

ADDENDUM NO. 2
TO
LIONS DEN ROAD – PHASE 3 RECONSTRUCTION
(300 feet north of Binning Road to approximately 250 feet south of the present Living Well entrance)

COUNTY OF JEFFERSON, MISSOURI

APRIL 7, 2010

This addendum forms a part of the bidding and contract documents and modifies the original bidding documents. Acknowledge receipt of this addendum in the space provided on this bid form. **FAILURE TO DO SO MAY SUBJECT BIDDER TO DISQUALIFICATION.**

ARRA - STP - 7203 (601) BIDDER'S FORMS (insert in PROJECT SPECIFICATIONS bidding documents):

Remove page BF 2 and replace with revised page BF 2 dated 4-7-10.

Remove page BF 6 and replace with revised page BF 6 dated 4-7-10.

ARRA - STP - 7203 (601) BID FORM (PROJECT SPECIFICATIONS bidding documents):

Remove page BF 2 and replace with revised page BF 2 dated 4-7-10.

Remove page BF 6 and replace with revised page BF 6 dated 4-7-10.

ARRA - STP - 7203 (601) AGREEMENT FORMS (PROJECT SPECIFICATIONS bidding documents):

Remove page AF 1 and replace with revised page AF 1 dated 4-7-10.

Remove page AF 2 and replace with revised page AF 2 dated 4-7-10.

The bidding documents were revised to reflect the increase in quantity for **CLASS A EXCAVATION** (from 12751 cubic yards to 15900 cubic yards) and to increase the time of completion to **100 WORKING DAYS**.

ARRA - STP - 7203 (601) JOB SPECIAL PROVISIONS:

Remove page JSP-1 dated 3-23-10 (Addendum #1) and replace with revised page JSP-1 dated 4-7-10.

Remove page JSP-33 dated 3-23-10 (Addendum #1) and replace with revised page JSP-33 dated 4-7-10.

A job provision was added to clarify that the pavement structure details of the Typical Sections shall govern over the details on the Cross Sections.

ARRA - STP - 7203 (601) CONSTRUCTION PLANS

Remove plan sheet 2B, Sheet 1 of 6, and replace with revised plan sheet 2B, Sheet 1 of 6, dated 4-5-10.

Remove plan sheets 59, 60, 63 and 64 and replace with revised plan sheets 59, 60, 63 and 64 dated 3-25-10.

The plan sheets were revised as follows:

- Provided quantity of CLASS A EXCAVATION to construct channel at new bridge location.
- Added note that the earth work quantities are based on the pavement structure shown in the TYPICAL SECTIONS.
- Deleted the note on all sheets concerning the pouring procedures of the concrete backwall.
- Corrected the piling quantity for Bent No. 2 on plan sheet 64 (total quantity of both bents is still correct).

END OF ADDENDUM NO. 2

ADD. 2-1



awarding the contract, and may or may not represent the actual quantities encountered on the job: and that the sum of quantities listed below, multiplied by the unit price shall constitute the gross sum bid.

BID ITEMS:

Project: LIONS DEN ROAD – PHASE 3 RECONSTRUCTION
FEDERAL PROJECT NO. ARRA – STP – 7203 (601)

ROADWAY ITEMS

<u>Line</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Total</u>
201-30.00	CLEARING AND GRUBBING	ACRE	7		
202-20.10	REMOVAL OF IMPROVEMENTS	LUMP SUM	1		
203-10.00	CLASS A EXCAVATION	CU YD	15900		
203-20.00	CLASS C EXCAVATION	CU YD	39374		
203-60.00	COMPACTING EMBANKMENT	CU YD	12749		
206-30.00	CLASS 3 EXCAVATION	CU YD	254		
206-31.00	CLASS 3 EXCAVATION IN ROCK	CU YD	199		
206-35.00	CULVERT CLEANOUT	EA	1.0		
206-55.00	TEMPORARY SHORING	LUMP SUM	1		
216-15.01	REMOVAL OF ASPHALT WEARING SURFACE	SQ FT	3416		
304-01.43	TYPE 1 AGGREGATE FOR BASE (4 IN. THICK)	SQ YD	20744		
304-99.10	TEMPORARY DRIVEWAY AGGREGATE	TONS	48.6		
310-50.02	GRAVEL (A) OR CRUSHED STONE (B)	TONS	1464		
401-12.09	BITUMINOUS PAVEMENT MIXTURE PG64-22 (BP-1)	TONS	2181.5		
401-30.00	BITUMINOUS PAVEMENT MIXTURE PG64-22 (BASE)	TONS	8316.7		
407-10.05	TACK COAT	GAL	910		
409-40.00	SEAL COAT, GRADE A	SQ YD	1524		
603-99.23	SANITARY SEWERS – GRAVITY (15 IN.)	LF	119		
603-99.23	PRECAST SANITARY MANHOLES	LF	44		
603-99.23	HIGHWAY CASING PIPE 30 IN. (BORE & JACK)	LF	80		
603-99.23	SANITARY SEWER MAIN ABANDONMENT	LF	127		
606-10.10	GUARDRAIL TYPE A	LF	925		
606-23.00A	TRANSITION SECTION, 6.5 FT. POSTS	EA	8		
606-24.00	BRIDGE ANCHOR SECTION (THRIE BEAM)	EA	4		

5. BIDDER agrees that the work will be completed within **100 Working days** or the CONTRACTOR shall pay the COUNTY, not as a penalty but as **liquidated damages**, a sum equal to One Thousand & Two-Hundred and Twenty-Five Dollars (\$1,225.00) for each working or calendar day (excluding Saturdays, Sundays and Legal Holidays) elapsing between the expiration of such time limit plus such extensions as may be necessary to cover contingencies beyond the CONTRACTOR'S control and the date of the full completion.

The County reserves the right to negotiate additional terms for the time of completion with the successful bidder.

5.1 **Acceptance of Provision for Asphalt Cement Price Index:** Bidder has the option to accept the provision for Asphalt Cement Price Index in accordance with the provisions of the Job Special Provisions, Section S. The bidder must mark the box below if they choose to accept the provision. No price adjustments will be made, due to asphalt price changes, for bidders that do not accept this provision. This provision applies only to projects that have a quantity of asphalt wet ton mix pay items over 1000 tons.

☐

Asphalt Cement

6. Communications concerning this Bid shall be addressed to the following:

Address:

awarding the contract, and may or may not represent the actual quantities encountered on the job: and that the sum of quantities listed below, multiplied by the unit price shall constitute the gross sum bid.

BID ITEMS:

Project: LIONS DEN ROAD – PHASE 3 RECONSTRUCTION
FEDERAL PROJECT NO. ARRA – STP – 7203 (601)

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<u>Line</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Total</u>
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206-31.00	CLASS 3 EXCAVATION IN ROCK	CU YD	199		
206-35.00	CULVERT CLEANOUT	EA	1.0		
206-55.00	TEMPORARY SHORING	LUMP SUM	1		
216-15.01	REMOVAL OF ASPHALT WEARING SURFACE	SQ FT	3416		
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☐

Asphalt Cement

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AGREEMENT FORM

THIS AGREEMENT is dated as of _____, in the year ____ by and between JEFFERSON COUNTY, MISSOURI (hereinafter called OWNER OR COUNTY) and _____(hereinafter called CONTRACTOR).

OWNER and CONTRACTOR, in consideration of the mutual covenants herein after set forth and in the amount of _____, agree as follows:

ARTICLE 1. WORK

CONTRACTOR shall complete all work as specified or indicated in the Contract Documents for the LIONS DEN ROAD – PHASE 3 RECONSTRUCTION. The work is generally described as follows:

The work, in general, will consist of the full reconstruction of Lions Den Road, including earth and rock excavation, earth embankment, bituminous pavement and base, bridge, drainage pipes, signing, erosion control, traffic control, and other miscellaneous work.

ARTICLE 2. ENGINEER

The County has designated the Director of Public Works, who is hereinafter called ENGINEER and who has the authority assigned to OWNER in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

ARTICLE 3. CONTRACT TIME

3.1 The work will be completed and ready for final payment in accordance with paragraph 23 of the General Conditions within **100** working days after the date when the Contract Time commences to run. Allowances will be made for weather conditions and other occurrences beyond the control of the CONTRACTOR.

If the CONTRACTOR is unable to begin work as required, the ENGINEER shall be notified in writing. Unless the ENGINEER gives written approval for a delay in beginning the work, calendar days will begin to be counted for liquidated damages. The count will continue until the CONTRACTOR begins full operation. The count will resume when work is suspended, or full operation is not maintained.

3.2 Liquidated Damages. The Contractor agrees that should he fail to complete work in the time specified or such additional time as may be allowed by the Owner under this contract, the Contractor shall pay the County, not as a penalty but as **liquidated damages**, a sum equal to One Thousand & Two-Hundred and Twenty-Five Dollars (\$1,225.00) for each working or calendar day (excluding Saturdays, Sundays and Legal Holidays)elapsing between the expiration of such time limit plus such extensions as may be necessary to cover contingencies beyond the CONTRACTOR'S control and the date of the full completion.

ARTICLE 4. CONTRACT PRICE

4.1 Owner shall pay Contractor for performance of the work in accordance with the contract documents in current funds.

Project: LIONS DEN ROAD – PHASE 3 RECONSTRUCTION
ARRA – STP – 7203 (601)

ROADWAY ITEMS

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JOB SPECIAL PROVISIONS

TABLE OF CONTENTS

(Job Special Provisions shall prevail over General Special Provisions whenever in conflict therewith).

- A. Governing Specifications and Definition Changes
- B. Revisions to MoDOT Standard Specifications
- C. Inspection Waiver
- D. Work Zone Traffic Management Plan
- E. Removal of Improvements
- F. Excess Class C Excavation
- G. Removal of Asphalt Wearing Surface on Existing Bridge
- H. Waterproofing Membrane System on Bridge Deck Surfaces
- I. Utilities Coordination
- J. Seeding, Fertilizing and Mulching
- K. Office for Engineer
- L. U-Channel Posts, 2 LBS
- M. Inspection by MoDOT and FHWA Officials
- N. Relocated Signs
- O. Daily Earthwork Duty
- P. Cohesive Transition Mat
- Q. Temporary Driveway Aggregate
- R. Salvage Existing Topsoil
- S. Price Index Option for Bituminous Material
- T. Conditions at the Site
- U. Acceptance of Precast Prestressed Concrete Box-Girder Beams
- V. State and Federal Wage Rates
- W. Contractor Requirements
- X. Material Testing
- Y. Subcontractor Disclosure
- Z. Typical Sections / Cross Sections Details

V. STATE AND FEDERAL WAGE RATES

When state and federal wage rates are both required the higher of the two for each job classification shall be used.

W. CONTRACTOR REQUIREMENTS

A prime contractor must have a fully responsive contractor questionnaire on file with the Missouri Department of Transportation at least seven (7) days prior to the bid opening date if this project involves roadway or bridge work.

X. MATERIAL TESTING

All project sampling and testing of materials shall be performed by the County or by a consultant employed by the County.

Y. SUBCONTRACTOR DISCLOSURE

For contracts of more than \$2,000,000 each bidder shall submit with each bid a disclosure of the subcontracts that have a subcontract value that is equal to or greater than twenty percent of the total project bid or subcontracts that are greater than or equal to \$2,000,000. The disclosure of subcontracts must include the name of each subcontractor, the category of work that each subcontractor will perform (e.g. asphalt, concrete, earthwork, bridges...) and the dollar value of each subcontract. The information shall be disclosed on the form provided in the bidding documents. If that information is not available at the time of bid the bidder shall submit the "Subcontractor Disclosure Form" pages to Jefferson County Public Works Department on or before 4:00 p.m. of the third business day after the bid opening date, directly to the Jefferson County Public Works Department, PO Box 100, Hillsboro, Missouri 63050. Telefax transmittal to Jefferson County Public Works Department will be permitted at fax no. 636-797-5565. Failure to disclose this information may result in a bid being declared non-responsive. The complete signed original documents do not need to be mailed to Jefferson County Public Works Department, but the bidder shall have it available if requested by the engineer.

Z. TYPICAL SECTIONS / CROSS SECTIONS DETAILS

The details of the pavement structure and subbase grading shown on the Typical Sections shall govern over the details provided on the Cross Sections. Earthwork quantities are based on the pavement structure shown in the Typical Sections.

PLOT 50
L:\Jefferson_Co\0343303\Draw\Sheets\02B_sheets_LDR3.dgn

REMOVAL OF IMPROVEMENTS - 1 LUMP SUM					
SHEET	STATION	STATION	LOCATION	DESCRIPTION	REMARKS
4	21+00	25+00	CL LIONS DEN ROAD	1070 S.Y. ASPHALT PAVEMENT	
4	10+49	11+50.19	CL BINNING ROAD	334 S.Y. ASPHALT PAVEMENT	
4	21+77		LT. CL LIONS DEN ROAD	CATTLE GUARD CROSSING / EXISTING GRAVEL DRIVE	
4	21+99		LT. CL LIONS DEN ROAD	TELEPHONE RISER	BY OTHERS
4	22+00		LT. CL LIONS DEN ROAD	POWER POLE	BY OTHERS
4	10+34	11+42	LT. CL BINNING ROAD	230' +/- 5 STRAND BARBED WIRE FENCE	
4	24+42		LT. CL LIONS DEN ROAD	36' - 15" CMP	
5	25+00	26+63	LT. CL LIONS DEN ROAD	508 S.Y. ASPHALT PAVEMENT	
5	26+63		LT. CL LIONS DEN ROAD	60' SAWCUT	
5	27+50		LT. CL LIONS DEN ROAD	CABLE GATE	
5	27+72		LT. CL LIONS DEN ROAD	19' - 30" RCP	
5	27+85		LT. CL LIONS DEN ROAD	SIGN	
5	28+00		LT. CL LIONS DEN ROAD	SIGN	
5	28+12		LT. CL LIONS DEN ROAD	SIGN	
5	28+32		LT. CL LIONS DEN ROAD	SIGN	
5	28+52	29+37	CL LIONS DEN ROAD	144' AERIAL LINE	BY OTHERS
6	32+76		LT. CL LIONS DEN ROAD	66' SAWCUT	
6	32+76	34+00	LT. CL LIONS DEN ROAD	347 S.Y. ASPHALT PAVEMENT	
7	34+19.84		LT. CL LIONS DEN ROAD	68 S.Y. ASPHALT ENTRANCE	
7	34+22		LT. CL LIONS DEN ROAD	45' - 12" CMP	
7	34+38		CL LIONS DEN ROAD	47' - 18" CMP	
7	34+00	35+69.45	LT. CL LIONS DEN ROAD	491 S.Y. ASPHALT PAVEMENT	
7	34+48.71		RT. CL LIONS DEN ROAD	EXIST. SANITARY SEWER MANHOLE SVB39	
7	34+74		LT. CL LIONS DEN ROAD	BUSINESS SIGN	
7	35+69.45		CL LIONS DEN ROAD	29' SAWCUT	
7	35+11.81		LT. CL LIONS DEN ROAD	77 S.Y. ASPHALT ENTRANCE	
7	35+38		RT. CL LIONS DEN ROAD	SIGN	
7	35+55		LT. CL LIONS DEN ROAD	SIGN	
7	35+38	35+94	RT CL LIONS DEN ROAD	50' GUARD RAIL	
7	35+56	36+11	LT. CL LIONS DEN ROAD	50' GUARD RAIL	
7	37+08	37+64	RT. CL LIONS DEN ROAD	50' GUARD RAIL	
7	37+49.97	39+00	LT. CL LIONS DEN ROAD	419 S.Y. ASPHALT PAVEMENT	
7	37+25	37+80	LT. CL LIONS DEN ROAD	50' GUARD RAIL	
7	37+49.97		CL LIONS DEN ROAD	27' SAWCUT	
7	37+63		RT. CL LIONS DEN ROAD	SIGN	
7	37+81		LT. CL LIONS DEN ROAD	SIGN	
7	37+90		LT. CL LIONS DEN ROAD	63 S.Y. GRAVEL ENTRANCE	
7	38+70		LT. CL LIONS DEN ROAD	42' - 18" RCP	
7,8	37+70	42+72	LT. CL LIONS DEN ROAD	520' +/- FENCE	
8	39+00	44+00	LT. CL LIONS DEN ROAD	1283 S.Y. ASHALT PAVEMENT	
8	41+35		LT. CL LIONS DEN ROAD	61 S.Y. GRAVEL ENTRANCE	
8	40+25		LT. CL LIONS DEN ROAD	52' - 15" CMP	
8	42+23		LT. CL LIONS DEN ROAD	SIGN AND TREE	
8	42+47		LT. CL LIONS DEN ROAD	SIGN	
8	42+48		LT. CL LIONS DEN ROAD	12' X 4' X 36' RCB	
8	42+49		LT. CL LIONS DEN ROAD	SIGN	
8	42+72		LT. CL LIONS DEN ROAD	SIGN	
9	44+00	49+50	LT. CL LIONS DEN ROAD	1272 S.Y. ASPHALT PAVEMENT	
9	44+52		RT. CL LIONS DEN ROAD	POWER POLE	BY OTHERS
9	44+55		LT. CL LIONS DEN ROAD	TELEPHONE RISER	BY OTHERS
9	44+69		LT. CL LIONS DEN ROAD	27' - 24" RCP	
9	47+62		LT. CL LIONS DEN ROAD	POWER POLE	BY OTHERS
10	49+50	54+50	LT. CL LIONS DEN ROAD	1228 S.Y. ASPHALT PAVEMENT	
10	50+30		LT. CL LIONS DEN ROAD	BUSHES	
10	50+45		LT. CL LIONS DEN ROAD	SIGN	
10	52+05		LT. CL LIONS DEN ROAD	29' - 30" RCP	
10	52+82		LT. CL LIONS DEN ROAD	SIGN	
10	53+85		LT. CL LIONS DEN ROAD	SIGN	
11	54+50	59+00	LT CL LIONS DEN ROAD	1077 S.Y. ASPHALT PAVEMENT	
11	54+82		LT. CL LIONS DEN ROAD	SIGN	
11	55+56		LT. CL LIONS DEN ROAD	SIGN	
11	56+21		LT. CL LIONS DEN ROAD	SIGN	
11	56+44		LT. CL LIONS DEN ROAD	POWER POLE	BY OTHERS
11	56+88		LT. CL LIONS DEN ROAD	SIGN	
11	57+50		RT. CL LIONS DEN ROAD	333 S.Y. GRAVEL LOT	
11	57+54		LT. CL LIONS DEN ROAD	SIGN	
11	58+21		LT. CL LIONS DEN ROAD	SIGN	
11	58+90		LT. CL LIONS DEN ROAD	SIGN	
12	59+00	64+50	LT. CL LIONS DEN ROAD	1060 S.Y. ASPHALT PAVEMENT	
12	59+33		LT. CL LIONS DEN ROAD	SIGN	
12	59+57		LT. CL LIONS DEN ROAD	SIGN	
12	60+07		LT. CL LIONS DEN ROAD	SIGN	
12	60+08		LT. CL LIONS DEN ROAD	40' - 24" RCP	
12	60+25		LT. CL LIONS DEN ROAD	SIGN	
12	60+35		RT. CL LIONS DEN ROAD	66' - 18" CMP	
12	62+81		LT. CL LIONS DEN ROAD	SIGN	
12	60+94		LT. CL LIONS DEN ROAD	SIGN	
12	62+94.30		CL LIONS DEN ROAD	40' SAWCUT	
12	62+94.30	64+50	LT. CL LIONS DEN ROAD	156' SAWCUT	
12	62+94.30		CL LIONS DEN ROAD	3 EA TYPE III MOVEABLE BARRICADES, TUBULAR MARKERS	

MOBILIZATION
1 - LUMP SUM

OFFICE FOR ENGINEER
12 MONTHS

CONTRACTOR FURNISHED SURVEYING AND STAKING
1 - LUMP SUM

TEMPORARY SHORING
1 - LUMP SUM

CLEARING AND GRUBBING					
SHEET	FROM STATION	TO STATION	LOCATION	CLEARING AND GRUBBING (ACRE)	REMARKS
3	19+56.78	20+00.00	LT. CL LIONS DEN ROAD	0.04	
3	19+56.78	20+00.00	RT. CL LIONS DEN ROAD	0.06	
4	20+00.00	25+00.00	LT. CL LIONS DEN ROAD	0.47	
4	20+00.00	25+00.00	RT. CL LIONS DEN ROAD	0.49	
5	25+00.00	30+00.00	LT. CL LIONS DEN ROAD	0.41	
5	25+00.00	30+00.00	RT. CL LIONS DEN ROAD	0.46	
6	30+00.00	34+00.00	LT. CL LIONS DEN ROAD	0.35	
6	30+00.00	34+00.00	RT. CL LIONS DEN ROAD	0.29	
7	34+00.00	39+00.00	LT. CL LIONS DEN ROAD	0.09	
7	34+00.00	39+00.00	RT. CL LIONS DEN ROAD	0.45	
8	39+00.00	44+00.00	LT. CL LIONS DEN ROAD	0.27	
8	39+00.00	44+00.00	RT. CL LIONS DEN ROAD	0.61	
9	44+00.00	49+50.00	LT. CL LIONS DEN ROAD	0.29	
9	44+00.00	49+50.00	RT. CL LIONS DEN ROAD	0.63	
10	49+50.00	54+50.00	LT. CL LIONS DEN ROAD	0.07	
10	49+50.00	54+50.00	RT. CL LIONS DEN ROAD	0.77	
11	54+50.00	59+00.00	RT. CL LIONS DEN ROAD	0.68	
12	59+00.00	62+94.30	RT. CL LIONS DEN ROAD	0.14	
12D	F.E. 1+65	F.E. 2+00	PARCEL 10	0.01	
TOTAL				7	

EARTHWORK						
FROM STATION	TO STATION	ROADWAY	LOCATION	COMPACTING EMBANKMENT (CY)	CLASS A EXCAVATION (CY)	CLASS C EXCAVATION (CY)
19+56.78	62+94.30	LIONS DEN ROAD	CL	11420	12389	39154
10+20.00	11+50.00	BINNING ROAD	CL	2	176	
0+20.00	3+39.35	LIVING WELL ROAD	CL	1327		
1+00	2+00	PARCEL 10 F.E.	CL		186	220
41+69.95	42+31.40	LIONS DEN ROAD	CL		3149 *	
TOTALS				12749 #	15900 #	39374 #

2
LINE ADDED

2
NOTE ADDED
* - SEE SHEET 14 FOR CHANNEL
GRADING DETAILS

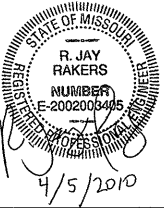
2
NOTE ADDED
- FOR CALCULATING FINAL EARTHWORK QUANTITIES, USE
THE PAVEMENT STRUCTURE SHOWN IN TYPICAL SECTIONS

NOTE:
ANY EXCESS EXCAVATION SHALL BE DISPOSED OF LAWFULLY BY THE CONTRACTOR. SEE JSPs.

NOTE:

ALL SAWCUTS REQUIRED FOR CONSTRUCTION SHALL BE INCLUDED IN THE COST FOR REMOVAL OF IMPROVEMENTS. THIS TABLE MAY NOT REFLECT THE TOTAL NUMBER OF SAWCUTS NEEDED. NO ADDITIONAL PAYMENT WILL BE MADE TO THE CONTRACTOR.

SHEET 1 OF 6



R. JAY RAKERS
PROFESSIONAL ENGINEER
MO. P.E. LICENSE • 2002003405

REVISIONS		
NUMBER	BY	DATE
2	RJR	04-05-10

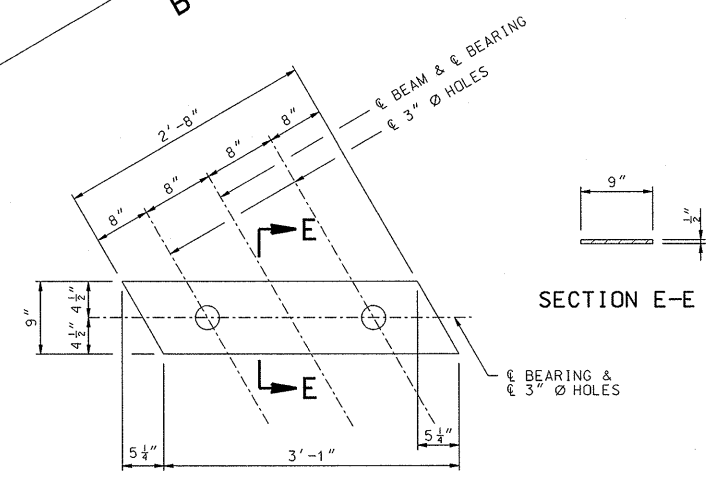
JEFFERSON COUNTY, MISSOURI
LIONS DEN ROAD IMPROVEMENTS - PHASE 3
ARRA-STP-7203 (601)

SUMMARY OF QUANTITIES

CMT
CRAWFORD, MURPHY & TILLY, INC.
ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102 (314) 436-5500
ENGINEERING CORPORATION - 000631
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DRAWN BY: AJK
CHECKED BY: RJR
APPROVED BY: RJR
DATE: 4/5/2010
JOB No: 03433-03-00

SHEET 28 OF 72 SHEETS




NOTES:

ALL U-BARS ARE TO BE PLACED PARALLEL TO & ROADWAY.
ADJUST F121 & F122 IN FIELD TO CLEAR GIRDER.

ALL CONCRETE IN THE END BENT ABOVE TOP OF BEAM
AND BELOW TOP OF SLAB SHALL BE CLASS B-2.

CONCRETE BACKWALLS AT THE INTEGRAL END BENTS
SHALL BE POURED A MINIMUM OF 12 HOURS BEFORE
THE SLAB IS POURED.



REINFORCEMENT IN WINGS IN PLAN OF BEAM NOT SHOWN FOR
CLARITY.

ALL VERTICAL REINFORCING BARS IN THE SUBSTRUCTURE
BEAMS OR CAPS SHALL BE FIELD ADJUSTED TO CLEAR PILES
BY AT LEAST 1-1/2".

NEOPRENE ELASTOMERIC PADS SHALL BE 60 DUROMETER.
THE NEOPRENE PAD SHALL BE BONDED TO THE BEARING
SEAT WITH AN EPOXY ADHESIVE AS APPROVED BY THE
BEARING MANUFACTURER FOR BONDING NEOPRENE TO
CONCRETE.

STRANDS AT END OF BEAM SHALL BE FIELD BENT OR, IF
NECESSARY, CUT IN FIELD TO MAINTAIN 1-1/2" MINIMUM
CLEARANCE TO FILL FACE OF END BENT.

FOR ELEVATIONS A-A AND B-B, SEE SHEET NO. 62.

FOR SECTION NEAR END BENT, SEE SHEET NO. 60.

FOR THRIE BEAM GUARD RAIL DETAILS, SEE SHEET NOS. 69 & 70.

FOR LOCATION OF #6-H100 STRAND TIE BARS, SEE SHEET NO. 65.

FOR BOX GIRDER ANCHORAGE DETAILS, SEE SHEET NO. 66.

FOR VERTICAL DRAIN AT END BENT DETAILS, SEE SHEET NO. 61.

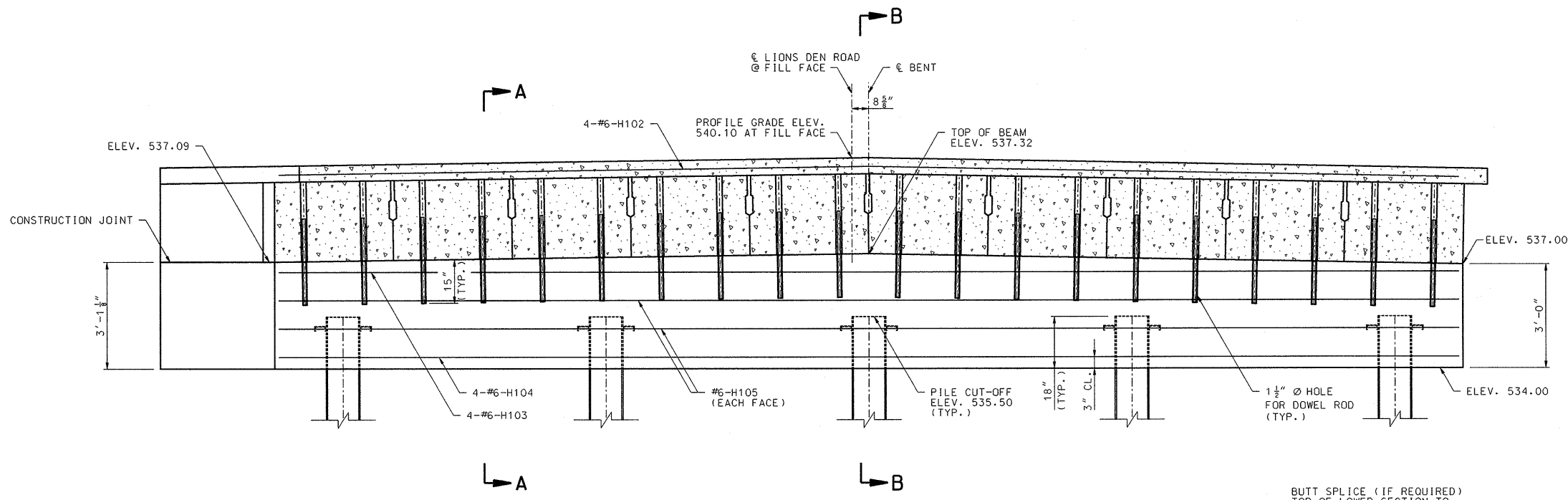
FOR DETAIL OF STEEL PILE SPLICE, SEE SHEET NO. 60.

FOR DETAIL OF PILE CHANNEL SHEAR CONNECTOR, SEE SHEET NO. 60.

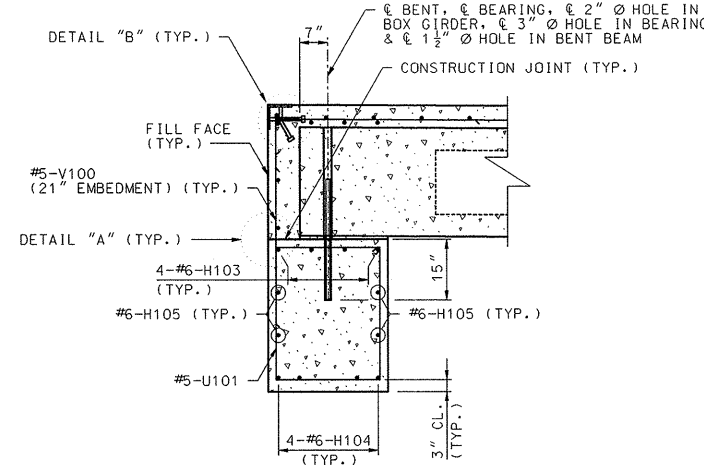
END BENT NO. 1 DETAILS

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

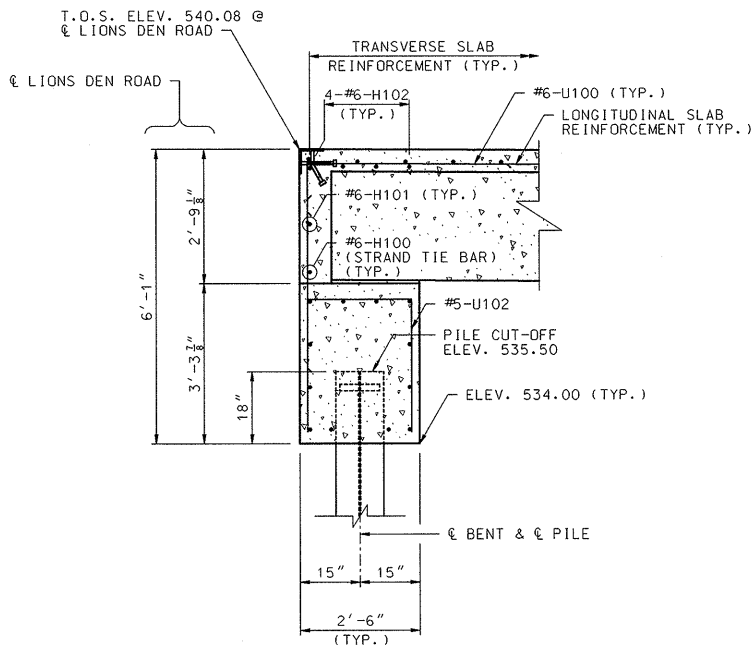
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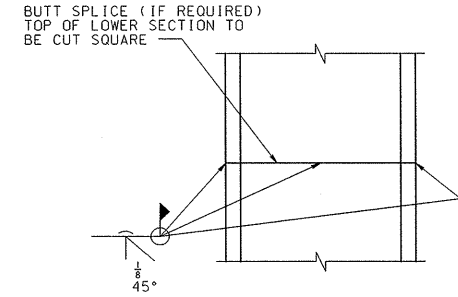
SECTION NEAR END BENT NO. 1



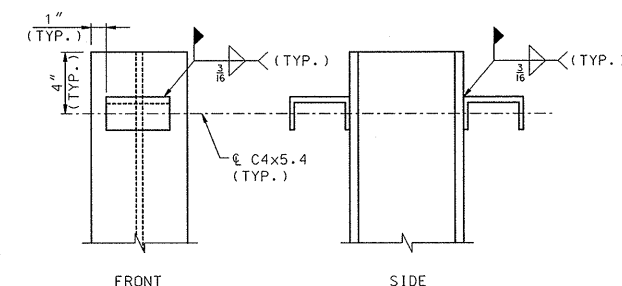
SECTION A-A



SECTION B-B



DETAIL OF STEEL PILE SPLICE



DETAIL OF PILE CHANNEL SHEAR CONNECTOR

SUBSTRUCTURE QUANTITY TABLE FOR BENT NO. 1		
ITEM		QUANTITY
CLASS 1 EXCAVATION	CU. YARD	25
STRUCTURAL STEEL PILE (10 IN.)	LINEAR FOOT	135
PILE POINT REINFORCEMENT	EACH	5
CLASS B CONCRETE (SUBSTRUCTURE)	CU. YARD	12.3
FABRICATED STRUCTURAL CARBON STEEL (MISC.)	POUND	740

NOTE:
THESE QUANTITIES ARE INCLUDED IN THE ESTIMATED QUANTITIES TABLE ON SHEET NO. 57.

- NOTES:
- ALL VERTICAL REINFORCING BARS IN THE SUBSTRUCTURE BEAMS OR CAPS SHALL BE FIELD ADJUSTED TO CLEAR PILES BY AT LEAST 1-1/2".
 - CONCRETE BACKWALLS AT THE INTEGRAL END BENTS SHALL BE POURED A MINIMUM OF 12 HOURS BEFORE THE SLAB IS POURED.

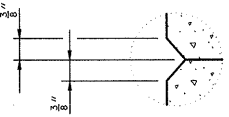
STRUCTURAL STEEL FOR THE ARMOR ANGLE SHALL BE ASTM A709 GRADE 36. ANCHORS FOR THE ANGLE SHALL BE IN ACCORDANCE WITH SEC 1037.

STRUCTURAL STEEL FOR THE ARMOR ANGLE SHALL BE COATED WITH A MINIMUM TWO COATS OF INORGANIC ZINC PRIMER (5 MILS MINIMUM) OR GALVANIZED IN ACCORDANCE WITH ASTM A123. ANCHORS NEED NOT BE PROTECTED FROM OVERSPRAY.

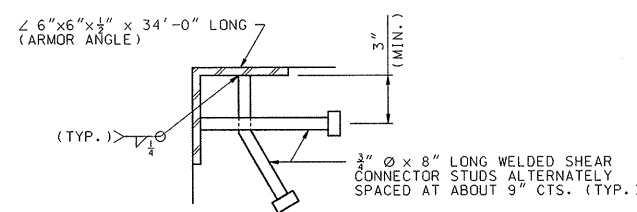
CONCRETE SHALL BE FORCED UNDER ARMOR ANGLE AND AROUND ANCHORS. PROPER CONSOLIDATION OF THE CONCRETE SHALL BE ACHIEVED BY LOCALIZED INTERNAL VIBRATION.

PAYMENT FOR FURNISHING, COATING OR GALVANIZING AND INSTALLING STRUCTURAL STEEL AND ANCHORS FOR THE ARMOR ANGLE SHALL BE COVERED BY THE CONTRACT UNIT PRICE FOR FABRICATED STRUCTURAL CARBON STEEL (MISC.).

FOR PART PLAN, SEE SHEET NO. 59.
FOR PLAN OF BEAM, SEE SHEET NO. 59.
FOR BOX GIRDER ANCHORAGE DETAILS, SEE SHEET NO. 66.



DETAIL "A"



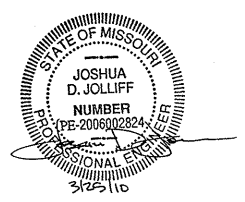
DETAIL "B"

NOTE:
REINFORCEMENT NOT SHOWN FOR CLARITY.

END BENT NO. 1 DETAILS

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

1 REVISED 03-25-10



JOSHUA D. JOLIFF
PROFESSIONAL ENGINEER
MO. P.E. LICENSE # 2006002824

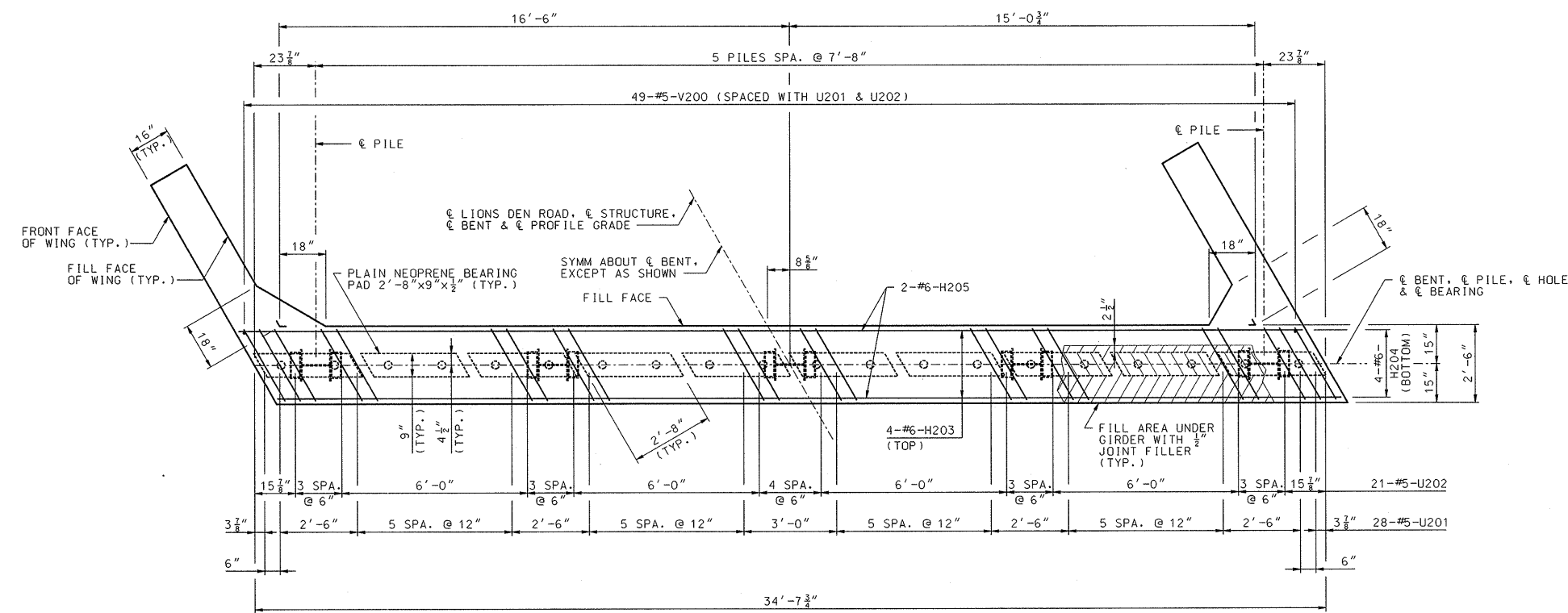
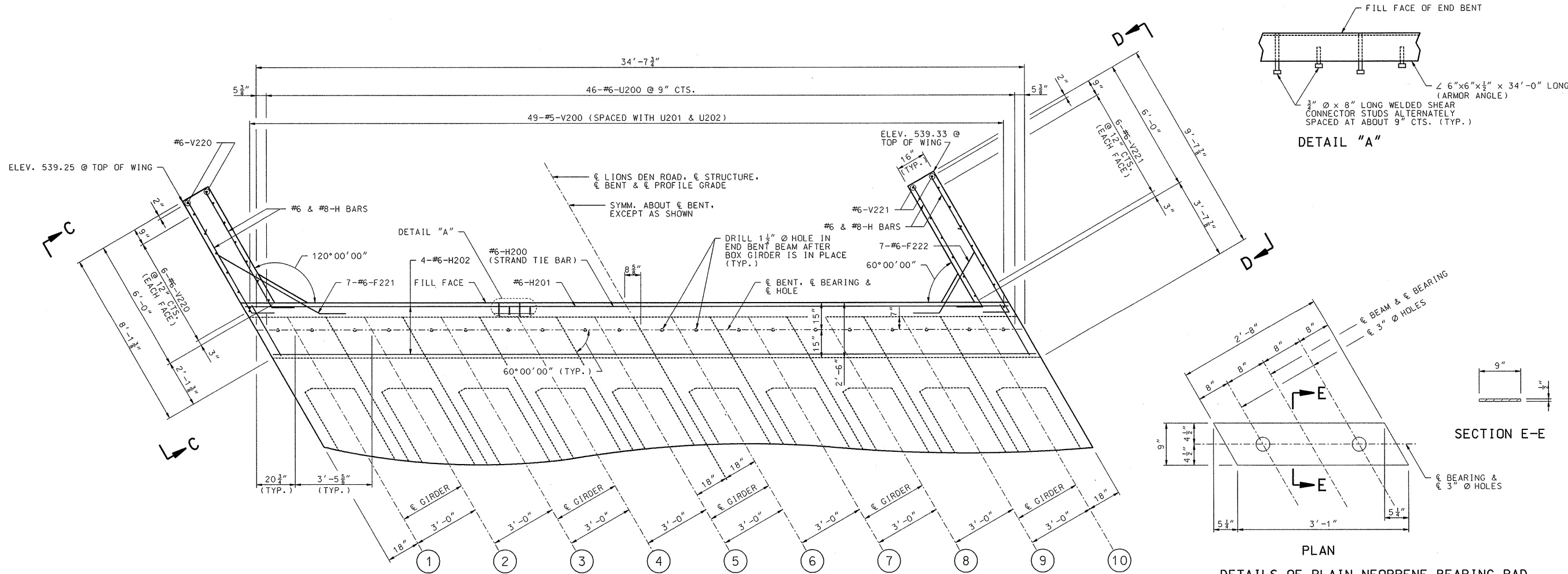
REVISIONS		
NUMBER	BY	DATE
1	JDJ	03-25-10

JEFFERSON COUNTY, MISSOURI
LIONS DEN ROAD IMPROVEMENTS - PHASE 3
ARRA-STP-7203 (601)
BRIDGE 0730009
LIONS DEN ROAD OVER TRIB. TO ROCK CREEK
STATION 41+69.95 TO STATION 42+31.40

CMT
CRAWFORD MURPHY & TILLY, INC.
ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102 (314) 436-5500
ENGINEERING CORPORATION - 000631
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DRAWN BY: AJK
CHECKED BY: REB
APPROVED BY: JDJ
DATE: 3/25/2010
JOB No: 03433-03-00

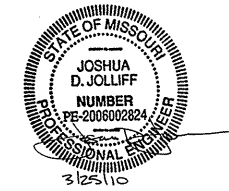
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END BENT NO. 2 DETAILS

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

- NOTES:**
- ALL U-BARS ARE TO BE PLACED PARALLEL TO ϵ ROADWAY.
 - ADJUST F221 & F222 IN FIELD TO CLEAR GIRDERS.
 - ALL CONCRETE IN THE END BENT ABOVE TOP OF BEAM AND BELOW TOP OF SLAB SHALL BE CLASS B-2.
 - CONCRETE BACKWALLS AT THE INTEGRAL END BENTS SHALL BE POURED A MINIMUM OF 12 HOURS BEFORE THE SLAB IS POURED.
 - REINFORCEMENT IN WINGS IN PLAN OF BEAM NOT SHOWN FOR CLARITY.
 - ALL VERTICAL REINFORCING BARS IN THE SUBSTRUCTURE BEAMS OR CAPS SHALL BE FIELD ADJUSTED TO CLEAR PILES BY AT LEAST 1-1/2".
 - NEOPRENE ELASTOMERIC PADS SHALL BE 60 DUROMETER. THE NEOPRENE PAD SHALL BE BONDED TO THE BEARING SEAT WITH AN EPOXY ADHESIVE AS APPROVED BY THE BEARING MANUFACTURER FOR BONDING NEOPRENE TO CONCRETE.
 - STRANDS AT END OF BEAM SHALL BE FIELD BENT OR, IF NECESSARY, CUT IN FIELD TO MAINTAIN 1-1/2" MINIMUM CLEARANCE TO FILL FACE OF END BENT.
 - FOR ELEVATIONS C-C AND D-D, SEE SHEET NO. 62.
 - FOR SECTION NEAR END BENT, SEE SHEET NO. 64.
 - FOR THRIE BEAM GUARD RAIL DETAILS, SEE SHEET NOS. 69 & 70.
 - FOR LOCATION OF #6-H200 STRAND TIE BARS, SEE SHEET NO. 65.
 - FOR BOX GIRDER ANCHORAGE DETAILS, SEE SHEET NO. 66.
 - FOR VERTICAL DRAIN AT END BENT DETAILS, SEE SHEET NO. 61.
 - FOR DETAIL OF STEEL PILE SPLICE, SEE SHEET NO. 64.
 - FOR DETAIL OF PILE CHANNEL SHEAR CONNECTOR, SEE SHEET NO. 64.



JOSHUA D. JOLIFF
PROFESSIONAL ENGINEER
MO. P.E. LICENSE • 2006002824

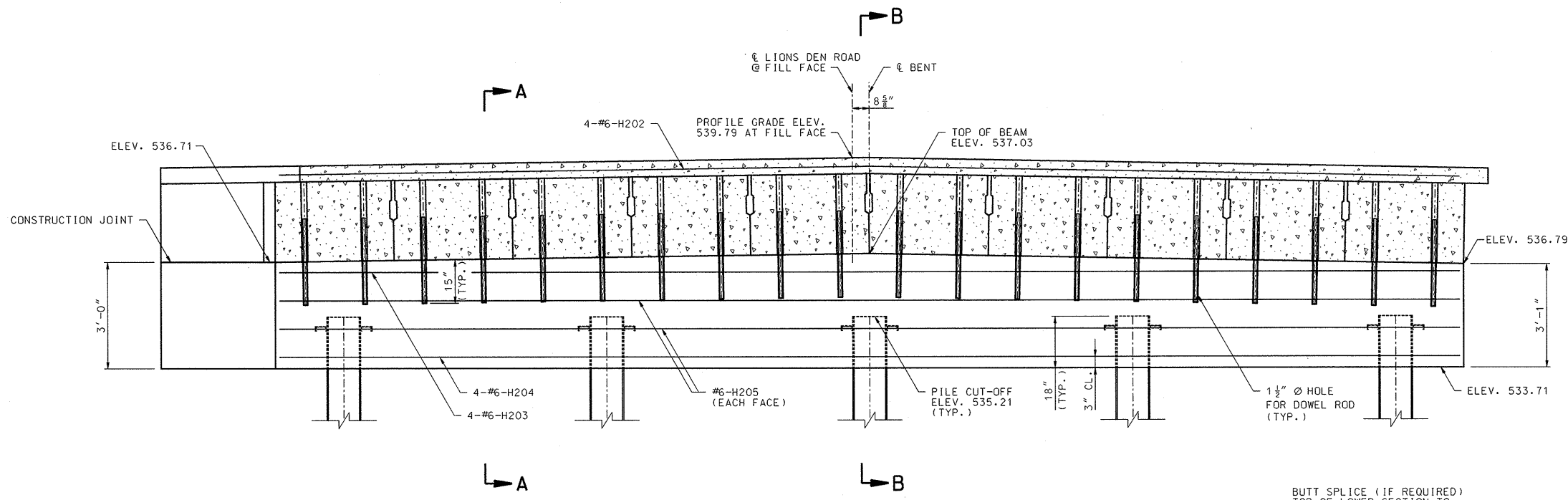
REVISIONS		
NUMBER	BY	DATE
1	JDJ	03-25-10

JEFFERSON COUNTY, MISSOURI
LIONS DEN ROAD IMPROVEMENTS - PHASE 3
ARRA-STP-7203 (601)
BRIDGE 0730009
LIONS DEN ROAD OVER TRIB. TO ROCK CREEK
STATION 41+69.95 TO STATION 42+31.40

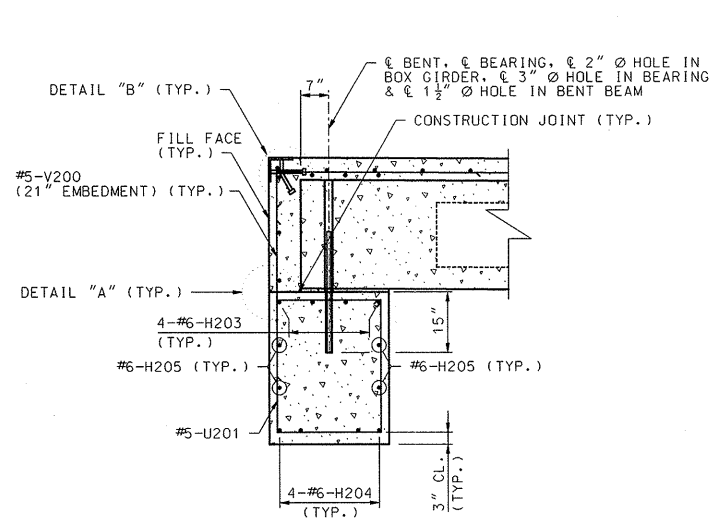
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ONE MEMORIAL DRIVE, SUITE 500
ST. LOUIS, MO 63102 (314) 436-5500
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DRAWN BY:	AJK
CHECKED BY:	REB
APPROVED BY:	JDJ
DATE:	3/25/2010
JOB No:	03433-03-00

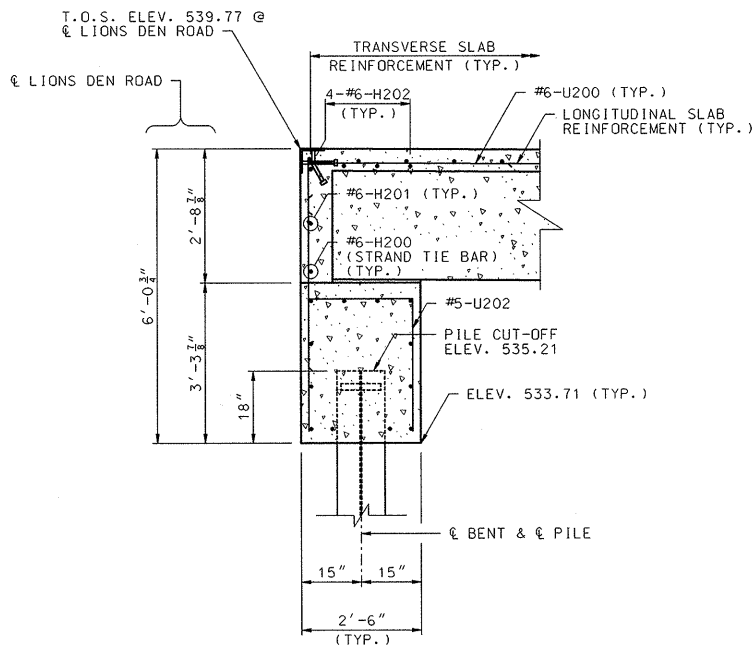
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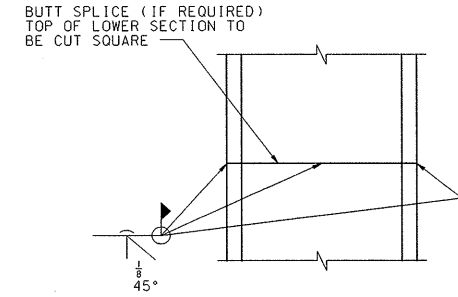
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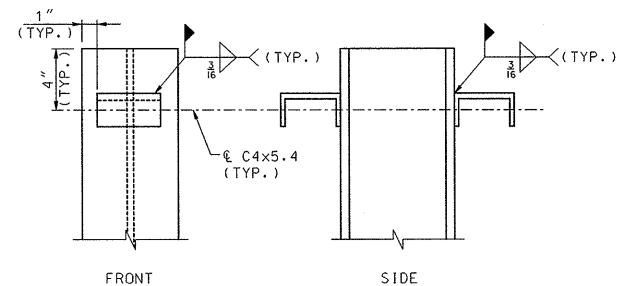
SECTION A-A



SECTION B-B



DETAIL OF STEEL PILE SPLICE



DETAIL OF PILE CHANNEL SHEAR CONNECTOR

NOTES:

ALL VERTICAL REINFORCING BARS IN THE SUBSTRUCTURE BEAMS OR CAPS SHALL BE FIELD ADJUSTED TO CLEAR PILES BY AT LEAST 1-1/2".

1 CONCRETE BACKWALLS AT THE INTEGRAL END BENTS SHALL BE POURED A MINIMUM OF 12 HOURS BEFORE THE SLAB IS POURED.

STRUCTURAL STEEL FOR THE ARMOR ANGLE SHALL BE ASTM A709 GRADE 36. ANCHORS FOR THE ANGLE SHALL BE IN ACCORDANCE WITH SEC 1037.

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FOR PART PLAN, SEE SHEET NO. 63.

FOR PLAN OF BEAM, SEE SHEET NO. 63.

FOR BOX GIRDER ANCHORAGE DETAILS, SEE SHEET NO. 66.

SUBSTRUCTURE QUANTITY TABLE FOR BENT NO. 2		
ITEM		QUANTITY
CLASS 1 EXCAVATION	CU. YARD	25
STRUCTURAL STEEL PILE (10 IN.)	LINEAR FOOT	135
PILE POINT REINFORCEMENT	EACH	5
CLASS B CONCRETE (SUBSTRUCTURE)	CU. YARD	12.3
FABRICATED STRUCTURAL CARBON STEEL (MISC.)	POUND	740

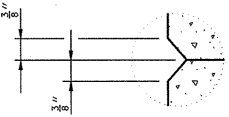
NOTE:

THESE QUANTITIES ARE INCLUDED IN THE ESTIMATED QUANTITIES TABLE ON SHEET NO. 57.

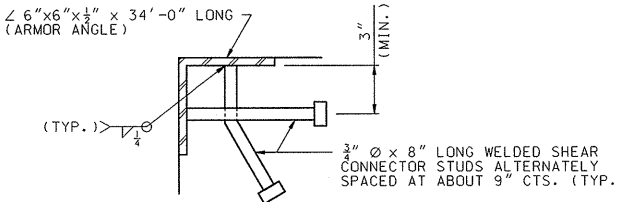
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END BENT NO. 2 DETAILS

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.



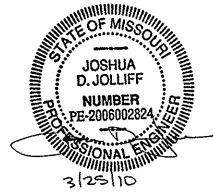
DETAIL "A"



DETAIL "B"

NOTE:

REINFORCEMENT NOT SHOWN FOR CLARITY.



JOSHUA D. JOLIFF
PROFESSIONAL ENGINEER
MO. P.E. LICENSE # 2006002824

REVISIONS

NUMBER	BY	DATE
1	JDJ	03-25-10

JEFFERSON COUNTY, MISSOURI
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