

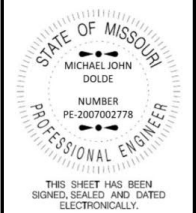
DESIGN DESIGNATION

ROUTE 180
 A.A.D.T. = 21,444
 V = 40 M.P.H.
 FUNCTIONAL CLASSIFICATION: PRINCIPAL ARTERIAL

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
PLANS FOR PROPOSED
ROUTE 180 SIGNAL IMPROVEMENTS
 MoDOT JOB NO. JSL0179
 ST. LOUIS COUNTY

INDEX OF SHEETS

DESCRIPTION	SHEET NUMBER
TITLE SHEET-----	1
SUMMARY OF QUANTITIES-----	2-3
ROUTE 180 PLAN SHEETS-----	4-81
TRAFFIC CONTROL-----	82-88



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED: 06/21/2024

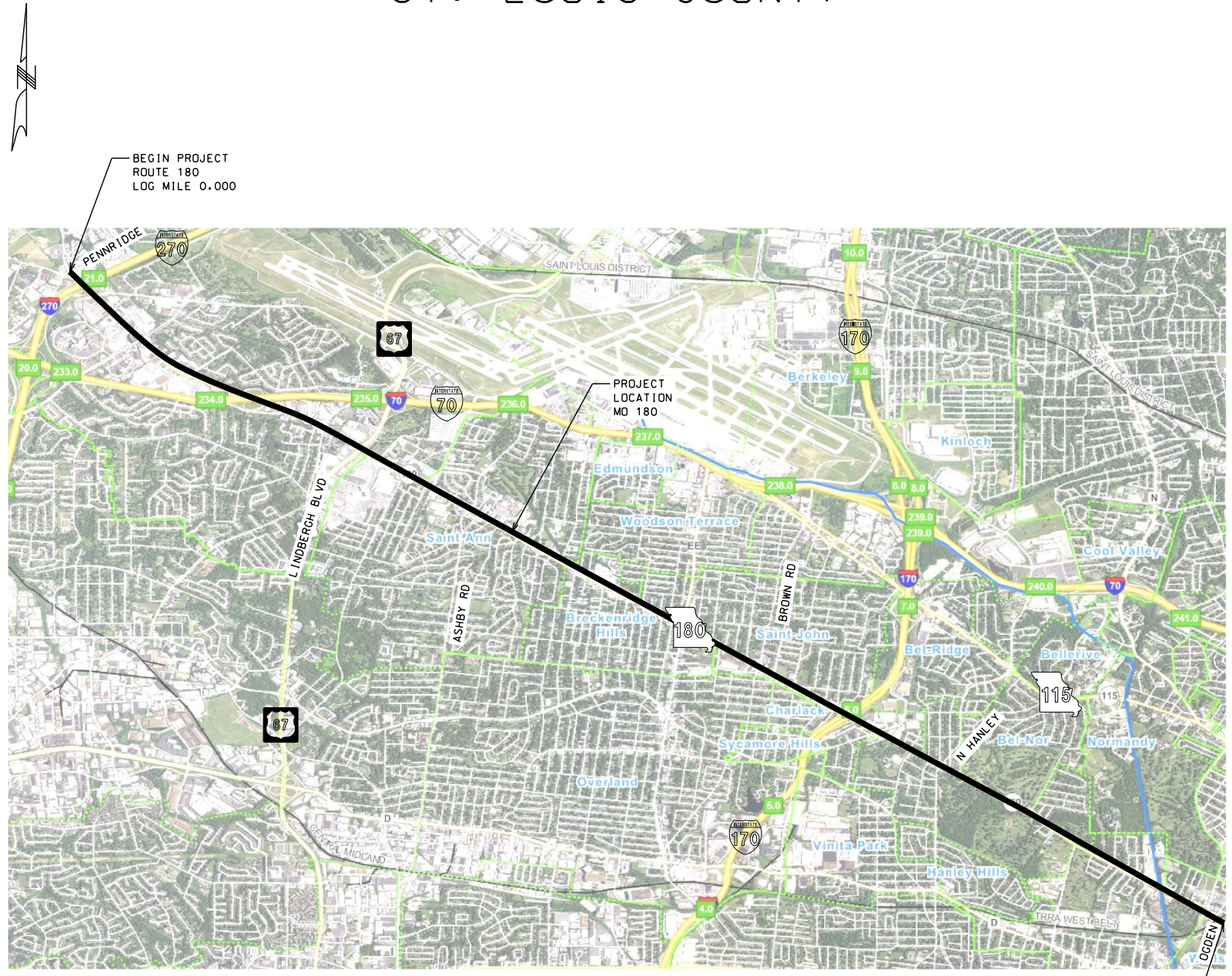
ROUTE	STATE
180	MO
DISTRICT	SHEET NO.
SL	1

COUNTY: ST. LOUIS
 JOB NO.: JSL0179
 CONTRACT ID.:
 PROJECT NO.:
 BRIDGE NO.:

NO NEW RIGHT OF WAY REQUIRED FOR THIS PROJECT

CONVENTIONAL SYMBOLS

	EXISTING	NEW
BUILDINGS AND STRUCTURES	[Symbol]	[Symbol]
GUARD RAIL	[Symbol]	[Symbol]
RIGHT-OF-WAY	[Symbol]	[Symbol]
UTILITIES		
FIBER OPTICS	-FO-	-FO-
OVERHEAD TELEPHONE	-T-	-T-
UNDERGROUND TELEPHONE	-OE-	-OE-
OVERHEAD POWER	-P-	-P-
UNDERGROUND POWER	-G-	-G-
GAS	-W-	-W-
WATER	[Symbol]	[Symbol]
MANHOLE	[Symbol]	[Symbol]
FIRE HYDRANT	[Symbol]	[Symbol]
WATER VALVE	[Symbol]	[Symbol]
WATER METER	[Symbol]	[Symbol]
DROP INLET	[Symbol]	[Symbol]
DITCH BLOCK	[Symbol]	[Symbol]
GROUND MOUNTED SIGN	[Symbol]	[Symbol]
LIGHT POLE	[Symbol]	[Symbol]
POWER POLE	[Symbol]	[Symbol]
H-FRAME POWER POLE	[Symbol]	[Symbol]
TELEPHONE PEDESTAL	[Symbol]	[Symbol]
FENCE	-X-	-X-
CONSTRUCTION LIMITS	[Symbol]	[Symbol]
EXISTING UTILITY EASEMENT	[Symbol]	[Symbol]
TEMPORARY CONSTRUCTION EASEMENT	[Symbol]	[Symbol]
BENCHMARK	[Symbol]	[Symbol]



LOCATION MAP NOT TO SCALE

END PROJECT
 ROUTE 180
 LOG MILE 9.558

LENGTH OF PROJECT

BEGINNING OF PROJECT	0.000	LOG MILE
END OF PROJECT	9.558	LOG MILE
APPARENT LENGTH	9.558	MILES

FOR INFORMATION ONLY
 ESTIMATED DISTURBED ACRES 0 ACRES

TITLE SHEET

ST. LOUIS COUNTY
 ROUTE 180 SIGNAL IMPROVEMENTS

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
 105 WEST CAPITOL
 JEFFERSON CITY, MO 65102
 1-888-ASK-MODOT (1-888-275-6636)



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FOR INFORMATION ONLY

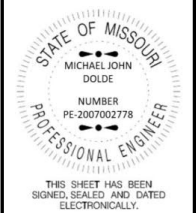
	MO 180 & PENNRIDGE-BOENKER	MO 180 & I-270 SB RAMP	MO 180 & I-270 NB RAMP	MO 180 & RTE B- MARESHHELL	MO 180 & DEPAUL CENTER	MO 180 & MCKELVEY	MO 180 & HILLTOP PLAZA	MO 180 & HARMONY	MO 180 & I-70 WB RAMP	MO 180 & I-70 EB RAMP	MO 180 & MARK TWAIN	MO 180 & FEE FEE	MO 180 & HOME DEPOT	MO 180 & 67-LINDBERGH SB RAMP	MO 180 & 67-LINDBERGH NB RAMP	MO 180 & NORTHWEST PLAZA	MO 180 & ADIE	MO 180 & CYPRESS	MO 180 & ST. TIMOTHY	MO 180 & ASHBY	MO 180 & SAN CARLOS	MO 180 & ST. GREGORY	MO 180 & GERALDINE-FIRE STATION	MO 180 & WISMER	MO 180 & LYNNTOWN	MO 180 & EDMUNDSON	MO 180 & WOODSON	MO 180 & ST. JOHN'S CROSSING	MO 180 & BROWN	MO 180 & MCKIBBON	MO 180 & I-170	MO 180 & LACKLAND	MO 180 & HANLEY	MO 180 & NORMANDY	MO 180 & SPUR-PENNSYLVANIA	MO 180 & FERGUSON	MO 180 & KINGSLAND-METRO	MO 180 & LUCAS & HUNT	MO 180 & OGDEN							
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	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																						
TRAFFIC SIGNAL VIDEO DETECTION SYSTEM (4 CAMERAS)	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	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	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																										
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	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

*LINDBERGH NB AND SB RAMP JUNCTIONS SHARE A SINGLE CONTROLLER

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			
202-20.10	REMOVAL OF IMPROVEMENTS	LS	1
612-30.01	TRUCK OR TRAILER MOUNTED ATTENUATOR (TMA)	LS	1
902-99.01	TRAFFIC SIGNAL MAINTENANCE AND PROGRAMMING	LS	1
902-99.02	ATC TRAFFIC SIGNAL CONTROLLER	EA	38
902-99.03	TRAFFIC SIGNAL VIDEO DETECTION SYSTEM (3 CAMERAS)	EA	11
902-99.04	TRAFFIC SIGNAL VIDEO DETECTION SYSTEM (4 CAMERAS)	EA	27
902-99.05	TRAFFIC SIGNAL ADVANCED DETECTION SYSTEM (2 UNITS)	EA	19
902-99.06	TRAFFIC SIGNAL ADVANCED DETECTION SYSTEM (3 UNITS)	EA	9
902-99.07	TRAFFIC SIGNAL ADVANCED DETECTION SYSTEM (4 UNITS)	EA	10
902-99.09	3 INCH CONDUIT, RIGID, IN-TRENCH OR PUSHED	LF	100
902-99.10	CONDUIT REPAIR	LF	100
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	38

QUANTITY SHEET 1 OF 2

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024
ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 2
COUNTY ST. LOUIS
JOB NO. JSL0179
CONTRACT ID.

PROJECT NO.
BRIDGE NO.

DATE	DESCRIPTION
04/16/24	PRELIMINARY PLANS
06/21/24	FINAL PLANS

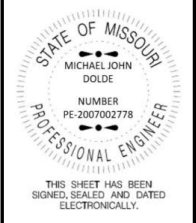
DATE
04/16/24
06/21/24

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.



DATE PREPARED 06/21/2024, ROUTE 180, STATE MO, DISTRICT SL, SHEET NO. 3, COUNTY ST. LOUIS, JOB NO. JSL0179, CONTRACT ID.

DESCRIPTION PRELIMINARY PLANS, FINAL PLANS

DATE 04/16/24, 06/21/24, MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION, DATE DESCRIPTION

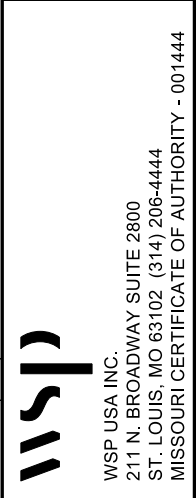


Table with columns: SIGN, SIZE, AREA, QTY, TOTAL, RELOC, SIGN NUM., DESCRIPTION. Includes sections for WARNING SIGNS, GUIDE SIGNS, REGULATORY SIGNS, and MISCELLANEOUS SIGNS.

Table with columns: SIGN, SIZE, AREA, QTY, TOTAL, RELOC, SIGN NUM., DESCRIPTION. Includes sections for GUIDE SIGNS, REGULATORY SIGNS, and MISCELLANEOUS SIGNS.

Table with columns: ITEM NUMBER, TOTAL QTY, DESCRIPTION. Lists various traffic control items like IMPACT ATTENUATOR, FLASHING ARROW PANEL, etc.

** ITEM NOT INCLUDED IN TEMP. TRAFFIC CONTROL LUMP SUM BID ITEM

DISCLAIMER THE PROFESSIONAL WHOSE SIGNATURE AND PERSONAL SEAL APPEAR HEREON ASSUMES RESPONSIBILITY ONLY FOR WHAT APPEARS ON THIS PAGE, AND DISCLAIMS (PURSUANT TO SECTION 327.411 RSMO) SPECIFICATION, ESTIMATES, REPORTS, OR OTHER DOCUMENTS OR INSTRUMENTS NOT SEALED BY THE UNDERSIGNED PROFESSIONAL RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE PROJECT TO WHICH THIS PAGE REFERS.

QUANTITY SHEET 2 OF 2, ST. LOUIS COUNTY ROUTE 180 SIGNAL IMPROVEMENTS

NOTE: ALL TRAFFIC CONTROL ARE INCLUDED IN PAY ITEM 616-99.01, LUMP SUM TEMPORARY TRAFFIC CONTROL UNLESS NOTED OTHERWISE IN THE PLANS. THESE QUANTITIES ARE ONLY AN ESTIMATE & ARE SUBJECT TO CHANGE BASED UPON FIELD CONDITIONS.

SIGN AND DEVICE LOCATION WILL BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.

* NO DIRECT PAYMENT WILL BE MADE FOR RELOCATING OR COVERING/UNCOVERING EXISTING OR TCP SIGNS UNLESS SPECIFIED.

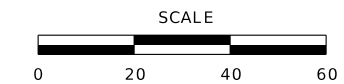
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REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	4	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.



- (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.

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 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS

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

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 06/21/2024	
ROUTE 180	STATE MO
DISTRICT SL	SHEET NO. 4
COUNTY ST. LOUIS	
JOB NO. JSL0179	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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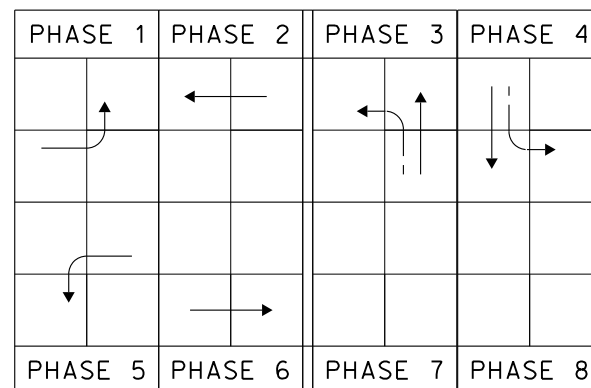
POWER SUPPLY													
LOCATION			POWER SUPPLY ASSEMBLY		CIRCUIT BREAKER TRIP RATING*				LIGHTING CONTROL * (ON POWER SUPPLY)		SERVICE POLE		
APPROACH	STATION	OFFSET	DRAWING 902.15	DRAWING	CONTROLLER		POWER SUPPLY DISCONNECT		120 VOLT CONTROL CABINET		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY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

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	NEMA		170		TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E EV DOUBLE			332 336S BITRAN WAPITI		
			MO 180 & PENNRIDGE-BOENKER	U.I.P.	U.I.P.					I		II	MASTER		LOCAL				1	

NEMA DETECTOR ASSIGNMENT									
CARD POSITION									
	1	2	3	4	5	6	7	8	
CHANNEL	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
		U.I.P.					
9	10	11	12	13	14	15	16
		U.I.P.					



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
31	NB (PHASE 3)		1
32	NB (PHASE 3)		1
41	SB (PHASE 4)		1
42	SB (PHASE 4)		1
51	WB (PHASE 5)		1
52	WB (PHASE 5)		1
61	EB (PHASE 6)		1
62	EB (PHASE 6)		1
63	EB (PHASE 6)		1
23	WB ADVANCE (PHASE 2)	1	
24	WB ADVANCE (PHASE 2)	1	
33	NB ADVANCE (PHASE 3)	1	
34	NB ADVANCE (PHASE 3)	1	
43	SB ADVANCE (PHASE 4)	1	
64	EB ADVANCE (PHASE 6)	1	
65	EB ADVANCE (PHASE 6)	1	
66	EB ADVANCE (PHASE 6)	1	
TOTAL		8	12

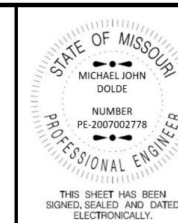
* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.

- (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.

MO 180 & PENNRIDGE-BOENKER
INTERSECTION

TRAFFIC SIGNAL SHEET 2 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024

ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 5

COUNTY
ST. LOUIS

JOB NO.
JSL0179
CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		



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

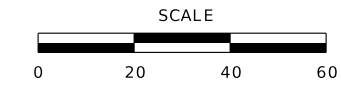
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REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	3	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.

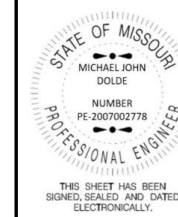


- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
- (2) THE CONTRACTOR SHALL REMOVE THE EXISTING VIDEO 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.

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 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024

ROUTE 180 STATE MO

DISTRICT SL SHEET NO. 6

COUNTY ST. LOUIS

JOB NO. JSL0179

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

DATE	DESCRIPTION
04/16/24	PRELIMINARY PLANS
06/21/24	FINAL PLANS

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
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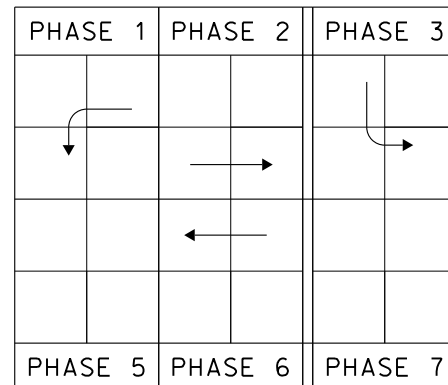
POWER SUPPLY													
LOCATION			POWER SUPPLY ASSEMBLY		CIRCUIT BREAKER TRIP RATING*				LIGHTING CONTROL * (ON POWER SUPPLY)		SERVICE POLE		
APPROACH	STATION	OFFSET	DRAWING 902.15	DRAWING	CONTROLLER		POWER SUPPLY DISCONNECT		120 VOLT CONTROL CABINET		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS					LIGHTING
U.I.P.			Type	U.I.P.	15 Amps	Amps	Amps	Amps			Amps	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	NEMA 170		NEMA 170		TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E EV DOUBLE			332 336S BITRAN WAPITI		
							I	II	MASTER	LOCAL		NEMA	170							
MO 180 & I-270 SB RAMP	U.I.P.	U.I.P.				1														

NEMA DETECTOR ASSIGNMENT									
CARD POSITION									
	1	2	3	4	5	6	7	8	
CHANNEL	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
			U.I.P.				
9	10	11	12	13	14	15	16
			U.I.P.				



DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
10	WB (PHASE 1)		1
21	EB (PHASE 2)		1
22	EB (PHASE 2)		1
23	EB (PHASE 2)		1
31	SB (PHASE 3)		1
32	SB (PHASE 3)		1
61	WB (PHASE 6)		1
62	WB (PHASE 6)		1
24	EB ADVANCE (PHASE 2)	1	
25	EB ADVANCE (PHASE 2)	1	
33	SB ADVANCE (PHASE 3)	1	
34	SB ADVANCE (PHASE 3)	1	
63	WB ADVANCE (PHASE 6)	1	
64	WB ADVANCE (PHASE 6)	1	
TOTAL		6	8

* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.

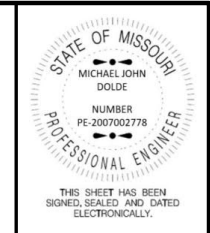
- (1) CABLING FOR THE NEW VIDEO DETECTION AND RADAR DETECTION SHOULD BE ROUTED THROUGH EXISTING CONDUITS. CONDUITS THAT ARE DAMAGED, COLLAPSED, OR UNUSABLE SHALL BE MARKED ON THE AS-BUILT PLANS PER JSP S.
- (2) THE INSTALLATION OF ALL EQUIPMENT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION MISSOURI 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.

MO 180 & I-270 SB RAMP

INTERSECTION

TRAFFIC SIGNAL SHEET 4 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024

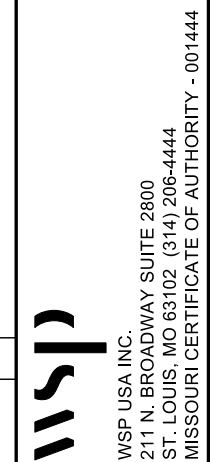
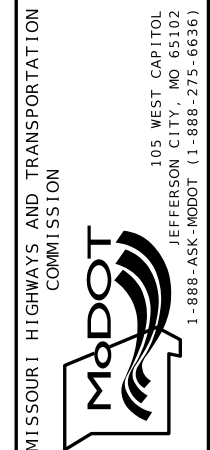
ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 7

COUNTY ST. LOUIS
JOB NO. JSL0179
CONTRACT ID.

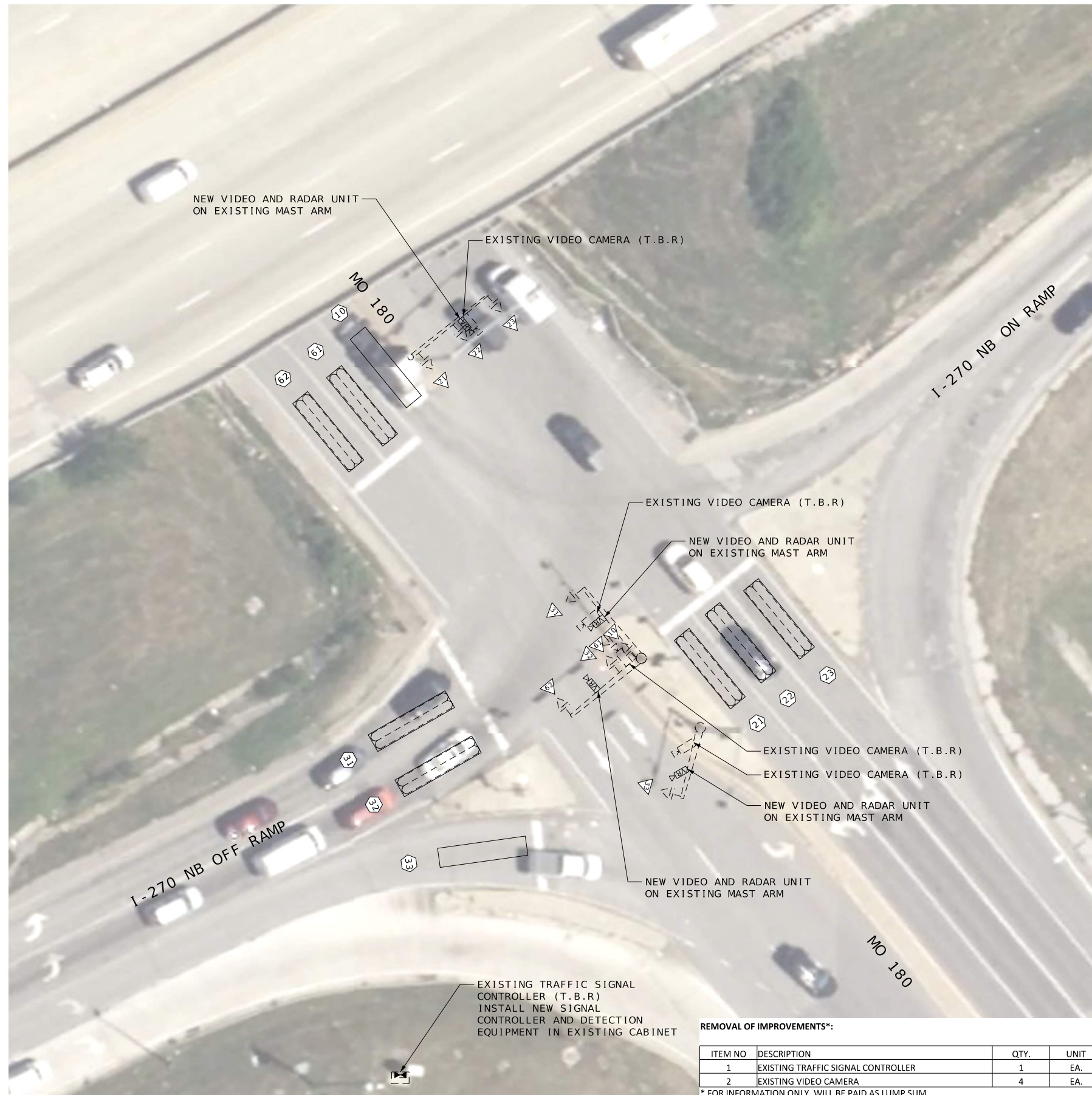
PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		



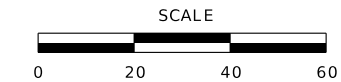
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



REMOVAL OF IMPROVEMENTS*

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	4	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.

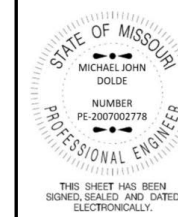


- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
- (2) THE CONTRACTOR SHALL REMOVE THE EXISTING VIDEO 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.

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 5 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024

ROUTE 180 STATE MO

DISTRICT SL SHEET NO. 8

COUNTY ST. LOUIS

JOB NO. JSL0179

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

DATE

04/16/24

06/21/24

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.

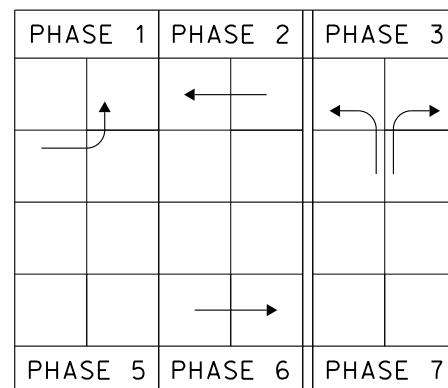
POWER SUPPLY													
LOCATION			POWER SUPPLY ASSEMBLY		CIRCUIT BREAKER TRIP RATING*				LIGHTING CONTROL * (ON POWER SUPPLY)		SERVICE POLE		
APPROACH	STATION	OFFSET	DRAWING 902.15	DRAWING	CONTROLLER		POWER SUPPLY DISCONNECT		120 VOLT CONTROL CABINET		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY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

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	NEMA	170	NEMA	170	TYPE	12C/7C HARDWARE (1)	TIME BASE	CLOSED LOOP			FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI
			MO 180 & I-270 NB RAMP	U.I.P.	U.I.P.			1			I II	MASTER LOCAL					1			

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

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

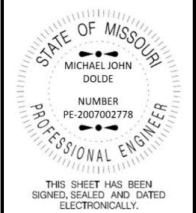
NEMA LOAD SWITCH ASSIGNMENTS							
1	2	3	4	5	6	7	8
			U.I.P.				
9	10	11	12	13	14	15	16
			U.I.P.				



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
31	NB (PHASE 3)		1
32	NB (PHASE 3)		1
33	NB (PHASE 3)		1
61	EB (PHASE 6)		1
62	EB (PHASE 6)		1
24	WB ADVANCE (PHASE 2)	1	
25	WB ADVANCE (PHASE 2)	1	
34	NB ADVANCE (PHASE 3)	1	
35	NB ADVANCE (PHASE 3)	1	
63	EB ADVANCE (PHASE 6)	1	
64	EB ADVANCE (PHASE 6)	1	
TOTAL		6	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.
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- (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.



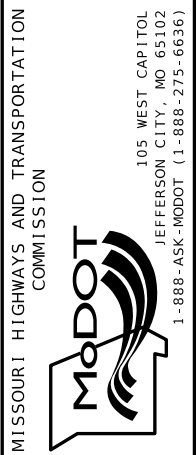
DATE PREPARED
06/21/2024

ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 9

COUNTY ST. LOUIS
JOB NO. JSL0179
CONTRACT ID.

PROJECT NO.
BRIDGE NO.

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24



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

MO 180 & I-270 NB RAMP
INTERSECTION
TRAFFIC SIGNAL SHEET 6 OF 78
ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS

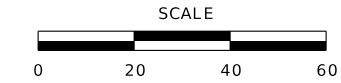
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	4	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.

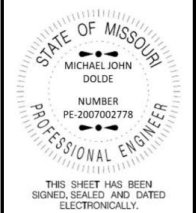


- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
- (2) THE CONTRACTOR SHALL REMOVE THE EXISTING VIDEO 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.

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 7 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024
ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 10
COUNTY ST. LOUIS
JOB NO. JSL0179
CONTRACT ID.

PROJECT NO.
BRIDGE NO.

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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.

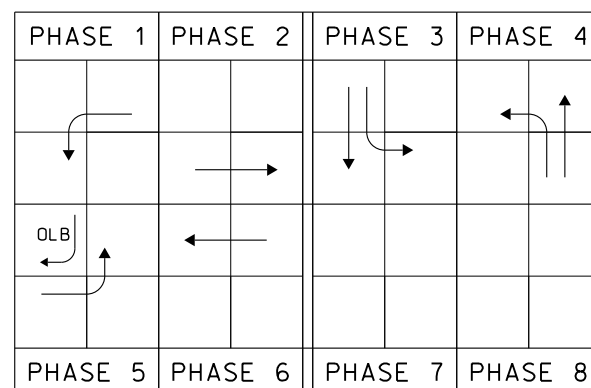
POWER SUPPLY													
LOCATION			POWER SUPPLY ASSEMBLY		CIRCUIT BREAKER TRIP RATING*				LIGHTING CONTROL * (ON POWER SUPPLY)		SERVICE POLE		
APPROACH	STATION	OFFSET	DRAWING 902.15	DRAWING	CONTROLLER		POWER SUPPLY DISCONNECT		120 VOLT CONTROL CABINET		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS					LIGHTING
U.I.P.			Type	U.I.P.	15 Amps	Amps	Amps	Amps			Ci.	Ft.	
			Type		15 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	NEMA	170	NEMA	170	TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI	
							I	II	MASTER	LOCAL		NEMA	170									
MO 180 & RTE B- MARESHALL	U.I.P.	U.I.P.				1																

NEMA DETECTOR ASSIGNMENT									
CARD POSITION									
	1	2	3	4	5	6	7	8	
CHANNEL	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
			U.I.P.				
9	10	11	12	13	14	15	16
			U.I.P.				



DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
10	WB (PHASE 1)		1
21	EB (PHASE 2)		1
22	EB (PHASE 2)		1
31	SB (PHASE 3)		1
32	SB (PHASE 3)		1
33	SB (PHASE 3)		1
41	NB (PHASE 4)		1
42	NB (PHASE 4)		1
43	NB (PHASE 4)		1
51	EB (PHASE 5)		1
52	EB (PHASE 5)		1
61	WB (PHASE 6)		1
62	WB (PHASE 6)		1
23	EB ADVANCE (PHASE 2)	1	
24	EB ADVANCE (PHASE 2)	1	
34	SB ADVANCE (PHASE 3)	1	
35	SB ADVANCE (PHASE 3)	1	
44	NB ADVANCE (PHASE 4)	1	
63	WB ADVANCE (PHASE 6)	1	
64	WB ADVANCE (PHASE 6)	1	
TOTAL		7	13

* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.

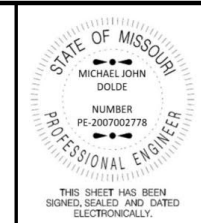
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- (2) THE INSTALLATION OF ALL EQUIPMENT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, DRAWINGS, AND ENGINEERING POLICY GUIDE.
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- (7) 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.

MO 180 & RTE B- MARESHALL

INTERSECTION

TRAFFIC SIGNAL SHEET 8 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024

ROUTE 180 STATE MO

DISTRICT SL SHEET NO. 11

COUNTY ST. LOUIS

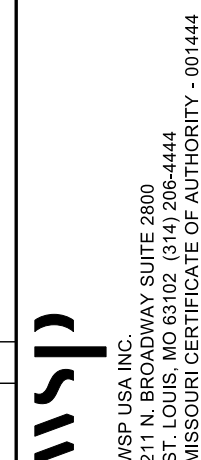
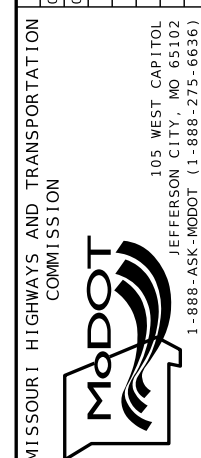
JSL0179

CONTRACT ID.

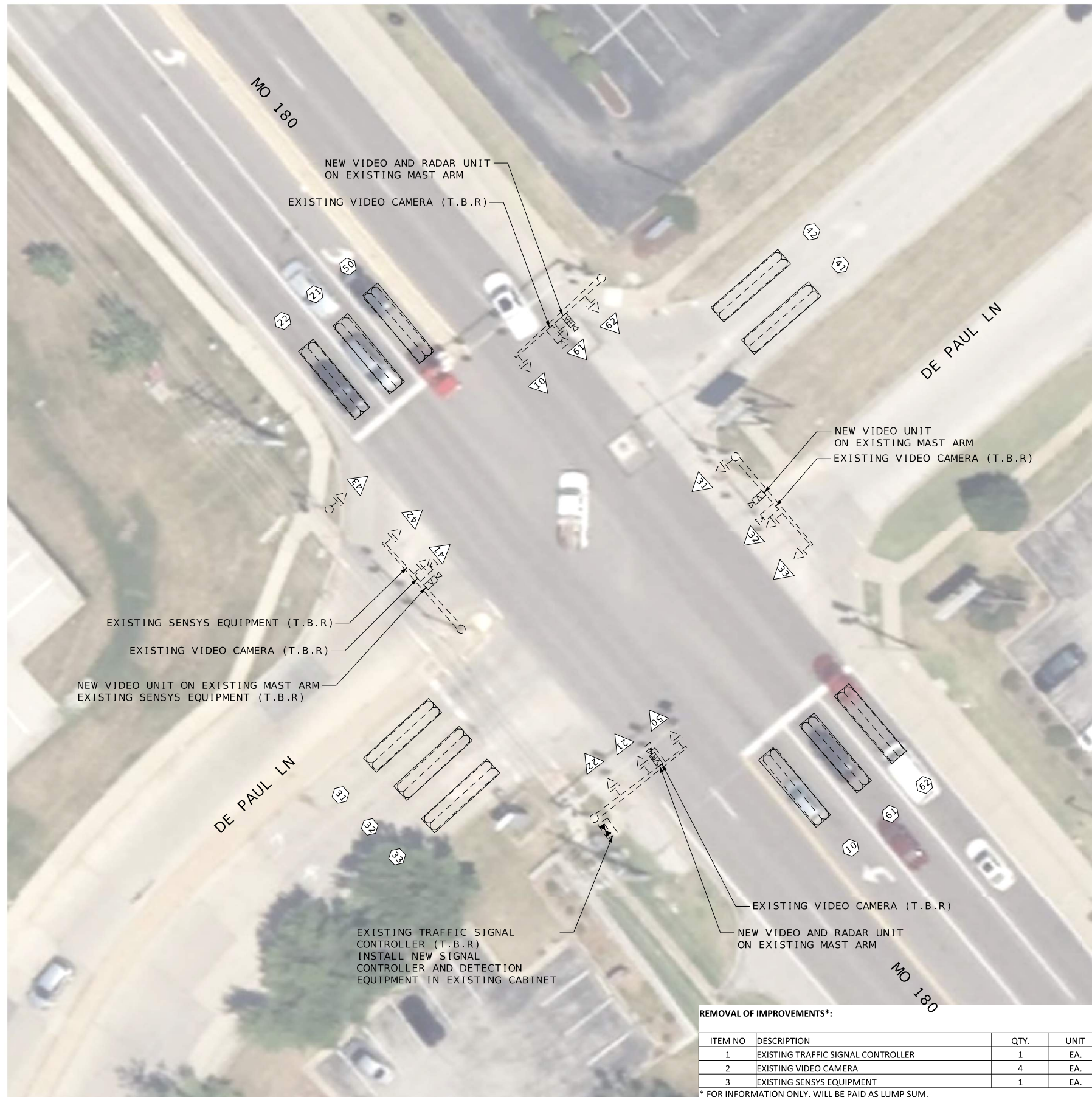
PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		



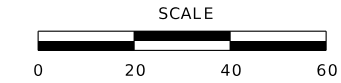
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REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	4	EA.
3	EXISTING SENSYS EQUIPMENT	1	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.



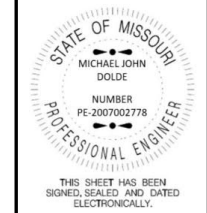
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- (2) THE CONTRACTOR SHALL REMOVE THE EXISTING VIDEO DETECTION EQUIPMENT INCLUDING ANY UNUSED CAMERAS, CABINET HARDWARE, MOUNTING HARDWARE/BRACKETS AND CABLING. THE EXISTING VIDEO DETECTION EQUIPMENT SHALL BE DELIVERED TO THE MODOT SIGNAL SHOP PER 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) THE CONTRACTOR SHALL REMOVE SENSYS EQUIPMENT (ACCESS POINTS, REPEATERS, AND EQUIPMENT IN THE CABINET) AS SPECIFIED IN JSP T. PAYMENT FOR REMOVAL WILL BE INCLUDED WITH REMOVAL OF IMPROVEMENTS (LS).

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 9 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024

ROUTE 180 STATE MO

DISTRICT SL SHEET NO. 12

COUNTY ST. LOUIS

JOB NO. JSL0179

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS					LIGHTING
U.I.P.			Type	U.I.P.	15 Amps						Amps	Ct. Ft.	U.I.P.
			Type		15 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	NEMA		170		TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E EV DOUBLE			332 336S BITRAN WAPITI		
			I	II	MASTER	LOCAL	NEMA	170	1											
MO 180 & DEPAUL CENTER	U.I.P.	U.I.P.																		

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

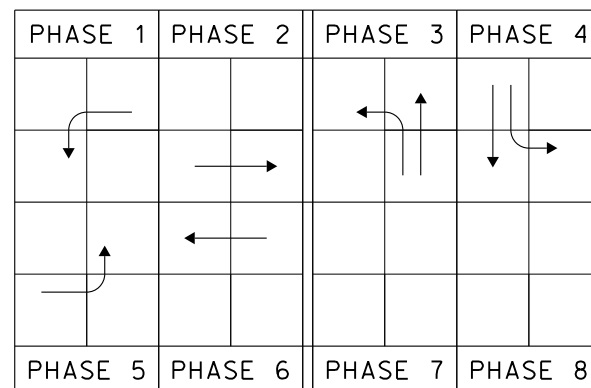
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
10	WB (PHASE 1)		1
21	EB (PHASE 2)		1
22	EB (PHASE 2)		1
31	NB (PHASE 3)		1
32	NB (PHASE 3)		1
33	NB (PHASE 3)		1
41	SB (PHASE 4)		1
42	SB (PHASE 4)		1
50	EB (PHASE 5)		1
61	WB (PHASE 6)		1
62	WB (PHASE 6)		1
23	EB ADVANCE (PHASE 2)	1	
24	EB ADVANCE (PHASE 2)	1	
63	WB ADVANCE (PHASE 6)	1	
64	WB ADVANCE (PHASE 6)	1	
TOTAL		4	11

* 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.

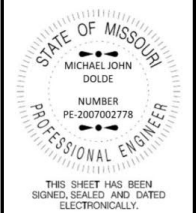
NEMA LOAD SWITCH ASSIGNMENTS											
1	2	3	4	5	6	7	8	9	10	11	12
				U	.	I	.	P	.		



MO 180 & DEPAUL CENTER
INTERSECTION

TRAFFIC SIGNAL SHEET 10 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024

ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 13

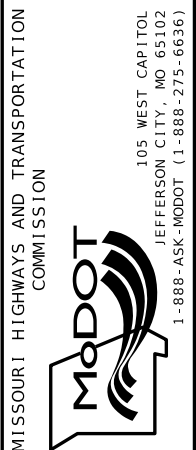
COUNTY ST. LOUIS

JOB NO. JSL0179
CONTRACT ID.

PROJECT NO.

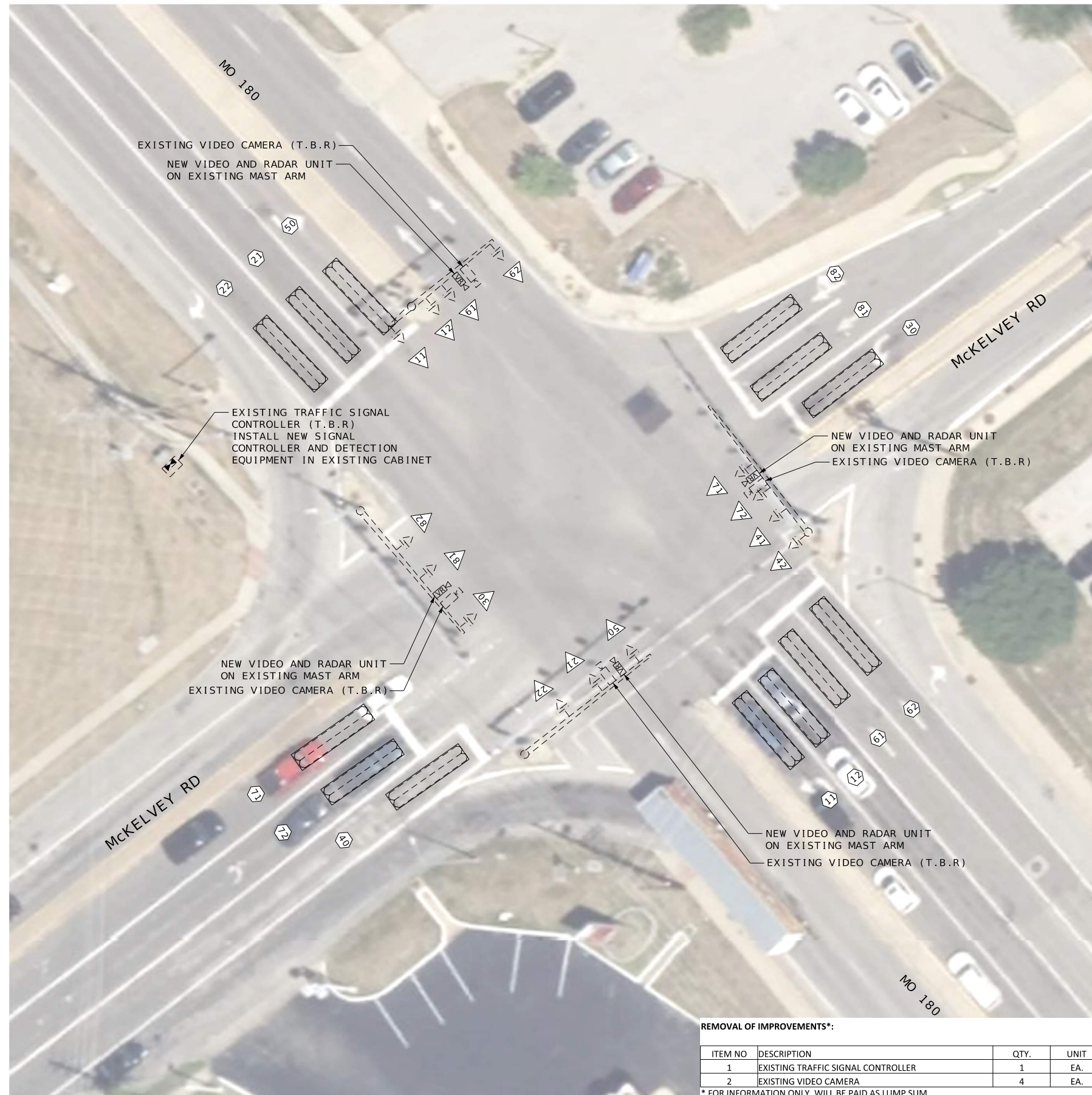
BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		



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.



REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	4	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.

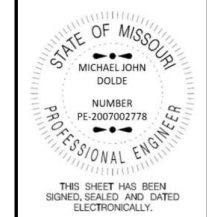
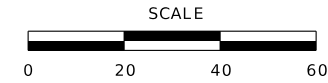
TRAFFIC SIGNALS LEGEND

	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

- (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.

TRAFFIC SIGNAL SHEET 11 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS

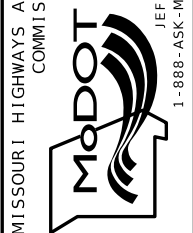


DATE PREPARED
06/21/2024
ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 14
COUNTY ST. LOUIS
JOB NO. JSL0179
CONTRACT ID.

PROJECT NO.
BRIDGE NO.

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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.

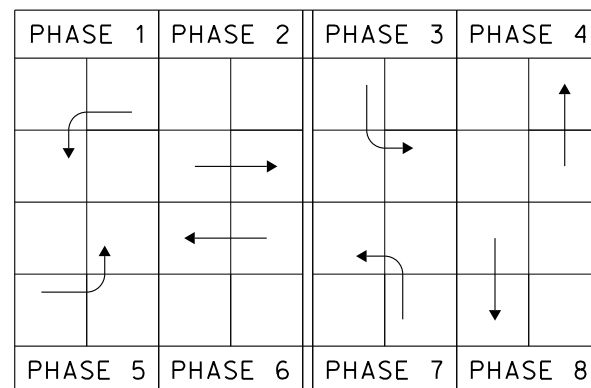
POWER SUPPLY													
LOCATION			POWER SUPPLY ASSEMBLY		CIRCUIT BREAKER TRIP RATING*				LIGHTING CONTROL * (ON POWER SUPPLY)		SERVICE POLE		
APPROACH	STATION	OFFSET	DRAWING 902.15	DRAWING	CONTROLLER		POWER SUPPLY DISCONNECT		120 VOLT CONTROL CABINET		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS LIGHTING					
U.I.P.			Type	U.I.P.	15 Amps	Amps	Amps	Amps			Ci.	Ft.	
			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	NEMA		170		TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E			332		336S		BITRAN		WAPITI			
			MO 180 & MCKELVEY	U.I.P.	U.I.P.					I		II	MASTER		LOCAL												

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

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

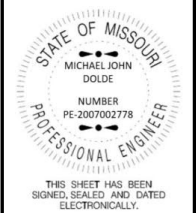
NEMA LOAD SWITCH ASSIGNMENTS							
1	2	3	4	5	6	7	8
			U.I.P.				
9	10	11	12	13	14	15	16
			U.I.P.				



DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
11	WB (PHASE 1)		1
12	WB (PHASE 1)		1
21	EB (PHASE 2)		1
22	EB (PHASE 2)		1
30	SB (PHASE 3)		1
40	NB (PHASE 4)		1
50	EB (PHASE 5)		1
61	WB (PHASE 6)		1
62	WB (PHASE 6)		1
71	NB (PHASE 7)		1
72	NB (PHASE 7)		1
81	SB (PHASE 8)		1
82	SB (PHASE 8)		1
23	EB ADVANCE (PHASE 2)	1	
24	EB ADVANCE (PHASE 2)	1	
41	NB ADVANCE (PHASE 4)	1	
63	WB ADVANCE (PHASE 6)	1	
64	WB ADVANCE (PHASE 6)	1	
83	SB ADVANCE (PHASE 8)	1	
84	SB ADVANCE (PHASE 8)	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
06/21/2024

ROUTE 180 STATE MO

DISTRICT SL SHEET NO. 15

COUNTY ST. LOUIS

JOB NO. JSL0179

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24



MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

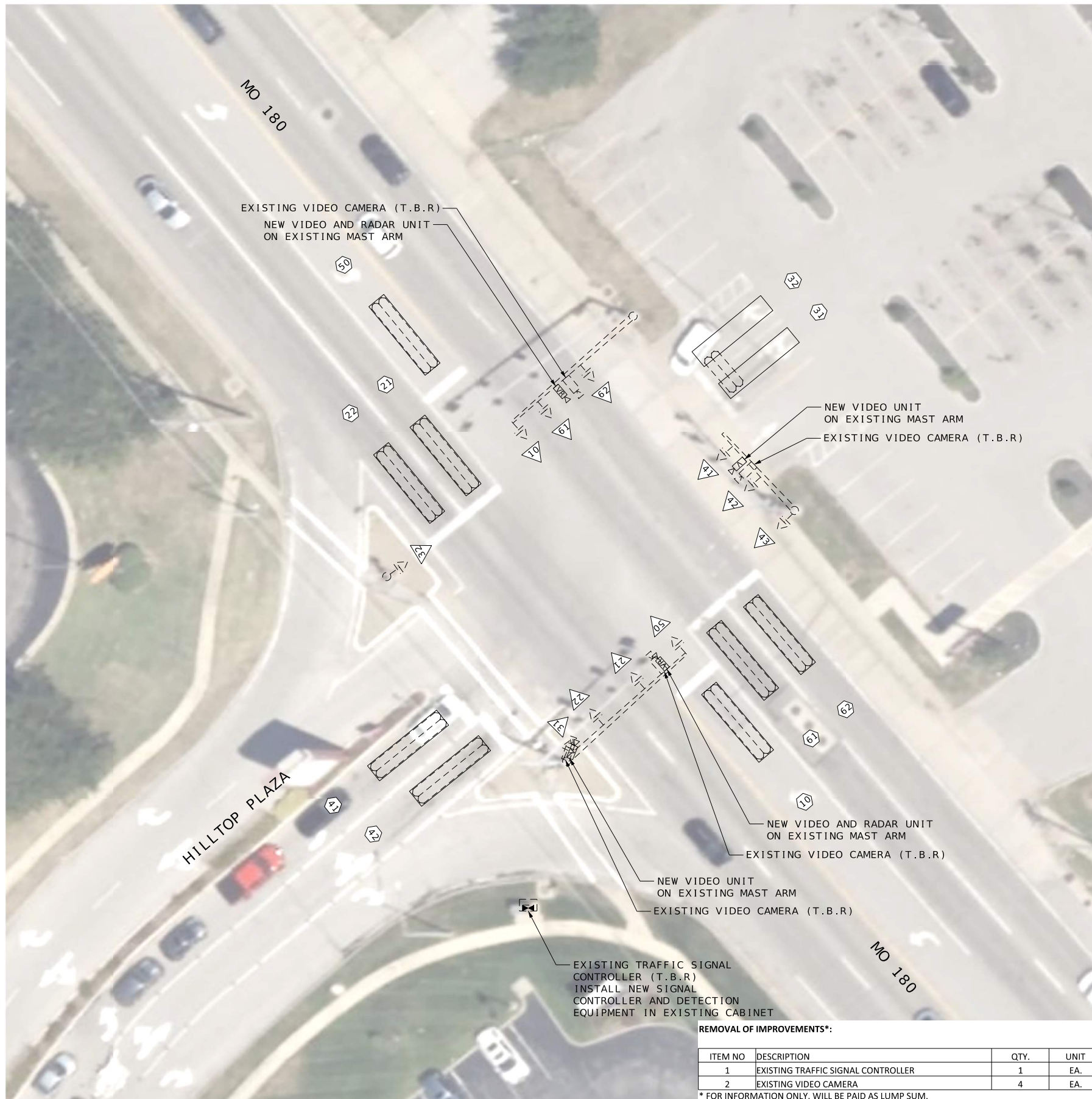
WSP USA INC.
211 N. BROADWAY SUITE 2800
ST. LOUIS, MO 63102 (314) 206-4444
MISSOURI CERTIFICATE OF AUTHORITY - 001444

MO 180 & MCKELVEY
INTERSECTION

TRAFFIC SIGNAL SHEET 12 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS

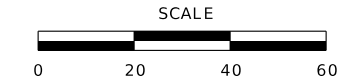
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	4	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.

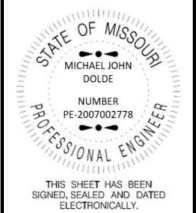


- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
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- (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 13 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS

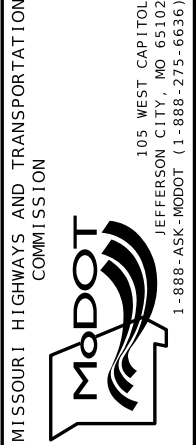


DATE PREPARED
06/21/2024
ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 16
COUNTY ST. LOUIS
JOB NO. JSL0179
CONTRACT ID.

PROJECT NO.
BRIDGE NO.

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION



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		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS					
U.I.P.			Type	U.I.P.	15 Amps								
			Type		15 Amps								

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	NEMA	170	NEMA	170	TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI	
							I	II	MASTER	LOCAL		NEMA	170									
MO 180 & HILLTOP PLAZA	U.I.P.	U.I.P.				1																

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

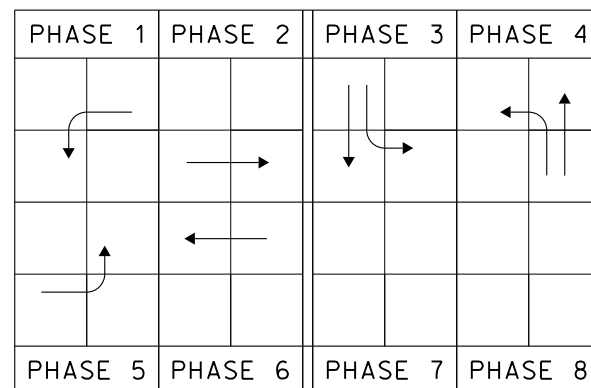
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
10	WB (PHASE 1)		1
21	EB (PHASE 2)		1
22	EB (PHASE 2)		1
31	SB (PHASE 3)		1
32	SB (PHASE 3)		1
41	NB (PHASE 4)		1
42	NB (PHASE 4)		1
50	EB (PHASE 5)		1
61	WB (PHASE 6)		1
62	WB (PHASE 6)		1
23	EB ADVANCE (PHASE 2)	1	
24	EB ADVANCE (PHASE 2)	1	
63	WB ADVANCE (PHASE 6)	1	
64	WB ADVANCE (PHASE 6)	1	
TOTAL		4	10

* 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.						

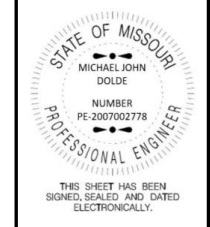


MO 180 & HILLTOP PLAZA

INTERSECTION

TRAFFIC SIGNAL SHEET 14 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024

ROUTE 180 STATE MO

DISTRICT SL SHEET NO. 17

COUNTY ST. LOUIS

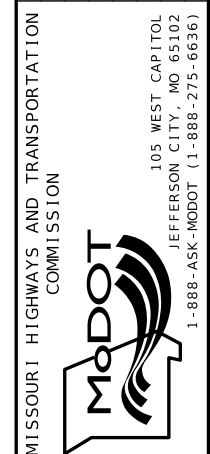
JOB NO. JSL0179

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		



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

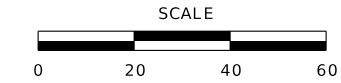
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	4	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.

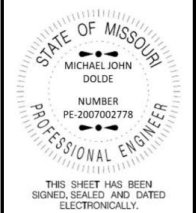


- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
- (2) THE CONTRACTOR SHALL REMOVE THE EXISTING VIDEO 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.

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 15 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024
ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 18
COUNTY ST. LOUIS
JOB NO. JSL0179
CONTRACT ID.

PROJECT NO.
BRIDGE NO.

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS					
U.I.P.			Type	U.I.P.	15 Amps								
			Type		15 Amps								

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	NEMA	170	NEMA	170	TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI		
							I	II	MASTER	LOCAL		NEMA	170										
MO 180 & HARMONY	U.I.P.	U.I.P.				1																	

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

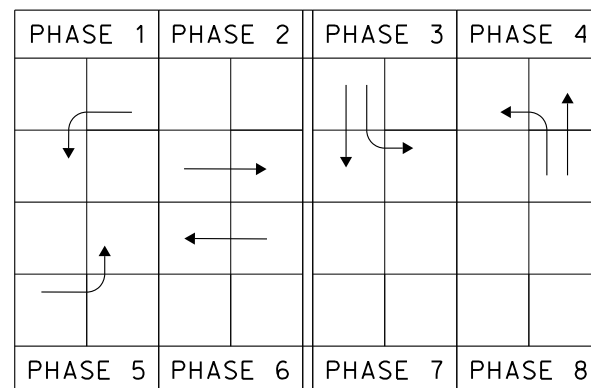
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
10	WB (PHASE 1)		1
21	EB (PHASE 2)		1
22	EB (PHASE 2)		1
31	SB (PHASE 3)		1
32	SB (PHASE 3)		1
41	NB (PHASE 4)		1
42	NB (PHASE 4)		1
50	EB (PHASE 5)		1
61	WB (PHASE 6)		1
62	WB (PHASE 6)		1
23	EB ADVANCE (PHASE 2)	1	
24	EB ADVANCE (PHASE 2)	1	
63	WB ADVANCE (PHASE 6)	1	
64	WB ADVANCE (PHASE 6)	1	
TOTAL		4	10

* 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.						

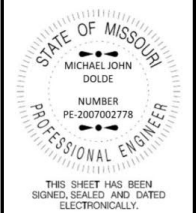


MO 180 & HARMONY

INTERSECTION

TRAFFIC SIGNAL SHEET 16 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024

ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 19

COUNTY ST. LOUIS

JSL0179
CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		

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

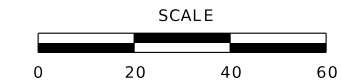
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	3	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.

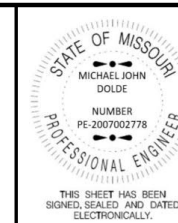


- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
- (2) THE CONTRACTOR SHALL REMOVE THE EXISTING VIDEO 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.

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 17 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024

ROUTE STATE
180 MO

DISTRICT SHEET NO.
SL 20

COUNTY
ST. LOUIS

JOB NO.
JSL0179

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

DATE	DESCRIPTION
04/16/24	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
06/21/24	

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		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS					
U.I.P.			Type	U.I.P.	15 Amps								
			Type		15 Amps								

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	NEMA	170	NEMA	170	TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI		
							I	II	MASTER	LOCAL		NEMA	170										
MO 180 & I-70 WB RAMP	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	.		

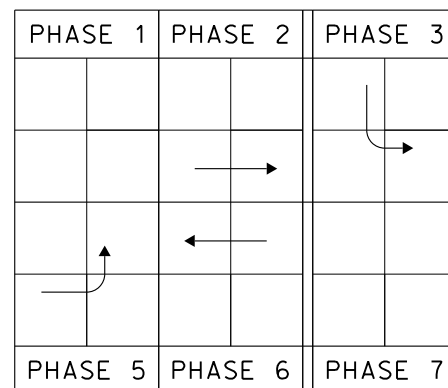
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
21	EB (PHASE 2)		1
22	EB (PHASE 2)		1
30	SB (PHASE 3)		1
50	EB (PHASE 5)		1
61	WB (PHASE 6)		1
62	WB (PHASE 6)		1
23	EB ADVANCE (PHASE 2)	1	
24	EB ADVANCE (PHASE 2)	1	
31	SB ADVANCE (PHASE 3)	1	
63	WB ADVANCE (PHASE 6)	1	
64	WB ADVANCE (PHASE 6)	1	
TOTAL		5	6

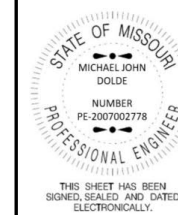
* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.

- (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	.		



MO 180 & I-70 WB RAMP
 INTERSECTION
 TRAFFIC SIGNAL SHEET 18 OF 78
 ST. LOUIS COUNTY
 ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
 06/21/2024
 ROUTE 180 STATE MO
 DISTRICT SL SHEET NO. 21
 COUNTY ST. LOUIS
 JOB NO. JSL0179
 CONTRACT ID.

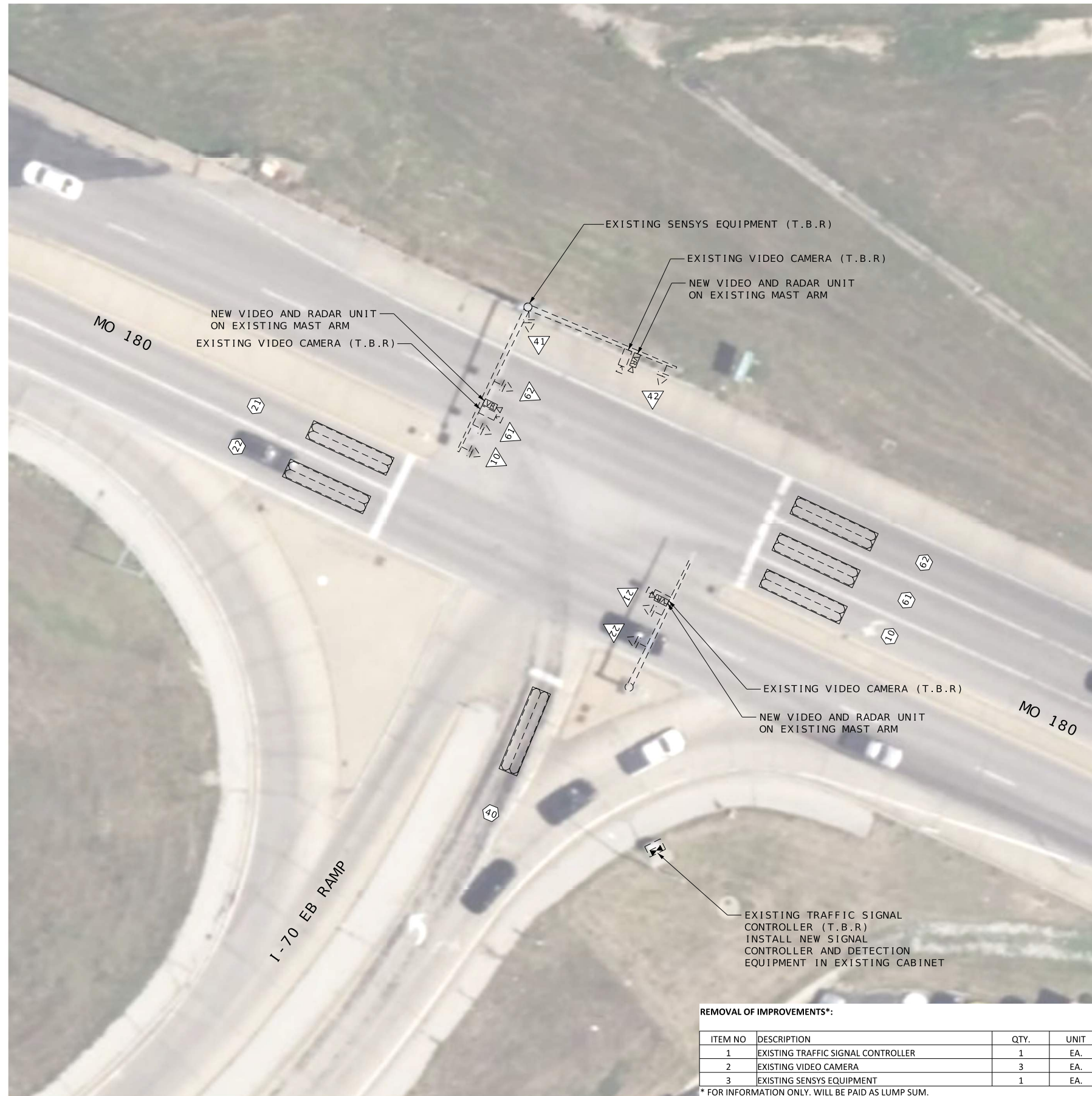
PROJECT NO.
 BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		



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

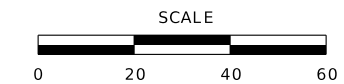
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	3	EA.
3	EXISTING SENSYS EQUIPMENT	1	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.



- (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) THE CONTRACTOR SHALL REMOVE SENSYS EQUIPMENT (ACCESS POINTS, REPEATERS, AND EQUIPMENT IN THE CABINET) AS SPECIFIED IN JSP T. PAYMENT FOR REMOVAL WILL BE INCLUDED WITH REMOVAL OF IMPROVEMENTS (LS).

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 19 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS

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

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 06/21/2024	
ROUTE 180	STATE MO
DISTRICT SL	SHEET NO. 22
COUNTY ST. LOUIS	
JOB NO. JSL0179	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS					LIGHTING
U.I.P.			Type	U.I.P.	15 Amps								
			Type		15 Amps								

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	NEMA	170	NEMA	170	TYPE		12C/7C HARDWARE (1)	TIME BASE	CLOSED LOOP			FIBER	E	EV	DOUBLE	332	336S	BITRAN
							I	II			NEMA	170								
MO 180 & I-70 EB RAMP	U.I.P.	U.I.P.			1															

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

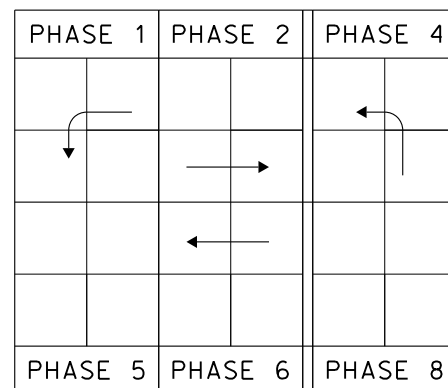
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
10	WB (PHASE 1)		1
21	EB (PHASE 2)		1
22	EB (PHASE 2)		1
40	NB (PHASE 4)		1
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62	WB (PHASE 6)		1
23	EB ADVANCE (PHASE 2)	1	
24	EB ADVANCE (PHASE 2)	1	
41	NB ADVANCE (PHASE 4)	1	
63	WB ADVANCE (PHASE 6)	1	
64	WB ADVANCE (PHASE 6)	1	
TOTAL		5	6

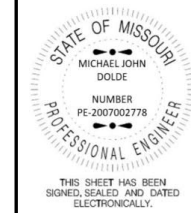
* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.

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- (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.						



MO 180 & I-70 EB RAMP
 INTERSECTION
 TRAFFIC SIGNAL SHEET 20 OF 78
 ST. LOUIS COUNTY
 ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024
 ROUTE 180 STATE MO
 DISTRICT SL SHEET NO. 23
 COUNTY ST. LOUIS
 JOB NO. JSL0179
 CONTRACT ID.

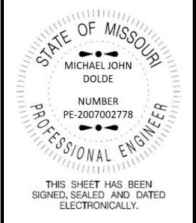
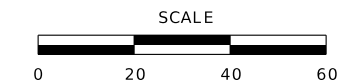
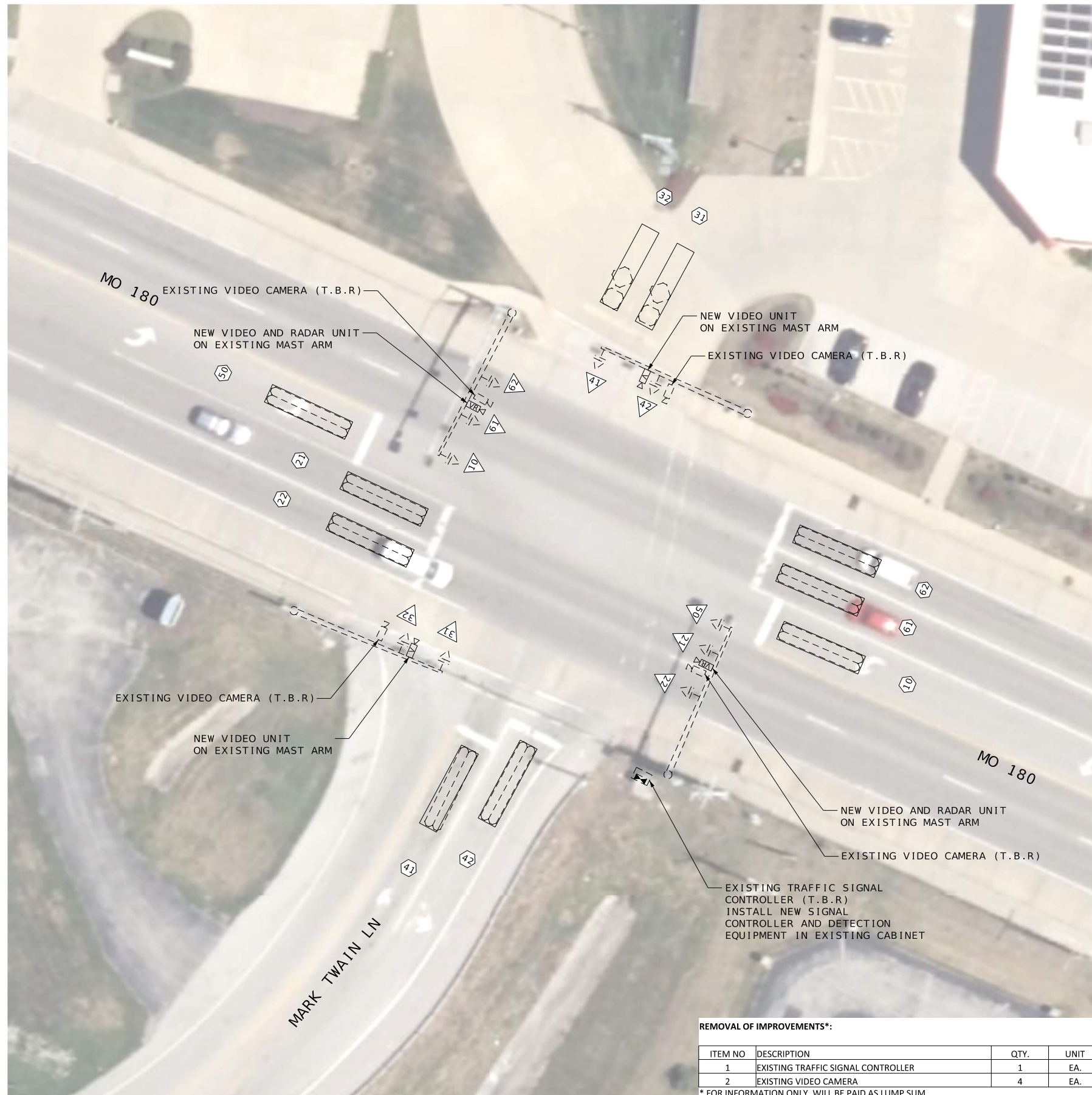
PROJECT NO.
 BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		



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.



DATE PREPARED		06/21/2024	
ROUTE	STATE	180	MO
DISTRICT	SHEET NO.	SL	24
COUNTY			
ST. LOUIS			
JOB NO.			
JSL0179			
CONTRACT ID.			

PROJECT NO.
BRIDGE NO.

DESCRIPTION
PRELIMINARY PLANS
FINAL PLANS

DATE
04/16/24
06/21/24

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

- (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.

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

REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	4	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.

TRAFFIC SIGNAL SHEET 21 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS

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		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS					
U.I.P.			Type	U.I.P.	15 Amps								
			Type		15 Amps								

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	NEMA	170	NEMA	170	TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI	
							I	II	MASTER	LOCAL		NEMA	170									
MO 180 & MARK TWAIN	U.I.P.	U.I.P.				1																

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

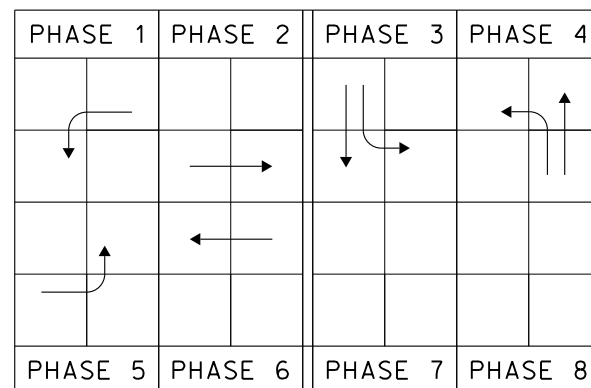
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
10	WB (PHASE 1)		1
21	EB (PHASE 2)		1
22	EB (PHASE 2)		1
31	SB (PHASE 3)		1
32	SB (PHASE 3)		1
41	NB (PHASE 4)		1
42	NB (PHASE 4)		1
50	EB (PHASE 5)		1
61	WB (PHASE 6)		1
62	WB (PHASE 6)		1
23	EB ADVANCE (PHASE 2)	1	
24	EB ADVANCE (PHASE 2)	1	
63	WB ADVANCE (PHASE 6)	1	
64	WB ADVANCE (PHASE 6)	1	
TOTAL		4	10

* 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.							

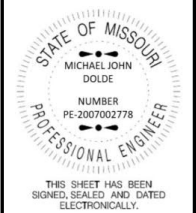


MO 180 & MARK TWAIN

INTERSECTION

TRAFFIC SIGNAL SHEET 22 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024

ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 25

COUNTY ST. LOUIS
JOB NO. JSL0179
CONTRACT ID.

PROJECT NO.
BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		

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

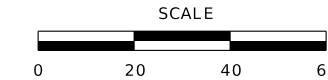
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	4	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.



- (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.

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 23 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS

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

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 06/21/2024	
ROUTE 180	STATE MO
DISTRICT SL	SHEET NO. 26
COUNTY ST. LOUIS	
JOB NO. JSL0179	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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.

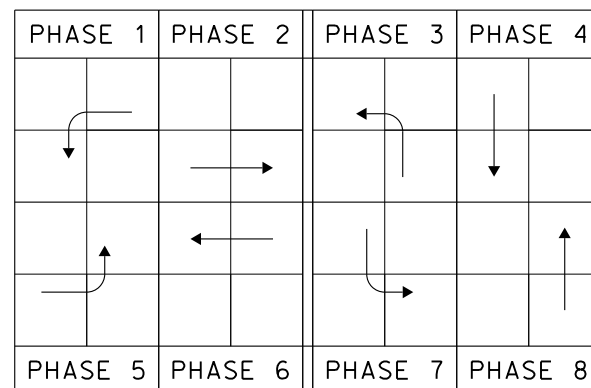
POWER SUPPLY													
LOCATION			POWER SUPPLY ASSEMBLY		CIRCUIT BREAKER TRIP RATING*				LIGHTING CONTROL * (ON POWER SUPPLY)		SERVICE POLE		
APPROACH	STATION	OFFSET	DRAWING 902.15	DRAWING	CONTROLLER		POWER SUPPLY DISCONNECT		120 VOLT CONTROL CABINET		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS					
U.I.P.			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	NEMA	170	NEMA	170	TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI		
							I	II	MASTER	LOCAL		NEMA	170										
MO 180 & FEE FEE	U.I.P.	U.I.P.				1																	

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

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

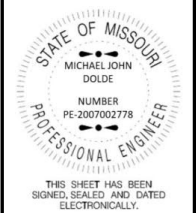
NEMA LOAD SWITCH ASSIGNMENTS							
1	2	3	4	5	6	7	8
			U.I.P.				
9	10	11	12	13	14	15	16
			U.I.P.				



DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
10	WB (PHASE 1)		1
21	EB (PHASE 2)		1
22	EB (PHASE 2)		1
30	NB (PHASE 3)		1
40	SB (PHASE 4)		1
50	EB (PHASE 5)		1
61	WB (PHASE 6)		1
62	WB (PHASE 6)		1
63	WB (PHASE 6)		1
70	SB (PHASE 7)		1
80	NB (PHASE 8)		1
23	EB ADVANCE (PHASE 2)	1	
24	EB ADVANCE (PHASE 2)	1	
41	SB ADVANCE (PHASE 8)	1	
64	WB ADVANCE (PHASE 6)	1	
65	WB ADVANCE (PHASE 6)	1	
81	NB ADVANCE (PHASE 4)	1	
TOTAL		6	11

* 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.
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- (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
06/21/2024

ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 27

COUNTY ST. LOUIS
JOB NO. JSL0179
CONTRACT ID.

PROJECT NO.
BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		

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 180 & FEE FEE
INTERSECTION
TRAFFIC SIGNAL SHEET 24 OF 78
ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS

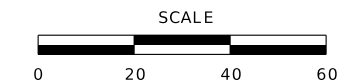
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	4	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.



- (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.

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 25 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS

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

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 06/21/2024	
ROUTE 180	STATE MO
DISTRICT SL	SHEET NO. 28
COUNTY ST. LOUIS	
JOB NO. JSL0179	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS					
U.I.P.			Type	U.I.P.	15 Amps								
			Type		15 Amps								

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	NEMA	170	NEMA	170	TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI	
							I	II	MASTER	LOCAL		NEMA	170									
MO 180 & HOME DEPOT	U.I.P.	U.I.P.			1									1								

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

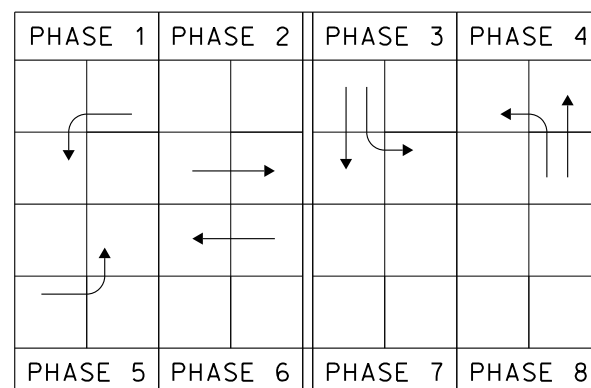
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
10	WB (PHASE 1)		1
21	EB (PHASE 2)		1
22	EB (PHASE 2)		1
23	EB (PHASE 2)		1
31	SB (PHASE 3)		1
32	SB (PHASE 3)		1
41	NB (PHASE 4)		1
42	NB (PHASE 4)		1
50	EB (PHASE 5)		1
61	WB (PHASE 6)		1
62	WB (PHASE 6)		1
24	EB ADVANCE (PHASE 2)	1	
25	EB ADVANCE (PHASE 2)	1	
26	EB ADVANCE (PHASE 2)	1	
63	WB ADVANCE (PHASE 6)	1	
64	WB ADVANCE (PHASE 6)	1	
TOTAL		5	11

* 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.							

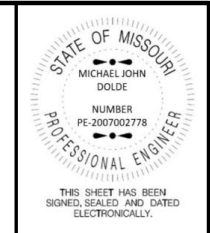


MO 180 & HOME DEPOT

INTERSECTION

TRAFFIC SIGNAL SHEET 26 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED

06/21/2024

ROUTE 180 STATE MO

DISTRICT SL SHEET NO. 29

COUNTY ST. LOUIS

JSL0179

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

PRELIMINARY PLANS

FINAL PLANS

DATE

04/16/24

06/21/24

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MoDOT

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MoDOT

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

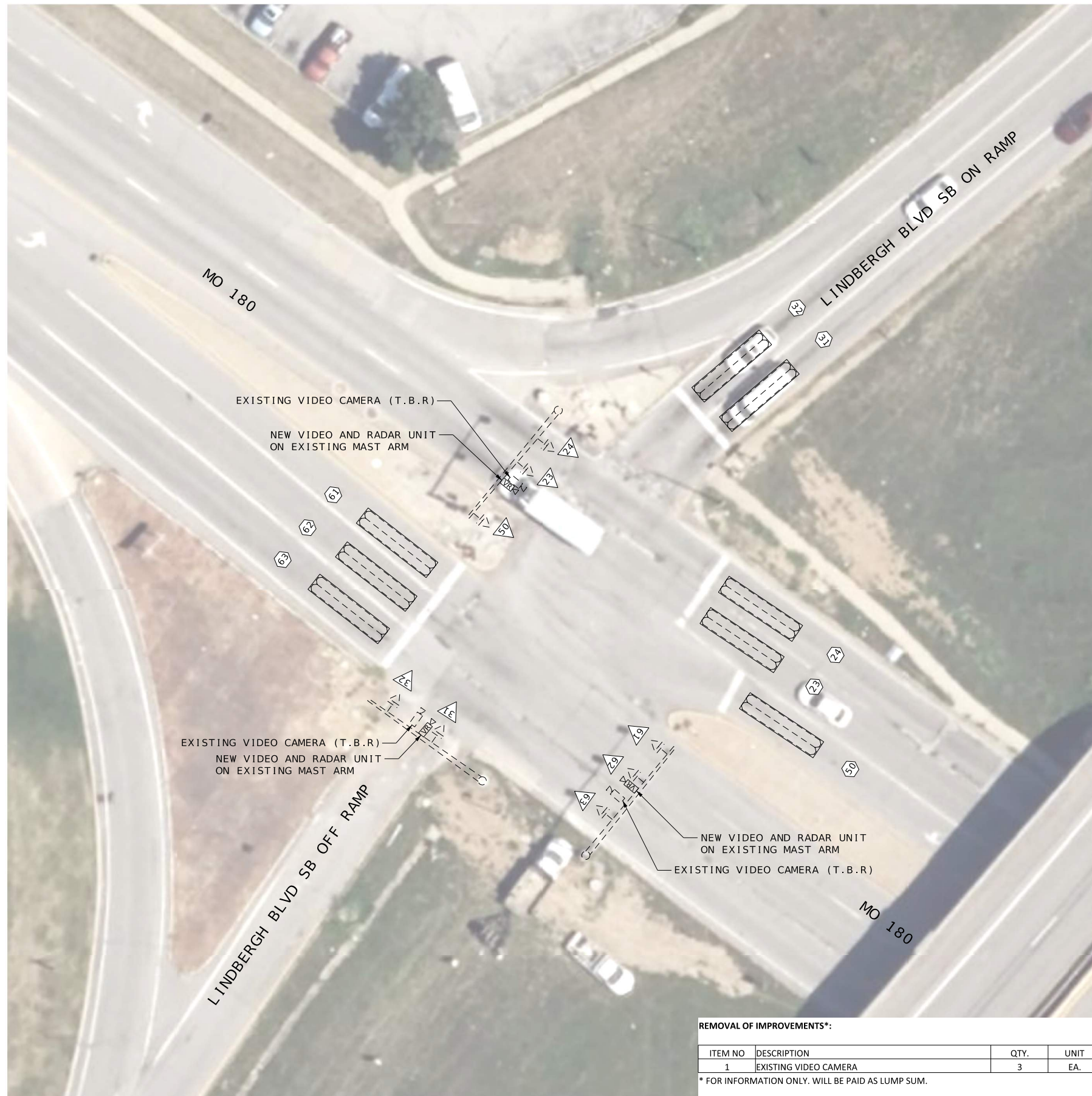
105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MoDOT

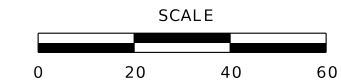
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION



REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING VIDEO CAMERA	3	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.

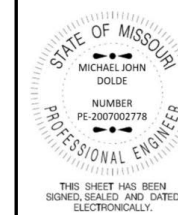


- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
- (2) THE CONTRACTOR SHALL REMOVE THE EXISTING VIDEO 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.

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 27 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024
ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 30
COUNTY ST. LOUIS
JOB NO. JSL0179
CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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



MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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.

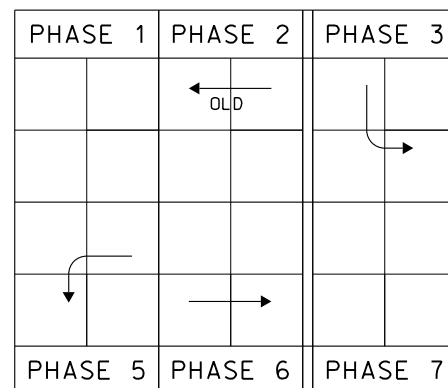
POWER SUPPLY													
LOCATION			POWER SUPPLY ASSEMBLY		CIRCUIT BREAKER TRIP RATING*				LIGHTING CONTROL * (ON POWER SUPPLY)		SERVICE POLE		
APPROACH	STATION	OFFSET	DRAWING 902.15	DRAWING	CONTROLLER		POWER SUPPLY DISCONNECT		120 VOLT CONTROL CABINET		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS					
U.I.P.			Type	U.I.P.	15 Amps	Amps	Amps	Amps			Amps	Ct. Ft.	
			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	NEMA	170	NEMA	170	TYPE	12C/7C	HARDWARE (1)	TIME BASE	CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI	
			MO 180 & 67-LINDBERGH SB RAMP	U.I.P.	U.I.P.			1		I	II	MASTER		LOCAL		NEMA	170				

NEMA DETECTOR ASSIGNMENT									
CARD POSITION									
	1	2	3	4	5	6	7	8	
CHANNEL	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
			U.I.P.				
9	10	11	12	13	14	15	16
			U.I.P.				



* SINGLE CONTROLLER FOR BOTH NB AND SB RAMP

DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
23	WB (PHASE 2)		1
24	WB (PHASE 2)		1
31	SB (PHASE 3)		1
32	SB (PHASE 3)		1
50	WB (PHASE 5)		1
61	EB (PHASE 6)		1
62	EB (PHASE 6)		1
63	EB (PHASE 6)		1
25	WB ADVANCE (PHASE 2)	1	
26	WB ADVANCE (PHASE 2)	1	
33	SB ADVANCE (PHASE 3)	1	
34	SB ADVANCE (PHASE 3)	1	
64	EB ADVANCE (PHASE 6)	1	
65	EB ADVANCE (PHASE 6)	1	
66	EB ADVANCE (PHASE 6)	1	
TOTAL		7	8

* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.

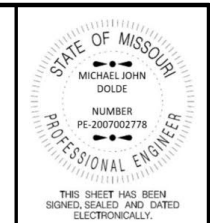
- (1) CABLING FOR THE NEW VIDEO DETECTION AND RADAR DETECTION SHOULD BE ROUTED THROUGH EXISTING CONDUITS. CONDUITS THAT ARE DAMAGED, COLLAPSED, OR UNUSABLE SHALL BE MARKED ON THE AS-BUILT PLANS PER JSP S.
- (2) THE INSTALLATION OF ALL EQUIPMENT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, DRAWINGS, AND ENGINEERING POLICY GUIDE.
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MO 180 & 67-LINDBERGH SB RAMP

INTERSECTION

TRAFFIC SIGNAL SHEET 28 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024
ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 31
COUNTY ST. LOUIS
JOB NO. JSL0179
CONTRACT ID.

PROJECT NO.
BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		



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

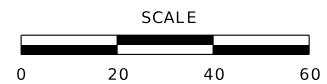
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	3	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.

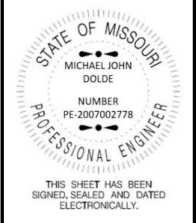


- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
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- (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 29 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024

ROUTE 180	STATE MO
DISTRICT SL	SHEET NO. 32

COUNTY
ST. LOUIS

JOB NO.
JSL0179

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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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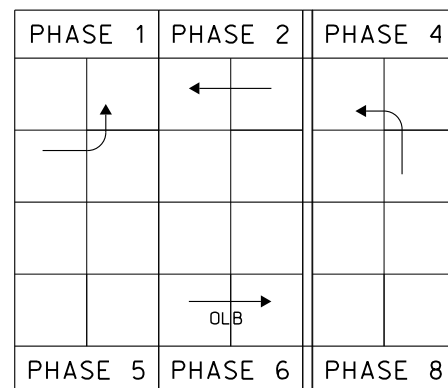
POWER SUPPLY													
LOCATION			POWER SUPPLY ASSEMBLY		CIRCUIT BREAKER TRIP RATING*				LIGHTING CONTROL * (ON POWER SUPPLY)		SERVICE POLE		
APPROACH	STATION	OFFSET	DRAWING 902.15	DRAWING	CONTROLLER		POWER SUPPLY DISCONNECT		120 VOLT CONTROL CABINET		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS					LIGHTING
U.I.P.			Type	U.I.P.	15 Amps	Amps	Amps	Amps			Amps	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	NEMA 170		NEMA 170		TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E EV DOUBLE			332 336S BITRAN WAPITI		
			I	II	MASTER	LOCAL	NEMA	170												
MO 180 & 67-LINDBERGH NB RAMP	U.I.P.	U.I.P.			1															

NEMA DETECTOR ASSIGNMENT									
CARD POSITION									
	1	2	3	4	5	6	7	8	
CHANNEL	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
			U.I.P.				
9	10	11	12	13	14	15	16
			U.I.P.				



* SINGLE CONTROLLER FOR BOTH NB AND SB RAMP

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
41	NB (PHASE 4)		1
42	NB (PHASE 4)		1
64	EB (PHASE 6)		1
65	EB (PHASE 6)		1
23	WB ADVANCE (PHASE 2)	1	
24	WB ADVANCE (PHASE 2)	1	
43	NB ADVANCE (PHASE 4)	1	
44	NB ADVANCE (PHASE 4)	1	
66	EB ADVANCE (PHASE 6)	1	
67	EB ADVANCE (PHASE 6)	1	
TOTAL		6	7

* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.

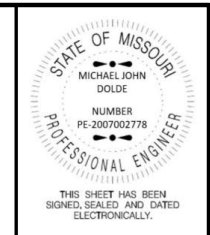
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- (7) THE CONTRACTOR SHALL REMOVE ALL DISUSED EXISTING DETECTION CAMERA CABLE AS PART OF THE DETECTION INSTALLATION.
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MO 180 & 67-LINDBERGH NB RAMP

INTERSECTION

TRAFFIC SIGNAL SHEET 30 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024

ROUTE 180 STATE MO

DISTRICT SL SHEET NO. 33

COUNTY ST. LOUIS

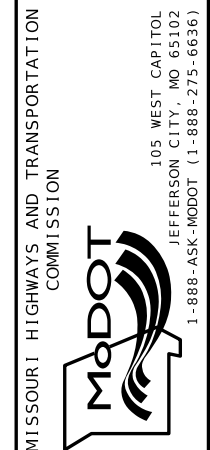
JOB NO. JSL0179

CONTRACT ID.

PROJECT NO.

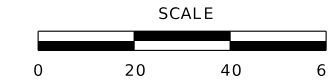
BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		



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.
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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 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 31 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS

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

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 06/21/2024	
ROUTE 180	STATE MO
DISTRICT SL	SHEET NO. 34
COUNTY ST. LOUIS	
JOB NO. JSL0179	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

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

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

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								
			Type		15 Amps								

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	NEMA	170	NEMA	170	TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI	
							I	II	MASTER	LOCAL		NEMA	170									
MO 180 & NORTHWEST PLAZA	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	.		

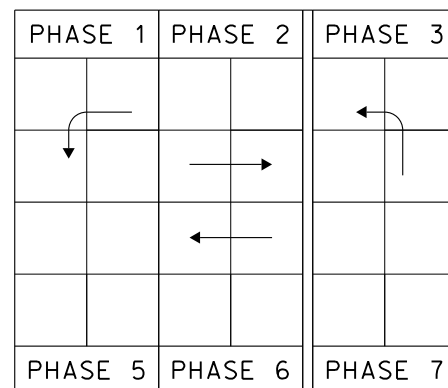
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
11	WB (PHASE 1)		1
12	WB (PHASE 1)		1
21	EB (PHASE 2)		1
22	EB (PHASE 2)		1
31	NB (PHASE 3)		1
32	NB (PHASE 3)		1
61	WB (PHASE 6)		1
62	WB (PHASE 6)		1
23	EB ADVANCE (PHASE 2)	1	
24	EB ADVANCE (PHASE 2)	1	
63	WB ADVANCE (PHASE 6)	1	
64	WB ADVANCE (PHASE 6)	1	
TOTAL		4	8

* 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	.		

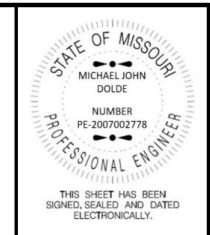


MO 180 & NORTHWEST PLAZA

INTERSECTION

TRAFFIC SIGNAL SHEET 32 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024

ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 35

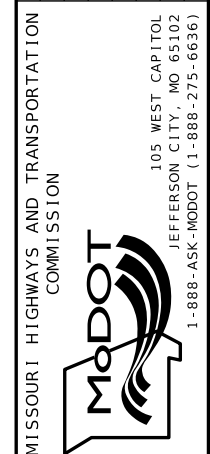
COUNTY ST. LOUIS

JOB NO. JSL0179
CONTRACT ID.

PROJECT NO.

BRIDGE NO.

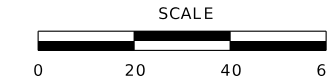
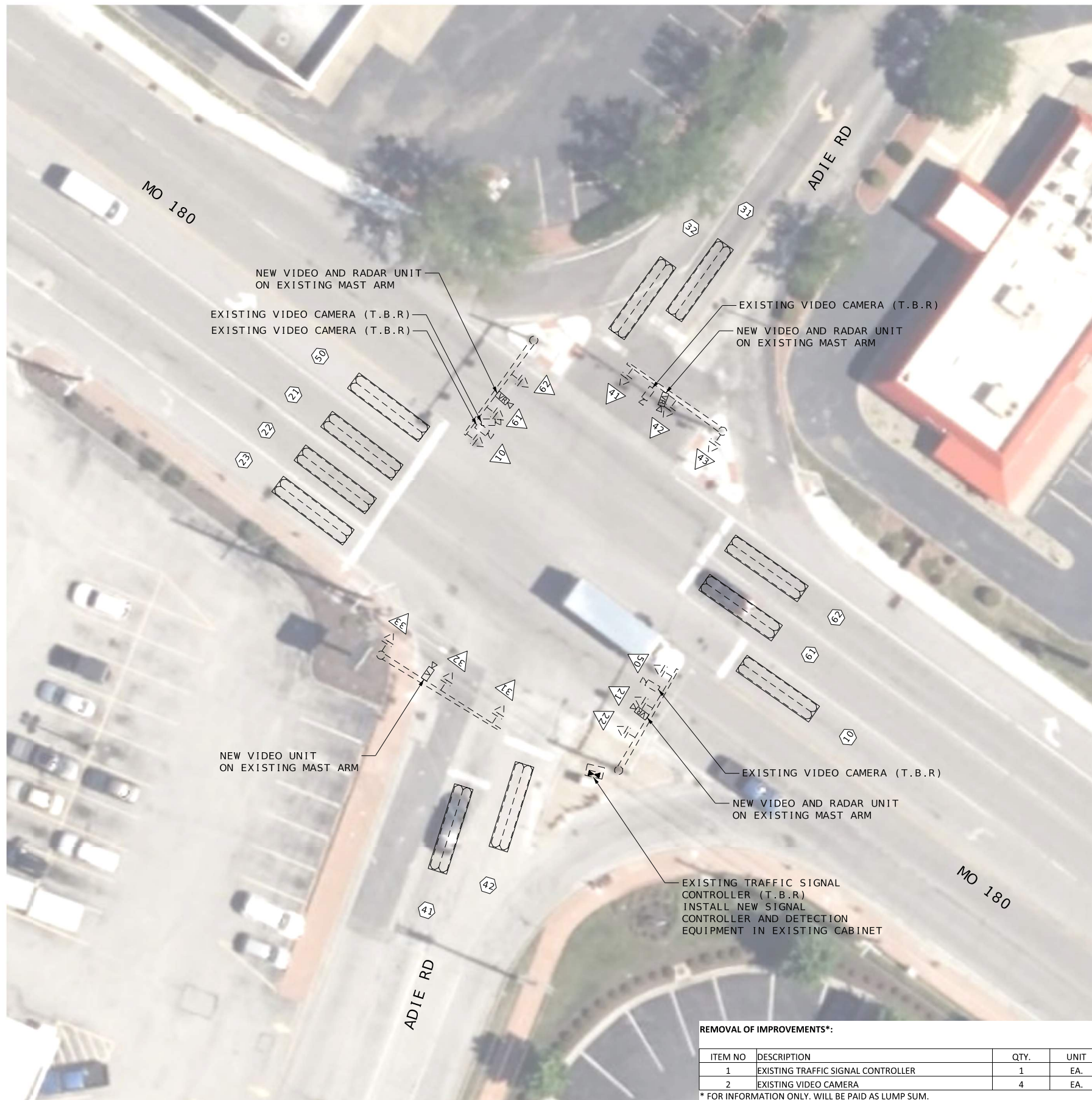
DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		



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.

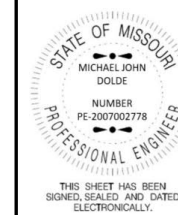


- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
- (2) THE CONTRACTOR SHALL REMOVE THE EXISTING VIDEO DETECTION EQUIPMENT INCLUDING ANY UNUSED CAMERAS, CABINET HARDWARE, MOUNTING HARDWARE/BRACKETS AND 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.

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 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024

ROUTE 180 STATE MO

DISTRICT SL SHEET NO. 36

COUNTY ST. LOUIS

JOB NO. JSL0179

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

DATE

04/16/24

06/21/24

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		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS					
U.I.P.			Type	U.I.P.	15 Amps								
			Type		15 Amps								

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	NEMA	170	NEMA	170	TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI		
							I	II	MASTER	LOCAL		NEMA	170										
MO 180 & ADIE	U.I.P.	U.I.P.				1																	

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

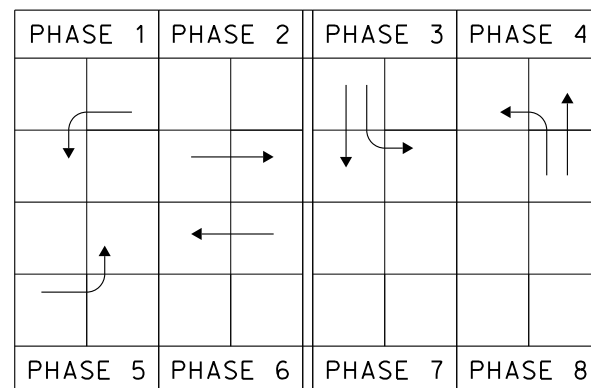
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
10	WB (PHASE 1)		1
21	EB (PHASE 2)		1
22	EB (PHASE 2)		1
23	EB (PHASE 2)		1
31	SB (PHASE 3)		1
32	SB (PHASE 3)		1
41	NB (PHASE 4)		1
42	NB (PHASE 4)		1
50	EB (PHASE 5)		1
61	WB (PHASE 6)		1
62	WB (PHASE 6)		1
24	EB ADVANCE (PHASE 2)	1	
25	EB ADVANCE (PHASE 2)	1	
43	NB ADVANCE (PHASE 4)	1	
63	WB ADVANCE (PHASE 6)	1	
64	WB ADVANCE (PHASE 6)	1	
TOTAL		5	11

* 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.

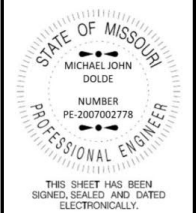
NEMA LOAD SWITCH ASSIGNMENTS											
1	2	3	4	5	6	7	8	9	10	11	12
				U.I.P.							



MO 180 & ADIE
INTERSECTION

TRAFFIC SIGNAL SHEET 34 OF 78

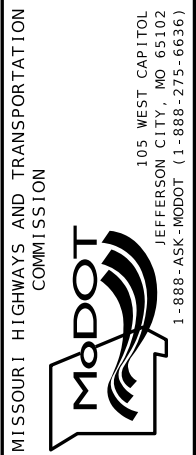
ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024
ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 37
COUNTY ST. LOUIS
JOB NO. JSL0179
CONTRACT ID.

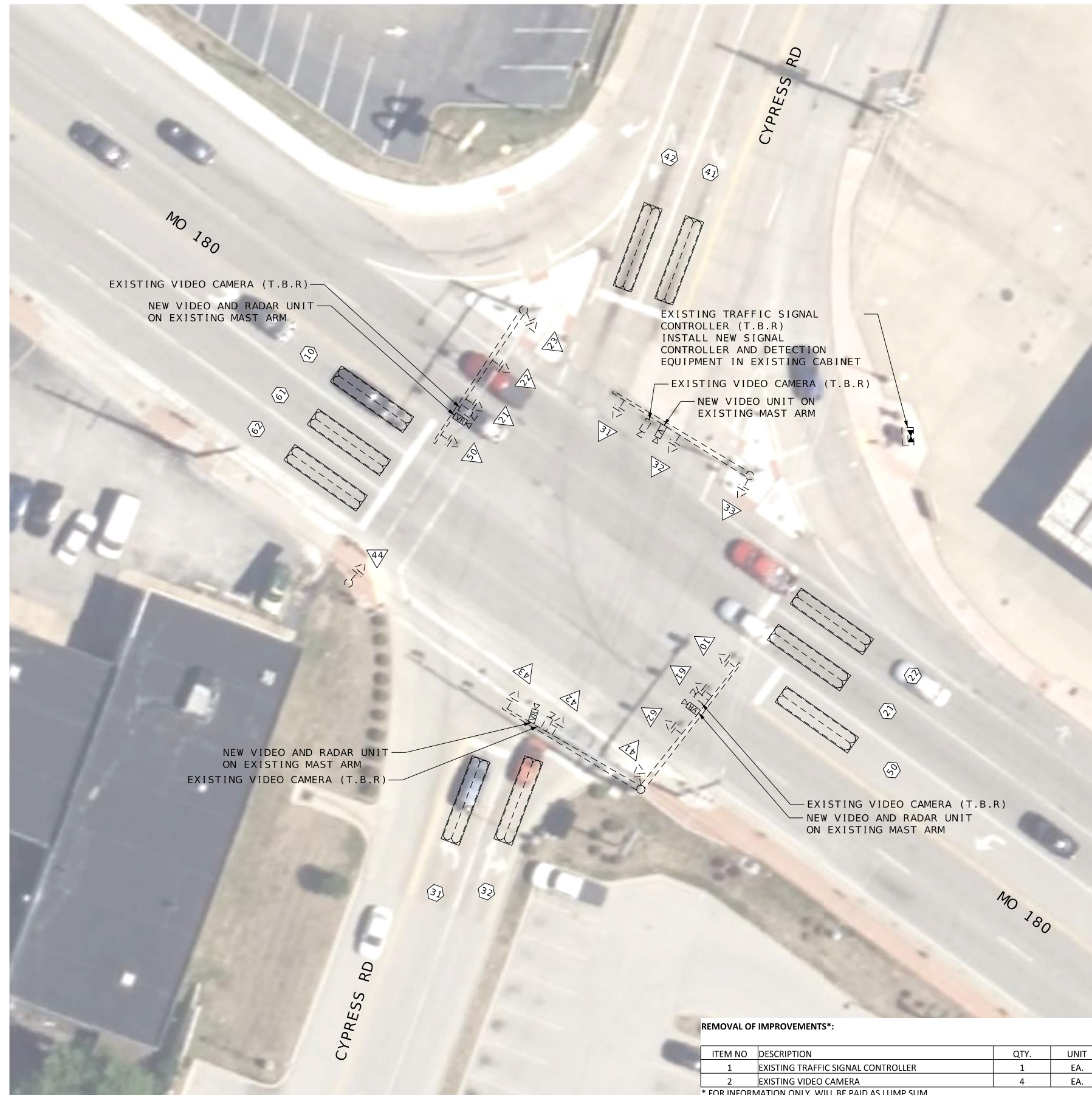
PROJECT NO.
BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		



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

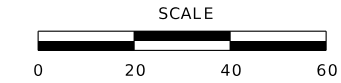
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	4	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.

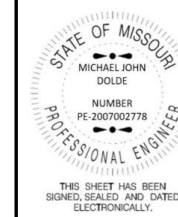


- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
- (2) THE CONTRACTOR SHALL REMOVE THE EXISTING VIDEO 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.

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 35 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED

06/21/2024

ROUTE STATE

180 MO

DISTRICT SHEET NO.

SL 38

COUNTY

ST. LOUIS

JOB NO.

JSL0179

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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

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		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS					LIGHTING
U.I.P.			Type	U.I.P.	15 Amps								
			Type		15 Amps								

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	NEMA	170	NEMA	170	TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI	
							I	II	MASTER	LOCAL		NEMA	170									
MO 180 & CYPRESS	U.I.P.	U.I.P.				1																

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

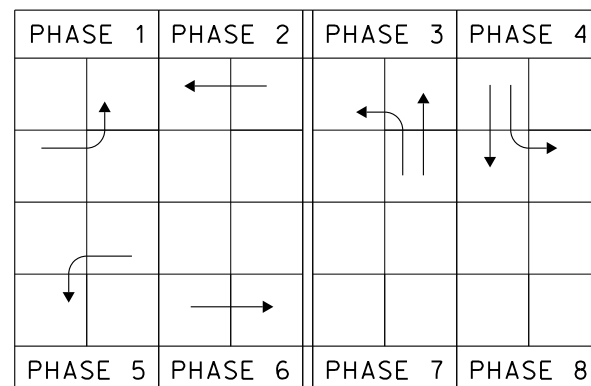
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

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
31	NB (PHASE 3)		1
32	NB (PHASE 3)		1
41	SB (PHASE 4)		1
42	SB (PHASE 4)		1
50	WB (PHASE 5)		1
61	EB (PHASE 6)		1
62	EB (PHASE 6)		1
23	WB ADVANCE (PHASE 2)	1	
24	WB ADVANCE (PHASE 2)	1	
43	SB ADVANCE (PHASE 4)	1	
63	EB ADVANCE (PHASE 6)	1	
64	EB ADVANCE (PHASE 6)	1	
TOTAL		5	10

* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.

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

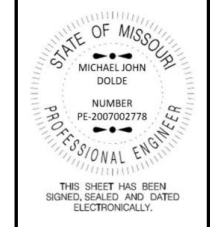


MO 180 & CYPRESS

INTERSECTION

TRAFFIC SIGNAL SHEET 36 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED

06/21/2024

ROUTE 180 STATE MO

DISTRICT SL SHEET NO. 39

COUNTY ST. LOUIS

JSL0179

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

PRELIMINARY PLANS

FINAL PLANS

DATE

04/16/24

06/21/24

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MoDOT

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MoDOT

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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MoDOT

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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JEFFERSON CITY, MO 65102

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MoDOT

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

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MoDOT

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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JEFFERSON CITY, MO 65102

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MoDOT

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1-888-ASK-MODOT (1-888-275-6636)

MoDOT

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MoDOT

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MoDOT

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

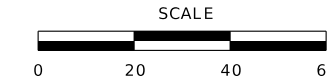
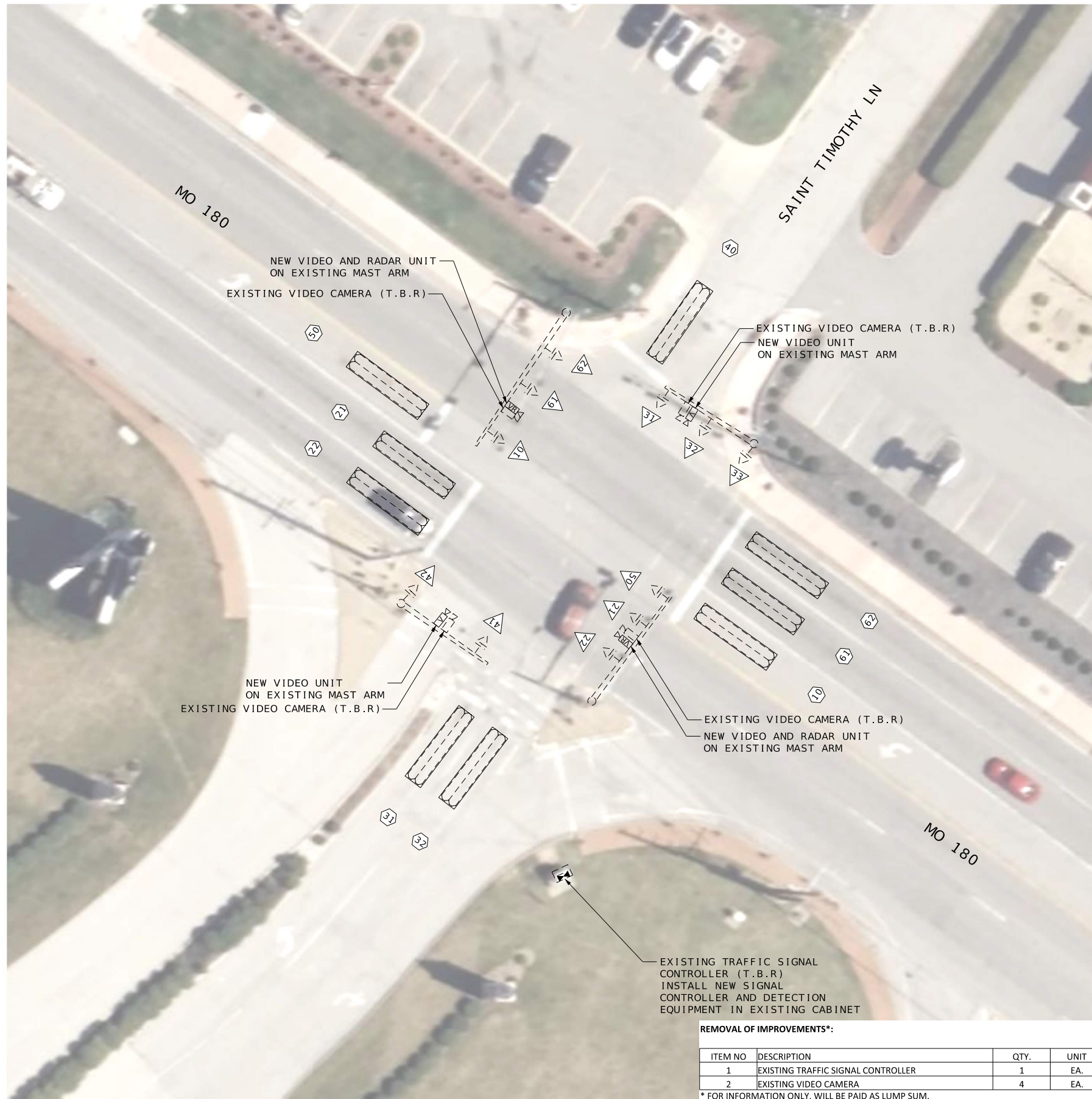
105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MoDOT

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION



- (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.

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 37 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS

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

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 06/21/2024	
ROUTE 180	STATE MO
DISTRICT SL	SHEET NO. 40
COUNTY ST. LOUIS	
JOB NO. JSL0179	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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		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	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	NEMA		170		TYPE	12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E			332		336S		BITRAN		WAPITI		
			I	II	MASTER	LOCAL		NEMA	170																
MO 180 & ST. TIMOTHY	U.I.P.	U.I.P.																							

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

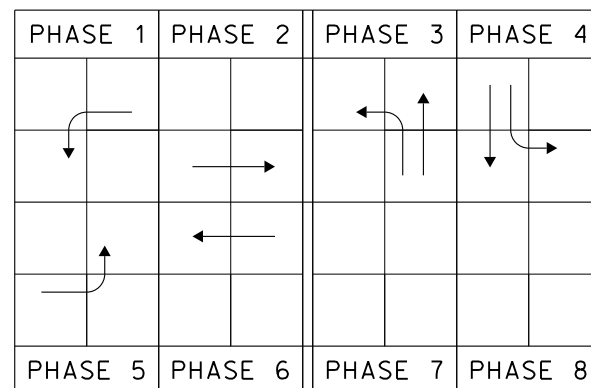
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
10	WB (PHASE 1)		1
21	EB (PHASE 2)		1
22	EB (PHASE 2)		1
31	NB (PHASE 3)		1
32	NB (PHASE 3)		1
40	SB (PHASE 4)		1
50	EB (PHASE 5)		1
61	WB (PHASE 6)		1
62	WB (PHASE 6)		1
23	EB ADVANCE (PHASE 2)	1	
24	EB ADVANCE (PHASE 2)	1	
63	WB ADVANCE (PHASE 6)	1	
64	WB ADVANCE (PHASE 6)	1	
TOTAL		4	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.

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

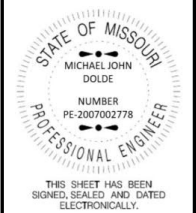


MO 180 & ST. TIMOTHY

INTERSECTION

TRAFFIC SIGNAL SHEET 38 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024

ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 41

COUNTY ST. LOUIS

JOB NO. JSL0179
CONTRACT ID.

PROJECT NO.

BRIDGE NO.

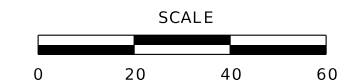
DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		

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 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.
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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

TRAFFIC SIGNAL SHEET 39 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS

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

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 06/21/2024	
ROUTE 180	STATE MO
DISTRICT SL	SHEET NO. 42
COUNTY ST. LOUIS	
JOB NO. JSL0179	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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
U.I.P.			Type	U.I.P.	15 Amps							Amps	Ct.	Ft.	U.I.P.
			Type		15 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	NEMA		170		TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E			332		336S		BITRAN		WAPITI			
			MO 180 & ASHBY	U.I.P.	U.I.P.					I		II	MASTER		LOCAL				1								

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

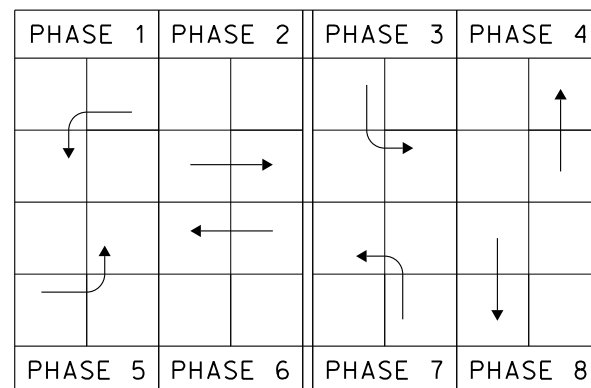
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
10	WB (PHASE 1)		1
21	EB (PHASE 2)		1
22	EB (PHASE 2)		1
23	EB (PHASE 2)		1
30	SB (PHASE 3)		1
40	NB (PHASE 4)		1
50	EB (PHASE 5)		1
61	WB (PHASE 6)		1
62	WB (PHASE 6)		1
63	WB (PHASE 6)		1
71	NB (PHASE 7)		1
72	NB (PHASE 7)		1
80	SB (PHASE 8)		1
24	EB ADVANCE (PHASE 2)	1	
25	EB ADVANCE (PHASE 2)	1	
41	NB ADVANCE (PHASE 4)	1	
64	WB ADVANCE (PHASE 6)	1	
65	WB ADVANCE (PHASE 6)	1	
TOTAL		5	13

* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.

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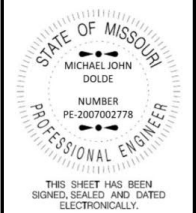
NEMA LOAD SWITCH ASSIGNMENTS											
1	2	3	4	5	6	7	8	9	10	11	12
					U.I.P.						



MO 180 & ASHBY
INTERSECTION

TRAFFIC SIGNAL SHEET 40 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024
ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 43
COUNTY ST. LOUIS
JOB NO. JSL0179
CONTRACT ID.

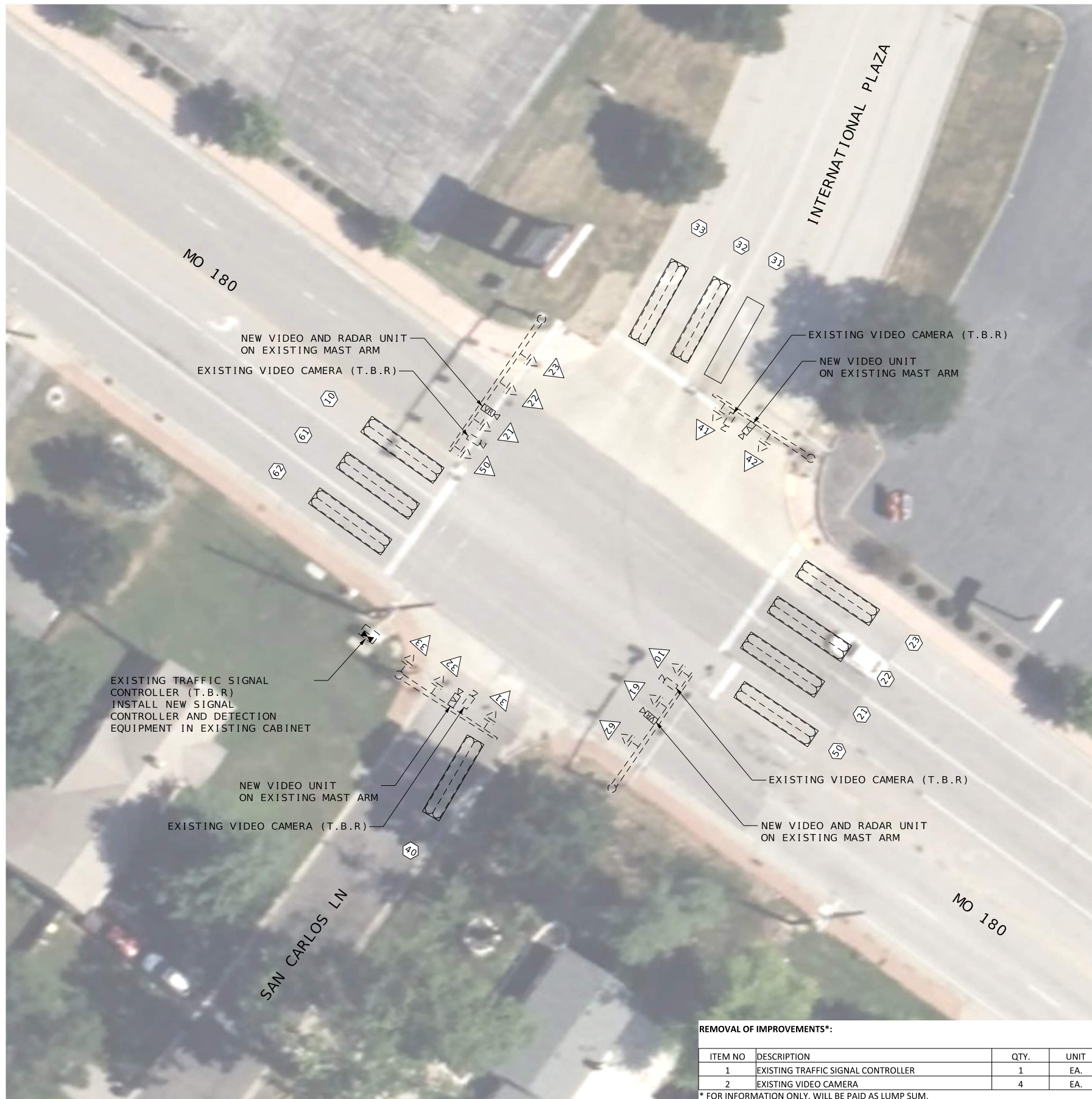
PROJECT NO.
BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		



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

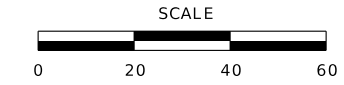
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	4	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.

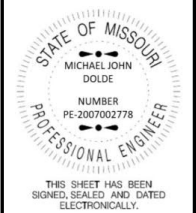


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- (3) THE CONTRACTOR SHALL INSTALL RADAR DETECTION UNITS AND PROGRAM FOR ADVANCED DETECTION PER JSP J.

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 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 41 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024
ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 44
COUNTY ST. LOUIS
JOB NO. JSL0179
CONTRACT ID.

PROJECT NO.
BRIDGE NO.

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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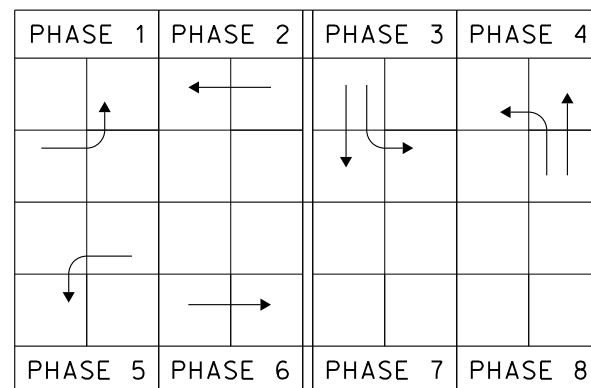
POWER SUPPLY													
LOCATION			POWER SUPPLY ASSEMBLY		CIRCUIT BREAKER TRIP RATING*				LIGHTING CONTROL * (ON POWER SUPPLY)		SERVICE POLE		
APPROACH	STATION	OFFSET	DRAWING 902.15	DRAWING	CONTROLLER		POWER SUPPLY DISCONNECT		120 VOLT CONTROL CABINET		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY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

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	NEMA		170		TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E EV DOUBLE			332 336S		BITRAN WAPITI				
			MO 180 & SAN CARLOS	U.I.P.	U.I.P.					I		II	MASTER		LOCAL									

NEMA DETECTOR ASSIGNMENT									
CARD POSITION									
	1	2	3	4	5	6	7	8	
CHANNEL	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
			U.I.P.				
9	10	11	12	13	14	15	16
			U.I.P.				



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
31	SB (PHASE 3)		1
32	SB (PHASE 3)		1
33	SB (PHASE 3)		1
40	NB (PHASE 4)		1
50	WB (PHASE 5)		1
61	EB (PHASE 6)		1
62	EB (PHASE 6)		1
24	WB ADVANCE (PHASE 2)	1	
25	WB ADVANCE (PHASE 2)	1	
63	EB ADVANCE (PHASE 6)	1	
64	EB ADVANCE (PHASE 6)	1	
TOTAL		4	11

* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.

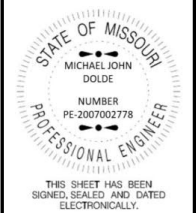
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- (4) THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL AND SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
- (5) ALL DRILLED OPENING FOR CABLE 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.

MO 180 & SAN CARLOS

INTERSECTION

TRAFFIC SIGNAL SHEET 42 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024

ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 45

COUNTY
ST. LOUIS

JOB NO.
JSL0179
CONTRACT ID.

PROJECT NO.

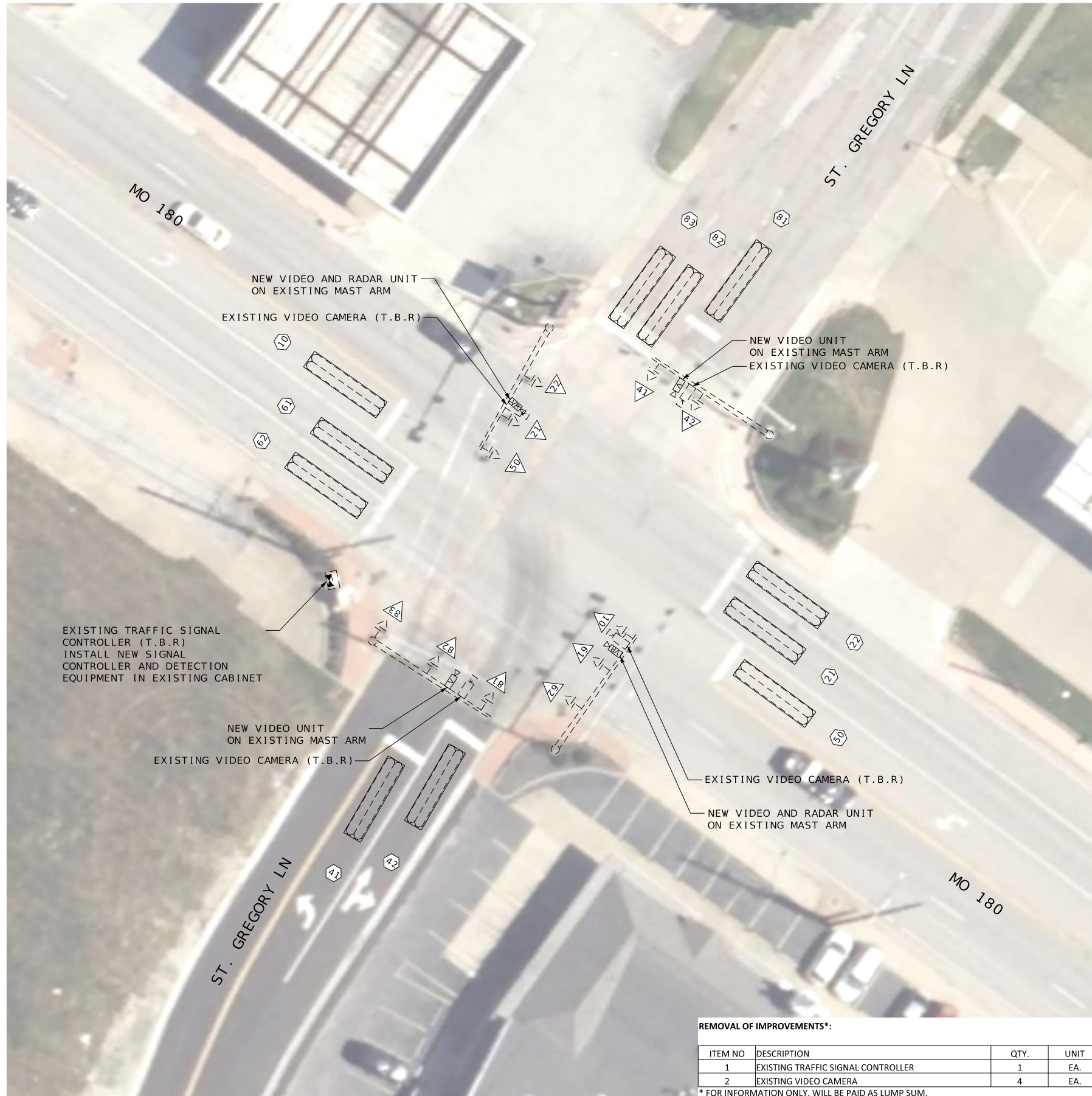
BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		



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

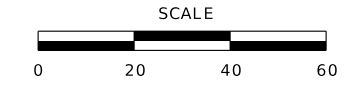
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	4	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.

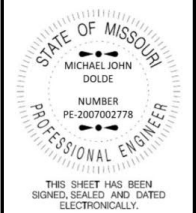


- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
- (2) THE CONTRACTOR SHALL REMOVE THE EXISTING VIDEO 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.

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 43 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED		06/21/2024	
ROUTE	STATE	180	MO
DISTRICT	SHEET NO.	SL	46
COUNTY			
ST. LOUIS			
JOB NO.			
JSL0179			
CONTRACT ID.			

PROJECT NO.
BRIDGE NO.

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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.

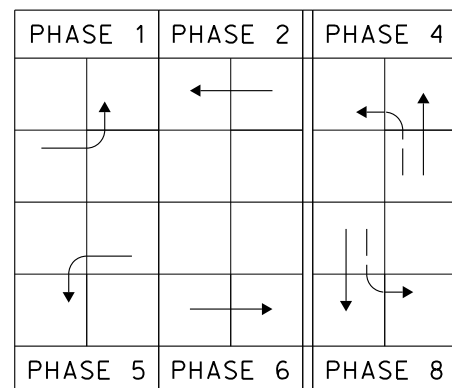
POWER SUPPLY												
LOCATION			POWER SUPPLY ASSEMBLY		CIRCUIT BREAKER TRIP RATING*				LIGHTING CONTROL * (ON POWER SUPPLY)		SERVICE POLE	
APPROACH	STATION	OFFSET	DRAWING 902.15	DRAWING	CONTROLLER		POWER SUPPLY DISCONNECT		120 VOLT CONTROL CABINET		MAIN BREAKER	UTILITY COMPANY
					AUXILIARY BREAKER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

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	NEMA	170	NEMA	170	TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI	
							I	II	MASTER	LOCAL		NEMA	170									
MO 180 & ST. GREGORY	U.I.P.	U.I.P.				1								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
		U	.	I	.	P	.
9	10	11	12	13	14	15	16
		U	.	I	.	P	.



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
41	NB (PHASE 4)		1
42	NB (PHASE 4)		1
50	WB (PHASE 5)		1
61	EB (PHASE 6)		1
62	EB (PHASE 6)		1
81	SB (PHASE 8)		1
82	SB (PHASE 8)		1
83	SB (PHASE 8)		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	11

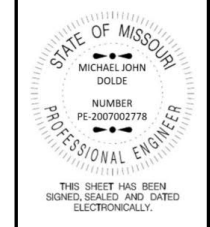
* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.

- 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.
- THE INSTALLATION OF ALL EQUIPMENT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, DRAWINGS, AND ENGINEERING POLICY GUIDE.
- THE CONTRACTOR SHALL HAVE RESPONSIBILITY OF LOCATING ALL UNDERGROUND AND OVERHEAD FACILITIES, STRUCTURES, AND UTILITIES.
- 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.
- 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.
- 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.
- THE CONTRACTOR SHALL REMOVE ALL DISUSED EXISTING DETECTION CAMERA CABLE AS PART OF THE DETECTION INSTALLATION.
- THE CONTRACTOR SHALL PULL ROPE THROUGH ANY USED CONDUITS PER JSP R.
- 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.

MO 180 & ST. GREGORY
INTERSECTION

TRAFFIC SIGNAL SHEET 44 OF 78

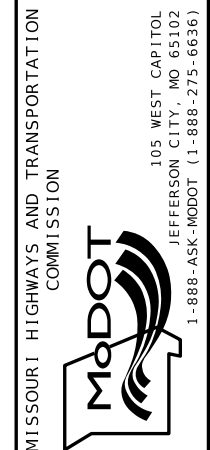
ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024
ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 47
COUNTY ST. LOUIS
JOB NO. JSL0179
CONTRACT ID.

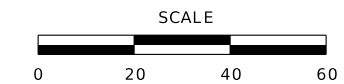
PROJECT NO.
BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		



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.

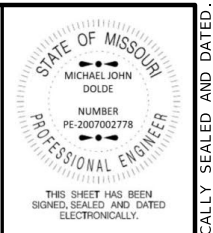


(1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.

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 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED		06/21/2024	
ROUTE	STATE	180	MO
DISTRICT	SHEET NO.	SL	48
COUNTY			
ST. LOUIS			
JOB NO.			
JSL0179			
CONTRACT ID.			
PROJECT NO.			
BRIDGE NO.			

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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	UTILITY COMPANY
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	SIGNALS	LIGHTING				
U.I.P.	U.I.P.	U.I.P.	U.I.P.	U.I.P.	15	Amps						
					Type							

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	NEMA	170	NEMA	170	TYPE		12C/7C HARDWIRE (1)	TIME BASE	CLOSED LOOP			FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI
							MO 180 & GERALDINE-FIRE STATION	U.I.P.			U.I.P.										

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

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

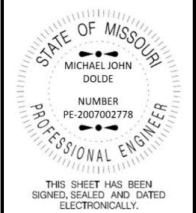
NEMA LOAD SWITCH ASSIGNMENTS															
1	2	3	4	5	6	7	8								

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

DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
TOTAL			

* 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.
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- (7) THE CONTRACTOR SHALL REMOVE ALL DISUSED EXISTING DETECTION CAMERA CABLE AS PART OF THE DETECTION INSTALLATION.
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- (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
06/21/2024

ROUTE 180 STATE MO

DISTRICT SL SHEET NO. 49

COUNTY ST. LOUIS

JOB NO. JSL0179

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE	
	04/16/24	06/21/24
PRELIMINARY PLANS		
FINAL PLANS		

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 180 & GERALDINE-FIRE STATION INTERSECTION

TRAFFIC SIGNAL SHEET 46 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS

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



REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	3	EA.

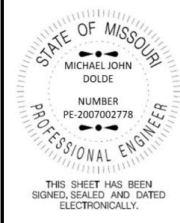
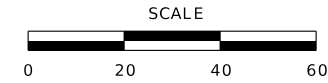
* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.

- (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.

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 47 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



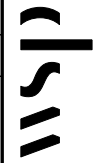
DATE PREPARED
06/21/2024
ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 50
COUNTY ST. LOUIS
JOB NO. JSL0179
CONTRACT ID.

PROJECT NO.
BRIDGE NO.

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS					
U.I.P.			Type	U.I.P.	15 Amps								
			Type		15 Amps								

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	NEMA	170	NEMA	170	TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI		
							I	II	MASTER	LOCAL		NEMA	170										
MO 180 & WISMER	U.I.P.	U.I.P.				1																	

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

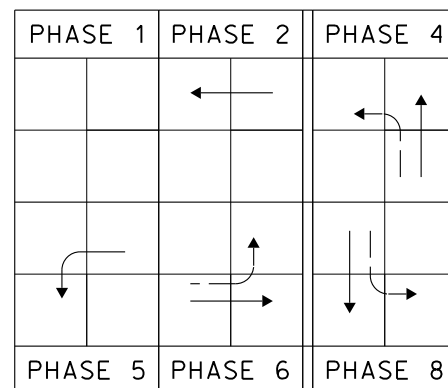
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

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
41	NB (PHASE 4)		1
42	NB (PHASE 4)		1
50	WB (PHASE 5)		1
61	EB (PHASE 6)		1
62	EB (PHASE 6)		1
81	SB (PHASE 8)		1
82	SB (PHASE 8)		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	10

* 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.
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- (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.

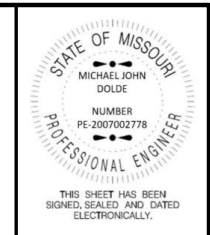
NEMA LOAD SWITCH ASSIGNMENTS											
1	2	3	4	5	6	7	8	9	10	11	12



MO 180 & WISMER
INTERSECTION

TRAFFIC SIGNAL SHEET 48 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024
ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 51
COUNTY ST. LOUIS
JOB NO. JSL0179
CONTRACT ID.

PROJECT NO.
BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		



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

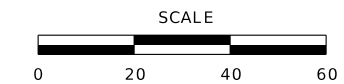
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	4	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.



- (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.

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 49 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS

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

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 06/21/2024	
ROUTE 180	STATE MO
DISTRICT SL	SHEET NO. 52
COUNTY ST. LOUIS	
JOB NO. JSL0179	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS					LIGHTING
U.I.P.			Type	U.I.P.	15 Amps								
			Type		15 Amps								

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	NEMA	170	NEMA	170	TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI	
							I	II	MASTER	LOCAL		NEMA	170									
MO 180 & LYNNTOWN	U.I.P.	U.I.P.				1																

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

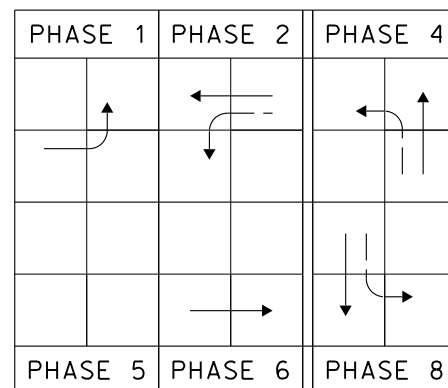
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

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
40	NB (PHASE 4)		1
50	WB (PHASE 5)		1
61	EB (PHASE 6)		1
62	EB (PHASE 6)		1
81	SB (PHASE 8)		1
82	SB (PHASE 8)		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	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.

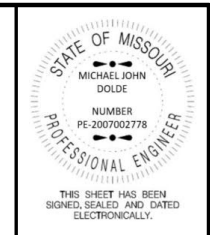
NEMA LOAD SWITCH ASSIGNMENTS											
1	2	3	4	5	6	7	8	9	10	11	12
					U.I.P.						



MO 180 & LYNNTOWN
INTERSECTION

TRAFFIC SIGNAL SHEET 50 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024

ROUTE 180 STATE MO

DISTRICT SL SHEET NO. 53

COUNTY ST. LOUIS

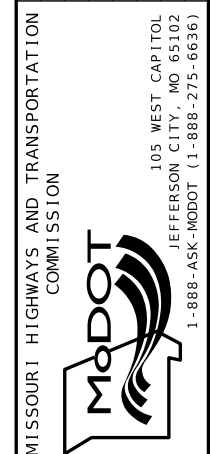
JOB NO. JSL0179

CONTRACT ID.

PROJECT NO.

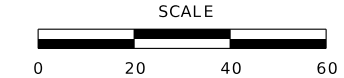
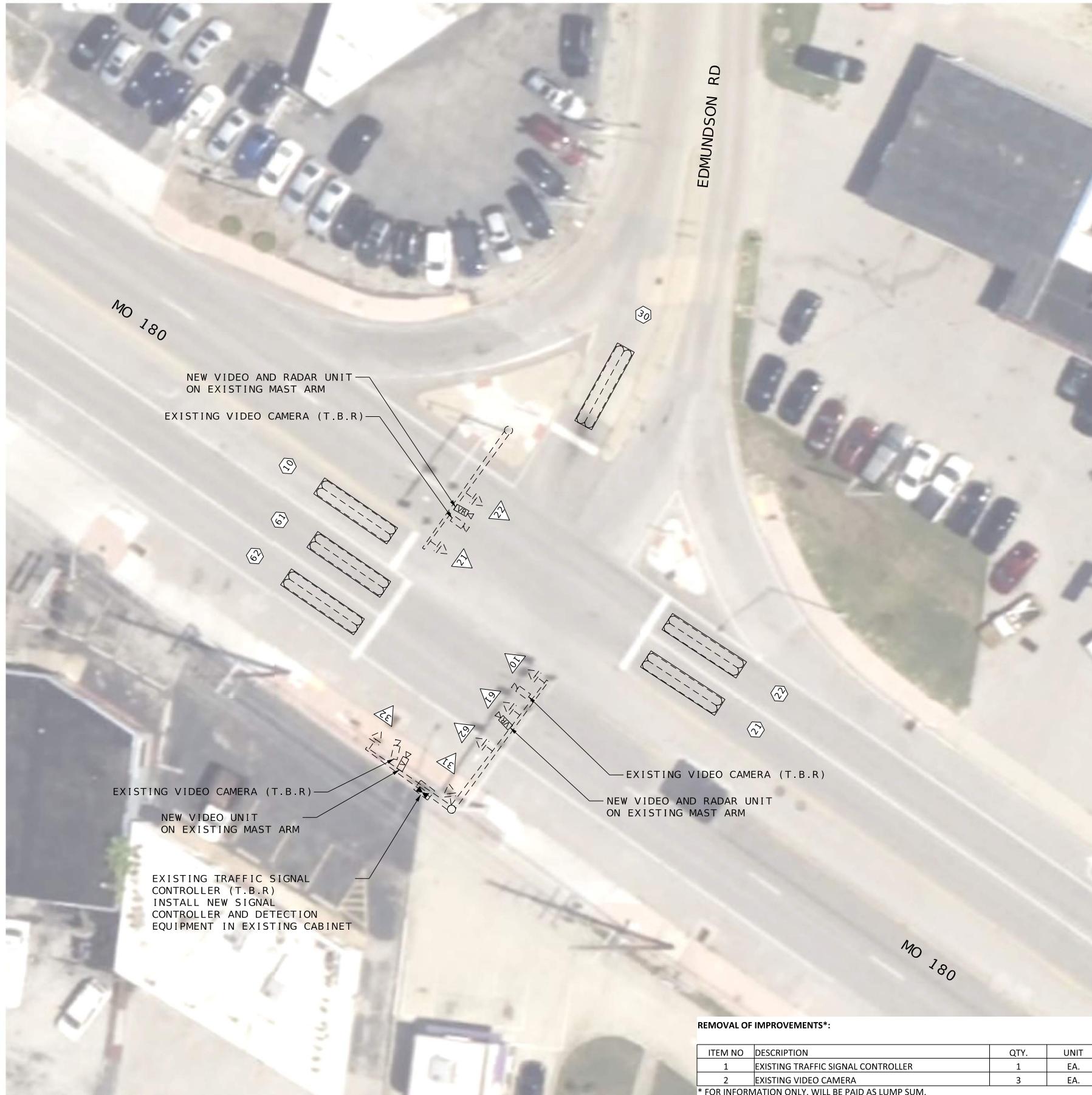
BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		



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 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.

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 51 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS

STATE OF MISSOURI
MICHAEL JOHN DOLDE
NUMBER PE-2007002778
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 06/21/2024	
ROUTE 180	STATE MO
DISTRICT SL	SHEET NO. 54
COUNTY ST. LOUIS	
JOB NO. JSL0179	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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	SIGNALS	LIGHTING					
U.I.P.			Type	U.I.P.	15	Amps							
			Type		15	Amps							

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	NEMA	170	NEMA	170	TYPE		12C/7C	HARDWARE (1)	TIME BASE	CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI	
							I	II				NEMA	170									
MO 180 & EDMUNDSON	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.							

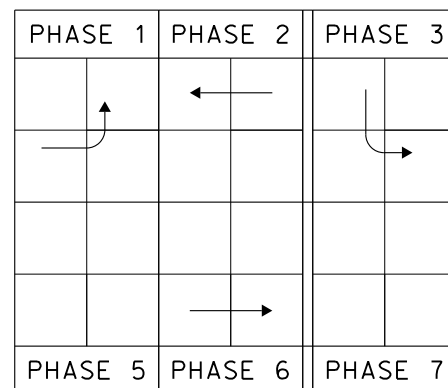
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

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
30	SB (PHASE 3)		1
61	EB (PHASE 6)		1
62	EB (PHASE 6)		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		5	6

* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.

- 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.
- THE INSTALLATION OF ALL EQUIPMENT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, DRAWINGS, AND ENGINEERING POLICY GUIDE.
- THE CONTRACTOR SHALL HAVE RESPONSIBILITY OF LOCATING ALL UNDERGROUND AND OVERHEAD FACILITIES, STRUCTURES, AND UTILITIES.
- 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.
- 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.
- 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.
- THE CONTRACTOR SHALL REMOVE ALL DISUSED EXISTING DETECTION CAMERA CABLE AS PART OF THE DETECTION INSTALLATION.
- THE CONTRACTOR SHALL PULL ROPE THROUGH ANY USED CONDUITS PER JSP R.
- 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.							

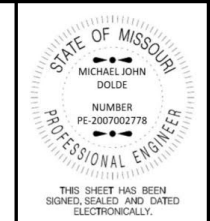


MO 180 & EDMUNDSON

INTERSECTION

TRAFFIC SIGNAL SHEET 52 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024

ROUTE 180 STATE MO

DISTRICT SL SHEET NO. 55

COUNTY ST. LOUIS

JOB NO. JSL0179

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		



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.



REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	4	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.

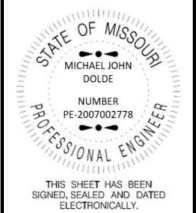


- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
- (2) THE CONTRACTOR SHALL REMOVE THE EXISTING VIDEO 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.

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 53 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED 06/21/2024	
ROUTE 180	STATE MO
DISTRICT SL	SHEET NO. 56
COUNTY ST. LOUIS	
JOB NO. JSL0179	
CONTRACT ID.	

PROJECT NO.
BRIDGE NO.

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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

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		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS LIGHTING					
U.I.P.			Type	U.I.P.	15 Amps								
			Type		15 Amps								

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	NEMA	170	NEMA	170	TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI	
							I	II	MASTER	LOCAL		NEMA	170									
MO 180 & WOODSON	U.I.P.	U.I.P.				1																

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

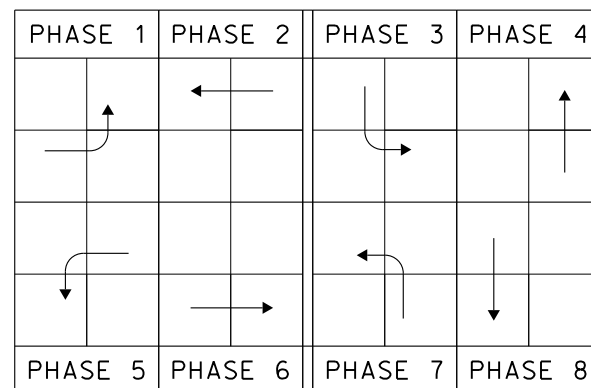
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

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
30	SB (PHASE 3)		1
41	NB (PHASE 4)		1
42	NB (PHASE 4)		1
50	WB (PHASE 5)		1
61	EB (PHASE 6)		1
62	EB (PHASE 6)		1
63	EB (PHASE 6)		1
70	NB (PHASE 7)		1
81	SB (PHASE 8)		1
82	SB (PHASE 8)		1
24	WB ADVANCE (PHASE 2)	1	
25	WB ADVANCE (PHASE 2)	1	
43	NB ADVANCE (PHASE 4)	1	
44	NB ADVANCE (PHASE 4)	1	
64	EB ADVANCE (PHASE 6)	1	
65	EB ADVANCE (PHASE 6)	1	
83	SB ADVANCE (PHASE 8)	1	
84	SB ADVANCE (PHASE 8)	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.
- (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.							

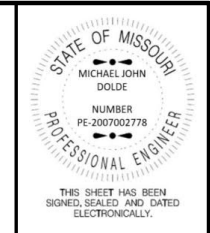


MO 180 & WOODSON

INTERSECTION

TRAFFIC SIGNAL SHEET 54 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED

06/21/2024

ROUTE 180 STATE MO

DISTRICT SL SHEET NO. 57

COUNTY ST. LOUIS

JSL0179

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

PRELIMINARY PLANS

FINAL PLANS

DATE

04/16/24

06/21/24

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

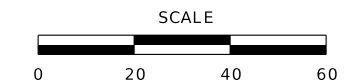
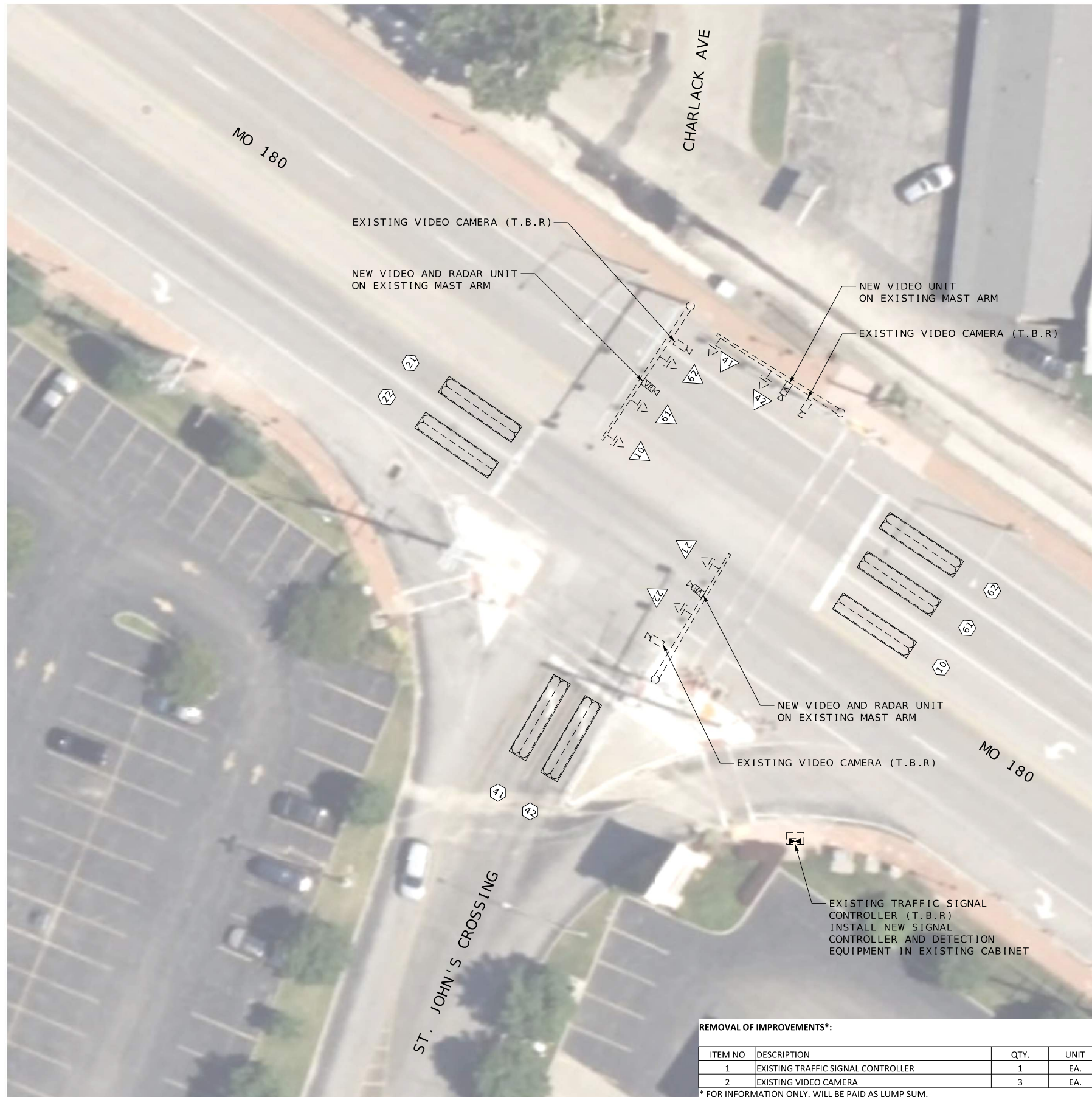
WSP USA INC.

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 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.

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

REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	3	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.

TRAFFIC SIGNAL SHEET 55 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS

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

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 06/21/2024	
ROUTE 180	STATE MO
DISTRICT SL	SHEET NO. 58
COUNTY ST. LOUIS	
JOB NO. JSL0179	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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.

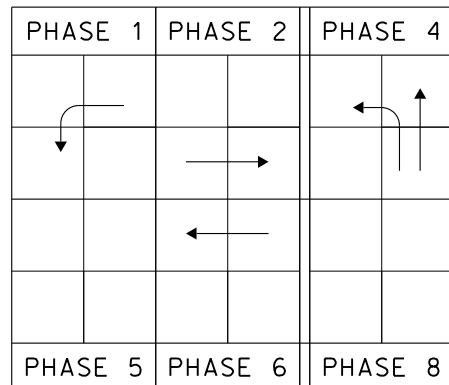
POWER SUPPLY														
LOCATION			POWER SUPPLY ASSEMBLY		CIRCUIT BREAKER TRIP RATING*				LIGHTING CONTROL * (ON POWER SUPPLY)		SERVICE POLE			
APPROACH	STATION	OFFSET	DRAWING 902.15	DRAWING	CONTROLLER		POWER SUPPLY DISCONNECT		120 VOLT CONTROL CABINET		CONTRACT FURNISH	UTILITY COMPANY		
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS					LIGHTING	
U.I.P.			Type	U.I.P.	15	Amps					Amps	Ct.	Ft.	U.I.P.
			Type		15	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	NEMA		170		TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E			332		336S		BITRAN		WAPITI		
							I	II	MASTER	LOCAL		NEMA	170													
MO 180 & ST. JOHN'S CROSSING	U.I.P.	U.I.P.																								

NEMA DETECTOR ASSIGNMENT									
CARD POSITION									
	1	2	3	4	5	6	7	8	
CHANNEL	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
			U	.	I	.	P
9	10	11	12	13	14	15	16
			U	.	I	.	P



DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
10	WB (PHASE 1)		1
21	EB (PHASE 2)		1
22	EB (PHASE 2)		1
41	NB (PHASE 4)		1
42	NB (PHASE 4)		1
61	WB (PHASE 6)		1
62	WB (PHASE 6)		1
23	EB ADVANCE (PHASE 2)	1	
24	EB ADVANCE (PHASE 2)	1	
63	WB ADVANCE (PHASE 6)	1	
64	WB ADVANCE (PHASE 6)	1	
TOTAL		4	7

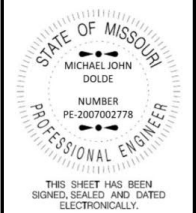
* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.

- (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.
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- (8) THE CONTRACTOR SHALL PULL ROPE THROUGH ANY USED CONDUITS PER JSP R.
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MO 180 & ST. JOHN'S CROSSING
INTERSECTION

TRAFFIC SIGNAL SHEET 56 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024

ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 59

COUNTY
ST. LOUIS

JOB NO.
JSL0179
CONTRACT ID.

PROJECT NO.

BRIDGE NO.

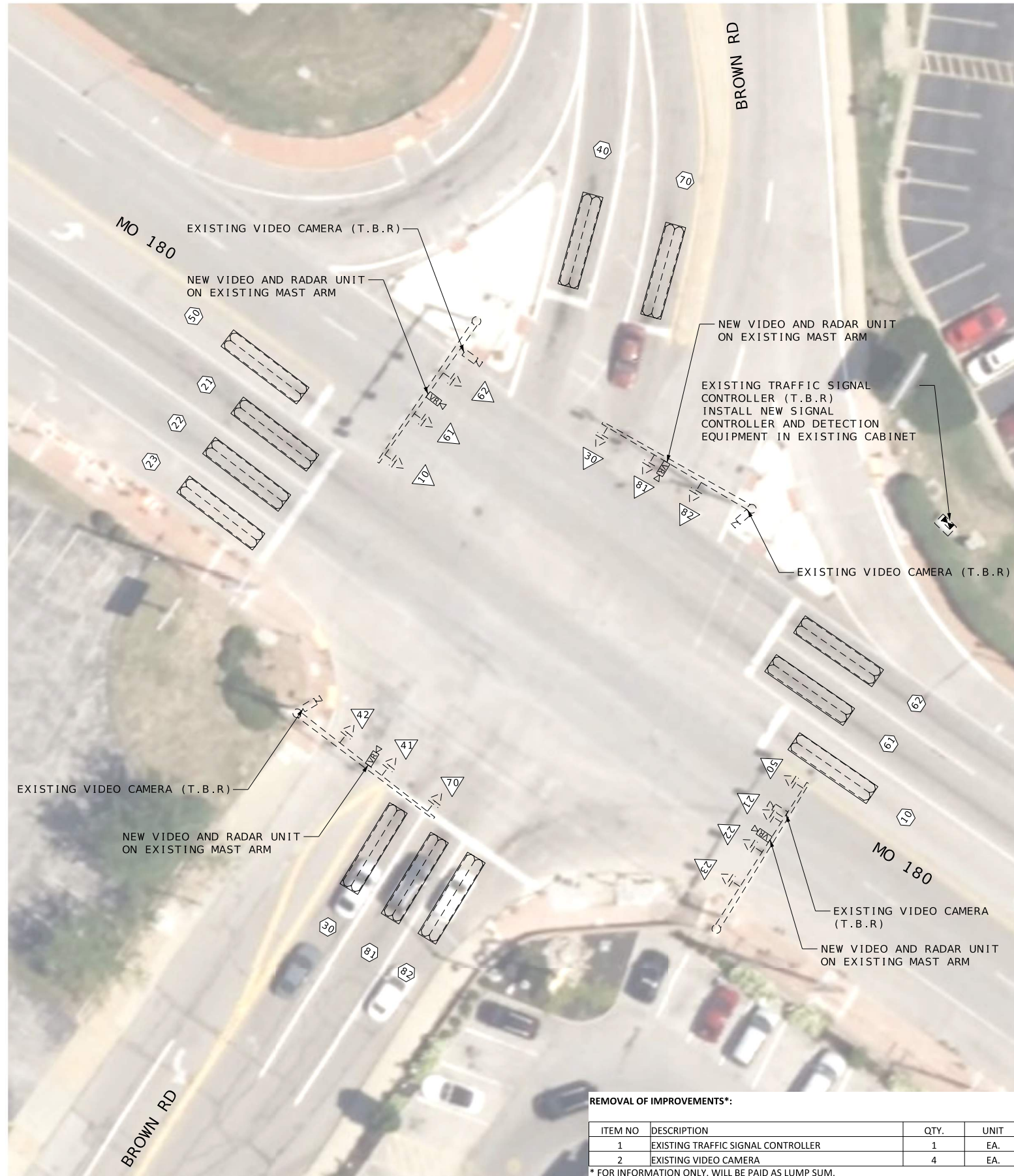
DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		

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

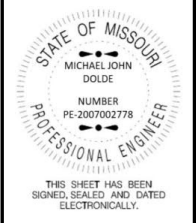
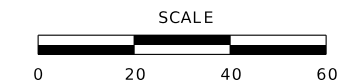
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	4	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.



DATE PREPARED		06/21/2024	
ROUTE	STATE	180	MO
DISTRICT	SHEET NO.	SL	60
COUNTY			
ST. LOUIS			
JOB NO.			
JSL0179			
CONTRACT ID.			
PROJECT NO.			
BRIDGE NO.			

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

- (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.

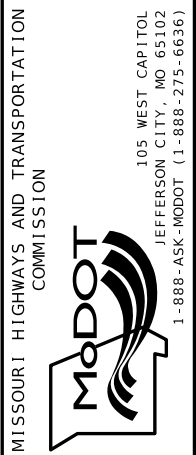


TRAFFIC SIGNALS LEGEND

	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 57 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



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		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS					
U.I.P.			Type	U.I.P.	15 Amps	Amps	Amps	Amps			Ci.	Ft.	
			Type		15 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	NEMA	170	NEMA	170	TYPE	12C/7C	HARDWARE (1)	TIME BASE	CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI	
			MO 180 & BROWN	U.I.P.	U.I.P.			1		I	II	MASTER		LOCAL							

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

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

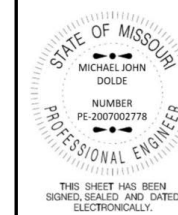
NEMA LOAD SWITCH ASSIGNMENTS							
1	2	3	4	5	6	7	8
			U.I.P.				
9	10	11	12	13	14	15	16
			U.I.P.				

PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 11	PHASE 12
↓	→	←	↓	←	↓
↑	←	↓	↑		
PHASE 5	PHASE 6	PHASE 7	PHASE 8	PHASE 13	PHASE 14
↓	→	←	↓		
↑	←	↓	↑		

DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
10	WB (PHASE 1)		1
21	EB (PHASE 2)		1
22	EB (PHASE 2)		1
23	EB (PHASE 2)		1
30	NB (PHASE 3)		1
40	SB (PHASE 4)		1
50	EB (PHASE 5)		1
61	WB (PHASE 6)		1
62	WB (PHASE 6)		1
70	SB (PHASE 7)		1
81	NB (PHASE 8)		1
82	NB (PHASE 8)		1
24	EB ADVANCE (PHASE 2)	1	
25	EB ADVANCE (PHASE 2)	1	
41	SB ADVANCE (PHASE 4)	1	
63	WB ADVANCE (PHASE 6)	1	
64	WB ADVANCE (PHASE 6)	1	
83	NB ADVANCE (PHASE 8)	1	
84	NB ADVANCE (PHASE 8)	1	
TOTAL		7	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.
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- (7) THE CONTRACTOR SHALL REMOVE ALL DISUSED EXISTING DETECTION CAMERA CABLE AS PART OF THE DETECTION INSTALLATION.
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- (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
06/21/2024

ROUTE 180 STATE MO

DISTRICT SL SHEET NO. 61

COUNTY ST. LOUIS

JOB NO. JSL0179

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

PRELIMINARY PLANS

FINAL PLANS

DATE

04/16/24

06/21/24

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MoDOT

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MoDOT

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MoDOT

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MoDOT

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MoDOT

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MoDOT

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MoDOT

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

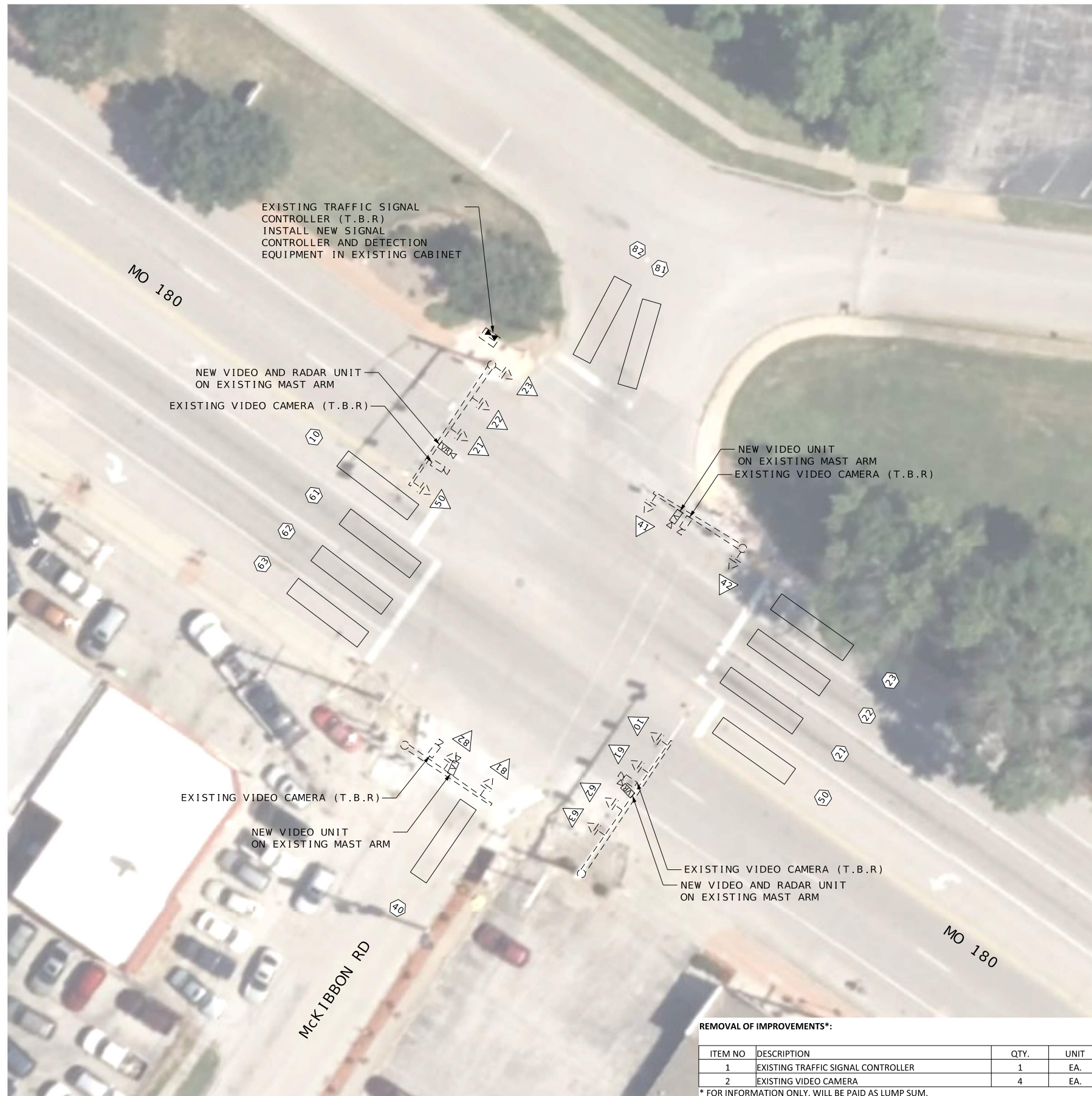
MO 180 & BROWN

INTERSECTION

TRAFFIC SIGNAL SHEET 58 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS

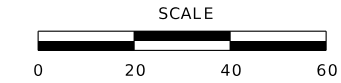
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	4	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.

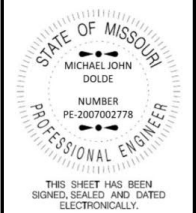


- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
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- (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 59 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED	06/21/2024
ROUTE	180
STATE	MO
DISTRICT	SL
SHEET NO.	62
COUNTY	ST. LOUIS
JOB NO.	JSL0179
CONTRACT ID.	

PROJECT NO.
BRIDGE NO.

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS					LIGHTING
U.I.P.			Type	U.I.P.	15 Amps								
			Type		15 Amps								

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	NEMA	170	NEMA	170	TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI		
							I	II	MASTER	LOCAL		NEMA	170										
MO 180 & MCKIBBON	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	.		

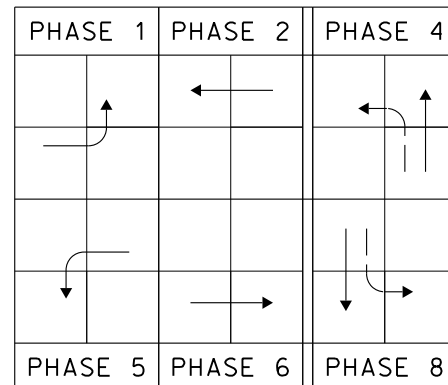
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

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
40	NB (PHASE 4)		1
50	WB (PHASE 5)		1
61	EB (PHASE 6)		1
62	EB (PHASE 6)		1
63	EB (PHASE 6)		1
81	SB (PHASE 8)		1
82	SB (PHASE 8)		1
24	WB ADVANCE (PHASE 2)	1	
25	WB ADVANCE (PHASE 2)	1	
64	EB ADVANCE (PHASE 6)	1	
65	EB ADVANCE (PHASE 6)	1	
TOTAL		4	11

* 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.

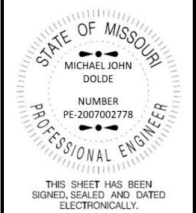
NEMA LOAD SWITCH ASSIGNMENTS											
1	2	3	4	5	6	7	8	9	10	11	12
			U	.	I	.	P	.			



MO 180 & MCKIBBON
INTERSECTION

TRAFFIC SIGNAL SHEET 60 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024
ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 63
COUNTY ST. LOUIS
JOB NO. JSL0179
CONTRACT ID.

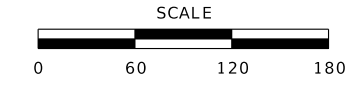
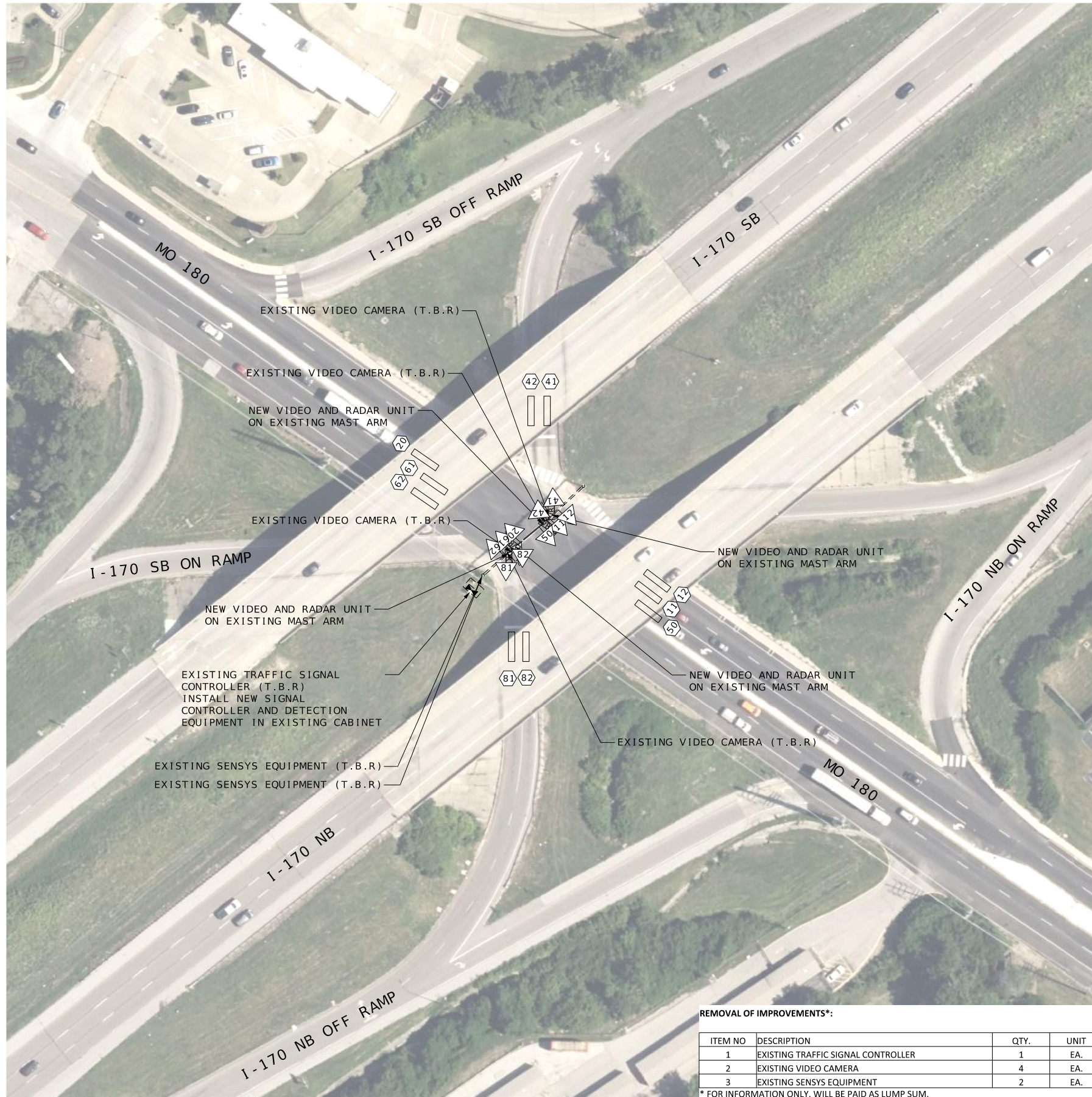
PROJECT NO.
BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		



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 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) THE CONTRACTOR SHALL REMOVE SENSYS EQUIPMENT (ACCESS POINTS, REPEATERS, AND EQUIPMENT IN THE CABINET) AS SPECIFIED IN JSP T. PAYMENT FOR REMOVAL WILL BE INCLUDED WITH REMOVAL OF IMPROVEMENTS (LS).

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

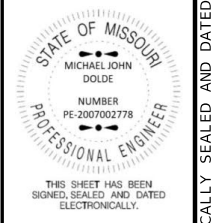
REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	4	EA.
3	EXISTING SENSYS EQUIPMENT	2	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.

TRAFFIC SIGNAL SHEET 61 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024

ROUTE 180	STATE MO
DISTRICT SL	SHEET NO. 64

COUNTY
ST. LOUIS

JOB NO.
JSL0179

CONTRACT ID.

PROJECT NO.
BRIDGE NO.

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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		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	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	NEMA		170		TYPE	12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E			332		336S		BITRAN		WAPITI		
			I	II	MASTER	LOCAL		NEMA	170																
MO 180 & I-170	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	.		

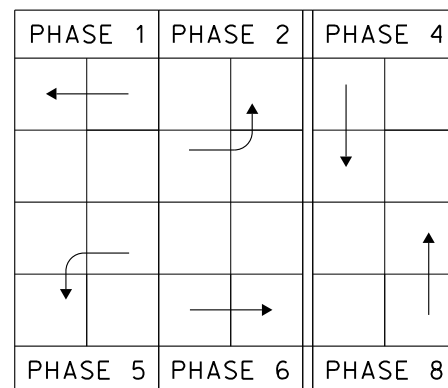
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
11	WB (PHASE 1)		1
12	WB (PHASE 1)		1
20	EB (PHASE 2)		1
41	SB (PHASE 4)		1
42	SB (PHASE 4)		1
50	WB (PHASE 5)		1
61	EB (PHASE 6)		1
62	EB (PHASE 6)		1
81	NB (PHASE 8)		1
82	NB (PHASE 8)		1
13	WB ADVANCE (PHASE 1)	1	
14	WB ADVANCE (PHASE 1)	1	
43	SB ADVANCE (PHASE 4)	1	
44	SB ADVANCE (PHASE 4)	1	
63	EB ADVANCE (PHASE 6)	1	
64	EB ADVANCE (PHASE 6)	1	
83	NB ADVANCE (PHASE 8)	1	
84	NB ADVANCE (PHASE 8)	1	
TOTAL		8	10

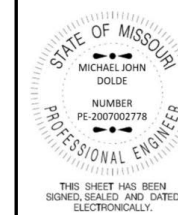
* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.

- (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.
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- (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	.		



MO 180 & I-170
 INTERSECTION
 TRAFFIC SIGNAL SHEET 62 OF 78
 ST. LOUIS COUNTY
 ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024

ROUTE 180 STATE MO
 DISTRICT SL SHEET NO. 65

COUNTY ST. LOUIS

JOB NO. JSL0179
 CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		



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

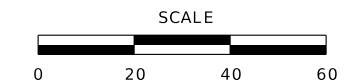
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	4	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.



- (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 63 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS

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

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 06/21/2024	
ROUTE 180	STATE MO
DISTRICT SL	SHEET NO. 66
COUNTY ST. LOUIS	
JOB NO. JSL0179	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS					LIGHTING
U.I.P.			Type	U.I.P.	15 Amps								
			Type		15 Amps								

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	NEMA 170		NEMA 170		TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E EV DOUBLE			332 336S BITRAN WAPITI		
							I	II	MASTER	LOCAL		NEMA	170							
MO 180 & LACKLAND	U.I.P.	U.I.P.																		

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

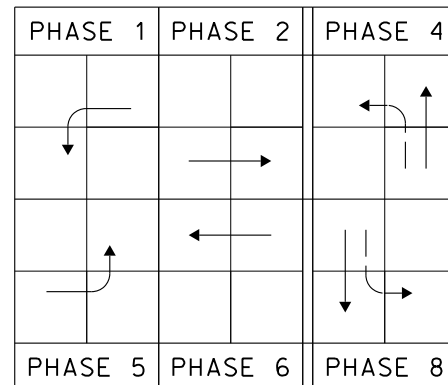
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
10	WB (PHASE 1)		1
21	EB (PHASE 2)		1
22	EB (PHASE 2)		1
40	NB (PHASE 4)		1
50	EB (PHASE 5)		1
61	WB (PHASE 6)		1
62	WB (PHASE 6)		1
80	SB (PHASE 8)		1
23	EB ADVANCE (PHASE 2)	1	
24	EB ADVANCE (PHASE 2)	1	
41	NB ADVANCE (PHASE 4)	1	
63	WB ADVANCE (PHASE 6)	1	
64	WB ADVANCE (PHASE 6)	1	
81	SB ADVANCE (PHASE 8)	1	
TOTAL		6	8

* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.

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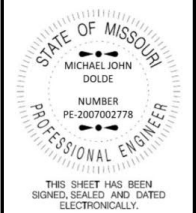
NEMA LOAD SWITCH ASSIGNMENTS											
1	2	3	4	5	6	7	8	9	10	11	12
			U	.	I	.	P	.			



MO 180 & LACKLAND
INTERSECTION

TRAFFIC SIGNAL SHEET 64 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024
ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 67
COUNTY ST. LOUIS
JOB NO. JSL0179
CONTRACT ID.

PROJECT NO.
BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

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211 N. BROADWAY SUITE 2800
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MISSOURI CERTIFICATE OF AUTHORITY - 001444

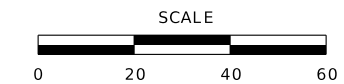
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REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	4	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.



- (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.

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 65 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS

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

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 06/21/2024	
ROUTE 180	STATE MO
DISTRICT SL	SHEET NO. 68
COUNTY ST. LOUIS	
JOB NO. JSL0179	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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.

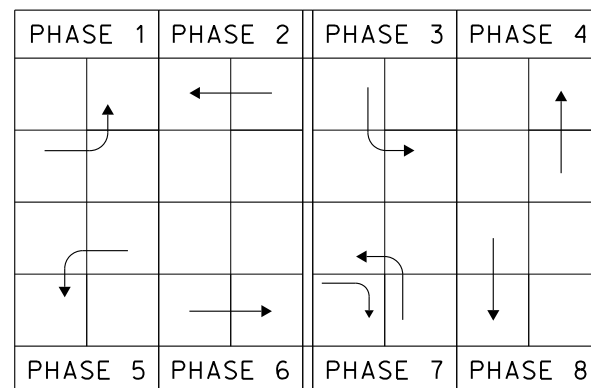
POWER SUPPLY													
LOCATION			POWER SUPPLY ASSEMBLY		CIRCUIT BREAKER TRIP RATING*				LIGHTING CONTROL * (ON POWER SUPPLY)		SERVICE POLE		
APPROACH	STATION	OFFSET	DRAWING 902.15	DRAWING	CONTROLLER		POWER SUPPLY DISCONNECT		120 VOLT CONTROL CABINET		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS					
U.I.P.			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	NEMA	170	NEMA	170	TYPE		12C/7C HARDWARE (1)	TIME BASE	CLOSED LOOP			FIBER	E	EV	DOUBLE	332	336S	BITRAN
							I	II			NEMA	170								
MO 180 & HANLEY	U.I.P.	U.I.P.				1														

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

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

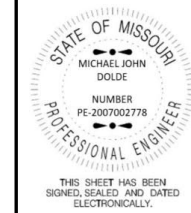
NEMA LOAD SWITCH ASSIGNMENTS							
1	2	3	4	5	6	7	8
			U.I.P.				
9	10	11	12	13	14	15	16
			U.I.P.				



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
30	SB (PHASE 3)		1
41	NB (PHASE 4)		1
42	NB (PHASE 4)		1
50	WB (PHASE 5)		1
61	EB (PHASE 6)		1
62	EB (PHASE 6)		1
63	EB (PHASE 6)		1
70	NB (PHASE 7)		1
81	SB (PHASE 8)		1
82	SB (PHASE 8)		1
23	WB ADVANCE (PHASE 2)	1	
24	WB ADVANCE (PHASE 2)	1	
43	NB ADVANCE (PHASE 4)	1	
44	NB ADVANCE (PHASE 4)	1	
64	EB ADVANCE (PHASE 6)	1	
65	EB ADVANCE (PHASE 6)	1	
83	SB ADVANCE (PHASE 8)	1	
84	SB ADVANCE (PHASE 8)	1	
TOTAL		8	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
06/21/2024

ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 69

COUNTY
ST. LOUIS

JOB NO.
JSL0179
CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

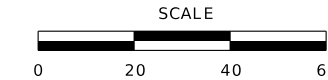
WSP USA INC.
211 N. BROADWAY SUITE 2800
ST. LOUIS, MO 63102 (314) 206-4444
MISSOURI CERTIFICATE OF AUTHORITY - 001444

MO 180 & HANLEY
INTERSECTION

TRAFFIC SIGNAL SHEET 66 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS

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.

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 67 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS

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

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 06/21/2024	
ROUTE 180	STATE MO
DISTRICT SL	SHEET NO. 70
COUNTY ST. LOUIS	
JOB NO. JSL0179	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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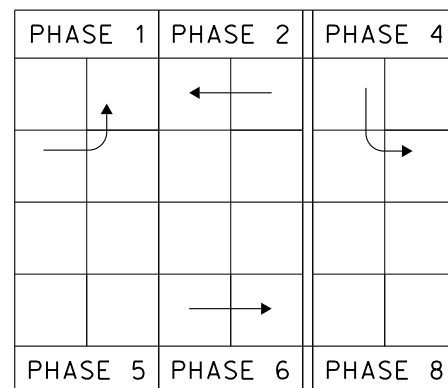
POWER SUPPLY													
LOCATION			POWER SUPPLY ASSEMBLY		CIRCUIT BREAKER TRIP RATING*				LIGHTING CONTROL * (ON POWER SUPPLY)		SERVICE POLE		
APPROACH	STATION	OFFSET	DRAWING 902.15	DRAWING	CONTROLLER		POWER SUPPLY DISCONNECT		120 VOLT CONTROL CABINET		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY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

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	NEMA	170	NEMA	170	TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI	
							I	II	MASTER	LOCAL		NEMA	170									
MO 180 & NORMANDY	U.I.P.	U.I.P.				1																

NEMA DETECTOR ASSIGNMENT									
CARD POSITION									
	1	2	3	4	5	6	7	8	
CHANNEL	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
		U.I.P.					
9	10	11	12	13	14	15	16
		U.I.P.					

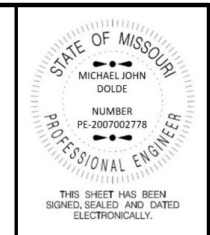


DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
10	EB (PHASE 1)		1
21	WB (PHASE 2)		1
22	WB (PHASE 2)		1
40	SB (PHASE 4)		1
60	EB (PHASE 6)		1
23	WB ADVANCE (PHASE 2)	1	
61	EB ADVANCE (PHASE 6)	1	
TOTAL		2	5

* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.

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- (3) THE CONTRACTOR SHALL HAVE RESPONSIBILITY OF LOCATING ALL UNDERGROUND AND OVERHEAD FACILITIES, STRUCTURES, AND UTILITIES.
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- (8) THE CONTRACTOR SHALL PULL ROPE THROUGH ANY USED CONDUITS PER JSP R.
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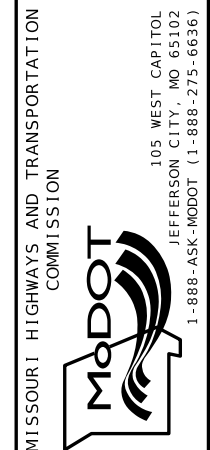
MO 180 & NORMANDY
 INTERSECTION
 TRAFFIC SIGNAL SHEET 68 OF 78
 ST. LOUIS COUNTY
 ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
 06/21/2024
 ROUTE 180 STATE MO
 DISTRICT SL SHEET NO. 71
 COUNTY ST. LOUIS
 JOB NO. JSL0179
 CONTRACT ID.

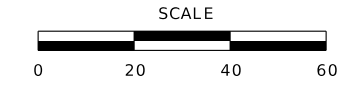
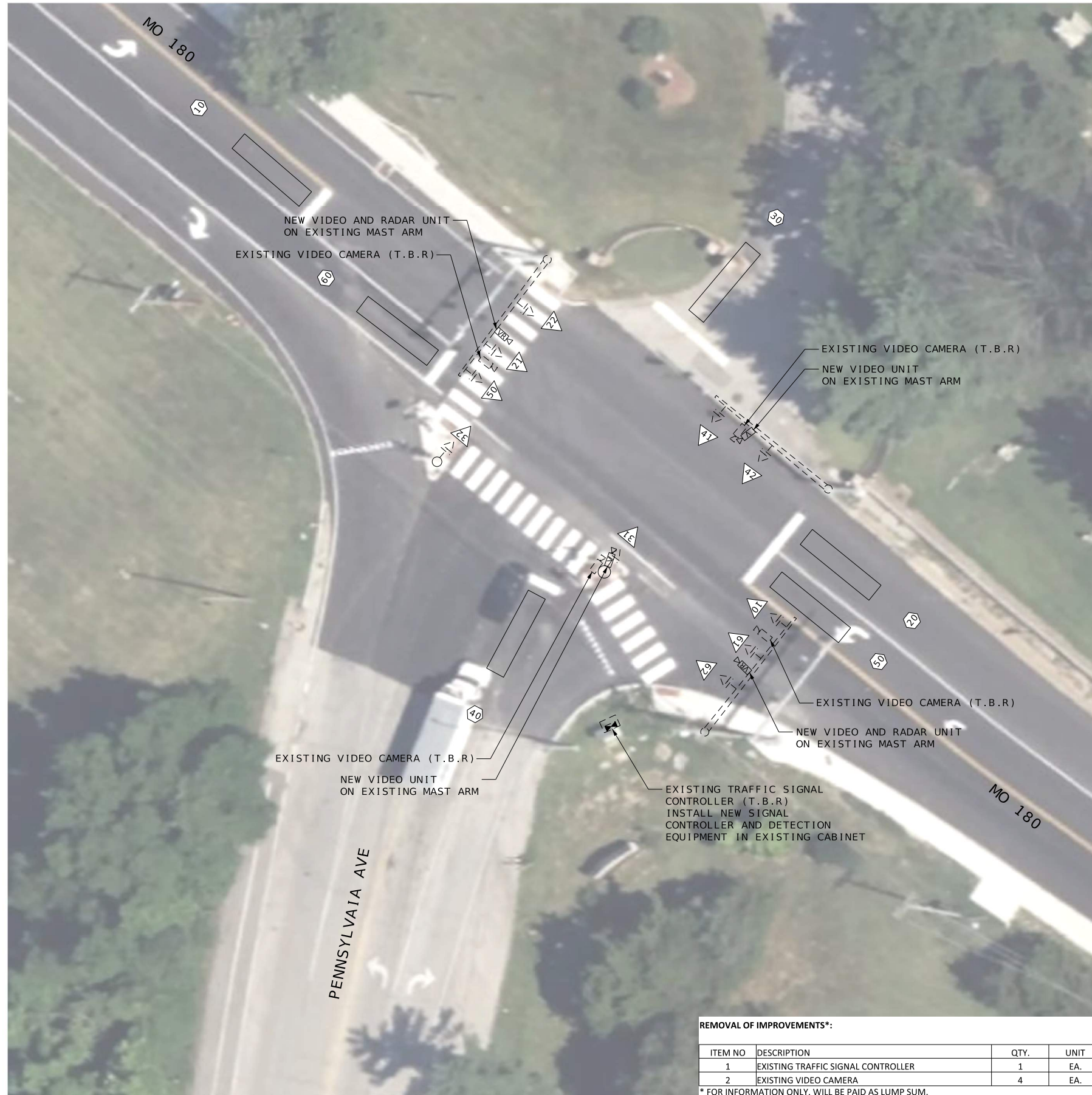
PROJECT NO.
 BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		



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.

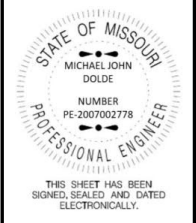


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TRAFFIC SIGNALS LEGEND	
	NEW CONTROLLER IN EXISTING CABINET
	EXISTING SIGNAL HEAD
	EXISTING VIDEO/RADAR DETECTION UNIT
	NEW VIDEO/RADAR COMBINATION DETECTION UNIT
	NEW VIDEO DETECTION UNIT
	NEW RADAR DETECTION UNIT
	EXISTING GRIDSMArt VIDEO DETECTION 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

TRAFFIC SIGNAL SHEET 69 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED		06/21/2024	
ROUTE	STATE	180	MO
DISTRICT	SHEET NO.	SL	72
COUNTY			
ST. LOUIS			
JOB NO.			
JSL0179			
CONTRACT ID.			

PROJECT NO.
BRIDGE NO.

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

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 211 N. BROADWAY SUITE 2800
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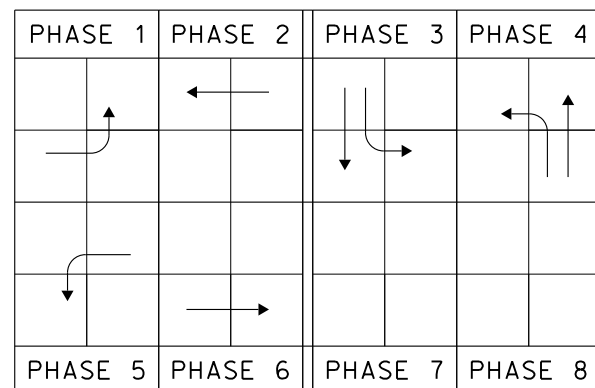
POWER SUPPLY														
LOCATION			POWER SUPPLY ASSEMBLY		CIRCUIT BREAKER TRIP RATING*				LIGHTING CONTROL * (ON POWER SUPPLY)		SERVICE POLE			
APPROACH	STATION	OFFSET	DRAWING 902.15	DRAWING	CONTROLLER		POWER SUPPLY DISCONNECT		120 VOLT CONTROL CABINET		CONTRACT FURNISH	UTILITY COMPANY		
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS					LIGHTING	
U.I.P.			Type	U.I.P.	15	Amps					Amps	Ct.	Ft.	U.I.P.
			Type		15	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	NEMA		170		TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E			332		336S		BITRAN		WAPITI			
			I	II	MASTER	LOCAL	NEMA	170	1	2		NEMA	170		1												
MO 180 & SPUR-PENNSYLVANIA	U.I.P.	U.I.P.																									

NEMA DETECTOR ASSIGNMENT									
CARD POSITION									
	1	2	3	4	5	6	7	8	
CHANNEL	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
		U	.	I	.	P	.
9	10	11	12	13	14	15	16
		U	.	I	.	P	.



DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
10	EB (PHASE 1)		1
20	WB (PHASE 2)		1
30	SB (PHASE 3)		1
40	NB (PHASE 4)		1
50	WB (PHASE 5)		1
60	EB (PHASE 6)		1
21	WB ADVANCE (PHASE 2)	1	
61	EB ADVANCE (PHASE 6)	1	
TOTAL		2	6

* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.

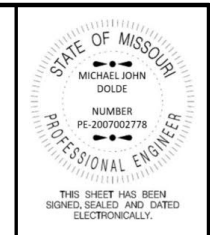
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MO 180 & SPUR-PENNSYLVANIA

INTERSECTION

TRAFFIC SIGNAL SHEET 70 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED

06/21/2024

ROUTE STATE

180 MO

DISTRICT SHEET NO.

SL 73

COUNTY

ST. LOUIS

JOB NO.

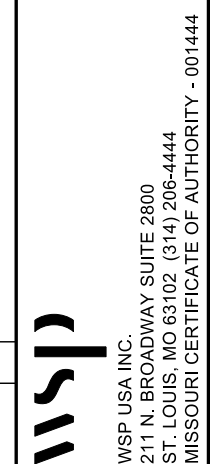
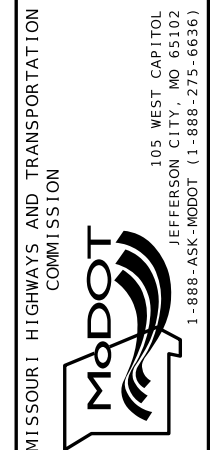
JSL0179

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		



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



REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	4	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.

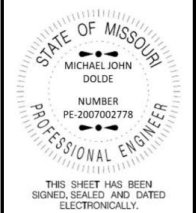


- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
- (2) THE CONTRACTOR SHALL REMOVE THE EXISTING VIDEO 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.

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 71 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED		06/21/2024	
ROUTE	STATE	MO	
180	MO		
DISTRICT	SHEET NO.	SL	74
COUNTY			
ST. LOUIS			
JOB NO.			
JSL0179			
CONTRACT ID.			
PROJECT NO.			
BRIDGE NO.			

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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		CONTRACT FURNISH	UTILITY COMPANY
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS	LIGHTING	MAIN BREAKER		
U.I.P.			Type	U.I.P.	15 Amps						Amps	Ct. Ft.
			Type		15 Amps							Amps

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	NEMA		170		TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E			332	336S	BITRAN		WAPITI	
					I	II	MASTER	LOCAL	NEMA	170			EV		DOUBLE								
MO 180 & FERGUSON	U.I.P.	U.I.P.																					

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

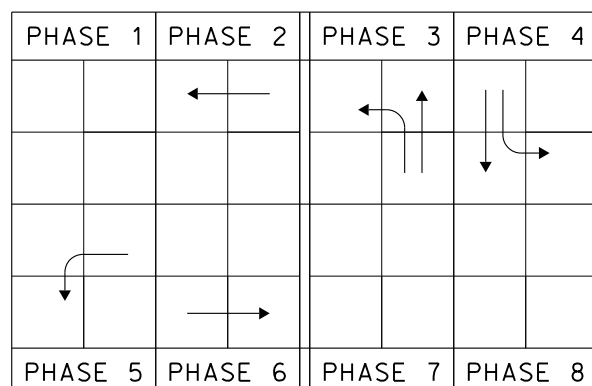
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
20	WB (PHASE 2)		1
31	NB (PHASE 3)		1
32	NB (PHASE 3)		1
40	SB (PHASE 4)		1
50	WB (PHASE 5)		1
61	EB (PHASE 6)		1
62	EB (PHASE 6)		1
21	WB ADVANCE (PHASE 2)	1	
63	EB ADVANCE (PHASE 6)	1	
64	EB ADVANCE (PHASE 6)	1	
TOTAL		3	7

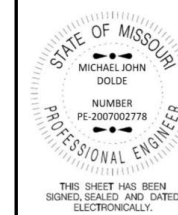
* ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.

- 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.
- THE INSTALLATION OF ALL EQUIPMENT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, DRAWINGS, AND ENGINEERING POLICY GUIDE.
- THE CONTRACTOR SHALL HAVE RESPONSIBILITY OF LOCATING ALL UNDERGROUND AND OVERHEAD FACILITIES, STRUCTURES, AND UTILITIES.
- 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.
- 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.
- 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.
- THE CONTRACTOR SHALL REMOVE ALL DISUSED EXISTING DETECTION CAMERA CABLE AS PART OF THE DETECTION INSTALLATION.
- THE CONTRACTOR SHALL PULL ROPE THROUGH ANY USED CONDUITS PER JSP R.
- 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.						



MO 180 & FERGUSON
 INTERSECTION
 TRAFFIC SIGNAL SHEET 72 OF 78
 ST. LOUIS COUNTY
 ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024
 ROUTE 180 STATE MO
 DISTRICT SL SHEET NO. 75
 COUNTY ST. LOUIS
 JOB NO. JSL0179
 CONTRACT ID.

PROJECT NO.

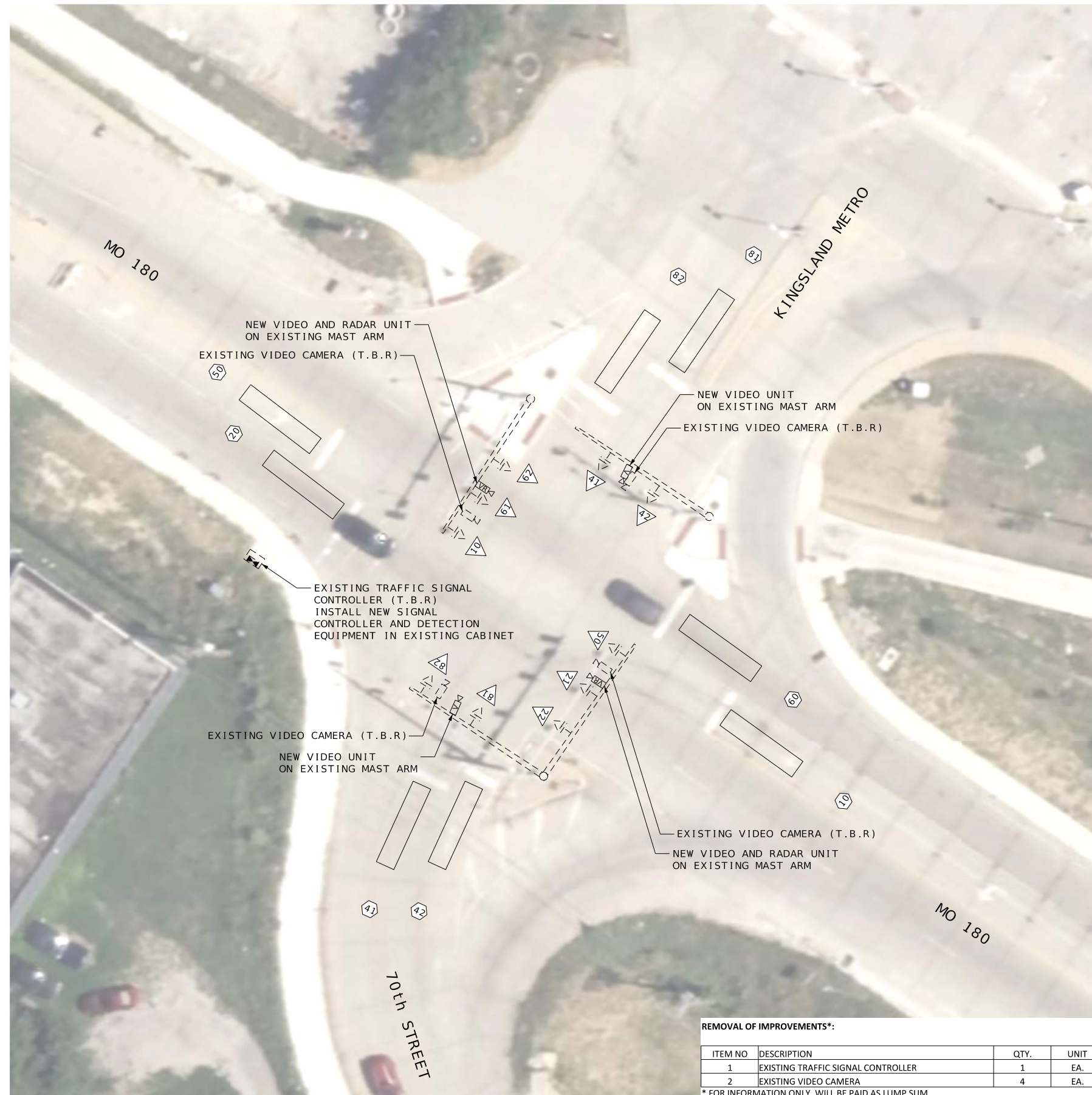
BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		



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

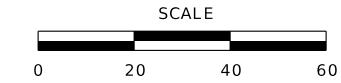
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



REMOVAL OF IMPROVEMENTS*:

ITEM NO	DESCRIPTION	QTY.	UNIT
1	EXISTING TRAFFIC SIGNAL CONTROLLER	1	EA.
2	EXISTING VIDEO CAMERA	4	EA.

* FOR INFORMATION ONLY. WILL BE PAID AS LUMP SUM.

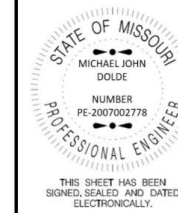


- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
- (2) THE CONTRACTOR SHALL REMOVE THE EXISTING VIDEO 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.

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 73 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024

ROUTE 180 STATE MO

DISTRICT SL SHEET NO. 76

COUNTY ST. LOUIS

JOB NO. JSL0179

CONTRACT ID.

PROJECT NO.

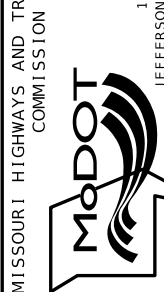
BRIDGE NO.

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

DATE

04/16/24
06/21/24

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION



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

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.

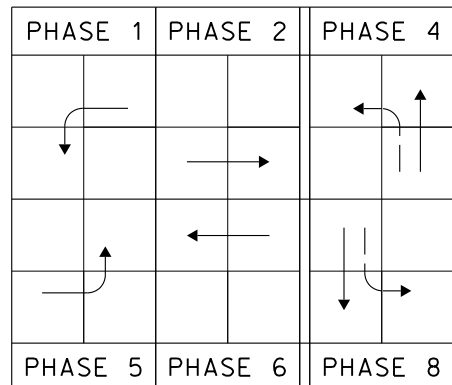
POWER SUPPLY													
LOCATION			POWER SUPPLY ASSEMBLY		CIRCUIT BREAKER TRIP RATING*				LIGHTING CONTROL * (ON POWER SUPPLY)		SERVICE POLE		
APPROACH	STATION	OFFSET	DRAWING 902.15	DRAWING	CONTROLLER		POWER SUPPLY DISCONNECT		120 VOLT CONTROL CABINET		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY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

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	NEMA	170	NEMA	170	TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI	
			MO 180 & KINGSLAND-METRO	U.I.P.	U.I.P.					I		II	MASTER		LOCAL		NEMA	170				

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

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

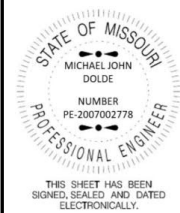
NEMA LOAD SWITCH ASSIGNMENTS							
1	2	3	4	5	6	7	8
		U	.	I	.	P	.
9	10	11	12	13	14	15	16
		U	.	I	.	P	.



DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
10	WB (PHASE 1)		1
20	EB (PHASE 2)		1
41	NB (PHASE 4)		1
42	NB (PHASE 4)		1
50	EB (PHASE 5)		1
60	WB (PHASE 6)		1
81	SB (PHASE 8)		1
82	SB (PHASE 8)		1
21	EB ADVANCE (PHASE 2)	1	
61	WB ADVANCE (PHASE 6)	1	
TOTAL		2	8

* 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
06/21/2024
ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 77
COUNTY ST. LOUIS
JOB NO. JSL0179
CONTRACT ID.

PROJECT NO.
BRIDGE NO.

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

DATE 04/16/24 06/21/24



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

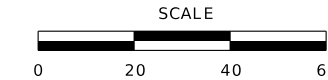
MO 180 & KINGSLAND-METRO

INTERSECTION

TRAFFIC SIGNAL SHEET 74 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS

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.

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 75 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS

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

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 06/21/2024	
ROUTE 180	STATE MO
DISTRICT SL	SHEET NO. 78
COUNTY ST. LOUIS	
JOB NO. JSL0179	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS					LIGHTING
U.I.P.			Type	U.I.P.	15 Amps								
			Type		15 Amps								

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	NEMA	170	NEMA	170	TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI	
							I	II	MASTER	LOCAL		NEMA	170									
MO 180 & LUCAS & HUNT	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	.		

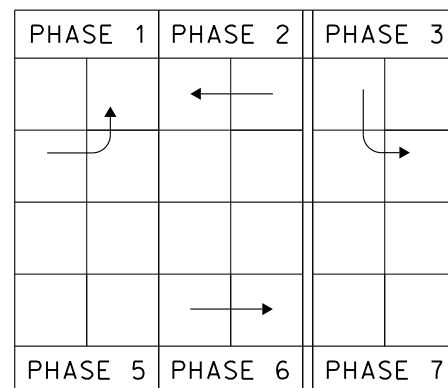
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

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
30	SB (PHASE 3)		1
60	EB (PHASE 6)		1
23	WB ADVANCE (PHASE 2)	1	
31	SB ADVANCE (PHASE 3)	1	
63	EB ADVANCE (PHASE 6)	1	
TOTAL		3	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.
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NEMA LOAD SWITCH ASSIGNMENTS											
1	2	3	4	5	6	7	8	9	10	11	12
				U	.	I	.	P	.		

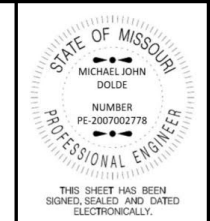


MO 180 & LUCAS & HUNT

INTERSECTION

TRAFFIC SIGNAL SHEET 76 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024

ROUTE 180 STATE MO

DISTRICT SL SHEET NO. 79

COUNTY ST. LOUIS

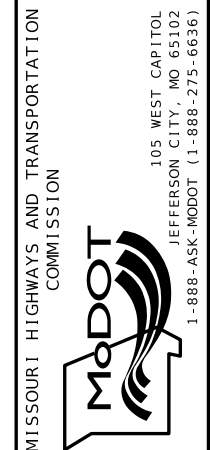
JOB NO. JSL0179

CONTRACT ID.

PROJECT NO.

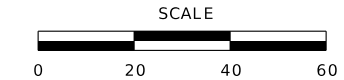
BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		



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.

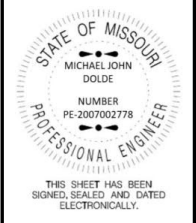


- (1) THE CONTRACTOR SHALL REMOVE THE EXISTING CONTROLLER AND DELIVER TO THE MODOT SIGNAL SHOP PER JSP K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE NEW CONTROLLER TO MATCH EXISTING PHASING, TIMING, AND COMMUNICATION SETTINGS PER JSP H.
- (2) THE CONTRACTOR SHALL REMOVE THE EXISTING VIDEO DETECTION EQUIPMENT INCLUDING ANY UNUSED CAMERAS, CABINET HARDWARE, MOUNTING HARDWARE/BRACKETS AND 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.

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 77 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED 06/21/2024	
ROUTE 180	STATE MO
DISTRICT SL	SHEET NO. 80
COUNTY ST. LOUIS	
JOB NO. JSL0179	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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		CONTRACT FURNISH	UTILITY COMPANY	
					AUXILIARY BREAKER	CONT & SIGNAL LAMPS	MAIN BREAKER	SIGNALS					LIGHTING
U.I.P.			Type	U.I.P.	15 Amps								
			Type		15 Amps								

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	NEMA	170	NEMA	170	TYPE		12C/7C HARDWARE (1)		TIME BASE	CLOSED LOOP		FIBER	E	EV	DOUBLE	332	336S	BITRAN	WAPITI	
							I	II	MASTER	LOCAL		NEMA	170									
MO 180 & OGDEN	U.I.P.	U.I.P.				1																

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

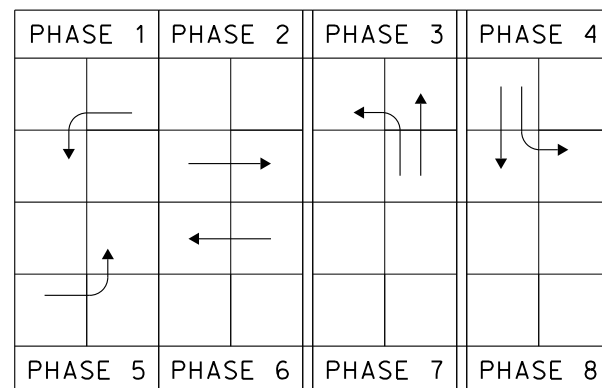
TOTAL NUMBER OF DETECTOR CARDS(2-CHANNEL) = (2)

DETECTOR SCHEDULE FOR INFORMATION ONLY			
DETECTOR NUMBER	APPROACH	TYPE	
		RADAR	VIDEO
10	WB (PHASE 1)		1
20	EB (PHASE 2)		1
30	NB (PHASE 3)		1
40	SB (PHASE 4)		1
50	EB (PHASE 5)		1
60	WB (PHASE 6)		1
21	EB ADVANCE (PHASE 2)	1	
61	WB ADVANCE (PHASE 6)	1	
TOTAL		2	6

* 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.

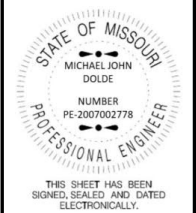
NEMA LOAD SWITCH ASSIGNMENTS											
1	2	3	4	5	6	7	8	9	10	11	12
				U.I.P.							



MO 180 & OGDEN
INTERSECTION

TRAFFIC SIGNAL SHEET 78 OF 78

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED
06/21/2024
ROUTE 180 STATE MO
DISTRICT SL SHEET NO. 81
COUNTY ST. LOUIS
JOB NO. JSL0179
CONTRACT ID.

PROJECT NO.
BRIDGE NO.

DATE	DESCRIPTION	PRELIMINARY PLANS		FINAL PLANS	
		04/16/24	06/21/24		



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

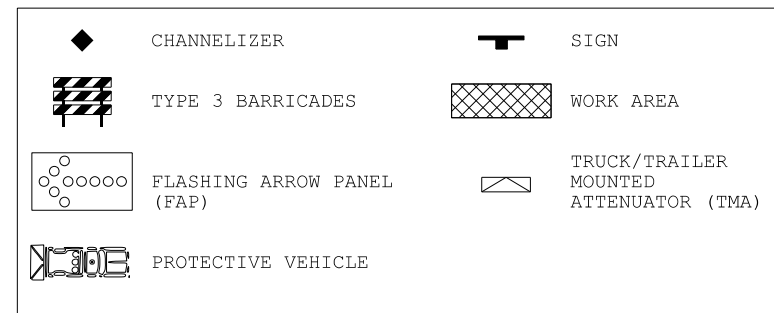
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

616.8.3S STATIONARY SHOULDER WORK

SPEED PERMANENT POSTED (MPH)	SIGN SPACING (FT.)		TAPER LENGTH (FT.)		OPTIONAL CHANNELIZER SPACING (FT.)		
	UNDIVIDED (S)		SHOULDER (1) (T1)	LANE (2) (T2)	BUFFER LENGTH (FT.) (B)	TAPERS	BUFFER/ WORK AREAS
0-35	200		70	-	250	35	40
40-45	500		150	-	360	40	80
50-55	1000		185	-	495	50	80
60-70	SA - 1000 SB - 1500		235	-	730	60	120

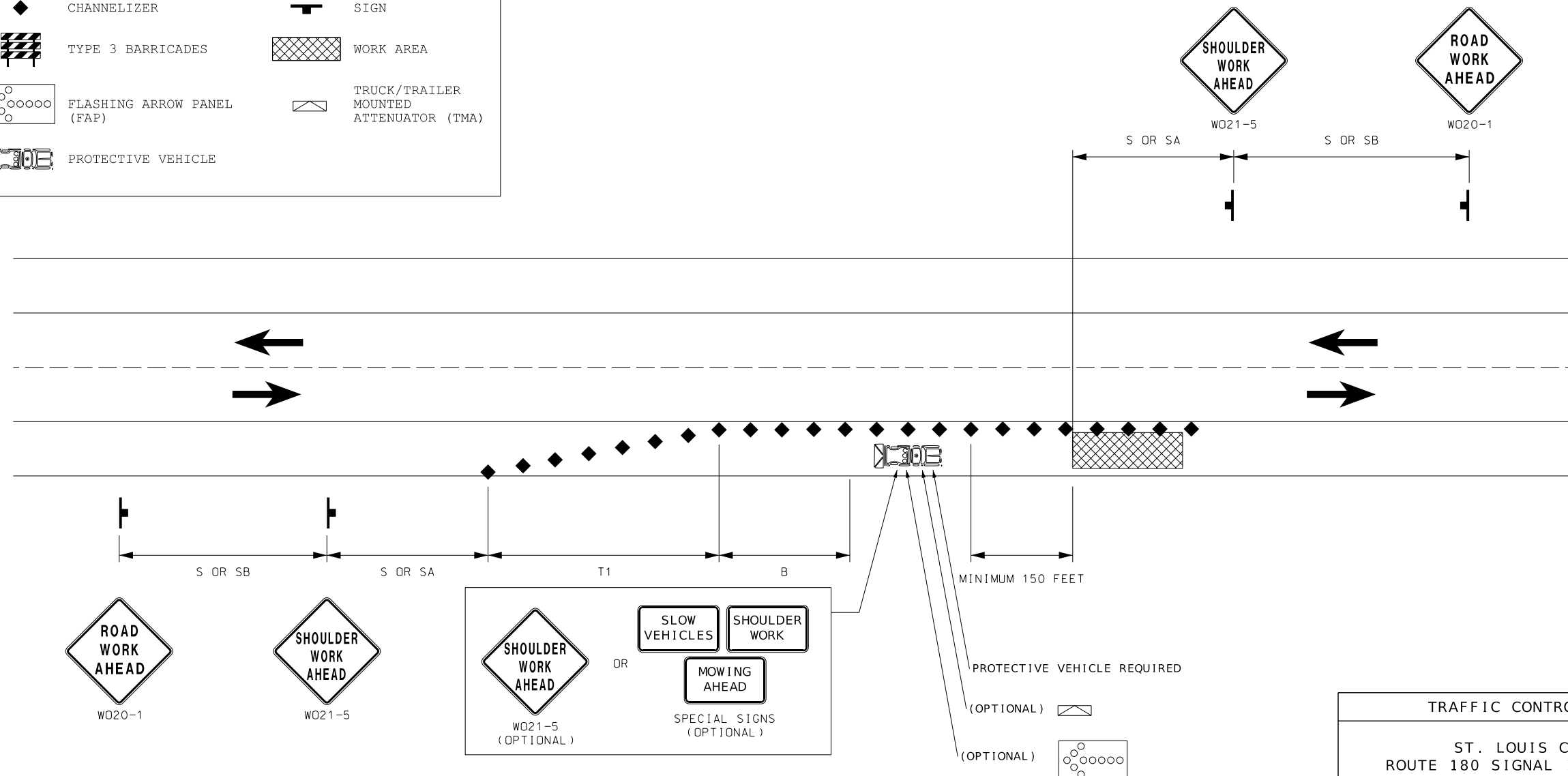
1. SHOULDER TAPER LENGTH BASED ON 10 FT (STANDARD SHOULDER WIDTH) OFFSET.
2. LANE TAPER LENGTH BASED ON 12 FT (STANDARD LANE WIDTH) OFFSET.

TYPE OF ROADWAY	SIGN HEIGHT (MINIMUM)	MAXIMUM WORKZONE LENGTH (L)
URBAN	1' PORTABLE, 7' POST	1 MILE
RURAL DIVIDED	1' PORTABLE, 7' POST	2 MILE
VEHICLE	48 INCHES RECOMMENDED	-

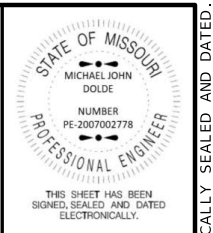


NOTES:

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.



TRAFFIC CONTROL SHEET
ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED 06/21/2024	
ROUTE 180	STATE MO
DISTRICT SL	SHEET NO. 82
COUNTY ST. LOUIS	
JOB NO. JSL0179	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION
04/16/24	PRELIMINARY PLANS
06/21/24	FINAL PLANS

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

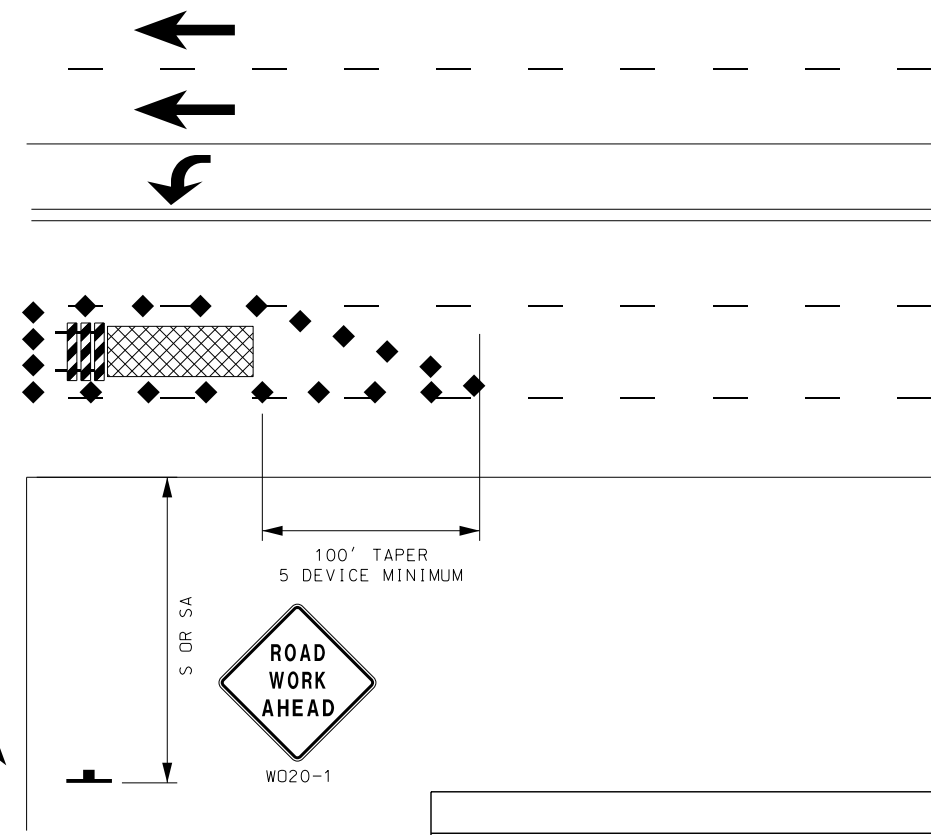
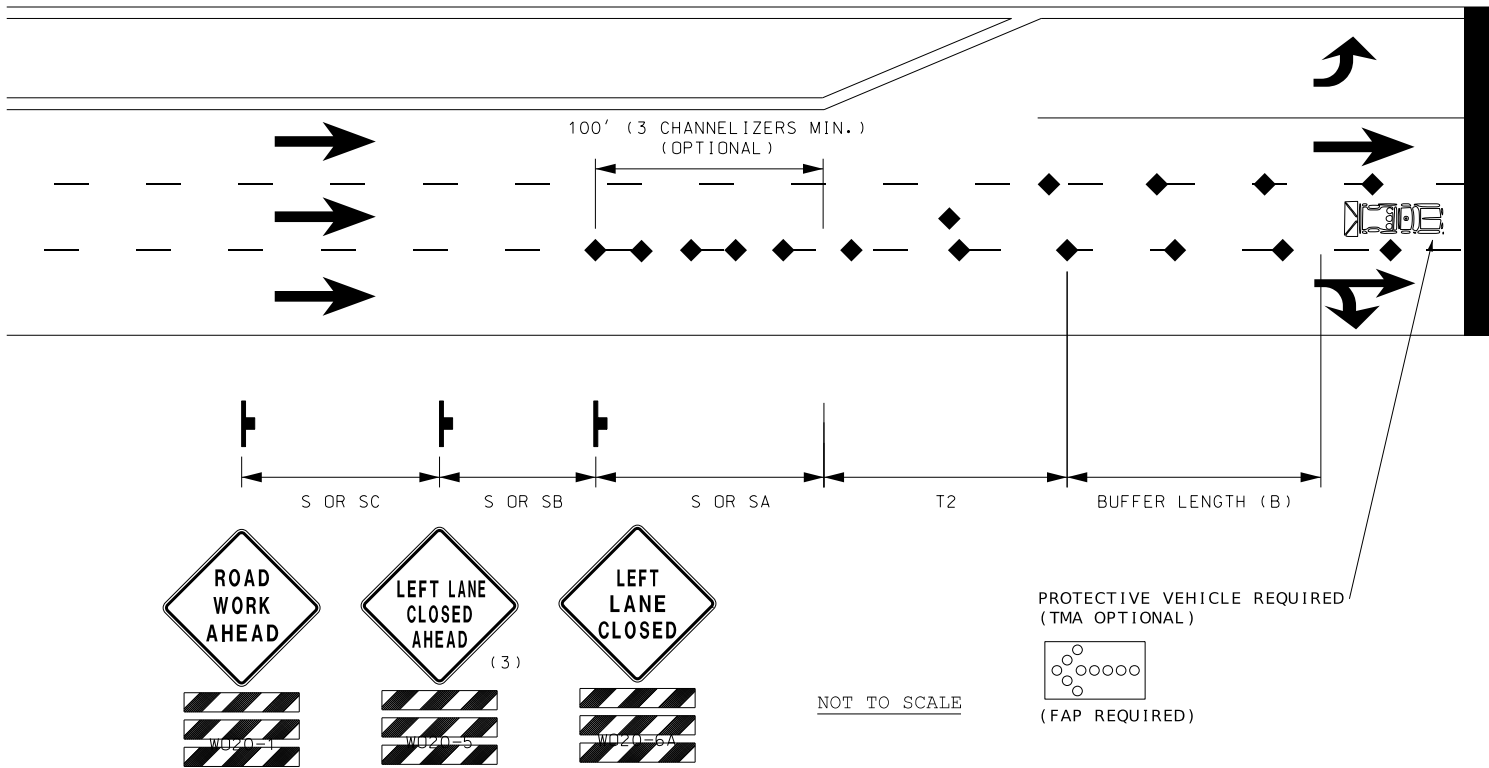
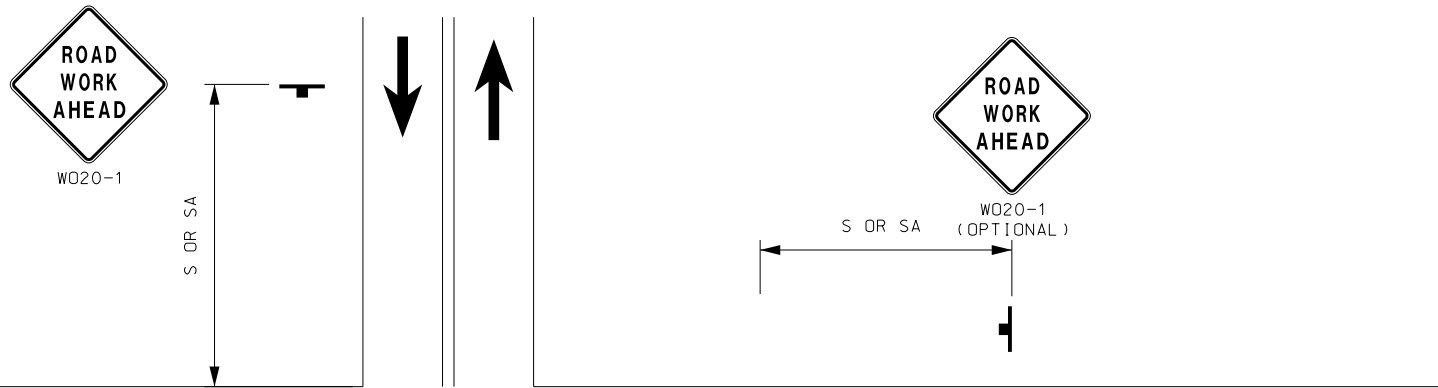
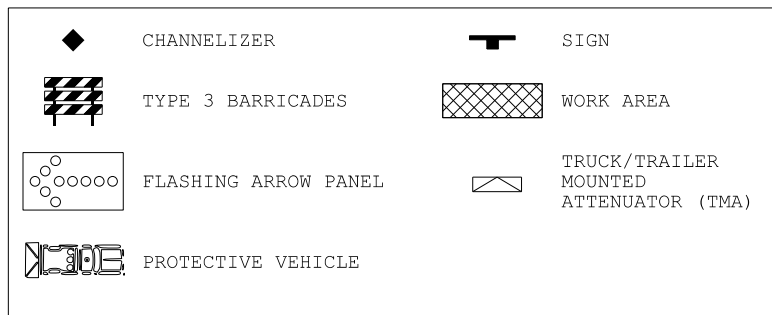
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

616.8.21S STATIONARY CENTER LANE CLOSURE AT AN INTERSECTION

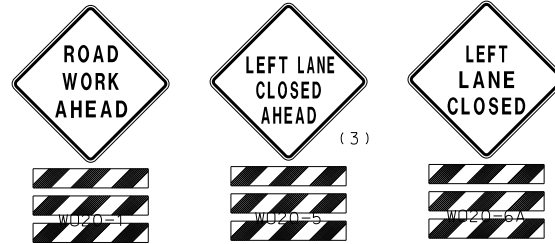
SPEED PERMANENT POSTED (MPH)	SIGN SPACING (FT.)		TAPER LENGTH (FT.)		OPTIONAL BUFFER LENGTH (FT.) (B)	CHANNELIZER SPACING (FT.)	
	UNDIVIDED (S)	DIVIDED (S)	SHOULDER (1) (T1)	LANE (2) (T2)		TAPERS	BUFFER/ WORK AREAS
0-35	200	200	-	245	250	35	40
40-45	350	500	-	540	360	40	80
50-55	500	1000	-	660	495	50	80
60-70	1000	SA - 1000 SB - 1500 SC - 2640	-	840	730	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.

TYPE OF ROADWAY	SIGN HEIGHT (MINIMUM)	MAXIMUM WORKZONE LENGTH (L)
URBAN	1' PORTABLE, 7' POST	1 MILE
RURAL DIVIDED	1' PORTABLE, 7' POST	2 MILE
RURAL UNDIVIDED	1' PORTABLE, 5' POST	3 MILE
VEHICLE	48 INCHES RECOMMENDED	-



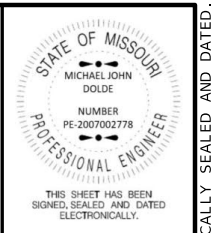
- NOTES:
- SEE EPG 616.12 WORK ZONE SPEED LIMITS FOR SPEED LIMIT GUIDELINES.
 - USE EPG 616.33SD (TA-33SD) SHORT DURATION LANE CLOSURE ON A MULTI-LANE HIGHWAY FOR SETTING ADVANCE WARNING SIGNS.
 - FOR SIGNALIZED INTERSECTIONS, ADJUSTMENTS MAY NEED TO BE MADE TO SIGNAL PHASING, TIMING, INDICATIONS OR DETECTOR SETTINGS.
 - REMOVE AND/OR MODIFY EXISTING PAVEMENT MARKINGS AS NEEDED.
 - PAVEMENT MARKING AND BARRICADES OPTIONAL FOR SHORT TERM OPERATIONS.
 - TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM LANE CLOSURES.
 - 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.
 - IF RUMBLE STRIPS ARE USED, REVIEW 616.6.87 RUMBLE STRIPS.
 - FOR LONG-TERM OPERATIONS, REFER TO EPG 616.6.2.2 FLAGS AND ADVANCE WARNING RAIL SYSTEM.



PROTECTIVE VEHICLE REQUIRED
(TMA OPTIONAL)
(FAP REQUIRED)

NOT TO SCALE

TRAFFIC CONTROL SHEET
ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED 06/21/2024	
ROUTE 180	STATE MO
DISTRICT SL	SHEET NO. 83
COUNTY ST. LOUIS	
JOB NO. JSL0179	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION
04/16/24	PRELIMINARY PLANS
06/21/24	FINAL PLANS

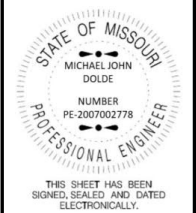
MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

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.

616.8.22S STATIONARY RIGHT LANE CLOSURE AT AN INTERSECTION



DATE PREPARED 06/21/2024	
ROUTE 180	STATE MO
DISTRICT SL	SHEET NO. 84
COUNTY ST. LOUIS	
JOB NO. JSL0179	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION
04/16/24	PRELIMINARY PLANS
06/21/24	FINAL PLANS

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.

SPEED NORMAL POSTED (MPH)	SIGN SPACING (FT.)		TAPER LENGTH (FT.)		RECOMMENDED BUFFER LENGTH (FT.) (B)	LONGITUDINAL TRANSITION (X)	CHANNELIZER SPACING (FT.)	
	UNDIVIDED (S)	DIVIDED (S)	SHOULDER (1) (T1)	LANE (2) (T2)			TAPERS	BUFFER/ WORK AREAS
0-35	-	200	70	245	250	120	35	40
40-45	-	500	150	540	360	270	40	80
50-55	-	1000	185	660	495	330	50	80
60-70	-	SA - 1000 SB - 1500 SC - 2640	235	840	730	420	60	120

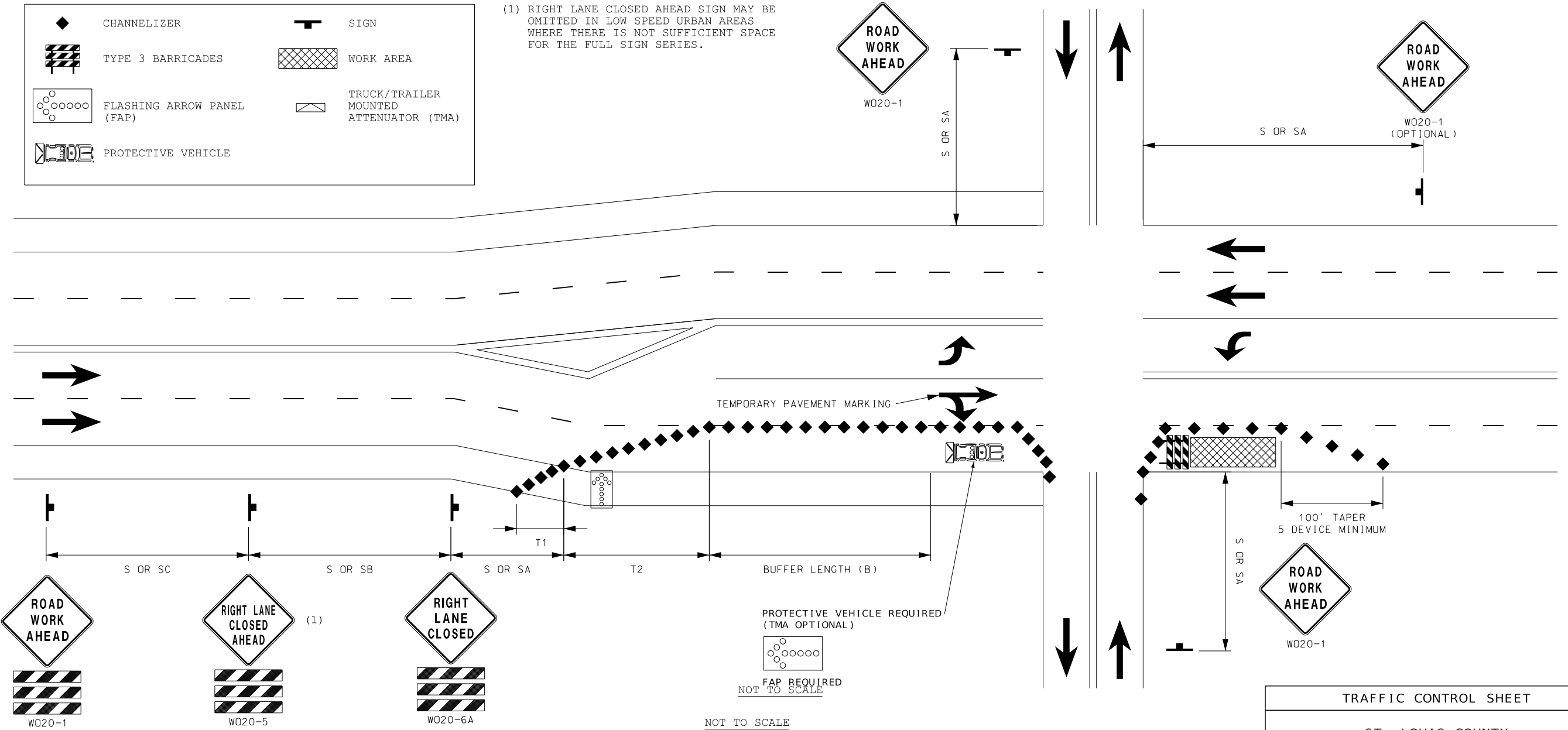
1. SHOULDER TAPER LENGTH BASED ON 10 FT (STANDARD SHOULDER WIDTH) OFFSET.
 2. LANE TAPER LENGTH BASED ON 12 FT (STANDARD LANE WIDTH OFFSET).

TYPE OF ROADWAY	SIGN HEIGHT (MINIMUM)	MAXIMUM WORKZONE LENGTH (L)
URBAN	1' PORTABLE, 7' POST	1 MILE
RURAL DIVIDED	1' PORTABLE, 7' POST	2 MILE
RURAL UNDIVIDED	1' PORTABLE, 5' POST	3 MILE
VEHICLE	48 INCHES RECOMMENDED	-

- NOTES:
- SEE EPG 616.12 WORK ZONE SPEED LIMITS FOR SPEED LIMIT GUIDELINES.
 - USE EPG 616.33SD (TA-33SD) SHORT DURATION LANE CLOSURE ON A MULTI-LANE HIGHWAY FOR SETTING ADVANCE WARNING SIGNS.
 - FOR SIGNALIZED INTERSECTIONS, ADJUSTMENTS MAY NEED TO BE MADE TO SIGNAL PHASING, TIMING, INDICATIONS OR DETECTOR SETTINGS.
 - REMOVE AND/OR MODIFY EXISTING PAVEMENT MARKINGS AS NEEDED.
 - PAVEMENT MARKING AND BARRICADES OPTIONAL FOR SHORT TERM OPERATIONS.
 - TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM LANE CLOSURES.
 - 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.
 - IF RUMBLE STRIPS ARE USED, REVIEW 616.6.87 RUMBLE STRIPS.
 - FOR FLAGS AND ADVANCE WARNING RAIL SYSTEM, REFER TO EPG 616.6.2.2 FLAGS AND ADVANCE WARNING RAIL SYSTEM.

	CHANNELIZER		SIGN
	TYPE 3 BARRICADES		WORK AREA
	FLASHING ARROW PANEL (FAP)		TRUCK/TRAILER MOUNTED ATTENUATOR (TMA)
	PROTECTIVE VEHICLE		

(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.



616.8.23S STATIONARY LEFT LANE CLOSURE AT AN INTERSECTION

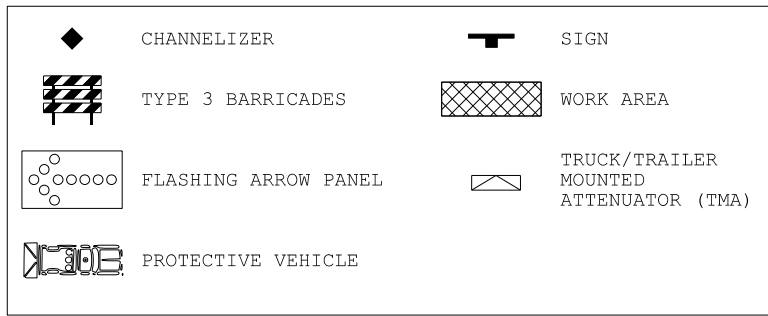
SPEED PERMANENT POSTED (MPH)	SIGN SPACING (FT.)		TAPER LENGTH (FT.)		OPTIONAL BUFFER LENGTH (FT.) (B)	CHANNELIZER SPACING (FT.)	
	UNDIVIDED (S)	DIVIDED (S)	SHOULDER (1) (T1)	LANE (2) (T2)		TAPERS	BUFFER/ WORK AREAS
0-35	200	200	-	245	250	35	40
40-45	350	500	-	540	360	40	80
50-55	500	1000	-	660	495	50	80
60-70	1000	SA - 1000 SB - 1500 SC - 2640	-	840	730	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.

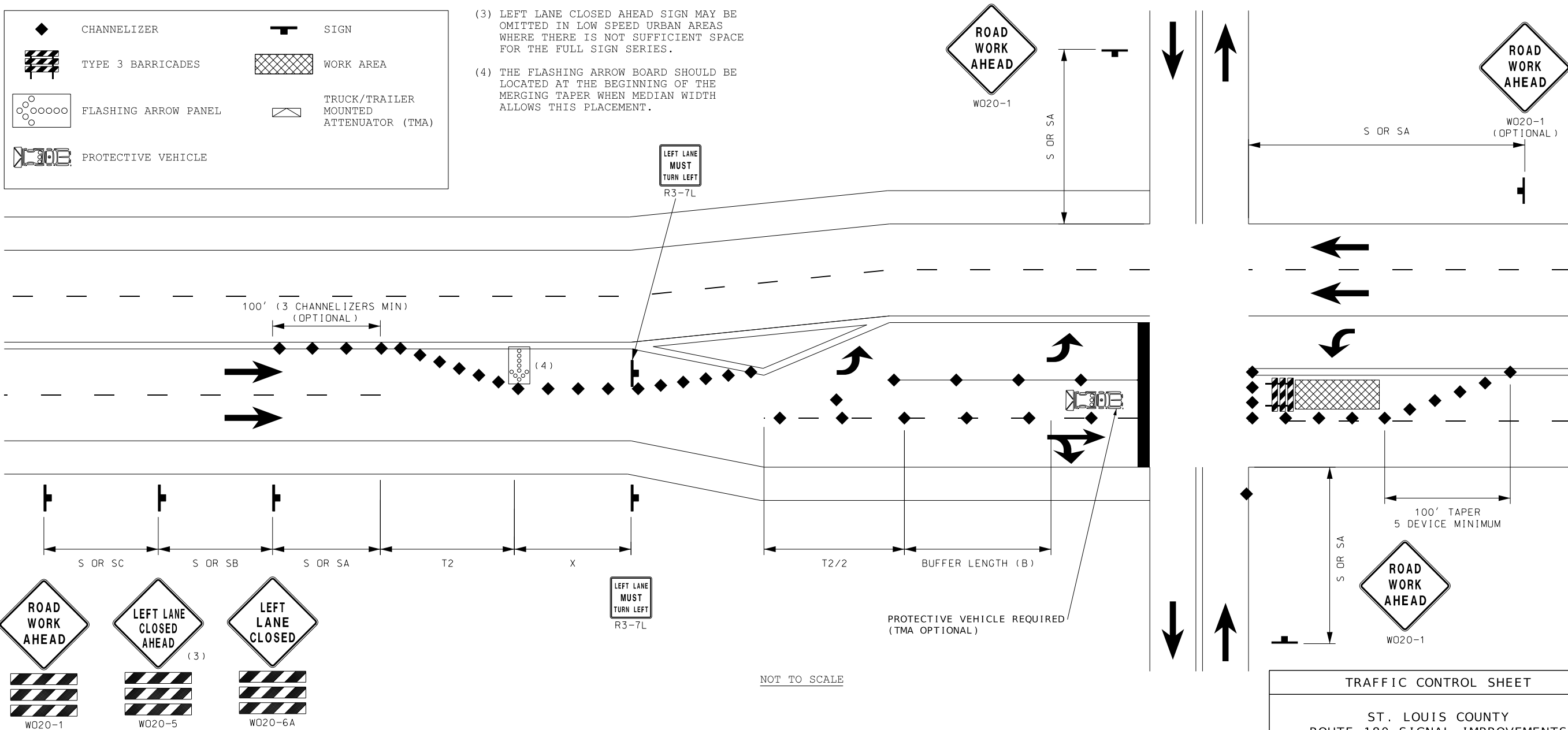
TYPE OF ROADWAY	SIGN HEIGHT (MINIMUM)	MAXIMUM WORKZONE LENGTH (L)
URBAN	1' PORTABLE, 7' POST	1 MILE
RURAL DIVIDED	1' PORTABLE, 7' POST	2 MILE
RURAL UNDIVIDED	1' PORTABLE, 5' POST	3 MILE
VEHICLE	48 INCHES RECOMMENDED	-

NOTES:

- SEE EPG 616.12 WORK ZONE SPEED LIMITS FOR SPEED LIMIT GUIDELINES.
- USE EPG 616.33SD (TA-33SD) SHORT DURATION LANE CLOSURE ON A MULTI-LANE HIGHWAY FOR SETTING ADVANCE WARNING SIGNS.
- FOR SIGNALIZED INTERSECTIONS, ADJUSTMENTS MAY NEED TO BE MADE TO SIGNAL PHASING, TIMING, INDICATIONS OR DETECTOR SETTINGS.
- REMOVE AND/OR MODIFY EXISTING PAVEMENT MARKINGS AS NEEDED.
- PAVEMENT MARKING AND BARRICADES OPTIONAL FOR SHORT TERM OPERATIONS.
- TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM LANE CLOSURES.
- 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.
- IF RUMBLE STRIPS ARE USED, REVIEW 616.6.87 RUMBLE STRIPS.
- FOR LONG-TERM OPERATIONS, REFER TO EPG 616.6.2.2 FLAGS AND ADVANCE WARNING RAIL SYSTEM.



- LEFT LANE CLOSED AHEAD SIGN MAY BE OMITTED IN LOW SPEED URBAN AREAS WHERE THERE IS NOT SUFFICIENT SPACE FOR THE FULL SIGN SERIES.
- THE FLASHING ARROW BOARD SHOULD BE LOCATED AT THE BEGINNING OF THE MERGING TAPER WHEN MEDIAN WIDTH ALLOWS THIS PLACEMENT.



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

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 06/21/2024	
ROUTE 180	STATE MO
DISTRICT SL	SHEET NO. 85
COUNTY ST. LOUIS	
JOB NO. JSL0179	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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

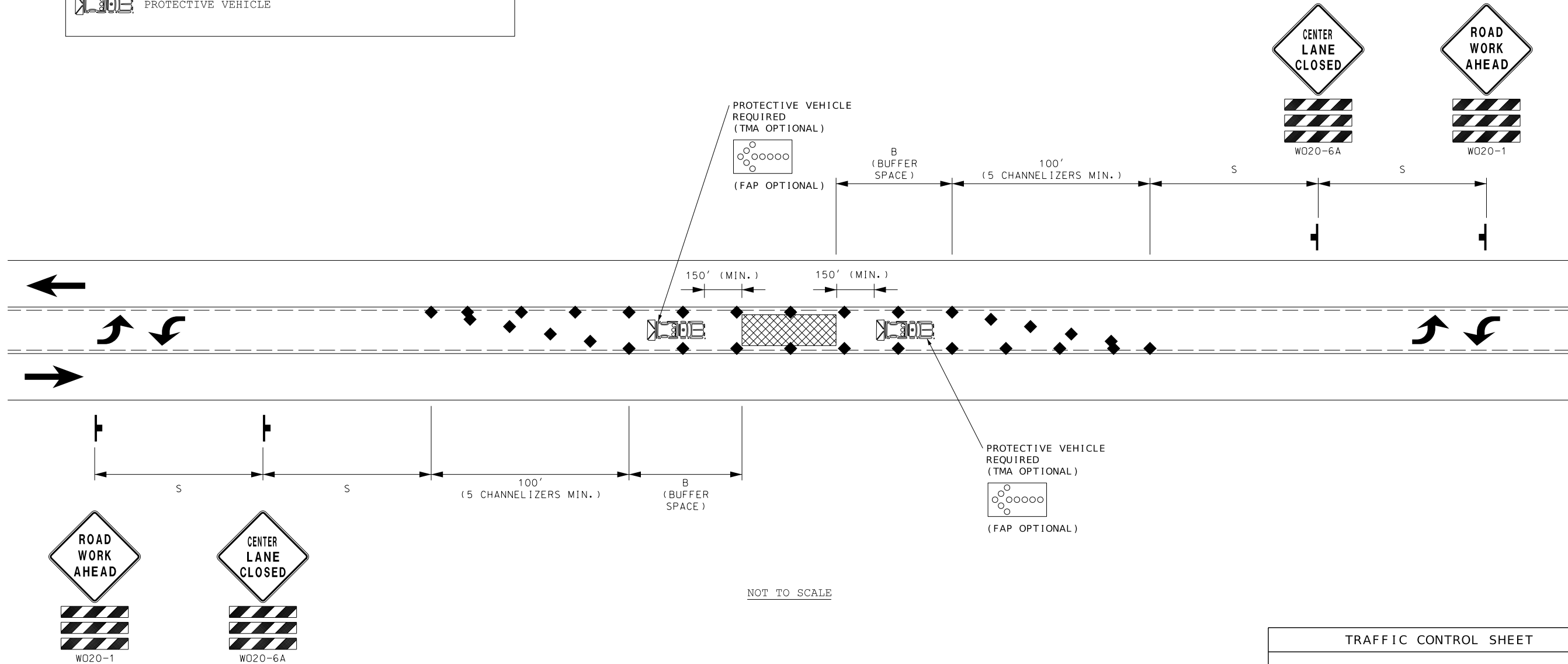
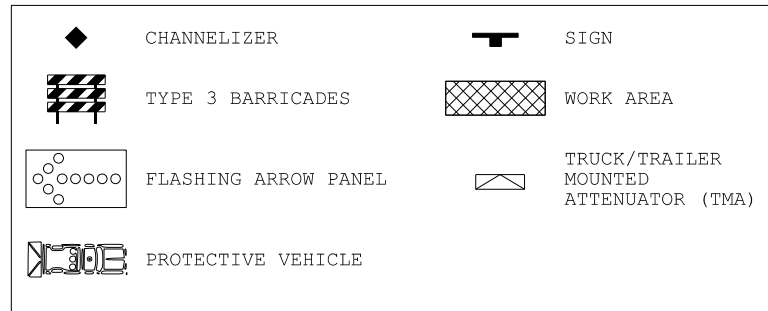
616.8.30STWLT L STATIONARY LANE CLOSURE WITH A TWO-WAY LEFT TURN LANE

SPEED PERMANENT POSTED (MPH)	SIGN SPACING (FT.) (S)	TAPER LENGTH (FT.)		OPTIONAL BUFFER LENGTH (FT.) (B)	CHANNELIZER SPACING (FT.)	
		SHOULDER (1) (T1)	LANE (2) (T2)		TAPERS	BUFFER/WORK AREAS
0-35	200	-	-	250	-	40
40-45	350	-	-	360	-	80
50-55	500	-	-	495	-	80
60-70	1000	-	-	730	-	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.

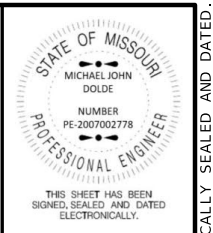
NOTES:

- SEE EPG 616.12 WORK ZONE SPEED LIMITS FOR SPEED LIMIT GUIDELINES.
- IF RUMBLE STRIPS ARE USED, REVIEW 616.6.87 RUMBLE STRIPS.
- FOR FLAGS AND ADVANCE WARNING RAIL SYSTEM, REFER TO EPG 616.6.2.2 FLAGS AND ADVANCE WARNING RAIL SYSTEM.



NOT TO SCALE

TRAFFIC CONTROL SHEET
ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED 06/21/2024	
ROUTE 180	STATE MO
DISTRICT SL	SHEET NO. 86
COUNTY ST. LOUIS	
JOB NO. JSL0179	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION
04/16/24	PRELIMINARY PLANS
06/21/24	FINAL PLANS

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

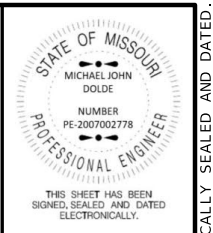
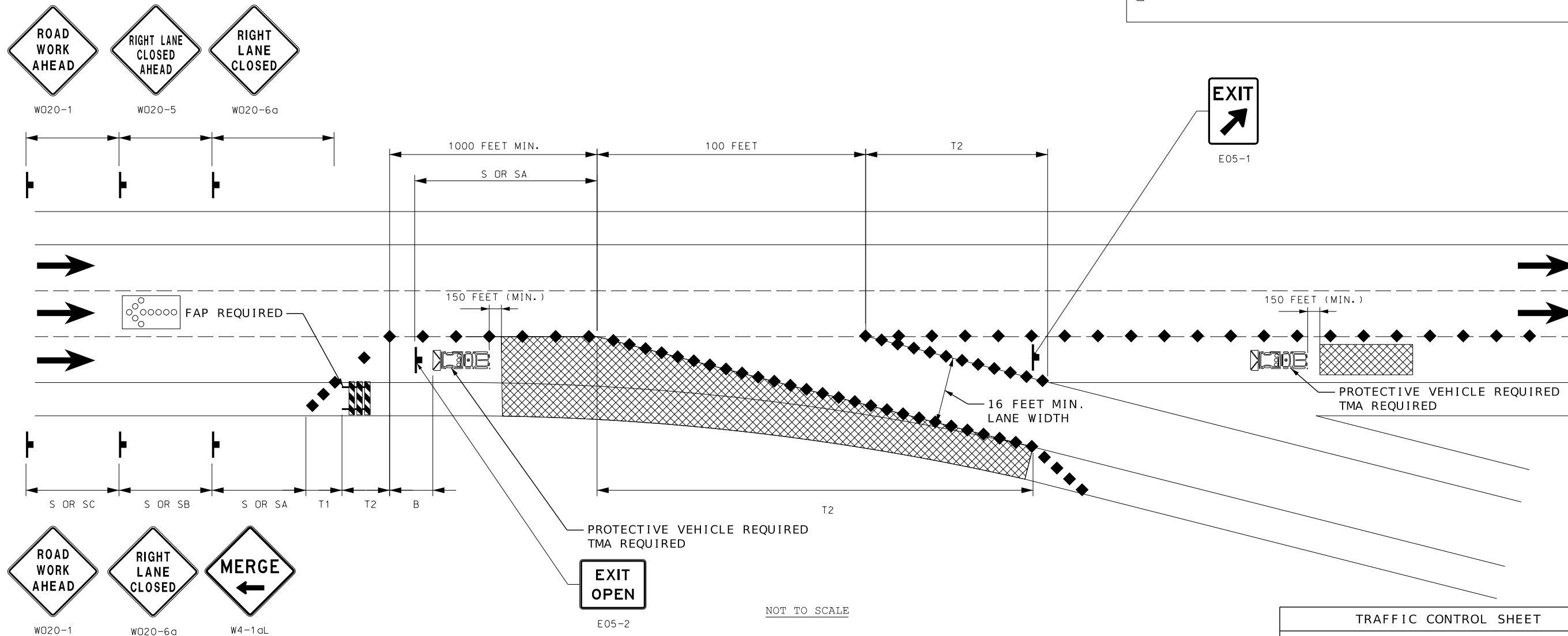
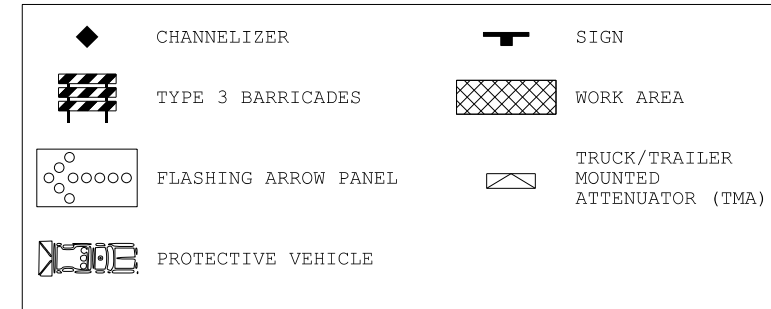
616.8.42S STATIONARY WORK IN THE VICINITY OF EXIT RAMP

NOTES:

- SEE EPG 616.12 WORK ZONE SPEED LIMITS FOR SPEED LIMIT GUIDELINES.
- IF RUMBLE STRIPS ARE USED, REVIEW 616.6.87 RUMBLE STRIPS.
- FOR FLAGS AND ADVANCE WARNING RAIL SYSTEM, REFER TO EPG 616.6.2.2 FLAGS AND ADVANCE WARNING RAIL SYSTEM.

SPEED PERMANENT POSTED (MPH)	SIGN SPACING (FT.)		TAPER LENGTH (FT.)		OPTIONAL BUFFER LENGTH (FT.) (B)	CHANNELIZER SPACING (FT.)	
	UNDIVIDED (S)	DIVIDED (S)	SHOULDER (1) (T1)	LANE (2) (T2)		TAPERS	BUFFER/ WORK AREAS
0-35	200	200	70	245	250	35	40
40-45	350	500	150	540	360	40	80
50-55	500	1000	185	660	495	50	80
60-70	1000	SA - 1000 SB - 1500 SC - 2640	235	840	730	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.



DATE PREPARED 06/21/2024	
ROUTE 180	STATE MO
DISTRICT SL	SHEET NO. 87
COUNTY ST. LOUIS	
JOB NO. JSL0179	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

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MISSOURI CERTIFICATE OF AUTHORITY - 001444

TRAFFIC CONTROL SHEET

ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS

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

616.8.44S STATIONARY WORK IN THE VICINITY OF AN ENTRANCE RAMP

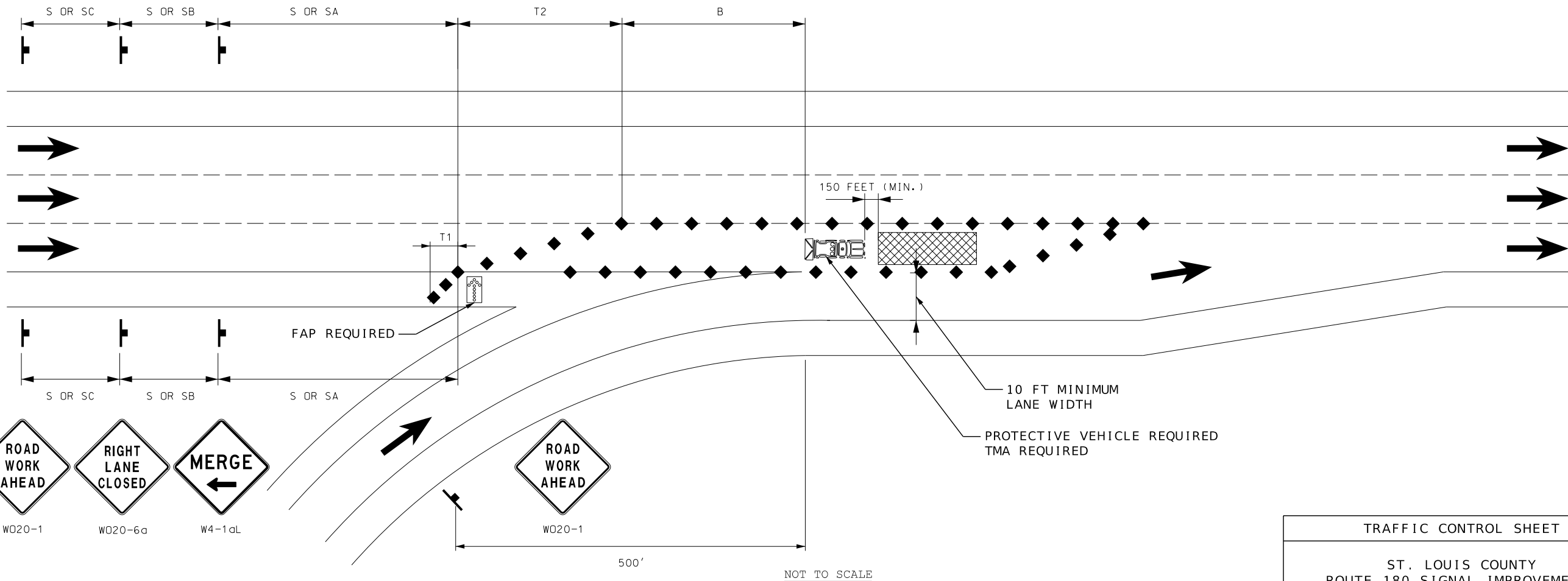
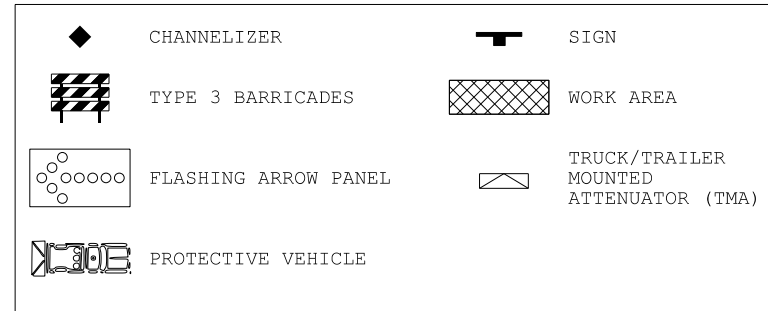
NOTES:

- SEE EPG 616.12 WORK ZONE SPEED LIMITS FOR SPEED LIMIT GUIDELINES.
- IF RUMBLE STRIPS ARE USED, REVIEW 616.6.87 RUMBLE STRIPS.
- FOR FLAGS AND ADVANCE WARNING RAIL SYSTEM, REFER TO EPG 616.6.2.2 FLAGS AND ADVANCE WARNING RAIL SYSTEM.

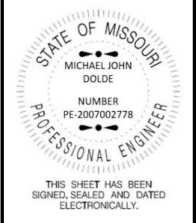
SPEED PERMANENT POSTED (MPH)	SIGN SPACING (FT.)		TAPER LENGTH (FT.)		OPTIONAL BUFFER LENGTH (FT.) (B)	CHANNELIZER SPACING (FT.)	
	UNDIVIDED (S)	DIVIDED (S)	SHOULDER (1) (T1)	LANE (2) (T2)		TAPERS	BUFFER/ WORK AREAS
0-35	200	200	70	245	250	35	40
40-45	350	500	150	540	360	40	80
50-55	500	1000	185	660	495	50	80
60-70	1000	SA - 1000 SB - 1500 SC - 2640	235	840	730	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.

TYPE OF ROADWAY	SIGN HEIGHT (MINIMUM)	MAXIMUM WORKZONE LENGTH (L)
URBAN	1' PORTABLE, 7' POST	1 MILE
RURAL DIVIDED	1' PORTABLE, 7' POST	2 MILE



TRAFFIC CONTROL SHEET
ST. LOUIS COUNTY
ROUTE 180 SIGNAL IMPROVEMENTS



DATE PREPARED	06/21/2024
ROUTE	180
STATE	MO
DISTRICT	SL
SHEET NO.	88
COUNTY	ST. LOUIS
JOB NO.	JSL0179
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION	DATE
PRELIMINARY PLANS	04/16/24
FINAL PLANS	06/21/24

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