



Public Works Department

10000 East 59th Street
Raytown, Missouri 64133
(816) 737-6012
www.raytown.mo.us



Date: September 5, 2019
To: Potential Bidders
SUBJECT: MO 350 Hwy & Raytown Road Intersection Improvements
Bid Addendum #4
Job No. STP 3343-408

The original bid documents for Project No. STP-3343(408) for the 350 Hwy & Raytown Road project shall remain in effect except as revised by the following changes, which shall take precedence over anything to the contrary in the plans and specifications.

• The Bid date & time will be changed from Mon., Sept. 9th to Tues., September 10th at 3:00pm.

Bid Addendum #4 - Questions & Clarifications:

Questions 1 thru 13 are all answered on the revised plan sheets included with this addendum.

1. Item 80, Pull box Preformed Class 2 plans indicate a Class 1 box.
2. Item 83, 2" Split Duct Conduit Splices, Plans do not indicate size of Split duct (diameter).
3. Item 87, Total Area Each Sign. Plans do not indicate location, number, or type of signs.
4. Item 88, 1" loop detectors, wiring schedule does not include wire in 1" conduit from pull box to push buttons or to pedestrian signal heads.
5. Item 89, 2" conduit pushed, plans indicate 3" conduit .
6. No bid item for pushbuttons on ped poles.
7. No bid item for pedestrian signal heads (8).
8. No bid item for signal heads (17).
9. There is no equipment indicated for the controller related to adding the pedestrian crossing signals.
10. Page 7 of 11 in the total Summary of Quantities refers to fiber in regards to the Type 5 box and the removal of 6 boxes. I have not been able to locate the fiber or the boxes to be removed anywhere on the drawings. How much fiber do we have to pull out and pull back in? Do we have to do any splicing or re-terminating of the fiber? What size fiber? Are the boxes we are removing in green space, medians or pavement?
11. The bid form shows 44' of 1" detector loops but there is not any cabling listed in the Summary of Quantities for the electrical. Is it 44' of detector loop wire or 44' of 1" conduit? If it is 44' of conduit, what about the induction loop cable?
12. Bid Form Line Item 80 & 81 Pull boxes. Drawings ask for 8 class 1 only. Bid Form calls for 8 class 2 and 1 class
13. Bid Form Line Item 87 has 141 SF of signage. There isn't any lighted signs that I see in the drawings. We typically only do the lighted street signs on the traffic poles but none are shown. The signs Summary of Quantities for electrical is empty but it has a total.

14. Will work along Raytown Road be under the same restrictions as "3.0 Work Hour Restrictions" within the spec?

a. Answer - We don't think this would apply to Raytown Rd, just 350 because of the traffic congestion.

15. Can any of the Traffic Control phases, under sheet 50 – Traffic Control Stage Writeup, be constructed concurrently?

a. Answer – The winning bidder can propose changes to traffic control in an RFI.

16. Will any imported topsoil be required for this project?

a. Answer - No, just normal erosion control measures for seeding/sodding.

17. Are street patch quantities (patching for new curb) accounted for under a specific bid item?

a. Answer - This would be subsidiary to the curb bid item.

b. Answer - If it's about the 1' offset from new curb where the pavement is replaced, that is covered under the normal asphalt quantity.


18. City of Raytown standard specification detail drawings are attached for CG-1 and CG-3 curb and gutter for City streets.

19. Revised Bid Form is attached.

20. Replacement Plan Sheets attached: Summary of Quantities Sheet 6 of 11, Summary of Quantities Sheet 7 of 11, Summary of Quantities Sheet 8 of 11, Sheet 94 Traffic Signal Legend Sheet 1 of 9, Sheet 95 Traffic Signal Legend Sheet 2 of 9, Sheet 96 Traffic Signal Legend Sheet 3 of 9, Sheet 97 Traffic Signal Legend Sheet 4 of 9, Sheet 98 Traffic Signal Legend Sheet 5 of 9, Sheet 99 Traffic Signal Legend Sheet 6 of 9, Sheet 100 Traffic Signal Legend Sheet 7 of 9, Sheet 101 Traffic Signal Legend Sheet 8 of 9, Sheet 102 Traffic Signal Legend Sheet 9 of 9.

ACKNOWLEDGEMENT

Each bidder shall acknowledge receipt of this Addendum No. 4 with their signature affixed hereto, and shall attach this Addendum to the original bid proposal.


Jason Hanson
City Engineer

CERTIFICATION BY BIDDER:

PRINT NAME _____

SIGNATURE _____

COMPANY _____

DATE _____

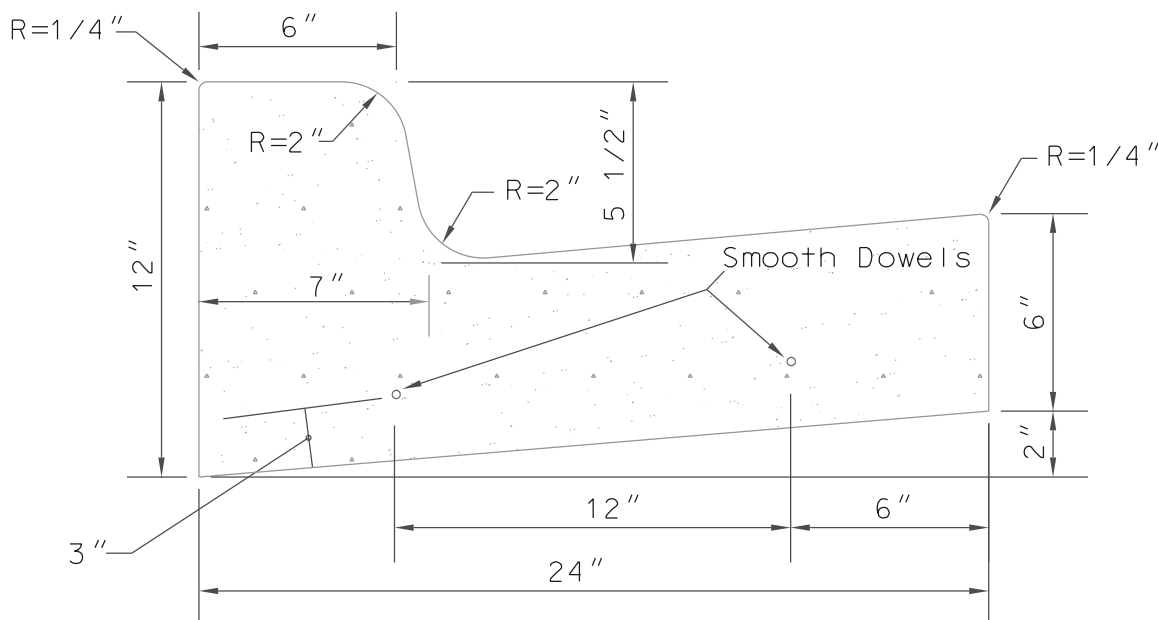
1. EXPANSION JOINTS SHALL BE FORMED BY A ONE-HALF (1/2) INCH THICK PREFORMED JOINT FILLER, CUT TO THE CONFIGURATION OF THE FULL SIZE OF THE CURB AND GUTTER SECTION AND BEING SECURED SO THAT THEY ARE NOT MOVED BY DEPOSITING AND COMPACTING THE CONCRETE AT THESE JOINTS. THE EDGES OF THESE JOINTS SHALL BE ROUNDED WITH AN EDGING TOOL ONE-EIGHTH (1/8) INCH RADIUS.

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- Technical drawing of a gutter cross-section. The gutter is 24" wide and 11" high. The top surface has a radius of $R=12\frac{1}{2}"$ and a radius of $R=31"$. The gutter line is 7 1/2" wide. The bottom surface has a radius of $R=1/4"$. The gutter is filled with smooth dowels. The gutter is 12" wide and 6" deep. The gutter is 2" high. The gutter is 5 1/2" high. The gutter is 8" high.

RAYTOWN, MISSOURI <u>PUBLIC</u> <u>WORKS/</u> <u>ENGINEERING</u> <u>DIVISION</u>	APPROVED JMH <u>CITY ENGINEER</u> 2-1-11 <u>DATE</u>	REVISED 	TYPE "CG-3" CURB AND GUTTER DETAIL (LAZY BACK)	STANDARD DETAIL 21-1
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NOTES:

1. EXPANSION JOINTS SHALL BE FORMED BY A ONE-HALF (1/2) INCH THICK PREFORMED JOINT FILLER, CUT TO THE CONFIGURATION OF THE FULL SIZE OF THE CURB AND GUTTER SECTION AND BEING SECURED SO THAT THEY ARE NOT MOVED BY DEPOSITING AND COMPACTING THE CONCRETE AT THESE JOINTS. THE EDGES OF THESE JOINTS SHALL BE ROUNDED WITH AN EDGING TOOL ONE-EIGHTH (1/8) INCH RADIUS.
2. EXPANSION JOINTS SHALL BE PLACED WHERE CURB AND GUTTER ABUTS OTHER STRUCTURES AND AT ALL POINTS OF TANGENTS TO CURBS. EXPANSION JOINTS SHALL NOT BE SPACED MORE THAN 50 FEET APART ON STRAIGHT RUNS FOR HAND LAID CURB AND GUTTER AND NOT MORE THAN 200 FEET APART FOR MACHINE LAID CURB AND GUTTER PROVIDED 3/4 INCH THICK JOINT FILLER IS USED. ALL JOINTS SHALL BE FORMED AT RIGHT ANGLES TO THE ALIGNMENT OF THE CURB AND GUTTER.
3. CONTRACTION JOINTS SHALL BE CONSTRUCTED BY SAWING THROUGH THE CURB AND GUTTER TO A DEPTH OF NOT LESS THAN ONE AND ONE-FOURTH (1 1/4) INCHES BELOW THE SURFACE AND TO A WIDTH NOT TO EXCEED THREE-EIGHTHS (3/8) INCH OR THEY MAY BE FORMED BY INSERTING A REMOVABLE METAL TEMPLATE IN THE FRESH CONCRETE, OR BY OTHER METHODS APPROVED BY THE ENGINEER. SEALING OF JOINTS IS NOT REQUIRED. CONTRACTION OR CONSTRUCTION JOINTS SHALL BE LOCATED APPROXIMATELY 10 FEET APART.
4. TWO 24", #4 SMOOTH DOWELS SHALL BE USED AT EXPANSION JOINT LOCATIONS. THE DOWELS SHALL BE GREASED AND WRAPPED OR CAPPED WITH PLASTIC EXPANSION TUBES AT ONE END. THE DOWELS SHALL EXTEND THROUGH THE JOINT.
5. REBAR IS NOT ALLOWED FOR CURB CONSTRUCTION.



<p>RAYTOWN, MISSOURI PUBLIC WORKS/ ENGINEERING DIVISION</p>	<p>APPROVED JMH CITY ENGINEER 2-1-11 DATE</p>	<p>REVISED</p>	<p>TYPE "CG-1" CURB AND GUTTER DETAIL (UPRIGHT)</p>	<p>STANDARD DETAIL 21-2</p>
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ITEMIZED BID: The bidder should complete the following section in accordance with Sec 102.7. The bidder proposes to furnish all labor, materials, equipment, services, etc. required for the performance and completion of the work, as follows:

BID FORM

PROJECT: STP-3343 (408), MO 350 Hwy & Raytown Road Intersection Improvements

TO: CITY OF RAYTOWN, MO

The undersigned bidder hereby proposes to furnish all material, supplies, transportation, tools, and equipment, perform all necessary labor and construct, install and complete all work stipulated in, required by, and in conformity with the proposed Contract Documents (including all documents referred to therein) and any and all written addenda thereto, for and in consideration of the lump sum price as follows:

ROADWAY					
<u>Item No</u>	<u>Item Name</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
1.	CLASS A EXCAVATION	225	CY		
2.	EMBANKMENT IN PLACE	1613	CY		
3.	COMPACTING EMBANKMENT	1926	CY		
4.	REMOVAL OF IMPROVEMENTS	1	LS		
5.	CONC. SIDEWALK 4 IN.	371.6	SY		
6.	STANDARD RAMP	19	EA		
7.	4 IN. TYPE 5 AGGREGATE BASE	3239.1	SY		
8.	6 IN. BASE ROCK	704	SY		
9.	COLDMILLING (3 IN. OR LESS)	7820	SY		
10.	12 IN. CONC. MEDIAN STRIP	113.8	SY		
11.	8 IN. CONC. MEDIAN STRIP	222.7	SY		
12.	6 IN. CONC. MEDIAN STRIP	38.7	SY		
13.	12" DOWELLED CURB	489	LF		
14.	TYPE A CURB & GUTTER	1883	LF		
15.	CG-1 CURB & GUTTER	1977	LF		
16.	CG-2 CURB & GUTTER	32	LF		
17.	1.5" SP095BSM	9319.4	SY		
18.	MODOT BITUMINOUS BASE (8") ASPHALT	1939.8	SY		
19.	RESURFACING ASPHALT (DEPTH VARIES)	35.6	CY		
20.	8" CONC. PAVEMENT, Driveway	922	SY		
21.	8" CONC. PAVEMENT, Street	677	SF		
22.	CLEAN GRAVEL BACKFILL	677	SF		
23.	FULL DEPTH VERTICAL SAWCUT	226	LF		
24.	DOWEL BAR	160	EA		
				SUBTOTAL	
DRAINAGE					
<u>Item No</u>	<u>Item Name</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
25.	12 IN. GROUP A PIPE	189	LF		
26.	18 IN. GROUP A PIPE	91	LF		

27.	12 IN. GROUP B PIPE	167	LF		
28.	18 IN. GROUP B PIPE	301	LF		
29.	12 IN. GROUP B FES	1	EA		
30.	TYPE S-1 GRATE INLET 3 FT. X 2 FT.	4	LF		
31.	TYPE T CURB INLET 5 FT. X 3 FT.	38	LF		
32.	TYPE T CURB INLET 5 FT. X 4 FT.	10	LF		
33.	APWA TYPE 1 CURB INLET 5 FT. X 3 FT.	4	LF		
34.	APWA TYPE 1 CURB INLET 7 FT. X 3 FT.	7	LF		
35.	GRATE & BEARING PLATE 3 FT. X 2 FT.	1	EA		
36.	MANHOLE FRAME & COVER TYPE 3	12	EA		
37.	PIPE COLLAR	1	EA		
38.	CLASS 3 EXCAVATION	328	CY		
39.	INLET TOP ADJUSTMENT	5	EA		
40.	MANHOLE TOP ADJUSTMENT	2	EA		
41.	4 FT. WIDE CONC. FLUME	2	EA		
				SUBTOTAL	
TRAFFIC CONTROL					
<u>Item No</u>	<u>Item Name</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
42.	RELOCATED SIGNS	213	SF		
43.	CONSTRUCTION SIGNS	943	SF		
44.	ADVANCED WARNING RAIL SYSTEM	4	EA		
45.	FLAG ASSEMBLY	25	EA		
46.	CHANNELIZER (TRIM LINE)	150	EA		
47.	TYPE III MOVEABLE BARRICADE	20	EA		
48.	DIRECTION INDICATOR BARRICADE, WITH LIGHT	28	EA		
49.	FLASHING ARROW PANEL	5	EA		
50.	CHANGEABLE MESSAGE SIGN, CONTRACTOR FURNISHED/RETAINED	4	EA		
51.	PAVEMENT EDGE TREATMENT	2860	LF		
				SUBTOTAL	
EROSION CONTROL					
<u>Item No</u>	<u>Item Name</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
52.	SILT FENCE	1451	LF		
53.	DITCH CHECK	7	EA		
54.	INLET CHECK	1	EA		
				SUBTOTAL	
SIGNING					
<u>Item No</u>	<u>Item Name</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
55.	U-CHANNEL POST	120	LF		
56.	2.5 IN. PSST POST - 12 GA.	30	LF		
57.	CONC. FOOTINGS BOLT DOWN	13.7	CY		

58.	R1-1, 36 IN. X 36 IN.	2	EA		
59.	R1-2, 36 IN. X 36 IN. X 36 IN.	2	EA		
60.	W11-2, 36 IN. X 36 IN.	3	EA		
61.	W14-1, 36 IN. X 36 IN.	1	EA		
62.	54' BUTTERFLY SIGN TRUSS	1	EA		
63.	15' SIGN TRUSS	1	EA		
64.	BREAKAWAY ASSEMBLY	4	EA		
65.	OVERHEAD SIGNS (STR2L-3)	341	SF		
				SUBTOTAL	
PAVEMENT MARKING					
<u>Item No</u>	<u>Item Name</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
66.	6 IN. SOLID WHITE ACRYLIC WATERBORNE PAVEMENT MARKING PAINT	5153	LF		
67.	6 IN. SOLID YELLOW ACRYLIC WATERBORNE PAVEMENT MARKING PAINT	3026	LF		
68.	6 IN. DASHED WHITE ACRYLIC WATERBORNE PAVEMENT MARKING PAINT	1331	LF		
69.	6 IN. DASHED YELLOW ACRYLIC WATERBORNE PAVEMENT MARKING PAINT	440	LF		
70.	12 IN. DASHED WHITE ACRYLIC WATERBORNE PAVEMENT MARKING PAINT	415	LF		
71.	24 IN. SOLID WHITE ACRYLIC WATERBORNE PAVEMENT MARKING PAINT	399	LF		
Add. 2 72.	TYPE 1 Preformed Thermoplastic (Surface Applied) LEFT ARROW	18	EA		
Add. 2 73.	TYPE 1 Preformed Thermoplastic (Surface Applied) RIGHT ARROW	4	EA		
Add. 2 74.	TYPE 1 Preformed Thermoplastic (Surface Applied) STRAIGHT ARROW	16	EA		
Add. 2 75.	TYPE 1 Preformed Thermoplastic (Surface Applied) STRAIGHT-LEFT ARROW	1	EA		
Add. 2 76.	TYPE 1 Preformed Thermoplastic (Surface Applied) STRAIGHT-RIGHT ARROW	2	EA		
77.	TYPE 1 Preformed Thermoplastic (Surface Applied) WORD (ONLY)	6	EA		
78.	PREFORMED THERMOPLASTIC PAVEMENT MARKING, 30 IN WHITE MIDBLOCK	5	EA		
				SUBTOTAL	
SIGNALS					
<u>Item No</u>	<u>Item Name</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
79.	CONCRETE BASE	2.6	CY		
80.	PULL BOX, PREFORMED CLASS 2	8	EA		
81.	PULL BOX, PREFORMED CLASS 5	1	EA		
82.	PULL BOX REMOVAL	6	EA		
83.	RELOCATION OF PEDESTRIAN POLE & PULL BOX	1	LS		
84.	TOP MOUNT POST, 8 FT.	4	EA		
85.	TOP MOUNT POST, 15 FT.	2	EA		
Add. 4 86.	TOTAL AREA EACH SIGN	12	SF		

Add. 4	87.	3 IN. CONDUIT, TRENCHED	44	LF		
	88.	4 IN. RIGID GALVANIZED CONDUIT, TRENCHED	15	LF		
Add. 4	89.	3 IN. CONDUIT, PUSHED	661	LF		
	90.	2C #16 CABLE	1605	LF		
	91.	5C #16 CABLE	405	LF		
Add. 4	92.	DETECTOR, PUSH BUTTON, INSTALLED	8	EA		
Add. 4	93.	SIGNAL HEAD, TYPE 1S (PEDESTRIAN)	8	EA		
Add. 4	94.	SIGNAL HEAD, TYPE 3T	4	EA		
Add. 4	95.	SIGNAL HEAD, TYPE 3B	12	EA		
Add. 4	96.	SIGNAL HEAD, TYPE 4B	1	EA		
					SUBTOTAL	
MISCELLANEOUS						
	<u>Item No</u>	<u>Item Name</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
Add. 1	97.	SURVEY STAKING	1	LS		
Add. 1	98.	MOBILIZATION	1	LS		
					SUBTOTAL	
BASE BID TOTAL (no alternates)						
					BASE BID TOTAL	
ALTERNATE 1						
	<u>Item No</u>	<u>Item Name</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
	99. A	CLASS A EXCAVATION	100	CY		
	100. A	EMBANKMENT IN PLACE	1082	CY		
	101. A	COMPACTING EMBANKMENT	1005	CY		
	102. A	4 IN. ASPHALT TRAIL	1392	SY		
	103. A	4 IN. TYPE 5 AGGREGATE BASE	1392	SY		
	104. A	BOLLARD	10	EA		
	105. A	STANDARD RAMP	11	EA		
	106. A	U-CHANNEL POST	300	LF		
	107. A	R1-1, 18 IN. X 18 IN.	10	EA		
	108. A	R9, 12 IN. X 18 IN.	10	EA		
	109. A	W11-15, 30 IN. X 30 IN.	10	EA		
	110. A	W11-15P, 18 IN. X 24 IN.	10	EA		
	111. A	TYPE 2 PREFORMED MARKING TAPE (GROOVED) 16 IN. WHITE YIELD LINE TRIANGLES	96	EA		
	112. A	PREFORMED THERMOPLASTIC PAVEMENT MARKING, 30 IN WHITE MIDBLOCK	35	EA		
					SUBTOTAL	
ALTERNATE 2						
	<u>Item No</u>	<u>Item Name</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
	113. A	CLASS A EXCAVATION	527	CY		
	114. A	EMBANKMENT IN PLACE	117	CY		

115. A	COMPACTING EMBANKMENT	548	CY		
116. A	7 FT. X 7 FT. JUNCTION BOX	1	EA		
117. A	18 IN. GROUP B PIPE	39	LF		
118. A	42 IN. GROUP B PIPE	16	LF		
119. A	48 IN. GROUP B PIPE	20	LF		
120. A	48 IN. GROUP B FES 16 rev.	1	EA		
121. A	MANHOLE FRAME & COVER TYPE 3	1	EA		
122. A	PIPE COLLAR	2	EA		
123. A	CLASS 3 EXCAVATION	22	CY		
124. A	FURNISHING TYPE 3 ROCK BLANKET	28	CY		
125. A	PLACING TYPE 3 ROCK BLANKET	28	CY		
126. A	SEPARATION GEOTEXTILE	46	SY		
127. A	BEDDING MATERIAL FOR ROCK DITCH LINER	10	CY		
128. A	DITCH CHECK	6	EA		
129. A	CLEARING AND GRUBBING	1	LS		
				SUBTOTAL	
ALTERNATE 3					
<u>Item No</u>	<u>Item Name</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
130. A	CLASS A EXCAVATION	2	CY		
131. A	EMBANKMENT IN PLACE	97	CY		
132. A	COMPACTING EMBANKMENT	99	CY		
133. A	CONC. SIDEWALK 4 IN.	113.4	SY		
134. A	STANDARD RAMP	5	EA		
135. A	TYPE A CURB & GUTTER	284	LF		
136. A	CG-1 CURB & GUTTER	98	LF		
137. A	MODOT BITUMINOUS BASE (10") ASPHALT	3	SY		
138. A	MODOT BP-1 (2") ASPHALT	3	SY		
139. A	8" CONC. PAVEMENT	259.1	SY		
140. A	6 IN. TYPE 5 AGGREGATE BASE	315	SY		
141. A	6 IN. BASE ROCK	68	SY		
142. A	6 IN. SOLID YELLOW ACRYLIC WATERBORNE PAVEMENT MARKING PAINT	332	LF		
				SUBTOTAL	
GRAND TOTAL WITH ALTERNATES					
				GRAND TOTAL	

BASE BID TOTAL: _____

BASE BID TOTAL IN WORDS: _____

Contractor Name: _____

Date: _____

The Contract will be awarded to the lowest, responsible, and responsive bidder.

EROSION CONTROL										
SHEET NO.	ROADWAY	BEGIN STATION	OFFSET (FT)	END STATION	OFFSET (FT)	SIDE	SILT FENCE (LF)	DITCH CHECK (EA)	INLET CHECK (EA)	REMARKS
89	ROUTE 350 EB	56+40.34	89.00	59+36.20	89.00	RT	296			
89	ROUTE 350 EB	56+45.71	76.00	59+36.20	76.00	RT	290			
90	ROUTE 350 EB	61+26.35	54.86	62+16.09	74.86	RT	93			
90,91	ROUTE 350 EB	62+49.10	74.70	65+03.07	70.50	RT	256			
91	ROUTE 350 EB	65+34.59	71.33	66+21.16	51.00	RT	92			
91	ROUTE 350 EB	65+51.43	51.00	69+06.12	37.00	RT	260			
91,92	ROUTE 350 EB	69+35.94	37.00	70+39.41	37.00	RT	104			
92	ROUTE 350 EB	71+06.04	35.64	71+35.26	41.02	RT	30			
92	ROUTE 350 EB	71+06.05	33.05	71+35.42	27.48	RT	30			
89	ROUTE 350 EB	56+35.94	81.65			RT		1		
89	ROUTE 350 EB	56+84.21	81.00			RT		1		
89	ROUTE 350 EB	57+17.00	80.00			RT			1	
89	ROUTE 350 EB	57+34.21	81.00			RT	1			
89	ROUTE 350 EB	57+84.21	81.00			RT	1			
89	ROUTE 350 EB	58+34.21	81.00			RT	1			
89	ROUTE 350 EB	58+84.21	81.00			RT	1			
92	ROUTE 350 EB	71+22.20	29.96			RT		1		
PAY TOTAL							1451	7	1	

PAVEMENT MARKING																	
SHEET NO.	ROADWAY	BEGIN STATION	END STATION	SIDE	6 IN. SOLID WHITE ACRYLIC WATERBORNE PAVEMENT MARKING PAINT (LF)	6 IN. SOLID YELLOW ACRYLIC WATERBORNE PAVEMENT MARKING PAINT (LF)	6 IN. DASHED WHITE ACRYLIC WATERBORNE PAVEMENT MARKING PAINT (LF)	6 IN. DASHED YELLOW ACRYLIC WATERBORNE PAVEMENT MARKING PAINT (LF)	12 IN. DASHED WHITE ACRYLIC WATERBORNE PAVEMENT MARKING PAINT (LF)	24 IN. SOLID WHITE ACRYLIC WATERBORNE PAVEMENT MARKING PAINT (LF)	PREFORMED THERMOPLASTIC PAVEMENT MARKING, LEFT ARROW (EA)	PREFORMED THERMOPLASTIC PAVEMENT MARKING, RIGHT ARROW (EA)	PREFORMED THERMOPLASTIC PAVEMENT MARKING, STRAIGHT ARROW (EA)	PREFORMED THERMOPLASTIC PAVEMENT MARKING, STRAIGHT-LEFT ARROW (EA)	PREFORMED THERMOPLASTIC PAVEMENT MARKING, STRAIGHT-RIGHT ARROW (EA)	PREFORMED THERMOPLASTIC PAVEMENT MARKING, WORD (ONLY) (EA)	PREFORMED THERMOPLASTIC PAVEMENT MARKING, 30 IN WHITE MIDBLOCK (EA)
110,111	ROUTE 350 WB	53+00.00	63+00.00	LT/RT	564	699				84		2	1	1			
113	ROUTE 350 EB	56+00.00	59+00.00	LT/RT	488					108		2	1				
113,114,115	ROUTE 350 EB	59+00.00	71+00.00	LT/RT	1749	991			415				2				
116	RAYTOWN RD.	397+00.00	400+00.00	LT/RT	392		371			29			4		1		
116,117	RAYTOWN RD.	400+00.00	406+00.00	LT/RT	1436	733	544			154	8		4			6	5
117,118	RAYTOWN RD.	406+00.00	412+00.00	LT/RT	402	494	416	440			6		4		1		
112	WALMART DR.	200+00.00	202+00.00	LT/RT	122	109				24	4						
PAY TOTAL					5153	3026	1331	440	415	399	18	4	16	1	2	6	5

△ REVISED 9/4/19

REV.	DESCRIPTION
1	PAVEMENT MARKING BID ITEM

SUMMARY OF QUANTITIES
SHEET 6 OF 11

STATE OF MISSOURI

BARBARA L. WELLS

NUMBER
PE-2009030026

PROFESSIONAL ENGINEER

DATE

5/15/2019

DATE PREPARED

5/15/2019

ROUTE

350

STATE

MO

DISTRICT

KC

SHEET NO.

3

COUNTY

JACKSON

JOB NO.

STP-3343(408)

CONTRACT ID.

.

PROJECT NO.

.

BRIDGE NO.

.

DESCRIPTION

DATE

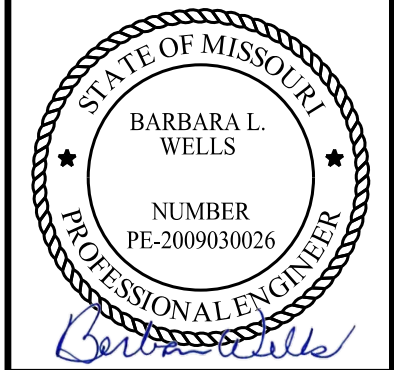
CDM
Smith

9200 Ward Parkway
Kansas City, MO 64114
816.444.8270
www.cdmsmith.com

CDM SMITH, INC.
PRO. ENGINEER 001431

BARBARA L. WELLS
PROFESSIONAL
ENGINEER
2009030026

K:\93081 350 Highway Economic Study\Phase 2\Design Files\Roadway\Plan Files\003_QU_06.dgn 6:56:58 PM 9/4/2019



DATE	
5/15/2019	
DATE PREPARED	
5/15/2019	
ROUTE	STATE
350	MO
DISTRICT	SHEET NO.
KC	3
COUNTY	
JACKSON	
JOB NO.	
STP-3343(408)	
CONTRACT ID.	
.	
PROJECT NO.	
.	
BRIDGE NO.	
.	

SIGNAL PULL BOXES *								
SHEET NO.	ROADWAY	BEGIN STATION	OFFSET (FT)	SIDE	PULL BOX REMOVAL (EA)	2' SPLIT-DUCT CONDUIT SPLICES (EA)	PULL BOX, PREFORMED CLASS 5 (EA)	REMARKS
8	ROUTE 350 EB	61+15.29	30.37	RT	1	1		
9	ROUTE 350 EB	62+55.03	27.46	RT	1	1		
9	ROUTE 350 EB	64+53.26	28.44	RT	1	1		
9	ROUTE 350 EB	66+03.27	34.71	RT	1	1	1	
9	ROUTE 350 EB	68+04.58	35.06	RT	1	1		
10	ROUTE 350 EB	70+03.52	36.44	RT	1	1		
PAY TOTAL					6	6	1	

* REMOVE EXISTING PULL BOXES AND INSTALL 2' SPLIT-DUCT CONDUIT SPLICES TO RECONNECT THE CONDUIT. THEN INSTALL A MODOT CLASS 5 PULL BOX AT ROUTE 350 EB STA. 66+03.27, 34.71' RT. TO CONTAIN THE EXTRA SLACK FIBER.

DESCRIPTION						
DATE						

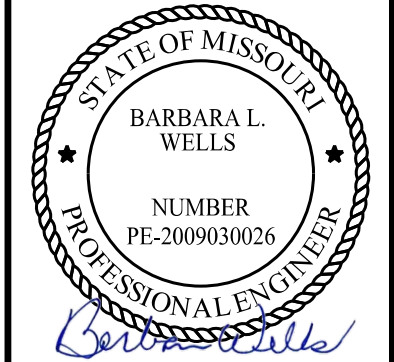


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SUMMARY OF QUANTITIES
SHEET 7 OF 11

BARBARA L. WELLS
PROFESSIONAL
ENGINEER
2009030026



DATE	
5/15/2019	
DATE PREPARED	
5/15/2019	
ROUTE	STATE
350	MO
DISTRICT	SHEET NO.
KC	94
COUNTY	
JACKSON	
JOB NO.	
STP-3343(408)	
CONTRACT ID.	
.	
PROJECT NO.	
.	
BRIDGE NO.	
.	

TRAFFIC SIGNALS LEGEND					
	CONTROLLER		VIDEO DETECTOR		CONDUIT MEDIAN
	CONTROLLER (EXISTING)		PUSH BUTTON DETECTOR		CONDUIT PUSHED
JCT	JUNCTION BOX		PREFORMED PULL BOX TYPE 1		CONDUIT BRIDGE
	POWER SOURCE		PREFORMED PULL BOX TYPE 2		CONDUIT EXISTING
P.S.	POWER SUPPLY		PULL BOX TYPE 1		CONDUIT TRENCHED
	WOOD POST		PULL BOX TYPE 2		SPAN WIRE
	SIGNAL HEAD (OPT LIM CONV)		ITS PULL BOX TYPE 5 MODIFIED		
	SIGNAL HEAD (OPT LIM)		6 X 6 LOOP DETECTOR		TYPE C MAST ARM A BASE
	SIGNAL HEAD (PEDESTRIAN)		6 X 15 LOOP DETECTOR		TYPE C MAST ARM F BASE
	SIGNAL HEAD (STANDARD)		30 X 6 DETECTION ZONE		

DATE	DESCRIPTION



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REVISED 9/4/19

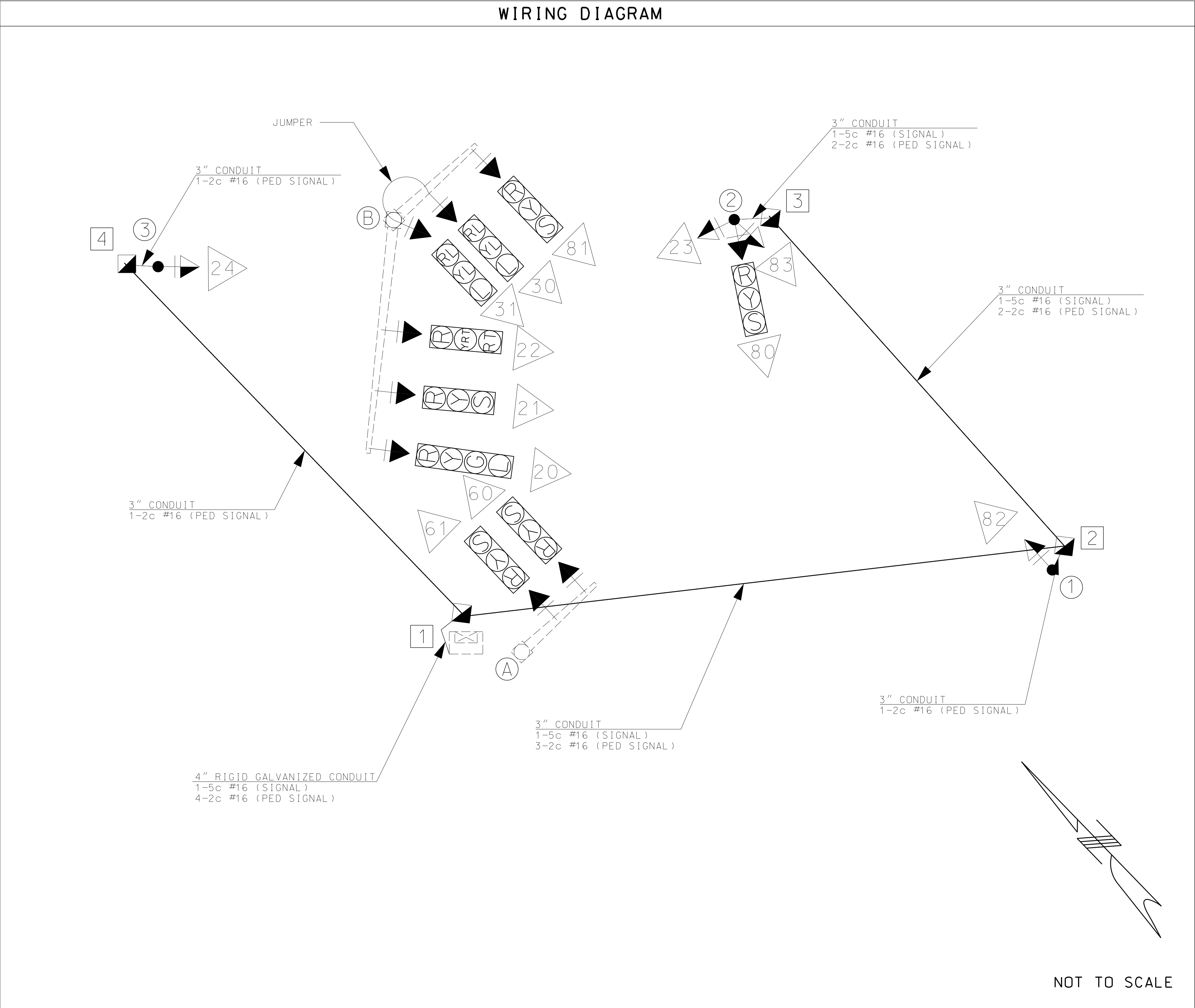
REV.	DESCRIPTION
1	

TRAFFIC SIGNAL
LEGEND
SHEET 1 OF 9

[illegible][illegible][illegible][illegible][illegible]

REV.		DESCRIPTION		EFFECTIVE: 07-01-2008																															
1		TRAFFIC SIGNAL QUANTITIES																																	
△ REVISED 9/4/19																																			
NOTE: * = RIGID GALVANIZED CONDUIT																																			
CONDUIT																		CABLE																	
FROM	TO	CENTER TO CENTER DISTANCE	LOOP DET.	TRENCH				PUSHED			MEDIAN			ON STRUCTURE			REMARKS	FROM	TO	CENTER TO CENTER DISTANCE	POWER		CONTROL				CLOSED LOOP INTERCONNECT	LUMINAIRE		DETECTOR		FIBER		REMARKS	
																												CONTROL	POLE & BRACKET						
				1"	2"	3"	4"	4" RGC*	2"	3"	4"	2"	3"	4"	2"	3"					4"	1c #2	2c #16	5c #16	7c #16	3c #16		3 PAIR #16	2c #12	1c #10	1c #14 IN DUCT	2c #14 LEAD-IN CABLE	SINGLE-MODE		MULTI-MODE
☒	①					10										☒	24	103			133														
①	②							109								☒	82	124			154														
②	①			5												☒	83	206			241														
②	③							80								☒	23	206			241														
③	②			7												☒	80	206			251														
①	④							87								31	30	8			30														
④	③			6																															
SUBTOTALS					18		10	276								SUBTOTALS					769	281													
TOTALS					18		10	276								TOTALS					769	281													
			INTERSECTION WB ROUTE 350 AND RAYTOWN ROAD																								D-37B								
			TRAFFIC SIGNALS SHEET 4 OF 9																																
			CDM Smith 9200 Ward Parkway Kansas City, MO 64114 816.444.8270 www.cdmsmith.com																																
			BARBARA L. WELLS PROFESSIONAL ENGINEER 2009030026																																

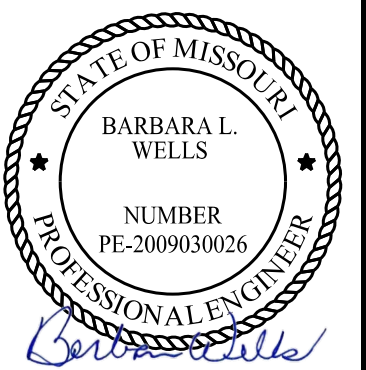
WIRING DIAGRAM



NOT TO SCALE

LEGEND

- 3" CONDUIT CONTAINING CABLE WITH SIZE
- CABLE
- X-Xc MULTI-CONDUCTOR CABLE #12 AWG (UNLESS OTHERWISE INDICATED)
- LIC #14 AWG DETECTOR LEAD-IN CABLE (2C TWISTED SHIELDED)
- X PULL BOX WITH NUMBER
- X POST WITH NUMBER
- X POST WITH MAST ARM
- X POST WITH MAST ARM AND LUMINAIRE
- X DETECTOR WITH NUMBER
- X SIGNAL HEAD WITH NUMBER
- X SIGNAL CONTROLLER
- POWER SUPPLY
- LIGHTING CONTROLLER



DATE
5/15/2019

DATE PREPARED
5/15/2019

ROUTE 350 STATE MO

DISTRICT KC SHEET NO. 98

COUNTY JACKSON

JOB NO. STP-3343(408)

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION



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BARBARA L. WELLS
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REVISD 9/4/19

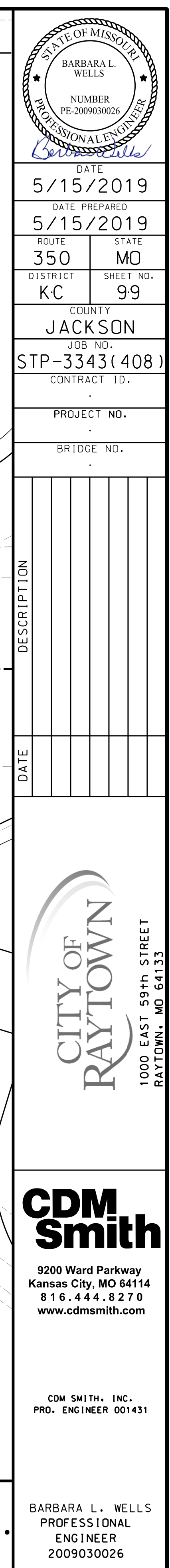
REV.	DESCRIPTION
1	TRAFFIC SIGNAL HEADS

WB ROUTE 350 AND RAYTOWN ROAD

INTERSECTION

TRAFFIC SIGNALS
SHEET 5 OF 9


D-37D



[illegible][illegible]

SIGNS				
QUANTITY	MUTCD SIGN NUMBER	SIZE (INCHES)	AREA (SQ. FT.)	TOTAL AREA EACH SIGN (SQ. FT.)
2	R3-2	24x24	4	8
SUBTOTAL AREA ITEM NO. 903-50.68				
TOTAL AREA ITEM NO. 903-50.68				8

REMARKS	
ALL LENGTHS AND SPACINGS ARE IN FEET UNLESS OTHERWISE INDICATED.	
* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.	
** SEE STANDARD PLANS 902.10 AND 902.30 FOR CONCRETE REQUIREMENTS ON BASES.	
*** USE D3-16 FOR ONE LINE. USE D3-18 FOR TWO LINE.	
SIGNAL STRUCTURES WHICH WILL EXCEED THE DIMENSION LIMITS SHOWN ON STANDARD PLAN SHEETS IN SECTION 902 AND ANY OTHER INSTALLATION WHERE THE DETAILS OF CONSTRUCTION ARE NOT FURNISHED IN THE CONTRACT PLANS, SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER IN ACCORDANCE WITH THE 2001 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION, AND LATEST INTERIMS. THE STRUCTURE SHALL BE DESIGNED AS IMPORTANCE CATEGORY I FOR FATIGUE WITH A 50-YEAR DESIGN LIFE. THE CONTRACTOR SHALL SUBMIT A SET OF SHOP DETAIL DRAWINGS INCLUDING WELD PROCEDURE SPECIFICATIONS AND DESIGN COMPUTATIONS FOR MODOT RECORDS AND REFERENCE. THE SUBMITTED DRAWINGS AND CALCULATIONS SHALL BE SIGNED AND SEALED IN ACCORDANCE WITH THE LAWS RELATING TO ARCHITECTS AND PROFESSIONAL ENGINEERS (CHAPTER 327, RSMO.), AND SHALL INCLUDE A TITLE BLOCK OR SUMMARY SHEET WHICH LISTS AND CERTIFIES THAT THE PRODUCT MEETS ALL OF THE SPECIFIED DESIGN CRITERIA.	

<div style="text-align: right;">  REVISED 9/4/19 </div>	
REV.	DESCRIPTION
1	TRAFFIC SIGNAL QUANTITIES

LEGEND

T - TOP MOUNT
S - SIDE MOUNT
C - SPANWIRE MOUNT
B - MAST ARM MOUNT

TRAFFIC SIGNALS
SHEET 7 OF 9

[illegible]

REV.		DESCRIPTION																																													
1		TRAFFIC SIGNAL QUANTITIES																																													
△ REVISED 9/4/19																																															
NOTE: * = RIGID GALVANIZED CONDUIT																																															
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				1"	2"	3"	4"	4" RGC*	2"	3"	4"	2"	3"	4"	2"	3"					1c #2	2c #16	5c #16	7c #16	3c #16	3 PAIR #16		CONTROL	POLE & BRACKET	1c #14 IN DUCT	2c #14 LEAD-IN CABLE	SINGLE-MODE	MULTI-MODE														
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⑤	⑥							135									☒	63	270			305																									
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SUBTOTALS					26		5	385									SUBTOTALS					961	672																								
TOTALS					26		5	385									TOTALS					961	672																								
																		INTERSECTION EB 350 AND RAYTOWN ROAD															D-37B														

STATE OF MISSOURI

BARBARA L. WELLS

NUMBER PE-2009030026

PROFESSIONAL ENGINEER

DATE 5/15/2019

DATE PREPARED 5/15/2019

ROUTE 350 STATE MO

DISTRICT K-C SHEET NO. 101

COUNTY JACKSON

JOB NO. STP-3343(408)

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

CITY OF RAYTOWN

1000 EAST 59th STREET RAYTOWN, MO 64133

CDM Smith

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CDM SMITH, INC. PRO. ENGINEER 001431

BARBARA L. WELLS PROFESSIONAL ENGINEER 2009030026

TRAFFIC SIGNALS
SHEET 8 OF 9

