DAVID MASON & ASSOCIATES

Engineering PM/CM
Architecture Planning
Surveying Environmental

Addendum No. 2

To: All Plan Holders

From: David Mason & Associates

Date of Issue: October 21, 2013

Project: Central Riverfront Leonor K. Sullivan Boulevard and Bikeway

Project Number: TDG-0705 (333) Project 2

This addendum forms a part of the Contract Documents for the Central Riverfront Leonor K. Sullivan Boulevard and Bikeway Project. Contractors are required to acknowledge the receipt of this addendum by listing the Addendum number and date at the Addendum Acknowledgement area in the bid form.

The following modifications shall be made in the Contract Documents. The cost thereof shall be included in the proposals submitted by bidders.

VOLUME 1 AND 2 OF THE CONTRACT DOCUMENTS CHANGES:

Section 00101 – Bidder Checklist
1. Revise paragraph number 9 to read as follows:
    a. "9. For paper bids, staple addenda **"Cover Sheets"** to the bid in the appropriate part of the bid. The letter **Cover Sheets** accompanying the addenda should be stapled to the inside of the back cover of the bid and returned. The bidder should retain a duplicate copy. (if applicable). **It is not necessary to staple the Addenda Attachments to the bid."**

Section 00400 – Bid Form (Form GRG-1) – Work Category 7 – CONCRETE
1. Quantity revision:
    a. PYLON DEEP FOUNDATION should have a quantity of 18.
    b. FLOOD CLOSURE STRUCTURE CONCRETE (CARR) should have a quantity of 182.
2. All bidders on this work category shall use the attached Addendum #2 Bid Form.

Section 00400 – Bid Form (Form GRG-1) – Work Category 11 – SEWERS/PLUMBING
1. New bid items:
    a. 600-4I2000120000SC PIPE SEWER 12 INCH (SANITARY/COMBINED),

quantity of 172 LF.

b. 600-4I2000150000SC PIPE SEWER 15 INCH (SANITARY/COMBINED), quantity of 33 LF.

2. Quantity revisions:
   a. MSD - EXCAVATION CLASS "C" should have a quantity of 1,564.
   b. MSD - ENCASEMENT - CLASS "A' CONCRETE should have a quantity of 49.
   c. MSD - PIPE SEWER 10 INCH (SANITARY/COMBINED) should have a quantity of 212.
   d. MSD - REINFORCED CONCRETE PIPE SEWER 12 INCH CLASS IV should have a quantity of 224.
   e. MSD - REINFORCED CONCRETE PIPE SEWER 12 INCH CLASS III should have a quantity of 2,423.
   f. MSD - REINFORCED CONCRETE PIPE SEWER 15 INCH CLASS IV should have a quantity of 59.
   g. MSD - REINFORCED CONCRETE PIPE SEWER 15 INCH CLASS III should have a quantity of 68.
   h. MSD - REINFORCED CONCRETE PIPE SEWER 18 INCH CLASS III should have a quantity of 212.
   i. MSD - REINFORCED CONCRETE PIPE SEWER 18 INCH CLASS IV should have a quantity of 210.
   j. TRANSFER OF SERVICES – TAP INSTALLATION should have a quantity of 5.
   k. 6” WATER MAIN should have a quantity of 485.
   l. 12” WATER MAIN should have a quantity of 3,197.

3. All bidders on this work category shall use the attached Addendum #2 Bid Form.

Section 00400 – Bid Form (Form GRG-1) – Work Category 12 – ELECTRICAL

1. Quantity revisions:
   a. ELECTRICAL PANEL should have a quantity of 3.
   b. METERING should have a quantity of 3.
   c. TRENCHING - ELECTRICAL should have a quantity of 4,500.
   d. UTILITY ELECTRIC CONDUIT should have a quantity of 3,000.
2. Bid item removed:
   a. 901-99.03 UTILITY ELECTRIC WIRE.
3. New bid items:
   a. 901-99.01 SUBSTATION 95 DEMOLITION.
   b. 901-99.02 CONTACTOR PANEL.
   c. 901-99.02 UTILITY ELECTRIC METER POLE ASSEMBLY.
   d. 901-99.03 1” PVC.
   e. 901-99.03 UTILITY ELECTRIC #2 WIRE.
   f. 901-99.03 UTILITY ELECTRIC #6 WIRE.
   g. 901-99.03 UTILITY ELECTRIC DUCTBANK.
4. All bidders on this work category shall use the attached Addendum #2 Bid Form.

Job Special Provision (JSP) Changes:

1. LL. WATER MAIN INSTALLATION
    a. Modify Section 4.0 as follows:

    4.0 Construction Requirements. All water service work shall be performed in accordance with the City of St. Louis Department of Public Utilities Water Division policies and regulations and as instructed by the Water Division. Contractor's construction will terminate 10 linear feet away from tie in to existing mains, leaving a cleared, constructible gap between with an excavation 3 feet clear around each end and either side of the connecting alignment. **The cost of the City Water Division's connection work will be paid by the Developer and is not to be included in the pay item. The work and pipe quantities to connect the new main to the existing 6" service facilities is included in this pay item.**

2. QQ. TRANSFER OF SERVICES – TAP INSTALLATION
    a. Modify Section 4.0 as follows:

    4.0 Construction Requirements. All water service work shall be performed in accordance with the City of St. Louis Department of Public Utilities Water Division policies and regulations and as instructed by the Water Division. **The 6 inch service connections will be included under the water main item and not included here. Contractor will coordinate the actual taps to be performed by the Water Division, but the cost of City work will be paid by the Developer and is not to be included in the pay item.**

3. RR. HYDRANT INSTALLATION
    a. Modify Section 2.1 as follows:

    2.1 Materials Supplied by Water Division. Hydrant assemblies will be supplied to the contractor. Hydrants are to be purchased from the City of St. Louis Water Division by the Developer and the material cost is not part of the pay item. **The Water Division has stated that the contractor will be connecting the fire hydrants to the mains on this project.**

    b. Modify Section 4.1 as follows:

    4.1 Work Performed by Water Division.

    A. Operation of all Water Division valves, hydrants and appurtenances.

    B. Making all connections to the existing water distribution system. **Except for the hydrants.**

    C. Meter installation, maintenance and removal.

4. UU. CONSTRUCTION OF SEWERS AND APPURTENANCES
    a. Modify Part 9, Section M, 8.e as follows:

    The construction of the new wet well, valve vault, **removal of existing valve vault,** removal and re-installation of all mechanical and electrical equipment, and piping to 4 feet outside of the valve vault, lining of the existing manhole, and commissioning and testing of the pumps shall not

be measured but will be considered as a lump sum.

b. Modify Part 9, Section M, 9.e as follows:
Payment for installation of the new wet well, valve vault, **removal of existing valve vault,** removal and re-installation of all mechanical and electrical equipment, and piping to 4 feet outside of the valve vault, lining of the existing manhole, and commissioning and testing of the pumps, will be paid for at the contract Lump Sum price.

5. EEE. FLOOD CLOSURE STRUCTURE MODIFICATIONS
   a. Modify Section 7.0 as follows:
   7.0 Method of Measurement.
   7.1 No direct measurement or payment will be made for the individual items of work within each Work Category, but shall be inclusive of all work complete and in place in accordance with the following:
   A. Work Category #7 – Concrete: Shall include all materials, equipment, tools, and labor for selective demolition of existing concrete; furnishing and placing reinforcing steel; ~~furnishing and~~ placing all embedded anchors, plates, and angles; and furnishing and placing all cast in place concrete.
   B. Work Category #9 - Metals / Rails: Shall include all materials, equipment, tools, and labor for furnishing and placing structural steel; modifications to existing structural steel; furnishing and installing all mechanical connections; modifications to existing closure panels; furnishing and installing rubber seals and gaskets; touchup and repair of metal finishes; test erection assembly and disassembly**; furnishing all embedded anchors, plates and angles.**
6. JJJ. SPECIALTY SOILS – See attached JSP.
7. UUU. CONDUIT, RACEWAYS, AND BOXES
   a. Add paragraph 4.8 to read as follows:
   1" PVC Conduit. Shall be measured by the number of LINEAR FEET of 1" EPC-40-PVC conduit, completed, ready for operation, and accepted as satisfactory.
   b. Add paragraph 5.8 to read as follows:
   1" PVC Conduit. Payment will be made at the contract unit price per LINEAR FOOT of 1" EPC-40-PVC conduit installed and accepted. This price shall be full compensation for furnishing all materials and for all preparation and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item, will be considered covered by the Pay Item No. 901-99.03 “1” PVC”.
8. ZZZ. PANELBOARDS – See Sections 3.3, 3.4, 5.0, 6.2, and 6.3 for additions to attached JSP.
9. CCCC. UTILITY ELECTRIC – See Sections 4.1, 4.5, 4.6, 5.6, 7.1, 7.2, 7.4, 7.5, 7.6, and 7.7 for revisions in attached JSP.

VOLUME 1 AND 2 OF THE DRAWINGS CHANGES:

Sheet C8.07:
1. Revise backfill of existing wet well 2AS from “granular fill” to “MSD CLASS A concrete”. No further documentation provided for this revision.
2. Change pipe between structures 2BS and 2AS from “Class III RCP” to “PVC”. No further documentation provided for this revision.

Sheet L4.14:
1. See attached Sketch 1. Detail 4 “Lawn Soil Profile” revised to indicate that soil fibers shall be thoroughly mixed with lawn soils prior to placement of soils instead of only mixing fibers into top layer of soil after it has been placed.

Sheet E1.00:
1. Light pole callout should read P3-2 instead of P1-2. No further documentation provided for this revision.

Sheet E1.09:
1. Revise keyed Note 1 to use (2) 2.5” PVC Conduit. No further documentation provided for this revision.

Sheet E2.20:
1. See attached Sketches 3 and 4.

Sheet E2.23:
1. See attached Sketches 2, 3 and 4.

Sheet E2.25:
1. See attached Sketch 1.

Sheet E2.27:
1. Utility Specifications for underground work have been added. See Sketches 1A and 1B.

Sheet E2.28:
1. See attached Sketches 1, 2 and 3.

ATTACHMENTS:

1. Updated Pre-Bid Meeting Sign-In Sheet
2. Section 00400 – Bid Form (Form GRG-1) – Work Category 7 – CONCRETE
3. Section 00400 – Bid Form (Form GRG-1) – Work Category 11 – SEWERS/PLUMBING
4. Section 00400 – Bid Form (Form GRG-1) – Work Category 12 – ELECTRICAL
5. JSP JJJ. SPECIALTY SOILS
6. JSP ZZZ. PANELBOARDS
7. JSP CCCC. UTILITY ELECTRIC
8. Sheet L4.14 Sketch 1.
9. Sheet E2.20 Sketch 3.
10. Sheet E2.20 Sketch 4.
11. Sheet E2.23 Sketch 2.
12. Sheet E2.23 Sketch 3.
13. Sheet E2.23 Sketch 4.
14. Sheet E2.25 Sketch 1.
15. Sheet E2.27 Sketch 1A.
16. Sheet E2.27 Sketch 1B.
17. Sheet E2.28 Sketch 1.
18. Sheet E2.28 Sketch 2.
19. Sheet E2.28 Sketch 3.
20. Bidder Questions and Responses.

End of Addendum #2

Central Riverfront Leonor K. Sullivan Boulevard and Bikeway Project
Attendees - Pre-Construction Conference & Mixer
10/7/2013

Click here for bid information.

Revised October 18, 2013 for Addendum # 2 — Revisions are in orange.

Please note that these have been transcribed to the best of our ability. Some firms may qualify as DBE/MBE, but may have not provided that information below. We recommend reaching out directly to the companies below in order to clarify their status, trade and other information.

Name	Company/Trade	Email	Phone	Are you a prime/sub?	DBE/MBE?
Keith Savage	4R Sourcing	ksavage@4RSourcing.com	314-627-0630		
Chantal Mailhot	ABNA Engineering	cmailhot@abnacorp.com	314-454-0222	Sub	
Terry Hampton	Access Engineer	Thampton@accessstl.com	314-863-8889		
Ana Hernandez	AFH Design	ana@afhdesign.com	314-963-0747	Sub	
Keith Ahal	AHAL Hardscapes	keith.ahal@ahalhardscapes.com	314-420-7665	Sub	
Bob Evans	ANOVA	bob@anovafurnishings.com	314-495-8357	Sub	
Neal Evans	Artisan Consulting Engineers, LLC.	Nlevans@artisancivil.com	618-567-5170	Sub	
Steve Lewis	Associated General Contractors of St. Louis	slewis@agcstl.org	314-480-3180	Not applicable	
Chantal Block	B.E. Scaife Plumbing	bescaife@bescaife.com	314-429-5200	Both	
Estelle Bruce	B.E. Scaife Plumbing	estelleb@bescaife.com	314-429-5200	Both	Yes
Renee Daniels	B.E. Scaife Plumbing	bescaife@bescaife.com	314-429-5200	Both	
Tony Beseda	Bates Utility Company	TonyBeseda@batesutility.net	314-574-9824 or 636-939-5628	Prime	
Gary Larumandler	Bloomsdale Excavating Company, Inc.	GPL@BLEX.com	314-808-0809	Both	
Sedrick Brandt	Brandt Contracting	Sedrick@BrandtContracting.com	636-352-4818	Sub	
Nick Rothe	Budrovich	nrothe@budrovich.com	314-892-3030	Prime	
Gary Bailey	C. Rallo Contracting Company, Inc.	Garyb@crallo.com	314-664-2900	Prime	
Marvin Sanders	Carpenters' District Council of Greater St. Louis	msanders@carpdc.org	314-644-4800 ext. 5272	Not applicable	
Nick Marler	Castle Contracting	nick@digcastle.com	314-421-0042	Prime	
Tim Conkling	Castle Contracting	tim@digcastle.com	314-421-0042	Prime	
Bernard Simington	City Design Group, Inc.	bsimington@citydesigngroupinc.com	314-241-9072	Sub	Yes
Eliza Simington	City Design Group, Inc.	esimington@citydesigngroupinc.com	314-241-9072	Sub	Yes
Vern Remiger	CityArchRiver 2015 Foundation	Vremiger@Remigersuda.com	314-241-5151	Not applicable	
Claud Brown	CKE				
Anne Milford	Datashop, Inc. (GRG)		314-436-7009	Not applicable	
Donald C. Robertson Sr.	DCR Management	robertson.donald21@yahoo.com	314-720-6424	Sub	
Robert Larkin	Demolition	rlarkin@makingamericabetter.biz	314-276-9105	Sub	Yes
~~DM Kaberts~~	~~DER Management Consultants~~			~~Sub~~	
Melvin Rush	Down to Earth Unlimited	Melrush2@outlook.com	314-308-3501		
Melvin Rush	Down to Earth Unlimited	Melrush2@outlook.com	314-308-3501		
Carl Baysinger	Eastern Missouri Laborers' District Council	Ebaysinger@EMLDC.org	573-864-6797	Not applicable	

Name	Company/Trade	Email	Phone	Are you a prime/sub?	DBE/MBE?
Darrell Eiler	EFK Moden	DLEilers@EFKMOEN.com	314-920-7988	Prime	
Charles Hayes	Fred Weber, Inc.	CEHayes@FredWeberInc.com	314-344-0070	Prime	Yes
Chuck Risley	Gershenson Construction Company	Crisley@gershenson.com	636-549-0202	Prime	
Scott Harriss	Gershenson Construction Company	sharriss@gershenson.com	636-549-0210	Prime	
Brian Schanuel	Gerstener Electric, Inc.	Bschanuel@gerstenerelectric.com	314-575-4797	Prime	
James Clark	GLC Construction Co		314-241-0014	Sub	
Kelly Hyde	GLS Land Services	kelly@glsstl.com	314-603-4508	Sub	
Leo Tevlin	Go Green Solar Lighting	LeoTevlin@gogreensolarlighting.com	314-922-2150	Prime	
Joe Yager	Goodwin Brothers Construction Company	Jyager@goodwinbros.com	636-498-5105	Prime	
Danni Eickenhorst	Great Rivers Greenway	deickenhorst@grgstl.org	314-436-7009	Not applicable	
Janet Wilding	Great Rivers Greenway	jwildling@grgstl.org	314-436-7009	Not applicable	
Sheryll Williams	Great Rivers Greenway	swilliams@grgstl.org	314-436-7009	Not applicable	
Joe Christante	Guarantee Electrical Company	Joe.christante@geco.com	314-678-8062		
Jesse Noel	Hansen's Tree	jesse@hansenstree.com	636-379-1830	Sub	
Dennis Reller	Hawkins Construction and Flatwork	dennis@hawkinsconstruction.net	636-379-5296	Prime	
Joe Vazquez	Home Turf LLC.	Vazquez.htcs@yahoo.com	314-910-3053		
Nick Lee	Nick Lee Maintenance and Cleaning, Inc.	Nick66hi@att.net	314-412-3705	Sub	Yes
Dave Buckel	Ideal Landscape Group	buckel.dave@idealandscape.com	314-892-9500	Prime	
Carl Turek	Interface Construction Corporation	CarlT@interfaceconstruction.com	314-521-1011	Prime	Yes
Joe Cavato	JAC Consulting				
Jarod Norton	JL Brown Contracting Services	jarod@jlbrowncontracting.com	314-770-9066		
Kent Rollins	Unnerstall Contracting & Equipment Company	UCC2803@hotmail.com	636-257-3003	Prime	
Kurt Unnerstall	K. J. Unnerstall Construction Company	kjuinc@Kjunnerstall.com	636-239-2028	Prime	
John P. Smith	KCI Construction Company, Inc.	jsmith@kciconstruction.com	314-894-8888		
Tom C. Huster	KCI Construction Company, Inc.	thuster@kciconstruction.com	314-220-3569	Prime	
Brian Lurk	Keeley and Sons	Brian.Lurk@KeeleyandSons.com	618-271-7470	Prime	
Matt Gardner	Kozeny-Wagner, Inc.	Mgardner@kozenywagner.com	636-296-2012	Prime	
Mark Nelson	Krupp Construction	Mnelson@KruppInc.com	314-581-2083	Prime	No
Gayle S. Lackey	Lackey Sheet Metal, LLC	glackey@lackeysheetmetal.com	314-241-7316 x 123	Sub	
Steven Kelly	Lawn Service & Landscaping	DMKelly97@aol.com	314-895-8860	Sub	
Lindsay Revelle	LC Service and Supply Company	LCSupply@live.com	314-565-7025	Prime	
Sandra Morris	L'Equipe Construction Services	lequipeconstructionservices@gmail.com	314-803-6057	Sub	Yes
Michael Jones	M. Jones Enterprises	mjones5818@sbcglobal.net	314-389-1578	Sub	
Marlene Maag	Maag Geotechnical Services	marlene@maag-geo.com	636-843-0865	Sub	Yes
Tate Brown	MAB, Inc.	tbrown@makingamericabetter.biz	314-479-0129	Sub	Yes
Cindy Thorne	Midwest Construction Services and Products, LLC	mwconstruction1923@sbcglobal.net	636-337-7290		
Charles Kirkwood	Midwestern Construction & Development Company	MidwesternCDC@sbcglobal.net	314-621-2622	Both	Yes
Woodrow Williams	Midwestern Construction & Development Company	MidwesternCDC@sbcglobal.net	314-621-2622	Both	Yes

Name	Company/Trade	Email	Phone	Are you a prime/sub?	DBE/MBE?
Bob Stubbs	Millstone Bangert, Inc.	Bob@MBKE.com	636-949-0038 x 118	Prime	
Charles Henson	Minority Business Development Agency (U.S. Department of Commerce)	chenson@chicagombdacenter.com	314-241-1143	Not applicable	
Kem Mosely	Minority Contractor Initiative	minoritycontractorinitiative@gmail.com	314-371-1548	Not applicable	Yes
Georgetta Vann	Minority Supplier Development Council	Gvann@stlouismsdc.org	314-241-1143		
April Kenderton	MoDOT	April.Kenderton@MoDot.Mo.Gov	314-453-1812	Not applicable	
Gregg Wilhelm	MoDOT	gregory.wilhelm@modot.mo.gov	314-453-1832	Not applicable	
Mark Sauerwein	MoDOT	mark.sauerwein@modot.mo.gov	314-453-1834	Not applicable	
Matthew Budd	MoDOT	matthew.budd@modot.mo.gov	314-453-1750	Not applicable	
Rose Lucas	MoDOT	rose.cooper@modot.mo.gov	314-453-1877	Not applicable	
Russell Klein	MoDOT	Russell.Klein@modot.mo.gov	314-453-9056	Not applicable	
Shirlyn Myles	MoDOT	Shirlyn.myles@modot.mo.gov	314-453-1811	Not applicable	
Adolphus Pruitt	NAACP	pruitt@stlouisnaacp	314-361-8600	Not applicable	
Monica Barker	Native Landscape Solutions	monica@nativelandscape.biz	636-373-1218	Sub	Yes
A. Edwards	Nick Lee Maintenance				
Mike Zambrana	Pangea Group	Mzambrana@Pangea-Group.com	314-333-0608	Both	Yes
Bejhamin Appieah	Patraba Electrical	bappiah@patrabaelectric.com	314-423-5011	Sub	
Mike Rood	Pea Ridge Forest	pearidge@socket.net	636-932-4687		
Megan D'Angelo	Pearl Street Electric	mdangelo.pse@att.net	314-420-8668	Prime	Yes
Wayne Ivory	Power Up Electric	Wivory@pskup.com	314-865-3888	Sub	Yes
Carol Zuckner	Precision Fountains	Precisionftns@sbcglobal.net	314-426-1481	Sub	
Rick Wagner	R. V. Wagner, Inc.	rwagner@rvwagner.com	314-892-1600	Prime	
Theresa Marie Bextermiller	Registered Architect	Theresa.BexterMiller@computer.org			
Mike Reinhold	Reinhold Electric	Mike@ReinholdElectric.com	314-574-4484		
Jerry Johnson	RJP Electric	Jjohnson@rjpelectric.com	636-222-7927	Sub	
Robert Scott	RMS Scott Engineering	rms01@charter.net	618-791-5529	Sub	
Courtney Cooper	Sachs Electric	ccooper@sachsco.com	314-743-1246	Prime	
Ted Reitz	SCI Engineering	treitz@sciengineering.com	636-757-1039	Both	
John W. Seates	Senator Roy Blunt	John. Seates@blunt.senate.gov	314-725-4484	Not applicable	
Kingsley E. Chukwuanu	SEP Consulting Engineers	kingsfec@yahoo.com	314-839-8162	Prime	
Al Burroughs	Shelton Demolition Contracting LLC	alfredburroughs@yahoo.com	314-578-0451	Sub	
Erston Malley	Show Me Industrial	showmeindustrial@gmail.com	314-890-8030	Sub	Yes
Terry Briggs	Site Improvement Association	tbriggs@sitestl.org	314-966-2950	Not applicable	
Earl G. Strauther, Jr.	St. Louis Agency on Training and Employment (SLATE)	estrauther@stlworks.com	314-657-3514	Not applicable	
Janet M. Wells	St. Louis Bridge Construction Company	janetw@stlbridge.com	636-296-3300	Both	
Jeff Boyster	St. Louis Bridge Construction Company	Jeff@BestBridge.com	636-296-3300	Prime	No
Roy Gross	St. Louis Compost	Rgross@STLCompost.com	314-581-6372	Sub	
Dillon J. Corr	Tarlton Corporation	DJCorr@tarltoncorp.com	314-633-3367	Prime	

Name	Company/Trade	Email	Phone	Are you a prime/sub?	DBE/MBE?
Steve Cronin	Tarlton Corporation	SGC@tarltoncorp.com	314-633-3315		
Sharon Tielke	TGB, Inc.	Sharon@TGBInc.com	314-664-4444	Prime	Yes
Alton Long	The Firm Home Investment & Development, LLC	thefirmhomeinvestments@yahoo.com	314-881-1489		Yes
Eddie Ross	The Firm Home Investment & Development, LLC	thefirmhomeinvestments@yahoo.com	314-881-1489		Yes
Ted Fletcher	The Fletcher Company, LLC	Ted@thefletcherco.com	314-727-1551	Sub	
Patricia Blackwell	Tim Person & Associates	tpa@cscos.com	314-426-5510	Sub	
Tim Person	Tim Person & Associates	timperson@sbcglobal.net	314-832-3580	Sub	
Steve Groene	TRAMAR Contracting, Inc.	sgroene@tramarcontracting.com	636-255-0808	Sub	Yes
Andre Tourrette	TROCO (Plumbing)	andretourrette@hotmail.com		Prime	
Peter Frane	TROCO (Plumbing)	peterfrane@sbcglobal.net		Prime	
Mark J. Conder	TSI Engineering	mconder@tsi-engineer.com	314-645-0703	Sub	
Paul Lodewyck	TSI Engineering	plodewyck@tsi-engineering.com	314-644-3134		
George Webb	Webb Engineering Services	gwebb@webb-engineering	314-497-9534	Sub	
Dana Howard	Zoic, LLC	ZoicLLC@yahoo.com			Yes

00400 - BID FORM (Form GRG 1) - Work Category 7 - CONCRETE

Project: Central Riverfront Leonor K. Sullivan Boulevard and Bikeway Project
Project No. TDG-0705(333) Project 2

Work Category: 7 - Concrete

Date : _____

BID from _____
hereinafter called "BIDDER," *(a corporation, organized and existing the laws of State of _____, a *partnership, or an individual doing business as _____).
Bidder acknowledges the Work Category descriptions contained in Section 00310.

To: Great Rivers Greenway District
6174A Delmar Boulevard
St. Louis, MO 63112, hereinafter called "DEVELOPER."

To the Great Rivers Greenway District:

Having carefully examined the Contract Documents as set forth in Article 1.1.1 of the General Conditions of the Contract for Construction for the Project listed above, which documents are made a part hereof as if more specifically set out herein, as well as the site and all conditions affecting the work, including work to be performed by others on this Project, the undersigned agrees to furnish all the labor, materials and equipment necessary to perform the work shown on the drawings and called for in the Specifications, and any addendum in accordance with said documents for the stipulated sums below; The following unit prices include all labor, overhead and profit, materials, equipment, removal, etc., to cover the finished work of the several kinds of work called for. Bidders should include all work required and incidental to the construction of each unit price items. No further work items or payment will be made for any work required to complete the work of any Unit Price Item listed.

BID ITEM LIST WORK CATEGORY 7 - CONCRETE					
PAY ITEM NUMBER	**DESCRIPTION**	**UNITS**	**TOTAL QUANTITY**	**UNIT PRICE**	**EXTENSION**
3040143	TYPE 1 AGGREGATE FOR BASE (4 IN. THICK) (WORK CATEGORY 7 - CONCRETE)	SQYD	54,738	$	$

BID ITEM LIST WORK CATEGORY 7 - CONCRETE					
PAY ITEM NUMBER	**DESCRIPTION**	**UNITS**	**TOTAL QUANTITY**	**UNIT PRICE**	**EXTENSION**
5021106	CONCRETE PAVEMENT (6 IN. NON-REINF)	SQYD	1,051	$	$
5021310	CONCRETE PAVEMENT (9 IN. NON-REINFORCED 15 LF. JOINTS)	SQYD	18,996	$	$
6081000	RAISED MEDIAN	SQYD	100	$	$
6081010	CONCRETE CURB RAMP	SQ YD	415	$	$
6085008	PAVED APPROACH, 8 IN	SQYD	3,468	$	$
5021104	CONCRETE PAVEMENT, 4 IN.	SQYD	8,009	$	$
6086005	CONCRETE SIDEWALK, 5 IN. (BROOM FINISH)	SQYD	3,717	$	$
6086006	CONCRETE SIDEWALK, 6 IN. (BROOM FINISH)	SQYD	11,499	$	$
6091011	CONCRETE CURB (OVER 6 IN. HEIGHT) TYPE S	LF	13,928	$	$
6092011	INTEGRAL CURB (6 IN. HEIGHT AND UNDER) TYPE A	LF	5,155	$	$
6092031	CONCRETE CURB LOW PROFILE TYPE E	LF	405	$	$
7034001	CLASS B-1 CONCRETE (STAIRS)	CUYD	145	$	$
7034009	CLASS B-1 CONCRETE (BATTERED RETAINING WALLS) W/ SANDBLAST FINISH (BASE BID)	CUYD	5,648	$	$
7034009	CLASS B-1 CONCRETE (VERTICAL RETAINING WALLS) W/ SANDBLAST FINISH BID SANDBLAST FINISH	CUYD	1,541	$	$
7061000	REINFORCING STEEL (STAIRS)	LB	6,981	$	$

BID ITEM LIST WORK CATEGORY 7 - CONCRETE					
PAY ITEM NUMBER	**DESCRIPTION**	**UNITS**	**TOTAL QUANTITY**	**UNIT PRICE**	**EXTENSION**
7061040	REINFORCING STEEL (BATTERED RETAINING WALLS)	LB	700,420	$	$
7061040	REINFORCING STEEL (VERTICAL RETAINING WALLS)	LB	173,320	$	$
502-99.07	STAMPED CONCRETE B (6" - NEAR OVERLOOK WALLS)	SQYD	308	$	$
502-99.07	STAMPED AND TINTED CONCRETE C (6" - BUFFER)	SQYD	4,697	$	$
502-99.05	STAMPED AND TINTED CONCRETE D (9 IN. NON REINFORCED 15 LF. JOINTS) - TABLETOP	SQYD	634	$	$
502-99.02B	CONCRETE PAVEMENT, STAMPED AND TINTED, 9 IN. APRONS LEVEE ENTRANCES	SQYD	131	$	$
602-99.02	RELOCATE FLAG POLE	EA	3	$	$
606-99.02	TRASH RECEPTACLES	EA	15	$	$
608-99.03	CONCRETE CURB 2 IN. HEIGHT, 9 IN. WIDE	LF	14,575	$	$
608-99.04	CAST IRON TRUNCATED DOMES	SF	2,589	$	$
609-99.03	4" ROLLED CURB	LF	1,566	$	$
618-99.01	MOBILIZATION (WORK CATEGORY 7 CONCRETE)	LS	1	$	$

B\ID ITEM LIST WORK CATEGORY 7 - CONCRETE					
PAY ITEM NUMBER	**DESCRIPTION**	**UNITS**	**TOTAL QUANTITY**	**UNIT PRICE**	**EXTENSION**
627-99.01	CONTRACTOR FURNISHED SURVEYING AND STAKING (WORK CATEGORY 7 CONCRETE)	LS	1	$	$
702-99.02	PYLON DEEP FOUNDATION	EA	**18**	$	$
703-99.02	MOORING ANCHOR - PIER	EA	3	$	$
703-99.02	MOORING ANCHOR - WALL EMBEDMENT	EA	13	$	$
703-99.07	FLOOD CLOSURE STRUCTURE CONCRETE (CHOUTEAU)	CUYD	86	$	$
703-99.07	FLOOD CLOSURE STRUCTURE CONCRETE (POPLAR)	CUYD	103	$	$
703-99.07	FLOOD CLOSURE STRUCTURE CONCRETE (CARR)	CUYD	**182**	$	$
703-99.07	CLASS B-1 CONCRETE (PYLONS)	CUYD	416	$	$
706-99.11	FLOOD CLOSURE STRUCTURE REINFORCING STEEL (CHOUTEAU)	LB	1,210	$	$
706-99.11	FLOOD CLOSURE STRUCTURE REINFORCING STEEL (POPLAR)	LB	3,255	$	$
706-99.11	FLOOD CLOSURE STRUCTURE REINFORCING STEEL (CARR)	LB	3,929	$	$
706-99.11	REINFORCING STEEL (PYLONS)	LB	76,250	$	$

B\ID ITEM LIST WORK CATEGORY 7 - CONCRETE					
PAY ITEM NUMBER	**DESCRIPTION**	**UNITS**	**TOTAL QUANTITY**	**UNIT PRICE**	**EXTENSION**
712-99.02	BIKE RACKS	EA	58	$	$
731-99.02	BENCHES	EA	54	$	$
BASE BID TOTAL WORK CATEGORY 7 – CONCRETE					**$**

_____(Write total on this line)

ADD ALTERNATE A – WORK CATEGORY #7 CONCRETE – FORMLINERS

This Add Alternate is the **ADDITIVE COST** to construct a formliner finish on walls A, B (except for the small vertical section), D (except for the small vertical section), E, F, G, H, I, J, K, L, M, N, O (except for the small vertical section), Q (except for the small vertical section), R, S, and T, as indicated on the drawings and as described in the CONCRETE RETAINING WALLS AND PYLONS JSP. The base bid includes sandblasted finish on all retaining walls and pylons, while the Add Alternate changes from a sandblasted finish to a formliner finish on the above listed retaining walls, only.

DESCRIPTION	**UNITS**	**TOTAL QUANTITY**	**UNIT PRICE**	**EXTENSION**
FORMLINER FINISH ON SELECT RETAINING WALLS ONLY (ADD ALTERNATE A)	SQ FT	27,630	$	$
ADD ALTERNATE A – WORK CATEGORY #7 CONCRETE – FORMLINERS			**$**	

_____(Write total on this line)

The prices indicated on the attached list include excise taxes, and any other taxes for all materials and equipment subject to and upon which taxes are levied. Developer is exempt from sales tax and therefore sales tax should not be included in the bid.

A Bid Bond, executed by the Bidder and an acceptable Surety Company equal to at least five percent (5%) of the amount of the Total Base Bid **plus all add alternates applicable for the work category**, or a cashier's check in like amount made out to the Developer, is hereby posted as security, in accordance with the Instructions to Bidders.

If the undersigned be notified of the acceptance of this Bid within sixty (60) consecutive calendar days after the time and date set for the opening of bids, he will, within ten (10) days after notification of acceptance, execute a contract for the above work, for the above stated compensation, or the above-stated and accompanying Bid Bond, or cashier's check shall be declared forfeit.

The undersigned agrees, if awarded the Contract, to furnish simultaneously with delivery of the executed Contract, a Performance and Payment Bond in the form provided in the Contract Documents in an amount equal to 100% of the Contract sum for faithful performance of the Contract and also 100% of the Contract sum for payment of material and labor. If unable to furnish said bonds, the undersigned and Surety hereby agree to forfeit the security posted with the Bid.

The undersigned hereby agrees to commence work under Contract on or before a date to be specified in written "NOTICE TO PROCEED" of the Developer and to fully complete the total project in accordance with the time schedule set forth in Paragraph 11 of the Instructions to Bidders.

The undersigned Bidder understands that:

1. With the District, MoDOT and FHWA in concurrence The Contract will be awarded to the responsible, responsive Bidder for each Work Category submitting the lowest Base Bid plus applicable awarded Bid Alternates falling within Great Rivers Greenway's budget. The successful bidders will be determined by lowest total bid of all AWARDED Work Categories. In determination of the lowest responsive bid, bid alternates will be added to the TOTAL BASE BID of all Work Categories in sequential order, A through B. For details regarding bid alternates and related requirements, the bidder(s) is directed to JSP C. The District, MoDOT and FHWA reserve the right to reject any or all bids.
2. This bid shall be good and may not be withdrawn under any circumstances for a period of sixty (60) consecutive calendar days after the time and date set for receiving and opening bids.
3. The Prime Contractor must have a fully responsive contractor questionnaire on file with the Missouri Highways and Transportation Commission (MHTC) at least seven (7) days prior to the bid opening date.

GRG herby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, businesses owned and controlled by socially and economically disadvantaged individuals will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, religion, creed, sex, age, ancestry, or national origin in consideration for an award.

The undersigned further agrees to indemnify and save the District from and against all losses, claims, demands, payments, suits, actions, recoveries, and judgments of every nature and description made, brought, or recovered against the District by reason of any act or omission of the undersigned, his/her agents, Subcontractors, or employees in the execution of the work or in guarding the same.

Bidder must include the following documents with their bid: Subcontractor List, Anti-Collusion Statement, DBE Provisions and all other documents required per 00101 – BIDDER CHECKLIST.

The undersigned hereby declares that all prices given herein include all taxes except those exempted by virtue of the work done and materials furnished.

ADDENDA ACKNOWLEDGEMENT

Bidder acknowledges the receipt of the following addenda (Fill in number and dates of all addenda received):

Addendum No._____ Dated_____

Addendum No._____ Dated_____

Addendum No._____ Dated_____

Addendum No._____ Dated_____

Addendum No._____ Dated_____

Addendum No._____ Dated_____

Bid respectfully submitted by:

_____
Company name of Bidder

_____ _____
Signature of Bidder Date

_____
Typed or Printed Name of Bidder's

Address:_____

City, State, Zip:_____

Phone Number:_____Fax:_____
Email Address:_____

Licensed to do business in Missouri? ____Yes ____No

Type of Firm: ___ Corporation (incorporated under the law of the State of _____
Officer:_____
Title:_____

___ Individual

___ Partnership: Provide Names, Addresses/Contact Information and % interest for all Partners:

_____
_____
_____
_____

___ Joint Venture: Provide Names, Addresses and Phone #'s of all Joint Venture Members.

_____
_____
_____
_____

00400 - BID FORM (Form GRG 1) – Work Category 11 - SEWERS/PLUMBING

Project: Central Riverfront Leonor K. Sullivan Boulevard and Bikeway Project
Project No. TDG-0705(333) Project 2

Work Category: 11 - Sewers/Plumbing

Date : _____

BID from _____
hereinafter called "BIDDER," *(a corporation, organized and existing the laws of State of _____, a *partnership, or an individual doing business as _____).
Bidder acknowledges the Work Category descriptions contained in Section 00310.

To: Great Rivers Greenway District
6174A Delmar Boulevard
St. Louis, MO 63112, hereinafter called "DEVELOPER."

To the Great Rivers Greenway District:

Having carefully examined the Contract Documents as set forth in Article 1.1.1 of the General Conditions of the Contract for Construction for the Project listed above, which documents are made a part hereof as if more specifically set out herein, as well as the site and all conditions affecting the work, including work to be performed by others on this Project, the undersigned agrees to furnish all the labor, materials and equipment necessary to perform the work shown on the drawings and called for in the Specifications, and any addendum in accordance with said documents for the stipulated sums below; The following unit prices include all labor, overhead and profit, materials, equipment, removal, etc., to cover the finished work of the several kinds of work called for. Bidders should include all work required and incidental to the construction of each unit price items. No further work items or payment will be made for any work required to complete the work of any Unit Price Item listed.

BID ITEM LIST WORK CATEGORY 11 – SEWERS/PLUMBING					
PAY ITEM NUMBER	**DESCRIPTION**	**UNITS**	**TOTAL QUANTITY**	**UNIT PRICE**	**EXTENSION**
202-99.02	SALVAGE FIRE HYDRANT	EA	19	$	$
206-99.07	TRENCHING - WATER	CUYD	1,600	$	$

BID ITEM LIST WORK CATEGORY 11 – SEWERS/PLUMBING					
PAY ITEM NUMBER	**DESCRIPTION**	**UNITS**	**TOTAL QUANTITY**	**UNIT PRICE**	**EXTENSION**
206-99.07	GRANULAR BACKFILL	CUYD	1,600	$	$
600 - 3H50000000000A	MSD - EXCAVATION CLASS "A"	CUYD	234	$	$
600 - 3H50000000000B	MSD - EXCAVATION OF CLASS "B"	CUYD	585	$	$
600 - 3H50000000000C	MSD - EXCAVATION CLASS "C"	CUYD	**1,564**	$	$
600 - 4I130000000000	MSD - GRANULAR BACKFILL	CUYD	1,387	$	$
600 - 4I2000080000FM	MSD - FORCE MAIN 08 INCH	LF	2,495	$	$
600 - 4I2000100000SC	MSD - PIPE SEWER 10 INCH (SANITARY/COMBINED)	LF	**212**	$	$
600 - 4I2000120000SC	**MSD - PIPE SEWER 12 INCH (SANITARY/COMBINED)**	**LF**	**172**	**$**	**$**
600 - 4I2000120RCPIV	MSD - REINFORCED CONCRETE PIPE SEWER 12 INCH CLASS IV	LF	**224**	$	$
600 - 4I200012RCPIII	MSD - REINFORCED CONCRETE PIPE SEWER 12 INCH CLASS III	LF	**2,423**	$	$
600 - 4I2000150000SC	**MSD - PIPE SEWER 15 INCH (SANITARY/COMBINED)**	**LF**	**33**	**$**	**$**
600 - 4I2000150RCPIV	MSD - REINFORCED CONCRETE PIPE SEWER 15 INCH CLASS IV	LF	**59**	$	$
600 - 4I200015RCPIII	MSD - REINFORCED CONCRETE PIPE SEWER 15 INCH CLASS III	LF	**68**	$	$
600 - 4I200018RCPIII	MSD - REINFORCED CONCRETE PIPE SEWER 18 INCH CLASS III	LF	**212**	$	$
600 - 4I200018RCPIV	MSD - REINFORCED CONCRETE PIPE SEWER 18 INCH CLASS IV	LF	**210**	$	$

BID ITEM LIST WORK CATEGORY 11 – SEWERS/PLUMBING					
PAY ITEM NUMBER	**DESCRIPTION**	**UNITS**	**TOTAL QUANTITY**	**UNIT PRICE**	**EXTENSION**
600 - 4I500000000000	MSD - ENCASEMENT - CLASS "A' CONCRETE	CY	**49**	$	$
600 - 4I600000000000	MSD - MANHOLE - STANDARD CONSTRUCTION	LF	375	$	$
600 - 4I600000COVERSX	MSD - MANHOLE COVER SEALS	LF	7	$	$
600 - 4I600000FRAMESX	MSD - MANHOLE FRAME SEALS	EA	7	$	$
600 - 4I700000000000	MSD - INLET MANHOLE - TOP SECTION	EA	19	$	$
600 - 4I8000000000AI	MSD - INLET - AREA	EA	5	$	$
600 - 4I80000000000D	MSD - INLET - DOUBLE	EA	4	$	$
600 - 4I8000000000ST	MSD - INLET - STREET	EA	19	$	$
600 - 4I800000002G	MSD - INLET - 2 GRATE	EA	2	$	$
600 - 4I80000000TRAP	MSD - INLET - TRAPPED	EA	6	$	$
600 - 4I800000TRAPX	MSD - INLET - DOUBLE TRAPPED	EA	2	$	$
600 - 7O110010000040	MSD - CIPP LINER - 10 INCH DIAMETER - 05 MM	LF	2,573	$	$
600 - 7O160006012000X	MSD - CLEANING AND TV 6" - 12" DIA.	LF	2,573	$	$
600 - 9B2000000000MH	MSD - CONNECTION TO EXISTING MANHOLE	PLC	15	$	$
600 - 9D400000000000	MSD - STREET PAVEMENT - ASPHALTIC CONCRETE REM. AND REP.	SQYD	108	$	$
600 - 9F100000000000	MSD - ABANDONMENT - PIPE FILL	CUYD	69	$	$

BID ITEM LIST WORK CATEGORY 11 – SEWERS/PLUMBING					
PAY ITEM NUMBER	**DESCRIPTION**	**UNITS**	**TOTAL QUANTITY**	**UNIT PRICE**	**EXTENSION**
600 - 9F200000000000	MSD - ABANDONMENT - STRUCTURE	EA	21	$	$
600 - 9J000000ATGARGX	MSD - ADJUST MANHOLE TO GRADE WITH ADJUSTMENT RING	EA	24	$	$
600 - 9M000000000PSX	MSD - RELOCATED WHARF STREET PUMP STATION WET WELL	LS	1	$	$
600- 9J000002ATGARGX	MSD - ADJUST MANHOLE TO GRADE (GREATER THAN 11 IN.)	EA	53	$	$
600 - 9J000002ATGCNVX	CONVERT CURB INLET TO MANHOLE	EA	14	$	$
603-99.01	TESTING – DISINFECTING – FLUSHING	LS	1	$	$
603-99.02	DRINKING FOUNTAINS	EA	1	$	$
603-99.02	FITTINGS	EA	54	$	$
603-99.02	12" VALVES	EA	3	$	$
603-99.02	6" VALVES	EA	15	$	$
603-99.02	DESTROYING SERVICE TAPS	EA	6	$	$
603-99.02	TRANSFER OF SERVICES – TAP INSTALLATION	EA	**5**	$	$
603-99.02	NEW HYDRANT INSTALLATION	EA	19	$	$
603-99.02	VALVES – ADJUST TO GRADE	EA	20	$	$
603-99.03	6" WATER MAIN	LF	**485**	$	$
603-99.03	12" WATER MAIN	LF	**3,197**	$	$
604-99.01	UTILITY VAULT REPLACEMENT (RV5)	LS	1	$	$
604-99.01	UTILITY VAULT REPLACEMENT (RV6)	LS	1	$	$

BID ITEM LIST WORK CATEGORY 11 – SEWERS/PLUMBING					
PAY ITEM NUMBER	**DESCRIPTION**	**UNITS**	**TOTAL QUANTITY**	**UNIT PRICE**	**EXTENSION**
604-99.01	UTILITY VAULT REPLACEMENT (RV7)	LS	1	$	$
604-99.01	UTILITY VAULT REPLACEMENT (RV9- WITH SERVICE TROUGHS	LS	1	$	$
604-99.01	FLOOD CLOSURE STRUCTURE DRAINAGE (CHOUTEAU)	LS	1	$	$
604-99.01	FLOOD CLOSURE STRUCTURE DRAINAGE (POPLAR)	LS	1	$	$
604-99.01	FLOOD CLOSURE STRUCTURE DRAINAGE (CARR)	LS	1	$	$
604-99.02	MSD - GRATED OUTFALL, 12 IN.	EA	4	$	$
604-99.02	MSD - GRATED OUTFALL, 15 IN.	EA	1	$	$
604-99.02	MSD - GRATED OUTFALL, 18 IN.	EA	3	$	$
618-99.01	MOBILIZATION (WORK CATEGORY 11 SEWERS/PLUMBING)	LS	1	$	$
627-99.01	CONTRACTOR FURNISHED SURVEYING AND STAKING (WORK CATEGORY 11 SEWERS/PLUMBING)	LS	1	$	$
BID TOTAL WORK CATEGORY 11 – SEWERS/PLUMBING					**$**

_____(Write total on this line)

The prices indicated on the attached list include excise taxes, and any other taxes for all materials and equipment subject to and upon which taxes are levied. Developer is exempt from sales tax and therefore sales tax should not be included in the bid.

A Bid Bond, executed by the Bidder and an acceptable Surety Company equal to at least five percent (5%) of the amount of the Total Base Bid, or a cashier's check in like amount made out to the Developer, is hereby posted as security, in accordance with the Instructions to Bidders.

If the undersigned be notified of the acceptance of this Bid within sixty (60) consecutive calendar days after the time and date set for the opening of bids, he will, within ten (10) days after notification of acceptance, execute a contract for the above work, for the above stated compensation, or the above-stated and accompanying Bid Bond, or cashier's check shall be declared forfeit.

The undersigned agrees, if awarded the Contract, to furnish simultaneously with delivery of the executed Contract, a Performance and Payment Bond in the form provided in the Contract Documents in an amount equal to 100% of the Contract sum for faithful performance of the Contract and also 100% of the Contract sum for payment of material and labor. If unable to furnish said bonds, the undersigned and Surety hereby agree to forfeit the security posted with the Bid.

The undersigned hereby agrees to commence work under Contract on or before a date to be specified in written "NOTICE TO PROCEED" of the Developer and to fully complete the total project in accordance with the time schedule set forth in Paragraph 11 of the Instructions to Bidders.

The undersigned Bidder understands that:

1. The District (with MoDOT and FHWA) concurrence) will award the contract to the lowest, responsive, responsible Bidder and they reserve the right to reject any or all bids.
2. This bid shall be good and may not be withdrawn under any circumstances for a period of sixty (60) consecutive calendar days after the time and date set for receiving and opening bids.
3. The Prime Contractor must have a fully responsive contractor questionnaire on file with the Missouri Highways and Transportation Commission (MHTC) at least seven (7) days prior to the bid opening date.

GRG herby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, businesses owned and controlled by socially and economically disadvantaged individuals will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, religion, creed, sex, age, ancestry, or national origin in consideration for an award.

The undersigned further agrees to indemnify and save the District from and against all losses, claims, demands, payments, suits, actions, recoveries, and judgments of every nature and description made, brought, or recovered against the District by reason of any act or omission of the undersigned, his/her agents, Subcontractors, or employees in the execution of the work or in guarding the same.

Bidder must include the following documents with their bid: Subcontractor List, Anti-Collusion Statement and DBE Provisions and all other documents required per 00101 – BIDDER CHECKLIST.

The undersigned hereby declares that all prices given herein include all taxes except those exempted by virtue of the work done and materials furnished.

ADDENDA ACKNOWLEDGEMENT

Bidder acknowledges the receipt of the following addenda (Fill in number and dates of all addenda received):

Addendum No._____ Dated_____

Addendum No._____ Dated_____

Addendum No._____ Dated_____

Addendum No._____ Dated_____

Addendum No._____ Dated_____

Addendum No._____ Dated_____

Bid respectfully submitted by:

_____
Company name of Bidder

_____ _____
Signature of Bidder Date

_____
Typed or Printed Name of Bidder's

Address:_____

City, State, Zip:_____

Phone Number:_____Fax:_____
Email Address:_____

Licensed to do business in Missouri? ____Yes ____No

Type of Firm: ___ Corporation (incorporated under the law of the State of _____
Officer:_____
Title:_____

___ Individual

___ Partnership: Provide Names, Addresses/Contact Information and % interest for all Partners:

_____
_____
_____
_____

___ Joint Venture: Provide Names, Addresses and Phone #'s of all Joint Venture Members.

_____
_____
_____
_____

00400 - BID FORM (Form GRG 1) – Work Category 12 - ELECTRICAL

Project: Central Riverfront Leonor K. Sullivan Boulevard and Bikeway Project
Project No. TDG-0705(333) Project 2

Work Category: 12 - Electrical

Date : _____

BID from _____
hereinafter called "BIDDER," *(a corporation, organized and existing the laws of State of _____, a *partnership, or an individual doing business as _____).
Bidder acknowledges the Work Category descriptions contained in Section 00310.

To: Great Rivers Greenway District
6174A Delmar Boulevard
St. Louis, MO 63112, hereinafter called "DEVELOPER."

To the Great Rivers Greenway District:

Having carefully examined the Contract Documents as set forth in Article 1.1.1 of the General Conditions of the Contract for Construction for the Project listed above, which documents are made a part hereof as if more specifically set out herein, as well as the site and all conditions affecting the work, including work to be performed by others on this Project, the undersigned agrees to furnish all the labor, materials and equipment necessary to perform the work shown on the drawings and called for in the Specifications, and any addendum in accordance with said documents for the stipulated sums below; The following unit prices include all labor, overhead and profit, materials, equipment, removal, etc., to cover the finished work of the several kinds of work called for. Bidders should include all work required and incidental to the construction of each unit price items. No further work items or payment will be made for any work required to complete the work of any Unit Price Item listed.

BID ITEM LIST WORK CATEGORY 12 - ELECTRICAL					
PAY ITEM NUMBER	**DESCRIPTION**	**UNITS**	**TOTAL QUANTITY**	**UNIT PRICE**	**EXTENSION**
202-99.02	SALVAGE STREET LIGHT POLE / FIXTURE ASSEMBLY	EA	67	$	$

BID ITEM LIST WORK CATEGORY 12 - ELECTRICAL					
PAY ITEM NUMBER	**DESCRIPTION**	**UNITS**	**TOTAL QUANTITY**	**UNIT PRICE**	**EXTENSION**
901-99.01	**SUBSTATION 95 DEMOLITION**	**LS**	**1**	**$**	**$**
618-99.01	MOBILIZATION (WORK CATEGORY 12 ELECTRICAL)	LS	1	$	$
901-99.02	ELECTRICAL PANEL	EA	**3**	$	$
901-99.02	**CONTACTOR PANEL**	**EA**	**2**	**$**	**$**
901-99.02	TRANSFORMERS	EA	2	$	$
901-99.02	METERING	EA	**3**	$	$
901-99.02	24x24x24 JB	EA	44	$	$
901-99.02	24x36x24 JB	EA	91	$	$
901-99.02	PYLON ELECTRICAL	EA	44	$	$
901-99.02	NON-PYLON ELECTRICAL	EA	41	$	$
901-99.02	VENDOR RECEPTACLE	EA	6	$	$
901-99.02	UTILITY ELECTRIC MANHOLE	EA	11	$	$
901-99.02	**UTILITY ELECTRIC METER POLE ASSEMBLY**	**EA**	**2**	**$**	**$**
901-99.02	P1 - GALVANIZED STEEL POLE AND MOUNTING ASSEMBLY (BASE BID)	EA	28	$	$
901-99.02	P2 - GALVANIZED STEEL POLE AND MOUNTING ASSEMBLY (BASE BID)	EA	2	$	$

BID ITEM LIST WORK CATEGORY 12 - ELECTRICAL					
PAY ITEM NUMBER	**DESCRIPTION**	**UNITS**	**TOTAL QUANTITY**	**UNIT PRICE**	**EXTENSION**
901-99.02	P3 - GALVANIZED STEEL MOUNTING ASSEMBLY (BASE BID)	EA	8	$	$
901-99.02	P3A - GALVANIZED STEEL MOUNTING ASSEMBLY (BASE BID)	EA	31	$	$
901-99.02	P3B - GALVANIZED STEEL MOUNTING ASSEMBLY (BASE BID)	EA	2	$	$
901-99.02	P4 - GALVANIZED STEEL POLE AND MOUNTING ASSEMBLY (BASE BID)	EA	14	$	$
901-99.02	P3 - CONCRETE POLE	EA	8	$	$
901-99.02	P3A - CONCRETE POLE	EA	31	$	$
901-99.02	P3B - CONCRETE POLE	EA	2	$	$
901-99.02	L1 - POLE MOUNTED TYPE III LED LUMINAIRE	EA	142	$	$
901-99.02	L2 - POLE MOUNTED TYPE II LED LUMINAIRE	EA	14	$	$

BID ITEM LIST WORK CATEGORY 12 - ELECTRICAL					
PAY ITEM NUMBER	**DESCRIPTION**	**UNITS**	**TOTAL QUANTITY**	**UNIT PRICE**	**EXTENSION**
901-99.02	L3 - POLE MOUNTED TYPE IV LED LUMINAIRE	EA	154	$	$
901-99.02	L3a - POLE MOUNTED TYPE IV LED LUMINAIRE	EA	4	$	$
901-99.02	L4 - POLE MOUNTED RGB LED LUMINAIRE	EA	56	$	$
901-99.02	L4 DATA/POWER SUPPLY	EA	14	$	$
901-99.02	L4 WIRELESS DMX CONTROL SYSTEM	EA	1	$	$
901-99.02	L5 - POLE TOP MOUNTED VAPORPROOF BEACON LIGHT	EA	85	$	$
901-99.03	TRENCHING - ELECTRICAL	LF	**4,500**	$	$
901-99.03	**1" PVC**	**LF**	**300**	**$**	**$**
901-99.03	2.5" PVC	LF	18,000	$	$
901-99.03	2.5" RMC	LF	300	$	$
901-99.03	4" PVC	LF	33,000	$	$
901-99.03	4" RMC	LF	1,000	$	$
901-99.03	DIRECTIONAL BORE	LF	1,500	$	$
901-99.03	#10 XHHW-2	LF	2,000	$	$
901-99.03	#2 XHHW-2	LF	15,400	$	$
901-99.03	#4 XHHW-2	LF	19,000	$	$
901-99.03	1/0 XHHW-2	LF	20,000	$	$
901-99.03	2/0 XHHW-2	LF	116,000	$	$
901-99.03	4/0 XHHW-2	LF	10,300	$	$
901-99.03	250KCMIL XHHW-2	LF	5,000	$	$
901-99.03	**UTILITY ELECTRIC #2 WIRE**	**LF**	**600**	**$**	**$**
901-99.03	**UTILITY ELECTRIC #6 WIRE**	**LF**	**800**	**$**	**$**
901-99.03	OPTIC FIBER	LF	10,300	$	$

BID ITEM LIST WORK CATEGORY 12 - ELECTRICAL					
PAY ITEM NUMBER	**DESCRIPTION**	**UNITS**	**TOTAL QUANTITY**	**UNIT PRICE**	**EXTENSION**
901-99.03	UTILITY ELECTRIC CONDUIT	LF	**3,000**	$	$
901-99.03	**UTILITY ELECTRIC DUCTBANK**	**LF**	**3,200**	**$**	**$**
BASE BID TOTAL WORK CATEGORY 12 – ELECTRICAL					**$**

_____(Write total on this line)

ADD ALTERNATE B WORK CATEGORY #12 ELECTRICAL – STAINLESS STEEL POLES AND MOUNTING ASSEMBLY

This Add Alternate is the **ADDITIVE COST** to construct stainless steel light poles and mounting assemblies as indicated on the drawings and as described in the STAINLESS STEEL LIGHT POLES (ADD ALTERNATE – B) JSP. The Base Bid includes galvanized carbon steel light poles and mounting assemblies, while the Add Alternate changes from galvanized carbon steel to stainless steel. The Add Alternate will apply to all steel poles and mounting assemblies specified for the project.

DESCRIPTION	UNITS	TOTAL QUANTITY	UNIT PRICE	EXTENSION
P1 - STAINLESS STEEL POLE AND MOUNTING ASSEMBLY IN LIEU OF GALVANIZED (ADD ALTERNATE B)	EA	28	$	$
P2 - STAINLESS STEEL POLE AND MOUNTING ASSEMBLY IN LIEU OF GALVANIZED (ADD ALTERNATE B)	EA	2	$	$
P3 - STAINLESS STEEL MOUNTING ASSEMBLY IN LIEU OF GALVANIZED (ADD ALTERNATE B)	EA	8	$	$
P3A - STAINLESS STEEL MOUNTING ASSEMBLY IN LIEU OF GALVANIZED (ADD ALTERNATE B)	EA	31	$	$
P3B - STAINLESS STEEL	EA	2	$	$

MOUNTING ASSEMBLY IN LIEU OF GALVANIZED (ADD ALTERNATE B)				
P4 - STAINLESS STEEL POLE AND MOUNTING ASSEMBLY IN LIEU OF GALVANIZED (ADD ALTERNATE B)	EA	14	$	$
ADD ALTERNATE B WORK CATEGORY #12 ELECTRICAL – STAINLESS STEEL POLES AND MOUNTING ASSEMBLY			**$**	

(Write total on this line)

The prices indicated on the attached list include excise taxes, and any other taxes for all materials and equipment subject to and upon which taxes are levied. Developer is exempt from sales tax and therefore sales tax should not be included in the bid.

A Bid Bond, executed by the Bidder and an acceptable Surety Company equal to at least five percent (5%) of the amount of the Total Base Bid **plus all Add Alternates applicable for the work category**, or a cashier's check in like amount made out to the Developer, is hereby posted as security, in accordance with the Instructions to Bidders.

If the undersigned be notified of the acceptance of this Bid within sixty (60) consecutive calendar days after the time and date set for the opening of bids, he will, within ten (10) days after notification of acceptance, execute a contract for the above work, for the above stated compensation, or the above-stated and accompanying Bid Bond, or cashier's check shall be declared forfeit.

The undersigned agrees, if awarded the Contract, to furnish simultaneously with delivery of the executed Contract, a Performance and Payment Bond in the form provided in the Contract Documents in an amount equal to 100% of the Contract sum for faithful performance of the Contract and also 100% of the Contract sum for payment of material and labor. If unable to furnish said bonds, the undersigned and Surety hereby agree to forfeit the security posted with the Bid.

The undersigned hereby agrees to commence work under Contract on or before a date to be specified in written "NOTICE TO PROCEED" of the Developer and to fully complete the total project in accordance with the time schedule set forth in Paragraph 11 of the Instructions to Bidders.

The undersigned Bidder understands that:

1. With the District, MoDOT and FHWA in concurrence The Contract will be awarded to the responsible, responsive Bidder for each Work Category submitting the lowest Base Bid plus applicable awarded Bid Alternates

falling within Great Rivers Greenway's budget. The successful bidders will be determined by lowest total bid of all AWARDED Work Categories. In determination of the lowest responsive bid, bid alternates will be added to the TOTAL BASE BID of all Work Categories in sequential order, A through B. For details regarding bid alternates and related requirements, the bidder(s) is directed to JSP C. The District, MoDOT and FHWA reserve the right to reject any or all bids.

2. This bid shall be good and may not be withdrawn under any circumstances for a period of sixty (60) consecutive calendar days after the time and date set for receiving and opening bids.
3. The Prime Contractor must have a fully responsive contractor questionnaire on file with the Missouri Highways and Transportation Commission (MHTC) at least seven (7) days prior to the bid opening date.

GRG herby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, businesses owned and controlled by socially and economically disadvantaged individuals will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, religion, creed, sex, age, ancestry, or national origin in consideration for an award.

The undersigned further agrees to indemnify and save the District from and against all losses, claims, demands, payments, suits, actions, recoveries, and judgments of every nature and description made, brought, or recovered against the District by reason of any act or omission of the undersigned, his/her agents, Subcontractors, or employees in the execution of the work or in guarding the same.

Bidder must include the following documents with their bid: Subcontractor List, Anti-Collusion Statement and DBE Provisions and all other documents required per 00101 – BIDDER CHECKLIST.

The undersigned hereby declares that all prices given herein include all taxes except those exempted by virtue of the work done and materials furnished.

ADDENDA ACKNOWLEDGEMENT

Bidder acknowledges the receipt of the following addenda (Fill in number and dates of all addenda received):

Addendum No._____ Dated_____

Addendum No._____ Dated_____

Addendum No._____ Dated_____

Addendum No._____ Dated_____

Addendum No._____ Dated_____

Addendum No._____ Dated_____

Bid respectfully submitted by:

_____
Company name of Bidder

_____ _____
Signature of Bidder Date

_____
Typed or Printed Name of Bidder's

Address:_____

City, State, Zip:_____

Phone Number:_____Fax:_____
Email Address:_____

Licensed to do business in Missouri? ____Yes ____No

Type of Firm: ___ Corporation (incorporated under the law of the State of _____
Officer:_____
Title:_____

___ Individual

___ Partnership: Provide Names, Addresses/Contact Information and % interest for all Partners:
_____
_____
_____

___ Joint Venture: Provide Names, Addresses and Phone #'s of all Joint Venture Members.

_____
_____
_____
_____

JJJ. SPECIALTY SOILS

1.0 Description

1.1 Scope: This work shall consist of furnishing all ~~structural~~ **planting** soils, material**s**, labor and equipment necessary for structural soils installation as indicated in the plans, consisting of streetscape sidewalk planting areas including but not limited to:

A. Structural Soil
B. Tree Soil
C. Lawn Soil
D. Geofiber reinforcement
E. Testing
F. Placement
G. Clean Up

2.0 Materials.

2.1 Soil Materials, General

1. All soil materials shall fulfill the requirements as specified and be tested to confirm the specified characteristics. Sources for Base Loam, Sand, and Compost: Submit information identifying sources for all soil components and the firm responsible for mixing of planting soil mixes.
2. Landscape Architect, Soil Scientist and Owner shall have the right to reject any soil supplier.
3. Soil mix supplier shall have a minimum of five years' experience at supplying **and mixing** custom planting soil mixes.
4. Submit supplier name, address, telephone and fax numbers and contact name.
5. **All soil mixes, materials, and components shall be single sourced.** Submit certification that accepted supplier is able to provide sufficient quantities and qualities of materials for the entire project.
    a. **The supplier/source of structural soils shall be identified in accordance with Article 4.00 of this Section.**
    b. **Before the start of the work, the Contractor shall submit verification of the supplier(s) and mixing facilities that shall be used to perform the work.**

6. **CRITICAL PATH PROCESSING: The Contractor shall be responsible for recognizing that these critical project planting soil materials warrant timely attention, that the testing process to achieve approved materials SHALL BE CONSIDERED A LONG LEAD TIME ITEM, and that under no circumstance shall failure to comply with all specification requirements be a reason for substitution of unacceptable materials(s).**

7. Final approval of soil supplier**/mixer** shall be made after on-site review of supplier's facility by the Soil Scientist.

8. Acceptable sources for soil materials shall include the following, or approved equivalent:

   (a) Fick Supply Company, Wildwood, MO (636) 532-4978
   (b) Kirkwood Material Supply, Kirkwood, MO (314) 822-9644
   (c) Brentwood Material Company, St. Louis, MO (314) 968-0184
   (d) St. Louis Composting, Valley Park, MO (636) 861-3344

2.2 Structural Soil

1. Structural soil shall be friable soil free from subsoil, clay lumps, stones or similar objects larger the 3/8" in greatest diameter, brush, stumps, roots, objectionable weeds or litter, excess acid or alkali or other material or substance which may be harmful to plant growth or a hindrance to subsequent construction of paved surfaces. Foreign material shall not exceed 2% by volume ~~or weight~~. Texture to be defined by % sand, % clay, and % silt taken from sample material provided for testing. ~~If possible, a~~ **A** native or natural soil meeting this specification should be obtained from a known, certified source.

   ~~(a) The source of structural soil shall be made known to the Landscape Architect, Soil Scientist, and the Engineer as part of the initial bid process, and prior to the start of the project.~~

   a. ~~If necessary, sand~~ **Sand** (see Sec. 2.4) shall be blended with the loamy sand source to achieve required sand grain size distribution percentages.

   Structural soil shall meet classification requirements for a loamy sand texture**, in accordance with USDA textural classification system, using the USDA sieve sizes of 10, 18, 35, 60, 140, 270, and silt 0.002mm and clay <0.002mm.** ~~Soils approved for use in specific planting areas~~ **Approved soils** shall remain consistent in sand, silt, and clay composition. ~~The structural soil shall be classified according to the USDA soil textural classification. USDA definitions are as follows:~~

   ~~Sand – 270 mesh (0.05mm) to 18 mesh (1.0mm)~~
   ~~Silt – 0.002mm to 0.05mm~~
   ~~Clay – < 0.002mm~~

   b. Composition requirements for loamy sand soil type shall meet the following recommended textural analysis for percent passing USDA sieve sizes indicated:

U.S. Sieve Size No.	Percent Passing		Texture (retained)
	min	max	
10	100		Gravel
18 (1.00mm)	90	-	very coarse sand
35 (0.50mm)	45	60	coarse sand
60(O.25mm)	20	30	medium sand
140(0.106mm)	10	20	fine sand
270 (0.053mm)	0	20	very fine sand

   i. Clay shall not exceed 10% (0.002mm)
   ii. Combined Silt and clay content shall range from 20% to 30%
   iii. Silt content shall not be less than 2x the clay content
   iv. Sand shall range from 70% to 80%, with no more than 20% fine or very fine sand .

2. For consistency of structural soil, the textural analysis shall remain within 10% each of the accepted sand, silt, and clay content throughout the project.

3. The structural soil shall contain no more than 0.3% to 1.5% by dry weight organic matter.

4. The structural soil shall have a pH value between 6.0 and 8.0.

5. Performance criteria:

Test	Criteria
*Infiltration Rate (K-SAT)@ 20oC	0.9 to 1.5 inches per hour minimum
Bulk Density	1.35 to 1.55 grams per cubic centimeter
Total Porosity	35% to 45%
*Water Retention @ 0 to –75 cm SMP	Minimum 50% Saturation loss
*Water Release @ 0 to –350 cm SMP	Minimum value 30% Saturation

6. Structural Soil shall meet ALL the mechanical, chemical, physical and performance criteria specified herein. If the soil does not meet any one requirement, it shall be the basis for rejection of the soil.

2.3 Tree Soil.

1. Tree Planting soil shall be fertile, friable soil free from subsoil, clay lumps, stones or similar objects larger the 3/8" in greatest diameter, brush, stumps, roots, objectionable weeds or litter, excess acid or alkali or other material or substance which may be harmful to plant growth or a hindrance to subsequent smooth grading, planting and maintenance operations. Foreign material shall not exceed 2% by volume ~~or weight~~. Texture to be defined by % sand, % clay, and % silt taken from sample material provided for testing. If possible, a native or natural soil meeting this specification should be obtained from a known, certified source.

~~a. The source of tree planting soil shall be made known to the Landscape Architect or Soil Scientist and the Construction Manager as part of the initial bid process, and prior to the start of the project.~~

Planting soil shall meet classification requirements for a loamy sand texture. Soils approved for use in specific planting areas shall remain consistent in sand, silt, and clay composition. The planting soil shall be classified according to the USDA soil textural classification. USDA definitions are as follows: **Tree soil shall meet classification requirements for a loamy sand texture, in accordance with USDA textural classification system, using the USDA sieve sizes of 10, 18, 35, 60, 140, 270, and silt 0.002mm and clay <0.002mm. Approved soils shall remain consistent in sand, silt, and clay composition.**

~~Sand – 270 mesh (0.05mm) to 18 mesh (1.0mm)~~

~~Silt – 0.002mm to 0.05mm~~
~~Clay – < 0.002mm~~

(a) Composition requirements for loamy sand soil shall meet the following recommended textural analysis for percent passing USDA sieve sizes indicated in Article 1.5 herein:

U.S. Sieve Size No.	Percent Passing		Texture (retained)
	min	max	
10	100		Gravel
18 (1.00mm)	90	-	very coarse sand
35 (0.50mm)	45	60	coarse sand
60(O.25mm)	20	30	medium sand
140(0.106mm)	10	20	fine sand
270 (0.053mm)	0	20	very fine sand

i. Clay shall not exceed 10% (0.002mm)
ii. Combined Silt and clay content shall range from 20% to 30%
iii. Silt content shall not be less than 2x the clay content
iv. Sand shall range from 70% to 80%, with no more than 20% fine or very fine sand

3. For consistency of base planting soil, the textural analysis shall remain within 10% each of the accepted sand, silt, and clay content throughout the project.

4. The planting soil shall contain 1.5% to 3.5% by dry weight organic matter. The organic matter content will consist of natural/native organic matter composition of the planting soil from its source, or from addition of compost in quantity necessary to raise the organic matter level to these levels.

5. The planting soil shall have a pH value between 6.0 and 8.0.

6. Performance criteria:

Test	Criteria
*Infiltration Rate (K-SAT)@ 20oC	0.9 to 1.5 inches per hour
Bulk Density	1.35 to 1.55 grams per cubic centimeter
Total Porosity	35% to 45%
*Water Retention @ 0 to –75 cm SMP	Minimum 50% Saturation loss
*Water Release @ 0 to –350 cMP	Minimum value 30% Saturation

7. Tree Soil shall meet ALL the mechanical, chemical, physical and performance criteria specified herein. If the soil does not meet any one requirement, it shall be the basis for rejection of the soil.

2.4 Lawn Soil.

1. Lawn ~~Planting soil~~ **Soil** shall be fertile, friable soil free from subsoil, clay lumps, stones or similar objects larger the 3/8" in greatest diameter, brush, stumps, roots, objectionable weeds or litter, excess acid or alkali or other material or substance which may be harmful to plant growth or a hindrance to subsequent smooth grading, planting and maintenance operations. Foreign material shall not exceed 2% by volume ~~or weight~~. Texture to be defined by % sand, % clay, and % silt taken from sample material provided for testing. If possible, a native or natural soil meeting this specification should be obtained from a known, certified source.

~~b. The source of lawn planting soil shall be made known to the Landscape Architect or Soil Scientist and the Construction Manager as part of the initial bid process, and prior to the start of the project.~~

Lawn soil shall meet classification requirements for a loamy sand texture, in accordance with USDA textural classification system, using the USDA sieve sizes of 10, 18, 35, 60, 140, 270, and silt 0.002mm and clay <0.002mm. Approved soils shall remain consistent in sand, silt, and clay composition.

Planting soil shall meet classification requirements for a sandy loam texture. Soils approved for use in specific planting areas shall remain consistent in sand, silt, and clay composition. The planting soil shall be classified according to the USDA soil textural classification. USDA definitions are as follows:
Sand – 270 mesh (0.05mm) to 18 mesh (1.0mm)
Silt – 0.002mm to 0.05mm
Clay – < 0.002mm

2. Composition requirements for sandy loam soil shall meet the following recommended textural analysis for percent passing USDA sieve sizes indicated in Article 1.5 herein:

U.S. Sieve Size No.	Percent Passing		Texture (retained)
	min	max	
10	100		Gravel
18 (1.00mm)	90	-	very coarse sand
35 (0.50mm)	60	80	coarse sand
60(O.25mm)	50	65	medium sand
140(0.106mm)	40	70	fine sand
270 (0.053mm)	40	70	very fine sand

(1) Clay shall not exceed 16% (0.002mm)
(2) Combined Silt and clay content shall range from 30% to 50%
(3) Silt content shall not be less than 2x the clay content
(4) Sand shall range from 50% to 70%, with no more than 20% fine or very fine sand

3. For consistency of base planting soil, the textural analysis shall remain within 10% each of the accepted sand, silt, and clay content throughout the project.

4. The planting soil shall contain 1.5% to 3.5% by dry weight organic matter. The organic matter content shall consist of natural/native organic matter composition of the planting

soil from its source, or from addition of compost in quantity necessary to raise the organic matter level to these levels.

5. The planting soil shall have a pH value between 6.0 and 8.0.

6. Performance criteria:

Test	Criteria
*Infiltration Rate (K-SAT)@ 20oC	0.9 to 1.5 inches per hour
Bulk Density	1.25 to 1.45 grams per cubic centimeter
Total Porosity	35% to 45%
*Water Retention @ 0 to –75 cm SMP	Minimum 50% Saturation loss
*Water Release @ 0 to –350 cm SMP	Minimum value 30% Saturation

7. <u>Lawn Soil shall meet ALL the mechanical, chemical, physical and performance criteria specified herein. If the soil does not meet any one requirement, it shall be the basis for rejection of the soil.</u>

<u>2.5</u> Compost.

1. The compost shall be of biological origin, completely composted, well-decomposed and weed-free, and un-sterilized as produced by aerobic (biological) decomposition of organic matter. Compost feedstock may include, but is not limited to, leaves and yard trimmings, manure or other agricultural residuals, forest residues, and bark Ensure compost and wood chips do not contain any visible refuse, other physical contaminants, or any substance considered harmful to plant growth. Do not use materials that have been treated with chemical preservatives as a compost feedstock or as wood chips. The compost shall not possess objectionable odor and shall not resemble the raw material from which it was derived.

2. Standard soil/compost tests prior to application must be completed to ensure that it falls within the following limits:

Chemical Characteristics of Acceptable Compost			
Item	**Units**	**Range**	**Final target in soil**
Total Kjeldahl Nitrogen	ppm	1000 - 8000	50 – 3,000
Nitrate N	ppm	20 -200	2 - 10
Ammonium N	ppm	50 - 800	5 - 10
Carbon:Nitrogen Ratio		25:1 or less	
Total phosphorus	ppm	5 - 2000	5 - 50
Available phosphorus	ppm	5 - 200	2 - 15
pH		5-8	
Salt concentration	dS.m-1	<6	

Chemical Characteristics of Acceptable Compost			
Item	**Units**	**Range**	**Final target in soil**
Moisture	% wt	30-55	

(a) Medium nutrient compost. ppm = mg.kg-1 ; dS = deciSiemens (conductivity) = mmhos.cm-1
(b) P (available) by Melich-3 Method, Bray or Olsen extraction and may underestimate actual bio-available P
(c) ppm = mg.kg-1
(d) dS = deciSiemens (conductivity) = mmhos.cm-1

Physical Requirements for Compost		
Property	**Test Method**	**Requirement**
Particle Size	TMECC1 02.02-B, "Sample Sieving for Aggregate Size Classification"	95% passing 5/8 in. 70% passing 3/8 in.
Heavy Metals Content	TMECC 04.06, "Heavy Metals and Hazardous Elements": 04.06-As, Arsenic 04.06-Cd, Cadmium 04.06-Cu, Copper 04.06-Pb, Lead 04.06-Hg, Mercury 04.06-Mo, Molybdenum 04.06-Ni, Nickel 04.06-Se, Selenium 04.06-Zn, Zinc	Pass
Soluble Salts	TMECC 04.10-A, "1:5 Slurry Method, Mass Basis"	5.0 dS/m maximum2
pH	TMECC 04.11-A, "1:5 Slurry pH"	5.5–8.5
Maturity	TMECC 05.05-A, "Germination and Root Elongation"	> 80%
Organic Matter Content	TMECC 05.07-A, "Loss-On-Ignition Organic Matter Method"	40–80% (dry mass)
Stability	TMECC 05.08-B, "Carbon Dioxide Evolution Rate" (Solvita Test)	6 - 8
Fecal Coliform	TMECC 07.01-B, "Fecal Coliforms"	Pass
1. "Test Methods for the Examination of Composting and Compost," published by the United States Department of Agriculture and the USCC.		

(e) Solvita Test: Test **result** of 6 to 8.

(f) Compost should be mature and have documentation that it has completed the thermophylic and mesophylic temperature phases.
(g) Carbon to Nitrogen ratio should be no more than 25:1

3. Compost shall meet the following minimum standards for biological activity (per gram dry weight of compost):
(a) 10-15 micrograms of active bacterial biomass
(b) 100-300 micrograms of total bacterial biomass
(c) 10-15 micrograms of active fungal biomass
(d) 100-300 micrograms of total fungal biomass
(e) 5,000 total flagellates and Amoebae
(f) Less than 100 ciliates
(g) 2 to 20 beneficial nematodes

4. Acceptable Compost Supplier shall meet all of the specifications noted herein.

2.6 Dry Screened Sand.

1. Sand for structural soil shall be uniformly graded coarse sand consisting of clean, inert, rounded grains of quartz or other durable rock free from loam or clay, surface coatings, mica, and other deleterious materials with the following gradation for material passing a Number 10 Sieve for washed sieving.

U.S. Sieve Size	% Passing Minimum	% Passing Maximum
10	100	
18	85	90
35	40	60
60	12	18
140	0	5
270	0	3
0.002 mm	0	1

2. Maximum size shall be one half-inch largest dimension. The maximum retained on the #4 sieve shall be 5% by weight of the total sample. The ratio of the particle size for 80% passing (D80) to the particle size for 30% passing (D30) shall be 3.0 or less. (D80/D30 <3.0) Tests shall be by combined hydrometer and wet sieving in compliance with ASTM 0422.

2.7 Geofiber Reinforcement

1. Geofiber Reinforcement: Geofibers shall be discrete polypropylene fibrillated fibers that are inert to commonly encountered chemicals and hydrocarbons and shall be resistant to mildew, rot, insects and rodents.

2. Fibers shall conform to the following characteristics:

Property	Test Method	Requirement

Material: Polypropylene	**ASTM D4101 Group 1/Class 1/ Grade 2**	**99% Minimum**
Moisture Absorption	**-----**	**Nil**
Fiber Length	**Measured**	**2.50 inch minimum or as determined by the manufacturers recommended length for the intended application (determined during the submittal process).**
Denier	**Measured**	**360**
Aspect Ratio	**Measured/Calculated**	**260 minimum**
Color	**-----**	**Black**
Specific Gravity	**ASTM D792**	**0.91 gm/cm^3**
Carbon Black Content	**ASTM D1603**	**0.6%, minimum**
Tensile Strength	**ASTM D2256**	**40,000 psi, minimum**
Tensile Elongation	**ASTM 2256**	**15%, maximum**
Young's Modulus	**ASTM D2101**	**600,000 psi, minimum**

3. **Storage and Packaging: Store fibers in a manner to protect them from moisture and direct sunlight. The fibers shall be packaged in sealed polypropylene bags placed in cardboard or other suitable cartons. The cartons shall be properly identified with a clearly readable label. The label shall list the flowing information:**

4. **Geofiber Manufacturers:**

   (a) **Fiber Soils**
   P.O. Box 80198
   Baton Rouge, LA 70898
   Tel: 225-757-9136
   Fax: 225-752-7975
   Web: www.fibersoils.com
   Product: GeoFibers for slopes
   Turfgrids for flat areas

   (b) **Stabilizer Solutions**
   c/o Sportechnic2000 (Regional distributor for Stabilizer Solutions products)
   55 Caza St.
   NDIP, Quebec J7V 8P6
   Tel: 514.425.4223
   Web: www.sportechnic2000.com and www.stabilizersoultions.com
   sportechnic@videotron.ca
   Product: Sta-Lok Fiber

   (c) **Geosynthetic Solutions**
   4223 Rock Run Road
   Havre de Grace, MD 21078
   Te: 410.878.6341
   Fax: 410.734.4129
   Web: www.geosyntheticsolutions.com
   Product: GEOFIBERS
   Web: www.geosyntheticsolutions.com

   (d) **Or Approved equal.**

3.0 Reference Standards

1. American Society for Testing Material (ASTM).
2. American Society of Agronomy
3. Soil Science Society of America
4. Association of Official Agricultural Chemists
5. CSI Section 02950
6. All standards shall include the latest additions and amendments as of the date of advertisement for bids.

4.0 Submittals.

4.1 Certificates. Provide certificates showing that compost meets the standards of the U.S. Composting Council and the specifications noted herein.

4.2 Testing Intervals. Testing is required at the following intervals:

1. Prior to any testing, Contractor, Engineer, Soil Scientist, and Landscape Architect shall hold meetings to discuss testing requirements with the Contractor.
2. Testing Requirements: Tests are described in Section 4.3 of JSP JJJ Specialty Soils
3. If the soil scientist and landscape architect deem it necessary to adjust ~~the structural soil~~ **any planting soil mix in order to meet the specifications**, retest new **planting soil mix(es)** ~~structural~~ until test results are accepted **by the soil scientist and landscape architect.**
4. Quality Assurance Samples: After the test results for ~~structural~~ **planting** soil have been accepted, and during the placement of ~~structural~~ **planting** soils, test every 250 cubic yards of ~~structural~~ **planting** soil delivered to the job site.
5. Testing of Subgrade for All Soils (Density Tests): Prior to placement of the structural soil, test the subgrade as described in ~~this Section~~ **Article 4.3.** Coordinate the testing of the subgrade with the Sitework Contractor.
6. In-place Density Tests: Compaction tests of ~~structural~~ **planting** soil in accordance with Section 4.3 of JSP JJJ Specialty Soils. For every layer of the soil profiles, in-place density tests shall be carried out at a rate of one test per 2,000 square feet for each type of material placed.
7. For Tree and Lawn Soils: Chemical analysis shall be undertaken for Nitrate Nitrogen, Ammonium Nitrogen, Phosphorus, Potassium, Calcium, Magnesium, Aluminum, Iron, Manganese, Lead, Cation Exchange Capacity, Soluble Salts, organic matter content, acidity (pH) and buffer pH.
8. Certified reports on analyses from approved testing agencies shall be required for all producers of composted organic materials and soil components shall be required.
9. ~~When~~ **If the soil scientist and landscape architect permit the** soil sources (suppliers) ~~are~~ **to be** changed, ~~contractor~~ **Contractor** shall provide new test reports.

4.3 Test Reports and Requirements. For all soil components and soil mixes, submit certified reports for tests as described in this section.

1. Mechanical gradation (sieve analysis) shall be performed and compared to the USDA Soil Classification System. Use the sieve sizes designated within this Section.
2. The silt and clay content shall be determined by a Hydrometer Test of soil passing the #200 sieve. Percent clay at 0.002 mm shall be reported separately in addition to silt (ASTM 0-422-63, hydrometer method).

3. Density Tests: ASTM 01556 Density of soil and rock in place using Sand Cone Method". ASTM 0698 Test Method for laboratory compaction characteristics of soil using Standard Effort.
4. Test for soil Organic Matter by loss of weight on ignition, as described in Northeastern Regional Publication No. 493, p. 59.
5. Test for soil CEC by exchangeable acidity method as described in Northeastern Regional Publication No. 493, p. 64.
6. Test for soil Soluble Salts shall be by the 1:2 (v:v) soil:water Extract Method as described in Northeastern Regional Publication No. 493, p. 74.
7. Test for Buffer pH by the SMP method as described in Northeastern Regional Publication No. 493.
8. Tests for pH shall be conducted on a 1:1 soil to distilled water ratio.
9. **Leaf Yard Waste Compost Stability Test and Pathogens/ Metals/ Vector Attraction**
10. ~~Testing Agencies: The following firms are acceptable testing agencies for the various components.~~
    (a) ~~Leaf Yard Waste Compost Stability Test and Pathogens/ Metals/ Vector Attraction: Woods End Research Laboratory, P.O. Box 297, Mt. Vernon, ME, 04352, tel: 201.293.2457, fax: 201.293.2488., or approved equivalent.~~
    (b) ~~Mechanical Gradation, Chemical Analysis and Organic Matter Content, All Components and Planting Soil Mixes: University of Massachusetts, West Experiment Station, Amherst, MA 01003, tel: 413.545.2311, fax: 413.545.1931 or approved equal.~~

4.4 Sources for Soil Components and Planting Soil Mixes. Submit information identifying sources for all soil components and the firm responsible for mixing of planting soil mixes.

1. Engineer, Soil Scientist and Landscape Architect shall have the right to reject any soil supplier for non-conformance to the requirements of this ~~Specificaiton~~ **Specification**..
2. Submit supplier name, address, telephone and fax numbers and contact name.
3. Submit certification that accepted supplier is able to provide sufficient quantities of materials for the entire project.

4.4 Samples

1. Prior to ordering the below listed materials, submit representative composite samples to the Landscape Architect~~Owner~~ and Soil Scientist for selection and approval. Representative composite samples shall be composed of at least five equal-sized subsamples mixed thoroughly and resampled for submittal. Do not order materials until Landscape Architect's~~, Owner's Representative's~~ and Soil Scientist's approval has been obtained. Delivered materials shall closely match the approved samples.
2. Components
   (a) Compost: duplicate samples of 1 gallon.
   (b) Base Loam: duplicate samples of 1 gallon.
   (c) Medium to Coarse Granitic Sand: duplicate samples 1 gallon.
3. Test Blends
   (a) Planting Bed Soil: duplicate samples of 1 gallon.
   (b) Sand-Based Structural Soil: duplicate samples of 1 gallon.
   (c) Horticultural Subsoil: duplicate samples of 1 gallon.

4. Production Stockpiles
   (a) Planting Bed Soil duplicate samples of 1 gallon.
   (b) Sand-Based Structural Soil duplicate samples 1 gallon.
   (c) Horticultural Subsoil duplicate samples of 1 gallon.
5. Materials **and Product Information**
   (a) 3/4" Crushed Stone: duplicate samples of 3.8 liters 1 gallon)
   (b) Filter Fabric Mirafi 140N or equal: duplicate one square foot samples.
   (c) Geofibers: quart bag, duplicate samples.

5.0 Construction Requirements.

5.1 Preparation.

1. Coordinate activities with other project contractors so that there is no soil disturbance from traffic or other construction activities subsequent to placement.
2. PRE-INSTALLATION EXAMINATION REQUIRED. The Contractor shall examine previous work, related work, and conditions under which this work is to be performed and shall notify engineer and landscape architect in writing of all deficiencies and conditions detrimental to the proper completion of this work. Beginning work means Contractor accepts substrates, previous work, and conditions. The Contractor shall not place any structural soil until all work in adjacent areas is complete and approved by the engineer and landscape architect and Soil Scientist.
3. SOIL PREPARATION. Examine soil and remove foreign materials, stones over 1/2", and organic debris. All preparation shall be accomplished when the soil moisture content is less than field capacity.
4. MOISTURE CONTENT Contractor shall not move, blend or grade soil when moisture content is so great that excessive compaction will occur, nor when it is so dry that dust will form in the air or that clods will not break readily, nor when it is frozen. Apply water, if necessary, or allow drying to bring soil moisture between 60% of optimum moisture content on the dry side of optimum and optimum moisture content as determined by ASTM D698 for compaction, grading and plantings.
5. Field Soil Moisture Test
   (a) Form soil in palm of hand, if soil retains shape and crumbles upon touching, the soil may be worked.
   (b) If the soil will not retain shape it is too dry and shall not be worked.
   (c) If the soil retains shape and will not crumble, it is too wet and shall not be worked.
   (d) If the soil glistens or free water is observed when the sample is patted in the palm of hand the soil is too wet and shall not be worked.

5.2 Delivery, Storage, and Handling.

1. Refer to SPECIALTY PLANTING JSP for overall material handling requirements.
2. In addition, the following provision is established: Material ~~should~~ **shall** not be handled or hauled, placed or compacted when it is wet as after a heavy rainfall or is frozen. Soil ~~should~~ **shall** be handled only when the moisture content is less than at field capacity. The engineer and landscape architect shall be consulted to determine if the soil is too wet to handle.

3. Store and handle packaged materials in strict compliance with manufacturer's instructions and recommendations. Protect all materials from weather, damage, **contamination**, injury and theft.
4. Sequence deliveries to avoid delay. On-site storage space is permissible only with written notice from the engineer and landscape architect. Deliver materials only after preparations for placement of planting soil have been completed.
5. Prohibit vehicular and pedestrian traffic on or around stockpiled ~~structural~~ **and placed planting** soil.
6. Vehicular access to the site is restricted. Before construction, the Contractor shall submit for approval a plan showing proposed routing for deliveries and site access.
7. ~~Soil materials shall not be handled or hauled, placed or compacted when it is wet, as after a heavy rain, nor when frozen. Soil shall be handled only when the moisture content is less than field capacity.~~

5.3 Placement of Soil Layers

1. SOIL PLACEMENT AND PREPARATION.
   (a) Notify the engineer and landscape architect of soil placement operations at least seven calendar days prior to the beginning of work.
2. EXAMINATION OF SUBGRADE. The subgrade shall be inspected prior to the start of soil placement for conformance with the Drawings for elevations of subgrade relative to finish grade. Subgrade shall be graded smooth and parallel to the finish grades.
3. PLACEMENT OF SEPARATION GEOTEXTILE
   (a) Geotextile shall be placed on top of the prepared rock base subgrade in strict conformance with Manufacturer's recommendation and in accordance with the plans. Where there is a conflict between the Manufacturer's recommendation and the plans, the more stringent requirement shall apply. Report conflicts to engineer and landscape architect.
4. PLACEMENT OF STRUCTURAL SOIL.
   (a) Placement of structural soil shall be carried out so as to prevent the creation of undesirable soil conditions, such as voids, uneven densities, or excessive compaction.
      i. The existing base soil shall be scarified at the surface to create a blended interface between the existing base soil and the structural soil.
      ii. The soil shall be placed in lifts not to exceed 8 inches in thickness and compacted to 95% Standard Proctor.
      iii. The Contractor shall place barricades as required to prevent any unnecessary compaction of planting soil from vehicles, equipment, or pedestrian traffic.
5. PLACEMENT OF AGGREGATE
   (a) Except where tree pits will be located, Type 5 Aggregate ~~will~~ **shall** be placed carefully on top of the structural soil. Placement of aggregate shall be completed to prevent undue compaction of the underlying structural soil. Aggregate shall not be dropped into place from greater than 12 inches above grade.
   (b) Aggregate shall be placed in one 4-inch lift and graded evenly.
   (c) The Contractor shall place barricades as required to prevent any unnecessary compaction of planting soil from vehicles, equipment, or pedestrian traffic.
6. PLACEMENT OF **TREE AND LAWN** SOIL
   (a) Soil ~~will~~ **shall** be prepared to meet specifications (Sec. 2.2) at the vendor source and delivered to the site.
   (b) After placement of paving materials, structural soil will be excavated from the tree pit to the designated depth.

i. Structural soil ~~must~~ **shall** be removed ~~while avoiding~~ **in a manner that avoids** damage to surrounding paving materials **and completed work.**
ii. Upon removal of the structural soil, the bottom and sides of the tree pit will be scarified to remove smooth surfaces.
iii. A planting pedestal ~~will~~ **shall** be constructed as shown in the ~~Planting Sheet (L.9.50)~~**Plans.**

(c) Planting soil shall be placed in 8-inch lifts and allowed to settle naturally. Each lift ~~will~~ **shall** be lightly tamped to remove any voids, and the surface of each lift ~~will~~ **shall** be scarified to remove smooth surfaces. Trees ~~will~~ **shall** be placed on the pedestal before placement of planting soil lifts above the pedestal area.
(d) Planting soil ~~will~~ **shall** be placed in 8-inch lifts around the tree as described, until full depth of the tree pit is achieved.

7. **Geofibers Application and Installation: Fiber Application for Planting Soils:**
   (a) The geofiber reinforced planting soil shall be installed in areas specified on the Contract Drawings. Mixing of geofibers shall be done at the planting soil blending facility as part of the blending process. The geofiber-reinforced soil shall be then transported and placed as specified herein.
   (b) Application rates for the geofibers shall be 7 pounds per cubic yard of planting soil. Blend in the top 6" layer of planting soil.
   (c) The Contractor shall take care in handling the planting soil blends so as to minimize the separation of geofibers from the planting soil blend. If segregation occurs, the Contractor shall notify the landscape architect and soil scientist and wait for further instructions.
   (d) If fiber-reinforced planting soils are stored on site, the Contractor shall cover the piles to prevent wind or water borne erosion of the fibers and soil.

8. **Incorporation of Organic Matter in Placed Soils: Spread 2 inches of approved organic matter into the top 4" layer of tree planting soil after trees are in place and accepted. Before incorporation, verify that finish grade of the final blend shall be at the levels accepted in the field by the landscape architect. Hand-blend organics into the tree soil, fully incorporating and blending to the depths shown on the documents.**

5.4 Protection.

1. Protect newly graded areas from traffic, freezing and erosion. Keep free of trash, debris or construction materials from other work.
2. Repair and re-establish grades to specified tolerances where completed or partially competed surfaces become eroded, rutted, settled or compaction due to subsequent construction operations or weather conditions. Scarify or remove and replace material to a depth as direct by the engineer and landscape architect; reshape and re-compact at optimum moisture content to the required density.
3. Where settling occurs, before final acceptance or during the warranty period, remove finish surfacing, backfill with additional approved material, compact to specified rates, and restore any disturbed areas to a condition acceptable to Owner.

5.5 Coordination and Excess Materials.

1. Coordinate activities with other project contractors so that there is no soil disturbance from traffic or other construction activities subsequent to placement.

2. EXCESS STRUCTURAL SOIL AND MATERIALS. Remove the excess structural soil and materials from the site at no additional cost to Owner unless otherwise requested.

6.0 Post-Installation Testing. In place density testing is required in all areas **in accordance with this Section**. The standard test for surface and subsurface density shall be ASTM 0-1556.

7.0 Acceptance and Maintenance.

1. REQUEST FOR ACCEPTANCE. In writing, request engineer and landscape architect inspection for acceptance at least 10 days in advance of preferred inspection date. Do not request inspection for acceptance until work is 100% complete (not including maintenance) and in compliance with the Contract requirements.
2. PARTIAL ACCEPTANCE. Acceptance of partial areas or portions of the total work may be granted, at Owner's option, if the area to be inspected for acceptance is large, well defined, and easily described. ~~engineer~~ **Engineer** and landscape architect are not obligated to provide partial acceptance of the work.
3. Final Acceptance is defined as the time at which all work has been performed and accepted by the engineer and landscape architect including any work noted on the "Punch List".

8.0 Method of Measurement. Measurement shall be made as follows:

A. Structural Soil: per cubic yard.
B. ~~Planting~~ **Tree** Soil: per cubic yard.
C. Lawn Area Soil: per cubic yard.

9.0 Basis of Payment. Payment will be based on the contract plan quantities. Any change in the contract plan quantities, based on approved change orders, will be paid for at the contract unit price. No payment will be made for materials not installed. No separate payment will be made for any other required installation task or attachment mechanisms.

9.1 Structural Soil. Payment for the work described in the contract documents as "Structural Soil", including all materials, excavation, backfill, removals, repairs, equipment, labor, submittals and any other incidental work necessary to complete this item, will be considered covered by the Pay Item "STRUCTURAL SOIL".

9.2 Tree Soil. Payment for the work described in the contract documents as Tree Soil, including all materials, excavation, backfill, removals, repairs, equipment, labor, submittals and any other incidental work necessary to complete this item, will be considered covered by the Pay Item "TREE SOIL".

9.3 Lawn Soil. Payment for the work described in the contract documents as Lawn Soil, including all materials, excavation, backfill, removals, repairs, equipment, labor, submittals and any other incidental work necessary to complete this item, will be considered covered by the Pay Item "LAWN SOIL".

ZZZ. PANELBOARDS

1.0 Description.

2.0 Submittals.

2.1 Product Data. For each type of product indicated.

2.2 Shop Drawings. For each panelboard and related equipment.

A. Include dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings.
B. Detail enclosure types and details for types other than NEMA 250, Type 1.
C. Detail bus configuration, current, and voltage ratings.
D. Short-circuit current rating of panelboards and overcurrent protective devices.
E. Field quality-control reports.
F. Panelboard schedules for installation in panelboards.
G. Operation and maintenance data.

2.2 Quality Assurance.

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
B. Supply similar products from the same manufacturer.
C. Comply with NEMA PB 1.
D. Comply with NFPA 70.

3.0 Products.

3.1 General Requirements for Panelboards.

A. Enclosures. Surface-mounted cabinets.
    1. Rated for environmental conditions at installed location.
    2. Wet or Damp Outdoor Locations: NEMA 250, Type 4X, stainless steel.
    3. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover.
    4. Directory Card: Inside panelboard door, mounted in transparent card holder.
B. Phase, Neutral, and Ground Buses. Hard-drawn copper, 98 percent conductivity.
C. Conductor Connectors. Suitable for use with conductor material and sizes.
    1. Material: Hard-drawn copper, 98 percent conductivity.
    2. Main and Neutral Lugs: Mechanical type.
    3. Ground Lugs and Bus Configured Terminators: Mechanical 999.5.3.1.4 Service Equipment Label: NRTL labeled for use as service equipment for panelboards with one or more main service disconnecting and overcurrent protective devices.
D. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals.

3.2 Lighting and Appliance Branch-Circuit Panelboards.

A. Basis-of-Design Product. Subject to compliance with requirements, provide product indicated on Drawings.
B. Panelboards. NEMA PB 1, lighting and appliance branch-circuit type.
C. Mains. Circuit breaker.
D. Branch Overcurrent Protective Devices. Bolt-on circuit breakers, replaceable without disturbing adjacent units.
E. Contactors in Main Bus. NEMA ICS 2, Class A, mechanically held, general-purpose controller, with same short-circuit interrupting rating as panelboard.
F. Doors. Concealed hinges; secured with flush latch with tumbler lock; keyed alike.
G. Disconnecting and Overcurrent Protective Devices.
H. Molded-Case Circuit Breaker (MCCB). Comply with UL 489, with interrupting capacity to meet available fault currents.
    1. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits.
    2. Molded-Case Circuit-Breaker (MCCB) Features and Accessories:
        a. Standard frame sizes, trip ratings, and number of poles.
        b. Lugs: Mechanical style, suitable for number, size, trip ratings, and conductor materials.
        c. Application Listing: Appropriate for application; Type HID for feeding high-intensity discharge (HID) lighting circuits.

3.3 Contactor Panels.

A. **Basis-of-Design Product. Subject to compliance with requirements, provide product indicated on Drawings.**
B. **Contactors. Electrically held.**
C. **Doors. Concealed hinges; secured with flush latch with tumbler lock; keyed alike.**
D. **Disconnecting and Overcurrent Protective Devices.**

3.4 Substation Demolition.

A. **Scope of Demolition. Subject to compliance with requirements, demolition equipment as indicated on Drawings.**
B. **All demolished equipment shall be removed from site and disposed of by contractor.**
C. **Any existing equipment to remain that is damaged by the contractor at any point in time is the full responsibility of the contractor to replace in kind.**

4.0 Execution.

4.1 Installation.

A. Receive, inspect, handle, store and install panelboards and accessories according to NEMA PB 1.1.
B. Mount panelboard cabinet plumb and rigid without distortion of box.
C. Install overcurrent protective devices and controllers not already factory installed.
D. Install filler plates in unused spaces.
E. Arrange conductors in gutters into groups and bundle and wrap with wire ties.

F. Comply with NECA 1.
G. **Meter:** Comply with equipment installation requirements in NECA 1.
H. Install meters furnished by utility company. Install equipment according to utility company's written requirements. Provide empty conduits for metering leads and extend grounding connections as required by utility company.

4.2 Identification.

A. Identify field-installed conductors, interconnecting wiring, and components.
B. Create a directory to indicate installed circuit. Obtain approval before installing. Use a computer or typewriter to create directory; handwritten directories are not acceptable.
C. Panelboard Nameplates. Label each panelboard with a nameplate complying with requirements for identification.
D. Device Nameplates. Label each branch circuit device in panelboard with a nameplate complying with requirements for identification.

4.3 Field Quality Control.

A. Perform tests and inspections.
B. Acceptance Testing Preparation:
    a. Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit.
    b. Test continuity of each circuit.
C. Tests and Inspections.
    a. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
    b. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
D. Panelboards will be considered defective if they do not pass tests and inspections.
E. Prepare test and inspection reports, including a certified report that identifies panelboards included and that describes scanning results. Include notation of deficiencies detected, remedial action taken and observations after remedial action.

5.0 Method of Measurement. The work provided herein as part of ELECTRICAL PANEL will be measured by EACH unit. **The work provided herein as part of CONTACTOR PANEL will be measured by EACH unit. The work provided herein as part of SUBSTATION 95 DEMOLITION will be measured by LUMP SUM.**

6.0 Basis of Payment.

6.1 Electrical Panel. These items include the whole cost and expense to provide new electrical services, metering, panels, breakers, wire, interconnections, conduit, fittings, mounting equipment, grounding, testing, accepted and ready for operation. This price shall be full compensation for the whole cost and expense of preparation and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item, will be considered covered by the Pay Item No. 901-99.02 "Electrical Panel".

6.2 Contactor Panel. These items include the whole cost and expense to provide new electrical enclosure, contactors, control devices, wire, interconnections, conduit, fittings, mounting equipment, grounding, testing, accepted and ready for operation. This price shall be full compensation for the whole cost and expense of preparation and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item, will be considered covered by the Pay Item No. 901-99.02 "Contactor Panel".

6.3 Substation 95 Demolition. This item includes the whole cost and expense to remove electrical enclosures, panels, power equipment, control devices, wire, interconnections, conduit, fittings, mounting equipment necessary. This price shall be full compensation for the whole cost and expense of preparation, and for all labor, equipment, tools, and incidentals necessary to complete this item, will be considered covered by the Pay Item No. 901-99.01 "Substation 95 Demolition".

CCCC. UTILITY ELECTRIC

1.0 Description. This section covers all materials, labor, and expenses required for installation of utility electrical wire/cable, raceway, manholes, boxes, fittings, connections, and hardware required for utility electric system.

2.0 Submittals. All material shall be in accordance with Division 1000, Material Details, except as noted below specifically as follows:

2.1 Product Data. For each type of product indicated.

A. Field quality-control test reports.

3.0 Quality Assurance. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use. Comply with NFPA 70 and NECA.

4.0 Materials.

4.1 Power Conductors.

A. Manufacturers. Subject to compliance with requirements, provide products by one of the following:
   - Service Wire.
   - General Cable Corporation.
   - Senator Wire & Cable Company.
   - Southwire Company.

B. Copper Conductors. Comply with NEMA WC 70.
C. Conductor Insulation. Comply with NEMA WC 70 for Type XHHW-2.
D. Insulation Color. Provide color coding for secondary service, feeder, and branch circuit conductors throughout the project secondary electrical system as follows:

1. 120/240V Circuit

PHASE	COLOR
A	BLACK
B	RED
NEUTRAL	WHITE
GROUND	GREEN

2. 480/277V Circuit

PHASE	COLOR
A	ORANGE
B	BROWN
C	YELLOW
NEUTRAL	WHITE
GROUND	GREEN

E. Use conductors with color factory-applied the entire length of the conductors except as follows:
   1. The following field-applied color-coding methods may be used in lieu of factory-coded wire for sizes larger than No. 10 AWG.
   2. Apply colored, pressure-sensitive plastic tape in half-lapped turns for a distance of 6 inches from terminal points and in boxes where splices or taps are made. Apply the last two laps of tape with no tension to prevent possible unwinding. Use I-inch wide tape in colors specified. Do not obliterate cable identification markings by taping. Tape locations may be adjusted slightly to prevent such obliteration.
   3. In lieu of pressure-sensitive tape, colored cable ties may be used for color identification. Apply three ties of specified color to each wire to each terminal or splice point starting 3 inches from the terminal and spaced 3 inches apart. Apply with a special tool or pliers, tighten for snug fit, and cut off excess length.

F. Power Circuit Identification. Securely fasten identifying metal tag or aluminum wraparound marker bands to cables, feeders, and power circuits in vaults, pull boxes, junction boxes, manholes, and switchboard rooms with 1/4-inch steel letter and number stamps with legend to correspond with designations on drawings. If metal tags are provided, attach them with approximately 55-lb test monofilament line or one-piece self-locking nylon cable ties.
   Tag or Label Conductors as follows:
   1. Future Connections: Conductors indicated to be for future connection or connection under another contract with identification indicating source and circuit number.
   2. Multiple Circuits: Where multiple branch circuits or control wiring or communication/signal conductors are present in the same box or enclosure (except for three-circuit, four-wire home runs), label each conductor or cable. Provide legend indicating source, voltage, circuit number, and phase for branch circuit wiring. Phase and voltage of branch circuit wiring may be indicated by mean of coded color of conductor insulation. For control and communications/ signal wiring, use color coding or wire/cable marking tape at terminations and at intermediate locations where conductors appear in wiring boxes, troughs, and control cabinets. Use consistent letter/number conductor designations throughout on wire/cable marking tapes.

3. Matching identification markings with designations used in panelboards shop drawings, contract documents, and similar previously established identification schemes for the facility's electrical installations.

G. Underground Connectors and Splices.
   1. Construction: UL listed for watertight and submersible, heavy-duty applications
   1. Description. Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.
   2. Accepts copper conductors ranging from #14 to 250kcmil wire.
   3. Acceptable Manufacturers. Subject to compliance with requirements, provide products by one of the following:
      - Thomas and Betts.
      - Homac.
      - NSi Industries or approved equal.

H. **Medium Voltage.**
   1. **Construction: As allowed by Utility Company**
   2. **Insulation: Rated for 5000V, outdoor use.**
   3. **Acceptable Manufacturers. As approved by Utility Company:**

4.2 Rigid Metallic Conduit and Fittings.

A. Rigid Steel Conduit (RSC), unless otherwise indicated.
B. Acceptable Manufacturers of RMC Conduit Fittings:
   - Appleton Electric.
   - O-Z/Gedney Co.
   - Electroline.
   - Raco.
   - Thomas & Betts.
   - Crouse-Hinds.
   - Killark or approved equal.
C. Minimum Size Rigid Metallic Conduit: 1 inch, unless otherwise noted.
D. Fittings and Conduit Bodies:
   1. End Bell Fittings: Malleable iron, hot dip galvanized, threaded flare type with provisions for mounting to form.
   2. Expansion Joints: Malleable iron and hot dip galvanized providing a minimum of 4 inches of movement. Fitting shall be watertight with an insulating bushing and a bonding jumper.
   3. Expansion Joint for Concrete Encased Conduit: Neoprene sleeve with bronze end coupling, stainless steel bands and tinned copper braid bonding jumper. Fittings shall be watertight and concrete-tight.
   4. Conduit End Bushings: Malleable iron type with molded-on high impact phenolic thermosetting insulation. Where required elsewhere in the contract documents, bushing shall be complete with ground conductor saddle and clamp. High impact phenolic threaded type bushings are not acceptable.
   5. All other fittings and conduit bodies shall be of malleable iron construction and hot dip galvanized.

4.3 Nonmetallic Conduit and Fittings.

A. NEMA TC 2, Type EPC-40-PVC, unless otherwise indicated.
B. HDPE Polyethylene Duct, Polyethylene (PE) duct should be smooth wall duct and conform to ASTM D3035 SDR 11. Conventional PVC couplings shall not be attached to PE duct. All couplings used with PE duct shall be designed for the purpose and approved by the Engineer.

4.4 Manholes.

A. As approved by utility company.
B. Basis-of-Design Product. Subject to compliance with requirements, provide product indicated on Drawings.
C. Collars - As approved by utility company.

4.5 Ductbanks.

A. **As approved by utility company.**
B. **Basis-of-Design Product. Subject to compliance with requirements, provide product indicated on Drawings.**

4.6 Utility Meter Pole Assembly.

A. **As approved by utility company.**
B. **Basis-of-Design Product. Subject to compliance with requirements, provide product indicated on Drawings as approved by utility.**
C. **Fused Switch Cutout: 15kV, 100A, fused. Fuse to be sized by utility.**
D. **Items furnished and installed with Meter Pole Assembly**
    1. **Double Dead End**
    2. **Insulators and hardware**
    3. **Fused Switch**
    4. **Lightning Arrestor**
    5. **Control Cabinet**
    6. **Pole and pole steps**
    7. **Grounding Unit**
E. **Items furnished and installed by Utility**
    1. **Meter enclosure and Metering Assembly**
    2. **Control Wire, Conduit, and hardware**
    3. **Final Connections**

5.0 Execution.

5.1 Conductor Material Applications.

5.2 Conductor Insulation and Wiring Methods.

A. Service Entrance. Type XHHW-2 single conductors in raceway.
B. Exposed Feeders. Type XHHW-2, single conductors in raceway.
C. Exposed Branch Circuits. Type XHHW-2, single conductors in raceway.
D. Branch Circuits Concealed in Concrete and Underground. Type XHHW-2 in PVC conduit.

5.3 Installation of Conductors. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

5.4 Connections. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.

5.5 Raceway Application.

A. Above Ground. Rigid Steel Conduit (RSC).
B. Underground. PVC or HDPE.

5.6 Installations. Comply with NECA 1 for installation requirements applicable to products specified except where requirements on Drawings or in this Article are stricter. Arrange stub-ups so curved portions of bends are not visible above the finished slab. Install no more than the equivalent of three 90-degree bends in any conduit run except for communications conduits, for which fewer bends are allowed.

A. Underground Conduit **(other than ductbanks).** Where specified on drawings, use directional base method of installing underground conduit. Otherwise, conduit shall be direct buried.
    1. Joints - Conduit joints in a multiple conduit run shall be staggered at least one foot apart.
    2. Drainage - Conduit runs shall be pitched a minimum of 4" per 100 feet to drain toward the terminations. Duct runs shall be installed deeper than the minimum wherever required to avoid any conflicts with existing or new piping, tunnels, etc.
    3. Spacers - For parallel runs, use suitable separators and chairs installed not greater than 4' on centers. Band conduit together with suitable banding devices. Securely anchor conduit to prevent movement during concrete placement or backfilling.
    4. Obstructions - Before the Contractor pulls any cables into the conduit he shall have a mandrel 1/4" smaller than the conduit inside diameter pulled through each conduit and if any concrete or obstructions are found, the Contractor shall remove them and clear the conduit. Spare conduit shall also be cleared of all obstructions.
    5. Depth - Ductbanks and conduit shall be installed a minimum of 24" below finished grade, unless otherwise noted on the drawings or elsewhere in these specifications.
    6. Seals - Where a raceway enters a structure, it shall be sealed with a sealing bushing or duct seal to prevent the entry of liquids or gases. Seal must be compatible with conductors and raceway system. Spare or unused raceway shall also be sealed.
    7. Excavation - Excavate trench bottom to provide firm and uniform support for conduit.
    8. Backfill - After installing conduit, backfill and compact. Start at tie-in point, and work toward end of conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly

hand tamp backfill around conduit to provide maximum supporting strength. After placing controlled backfill to within 12 inches of finished grade, make final conduit connection at end of run and complete backfilling with normal compaction.

9. Pulling String - Contractor shall provide a polypropylene pull cord with 2000 lbs. tensile strength in each empty conduit, except in sleeves and nipples.
10. Stubs - Install manufactured rigid steel conduit elbows for stub-ups at poles and equipment.
    - Couple steel conduits to ducts with adapters designed for this purpose, and encase coupling with 3 inches of concrete.
    - For stub-ups at equipment mounted on outdoor concrete bases, extend steel conduit horizontally a minimum of 60 inches from edge of equipment pad or foundation. Install insulated grounding bushings on terminations at equipment.

6.0 Method of Measurement. Cable, Wire, Ductbanks, and Conduit will be measured per LINEAR FOOT. Manhole installation and Meter Pole Assemblies will be measured per EACH unit.

7.0 Basis of Payment.

~~**7.1 Utility Electric Wire. Separate payment will be made at the contract unit price per LINEAR FOOT of each 500kcmil XHHW-2 installed in conduit, and accepted. This price shall be full compensation for the whole cost and expense of furnishing all materials and for all preparation and installation of these materials, and for all labor, equipment, connections, tools, and incidentals necessary to complete this item, will be considered covered by the Pay Item No. 901-99.26 "Utility Electric Wire".**~~

7.2 Utility Electric Conduit (Other than Ductbanks). Payment will be made at the contract unit price per LINEAR FOOT of 5" EPC-40-PVC conduit installed and accepted. This price shall be full compensation for furnishing all materials and for all preparation and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item, will be considered covered by the Pay Item No. 901-99.03 "Utility Electric Conduit".

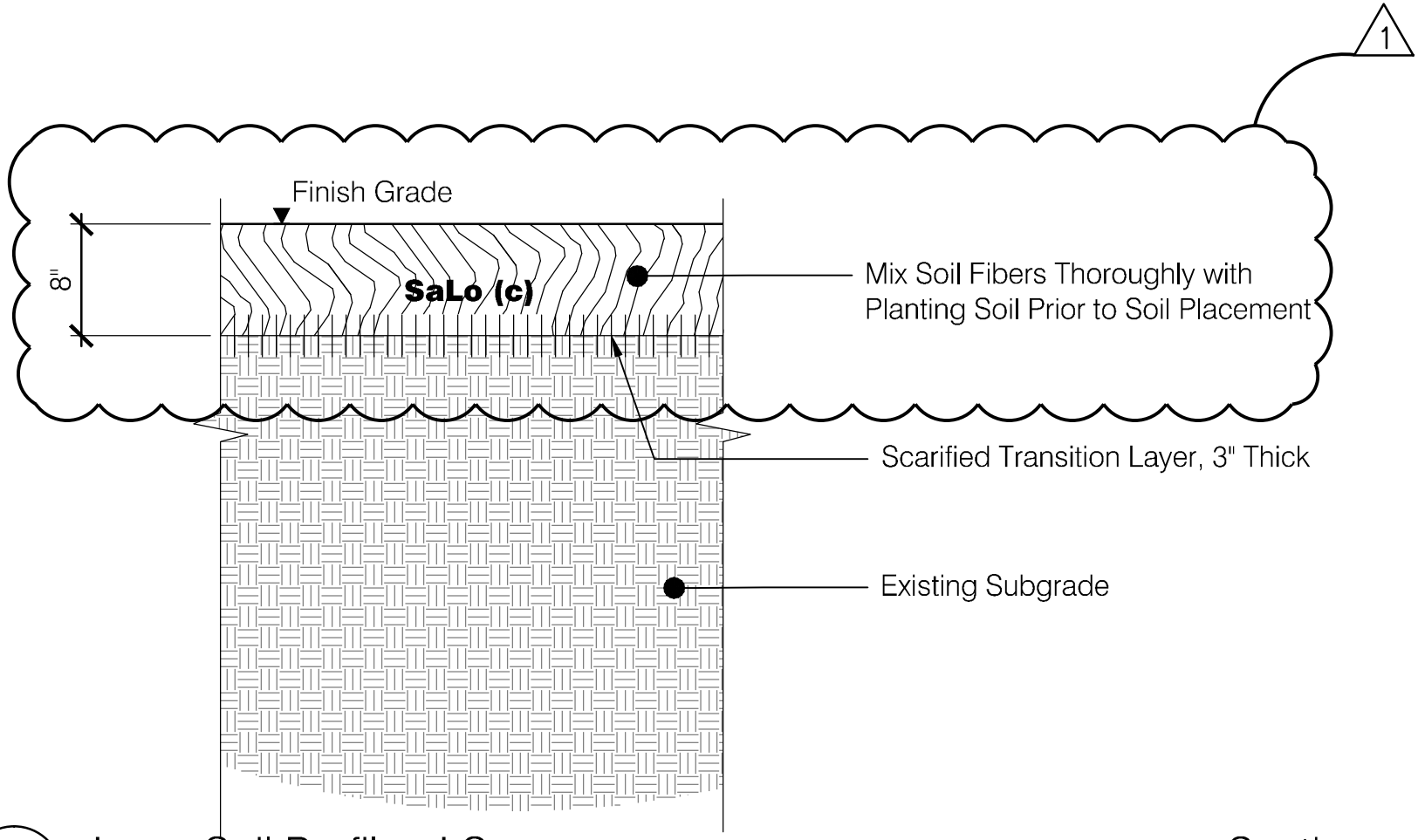
7.3 Utility Electric Manhole. The work provided herein shall be measured per each installation of UTILITY ELECTRIC MANHOLE. This price shall be full compensation for the whole cost and expense of furnishing all materials and for all preparation and installation of these materials, wiring connections, conduit caps, conduit seals, and for all labor, equipment, tools, and incidentals necessary to complete this item, will be considered covered by the Pay Item No. 901-99.02 "Utility Electric Manhole".

~~**7.4 Utility Electric Adjust to Grade. The work provided herein shall be measured per each UTILITY ELECTRIC ADJUST TO GRADE of existing utility manholes. This price shall be full compensation for the whole cost and expense of furnishing all materials and for all preparation and installation of these materials and for all labor, equipment, tools, and incidentals necessary to complete this item, will be considered covered by the Pay Item No. 901-99.02 "Utility Electric Adjust to Grade"**~~

7.5 Utility Electric Medium Voltage Wire. Separate payment will be made at the contract unit price per LINEAR FOOT of each #2 AND #6 5kV rated wire installed and accepted. This price shall be full compensation for the whole cost and expense of furnishing all materials and for all preparation and installation of these materials, and for all labor, equipment, connections, tools, and incidentals necessary to complete this item, will be considered covered by the Pay Item No. 901-99.03 "Utility Electric #2 Wire" or "Utility Electric #6 Wire".

7.6 Utility Electric Ductbank. Separate payment will be made at the contract unit price per LINEAR FOOT of each UTILITY ELECTIC DUCTBANK installed and accepted. This price shall be full compensation for the whole cost and expense of furnishing all materials and for all preparation and installation of these materials, and for all labor, equipment, connections, tools, and incidentals necessary to complete this item, will be considered covered by the Pay Item No. 901-99.02 "Utility Electric Ductbank".

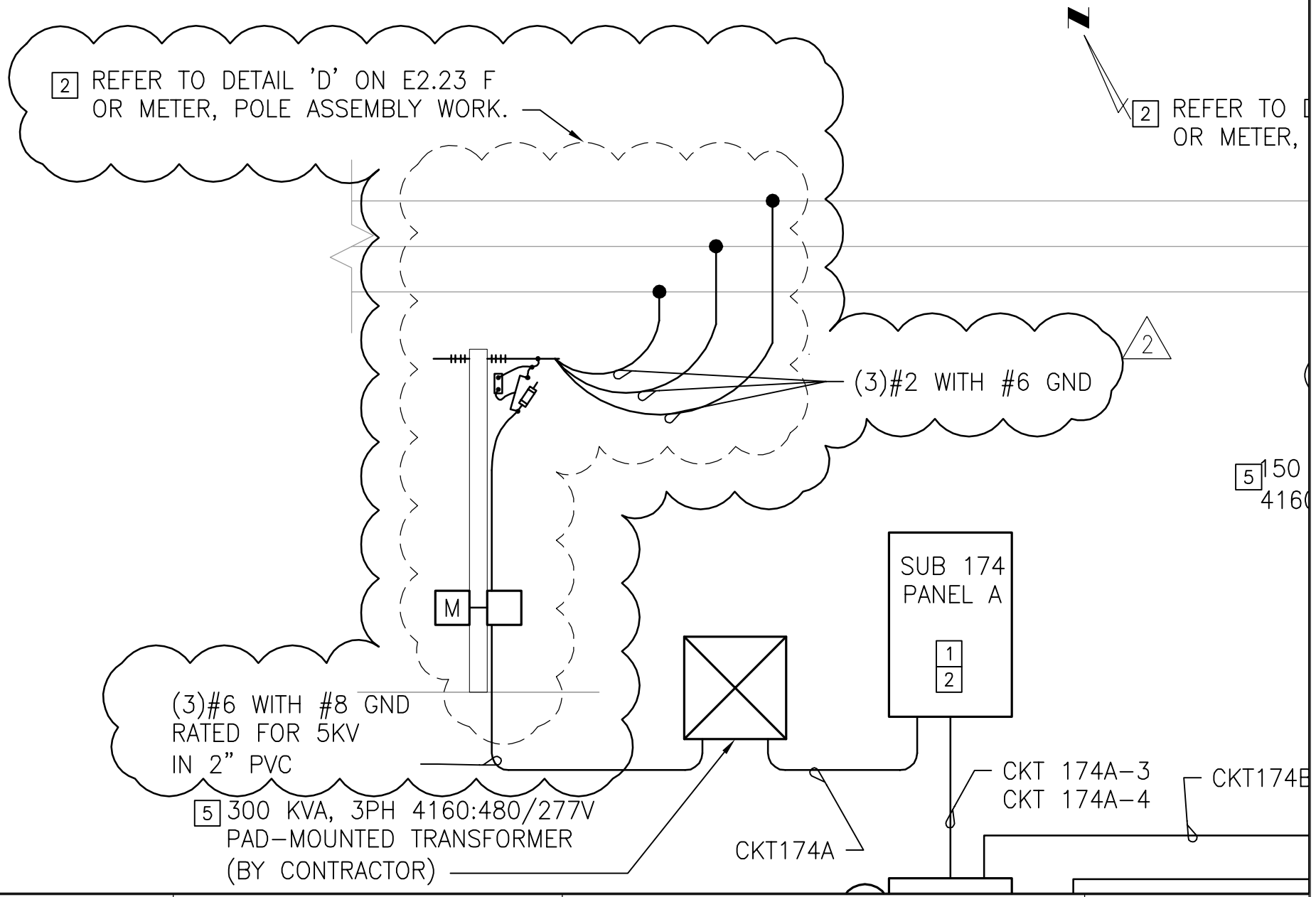
7.7 Utility Electric Meter Pole Assembly. The work provided herein shall be measured per each installation of UTILITY ELECTRIC POLE ASSEMBLY. This price shall be full compensation for the whole cost and expense of furnishing all materials and for all preparation and installation of these materials, wiring connections, conduit caps, conduit seals, and for all labor, equipment, tools, and incidentals necessary to complete this item, will be considered covered by the Pay Item No. 901-99.02 "Utility Electric Pole Assembly".



4 Lawn Soil Profile - LS — Section

1" = 1'-0"

LOCAL PUBLIC AGENCY **Great Rivers Greenway** 6174A Delmar Boulevard Saint Louis, Missouri 63112 Tel: 314.436.7009 **CO-SPONSORS** **CityArchRiver 2015 Foundation** **National Park Service**	**CONSULTANT TEAM:** **Structural Engineer / Surveyor** David Mason & Associates **Utility / Electrical Engineer** CDG Engineers, Inc. **Landscape Architect** Michael Van Valkenburgh Associates, Inc. **Lighting Consultant** Domingo Gonzalez Associates **Civil Engineer** Access Engineering, LLC **Geotechnical Engineer** SCI Engineering, Inc.	CENTRAL RIVERFRONT LEONOR K SULLIVAN BOULEVARD & BIKEWAY St. Louis, Missouri County: City of St. Louis	Addendum #2 Date 10/21/2013 Job No. TDG-0705(333) Project 2 Sheet No. L4.14-SK 1



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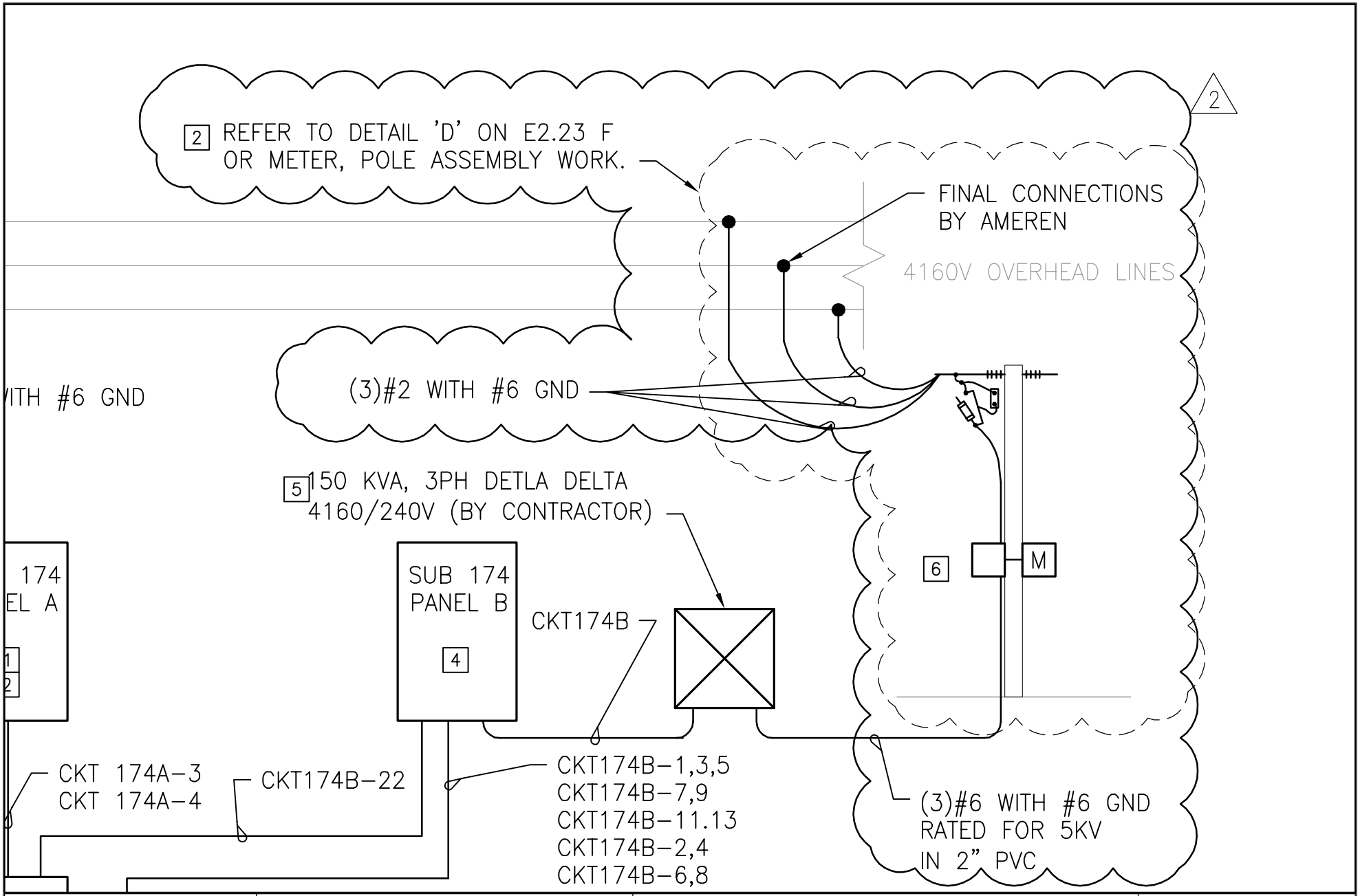
CENTRAL RIVERFRONT
LEONOR K SULLIVAN
BOULEVARD & BIKEWAY

St. Louis, Missouri

County: City of St. Louis

Addendum #2	
Date	10/21/2013
Job No.	TDG-0705(333) Project 2
Sheet No.	E2.20 - SK 3



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St. Louis, Missouri
County: City of St. Louis

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Job No.	TDG-0705(333) Project 2
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4160V OVERHEAD LINE.
FINAL CONNECTIONS BY
AMEREN.

AMEREN APPROVED DEADENDS,
INSULATORS, LIGHTNING ARRESTORS,
AND FUSED CUTOUT FURNISHED AND
INSTALLED BY CONTRACTOR. FUSES
SIZED BY AMEREN ENGINEER.

1" WEATHERHEAD

2" WEATHERHEAD

COIL 20' SPARE FOR EACH WIRE ON LINE
SIDE OF FUSED CUTOUT AND TAPE ENDS.
HANG LOOSE. FINAL CONNECTION BY OTHERS.
COORDINATE WITH AMEREN MISSOURI.

EXISTING
50KVA
TRANSFORMER
TO REMAIN IN
PLACE

2" RGS W/ (
3) #6, #6 GND
RATED FOR 5KV
TERMINATED AT FUSED CUTOUT

2

XISTING CIRCUIT 1
& 2 TO REMAIN.
EMOLISH
IRCUITS 3 & 4.

35' AMEREN APPROVED WOOD POLE
WITH AMEREN APPROVED STEPS,
GROUNDING UNIT, AND GUY WIRES
FURNISHED AND INSTALLED BY
CONTRACTOR. FINAL QUANTITY OF
STEPS AND GUYS BY AMEREN. POLE
LOCATION BY AMEREN.

INST
B-C
PAD

METER ENCLOSURE,
CONTROL WIRE,
CONDUIT, METERING
ASSEMBLY BY AMEREN

300 KVA
TRANSFORMER

STREET

AMEREN APPROVED
CONTROL CABINET BY
CONTRACTOR

/WIRING TO
CONTRACTOR
ECONNECT
UNDER THE
NSTRUCTION
EREUNDER

MIN 36" BELOW GRADE
FOR PRIMARY WIRES

GRADE

6"

TO PANEL A/B
TRANSFORMER

2" RGS TO
PVC COUPLING

3'-0"

6' MIN DEPTH

D EXISTING LIGHTING
RCUITS 1 & 2

12"

6'-0"

ATION DETAIL C -

METER POLE ASSEMBLY DETAIL

TYPICAL OF 2

D -

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St. Louis, Missouri
County: City of St. Louis

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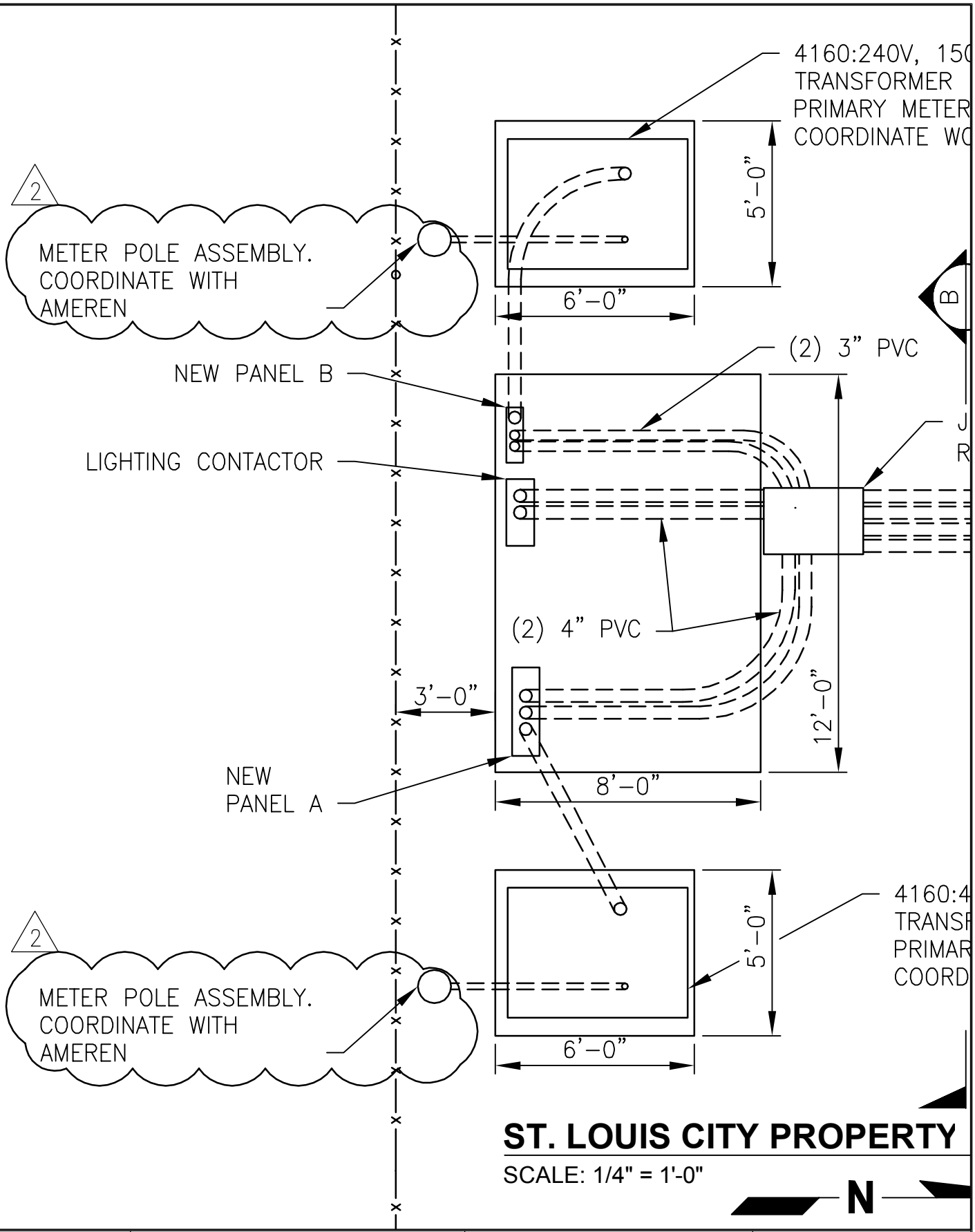

ST. LOUIS CITY PROPERTY

SCALE: 1/4" = 1'-0"

N

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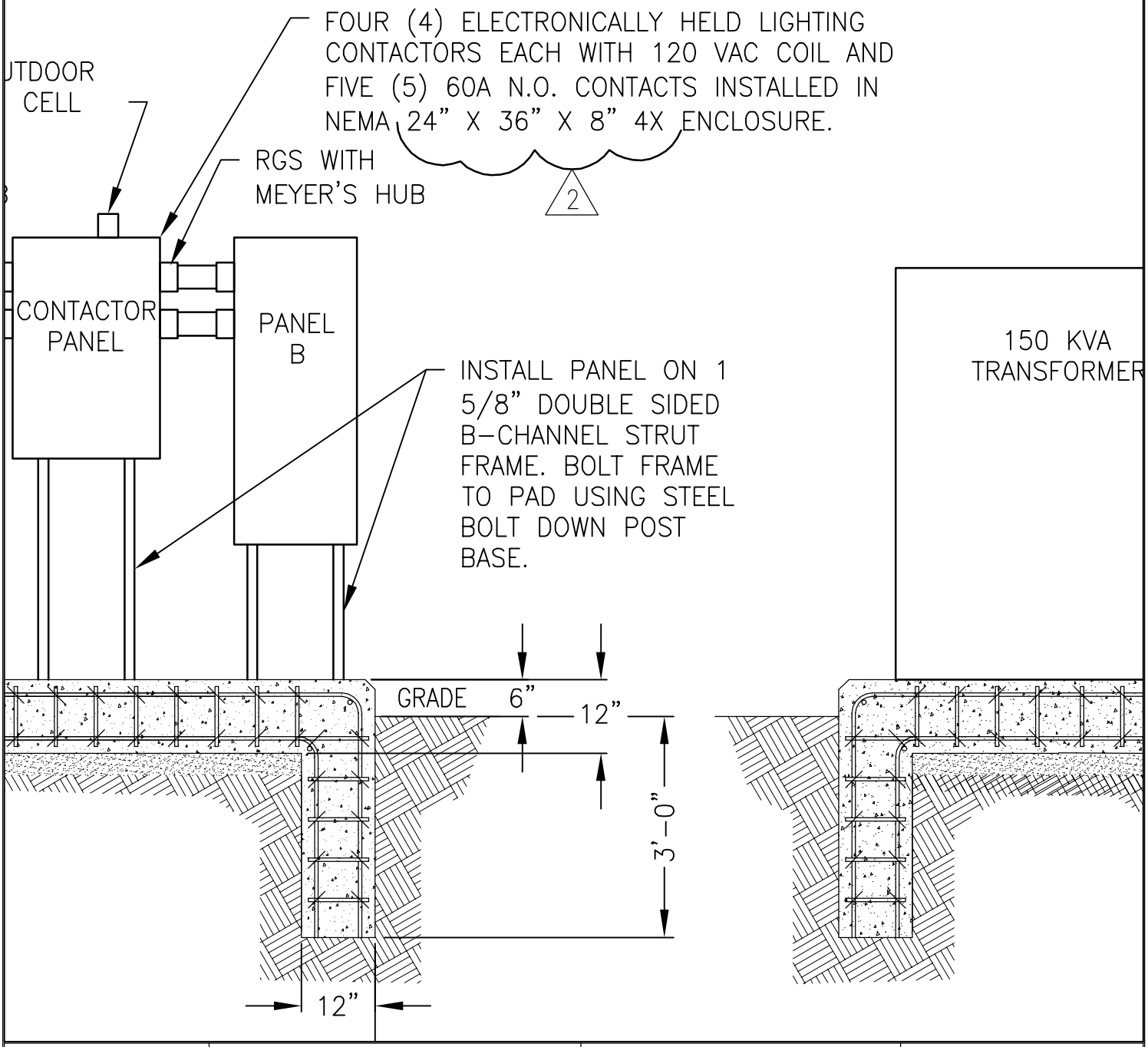
Great Rivers Greenway 6174A Delmar Boulevard Saint Louis, Missouri 63112 Tel: 314.436.7009	**Structural Engineer / Surveyor** David Mason & Associates	**Utility / Electrical Engineer** CDG Engineers, Inc.	St. Louis, Missouri	Date 10/21/2013
CO-SPONSORS **CityArchRiver 2015 Foundation** **National Park Service**	**Landscape Architect** Michael Van Valkenburgh Associates, Inc.	**Lighting Consultant** Domingo Gonzalez Associates	County: City of St. Louis	Job No. TDG-0705(333) Project 2
	Civil Engineer Access Engineering, LLC	**Geotechnical Engineer** SCI Engineering, Inc.		Sheet No. E2.23 - SK 3



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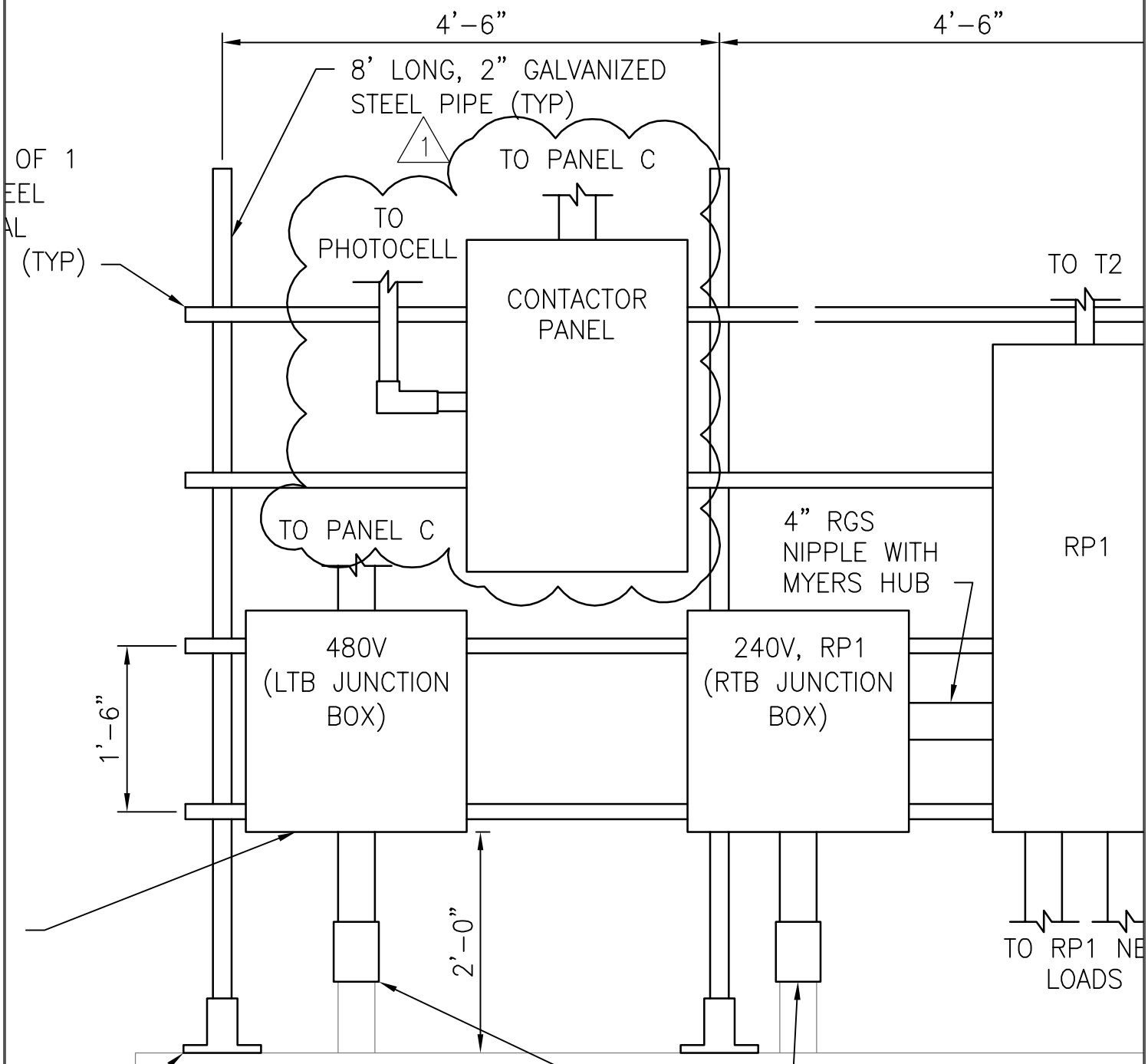

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	Civil Engineer Access Engineering, LLC	**Geotechnical Engineer** SCI Engineering, Inc.		Sheet No. E2.25 - SK 1

UTILITY ELECTRIC SPECIFICATIONS:

1. CONDUIT AND ARRANGEMENT OF DUCTS

1.1. CONDUIT SPECIFICATION. ELECTRICAL GRADE, RIGID, NONMETALLIC, SCHEDULE EB (ENCASED BURIAL) PVC CONDUIT IN A 5" DIAMETER SIZE ONLY, SHALL BE INSTALLED. IT SHALL BE 90° C RATED PVC AND MEET THE LATEST REVISION OF NEMA STANDARD TC6. THE COMPANY SPECIFIES LENGTHS OF EITHER 10' OR 20', WITH BELLED OR COUPLED ENDS. ALL MALE SECTIONS SHALL BE CUT STRAIGHT AND BEVELED ON THE INSIDE APPROXIMATELY ½" FROM ENDS TO PROVIDE A SMOOTH INTERNAL TRANSITION BETWEEN PIECES INCLUDING PIECES THAT ARE FIELD CUT.

1.2. DEVIATION FROM DRAWINGS. ANY NUMBER OF FIELD CONDITIONS MAY WARRANT DEVIATING FROM THE DUCT FORMATION SPECIFIED ON THE DRAWINGS, SUCH AS OBSTRUCTIONS, POOR SOIL CONDITIONS, THE NEED FOR A SHALLOWER TRENCH, ETC. IN SUCH CASES, THE AMEREN REPRESENTATIVE SHALL APPROVE THE DEVIATION PRIOR TO ITS BEING EXECUTED.

1.3. CONDUIT JOINING. INDIVIDUAL DUCT SECTIONS SHALL BE JOINED WITH COUPLINGS, NO INTERNAL PROTRUSIONS OR OBSTRUCTIONS ARE ALLOWED. THE CUSTOMER SHALL ENSURE THAT NO FOREIGN MATERIAL ENTERS THE DUCTS TO BE JOINED.

1.4. INSTALLATION STOPPAGE. IF THE INSTALLATION IS STOPPED TEMPORARILY FOR ANY REASON, OR IF THE CUSTOMER INSTALLATION IS COMPLETED MIDSPAN FOR THE COMPANY TO MARRY UP TO LATER, THE END OF ALL THE DUCTS IN THE FORMATION SHALL BE PLUGGED WITH APPROVED END PLUGS. IN ADDITION, IF THE CUSTOMER DUCTS ARE TO BE ENCASED AND THE TRENCH BACKFILLED FOR THE COMPANY TO EXPOSE LATER, A PLYWOOD BULKHEAD SHALL BE INSTALLED HARD AGAINST THE ENDS OF THE PLUGGED DUCTS IN ORDER TO MINIMIZE THE AMOUNT OF CUSTOMER BACKFILL THAT SPILLS INTO THE COMPANY TRENCH.

1.5. AMOUNT OF COVER. AT LEAST 36" OF COVER ABOVE THE DUCTS IN THE TOPMOST ROW SHALL BE MAINTAINED WHEREVER POSSIBLE. HOWEVER, WHEN MORE SHALLOW COVER IS UNAVOIDABLE, THE COMPANY MAY REQUIRE MEASURES BEYOND CONCRETE ENCASEMENT (SUCH AS STEEL PLATING, ETC.) IN ORDER TO PROTECT THE DUCTS.

1.6. DUCT FORMATION AT MANHOLES. CONCRETE ENCASED DUCT BANKS SHALL ENTER AND EXIT TRAFFIC–RATED MANHOLES IN ONE–COLUMN OR TWO–COLUMN FORMATIONS, REGARDLESS OF WHETHER THEIR MATRICES ARE "ROLLED" HORIZONTALLY IN MIDSPAN, OR MODIFIED IN ANY WAY.

1.7. PULLING TAPE INSTALLATION. A FLAT PULLING TAPE RATED A MINIMUM 2500 LBS. SHALL BE INSTALLED IN ALL COMPLETED DUCT SECTIONS, WITH A MINIMUM OF 10 FEET LEFT EXTENDING OUT EACH DUCT END. THE TAPE SHALL BE BLOWN INTO THE CONDUITS AFTER THE DUCT SECTION HAS BEEN COMPLETED. DURINGINSTALLATION, THE TAPE REEL SHOULD BE PLACED ON A PAY OUT STAND IN ORDER TO ALLOW THE TAPE TO PAY OUT FLATLY INTO THE DUCT IN A SINGLE CONTINUOUS PIECE. NEITHER KNOTS NOR FRAYS SHALL BE PERMITTED INSIDE A DUCT SECTION.

2. BLOCKS, SPACERS AND BOND WIRE

2.1. BLOCKS AND SPACERS (GENERAL). THE CONDUITS IN THE DUCT BANK SHALL BE ARRANGED IN THE TRENCH IN A TIGHT, ORDERLY MATRIX ARRANGEMENT WITH THE USE OF BLOCKS AND SPACERS. BLOCKS AND SPACERS ARE DUCT SUPPORTS AND SPACING GUIDES THAT MAINTAIN THE 2" CLEARANCE REQUIRED BETWEEN INDIVIDUAL DUCTS AND BETWEEN THE DUCTS AND THE TRENCH FLOOR. THEY ARE MADE OF CONCRETE AND AS SUCH, BECOME AN INTEGRAL PART OF THE OVERALL DUCT FORMATION (REF. SPEC 6).

2.2. APPROVED SUPPLIER. AMEREN APPROVED BLOCK OR SPACER SHALL MAINTAIN A STRENGTH OF 2000 PSI AND THE MINIMUM 2" CLEARANCE REQUIRED AROUND EACH DUCT.

2.3. BLOCK ARRANGEMENT. THE BLOCKS SHALL BE PLACED BENEATH THE BOTTOM ROW OF DUCTS, DIRECTLY ON THE TRENCH FLOOR, WHICH WILL ALLOW FOR A 2" LAYER OF CONCRETE UNDERNEATH THE DUCTS. ANOTHER SET OF BLOCKS SHALL BE PLACED IN AN INVERTED POSITION OVER THE TOP ROW OF DUCTS. THIS WILL SERVE AS A POURING GUIDE FOR ENSURING THAT A MINIMUM 2" CONCRETE LAYER IS ACHIEVED AT THE TOP. IN ADDITION, THE EXTRA WEIGHT WILL HELP PREVENT THE CONDUITS FROM "FLOATING" AS THE ENCASEMENT IS BEING POURED.

2.4. SPACER ARRANGEMENT. THE SPACERS SHALL BE PLACED IN BETWEEN EACH ROW OF DUCTS, WHICH WILL ALLOW FOR A 2" LAYER OF CONCRETE COMPLETELY AROUND EACH INDIVIDUAL CONDUIT.

2.5. BLOCK AND SPACER GROUPING. BLOCKS AND SPACERS SHALL BE PLACED SUCH THAT TWO ARE USED TO SUPPORT EACH 10' SECTION OF DUCT – ONE SITUATED 2' OFF EACH END. FOR 20' SECTIONS, BLOCKS AND SPACERS SHALL BE PLACED IN GROUPS OF THREE – ONE SITUATED 2' OFF EACH END, AND THE THIRD SITUATED DIRECTLY IN THE CENTER. EACH MANUFACTURED BEND SHALL BE sUPPORTED WITH ONE BLOCK/SPACER DIRECTLY IN THE CENTER, WITH THE EXCEPTION OF THE 120" RADIUS BENDS AT 45°, WHICH SHALL BE SUPPORTED WITH TWO – ONE SITUATED 2' OFF EACH END.

2.6. BOND WIRE LOCATION. A BARE 4/0 AWG, TINNED COPPER, 19–STRAND, SOFT–DRAWN CONDUCTOR SHALL BE INSTALLED IN THE DUCT BANK ALONG ITS ENTIRE LENGTH FOR PURPOSES OF ESTABLISHING A CONTINUOUS GROUND REFERENCE. IT SHALL BE SITUATED IN THE CENTER OF THE BOTTOM ROW OF DUCTS AND LAID DIRECTLY ATOP EACH BLOCK IN BETWEEN THE TWO BOTTOM CONDUITS THEY SUPPORT. THE ENCASEMENT SHALL BE POURED DIRECTLY OVER AND COMPLETELY ENCAPSULATE THE BARE BOND WIRE.

2.7. BOND WIRE ENDS. THE BOND WIRE SHALL BE BROUGHT INTO EACH TRAFFIC–RATED MANHOLE IN SUFFICIENT LENGTH TO "DRAPE THE TAIL" ONTO THE FLOOR FROM WHATEVER ELEVATION IT ENTERS WITH THE DUCTS. WHERE THE DRAWINGS INDICATE A BOND WIRE COMING UP THROUGH THE INSIDE OF A SWITCHGEAR FIBERGLASS PAD, IT SHALL BE BROUGHT UP IN SUFFICIENT LENGTH TO EXTEND THE "TAIL" TO THE CLOSEST INSIDE CORNER FROM WHEREVER IT EMERGES WITH ONE OF THE DUCTS. THE COMPANY SHALL MAKE ALL FINAL BOND WIRE CONNECTIONS AT THESE ENDPOINTS.

3. CONCRETE AND BACKFILLING

3.1. CONCRETE SPECIFICATION. THE DUCTS THEMSELVES SHALL BE ENCASED USING EITHER A 2½–SACK FLY ASH (PREFERRED) OR A 4½–SACK STANDARD CONCRETE MIX. THIS ENCASEMENT SHALL BE A 3/8" MINUS (A.K.A. "MERAMEC P–GRAVEL" OR "TORPEDO") AGGREGATE MIX AND ATTAIN A MINIMUM 28–DAY STRENGTH OF 2000 PSI (REF. SPEC 6).

3.2. ENCASEMENT REINFORCING. THE HIGH GRANULAR NATURE OF THE CONCRETE ENCASEMENT MIX SHALL FACILITATE THE COMPANY'S NEED TO BE ABLE TO CHIP AT THE CONCRETE AS REQUIRED, IN ORDER TO EXPOSE DUCTS CONTAINING ENERGIZED CABLES. UNDER NO CIRCUMSTANCES SHALL THE DUCT BANK ENCASEMENT BE REINFORCED WITH ANY FOREIGN BONDING AGENT OR MATERIAL SUCH AS STEEL REBAR OR THE LIKE.

3.3. AMOUNT OF COVER. THE CONCRETE ENCASEMENT SHALL BE POURED TO AT LEAST 2" ABOVE THE TOP ROW OF DUCTS. (THE UPPER EDGES OF THE INVERTED BLOCKS PLACED OVER THIS TOP ROW OF DUCTS SHALL BE USED AS A GUIDE.) THE TOP OF THIS ENCASEMENT SHALL BE AT LEAST 36" BELOW FINAL GRADE.

3.4. BACKFILL MATERIALS (TRAFFIC AREAS). FOR DUCT BANKS IN A TRAFFIC AREA, I.E. ALLEY, STREET OR HIGHWAY (INCLUDING A SHOULDER OR OTHER RIGHT–OF–WAY), THE LAYER ABOVE THE DUCT ENCASEMENT SHALL BE ONE OF EITHER ¾" MINUS GRANULAR OR FLOWABLE FILL, UP TO 11" OF FINAL GRADE. ACCEPTABLE FLOWABLE FILL IS A 2–SACK STANDARD CONCRETE MIX. ON TOP OF THAT SHALL BE A 9" STREET BASE LAYER OF EITHER 3–SACK FLY ASH (PREFERRED) OR 4–SACK STANDARD CONCRETE MIX. THE STREET BASE SHALL BE A ¾" MINUS (A.K.A. "MERAMEC C–GRAVEL") AGGREGATE MIX AND ATTAIN A MINIMUM 28–DAY STRENGTH OF 2400 PSI. THE FINAL 2" SHALL CONSIST OF AN ASPHALT LAYER AS APPROPRIATE.

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CENTRAL RIVERFRONT LEONOR K SULLIVAN BOULEVARD & BIKEWAY

St. Louis, Missouri

County: City of St. Louis

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4. MANHOLES AND ACCESSORIES

4.1. APPLICATION AND APPROVED SUPPLIER. TRAFFIC-RATED MANHOLES SHALL BE CALLED OUT ON THE DRAWINGS IN THOSE CASES WHERE EITHER THE COMPANY REQUIRES THE CONDUITS ENTERING AND EXITING TO BE CONCRETE ENCASED, OR A VAULT IN A DIRECT BURIED CONDUIT INSTALLATION WOULD OTHERWISE BE SUBJECT TO VEHICULAR TRAFFIC. THE COMPANY SPECIFIES THREE DIFFERENT SIZES FOR USE IN CUSTOMER-INSTALLED SITUATIONS, DEPENDING ON THE NUMBER AND SIZES OF CABLES INVOLVED (REF. SPEC 8, 9 AND 10). CHAMPION PRECAST, INC. (2441 HWY 61 NORTH IN TROY, MO 63379, 573-384-5855) IS THE COMPANY'S APPROVED SUPPLIER OF ALL TRAFFIC-RATED MANHOLES.

4.2. GENERAL DESCRIPTION. ALL TRAFFIC-RATED MANHOLES ARE MADE OF STEEL-REINFORCED CONCRETE AND ARE PRECAST IN ONLY TWO PIECES EACH. THE WALLS ARE 6" THICK AND FORM AN ELONGATED OCTAGON IN THE PLAN VIEW. THEY HAVE A PULLING EYE INSTALLED 6" ABOVE THE FLOOR IN EACH END WALL, A 12 DIAMETER SUMP HOLE CENTERED IN THE FLOOR, AND A 36" DIAMETER OPENING ENTERED IN THE ROOF FOR THE MANWAY.

4.3. PIT EXCAVATION. IN ORDER TO REGULATE THE HEIGHT OF THE MANWAY, THE EXCAVATION SHALL BE SUCH THAT THE 4 X 10 IS SET ON A FLOOR LEVELED AT 7'6" BELOW FINAL GRADE, AND THE 6 X 13 AND 6 X 17 ARE SET ON A FLOOR LEVELED AT 9'6" BELOW FINAL GRADE. ANY DEVIATION FROM THESE SETTING ELEVATIONS SHALL BE INDICATED ON THE DRAWINGS OR APPROVED BY THE COMPANY REPRESENTATIVE. THE EXCAVATION FLOOR SHALL BE LEVELED WITH A 6" LAYER OF CRUSHED ROCK OR FLOWABLE FILL PRIOR TO SETTING THE MANHOLE.

4.4. BACKFILL MATERIAL. AFTER THE MANHOLE IS SET, THE EXCAVATION SHALL BE BACKFILLED WITH FLOWABLE FILL, A WEAK 2-SACK CEMENT (A.K.A. "GROUT") MIX. THIS ELIMINATES VOIDS, DEVELOPS A "SEAL" BETWEEN THE TWO MANHOLE PIECES, AND FACILITATES THE COMPANY'S BEING ABLE DIG IT BACK OUT (IF NECESSARY IN THE FUTURE) IN ORDER TO BRING ADDITIONAL DUCTS INTO THE MANHOLE ONCE IT CONTAINS ENERGIZED CABLES.

4.5. MANHOLE NECK AND EXTENSIONS. THE MANHOLE NECK IS CONSTRUCTED TO EXTEND THE ENTRYWAY FROM THE ROOF OF THE PRECAST STRUCTURE TO THE SURFACE ABOVE. WITH THE MANHOLE SET AT A STANDARD DEPTH, THERE WILL BE ROUGHLY 2' IN WHICH TO BUILD UP THE NECK. IN SUCH A CASE, A COMBINATION OF 6" AND 3" THICK CONCRETE RING SECTIONS (REF. SPEC 11) SHALL BE STACKED ATOP THE MANHOLE ROOF. THE FRAME AND COVER SHALL BE PLACED DIRECTLY ATOP THE LAST RING (REF. SPEC 12).

4.6. MANHOLES SET EXTRA DEEP. FOR MANHOLES THAT FOR ANY REASON ARE SET EXTRA DEEP, THE NECK SHALL BE BUILT UP USING 48" DIAMETER 14 GAUGE CORRUGATED STEEL PIPE WITH ROLLED ENDS (REF. SPEC 12). THE PIPE SHALL BE STOOD UP ON ITS END, DIRECTLY ATOP THE MANHOLE ROOF. A 10" HIGH FRAME SHALL BE FORMED OUT ATOP THE ROOF AND AROUND THE BASE OF THE PIPE AT LEAST 5' SQUARE, USING 2" X 12" LUMBER. THIS PIPE "FOUNDATION" SHALL BE POURED USING EITHER A 4.8-SACK FLY ASH (PREFERRED) OR 7-SACK STANDARD CONCRETE MIX WITH A ¾" MINUS (A.K.A. "MERAMEC C-GRAVEL") AGGREGATE AND A MINIMUM 28-DAY STRENGTH OF 4000 PSI. A SIMILAR 10" HIGH "COLLAR" SHALL BE FORMED OUT AND POURED FLUSH WITH THE TOP OF THE CORRUGATED STEEL PIPE. IT SHALL BE REINFORCED WITH FOUR #3 REINFORCING STEEL BARS OVERLAPPING ON ALL SIDES AND POURED WITH THE SAME CONCRETE MIX AS THE FOUNDATION AT THE BASE OF THE PIPE. A 6" OR 3" CONCRETE RING SECTION SHALL BE STACKED ATOP THE PIPE COLLAR, AND THE FRAME AND COVER PLACE DIRECTLY ATOP THE RING.

4.7. MANHOLE FRAME AND COVER. THE COMPANY SPECIFIES A CAST IRON FRAME AND LID WITH A 36" OPENING TO COVER THE ENTRANCE TO THE MANHOLE (REF. SPEC 13). THEY ARE TRAFFIC-RATED AND COMBINE FOR OVER 650 LBS., MEETING OR EXCEEDING THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) SPECIFICATION H-20. IF FINER GRADE ADJUSTMENTS NEED BE MADE, A FRAME EXTENSION OF EITHER 1¾" OR 2¼" CAN BE USED ATOP THE FRAME PRIOR TO THE LID BEING SET.

5. TYING DUCTS INTO MANHOLES AND MANHOLE BAYS

5.1. END WALL DUCT CONFIGURATIONS. THE FAR END WALLS OF EACH MANHOLE ARE 18" WIDE AND CONTAIN "KNOCKOUT" PANELS FOR PURPOSES OF TYING IN THE CONDUITS. ENCASEMENTS OF UP TO SIX CONDUITS (IN TWO COLUMNS AND THREE ROWS) CAN BE BROUGHT INTO THE ENDS OF A 4 X 10, WHILE UP TO TEN CONDUITS (IN TWO COLUMNS AND FIVE ROWS) CAN BE BROUGHT INTO THE ENDS OF A 6 X 13 OR 6 X 17. UNDER NO CIRCUMSTANCES SHALL A DUCT BANK BE BROUGHT INTO A MANHOLE THROUGH EITHER SIDEWALL.

5.2. CONDUIT CONNECTION (EXISTING MANHOLE). THE CUSTOMER SHALL NOT INSTALL NEW CONDUITS DIRECTLY INTO A MANHOLE THAT ALREADY CONTAINS ENERGIZED COMPANY-MAINTAINED CABLES, REGARDLESS OF THE MANHOLE'S LOCATION ON OR OFF CUSTOMER PROPERTY, UNLESS ARRANGEMENTS TO THAT EFFECT ARE MADE WITH THE COMPANY REPRESENTATIVE. WHEN THE DRAWINGS SPECIFY THAT CUSTOMER-INSTALLED CONDUITS BE BROUGHT INTO SUCH A MANHOLE, THE CUSTOMER SHALL STOP THE CONDUIT INSTALLATION ROUGHLY 10' FROM THE MANHOLE, OR AT A LOCATION OTHERWISE DETERMINED BY THE COMPANY REPRESENTATIVE. THE COMPANY SHALL PICK UP THE INSTALLATION AT THIS POINT AND TIE IT INTO THE MANHOLE.

5.3. USING END WALL KNOCKOUTS. AFTER A KNOCKOUT IS REMOVED, PLYWOOD BACKING SHALL BE BRACED DIRECTLY AGAINST THE INSIDE WALL OVER THE HOLE TO ENSURE A CONCRETE POUR THAT IS FLUSH. THE CONDUITS SHALL BE SLID INTO THE MANHOLE WITH STRAIGHT COUPLINGS ATTACHED TO THE ENDS, UNTIL THEY BUTT DIRECTLY UP AGAINST THE PLYWOOD. NO HOLES SHALL BE DRILLED INTO THE PLYWOOD FOR THE CONDUITS. THE COUPLINGS SHALL BE SEALED FIRST WITH DUCT PLUGS IN ORDER TO PREVENT THE POURED ENCASEMENT FROM ENTERING THE DUCTS. A HOLE SHALL BE DRILLED INTO THE PLYWOOD BACKING AND THE 4/0 BOND WIRE PULLED THROUGH IT IN A SUFFICIENT LENGTH TO DRAPE THE TAIL ONTO THE FLOOR.

5.4. ENCASING END WALL DUCTS. WHEN THE DUCT ENCASEMENT IS POURED, THE CONCRETE SHALL BE RUN UP FULL AGAINST THE PLYWOOD BACKING TO RE-ESTABLISH A CONTIGUOUS END WALL IN THE MANHOLE. THE PLYWOOD SHALL NOT BE REMOVED UNTIL THE CONCRETE HAS COMPLETELY SET UP.

5.5. BAYS AND DUCT CONFIGURATIONS. THE FOUR DIAGONAL WALLS OF EACH MANHOLE (THE "WING WALLS") ALSO CONTAIN KNOCKOUT PANELS, INTENDED FOR TYING IN CONDUITS FROM A DIRECTION OTHER THAN THAT IN WHICH THE MANHOLE IS LINED UP. SUCH A KNOCKOUT IS USED FOR THE CONSTRUCTION OF A BAY - A "TELESCOPING OUTGROWTH" OF THE MANHOLE WALL IN A DIRECTION THAT LINES UP WITH THAT OF THE INCOMING DUCT BANK (REF. SPEC 14). ENCASEMENTS OF UP TO FOUR CONDUITS (IN TWO COLUMNS AND TWO ROWS) CAN BE BROUGHT INTO A BAY OF A 4 X 10, WHILE UP TO EIGHT CONDUITS (IN TWO COLUMNS AND FOUR ROWS) CAN BE BROUGHT INTO A BAY OF A 6 X 13 OR 6 X 17.

5.6. NEED FOR MANHOLE BAYS. THE NEED FOR THE CONSTRUCTION OF A BAY IN A MANHOLE SHALL BE DETERMINED BY THE COMPANY AND INDICATED ON THE DRAWINGS. UNDER NO CIRCUMSTANCES SHALL A DUCT BANK BE BROUGHT INTO A MANHOLE THROUGH THE WING WALL WITHOUT THE CONSTRUCTION OF A BAY. THE BAY IS IMPERATIVE FOR CABLE TRAINING PURPOSES, EVEN IF THE ANGLE OF THE WING WALL ALREADY LINES UP PROPERLY WITH THE INCOMING CONDUITS.

5.7. WING WALL KNOCKOUTS AND BAY FORMATION. AFTER THE WING WALL KNOCKOUT IS REMOVED, A PLYWOOD FORM IN THE SHAPE OF A TRUNCATED PYRAMID SHALL BE CONSTRUCTED, THE BASE OF WHICH IS SLIGHTLY LARGER THAN THE NOCKOUT HOLE. THIS FORM SHALL BE INSERTED THROUGH THE KNOCKOUT OPENING FROM INSIDE THE MANHOLE AND BRACED AGAINST THE INTERIOR EDGE OF THE KNOCKOUT OPENING. THE TRUNCATED PLYWOOD SURFACE "TELESCOPING" OUT OF THE WALL SHALL BE LARGE ENOUGH AND AT SUCH AN ANGLE THAT THE INCOMING CONDUITS CAN ALL BUTT UP DIRECTLY AGAINST IT.

5.8. EXTENDING MANHOLE BAY DUCTS. THE INCOMING CONDUITS SHALL BE SLID INTO THE BAY WITH STRAIGHT COUPLINGS ATTACHED TO THE ENDS, UNTIL THEY BUTT DIRECTLY UP AGAINST THE TRUNCATED PLYWOOD SURFACE. NO HOLES ARE TO BE DRILLED INTO THE PLYWOOD FOR THE CONDUITS. THE COUPLINGS SHALL BE SEALED FIRST WITH DUCT PLUGS IN ORDER TO PREVENT THE POURED ENCASEMENT FROM ENTERING THE DUCTS. A HOLE SHALL BE DRILLED INTO THE PLYWOOD AND THE 4/0 BOND WIRE PULLED THROUGH IT IN A SUFFICIENT LENGTH TO DRAPE THE TAIL THROUGH THE BAY AND ONTO THE FLOOR.

5.9. ENCASING MANHOLE BAY DUCTS. WHEN THE DUCT ENCASEMENT IS POURED, THE CONCRETE SHALL BE RUN UP AGAINST THE ENTIRE OUTER PLYWOOD SURFACE OF THE BAY TO RE-ESTABLISH A CONTIGUOUS MANHOLE STRUCTURE. THE PLYWOOD FORM SHALL NOT BE REMOVED UNTIL THE CONCRETE SETS UP COMPLETELY. x

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CO-SPONSORS
CityArchRiver 2015 Foundation

National Park Service

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David Mason & Associates

Utility / Electrical Engineer
CDG Engineers, Inc.

Landscape Architect
Michael Van Valkenburgh Associates, Inc.

Lighting Consultant
Domingo Gonzalez Associates

Civil Engineer
Access Engineering, LLC

Geotechnical Engineer
SCI Engineering, Inc.

CENTRAL RIVERFRONT
LEONOR K SULLIVAN
BOULEVARD & BIKEWAY
St. Louis, Missouri
County: City of St. Louis

Addendum #2
Date 10/21/2013
Job No. TDG-0705(333) Project 2
Sheet No. E2.27 - SK 1B

PANELBOARD SCHEDULE

PANEL : **SUBSTATION 95 PANEL C (EXISTING)**
LEONOR K. SULLIVAN BLVD.

VOLTS: **480**
PHASE/WIRE: **3PH, 4W**
MAIN: **200A MCB**

CKT NO.	O/C PROT. NO. POLES	SERVICE	LOAD (KVA) LIGHT	RECPT	MOTOR & APPL.	LINE/ PHASE	LOAD (KVA) LIGHT	RECPT	MOTOR & APPL..	SERVICE	PROT. NO. POLES	CKT NO.
1	60A	REFED CIRCUIT FOR CASINO LIGHTS (PORTE COSHERE)				A				SPARE (EXISTING)	100A	2
3						B						4
5						C						6
7	100A	EXISTING RECEPTACLES				A				LKS LIGHTING CKT95-1	60A	8
9						B						10
11						C						12
13	60A	REFED CIRCUIT FROM LP				A				LKS LIGHTING CKT95-5	60A	14
15						B						16
17	60A	SPARE				C						18
19						A						20
21						B						22
23						C						24
25						A						26
27						B						28
29						C						30

PANELBOARD SHORT CIRCUIT RATING: 22,000
PANELBOARD FEATURES:
1 NEW INTERIOR IN EXISTING ENCLOURE
2. BOTTOM FEED
3. CONTROLS - G3 POWERLINK 500 CONTROLLER

A KVA	B KVA	C KVA
#REF!	#REF!	#REF!

PANELBOARD LOAD SUMMARY:

LIGHTING LOAD:	0	KVA
RECEPTACLE LOAD:	0	KVA
MOTOR/EQUIPMENT LOAD:	0	KVA
TOTAL CONNECTED LOAD:	0	AMPS
TOTAL DEMAND LOAD:		AMPS

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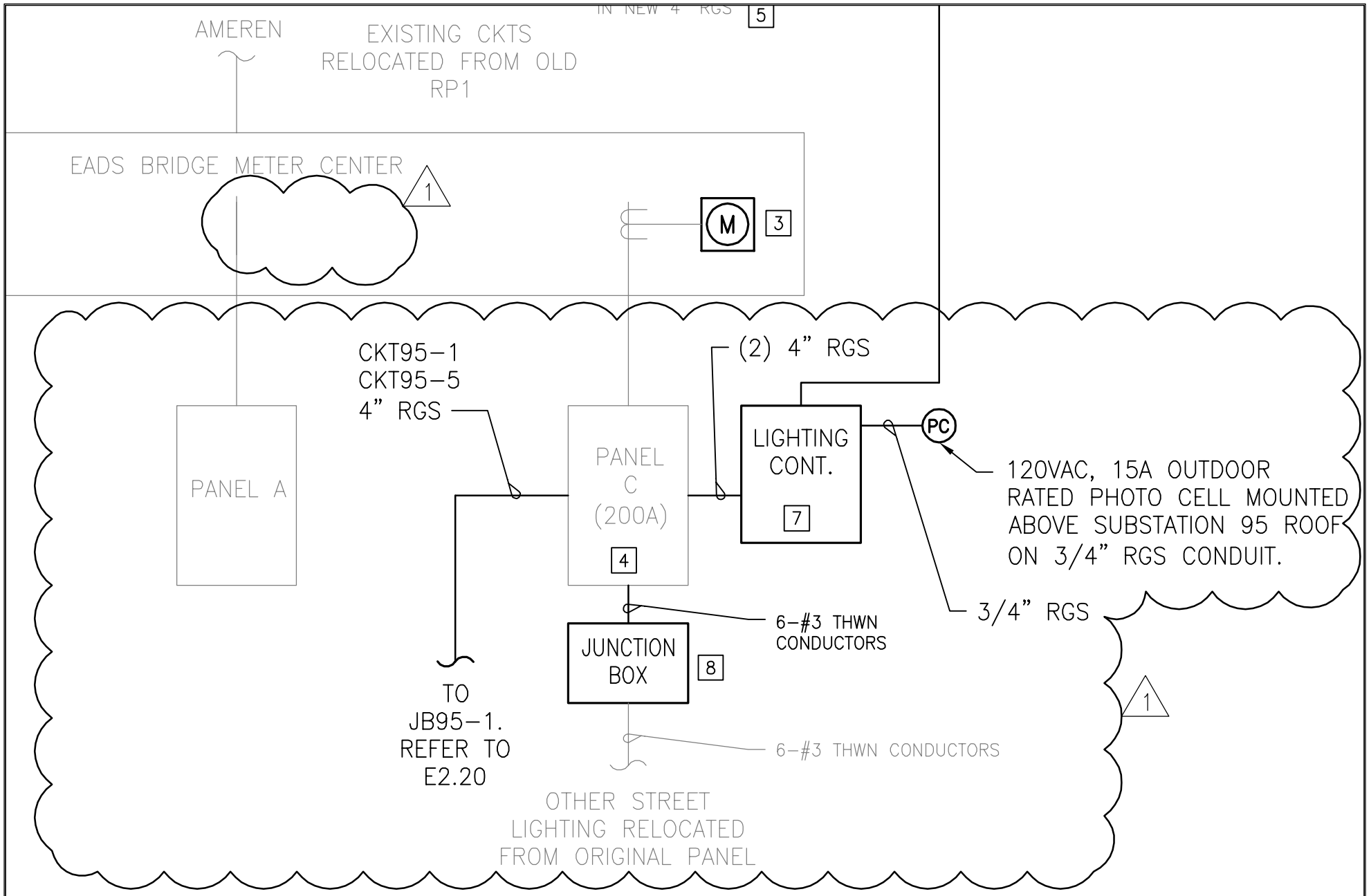
CENTRAL RIVERFRONT
LEONOR K SULLIVAN
BOULEVARD & BIKEWAY
St. Louis, Missouri
County: City of St. Louis

Addendum #2
Date 10/21/2013
Job No. TDG-0705(333) Project 2
Sheet No. E2.28 - SK 1



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CENTRAL RIVERFRONT
LEONOR K SULLIVAN
BOULEVARD & BIKEWAY

St. Louis, Missouri

County: City of St. Louis

Addendum #2	
Date	10/21/2013
Job No.	TDG-0705(333) Project 2
Sheet No.	E2.28 - SK 2

METER SOCKET. COORDINATE INSTALLATION WORK WITH AMEREN MO.

4 PANEL C MODIFICATIONS: FURNISH AND INSTALL FOUR (4) 60A, 480V, 3P SQAURE D EJB BREAKERS AND ONE (1) 60A, 2P BREAKER IN PANEL C. REFER TO THIS DRAWING FOR PANEL C SCHEDULE. TERMINATE CABLES FOR CIRCUIT CKT95–1 AND CKT95–5 AT 60A BREAKER LUGS. 2

5 EXISTING CIRCUITS TO BE REFED: NO INFORMATION EXISTS TO CONFIRM LOADS OF EXISTING CIRCUITS. CONTRACTOR TO FIELD VERIFY LOADS OF EACH CIRCUIT AND CONFIRM REFEED WITH CITY OF ST LOUIS STREET DEPARTMENT OR ENGINEER.

6 PANEL RP1: FURNISH AND INSTALL 300A, 120/208V, 3PH, 4 WIRE, NEMA 4X PANEL. REFER TO E2.21 FOR PANEL SCHEDULE. REFER TO E2.23 FOR INSTALLATION DETAILS.

7 CONTACTOR PANEL: FOUR (4) ELECTRONICALLY HELD LIGHTING CONTACTORS EACH WITH 120 VAC COIL AND FIVE (5) 60A N.O. CONTACTS INSTALLED IN 24" X 36" X 8" NEMA 4X ENCLOSURE.

8 JUNCTION BOXES FOR EXISTING WIRING: THERE ARE EXISTING CIRCUITS FROM EXISTING PANEL RP1 AND AND EXISTING 480V 400A PANEL THAT NEED TO BE REFED TO NEW PANELS RP1 AND PANEL A. FURNISH AND INSTALL TWO (2) NEMA 4X 30"H X 24"W X 6"D JUNCTION BOXES ON MOUNTING RACK. PULL

CENTRAL RIVERFRONT LEONOR K SULLIVAN BOULEVARD AND BIKEWAY
TDG-0705 (333) PROJECT 2
BIDDER QUESTIONS AND RESPONSES

10/21/2013 1:36:14 PM

Q#	QUESTION	RESPONSE	ISSUED
1	Q1: On the electrical sheets, Note #1 in the Electrical Utility Notes states Ameren to adjust the 19 existing manholes to grade, why is there a bid item Utility Electrical Manhole Modification?	A1: There should no longer be a bid item for manhole modifications. See Addendum #1.	Addendum #1
2	Q2: On Sheet E1.03 Cable & Conduit Installation, one note calls for fourteen (14) 5" PVC w/12 each 500 KCMIL and another note calls for six (6) 5" PVC conduits w/12 each 500 KCMIL. Should the correct quantity be six (6) 5" conduits?	A2: Yes, the note calling out fourteen (14) 5" conduits should read six (6) 5" conduits. See Addendum #1.	Addendum #1
3	Q3: Is the only conduit to be concrete encased the Utility Ductbank and does it require a bare ground installed in the concrete encasement?	A3: Yes, only the utility (Ameren) conduits are to be concrete encased. Yes, it requires a ground based on Ameren specifications. Bare ground should be 4/0, 19 strand, tinned copper and run length of ductbank. Ground should be located in the center of the bottom row of ducts. Concrete should fully encapsulate bare ground. Sufficient length should be brought into each manhole that tail can rest on floor. See Addendum #1.	Addendum #1
4	Q4: Pay Item 901-99.02 "Pylon Electrical" shows a total quantity of 55. If the number of electrical pylons is to match the number of galvanized steel poles, shouldn't the quantity be 44 instead of 55?	A4. Yes, the quantity should be 44 not 55. See Addendum #1.	Addendum #1
5	Q5: Pertaining to Pay Item 901-99.02 "Non-Pylon Electrical", if this number is to equal the number of concrete poles should the quantity for this pay item be 41 instead of 30?	A5: Yes, the quantity should be 41 not 30. See Addendum #1.	Addendum #1
6	Q6: Pay item 901-99.02 "Electrical Panel" shows a quantity of 2. Shouldn't there be more than 2?	~~A6: Yes, there should be three (3) panels (1 480v, 2 240v) and one (1) panel interior. See Addendum #1.~~ A6-Rev: There are (3) Electric Panels and (2) Contactor Panels. See Addendum #2.	Addendum #1 Addendum #2
7	Q7: Concerning Note #3 on drawings referring to the number of 500KCMIL conductors in the UE duct bank, are we to assume that the number shown is the total amount of conductors, and that there are spare conduits in the ductbanks?	A7: Yes, you should assume the other conduits are spare in the duct bank.	Addendum #1
8	Q8: Can you supply more information on the FIBER OPTIC CABLE required on the above project. The supplier needs to know the number of fibers, what type of fibers ie Single or Double Mode, what size do the fibers need to be, and any other information you can supply. It is my understanding we will not be terminating this cable but just installing it to the various poles for the camera installer to use.	A8: The fiber details are called out on drawing E2.26. 12 strand single-mode, 12 strand multi-mode, plenum rated cable. Also, you are correct that you are providing cable to the poles for the camera installer to perform final connections.	Addendum #1
9	Q9: Preliminary review shows entire fill made of crushed rock base	A9: Earthwork shall be bid as indicated on the Contract	Addendum #1

Q#	QUESTION	RESPONSE	ISSUED
	material. Would "clean fill" i.e. clay soil and/or processed road materials (similar to what will be rubblized and left in place) be able to be placed in bottom two foot of fill, then capped with base rock? I believe this would greatly reduce cost of earthwork portion.	Documents.	
10	Q10: Since the project is partially funded thru MoDOT, do MoDOT approved Contractors need a City of St. Louis license, plumbers license, etc. for work performed on this project?	A10: All City of St. Louis and Metropolitan St. Louis Sewer District license requirements are applicable to this project.	Addendum #1
11	Q11: While reviewing the scope of work for the Work Category 12 – Electrical, it says that the contractor is responsible for installing the utility electric wire. I spoke with Les Nolan at AmerenMO to figure out how that would work since typically, Ameren would install the wire themselves. He told me that the wire would be installed by Ameren. Are we to carry the cost of the Ameren installed wire or should the pay item be removed from the bid? I also told him what quantity we were to figure and his initial figures were quite a bit less than what was shown.	A11: Pay Item 901-99.03 UTILITY ELECTRIC WIRE should be removed from the work and bid items list as this work will be performed by Ameren. All bidders for Work Category – 12 Electrical shall use the revised 00400 – BID FORM (Form GRG 1) – Work Category 12 – Electrical contained in Addendum #2.	Addendum #2
12	Q12: Is there a CAD file available for this project? It would really help us develop a more accurate takeoff.	A12: CAD files are not available to bidders.	Addendum #2
13	Q13: Will the contractor be able to submit material storage allowances for materials purchased in order to avoid material increases due to the project being split into phases and 2 construction seasons. This will help the contractor avoid material price increases.	A13: Payments to the Contractor will be in accordance with the provisions of Section 109 Measurement and Payment of the MoDOT Standard Specifications.	Addendum #2
14	Q14: Does non-reinforced pavement have dowel bar baskets at transverse joints?	A14: All concrete roadway pavements noted with "15 ft joints" shall have dowel bars at the contraction joints in accordance with MODOT Standard Drawing 502.05	Addendum #2
15	Q15: Does pavement have to be poured with slip-form pavers?	A15: Slip form methods may be used, but are not required.	Addendum #2
16	Q16: Is demo/earthwork contractor responsible for demolition and excavation for flood control structures?	A16: All excavation and selective demolition for flood closure structure modifications shall be performed by the Work Category 7 – Concrete Contractor.	Addendum #2
17	Q17. Sheet E2.01 shows 19 pylons with deep foundations. You have 17 for Bid Item 702-99.02. Can you check and let me know if it will be adjusted, please?	A17: The numbers in the lighting schedule on Sheet E2.01 do not indicate the number of pylons, but rather the number of luminaires per pole, pylon and non-pylon. Refer to Sheets S5.20 – S5.22 to determine the pylons requiring deep foundations. The quantity for Pay Item 702-99.02 PYLON DEEP FOUNDATIONS is incorrect in the Bid Form, and should be revised to (18 each). All	Addendum #2

Q#	QUESTION	RESPONSE	ISSUED
		bidders for Work Category – 7 Concrete shall use the revised 00400 – BID FORM (Form GRG 7) – Work Category 7- Concrete contained in Addendum #2.	
18	Q18: The following items are listed in the plans for the flood gate plans that are either installed or embedded in the concrete work we are doing. Would like clarification if the Concrete Contractor is to supply these as well as install them and any other embeds: a). Attach/Repair Anchor Bolts b). Install Sill Angles c). Install 2" Pocket Drain d). Install MH Frame/Grate	A18: Bidder should review all applicable Section(s) 00310 – SCOPE OF CONSTRUCTION WORK, and JSP EEE FLOOD CLOSURE STRUCTURE MODIFICATIONS. Specifically, the following answers are provided: a). Attach/Repair Anchor Bolts - Furnished by Work Category 9 [Item #3 Scope of Work]; installed by Work Category 7 [Item # 12 Scope of Work] b). Install Sill Angles - Furnished by Work Category 9 [Item #3 Scope of Work]; installed by Work Category 7 [Item #12 Scope of Work] c). Install 2" Pocket Drain - Furnished and installed by Work Category 11 d). Install MH Frame/Grate - Furnished and installed by Work Category 11	Addendum #2
19	Q19: We also have a question regarding the Mooring Piers. It says removal and replacement of cobblestones is included in the plans/scope. Is the Concrete Contractor responsible for this or will the Cobblestone Contract take care of this?	A19: The Work Category 8 – Pavers Contractor is responsible for cobblestone removal and replacement related to mooring piers.	Addendum #2
20	Q20: We are bidding the concrete package and my question concerns bid item 703-99.07, Flood Closure Structure Concrete (Carr). The bid quantity shown on the proposal is 82 cubic yards. However, when looking at sheets S4.00 and S4.01, there appears to be approximately 305 SF that's 3 feet thick (from 414.50 to 411.50) and about 295 SF that's 12.7 feet thick (414.50 to 401.80). This would represent a total quantity of over 170 cubic yards. Could you clarify?	A20: The quantity for Pay Item 703-99.07 FLOOD CLOSURE STRUCTURE STRUCTURAL CONCRETE (CARR) is incorrect in the Bid Form, and should be revised to (182 cubic yards). All bidders for Work Category – 7 Concrete shall use the revised 00400 – BID FORM (Form GRG 7) – Work Category 7- Concrete contained in Addendum #2.	Addendum #2
21	Q21: Leonor K Sullivan combination bids: We will be self-performing 90% of the work on Packages 4, 7 & 11. We would accept the Concrete package 7 on its own. We would like to give combination bids for packages 4 & 11 only if tied to Package 7 award. Bids for packages 4 & 11 would state that we "… will not accept award of this package without awarding package 7." Would this be accepted? If not, would a combination bid reduction of say	A21: Bids will only be accepted for individual work categories. Bidders are not to provide combination bids, or discounts for multiple work categories. Bidders are not to make conditions or other bid qualification statements on the Bid Forms, doing so may be considered "non-responsive".	Addendum #2

Q#	QUESTION	RESPONSE	ISSUED
	(x)% be allowed on packages 4 & 11 combined with the award of package 7. Not sure how to bid on this combination of $15,000,000 worth of work.		
22	Q22: For Clarification the Typicals state, "Concrete Pavement and Pavement Joints Shall be Constructed per Modot Standard Drawing 502.05." But in the JSP HH it states, "All sawed contraction joints shall be sealed unless otherwise specified." We just want to clarify that all pavement contraction joints need to be sealed.	A22: MoDOT Standard Drawing 502.05M shows joint details, spacing and layout, and for this Project applies to Concrete Pavement (9-inch non-reinforced 15-ft joints). All sidewalk pavements constructed under bid items 502 or 608 may have either tooled contraction joints or saw-cut contraction joints, but not a combination of the both. The provision in JSP-HH for sealing of all saw-cut joints and expansion joints applies to all pavements in this project.	Addendum #2
23	Q23: Concrete Scope #37 says, "Furnishing and installing all mesh and reinforcing bar and dowels in all site concrete." What items would require mesh?	A22: Mesh is not required on the project.	Addendum #2
24	Q24: Which Contractor is responsible for Full Depth Sawcut at pavement tie-in and along the new sidewalk at the bottom of retaining wall? Demo Scope states the following, "All saw cutting as required to support the site demolition work. Note: If this contractor elects to "rough break" areas without sawcutting then they will be expected to return to the jobsite immediately before pavement repairs to provide a clean edge." Does that include the areas for the new sidewalk called out in the plans?	A24: All saw cutting required for the project will be performed by the Work Category 4 – Demolition/Earthwork Contractor.	Addendum #2
25	Q25: Can you please send me the weight and EPA of the fixture?	A25: Basis of Design Luminaire type L1, L2, L3, L3a : 54 lbs each, EPA = 1.07 (Sq.Ft.) (Refer to drawing #E2.06) Basis of Design Luminaire type L4: 75 lbs each, EPA = 0.42 (Sq.Ft.) (Refer to drawing #E2.09)	Addendum #2
26	Q26: What is the weight and EPA of the projection equipment?	A26: Estimated weight of 250 pounds each.	Addendum #2
27	Q27: What is the weight and dimensions of the switch box? What provisions are required to mount this?	A27: 24"x20"x8", approximate weight 50 pounds. This is a wall-mountable enclosure intended to mount on a steel channel on pole.	Addendum #2
28	Q28: What is the weight and dimensions of the banner?	A28: Estimated weight of 25 pounds each. Approximately 4'-6" x 4'-6" (Refer to drawing #E2.05)	Addendum #2
29	Q29: What is the weight and EPA of the camera?	A29: Sizes and weights vary depending on camera type. Assume worst case scenario of (3) cameras per pole, for a total weight of 35 pounds. The approximate dimension of each camera is 15 ½" x 9 ½".	Addendum #2

Q#	QUESTION	RESPONSE	ISSUED
30	Q30: No sealant shown on exterior flatwork. Will expansion and control joint both be caulked & do you have a detail? Size of joints? Probably sealed over fiber join board.	A30: See response to question Q22. Bidder is also directed to Sheets C7.00 and C7.01 for typical joint details.	Addendum #2
31	Q31: Retaining Walls - need detail for expansion and control joints and verify if backer rod is in joint. Maybe just expansion joints get caulked.	A31: Retaining Wall joint details are indicated on sheet S5.10	Addendum #2
32	Q32: What caulking material is specified?	A32: Bidder is referred to MoDOT Standard Specification Section 703 Concrete Masonry Construction for requirements for joint materials.	Addendum #2
33	Q33: Paver salvage and cleaning, is it required that the pavers be palletized? In our opinion we do not see this necessary after we load them dump them wash them and re-load and return to the site most debris will have fallen off therefore minimizing effort required?	A33: Every effort should be made to mitigate damage to the existing pavers. "Dumping" of pavers or cobblestones is viewed as an insufficient method of handling, thus increasing the risk of damage.	Addendum #2
34	Q34: Paver Storage is it this contractors obligation to store the picked up pavers at his own acquired site? Or Will we be able to store pavers on the riverfront somewhere close by till they need to be re-laid?	A34: Storage may take place on site on the cobblestone area next to the river. In the event of a flood or rise in water, Work Category 8 Contractor shall remove the Pavers to a location [off-site] to prevent damage or loss of property. No additional costs will be paid for handling or storage. The preferred method is "off-site storage".	Addendum #2
35	Q35: Is it to be assumed that subgrade will be excavated to by the excavating contractor for all the paver re-Laying? We just see a lot of small areas that most likely will not be cut out by the excavator more likely by other contractors.	A35: Subgrade preparation in Sand Set and Mortar Set areas will be by Work Category 4. Subgrade preparation in "Special Repair Areas" (Pay Item #613-99.05) will be by Work Category 8.	Addendum #2
36	Q36: Do we need to include Compaction Testing or is this covered by the Construction Manager?	A36: All testing will be performed by a testing agency hired by the Owner and under the direction of the Construction Manager.	Addendum #2
37	Q37: Regarding the aeration pipes 4.4 pipe welding just making sure this is a requirement? Would we not just use the simple snap couplings?	A37: Welded connections are required.	Addendum #2
38	Q38: Is it to be assumed that the subgrade established will be roughly the road/trail or sidewalk elevation and this is fill that is to be imported right? So the Landscape contractor will need to excavate that imported material for the tree pits / aeration pipe assembly areas roughly 2,000cy and haul offsite or will we just stockpile onsite for the excavating contractors re-use?	A38: Work Category 4 Contractor will leave holes in the subgrade at the Tree Pits. Work Category 6 Contractor will import and place the Tree Soil and Structural Soil Fill.	Addendum #2
39	Q39: Tree Stakes or they Bamboo or Cedar posts the spec. and	A39: The plans are correct. Tree stakes shall be 2" diameter	Addendum #2

Q#	QUESTION	RESPONSE	ISSUED
	plans contradict each other.	cedar, unpeeled.	
40	Q40: Is there a minimum caliper required for the trees? I see a height and root ball spec.	A40: No. Bald Cypress are typically selected by height.	Addendum #2
41	Q41: Would you see any contractor provided testing that would be required for the landscape package?	A41: No Testing will be required for the Landscaping.	Addendum #2
42	Q42: Are the battered walls battered for architectural reasons or structural purpose?	A42: Walls are battered for aesthetic and hydraulic reasons.	Addendum #2
43	Q43: In section B-B of the deep foundation system loading diagram on sheet S1.00 the concentrated 58 ft*k moment is shown counterclockwise and the 8 k horizontal force is acting to the left. Are these directions correct?	A43: The directions indicated on the drawings are correct.	Addendum #2
44	Q44: Do the Sidewalks or the 4" PCC under the asphalt bike path joints need to sealed?	A44: No, the control joints in the sidewalks and under the bike path do not need to be sealed. These joints are designated to be tooled. There are no expansion joints specified for the bike path. However, expansion joints behind the curbs adjacent to sidewalk areas will require sealing. These joints are shown on sheets C7.00 and C7.01.	Addendum #2
45	Q45: Drawing E2.20 and detail drawing E2.23 show new pole work at existing Substation 174. The wiring shown from the pole to the transformers to be 3 #6 THHW with a #8 ground. Shouldn't the phase conductors be rated for 5KV?	A45: Yes, they should be rated for 5kv. This will be revised by Addendum.	Addendum #2
46	Q46: Concerning the detail for the service drop at the substation 174: Will a separate metering pole be required at this location since the conductors are rated for 5kv?	A46: Yes. This will be added by Addendum.	Addendum #2
47	Q47: Under what pay item is the 5kv rated cables to be put under?	A47: A new pay item for this will be added to Work Category 12 – Electrical by Addendum. All bidders for Work Category – 12 Electrical shall use the revised 00400 – BID FORM (Form GRG 7) – Work Category 12- Electrical contained in Addendum #2.	Addendum #2
48	Q48: Won't a disconnect switch be required ahead of both the new 300kva and 150kva transformers?	A48: Yes, an Ameren approved disconnect will be required. This will be added to Work Category 12 - Electrical by Addendum.	Addendum #2
49	Q49: Under what pay item does the contactor panel go under?	A49: A new pay item for this will be added to Work Category 12 - Electrical by Addendum. All bidders for Work Category – 12 Electrical shall use the revised 00400 – BID FORM (Form GRG 7) – Work Category 12- Electrical contained in Addendum #2.	Addendum #2
50	Q50: Drawing E 2.24 shows details for the parking booth islands. Under what pay item does all of this 1" conduit be put under?	A50: A new pay item for this will be added to Work Category 12 - Electrical by Addendum. All bidders for Work Category – 12	Addendum #2

Q#	QUESTION	RESPONSE	ISSUED
		Electrical shall use the revised 00400 – BID FORM (Form GRG 7) – Work Category 12- Electrical contained in Addendum #2.	
51	Q51: The 2.5" PVC and the 5" PVC conduits along with all of the other underground conduits will require trenching and backfill of different configurations, where is this to be put? In the individual pay items? If so what is the pay item #901-99.03 "TRENCHING_ ELECTRICAL" for? (lump all types of trenching / backfill within this pay item?	A51: New pay items to address the various types of installations will be added to Work Category 12 – Electrical by Addendum. All bidders for Work Category – 12 Electrical shall use the revised 00400 – BID FORM (Form GRG 7) – Work Category 12- Electrical contained in Addendum #2.	Addendum #2
52	Q52: Under what pay item would the demolition of substation 95 be put under?	A52: A new pay item for this will be added to Work Category 12 – Electrical by Addendum. All bidders for Work Category – 12 Electrical shall use the revised 00400 – BID FORM (Form GRG 7) – Work Category 12- Electrical contained in Addendum #2.	Addendum #2
53	Q53: There are a few items that don't seem to fit into any of the bid units can you please let me know where these should go? Drawing E1.00 - 1" PVC feeding existing meter on east side of flood wall.	A53: A new pay item for this will be added to Work Category 12 – Electrical by Addendum. All bidders for Work Category – 12 Electrical shall use the revised 00400 – BID FORM (Form GRG 7) – Work Category 12- Electrical contained in Addendum #2.	Addendum #2
54	Q54: There are a few items that don't seem to fit into any of the bid units can you please let me know where these should go? Drawing E1.09 – Keyed note #1 – Future Installation (2) 2" PVC conduits from JB95-1 to base of rail trestle support.	A54: Use the 2.5" bid item. Revise drawings to show conduit as 2.5" and not 2", see Addendum.	Addendum #2
55	Q55: There are a few items that don't seem to fit into any of the bid units can you please let me know where these should go? Parking booth electrical work.	A55: A new pay item for 1" PVC will be added to Work Category 12 – Electrical by Addendum. All bidders for Work Category – 12 Electrical shall use the revised 00400 – BID FORM (Form GRG 7) – Work Category 12- Electrical contained in Addendum #2.	Addendum #2
56	Q56: There are a few items that don't seem to fit into any of the bid units can you please let me know where these should go? Sewer Lift Station electrical work	A56: All electrical work for the Lift Station Relocation is included in the lump sum cost for that item.	Addendum #2
57	Q57: Will the cost of the rxr insurance requirements need to be included in all the packages?	A57: Any contractor that works within the railroad limits is responsible for their own railroad protective liability insurance	Addendum #2
58	Q58: Is the earthwork contractor responsible for the backfill in front of the retaining walls (river side)?	A58: Backfill to subgrade is by Work Category 4, Demolition/Earthwork contractor.	Addendum #2
59	Q59: Has a one week delay been considered for this bid?	A59: No.	Addendum #2
60	Q60: Will retainage be withheld on these projects?	A60: Blanket retainage will not be withheld on this project. However, retainage may be initiated in accordance with the provisions of Section 109.9 of the MoDOT Standard Specifications.	Addendum #2
61	Q61: Will jetting be allowed per MSD standards?	A61: See Part 4 Section H.2 Backfill – Granular or Other	Addendum #2

Q#	QUESTION	RESPONSE	ISSUED
		Compacted Materials	
62	Q62: Is the MSD permit at no cost?	A62: No. The Contractor will be required to pay all MSD Construction Permit Fees and Escrow deposits.	Addendum #2
63	Q63: Do we have to submit equipment rates with bid as stated in Instruction to Bidders, page 3 of 10, item 5.4?	A63: No, equipment rates are not required.	Addendum #2
64	Q64: Specification Page JSP UU-38, Section 9, item b states payment for removal of existing valve vault will be paid under "Removal of Improvements". I did not find that bid item.	A64: Removal of the valve vault shall be included in the lump sum cost for the Lift Station Relocation. See revisions to JSP UU CONSTRUCTION OF SEWERS in Addendum #2.	Addendum #2
65	Q65: Does the abandoned waterline get grout filled?	A65: The abandoned waterline does not have to be grouted.	Addendum #2
66	Q66: Is City Water going perform taps at no cost or is it the contractors responsibility to install taps?	A66: City Water will install taps at no cost to the Contractor.	Addendum #2
67	Q67: Is City Water going provide and install water meters at no cost to the contractor?	A67: City Water will install water meters (where needed) at no cost to the Contractor.	Addendum #2
68	Q68: On sheet U1.22 and U1.25 a 6" tap on the new 12" water main is called out. Is this to be a tap or will a 12 x 6 tee be acceptable?	A68: Replace 6" tap verbiage with 12 x 6 Tee at both locations. See modifications in Addendum #2.	Addendum #2
69	Q69: Will utility conflicts be defined per MSD Standard Specifications?	A69: Utility conflicts shall be addressed in accordance with Section 105 Control of Work of the MoDOT Standard Specifications and the project JSPs.	Addendum #2
70	Q70: Note 1 on Drawings C5.40 – C5.46 indicates that it will be at MSD discretion if a structure is to be removed and replaced in lieu of modification. How will this be paid for?	A70: Changes will be addressed in accordance with the provisions of Section 104.3 Changes in the Work of the MoDOT Standard Specifications.	Addendum #2
71	Q71: This may be just be for me, but I cannot find a specification for the drinking fountain.	A71: Drinking fountains are specified in JSP III SITE FURNISHINGS.	Addendum #2
72	Q72: Can the 6" and 12" Water Main total quantities be confirmed?	A72: The quantities for 6" water main and 12" water main have been revised, see Addendum. All bidders for Work Category – 11 Sewers/Plumbing shall use the revised 00400 – BID FORM (Form GRG 7) – Work Category 11- Sewers/Plumbing contained in Addendum #2.	Addendum #2
73	Q73: Can a better description be provided for bid item 603-99.02 Fittings be provided? I am assuming only the fittings for the 6" and 12" water main, but the quantity does not add up.	A73: The Pay Item "Fittings" includes all fittings of any size and type as necessary for construction of the water system in a tightly congested utility corridor.	Addendum #2
74	Q74: Is it safe to assume that the water and sewer will go in before the fill?	A74: Yes	Addendum #2

CENTRAL RIVERFRONT LEONOR K SULLIVAN BOULEVARD AND BIKEWAY TDG-0705 (333) PROJECT 2 BIDDER QUESTIONS AND RESPONSES 10/21/2013 1:36:14 PM			
Q#	**QUESTION**	**RESPONSE**	**ISSUED**
75	Q75: What is the engineers estimate on what each package is worth? Specifically the Concrete and the Earthwork package.	A75: The Engineers Estimate is confidential and will not be provided to the bidders.	Addendum #2
76	Q76: The profiles show some 12" and 15" PVC pipe. There is no pay this material. Please advise.	A76: The pipe type on runs 13, 16 and 17 was changed from RCP Class III to PVC near the end of design. This change was not picked up on the bid tab. Please see revised bid tab for quantities of PVC pipe and corresponding reduction of RCP quantities. All bidders for Work Category – 11 Sewers/Plumbing shall use the revised 00400 – BID FORM (Form GRG 7) – Work Category 11-Sewers/Plumbing contained in Addendum #2.	Addendum #2
77	Q77: There is no profile for the run from structures 7A to 7B on sheet C5.41.	A77: These are structures being set over existing pipe. There is no new pipe. The invert elevations will have to be field verified. The quantity calculations for structures 7A and 7B were based on an assumed invert elevation of 404.62.	Addendum #2
78	Q78: Will the little bit of required electrical work for the Wharf Street Pump Station Relocation be a part of the electrical package.	A78: No. See note #5 of Work Category 11 Scope of Work. All work on pump station is included in Work Category 11	Addendum #2
79	Q79: Will the structures and pipe on the drawings that call to be removed be a part of the earthwork/demolition package.	A79: Removal of sewer pipes and structures required for construction of new sewer lines and new sewer structures shall be removed by the Work Category 11 - Sewers/Plumbing Contractor in accordance with MSD Standard Specifications. Removal of all other sewer pipes and structures as indicated on the plans shall be the responsibility of the Work Category 4 - Earthwork/Demolition Contractor.	Addendum #2
80	Q80: Sheet C5.45 has a note at existing structure 3717 calling it to be rehabilitated per the specifications. The only structure rehab specs I saw referred to converting Catch Basins to Manholes. Please advise.	A80: The rehab of MH 3717 is specified in JSP UU Part 9, section M (Relocation of Wharf St. Pump Station.), 3.b.	Addendum #2
81	Q81: If the Deep Foundations for Pylons requires drilled piers, will the testing required by MODOT specifications be paid for by GRG?	Q81: The Deep Foundations will be treated as design/build elements. The Construction Manager will develop a Quality Management Plan (QMP) for the Deep Foundations to include a Testing and Inspection Plan (TIP) based upon MoDOT standard checklists as applicable to the type of foundation system approved. The proposed QMP and TIP will be provided to the Contractor. All costs for testing and inspection as directed by the Construction Manager will be paid for by the Owner.	Addendum #2
82	Q82: Was MSD pay line quantities and existing grades to calculate the excavation and granular backfill quantities?	A82: Yes.	Addendum #2

CENTRAL RIVERFRONT LEONOR K SULLIVAN BOULEVARD AND BIKEWAY TDG-0705 (333) PROJECT 2 BIDDER QUESTIONS AND RESPONSES 10/21/2013 1:36:14 PM			
Q#	**QUESTION**	**RESPONSE**	**ISSUED**
83	Q83: How is the 12 PVC pipe going to be paid? We are close in total quantities I estimated a total of 3064' to your 3005'	A83: The pipe type on runs 13, 16 and 17 was changed from RCP Class III to PVC near the end of design. This change was not picked up on the bid tab. Please see revised bid tab for quantities of PVC pipe and corresponding reduction of RCP quantities. All bidders for Work Category – 11 Sewers/Plumbing shall use the revised 00400 – BID FORM (Form GRG 7) – Work Category 11- Sewers/Plumbing contained in Addendum #2.	Addendum #2
84	Q84: Is the pay quantity for all pipe going to be from center of structure to center of structure?	A84: Quantities for storm and sanitary sewer pipe are now tabulated from inside face to inside face of structures per MSD specifications. A revised tabulation of storm and sanitary sewer lineal footage is provided with Addendum #2. All bidders for Work Category – 11 Sewers/Plumbing shall use the revised 00400 – BID FORM (Form GRG 7) – Work Category 11- Sewers/Plumbing contained in Addendum #2.	Addendum #2
85	Q85: Is there more concrete encasement than under the retaining walls?	A85: The only concrete encasement required for storm and sanitary sewers is under retaining walls. The volume calculation in the bid tabulation is based on the details shown on Sheet S1.00.	Addendum #2