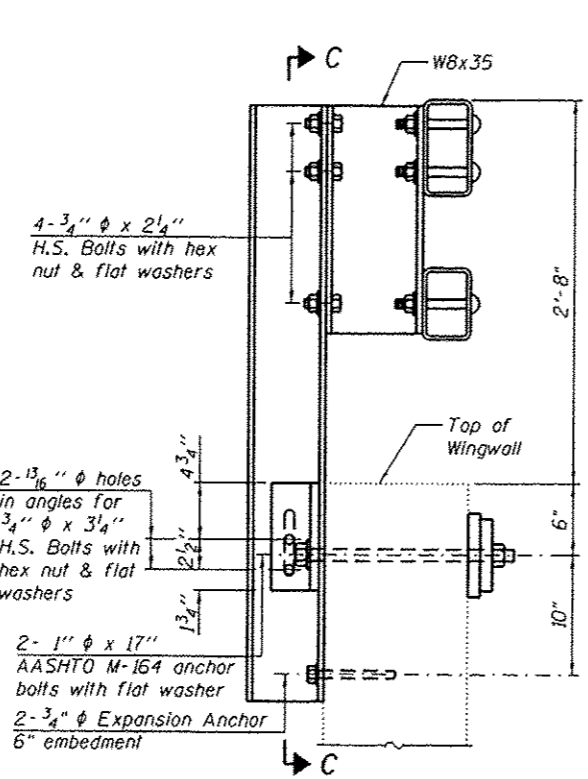
PLAN AT ABUTMENTS



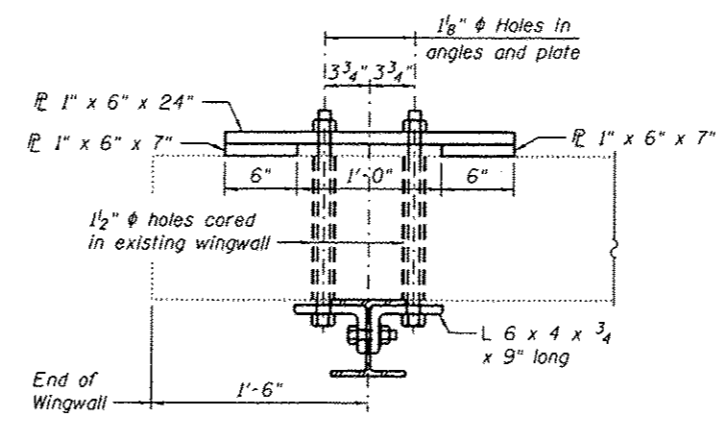
PLAN AT PIERS



SECTION C-C



SECTION AT WINGWALL POST



SECTION D-D

- Substructure Notes:
1. Cut or burn existing dowel rods flush with existing substructure surface. Grind existing dowel rods smooth and seal with epoxy. Cost included with Removal of Existing Superstructures.
 2. The bearing seat surfaces shall be adjusted by shimming the bearing to assure firm and even bearing prior to placement of grout. 2-1/8" fabric adjusting pads shown shall be provided for each bearing.
 3. See Sections A-A and B-B on Sheet 2 of 12.
 4. See Sheet 5 of 12 for proposed dowel rod spacing.

- Railing Notes:
1. See Sheet 3 of 12 for details not shown.
 2. The cost of anchoring the railing posts at the wingwalls, including excavation, shall be included in the cost of "Steel Railing, Type SM".

FILE NAME: P:\1286131-CAD - DWG\A.3-5110876882-97524-006-Substructure D11.dgn

THOUVENOT, WADE & MERCHEN, INC. **TWM**
 SWANSEA • WATERLOO • EDWARDSVILLE • ST. LOUIS • ST. CHARLES

USER NAME: m_joost	DESIGNED: MJJ	REVISED:
PLOT SCALE: 0:2.0000 1/4" = 1'-0"	CHECKED: ALN	REVISED:
PLOT DATE: 3/12/2013	DRAWN: MJJ	REVISED:
	CHECKED: ALN	REVISED:

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SUBSTRUCTURE DETAILS
 STRUCTURE NO. 067-6002
 SHEET NO. 6 OF 12 SHEETS

F.A.U. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9304	12-00023-01-BR	MONROE	16	10
ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

BENCHMARK: Three Spikes Nails in North Foot of 48" Cottonwood, N.E. of Existing Bridge
Elev. 423.93

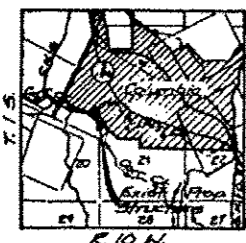
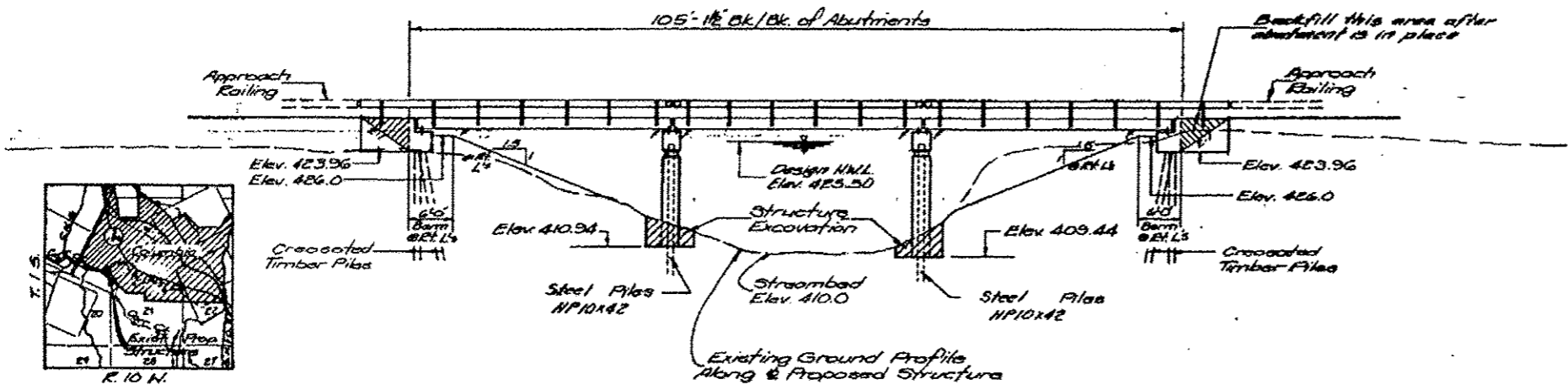
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VALMEYER ROAD	78-00023-00-BR	MONROE	11	6

EXISTING STRUCTURE:

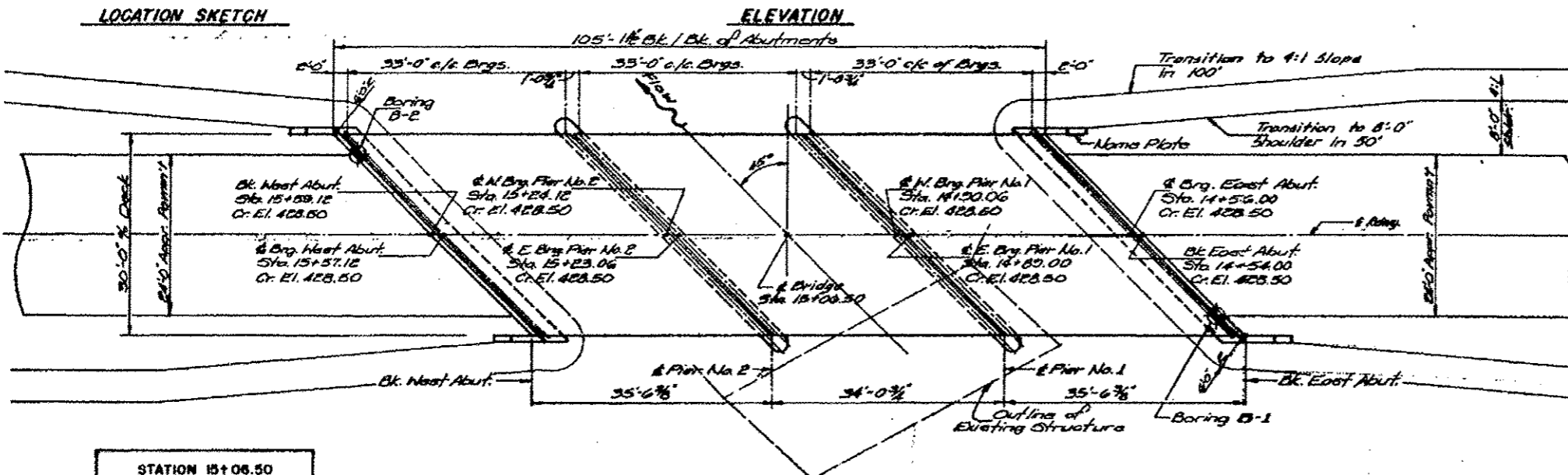
Structure No. 067-6000 One single span of 42 feet. Steel wide flange beams with wood plank deck supported by solid masonry abutments. Infeasible to remove and dispose of existing Superstructure and Substructure. No Salvage.

GENERAL NOTES

- See Special Provisions for Boring Data.
- The Contractor shall drive one (1) Timber test pile in a permanent location of the East Abutment and one (1) HP10x42 test pile in a permanent location of Pier No. 2 as directed by the Engineer before ordering the remainder of piles.
- Reinforcement bars used in Substructure units shall conform to A.A.S.H.T.O. M-31 grade 60 or M-53 grade 60.



LOCATION SKETCH



WATERWAY INFORMATION

Drainage Area 101 Sq. Mi.
Design Discharge (30 Year) 600 cfs.
Existing Waterway Opening (Below 30 Year H.W.E.) 304 Sq. Ft.
Required Waterway Opening (Below 30 Year H.W.E.) 570 Sq. Ft.
Proposed Waterway Opening (Below 30 Year H.W.E.) 570 Sq. Ft.
Created Head for 30 Year Design Flood Flow 0.60 Ft.
100 Year Discharge 6811 cfs.
Created Head for 100 Year Flood 0.60 Ft.

Note: Relief flow over approach roadway of Design Flood and 100 Year Flood.

TOTAL BILL OF MATERIAL

Item.	Unit	Super.	Sub.	Total
Removal of Existing Structures	Ea.	—	—	1
Class X Concrete	C.Y.	5.6	174.7	180.3
Precast Concrete Bridge Slab (each)	S.F.	3053	—	3053
Reinforcement Bars	Lbs.	350	11700	12050
Furnishing Crossed Piles 201 to 205	L.F.	—	556	556
Furnishing Steel Piles HP10x42	L.F.	—	1125	1125
Driving Timber Piles	L.F.	—	556	556
Driving Steel Piles HP10x42	L.F.	—	1125	1125
Test Pile Timber	Ea.	—	1	1
Test Pile Steel HP10x42	Ea.	—	1	1
Steel Railing, Type 5	L.F.	228	—	228
Name Plate	Ea.	—	—	1
Structure Excavation	C.Y.	—	—	77

STATION 15+06.50
CARR CREEK
BUILT 197 BY
CITY OF COLUMBIA
SEC. 78-00023-00-BR
LOADING HS 20
STRUCTURE NO 067-6002

NAME PLATE
(See Std. C113)

DESIGNED: K.L.F.
CHECKED: B.H.C.
DRAWN: R.A.W.
CHECKED: K.L.F.

Kenneth L. Figge
REGISTERED STRUCTURAL
ENGINEER IN ILLINOIS
NO. 2992

DESIGN STRESSES
CAST IN PLACE CONCRETE
f_c = 3,500 p.s.i.
f_y = 60,000 p.s.i. (Reinf.)

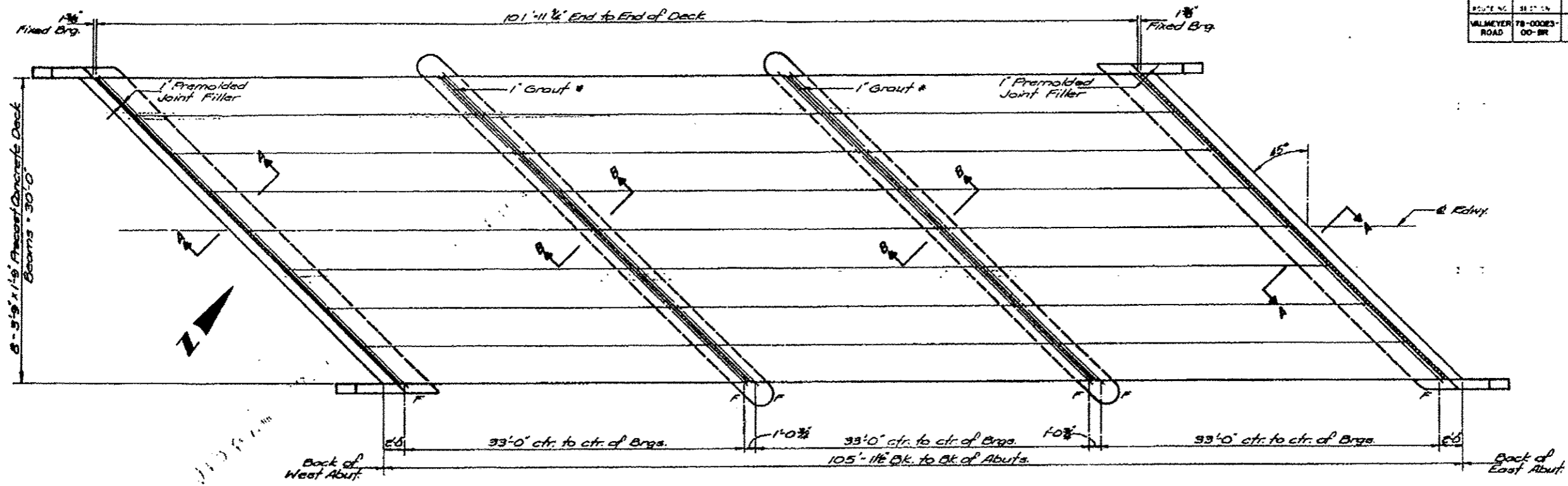
APPROVED
FOR STRUCTURAL AGENCY ONLY
[Signature]

GENERAL PLAN & ELEVATION
VALMEYER ROAD OVER CARR CREEK
SECTION 78-00023-00-BR
CITY OF COLUMBIA

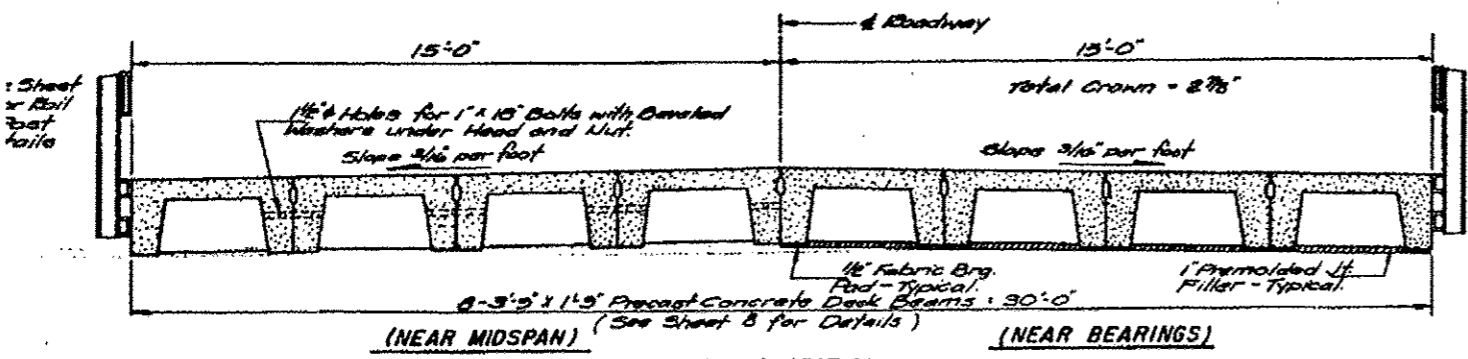
LOADING HS 20-44
Specification: 1977 A.A.S.H.T.O. and Applicable Interim

FILE NAME: P:\120613\4-CADD - DWG\4-3-ST-0576802-97524-007-Existing Plans Sheet 6.dgn

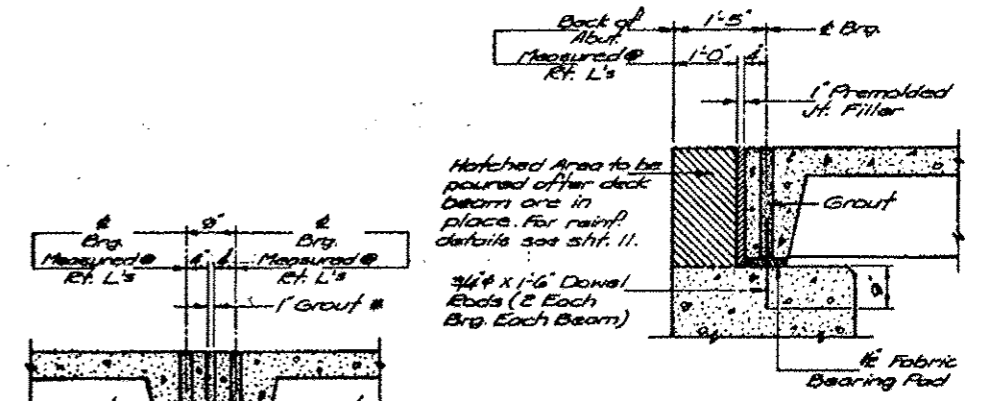
ROUTE NO.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
VALMEYER ROAD	78-00023-00-BR	MONROE	11	7



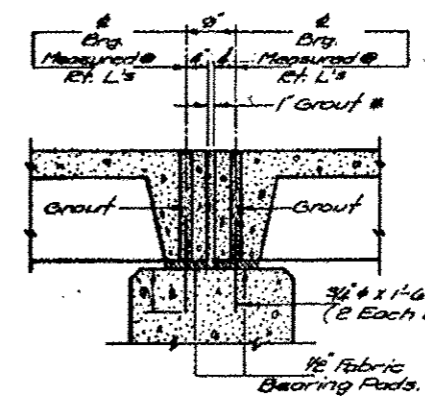
PLAN



CROSS SECTION



SECTION A-A



SECTION B-B

BILL OF MATERIAL

Qty	No.	Size	Length	Shape
h	24	"#4	22'-0"	
		Pre. Conc. Bridge Sbs	Sq. Ft.	3053
		Class X Concrete	Cu. Yds.	5.6
		Reinforcement Bars	Lbs.	350

NOTES:
 After deck beams are in place holes shall be drilled into the pile caps and the dowel rods grouted in place.
 1" Joint shall be packed with a very dry mix of 2:1 Sand and PC Mortar. 1" dimension may vary plus or minus to accommodate tolerances in beam lengths.

SUPERSTRUCTURE DECK
VALMEYER ROAD OVER CARR CREEK
SECTION 78-00023-00-BR
CITY OF COLUMBIA

DESIGNED	K L F
CHECKED	
DRAWN	R A W
CHECKED	K L F

THOUVENOT, WADE & MOERCHEN, INC.
 SWANSEA • WATERLOO • EDWARDSVILLE • ST. LOUIS • ST. CHARLES



USER NAME	mjoost	DESIGNED	-	REVISED	-
PLOT SCALE	0:2,0000 Y' / in	CHECKED	-	REVISED	-
PLOT DATE	3/12/2013	DRAWN	-	REVISED	-
		CHECKED	-	REVISED	-

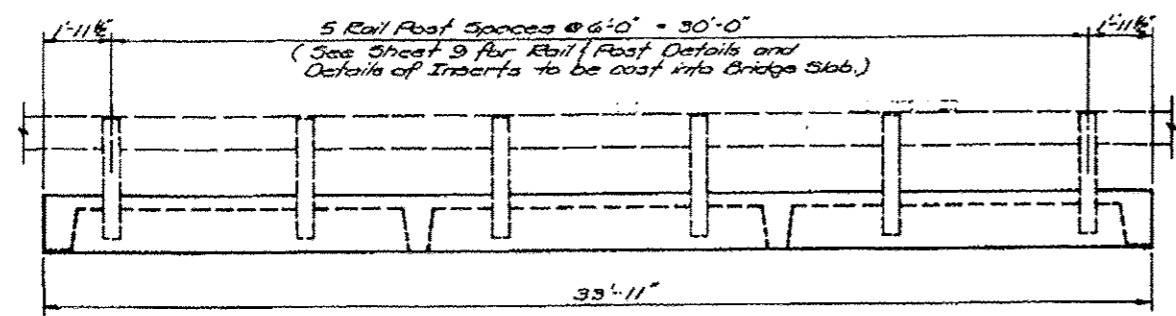
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS - FOR INFORMATION ONLY
 STRUCTURE NO. 067-6002

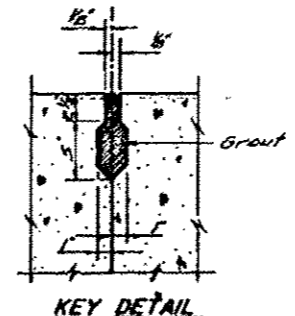
SHEET NO. 8 OF 12 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9304	12-00023-01-BR	MONROE	16	12
ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 97524	

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VALMEYER ROAD	78-00023-00-BR	MONROE	11	8

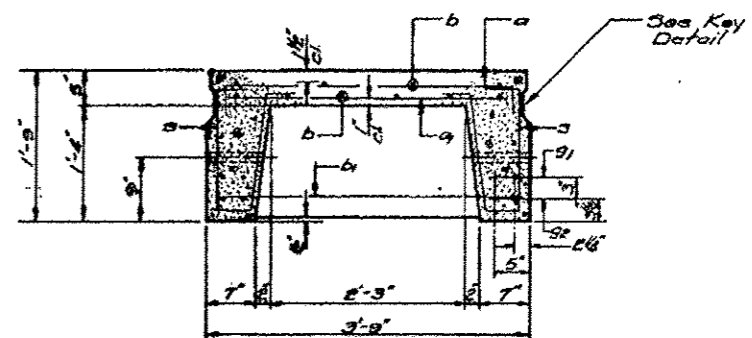


ELEVATION EXTERIOR BEAM



KEY DETAIL

Note: Omit shear key on exterior face of exterior beam.



TYPICAL SECTION

PRECAST NOTES

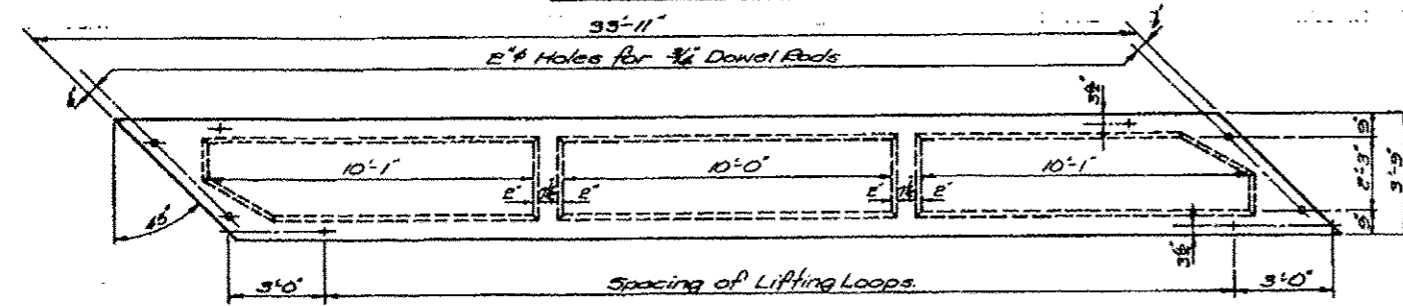
This work shall be done and paid for in accordance with Section 505 of the Standard Specifications effective July 1, 1976. In case of conflict these notes shall take precedence.

All transverse tie assemblies (nuts, bolts and washers) shall be hot dipped galvanized in accordance with A.R.S.H.T.A. Designation M-232.

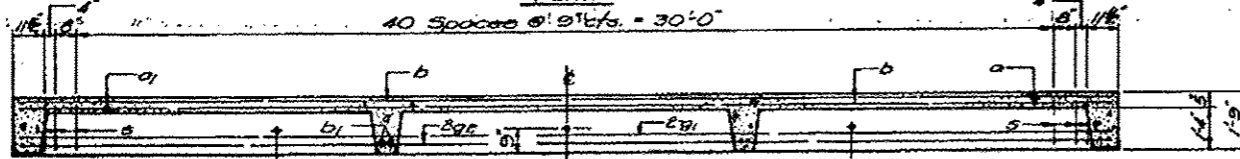
Unless otherwise approved by the Engineer, lifting loops shall be 7/16" # non-galvanized high strength stress relieved wire strands. Loops shall be burned off after slab/cap have been erected.

Cost of reinforcement and accessories cast into slab unit, of bearing pads, furnishing, drilling for, placing and grouting anchor dowels, of furnishing and assembling of 1" bolts and of grouting longitudinal shear key is included in Unit bid price for "Precast Concrete Bridge Slab".

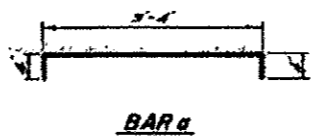
Track welding of stirrups to the bottom longitudinal reinforcement bars will not be permitted except as otherwise authorized in writing by the Engineer.



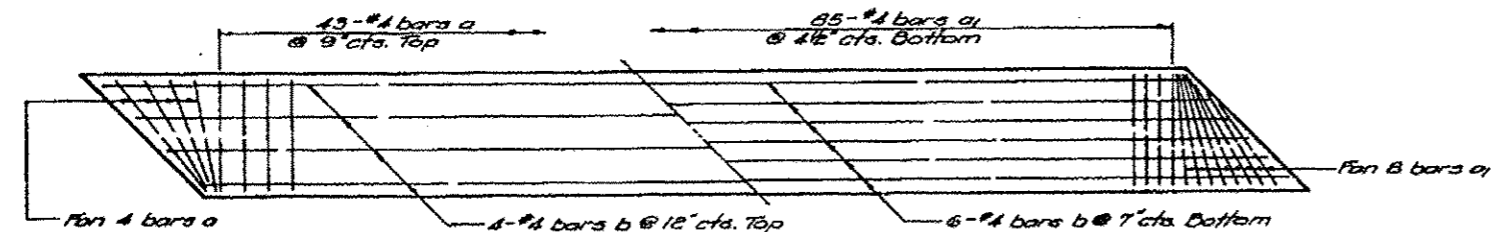
PLAN



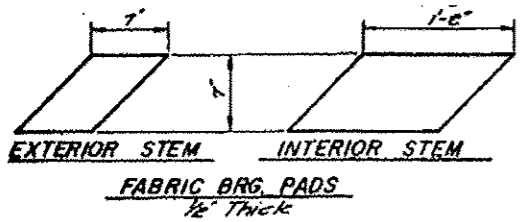
LONGITUDINAL SECTION



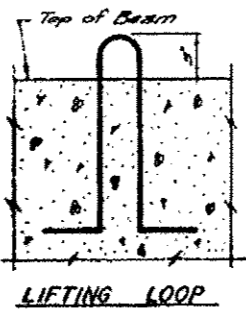
BAR a



SLAB REINFORCEMENT



FABRIC BRG. PADS
1/2" THICK



LIFTING LOOP

DESIGNED: K.L.F.
CHECKED:
DRAWN: R.A.W.
CHECKED: K.L.F.

DESIGN STRESSES
 $f_c = 4,500$ p.s.i.
 $f_t = 1,800$ p.s.i.
 $f_s = 20,000$ p.s.i.
 $n = 8$
 LOADINGS HS 20-44

BILL OF MATERIAL - FOR ONE BEAM

Bar	Size	Length	No.	Weight
a	#4	4'-0"	49	115
a1	#4	3'-3"	87	189
b	#4	33'-6"	10	224
b1	#4	3'-6"	8	19
g1	#10	33'-6"	4	577
g2	#11	33'-6"	4	712
g	#3	3'-10"	90	130
Class II Concrete C1256				4.6
Reinforcement Bars				Lbs. 1,906
Total Weight				Lbs. 18,630

DETAILS

PRECAST CONCRETE BRIDGE SLAB
 VALMEYER ROAD OVER CARR CREEK
 SECTION 78-00023-01-BR
 CITY OF COLUMBIA

FILE NAME: P:\120613\1-CADD - D:\V\43\ST-1857682-97524-889-Existing Plans (Sheet 8).dgn

THOUVENOT, WADE & MOERCHEN, INC.

 SWANSEA - WATERLOO - EDWARDSVILLE - ST. LOUIS - ST. CHARLES

USER NAME: n.jook	DESIGNED: -	REVISED: -
FLDT SCALE: 0/2,0000 1/16"	CHECKED: -	REVISED: -
PLDT DATE: 3/12/2013	DRAWN: -	REVISED: -
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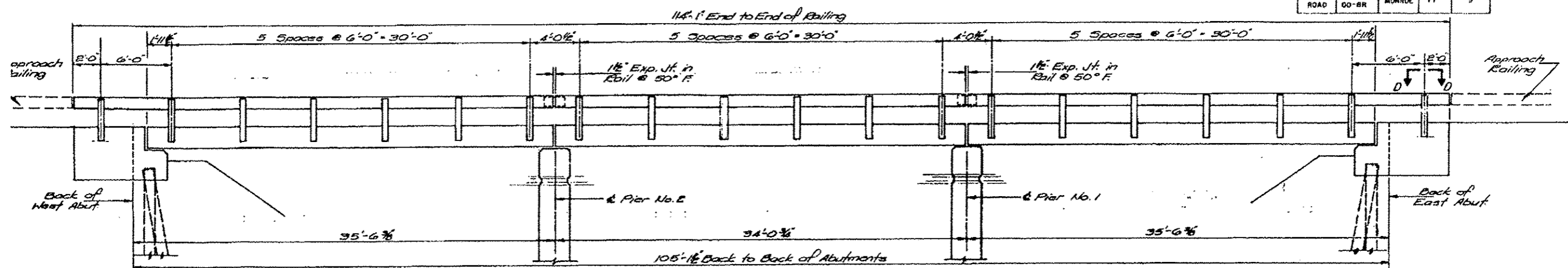
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS - FOR INFORMATION ONLY
 STRUCTURE NO. 067-6002
 SHEET NO. 9 OF 12 SHEETS

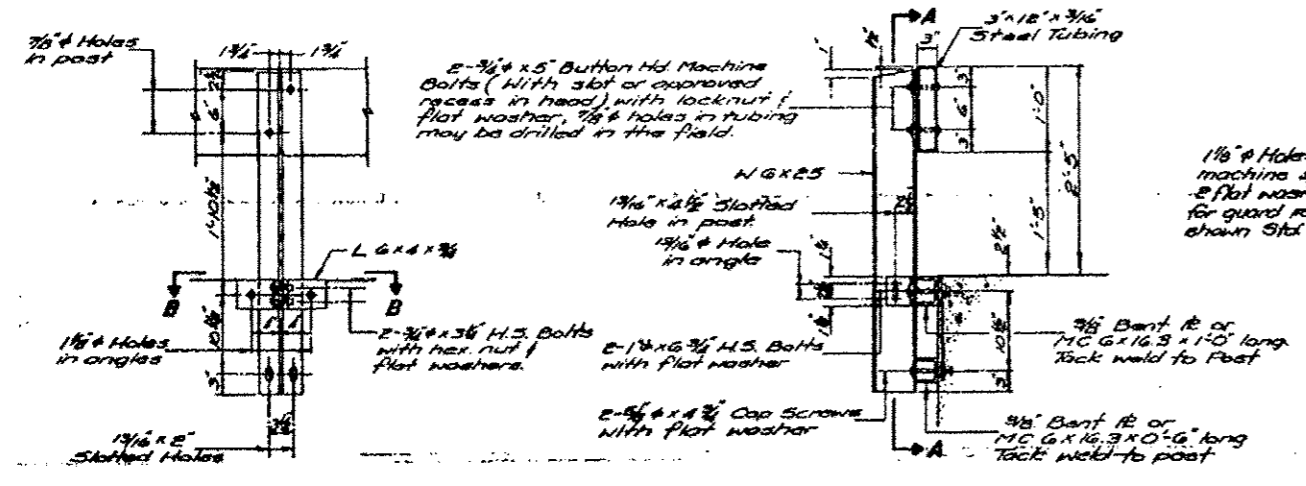
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9304	12-00023-01-BR	MONROE	16	13
ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 97524	

H.M. 16. AG. 1713

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VALMEYER ROAD	78-00023-00-BR	MONROE	11	9

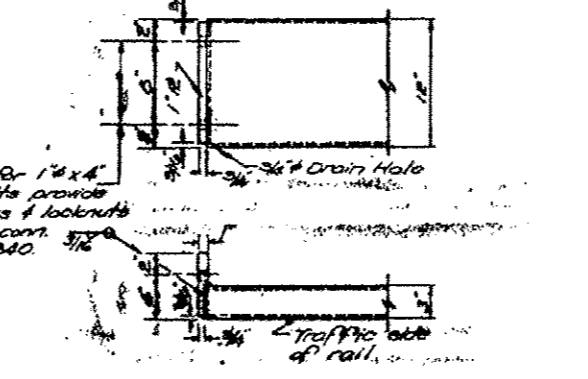


ELEVATION



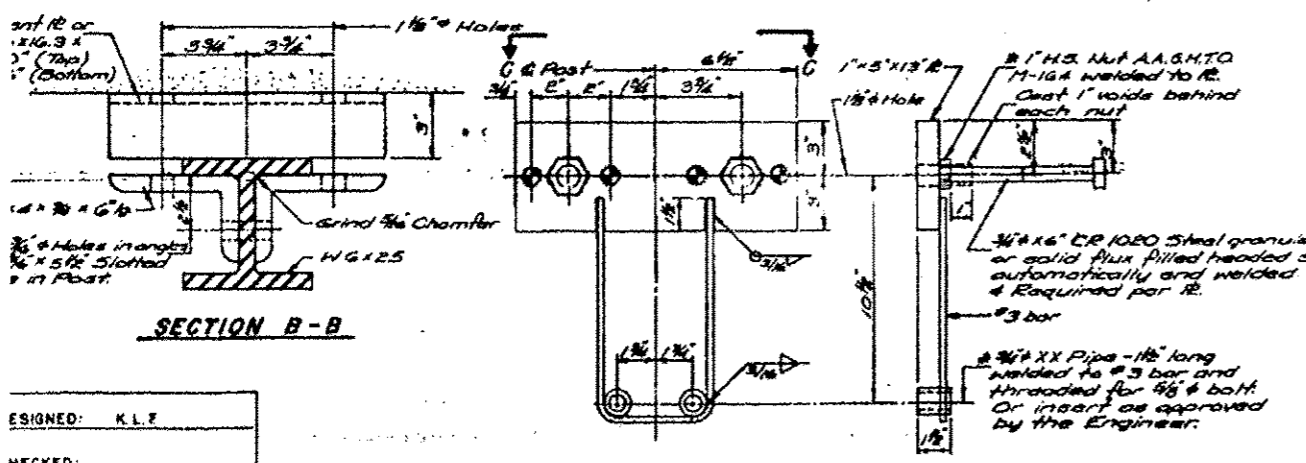
SECTION A-A

SECTION AT RAIL POST



END OF RAIL DETAIL

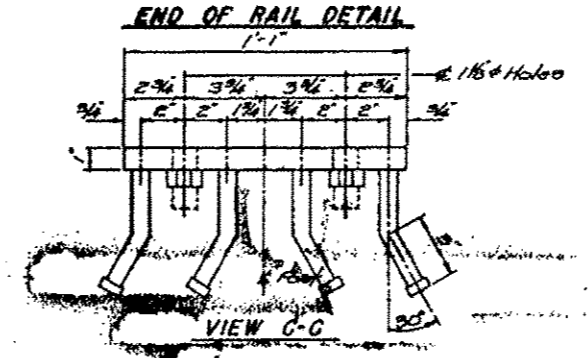
VIEW C-C



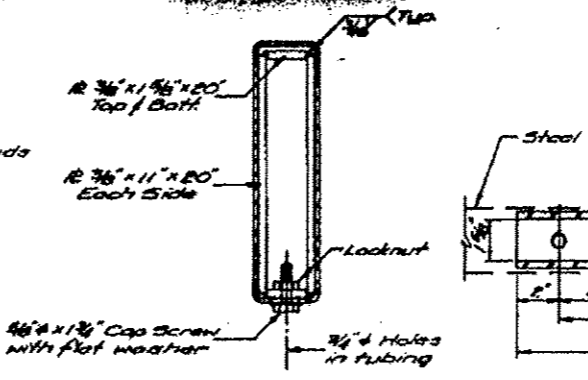
SECTION B-B

ANCHOR DEVICE

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



PLAN-BOTT. SPLICE & TYPICAL



SECTION AT RAIL SPLICE

NOTES

Hollow structural steel tubing shall conform to the requirements of A.S.T.M. designation A-500 Grade B or A-501 Structural Steel Tubing.

All other steel shapes and plates shall conform to the requirements of A.S.T.M. designation M-183 except posts shall conform to A.A.S.H.T.O. M22, G. 50.

Bolts, cap screws, and nuts shall conform to the requirements of A.S.T.M. designation A-307 except for high strength bolts, nuts and washers noted which shall conform to A.S.T.M. designation M-164.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized in accordance with A.A.S.H.T.O. designation M-252.

All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with A.A.S.H.T.O. designation M-11 and 1.574 A305 Galvanized rail shall not be painted.

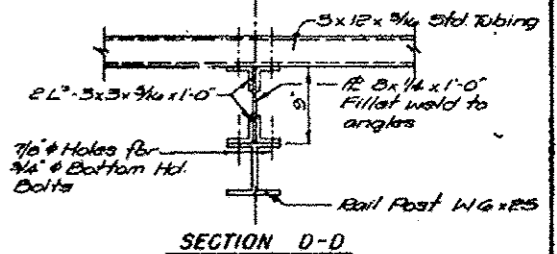
Railing shall be in accordance with Section 508 of the Standard Specifications, except as noted, and shall be paid for at the contract unit price per linear foot for STEEL RAILING, TYPE 5.

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

The lower portion of the post mounting assembly in contact with concrete shall receive two coats of asphalt paint conforming to Section 714.08 Type B or above 1/2" fabric bearing pad between the mounting assembly and concrete.

1" high strength bolts used to connect the 6" x 4" x 3/4" angles to the posts shall be tightened in accordance with Article 507.04 (g) of the Standard Specifications. The 1" high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/8 turn.

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



SECTION D-D

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type 5	Lin. Ft.	228

1/4" STEEL SHIMS



RAILING

VALMEYER ROAD OVER CARR CREEK
SECTION 78-00023-00-BR
CITY OF COLUMBIA

FILE NAME: P:\128613\4-C600 - DWG\4-3-ST\8576802-97524-01B-Existing Plans Sheet 9.dgn

DESIGNED:	K.L.F.
CHECKED:	
RAWN:	R.A.W.
CHECKED:	K.L.F.



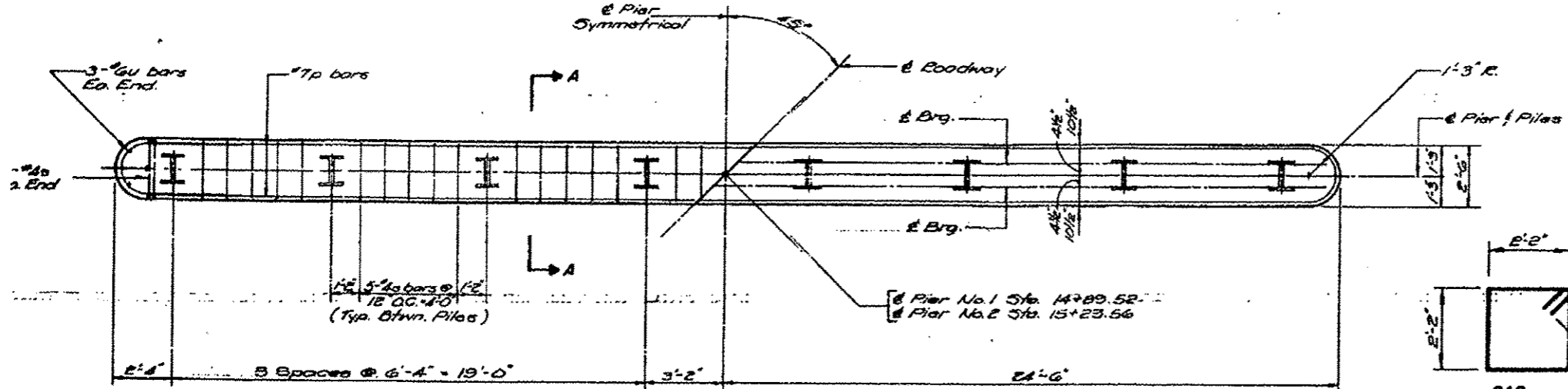
USER NAME:	mjoost	DESIGNED:		REVISED:	
PLOT SCALE:	0:12.0000 1" = 12'	CHECKED:		REVISED:	
PLOT DATE:	3/12/2013	DRAWN:		REVISED:	
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS - FOR INFORMATION ONLY
STRUCTURE NO. 067-6002
SHEET NO. 10 OF 12 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9304	12-00023-01-BR	MONROE	16	14
ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

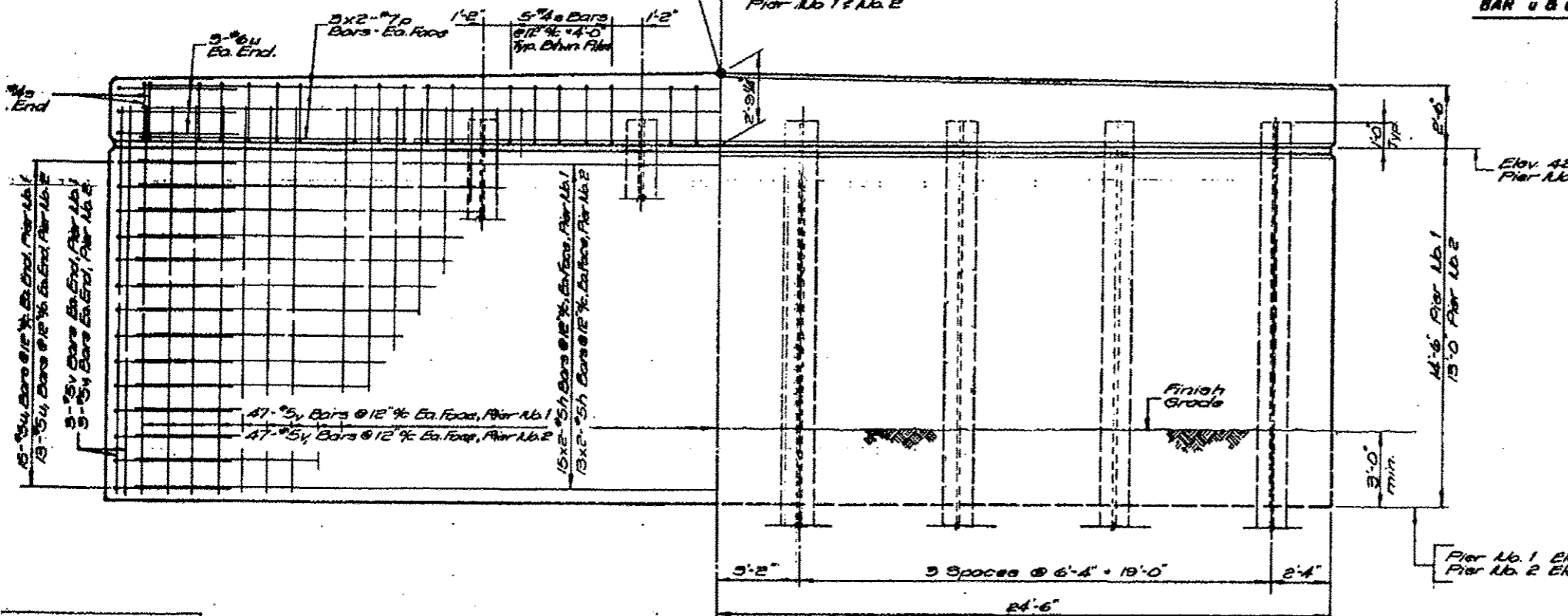
ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.
VALMEYER ROAD	78-00023-00-BR	MONROE	11	10



PLAN

FILE DATA

	Pier No. 1	Pier No. 2
Type	Steel HP10x12	Steel HP10x12
Length	75 Ft.	75 Ft.
Locality	Drive to refusal	Drive to refusal
Embed	0	7
of Pile		



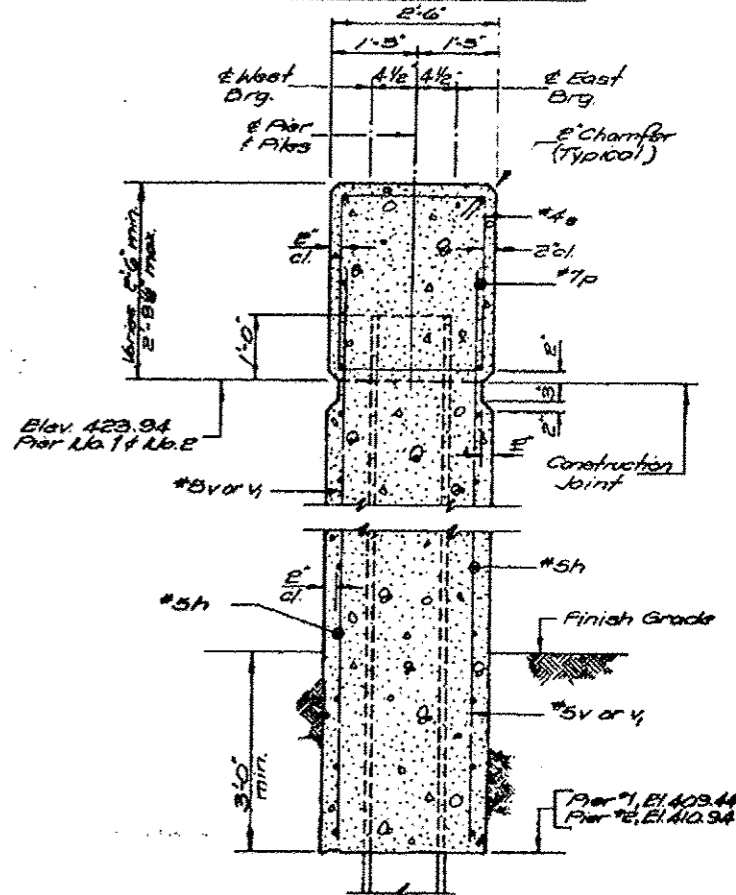
ELEVATION

DESIGNED: K.L.F.
 CHECKED:
 DRAWN: R.A.W.
 CHECKED: K.L.F.

NOTE: Bars indicated thus 15 x 2 - #5 etc., indicates 15 lines of bars with 2 lengths per line.

TABLE OF REINFORCEMENT
BAR SPLICE LENGTHS

Bar	Size	Splice Length
h	#5	1'-3"
p	#7	4'-6"



SECTION A-A

PIER NO. 1 & NO. 2
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	112	#5	24'-0"	—
p	84	#7	25'-6"	—
q	78	#4	9'-6"	□
u	12	#6	10'-10"	—
u ₁	56	#5	10'-10"	—
v	100	#5	15'-6"	—
v ₁	100	#5	14'-0"	—

Glass & Concrete 0.1 Yds 1470
 Reinforcement Bars Lbs 8450
 Steel Piles HP10x12 Lin. Ft 1125
 Driving Steel Piles HP10x12 Lin. Ft 1125
 Test Pile, Steel HP10x12 Each 1

Bill of Material includes quantities for both Pier No. 1 & Pier No. 2

PIER NO. 1 & NO. 2
 VALMEYER ROAD OVER CARR CREEK
 SECTION 78 - 00023-00-BR
 CITY OF COLUMBIA

FILE NAME: PATRICKA.L.COOD - DWG-43-STV-0676002-97524-011-Existing Plans (Sheet 10).dgn

THOUVENOT, WADE & MOERCHEN, INC.
 SWANSEA • WATERLOO • EDWARDSVILLE • ST. LOUIS • ST. CHARLES

USER NAME: r.joyant	DESIGNED: -	REVISED: -
PLOT SCALE: 0.2, 0.000 1" = 10'	CHECKED: -	REVISED: -
PLOT DATE: 3/12/2013	DRAWN: -	REVISED: -
	CHECKED: -	REVISED: -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS - FOR INFORMATION ONLY
 STRUCTURE NO. 067-6002
 SHEET NO. 11 OF 12 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9304	12-00023-01-BR	MONROE	16	15

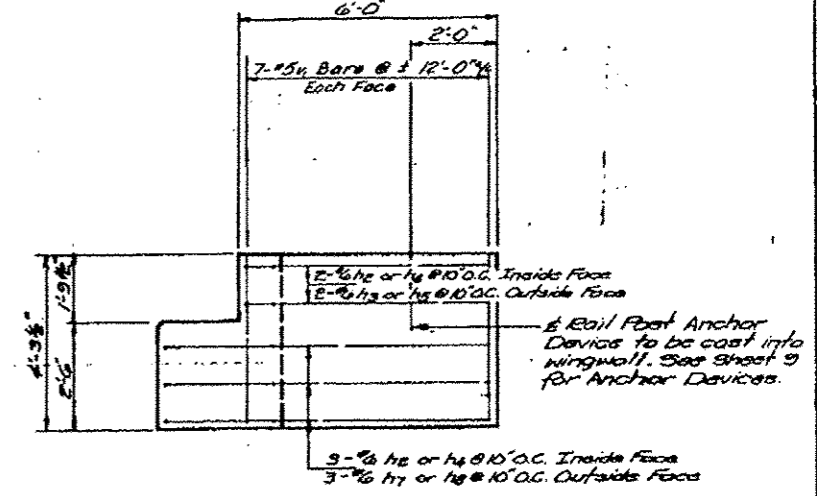
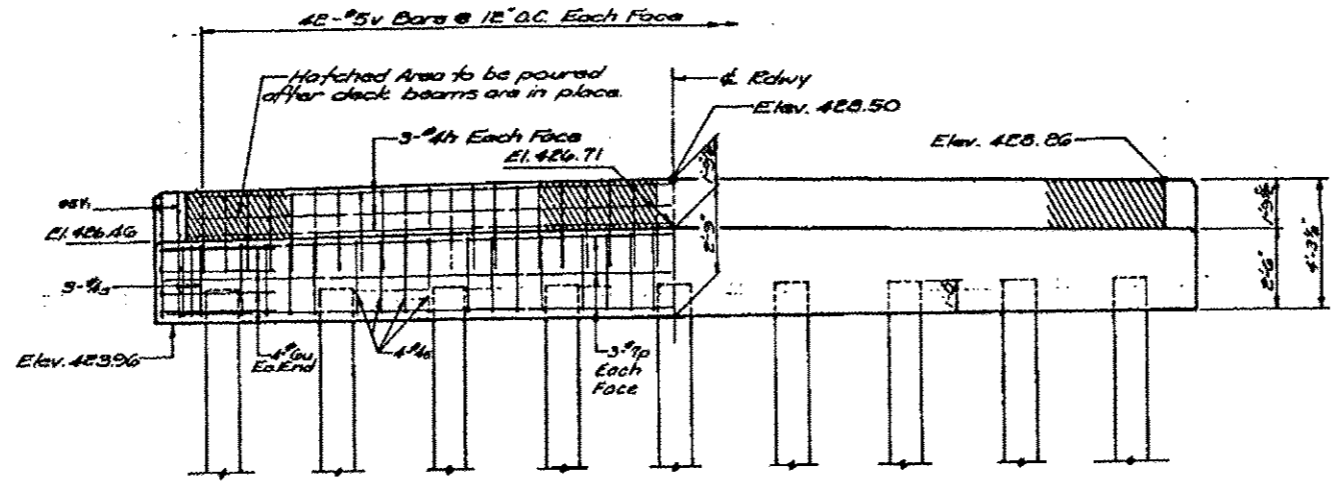
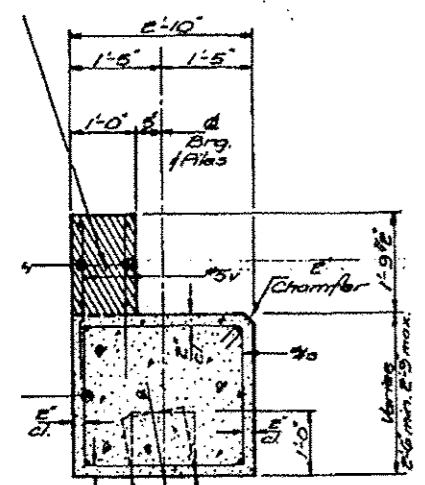
ROAD DIST. NO. ILLINOIS FED. AID PROJECT CONTRACT NO. 97524

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
WALMEYER ROAD	78-00023-00-BR	MONROE	11	11

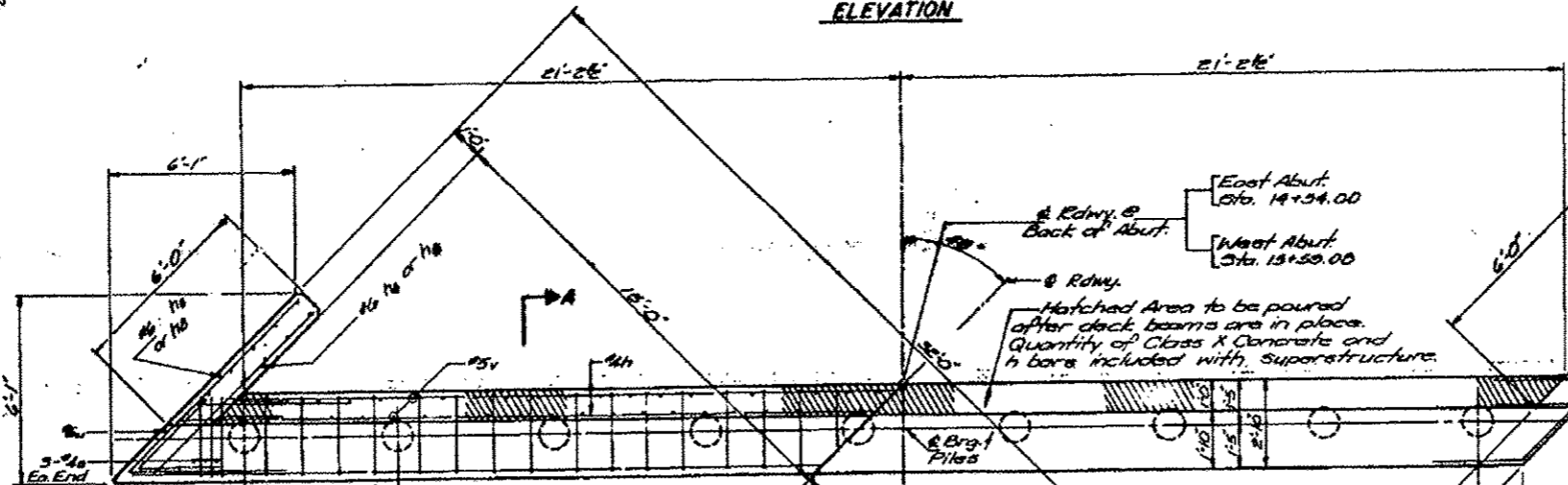
**TABLE OF REINFORCEMENT
BAR SPLICE LENGTHS**

Bar	Splice Length
p	3'-4"
h	1'-0"

Hatched Area to be poured after deck beams are in place. Quantity of Class X Concrete and h bars included with superstructure.



WINGWALL ELEVATION



ELEVATION

PLAN

FILE DATA

	East Abut.	West Abut.
Type	Crossed Timber	Crossed Timber
Length	38'	28'
Capacity	15 Tons	15 Tons
Number	8	8
# Piles	1	-

**EAST & WEST ABUTS.
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h1	10	#6	7'-1"	└
h2	4	#6	7'-2"	└
h3	10	#6	6'-1"	└
h4	4	#6	7'-1"	└
h7	6	#6	5'-9"	└
h8	6	#6	10'-9"	└
s	76	#4	10'-2"	□
u	16	#6	13'-4"	└
v	168	#5	2'-9"	└
v1	56	#5	4'-0"	└
p	24	#7	25'-2"	└

Class X Concrete	Cu Yds	277
Reinforcement Bars	Lbs	3250
Form Cross Piles 201/198	- F	556
Driving Timber Piles	- F	536
Test Pile, Timber	Each	1

Bill of material includes quantities for East & West Abutments.

DESIGNED: K.L.F.
CHECKED: R.N.G.
DRAWN: R.A.W.
CHECKED: K.L.F.

EAST & WEST ABUTMENTS
WALMEYER ROAD OVER CARR CREEK
SECTION 78-00023-00-BR
CITY OF COLUMBIA

FILE NAME: P:\128231\1-CADD - DWG\4.3-ST\128231-012-Existing Plans (Sheet 11).dwg