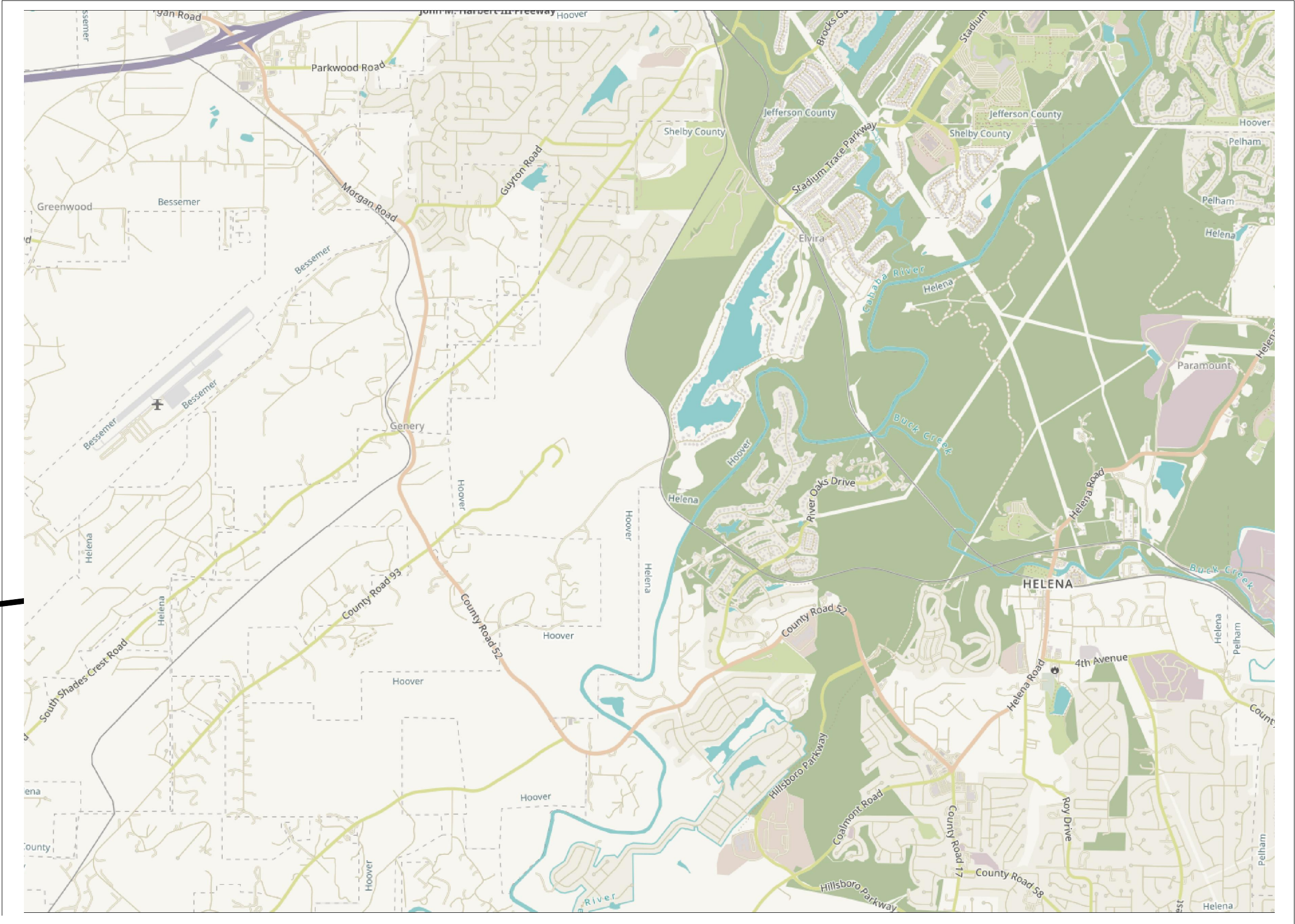


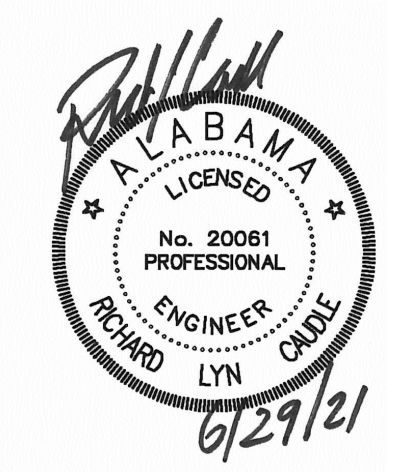
SHELBY COUNTY
HIGHWAY DEPARTMENT
PLANS OF PROPOSED
PROJECT NO. SCP 59-926-21
TRAFFIC SIGNAL CONSTRUCTION
AT HIGHWAY 52 AND HIGHWAY 93
SHELBY COUNTY

REFERENCE PROJECT NO.	FISCAL YEAR	SHEET NO.	LAST SHEET NO.
SCP-59-926-21	2021	1	6

PROJECT LOCATION



VICINITY MAP



PLANS PREPARED BY:
SKIPPER
CONSULTING INC
3644 VANN ROAD SUITE 100
BIRMINGHAM, ALABAMA 35235
TELEPHONE: (205)655-8855

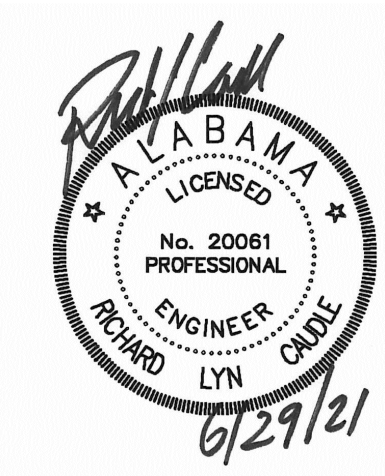
INDEX TO SHEETS

REFERENCE PROJECT NO.	FISCAL YEAR	SHEET NO.
SCP-59-926-21	2021	1B

<u>SHEET NO.</u>	<u>TITLE</u>	<u>DESCRIPTION</u>
1.	TITLE SHEET	
1B.	INDEX TO SHEETS	
1C.	TRAFFIC SIGNAL LEGEND	
2.	TRAFFIC SIGNAL NOTES	
3.	TRAFFIC SIGNAL QUANTITIES	
4.	TRAFFIC SIGNAL PLAN	TRAFFIC SIGNAL CONSTRUCTION PLAN – CR-52 AT CR-93
5.	TRAFFIC SIGNAL DETAILS	SPECIAL PROJECT TRAFFIC SIGNAL DETAILS
6.	TRAFFIC CONTROL PLAN	

2020 ALDOT STANDARD AND SPECIAL DRAWING REFERENCES

<u>INDEX</u>	<u>DRAWING NO.</u>	<u>DESCRIPTION</u>
74007	TCD-100	DETAILS OF TRAFFIC CHANNELIZING DEVICES
73001	T.S.D.-730-1	POWER SOURCE DETAIL FOR TRAFFIC SIGNALS AND TRAFFIC SIGNAL POLES WITH LIGHTING
73005	T.S.D.-730-2A	METAL TRAFFIC SIGNAL POLE AND LIGHTING INSTALLATION DETAILS (SHEET 2 OF 3)
73006	T.S.D.-730-2B	METAL TRAFFIC SIGNAL POLE AND LIGHTING INSTALLATION DETAILS (SHEET 3 OF 3)
73009	T.S.D.-730-4	TRAFFIC SIGNAL POLE FOUNDATION
73027	T.S.D.-730-10	BASE AND POLE MOUNTED CONTROLLER CABINET INSTALLATIONS
73033	T.S.D.-730-12	VIDEO DETECTION SYSTEM INSTALLATION
73048	T.S.D.-730-17	RADAR DETECTION SYSTEM DETAILS
73051	T.S.D.-730-18	FLASHING YELLOW ARROW SIGN
73084	TSOP MO.30	TRAFFIC SIGNAL OPERATING PLAN
71032	IHS-710-21	DETAILS FOR LOCATION AND MOUNTING STANDARD FLAT PANEL SIGNS ON U-CHANNEL AND TUBULAR POSTS
71075	SHS-13	STANDARD HIGHWAY SIGNS
71085	SHS-22	STANDARD HIGHWAY SIGNS



RESPONSIBLE PE: Richard L. Caudle, P.E.	SUPERVISOR: Richard L. Caudle, P.E.	DESIGNER: Richard L. Caudle, P.E.	PLAN SUBMITTAL	SHELBY COUNTY HIGHWAY DEPARTMENT		SHEET TITLE	ROUTE
DATE: June 29, 2021	DATE: June 29, 2021	DATE: June 29, 2021	FINAL			INDEX TO SHEETS	CR-52

TRAFFIC SIGNAL AND ITS LEGEND

REFERENCE PROJECT NO.	FISCAL YEAR	SHEET NO.
SCP-59-926-21	2021	1C

ELECTRICAL BOXES

	EXISTING	REQUIRED
METALLIC PULL BOX		
FIBER OPTIC COMMBOX TYPE F1		
FIBER OPTIC COMMBOX TYPE F2		
TRAFFIC SIGNAL JUNCTION BOX		

CABLE IN CONDUIT

	EXISTING	REQUIRED
FIBER OPTIC CABLE IN CONDUIT (UNDERGROUND)		
FIBER OPTIC CABLE IN CONDUIT (UNDERGROUND WITH CONCRETE)		
FIBER OPTIC CABLE IN CONDUIT (BRIDGE ATTACHED)		
FIBER OPTIC CABLE (AERIAL INSTALLATION)		
INTERCONNECT CABLE IN CONDUIT (UNDERGROUND)		
INTERCONNECT CABLE (AERIAL INSTALLATION)		
CONDUIT		
ENCASEMENT		
OVERHEAD ELECTRIC		
BURIED ELECTRIC		

VEHICULAR DETECTORS

	EXISTING	REQUIRED
PRESENCE LOOP DETECTOR		
QUADRUPOLE LOOP DETECTOR		
6'x 6' LOOP DETECTOR		
VEHICLE DETECTION CAMERA		
VIDEO DETECTION ZONE		
RADAR DETECTION UNIT		

CABINETS

	EXISTING	REQUIRED
CABINET		

CAMERAS

	EXISTING	REQUIRED
CCTV CAMERA, FIXED		
CCTV CAMERA, PTZ		

MISCELLANEOUS EQUIPMENT

	EXISTING	REQUIRED
TRAFFIC SIGNAL HEAD		
TRAFFIC SIGNAL HEAD WITH BACKPLATE		
PEDESTRIAN SIGNAL HEAD		
8 FOOT PEDESTAL POLE AND PEDESTRIAN SIGNAL HEAD		
PEDESTAL MOUNTED FLASHING WARNING SIGNAL WITH SIGN		
PEDESTAL MOUNTED ILLUMINATED SCHOOL ZONE SIGN		
PUSH BUTTON ASSEMBLY		
SPAN/MASTARM MOUNTED SIGN		
OMNI DIRECTIONAL ANTENNA		
DIRECTIONAL ANTENNA		
EMERGENCY VEHICLE PREEMPTION SENSOR		
BLANKOUT MESSAGE SIGN		
TRAFFIC CONTROL CENTER		
HIGHWAY ADVISORY RADIO		
HUB BUILDING		
DYNAMIC MESSAGE SIGN (OVERHEAD)		
DYNAMIC MESSAGE SIGN (ROADSIDE)		
DYNAMIC MESSAGE SIGN (CANTILEVER)		

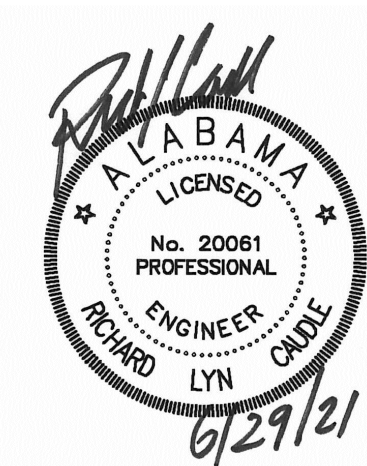
(NOTE: # INDICATES SIGNAL HEAD NUMBER)

POLES

	EXISTING	REQUIRED
METAL POLE		
CONCRETE POLE		
METAL MASTARM POLE		
CLASS 3 WOOD SERVICE POLE WITH DISCONNECT		
WOOD POLE		
DOWN GUY		
LUMINAIRE		

ABBREVIATIONS

AMERICAN WIRE GUAGE	AWG
CLOSED CIRCUIT TELEVISION	CCTV
CONDUIT.....	C
CURB AND GUTTER	C&G
DYNAMIC MESSAGE SIGN	DMS
EASTBOUND ROADWAY	EBR
EMERGENCY VEHICLE PREEMPTION	EVP
END ANCHOR	E/A
FLASHING BEACON	FB
GALVANIZED RIGID CONDUIT.....	GRC
GUARDRAIL	GR
HIGH DENSITY POLYETHYLENE	HDPE
HIGHWAY ADVISORY RADIO	HAR
INDIVIDUAL LOWERING DEVICE	ILD
INTELLIGENT TRANSPORTATION SYSTEM(S)....	ITS
JUNCTION BOX	JB
LEFT	LT
LIGHT EMITTING DIODE	LED
LIGHT POLE	LP
LUMINAIRE	LUM
MILEPOST.....	MP
NORTHBOUND ROADWAY	NBR
NON-METALLIC CONDUIT	NMC
PAN TILT ZOOM.....	PTZ
PRIMARY FIBER DISTRIBUTION UNIT.....	PFDU
PROPERTY LINE	PL
PUBLIC ACCESS CAMERA.....	PAC
PULL BOX.....	PB
RADIUS	R
RAILROAD	RR
RIGHT	RT
RIGHT OF WAY.....	ROW
ROADWAY	RDWY
SECONDARY FIBER DISTRIBUTION UNIT	SFDU
SCHOOL.....	SCH
SOUTHBOUND ROADWAY	SBR
STANDARD DRAWING	STD-DWG
STATION	STA
TRAFFIC CONTROL CENTER	TCC
TRAFFIC SIGNAL OPERATING PLAN	TSOP
TRANSPORTATION MANAGEMENT CENTER	TMC
TURNOUT	TO
VEHICLE DETECTION CAMERA	VDC
WESTBOUND ROADWAY	WBR



RESPONSIBLE PE: Richard L. Caudle, P.E.	SUPERVISOR: Richard L. Caudle, P.E.	DESIGNER: Richard L. Caudle, P.E.	PLAN SUBMITTAL	ALABAMA DEPARTMENT OF TRANSPORTATION TRAFFIC DESIGN SECTION	NOT TO SCALE	SHEET TITLE	ROUTE
DATE: June 29, 2021	DATE: June 29, 2021	DATE: June 29, 2021	FINAL			TRAFFIC SIGNAL AND ITS LEGEND	CR-52

REFERENCE PROJECT NO.	FISCAL YEAR	SHEET NO.
SCP-59-926-21	2021	2

TRAFFIC SIGNAL PLAN NOTES

IN THE EVENT CONFLICTS OCCUR BETWEEN THE PROJECT TRAFFIC SIGNAL NOTES
AND THE MUTCD, THE MUTCD WILL GOVERN.



NOTES THAT APPLY TO THIS PROJECT.

500. WHEN THE CONTROLLER IS IN THE FLASHING MODE, THE VEHICULAR SIGNAL HEADS SHALL FLASH YELLOW ON CR-52, RED ON CR-93, AND RED ON PROTECTED LEFT TURNS AND U-TURNS.

501. ALL EXISTING TRAFFIC CONTROL EQUIPMENT WHICH IS THE PROPERTY OF THE STATE INCLUDING SIGNAL HEADS, CONTROLLERS, POLES, AND MISCELLANEOUS HARDWARE SHALL BE REMOVED UPON COMPLETION OF THE NEW TRAFFIC CONTROL UNIT (TEMPORARY OR PERMANENT) AND STORED TO COMPLY WITH SECTION 730.03 OF THE STANDARD SPECIFICATIONS. THE SAME SHALL BE DELIVERED TO THE ALABAMA DEPARTMENT OF TRANSPORTATION AS DIRECTED BY THE ENGINEER.

502. ALL EXISTING TRAFFIC CONTROL EQUIPMENT WHICH IS THE PROPERTY OF SHELBY COUNTY INCLUDING SIGNAL HEADS, CONTROLLERS, POLES, AND MISCELLANEOUS HARDWARE SHALL BE REMOVED UPON COMPLETION OF THE NEW TRAFFIC CONTROL UNIT (TEMPORARY OR PERMANENT) AND STORED TO COMPLY WITH SECTION 730.03 OF THE STANDARD SPECIFICATIONS. THE SAME SHALL BE DELIVERED TO THE ALABAMA DEPARTMENT OF TRANSPORTATION AS DIRECTED BY THE ENGINEER.

503. THE LOCATION OF THE POWER SOURCE AS SHOWN IN THE PLANS IS APPROXIMATE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF THE POWER SOURCE AND THE SHORTEST ROUTE TO SERVE THE TRAFFIC SIGNAL CONTROLLER CABINET AND LUMINAIRES.

504. FROM THE DATE TIME CHARGE BEGINS THE CONTRACTOR SHALL ASSUME TOTAL RESPONSIBILITY FOR ALL EXISTING, TEMPORARY, AND NEW TRAFFIC CONTROL UNIT(S) ON THE PROJECT. THE CONTRACTOR SHALL CONTINUE THE OPERATION AND MAINTENANCE OF THE EXISTING TRAFFIC CONTROL UNIT(S) UNTIL THE ENTIRE NEW PERMANENT TRAFFIC CONTROL UNIT(S) IS(ARE) OPERATIONAL AND ACCEPTED BY SHELBY COUNTY.

505. THE CONTRACTOR, WITHOUT EXTRA COMPENSATION, SHALL BE RESPONSIBLE TO INSURE THE CONTINUAL OPERATION AND MAINTENANCE OF THE EXISTING AND TEMPORARY TRAFFIC CONTROL UNIT(S) DURING THE PERIOD OF CONSTRUCTION. MAINTAINING CONTINUAL OPERATION SHALL INCLUDE THE RELOCATION OF VEHICULAR SIGNAL HEADS DURING CONSTRUCTION AND THE MATERIALS AND LABOR NECESSARY TO INSURE THE CONTINUAL OPERATION OF THE TRAFFIC CONTROL UNIT(S) EQUIPMENT AT ALL TIMES.

506. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES TO LOCATE ALL OVERHEAD AND UNDERGROUND UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT. DAMAGE TO UTILITIES CAUSED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE UTILITY COMPANY AND THE ENGINEER. THE CONTRACTOR SHALL BEAR ALL COST TO REPAIR ANY AND ALL DAMAGES TO THE UTILITIES CAUSED BY THE CONTRACTOR.

507. SHELBY COUNTY RESERVES THE RIGHT TO RESPOND TO TRAFFIC CONTROL UNIT(S) MALFUNCTIONS IN AN EMERGENCY OR NATURAL DISASTER. IN DOING SO THE CONTRACTOR'S LIABILITY AND RESPONSIBILITY RELATED TO MAINTAINING THE TRAFFIC UNIT(S) OR SYSTEM REMAINS IN EFFECT.

508. THE CONTRACTOR SHALL HAVE THE APPROVAL OF THE ENGINEER PRIOR TO THE REMOVAL OF ANY EXISTING TRAFFIC CONTROL UNIT. THE CONTRACTOR SHALL NOT REMOVE AN EXISTING TRAFFIC CONTROL UNIT UNTIL THE REQUIRED TRAFFIC CONTROL UNIT IS INSTALLED AND COMPLETELY OPERATIONAL.

509. EACH REQUIRED TRAFFIC SIGNAL STRAIN POLE AND MAST ARM POLE MAY VARY IN LENGTH AND SIZE. THE CONTRACTOR SHALL ASCERTAIN THAT THE POLE HEIGHTS ARE SUFFICIENT TO PROVIDE THE REQUIRED VEHICULAR TRAFFIC SIGNAL CLEARANCE. EXTENSIONS FOR MOUNTING SIGNALS SHALL BE PROVIDED WHEN NECESSARY.

510. EACH MAST ARM MAY VARY IN LENGTH. THE CONTRACTOR SHALL ASCERTAIN THAT ALL ARM LENGTHS ARE SUFFICIENT SO THAT EACH VEHICULAR SIGNAL HEAD POSITION CONFORMS TO THE MUTCD.

511. THE TRAFFIC SIGNAL POLE LOCATION(S) AS SHOWN IN THE PLANS IS(ARE) APPROXIMATE. THE CONTRACTOR SHALL COORDINATE THE POLE LOCATION(S) WITH THE ENGINEER. THE CONTRACTOR SHALL ASCERTAIN THAT THE FINAL POLE LOCATION(S) PROVIDE FOR THE VEHICULAR TRAFFIC SIGNAL HEADS TO MEET THE DISTANCE REQUIREMENTS TO THE STOP LINE AS REQUIRED BY THE MUTCD. WHEN PEDESTRIAN SIGNAL HEADS AND/OR PEDESTRIAN CROSSWALKS ARE INVOLVED THE SAME SAID POLE LOCATION(S) SHALL ALSO CONFORM TO THE RELATIVE SECTIONS OF THE MUTCD.

512. THE CONTRACTOR SHALL LOCATE EACH REQUIRED AND RELOCATED VEHICULAR TRAFFIC SIGNAL HEAD ON THE SPAN WIRE OR MAST ARM SO THAT EACH HEAD IS LOCATED IN THE APPROACH LANE FOR WHICH IT APPLIES. LOCATION OF SIGNAL HEADS SHALL CONFORM TO THE MUTCD.

513. THE TRAFFIC SIGNAL STRAIN POLE LOCATION(S) AS SHOWN IN THE PLANS IS(ARE) APPROXIMATE. THE ENGINEER SHALL APPROVE ALL FOUNDATION LOCATIONS PRIOR TO THE CONTRACTOR EXCAVATING FOR EACH FOUNDATION.

514. BALANCE ADJUSTERS SHALL BE INSTALLED ON TRAFFIC SIGNAL HEADS FOR PROPER AIM. THE CONTRACTOR SHALL ALIGN THE SIGNAL HEADS IN ACCORDANCE WITH THE MUTCD AND TO THE SATISFACTION OF THE ENGINEER.

515. A 12 INCH DRIP COIL WITH 3 LOOPS SHALL BE PROVIDED TO THE RIGHTS OF EACH VEHICULAR TRAFFIC SIGNAL HEAD. A DRIP LOOP SHALL BE FORMED SO THAT WATER CANNOT ENTER THE ENTRANCE CLAMP. THE WIRE SHALL ENTER THE CLAMP FROM THE BOTTOM OF THE DRIP LOOP.

516. WHEN PVC CONDUIT IS USED FROM THE CONTROLLER TO THE STEEL STRAIN POLE OR MAST ARM POLE, THE CONTRACTOR SHALL BOND THE CONTROLLER TO THE POLE WITH A #6-1C BONDING CABLE.

517. MARKING TAPE SHALL BE BURIED OVER CONDUIT. THE TAPE SHALL BE 4 INCH POLYETHYLENE, RED IN COLOR WITH BLACK LETTERING.

518. WHEN EXISTING LOOP WIRE AND VEHICLE LOOP DETECTORS ARE TO BE RETAINED AND REUSED, OR RELOCATED IN A NEW CONTROLLER CABINET, THE CONTRACTOR SHALL ASCERTAIN THE MANUFACTURER AND MODEL NUMBER OF EACH EXISTING DETECTOR AMPLIFIER AND PROVIDE A NEW WIRING HARNESS COMPLETELY WIRED IN THE CONTROLLER CABINET FOR EACH EXISTING DETECTOR AMPLIFIER.

519. WHEN SYSTEM TIMINGS ARE NOT INCLUDED IN THE PLANS FOR TIME BASE OR CLOSED LOOP SYSTEMS, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO HIRE A LICENSED PROFESSIONAL ENGINEER TO CALCULATE SYSTEM TIMINGS. THE COST OF CALCULATING SYSTEM TIMINGS SHALL BE A SUBSIDIARY OBLIGATION OF 730C.

520. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO HIRE A LICENSED PROFESSIONAL ENGINEER TO INPUT THE TIMINGS AND FINE TUNE THE TIMINGS. THE COST OF INPUTTING AND FINE TUNING TIMINGS SHALL BE A SUBSIDIARY OBLIGATION OF 730C.

521. THE DESIGN ENGINEER SHALL BE RESPONSIBLE FOR INPUTTING AND FINE TUNING THE TIMINGS.

522. WHEN EXISTING SPAN WIRE THAT IS TO BE RETAINED HAS SAGGED, THE CONTRACTOR SHALL ADJUST THE SPAN WIRE SO THAT SIGNAL HEADS COMPLY WITH THE CLEARANCE SHOWN ON THE STANDARD DETAIL DRAWING.

523. OMIT.

524. THE CONTRACTOR SHALL PROVIDE A SET OF AS-BUILT PLANS TO SHELBY COUNTY.

525. BACKPLATES WITH AN 1 INCH OR 3 INCH FLUORESCENT YELLOW REFLECTIVE BORDER SHALL BE INSTALLED ON ALL SIGNAL HEADS (EXISTING AND REQUIRED).

526. CONTROLLER SHALL BE A SIEMENS M60 OR ECONOLITE COBALT.

527. OMIT

528. THE INSTALLER IS REQUIRED TO CONSTRUCT AND PROVIDE A COMPLETE TRAFFIC SIGNAL SO THAT THE INTERSECTION FUNCTIONS PROPERLY AND MEETS SHELBY COUNTY REQUIREMENTS AND STANDARDS.

529. LUMINAIRES USED AS A PART OF THIS PROJECT SHALL BE APPROVED FOR USE BY ALDOT AND SHALL BE LED TYPE FIXTURES.

530. D3 SIGNS USED AS A PART OF THIS PROJECT SHALL BE EDGE LIT LED TYPE SIGNS.

531. OMIT

532. THE CONTRACTOR SHALL INSTALL AN UNINTERRUPTIBLE POWER SUPPLY (UPS) ON THIS TRAFFIC SIGNAL. THE UPS SHALL COMPLY WITH THE FOLLOWING:

 - * SHALL BE A STANDBY GENERATOR W/INTERNAL COMBUSTION ENGINE FUELED BY NATURAL GAS
 - * SHALL BE INSTALLED ON A CONCRETE PAD ADJACENT TO THE TRAFFIC SIGNAL CONTROLLER
 - * SHALL INCLUDE AN AUTOMATIC TRANSFER SWITCH WITH A MINIMUM OF TWO (2) CIRCUITS -
 - 1 STREET LIGHT CIRCUIT & 1 TRAFFIC SIGNAL CIRCUIT
 - * SHALL HAVE A SELF EXERCISING FUNCTION
 - * SHALL PROVIDE A MINIMUM 3,000 WATT SINGLE PHASE POWER SUPPLY

SHELBY COUNTY SHALL REVIEW AND APPROVE THE UPS PRIOR TO PROCUREMENT.

533. SHELBY COUNTY WILL ASSIST IN THE COORDINATION WITH THE NATURAL GAS PROVIDER AND THE SHELBY COUNTY BUILDING INSPECTIONS DEPARTMENT. SHELBY COUNTY WILL REQUIRE BUILDING INSPECTIONS FOR ALL GAS RELATED PLUMBING WORK ON THIS PROJECT.

534. IT IS THE CONTRACTOR'S RESPONSIBILITY TO:

 - A) FURNISH AND INSTALL THE UPS,
 - B) INSTALL THE GAS SERVICE LINE FROM THE METER/TAP TO THE UPS, AND
 - C) AND MAKE THE CONNECTIONS TO THE UPS PER THE UPS MANUFACTURER GUIDELINES.

ALL COSTS ASSOCIATED ARE CONSIDERED A SUBSIDIARY REQUIREMENT OF PAY ITEM 730C-000.
- A circular professional engineer seal for the state of Alabama. The outer ring contains the text "ALABAMA" at the top and "ENGINEER" at the bottom. Inside the ring, the word "LICENSED" is at the top and "RICHARD LYN OBLE" is at the bottom. In the center, it says "No. 20081".

RESPONSIBLE PE: Richard L. Caudle, P.E.	SUPERVISOR: Richard L. Caudle, P.E.	DESIGNER: Richard L. Caudle, P.E.	PLAN SUBMITTAL	<div style="text-align: center;"> SHELBY COUNTY HIGHWAY DEPARTMENT </div>		SHEET TITLE	ROUTE
DATE: June 29, 2021	DATE: June 29, 2021	DATE: June 29, 2021	FINAL			TRAFFIC SIGNAL PLAN NOTES	CR-52

SUMMARY OF QUANTITIES

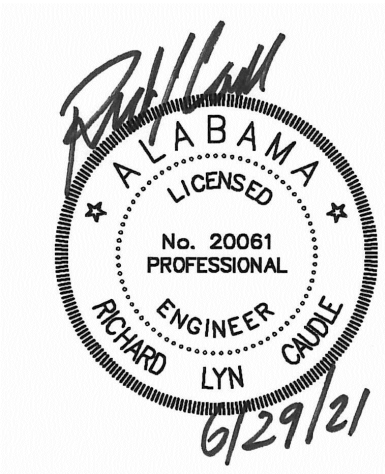
REFERENCE PROJECT NO.	FISCAL YEAR	SHEET NO.
SCP-59-926-21	2021	3

BASE BID

TOTAL	ITEM NO.	UNITS	DESCRIPTION
1	730C-000	LUMP SUM	FURNISHING AND INSTALLING TRAFFIC CONTROL UNIT (CR-52 AT CR-93)
4	730E-000	EACH	METAL TRAFFIC SIGNAL POLE FOUNDATION
4	730G-001	EACH	METAL TRAFFIC SIGNAL STRAIN POLE
100	730L-003	LINEAR FOOT	1", NON-METALLIC CONDUIT
3	730N-000	EACH	LUMINAIRE EXTENSION ASSEMBLY, 12 FOOT
8	730P-022	EACH	VEHICULAR SIGNAL HEAD, 12 INCH, 3 SECTION, TYPE LED
2	730P-023	EACH	VEHICULAR SIGNAL HEAD, 12 INCH, 4 SECTION, TYPE LED
1	730R-022	EACH	CONTROLLER ASSEMBLY, TYPE III, 8 PHASE
1	730U-400	LUMP SUM	RADAR DETECTION SYSTEM

ALTERNATE #1 BID

TOTAL	ITEM NO.	UNITS	DESCRIPTION
1	730C-000	LUMP SUM	FURNISHING AND INSTALLING TRAFFIC CONTROL UNIT (CR-52 AT CR-93)
4	730E-000	EACH	METAL TRAFFIC SIGNAL POLE FOUNDATION
4	730G-001	EACH	METAL TRAFFIC SIGNAL STRAIN POLE
100	730L-003	LINEAR FOOT	1", NON-METALLIC CONDUIT
3	730N-000	EACH	LUMINAIRE EXTENSION ASSEMBLY, 12 FOOT
8	730P-022	EACH	VEHICULAR SIGNAL HEAD, 12 INCH, 3 SECTION, TYPE LED
2	730P-023	EACH	VEHICULAR SIGNAL HEAD, 12 INCH, 4 SECTION, TYPE LED
1	730R-022	EACH	CONTROLLER ASSEMBLY, TYPE III, 8 PHASE
1	730U-015	LUMP SUM	VIDEO DETECTION SYSTEM
1	730U-400	LUMP SUM	RADAR DETECTION SYSTEM



NOTE: FOR ALTERNATE #1 BID, SUBSITUTE 4 VIDEO DETECTION CAMERAS FOR 4 WAVETRONIX DETECTION UNITS. RETAIN 2 WAVETRONIX ADVANCE EXTENDED RANGE RADAR UNITS FOR PHASE 2 AND 6 DETECTION.

RESPONSIBLE PE: Richard L. Caudle, P.E.	SUPERVISOR: Richard L. Caudle, P.E.	DESIGNER: Richard L. Caudle, P.E.	PLAN SUBMITTAL	SHELBY COUNTY HIGHWAY DEPARTMENT		SHEET TITLE	ROUTE
DATE: June 29, 2021	DATE: June 29, 2021	DATE: June 29, 2021	FINAL			SUMMARY OF QUANTITIES	CR-52

TRAFFIC SIGNAL PLAN SHEET

REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
SCP-59-926-21	2021	4

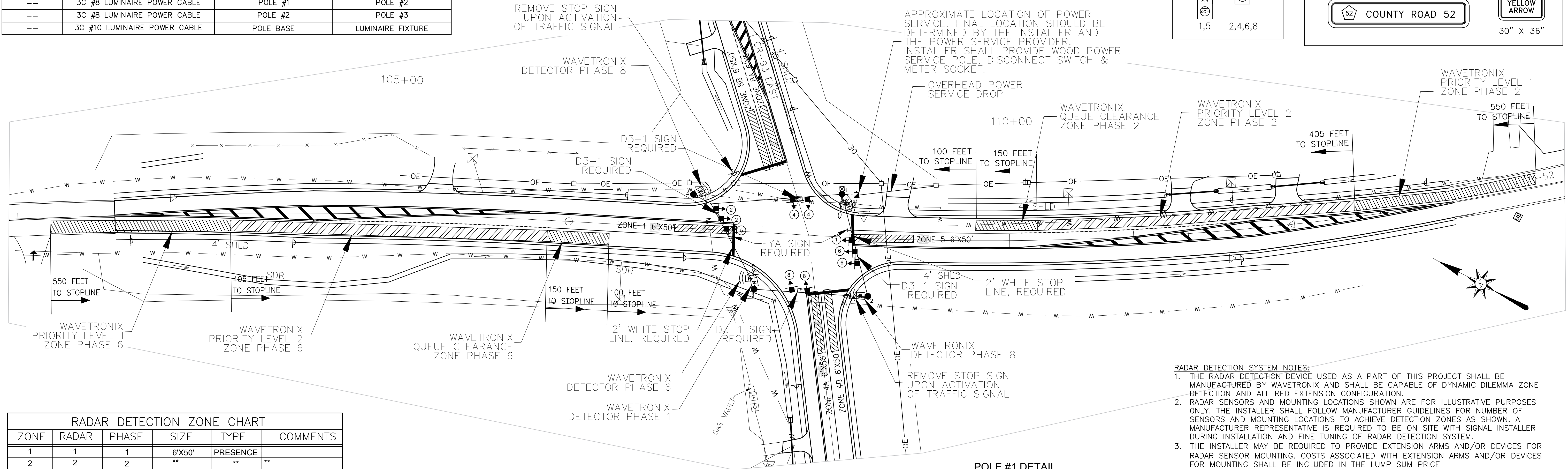
CONDUIT AND CONDUCTOR SCHEDULE			
CONDUIT	CONDUCTOR	FROM	TO
2-1" PVC	3C #6 CONTROLLER POWER CABLE	DISCONNECT SWITCH	TRAFFIC SIGNAL CONTROLLER
	3C #8 LUMINAIRE POWER CABLE		
--	5C #14 SIGNAL CABLE	TRAFFIC SIGNAL CONTROLLER	SIGNAL HEAD #1
--	4C #14 SIGNAL CABLE	TRAFFIC SIGNAL CONTROLLER	SIGNAL HEADS #2
--	4C #14 SIGNAL CABLE	TRAFFIC SIGNAL CONTROLLER	SIGNAL HEADS #4
--	5C #14 SIGNAL CABLE	TRAFFIC SIGNAL CONTROLLER	SIGNAL HEAD #5
--	4C #14 SIGNAL CABLE	TRAFFIC SIGNAL CONTROLLER	SIGNAL HEADS #6
--	4C #14 SIGNAL CABLE	TRAFFIC SIGNAL CONTROLLER	SIGNAL HEADS #8
--	RADAR DETECTION CABLE	TRAFFIC SIGNAL CONTROLLER	EACH RADAR UNIT
--	3C #8 LUMINAIRE POWER CABLE	POLE #1	POLE #2
--	3C #8 LUMINAIRE POWER CABLE	POLE #2	POLE #3
--	3C #10 LUMINAIRE POWER CABLE	POLE BASE	LUMINAIRE FIXTURE

LOCAL CONTROLLER PROGRAMMING CHART													
PHASE	MIN INITIAL	DENSITY ACTIVE	PASSAGE	YELLOW	ALL RED	MAX 1	MAX 2	WALK	FDW	PED OMIT	MIN RECALL	PHASE OMIT	NON-LOCK
1	6.0	N	3.0	4.0	1.6	20.0	20.0			Y	N	N	Y
2	20.0	N	4.0	4.9	1.9	60.0	60.0			Y	Y	N	N
3		N								Y	N	Y	N
4	8.0	N	3.0	4.5	1.9	30.0	30.0			Y	N	N	Y
5	6.0	N	3.0	4.0	1.6	25.0	25.0			Y	N	N	Y
6	20.0	N	4.0	4.9	1.9	60.0	60.0			Y	Y	N	N
7		N								Y	N	Y	N
8	8.0	N	3.0	4.5	1.9	20.0	20.0			Y	N	N	Y

PHASING DIAGRAM			
1	2	3	4
5	6	7	8

REQUIRED SIGNAL HEADS	
	1, 5
	2, 4, 6, 8

REQUIRED SIGNS	
D3-1 COUNTY ROAD 93	R10-12a LEFT TURN YIELD ON FLASHING YELLOW ARROW
D3-1 COUNTY ROAD 52	30" X 36"



- RADAR DETECTION SYSTEM NOTES:**
- THE RADAR DETECTION DEVICE USED AS A PART OF THIS PROJECT SHALL BE MANUFACTURED BY WAVETRONIX AND SHALL BE CAPABLE OF DYNAMIC DILEMMA ZONE DETECTION AND ALL RED EXTENSION CONFIGURATION.
 - RADAR SENSORS AND MOUNTING LOCATIONS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE INSTALLER SHALL FOLLOW MANUFACTURER GUIDELINES FOR NUMBER OF SENSORS AND MOUNTING LOCATIONS TO ACHIEVE DETECTION ZONES AS SHOWN. A MANUFACTURER REPRESENTATIVE IS REQUIRED TO BE ON SITE WITH SIGNAL INSTALLER DURING INSTALLATION AND FINE TUNING OF RADAR DETECTION SYSTEM.
 - THE INSTALLER MAY BE REQUIRED TO PROVIDE EXTENSION ARMS AND/OR DEVICES FOR RADAR SENSOR MOUNTING. COSTS ASSOCIATED WITH EXTENSION ARMS AND/OR DEVICES FOR MOUNTING SHALL BE INCLUDED IN THE LUMP SUM PRICE

RADAR DETECTION ZONE CHART					
ZONE	RADAR	PHASE	SIZE	TYPE	COMMENTS
1	1	1	6'X50'	PRESENCE	
2	2	2	**	**	**
4A	3	4	6'X50'	PRESENCE	
4B	3	4	6'X50'	PRESENCE	5 SEC DELAY
5	4	5	6'X50'	PRESENCE	
6	5	6	**	**	**
8B	6	8	6'X50'	PRESENCE	
8A	6	8	6'X50'	PRESENCE	5 SEC DELAY

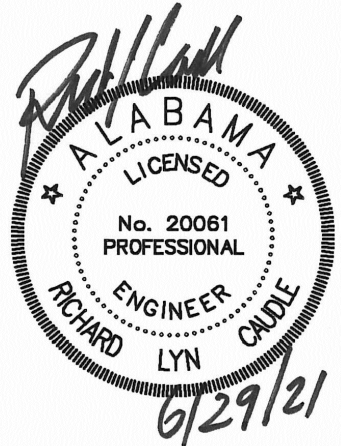
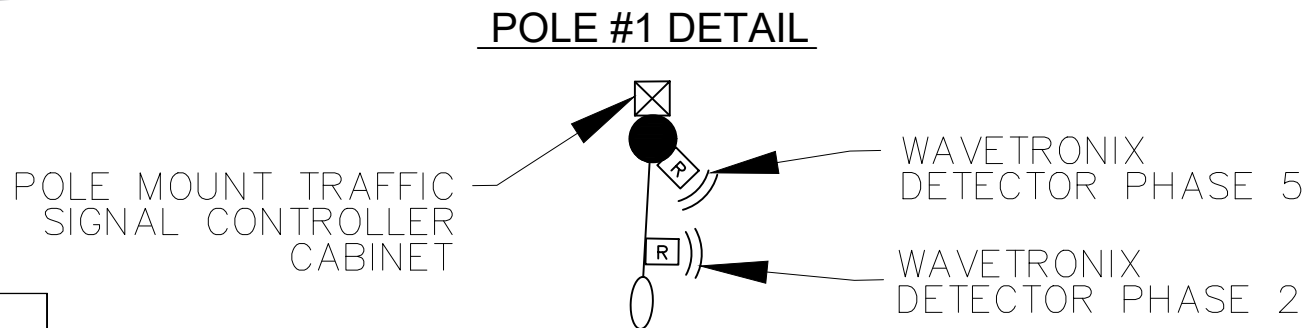
** - See recommended Wavetronix radar sensor advance extended range programming chart

PAY ITEM 730C-000 REQUIRED EQUIPMENT AND MATERIAL SCHEDULE	
DESCRIPTION	
MISC. HARDWARE	
#14 SIGNAL CABLE, IMSA 20-1	
POWER SERVICE, 240 VOLTS, W/METER SOCKET	
BACKPLATES WITH REFLECTIVE BORDER	
FYA SIGNS	
D3-1 STREET NAME SIGNS	
2' WHITE STOP LINE	

SUPPORTING STRUCTURES (STEEL)				
POLE NO.	POLE LENGTH (APPROX.)	POLE LOCATION (APPROX.)	LUMINAIRE ARM EXT. LENGTH (APPROX.)	COMMENTS
1.	37FT	STA 108+63 LT35'	12 FT	
2.	37FT	STA 108+88 RT47'	12 FT	
3.	37FT	STA 107+96 RT46'	12 FT	
4.	28FT	STA 107+43 LT27'	N/A	

ALTERNATE #1 BID NOTE

NOTE: FOR ALTERNATE #1 BID, SUBSITUTE 4 VIDEO DETECTION CAMERAS FOR 4 WAVETRONIX DETECTION UNITS. FOR DETECTION ZONES FOR PHASES 1, 4, 5, AND 8. RETAIN 2 WAVETRONIX ADVANCE EXTENDED RANGE RADAR UNITS FOR PHASE 2 AND 6 DETECTION.



- TRAFFIC SIGNAL NOTES:**
- TRAFFIC SIGNAL HEADS SHALL HAVE BACKPLATES WITH FLUORESCENT BORDER.
 - TRAFFIC SIGNAL HEAD HOUSINGS SHALL BE YELLOW.
 - D3-1 SIGNS SHALL BE EDGE LIT AND MOUNTED ABOVE THE CENTER OF THE THROUGH LANES BETWEEN TRAFFIC SIGNAL HEADS. SEE DETAILS SHEET 5.
 - LUMINAIRE FIXTURES SHALL BE COBRAHEAD TYPE WITH LED FIXTURE.
 - TRAFFIC SIGNAL CONTROLLER SHALL BE A NEMA 8 PHASE CONTROLLER. THE MANUFACTURER AND SERIES SHALL BE SIEMENS M60 SERIES OR ECONOLITE COBALT SERIES
 - REMOVE STOP SIGNS UPON ACTIVATION OF TRAFFIC SIGNAL.
 - PAVEMENT MARKINGS SHOWN FOR ILLUSRATIVE PURPOSES ONLY UNLESS OTHERWISE NOTED.

RECOMMENDED WAVETRONIX RADAR SENSOR ADVANCE EXTENDED RANGE PROGRAMMING				
CHANNEL	DISCOVERY	RANGE	SPEED	ETA
PRIORITY LEVEL 1	550'	405' TO 550'	35 TO 100 MPH	2.5 TO 7.5 SECONDS
PRIORITY LEVEL 2	405'	150' TO 405'	35 TO 100 MPH	2.5 TO 5.5 SECONDS
QUEUE CLEARANCE	N/A	100' TO 150'	0 TO 35 MPH	2.0 TO 5.5 SECONDS

RESPONSIBLE PE: Richard L. Caudle, P.E.	SUPERVISOR: Richard L. Caudle, P.E.	DESIGNER: Richard L. Caudle, P.E.	PLAN SUBMITTAL	SHELBY COUNTY HIGHWAY DEPARTMENT	40 0 40 HORIZ SCALE (FEET)	SHEET TITLE	ROUTE
DATE: June 29, 2021	DATE: June 29, 2021	DATE: June 29, 2021	FINAL			TRAFFIC SIGNAL PLAN SHEET	CR-52

TRAFFIC SIGNAL DETAILS

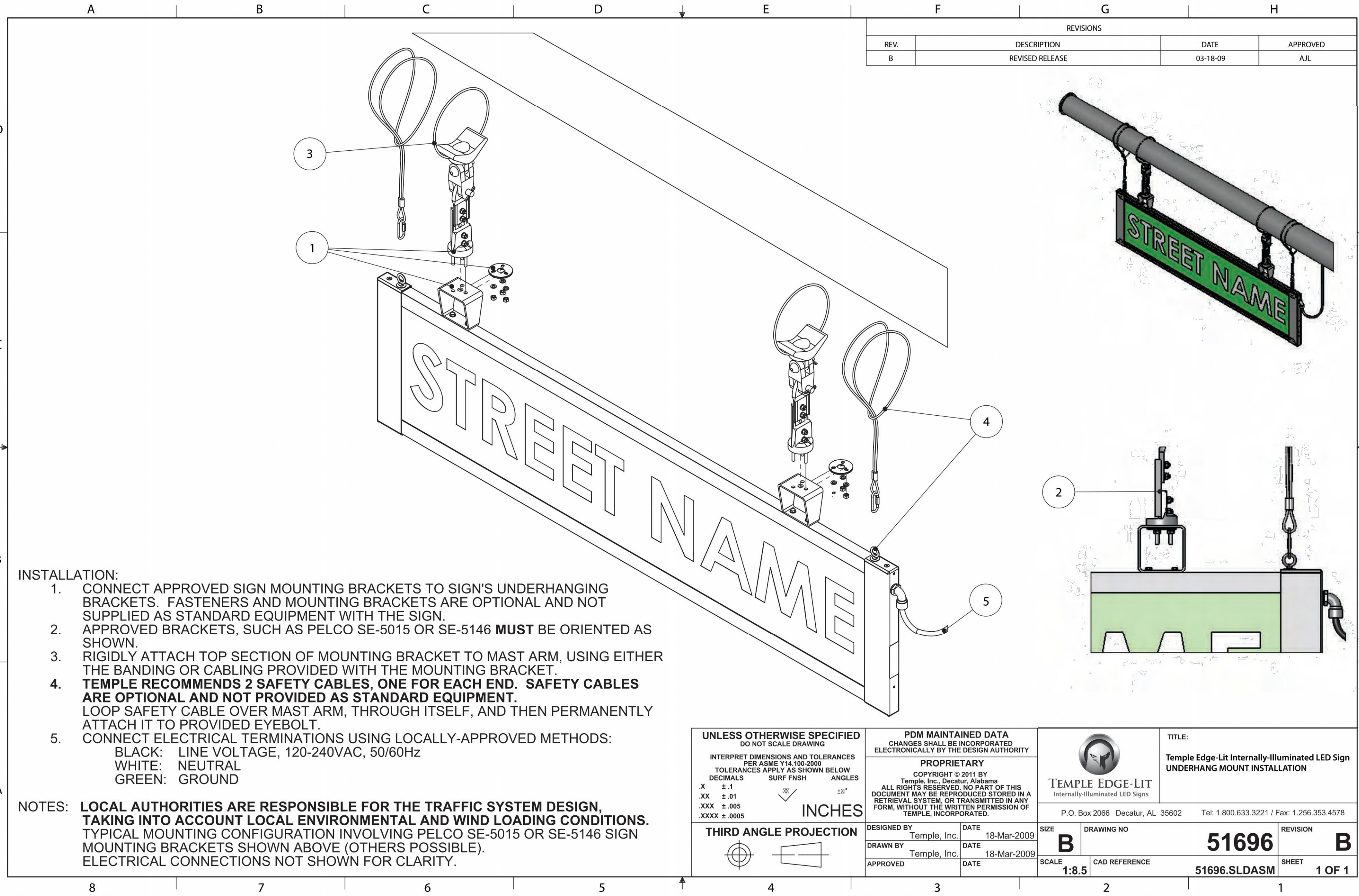
REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
SCP-59-926-21	2021	5



County Road 52



County Road 93



INSTALLATION:

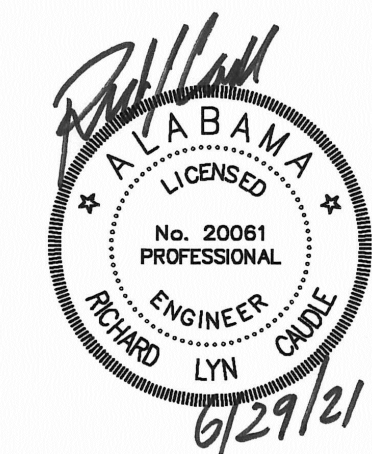
- CONNECT APPROVED SIGN MOUNTING BRACKETS TO SIGN'S UNDERHANGING BRACKETS. FASTENERS AND MOUNTING BRACKETS ARE OPTIONAL AND NOT SUPPLIED AS STANDARD EQUIPMENT WITH THE SIGN.
- APPROVED BRACKETS, SUCH AS PELCO SE-5015 OR SE-5146 **MUST** BE ORIENTED AS SHOWN.
- RIGIDLY ATTACH TOP SECTION OF MOUNTING BRACKET TO MAST ARM, USING EITHER THE BANDING OR CABLING PROVIDED WITH THE MOUNTING BRACKET.
- TEMPLE RECOMMENDS 2 SAFETY CABLES, ONE FOR EACH END. SAFETY CABLES ARE OPTIONAL AND NOT PROVIDED AS STANDARD EQUIPMENT.** LOOP SAFETY CABLE OVER MAST ARM, THROUGH ITSELF, AND THEN PERMANENTLY ATTACH IT TO PROVIDED EYEBOLT.
- CONNECT ELECTRICAL TERMINATIONS USING LOCALLY-APPROVED METHODS:
BLACK: LINE VOLTAGE, 120-240VAC, 50/60Hz
WHITE: NEUTRAL
GREEN: GROUND

NOTES: **LOCAL AUTHORITIES ARE RESPONSIBLE FOR THE TRAFFIC SYSTEM DESIGN, TAKING INTO ACCOUNT LOCAL ENVIRONMENTAL AND WIND LOADING CONDITIONS.** TYPICAL MOUNTING CONFIGURATION INVOLVING PELCO SE-5015 OR SE-5146 SIGN MOUNTING BRACKETS SHOWN ABOVE (OTHERS POSSIBLE). ELECTRICAL CONNECTIONS NOT SHOWN FOR CLARITY.

UNLESS OTHERWISE SPECIFIED DO NOT SCALE DRAWING INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.100-2009 TOLERANCES APPLY AS SHOWN BELOW DECIMALS SURF FINISH ANGLES .X ±.1 .XX ±.01 .XXX ±.005 .XXXX ±.0005		PDM MAINTAINED DATA CHANGES SHALL BE INCORPORATED ELECTRONICALLY BY THE DESIGN AUTHORITY PROPRIETARY COPYRIGHT © 2011 BY Temple, Inc., Decatur, Alabama ALL RIGHTS RESERVED. NO PART OF THIS DOCUMENT MAY BE REPRODUCED STORED IN A RETRIEVAL SYSTEM, OR TRANSMITTED IN ANY FORM, WITHOUT THE WRITTEN PERMISSION OF TEMPLE, INCORPORATED.		 TEMPLE EDGE-LIT Internally-Illuminated LED Signs P.O. Box 2066 Decatur, AL 35602 Tel: 1.800.633.3221 / Fax: 1.256.353.4578	
THIRD ANGLE PROJECTION 		DESIGNED BY Temple, Inc.	DATE 18-Mar-2009	SIZE B	DRAWING NO 51696
		DRAWN BY Temple, Inc.	DATE 18-Mar-2009	SCALE 1:8.5	CAD REFERENCE 51696.SLDASM
		APPROVED	DATE		REVISION B
		SHEET 1 OF 1			

EDGE LIT LED SIGN NOTES:

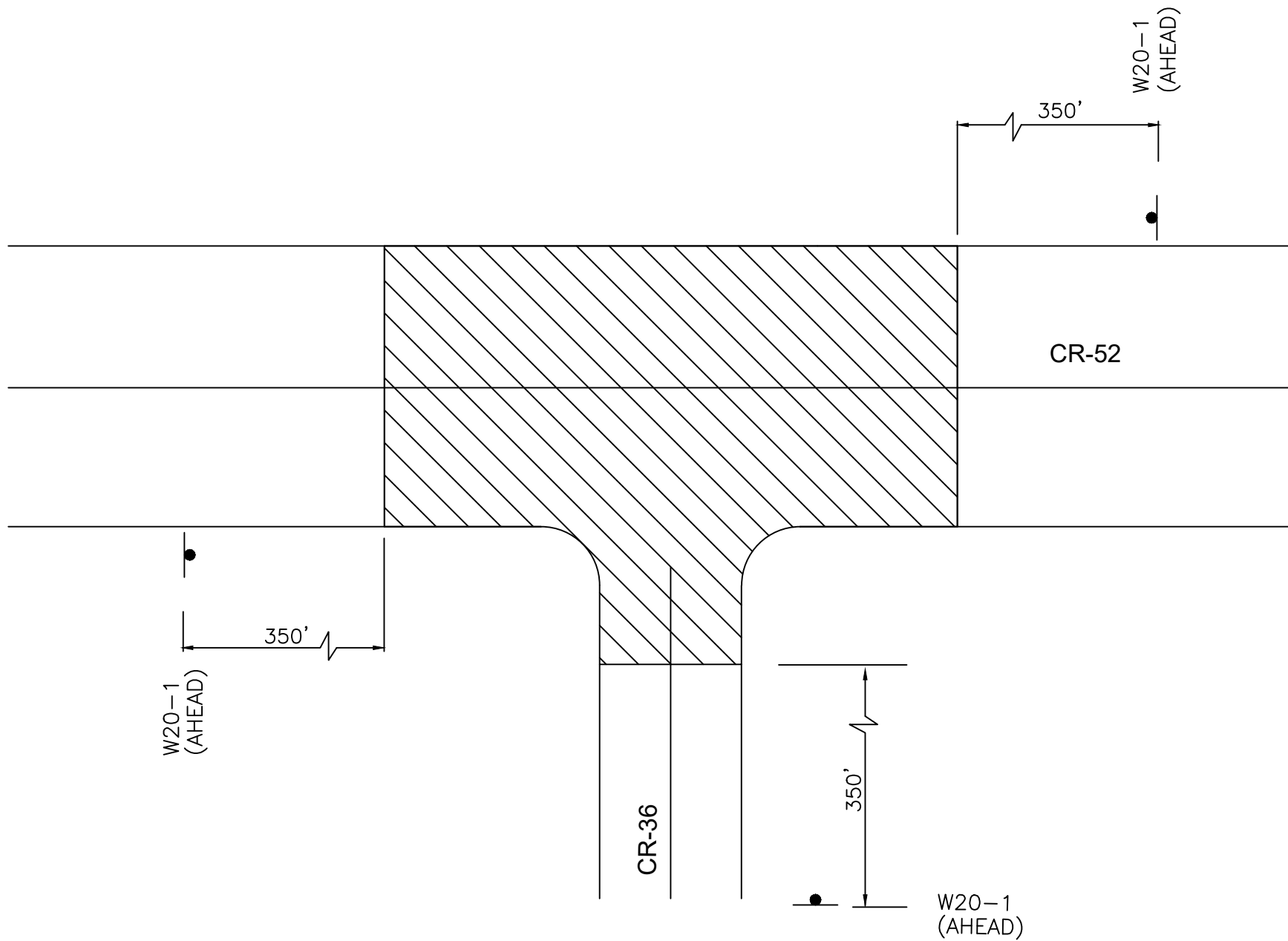
- STREET NAME SIGNS SHALL BE TEMPLE EDGE LIT LED STREET NAME SIGNS OR APPROVED ALTERNATE.
- STREET NAME SIGNS SHALL HAVE STANDARD GREEN BACKGROUNDS AND WHITE BORDER AS REQUIRED BY THE MUTCD LATEST EDITION.
- STREET NAME SIGNS SHALL HAVE THE SHELBY COUNTY ROUTE SHIELD PLACED TO THE LEFT OF THE TEXT AS SHOWN IN THE DETAILS ABOVE. THE SHIELD SHALL SHOW THE APPROPRIATE COUNTY ROADWAY NUMBER.
- STREET NAME SIGNS SHALL BE PLCD AS CLOSE AS POSSIBLE TO THE CENTER OF THE APPROACH OVER WHICH THE SIGN SHALL FACE. FINAL SIGN POSITIONING SHALL BE APPROVED BY SHELBY COUNTY.
- THE SIGN MANUFACTURER SHALL SIZE THE STREET NAME SIGN ACCORDING TO THE REQUIRED TEXT AND SYMBOLS AND SUBMIT TO SHELBY COUNTY FOR APPROVAL PRIOR TO CONSTRUCTION.



RESPONSIBLE PE: Richard L. Caudle, P.E. DATE: June 29, 2021	SUPERVISOR: Richard L. Caudle, P.E. DATE: June 29, 2021	DESIGNER: Richard L. Caudle, P.E. DATE: June 29, 2021	PLAN SUBMITTAL FINAL	SHELBY COUNTY HIGHWAY DEPARTMENT	30 0 30 HORIZ SCALE (FEET)	SHEET TITLE	ROUTE
						TRAFFIC SIGNAL DETAILS	CR-52

TRAFFIC CONTROL PLAN

REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
SCP-59-926-21	2021	6



NOTE:
NO LANE CLOSURES SHALL BE PERMITTED
BETWEEN THE HOURS OF 7:00AM TO 8:30AM
AND 4:00PM TO 6:00 PM.

TRAFFIC CONTROL NOTES:

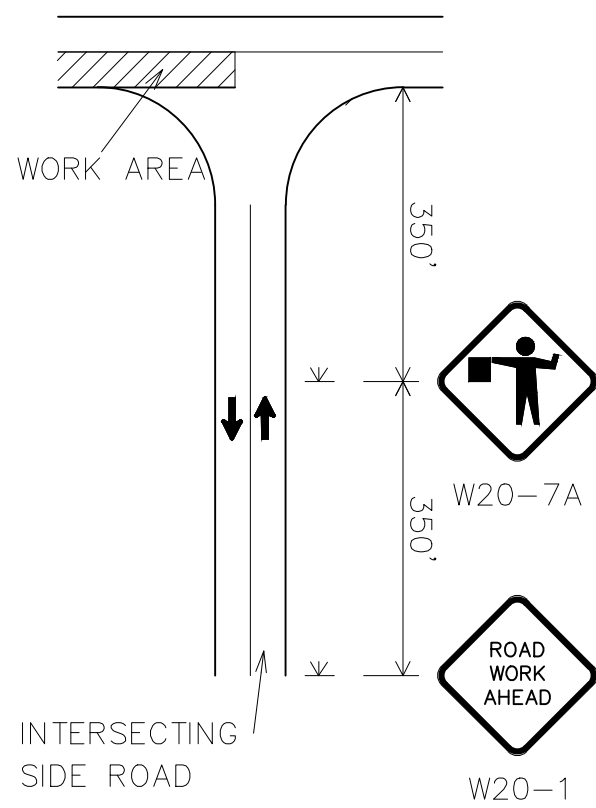
1. WORK AREAS COVERED BY TRAFFIC CONTROL SCHEME #2 ARE MORE THAN TWO FEET FROM THE TRAVEL WAY BUT LESS THAN 15 FEET. (FOUNDATIONS FOR POLES, CONTROLLER FOUNDATIONS, CABINET WIRING, ETC.)
2. ALL TRAFFIC CONTROL DEVICES SHALL BE IN CONFORMANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION.
3. THE TRAFFIC CONTROL SCHEMES SHOWN HAVE BEEN DEVELOPED IN CONFORMANCE WITH THE MUTCD. THE DEVICES SHOWN REPRESENT CONDITIONS KNOWN DURING PLAN DEVELOPMENT. IN THE EVENT ACTUAL PHYSICAL CONDITIONS WARRANT ADDITIONAL CONTROL DEVICES, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL SAME AS OUTLINED IN THE MUTCD.
4. ALL THE TRAFFIC CONTROL DEVICES REQUIRED FOR WORK WITHIN THE ROADWAY SHALL BE IN PLACE PRIOR TO THE CONTRACTOR BEGINNING WORK.
5. ALL PORTABLE SIGNS SHALL BE REMOVED WHEN NOT IN USE OR AT THE END OF THE WORK DAY.
6. ALL TRAFFIC CONTROL DEVICES SHOWN IN SCHEME #1 SHALL REMAIN IN PLACE DURING ALL CONSTRUCTION.
7. ALL TRAFFIC CONTROL SCHEMES ARE BASED UPON A DESIGN SPEED OF 50 MILES PER HOUR.
8. PERMANENT OR TEMPORARY CONSTRUCTION SIGNS WHICH ARE NOT APPLICABLE OR INAPPROPRIATE FOR THE CURRENT CONDITIONS SHALL BE COVERED OR REMOVED.
9. HAZARDOUS CONDITIONS ON OPEN ROADWAYS SUCH AS PAVEMENT DROP OFFS; CONSTRUCTION MATERIALS VEHICLES, OR EQUIPMENT STORED OR PLACED WITHIN THE ROADWAY RIGHT OF WAY; AND OPEN TRENCHES ACROSS OR NEAR THE ROADWAY SHALL NOT BE ALLOWED UNLESS THE INSTALLER IS ON SITE AND WORKING, AND PROPER TRAFFIC CONTROL MEASURES ARE BEING TAKEN.
10. THE INSTALLER SHALL KEEP OPEN ROADWAYS CLEAN AND FREE OF CONSTRUCTION DEBRIS, DIRT, LOOSE GRAVEL, OR OTHER MATERIAL THAT MAY CAUSE HAZARDOUS DRIVING CONDITIONS.
11. TRAFFIC CONTROL DEVICES SHALL MEET THE STANDARD MATERIAL AND INSTALLATION REQUIREMENT SPECIFIED IN THE CURRENT EDITION OF THE ALDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
12. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SECURE THE WORK AREA.

LEGEND:

- POST MOUNTED SIGN
- REQUIRED SIGN (PORTABLE)
- CHANNELIZING DRUMS
- FLAGGER STATION
- WORK AREA
- DIRECTION OF TRAVEL

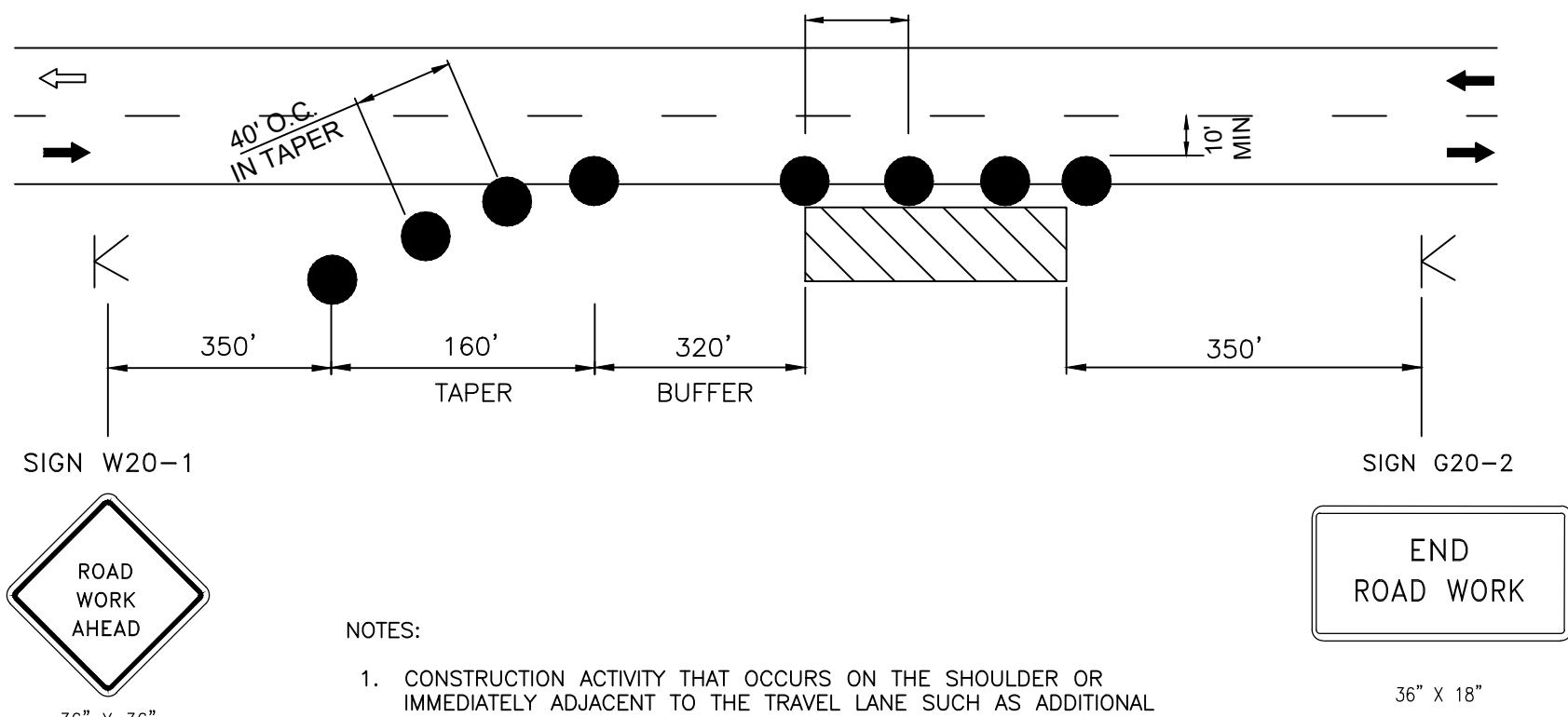


TRAFFIC CONTROL FOR INTERSECTING SIDE ROADS WITHIN WORK AREA



NOTE:
THE W20-1 AND W20-7A SIGNS TO BE USED ON INTERSECTING ROADS SHALL BE 48"X48" IN SIZE. THE TEMPORARY MOUNTED W20-1 ROAD WORK AHEAD SIGN SHOWN ON THE SIDE ROAD WILL NOT BE REQUIRED IF ONE IS ALREADY POST MOUNTED ON THE SIDE STREET.

EQUAL SPACING NOT TO EXCEED 80'

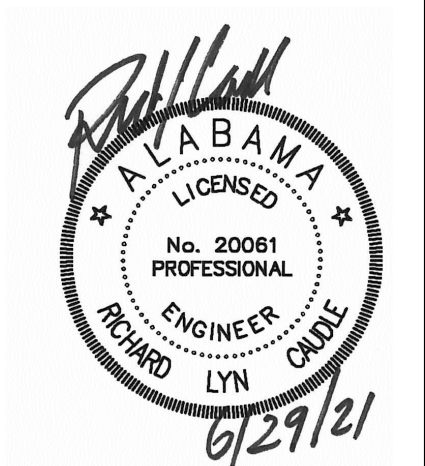
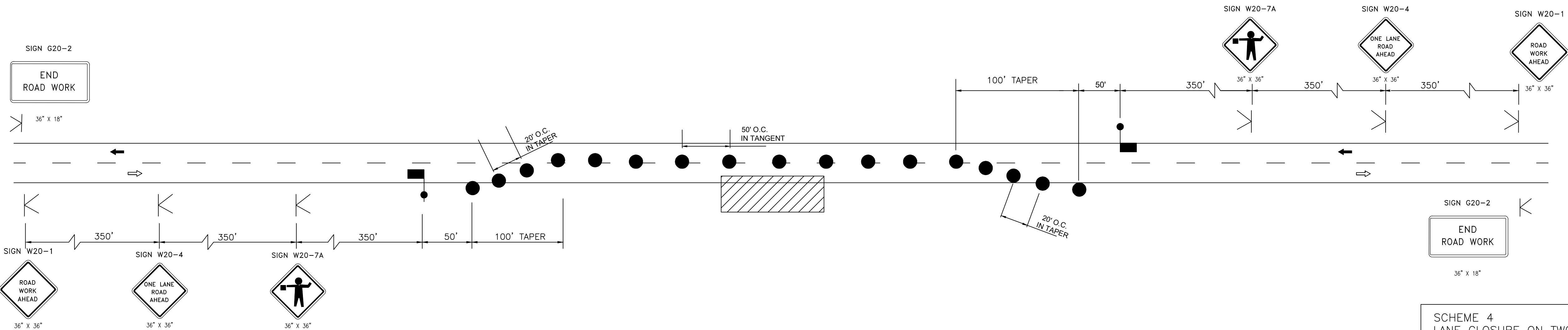


NOTES:

1. CONSTRUCTION ACTIVITY THAT OCCURS ON THE SHOULDER OR IMMEDIATELY ADJACENT TO THE TRAVEL LANE SUCH AS ADDITIONAL LANE CONSTRUCTION, POLE FOUNDATIONS, BASE/PAVE ACTIVITY, ETC. AND DO NOT REQUIRE A LANE CLOSURE.
2. SIMILAR TRAFFIC CONTROL MUST BE IN PLACE IF CONSTRUCTION OCCURS ON THE OTHER SIDE OF ROAD. IF CONSTRUCTION IS ON BOTH SIDES OF ROAD, CONTROL DEVICES MUST BE IN PLACE FOR BOTH DIRECTIONS OF TRAVEL.

SCHEME 3

SHOULDER WORK WITH MINOR ENCROACHMENT (NO LANE CLOSURE)



SCHEME 4
LANE CLOSURE ON TWO LANE ROAD USING FLAGGER

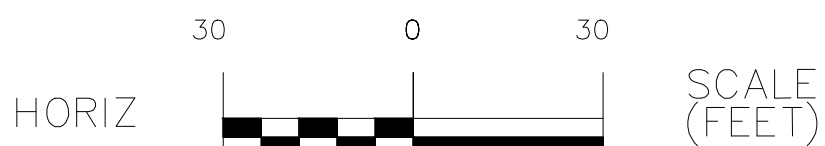
RESPONSIBLE PE: Richard L. Caudle, P.E.

SUPERVISOR: Richard L. Caudle, P.E.

DESIGNER: Richard L. Caudle, P.E.

PLAN SUBMITTAL

SHELBY COUNTY
HIGHWAY DEPARTMENT



SHEET TITLE

ROUTE

TRAFFIC CONTROL PLAN

CR-52

DATE: June 29, 2021

DATE: June 29, 2021

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FINAL