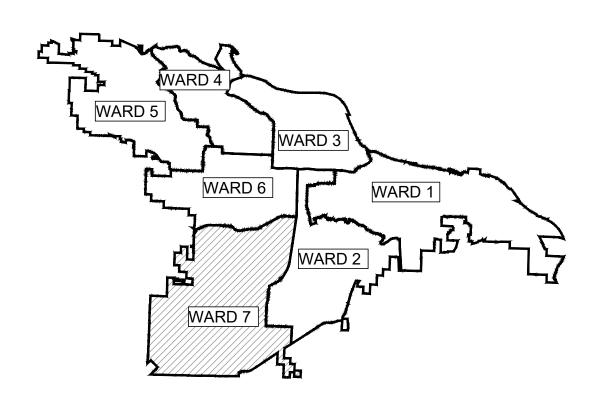
36374

65th and Geyer Springs Traffic Signal Modification

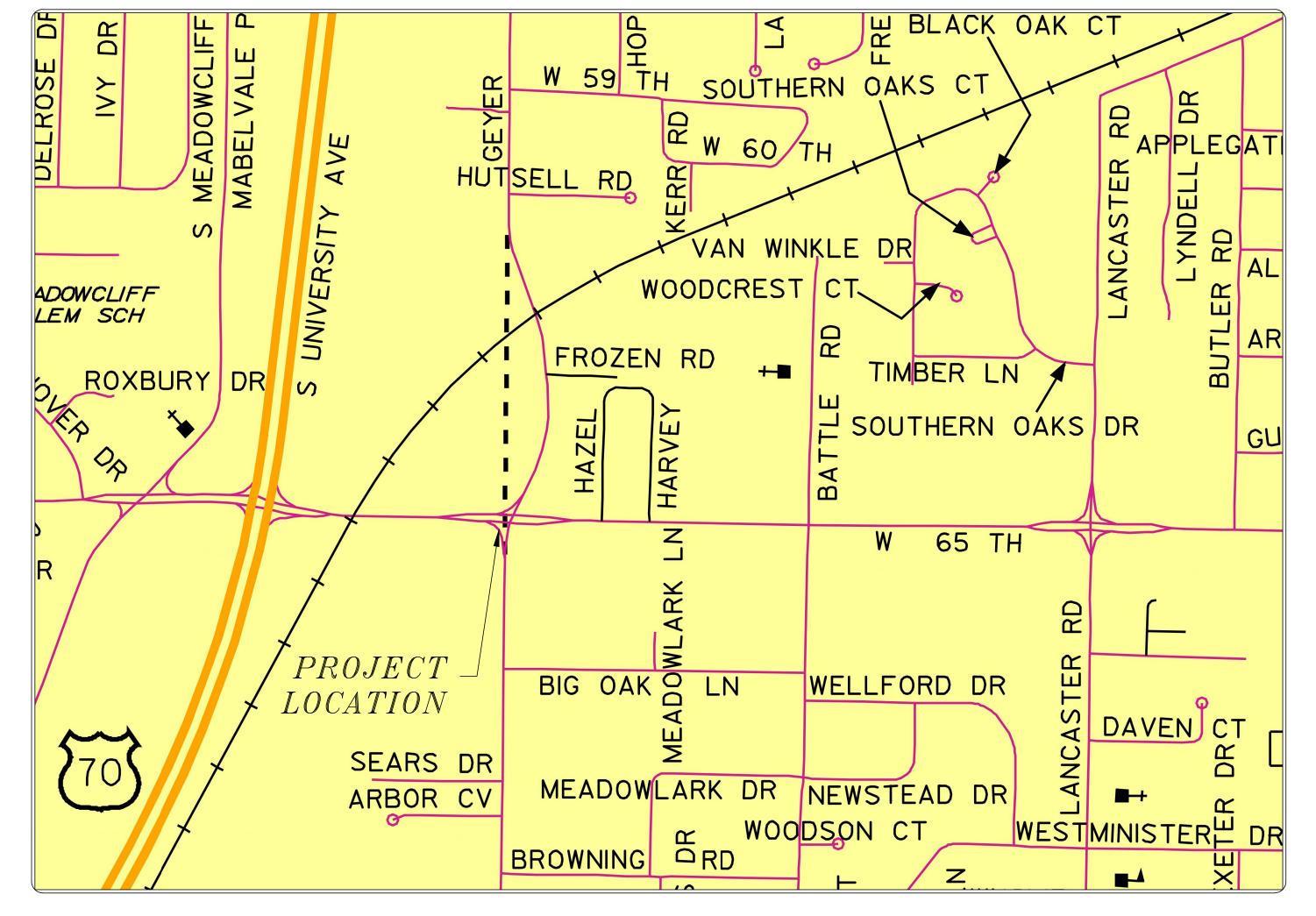
Little Rock, AR



PROJECT LOCATION - WARD 7

TITLE







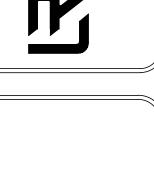
2019-2021 **BOND PROGRAM** DEPARTMENT OF PUBLIC WORKS CIVIL ENGINEERING 701 WEST MARKHAM STREET LITTLE ROCK, ARKANSAS 72201

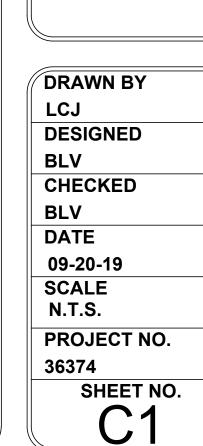


10800 Financial Centre Pkwy. Suite 500 Little Rock, Arkansas 72211 MAIN (501) 801-2690

REVISIONS







NOTES:

- 1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE NFPA 70 (2017) NATIONAL ELECTRICAL CODE, NFPA 101 (CURRENT EDITION) LIFE SAFETY CODE, STATE ELECTRICAL CODE AND LOCAL ELECTRICAL CODE.
- 2. EXTEND GREEN EQUIPMENT GROUNDING CONDUCTOR (E.G.C.) FROM GROUND BAR AT MAIN BREAKER TO CONTROL PANEL AND TO FIRST POLE. SOLIDLY BOND E.G.C. TO GROUND LUG OF CONTROL CABINET AND TO POLE GROUND. ENSURE THAT ONLY ONE NEUTRAL-TO-GROUND BOND EXISTS IN THE SYSTEM AND THAT IT IS AT THE MAIN BREAKER.
- 3. ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY/COUNTY TO A SERVICE POLE WITH EXTERNAL RAINTIGHT BREAKER (MAIN BREAKER), GALVANIZED STEEL SERVICE RISER, METER LOOP (IF REQUIRED), AND WEATHERHEAD AT A MUTUALLY ACCEPTABLE POINT WITHIN THE RIGHT-OF-WAY. IF THE SERVICE POINT IS OVER 10 FEET FROM THE CONTROLLER, THE CONTRACTOR SHALL PROVIDE AND INSTALL A SEPARATE TWO CIRCUIT EXTERNAL BREAKER (SECONDARY BREAKER) ON OR NEAR THE TRAFFIC SIGNAL CONTROLLER CABINET AND SHALL INSTALL CONDUIT, ELECTRICAL SERVICE WIRE (2c/#6 A.W.G. USE RATED, WITH GROUND TYPICAL), AND PERFORM WIRING TO TAP INTO THE CITY'S/COUNTY'S MAIN BREAKER AS PART OF THIS CONTRACT. CONDUIT IS PAID FOR AS A SEPARATE ITEM OF THIS CONTRACT. TWO CIRCUIT BREAKERS, CONSIDERED SUBSIDIARY TO THE CONTROL EQUIPMENT, ARE NEEDED WHERE STREET LIGHTING IS INCLUDED. AS PART OF THE SIGNAL INSTALLATION, STREET LIGHTING CIRCUIT (2c/#12 A.W.G. UF RATED, TYPICAL) SHALL BE KEPT FROM THE CIRCUIT SERVING THE TRAFFIC SIGNAL CONTROL EQUIPMENT FROM THE POINT OF TIE-IN AT THE SECONDARY BREAKER PROVIDED BY THE CONTRACTOR.
- 4. CONTRACTOR SHALL CONNECT A SEPARATE NEUTRAL FOR EACH LOAD SWITCH REPRESENTED ON EACH SIGNAL POLE.
- 5. TRAFFIC CONTROLLER CABINET AND LAYOUT SHALL BE SUCH THAT IT IS NOT NECESSARY TO SHUT DOWN POWER OR REMOVE LOAD SWITCHES IN ORDER TO EASILY TEST OR MODIFY DETECTOR INPUTS TO THE CONTROLLER.
- 6. CONTROLLER CABINET SHALL BE WIRED SUCH THAT DURING FLASH OPERATIONS POWER TO THE LOAD SWITCHES CANNOT BACKFEED TO LOAD SWITCH POWER BUSS.
- 7. ALL PARTS OF THIS INSTALLATION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, STANDARD DRAWINGS AND WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION.
- 8. CONDUIT INSTALLED UNDER ROADWAY SURFACES SHALL BE HDPE AND INSTALLED BY PUSHING OR BORING METHODS. IF THE ENGINEER DETERMINES THIS IS NOT FEASIBLE, THEN A TRENCHING METHOD AS SHOWN IN THE STANDARD DRAWINGS MAY BE USED.
- 9. TRAFFIC SIGNAL POLES SHALL BE GALVANIZED WITH METAL HANDHOLE COVERS. BACKPLATES SHALL BE METAL AND SUPPLIED FOR ALL SIGNAL HEADS.
- 10. PAVEMENT MARKINGS SHOWN FOR REFERENCE ONLY. SEE PERMANENT PAVEMENT MARKING DETAILS.
- 11. FOUNDATION FOR ALL POLES SHALL BE EXTENDED IF NECESSARY TO ACCOMMODATE THE REQUIREMENTS FOR SIGNAL HEAD CLEARANCE ABOVE ROADWAY ONLY AT LOCATIONS WHERE THE GROUND ELEVATION AT THE POLE IS BELOW THE ELEVATION OF THE ROADWAY (SEE NOTES ON STANDARD DRAWING). PAYMENT WILL BE INCLUDED IN SECTION 714 TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, CURRENT EDITION.
- 12. ALL CONCRETE PULL BOXES SHALL BE (TYPE 2 HD) UNLESS OTHERWISE INDICATED. ALL CONDUIT SHALL BE THREE (3") INCH DIAMETER UNLESS SPECIFIED ON PLANS.
- 13. CONTRACTOR SHALL NOTIFY ALL EXISTING UTILITY OWNERS BEFORE BEGINNING WORK ON THIS PROJECT.
- 14. LUMINAIRE ASSEMBLIES SHALL BE OF THE FULL CUTOFF TYPE.
- 15. HARDWARE INPUTS MAY BE DETERMINED BY SUPPLIER. EACH DETECTOR OUTPUT SHALL INPUT THE CONTROLLER THROUGH A SEPARATE INPUT UNLESS OTHERWISE NOTED AND BE PROGRAMMED TO ACTUATE THE ASSOCIATED PHASE. COMBINATION (COMB.) DETECTORS SHALL ALSO BE PROGRAMMED TO PROVIDE VEHICLE COUNT/OCCUPANCY DATA.
- 16. THE LOCAL RADIO WITH ANTENNA SHALL BE COMPATIBLE WITH THE EXISTING CLOSED LOOP COORDINATION SYSTEM IN THE CITY/COUNTY.
- 17. TO DETERMINE UTILITY CLEARANCES ABOVE THE TRAFFIC SIGNAL POLE, REFER TO THE POLE SCHEDULE FOR VERTICAL SHAFT HEIGHT. WHERE THE POLE SCHEDULE INDICATES THAT A LUMINAIRE ARM WILL BE USED, THIRTY-EIGHT (38') FEET SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE LUMINAIRE ARM. WHERE THE POLE SCHEDULE INDICATES A TRAFFIC SIGNAL POLE WITHOUT A LUMINAIRE ARM, A HEIGHT OF TWENTY-ONE (21') FEET SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE TRAFFIC SIGNAL MAST ARM. AN ADDITIONAL SIX (6') FEET SHOULD BE USED DIRECTLY ABOVE "VIDEO DETECTOR" AT LOCATIONS SHOWN ON THE SIGNAL PLANS.

- 18. THE DESIRABLE MINIMUM DISTANCE FROM THE FACE OF ROADWAY CURB OR SHOULDER EDGE TO THE FACE OF NON-BREAKAWAY POLE OR OBSTRUCTION IS SIX (6') FEET. REFER TO TRAFFIC SIGNAL PLANS FOR SPECIFIC LOCATION OF POLES, CONTROLLER AND ANY OTHER NON-BREAKAWAY OBSTRUCTIONS. REFER TO "DESIGN PARAMETERS, MINIMUM CLEAR ZONE DISTANCE" FOR MINIMUM DISTANCE FROM THE EDGE OF TRAVELED WAY TO THE FACE OF A NON-BREAKAWAY POLE OR OBSTRUCTION. TRAFFIC SIGNAL POLES OR ANY OTHER NON-BREAKAWAY OBSTRUCTION SHALL NOT BE INSTALLED WITHIN THE CLEAR ZONE.
- 19. AS DETERMINED BY THE ENGINEER, FOUNDATION EMBEDMENT MAY BE DECREASED BY A MAXIMUM OF TWO FEET IF COMPETENT ROCK IS ENCOUNTERED PRIOR TO ACHIEVING PLAN EMBEDMENT AND AT LEAST HALF OF THE REMAINING PLAN EMBEDMENT LENGTH IS KEYED INTO COMPETENT ROCK.
- 20. CONNECTION OF TRAFFIC SIGNAL DISPLAY TO FIELD WIRING SHALL UTILIZE AN APPROVED TERMINAL STRIP BEHIND HAND-HOLE COVER AT BASE OF POLE. TERMINAL STRIP SHALL PROVIDE PROTECTION TO PREVENT EXPOSURE TO THE PUBLIC IN THE EVENT THAT POLE COVER IS MISSING. PAYMENT FOR TERMINAL STRIPS SHALL BE INCLUDED IN ITEM 714 TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION. CURRENT EDITION.
- 21. CONTROLLER CABINET LAYOUT AND ORIENTATION SHALL CONFORM TO IMSA STANDARDS.
- 22. ONE VIDEO PROGRAMMING MODULE SHALL BE PROVIDED FOR AIMING AND SETUP OF DETECTORS IF THE VIDEO SYSTEM CANNOT BE ADJUSTED THROUGH HARDWARE AND SOFTWARE PROVIDED BY ITEMS WITHIN THE JOB.
- 23. TRAFFIC SIGNAL CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER OR ASSIGNED DEPARTMENT PROJECT INSPECTOR EACH DAY PRIOR TO SIGNAL RELATED WORK. NO WORK ON TRAFFIC SIGNALS WILL BE ALLOWED OR APPROVED WITHOUT THIS PRIOR NOTIFICATION.
- 24. ALL STEEL POLES SHALL BE DESIGNED TO MEET THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4th EDITION (2001) WITH 2003 AND 2006 INTERIMS.
- 25. DOOR PANEL TEST PUSH BUTTONS SHALL ACTUATE INDICATED PHASES. DETECTOR ASSIGNMENTS AND/OR SIDE PANEL JUMPERS MAY REQUIRE MODIFICATION.
- 26. ALL SYSTEM DETECTOR RACKS AND ASSOCIATED EQUIPMENT SHALL BE PROTECTED BY THE MAIN CONTROLLER CABINET POWER SURGE PROTECTION.
- 27. IN PULL BOXES, POLE BASES, JUNCTION BOXES AND CONTROLLER CABINETS, THE DIRECTION OF EACH CABLE RUN SHALL BE INDICATED BY ATTACHING A PERMANENT TAG OF RIGID PLASTIC OR NON-FERROUS METAL TO THE CONDUIT. TAGS SHALL BE EMBOSSED, STAMPED OR ENGRAVED WITH LETTERS 1/4" OR GREATER IN HEIGHT AND SECURED TO THE CONDUIT WITH NYLON OR PLASTIC TIES. IN INSTANCES WHERE THE CONDUIT OR CONDUIT ENTRANCES ARE NOT VISIBLE OR ACCESSIBLE, A DIRECTION TAG SHALL BE ATTACHED TO EACH CABLE.
- 28. THE CONTRACTOR SHALL PERFORM ALL WORK POSSIBLE THAT WILL MINIMIZE THE TIME THAT THE TRAFFIC SIGNAL IS OUT OF OPERATION. IF, IN THE OPINION OF THE ENGINEER, TRAFFIC CONDITIONS WARRANT THE CONTRACTOR SHALL PROVIDE FLAGMEN TO DIRECT TRAFFIC WHILE THE TRAFFIC SIGNAL IS OUT OF OPERATION.

REVISIONS DATE

E ROCK, ARKANSAS R SPRINGS SIGNALS

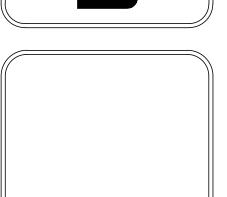
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CIVIL ENGINEERING
701 W. MARKHAM



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SHEET NO.

	PRICING OF ESTIMATED QUANTITIES		
	PROJECT #36374		
	65TH AND GEYER SPRINGS ROAD		
	2-Aug-19		
ITEM#	ITEM DESCRIPTION	UNIT	QUANTITY
701	ACTUATED CONTROLLER TS1-TYPE 2 (8 PHASES)	EACH	1
SP&706	TRAFFIC SIGNAL HEAD, LED (3 SECTION, 1 WAY)	LIN. FT.	6
SP&706	TRAFFIC SIGNAL HEAD, LED (4 SECTION, 1 WAY)	LIN. FT.	3
707	PEDESTRIAN SIGNAL HEAD	EACH	6
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.C.)	LIN. FT.	1232
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.C.)	LIN. FT.	2438
710	NON-METALLIC CONDUIT (3")	LIN. FT.	709
711	CONCRETE PULL BOX (TYPE 2 HD)	EACH	7
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (56' MAST ARM)	EACH	1
714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (60' MAST ARM)	EACH	1
715	PEDESTRIAN POLE WITH FOUNDATION	EACH	3
719	THERMOPLASTIC PAVEMENT MARKING WHITE (24")	LIN. FT.	240
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	LIN. FT.	754
SP	ELECTRICAL CONDUCTORS-IN-CONDUITS (1C/8 A.W.G., E.G.C.)	LIN. FT.	968
SP	ELECTRICAL CONDUCTORS-IN-CONDUITS (2C/8 A.W.G.)	LIN. FT.	33
SP	LED LUMINAIRE ASSEMBLY	EACH	2
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	EACH	1
733	VIDEO CABLE	LIN. FT.	1500
733	VIDEO DETECTOR (CLR)	EACH	6
733	VIDEO MONITOR (CLR)	EACH	1
733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	EACH	2

LEGEND

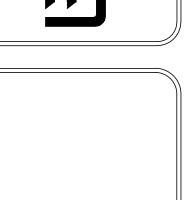
BASE MTD. CONTROLLER	
EXIST. SIGNAL HEAD	─
PROP. SIGNAL HEAD	———▶
PROP. PEDESTRIAN SIGNAL HEAD	─
PROP. LUMINAIRE (TYPE 2)	
EXIST. LUMINAIRE (TYPE 2)	
1"Ø PVC CONDUIT (TYP)	
TYPE-2 PULL BOX	2
VIDEO DETECTOR	
SERVICE DISCONNECT	Ų
PROP. TRAFFIC SIGNAL MAST ARM AND POLE W/ FOUNDATION	
EXIST. TRAFFIC SIGNAL MAST ARM AND POLE W/ FOUNDATION)
AND POLE W/ FOUNDATION	

REVISIONS DATE

CITY OF LITTLE ROCK, ARKANSAS
65TH AND GEYER SPRINGS SIGNALS
ESTIMATE AND LEGEND



CIVIL ENGINEERING
701 W. MARKHAM



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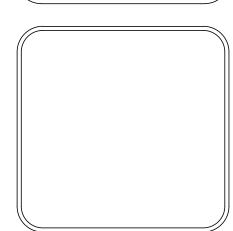
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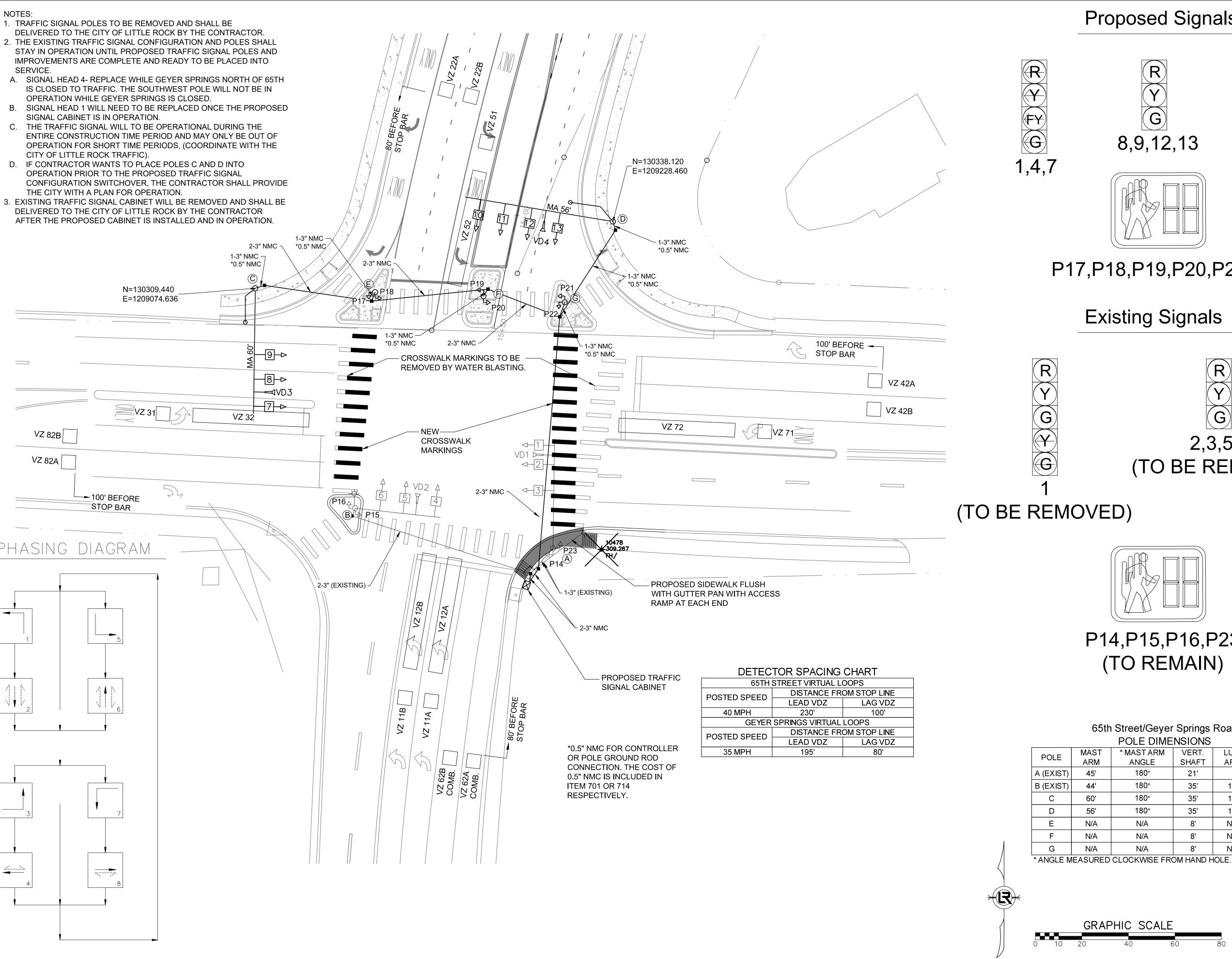






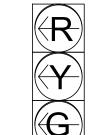
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C4



Proposed Signals





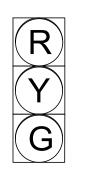




8,9,12,13

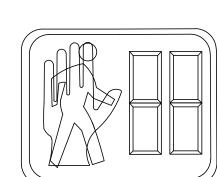
P17,P18,P19,P20,P21,P22

Existing Signals



2,3,5,6 (TO BE REMOVED)

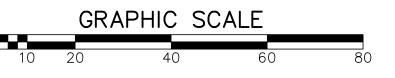
(TO BE REMOVED)



P14,P15,P16,P23 (TO REMAIN)

65th Street/Geyer Springs Road POLE DIMENSIONS

	POLE	MAST	* MAST ARM	VERT.	LUM.	* LUM.		
	POLE	ARM	ANGLE	SHAFT	ARM	ANGLE		
	A (EXIST)	45'	180°	21'		90°		
	B (EXIST)	44'	180°	35'	15'	90°		
	С	60'	180°	35'	15'	180°		
	D	56'	180°	35'	15'	180°		
	Е	N/A	N/A	8'	N/A	N/A		
	F	N/A	N/A	8'	N/A	N/A		
	G	N/A	N/A	8'	N/A	N/A		
	* ANGLE MEASURED OLOCKWISE FROM HAND HOLE							



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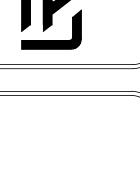
ARKANSAS SIGNAL ROCK,

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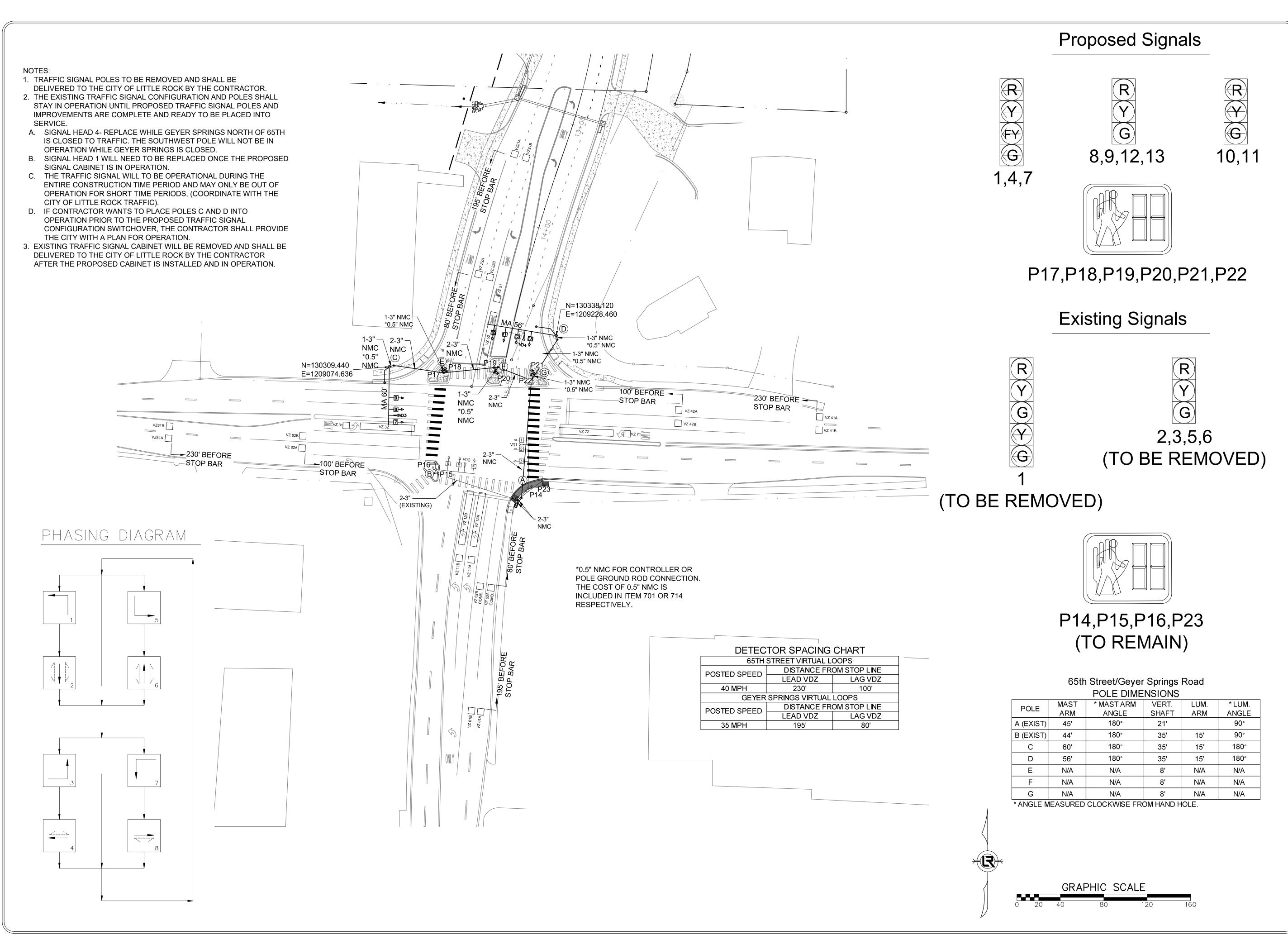
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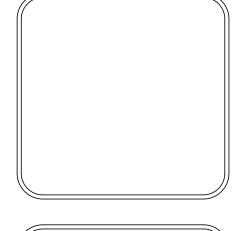
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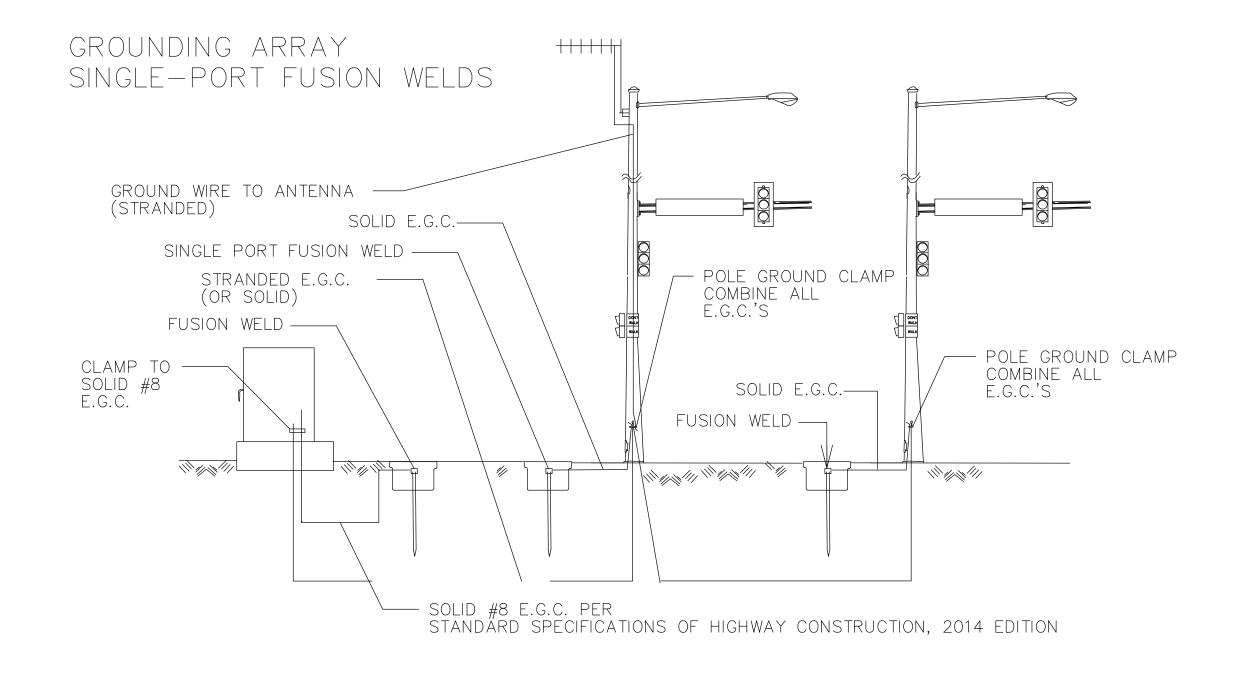
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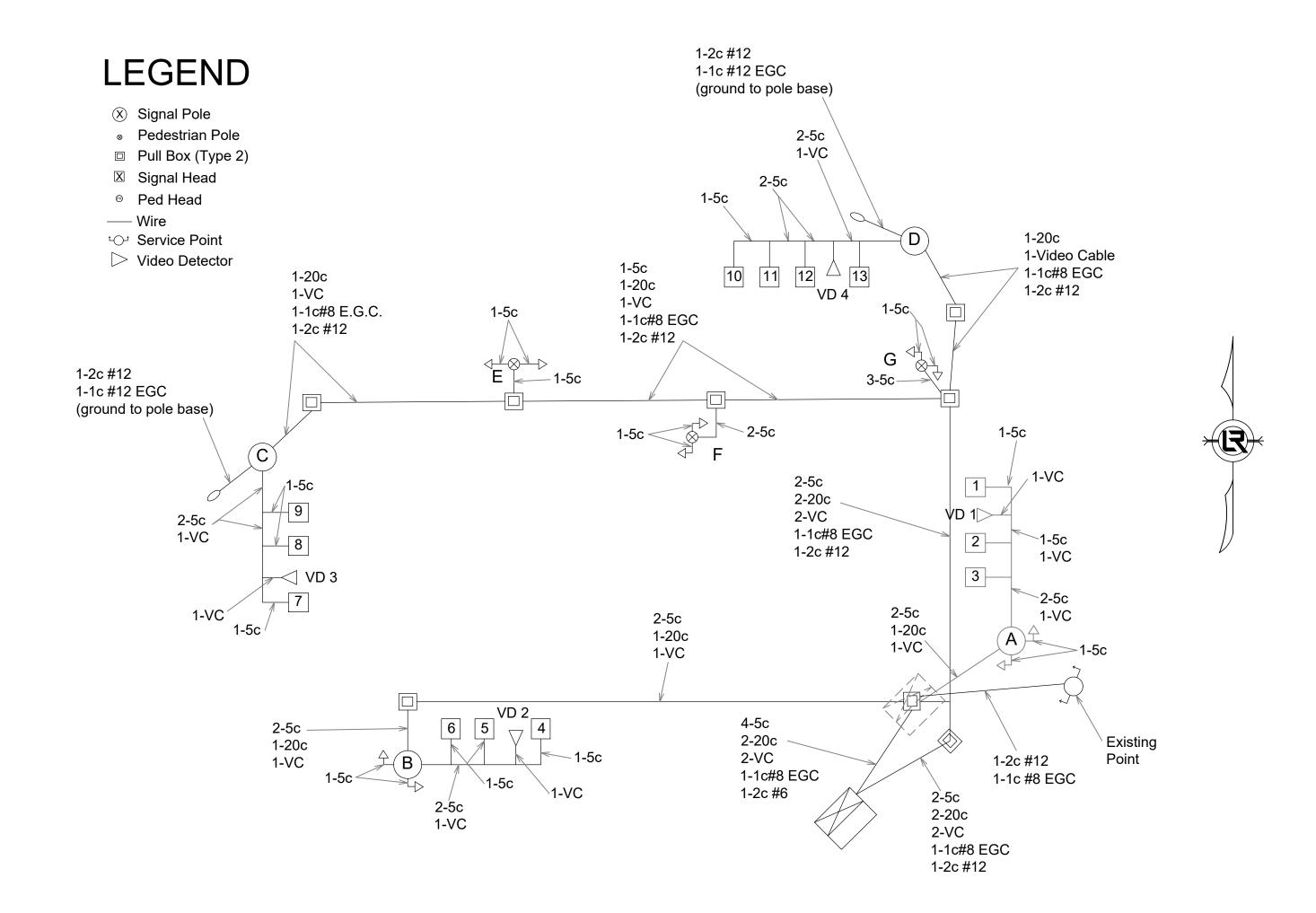
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WIRING DIAGRAM

NOTES TO CONTRACTOR:

- 1. ONE SEPARATE 1-5C IS RUN TO EACH POLE FOR THE PEDESTRIAN PUSH BUTTON.
- ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA OF CABINET.
- 3. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.
- 4. SEPARATE 5C/#14 A.W.G. FROM EACH 3 SEC. SIGNAL HEAD TO BASE OF POLE.
- 5. SEPARATE 7C/#14 A.W.G. FROM EACH 4 SEC. SIGNAL HEAD TO BASE OF POLE.

REVISIONS DATE

LITTLE ROCK, ARKANSAS GEYER SPRINGS SIGNALS

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