

ROUTE 141

V = 50 M.P.H.



FOR INFORMATION ONLY																															
	I-64 WB RAMPS	I-64 EB RAMPS	MILLDALE DR./ MANORS WAY	DUTCH MILL DR.	PARKWAY MIDDLE SCHOOL	CLAYWORTH DR.*	BURGUNDY LN.	HIGHLAND BLVD. DR./ WOODS MILLS RD.	MERAMEC STATION RD./ HOWARD GEORGE DR.	CARMAN RD.	BROMFIELD TER.	BRIARHURST DR.	BIG BEND RD.	HELFRICH RD.	VANCE RD./ FOREST AVE.	MARSHALL RD.	ELAM AVE.	I-44 WB RAMPS	I-44 EB RAMPS	MERAMEC STATION RD./ VALLEY DR.	CENTURION DR.	HAWKINS RD./ GLADIATOR DR.	BOWLES AVE.	SAN SIMEON WAY	GREGORY LN.	DIERBERGS CROSSING	MO-30 WB RAMPS	MO-30 EB RAMPS	GRAVOIS RD.	GRAVOIS BLUFFS BLVD.	
ATC TRAFFIC SIGNAL CONTROLLER	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
TRAFFIC SIGNAL VIDEO DETECTION SYSTEM (3 CAMERAS)	1	1			1	1				1	1	1					1		1							1	1	1			
TRAFFIC SIGNAL VIDEO DETECTION SYSTEM (4 CAMERAS)			1	1			1	1	1				1	1							1			1	1					1	
TRAFFIC SIGNAL VIDEO DETECTION SYSTEM (5 CAMERAS)																		1				1		1							
TRAFFIC SIGNAL VIDEO DETECTION SYSTEM (6 CAMERAS)															1	1				1		1	1								1
TRAFFIC SIGNAL ADVANCED DETECTION SYSTEM (2 UNITS)			1	1	1	1	1		1		1	1	1	1			1				1		1		1	1	1				
TRAFFIC SIGNAL ADVANCED DETECTION SYSTEM (3 UNITS)	1	1						1		1						1		1	1	1					1			1	1		
TRAFFIC SIGNAL ADVANCED DETECTION SYSTEM (4 UNITS)															1							1	1						1	1	
REMOVAL OF IMPROVEMENTS	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

\* CLAYWORTH SHARES A CONTROLLER WITH PARKWAY MIDDLE SCHOOL

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
ROADWAY ITEMS			
616-99.01	LUMP SUM TEMPORARY TRAFFIC CONTROL	LS	1
618-10.00	MOBILIZATION	LS	1
SIGNAL ITEMS			
902-99.01	ATC TRAFFIC SIGNAL CONTROLLER	EA	29
902-99.02	TRAFFIC SIGNAL VIDEO DETECTION SYSTEM (3 CAMERAS)	EA	12
902-99.03	TRAFFIC SIGNAL VIDEO DETECTION SYSTEM (4 CAMERAS)	EA	11
902-99.04	TRAFFIC SIGNAL VIDEO DETECTION SYSTEM (5 CAMERAS)	EA	1
902-99.05	TRAFFIC SIGNAL VIDEO DETECTION SYSTEM (6 CAMERAS)	EA	6
902-99.06	TRAFFIC SIGNAL ADVANCED DETECTION SYSTEM (2 UNITS)	EA	15
902-99.07	TRAFFIC SIGNAL ADVANCED DETECTION SYSTEM (3 UNITS)	EA	10
902-99.08	TRAFFIC SIGNAL ADVANCED DETECTION SYSTEM (4 UNITS)	EA	5
902-99.09	REMOVAL OF IMPROVEMENTS	LS	1
902-99.10	TRAFFIC SIGNAL MAINTENANCE AND PROGRAMMING	LS	1
902-99.11	3 INCH CONDUIT, RIGID, IN-TRENCH OR PUSHED	LF	100
902-99.12	CONDUIT REPAIR	LF	100
902-99.13	REMOVE IN-PAVEMENT WIRELESS DETECTION SYSTEM SENSYS TRAVEL TIME	EA	8
910-88.11	PULL BOX, PREFORMED CLASS 2	EA	1
910-88.16	PULL BOX, PREFORMED CLASS 5	EA	1
910-99.01	AS-BUILT	LS	1
910-99.02	PULL ROPES	EA	29

SUMMARY OF QUANTITIES

ST. LOUIS COUNTY  
ROUTE 141 SIGNAL IMPROVEMENTS

STATE OF MISSOURI

MICHAEL JOHN DOLDE

NUMBER PE-2007002778

PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED

3/21/2024

ROUTE

141

STATE

MO

DISTRICT

SL

SHEET NO.

2

COUNTY

ST LOUIS

JOB NO.

JSL0110

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)

WSP

WSP USA INC.  
211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444

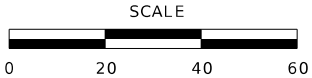
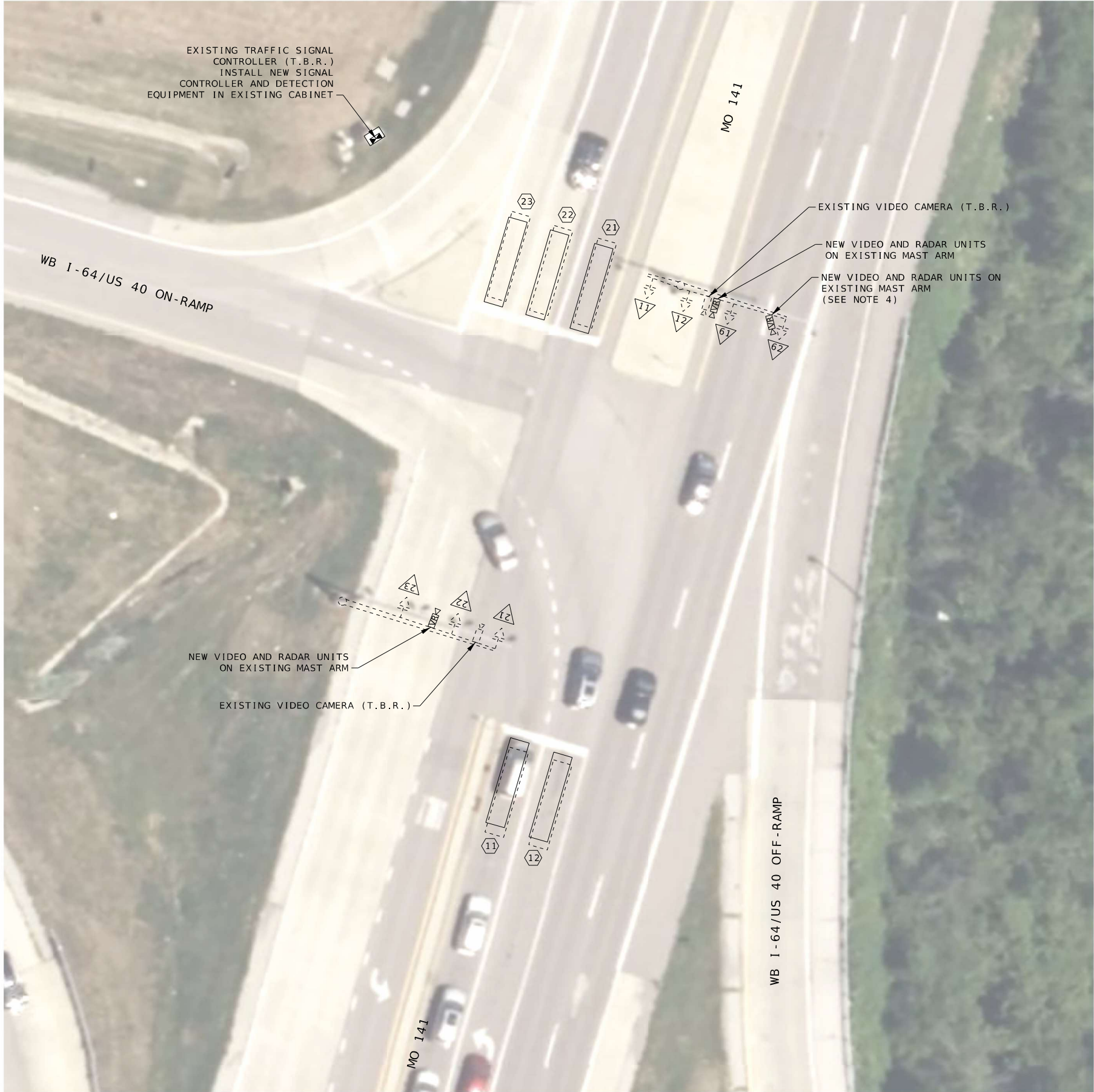
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IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.







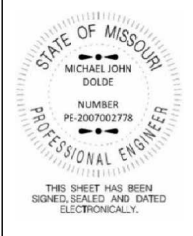


- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
- (2) THE CONTRACTOR SHALL REMOVE THE EXISTING VIDEO DETECTION EQUIPMENT INCLUDING ANY UNUSED CAMERAS, CABINET HARDWARE, MOUNTING HARDWARE/BRACKETS AND CABLING. THE EXISTING VIDEO DETECTION EQUIPMENT SHALL BE DELIVERED TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL INSTALL A COMPLETE VIDEO DETECTION SYSTEM WITH ENCLOSURES, MOUNTING HARDWARE/BRACKETS, TERMINATION PANELS, POWER AND COMMUNICATION CABLES FOR STOP BAR DETECTION PER JSP I.
- (3) THE CONTRACTOR SHALL INSTALL RADAR DETECTION UNITS AND PROGRAM FOR ADVANCED DETECTION PER JSP J.
- (4) CONTRACTOR SHALL PROGRAM DATA COLLECTION ZONE IN ORDER TO COLLECT SPEED, CLASSIFICATION, AND VOLUME DATA FOR THIS LANE.

TRAFFIC SIGNALS LEGEND	
	NEW CONTROLLER IN EXISTING CABINET
	EXISTING SIGNAL HEAD
	EXISTING VIDEO/RADAR DETECTION UNIT
	NEW VIDEO/RADAR COMBINATION DETECTION UNIT
	NEW VIDEO DETECTION UNIT
	NEW RADAR DETECTION UNIT
	EXISTING GRIDSMA RT VIDEO DETECTION UNIT
	EXISTING ACCESS POINT
	EXISTING REPEATER
	EXISTING SENSYS DETECTOR PROBE
	6 X 6 LOOP DETECTOR
	6 X 15 LOOP DETECTOR
	30 X 6 LOOP DETECTOR
	EXISTING STOP BAR DETECTION ZONE
	PROPOSED STOP BAR DETECTION ZONE
	EXISTING MAST ARM
	EXISTING TRUSS

TRAFFIC SIGNAL SHEET 1 OF 60

ST. LOUIS COUNTY  
ROUTE 141 SIGNAL IMPROVEMENTS



DATE PREPARED	
3/21/2024	
ROUTE	STATE
141	MO
DISTRICT	SHEET NO.
SL	4
COUNTY	
ST LOUIS	
JOB NO.	
JSL0110	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION	DATE




MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

WSP USA INC.  
211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
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POWER SUPPLY													
LOCATION			POWER SUPPLY ASSEMBLY		CIRCUIT BREAKER TRIP RATING*				LIGHTING CONTROL * (ON POWER SUPPLY)		SERVICE POLE		
APPROACH	STATION	OFFSET	DRAWING 902.15	DRAWING	CONTROLLER		POWER SUPPLY DISCONNECT		120 VOLT CONTROL CABINET	MAIN BREAKER	CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT. & SIGNAL LAMPS	MAIN BREAKER						
							SIGNALS	LIGHTING					
			Type	U. I. P.	15 Amps	Amps	Amps	Amps		Amps	Ci.	Ft.	U. I. P.
			Type		15 Amps	Amps	Amps	Amps		Amps	Ci.	Ft.	

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		NEMA DETECTOR ASSIGNMENT							
		CARD POSITION							
		1	2	3	4	5	6	7	8
C H A N N E L	1		U	I	P				
	2		U	I	P				

TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
11	NB ( PHASE 1 )		1
12	NB ( PHASE 1 )		1
21	SB ( PHASE 2 )		1
22	SB ( PHASE 2 )		1
23	SB ( PHASE 2 )		1
13	NB ADVANCE ( PHASE 1 )	1	
14	NB ADVANCE ( PHASE 1 )	1	
24	SB ADVANCE ( PHASE 2 )	1	
25	SB ADVANCE ( PHASE 2 )	1	
26	SB ADVANCE ( PHASE 2 )	1	
61	NB ADVANCE ( PHASE 1 )	1	
62	NB ADVANCE ( PHASE 1 )	1	
TOTAL		7	5

- \* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.
- (1) CABLING FOR THE NEW VIDEO DETECTION AND RADAR DETECTION SHOULD BE ROUTED THROUGH EXISTING CONDUITS. CONDUITS THAT ARE DAMAGED, COLLAPSED, OR UNUSABLE SHALL BE MARKED ON THE AS-BUILT PLANS PER JSP S.
- (2) THE INSTALLATION OF ALL EQUIPMENT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, DRAWINGS, AND ENGINEERING POLICY GUIDE.
- (3) THE CONTRACTOR SHALL HAVE RESPONSIBILITY OF LOCATING ALL UNDERGROUND AND OVERHEAD FACILITIES, STRUCTURES, AND UTILITIES.
- (4) THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL AND SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
- (5) ALL DRILLED OPENING FOR CABLE SHALL BE WEATHERPROOF. THERE WILL BE NO DIRECT PAYMENT FOR DRILLED OPENINGS. DISUSED OPENINGS SHALL BE PLUGGED BY THE CONTRACTOR.
- (6) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING DETECTION ZONES PER JSP I AND JSP J. PER JSP I AND JSP J, COUNT ZONES SHOULD BE PROGRAMMED FOR EACH LANE AT THE INTERSECTION EVEN IF NO VEHICLE DETECTION ZONE IS REQUIRED FOR THAT LANE.
- (7) THE CONTRACTOR SHALL REMOVE ALL DISUSED EXISTING DETECTION CAMERA CABLE AS PART OF THE DETECTION INSTALLATION.
- (8) THE CONTRACTOR SHALL PULL ROPE THROUGH ANY USED CONDUITS PER JSP R.
- (9) MANUFACTURER'S REPRESENTATIVE SHALL BE PRESENT DURING PROGRAMMING OF DETECTION ZONES PER JSP I AND JSP J. MANUFACTURER'S REPRESENTATIVE SHALL PROVIDE GUIDANCE TO CONTRACTOR ON OPTIMAL PLACEMENT OF DETECTION EQUIPMENT AND PROGRAMMED DETECTION ZONES.

NEMA LOAD SWITCH ASSIGNMENTS											
1	2	3	4	5	6	7	8	9	10	11	12
				U	.	I	.	P	.		

PHASE 1		PHASE 2	
			

NOTE: FACE NUMBERS 61 AND 62 WIRED TO CONSTANT ON.

STATE OF MISSOURI  
MICHAEL JOHN  
DOLDE  
NUMBER  
PE-2007002778  
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED	
3/21/2024	
ROUTE	STATE
141	MO
DISTRICT	SHEET NO.
SL	5
COUNTY	
ST LOUIS	
JOB NO.	
JSL0110	
CONTRACT ID.	

PROJECT NO.
BRIDGE NO.

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MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

**MoDOT**

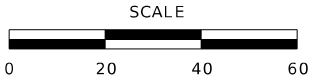
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT / 1-888-275-6636

**wsp**  
WSP USA INC.  
1211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444

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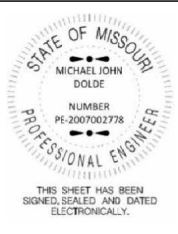


- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
- (2) THE CONTRACTOR SHALL REMOVE THE EXISTING VIDEO DETECTION EQUIPMENT INCLUDING ANY UNUSED CAMERAS, CABINET HARDWARE, MOUNTING HARDWARE/BRACKETS AND CABLING. THE EXISTING VIDEO DETECTION EQUIPMENT SHALL BE DELIVERED TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL INSTALL A COMPLETE VIDEO DETECTION SYSTEM WITH ENCLOSURES, MOUNTING HARDWARE/BRACKETS, TERMINATION PANELS, POWER AND COMMUNICATION CABLES FOR STOP BAR DETECTION PER JSP I.
- (3) THE CONTRACTOR SHALL INSTALL RADAR DETECTION UNITS AND PROGRAM FOR ADVANCED DETECTION PER JSP J.
- (4) CONTRACTOR SHALL PROGRAM DATA COLLECTION ZONES FOR THE NORTHBOUND RIGHT SLIP RAMP IN ORDER TO COLLECT SPEED, CLASSIFICATION, AND VOLUME DATA.

TRAFFIC SIGNALS LEGEND	
	NEW CONTROLLER IN EXISTING CABINET
	EXISTING SIGNAL HEAD
	EXISTING VIDEO/RADAR DETECTION UNIT
	NEW VIDEO/RADAR COMBINATION DETECTION UNIT
	NEW VIDEO DETECTION UNIT
	NEW RADAR DETECTION UNIT
	EXISTING GRIDSMART VIDEO DETECTION UNIT
	EXISTING ACCESS POINT
	EXISTING REPEATER
	EXISTING SENSYS DETECTOR PROBE
	6 X 6 LOOP DETECTOR
	6 X 15 LOOP DETECTOR
	30 X 6 LOOP DETECTOR
	EXISTING STOP BAR DETECTION ZONE
	PROPOSED STOP BAR DETECTION ZONE
	EXISTING MAST ARM
	EXISTING TRUSS

TRAFFIC SIGNAL SHEET 3 OF 60

ST. LOUIS COUNTY  
ROUTE 141 SIGNAL IMPROVEMENTS



DATE PREPARED 3/21/2024	
ROUTE 141	STATE MO
DISTRICT SL	SHEET NO. 6
COUNTY ST LOUIS	
JOB NO. JSL0110	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

WSP USA INC.  
211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



POWER SUPPLY														
LOCATION			POWER SUPPLY ASSEMBLY		CIRCUIT BREAKER TRIP RATING*				LIGHTING CONTROL * (ON POWER SUPPLY)		SERVICE POLE			
APPROACH	STATION	OFFSET	DRAWING 902.15	DRAWING	CONTROLLER		POWER SUPPLY DISCONNECT				CONTRACT FURNISH	UTILITY COMPANY		
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER							
							SIGNALS	LIGHTING	120 VOLT CONTROL CABINET	MAIN BREAKER				
U	I	P	Type	U.I.P.	15	Amps	Amps	Amps	Amps		Amps	Ct.	Ft.	U.I.P.
			Type		15	Amps	Amps	Amps	Amps		Amps	Ct.	Ft.	

CONTROLLER ASSEMBLY AND AUXILIARY EQUIPMENT																					
LOCATION			SYSTEM MASTER (CLOSED LOOP)		ACTUATED		ON-OFF* SWITCH		COORDINATION INTERFACE *					TIME * CLOCK	NEMA CABINET TYPE *			170 CABINET TYPE *		170 SOFTWARE *	
APPROACH	STATION	OFFSET							TYPE	12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN
			NEMA	170	NEMA	170	I	II		MASTER	LOCAL		NEMA								
MO 141 & I-64 EB RAMPS	U.I.P.	U.I.P.			1																

NEMA DETECTOR ASSIGNMENT									
CARD POSITION									
CHANNEL	1	2	3	4	5	6	7	8	
	1								
	2		U	I	P				

TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

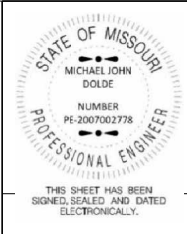
NEMA LOAD SWITCH ASSIGNMENTS											
1	2	3	4	5	6	7	8	9	10	11	12
				U	I	P					

PHASE 1	PHASE 2	PHASE 3
	PHASE 6	

DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
11	SB (PHASE 1)		1
12	SB (PHASE 1)		1
21	NB (PHASE 2)		1
22	NB (PHASE 2)		1
23	NB (PHASE 2)		1
31	EB (PHASE 3)		1
32	EB (PHASE 3)		1
33	EB (PHASE 3)		1
34	EB (PHASE 3)		1
61	SB (PHASE 6)		1
62	SB (PHASE 6)		1
63	SB (PHASE 6)		1
24	NB ADVANCE (PHASE 2)	1	
25	NB ADVANCE (PHASE 2)	1	
26	NB ADVANCE (PHASE 2)	1	
35	EB ADVANCE (PHASE 3)	1	
36	EB ADVANCE (PHASE 3)	1	
64	SB ADVANCE (PHASE 6)	1	
65	SB ADVANCE (PHASE 6)	1	
66	SB ADVANCE (PHASE 6)	1	
TOTAL		8	12

\* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.

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- (2) THE INSTALLATION OF ALL EQUIPMENT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, DRAWINGS, AND ENGINEERING POLICY GUIDE.
- (3) THE CONTRACTOR SHALL HAVE RESPONSIBILITY OF LOCATING ALL UNDERGROUND AND OVERHEAD FACILITIES, STRUCTURES, AND UTILITIES.
- (4) THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL AND SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
- (5) ALL DRILLED OPENING FOR CABLE SHALL BE WEATHERPROOF. THERE WILL BE NO DIRECT PAYMENT FOR DRILLED OPENINGS. DISUSED OPENINGS SHALL BE PLUGGED BY THE CONTRACTOR.
- (6) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING DETECTION ZONES PER JSP I AND JSP J. PER JSP I AND JSP J, COUNT ZONES SHOULD BE PROGRAMMED FOR EACH LANE AT THE INTERSECTION EVEN IF NO VEHICLE DETECTION ZONE IS REQUIRED FOR THAT LANE.
- (7) THE CONTRACTOR SHALL REMOVE ALL DISUSED EXISTING DETECTION CAMERA CABLE AS PART OF THE DETECTION INSTALLATION.
- (8) THE CONTRACTOR SHALL PULL ROPE THROUGH ANY USED CONDUITS PER JSP R.
- (9) MANUFACTURER'S REPRESENTATIVE SHALL BE PRESENT DURING PROGRAMMING OF DETECTION ZONES PER JSP I AND JSP J. MANUFACTURER'S REPRESENTATIVE SHALL PROVIDE GUIDANCE TO CONTRACTOR ON OPTIMAL PLACEMENT OF DETECTION EQUIPMENT AND PROGRAMMED DETECTION ZONES.



DATE PREPARED  
3/21/2024

ROUTE 141 STATE MO

DISTRICT SL SHEET NO. 7

COUNTY ST LOUIS

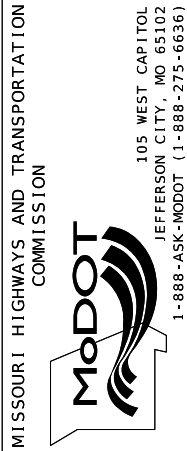
JOB NO. JSL0110

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE



WSP USA INC.  
211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444

MO 141 AND I-64 EB RAMPS

INTERSECTION D-37C

TRAFFIC SIGNAL SHEET 4 OF 60

ST. LOUIS COUNTY  
ROUTE 141 SIGNAL IMPROVEMENTS







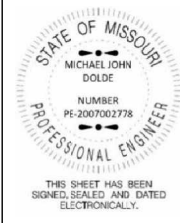






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










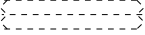


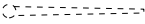
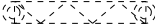


DATE PREPARED	
3/21/2024	
ROUTE	STATE
141	MO
DISTRICT	SHEET NO.
SL	10
COUNTY	
ST LOUIS	
JOB NO.	
JSL0110	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

[illegible]

DATE	

- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
- (2) THE CONTRACTOR SHALL DISCONNECT LOOP LEAD-IN WIRES AND REMOVE DETECTOR CARDS FROM DETECTOR RACK. EXISTING LOOP DETECTORS SHALL BE LEFT IN PLACE AND ABANDONED. THE CONTRACTOR SHALL INSTALL A COMPLETE VIDEO DETECTION SYSTEM WITH ENCLOSURES, MOUNTING HARDWARE/BRACKETS, TERMINATION PANELS, POWER AND COMMUNICATION CABLES FOR STOP BAR DETECTION PER JSP I.
- (3) THE CONTRACTOR SHALL INSTALL RADAR DETECTION UNITS AND PROGRAM FOR ADVANCED DETECTION PER JSP J.

TRAFFIC SIGNALS LEGEND	
	NEW CONTROLLER IN EXISTING CABINET
	EXISTING SIGNAL HEAD
	EXISTING VIDEO/RADAR DETECTION UNIT
	NEW VIDEO/RADAR COMBINATION DETECTION UNIT
	NEW VIDEO DETECTION UNIT
	NEW RADAR DETECTION UNIT
	EXISTING GRIDSMART VIDEO DETECTION UNIT
	EXISTING ACCESS POINT
	EXISTING REPEATER
	EXISTING SENSYS DETECTOR PROBE
	6 X 6 LOOP DETECTOR
	6 X 15 LOOP DETECTOR
	30 X 6 LOOP DETECTOR
	EXISTING STOP BAR DETECTION ZONE
	PROPOSED STOP BAR DETECTION ZONE
	EXISTING MAST ARM
	EXISTING TRUSS

TRAFFIC SIGNAL SHEET 7 OF 60

ST. LOUIS COUNTY  
ROUTE 141 SIGNAL IMPROVEMENTS



MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-375-6636)

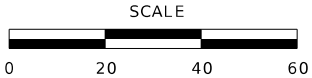
**wsp**

WSP USA INC.  
2111 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444









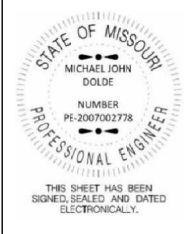
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- (3) THE CONTRACTOR SHALL INSTALL RADAR DETECTION UNITS AND PROGRAM FOR ADVANCED DETECTION PER JSP J.

TRAFFIC SIGNALS LEGEND

- NEW CONTROLLER IN EXISTING CABINET
- EXISTING SIGNAL HEAD
- EXISTING VIDEO/RADAR DETECTION UNIT
- NEW VIDEO/RADAR COMBINATION DETECTION UNIT
- NEW VIDEO DETECTION UNIT
- NEW RADAR DETECTION UNIT
- EXISTING GRIDSMART VIDEO DETECTION UNIT
- EXISTING ACCESS POINT
- EXISTING REPEATER
- EXISTING SENSYS DETECTOR PROBE
- 6 X 6 LOOP DETECTOR
- 6 X 15 LOOP DETECTOR
- 30 X 6 LOOP DETECTOR
- EXISTING STOP BAR DETECTION ZONE
- PROPOSED STOP BAR DETECTION ZONE
- EXISTING MAST ARM
- EXISTING TRUSS

TRAFFIC SIGNAL SHEET 9 OF 60

ST. LOUIS COUNTY  
ROUTE 141 SIGNAL IMPROVEMENTS



DATE PREPARED 3/21/2024	
ROUTE 141	STATE MO
DISTRICT SL	SHEET NO. 12
COUNTY ST LOUIS	
JOB NO. JSL0110	
CONTRACT ID.	

PROJECT NO.
BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

MoDOT

WSP USA INC.  
211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.














POWER SUPPLY													
LOCATION			POWER SUPPLY ASSEMBLY		CIRCUIT BREAKER TRIP RATING*				LIGHTING CONTROL * (ON POWER SUPPLY)		SERVICE POLE		
APPROACH	STATION	OFFSET	DRAWING 902.15	DRAWING	CONTROLLER		POWER SUPPLY DISCONNECT		120 VOLT CONTROL CABINET	MAIN BREAKER	CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT. & SIGNAL LAMPS	MAIN BREAKER						
							SIGNALS	LIGHTING					
			Type	U. I. P.	15 Amps	Amps	Amps	Amps		Amps	Ci.	Ft.	U. I. P.
			Type		15 Amps	Amps	Amps	Amps		Amps	Ci.	Ft.	

CONTROLLER ASSEMBLY AND AUXILIARY EQUIPMENT																					
LOCATION			SYSTEM MASTER (CLOSED LOOP)		ACTUATED		ON-OFF* SWITCH		COORDINATION INTERFACE *					TIME * CLOCK	NEMA CABINET TYPE *			170 CABINET TYPE *		170 SOFTWARE *	
APPROACH	STATION	OFFSET							TYPE		12C/7C HARDWIRE (1)		TIME BASE		CLOSED LOOP		FIBER	E	EV	DOUBLE	332
			NEMA	170	NEMA	170	I	II	MASTER	LOCAL		NEMA		170							
MO 141 & CLAYWORTH DR	U.I.P.	U.I.P.																			

NOTE: CONTROLLER FOR THIS LOCATION IS LOCATED AT THE PARKWAY MIDDLE SCHOLL ENTRANCE CABINET.

		NEMA DETECTOR ASSIGNMENT							
		CARD POSITION							
		1	2	3	4	5	6	7	8
C H A N N E L	1		U	I	P				
	2		•	•	•				









TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
21	NB ( PHASE 2 )		1
22	NB ( PHASE 2 )		1
23	NB ( PHASE 2 )		1
31	EB ( PHASE 3 )		1
32	EB ( PHASE 3 )		1
50	NB ( PHASE 5 )		1
61	SB ( PHASE 6 )		1
62	SB ( PHASE 6 )		1
63	SB ( PHASE 6 )		1
64	SB ( PHASE 6 )		1
24	NB ADVANCE ( PHASE 2 )	1	
25	NB ADVANCE ( PHASE 2 )	1	
26	NB ADVANCE ( PHASE 2 )	1	
65	SB ADVANCE ( PHASE 6 )	1	
66	SB ADVANCE ( PHASE 6 )	1	
67	SB ADVANCE ( PHASE 6 )	1	
TOTAL		6	10

- \* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.

- (1) CABLE FOR THE NEW VIDEO DETECTION AND RADAR DETECTION SHOULD BE ROUTED THROUGH EXISTING CONDUITS. CONDUITS THAT ARE DAMAGED, COLLAPSED, OR UNUSABLE SHALL BE MARKED ON THE AS-BUILT PLANS PER JSP S.
- (2) THE INSTALLATION OF ALL EQUIPMENT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, DRAWINGS, AND ENGINEERING POLICY GUIDE.
- (3) THE CONTRACTOR SHALL HAVE RESPONSIBILITY OF LOCATING ALL UNDERGROUND AND OVERHEAD FACILITIES, STRUCTURES, AND UTILITIES.
- (4) THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL AND SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
- (5) ALL DRILLED OPENING FOR CABLE SHALL BE WEATHERPROOF. THERE WILL BE NO DIRECT PAYMENT FOR DRILLED OPENINGS. DISUSED OPENINGS SHALL BE PLUGGED BY THE CONTRACTOR.
- (6) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING DETECTION ZONES PER JSP I AND JSP J. PER JSP I AND JSP J, COUNT ZONES SHOULD BE PROGRAMMED FOR EACH LANE AT THE INTERSECTION EVEN IF NO VEHICLE DETECTION ZONE IS REQUIRED FOR THAT LANE.
- (7) THE CONTRACTOR SHALL REMOVE ALL DISUSED EXISTING DETECTION CAMERA CABLE AS PART OF THE DETECTION INSTALLATION.
- (8) THE CONTRACTOR SHALL PULL ROPE THROUGH ANY USED CONDUITS PER JSP R.
- (9) MANUFACTURER'S REPRESENTATIVE SHALL BE PRESENT DURING PROGRAMMING OF DETECTION ZONES PER JSP I AND JSP J. MANUFACTURER'S REPRESENTATIVE SHALL PROVIDE GUIDANCE TO CONTRACTOR ON OPTIMAL PLACEMENT OF DETECTION EQUIPMENT AND PROGRAMMED DETECTION ZONES.

NEMA LOAD SWITCH ASSIGNMENTS											
1	2	3	4	5	6	7	8	9	10	11	12
				U	I	P					

	PHASE 1	PHASE 2	PHASE 3	PHASE 4
PARKWAY		OLA 		
CLAYWORTH				
PARKWAY				
CLAYWORTH		OLB 		
	PHASE 5	PHASE 6	PHASE 7	PHASE 8

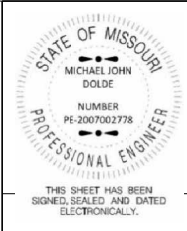
MO 141 AND CLAYWORTH DR

INTERSECTION

D-37C

TRAFFIC SIGNAL SHEET 12 OF 60

ST. LOUIS COUNTY  
ROUTE 141 SIGNAL IMPROVEMENTS



DATE PREPARED
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ROUTE 141	STATE MO
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DISTRICT	SHEET NO.
SL	15

COUNTY  
ST LOUIS

JOB NO.  
JSL0110

CONTRACT ID.

PROJECT NO.

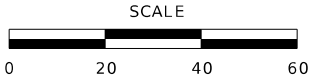
BRIDGE NO.

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COMMISSION



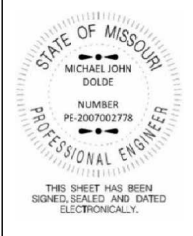


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- (3) THE CONTRACTOR SHALL INSTALL RADAR DETECTION UNITS AND PROGRAM FOR ADVANCED DETECTION PER JSP J.

TRAFFIC SIGNALS LEGEND	
	NEW CONTROLLER IN EXISTING CABINET
	EXISTING SIGNAL HEAD
	EXISTING VIDEO/RADAR DETECTION UNIT
	NEW VIDEO/RADAR COMBINATION DETECTION UNIT
	NEW VIDEO DETECTION UNIT
	NEW RADAR DETECTION UNIT
	EXISTING GRIDSMART VIDEO DETECTION UNIT
	EXISTING ACCESS POINT
	EXISTING REPEATER
	EXISTING SENSYS DETECTOR PROBE
	6 X 6 LOOP DETECTOR
	6 X 15 LOOP DETECTOR
	30 X 6 LOOP DETECTOR
	EXISTING STOP BAR DETECTION ZONE
	PROPOSED STOP BAR DETECTION ZONE
	EXISTING MAST ARM
	EXISTING TRUSS

TRAFFIC SIGNAL SHEET 13 OF 60

ST. LOUIS COUNTY  
ROUTE 141 SIGNAL IMPROVEMENTS



DATE PREPARED 3/21/2024	
ROUTE 141	STATE MO
DISTRICT SL	SHEET NO. 16
COUNTY ST LOUIS	
JOB NO. JSL0110	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

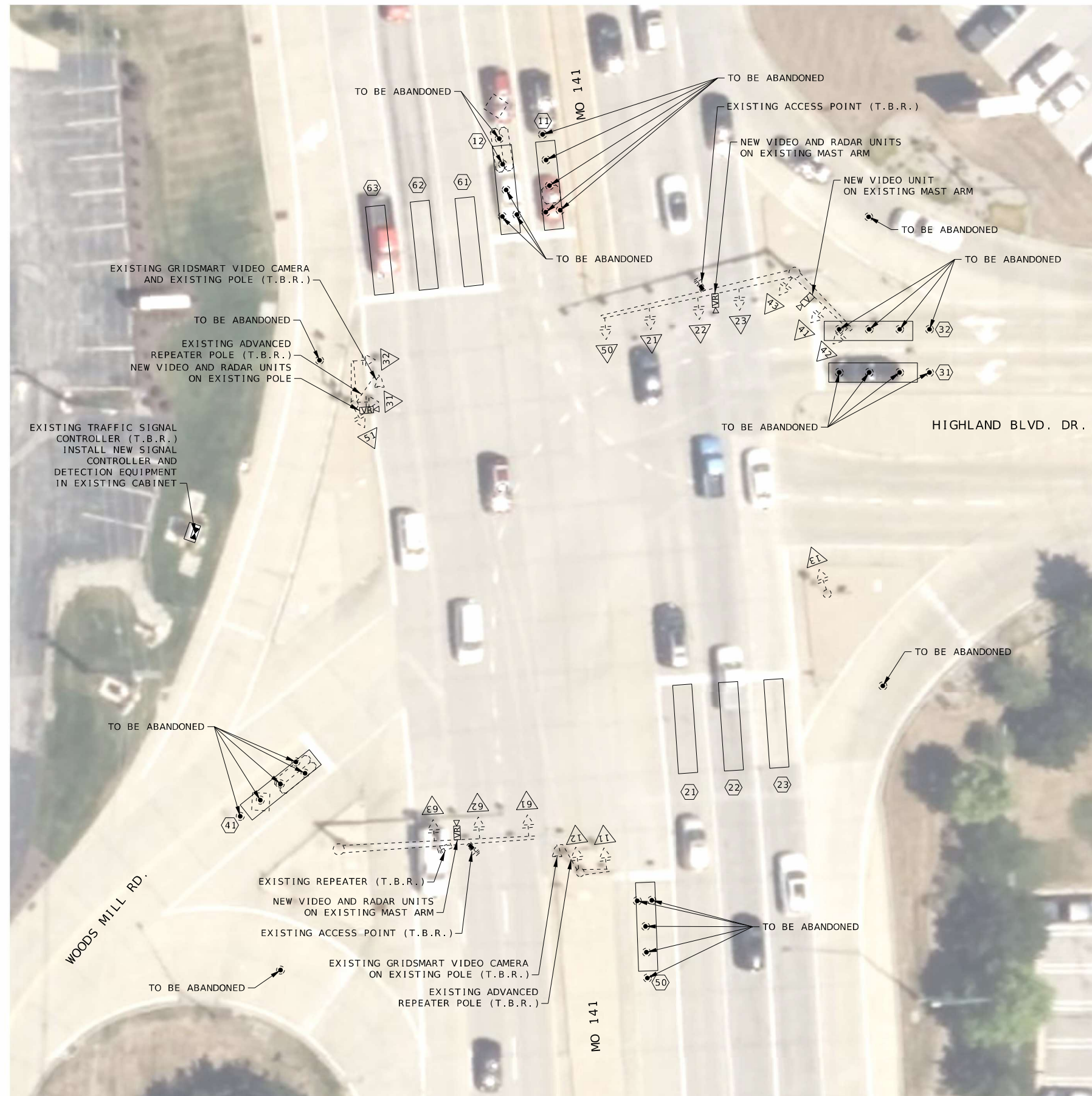
WSP USA INC.  
211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444

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SCALE



0 20 40 60



STATE OF MISSOURI

MICHAEL JOHN  
DOLDE

NUMBER  
PE-2007002778

PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.













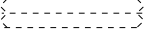




DATE PREPARED	
3/21/2024	
ROUTE	STATE
141	MO
DISTRICT	SHEET NO.
SL	18
COUNTY	
ST LOUIS	
JOB NO.	
JSL0110	
CONTRACT ID.	

PROJECT NO.
BRIDGE NO.

[illegible]

- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
- (2) THE CONTRACTOR SHALL DISCONNECT ACCESS POINTS AND REPEATERS. EXISTING SENSUS DETECTOR PROBES SHALL BE LEFT IN PLACE AND ABANDONED. THE CONTRACTOR SHALL INSTALL A COMPLETE VIDEO DETECTION SYSTEM WITH ENCLOSURES, MOUNTING HARDWARE/BRACKETS, TERMINATION PANELS, POWER AND COMMUNICATION CABLES FOR STOP BAR DETECTION PER JSP I.
- (3) THE CONTRACTOR SHALL INSTALL RADAR DETECTION UNITS AND PROGRAM FOR ADVANCED DETECTION PER JSP J.

### TRAFFIC SIGNALS LEGEND

	NEW CONTROLLER IN EXISTING CABINET
	EXISTING SIGNAL HEAD
	EXISTING VIDEO/RADAR DETECTION UNIT
	NEW VIDEO/RADAR COMBINATION DETECTION UNIT
	NEW VIDEO DETECTION UNIT
	NEW RADAR DETECTION UNIT
	EXISTING GRIDSMART VIDEO DETECTION UNIT
	EXISTING ACCESS POINT
	EXISTING REPEATER
	EXISTING SENSYS DETECTOR PROBE
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	30 X 6 LOOP DETECTOR
	EXISTING STOP BAR DETECTION ZONE
	PROPOSED STOP BAR DETECTION ZONE
	EXISTING MAST ARM
	EXISTING TRUSS

TRAFFIC SIGNAL SHEET 15 OF 60

DUIS COUNTY  
SIGNAL IMPROVEMENTS

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

**MoDOT**

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-273-6636)

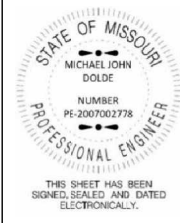
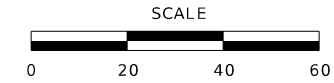
**wsp**  
WSP USA INC.  
2211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444

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













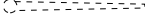
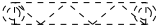




DATE PREPARED	
3/21/2024	
ROUTE	STATE
141	MO
DISTRICT	SHEET NO.
SL	20
COUNTY	
ST LOUIS	
JOB NO.	
JSL0110	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

[illegible]

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TRAFFIC SIGNALS LEGEND	
	NEW CONTROLLER IN EXISTING CABINET
	EXISTING SIGNAL HEAD
	EXISTING VIDEO/RADAR DETECTION UNIT
	NEW VIDEO/RADAR COMBINATION DETECTION UNIT
	NEW VIDEO DETECTION UNIT
	NEW RADAR DETECTION UNIT
	EXISTING GRIDSMART VIDEO DETECTION UNIT
	EXISTING ACCESS POINT
	EXISTING REPEATER
	EXISTING SENSYS DETECTOR PROBE
	6 X 6 LOOP DETECTOR
	6 X 15 LOOP DETECTOR
	30 X 6 LOOP DETECTOR
	EXISTING STOP BAR DETECTION ZONE
	PROPOSED STOP BAR DETECTION ZONE
	EXISTING MAST ARM
	EXISTING TRUSS

# ST. LOUIS COUNTY ROUTE 141 SIGNAL IMPROVEMENTS



MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

**wsp**  
WSP USA INC.  
211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444













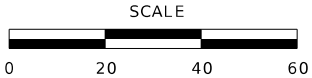










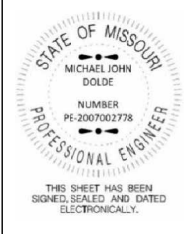


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TRAFFIC SIGNALS LEGEND	
	NEW CONTROLLER IN EXISTING CABINET
	EXISTING SIGNAL HEAD
	EXISTING VIDEO/RADAR DETECTION UNIT
	NEW VIDEO/RADAR COMBINATION DETECTION UNIT
	NEW VIDEO DETECTION UNIT
	NEW RADAR DETECTION UNIT
	EXISTING GRIDSMART VIDEO DETECTION UNIT
	EXISTING ACCESS POINT
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	EXISTING SENSYS DETECTOR PROBE
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	30 X 6 LOOP DETECTOR
	EXISTING STOP BAR DETECTION ZONE
	PROPOSED STOP BAR DETECTION ZONE
	EXISTING MAST ARM
	EXISTING TRUSS

TRAFFIC SIGNAL SHEET 23 OF 60

ST. LOUIS COUNTY  
ROUTE 141 SIGNAL IMPROVEMENTS



DATE PREPARED 3/21/2024	
ROUTE 141	STATE MO
DISTRICT SL	SHEET NO. 26
COUNTY ST LOUIS	
JOB NO. JSL0110	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

WSP USA INC.  
211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.














POWER SUPPLY													
LOCATION			POWER SUPPLY ASSEMBLY		CIRCUIT BREAKER TRIP RATING*				LIGHTING CONTROL * (ON POWER SUPPLY)		SERVICE POLE		
APPROACH	STATION	OFFSET	DRAWING 902.15	DRAWING	CONTROLLER		POWER SUPPLY DISCONNECT		120 VOLT CONTROL CABINET	MAIN BREAKER	CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT. & SIGNAL LAMPS	MAIN BREAKER						
							SIGNALS	LIGHTING					
			Type	U. I. P.	15 Amps	Amps	Amps	Amps		Amps	Ci.	Ft.	U. I. P.
			Type		15 Amps	Amps	Amps	Amps		Amps	Ci.	Ft.	

CONTROLLER ASSEMBLY AND AUXILIARY EQUIPMENT																						
LOCATION			SYSTEM MASTER (CLOSED LOOP)		ACTUATED		ON-OFF* SWITCH		COORDINATION INTERFACE *						TIME * CLOCK	NEMA CABINET TYPE *			170 CABINET TYPE *		170 SOFTWARE *	
APPROACH	STATION	OFFSET							TYPE		12C/7C HARDWIRE (1)		TIME BASE	CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN
			NEMA	170	NEMA	170	I	II	MASTER	LOCAL	NEMA	170		1								
MO 141 & BIG BEND RD	U.I.P.	U.I.P.			1																	







		NEMA DETECTOR ASSIGNMENT							
		CARD POSITION							
		1	2	3	4	5	6	7	8
C H A N N E L	1		U	I	P				
	2		U	I	P				

TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

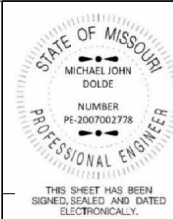
DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
11	EB (PHASE 1)		1
12	EB (PHASE 1)		1
21	WB (PHASE 2)		1
22	WB (PHASE 2)		1
31	NB (PHASE 3)		1
32	NB (PHASE 3)		1
51	WB (PHASE 5)		1
52	WB (PHASE 5)		1
61	EB (PHASE 6)		1
62	EB (PHASE 6)		1
71	SB (PHASE 7)		1
72	SB (PHASE 7)		1
23	WB ADVANCE (PHASE 2)	1	
24	WB ADVANCE (PHASE 2)	1	
63	EB ADVANCE (PHASE 6)	1	
64	EB ADVANCE (PHASE 6)	1	
TOTAL		4	12

- \* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.
- (1) CABLING FOR THE NEW VIDEO DETECTION AND RADAR DETECTION SHOULD BE ROUTED THROUGH EXISTING CONDUITS. CONDUITS THAT ARE DAMAGED, COLLAPSED, OR UNUSABLE SHALL BE MARKED ON THE AS-BUILT PLANS PER JSP S.
- (2) THE INSTALLATION OF ALL EQUIPMENT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, DRAWINGS, AND ENGINEERING POLICY GUIDE.
- (3) THE CONTRACTOR SHALL HAVE RESPONSIBILITY OF LOCATING ALL UNDERGROUND AND OVERHEAD FACILITIES, STRUCTURES, AND UTILITIES.
- (4) THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL AND SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
- (5) ALL DRILLED OPENING FOR CABLE SHALL BE WEATHERPROOF. THERE WILL BE NO DIRECT PAYMENT FOR DRILLED OPENINGS. DISUSED OPENINGS SHALL BE PLUGGED BY THE CONTRACTOR.
- (6) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING DETECTION ZONES PER JSP I AND JSP J. PER JSP I AND JSP J, COUNT ZONES SHOULD BE PROGRAMMED FOR EACH LANE AT THE INTERSECTION EVEN IF NO VEHICLE DETECTION ZONE IS REQUIRED FOR THAT LANE.
- (7) THE CONTRACTOR SHALL REMOVE ALL DISUSED EXISTING DETECTION CAMERA CABLE AS PART OF THE DETECTION INSTALLATION.
- (8) THE CONTRACTOR SHALL PULL ROPE THROUGH ANY USED CONDUITS PER JSP R.
- (9) MANUFACTURER'S REPRESENTATIVE SHALL BE PRESENT DURING PROGRAMMING OF DETECTION ZONES PER JSP I AND JSP J. MANUFACTURER'S REPRESENTATIVE SHALL PROVIDE GUIDANCE TO CONTRACTOR ON OPTIMAL PLACEMENT OF DETECTION EQUIPMENT AND PROGRAMMED DETECTION ZONES.

NEMA LOAD SWITCH ASSIGNMENTS											
1	2	3	4	5	6	7	8	9	10	11	12
				U	.	I	.	P	.		

PHASE 1	PHASE 2	PHASE 3
		
		
PHASE 5	PHASE 6	PHASE 7

MD 141 AND BIG BEND RD INTERSECTION	D-37C
TRAFFIC SIGNAL SHEET 26 OF 60	
ST. LOUIS COUNTY ROUTE 141 SIGNAL IMPROVEMENTS	



DATE PREPARED

DATE PREPARED

ROUTE	STA
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141 | M

DISTRICT	SHEET
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SL	2
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COUNTY

ST LOUI

JOB NO.

LSI 0110

CONTRACT ID.

PROJECT NO.

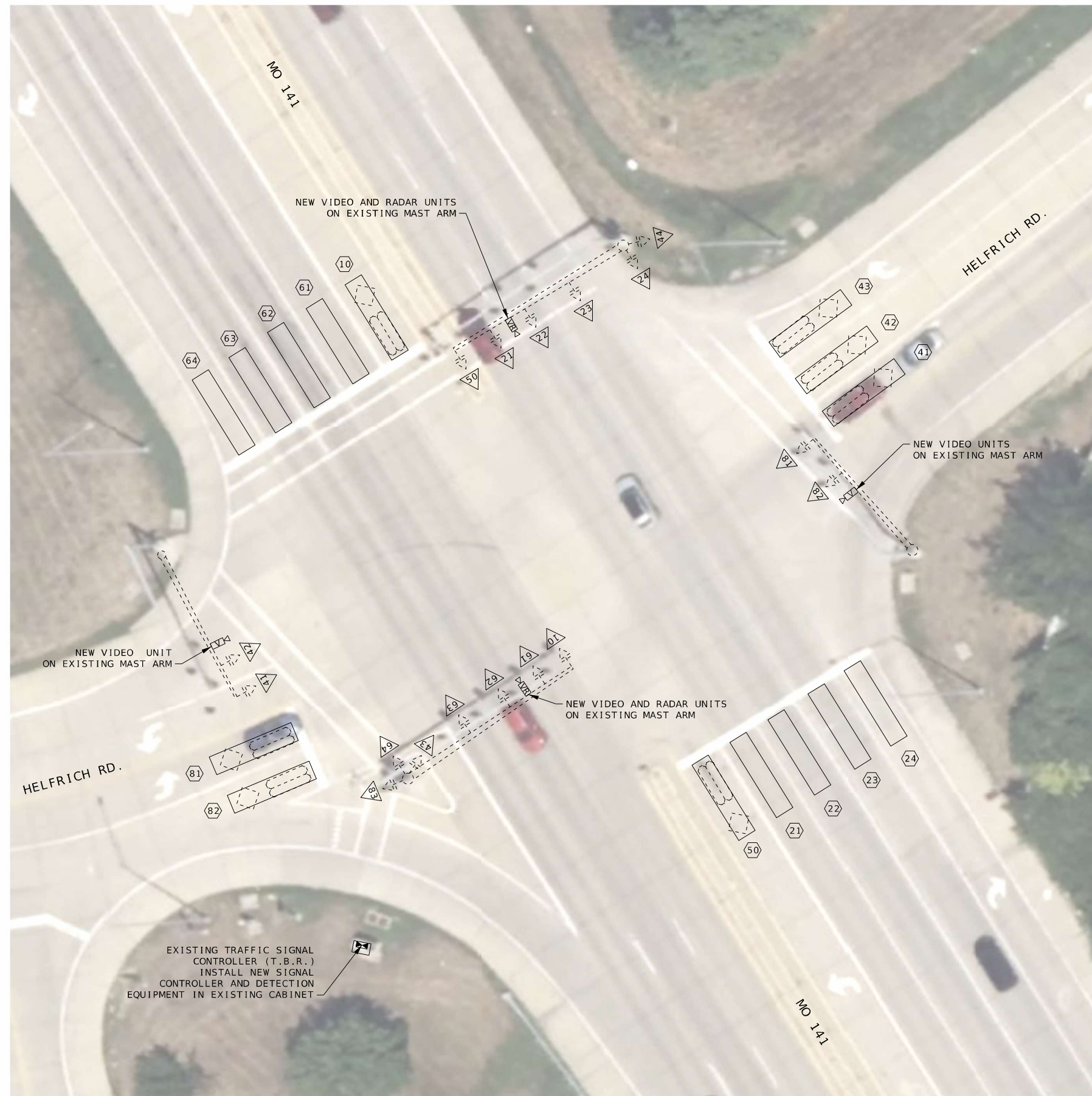
BRIDGE NO.

[illegible]MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION


105 WEST CAPITOL  
JEFFERSON CITY, MO 65102

WSP USA INC.  
2211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444

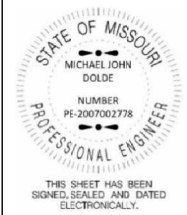




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










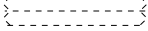


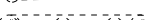



DATE PREPARED	
3/21/2024	
ROUTE	STATE
141	MO
DISTRICT	SHEET NO.
SL	30
COUNTY	
ST LOUIS	
JOB NO.	
JSL0110	
CONTRACT ID.	

PROJECT NO.
BRIDGE NO.

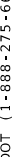
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- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
- (2) THE CONTRACTOR SHALL DISCONNECT LOOP LEAD-IN WIRES AND REMOVE DETECTOR CARDS FROM DETECTOR RACK. EXISTING LOOP DETECTORS SHALL BE LEFT IN PLACE AND ABANDONED. THE CONTRACTOR SHALL INSTALL A COMPLETE VIDEO DETECTION SYSTEM WITH ENCLOSURES, COUNTING HARDWARE/BRAKETS, TERMINATION PANELS, POWER AND COMMUNICATION CABLES FOR STOP BAR DETECTION PER JSP I.
- (3) THE CONTRACTOR SHALL INSTALL RADAR DETECTION UNITS AND PROGRAM FOR ADVANCED DETECTION PER JSP J.

TRAFFIC SIGNALS LEGEND	
	NEW CONTROLLER IN EXISTING CABINET
	EXISTING SIGNAL HEAD
	EXISTING VIDEO/RADAR DETECTION UNIT
	NEW VIDEO/RADAR COMBINATION DETECTION UNIT
	NEW VIDEO DETECTION UNIT
	NEW RADAR DETECTION UNIT
	EXISTING GRIDSMART VIDEO DETECTION UNIT
	EXISTING ACCESS POINT
	EXISTING REPEATER
	EXISTING SENSYS DETECTOR PROBE
	6 X 6 LOOP DETECTOR
	6 X 15 LOOP DETECTOR
	30 X 6 LOOP DETECTOR
	EXISTING STOP BAR DETECTION ZONE
	PROPOSED STOP BAR DETECTION ZONE
	EXISTING MAST ARM
	EXISTING TRUSS

TRAFFIC SIGNAL SHEET 27 OF 60

ST. LOUIS COUNTY  
ROUTE 141 SIGNAL IMPROVEMENTS



MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

MoDOT

105 WEST CAPITAL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

**wsp**  
WSP USA INC.  
211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444



POWER SUPPLY														
LOCATION			POWER SUPPLY ASSEMBLY		CIRCUIT BREAKER TRIP RATING*				LIGHTING CONTROL * (ON POWER SUPPLY)		SERVICE POLE			
APPROACH	STATION	OFFSET	DRAWING 902.15	DRAWING	CONTROLLER		POWER SUPPLY DISCONNECT		120 VOLT CONTROL CABINET		CONTRACT FURNISH	UTILITY COMPANY		
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER							
							SIGNALS	LIGHTING						
U	I	P	Type	U.I.P.	15	Amps	Amps	Amps	Amps		Amps	Cl.	Ft.	U.I.P.
			Type		15	Amps	Amps	Amps	Amps		Amps	Cl.	Ft.	

CONTROLLER ASSEMBLY AND AUXILIARY EQUIPMENT																							
LOCATION			SYSTEM MASTER (CLOSED LOOP)		ACTUATED		ON-OFF* SWITCH		COORDINATION INTERFACE *					TIME * CLOCK	NEMA CABINET TYPE *			170 CABINET TYPE *		170 SOFTWARE *			
APPROACH	STATION	OFFSET							TYPE	12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP									FIBER	
													NEMA										170
MD 141 & HELFRICH RD	U.I.P.	U.I.P.			NEMA	170	I	II	MASTER	LOCAL													

NEMA DETECTOR ASSIGNMENT									
CARD POSITION									
CHANNEL	1	2	3	4	5	6	7	8	
	1								
	2		U	I	P				

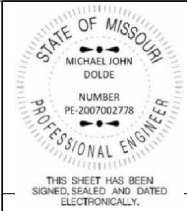
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

NEMA LOAD SWITCH ASSIGNMENTS											
1	2	3	4	5	6	7	8	9	10	11	12
				U	I	P					

PHASE 1	PHASE 2	PHASE 4
PHASE 5	PHASE 6	PHASE 8

DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
10	SB (PHASE 1)		1
21	NB (PHASE 2)		1
22	NB (PHASE 2)		1
23	NB (PHASE 2)		1
24	NB (PHASE 2)		1
41	WB (PHASE 4)		1
42	WB (PHASE 4)		1
43	WB (PHASE 4)		1
50	NB (PHASE 5)		1
61	SB (PHASE 6)		1
62	SB (PHASE 6)		1
63	SB (PHASE 6)		1
64	SB (PHASE 6)		1
81	EB (PHASE 8)		1
82	EB (PHASE 8)		1
25	NB ADVANCE (PHASE 2)	1	
26	NB ADVANCE (PHASE 2)	1	
44	WB ADVANCE (PHASE 4)	1	
65	SB ADVANCE (PHASE 6)	1	
66	SB ADVANCE (PHASE 6)	1	
67	SB ADVANCE (PHASE 6)	1	
83	EB ADVANCE (PHASE 8)	1	
TOTAL		7	15

- \* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.
- (1) CABLING FOR THE NEW VIDEO DETECTION AND RADAR DETECTION SHOULD BE ROUTED THROUGH EXISTING CONDUITS. CONDUITS THAT ARE DAMAGED, COLLAPSED, OR UNUSABLE SHALL BE MARKED ON THE AS-BUILT PLANS PER JSP S.
- (2) THE INSTALLATION OF ALL EQUIPMENT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, DRAWINGS, AND ENGINEERING POLICY GUIDE.
- (3) THE CONTRACTOR SHALL HAVE RESPONSIBILITY OF LOCATING ALL UNDERGROUND AND OVERHEAD FACILITIES, STRUCTURES, AND UTILITIES.
- (4) THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL AND SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
- (5) ALL DRILLED OPENING FOR CABLE SHALL BE WEATHERPROOF. THERE WILL BE NO DIRECT PAYMENT FOR DRILLED OPENINGS. DISUSED OPENINGS SHALL BE PLUGGED BY THE CONTRACTOR.
- (6) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING DETECTION ZONES PER JSP I AND JSP J. PER JSP I AND JSP J, COUNT ZONES SHOULD BE PROGRAMMED FOR EACH LANE AT THE INTERSECTION EVEN IF NO VEHICLE DETECTION ZONE IS REQUIRED FOR THAT LANE.
- (7) THE CONTRACTOR SHALL REMOVE ALL DISUSED EXISTING DETECTION CAMERA CABLE AS PART OF THE DETECTION INSTALLATION.
- (8) THE CONTRACTOR SHALL PULL ROPE THROUGH ANY USED CONDUITS PER JSP R.
- (9) MANUFACTURER'S REPRESENTATIVE SHALL BE PRESENT DURING PROGRAMMING OF DETECTION ZONES PER JSP I AND JSP J. MANUFACTURER'S REPRESENTATIVE SHALL PROVIDE GUIDANCE TO CONTRACTOR ON OPTIMAL PLACEMENT OF DETECTION EQUIPMENT AND PROGRAMMED DETECTION ZONES.



DATE PREPARED		3/21/2024	
ROUTE	141	STATE	MO
DISTRICT	SL	SHEET NO.	31
COUNTY			
ST LOUIS			
JOB NO.			
JSL0110			
CONTRACT ID.			

PROJECT NO.
BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

WSP USA INC.  
211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444

MO 141 AND HELFRICH RD  
INTERSECTION D-37C

TRAFFIC SIGNAL SHEET 28 OF 60

ST. LOUIS COUNTY  
ROUTE 141 SIGNAL IMPROVEMENTS



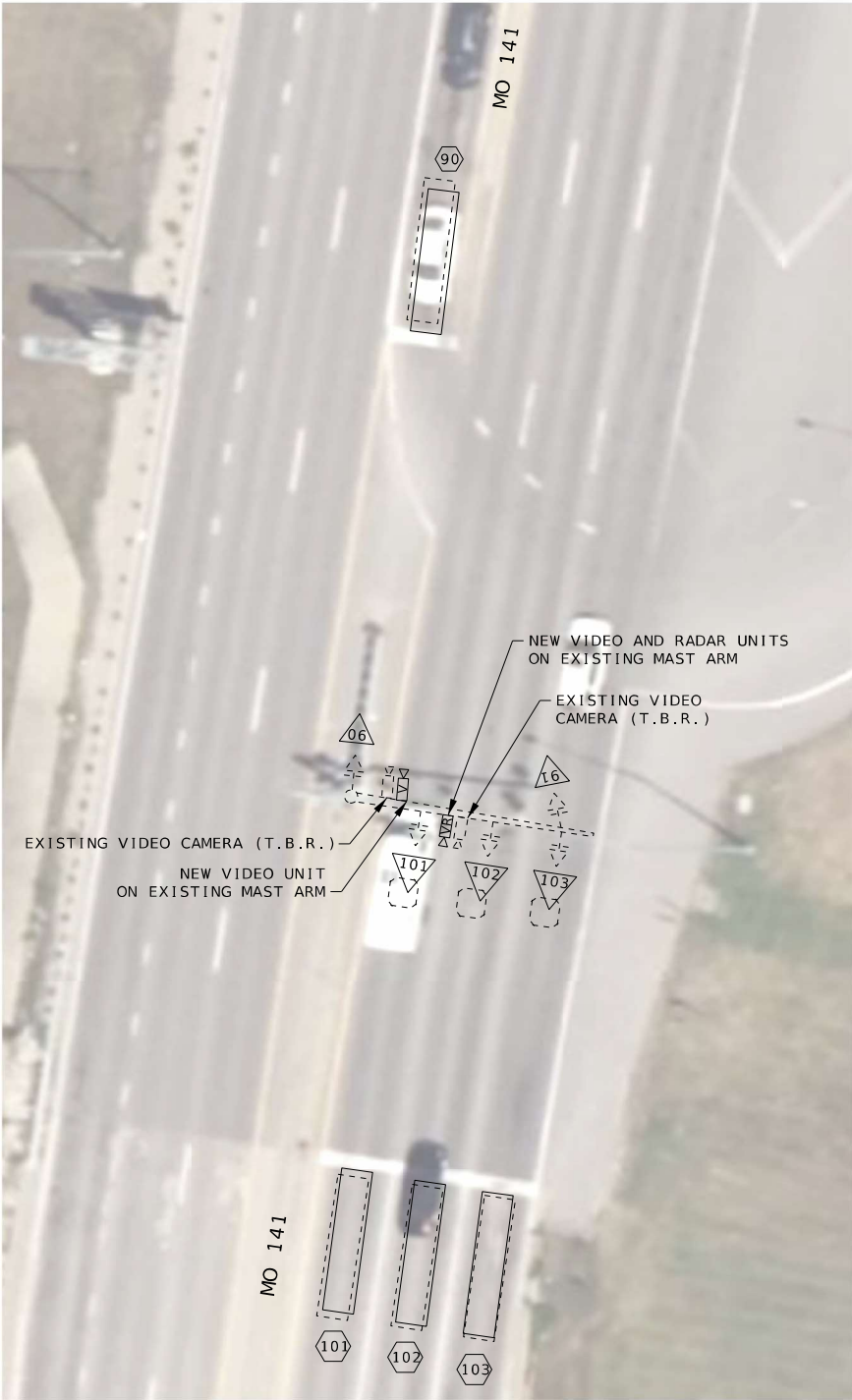
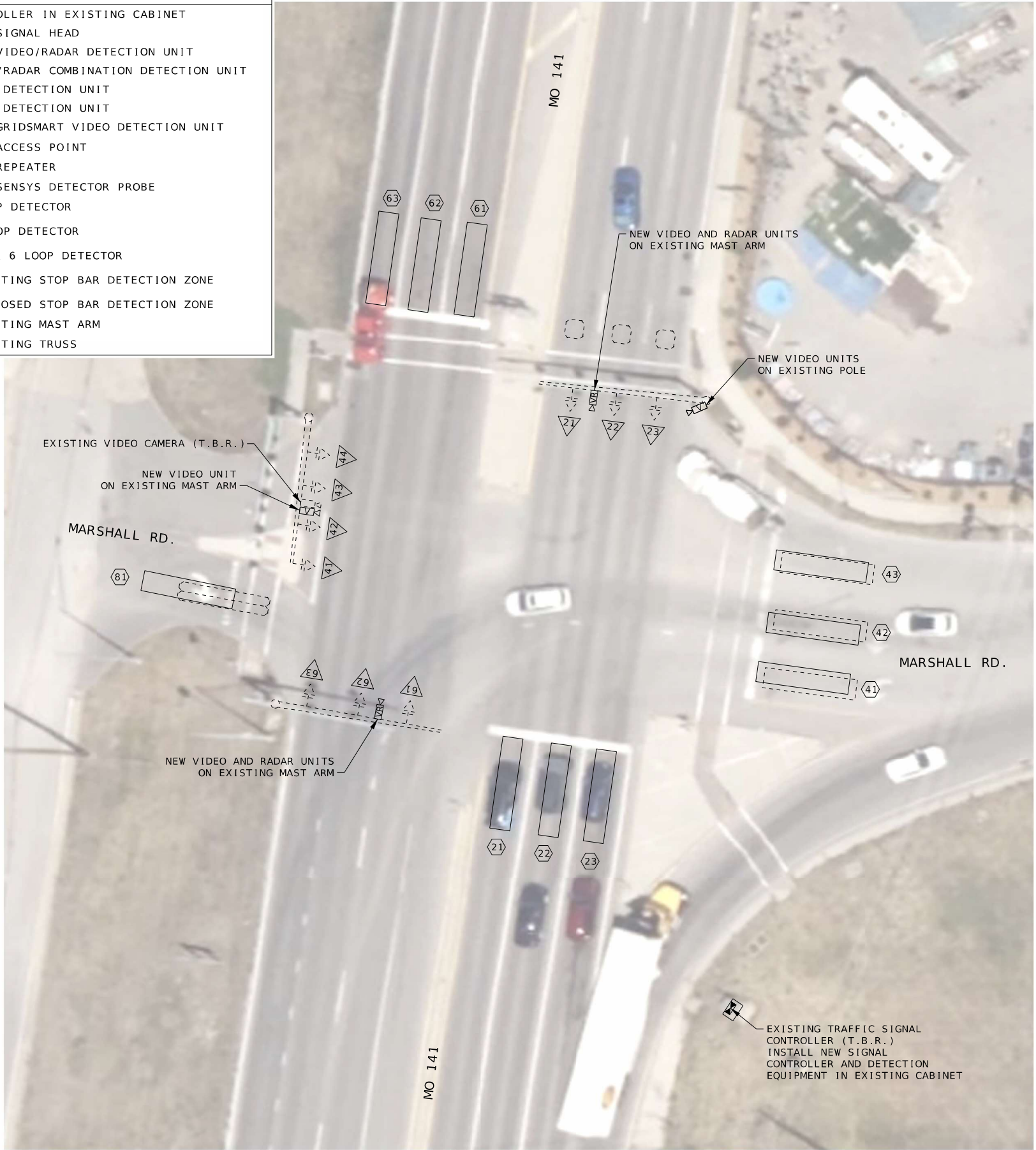








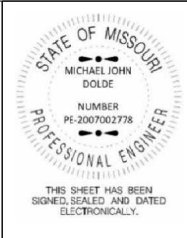
TRAFFIC SIGNALS LEGEND	
	NEW CONTROLLER IN EXISTING CABINET
	EXISTING SIGNAL HEAD
	EXISTING VIDEO/RADAR DETECTION UNIT
	NEW VIDEO/RADAR COMBINATION DETECTION UNIT
	NEW VIDEO DETECTION UNIT
	NEW RADAR DETECTION UNIT
	EXISTING GRIDSMART VIDEO DETECTION UNIT
	EXISTING ACCESS POINT
	EXISTING REPEATER
	EXISTING SENSYS DETECTOR PROBE
	6 X 6 LOOP DETECTOR
	6 X 15 LOOP DETECTOR
	30 X 6 LOOP DETECTOR
	EXISTING STOP BAR DETECTION ZONE
	PROPOSED STOP BAR DETECTION ZONE
	EXISTING MAST ARM
	EXISTING TRUSS



- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
- (2) THE CONTRACTOR SHALL DISCONNECT LOOP LEAD-IN WIRES AND REMOVE DETECTOR CARDS FROM DETECTOR RACK. EXISTING LOOP DETECTORS SHALL BE LEFT IN PLACE AND ABANDONED. THE CONTRACTOR SHALL REMOVE THE EXISTING VIDEO DETECTION EQUIPMENT INCLUDING ANY UNUSED CAMERAS, CABINET HARDWARE, MOUNTING HARDWARE/BRACKETS AND CABLING. THE EXISTING VIDEO DETECTION EQUIPMENT SHALL BE DELIVERED TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL INSTALL A COMPLETE VIDEO DETECTION SYSTEM WITH ENCLOSURES, MOUNTING HARDWARE/BRACKETS, TERMINATION PANELS, POWER AND COMMUNICATION CABLES FOR STOP BAR DETECTION PER JSP I.
- (3) THE CONTRACTOR SHALL INSTALL RADAR DETECTION UNITS AND PROGRAM FOR ADVANCED DETECTION PER JSP J.
- (4) PHASE 8 IS A DUMMY PHASE TO ALLOW FOR A BRIEF ALL RED PERIOD WHEN EASTBOUND RIGHT TURN IS ACTUATED.

TRAFFIC SIGNAL SHEET 31 OF 60

ST. LOUIS COUNTY  
ROUTE 141 SIGNAL IMPROVEMENTS



DATE PREPARED 3/21/2024	
ROUTE 141	STATE MO
DISTRICT SL	SHEET NO. 34
COUNTY ST LOUIS	
JOB NO. JSL0110	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

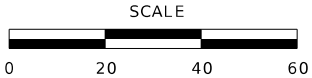
WSP USA INC.  
211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444

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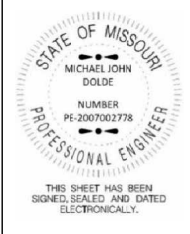


- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
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- (3) THE CONTRACTOR SHALL INSTALL RADAR DETECTION UNITS AND PROGRAM FOR ADVANCED DETECTION PER JSP J.

TRAFFIC SIGNALS LEGEND	
	NEW CONTROLLER IN EXISTING CABINET
	EXISTING SIGNAL HEAD
	EXISTING VIDEO/RADAR DETECTION UNIT
	NEW VIDEO/RADAR COMBINATION DETECTION UNIT
	NEW VIDEO DETECTION UNIT
	NEW RADAR DETECTION UNIT
	EXISTING GRIDSMART VIDEO DETECTION UNIT
	EXISTING ACCESS POINT
	EXISTING REPEATER
	EXISTING SENSYS DETECTOR PROBE
	6 X 6 LOOP DETECTOR
	6 X 15 LOOP DETECTOR
	30 X 6 LOOP DETECTOR
	EXISTING STOP BAR DETECTION ZONE
	PROPOSED STOP BAR DETECTION ZONE
	EXISTING MAST ARM
	EXISTING TRUSS

TRAFFIC SIGNAL SHEET 33 OF 60

ST. LOUIS COUNTY  
ROUTE 141 SIGNAL IMPROVEMENTS



DATE PREPARED 3/21/2024	
ROUTE 141	STATE MO
DISTRICT SL	SHEET NO. 36
COUNTY ST LOUIS	
JOB NO. JSL0110	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

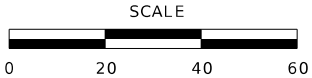
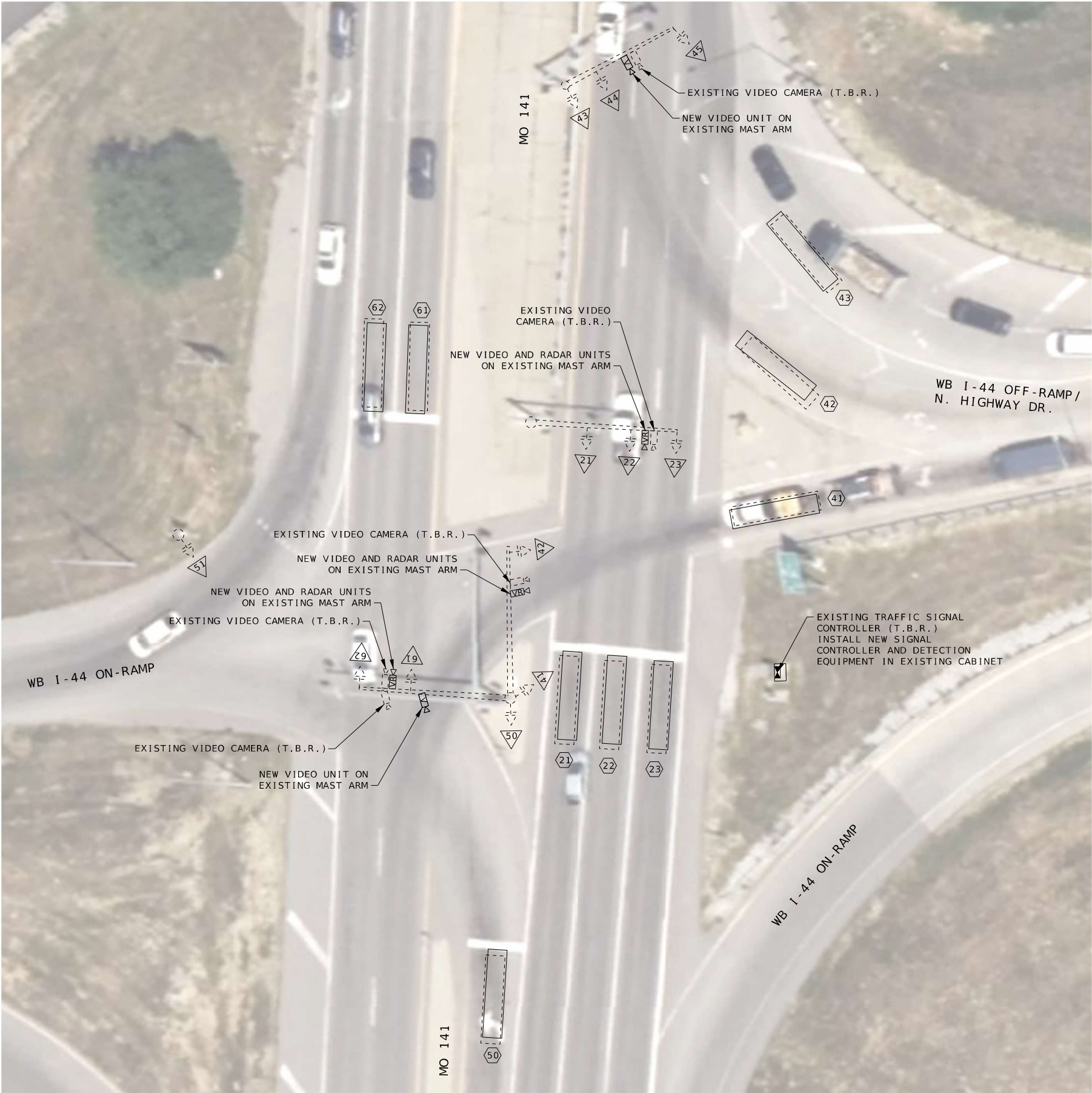
WSP USA INC.  
211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.







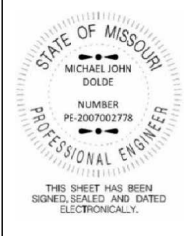


- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
- (2) THE CONTRACTOR SHALL REMOVE THE EXISTING VIDEO DETECTION EQUIPMENT INCLUDING ANY UNUSED CAMERAS, CABINET HARDWARE, MOUNTING HARDWARE/BRACKETS AND CABLEING. THE EXISTING VIDEO DETECTION EQUIPMENT SHALL BE DELIVERED TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL INSTALL A COMPLETE VIDEO DETECTION SYSTEM WITH ENCLOSURES, MOUNTING HARDWARE/BRACKETS, TERMINATION PANELS, POWER AND COMMUNICATION CABLES FOR STOP BAR DETECTION PER JSP I.
- (3) THE CONTRACTOR SHALL INSTALL RADAR DETECTION UNITS AND PROGRAM FOR ADVANCED DETECTION PER JSP J.

TRAFFIC SIGNALS LEGEND	
	NEW CONTROLLER IN EXISTING CABINET
	EXISTING SIGNAL HEAD
	EXISTING VIDEO/RADAR DETECTION UNIT
	NEW VIDEO/RADAR COMBINATION DETECTION UNIT
	NEW VIDEO DETECTION UNIT
	NEW RADAR DETECTION UNIT
	EXISTING GRIDSMART VIDEO DETECTION UNIT
	EXISTING ACCESS POINT
	EXISTING REPEATER
	EXISTING SENSYS DETECTOR PROBE
	6 X 6 LOOP DETECTOR
	6 X 15 LOOP DETECTOR
	30 X 6 LOOP DETECTOR
	EXISTING STOP BAR DETECTION ZONE
	PROPOSED STOP BAR DETECTION ZONE
	EXISTING MAST ARM
	EXISTING TRUSS

TRAFFIC SIGNAL SHEET 35 OF 60

ST. LOUIS COUNTY  
ROUTE 141 SIGNAL IMPROVEMENTS



DATE PREPARED 3/21/2024	
ROUTE 141	STATE MO
DISTRICT SL	SHEET NO. 38
COUNTY ST LOUIS	
JOB NO. JSL0110	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

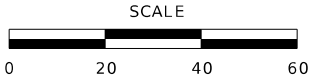
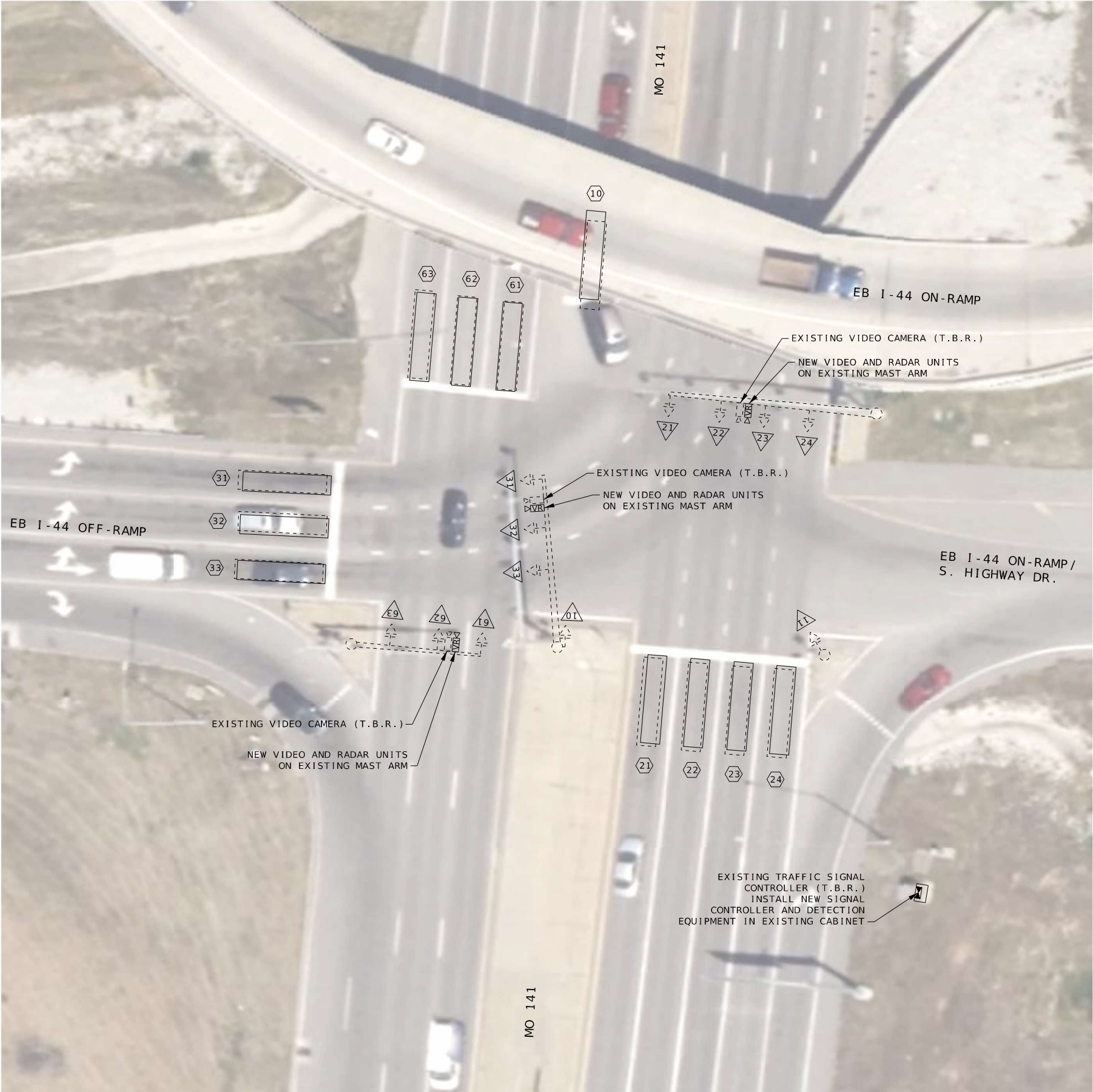
WSP USA INC.  
211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.







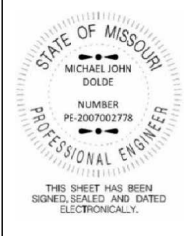


- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
- (2) THE CONTRACTOR SHALL REMOVE THE EXISTING VIDEO DETECTION EQUIPMENT INCLUDING ANY UNUSED CAMERAS, CABINET HARDWARE, MOUNTING HARDWARE/BRACKETS AND CABLEING. THE EXISTING VIDEO DETECTION EQUIPMENT SHALL BE DELIVERED TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL INSTALL A COMPLETE VIDEO DETECTION SYSTEM WITH ENCLOSURES, MOUNTING HARDWARE/BRACKETS, TERMINATION PANELS, POWER AND COMMUNICATION CABLES FOR STOP BAR DETECTION PER JSP I.
- (3) THE CONTRACTOR SHALL INSTALL RADAR DETECTION UNITS AND PROGRAM FOR ADVANCED DETECTION PER JSP J.

TRAFFIC SIGNALS LEGEND	
	NEW CONTROLLER IN EXISTING CABINET
	EXISTING SIGNAL HEAD
	EXISTING VIDEO/RADAR DETECTION UNIT
	NEW VIDEO/RADAR COMBINATION DETECTION UNIT
	NEW VIDEO DETECTION UNIT
	NEW RADAR DETECTION UNIT
	EXISTING GRIDSMART VIDEO DETECTION UNIT
	EXISTING ACCESS POINT
	EXISTING REPEATER
	EXISTING SENSYS DETECTOR PROBE
	6 X 6 LOOP DETECTOR
	6 X 15 LOOP DETECTOR
	30 X 6 LOOP DETECTOR
	EXISTING STOP BAR DETECTION ZONE
	PROPOSED STOP BAR DETECTION ZONE
	EXISTING MAST ARM
	EXISTING TRUSS

TRAFFIC SIGNAL SHEET 37 OF 60

ST. LOUIS COUNTY  
ROUTE 141 SIGNAL IMPROVEMENTS



DATE PREPARED 3/21/2024	
ROUTE 141	STATE MO
DISTRICT SL	SHEET NO. 40
COUNTY ST LOUIS	
JOB NO. JSL0110	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

WSP USA INC.  
211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



















POWER SUPPLY													
LOCATION			POWER SUPPLY ASSEMBLY		CIRCUIT BREAKER TRIP RATING*				LIGHTING CONTROL * (ON POWER SUPPLY)		SERVICE POLE		
APPROACH	STATION	OFFSET	DRAWING 902.15	DRAWING	CONTROLLER		POWER SUPPLY DISCONNECT				CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER						
							SIGNALS	LIGHTING	120 VOLT CONTROL CABINET	MAIN BREAKER			
U	I	P	Type	U.I.P.	15	Amps	Amps	Amps	Amps		Amps	Ct. Ft.	U.I.P.
			Type		15	Amps	Amps	Amps	Amps	Amps		Amps	Ct. Ft.

CONTROLLER ASSEMBLY AND AUXILIARY EQUIPMENT																							
LOCATION			SYSTEM MASTER (CLOSED LOOP)		ACTUATED		ON-OFF* SWITCH		COORDINATION INTERFACE *					TIME * CLOCK	NEMA CABINET TYPE *			170 CABINET TYPE *		170 SOFTWARE *			
APPROACH	STATION	OFFSET							TYPE	12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI	
										MASTER	LOCAL		NEMA										170
MD 141 & CENTURION DR	U.I.P.	U.I.P.		170	NEMA	170	I	II	MASTER	LOCAL					1		E	EV	DOUBLE	332	336S	BITRAN	WAPITI

NEMA DETECTOR ASSIGNMENT									
CARD POSITION									
CHANNEL	1	2	3	4	5	6	7	8	
	1								
	2		U	I	P				

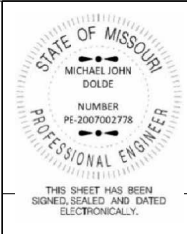
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

NEMA LOAD SWITCH ASSIGNMENTS											
1	2	3	4	5	6	7	8	9	10	11	12
				U	I	P					

PHASE 1	PHASE 2	PHASE 4
PHASE 5	PHASE 6	PHASE 8

DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
10	SB (PHASE 1)		1
21	NB (PHASE 2)		1
22	NB (PHASE 2)		1
23	NB (PHASE 2)		1
24	NB (PHASE 2)		1
41	WB (PHASE 4)		1
42	WB (PHASE 4)		1
50	NB (PHASE 5)		1
61	SB (PHASE 6)		1
62	SB (PHASE 6)		1
63	SB (PHASE 6)		1
81	EB (PHASE 8)		1
82	EB (PHASE 8)		1
25	NB ADVANCE (PHASE 2)	1	
26	NB ADVANCE (PHASE 2)	1	
27	NB ADVANCE (PHASE 2)	1	
43	WB ADVANCE (PHASE 4)	1	
64	SB ADVANCE (PHASE 6)	1	
65	SB ADVANCE (PHASE 6)	1	
66	SB ADVANCE (PHASE 6)	1	
TOTAL		7	13

- \* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.
- (1) CABLING FOR THE NEW VIDEO DETECTION AND RADAR DETECTION SHOULD BE ROUTED THROUGH EXISTING CONDUITS. CONDUITS THAT ARE DAMAGED, COLLAPSED, OR UNUSABLE SHALL BE MARKED ON THE AS-BUILT PLANS PER JSP S.
- (2) THE INSTALLATION OF ALL EQUIPMENT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, DRAWINGS, AND ENGINEERING POLICY GUIDE.
- (3) THE CONTRACTOR SHALL HAVE RESPONSIBILITY OF LOCATING ALL UNDERGROUND AND OVERHEAD FACILITIES, STRUCTURES, AND UTILITIES.
- (4) THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL AND SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
- (5) ALL DRILLED OPENING FOR CABLE SHALL BE WEATHERPROOF. THERE WILL BE NO DIRECT PAYMENT FOR DRILLED OPENINGS. DISUSED OPENINGS SHALL BE PLUGGED BY THE CONTRACTOR.
- (6) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING DETECTION ZONES PER JSP I AND JSP J. PER JSP I AND JSP J, COUNT ZONES SHOULD BE PROGRAMMED FOR EACH LANE AT THE INTERSECTION EVEN IF NO VEHICLE DETECTION ZONE IS REQUIRED FOR THAT LANE.
- (7) THE CONTRACTOR SHALL REMOVE ALL DISUSED EXISTING DETECTION CAMERA CABLE AS PART OF THE DETECTION INSTALLATION.
- (8) THE CONTRACTOR SHALL PULL ROPE THROUGH ANY USED CONDUITS PER JSP R.
- (9) MANUFACTURER'S REPRESENTATIVE SHALL BE PRESENT DURING PROGRAMMING OF DETECTION ZONES PER JSP I AND JSP J. MANUFACTURER'S REPRESENTATIVE SHALL PROVIDE GUIDANCE TO CONTRACTOR ON OPTIMAL PLACEMENT OF DETECTION EQUIPMENT AND PROGRAMMED DETECTION ZONES.



DATE PREPARED  
3/21/2024

ROUTE 141 STATE MO

DISTRICT SL SHEET NO. 45

COUNTY ST LOUIS

JOB NO. JSL0110

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

WSP USA INC.  
211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444

MO 141 AND CENTURION DR

INTERSECTION D-37C

TRAFFIC SIGNAL SHEET 42 OF 60

ST. LOUIS COUNTY  
ROUTE 141 SIGNAL IMPROVEMENTS

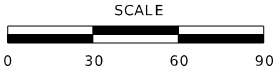
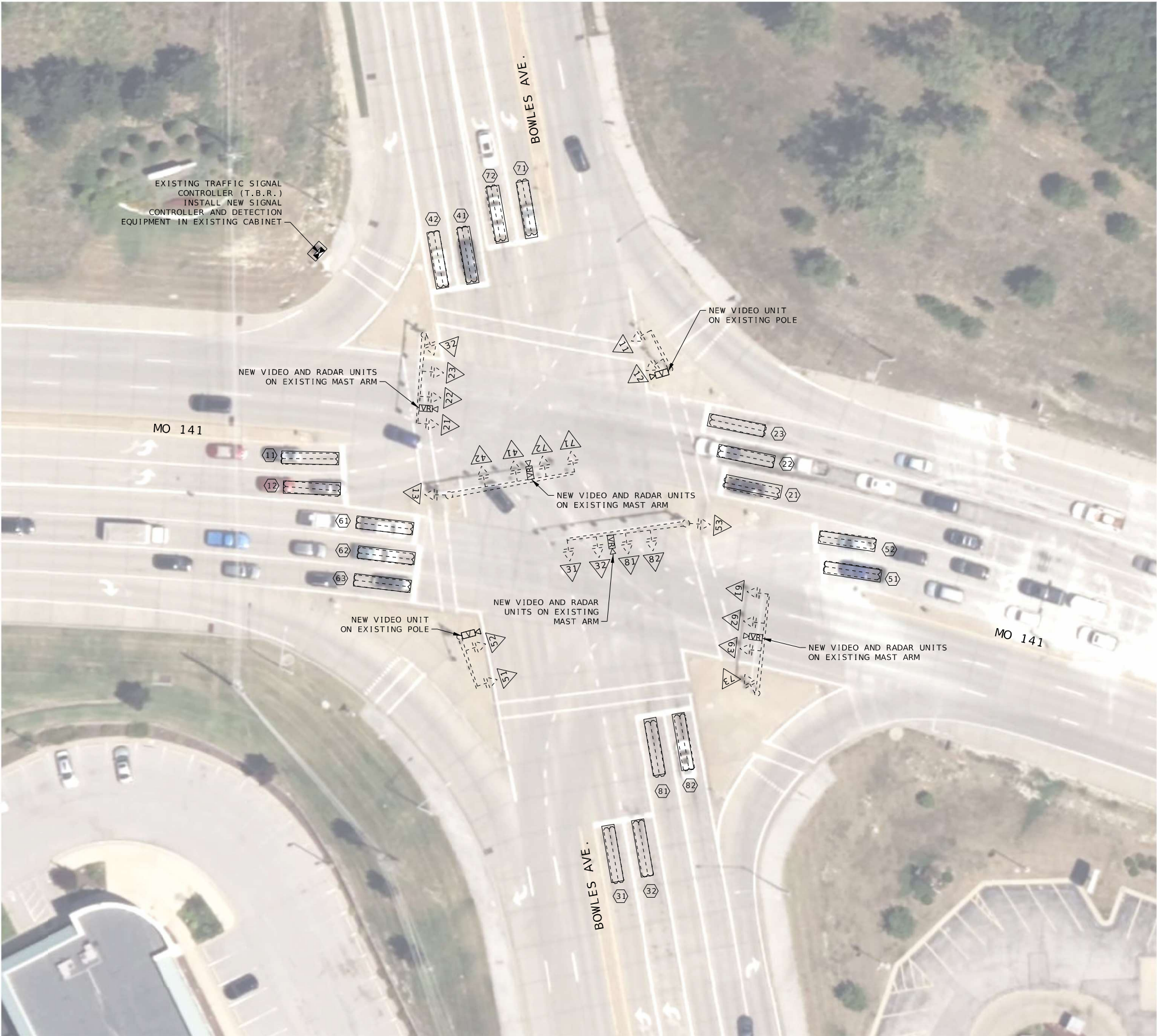










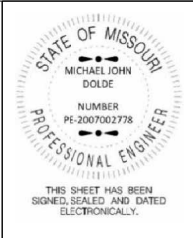


- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
- (2) THE CONTRACTOR SHALL DISCONNECT LOOP LEAD-IN WIRES AND REMOVE DETECTOR CARDS FROM DETECTOR RACK. EXISTING LOOP DETECTORS SHALL BE LEFT IN PLACE AND ABANDONED. THE CONTRACTOR SHALL INSTALL A COMPLETE VIDEO DETECTION SYSTEM WITH ENCLOSURES, MOUNTING HARDWARE/BRACKETS, TERMINATION PANELS, POWER AND COMMUNICATION CABLES FOR STOP BAR DETECTION PER JSP J.
- (3) THE CONTRACTOR SHALL INSTALL RADAR DETECTION UNITS AND PROGRAM FOR ADVANCED DETECTION PER JSP J.

TRAFFIC SIGNALS LEGEND	
	NEW CONTROLLER IN EXISTING CABINET
	EXISTING SIGNAL HEAD
	EXISTING VIDEO/RADAR DETECTION UNIT
	NEW VIDEO/RADAR COMBINATION DETECTION UNIT
	NEW VIDEO DETECTION UNIT
	NEW RADAR DETECTION UNIT
	EXISTING GRIDSMART VIDEO DETECTION UNIT
	EXISTING ACCESS POINT
	EXISTING REPEATER
	EXISTING SENSYS DETECTOR PROBE
	6 X 6 LOOP DETECTOR
	6 X 15 LOOP DETECTOR
	30 X 6 LOOP DETECTOR
	EXISTING STOP BAR DETECTION ZONE
	PROPOSED STOP BAR DETECTION ZONE
	EXISTING MAST ARM
	EXISTING TRUSS

TRAFFIC SIGNAL SHEET 45 OF 60

ST. LOUIS COUNTY  
ROUTE 141 SIGNAL IMPROVEMENTS



DATE PREPARED 3/21/2024	
ROUTE 141	STATE MO
DISTRICT SL	SHEET NO. 48
COUNTY ST LOUIS	
JOB NO. JSL0110	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

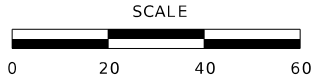
WSP USA INC.  
211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.







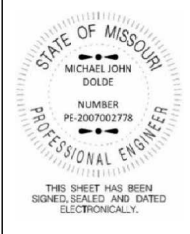


- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
- (2) THE CONTRACTOR SHALL DISCONNECT LOOP LEAD-IN WIRES AND REMOVE DETECTOR CARDS FROM DETECTOR RACK. EXISTING LOOP DETECTORS SHALL BE LEFT IN PLACE AND ABANDONED. THE CONTRACTOR SHALL INSTALL A COMPLETE VIDEO DETECTION SYSTEM WITH ENCLOSURES, MOUNTING HARDWARE/BRACKETS, TERMINATION PANELS, POWER AND COMMUNICATION CABLES FOR STOP BAR DETECTION PER JSP I.
- (3) THE CONTRACTOR SHALL INSTALL RADAR DETECTION UNITS AND PROGRAM FOR ADVANCED DETECTION PER JSP J.
- (4) THE CONTRACTOR SHALL AIM THE CAMERA TO DETECT NORTHBOUND LEFT/THRU AND RIGHT TURN LANES.

TRAFFIC SIGNALS LEGEND	
	NEW CONTROLLER IN EXISTING CABINET
	EXISTING SIGNAL HEAD
	EXISTING VIDEO/RADAR DETECTION UNIT
	NEW VIDEO/RADAR COMBINATION DETECTION UNIT
	NEW VIDEO DETECTION UNIT
	NEW RADAR DETECTION UNIT
	EXISTING GRIDSMART VIDEO DETECTION UNIT
	EXISTING ACCESS POINT
	EXISTING REPEATER
	EXISTING SENSYS DETECTOR PROBE
	6 X 6 LOOP DETECTOR
	6 X 15 LOOP DETECTOR
	30 X 6 LOOP DETECTOR
	EXISTING STOP BAR DETECTION ZONE
	PROPOSED STOP BAR DETECTION ZONE
	EXISTING MAST ARM
	EXISTING TRUSS

TRAFFIC SIGNAL SHEET 47 OF 60

ST. LOUIS COUNTY  
ROUTE 141 SIGNAL IMPROVEMENTS



DATE PREPARED 3/21/2024	
ROUTE 141	STATE MO
DISTRICT SL	SHEET NO. 50
COUNTY ST LOUIS	
JOB NO. JSL0110	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

WSP USA INC.  
211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.














POWER SUPPLY													
LOCATION			POWER SUPPLY ASSEMBLY		CIRCUIT BREAKER TRIP RATING*				LIGHTING CONTROL * (ON POWER SUPPLY)		SERVICE POLE		
APPROACH	STATION	OFFSET	DRAWING 902.15	DRAWING	CONTROLLER		POWER SUPPLY DISCONNECT		120 VOLT CONTROL CABINET	MAIN BREAKER	CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT. & SIGNAL LAMPS	MAIN BREAKER						
							SIGNALS	LIGHTING					
			Type	U. I. P.	15 Amps	Amps	Amps	Amps		Amps	Ci.	Ft.	U. I. P.
			Type		15 Amps	Amps	Amps	Amps		Amps	Ci.	Ft.	

[illegible]

		NEMA DETECTOR ASSIGNMENT							
		CARD POSITION							
		1	2	3	4	5	6	7	8
C H A N N E L	1		U	I	P				
	2		U	I	P				

TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

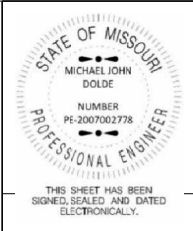
DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
10	EB ( PHASE 1 )		1
21	WB ( PHASE 2 )		1
22	WB ( PHASE 2 )		1
23	WB ( PHASE 2 )		1
50	WB ( PHASE 5 )		1
61	EB ( PHASE 6 )		1
62	EB ( PHASE 6 )		1
63	EB ( PHASE 6 )		1
71	SB ( PHASE 7 )		1
72	SB ( PHASE 7 )		1
81	NB ( PHASE 8 )		1
82	NB ( PHASE 8 )		1
24	WB ADVANCE ( PHASE 2 )	1	
25	WB ADVANCE ( PHASE 2 )	1	
26	WB ADVANCE ( PHASE 2 )	1	
64	EB ADVANCE ( PHASE 6 )	1	
65	EB ADVANCE ( PHASE 6 )	1	
66	EB ADVANCE ( PHASE 6 )	1	
TOTAL		6	12

- \* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.
- (1) CABLING FOR THE NEW VIDEO DETECTION AND RADAR DETECTION SHOULD BE ROUTED THROUGH EXISTING CONDUITS. CONDUITS THAT ARE DAMAGED, COLLAPSED, OR UNUSABLE SHALL BE MARKED ON THE AS-BUILT PLANS PER JSP S.
- (2) THE INSTALLATION OF ALL EQUIPMENT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, DRAWINGS, AND ENGINEERING POLICY GUIDE.
- (3) THE CONTRACTOR SHALL HAVE RESPONSIBILITY OF LOCATING ALL UNDERGROUND AND OVERHEAD FACILITIES, STRUCTURES, AND UTILITIES.
- (4) THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL AND SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
- (5) ALL DRILLED OPENING FOR CABLE SHALL BE WEATHERPROOF. THERE WILL BE NO DIRECT PAYMENT FOR DRILLED OPENINGS. DISUSED OPENINGS SHALL BE PLUGGED BY THE CONTRACTOR.
- (6) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING DETECTION ZONES PER JSP I AND JSP J. PER JSP I AND JSP J, COUNT ZONES SHOULD BE PROGRAMMED FOR EACH LANE AT THE INTERSECTION EVEN IF NO VEHICLE DETECTION ZONE IS REQUIRED FOR THAT LANE.
- (7) THE CONTRACTOR SHALL REMOVE ALL DISUSED EXISTING DETECTION CAMERA CABLE AS PART OF THE DETECTION INSTALLATION.
- (8) THE CONTRACTOR SHALL PULL ROPE THROUGH ANY USED CONDUITS PER JSP R.
- (9) MANUFACTURER'S REPRESENTATIVE SHALL BE PRESENT DURING PROGRAMMING OF DETECTION ZONES PER JSP I AND JSP J. MANUFACTURER'S REPRESENTATIVE SHALL PROVIDE GUIDANCE TO CONTRACTOR ON OPTIMAL PLACEMENT OF DETECTION EQUIPMENT AND PROGRAMMED DETECTION ZONES.

NEMA LOAD SWITCH ASSIGNMENTS											
1	2	3	4	5	6	7	8	9	10	11	12
				U	.	I	.	P	.		

PHASE 1	PHASE 2	PHASE 3	PHASE 4
PHASE 5	PHASE 6	PHASE 7	PHASE 8

MD 141 AND GREGORY LN INTERSECTION	D-37C
TRAFFIC SIGNAL SHEET 50 OF 60	
ST. LOUIS COUNTY ROUTE 141 SIGNAL IMPROVEMENTS	



DATE PREPARED
---------------


ROUTE 141	STATE MO
DISTRICT SL	SHEET NO. 53

COUNTY  
ST LOUIS

JOB NO.
JSL0110
CONTRACT ID.

PROJECT NO.
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BRIDGE NO.
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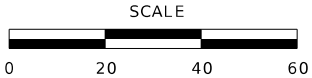
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MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

**wsp**  
WSP USA INC.  
1211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444



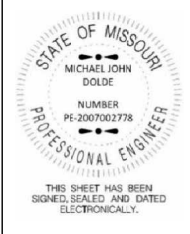


- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
- (2) THE CONTRACTOR SHALL DISCONNECT LOOP LEAD-IN WIRES AND REMOVE DETECTOR CARDS FROM DETECTOR RACK. EXISTING LOOP DETECTORS SHALL BE LEFT IN PLACE AND ABANDONED. THE CONTRACTOR SHALL INSTALL A COMPLETE VIDEO DETECTION SYSTEM WITH ENCLOSURES, MOUNTING HARDWARE/BRACKETS, TERMINATION PANELS, POWER AND COMMUNICATION CABLES FOR STOP BAR DETECTION PER JSP I.
- (3) THE CONTRACTOR SHALL INSTALL RADAR DETECTION UNITS AND PROGRAM FOR ADVANCED DETECTION PER JSP J.

TRAFFIC SIGNALS LEGEND	
	NEW CONTROLLER IN EXISTING CABINET
	EXISTING SIGNAL HEAD
	EXISTING VIDEO/RADAR DETECTION UNIT
	NEW VIDEO/RADAR COMBINATION DETECTION UNIT
	NEW VIDEO DETECTION UNIT
	NEW RADAR DETECTION UNIT
	EXISTING GRIDSMART VIDEO DETECTION UNIT
	EXISTING ACCESS POINT
	EXISTING REPEATER
	EXISTING SENSYS DETECTOR PROBE
	6 X 6 LOOP DETECTOR
	6 X 15 LOOP DETECTOR
	30 X 6 LOOP DETECTOR
	EXISTING STOP BAR DETECTION ZONE
	PROPOSED STOP BAR DETECTION ZONE
	EXISTING MAST ARM
	EXISTING TRUSS

TRAFFIC SIGNAL SHEET 51 OF 60

ST. LOUIS COUNTY  
ROUTE 141 SIGNAL IMPROVEMENTS



DATE PREPARED 3/21/2024	
ROUTE 141	STATE MO
DISTRICT SL	SHEET NO. 54
COUNTY ST LOUIS	
JOB NO. JSL0110	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

WSP USA INC.  
211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



POWER SUPPLY														
LOCATION			POWER SUPPLY ASSEMBLY		CIRCUIT BREAKER TRIP RATING*				LIGHTING CONTROL * (ON POWER SUPPLY)		SERVICE POLE			
APPROACH	STATION	OFFSET	DRAWING 902.15	DRAWING	CONTROLLER		POWER SUPPLY DISCONNECT				CONTRACT FURNISH	UTILITY COMPANY		
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER							
								SIGNALS	LIGHTING	120 VOLT CONTROL CABINET			MAIN BREAKER	
U	I	P	Type	U.I.P.	15	Amps	Amps	Amps	Amps		Amps	Cl.	Ft.	U.I.P.
			Type		15	Amps	Amps	Amps	Amps		Amps	Cl.	Ft.	

CONTROLLER ASSEMBLY AND AUXILIARY EQUIPMENT																						
LOCATION			SYSTEM MASTER (CLOSED LOOP)		ACTUATED		ON-OFF* SWITCH		COORDINATION INTERFACE *					TIME * CLOCK	NEMA CABINET TYPE *			170 CABINET TYPE *		170 SOFTWARE *		
APPROACH	STATION	OFFSET					TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP			FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI
							NEMA	170	NEMA	170		I	II									
MO 141 & DIERBERGS CROSSING	U.I.P.	U.I.P.																				

NEMA DETECTOR ASSIGNMENT									
CARD POSITION									
CHANNEL	1	2	3	4	5	6	7	8	
		U	I	P					
	2								

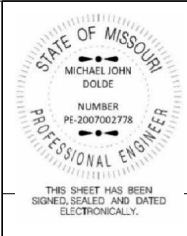
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

NEMA LOAD SWITCH ASSIGNMENTS											
1	2	3	4	5	6	7	8	9	10	11	12
				U	I	P					

		PHASE 2	PHASE 3
		←	←
		→	
PHASE 5	PHASE 6		

DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
21	WB (PHASE 2)		1
22	WB (PHASE 2)		1
23	WB (PHASE 2)		1
31	NB (PHASE 3)		1
32	NB (PHASE 3)		1
50	WB (PHASE 5)		1
61	EB (PHASE 6)		1
62	EB (PHASE 6)		1
63	EB (PHASE 6)		1
24	WB ADVANCE (PHASE 2)	1	
25	WB ADVANCE (PHASE 2)	1	
26	WB ADVANCE (PHASE 2)	1	
64	EB ADVANCE (PHASE 6)	1	
65	EB ADVANCE (PHASE 6)	1	
66	EB ADVANCE (PHASE 6)	1	
32	NB ADVANCE (PHASE 3)	1	
33	NB ADVANCE (PHASE 3)	1	
TOTAL		8	9

- \* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.
- (1) CABLING FOR THE NEW VIDEO DETECTION AND RADAR DETECTION SHOULD BE ROUTED THROUGH EXISTING CONDUITS. CONDUITS THAT ARE DAMAGED, COLLAPSED, OR UNUSABLE SHALL BE MARKED ON THE AS-BUILT PLANS PER JSP S.
- (2) THE INSTALLATION OF ALL EQUIPMENT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, DRAWINGS, AND ENGINEERING POLICY GUIDE.
- (3) THE CONTRACTOR SHALL HAVE RESPONSIBILITY OF LOCATING ALL UNDERGROUND AND OVERHEAD FACILITIES, STRUCTURES, AND UTILITIES.
- (4) THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL AND SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
- (5) ALL DRILLED OPENING FOR CABLE SHALL BE WEATHERPROOF. THERE WILL BE NO DIRECT PAYMENT FOR DRILLED OPENINGS. DISUSED OPENINGS SHALL BE PLUGGED BY THE CONTRACTOR.
- (6) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING DETECTION ZONES PER JSP I AND JSP J. PER JSP I AND JSP J, COUNT ZONES SHOULD BE PROGRAMMED FOR EACH LANE AT THE INTERSECTION EVEN IF NO VEHICLE DETECTION ZONE IS REQUIRED FOR THAT LANE.
- (7) THE CONTRACTOR SHALL REMOVE ALL DISUSED EXISTING DETECTION CAMERA CABLE AS PART OF THE DETECTION INSTALLATION.
- (8) THE CONTRACTOR SHALL PULL ROPE THROUGH ANY USED CONDUITS PER JSP R.
- (9) MANUFACTURER'S REPRESENTATIVE SHALL BE PRESENT DURING PROGRAMMING OF DETECTION ZONES PER JSP I AND JSP J. MANUFACTURER'S REPRESENTATIVE SHALL PROVIDE GUIDANCE TO CONTRACTOR ON OPTIMAL PLACEMENT OF DETECTION EQUIPMENT AND PROGRAMMED DETECTION ZONES.



DATE PREPARED  
3/21/2024

ROUTE 141 STATE MO

DISTRICT SL SHEET NO. 55

COUNTY ST LOUIS

JOB NO. JSL0110

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

WSP USA INC.  
211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444

MO 141 AND DIERBERGS CROSSING

INTERSECTION D-37C


TRAFFIC SIGNAL SHEET 52 OF 60

ST. LOUIS COUNTY  
ROUTE 141 SIGNAL IMPROVEMENTS

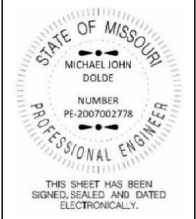




SCALE















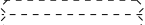


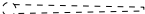
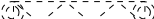
0 20 40 60



DATE PREPARED	
3/21/2024	
ROUTE	STATE
141	MO
DISTRICT	SHEET NO.
SL	56
COUNTY	
ST LOUIS	
JOB NO.	
JSL0110	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

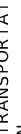
[illegible]

- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
- (2) THE CONTRACTOR SHALL DISCONNECT LOOP LEAD-IN WIRES AND REMOVE DETECTOR CARDS FROM DETECTOR RACK. EXISTING LOOP DETECTORS SHALL BE LEFT IN PLACE AND ABANDONED. THE CONTRACTOR SHALL INSTALL A COMPLETE VIDEO DETECTION SYSTEM WITH ENCLOSURES, MOUNTING HARDWARE/BRACKETS, TERMINATION PANELS, POWER AND COMMUNICATION CABLES FOR STOP BAR DETECTION PER JSP I.
- (3) THE CONTRACTOR SHALL INSTALL RADAR DETECTION UNITS AND PROGRAM FOR ADVANCED DETECTION PER JSP J.

TRAFFIC SIGNALS LEGEND	
	NEW CONTROLLER IN EXISTING CABINET
	EXISTING SIGNAL HEAD
	EXISTING VIDEO/RADAR DETECTION UNIT
	NEW VIDEO/RADAR COMBINATION DETECTION UNIT
	NEW VIDEO DETECTION UNIT
	NEW RADAR DETECTION UNIT
	EXISTING GRIDSMART VIDEO DETECTION UNIT
	EXISTING ACCESS POINT
	EXISTING REPEATER
	EXISTING SENSYS DETECTOR PROBE
	6 X 6 LOOP DETECTOR
	6 X 15 LOOP DETECTOR
	30 X 6 LOOP DETECTOR
	EXISTING STOP BAR DETECTION ZONE
	PROPOSED STOP BAR DETECTION ZONE
	EXISTING MAST ARM
	EXISTING TRUSS

TRAFFIC SIGNAL SHEET 53 OF 60

ST. LOUIS COUNTY  
ROUTE 141 SIGNAL IMPROVEMENTS



MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO. 65102  
1-888-ASK-MODOT (1-888-275-6636)

**wsp**  
WSP USA INC.  
12111 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444



POWER SUPPLY														
LOCATION			POWER SUPPLY ASSEMBLY		CIRCUIT BREAKER TRIP RATING*				LIGHTING CONTROL * (ON POWER SUPPLY)		SERVICE POLE			
APPROACH	STATION	OFFSET	DRAWING 902.15	DRAWING	CONTROLLER		POWER SUPPLY DISCONNECT				CONTRACT FURNISH	UTILITY COMPANY		
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER							
							SIGNALS	LIGHTING	120 VOLT CONTROL CABINET	MAIN BREAKER				
U	I	P	Type	U.I.P.	15	Amps	Amps	Amps	Amps		Amps	Cl.	Ft.	U.I.P.
			Type		15	Amps	Amps	Amps	Amps		Amps	Cl.	Ft.	

CONTROLLER ASSEMBLY AND AUXILIARY EQUIPMENT																								
LOCATION			SYSTEM MASTER (CLOSED LOOP)		ACTUATED		ON-OFF* SWITCH		COORDINATION INTERFACE *					TIME * CLOCK	NEMA CABINET TYPE *			170 CABINET TYPE *		170 SOFTWARE *				
APPROACH	STATION	OFFSET							TYPE		12C/7C HARDWARE (1)		TIME BASE		CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI
									NEMA	170	NEMA	170			I	II								
MO 141 & MO 30 WB RAMPS	U.I.P.	U.I.P.				1																		

NEMA DETECTOR ASSIGNMENT									
CARD POSITION									
CHANNEL	1	2	3	4	5	6	7	8	
		U	I	P					
	2								

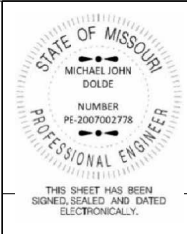
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

NEMA LOAD SWITCH ASSIGNMENTS											
1	2	3	4	5	6	7	8	9	10	11	12
				U	I	P					

		PHASE 2			
			↑		
	←				
		↓			↘
PHASE 5	PHASE 6			PHASE 7	

DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
21	NB (PHASE 2)		1
22	NB (PHASE 2)		1
23	NB (PHASE 2)		1
24	NB (PHASE 2)		1
51	NB (PHASE 2)		1
52	NB (PHASE 2)		1
61	SB (PHASE 6)		1
62	SB (PHASE 6)		1
63	SB (PHASE 6)		1
64	SB (PHASE 6)		1
65	SB (PHASE 6)		1
71	WB (PHASE 7)		1
72	WB (PHASE 7)		1
73	WB (PHASE 7)		1
24	NB ADVANCE (PHASE 2)	1	
25	NB ADVANCE (PHASE 2)	1	
26	NB ADVANCE (PHASE 2)	1	
66	SB ADVANCE (PHASE 6)	1	
67	SB ADVANCE (PHASE 6)	1	
68	SB ADVANCE (PHASE 6)	1	
74	WB ADVANCE (PHASE 7)	1	
75	WB ADVANCE (PHASE 7)	1	
TOTAL		8	14

- \* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.
- (1) CABLING FOR THE NEW VIDEO DETECTION AND RADAR DETECTION SHOULD BE ROUTED THROUGH EXISTING CONDUITS. CONDUITS THAT ARE DAMAGED, COLLAPSED, OR UNUSABLE SHALL BE MARKED ON THE AS-BUILT PLANS PER JSP S.
- (2) THE INSTALLATION OF ALL EQUIPMENT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, DRAWINGS, AND ENGINEERING POLICY GUIDE.
- (3) THE CONTRACTOR SHALL HAVE RESPONSIBILITY OF LOCATING ALL UNDERGROUND AND OVERHEAD FACILITIES, STRUCTURES, AND UTILITIES.
- (4) THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL AND SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
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- (6) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING DETECTION ZONES PER JSP I AND JSP J. PER JSP I AND JSP J, COUNT ZONES SHOULD BE PROGRAMMED FOR EACH LANE AT THE INTERSECTION EVEN IF NO VEHICLE DETECTION ZONE IS REQUIRED FOR THAT LANE.
- (7) THE CONTRACTOR SHALL REMOVE ALL DISUSED EXISTING DETECTION CAMERA CABLE AS PART OF THE DETECTION INSTALLATION.
- (8) THE CONTRACTOR SHALL PULL ROPE THROUGH ANY USED CONDUITS PER JSP R.
- (9) MANUFACTURER'S REPRESENTATIVE SHALL BE PRESENT DURING PROGRAMMING OF DETECTION ZONES PER JSP I AND JSP J. MANUFACTURER'S REPRESENTATIVE SHALL PROVIDE GUIDANCE TO CONTRACTOR ON OPTIMAL PLACEMENT OF DETECTION EQUIPMENT AND PROGRAMMED DETECTION ZONES.



DATE PREPARED 3/21/2024	
ROUTE 141	STATE MO
DISTRICT SL	SHEET NO. 57
COUNTY ST LOUIS	
JOB NO. JSL0110	
CONTRACT ID.	

PROJECT NO.
BRIDGE NO.

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

WSP USA INC.  
211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444

MO 141 AND MO 30 WB RAMPS

INTERSECTION D-37C

TRAFFIC SIGNAL SHEET 54 OF 60

ST. LOUIS COUNTY  
ROUTE 141 SIGNAL IMPROVEMENTS

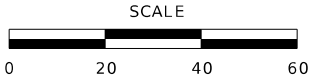










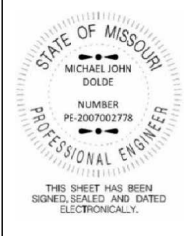


- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
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- (3) THE CONTRACTOR SHALL INSTALL RADAR DETECTION UNITS AND PROGRAM FOR ADVANCED DETECTION PER JSP J.

TRAFFIC SIGNALS LEGEND	
	NEW CONTROLLER IN EXISTING CABINET
	EXISTING SIGNAL HEAD
	EXISTING VIDEO/RADAR DETECTION UNIT
	NEW VIDEO/RADAR COMBINATION DETECTION UNIT
	NEW VIDEO DETECTION UNIT
	NEW RADAR DETECTION UNIT
	EXISTING GRIDSMART VIDEO DETECTION UNIT
	EXISTING ACCESS POINT
	EXISTING REPEATER
	EXISTING SENSYS DETECTOR PROBE
	6 X 6 LOOP DETECTOR
	6 X 15 LOOP DETECTOR
	30 X 6 LOOP DETECTOR
	EXISTING STOP BAR DETECTION ZONE
	PROPOSED STOP BAR DETECTION ZONE
	EXISTING MAST ARM
	EXISTING TRUSS

TRAFFIC SIGNAL SHEET 57 OF 60

ST. LOUIS COUNTY  
ROUTE 141 SIGNAL IMPROVEMENTS



DATE PREPARED 3/21/2024	
ROUTE 141	STATE MO
DISTRICT SL	SHEET NO. 60
COUNTY ST LOUIS	
JOB NO. JSL0110	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

MoDOT

WSP

WSP USA INC.  
211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.













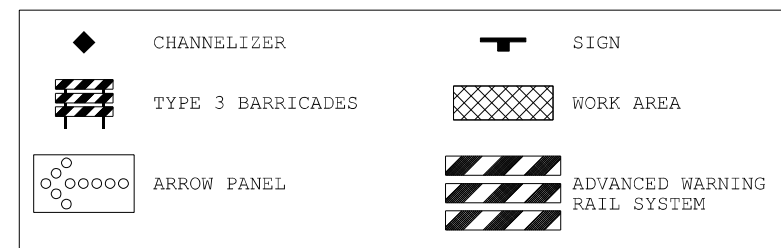


616.8.22 (TA-22) RIGHT LANE CLOSURE AT INTERSECTION WORK ON NEAR OR FAR SIDE - DE/CM

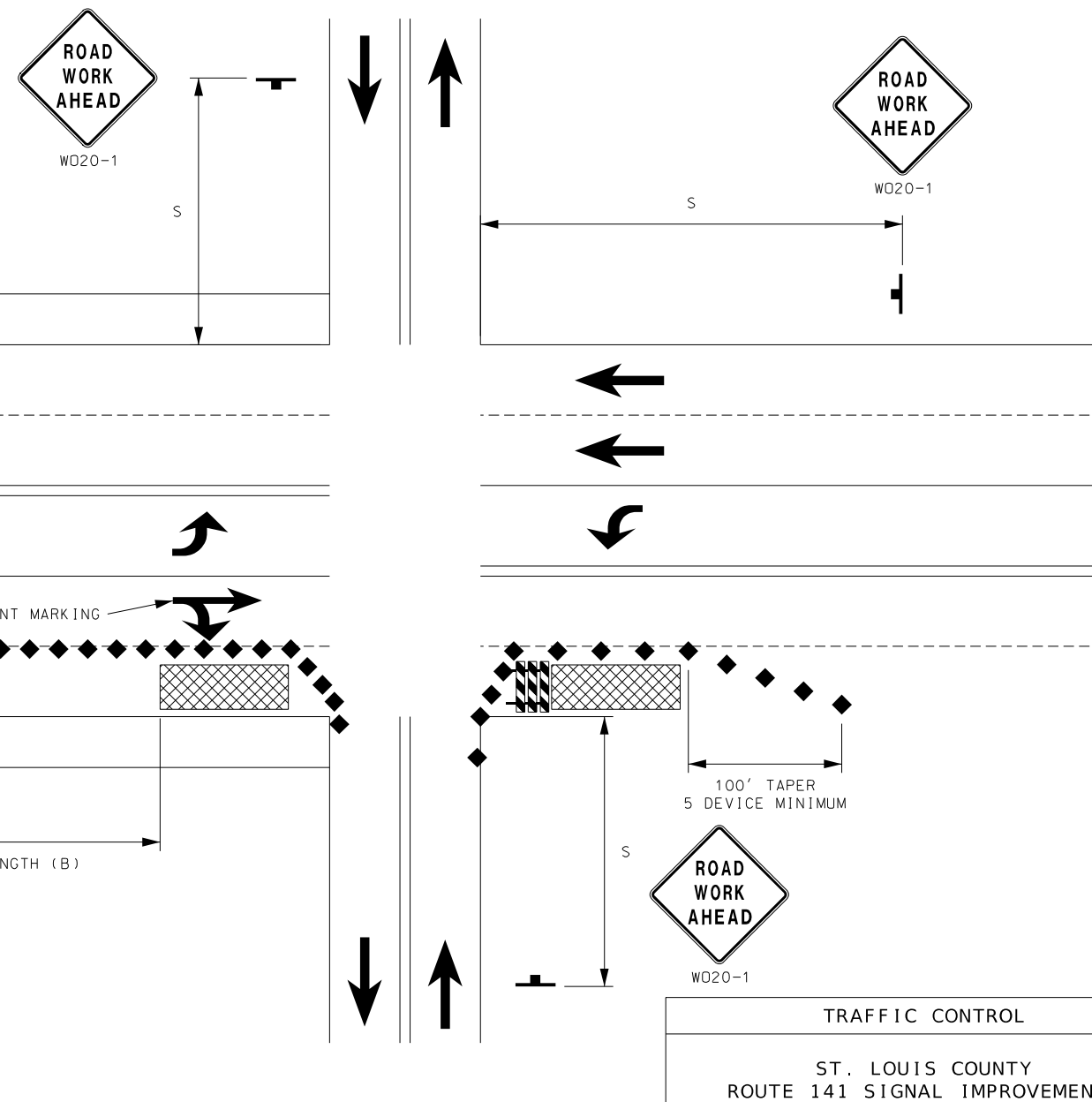
SPEED	SIGN SPACING (FT.)		TAPER LENGTH (FT.)		OPTIONAL	CHANNELIZER SPACING (FT.)	
PERMANENT POSTED (MPH)	UNDIVIDED (S)	DIVIDED (S)	SHOULDER (1) (T1)	LANE (2) (T2)	BUFFER LENGTH (FT.) (B)	TAPERS	BUFFER/ WORK AREAS
0-35	200	200	70	245	280	35	40
40-45	350	500	150	540	400	40	80
50-55	500	1000	185	660	560	50	80
60-70	1000	SA - 1000 SB - 1500 SC - 2640	235	840	840	60	120

1. SHOULDER TAPER LENGTH BASED ON 10 FT (STANDARD SHOULDER WIDTH) OFFSET.  
2. LANE TAPER LENGTH BASED ON 12 FT (STANDARD LANE WIDTH) OFFSET.

- NOTES:
1. SEE EPG 616.12 WORK ZONE SPEED LIMITS FOR SPEED LIMIT GUIDELINES.
  2. REVIEW TYPICAL APPLICATION 616.8.22A (TA-22A) LANE CLOSURE OF RIGHT LANE ON FAR SIDE OF INTERSECTION.
  3. FOR SIGNALIZED INTERSECTIONS, ADJUSTMENTS MAY NEED TO BE MADE TO SIGNAL PHASING, TIMING, INDICATIONS OR DETECTOR SETTINGS.
  4. REMOVE AND/OR MODIFY EXISTING PAVEMENT MARKINGS AS NEEDED.
  5. PAVEMENT MARKING AND BARRICADES OPTIONAL FOR SHORT TERM OPERATIONS.
  6. TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM LANE CLOSURES.
  7. FOR SHORT TERM OPERATIONS, WHERE IT IS NOT FEASIBLE TO MODIFY PAVEMENT MARKINGS, A 10-FOOT DEVICE SPACING IS USED WHERE TRAFFIC IS GUIDED ACROSS DOUBLE YELLOW LINES OR OTHER CONFLICTING PAVEMENT MARKINGS. ALL OTHER SPACING IS ONE-HALF OF THE SPACING.
  8. IF RUMBLE STRIPS ARE USED, REVIEW 616.6.87 RUMBLE STRIPS.
  9. FOR FLAGS AND ADVANCE WARNING RAIL SYSTEM, REFER TO EPG 616.6.2.2 FLAGS AND ADVANCE WARNING RAIL SYSTEM.



(1) RIGHT LANE CLOSED AHEAD SIGN  
MAY BE OMITTED IN LOW SPEED  
URBAN AREAS WHERE THERE IS NOT  
SUFFICIENT SPACE FOR THE FULL  
SIGN SERIES.



NOT TO SCALE

[illegible]



STATE OF MISSOURI

MICHAEL JOHN  
DOLDE

NUMBER  
PE-2007002778

PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

NOTES:

1. SEE EPG 616.12 WORK ZONE SPEED LIMITS FOR SPEED LIMIT GUIDELINES.
2. REVIEW TYPICAL APPLICATION 616.8.23A (TA-23A) LEFT LANE CLOSURE AT INTERSECTION WORK ON FAR SIDE ONLY - DE/CM.
3. FOR SIGNALIZED INTERSECTIONS, ADJUSTMENTS MAY NEED TO BE MADE TO SIGNAL PHASING, TIMING, INDICATIONS OR DETECTOR SETTINGS.
4. REMOVE AND/OR MODIFY EXISTING PAVEMENT MARKINGS AS NEEDED.
5. PAVEMENT MARKING AND BARRICADES OPTIONAL FOR SHORT TERM OPERATIONS.
6. TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM LANE CLOSURES.
7. FOR SHORT TERM OPERATIONS, WHERE IT IS NOT FEASIBLE TO MODIFY PAVEMENT MARKINGS, A 10-FOOT DEVICE SPACING IS USED WHERE TRAFFIC IS GUIDED ACROSS DOUBLE YELLOW LINES OR OTHER CONFLICTING PAVEMENT MARKINGS. ALL OTHER SPACING IS ONE-HALF OF THE SPACING.
8. IF RUMBLE STRIPS ARE USED, REVIEW 616.6.87 RUMBLE STRIPS.
9. FOR LONG-TERM OPERATIONS, REFER TO EPG 616.6.2.2 FLAGS AND ADVANCE WARNING RAIL SYSTEM.

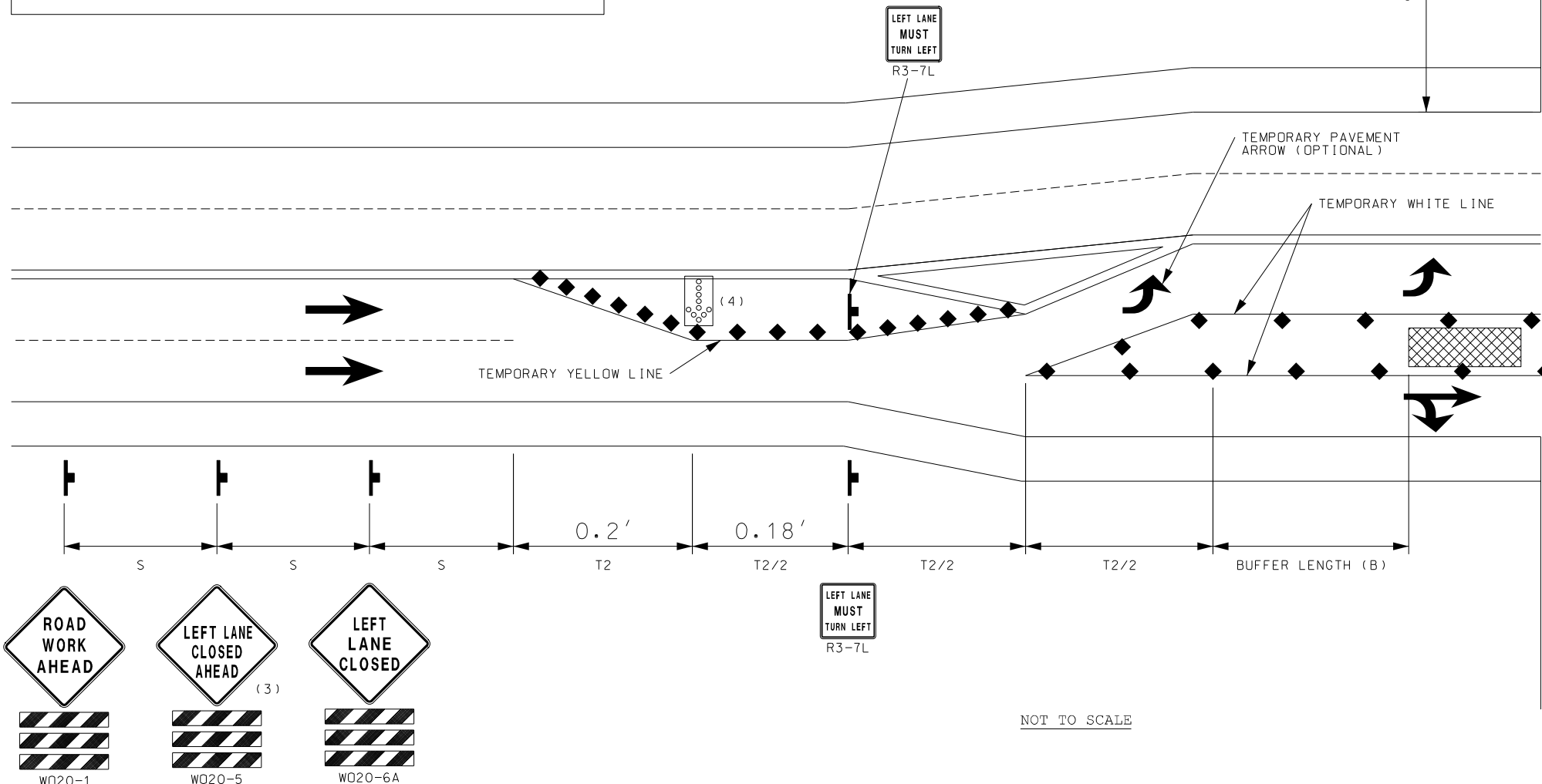
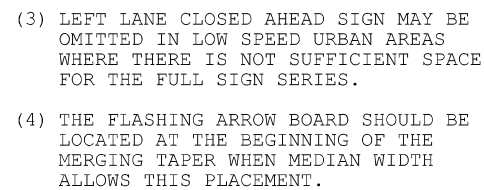



Diagram illustrating a single-lane road work zone. The diagram shows a road with a dashed line indicating the lane boundary. A work zone is marked by a hatched rectangular area. A diamond-shaped sign with the text "ROAD WORK AHEAD" is positioned before the work zone. The sign is labeled "W020-1". A dimension line indicates a "100' TAPER" and "5 DEVICE MINIMUM" for the taper length. A vertical dimension line labeled "S" indicates the sight distance. A "TRAFFIC CONTROL" symbol is shown at the bottom left. Arrows indicate traffic flow: two straight arrows pointing left above the road and a curved arrow pointing left above the work zone.

[illegible]

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

**wsp**  
WSP USA INC.  
2211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



616.8.3 (TA-3) WORK ON THE SHOULDER ON DIVIDED AND UNDIVIDED HIGHWAYS - DE/CM

SPEED	SIGN SPACING (FT.)		TAPER LENGTH (FT.)		OPTIONAL	CHANNELIZER SPACING (FT.)	
PERMANENT POSTED (MPH)	UNDIVIDED (S)	DIVIDED (S)	SHOULDER (1) (T1)	LANE (2) (T2)	BUFFER LENGTH (FT.) (B)	TAPERS	BUFFER/ WORK AREAS
0-35	200	200	70	245	280	35	40
40-45	350	500	150	540	400	40	80
50-55	500	1000	185	660	560	50	80
60-70	1000	SA - 1000 SB - 1500 SC - 2640	235	840	840	60	120

1. SHOULDER TAPER LENGTH BASED ON 10 FT (STANDARD SHOULDER WIDTH) OFFSET.

2. LANE TAPER LENGTH BASED ON 12 FT (STANDARD LANE WIDTH OFFSET).

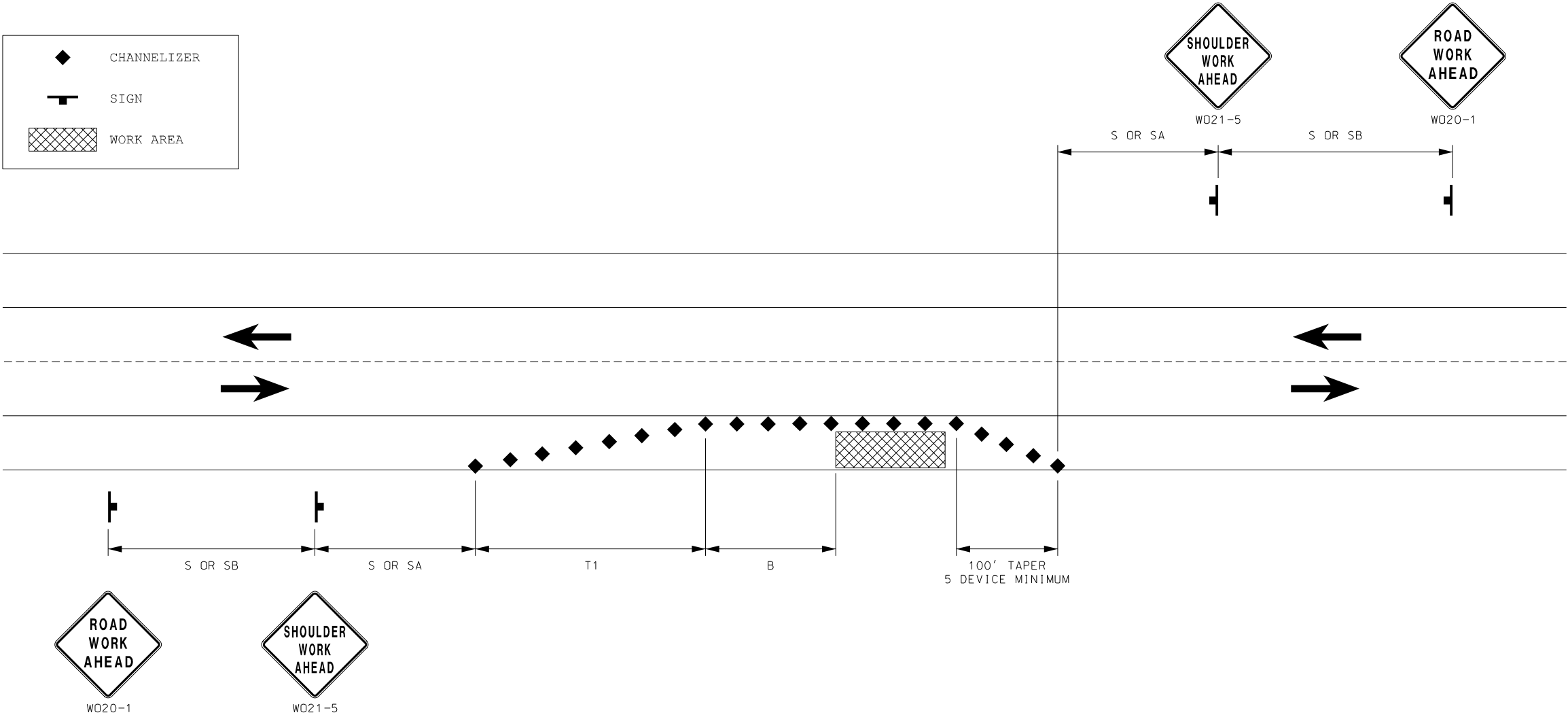
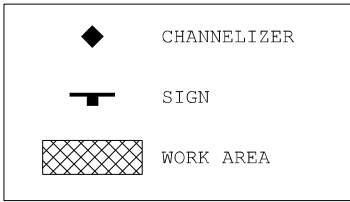
- NOTES:
1. PROVIDE SIGNS ON LEFT AND RIGHT SIDES OF DIVIDED HIGHWAYS.

2. ROAD WORK AHEAD SIGN NOT NEEDED IF SHOULDER WORK IS LOCATED WITHIN THE LIMITS OF AN ACTIVITY AREA WHERE ANOTHER ROAD WORK AHEAD SIGN IS ALREADY USED.

3. SEE EPG 616.12 WORK ZONE SPEED LIMITS FOR SPEED LIMIT GUIDELINES.

4. VEHICLE HAZARD WARNING SIGNALS SHALL NOT BE USED INSTEAD OF THE VEHICLE'S ROTATING LIGHTS OR STROBE LIGHTS.

5. WHEN PAVED SHOULDERS HAVING A WIDTH OF 8 FEET OR MORE ARE CLOSED, AT LEAST ONE ADVANCE WARNING SIGN SHALL BE USED. IN ADDITION, CHANNELIZING DEVICES SHALL BE USED TO CLOSE THE SHOULDER IN ADVANCE TO DELINEATE THE BEGINNING OF THE WORK SPACE AND DIRECT VEHICULAR TRAFFIC TO REMAIN WITHIN THE TRAVELED WAY.



NOT TO SCALE

TRAFFIC CONTROL

ST. LOUIS COUNTY  
ROUTE 141 SIGNAL IMPROVEMENTS

STATE OF MISSOURI  
MICHAEL JOHN DOLDE  
NUMBER PE-2007002778  
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

DATE PREPARED  
3/21/2024

ROUTE  
141

STATE  
MO

DISTRICT  
SL

SHEET NO.  
66

COUNTY  
ST LOUIS

JOB NO.  
JSL0110

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

MoDOT

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

WSP

WSP USA INC.  
211 N. BROADWAY SUITE 2800  
ST. LOUIS, MO 63102 (314) 206-4444  
MISSOURI CERTIFICATE OF AUTHORITY - 001444

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