# BROADWAY BLVD. DESIGN DESIGNATION

	A.D.T.	- 2014	1	=	23	000	)	
	A.D.T.	- 2034	1	=	27	000	)	
	D.H.V.			=	2.7	700		
	Τ, .			=	10%	10		
	DESIGN	SPEED		=	35	M.F	Р.Н.	
	POSTED	SPEED	LIMIT		35	M.F	•.Н.	
FUNC	TIONAL	CLASSI	FICATION	_	URE	BAN	ARTER	RIA

UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEY AND RECORDS. THE CITY DOES NOT WARRANT THE LOCATIONS OF THESE FACILITIES AS PRECISE. IT IS POSSIBLE THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTL NOT KNOWN OR SHOWN. IT IS THE CONTRACTOR RESPONSIBILITY TO DETERMINE THE EXISTENCE AND PRECISE LOCATION OF ALL FACILITIES AND TO AVOID DAMAGE. SEE PROJECT MANUAL FOR A LIST OF UTILITY COMPANIES ON OR WITHIN THE VICINITY OF THE PROJECT LIMITS.

EMERGENCY UTILITY SERVICE NUMBER	RS
UTILITY MARKING	800-DIG-RITE
AT&T	800-252-1133
KCMO - TRAFFIC SIGNALS	816-513-9314
KCMO - STREET & TRAFFIC DIVISION	816-513-9300
KCMO - WATER SERVICES DEPARTMENT	816-513-0209
KCP&L 800-303-0357 OR	816-471-KCPL
MCI/WESTERN UNION	800-MCI-WORK
MISSOURI GAS ENERGY	800-582-0000
MISSOURI PUBLIC SERVICE COMPANY 816-353-5000	OR 737-7821
SOUTHWESTERN BELL TELEPHONE COMPANY	800-870-8390
SPRINT	800-880-2822
TIME WARNER CABLE	816-358-8833

# CITY OF KANSAS CITY, MISSOURI DEPARTMENT OF PUBLIC WORKS DEPARTMENT OF PARKS AND RECREATION FINAL PLANS BROADWAY BRIDGE OVER 30TH STREET JACKSON COUNTY





KANSAS CITY, MISSOURI BOARD OF PARKS AND RECREATION COMMISSIONERS

JEAN PAUL CHAURAND - PRESIDENT ALLEN DILLINGHAM - COMMISSIONER AMBER HACKETT - COMMISSIONER DAVID MECKLENBURG - COMMISSIONER MARY JANE JUDY - COMMISSIONER MARK L. MCHENRY - DIRECTOR



THE EXISTENCE AND APPROXIMATE LOCATION OF UTILITY FACILITIES KNOWN TO EXIST, AS SHOWN ON THE PLANS, ARE BASED ON THE BEST INFORMATION AVAILABLE TO THE CITY AT THIS TIME. THIS INFORMATION IS PROVIDED BY THE CITY "AS-IS" AND THE CITY EXPRESSLY DISCLAIMS ANY REPRESENTATION OR WARRANTY AS TO THE COMPLETENESS, ACCURACY, OR SUITABILITY OF THE INFORMATION FOR ANY USE. RELIANCE UPON THIS INFORMATION IS DONE AT THE RISK AND PERIL OF THE USER, AND THE CITY SHALL NOT BE LIABLE FOR ANY DAMAGES THAT MAY ARISE FROM ANY ERROR IN THE INFORMATION.



PLANS PREPARED BY:



4435 Main Street Suite 1000

Kansas City, MO 64111-1856 816-360-2700 Certificate of Authority: 000856



DESIGN GROUP, LLC 1441 E 104th St, Suite 105 Kansas City, MO 64131 Tel (816) 874-4655 Fax (816) 874-4675

MO St. Cert. of Authority: 2002010300

## LOCATION MAP NOT TO SCALE

4-24-15

CHAD D. HALL, P.E.

"I HEREBY CERTIFY THAT THIS PROJECT HAS BEEN DESIGNED, AND THESE PLANS PREPARED, TO MEET OR EXCEED THE DESIGN CRITERIA OF KANSAS CITY, MISSOURI, IN CURRENT USAGE EXCEPT AS INDICATED BELOW. '

EXCEPTIONS:

VERTICAL CLEARANCE STANDARD = 14'-0" (15'-0" preferred) VERTICAL CLEARANCE PROVIDED (EXISTING) = 13'-3" (EB) 13'-3" (WB)

ENGINEER: CHAD HALL, P.E.

2								
	SEC/SUR S18 TWP T49N RGE R33W		, II		FM	111111 ISSA	1111	
	INDEX OF SHEETS	1318882 <i>22.</i>	A X SYII	CH	AD DA HALL			
	DESCRIPTION	11.	ROCUL	PE	200300	11039	A ANTIN	Will.
	TITLE SHEET GO1		SIG	THIS SH		AS BEE	N ATED	
	TYPICAL SECTION GO2	-		ELEC	PREF	ARED		
	QUANTITIES GO3 -GO4A	BF		JTE WΔ	Y	ST/		-
1. ** . * 	ROADWAY PROFILE GO7			RICT	+	SHEE		).
: بر بر	DRAINAGE MAP GO8				тиис	<u>, 0,</u> 10,2	<u></u> V	
	STORM SEWER PROFILES GO9 - G10		8	90	<sup>IB</sup> N	0. 56	<u>.</u> 1	
	DETOUR PLAN G11		(	CONT	RACT	ID	•	
	LIGHTING G13 - G19		6) 6)	PROJ	ECT	ΝΟ.		
- - -	SIGNING & PAVEMENT MARKING G20 - G22			BRI	DGE	NO.		
а ж	CROSS SECTIONS G23 - G28							
	BRIDGE SHEETS CO1-C16						n' es	* 
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	BEGINNING OF PROJECT STA. 10+00 (BROADWAY BLVD.) END OF PROJECT STA. 12+37.10	DAT					4	5
5 0 12	APPARENT LENGTH 237.10 FEET		SOUR	LOOF				
	EQUATIONS AND EXCEPTIONS: NONE	а 1 1 1 1 1 1	, MISS	I9TH F	0 6415	000 572		D
	BEGINNING OF PROJECT STA. 100+50 (30TH STREET) END OF PROJECT STA. 109+00	,	SAS CITY	TREET, 1	CITY, MC	16) 513-2	w.kcmo.o	
	APPARENT LENGTH 850.00 FEET		KAN:	2TH S	NSAS	о 8 . н		:
	EQUATIONS AND EXCEPTIONS: NONE		CITY OF	414 E. 1	KA			
	THIS PROJECT HAS BEEN DESIGNED, AND THESE PLANS PREPARED, TO MEET OR EXCEED THE DESIGN CRITERIA OF APWA AND KANSAS CITY, MISSOURI. EXCEPT AS NOTED IN PROJECT VARIANCES.		Y					
		1						
700	15TANT PIPECTOR-ENGINEERING PLANNING DESIGN							
A33	4.7 9 17							
DIFE	CTOR OF PARKS AND RECREATION DATE	2. 2						
2.0 2. 	flage 4/30/15			J.	9 10			
CITY	ÉNGINEER DATE			ring, In				
DIRE	Sherri K- MJutyr 4/30/2015 CTOR OF PUBLIC WORKS DATE			DR Enginee		111-1856		ity: 000856
JOB	NO. <u>KCMO # 89005561</u> C.D. NO			I	in Street	DO City MO 64	2700	e of Author
SHE	ET <u>G01</u> OF FILE NO				4435 Ma	Suite 10 Kansas (	816-360-	Certificat

HDR Engineering, Inc



	KIMBERLY L PEMBERTON NUMBER 2001003904 FESSION Kimberly Pemberton MO PE #2001003904					
	47 177 2015 ROUTE STATE BRDWAY MO DISTRICT SHEET NO. KC GO2 COUNTY JACKSON JOB NO. 89005561 CONTRACT ID.					
	PROJECT NO.  BRIDGE NO. 					
	DESCRIPTION					
	DATE					
	CITY OF KANSAS CITY, MISSOURI 414 E. 12TH STREET, 19TH FLOOR KANSAS CITY, MO 64151 P: (816) 513-2600 F: (816) 513-2572 www.kcmo.org					
	1441 East 104th St., Suite 105 Kansas City, MO 64131 Tel (816) 874-4655 Fax (816) 874-4675 www.trekkdesigngroup.com Missouri Cert. of Authority 2002010300					
TYPICAL SECTION SHEET 1 OF 1	HDR Engineering, Inc. HDR Engineering, Inc. HDR Engineering, Inc. 4435 Main Street Suite 1000 Kansas City, MO 64111-1856 816-360-2700 Certificate of Authority: 000856					

	GENERAL NO	DTES	
1.	The construction covered by these plans shall conform to the current "city standards" and specifications of the public works department,	23.	The contractor is responsible all environmental rules and r
2.	Kansas City Missouri, except as noted. Public notification of construction shall be two weeks prior to any construction. This notification shall be accomplished by a letter hand delivered or mailed to each address within construction limits. The letter shall be submitted to the engineer for approval prior to	24. 25.	county, state and any other j all conditions set forth in e Grades shown are finished gro Existing drainage structures limits shall remain unless ot
3.	distribution. Horizontal and vertical underground utility information shown on the	26.	The contractor must maintain throughout the project during construction.
	available at the time, underground utility locations shall be determined in the field by each utility company at the request of the contractor where necessary. It shall be the contractors responsibility to ascertain	27.	Special care should be taken and proposed water lines and during construction. The cont
4.	may be present and their exact horizontal and vertical locations as needed. All necessary utility relocations and service line reconnections shall be	28.	the City. Removal of improvements are p
	with construction. Contractor shall be required to cooperate and schedule with utility companies to facilitate relocations.		information only. Any other r improvements are to be consid subsidiary.
5.	All sanitary and storm sewer manholes located within construction limits shall be adjusted to match proposed grade. Adjustment(s) shall be subsidiary to other items.	29.	The contractor shall refer to field inlet standard detail f inlet details.
6.	City shall inspect all existing pipe removed. If in the opinion of the city, pipe is salvageable the contractor shall haul this reusable pipe to city salvage yard, 4727 coal mine road. Contractor shall remove all other pipe	, 30.	Project tied to kansas city m control monument cl-70. n 327 e 842116.546m; elev. 225.9m.
7.	from šité. Contractor shall immediately contact street and traffic, district 1 at (816) 387-2350 if project engineer determines the pipe is salvageable. All elevations, unless indicated otherwise are based on navd88 vertical	+ 31.	3.28083333 feet. Grid factor 0.9999116. Curb, sidewalk and barrier sh
8.	datum. Existing sidewalk or drive shall be removed to the nearest joint from the location shown on the plans where existing sidewalk or drive removal is		the requirements of KCMO spec section 2200, 2300 & 2700. Co shall meet the requirements c
	noted on the plans. All fences required to be removed during the course of work shall be replaced with new material and in original location unless otherwise shown on plans. All removed fences shall be replaced by stable	32.	2700. Moment slab shall meet requir KCMD section 2208 "portland c
9.	and secure temporary fencing at the contractor's expense during construction operations. During construction, access shall be maintained for emergency vehicles and		concrete pavement".
	local traffic, the fire, police, med-act and public works department are to be notified prior to any street closures. A permit is required from street and traffic division for street closures. No street will be closed without		
10.	the approval of the engineer or as noted herein. Throughout construction, the contractor shall provide and maintain traffic control devices in accordance with the latest edition of the Manual on		
	Uniform Traffic Control Devices (MUTCD) and the traffic control plans. The contractor shall inspect the traffic controls a minimum of twice weekly with project engineer.	٦	
11. 12.	The contractor shall not close a street without the approval of the engineer According to the city specifications, a minimum of one work week prior to any street closure the contractor shall notify the street and traffic divis	· ·	
1 ⋜	of the public works department of the city of Kansas City, Missouri and all residents directly affected by the closure.		
	construction signs as required to protect the public from injury, to avoid property damage during construction and until it is safe for the traveling		
14.	Type B warning lights shall be mounted on all warning signs left in place during hours of darkness.		
16.	Contractor shall submit traffic control plans to owner's representative for review and approval prior to start of construction.		
18.	throughout construction. Trees and shrubs adjacent to construction areas shall be protected by the		
	with an accepted pruning paint specially formulated for horticulture applications. All trees and brush, which must be removed for proper executions	on .	
1.0	of the work, shall be removed by contractor. No direct pay. All trees not r for removal are to be protected and comply with KCMO-APWA section 2101.2 and 5106.8 unless directed by owner.	narke	D
19.	disposed of at a site furnished by the contractor and on the board of zoning adjustments list of approved disposal sites according to city specifications	J 5.	
20.	No stockpilling on site will be allowed. Gutters shall be kept clear and satisfactory and provisions shall be made for street and parking area draind The contractor shall maintain the construction site in a clean, orderly and	age.	
21.	sate condition at all times during the course of the project. The contractor shall maintain all roadway, sidewalk and drive areas free of debris. The contractor shall control the erosion and siltation during all phases of	-	
22.	construction, and shall keep all streets clean of mud and debris. All sidewalks shall be ADA accessible per city standards and details.		
	SEEDING TYPE-A	LS	
	2" 2" 10" 6" TOTAL	1	
	PAVEMENT COLD COLD SURFACE BASE AGGR. MILL COURSE COURSE		
	SHEET         ROUTE         STATION         (SY)         (SY)         (SY)         (SY)           G05         30TH         108+28.70         108+68.41         174.3         174.3         CLASS 2	2 LINE	AR GRADING
G	D5-G06         30TH         103+53.01         108+28.70         1304.4         1304.4         1304.4         SHEET         STA.           G06         30TH         102+16.32         103+53.07         540.9         540.9         540.9         540.4	TOS	STA. LOCATION STA.
I		15 1 1 1	



contractor is responsible for environmental rules and regu	pr complic ulations c	ince with	th cịty,									SHE G05-0 G00	ET ST. 306 102 6 108	4″ SIDE ATION S +04.9310 +07.6410	WALK 5TATION 08+10.76 08+02.85	LOCATION 30TH LT 30TH LT	CONCRETE SIDEWALK (SY) 522.0 13.3	HILES * PRO	CHAD D HALI PE-2003(	DALE
nty, state and any other juri conditions set forth in envi des shown are finished grades sting drainage structures wit ts shall remain unless other contractor must maintain pos bughout the project during al struction. cial care should be taken to	sdictiona ronmental hin const wise note sitive dra I phases protect e	permi permi ruction d. inage of existin	cies c ts. g	Ind	* FOR	PERMANE TOTAL INDIVIDU	ENT SIGN LUMP 1 AL QUANT	ING * SUM	OFFIC TOTAL SEE	E FOR EN LUMP	GINEER <u>°</u> SUM 1		VEYING STAKINC TOTAL	AND L	S	TOTAL MOBILIZA	535,3 Ation JMP Sum 1	TH SIGNE DA 4 / 2	IIS SHEET H ED, SEALED ELECTRON ATE PREI 20/1	HAS BEEN DAND DATED NICALLY PARED 2015
proposed water lines and sar ing construction. The contrac ports as necessary at no addi City. pval of improvements are prov prmation only. Any other remo rovements are to be considere sidiary.	nitary sew ctor shall tional cc vided for oval of ed	ver line provie osts to	es de 	VALS	SHEE	I GO4	N CURB &	FULL-DE	EPTH D	RAINAGE	12″ 808	15″ 808	18″ 809	30″ G	UTTER	REMA	RKS		IAY CT COUN ACK JOB	MO SHEET NO. GO3 TY SON
contractor shall refer to KC Id inlet standard detail for et details. Fect tied to kansas city metr Frol monument cl-70. n 327469 A2116.546m; elev. 225.9m. 1 m 3083333 feet. Grid factor =	MO-APWA field 0.425m, heter =	SHEET G05-G06 G05-G06 G05-G06 G05-G06	STATI 103+23 103+53 102+22 103+52	ON         STATION           3.95         108+67.           3.07         108+28.           2.19         108+10.5           2.75         108+82.4	N (S 71 5 70 55 14	97) (EA 86	) (LF) 631 512	(SY) 126	7	(EA)	(LF)	(LF)	(LF)	(LF)	(LF)			- 89 cc	1005 INTRAC ROJECT	5561 T ID.
999116. , sidewalk and barrier shall requirements of KCMO specifi tion 2200, 2300 & 2700. Concr I meet the requirements of s	meet cations ete section	G06 G06 G05 G05 G05 G05	102+40 102+18 108+00 107+86 107+86	).13       103+52.         3.13       103+01.         ).00       107+83.         3.80       108+32.5         3.69       107+86.8	75 79 30 54 30		90 107				7	58		17				- B		NO.
) section 2208 "portland ceme crete pavement".	ent _	G05 G05 G05 G05 G05	107+38 105+87 107+86 107+34 105+87	8.28     107+86.8       7.48     107+86.8       5.47     1.62       7.48     1.62	30 30					1 1 1	60		204			FIELD CURBI MANH	INLET NLET OLE	SCRIPTION		
	-	G05 G05 G05 G05 G05-G06	105+86 105+86 105+48 105+48 105+48	5.12 105+87.4 5.12 3.98 105+87.4 3.98 0.00 102+11.5	18       18       50					1	6				329	FIELD FIELD	I NLET I NLET			
	-	G05-G06 G05-G06 G06 G06 G06	$     \begin{array}{r}       105+86 \\       104+87 \\       104+87 \\       103+37 \\       102+89 \\       \hline     \end{array} $	5.00 103+60.5 7.13 105+87.4 103 7.04 9.36 103+37.0	50 18 04					1	103				226	CURB I FIELD	INLET	RI DATE	×	
	-	G06 G06 G06 G06 G20 G20	102+89 102+88 102+88 102+89 102+89 108+39	3.02 102+89.3 3.02 3.02 3.36 103+29.2 5.79 3.62	22	1				1	8			40		CURB I REMOVE STOP ONE-WAY	INLET & PLUG SIGN / SIGN	CITY, MISSOU	בב ו, ושוח ובשי ץ, MO 64151 יוי הבהה	513-2572 513-2572 3mo.org
	-	G21 G21 G21	103+51 102+39 102+28	.74 9.60 8.00 TOTA	L 5	1 1 86 5	1336 PAYME	126 <sup>-</sup> NT= 1 LU	7 UMP SL	10 JM	285	58	244	57	555	DO NOT EN Hare the Keep Ri	TER SIGN ROAD SIGN SIGN	Y OF KANSAS E 12TH STDE	KANSAS CIT	F: (816) 5 F: (816) 5 www.ko
		LIGHT	TING			CONDUIT	2" HDPF	2" RGS		CABLE	C(	)MBINED JPPLY/LI	POWER GHTING	TYPE I PRECAST JUNCTION	30'MH POLE	250 WATT HPS	- 100 WATT WALLPACK	CIT	± +	
PO (E TR	FROM WER SOURCE XISTING PAD RANSFORMER)	LIGHT CONTRC POWER S ASSEM	) FING DLLER/ SUPPLY /BLY	C-C DISTANCE	2″ PVC 132	TR	PSHD	STR MTD	3C#2	3C#8 3C	;#10	1		BOX			-		X	
	LIGHTING ONTROLLER/ WER SUPPLY ASSEMBLY SAF#5001	SAF#	5001 31	257 91		263 93		1.5		283	46			1	1	1		-		
	JB1 JB1 SAF#5003 BTOTALS	SAF#5	5002 5003 5004	82 133	132	84 139 579	0	15	149	94 143 623 1	46 46 63	1		1	1 1	1 1			ngineering, inc.	356 3856
RAV TOT RADING LOCATION STA.	W TAL				140	580	0	20	156.45	654.15 17 660 1	1.15	1		1	3	3	1		ain Street	000 City, MO 64111-1 )-2700 ite of Authority: 000
09 30TH LT 2.5 TOTAL 2.5	UANT	ITIE	S							c:∖pw	working	\oma\d	1753355	5\03_gen	notes &	quantities	.dgn 2:59	):20 PM	4435 M	Suite 10 Kansas 816-360 Certifica

olulury.				
d inlet standard detail for field	SHEET	STATION	STATION	
et details.	G05-G06	103+23.95	108+67.71	
ect tied to kansas city metro	G05-G06	103+53.07	108+28.70	
2116,546m; elev, 225,9m, 1 meter =	G05-G06	102+22.19	108+10.55	
083333 feet. Grid factor =	G05-G06	103+52.75	108+82.44	
199116.	G06	102+40.13	103+52.75	
requirements of KCMO specifications	G06	102+18.13	103+01.79	
ion 2200, 2300 & 2700. Concrete	G05	108+00.00	107+83.30	
I meet the requirements of section	G05	107+86.80	108+32.54	
) •	005	107196 60	107106 00	

	PERMANE	NT SIGNING *	OFFICE	FOR EN
		LUMP SUM		LUMF
	TOTAL	1	TOTAL	
FOR ]	NDIVIDU	AL QUANTITIES,	SEE	
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vided for					
ed		REMOVALS	•	SIDEWALK	SI
CMO-APWA		CTATION	CTATION		
field	SHEET	STATION	STATION	(SY)	(E)
	G05-G06	103+23.95	108+67.71	586	
-0 2 125m	G05-G06	103+53.07	108+28.70		
neter =	G05-G06	102+22.19	108+10.55		
	G05-G06	103+52.75	108+82.44		
	G06	102+40.13	103+52.75		
i meet	606	102+18.13	103+01.79		

	CONCRETE CHRR & CHITT	TFR.				STATE OF MISS
SIGN ASSEMBLIES	CONCRETE GUTTER AN CONCRETE MEDIAN	ND APWA TYPE TYPE A 3" CO CG-1 GUTTER MEDI	ONC     PERMANENT PAVEMENT MARKING	THERMOPLASTIC	TYPE 1 PAVEMENT	HALL
SHEET STA. LOCATION SIGN ASSEMBLY STOP SIGN ALL WAY DO NOT STOP SIGN SIGN SIGN (EA) SIGN (EA)	VALLEY DRIVESHEETSTATIONSTATIONSIGN W/ARROWSG05108+83-50108+91-91	LOCATION (LF) (LF) (SY		4" SOLID 4" SOLID 8" SOLID 12" SOLIC	D 24" SOLID WHITE 24"	PE-2003001039
G20     108+50     30TH     1     1     1     1	$(EA) \qquad \qquad$	0 30TH 631	SHEET STATION TO LOCATION	YELLOWWHITEWHITE(LF)(LF)(LF)	(LF) (LF)	SIONAL E
G20       108+45       30TH       1       1       1       1         G20       108+86       30TH       1       1       1       1       1	G06 102+22.19103+01.79	9 30TH 103	G20-G21         100+50         108+38         30TH           G20         108+17         109+00         30TH	1584.0       35.0		THIS SHEET HAS BE SIGNED, SEALED AND ELECTRONICALL
G20     100+50     30TH     1     1     1       G20     108+66     30TH     1     1     1	<u> </u>	4 30TH 512	G20         108+34         30TH           G20         108+59         30TH		18.0 12.0	DATE PREPARE
G20     108+77     30TH     1       G21     102+25     30TH     2	<u> </u>	0 30TH 192 2 30TH 55	G20 108+54 30TH G20 108+70 30TH		80.0	
TOTAL     8     4     4     2     2	<u> </u>	0 30TH 17 TOTAL 1330 523 55	G20 109+02 108+59 30TH	314.0		
			G21 101+50 102+78 30TH	143.0 62.0		
			G22         10+01         11+86         301H           G22         10+72         11+31         30TH	15.0		
SIGN SIZE AREA QTY TOTAL QTY RELOC DESCRIPTION SIC	IGN SIZE AREA QTY TOTAL QTY RELOC	DESCRIPTION	G22         10+81         11+40         30TH           G22         10+87         11+46         30TH	59.0 59.0		CONTRACT IL
(IN.) (SO. FT.) AREA RELOC AREA WARNING SIGNS WO20-	(IN.)         (SO. FT.)         AREA         RELOC         AREA           0-5a         48X48         16.00         RIGH         RHEA         RECOV         REA	HT/CENTER/LEFT TWO LANES CLOSED	G22 10+96 11+55 30TH	15.0		PROJECT NO
WD1-1L         48X48         16.00         TURN (SYMBOL LEFT ARROW)           WD1-1R         48X48         16.00         TURN (SYMBOL RIGHT ARROW)	0-6a 48X48 16.00 RIGH	HT/CENTER/LEFT LANE CLOSED	G22   10+61   12+39   30TH TOTAL	2051.0 393.0 215.0 62.0	80.0 42.0	BRIDGE NO.
W01-2L         48X48         16.00         CURVE (SYMBOL LEFT ARROW)         W020-           W01-2R         48X48         16.00         CURVE (SYMBOL RIGHT ARROW)         W021-	0-70         48x48         16.00         FLAC           1-2         36x36         9.00         FRES           1-5         40x40         16.00         FUNCTION	GGER (SYMBUL) WITH FLAGS				
W01-3L         48X48         16.00         REVERSE TURN (SYMBOL LEFT ARROW)         W021           W01-3R         48X48         16.00         REVERSE TURN (SYMBOL RIGHT ARROW)         W022           W01-3R         48X48         16.00         REVERSE TURN (SYMBOL RIGHT ARROW)         W022	1-5D     48x48     16.00     SHOU       2-1     48x48     16.00     BLAS       2-2     43x36     10.50     TUDE	STING ZONE AHEAD				
WU1-4L         48X48         16.00         REVERSE CURVE (SYMBOL LEFT ARROW)         WU22-           W01-4R         48X48         16.00         REVERSE CURVE (SYMBOL RIGHT ARROW)         W022-           W01-4R         48X48         16.00         REVERSE CURVE (SYMBOL RIGHT ARROW)         W022-	2     -3     42X36     10.50     IURN       2-3     42X36     10.50     END       2-60     21X15     2.19     IURN	BLASTING ZONE	ITEM TOTAL DESCRIPTION	)N		
W01-4bl     48X48     16.00     DOUBLE ARROW REVERSE CURVE (SYMBOL       W01-4bl     48X48     16.00     LEFT ARROWS)	CUIDE SIGNS	PAINT (ARROW PIVOTS) 6	612-20.08         IMPACT ATTENUATOR (8 SAND           612-20.09         IMPACT ATTENUATOR (9 SAND	BARRELS) BARRELS)		N ON
WUI-4DR 48X48 16.00 DUUBLE ARROW REVERSE CURVE (STMBUL SPEC RIGHT ARROWS) E05-	CIAL         36X36         9.00         FRES           -1         36X48         12.00         GORE	SH OIL/LOOSE GRAVEL E EXIT	612-20.10     IMPACT ATTENUATOR (10 SAND       612-20.12     IMPACT ATTENUATOR (12 SAND	BARRELS) BARRELS)		IPTI
WOT 4CE 40X40 10:00 E05-2 LEFT ARROWS) WO1-4cR 48X48 16:00 TRIPLE ARROW REVERSE CURVE (SYMBOL	-2     48X36     12.00     EXIT       -2a     48X36     12.00     EXIT	T OPEN 6 T CLOSED 6	612-20.14     IMPACT ATTENUATOR (14 SAND       612-20.17     IMPACT ATTENUATOR (17 SAND       612-20.10     IMPACT ATTENUATOR (17 SAND	BARRELS) BARRELS)		SCR
WO1-6     48X24     8.00     HORIZONTAL ARROW (SYMBOL)     GO20-	0-1         60X24         10.00         ROAD           0-2         48X24         8.00         END	D WORK NEXT XX MILES	612–20.19 IMPACT ATTENUATOR (19 SAND 612–20.20 REPLACEMENT SAND BARREL	ELOCATION CONTRACTOR		
WO1-6a 72X36 18.00 HORIZONTAL ARROW (SYMBOL ON PERMANENT MO4- BARRICADE)	-10R         24X12         2.00         1         2         DETC           -10L         24X12         2.00         DETC         DETC	OUR RIGHT ARROW GUR LEFT ARROW G	612-20.30     IMPACT ATTENUATOR ARRAY (F       612-30.00A     TRUCK OR TRAILER MOUNTED A       612-30.00A     CDEED LUNIT AND CTROPE LUNIT	TTENUATOR (TMA)		
W01-748X248.00DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)M04-8W01-7a72X3618.00DOUBLE HEAD HORIZONTAL ARROW (SYMBOL ON M04-8)	-8         24X12         2.00         13         26         DETC           -8a         24X18         3.00         2         6         END	OUR GETOUR G	616-10.07     SPEED LIMIT AND STRUBE LIN       616-10.08     ADVANCED WARNING RAIL SYST       616-10.09     2	EM		
WD1-8         18X24         3.00         CHEVRON (SYMBOL)         MO4-9	-9L         48X36         12.00         8         96         DETC           -9R         48X36         12.00         17         204         DETC	OUR (LEFT ARROW) OUR (RIGHT ARROW) GUR (RIGHT ARROW)	616-10.09     2     FLAG ASSEMBLT       616-10.20     CHANNELIZER (DRUM-LIKE)       616-10.22     CHANNELIZER (CONES)			ш
WU1-8a         36x48         12.00         CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)         M3-1           W03-1a         48x48         16.00         STOP AHEAD (SYMBOL)         M3-3           W03-2a         48x48         16.00         STOP AHEAD (SYMBOL)         M3-4	1         24X12         2.00         1         2         NOR           3         24X12         2.00         2         4         SOU <sup>1</sup>		616-10.22     CHANNELIZER (CONES)       616-10.24     CHANNELIZER (TRIM LINE) W       616-10.25     69       616-10.25     69	TH LIGHT		DA
WU3-2d     48x48     16.00     M6-11       W03-3     48x48     16.00     SIGNAL AHEAD (SYMBOL)       W03-4     48x48     16.00     M6-11	1R         21x15         2.19         2         4.38         RIGE           1L         21x15         2.19         1         2.19         LEF1           2         21x15         2.19         1         2.19         LEF1	T ARROW	616–10.26 CHANNELIZER (VERTICAL PANE 616–10.27 CHANNELIZER (VERTICAL PANE	L) L) WITH LIGHT		JRI OR
W03-4     48X48     16.00     Image: Bell PREPARED TO STOP     Image: Bell PREPARED TO STOP       W03-5(XX)     48X48     16.00     SPEED LIMIT XX AHEAD (SYMBOL)     M6-4       W04-11     48X48     16.00     MERCE (SYMBOL FROM LEFT)     M6-4	S         Z1X15         Z.19         14         SU.66         STRA           4         21X15         2.19         DOUE         DOUE	BLE ARROW	616-10.28CHANNELIZER616-10.30TYPE III MOVEABLE BARRICAL	E		SSOL 51
W04-1E     48X48     16.00     MERGE (SYMBOL FROM RIGHT)       W05-1     48X48     16.00	REGULATORY SIGN           1         48X48         13.25         2         26.50         STOP	P 6	616-10.3116TYPE III MOVEABLE BARRICAL616-10.33DIRECTION INDICATOR BARRIC	E WITH LIGHT ADE		, MIS 9TH 0.641
W05-3     48X48     16.00     ONE LANE BRIDGE     R1-2       W05-5     48X48     16.00     0.00     0.00     0.00	2     48 TRI.     6.93     YIEL       2a     36X36     9.00     TO (	LD ( ONCOMING TRAFFIC (PLAQUE) 6	616-10.34DIRECTION INDICATOR BARRIO616-10.40FLASHING ARROW PANEL	ADE, WITH LIGHT		CITY 13-26
WO6-1         48X48         16.00         DIVIDED HIGHWAY (SYMBOL)         R2-1           WO6-2         48X48         16.00         DIVIDED HIGHWAY END (SYMBOL)         R2-1	3         20X9         1.25         X-WA           1         36X48         12.00         SPEE           1         36X48         12.00         SPEE	ED LIMIT XX 6	616-10.47     TYPE III OBJECT MARKER       616-10.51     WARNING LIGHT, TYPE A			SAS TREI CITY 16) 5
WO6-3         48X48         16.00         TWO WAY TRAFFIC (SYMBOL)         R3-2           WO7-3a         30X24         5.00         NEXT XX MILES (PLAQUE)         P3-3	1         36×36         9.00         1         9         NO         1           2         36×36         9.00         5         45         NO         L           3         36×36         9.00         5         45         NO         L	LEFT TURN (SYMBOL) 6	616-10.52     WARNING LIGHT, TYPE B       616-10.53     WARNING LIGHT, TYPE C       616-10.53     TUBLE AD MARKED			(8): (8): (8): (8): (8): (8): (8): (8):
WD8-1         48X48         16.00         BUMP         R3-4           W08-2         48X48         16.00         DIP         R3-7	3     36736     9.00     NO       4     48X48     16.00     NO       71     30X30     6.25     1     6.25	U-TURN (SYMBOL)	616-10.95 RADAR SPEED ADVISORY SYSTE			0F 1 121 :: 121 F
WO8-3         48X48         16.00         PAVEMENT ENDS         R3-76           WO8-4         48X48         16.00         SOFT SHOULDER         R4-1	7L         30x30         6.25         1         6.25         EEF           7R         30x30         6.25         1         6.25         RIGH           1         36x48         12         00         D0         D0	HT LANE MUST TURN RIGHT	FURNISHED/RETAINED			
WD8-5         48X48         16.00         SLIPPERY WHEN WET (SYMBOL)         R4-2           WD8-6         48X48         16.00         TRUCK CROSSING WITH FLAGS         R4-7	2         36X48         12.00         D0 F           2         36X48         12.00         PASS	S WITH CARE	FURNISHED/RETAINED			0 4
WD8-6c         48X48         16.00         TRUCK ENTRANCE         R4-70           W08-7         36X36         9.00         LOOSE GRAVEL         R5-1	Tol         36X48         12.00         KEEF           1         30X30         6.25         DO N	P RIGHT (HORIZONTAL ARROW)	FURNISHED/COMMISSION RETAIL	NED		
W08-9         48X48         16.00         LOW SHOULDER         R5-1           W08-9a         48X48         16.00         SHOULDER DROP-OFF         R5-1	1a         36X24         6.00         WRON           1L         48X18         6.00         0NF	NG WAY	48 IN. X 48 IN. SIGN       616-11.33A	NCE", 96 IN.		
W08-11         48X48         16.00         UNEVEN LANES         R6-16           W08-12         36X36         9.00         NO CENTER STRIPE         R6-21	1R         48X18         6.00         ONE           21         24X30         5.00         ONE	WAY ARROW (RIGHT)	X     48     IN. SIGN       616-11.34     INSTALLING "POINT OF PRES	NCE", 36 IN.		
W10-1         42 RND.         9.62         RAILROAD CROSSING         R6-26           W012-1         24X24         4.00         1         4         DOUBLE DOWN ARROW (SYMBOL)         R10-0	2R         24X30         5.00         ONE           -6         24X36         6.00         STOF	WAY (RIGHT) P HERE ON RED (45° ARROW)	X 48 IN. SIGN 617-36.00D CONTRACTOR FURNISHED/RETA	NED TEMPORARY		
W012-2         48X48         16.00         LOW CLEARANCE (SYMBOL)         R11-2           W012-2x         24X18         3.00         LOW CLEARANCE (PLAQUE)         R11-2	-2         48X30         10.00         4         40         ROAL           -3a         60X30         12.50         ROAL         ROAL	D CLOSED XX MILES AHEAD LOCAL	TRAFFIC BARRIER           617-36.02B         CONTRACTOR FURNISHED/COMMI	SSION RETAINED		<b>–</b>
WU12-30,D     144X24     24.00     OVERHEAD LOW CLEARANCE (FEET AND INCHES)       SPECIAL     120X60     50.00     IS4-4	4 36X15 3.75 WHEN	FFIC ONLY	617-40.00A TEMPORARY TRAFFIC BARRIER	HEIGHT		
SPECIAL     120x60     50.00     Image: Special structure     Image: Special structure	T-6-48         48X48         16.00         MoDO           9         36X24         6.00         5         30         SIDE	OT CONSTRUCTION SIGN 6	617-50.10A RELOCATING TEMPORARY TRAFF	IC		
W013-1     30X30     6.25     ADVISORY SPEED (PLAQUE)     CDEC	MISCELLANEOUS SI	GNS	617-60.00B COMMISSION FURNISHED/RETA TRAFFIC BARRIER	NED TEMPORARY		
W016-2         30X24         5.00         XXX FEET (PLAQUE)         SPEC           W16-9P         30X18         3.75         1         3.75         AHEAD         SPEC	CIAL     48X18     6.00     2     12     P.VA       CIAL     48X18     6.00     6     36     P.OA	ALLEY DR CLOSED B-WAY USE ALT, RTE	617-70.00B COMMISSION FURNISHED/RETA TRAFFIC BARRIER HEIGHT TRA	NED TEMPORARY NSITION		d, Inc.
W4-2R         36X36         9.00         1         9         LANE DROP         SPEC         SPEC <t< td=""><td>CIAL         48X18         6.00         5         30         BROA           CIAL         36X12         3.00         22         66         BROA</td><td>ADWAY BLVD, CLOSED SOUTH OF 29TH ST.</td><td>901-94.00TEMPORARY LIGHTING902-94.00TEMPORARY TRAFFIC SIGNALS</td><td></td><td></td><td>Jeerin</td></t<>	CIAL         48X18         6.00         5         30         BROA           CIAL         36X12         3.00         22         66         BROA	ADWAY BLVD, CLOSED SOUTH OF 29TH ST.	901-94.00TEMPORARY LIGHTING902-94.00TEMPORARY TRAFFIC SIGNALS			Jeerin
W020-3         36X36         9.00         3         27         ROAD CLOSED AHEAD         SPEC           W020-4         48X48         16.00         0NE LANE ROAD AHEAD         516-	CIAL         24X12         2.00         6         12         I35N           -10.05         -10<		JUZ-94.01     ITEMPORARY TRAFFIC SIGNALS	AND LIGHIING		Engir
WO20-5 48X48 16.00 RIGHT/CENTER/LEFT LANE CLOSED AHEAD CONS	STRUCTION SIGNS TOTAL 758		902-99.02  UPIIUNAL IRAFFIC SIGNAL DE			HDR
	OCATED SIGNS TOTAL	DIRECTED BY THE ENGINEER				MO 6
	NO DIRECT PAY WILL BE MADE FOR RELOCATION OF	CONSTRUCTION SIGNING				
		QUANTITIE	25			1435 N
Detailed March 2015 Chaokad March 2015						

	חוח			Grouted R	Rip-Rap	Rip-Rap		
		ПАГ		FURNISHING	PLACING	FURNISHING	PLACING	
SHEET	STATION	STATION	LOCATION	С.Ү.	С.Ү.	С.Ү.	С.Ү.	
G05	110+21.18	110+37.45	30TH LT	36	36			
G05	109+46.02	109+80.62	30TH LT			32	32	
			TOTAL	36	36	32	32	

	MANHOLES												
STRUCTURE	PLAN SHEET	STATION	NEESET		48" PRECAST	MANHOLE RING &	CLASS 3	PIPE (					
NO.	NO.				MANHOLE	COVER TYPE R4	EXCAVATION	AND					
					(EA)	(EA)	(CY)						
1-2	G06	102+11.50	24.40′	30TH LT	1	1	6.6	2 0					
				TOTAL	1	1	6.6	2 (					

							DRO	P INLETS							
STRUCTURE NO.	PLAN Sheet NO.	PROFILE SHEET NO.	STATION	OFFSET	LOCATION	JUNCTION BOX 6'X 6' (EA)	JUNCTION BOX 6'X 7' (EA)	GUTTER INLET 3'X 3' (EA)	GUTTER INLET 4′X 4′ (EA)	FIELD INLET 6'X 7' (EA)	TYPE 1 CURB INLET 5'X 3' (EA)	MANHOLE RING & COVER TYPE R3 (EA)	MANHOLE RING & COVER TYPE R4 (EA)	CLASS 3 EXCAVATION (CY)	PIPE OPENINGS AND SIZES
1-3	G06	G09	102+88.12	22.33′	30TH LT			1					1	8.8	2 @ 15"
1-4	G06	G09	102+88.00	16.09′	30TH LT						1		1	11.2	2 @ 15"
1-5	G06	G09	102+89.36	3.60′	30TH LT	1						1		87.3	1@ 15", 1@ 48", 1@ 24"
1-6	G06	G09	104+87.00	0.09′	30TH LT	1						1		58.2	2@ 15", 2@ 48"
1-7	G06	G09	104+87.04	17.00′	30TH LT						1		1	31.3	1 @ 15"
1-9	G05	G09	105+55.00	0.00′	30TH	1						1		48.7	2@ 15", 2@ 48"
1-10	G05	G09	105+39.99	25.00′	30TH LT				1				1	20.3	1 @ 15"
1-11	G05	G09	105+55.00	19.12′	30TH RT				1				1	19.0	1 @ 15″
1-12	G05	G10	107+24.96	2.56′	30TH LT	1						1		40.3	1@ 15", 2@ 48"
1-13	G05	G10	107+29.51	17.00′	30TH RT						1		1	15.6	1 @ 15"
1-14	G05	G10	107+86.83	28.39′	30TH LT					1			1	43.8	2 @ 48 "
1-15	G05	G10	107+85.93	41.15′	30TH LT		1						1	53.2	2 @ 48 "
1-16	G05	G10	108+55.53	107.10′	30TH LT		1						1	68.3	2 @ 48 "
				TOTAL		4	2	1	2	1	3	4	9	506.0	

				PIP	ES AND FLA	ARED END S	SECTIONS				
FROM STRUCTURE	STATION	TO STRUCTURE	STATION		PL AN SHEE T	PROF ILE SHEET	CLASS REINF CONCRE	S III ORCED TE PIPE	CONC. FLARED END SECT.	CLASS 3 EXCAVATION	REMARKS
NO.		NO.			NO.	NO.	15 in. LF	48 in. LF	48 in. (EA)		
1-1	101+71.23	1-2	102+11.50	30TH LT	G06	G09	33			19.7	CONNECT TO EXIST INLET
1-2	102+11.50	1-3	102+88.12	30TH LT	G06	G09	68			36.8	
1-3	102+88.12	1-4	102+88.00	30TH LT	G06	G09	4			0.2	
1-4	102+88.00	1-5	102+89.36	30TH LT	G06	G09	8			4.5	
1-5	102+89.36	1-6	104+87.00	30TH LT	G06	G09		191		1154.0	
1-7	104+87.04	1-6	104+87.00	30TH LT	G06	G09	13			21.2	
1-8	105+30.10	1-6	104+87.00	30TH RT	G06	G09	53			96.0	CONNECT TO EXIST INLET
1-6	104+87.00	1-9	105+55.00	30TH	G05-G06	G09		62		260.3	
1-10	105+39.99	1-9	105+55.00	30TH LT	G05	G09	25			38.5	
1-11	105+55.00	1-9	105+55.00	30TH RT	G05	G09	14			19.2	
1-9	105+55.00	1-12	107+24.96	30TH	G05	G10		164		550.9	
1-13	107+29.51	1-12	107+24.96	30TH RT	G05	G10	16			14.9	
1-12	107+24.96	1-14	107+86.83	30TH LT	G05	G10		65		219.8	
1-14	107+86.83	1-15	107+85.93	30TH LT	G05	G10		6		16.7	
1-15	107+85.93	1-16	108+55.53	30TH LT	G05	G10		104		463.6	
1-16	108+55.53	1-17	109+46.90	30TH LT	G05	G10		113	1	414.6	
							234	705	1	3330.9	

Detailed	March	2015
Checked	March	2015

# QUANTITIES



-	BF		THIS ELE DATE V JA G ON PRC					
┠			BR	IDG	E M	10.		
	DESCRIPTION							
	DATE							
		CITY OF KANSAS CITY, MISSOURI	414 E. 12TH STREET, 19TH FLOOR	KANSAS CITY, MO 64151	P: (816) 513-2600	F (816) 513-2572	www.kcmo.org	
			HDR Engineering, Inc.	4435 Main Street	Suite 1000	Kansas City, MO 64111-1856	816-360-2700	Certificate of Authority: 000856



![](_page_6_Figure_0.jpeg)

![](_page_7_Figure_0.jpeg)

![](_page_8_Figure_0.jpeg)

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1(	) YEAR STO	RM WATER	RUN-OFF CA	LCULATIONS					INLET CA	LCULATIONS	5									PIPE	CALCULAT	IONS			
DRAINAGE AREA ID.	AREA (AC.)	RUN-OFF "C"	TIME OF CONC. (MIN.)	INTENSITY (IN/HR)	DISCHARGE (CFS)	STRUCTURE ID.	STRUCTURE CODE	E SPREAD WIDTH (FT.)	PONDED   DEPTH (FT.)	INTERCEPTED FLOW (CFS)	BYPASSED FLOW (CFS)	BYPASS TO STRUCTURE	EFFICIENCY (%)	PIPE SEGMENT ID	UPSTREAM STRUCTURE ID	UPSTREAM INVERT ELEVATIO N (FT.)	UPSTREAM HGL ELEVATIO N (FT.)	DOWNSTREAM STRUCTURE ID	DOWNSTREAM INVERT ELEVATION (FT.)	DOWNSTREAN HGL ELEVATION (FT.)	I LENGTH (FT.)	SLOPE (%)	PIPE DIA. (IN.)	PIPE MATERIAL	ľ
1-01	0.213	0.47	5.00	7 35	0.74	1-01	CI-G	2.89	0.11	0.74	0.00	1-04	100%	1-01	1-01	920.57	921 32	1-02	918 20	918 38	32.79	7 23	15		$\neg$
1-01	0.215 N/A	0.47 N/A	N/A	N/A	N/A	1-01	MH	N/A	N/A	0:/4 N/A	0.00 N/A	N/A	N/A	1-01	1-01	918.00	918.63	1-02	913.00	913.18	68.18	7.33	15	RCP	
1-03	0.351	0.36	5.00	7.35	0.93	1-03	FL-G	N/A	N/A	0.93	0.00	N/A	100%	1-03	1-03	912.50	913.32	1-04	912.35	912.70	3.26	4.60	15	RCP	+
1-04	0.133	0.90	5.00	7.35	0.88	1-04	CI-G	2.67	0.12	0.81	0.07	1-07	92%	1-04	1-04	912.15	913.17	1-05	911.50	911.86	8.10	8.02	15	RCP	+
1-05	N/A	N/A	N/A	N/A	N/A	1-05	JB	N/A	N/A	N/A	N/A	N/A	N/A	1-05	1-05	891.10	895.90	1-06	889.90	895.28	190.96	1.05	48	RCP	T
1-06	N/A	N/A	N/A	N/A	N/A	1-06	JB	N/A	N/A	N/A	N/A	N/A	N/A	1-06	1-06	889.70	895.28	1-09	889.00	894.20	62.00	1.13	48	RCP	
1-07	0.242	0.90	5.00	7.35	1.60	1-07	CI-G	6.03	0.14	1.27	0.40	1-13	76%	1-07	1-07	893.85	895.30	1-06	882.65	895.28	12.41	9.67	15	RCP	
1-08	N/A	N/A	N/A	N/A	N/A	1-08	EX MH	N/A	N/A	N/A	N/A	N/A	N/A	1-08	1-08	895.30	895.71	1-06	882.65	892.68	52.82	5.02	15	RCP	
1-09	N/A	N/A	N/A	N/A	N/A	1-09	JB	N/A	N/A	N/A	N/A	N/A	N/A	1-09	1-09	888.80	894.20	1-12	887.00	893.79	164.05	1.10	48	RCP	
1-10	1.155	0.34	5.00	7.35	2.89	1-10	FL-S	N/A	N/A	2.89	0.00	N/A	100%	1-10	1-10	894.25	895.52	1-09	891.75	892.08	25.00	10.00	15	RCP	
1-11	0.471	0.39	5.00	7.35	1.35	1-11	FL-S	N/A	N/A	1.35	0.00	N/A	100%	1-11	1-11	893.15	894.13	1-09	891.75	891.98	14.12	9.92	15	RCP	
1-12	N/A	N/A	N/A	N/A	N/A	1-12	JB	N/A	N/A	N/A	N/A	N/A	N/A	1-12	1-12	886.80	893.79	1-14	885.80	893.44	64.56	1.55	48	RCP	
1-13	0.913	0.50	5.00	7.35	3.36	1-13	CI-G	5.18	0.35	3.36	0.40	1-19	89%	1-13	1-13	891.30	893.97	1-12	889.75	893.79	15.60	9.94	15	RCP	
1-14	0.962	0.30	5.00	7.35	2.12	1-14	FI-S	N/A	N/A	2.12	0.00	N/A	100%	1-14	1-14	885.30	893.44	1-15	885.15	893.12	5.80	2.59	48	RCP	
1-15A	19.626	0.51	5.00	7.35	73.60	1-15A	CI-G	EXISTING	30" RCP - AT	ГАСН ТО 1-15				1-15A	1-15A		EXISTIN	G 30" RCP - CONT	RACTOR SHALL F	IELD VERIFY ELI	EVATIONS		30	RCP	
1-15	N/A	N/A	N/A	N/A	N/A	1-15	JB	N/A	N/A	N/A	N/A	N/A	N/A	1-15	1-15	884.65	893.12	1-16	883.10	885.86	103.17	1.50	48	RCP	$\perp$
1-16	N/A	N/A	N/A	N/A	N/A	1-16	JB	N/A	N/A	N/A	N/A	N/A	N/A	1-16	1-16	882.60	887.06	1-17	881.20	884.08	111.96	1.25	48	RCP	$\perp$
1-17	N/A	N/A	N/A	N/A	N/A	1-17	FE FE	N/A	N/A	N/A	N/A	N/A	N/A												

	ст
EXISTING 24" WATER MAIN EXISTING 24" WATER MAIN DB6 CONTRACTOR SHALL VERIFY LOCATION SEE NOTE 1 ON SHEET G05 SEE NOTE 1 ON SHEET G05	
FL 889.00 FL 889.00 FL 888.80 FL 886.80 FL 886	
48' RCP 13%. 2001 100 100 100 100 100 100 10	
FL 889.70 FL 787 FL 889.70 FL 787 FL 889.70 FL 787 FL 889.70 FL 787 FL 889.70 FL 787 FL 787	
910	
A X 48" RCF 1.05% 1-05	
Independent of the second s	
E 99 A 10 I 0 I 0 I 0 I 0 I 0 I 0 I 0 I	
FL 891.91 FL 891.91 FL 891.92 FL 891.92 FL 891.92 FL 892.65 FL 891.98 FL 89	
1-93, CUTER INLET 1-3 3/X3' GUTTER INLET 1-092'	
910 905 900 895 890 885 885 885 	
FL 918.20 FL 918.20	
FL 920.57	
920 910 910 900 895 880 885	875 870

![](_page_9_Figure_1.jpeg)

	RB INLET	N BOX										
	TYPE 1 CU 897.53	/ JUNCTIO										
900	-13 5'X3'	1-12 6'X6 TOP ELEV 006										
895		895										
890		A 89Ø										
885	FL 891.30	885										
	16, x 15" @ 9.94	RCP										
	- 13											
				SIDES						BOX		
	DN BOX			INLET, 2	TION BOX 38					JUNCTION	50.10 6	
	E 6' JUNCTIC 888.24			.X7' FIELD _EV 898.7	S'X7' JUNC					-16 6'X7' ,		
900	ATCH LINE 1-12 6'X			<u>1-14 6</u> TOP EL	1-15 ( TOP E					۲ ۲		
895								'				 
890		65' >		L		CONTR LOCAT FABRI	ACTOR SH ION AND CATING JU	JP ALL VERIF DEPTH PRI JNCTION B	-Y OR TO OX 1-15			
885			1.55% 1-12				- <u>104′</u> ) @ 1-	( <u>48" RCP</u> 1.51% 15EX		·		 <u>112' X</u>
880	FL 887	ЕL 886		FL 885.81	- 885.15 885.15 884.65					83.10	5.60	1
875				6′ X @ 2 1-	- L 48" RCP 2.04% -14					8 1 1	FL 88	
870												

30" RC TOR SH N AND TING JU _ <u>104'</u> @  1-	CP HALL VERIF DEPTH PRI UNCTION BO 1.51% 15EX	 FL 883.10		<u>112' X 48</u> © 1.25 1-16	" <u>RCP</u> %	1-17 OUTLET ELEV 881.13 48" CONCRETE FES		900 895 885 885 880 880 875		SFWF		F S 2		HDR Engineering, Inc.       1441 East 104th St., Suite 105       414 E. 12TH S         4435 Main Street       1441 East 104th St., Suite 105       414 E. 12TH S         A435 Main Street       1el (816) 874-4655       Fax (816) 874-4655         Suite 1000       Fax (816) 874-4675       P: (8         Kansas City, MO 64111-1856       www.trekkdesigngroup.com       P: (8	Certificate of Authority: 000856 Missouri Cert. of Authority 2002010300

![](_page_11_Picture_0.jpeg)

![](_page_11_Figure_12.jpeg)

![](_page_12_Picture_0.jpeg)

![](_page_12_Picture_5.jpeg)

![](_page_13_Figure_0.jpeg)

![](_page_14_Figure_0.jpeg)

![](_page_15_Figure_0.jpeg)

GENERAL NOTES:

JUNCTION BOX:

![](_page_15_Figure_8.jpeg)

GENERAL NOTES:

ALL WORK SHALL COMPLY WITH THE KANSAS CITY, MO, DEPARTMENT OF PUBLIC WORKS STANDARD CONSTRUCTION AND MATERIALS SPECIFICATION, DIVISION II SECTION 2800, DIVISION V SECTION 5800, SUPPLEMENTAL CHANGES AND OTHER APWA SECTIONS REQUIRED TO RESTORE THE CITY'S "RIGHT OF WAY" TO ITS ORIGINAL CONDITION.

- 1. ROADWAY AND AREA CLASSIFICATION IS COLLECTOR/INTERMEDIATE. PAVEMENT CLASSIFICATION IS R3 WITH A LLF OF .54.
- 2. THE STREET LAYOUT WAS BASED ON AN AMERICAN ELECTRICROADWAY SERIES 125, 250W HPS (TYPE III), CUTOFF FLAT, 240V LUMINAIRE WITH PE RECEPTACLE AND SHORTING CAP OR APPROVED EQUAL
- 3. POLE SHALL BE A ROUND TAPERED STEEL FOR A 30FT LUMINAIRE MOUNTING HEIGHT WITH 6FT BY 8FT ARMS. ALL ADJUSTMENTS MUST BE COORDINATED BETWEEN THE DESIGN ENGINEER AND CITY.
- 4. ALL DISTRIBUTION CABLE SHALL BE INSTALLED IN SCHEDULE 40, 2" PVC CONDUIT OR IN PREASSEMBLED "CABLE-IN-DUCT" AS PER PLANS. ALL CONDUIT RUNS OUTSIDE THE BRIDGE SHALL BE PLACED AT A MINIMUM DEPTH OF 24".
- 5. PER APWA SECTION 5800, ALL STREET LIGHT POLES, MATERIALS AND CONTROLLER MUST BE INSTALLED WITHIN THE CITY'S "RIGHT-OF-WAY".
- 6. DISTRIBUTION CABLE SHALL BE PER PLANS, TYPE RHH/RHW/USE, 600 VOLT, COPPER STRANDED AND COLOR CODED BLACK, RED (OR BLACK) AND GREEN (APWA 2802.8) FOR A GROUNDED 240 VOLT SYSTEM (SINGLÉ PHASE).
- 7. CABLE USED WITHIN THE POLES SHALL BE 3-#10, TYPE RHW/USE, 600 VOLTS RATED, COPPER STRANDED, U.L. LISTED AND COLOR CODED RED, BLACK AND GREEN ACCORDING TO THE NEC.
- 8. PROVIDE AND INSTALL IN EACH POLE BASE, 3 SINGLE-POLE, SET-SCREW, IN-LINE, BREAKAWAY FUSE HOLDERS. USE BUSSMAN (OR APPROVED EQUAL) MODEL NO. HEB-JW-RYC AND HEB-JW-RLC-J (LAST POLE). FOR THE 2 "HOT" BREAKAWAY CONDUCTORS, PLACE À 10 AMP KTK FUSE IN EACH BREAKAWAY FUSE HOLDER AND A NNB COPPER SLUG IN THE SYSTEM GROUND FUSE HOLDER. 9. INDIVIDUAL AND SYSTEM GROUNDS SHALL BE INSTALLED ON ALL
- CIRCUITS (POLE GROUNDING RODS AND A GROUND WIRE FROM POLE TO POLE). GROUNDING SHALL COMPLY WITH SECTION 2808 OF
- STANDARDS NOTED ABOVE. 10. ALL CONDUIT CROSSINGS SHALL BE INDICATED WITH AN ALUMINUM MARKER IN THE TOP OF CURB. ALUMINUM MARKERS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
- 11. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO TYPE AND LOCATION OF UNDERGROUND AND OVERHEAD UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE. THE CONTRACTOR SHALL VERIFY LOCATION OF UNDERGROUND PIPELINES. CONDUITS, STRUCTURES AND OVERHEAD LINES BY CONTACTING THE OWNERS OF THE UTILITIES.
- 12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATION OF THE CONSTRUCTION SITE TO CITY SPECIFICATIONS. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ALL COST ASSOCIATED WITH ANY DAMAGE, INCLUDING BUT NOT LIMITED TO LANDSCAPING, SPRINKLER SYSTEMS, WATER, SEWER, CURBS AND SIDEWALK, GAS MAIN, ETC .., CAUSED BY THE CONSTRUCTION.
- 13. ALL WORKMANSHIP AND MATERIALS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE STREETLIGHTING, PUBLIC WORKS DEPARTMENT. COORDINATE A FINAL JOINT INSPECTION WITH THE MAINTENANCE SUPERVISOR, CAROLYN ADKINS AT (816) 513-9874.

DECORAT	IVE POLES MUST AT (816) 513-	BE COORDINA 9851.	TED WITH TH	HE STREETLIGH	HTING			J		SON
STEEL PO DIRECTLY VERTICAL ABOVE T POSITION 15. THE CON BETWEEN RETAINER PREVENT FOR INFO 16. THE CON OR APPE 1) ROAD MFG: MODE	OLES SHALL BE ON THE POLE. AXIS OF THE F HE PAVEMENT SU ED NEAR THE TO FRACTOR SHALL A LUMINAIRE TO CONDUCTOR TH ORMATION AND N FRACTOR SHALL OVED EQUAL: WAY LUMINAIRE AMERICAN ELEC EL: ROADWAY SE	LABELED BY AN THE LABEL S OLE FACING TH JRFACE. LABEN OP OF THE DOU INSTALL A CABN YPE POLE AND O SECURE THE EFT. CONTACT ATERIAL. ACQUIRE THE F	FIXING SELF HALL BE PO E STREET A LS ON CABIN OR ADJACEN E RETAINER FOUNDATION ELECTRICAL PELCO AT	F-ADHESIVE D DSITIONED ON AND 8-10 FEB NETS SHALL E IT TO THE DO ASSEMBLY M ANCHOR. T (405) 562-4 SPECIFIED EQU	ECAL THE T BE OR HINGE. IOUNTED THE S TO 680			DE SCR I PT I ON	PROJECT 	D D D I T ID. NO.
DESC LUMI MOUI	RIPTION: 250W, NAIRE WITH PE I NTED AT 30 FT	HPS, 240V, CV Receptacle, Sf	VA BALLAST, Horting cai	CUTOFF TYPE P and alumin	III IUM FINISH,					
	LOG NUMBER: 1	25 25S CA 24( _	) R3 FG, O	PTION SH (SF	IORTING CAP)			DATE		
MFG: MODE DESC FUSE CATA 3) POLE MFG: MODE DESC (RISE	AMERICAN ELEC EL: UNDERPASS CRIPTION: 100W, D FOR 240V, M LOG NUMBER: 5 MILLERBERND C EL: RNA-250 (P CRIPTION: GALVAN E X LENGTH) AR	TRIC OR APPROSERIES 581 HPS, 240V, CV OUNTED 12 FT 81 10 CA 240 OR APPROVED E 25S-S) IIZED STEEL PC M (SB6R8L-S),	OVED EQUAL VA BALLAST, GY DF EQUAL DLE (P25S-S LUMINAIRE	GRAY FINISH, S) WITH 6FT 2 Mounted at	DOUBLE ( 8FT 30 FT			CITY OF KANSAS CITY, MISSOURI	414 E. 12TH STREET, 19TH FLOOR KANSAS CITY, MO 64151 D- (846) 513 2600	F: (816) 513-2600 F: (816) 513-2572 www.kcmo.org
			LUM. MT.	MOUNTING	LUMINAIRE	LUMINAIRE				X
			HEIGHT	TYPE	ARM LENGTH	WATTAGE			X	
SAF#5002	106+00.4	21.0'LT	12'	WALLMOUNT	N/A	100W				
SAF#5003	105+18.2	22.8'LT	30′	FOOTING	8 ′	250W				
SAF #5004	103+85.0	22.3'LI	30'	FOUTING	8 ′	250W				
NOTES: THE PELCO 6 BUSSMAN FUS BREAKAWAY B ARE SUBSIDIA	" anti-theft de Se kits W/10a i USSMAN Fuse k Ry to the Unit	EVICE, BREAKAW KTK FUSE (QUA ITS (QUANTITY COST OF THE	/AY, SET-SC NTITY 2 PEI 1 PER POLE 30' MH PO	REW, R POLE), UNF E), AND PULL DLES, PER EAC	USED BOXES CH.				HDR Engineering, Inc.	D 64111-1856 thority: 000856
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,				LIGHTIN	IG PLAN	SHEET 4	1 OF 7		4435 Me	Suite 1C Kansas 816-360 Certifica
					c∶∖pwworking	g\oma\d1739832\Lt	g Plan_04.dgn 4:3	39:41 PN	/ 4/	/20/2015

TE OF MISS CHAD DALE HALL

NUMBER

PE-2003001039

THIS SHEET HAS BEEN

SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED

4/20/2015

ROUTE STATE BRDWAY MO

DISTRICT SHEET NO.

КC

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SIONAL

14. LUMINAIRE AND CONTROLLER CABINET LABELS: THE CONTRACTOR SHALL FURNISH AND INSTALL LUMINAIRE AND CONTROLLER CABINET IDENTIFICATION LABELS ACCORDING TO THE CONSTRUCTION PLANS. IDENTIFICATION LABELS SHALL CONSIST OF THREE LETTERS AND FOUR NUMERALS IN VERTICAL ORIENTATION WITH THE LETTERS AT THE TOP SO AS TO READ DOWNWARD. LEGEND SHALL BE 2 INCH SERIES "C' UPPER CASE BLACK CHARACTERS ON SILVER RETRO-REFLECTIVE SHEETING WITH PRESSURE SENSITIVE ADHESIVE BACKING, AS PRESCRIBED FOR USE ON STANDARD HIGHWAYS SIGNS IN THE FHWA MANULAL OF LINIFORM TRAFFIC CONTROL DEVICES LARFLS FOR

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![](_page_17_Figure_1.jpeg)

![](_page_18_Figure_0.jpeg)

Detailed	i Marcr	2015 ו
Checked	March	2015

![](_page_19_Figure_0.jpeg)

![](_page_19_Figure_2.jpeg)

UTILITY SECTION

![](_page_19_Figure_3.jpeg)

### WIRING DIAGRAM

PACIFIC UTILITY PRODUCTS 2430 RAILROAD ST. CORONA, CA. 92880

CAT, NO, MHPDR-KCMO-33 120/240VAC 1PH 3W 100 AMPS RAINPROOF TYPE 3R ENCLOSURE

- REPLACEMENT BREAKER MUST BE SAME TYPE AND RATING
- \*AUTOMATIC TRIP IS INDICATED BY HANDLE POSITION MIDWAY BETWEEN (ON) AND (OFF). TO RESTORE POWER MOVE HANDLE TO (OFF), THEN (ON).
- \*METER SOCKET: MS24' 200 AMPS WATT-HOUR METER NOT INCLUDED IN SHORT CIRCUIT RATING. \*THE MAXIMUM SIZE CIRCUIT BREAKER TO BE INSTALLED ON THE LOAD CENTER IS 50 AMPS WHEN COPPER WIRE IS USED AND 40 AMPS WHEN ALUMINUM WIRE IS USED.

![](_page_19_Picture_13.jpeg)

E	DESCF		
	LIGHTING 1		
	PEC		
TIO	N		
	CU/AL		275 IN.LB.
	CU/AL		275 IN LB.
	CU/AL		50 IN.LB.
/IEN	II GROUND-SING	LE CONDU	
	CU/AL	#3-1/0	50 IN.LB.
		#0-4 #0	43 IN.LB.
		#0 #14_10	40 IN.LD.
	CU/AI	#14-10 #6	25 IN LB.
	COAL	#0 #8	25 IN L B
		#0 #14-10	20 IN LB
ND-	MULTIPLE CONDU	JCTOR	_00.
ŧ10.	12,14	CU/AL	45 IN.LB.
ŧ12,	14	CU/AL	20 IN.LB.
θEV	ICES-TORQUE TO	VALUES	
VITI	H DEVICE		

N.T.S.

- INDUSTRIAL CONTROL SUITABLE ONLY FOR USE AS SERVICE EQUIPMENT BONDED NEUTRAL REMOVE BONDING MEANS FOR TEST PURPOSES ONLY
- INSTALL NO MORE THAN 6 (ONE OR TWO POLE) DISCONNECTING MEANS
- \*SHORT CIRCUIT RATING: 10,000 RMS SYM. AMPS @ 240 VAC MAXIMUM \*CIRCUIT BREAKERS 100-15 AMPS: CUTLER HAMMER BR, BQ, GFCB
- \*MOISTURE KIT AVAILABLE CONTACT FACTORY, CAT. NO. MSK-1
- \*SHIPPING TENDS TO LOOSEN ELECTRICAL CONNECTIONS TIGHTEN ALL CONNECTIONS BEFORE ENERGIZING UNIT.

Date       Description         CITY OF KANSAS CITY, MISSOURI       DATE       DESCRIPTION         414 E. 12TH STREET, 19TH FLOOR       MISSOURI       MISSOURI         414 E. 12TH STREET, 19TH FLOOR       MISSOURI       MISSOURI         F: (816) 513-2600       MISSOURI       MISSOURI         F: (816) 513-2572       MISSOURI       MISSOURI         www.kcmo.org       MISSOURI       MISSOURI
CITY OF KANSAS CITY, MISSOURI 414 E. 12TH STREET, 19TH FLOOR KANSAS CITY, MO 64151 P: (816) 513-2600 F: (816) 513-2572 www.kcmo.org

![](_page_20_Figure_0.jpeg)

![](_page_21_Figure_0.jpeg)

![](_page_22_Figure_0.jpeg)

![](_page_23_Figure_0.jpeg)

![](_page_24_Figure_0.jpeg)

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![](_page_27_Figure_1.jpeg)

![](_page_28_Figure_0.jpeg)

![](_page_29_Figure_0.jpeg)

ESTIMATED QUANTITIES		
Item	Unit	Tota
Removal of Asphalt Wearing Surface	Sq. Ft.	5626
Curb Removal	Lin. Ft.	130
Safety Barrier Curb	Lin. Ft.	445.
Raised Median Barrier	Sq. Ft.	470.
Substructure Repair (Unformed)	Sq. Ft.	220
Repairing Concrete Deck (Half-Soling)	Sq. Ft.	190
Epoxy Pressure Injection	Lin. Ft.	75
Total Surface Hydro Demolition with Vacuum System	Sq. Yd.	422.
Protective Coating - Concrete Bents and Piers (Epoxy)	Lump Sum	1
Concrete and Masonry Protection System	Lump Sum	1
Sacrificial Graffiti Protection System	Lump Sum	1
Waterproofing Membrane	Sq. Yd.	359.
Temporary Shoring	Lump Sum	1
Silica Fume Overlay (5")	Sq. Yd.	422.
Limestone Facing	Sq. Ft.	843.
Corrosion Protection System	Lump Sum	1
Moment Slab	Sq. Yd.	400.
Asphalt Surface Course - 6"	Sq. Yd.	692.

Barrier Curb shall be Cast-In-Place.

GENERAL NOTES:	
DESIGN SPECIFICATIONS: 2010 - AASHTO LRFD Bridge Design Specifications and 2010 Interim Revisions Load and Resistance Factor Design	
DESIGN LOADING: HL-93 and S70 LRV (LRFD Superstructure, LRFD Substructure) 35#/Sq. Ft. Future Wearing Surface	
Earth 120#/Cu. Ft., Equivalent Fluid Pressure 45#/Cu. Ft. DESIGN UNIT STRESSES:	
Class B-1 Concrete (Substructure) $f = 4,000$ psi.Class B-1 Concrete $\#$ (Safety Barrier Curb) $f'c = 4,000$ psi.Class B-2 Concrete $\#$ (Superstructure) $f'c = 4,000$ psi.Reinforcing Steel (Grade 60) $fy = 60,000$ psi.	
* Superstructure and barrier curb concrete shall be bid as special aggregate concrete and shall conform to the requirements of the specifications unless otherwise shown. All Reinforcing steel shall be epoxy coated.	
Dutline of old work is indicated by light dashed lines. Heavy lines indicate new shall verify all dimensions in field before ordering new material. Bars bonded in not removed shall be cleanly stripped and embedded into new concrete where possib is available, old bars shall extend into new concrete at least 40 bar diameters and 30 diameters for deformed bars, unless otherwise noted.	ע וe fc
REINFORCING STEEL: All reinforcing steel shall conform to the requirements of ASTM A615, Grade 60, wh non-coated bars come in contact with epoxy coated bars, they need not be coated, dimensions relative to reinforcing steel placement are to the centerline of bars u otherwise noted. Minimum clearance to reinforcing steel shall be 1-1/2" unless o shown. Bar bending and dimensions shall be as shown and noted on the bending diagr	פר A חר ל h
MISCELLANEOUS: "Sec" refers to the sections in the standard and supplemental specifications unless specified otherwise.	
Apply protective coating to all exposed surfaces of Abutments, and lower face of deck. Coating shall be clear.	
TRAFFIC CONTROL: Broadway and 30th street will both be closed during construction. See detour plan.	
QUANTITIES: Items not listed separately in the summary of quantities are subsidiary to the other items of the proposal.	
DIMENSIONS: All dimensions shown on the plans are horizontal unless otherwise noted. The contractor shall make necessary allowances for roadway grade and cross slope. All dimensions are specified in feet except as noted.	
CONSTRUCTION JOINTS: Construction joints as shown are optional but if used shall be made only at locat shown or at location approved by engineer.	ic
JOINT FILLER: All joint filler shall be in accordance with Section 1057 of the Missouri Standard Specifications for preformed sponge rubber expansion and partition joint filler except as noted.	J
CONCRETE: All superstructure concrete shall be bid as special aggregate concrete and shall of to the requirements of the specifications unless otherwise shown or noted. All substructure concrete shall be bid as Class B-1 concrete and shall conform to the requirements of the specifications unless noted otherwise shown or noted. All exposed edges of concrete shall be beveled 3/4" unless otherwise shown or noted. Slab shall be cast-in-place with conventional forms. All concrete and reinforcing steel in safety barrier curb, moment slab and raised median barrier will be considered completely covered by the contract unit price for the respective item.	30
CONCRETE AND MASONRY COATINGS: Protective coating for "Concrete Bents and Piers (Epoxy)" shall be applied to the area of the abutments and bottom and sides of top slab and in accordance with Sec of the Missouri Standard Specifications.	e 7
"Concrete and Masonry Protection Systems" shall be applied to all massonry surface repair and new construction have been completed.	ЭS
"Sacrificial Graffiti Protection System" shall be applied to all masonry and concr of the barriers, abutments and retaining walls after all other coating systems hav	́e ve
RESIN ANCHORS: The contractor shall use one of the qualified resin anchor systems in accordance of Sec 1039 of the Missouri Standard Specification. Cost of furnishing and installing anchor system complete-in-place will be considered completely covered by the contr price for Safety Barrier Curb and Raised Median Barrier. The minimum embedment de concrete with f'c = 4,000 psi for the resin anchor system shall be that required the minimum ultimate pullout strength in accordance with Sec 1039 of the Missouri Star Specification, but shall not be less than 6".	vi ⊃g ≥p tc nd
EXISTING PLANS: Existing bridge plans may be obtained from the City.	

## GENERAL NOTES AND QUANTITIES

w work. Contractor in old concrete ble. If length for plain bars	BF	THIS SIGNET DA 4/2 ROUTE 2DW DISTRIC KC JA 89 COP		ALL ALL ALL ALL ALL ALL ALL ALL		
vhere All unless otherwise grams.	DESCRIPTION	Bf	RIDG	E N(	0.	
	DATE					
tions -d conform		CITY OF KANSAS CITY, MISSOURI 414 E. 12TH STREET. 19TH FLOOR	KANSAS CITY, MO 64151	P: (816) 513-2600	F: (816) 513-2572	www.kcmo.org
e exposed c 711 ces after crete surfaces ave been applied. with ing the resin tract unit depth in to meet the andard		HDR Engineering. Inc.			64111-1856	hority: 000856
		ř	4435 Main Street	Suite 1000	Kansas City, MO	certificate of Auth

![](_page_31_Figure_2.jpeg)

### BORING SHEET

BF	CHAD DALE HALL NUMBER PE-2003001039 PE-2003001039 DISTRISSHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY DATE PREPARED 4/20/2015 ROUTE STATE BRDWAY MO DISTRICT SHEET NO. KC C03 COUNTY JACK SON JOB NO. 89005561										
╞	8	9( con	108 00 TRA	NO 55 .CT	56 <sup>ID</sup>	, 1					
	PROJECT NO. — Bridge No. —										
				_							
DESCRIPTION											
DATE											
	CITY OF KANSAS CITY, MISSOURI	414 E. 12TH STREET, 19TH FLOOR	KANSAS CITY, MO 64151	P: (816) 513-2600	F: (816) 513-2572	www.kcmo.org	)				
	Y										
					Z						
		HDR Engineering, Inc.	4435 Main Street	Suite 1000	Kansas City, MO 64111-1856	816-360-2700	Certificate of Authority: 000856				

Note: For Location of Boring see Sheet CO1.

![](_page_32_Figure_0.jpeg)

ment Walls	CHAD DALE HALL NUMBER PE-2003001039 CONAL PE-2003001039 CONTE DATE PREPARED A/20/2015 ROUTE STATE BRDWAY MO DISTRICT SHEET NO. COUNTY JACK SON JOB NO. 89005561 CONTRACT ID.  PROJECT NO.
coating alls to have surface & rack repair and anti-araffiti	BRIDGE NO. —
Removal of asphalt & curb to allow new moment slab for barrier (Typ.)	DESCRIPTION
	DATE
Typ. Section ical Sections	CITY OF KANSAS CITY, MISSOURI 414 E. 12TH STREET, 19TH FLOOR KANSAS CITY, MO 64151 P: (816) 513-2600 F: (816) 513-2572 www.kcmo.org
Sta. 12+10.69 Note: See detail sheets for removal limits.	HDR Engineering, Inc. 4435 Main Street Suite 1000 Kansas City, MO 64111-1856 Suite 1000 Kansas City, MO 64111-1856 S16-360-2700 Certificate of Authority: 000856

![](_page_33_Figure_0.jpeg)

![](_page_33_Figure_1.jpeg)

![](_page_33_Figure_2.jpeg)

### EXISTING TYPICAL SECTION (BRIDGE)

# TYPICAL SECTIONS

Sequence of Construction

- Install Temporary shoring to support top slab of Rigid Frame prior to Hydrodemolition. Shoring to be signed and sealed by Missouri Professional Engineer. 2. Remove existing limestone facing,
  - curb and median.
- Mill asphalt overlay to top of deck.
   Remove original median. 5. Total surface hydro demolition to a depth of 5".
- 6. Replace damaged or deteriorated deck steel as directed by Engineer. 7. Perform half-sole repairs for areas
- noted by Engineer after hydro demolition.
- 8. Install sacrificial anodes per details on Sheet C10.
- 9. Install Reinforcing steel for new barriers and median. See Sheets CO9 & C10. 10. Place Silica Fume Overlay.
- 11. Construct new barriers and median.
- See details on Sheets CO9 & C10. 12. Place waterproofing membrane to limits shown.
- 13. Place Asphalt wearing surface. 14. Install new limestone facing.
- 15. Underside of slab to be repaired after removal of temporary shoring.

	CHAD DALE HALL NUMBER PE-2003001039 CONAL FINS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY DATE PREPARED 4/20/2015 ROUTE STATE BRDWAY MO DISTRICT SHEET NO. KC CO5 COUNTY JACK SON JOB NO. 89005561 CONTRACT ID.  PROJECT NO.  BRIDGE NO.									
ł	BRIDGE NO.									
	DESCRIPTION									
	DATE									
		CITY OF KANSAS CITY, MISSOURI	414 E. 12TH STREET, 19TH FLOOR	KANSAS CITY, MO 64151	P: (816) 513-2600	F: (816) 513-2572	www.kcmo.org	)		
			HDR Engineering, Inc.	4435 Main Street	Suite 1000	Kansas City, MO 64111-1856	816-360-2700	Certificate of Authority: 000856		

![](_page_34_Figure_0.jpeg)

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

A / 20 / 2015 ROUTE STATE BRD WAY MO DISTRICT SHEET NO. KC CO6 COUNTY JACK SON JOB NO. 89005561 CONTRACT ID. PROJECT NO. BRIDGE NO. BRIDGE NO. - BRIDGE NO. - BRIDGE NO. - BRIDGE NO. - MON (4121 101 - 101 - BRIDGE NO. - - MON (4121 101 - 101 - - - - - - - - - - - - -			THIS S NED, I DATE			E R 039 S BEEE ND D/ ALLY RED	NATED				
CITY OF KANSAS CITY, MISSOURI 414 E. 12TH STREET, 19TH FLOOR RANSAS CITY, MO 64151 P: (816) 513-2600 F: (816) 513-2572 www.kcmo.org	4/20/2015 ROUTE STATE BRDWAY MO DISTRICT SHEET NO. KC CO6 COUNTY JACKSON JOB NO. 89005561 CONTRACT ID. - PROJECT NO. - BRIDGE NO. -										
DATE       DESCRIPTION         CITY OF KANSAS CITY, MISSOURI       DATE       DESCRIPTION         414 E. 12TH STREET, 19TH FLOOR       10       DESCRIPTION         414 E. 12TH STREET, 19TH FLOOR       10       10         F: (816) 513-2600       10       10         F: (816) 513-2572       10       10         www.kcmo.org       10       10											
CITY OF KANSAS CITY, MISSOURI 414 E. 12TH STREET, 19TH FLOOR KANSAS CITY, MO 64151 P: (816) 513-2600 F: (816) 513-2572 www.kcmo.org	DESCRIPTION										
	DATE	CITY OF KANSAS CITY, MISSOURI	414 E. 12TH STREET, 19TH FLOOR	KANSAS CITY, MO 64151	P: (816) 513-2600	F: (816) 513-2572					
			HDR Engineering, Inc.	4435 Main Street	Suite 1000	Kansas City, MO 64111-1856	816-360-2700	Certificate of Authority: 000856			

![](_page_35_Figure_0.jpeg)

![](_page_36_Figure_0.jpeg)

		THIS PEDE EL DAT DAT V Z JTE V Z DAT C DAT C DAT BR	COU COU COU COU COU COU COU COU COU COU				
DESCRIPTION							
DATE	CITY OF KANSAS CITY, MISSOURI	414 E. 12TH STREET, 19TH FLOOR	KANSAS CITY, MO 64151	P: (816) 513-2600	F: (816) 513-2572	www.kcmo.org	
		HDR Engineering, Inc.	4435 Main Street	Suite 1000	Kansas City, MO 64111-1856	816-360-2700	Certificate of Authority: 000856

c:\pwworking\oma\d1648239\08\_B\_XXX\_89005561\_Concrete Traffic Barrier.dgn

![](_page_37_Figure_0.jpeg)

	BF							
	CONTRACT ID. — PROJECT NO. — BRIDGE NO. —							
ETAILS "C" "D"	DESCRIPTION							
43'-8"     45       33'-10"     66       35'-10"     70       35'-10"     70	DATE							
33'-10"     66       53'-2"     54       Wall		CITY OF KANSAS CITY, MISSOURI	414 E. 12TH STREET, 19TH FLOOF	KANSAS CITY, MO 64151	P: (816) 513-2600	F: (816) 513-2572	www.kcmo.org	)
Arb shall de with safety cept at end fety barrier a 1/2" radius or herwise noted. curb is bid by ct unit price of all concrete lete in place. carrier curb farrier curb is pot for each ng the outside f slab to edge			HDR Engineering, Inc.	t Street		ity, MO 64111-1856		of Authority: 000856
				4435 Main 5	Suite 1000	Kansas City	816-360-27	Certificate c

/ Adjacent Barrier or / Transition Section, Typ.

ΒA	ARRIER RE	INFORCE	MENT DE	TAILS	
	"」"	"A"	"В"	"C "	"D"
	44′-0″	14	1	43′-8″	45
е	65′-0″	16	2	33′-10″	66
	68′-11″	17	2	35′-10″	70
	69′-0″	17	2	35′-10″	70
Ф	65′-0″	16	2	33′-10″	66

1

NE	—	Northeas	t Reto	lining	Wall
SE	—	Southeas	t Reto	lining	Wall
SW	—	Southwes	t Reto	ining	Wall
NW	—	Northwes	t Reto	ining	Wall

15

### Notes:

53′-6″

Top of safety barrier curb be built parallel to grade barrier curb joints (except bents) normal to grade.

All exposed edges of safety curb shall have either a 1/2 a 3/8" bevel, unless otherwi

When the safety barrier cur linear feet, the contract ur shall include the cost of a and reinforcement, complete

Concrete in the safety barri shall be Class B-1.

Measurement of safety barrie to the nearest linear foot structure, measured along t top of slab from edge of sla of slab.

![](_page_38_Figure_0.jpeg)

Checked March 2015

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

3. Ensure all exposed reinforcing steel is securely fastened together with tie wire to provide good continuity.

4. Attach Galvashield XP2 anodes to clean reinforcing steel. Attach to top transverse bars, spacing not to exceed 28'

6. Details are shown for anodes produced by Vector Corrosion Technologies LTD. Contractor may submit alternate

Sequence of Construction: 1. Remove damaged concrete as with standard repair methods.

	CHAD DALE HALL NUMBER PE-2003001039 EECTRONICALLY DATE PREPARED A/20/2015 ROUTE STATE BRDWAY MO DISTRICT SHEET NO. KC C10 DISTRICT SHEET NO. KC C10 COUNTY JACKSON JOB NO. 89005561 CONTRACT ID.  PROJECT NO.									
DESCRIPTION										
DATE	CITY OF KANSAS CITY, MISSOURI	414 E. 12TH STREET, 19TH FLOOR	KANSAS CITY, MO 64151	P: (816) 513-2600	F: (816) 513-2572					
		HDR Engineering, Inc.	4435 Main Street	Sulte 1000	Kansas City, MO 64111-1856	16-360-2700	ertificate of Authority: 000856			

![](_page_39_Figure_0.jpeg)

![](_page_39_Figure_3.jpeg)

### NEW BARRIER & CURB (BRIDGE)

- st Limestone Facing Anchors shall be spaced in accordance with ACI 530. For adjustable two-piece anchors, anchors or wire size W1.7 (MW11), and for each 2.67 sq. ft. of wall area. For other anchors provide at least one anchor for each 3.5 sq. ft. of wall area. Maximum spacing shall not exceed 32" horizontally and 18" vertically.
- ## Limestone Facing Anchors shall either be cast into the wall/barrier or attached with concrete/masonry screws compatible with specified anchors.

# CONCRETE AND MASONRY REPAIR DETAILS

![](_page_39_Figure_10.jpeg)

0.0 CHAD DALE

NUMBER PE-2003001039 SIONAL

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY

DATE PREPARED 4/20/2015

STATE

ROUTE

EX PRO

![](_page_40_Figure_0.jpeg)

![](_page_41_Figure_0.jpeg)

![](_page_42_Figure_0.jpeg)

![](_page_42_Figure_2.jpeg)

![](_page_43_Figure_0.jpeg)

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

BILL OF REINFORCING STEEL																												
, D.	M/ N	ARK IO•		(E)		(S)	÷.	2	н						DIN	IENS	IONS							NAL	СТН	UAL	GТН	
REO	ZE	RK	LOCATION	×	APE N	RUP	STR.	IES	). EAC	E	3		С		D		Е		F		н		K	IMON	LEN	ACT	LEN	WEIGHT
.0N.	SI	MA		EPO	HS	STI		VAR	N N	FΤ.	IN.	FT.	I N .	FT.	IN.	FT	. IN	• F	T. IN.	ΓT	. IN.	FT.	IN.	FΤ.	IN.	FΤ.	IN.	LBS.
			BARRIER CURF	3				_																				
								1																				
132	5	R1	BARRIER	E	19	X	+	╉		4	9.000		3.500	)				+						5	1	5	0	688
132	5	R2	BARRIER	E	15	X				4	9.000		3.500	)	4 0 5 0		1 0 0 0			4	9.000	-	3.000	5	1	5	0	688
132 239	5	R3 R4	BARRIER	E  F	27	X	_			2	6.000		4.250	$\frac{1}{1}$	1.250	2	1.000	)		2	9.250		<u>6.375</u> 3.000	ろ 5	0 3	2	10 3	390
239	5	R5	BARRIER	E	19	X				2	6.000	1	8.000					+		2	0.000		5.000	2	2	2	1	519
239	5	R6	BARRIER	E	27	Х							6.000	) 1	1.250	1	0.500	)	12.000		9.250		6.375	3	6	3	4	831
12	5	R7	BARRIER	E	20 1 a		_		_	13	2.000		6 000					+						13	2	13	2 र	165
56	5	R9	BARRIER	E	27	X	┥	+			1.000		6.000	) 1	1.250	1	0.500		12.000		9.250		6.375	2 3	6	2 3	4	195
12	5	R10	BARRIER	E	20					13	3.000													13	3	13	3	166
<b>F O</b>	<u>_</u>				1.0		_			<u> </u>	<u> </u>													0	1.0	0		
52 52	5 5	R1Z	BARRIER	IE F	19	X	+			2 2	6.000		3.500					+		2	6,000	-	3.000	2	10	2	8 9	145
7	5	R14	BARRIER	E	20		+			43	8.000									2	0.000			43	8	43	8	319
7	5	R15	BARRIER	E	20					53	2.000													53	2	53	2	388
28	5	R16	BARRIER	E	20					33 1	0.000													33	10	33	10	988
28	5	RII	BAKKIEK	E	20	$\left  \right $	+			35 I	0.000							+						35	10	35	10	1046
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![](_page_44_Figure_3.jpeg)

STIRRUP HOOK DIMENSIONS											
GRADES 40 - 50 - 60 KSI											
BAR	D	90° HOOK	1 35°	ноок							
SIZE	(IN.)	HOOK A OR G	HOOK A OR G	APPROX. H							
#4	2″	4 1/2″	4 1/2"	3″							
#5	2 1/2"	6″	5 1/2″	3 3/4″							
#6	4 1/2″	12″	8″	4 1/2"							

NOTE: UNLESS OTHERWISE NOTED, DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

![](_page_44_Figure_6.jpeg)

END HOOK DIMENSIONS										
		ALL GRADES								
BAR		180°	90° HOOKS							
SIZE	(111.)	A OR G	J	A OR G						
#3	2 1/4"	5″	3″	6″						
#4	3″	6″	4″	8″						
#5	3 3/4″	7″	5″	10″						
#6	4 1/2"	8″	6″	12″						
#7	5 1/4″	10″	7″	14″						
#8	6″	11″	8″	16″						
#9	9 1/2″	15″	11 3/4"	19″						
#10	10 3/4"	17″	13 1/4″	22″						
#11	12″	19″	14 3/4"	2'-0"						
#14	18 1/4"	2'-3"	21 3/4"	2'-7"						

### NOTE:

ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET. E = EPOXY COATED REINFORCEMENT.

S = STIRRUP.

X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.

V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE. NO. EA. = NUMBER OF BARS OF EACH LENGTH.

NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH) ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS. Four angle or channel spacers are required for each column spiral. spacers are to

BE PLACED ON INSIDE OF SPIRALS. LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.

REINFORCING STEEL (GRADE 60) FY = 60,000 PSI.

![](_page_44_Picture_17.jpeg)

### BAR BILL AND BENDING DIAGRAM

![](_page_44_Figure_21.jpeg)