



City of Columbia

701 East Broadway, Columbia, Missouri 65201

Department Source: City Utilities - Water and Light

To: City Council

From: City Manager & Staff

Council Meeting Date: February 15, 2016

Re: Missouri Highways and Transportation Commission Utility Agreement – 70 Bridge Project

Executive Summary

Staff has prepared for Council consideration an ordinance authorizing the City Manager to execute a Utility Agreement with the Missouri Highways and Transportation Commission (MHTC) for the relocation of City owned water facilities in conjunction with the Columbia I-70 Bridge Design-Build Project, Job No. J512172. The City's obligation to the MHTC for the cost of utility work identified in the agreement is estimated to be \$373,325.

Discussion

This agreement is necessary to provide payment for the adjustment of City owned water facilities now located entirely on MHTC right of way that are in conflict with the proposed I-70 bridge improvements at Business Loop 70 and Creasy Springs Road in accordance with the Master Reimbursable Utility Agreement with MHTC . Design and construction services on this project are being performed by the MHTC's design-build contractor for the I-70 bridge work.

This project to relocate the water main and maintain existing City service will consist of directional drilling a 12-inch fused PVC water main within a 16-inch fused PVC casing pipe approximately 484 feet through the interstate corridor. Additional piping will also be required for attaching this bore to existing infrastructure. This additional piping will include approximately 634 feet of 12-inch water main installed utilizing traditional construction methods in order to connect the new main to existing infrastructure.

Staff has worked closely with MoDOT and their contractors to develop the estimated costs in this agreement and has agreed to reimburse MHTC \$30,101 for design and construction engineering services on this project. The total cost of the utility adjustment is estimated at \$312,022 with a 10% construction contingency (\$31,202) for change orders, with a total estimated construction cost of \$343,044. The City's final cost will be based upon final measurements of facilities constructed at the Commission's contract unit prices, including change orders. Core Drilling indicated solid rock is not expected to be encountered with the proposed bore work under I-70, but if solid rock is encountered for the boring of I-70, there is a rock clause estimated additional cost of \$242,000. The City will be obligated for the additional expense if solid rock is encountered involving the bore of I-70.



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Fiscal Impact

Short-Term Impact: The estimated costs of \$373,325 for this relocation work will be funded from Capital Improvement Project No. WT0125 for water main relocations associated with street and highway projects.

Long-Term Impact: None

Vision & Strategic Plan Impact

Vision Impacts:

Primary Impact: Transportation, Secondary Impact: Not Applicable, Tertiary Impact: Not Applicable

Strategic Plan Impacts:

Primary Impact: Infrastructure, Secondary Impact: Not Applicable, Tertiary Impact: Not Applicable

Comprehensive Plan Impacts:

Primary Impact: Infrastructure, Secondary Impact: Not applicable, Tertiary Impact: Not Applicable

Legislative History

Date	Action
11/03/2014	Ordinance authorizing the First Supplemental Master Reimbursable Utility Agreement with Missouri Highways and Transportation Commission.
09/03/1996	Master Reimbursable Utility Agreement with Missouri Highways and Transportation Commission.

Suggested Council Action

Authorizing the City Manager to execute this Utility Agreement with the Missouri Highways and Transportation Commission.

Introduced by _____

First Reading _____

Second Reading _____

Ordinance No. _____

Council Bill No. B 37-16

AN ORDINANCE

authorizing a utility agreement with the Missouri Highways and Transportation Commission as it relates to the relocation of City-owned water facilities in conjunction with proposed I-70 bridge improvements at Business Loop 70 and Creasy Springs Road; and fixing the time when this ordinance shall become effective.

BE IT ORDAINED BY THE COUNCIL OF THE CITY OF COLUMBIA, MISSOURI, AS FOLLOWS:

SECTION 1. The City Manager is hereby authorized to execute a utility agreement with the Missouri Highways and Transportation Commission as it relates to the relocation of City-owned water facilities in conjunction with proposed I-70 bridge improvements at Business Loop 70 and Creasy Springs Road. The form and content of the agreement shall be substantially in the same form as set forth in "Attachment A" attached hereto.

SECTION 2. This ordinance shall be in full force and effect from and after its passage.

PASSED this _____ day of _____, 2016.

ATTEST:

City Clerk

Mayor and Presiding Officer

APPROVED AS TO FORM:

City Counselor

CCO Form: UT04
 Approved: 1/98 (BDG)
 Revised: 06/15 (AR)
 Modified:

Route Interstate 70
 County Boone
 Job No. J5I2172

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION UTILITY AGREEMENT-ACTUAL COST

(For Utility Work That is to be Included in the
 Missouri Highways and Transportation Commission's Road Project)

THIS AGREEMENT is entered into by the Missouri Highways and Transportation Commission (hereinafter, "Commission") and the **City of Columbia, Missouri**, a municipal corporation (hereinafter, "City").

WITNESSETH:

WHEREAS, the Commission proposes to construct and improve a section of state highway designated as **the Columbia I-70 Bridge Design-Build Project**, Job No. **J5I2172**, Route **I-70**, **Boone** County, in the vicinity **City of Columbia**, in accordance with certain road plans on file in the office of the County Clerk of **Boone**, Missouri; and

WHEREAS, in order to improve said highway in accordance with said plans it will be necessary to adjust certain **City owned water** facilities now located **entirely on Commission right of way** in order to maintain the present services of the City, such changes being generally shown in legend on plan marked Exhibit "A" and estimate of cost marked Exhibit "B" attached hereto and each made a part hereof.

NOW, THEREFORE, in consideration of the mutual covenants contained herein, it is agreed as follows:

(1) RELEASE: The City releases to the Commission such right, title, and interest which the City may have in and to the right of way of said state highway, as specifically described in a separate easement.

(2) COMPLY WITH CODE OF FEDERAL REGULATIONS (CFR): The City agrees that the detail plan and estimate of cost for the required adjustment of City's facilities has been prepared in accordance with the provisions of the 23 CFR 645, as amended, which by reference are made a part of this Agreement.

(3) UTILITY WORK TO BE INCLUDED IN COMMISSION'S PROJECT: The Commission hereby agrees to include, as part of its contract for the public improvement contemplated above, all labor, equipment, and materials necessary to adjust the City's utility facilities in accordance with plans and specifications prepared by the City and approved by the Commission. The City shall be diligent in its efforts to furnish the plans and specifications to the Commission in sufficient time for the Commission to include

them in the public improvement contract. The plans, specifications and estimate of cost shall be used by the Commission to establish funding for this project. The Commission will advertise the public improvement, receive bids, and award a contract for the public improvement in accordance with its normal practice for awarding contracts for highway construction.

(4) INSPECTION: The City shall be responsible for all inspection of the new water main facilities.

(5) CHANGE ORDER: If any substantial change is made in the original plan and extent of the work, the City agrees that changes in the costs will be covered by a change order having approval of the City, Commission and Federal Highway Administration PRIOR to the performance of the work, as set out in 23 CFR 645.

(6) MAINTENANCE: Upon completion of the project, the utility facilities will become the property of the City and the City agrees to accept responsibility for all maintenance work thereon. All obligations of the Commission under this Agreement shall thereupon cease and terminate. The City shall maintain such property. The City shall indemnify and save harmless the Commission from damages or injuries resulting from City maintenance of the property. In no event shall the language of this Agreement constitute or be construed as a waiver or limitation for either party's rights or defenses with regard to each party's applicable sovereign, governmental, or official immunities and protections as provided by federal and state constitution or law. Any future work on the adjusted facilities requiring excavation or any future maintenance work in or under Commission right of way will be performed in accordance with the terms of a permit that will be issued to the City by Commission's District Engineer for such work.

(7) COST: The obligation toward cost of work under this Agreement is as follows:

(A) Consultant Engineering: The maximum not to exceed fee for design and construction engineering by consultant engineers is **\$30,101**. The Commission's obligation toward the cost of design and construction engineering shall be **0%** of the actual cost thereof, which obligation is now estimated to be **\$0**. The City's obligation toward the cost of design and construction engineering shall be **100%** of the actual cost thereof, which obligation is now estimated to be **\$30,101**. The maximum design and construction engineering fee of **\$30,101** shall not be exceeded without the Commission's approval.

(B) Obligations: The total cost of the utility adjustment is estimated to be **\$312,022**. The Commission's obligation toward the cost of this work shall be **0%** of the actual cost thereof, which obligation is now estimated to be **\$0**. The City's obligation toward the cost of this work shall be **100%** of the actual cost thereof, which obligation is now estimated to be **\$312,022**. The Commission's obligation shall extend only to those costs incurred under the provisions of 23 CFR 645. The City's final cost will be based

upon final measurements of facilities constructed at the Commission's contract unit prices, including change orders. Solid rock is not expected to be encountered with the proposed bore work under I-70. No solid rock was detailed in any core drilling investigation for the adjacent proposed bridge structure. But if solid rock is encountered for the boring of I-70, there is a rock clause price in the cost estimate (Exhibit B) being \$242,000. The City will be obligated for the additional expense if solid rock is encountered involving the bore of I-70.

(C) The City's obligation toward the cost of the utility work in paragraph 7(B) is estimated to be **\$373,325 (includes 10% construction contingency for change orders)**. The City shall deliver a check in the amount of **\$373,325** to the Commission within thirty (30) days after the execution of this Agreement. The check should be made payable to the "Director of Revenue – Credit State Road Fund".

(D) Total payment by the City under this agreement described herein shall not exceed **\$373,325**. All additional obligations of the City under this Agreement which require the expenditure of funds are conditional upon the availability of funds budgeted and appropriated for that purpose, in addition to the approvals of the Commission as set forth herein.

(8) DEPOSITED FUNDS: The City agrees that all funds deposited by it with the Commission under this Agreement may be commingled by the Commission with similar monies deposited from other sources. Such deposits may be invested at the discretion of the Commission in such investments allowed for other state funds. All interest income shall be payable to the fund and credited to the City on its pro rata share of the investment. If the amount deposited with the Commission shall be less than the actual obligation of the City, any interest credited to the City shall be used by the Commission in fulfillment of the City's obligation. If the actual cost of the City's obligation exceeds both the deposit and interest accrued, the City shall, upon written request by the Commission's District Engineer, forward to the Commission any amount necessary to pay the actual cost of the City obligation under this Agreement. If the actual cost of the City's obligation is less than the deposit and interest accrued, the excess amount shall be refunded to the City.

(9) COMMISSION'S USE OF CITY'S EASEMENT: The City agrees to allow the Commission's contractor and sub-tier contractors access to the City's easements to make the adjustment to the City's facilities. The City agrees to acquire and allow access to temporary construction easements to make the necessary utility adjustments.

(10) FINAL INVOICE SUBMITTAL: After completion of the utility work and after the new water main facilities pass inspection by City, the City agrees to submit a final invoice for the cost of reimbursable engineering and other eligible City costs to the Commission within sixty (60) days or as mutually agreed to by the Commission's resident engineer or his/her representative. The final invoice shall be in as much detail as possible to verify the cost of the completed work. It should follow the format of the original cost estimate (Exhibit B) when possible to promote timely processing by the

Commission. The Commission's resident engineer will process the final invoice as soon as possible after receipt of the final invoice. The Commission's resident engineer will submit a final invoice to the City for its obligation of the total cost of the utility work.

(11) AMENDMENTS: Any change in this Agreement, whether by modification or supplementation, must be accomplished by a formal contract amendment signed and approved by the duly authorized representative of the City and the Commission.

(12) COMMISSION REPRESENTATIVE: The Commission's resident engineer is designated as the Commission's representative for the purpose of administering the provisions of this Agreement. The Commission's representative may designate by written notice other persons having the authority to act on behalf of the Commission in furtherance of the performance of this Agreement.

(13) CITY REPRESENTATIVE: The City Water and Light Director is designated as City's representative to perform inspection and approve changes to the plan of adjustment which may add or delete work from this Agreement. The resident engineer's staff will provide inspection for the adjustment of the City's facilities.

(14) LAW OF MISSOURI TO GOVERN: This Agreement shall be construed according to the laws of the State of Missouri. The City shall comply with all local, state and federal laws and regulations relating to the performance of this Agreement.

(15) CANCELLATION: The Commission may cancel this Agreement at any time for a material breach of contractual obligations by providing the City with written notice of cancellation. Should the Commission exercise its right to cancel the contract for such reasons, cancellation will become effective upon the date specified in the notice of cancellation sent to the City.

(16) VENUE: It is agreed by the parties that any action at law, suit in equity, or other judicial proceeding to enforce or construe this Agreement, or regarding its alleged breach, shall be instituted only in the Circuit Court of Cole County, Missouri.

(17) ASSIGNMENT: The City shall not assign, transfer or delegate any interest in this Agreement without the prior written consent of the Commission.

(18) SECTION HEADINGS: All section headings contained in this Agreement are for the convenience of reference only and are not intended to define or limit the scope of any provision of this Agreement.

(19) SOLE BENEFIT OF PARTIES: This agreement is for the sole benefit of City and Commission. Nothing in this agreement is intended to confer any rights or remedies on any third party.

IN WITNESS WHEREOF, the parties have entered into this Agreement on the last date written below.

Executed by the **City** this ____ day of _____, 20__.

Executed by the Commission this ____ day of _____, 20__.

**MISSOURI HIGHWAYS AND
TRANSPORTATION COMMISSION**

City of Columbia

Title _____

By _____

Print Name Mike Matthes

Title City Manager

ATTEST:

ATTEST:

Secretary to the Commission

By _____

Title Sheela Amin, City Clerk

Approved as to Form:

Approved as to Form:

Commission Counsel

Title Nancy Thompson, City Counselor

CERTIFICATION: I certify that this contract is within the purpose of the appropriation to which it is to be charged and there is an unencumbered balance to the credit of such appropriation sufficient to pay therefor. Acct Number:

John Blattell, Director of Finance

ACKNOWLEDGMENT BY CITY

STATE OF _____)
)
COUNTY OF _____) ss

On this ____ day of _____, 20__, before me appeared _____ personally known to me, who being by me duly sworn, did say that he/she is the ____ (title) _____ of the City of Columbia and that the foregoing instrument was signed and sealed on behalf of the City of Columbia and that he/she acknowledged said instrument to be the free act and deed of the City of Columbia and that it was executed for the consideration stated therein and no other.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal in the county and state aforesaid the day and year written above.

Notary Public

My Commission Expires: _____

ACKNOWLEDGMENT BY COMMISSION

STATE OF MISSOURI _____)
)
COUNTY OF _____) ss

On this _____ day of _____, 20__, before me appeared _____ personally known to me, who being by me duly sworn, did say that he/she is the _____ of the Missouri Highways and Transportation Commission and the seal affixed to the foregoing instrument is the official seal of said Commission and that said instrument was signed in behalf of said Commission by authority of the Missouri Highways and Transportation Commission and said _____ acknowledged said instrument to be the free act and deed of said Commission.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal in the county and state aforesaid the day and year written above.

Notary Public

My Commission Expires: _____

BENCH MARK

BM-E FIRE HYDRANT ON NORTH WEST QUAD IF ROUND-ABOUT AT BUSINESS LOOP 70, CREASY SPRINGS RD. AND I-70 W.B. OFFRAMP.

NORTHING = 1410750.526
EASTING = 1683185.788
ELEVATION = 765.235

BM-F FIRE HYDRANT 75± NORTH OF MAIN ENTRANCE TO ECO-LODGE HOTEL, SOUTH OF I-70 AND WEST OF BUSINESS LOOP 70.

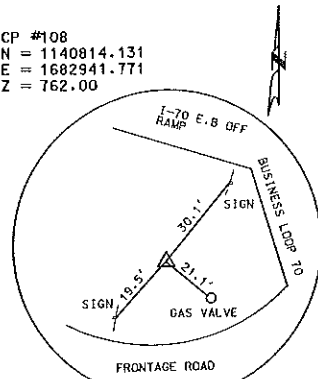
NORTHING = 1140985.054
EASTING = 1682464.126
ELEVATION = 772.33

CONTROL POINTS

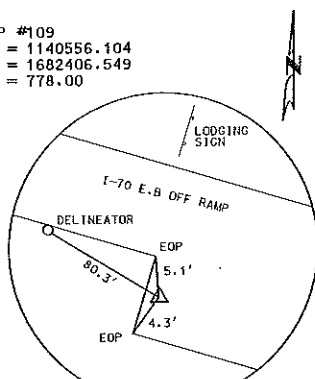
CP #108
N = 1140814.131
E = 1682941.771
Z = 762.00

CP #109
N = 1140556.104
E = 1682406.549
Z = 778.00

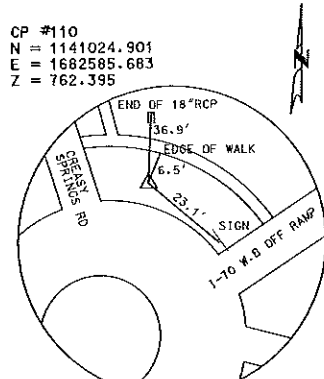
CP #110
N = 1141024.901
E = 1682585.683
Z = 762.395



SET IRON ROD W/CAP



SET MAG NAIL



SET IRON ROD W/CAP

UTILITY CONTACTS

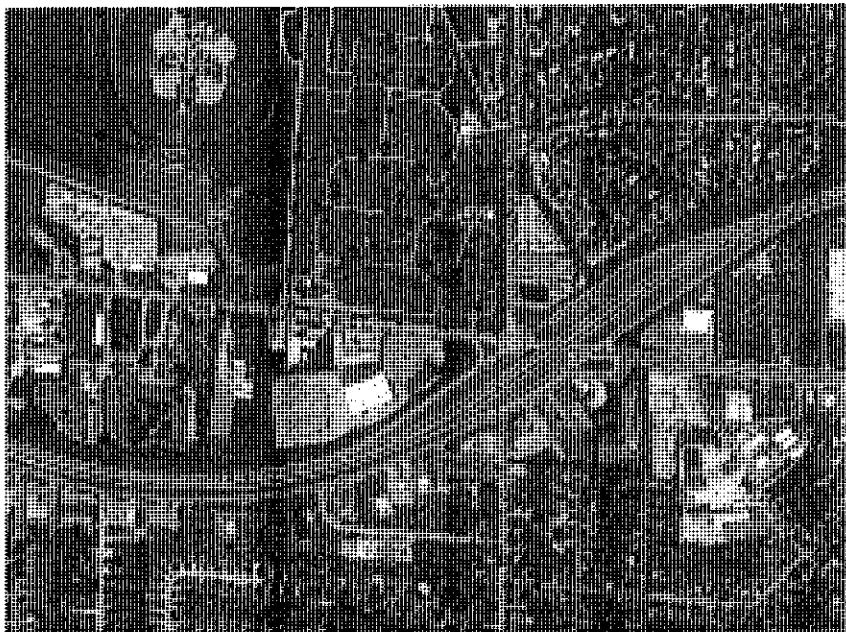
UTILITY	OWNER	SIZE	MATERIAL	DESCRIPTION	ADDRESS	NAME	PHONE
WATER	CITY OF COLUMBIA - WATER	8 INCHES	DUCTILE IRON (DI)	ALONG THE WEST SIDE OF CREASY SPRINGS ROAD	701 E. BROADWAY, P.O. BOX 6015, COLUMBIA, MISSOURI 65201	JOE STRODTMAN	573-874-6308
		24 INCHES	STEEL CASING	ALONG NORTH SIDE OF BUSINESS LOOP 70, EAST OF PROPOSED ROUNDABOUT			
		6 INCHES	CAST IRON (CI)	CROSSING BUSINESS LOOP 70, EAST OF PROPOSED ROUNDABOUT			
		12 INCHES	POLYVINYL CHLORIDE (PVC)	ALONG THE SOUTH SIDE OF EXISTING/OLD BUSINESS LOOP 70			
		8 INCHES	DUCTILE IRON (DI)	ALONG THE SOUTH SIDE OF EXISTING/OLD BUSINESS LOOP 70			
ELECTRIC	CITY OF COLUMBIA - ELECTRIC			WEST OF CREASY SPRINGS ROAD	701 E. BROADWAY, P.O. BOX 6015, COLUMBIA, MISSOURI 65201	DAN CLARK	PHONE: 573-874-7738 CELL: 573-808-0346
				OVERHEAD LINE ALONG THE EAST SIDE OF CREASY SPRINGS ROAD AND ALONG NORTH SIDE OF I-70 WB RAMP			
GAS	AMEREN GAS	8 INCHES	POLYETHYLENE (PE)	UNDERGROUND POWER EAST OF N CREASY SPRINGS RD BETWEEN TWO (2) SPICE BOXES (P RISER AS NOTED ON PLANS) NORTH OF BUSINESS LOOP 70	2001 MAGUIRE BLVD, COLUMBIA MO 65201	BRUCE DARR	573-876-3030
		4 INCHES		CROSSING PROPOSED WATER MAIN SOUTH OF 1306 N CREASY SPRINGS RD AT APPROXIMATELY STATION 2+69 (POT HOLE LOCATION)			
TELEPHONE	CENTURY LINK			ALONG THE WEST & EAST SIDE OF CREASY SPRINGS	625 CHERRY ST, COLUMBIA, MO 65201	TIM DISHMAN	573-886-3505
				ALONG NORTH SIDE OF I-70 AND CROSSING EXISTING AND PROPOSED BUSINESS LOOP 70			
CATV	CHARTER COMMUNICATION			TELEPHONE MANHOLE/STRUCTURE NORTH OF BUSINESS LOOP 70, EAST OF THE PROPOSED ROUNDABOUT INTERSECTION WITH I-70 RAMP (NEAR ALDI- 807 BUSINESS LOOP 70)	428 N. KENTUCKY ST., MEXICO, MO 65205	TED SPRADLIN	573-219-0662
				NORTH OF BUSINESS LOOP 70, EAST OF THE PROPOSED ROUNDABOUT INTERSECTION WITH I-70 RAMP (NEAR ALDI- 807 BUSINESS LOOP 70)			
LIGHTCORE				ALONG NORTHWEST SIDE OF I-70 CROSSING BUSINESS LOOP 70, AT THE INTERSECTION WITH WB I-70 RAMP.	11111 DORSET RD, MARYLAND HEIGHTS, MO 63043	JASON JOHNS	916-296-8520
SANITARY SEWER	CITY OF COLUMBIA - SEWER			ALONG NORTH SIDE OF EXISTING/OLD BUSINESS LOOP 70.	701 E. BROADWAY, P.O. BOX 6015, COLUMBIA, MO 65201	LINDSEY SCHAEFER	573-441-5481
STORM SEWER	CITY OF COLUMBIA - SEWER	AS SHOWN	AS SHOWN		701 E. BROADWAY, P.O. BOX 6015, COLUMBIA, MISSOURI 65201	*LINDSEY SCHAEFER	*573-441-5481

*Assumption made from available information.

Note: This drawing is not to scale. Follow dimensions.

12 INCH WATER MAIN RELOCATION AT BUSINESS LOOP 70

N. CREASY SPRINGS ROAD THROUGH I-70
COLUMBIA, MISSOURI
11/04/2015



SITE LOCATION MAP
NOT TO SCALE

EXHIBIT A

Part of contract dated _____
Between Missouri Highways and
Transportation Commission and
City of Columbia

Route I-70 County BOONE

Job No. J512172

Sheet 1 of 4

ALL WORK SHALL MEET APPLICABLE CONSTRUCTION, STATE, MODOT, AND CITY OF COLUMBIA REGULATIONS AND SPECIFICATIONS.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE LOCATION OF EXISTING UTILITIES, AND FIELD VERIFY EXISTING FACILITY ALIGNMENTS, DEPTHS, AND ANGLES BEFORE BEGINNING WORK.
3. ALL OPENINGS SHALL BE CLOSED WITH WATERTIGHT PLUGS WHEN PIPE LAYING IS STOPPED, INCLUDING REST BREAKS, MEALS AND THE END OF THE DAY.
4. ALL VALVES SHALL BE FULLY CLOSED DURING INSTALLATION AND CONSTRUCTION OF THE MAIN. VALVES TO BE OPERATED BY COLUMBIA WATER & LIGHT EMPLOYEES ONLY.
5. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TRAFFIC CONTROL IN ACCORDANCE WITH APPLICABLE STANDARDS. SEE SPECIFICATIONS SECTION C.
6. THE CONTRACTOR IS RESPONSIBLE FOR EROSION CONTROL, THE STORM WATER POLLUTION PREVENTION PLAN AND OBTAINING ALL REQUIRED LAND DISTURBANCE PERMITS.
7. THE CONTRACTOR SHALL PROVIDE AND INSTALL VALVE OPERATING NUT EXTENSIONS FOR ALL OPERATING NUTS 6 FEET OR DEEPER BELOW FINISH GRADE IN ORDER TO EXTEND THE OPERATING NUT TO WITHIN 30 INCHES OF THE FINISH SURFACE.
8. PROVIDE 18 INCH MINIMUM VERTICAL AND 10 FEET HORIZONTAL SEPARATION BETWEEN WATER MAIN AND ANY SEWER CROSSINGS. SEE SPECIFICATIONS SECTION G FOR MORE DETAILS.
9. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING PERMITS FOR EXCAVATION WITHIN THE CITY RIGHT-OF-WAY. ALL WORK IN MODOT RIGHT-OF-WAY SHALL BE PER APPLICABLE MODOT STANDARDS.
10. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING TEMPORARY SAMPLE POINTS AT ALL AIR RELEASE MANHOLES, FLUSH ASSEMBLIES, AND OTHER AREAS INDICATED ON THE PLANS. THIS WORK SHALL BE INCLUDED IN THE CLEANING, DISINFECTION, PRESSURE AND LEAK TESTING BID ITEM.
11. 12 INCH WATER LINE DESIGN IS BASED ON 20 FOOT PIPE LENGTHS, 5 DEGREE MAXIMUM JOINT DEFLECTION, (MINIMUM PIPE RADIUS 15 275 FEET FOR PVC AND 363 FEET FOR FPVC) MINIMUM 42 INCHES OF COVER OVER PIPE OR 60 INCHES BELOW STREET PAVEMENT ELEVATION, WHICHEVER IS GREATER, UNLESS SHOWN OTHERWISE.
12. TRENCH BACKFILL SHALL BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR DENSITY PER ASTM D 698 FOR COHESIVE SOILS AND GRANULAR MATERIAL WITH A MOISTURE DENSITY RELATIONSHIP. CLEAN ROCK BACKFILL SHALL BE COMPACTED TO 70% RELATIVE DENSITY PER ASTM D 4253 AND 4254 IN 4" THICK LIFTS. ALL COMPACTION SHALL BE OBSERVED BY THE ENGINEER OR ASSIGNED REPRESENTATIVE.
13. CONTRACTOR SHALL COORDINATE THE PHASING OF ALL WATER LINE CONSTRUCTION WITH COLUMBIA WATER & LIGHT.
14. CONTRACTOR SHALL SUBMIT MATERIAL CERTIFICATIONS AND SHOP DRAWINGS FOR ALL MATERIALS TO COLUMBIA WATER AND LIGHT.
15. THE CONTRACTOR SHALL FURNISH ANY BENDS OR FITTINGS NECESSARY TO ASSURE PROPER HORIZONTAL AND VERTICAL ALIGNMENT AT CONNECTIONS TO EXISTING MAINS. ALL WATER PIPE JOINTS IN CASINGS SHALL HAVE RESTRAINED JOINTS.
16. EXCAVATIONS AND PREPARATION OF THE TRENCH SHALL BE IN ACCORDANCE TO SECTION H OF THE SPECIFICATIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL WORK IN COMPLIANCE WITH CURRENT OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA).

NOTES

1. THE UNDERGROUND STRUCTURES, UTILITIES AND EASEMENTS HAVE BEEN PLOTTED FROM READILY AVAILABLE RECORDS AND AVAILABLE MAPS AS WELL AS FIELD OBSERVED MARKINGS AT THE TIME OF THE FIELD VISIT. LOCATIONS ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY CONSTRUCTION.
2. THE CLIENT IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. LOCATION, RELOCATION AND CONNECTION OF THE UTILITIES SHALL BE COORDINATED WITH THE UTILITY COMPANIES.
3. ALL WATERLINES ARE CITY OF COLUMBIA EXCEPT AS NOTED.
4. UNDERGROUND UTILITY SERVICES TO BUILDINGS WERE NOT LOCATED

SHEET INDEX

- 1 COVER SHEET
- 2 SUMMARY OF QUANTITIES AND NOTES
- 3 PLAN AND PROFILE
- 4 PLAN AND PROFILE

NOT
FOR
CONSTRUCTION

DATE
12/01/2015

DATE PREPARED
12/1/2015

ROUTE DISTRICT STATE
I-70 CD MO

COUNTY
BOONE

JOB NO.
J512172

BRIDGE NO.

SHEET NO.
WTO01

DESIGNED BY	DATE	DESCRIPTION
ALL		
CHECKED BY		
LWR		
DRAFTED BY		
ATS		

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6836)

MODOT

COVER SHEET
WATER MAIN RELOCATION
SHEET 1 OF 4

COLUMBIA I-70 BRIDGES D-B PROJECT

CDI

CIVIL DESIGN, INC.
W & S

MISSOURI STATE CERTIFICATE OF AUTHORITY #2002006804 ENGINEERING

SUMMARY OF QUANTITIES AS INSTALLED						
12" C900-07 DR 18 PVC PIPE						
				FOR FIELD USE ONLY		
STATION	TO STATION	LOCATION	(L.F.)	REMARKS	DATE	MEAS. QUANT.
0+00	4+29	N CREASY SPRING RD TO ENTRY BORE PIT	429			
4+29	9+29	I-70 CROSSING	500			
9+29	11+17.49	EXIT HDD TO END OF WATERMAIN ALIGNMENT	188.49			

12" GATE VALVES				
		FOR FIELD USE ONLY		
STATION	LOCATION	REMARKS	DATE	MEAS. QUANT.
4+00	EAST OF EB I-70			
9+61	SOUTHEAST OF HDD EXIT LOCATION			
11+17.49	EXISTING DEAD END VALVE			

12" FITTINGS WITH CONCRETE THRUST BLOCKS AS SHOWN				
		FOR FIELD USE ONLY		
STATION	DESCRIPTION	REMARKS	DATE	MEAS. QUANT.
0+62.17	VERTICAL 45 DEGREE BEND			
0+66.06	VERTICAL 45 DEGREE BEND			
0+97	CONC. THRUST COLLAR			
2+53.86	HORIZONTAL 45 DEGREE BEND			
3+06.34	HORIZONTAL 22.5 DEGREE BEND			
4+14.47	HORIZONTAL 22.5 DEGREE BEND			
4+22.47	HORIZONTAL 45 DEGREE BEND			
9+69	CONC. THRUST COLLAR			

8" FITTINGS				
		FOR FIELD USE ONLY		
STATION	DESCRIPTION	REMARKS	DATE	MEAS. QUANT.
0+00	8" X 8" X 8" TAPPING SLEEVE 8" TAPPING VALVE 8" X 12" REDUCER			

16" FUSED POLYVINYL CHLORIDE (FPVC) HORIZONTAL DIRECTIONAL DRILLING (HDD)						
FOR FIELD USE ONLY						
STATION	TO STATION	LOCATION	(L.F.)	REMARKS	DATE	MEAS. QUANT.
4+41	9+25	WB I70 West - I70	484			

APPLICABILITY				
AWWA C900/ C905 PVC WATER PIPES				
DR 18				
SOIL CLASS	COMPACTION (% PROCTOR)	E' VALUE (PSI)	MAXIMUM BURIAL (FT)	MINIMUM BURIAL (FT)
I	> 95%	3000	50 +	1
II	> 95%	3000	50 +	1
III	> 95%	2000	50 +	1
IV	> 95%	1000	50 +	1
V	NOT RECOMMENDED			

NOTE: THE TYPE AND QUALITY OF ALL WATER MAIN MATERIALS, THE METHOD AND PROCEDURE OF CONSTRUCTION, THE INSPECTIONS AND TESTING METHODS, AND THE TERMS OF ACCEPTANCE BY THE CITY OF COLUMBIA OF ANY WATER MAIN WORK OR EXTENSION ON ANY MAIN OR MAINS, THAT ARE OR WILL BE AN ACTIVE PART OF THE WATER SYSTEM OF THE CITY OF COLUMBIA, MISSOURI SHALL CONFORM TO SPECIFICATIONS FOR WATER MAIN CONSTRUCTION CITY OF COLUMBIA WATER & LIGHT DEPARTMENT, REVISED OCTOBER 1, 2015.

Note: This drawing is not to scale. Follow dimensions.

BASE BID QUANTITIES			
ITEM NO	ITEM DESCRIPTION	UNITS	QUANTITY
1	MOBILIZATION, BONDS, INSURANCE	L.S.	1
2	CONNECITON TO EXISTING MAIN	L.S.	1
3	CONNECTION TO EXISTING VALVE	L.S.	1
4	12" C900-07 FPVC CARRIER PIPE	L.F.	1117
5	12" GATE VALVES	EACH	2
6	12" FITTINGS (RESTRAINED JOINTS, CONCRETE THRUST BLOCKS, AND CONCRETE THRUST COLLARS AS SHOWN)	EACH	8
7	16" FPVC CASING - HDD (OR MODOT APPROVED TRENCHLESS METHOD)	L.F.	484
8	AIR RELEASE VALVES AND MANHOLES	EACH	2
9	TRACER WIRE ACCESS	EACH	4
10	12" FLUSHOUT ASSEMBLY	EACH	3
11	CLEANING, PRESSURE AND LEAK TESTING	EACH	1
12	DISINFECTION	EACH	1
13	ASPHALT REMOVAL AND REPLACE	S.Y.	210
14	CONCRETE REMOVAL AND REPLACE	S.Y.	50
15	SITE RESTORATION AND SEEDING	L.S.	1

PIPE DESIGN CRITERIA (HDD - Horizontal directional Bore Under I-70)	
DESIGN PARAMETERS	FUSIBLE POLYVINYLE CHLORIDE C900 (FPVC)
MAXIMUM OPERATING PRESSURE (PSI)	300
SURGE ALLOWANCE (PSI)	17.4 (DR 18)
TEST PRESSURE (PSI)	200
HEIGHT OF FILL ABOVE TOP OF PIPE (FEET)	5-27
MAXIMUM DEPTH OF COVER PER AWWA (FEET)	(50)
MAXIMUM TRENCH WIDTH (FEET)	3
SECTION LENGTHS (FEET)	MAX PER MANUFACTURER'S RECOMMENDATION
WALL THICKNESS (FEET)	DR 18
BELL DEPTH (INCHES)	DR 18, NA FOR FUSIBLE PIPE
CARRIER PIPE	12-INCH FUSIBLE POLYVINYLE CHLORIDE C900 (FPVC)
CASING	16-INCH DR 25 FUSIBLE C-905

DISTANCE OF RESTRAINED JOINTS REQUIRED EITHER SIDE OF BENDS			
PIPE SIZE 12"			
BEND ANGLE	Horizontal Bend		Vertical Bend
	LENGTH (FEET)	UPPER LENGTH (FEET)	LOWER LENGTH (FEET)
11.25°	3	10	3
22.5°	6	19	6
45°	11	39	11
90°	26	-	-

SPECIAL CONDITIONS FPVC WATERMAIN

STORAGE, HANDLING, INSTALLATION, PRESSURE TESTING, AND TAPPING PROCEDURES APPLICABLE TO FUSIBLE PVC PIPE.

THE PROCEDURES FOR STORING, HANDLING, INSTALLING, TESTING, AND TAPPING FUSIBLE PVC PIPE ARE SIMILAR TO THOSE USED WHEN WORKING WITH BELL AND SPIGOT PVC PRODUCTS. BECAUSE OF THE DIFFERENT STRESSES TO WHICH FUSIBLE PVC PIPE IS OFTEN SUBJECTED, THE LONGER PIPE LENGTHS SUPPLIED, THE MONOLITHIC NATURE OF THE INSTALLED PRODUCT, AND THE DIFFERENT INSTALLATION METHODS EMPLOYED WHEN USING FUSIBLE PVC PIPE, THERE ARE SOME ADDITIONAL HANDLING REQUIREMENTS ASSOCIATED WITH FUSIBLE PVC PIPE PRODUCTS.

THE CONTRACTOR OR MANUFACTURER SHALL PROVIDE AN OPERATIONS PROCEDURAL DOCUMENTS HANDBOOK TO PROVIDE GUIDANCE COVERING THE FOLLOWING TOPICS:

1. PIPE HANDLING AND STORAGE
2. INSTALLATION
3. PRESSURE TESTING
4. TAPPING

NOTES

1. MINIMUM LENGTHS OF PIPE REQUIRED TO RESTRAIN FITTINGS SHOWN.
2. LENGTHS BASED ON PIPE MATERIAL AS SHOWN, 1.5 TO 1 SAFETY FACTOR, TYPE 4 TRENCH AND 150 PSI TEST PRESSURE
3. IF DISTANCE BETWEEN FITTINGS IS LESS THAN OR EQUAL TO THE RESTRAINT LENGTH, RESTRAIN ALL JOINTS BETWEEN FITTINGS.
4. ALL PIPES UNDER ROADWAY SHALL HAVE MECHANICALLY RESTRAINED JOINTS.
5. INSPECTION

IT SHALL BE AGREED TO BY ALL PARTIES THAT THE WATER AND LIGHT DEPARTMENT OF THE CITY OF COLUMBIA, MISSOURI SHALL HAVE FULL AUTHORITY OF INSPECTION AT ALL TIMES DURING THE PROGRESS OF ANY WATER MAIN WORK. THE INSPECTOR SHALL HAVE FULL AUTHORITY TO INSPECT THE MATERIALS AND THE WORK PERFORMED.

EXHIBIT A
Part of contract dated _____
Between Missouri Highways and
Transportation Commission and
City of Columbia
Route I-70 County BOONE
Job No. J512172
Sheet 1 of 4

NOT
FOR
CONSTRUCTION

DATE
12/01/2015
DATE PREPARED
12/1/2015
ROUTE DISTRICT STATE
I-70 CD MO
COUNTY
BOONE
JOB NO.
J512172
BRIDGE NO.
SHEET NO.
WTO02

DESCRIPTION	DATE	DESIGNED BY	REV	CHECKED BY	DATE	DRAFTED BY	DATE
		ALL		LMR		ATS	

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
COLUMBIA I-70 BRIDGES D-B PROJECT
SUMMARY OF QUANTITIES AND NOTES
WATER MAIN RELOCATION
SHEET 2 OF 4
CDI CIVIL DESIGN, INC.
WBE / DBE
EMERY SAPP & SONS, INC.
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6361)

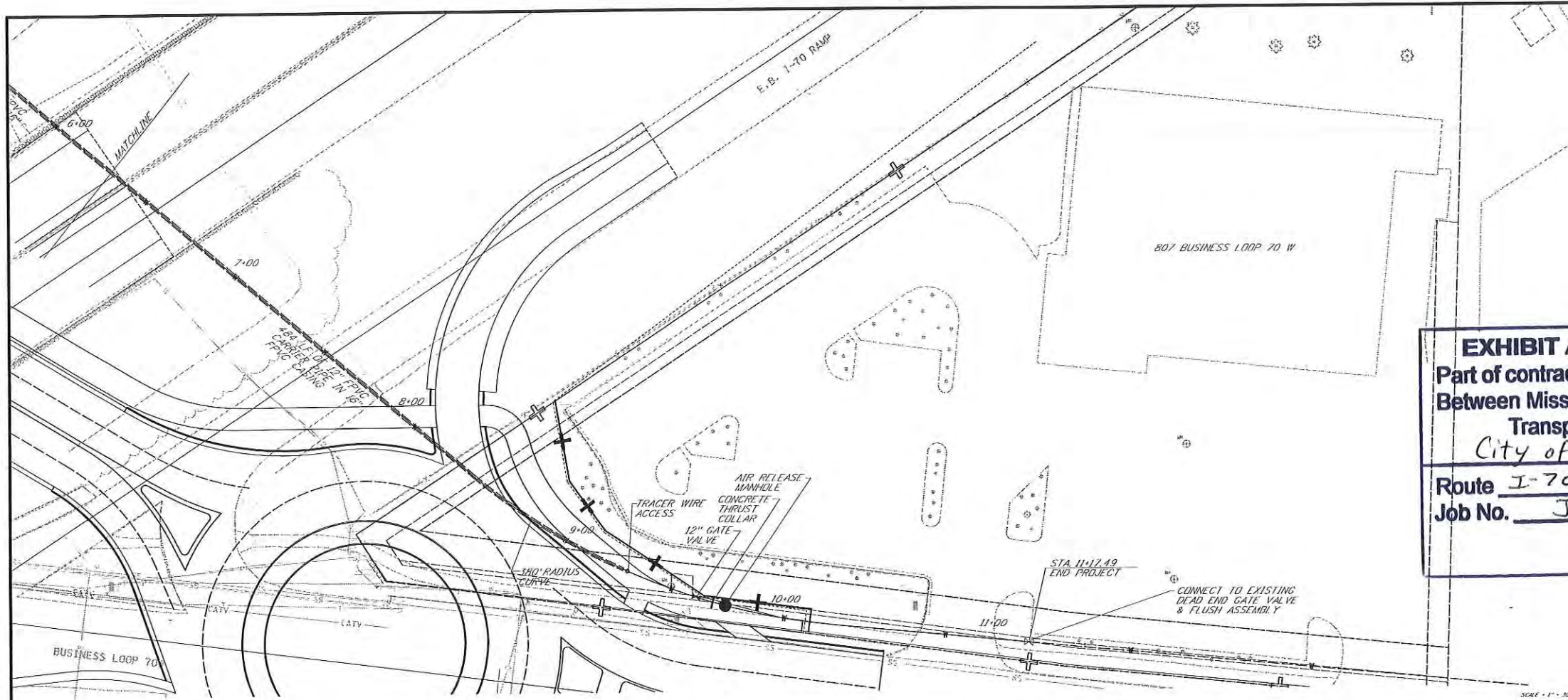
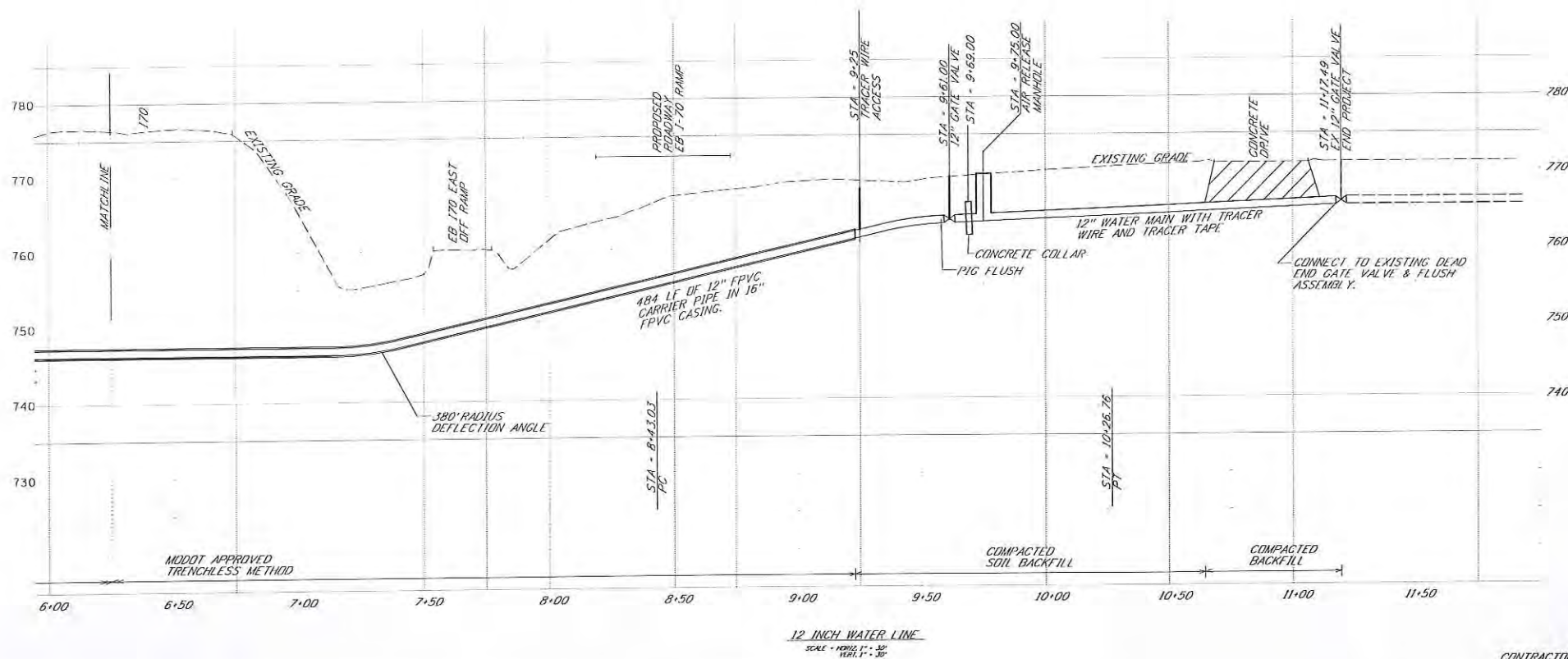


EXHIBIT A
 Part of contract dated _____
 Between Missouri Highways and
 Transportation Commission and
 City of Columbia

Route I-70 County BOONE
 Job No. J512172
 Sheet 3 of 4



Note: This drawing is not to scale. Follow dimensions.

CONTRACTOR SHALL VERIFY
 DEPTHS AT ALL UTILITY LOCATIONS.

NOT FOR CONSTRUCTION	
DATE 12/01/2015	
DATE PREPARED 12/1/2015	
ROUTE I-70	DISTRICT CD
STATE MO	
COUNTY BOONE	
JOB NO. J512172	
BRIDGE NO.	
SHEET NO. WT004	
DESIGNED BY	DATE
CHECKED BY	DATE
DRAWN BY	DATE
APPROVED BY	DATE
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
PLAN AND PROFILE WATER MAIN RELOCATION SHEET 4 OF 4 COLUMBIA I-70 BRIDGES D-B PROJECT	
 CIVIL DESIGN, INC. WBE / DBE MO STATE CERTIFICATE OF AUTHORITY #200206804 ENGINEERING	

Columbia I-70 Bridges DB - STRUCTURES

Printed:

Engineering Estimate Summary Form

Company	Estimated By	Date	Rev	Sht	of
Parsons	Thad Kosmicki	3/27/2015	0	1	4

Task Description	Discipline
Final Design Structures (EDSC not included)	Structures

Hours and Labor Charges


Item	Code	Personnel Category	Rate	Hours	Salary Labor
1	PS	Project Sponsor	\$78.00	0	\$0
2	PM	Project Manager	\$55.00	40	\$2,200
3	TD	Technical Director	\$64.00	0	\$0
4	LD	Lead Designer	\$64.00	0	\$0
5	SEN	Senior Engineer	\$52.00	0	\$0
6	ENG	Engineer	\$42.00	0	\$0
7	JE	Junior Engineer	\$35.00	0	\$0
8	ST	Senior Technician	\$42.00	0	\$0
9	DRA	Draftsperson	\$32.00	0	\$0
10	ADM	Administrative	\$20.00	0	\$0
11				0	\$0
12				0	\$0
13				0	\$0
14				0	\$0
15				0	\$0

Subtotals	40	\$2,200
Labor Overhead Multiplier		2.750
Fee		0.000
subtotal (Labor Cost)		\$6,050

Other Direct Cost (ODC)

	Travel and Living	\$0
Errata	Communications and Shipping	\$0
Composite Rate	Project Office / Supplies	\$0
\$55.00	CAD Equipment/Computers/Software	\$0
ODC Rate	Reproduction	\$0
\$0.00	Other (see Form C)	\$0
Doc Count	subtotal (ODC Cost)	\$0
0	subtotal (Vendor Cost)	\$24,051
Hours / Document		
n/a	TOTAL COST	\$30,101

Comments

<div>  <div> 170 Columbia Bridges 12 Inch Waterline Relocation Business Loop 70 West </div> </div>							
Task Description	Hours					Total Hours	Fee
	President	Proj Mgr II	Proj Eng III	Proj Eng I	Designer I		
1. Project Kickoff Meeting							
Project Kickoff Meeting		2	2			4	\$ 544.66
Subtotal Project Kickoff Meeting	0	2	2	0	0	4	\$ 544.66
2. Conceptual Design (30%):							
Develop Relocation Alignment Plan	To be completed by the City of Columbia						
Identify Major Conflicts - Design Build Coordination		2	4			6	\$ 784.54
Develop Design Profile			4	8		12	\$ 1,085.76
Special Conditions, Specifications and Notes			2	4		6	\$ 542.88
QA/QC		1	2			3	\$ 392.27
Conceptual Design Submittal Meeting - Design Build Coordination		1	1			2	\$ 272.33
Subtotal Conceptual Design	0	4	13	12	0	29	\$ 3,077.78
3. Preliminary Plans (60%):							
Preliminary Design Alignment			2	8		10	\$ 845.88
Geotechnical Assessment	By Others						
Preliminary Design Profile			2	4		6	\$ 542.88
Preliminary Plans 60%				2		2	\$ 151.50
Cover				16		18	\$ 1,451.88
Plan and Profile			2	4		6	\$ 542.88
Details			2	4		6	\$ 542.88
Special Conditions, Specifications and Notes			2	4		6	\$ 542.88
Utility Coordination	1	1				2	\$ 272.33
Proposed Easements, Construction Access and Working Room	1	2				3	\$ 392.27
Preliminary Opinion of Construction Costs / Quantities		4				4	\$ 479.76
QA/QC	1	2				3	\$ 392.27
Preliminary Plan Submittal Meeting - Design Build Coordination	1	1				2	\$ 272.33
Subtotal Preliminary Plans Phase	0	4	20	38	0	62	\$ 5,886.86
4. Final Plans and Specs (90%)							
Revise Alignment and Profile per City/ Design Build Team Review Comments			1	4		5	\$ 422.94
Prepare 90% Final Plans						0	\$ -
Cover						0	\$ -
Plan & Profile Sheet(s)			2	8		10	\$ 845.88
Details			1	2		3	\$ 271.44
Special Conditions, Specifications and Notes			1	4		5	\$ 422.94
Final Opinion of Construction Costs/ Quantities			1	2		3	\$ 271.44
QA/QC	1	1				2	\$ 272.33
Final Plan Submittal Meeting	1	1				2	\$ 272.33
Subtotal Final Plans and Specs	0	2	8	20	0	30	\$ 2,779.30
5. Final Deliverables (100%):							
Revise Alignment and Profile per City/ Design Build Team Review Comments			2	4		6	\$ 542.88
Prepare Final Plans	1	2		8		11	\$ 998.27
QA/QC	1	2				3	\$ 392.27
Final Deliverables Meeting	1	1				2	\$ 272.33
Subtotal Deliverables	0	3	7	12	0	22	\$ 2,205.75
Total Project Labor	0	15	50	82	0	147	\$ 14,494.35
Direct Costs	Quantity		Units		Unit Cost		
Mileage - Field Visit	250		miles		0.575		\$ 143.75
Mileage - Project Meetings (6)	500		miles		0.575		\$ 287.50
Prints	50		ea		2.50		\$ 125.00
Direct Cost Total							\$ 556.25
170 Columbia Bridges							\$ 15,050.60
Notes:							
CDI Billing Rates - 2015							
President						\$	162.31
Project Manager II						\$	152.39
Project Engineer III						\$	119.94
Project Engineer I						\$	75.75
Designer I						\$	69.31
Professional Land Surveyor II						\$	105.52
Professional Land Surveyor I						\$	88.93
Survey Technician						\$	56.93

Columbia I-70 Bridges DB - STRUCTURES

Printed: 8/18/2015 5:55

Estimate ODC/Vendor Detail Sheet

Company Parsons	Estimated By Thad Kosmicki	Date 3/27/2015	Rev 0	Sht 3	of 4
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Task Description
Final Design Structures (EDSC not included)

Discipline
Structures

Other Direct Expenses

Description	Unit cost	Quantity	Additional Lump Sum Cost	Subtotals
Mileage @	\$0.56 per mile	0 miles		0
Plane tickets @	\$500.00 per trip	0 trips		0
Hotel @	\$150.00 per night	0 nights		0
Meals	\$45.00 per day	0 days		0
Tolls and Parking	\$5.00		Lump Sum	0
Perdiem	\$100.00 Per Week	0 Weeks		0
Temp Housing	\$2,000.00 Per Month	0 Months		0
Relocation	\$5,000.00 Each			0
Rental Car	\$75.00 Per Day	0 days		0
Taxi	\$45.00 Each	0 each		0
Subtotal Travel				0
Telephone	\$100.00 Per Month	Months		0
Express mail	\$30.00 Each	each		0
Postage/Freight	\$100.00 Per Month	Months		0
Other				0
Subtotal Communications/Shipping				0
Space Rental	Per Month	Months		0
Utilities	Per Month			0
Supplies	Per MH			0
Furniture			Lump Sum	0
Equipment Rental	Per Month	Months		0
Mobilization/Demobilization			Lump Sum	0
Maintenance	Per Month	Months		0
Other				0
Subtotal Project Office				0
CADD time	Per Hour	Hours		0
Personal Computers	Each			0
CAD Software	Each			0
Other Software	Each			0
Printers	Each			0
Other	Each			0
Subtotal CAD /Computer				0
Plotting	per foot	plots	submissions	0
Reproductions, 8 1/2x11 @	\$0.10 per copy	0 copies		0
Reproductions, 11x17 @	\$0.10 per copy	0 copies		0
Reproductions, Drawings @	per copy	copies	sets	0
Other				0
Subtotal Reproduction				0
Miscellaneous Expenses	\$1.00			0
				0
				0
				0
Sub Total Other				0
Sub Total Direct Expenses				\$0
Vendors / Professional Services				
Name	Description of work	Amount		
CDI	Drainage / Civil Services	\$15,051		
Geotechnology	Geotechnical	\$9,000		
Lochmeuller	Traffic / MOT	\$0		
PTG	Core Services	\$0		
Total for Vendors				\$24,051

I-70 Waterline Relocate - Bus. Loop & Creasy Springs

Final Estimate



Watermain Relocation			Unit Price	Ext. Price
Mobilization	1	LS	\$7,500.00	\$7,500.00
12" C-900 - Open Cut	634	LF	\$66.00	\$41,844.00
12" FUSED PVC in Bored 16" FUSED PVC Casing - I 70 Bore	484	LF	\$363.00	\$175,692.00
8" x 8" Tap on Existing Main w/ 12" x 8" Reducer - West Connection	1	LS	\$5,345.00	\$5,345.00
Connect to Existing 12" Gate Valve - East Connection	1	LS	\$1,033.00	\$1,033.00
12" MJ Gate Valve	2	EA	\$3,031.00	\$6,062.00
12" Fittings (Bends & Thrust Collars)	8	EA	\$784.00	\$6,272.00
Air Release Valve & Manhole	2	EA	\$6,340.00	\$12,680.00
Tracer Wire Access Vault	4	EA	\$165.00	\$660.00
12" Flush Assembly	3	EA	\$1,242.00	\$3,726.00
Flush & Test Waterline	1	LS	\$1,628.00	\$1,628.00
Remove & Replace 7" Commercial Entrance - Aldis	75	SY	\$70.00	\$5,250.00
Remove & Replace Asphalt Parking Lot - Schaefer Autobody	300	SY	\$65.00	\$19,500.00
Remove & Replace Chain Link Fence - Schaefer Autobody	450	LF	\$25.00	\$11,250.00
Street Patch - Creasy Springs Road	36	SY	\$140.00	\$5,040.00
Remove and Replace Sidewalk - Business Loop	400	SF	\$8.35	\$3,340.00
Cleanup and Restoration	1	LS	\$5,200.00	\$5,200.00
			Total:	\$312,022.00

Add if Rock Encountered in Bore

Add - I70 Rock Bore	484	LF	\$242,000.00
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Notes:

Does not include any work with abandoning existing main.
 If rock encountered anywhere along bore the full upcharge for rock bore will be added.
 Does not include design fees.
 Does not include tapping fees.