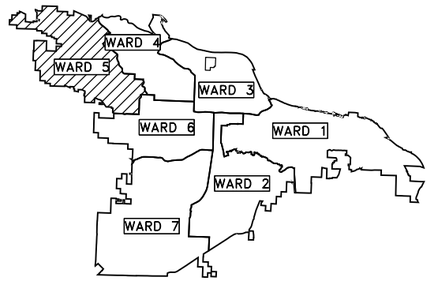
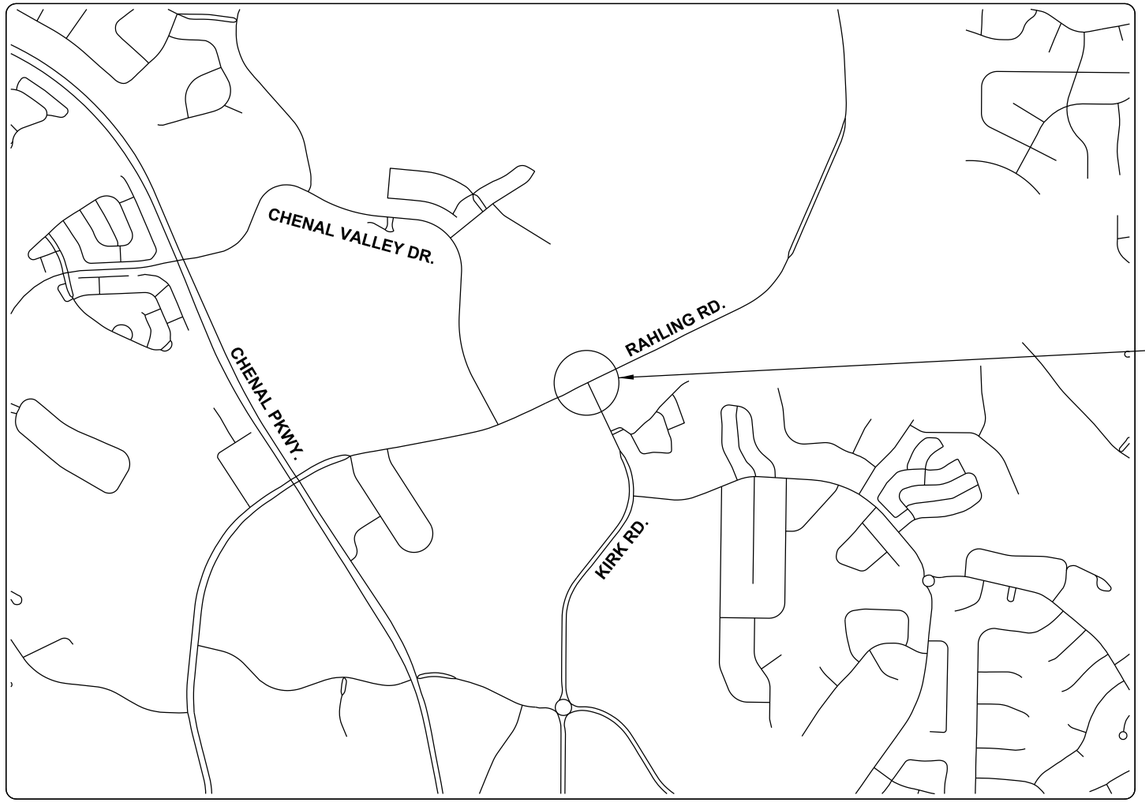
KIRK AND RAHLING
TRAFFIC SIGNAL

CLR #05-22-TS-180



PROJECT LOCATION – WARD 5



PROJECT LOCATION
LAT: 34° 46' 20"
LONG: 92° 26' 56"

PUBLIC WORKS · CITY OF LITTLE ROCK ·

DEPARTMENT OF PUBLIC WORKS
CIVIL ENGINEERING
701 WEST MARKHAM STREET
LITTLE ROCK, ARKANSAS 72201

PREPARED BY:

VOLKERT

2102 RIVERFRONT DR, SUITE 100
LITTLE ROCK, AR 72202
PHONE: (501) 817-7510

REVISIONS	DATE

CITY OF LITTLE ROCK, ARKANSAS
KIRK AND RAHLING TRAFFIC SIGNAL

COVER SHEET

DEPARTMENT OF PUBLIC WORKS
CIVIL ENGINEERING
701 W. MARKHAM
LITTLE ROCK, ARKANSAS 72201

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9827
RONALD E. HOLT
DIGITALLY SIGNED 06-12-24

DRAWN BY	JDZ
DESIGNED	HRH
CHECKED	HRH
DATE	02/29/2024
SCALE	AS SHOWN
PROJECT NO.	CLR #02-22-TS-180
SHEET NO.	1

INDEX OF SHEETS

SHEET NO.	TITLE	DATE
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ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
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SD-5	CONTROLLER CABINET UTILITY DRAWER	09-12-13
SD-6	HEAVY DUTY PULL BOX	11-16-17
SD-8	SIGNAL HEAD PLACEMENT	12-08-16
SD-9	SERVICE POINT	11-07-19
SD-11	STEEL POLE WITH MAST ARM	11-16-17
SD-16	OVERHEAD SIGN DETAILS (OVERHEAD SIGN MOUNTED ON STEEL POLE WITH MAST ARM)	09-12-13

REVISIONS	DATE

CITY OF LITTLE ROCK, ARKANSAS
KIRK AT RAHLING TRAFFIC SIGNAL
INDEX OF SHEETS

DEPARTMENT OF PUBLIC WORKS
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SHEET NO.	2

TRAFFIC SIGNAL QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
SP & 701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2, E-NET (8 PHASES)	1	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	8	EACH
SP & 706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	2	EACH
SP & 707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	6	EACH
708	TRAFFIC SIGNAL CABLE (5C/14 A.W.G.)	1215	LIN. FT.
708	TRAFFIC SIGNAL CABLE (7C/14 A.W.G.)	145	LIN. FT.
708	TRAFFIC SIGNAL CABLE (20C/14 A.W.G.)	488	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., E.G.C.)	473	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	46	LIN. FT.
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	690	LIN. FT.
710	NON-METALLIC CONDUIT (2")	46	LIN. FT.
710	NON-METALLIC CONDUIT (3")	592	LIN. FT.
SS & 711	CONCRETE PULL BOX (TYPE 1 HD)	1	EACH
SS & 711	CONCRETE PULL BOX (TYPE 2 HD)	4	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (26')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (42')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (44')	1	EACH
SS & 714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (46')	1	EACH
SP	LED LUMINAIRE ASSEMBLY	4	EACH
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS) WITH BATTERY BACKUP	1	EACH
719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")	264	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")	568	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	930	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	2	EACH
719	THERMOPLASTIC PAVEMENT MARKING (WORDS)	4	EACH
SP	18" STREET NAME SIGN	4	EACH
733	VIDEO MONITOR (CLR)	1	EACH
SP	ATCS PROCESSING UNIT	1	EACH
SP	VIDEO DETECTOR (IP)	6	EACH
SP	NETWORK CABLE, EXTERIOR CAT 5E	746	LIN. FT.
SP	ETHERNET SWITCH T100/1000 HARDENED (8 PORT Gb w/ 2 fiber ports)	1	EACH
SP	POWER OVER ETHERNET EXTENDER	1	EACH
SP&701	ETHERNET SWITCH MULTIPORT LAYER 3	1	EACH
SP	ETHERNET RADIO UBIQUITI NSM5	5	EACH
2.01	SITE PREPARATION (INCL. MOBILIZATION)	1	LUMP SUM
3.01	UNCLASSIFIED EXCAVATION	4	C.Y.
4.01	AGGREGATE BASE COURSE (CLASS 7)	10	TON
8.01	CONCRETE CURB AND GUTTER	11	LIN. FT.
9.01	CONCRETE SIDEWALK 4"	248	S.F.
14.01	SOLID SODDING (BERMUDA)	94	S.Y.
16.01	MAINTENANCE OF TRAFFIC	1	LUMP SUM
18.09	HANDICAP RAMP	264	S.F.
19.01	FINAL CLEAN-UP	1	LUMP SUM
49.00	TOP SOIL	3	C.Y.

REVISIONS	DATE

CITY OF LITTLE ROCK, ARKANSAS
KIRK AT RAHLING TRAFFIC SIGNAL
SUMMARY OF TRAFFIC SIGNAL QUANTITIES

DEPARTMENT OF PUBLIC WORKS
CIVIL ENGINEERING
701 W. MARKHAM
LITTLE ROCK, ARKANSAS 72201

STATE OF ARKANSAS
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SHEET NO.	3

TRAFFIC SIGNAL NOTES:

1. THE TRAFFIC SIGNAL SHALL NOT BE PUT INTO OPERATION OR SWITCHED TO THE NEXT CONSTRUCTION STAGE PRIOR TO THE FOLLOWING:

   A. ALL TRAFFIC SIGNAL EQUIPMENT HAS BEEN INSTALLED ACCORDING TO THE PLANS, SPECIAL PROVISIONS, AND PROPERLY FUNCTIONAL. THIS INCLUDES BUT NOT LIMITED TO: CABINETS, PULL BOXES, JUNCTION BOXES, POLES, MAST ARMS, FOUNDATIONS, LUMINAIRES, SIGNAL HEADS, PEDESTRIAN SIGNAL HEADS, PUSH BUTTONS, DETECTION SYSTEM, CONDUITS, CONDUCTORS, CABLES, TRAFFIC CONTROLLER, CONFLICT MONITOR, COMMUNICATION SYSTEM, SERVICE POINT, AND RAILROAD INTERCONNECT SYSTEM.

   B. THE DETECTION SYSTEM SHALL BE INSTALLED, SETUP, AND CONFIGURED BY THE CONTRACTOR OR THEIR SUPPLIER PER PLANS. A TRAFFIC OPERATIONS INSPECTOR SHALL INSPECT AND PROVIDE APPROVAL IN ORDER TO PUT THE TRAFFIC SIGNAL INTO OPERATION.

   C. THE TRAFFIC CONTROLLER AND CONFLICT MONITOR SHALL BE PROGRAMMED TO OPERATE AS REQUIRED PER THE PLANS (PHASING DIAGRAM, INTERVAL CHART, AND ANY ADDITIONAL NOTES), SPECIAL PROVISIONS AND ARDOT SPECIFICATIONS.

   D. TIMING SETTINGS HAVE BEEN PROGRAMMED AND APPROVED AS REQUIRED BY CITY OF LITTLE ROCK TRAFFIC ENGINEERING.

   E. THE TRAFFIC SIGNAL HAS BEEN INSPECTED AND APPROVED BY A TRAFFIC OPERATIONS INSPECTOR.

   F. ALL REQUIRED DOCUMENTS RELATED TO THE TRAFFIC SIGNAL EQUIPMENT, THIS INCLUDES BUT NOT LIMITED TO: TEST RESULTS, CONFIGURATION/DATA REPORTS, WARRANTIES, AND ANY OTHER DOCUMENTATION REQUIRED PER PLANS AND SPECIAL PROVISIONS.

2. CONTRACTOR SHALL NOTIFY ALL EXISTING UTILITY OWNERS BEFORE BEGINNING WORK ON THIS PROJECT.

3. 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.

4. 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.

5. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE NFPA 70 (CURRENT EDITION) NATIONAL ELECTRICAL CODE, NFPA 101 (CURRENT EDITION) LIFE SAFETY CODE, STATE ELECTRICAL CODE AND LOCAL ELECTRICAL CODE.

6. 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.

7. 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.

8. CONTRACTOR SHALL CONNECT A SEPARATE NEUTRAL FOR EACH LOAD SWITCH REPRESENTED ON EACH SIGNAL POLE.

9. 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.

10. CONTROLLER CABINET SHALL BE WIRED SUCH THAT DURING FLASH OPERATIONS POWER TO THE LOAD SWITCHES CANNOT BACKFEED TO LOAD SWITCH POWER BUSS.

11. 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.

12. CONTROLLER CABINET LAYOUT AND ORIENTATION SHALL CONFORM TO IMSA STANDARDS.

13. DOOR PANEL TEST PUSH BUTTONS SHALL ACTUATE INDICATED PHASES. DETECTOR ASSIGNMENTS AND/OR SIDE PANEL JUMPERS MAY REQUIRE MODIFICATION.

14. ALL SYSTEM DETECTOR RACKS AND ASSOCIATED EQUIPMENT SHALL BE PROTECTED BY THE MAIN CONTROLLER CABINET POWER SURGE PROTECTION.

15. ONE VIDEO PROGRAMMNG 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.

16. 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.

17. THE LOCAL RADIO WITH ANTENNA AND TRAFFIC SIGNAL CONTROLLER SHALL BE COMPATIBLE WITH THE EXISTING COORDINATION SYSTEM IN THE CITY/COUNTY.

18. CONDUIT INSTALLED UNDER ROADWAY SURFACES SHALL BE INSTALLED BY PUSHING OR BORING METHOD OR AS DIRECTED BY THE ENGINEER. PVC OR HDPE CONDUIT SHALL BE USED AND SHALL BE UL LISTED. PVC CONDUIT SHALL BE MARKED "DIR. BORING" OR "DIRECTIONAL BORING" PER NEC. IF THE ENGINEER DETERMINES THIS IS NOT FEASIBLE, THEN A TRENCHING METHOD AS SHOWN IN THE STANDARD DRAWINGS MAY BE USED. THE ENGINEER SHALL GRANT A WRITTEN APPROVAL PRIOR TO USING THE TRENCHING METHOD.

19. ALL CONDUIT SHALL BE THREE (3") INCH DIAMETER UNLESS SPECIFIED ON PLANS. ALL CONDUIT UNDER THE ROADWAY, SIDEWALKS, AND DRIVEWAYS SHALL HAVE A MINIMUM DEPTH OF 24" FROM THE TOP OF THE CONDUIT TO THE FINISHED GRADE. CONDUIT DEPTH MAY NEED TO INCREASE NEAR DRAINAGE STRUCTURES.

20. CONDUIT BELL END FITTINGS SHALL BE INSTALLED ON ALL TERMINATING ENDS OF NON-METALLIC CONDUIT RUNS. THIS INCLUDES PULL BOXES, POLE BASES, AND TRAFFIC SIGNAL CABINETS. THE COST OF THE FITTINGS SHALL BE CONSIDERED SUBSIDARY TO THE PAY ITEM. ALL NON-METALLIC CONDUIT SHALL USE LONG SWEEP 90 DEGREE ELBOWS ON ALL CONDUIT BENDS.

21. ALL CONCRETE PULL BOXES SHALL BE (TYPE 2 HD) UNLESS OTHERWISE INDICATED. PULL BOX LIDS SHALL CLOSE FLUSH WITHOUT PINCHING ANY CONDUCTORS. CONDUIT LENGTHS IN PULL BOXES SHALL BE SET ACCORDINGLY. ANY CONDUCTORS THAT HAVE BEEN DAMAGED BY PINCHING SHALL BE COMPLETELY REPLACED AT THE CONTRACTOR'S EXPENSE.

22. ALL CONCRETE PULL BOXES SHALL BE SET ON A GRAVEL OR CRUSHED STONE BEDDING AS SPECIFIED IN SECTION 711, CONCRETE PULL BOX, OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014.

23. CONTRACTOR SHALL ATTACH A PERMANENT TAG OF RIGID PLASTIC OR NON-FERROUS METAL TO EACH CONDUIT AT PULLBOXES, POLE BASES, JUNCTION BOXES AND CONTROLLER CABINETS. 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. EACH TAG SHALL INDICATE THE END LOCATION OF CONDUIT RUN. THE COST OF THE TAGS SHALL BE SUBSIDIARY TO THE CONDUIT PAY ITEM.
    EXAMPLES FOR CONDUIT IN SIDE CABINET: "TO POLE A AND B" OR "TO POLE C"
    EXAMPLES FOR CONDUIT IN PULL BOX: "TO POLE A" OR "TO TRAFFIC CABINET"

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. ALL TRAFFIC SIGNAL POLES SHALL BE POWDER COATED BLACK WITH METAL HANDHOLE COVERS.

26. 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.

27. 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.

28. 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.

29. 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.

30. 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.

31. LED LUMINAIRE ASSEMBLIES SHALL HAVE A BUG RATING OF U0.

32. BACKPLATES SHALL BE SUPPLIED FOR ALL TRAFFIC SIGNAL HEADS AND MUST BE METAL, REFER TO THE RETROREFLECTIVE BACKPLATES SPECIAL PROVISION FOR REQUIREMENTS.

33. PAVEMENT MARKINGS SHOWN FOR REFERENCE ONLY. SEE PERMANENT PAVEMENT MARKING DETAILS.

34. BEFORE FINAL ACCEPTANCE OF THE TRAFFIC SIGNAL, THE CONTRACTOR SHALL PROVIDE TWO (2) SETS OF LEDGER SIZE (11" X 17") AS-BUILT TRAFFIC SIGNAL PLANS TO THE MAINTENANCE AUTHORITY.

35. VIDEO DETECTION SYSTEM SHALL BE RHYTHEM ENGINEERING.

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CITY OF LITTLE ROCK, ARKANSAS
KIRK AT RAHLING TRAFFIC SIGNAL

TRAFFIC SIGNAL NOTES

DEPARTMENT OF PUBLIC WORKS
CIVIL ENGINEERING
701 W. MARKHAM
LITTLE ROCK, ARKANSAS 72201

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9827
RONALD E. [illegible]
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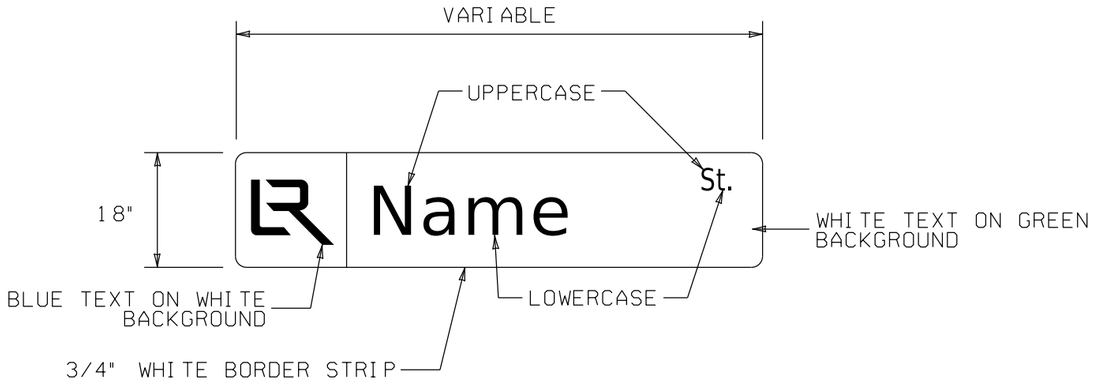
OVERHEAD STREET NAME MARKER
STANDARD MAST ARM MOUNTED



NOTES:

1. REFLECTIVE SHEETING SHALL COMPLY WITH ASTM 4956 TYPE 8 OR 9 REFLECTIVE SHEETING. SHEETING AND LEGEND SHALL BE APPLIED IN SUCH A MANNER TO PROVIDE WRINKLE AND BUBBLE FREE SURFACES. APPLICATION OF SHEETING IS CAUSE FOR REJECTION OF MATERIALS DUE TO WORKMANSHIP.
2. ALUMINUM SIGN BLANK SHALL BE ALLOY 6061-T6 OR 5052-H38. THE ALUMINUM SIGN SHALL BE ALSO ALODIZED. THE ALUMINUM SHEETING SHALL BE 0.100 INCH NOMINAL THICKNESS AND OF THE SIZE SHOWN WITH 1.5" CORNER RADII. PRIOR TO FABRICATION OF THE SIGNS, THE LAYOUT SHALL FIRST BE APPROVED BY AN AGENT OF THE CITY/ COUNTY.
3. WHEN CROSSROAD HAS TWO NAMES, THE SIGN FOR THE CROSSROAD TO THE LEFT MAY BE INSTALLED ON THE BACKSIDE OF THE MAST ARM ON THE NEARSIDE LEFT POLE. SEE STANDARD DRAWING SHEET FOR MORE INFORMATION FOR MOUNTING ON MAST ARM ASSEMBLY.
4. THE SERIES C 2000 STANDARD ALPHABET SHALL BE USED FOR ALL LETTERS.

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CITY OF LITTLE ROCK, ARKANSAS
KIRK AT RAHLING TRAFFIC SIGNAL

TRAFFIC SIGNAL STREET NAME SIGNS

DEPARTMENT OF PUBLIC WORKS
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701 W. MARKHAM
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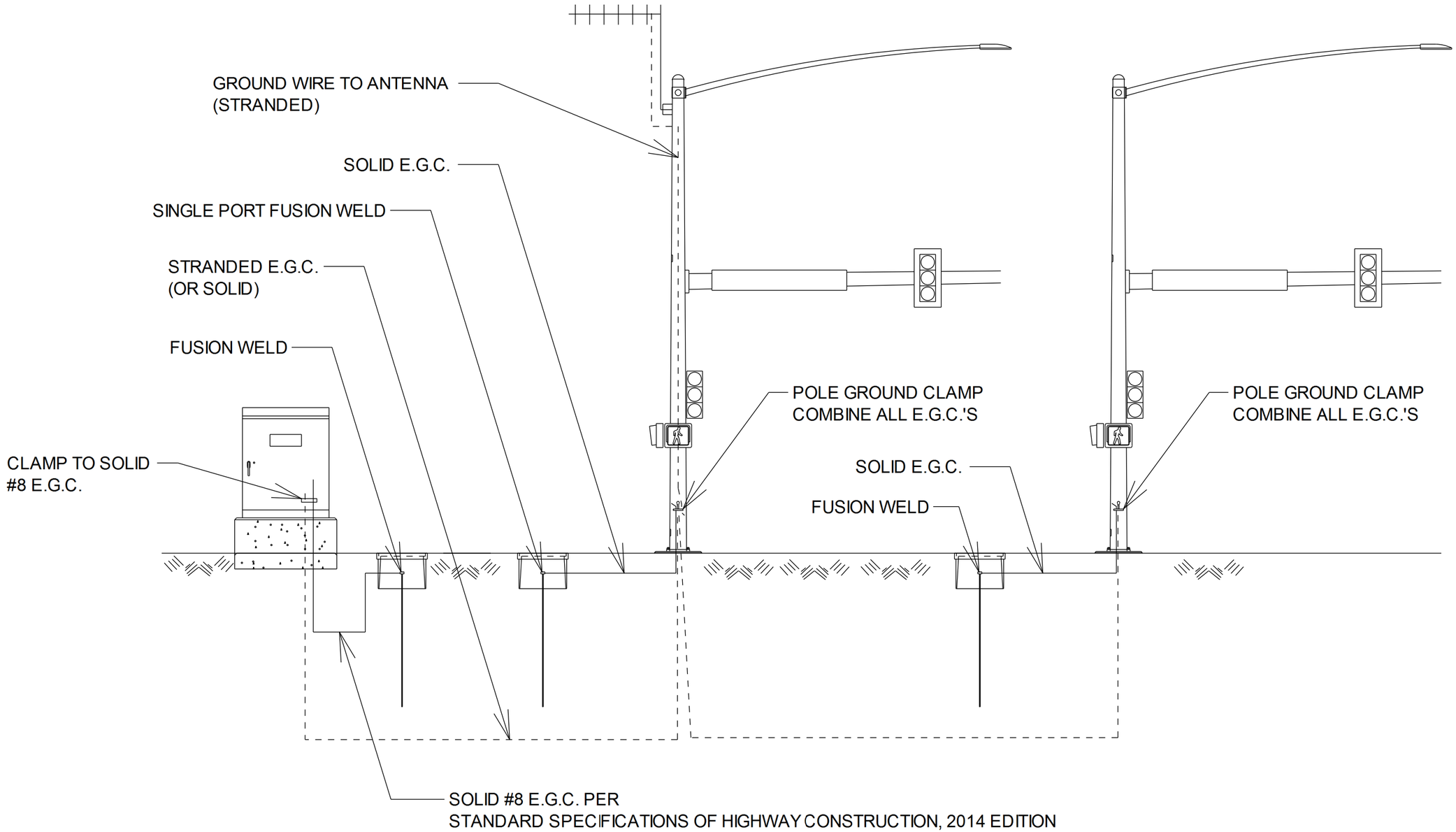
SHEET NO.	5

GROUNDING ARRAY
SINGLE-PORT FUSION WELDS



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CITY OF LITTLE ROCK, ARKANSAS
KIRK AT RAHLING TRAFFIC SIGNAL
GROUNDING ARRAY DETAIL

DEPARTMENT OF PUBLIC WORKS
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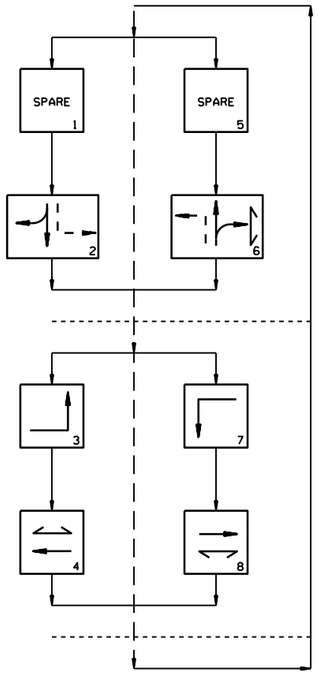
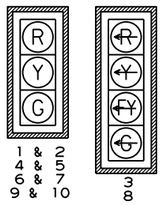
PHASING DIAGRAM



SIGNAL FACES

12" LENSES



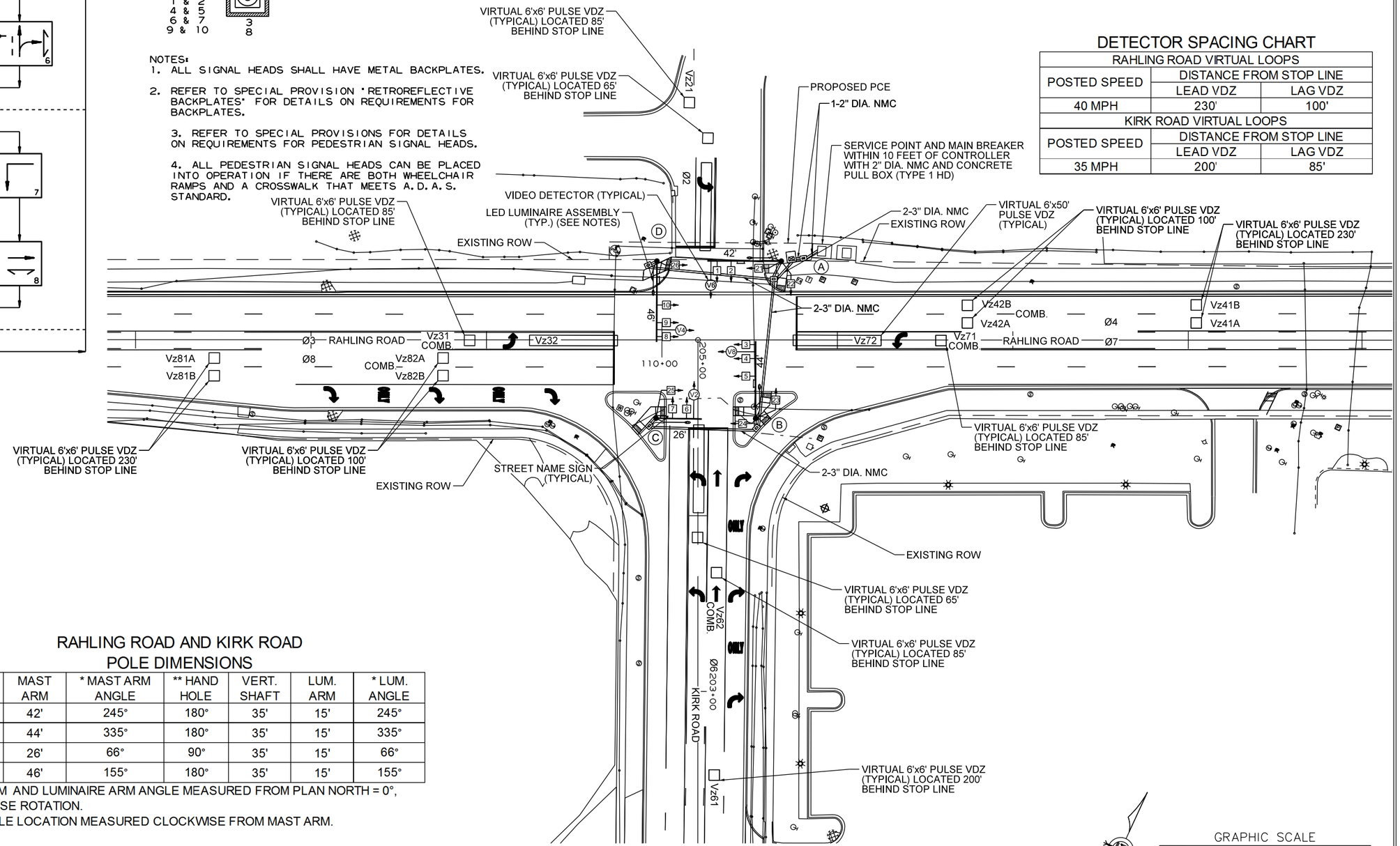
ONE SECTION
(SOLID SYMBOL)

21 & 26
22 & 23
24 & 25

NOTES:
1. ALL SIGNAL HEADS SHALL HAVE METAL BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
3. REFER TO SPECIAL PROVISIONS FOR DETAILS ON REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS.
4. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMPS AND A CROSSWALK THAT MEETS A.D.A.S. STANDARD.

DETECTOR SPACING CHART

RAHLING ROAD VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
40 MPH	230'	100'
KIRK ROAD VIRTUAL LOOPS		
POSTED SPEED	DISTANCE FROM STOP LINE	
	LEAD VDZ	LAG VDZ
35 MPH	200'	85'



RAHLING ROAD AND KIRK ROAD POLE DIMENSIONS

POLE	MAST ARM	* MAST ARM ANGLE	** HAND HOLE	VERT. SHAFT	LUM. ARM	* LUM. ANGLE
A	42'	245°	180°	35'	15'	245°
B	44'	335°	180°	35'	15'	335°
C	26'	66°	90°	35'	15'	66°
D	46'	155°	180°	35'	15'	155°

* MAST ARM AND LUMINAIRE ARM ANGLE MEASURED FROM PLAN NORTH = 0°, CLOCKWISE ROTATION.
** HAND HOLE LOCATION MEASURED CLOCKWISE FROM MAST ARM.

NOTE:
1. CROSSWALKS NOT SHOWN FOR CLARITY.
2. LED LUMINAIRE ASSEMBLY SHALL HAVE A 10 YEAR MANUFACTURE'S WARRANTY.
3. LED LUMINAIRE ASSEMBLY TO BE EATON "VERD-C02H8-D-U-T3-4N7-10MPS-BZ-LLPC-U77602 OR APPROVED EQUAL.

GRAPHIC SCALE
0 15 30 60 90 120

REVISIONS	DATE

CITY OF LITTLE ROCK, ARKANSAS
KIRK AT RAHLING TRAFFIC SIGNAL
SIGNALIZATION PLAN SHEET

DEPARTMENT OF PUBLIC WORKS
CIVIL ENGINEERING
701 W. MARKHAM
LITTLE ROCK, ARKANSAS 72201

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9827
RONALD E. LEE
DIGITALLY SIGNED 06-12-24

DRAWN BY	JDZ
DESIGNED	HRH
CHECKED	HRH
DATE	02/29/24
SCALE	AS SHOWN
PROJECT NO.	CLR #05-22-TS-180
SHEET NO.	7

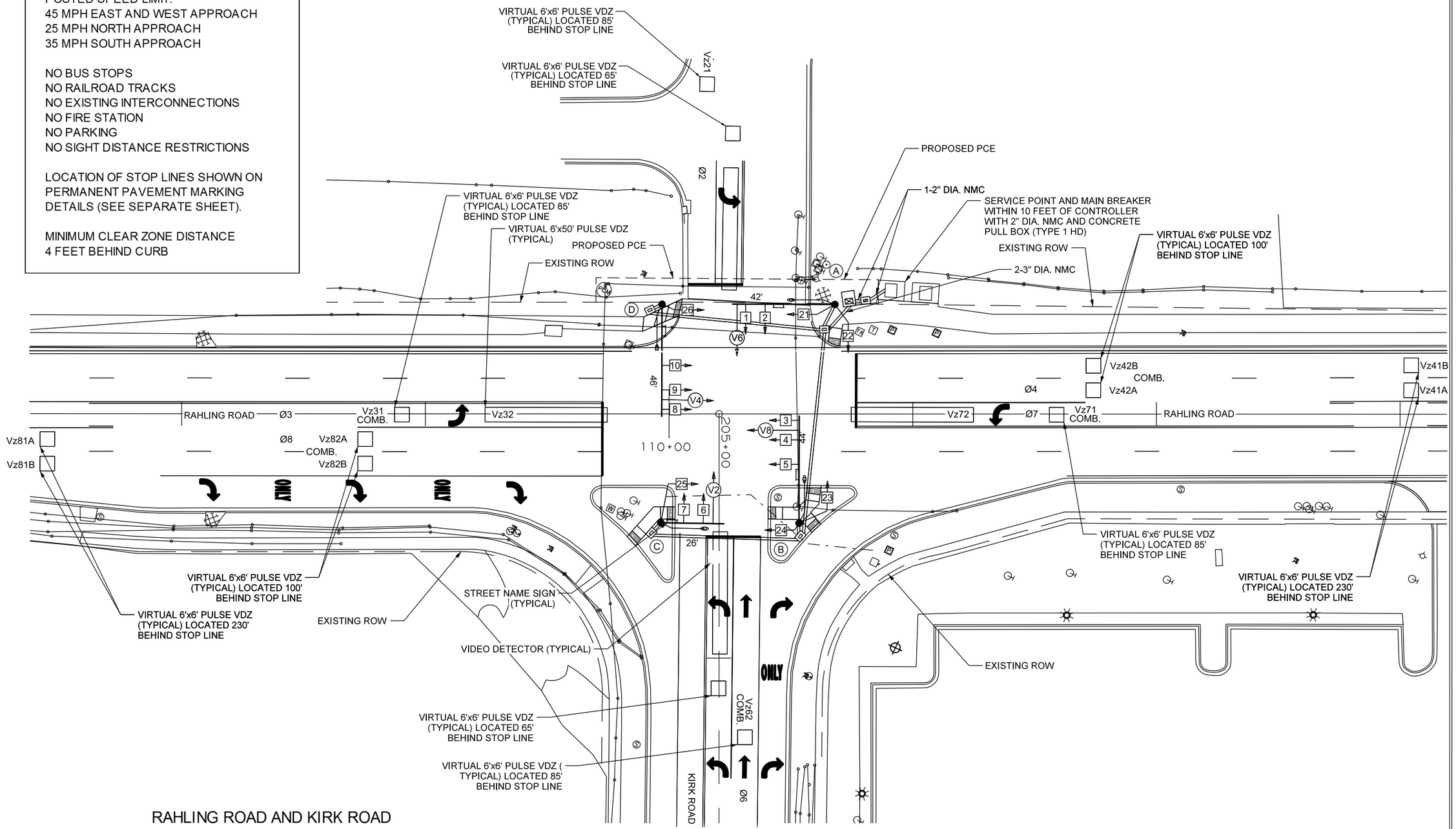
DESIGN PARAMETERS

POSTED SPEED LIMIT:
45 MPH EAST AND WEST APPROACH
25 MPH NORTH APPROACH
35 MPH SOUTH APPROACH

NO BUS STOPS
NO RAILROAD TRACKS
NO EXISTING INTERCONNECTIONS
NO FIRE STATION
NO PARKING
NO SIGHT DISTANCE RESTRICTIONS

LOCATION OF STOP LINES SHOWN ON PERMANENT PAVEMENT MARKING DETAILS (SEE SEPARATE SHEET).

MINIMUM CLEAR ZONE DISTANCE
4 FEET BEHIND CURB



RAHLING ROAD AND KIRK ROAD
POLE LOCATIONS

POLE	LOCATION & STATION	OFFSET	X, Y COORDINATES
A	RAHLING RD - STA. 110+68.04	44.80' LT.	160146.84, 1177386.38
B	RAHLING RD - STA. 110+53.19	44.70' RT.	160059.45, 1177410.60
C	RAHLING RD - STA. 109+96.62	44.52' RT.	160035.91, 1177359.17
D	RAHLING RD - STA. 109+97.11	44.83' LT.	160117.23, 1177322.17

GRAPHIC SCALE
0 10 20 40 60 80

NOTE:
CROSSWALKS NOT SHOWN FOR CLARITY.

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SHEET NO.	8

RAHLING ROAD AND KIRK ROAD
PULL BOX LOCATIONS

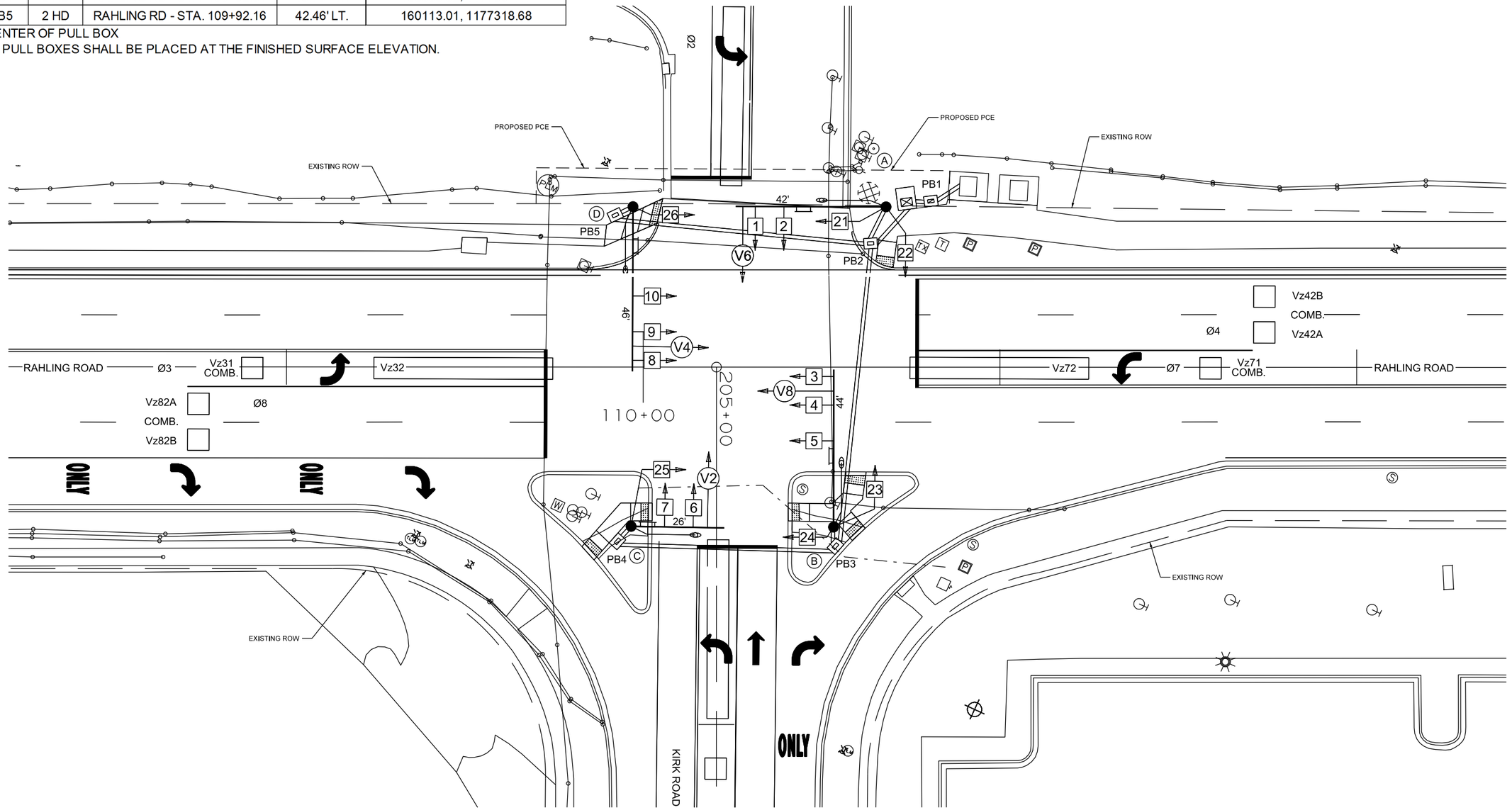
PULL BOX	TYPE	LOCATION & STATION	OFFSET	X, Y COORDINATES
PB1	1 HD	RAHLING RD - STA. 110+80.61	46.41' LT.	160153.55, 1177397.08
PB2	2 HD	RAHLING RD - STA. 110+63.71	34.59' LT.	160135.76, 1177386.74
PB3	2 HD	RAHLING RD - STA. 110+53.92	50.02' RT.	160054.84, 1177413.33
PB4	2 HD	RAHLING RD - STA. 109+92.51	48.70' RT.	160030.52, 1177357.47
PB5	2 HD	RAHLING RD - STA. 109+92.16	42.46' LT.	160113.01, 1177318.68

* CENTER OF PULL BOX
ALL PULL BOXES SHALL BE PLACED AT THE FINISHED SURFACE ELEVATION.

CONTROLLER CABINET LOCATION

LOCATION & STATION	* OFFSET	* X, Y COORDINATES
RAHLING RD - STA. 110+73.81	46.14' LT.	160150.47, 1177391.03

* CENTER OF CABINET



NOTE:
CROSSWALKS NOT SHOWN FOR CLARITY.

GRAPHIC SCALE
0 7.5 15 30 45 60

REVISIONS	DATE

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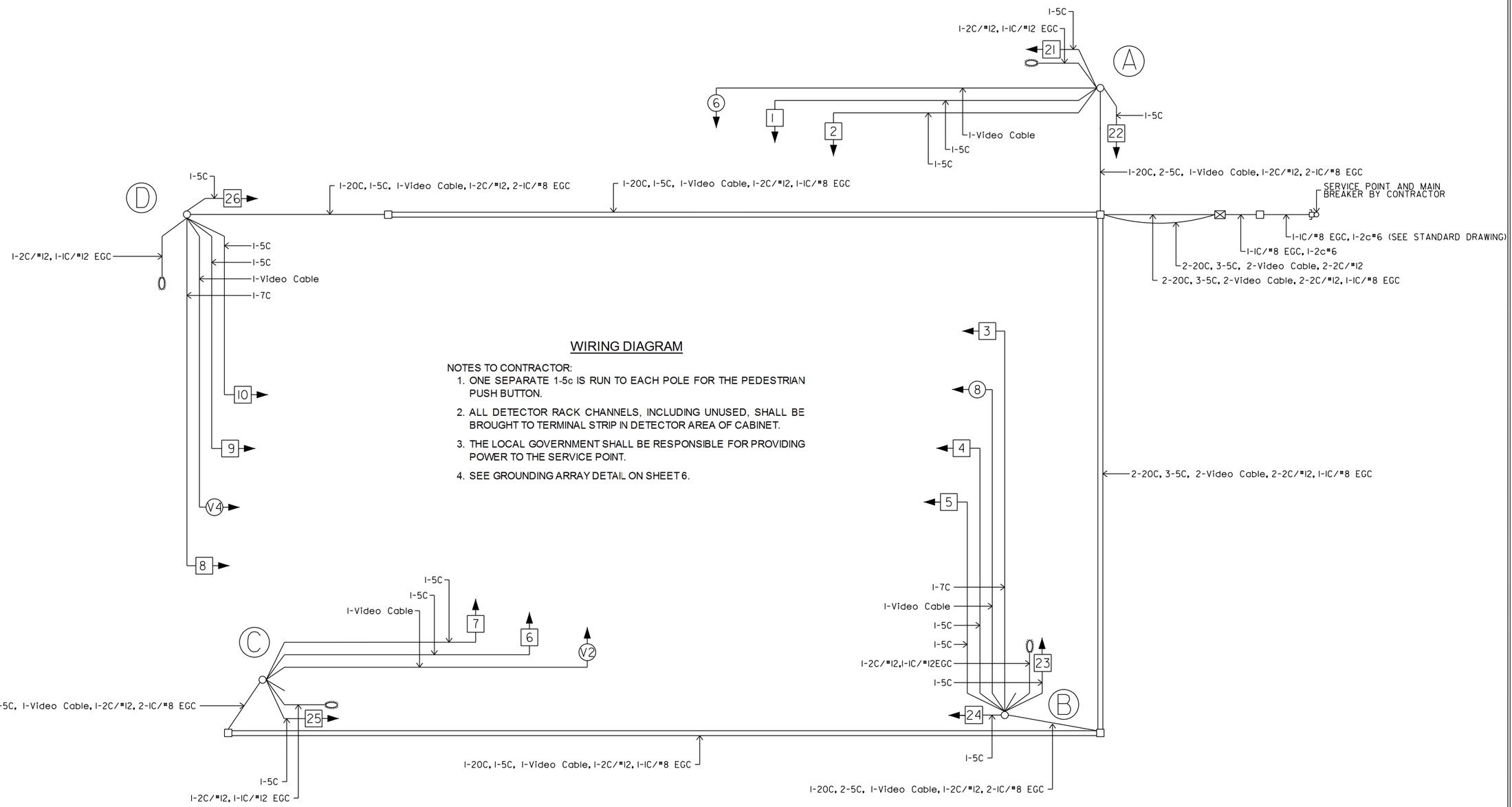
PROJECT NO.	CLR #05-22-TS-180
SHEET NO.	9



WIRING DIAGRAM

NOTES TO CONTRACTOR:

1. ONE SEPARATE 1-5c IS RUN TO EACH POLE FOR THE PEDESTRIAN PUSH BUTTON.
2. 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. SEE GROUNDING ARRAY DETAIL ON SHEET 6.

REVISIONS	DATE

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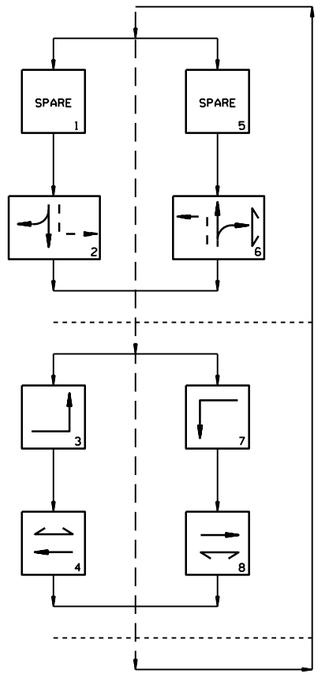
SHEET NO.	10

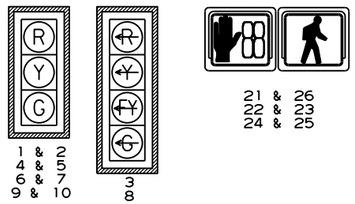
PHASING DIAGRAM



SIGNAL FACES

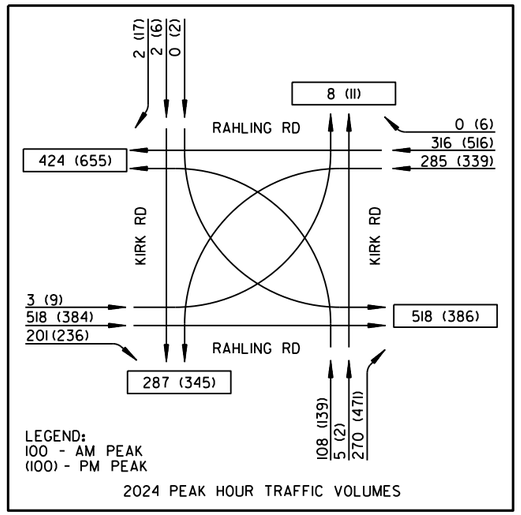
12" LENSES

ONE SECTION
(SOLID SYMBOL)



NOTES:
1. ALL SIGNAL HEADS SHALL HAVE METAL BACKPLATES.
2. REFER TO SPECIAL PROVISION "RETROREFLECTIVE BACKPLATES" FOR DETAILS ON REQUIREMENTS FOR BACKPLATES.
3. REFER TO SPECIAL PROVISIONS FOR DETAILS ON REQUIREMENTS FOR PEDESTRIAN SIGNAL HEADS.
4. ALL PEDESTRIAN SIGNAL HEADS CAN BE PLACED INTO OPERATION IF THERE ARE BOTH WHEELCHAIR RAMPS AND A CROSSWALK THAT MEETS A.D.A.S. STANDARD.

TRAFFIC FLOW DIAGRAM



DETECTOR CHART

DETECTOR SYSTEM DESCRIPTION: JOB 1201242											
RAHLING ROAD AND KIRD ROAD DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS			COMMENTS	TUBE LENGTHS
							LOCAL		MASTER SYSTEM		
DET. ID #	LOCATION DIRECTION	TYPE	DET. #	CAB. TRM. #	AMP CHN. #	CON. IMP. #	PHS	SYSTEM DET. #	DETECTOR NUMBERS		
Vz11	NB LEFT TURN FAR	COMB.			1	V9	1	1		CAMERA V1	37"
Vz12	NB LEFT TURN	LOCAL			2	V1	1			CAMERA V1	37"
Vz21	SB ADVANCE	LOCAL			5	V2	2			CAMERA V2	37"
Vz31	EB LEFT TURN FAR	COMB.			9	V11	3	3		CAMERA V8	37"
Vz32	EB LEFT TURN	LOCAL			10	V3	3			CAMERA V8	37"
Vz41 A&B	WB ADVANCE	LOCAL			13	V4	4			CAMERA V4	37"
Vz42 A&B	WB NEAR	COMB.			14	V12	4	4		CAMERA V4	37"
Vz51	SB LEFT TURN FAR	COMB.			7	V13	5	5		CAMERA V2	37"
Vz52	SB LEFT TURN	LOCAL			8	V5	5			CAMERA V2	37"
Vz61	NB ADVANCE	LOCAL			3	V6	6			CAMERA V1	37"
Vz62	NB NEAR	COMB.			4	V14	6	6		CAMERA V1	37"
Vz71	WB LEFT TURN FAR	COMB.			15	V15	7	7		CAMERA V4	37"
Vz72	WB LEFT TURN	LOCAL			16	V7	7			CAMERA V4	37"
Vz81 A&B	EB ADVANCE	LOCAL			11	V8	8			CAMERA V8	37"
Vz82 A&B	EB NEAR	COMB.			12	V16	8	8		CAMERA V8	37"
					SPARE:						

CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

NOTE: "AMP CHN =" REFERS TO THE RACK OUTPUT POSITION.
THIS IS WIRED TO CONTROLLER INPUT DETECTOR NUMBER WHICH IS PROGRAMMED TO ACTUATE THE DESIGNATED PHASE.
EXAMPLE: V9 = SYSTEM DETECTOR 1, V10 = SYSTEM DETECTOR 2

INTERVAL CHART

	RAHLING ROAD AND KIRK ROAD													FLASH
SIGNAL FACES	6	CLR.	2	CLR.	3+7	CLR.	3+8	CLR.	4+7	CLR.	4+8	CLR.		SEQUENCE
1 & 2	G	**	R	R	R	R	R	R	R	R	R	R		R
3	~~R~~	~~R~~	~~R~~	~~R~~	~~G~~	*	~~G~~	*	~~R~~	~~R~~	~~FY~~	~~FY~~		~~R~~
4 & 5	R	R	R	R	R	R	G	**	R	R	G	**		R
6 & 7	R	R	G	**	R	R	R	R	R	R	R	R		R
8	~~R~~	~~R~~	~~R~~	~~R~~	~~G~~	*	~~R~~	~~R~~	~~R~~	*	~~FY~~	~~FY~~		~~R~~
9 & 10	R	R	R	R	R	R	R	R	G	**	G	**		R

* DENOTES GREEN OR YELLOW ARROW DEPENDING ON NEXT PHASE
** DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE
*** DENOTES FLASHING YELLOW ARROW OR YELLOW ARROW DEPENDING ON NEXT PHASE

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SIGNALIZATION PLAN SHEET

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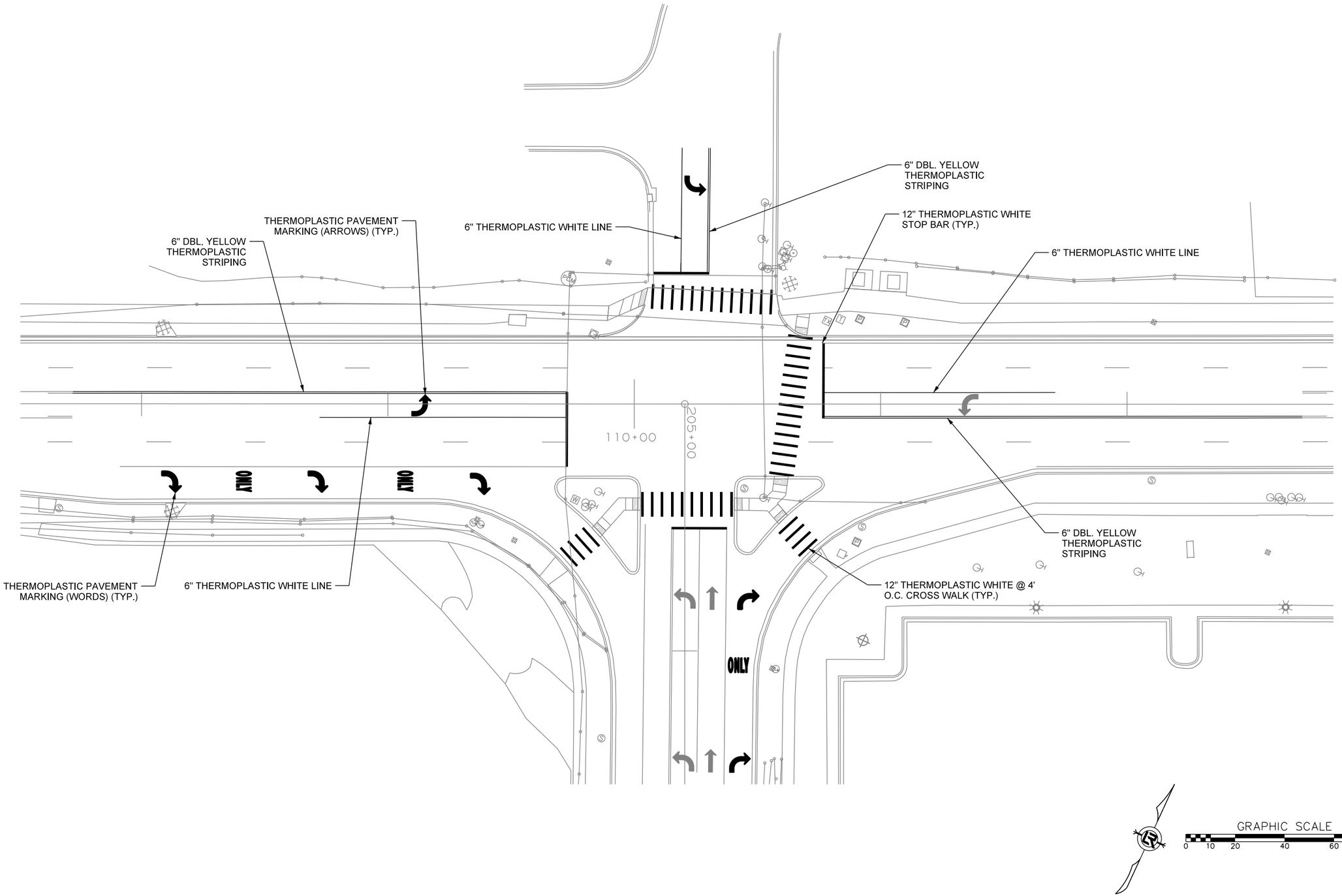
SHEET NO.	11



REVISIONS	DATE

CITY OF LITTLE ROCK, ARKANSAS

KIRK AT RAHLING TRAFFIC SIGNAL

PERMANENT PAVEMENT MARKING DETAILS

DEPARTMENT OF PUBLIC WORKS
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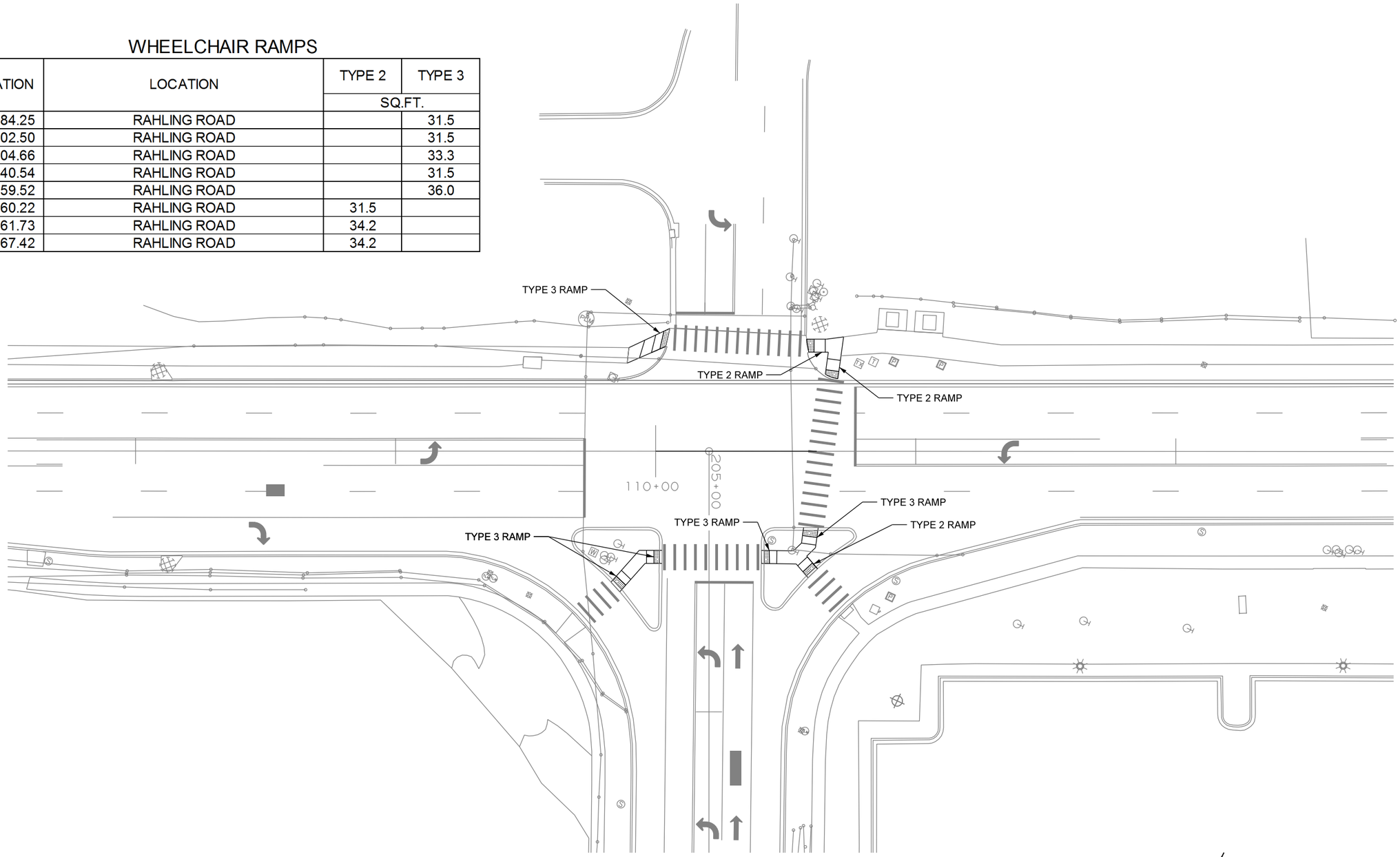
SHEET NO.	12

WHEELCHAIR RAMPS

STATION	LOCATION	TYPE 2	TYPE 3
		SQ.FT.	
109+84.25	RAHLING ROAD		31.5
110+02.50	RAHLING ROAD		31.5
110+04.66	RAHLING ROAD		33.3
110+40.54	RAHLING ROAD		31.5
110+59.52	RAHLING ROAD		36.0
110+60.22	RAHLING ROAD	31.5	
110+61.73	RAHLING ROAD	34.2	
110+67.42	RAHLING ROAD	34.2	



NOTE:
1. INSTALL CONCRETE CURB (TYPE B) WHERE NECESSARY TO ENCLOSE ISLAND.
2. ALL EXISTING CONCRETE ISLAND RAMPS AND SIDEWALKS TO BE REMOVED AND REPLACED.

GRAPHIC SCALE
0 10 20 40 60 80

REVISIONS	DATE

CITY OF LITTLE ROCK, ARKANSAS
KIRK AT RAHLING TRAFFIC SIGNAL
WHEELCHAIR RAMP DETAILS

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SHEET NO.	13