CITY OF LITTLE ROCK, ARK.

PUBLIC WORKS DEPARTMENT
TRAFFIC ENGINEERING DIVISION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14038
TRAVIS B. HERBNER

TRAFFIC SIGNAL INSTALLATION

KANIS AT WOODLANDS TRAIL

APPROVAL
PUBLIC WORKS DEPARTMENT
TRAFFIC ENGINEERING DIVISION

APPROVED BY: _____
Jon Honeywell, Public Works Director

DATE: _____

BID NO.: _____

LIST OF PLAN SHEETS

NOTE:

EXTEND GREEN EQUIPMENT GROUNDING CONDUCTOR (EGC) FROM GROUND BAR AT MAIN BREAKER TO CONTROL PANEL AND TO FIRST POLE. SOLIDLY BOND EGC 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.

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

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.

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

ALL PARTS OF THIS INSTALLATION SHALL BE IN ACCORDANCE WITH THE ARKANSAS HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARDS AND DETAILS AND WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITIONS.

CONDUIT INSTALLED UNDER ROADWAY SURFACES SHALL BE INSTALLED BY PUSHING OR BORING METHODS AND MUST BE H.D.P.E. WITH NO UNDERGROUND SPLICES. IF THE ENGINEER DETERMINES THIS IS NOT FEASIBLE, THEN A TRENCHING METHOD AS SHOWN IN THE DETAILS MAY BE USED.

PAVEMENT MARKING SHOWN FOR REFERENCE ONLY. SEE PAVEMENT MARKING PLAN SHEETS.

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 SPECIAL DETAILS). PAYMENT WILL BE INCLUDED IN SECTION 714, AHTD STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

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

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.

THE LOCAL RADIO WITH ANTENNA SHALL BE COMPATIBLE WITH THE EXISTING CLOSED LOOP COORDINATION SYSTEM IN THE CITY.

NOTE:

P.E. CERTIFIED SHOP DRAWINGS FOR MAST ARMS AND POLES MUST BE SUBMITTED FOR APPROVAL. CERTIFICATION SHALL INDICATE TRAFFIC SIGNAL POLES, MAST ARMS AND FOUNDATION DESIGNS CONFORM TO 2003 AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS". FOR 90 MPH WIND ZONE TO SUPPORT FIXED SIGNALS AND SIGNS WITH ACTUAL AREAS AS CALLED FOR BY SIGNAL PLACEMENT AS SHOWN ON THESE PLANS.

CONTRACTOR SHALL RESTORE DISTURBED SURFACES TO THE ORIGINAL CONDITION OR BETTER, PER AHTD SPECIFICATION, 2003 EDITION.

BACKPLATES REQUIRED FOR ALL SIGNAL HEADS, CONSIDERED SUBSIDIARY TO ITEM NUMBER 706.

TRAFFIC SIGNAL MUST BE SETUP FOR ALL RED CONFLICT FLASH AND BE WIRED SUCH THAT DURING FLASH OPERATIONS, POWER TO THE LOAD SWITCHES CANNOT BACKFEED TO LOAD SWITCH POWER BUSS.

PERFORM ELECTRICAL WORK IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE NFPA 70 (2002) NATIONAL ELECTRICAL CODE, NFPA 101 (2000) LIFE SAFETY CODE, STATE ELECTRICAL CODE, AND LOCAL ELECTRICAL CODE.

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, 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 21' SHOULD BE USED TO DETERMINE UTILITY CLEARANCE ABOVE THE TRAFFIC SIGNAL MAST ARM. AN ADDITIONAL 6 FEET SHOULD BE USED DIRECTLY ABOVE "VIDEO DETECTOR" AT LOCATIONS SHOWN ON THE SIGNAL PLANS.

THE DESIRABLE MINIMUM DISTANCE FROM THE FACE OF ROADWAY CURB OR SHOULDER EDGE TO THE FACE OF NON-BREAKAWAY POLE OR OBSTRUCTION IS 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.

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.

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. CONTRACTOR SHALL PROVIDE A MINIMUM OF 3' OF ADDITIONAL CONDUCTORS FOR LACK PRIOR TO TERMINAL STRIP CONNECTION.

CONTROLLER CABINET LAYOUT AND ORIENTATION SHALL CONFORM TO IMSA STANDARDS.

TRAFFIC SIGNAL CONTRACTOR MUST NOTIFY 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.

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SUMMARY OF QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
601	MOBILIZATION	1	EACH
603	MAINTENANCE OF TRAFFIC	1	EACH
701	SYSTEM LOCAL CONTROLLER (8 PHASE)	1	EACH
701+SP	SYSTEM LOCAL RADIO WITH ANTENNA	1	EACH
701	ANTENNA CABLE (TYPE 6)	35	EACH
706+SP	TRAFFIC SIGNAL HEAD (3 SECT./1 WAY)	6	EACH
708	TRAFFIC SIGNAL CABLE (5C/14AWG)	210	LIN. FT.
709	GALVANIZED STEEL CONDUIT (2")	60	LIN. FT.
713+SP	SPAN WIRE ASSEMBLY	1	EACH
716+SP	TREATED WOOD POLE (CLASS 2, 35FT)	2	EACH
719+SP	THERMOPLASTIC PAVEMENT MARKING (4" WHITE)	150	LIN. FT.
719+SP	THERMOPLASTIC PAVEMENT MARKING (12" WHITE)	35	LIN. FT.
719+SP	THERMOPLASTIC PAVEMENT MARKING (ARROW)	1	EACH
719+SP	THERMOPLASTIC PAVEMENT MARKING ("ONLY")	1	EACH
SP	VIDEO DETECTION SYSTEM (MIOVISION TRAFFICLINK)	1	EACH
SP	ELECTRICAL CONDUCTOR IN CONDUIT (2C/6AWG, EGC)	40	LIN. FT.
SP	SERVICE POINT ASSEMBLY	1	EACH

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		3	9
				JOB NO.				
				(2)	KANIS AT WOODLANDS TRAIL			

INTERSECTION NUMBER XXX

NOTE:

REFER TO OTHER DETAIL SHEETS FOR "GENERAL NOTES / TRAFFIC SIGNALS"

PEDESTAL DISCONNECT SHALL BE TESCO 26-000 AND INCLUDE METER AND 100 AMP SWITCH ON RISER AS APPROVED BY ENGINEER
100 AMP SWITCH SHALL BE SQUARE D BRAND #DU323RB OR APPROVED EQUAL

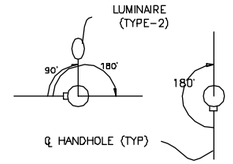
RADIO SHALL MDS 9710 FIXED FREQUENCY DIGITAL OR APPROVED EQUAL

ETHERNET SWITCH SHALL BE 8 PORT UBIQUITY TOUGH SWITCH PRO POE OR APPROVED EQUAL AND SHALL BE CONDISERED SUBSIDIARY TO SYSTEM LOCAL RADIO

POLE – MAST ARM SCHEDULE

POLE	MAST ARM(S) LENGTH	MAST ARM(S) ORIENTATION ANGLE FROM HANDHOLE (CLOCKWISE)	VERTICAL SHAFT LENGTH	LUM. ARM LENGTH	LUM. ARM(S) ORIENTATION ANGLE FROM HANDHOLE (CLOCKWISE)
A	15'	N/A	35'	N/A	N/A
B	N/A	N/A	35'	N/A	N/A

POLE DETAIL

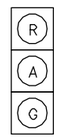


TRAFFIC SIGNAL LEGEND

- TRAFFIC SIGNAL CONTROLLER
- JUNCTION BOX
- CONDUIT
- METAL POLE
- MAST ARM AND POLE
- SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN HEAD NUMBER 'n'
- SIGNAL HEAD NUMBER 'n'
- COBRA HEAD STREET LIGHT
- TRAFFIC SIGN
- VIDEO DETECTOR
- BREAKER DISCONNECT BOX
- WOOD POLE
- POLE NUMBER 'n'
- ETHERNET RADIO

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14038
TRAVIS B. HERBNER

SIGNAL FACES



11,12,41,42
81,82

0 10 20 40

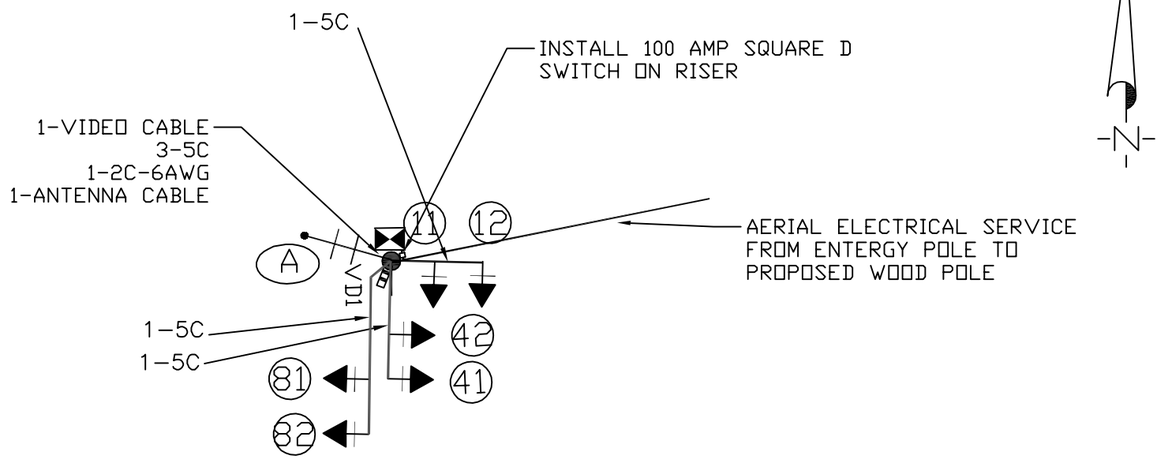
CITY OF LITTLE ROCK
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

NEW TRAFFIC SIGNAL INSTALLATION AT
KANIS AND WOODLANDS TRAIL

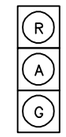
REVISION	DATE	BY	SCALE	DATE	JOB NO.
			1" = 20'	7/27/23	
			DRAWN BY: TBH	CHECKED BY: WLH	
			APPROVED BY: TRAVIS HERBNER	SHEET 3 of 9	

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		4	9
				JOB NO.				
				(2) KANIS AT WOODLANDS TRAIL				

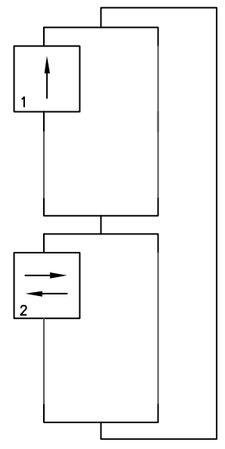
INTERSECTION NUMBER XXX



SIGNAL FACES



11,12,41,42
81,82



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 14038
TRAVIS B. HERBNER

TRAFFIC SIGNAL LEGEND

- TRAFFIC SIGNAL CONTROLLER
- JUNCTION BOX
- CONDUIT
- METAL POLE
- MAST ARM AND POLE
- SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN HEAD NUMBER 'n'
- SIGNAL HEAD NUMBER 'n'
- COBRA HEAD STREET LIGHT
- TRAFFIC SIGN
- VIDEO DETECTOR
- BREAKER DISCONNECT BOX
- WOOD POLE
- POLE NUMBER 'n'
- ETHERNET RADIO

NOTE:

1. EXTEND GREEN EQUIPMENT GROUNDING CONDUCTOR (EGC) FROM GROUND BAR AT MAIN BREAKER TO CONTROL PANEL AND TO FIRST POLE. SOLIDLY BOND EGC 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.

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

3. ALL PARTS OF THIS INSTALLATION SHALL BE IN ACCORDANCE WITH THE ARKANSAS HIGHWAY AND TRASPORTATION DEPARTMENT STANDARDS AND DETAILS AND WITH THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

4. CONDUIT INSTALLED UNDER ROADWAY SURFACES SHALL BE INSTALLED BY PUSHING OR BORING METHODS. IF THE ENGINEER DETERMINES THIS IS NOT FEASIBLE, THEN A TRENCHING METHOND AS SHOWN IN THE DETAILS MAY BE USED.

5. TRAFFIC SIGNAL POLES SHALL BE WOOD. BACKPLATES FOR ALL SIGNAL HEADS SHALL BE INCLUDED AND CONSIDERED SUBSIDIARY TO THE TRAFFIC SIGNAL HEADS. TRAFFIC SIGNAL AND PEDESTRIAN SIGNAL HEADS SHALL BE LED.

6. Cat 5E VIDEO CABLE SHALL BE SHIELDED AND OUTDOOR RATED.

7. CONTROLLER SHALL BE THE LATEST VERSION OF THE TS2 TYPE 2 EAGLE GENESIS MODEL M60 WITH FSK COMPATABLILITY, AND SHALL BE DELIVERED TO THE CITY OF LITTLE ROCK FOR PROGRAMMING A MINIMUM OF 7 DAYS IN ADVANCE OF INSTALLATION.

8. BOLT - ON MAST ARM TO POLE "A" WILL BE SUPPLIED BY CLR. CONTACT DOYLE JONES 501-918-3652 TO SCHEDULE PICK-UP.

9. CABINET SHALL BE POLE MOUNTED.

10. VIDEO PROCESSOR SHALL BE MIOVISION TRAFFICLINK SINGLE FISH-EYE CAMERA OR APPROVED EQUAL.

11. ALL PULL BOXES SHALL BE TYPE 2 HD UNLESS OTHERWISE NOTED..

CITY OF LITTLE ROCK
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

NEW TRAFFIC SIGNAL INTALLATION AT
KANIS AND WOODLANDS TRAIL

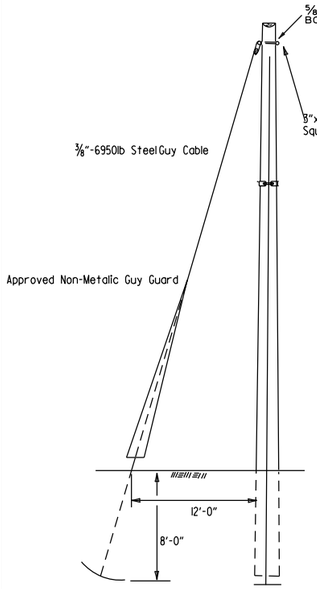
REVISION	DATE	BY	SCALE	DATE	JOB NO.
			1"=20'	7/27/23	
			DRAWN BY: TBH	CHECKED BY: WLH	
			APPROVED BY: TRAVIS HERBNER	SHEET 4 / 9	

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	••••			

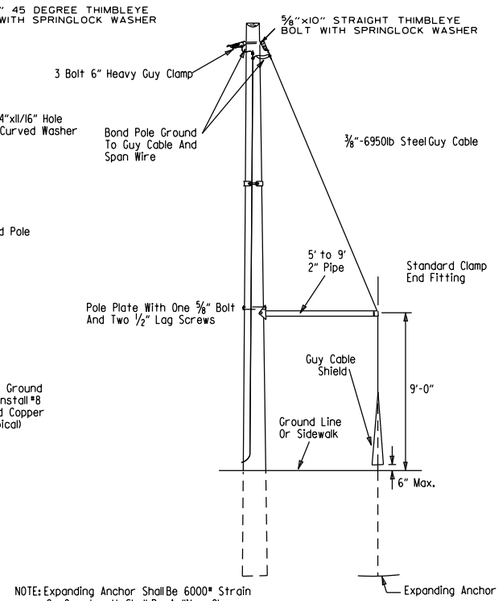
(2) SIGNALIZATION DETAILS

PRELIMINARY
SUBJECT TO REVISION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7605
MICHAEL D. FUGETT



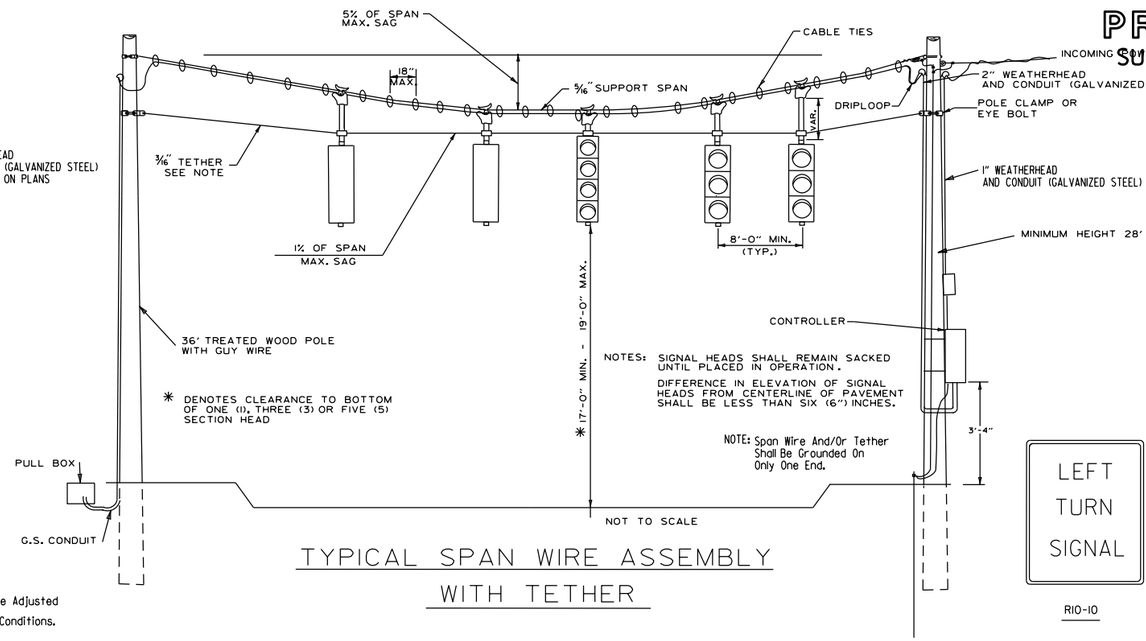
STANDARD GUY INSTALLATION



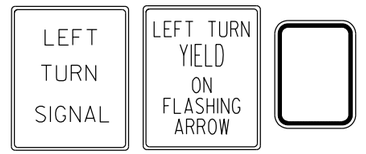
NOTE: Expanding Anchor Shall Be 6000# Strain Or Greater. It Shall Be A "New Chance 8-Way Expanding Anchor", With A 5/8" Minimum Guy Rod.

SIDEWALK GUY INSTALLATION

NOTE: Conduit Installation May Be Adjusted By The Engineer To Meet Field Conditions.



TYPICAL SPAN WIRE ASSEMBLY WITH TETHER

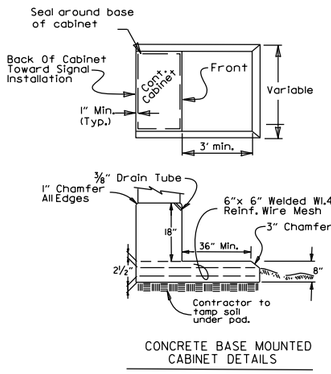


R10-10 | SPECIAL | R10-3e (SEE MUTCD)

NOTES: Span wire poles shall be mounted a minimum of 4' behind curb or shoulder.

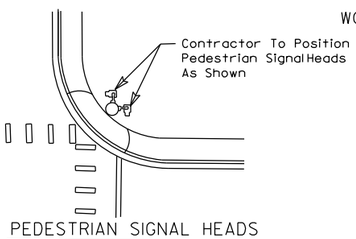
Span wire assemblies will require tether unless otherwise noted on plan sheets. Cable ties shall be suitable for outside use (black).

The controller power supply ground buss shall be bonded to the ground rod with a #8 AWG solid copper wire. On existing installations with no ground rod, Contractor shall install a 10' x 5/8" copperweld ground rod.

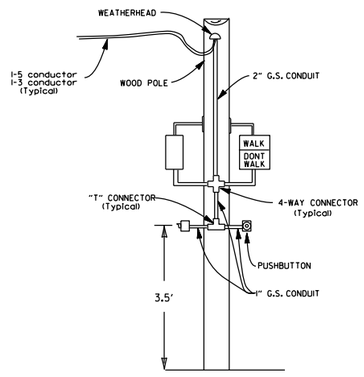


CONCRETE BASE MOUNTED CABINET DETAILS

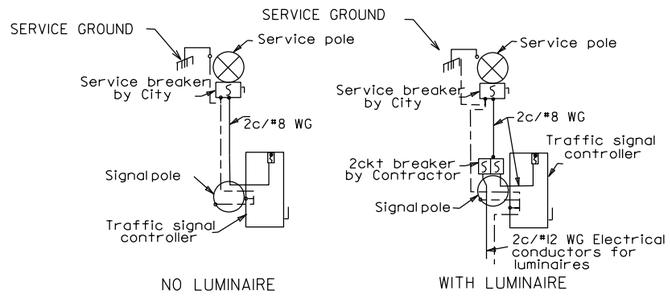
Unless otherwise directed by the engineer, cabinet orientation shall be such that the back of the cabinet is parallel to the street and positioned to allow visibility of the signal display while observing the controller front panel.



PEDESTRIAN SIGNAL HEADS



WOODEN POLE INSTALLATION OF PED HEADS



NO LUMINAIRE | WITH LUMINAIRE

SERVICE DISCONNECT

NOTE: ELECTRICAL GROUND CONDUCTOR IS BONDED TO ALL METAL ENCLOSURES

NOTES:

Each item "TRAFFIC SIGNAL HEAD (4 SEC., 1-WAY)" shall include a special sign as shown, attached to the mast arm or span assembly 12" to the right of the signal head unless removed within signal plan notes.

Sign blank shall be constructed of alluminum alloy (ASTM designation B-209, Alloy 5052-H38) with a thickness of 0.100 inch.

Sign face shall be constructed of high intensity sheeting (Type III) with silkscreen legend and border.

Each item "TRAFFIC SIGNAL HEAD (3 SEC., 1-WAY)" to be used as a left turn indication only shall include a sign (R10-10) as shown, attached to the mast arm or span assembly 12" to the right of the signal head.

SIGNAL OPERATION NOTES:

Flashing Operation - Prior to normal operation, signal shall be flashed for a period of 3 to 5 working days. Signal shall be placed in operation only on a regular work day, except Friday.

The contractor may be required to alter the flashing display during the temporary flash period. At the time the intersection is placed in permanent operation, the flash sequence shall then be returned to that indicated on the plan sheets. No additional compensation shall be allowed for these alterations in flash sequence.

DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

CONSTRUCTION SPECIFICATIONS: ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2003 EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

BASE WIND SPEED: 90 MPH

STEEL MEMBERS CONSIDERED MAIN LOAD CARRYING MEMBERS WITH THICKNESS GREATER THAN 1/2" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.

DATE	REVISION	DATE FILM
7-21-11	REVISED PED SIGN, CABINET GROUNDING	
4-17-08	REVISED TO 2001 AASHTO STANDARDS	
10-12-04	REV. CABINET ORIENT. & SIGNAL OPER.	
5-22-02	REV. TYP. SPAN WIRE ASSEMBLY	
12-27-99	REVISED	
11-18-98	REVISED NOTES	
11-21-95	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

SIGNALIZATION DETAILS
(Span Wire Assembly Wood Pole)

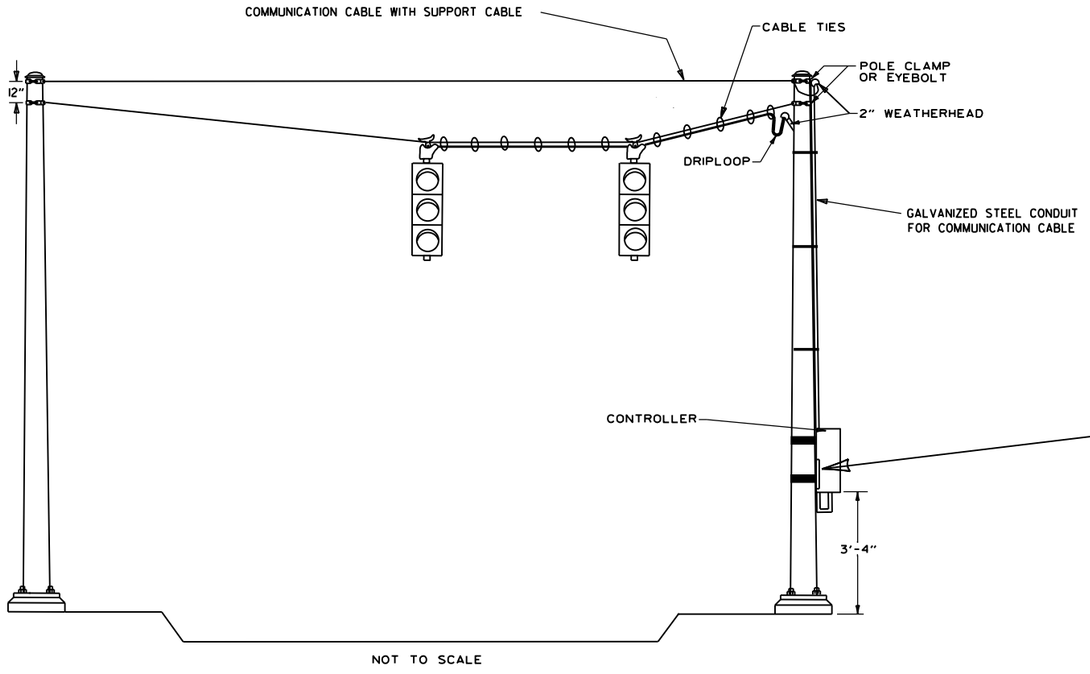
6-2-11
stdsd7.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				

(2) SIGNALIZATION DETAILS

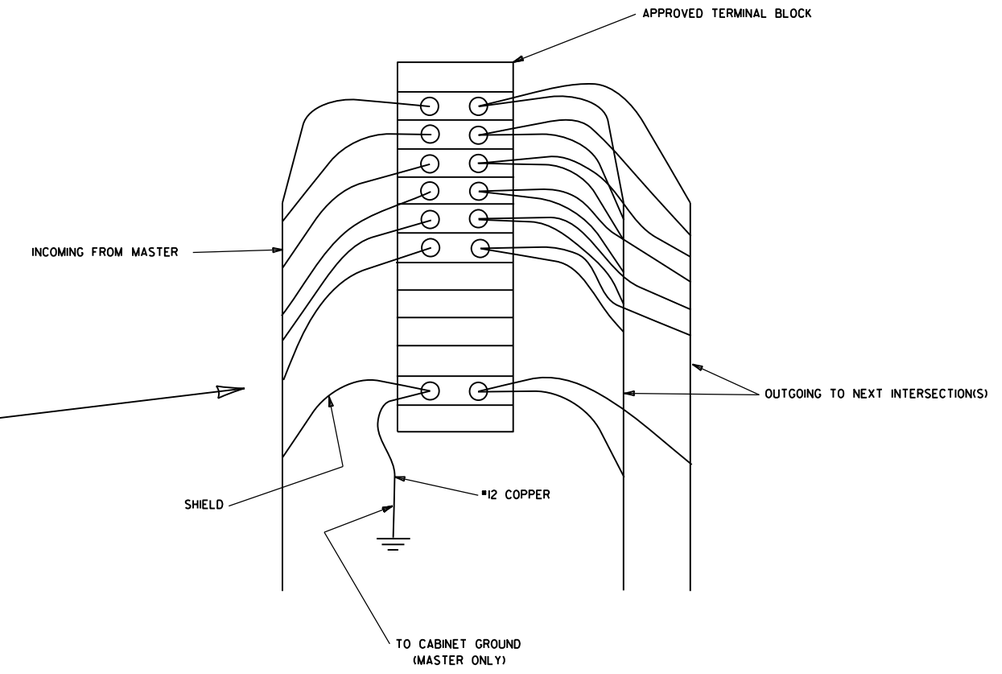
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 4794

PRELIMINARY REVISION



COMMUNICATION CABLE CROSSING BETWEEN SPAN WIRE POLES

NOTE: COMMUNICATION CABLE SHIELD SHALL BE TIED TO GROUND AT ONLY ONE POINT (MASTER CABINET). THE SHIELD SHALL BE MAINTAINED CONTINUOUS (THROUGH ALL SPLICES). PLEASE REFER TO TESTING PROCEDURES IN SPECIAL PROVISIONS.



TYPICAL WIRING DIAGRAM FOR COMMUNICATION CABLE

stdsd3.dgn

12-27-99	REVISED NOTES	
11-18-98	REVISED NOTES	
3-21-92	ISSUED	
DATE	REVISION	DATE FILM

ARKANSAS STATE HIGHWAY COMMISSION

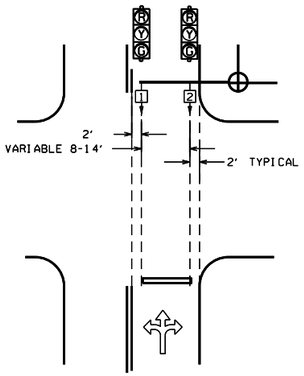
SIGNALIZATION DETAIL
(Span Wire Installation With Communication Cable Crossing)

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				

(2) SIGNALIZATION DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 1794
PRELIMINARY NOT FOR REVISION

(A)



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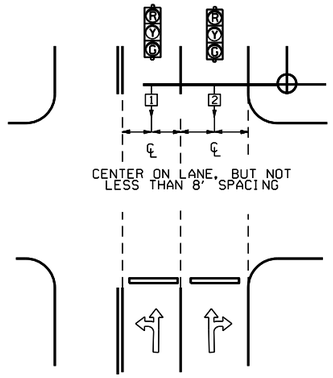

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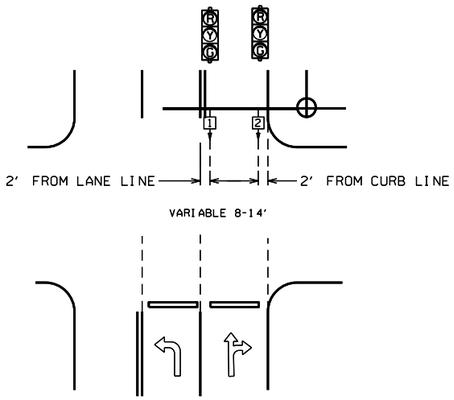
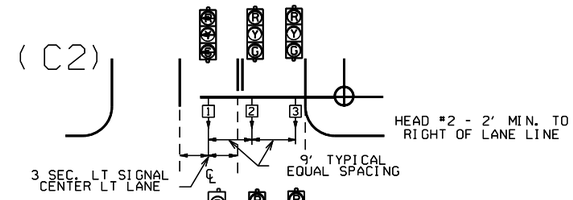
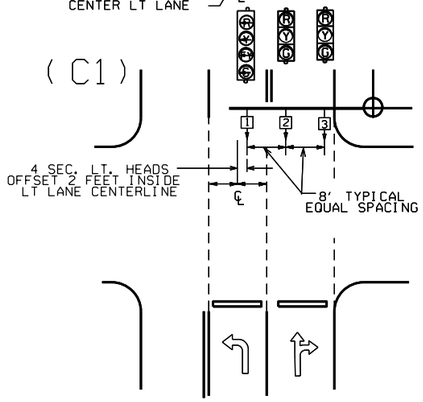


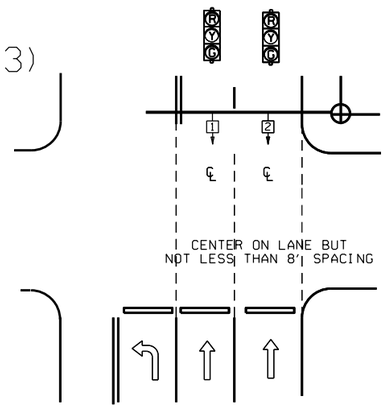
(C2)



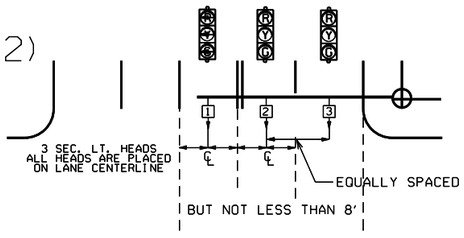
(C1)



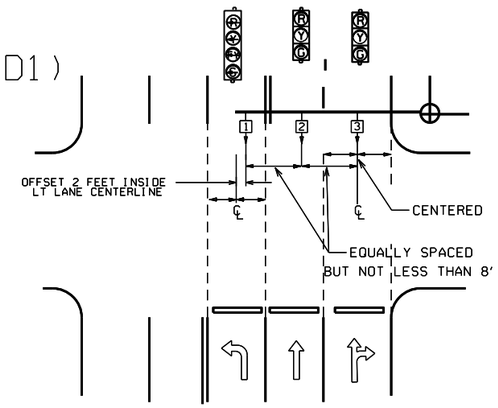
(C3)



(D2)

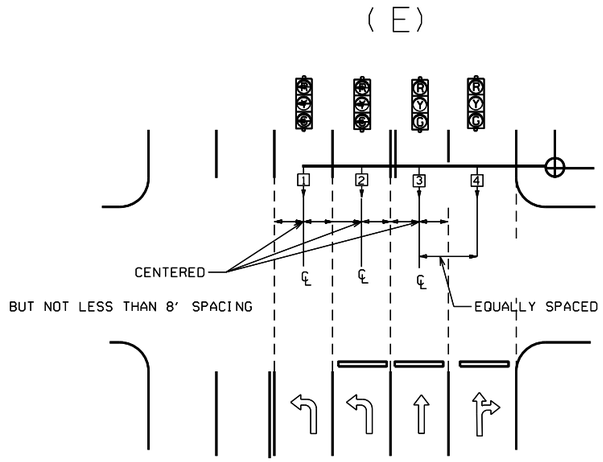


(D1)



NOTE: WHERE LEFT TURN HEAD (HEAD 1 ON D1 AND D2) IS NOT CALLED FOR ON PLANS, MAST ARM LENGTH MAY STILL BE ALLOWED FOR FUTURE INSTALLATION. HEADS FOR THROUGH MOVEMENTS SHALL STILL BE ALIGNED WITH THROUGH LANES AS SHOWN ON DETAILS

(E)



℄ = CENTER OF LANE FROM APPROACH SIDE

GENERAL NOTES:

1. FOUR SECTION "PROTECTED/PERMISSIVE" LEFT TURN HEADS SHOULD BE PLACED A MINIMUM OF TWO (2') FEET TO THE RIGHT OF THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.

2. THREE SECTION "PROTECTED" LEFT TURN HEADS SHOULD BE PLACED ON THE CENTERLINE OF THE APPROACHING LEFT TURN LANE.

3. WHEN IT IS NECESSARY TO PLACE POLES OTHER THAN AS SHOWN ON PLAN SHEET(S) RESULTING IN MAST ARM EXTENDING MORE THAN TWO FEET PAST (TO THE LEFT OF) THE CENTERLINE OF THE APPROACHING LEFT TURN LANE, MAST ARM SHALL BE CUT TO APPROPRIATE LENGTH AS DETERMINED BY THE ENGINEER, AND A NEW END CAP PROVIDED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THIS PRIOR TO INSTALLING THE MAST ARM IF ADDITIONAL COMPENSATION IS REQUIRED.

4. SIGNAL HEAD SPACING SHALL, IN NO CASE, BE LESS THAN EIGHT (8') FEET BETWEEN HEADS ON CENTER, MEASURED HORIZONTALLY PERPENDICULAR TO THE APPROACH.

5. ALL SIGNAL HEADS SHOWN ON THIS DETAIL SHEET SHALL BE LOCATED ACCORDING TO THE DIMENSIONS SHOWN IN RELATION TO THE APPROACH SIDE OF THE INTERSECTION.

6. MAXIMUM MOUNTING HEIGHT OF SIGNAL FACES LOCATED BETWEEN 40 FEET AND 53 FEET FROM STOP BAR SHALL BE IN ACCORDANCE WITH FIGURE 4D-1 OF 2009 MUTCD.

3-11-10	2009 MUTCD	
12-9-99	ISSUED	
DATE	REVISION	DATE FILM

ARKANSAS STATE HIGHWAY COMMISSION

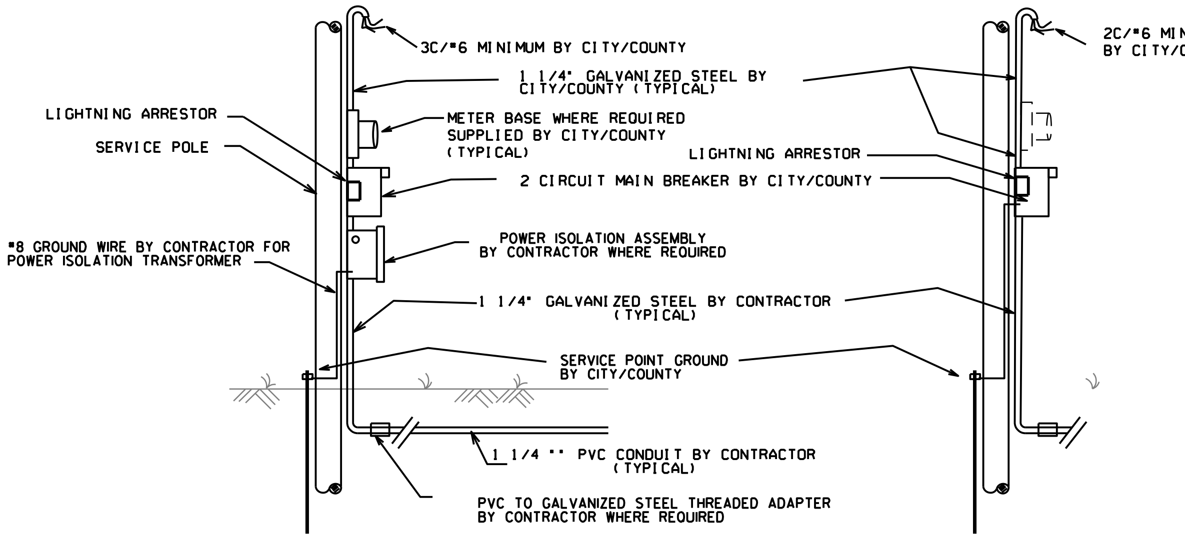
SIGNALIZATION DETAIL
(Signal Head Placement)

stdsd8.dgn

MAIN BREAKER NOT NEAR CONTROLLER CABINET
SECONDARY REQUIRED

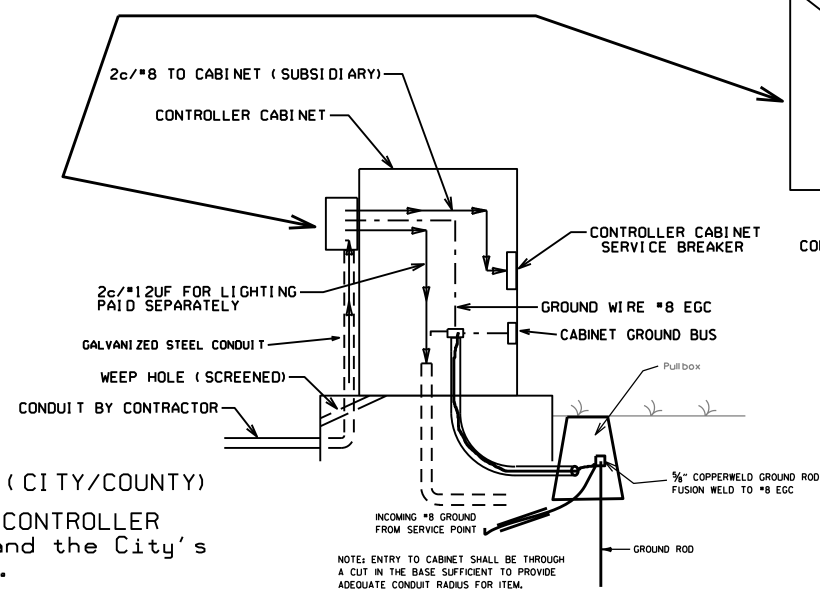
WITH POWER ISOLATION ASSEMBLY

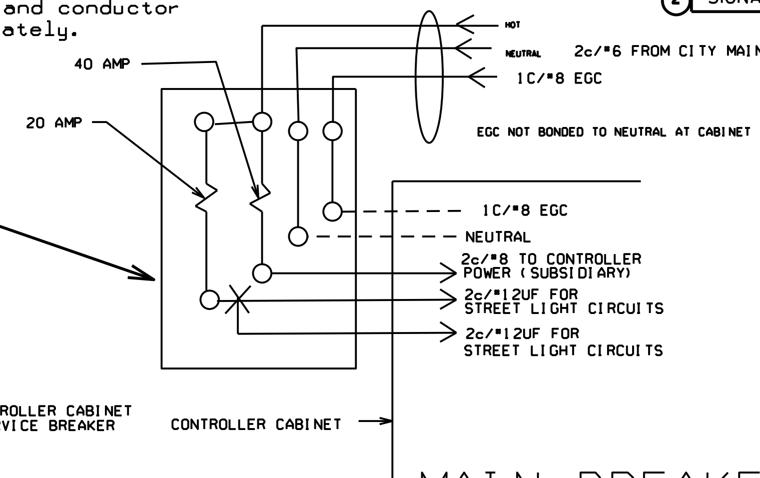
WITHOUT POWER ISOLATION ASSEMBLY



Ground Rod-A 10' x ⅝" ground rod shall be installed in the pull box for each pole and the controller. Payment for the ground rod and ½" NMC shall be included in Item 701. The pull box and conductor box shall be paid for separately.

SECONDARY BREAKER BY CONTRACTOR (SUBSIDIARY)





MAIN BREAKER WIRING
(TYPICAL)

NOTES TO CONTRACTOR AND AGENCY RESPONSIBLE FOR MAINTENANCE OF THE INTERSECTION (CITY/COUNTY)

Electrical service typically falls into two categories: MAIN BREAKER NEAR CONTROLLER CABINET; and MAIN BREAKER NOT NEAR CONTROLLER CABINET. The Contractor's and the City's or County's responsibility varies accordingly as indicated on these details.

1. ALL SITUATIONS: Electrical service shall be provided by the City/County to a service pole with external raintight breaker (MAIN BREAKER) at a mutually acceptable point within the right-of-way. Service point includes galvanized steel conduit to a point 18" below ground line, two circuit main breaker, lightning arrestor, power isolation assembly where required, meter loop if required by local utility, electrical conductors and weatherhead. Where street lighting is included as part of signal installation, street lighting circuit (2c/#12 awg UF rated, typical) shall be kept separate from the circuit serving traffic signal. Service wire and wiring from the controller to main breaker is provided by the Contractor as a part of this contract. Wire and wiring from main breaker, and connection to the utility is the responsibility of the City/County.

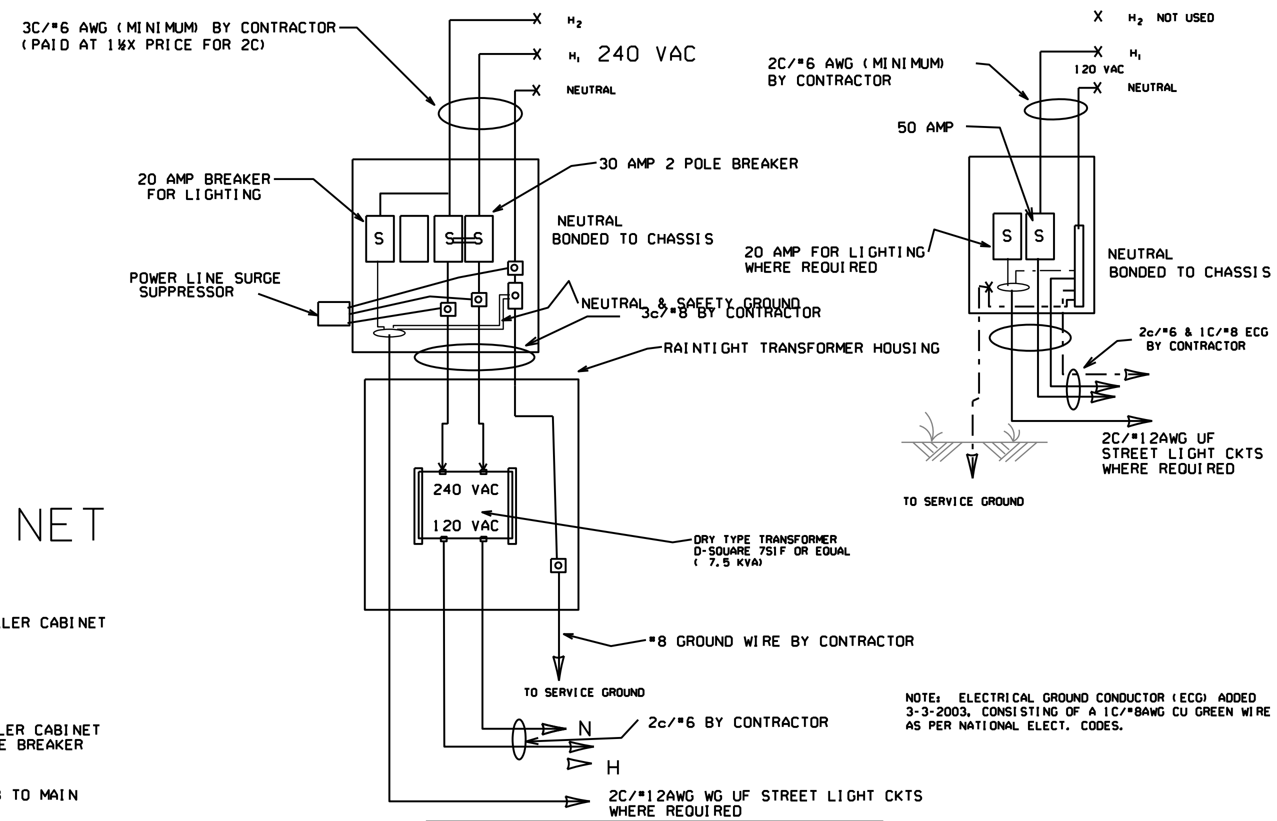
2. MAIN BREAKER NOT NEAR CONTROLLER CABINET: The Main Breaker assembly, galvanized steel conduit, weatherhead and wire above Main Breaker and connection to the utility shall be provided by City/County. Contractor shall provide as part of contract Secondary Breaker, conduit, wire and wiring to the Main Breaker.

3. MAIN BREAKER NEAR CONTROLLER CABINET: All components of the service point with the exception of the wire and wiring above the Main Breaker is furnished and installed by the Contractor. Wiring from Main Breaker including connection to the utility, is the responsibility of the City/County. If meter loop is required, meter base and hardware is provided by the City/County and installed by the contractor.

Service Ground is typically tied to neutral at the Main Breaker. As such, controller ground IS NOT tied to Neutral at secondary Breaker or in controller cabinet.

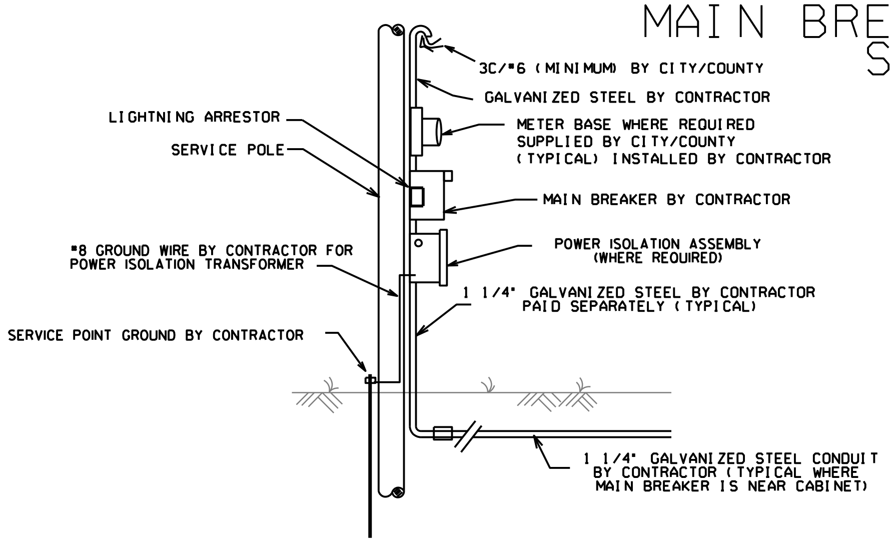
WITH POWER ISOLATION ASSEMBLY
4 CIRCUIT MAIN BREAKER

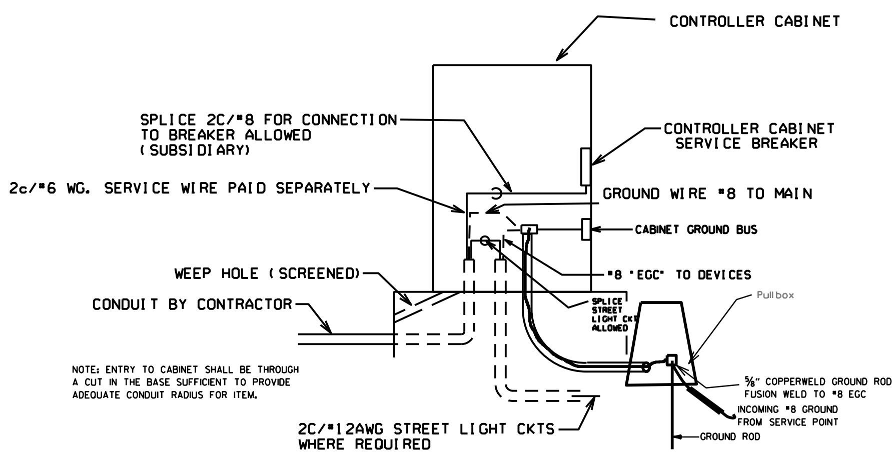
WITHOUT POWER ISOLATION ASSEMBLY
2 CIRCUIT MAIN BREAKER



NOTE: ELECTRICAL GROUND CONDUCTOR (ECG) ADDED 3-3-2003, CONSISTING OF A 1C/#8AWG CU GREEN WIRE AS PER NATIONAL ELECT. CODES.

MAIN BREAKER NEAR CONTROLLER CABINET
SECONDARY NOT REQUIRED





DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				

(2) SIGNALIZATION DETAILS

PRELIMINARY REVISION — STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11425

DATE	REVISION	DATE FILM
4-18-13	ADDED LIGHTNING ARRESTOR	
5-21-09	REVISED GROUNDING	
7-31-08	REVISED GROUNDING	
3-3-03	ADDED EGC NOTE	
9-26-01	REVISED	
12-27-99	REVISED	
7-28-99	REVISED	
2-5-99	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

SIGNALIZATION DETAIL
(Service Point)

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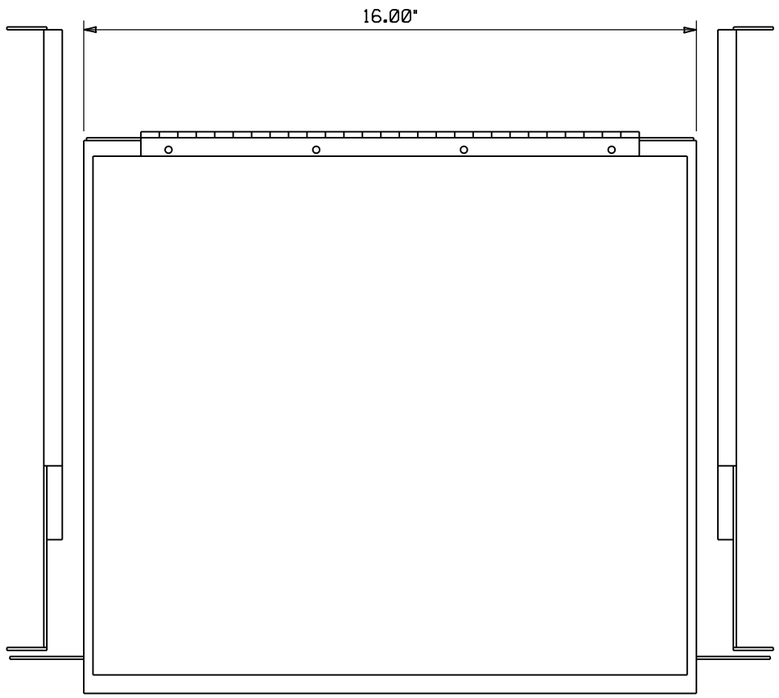
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				

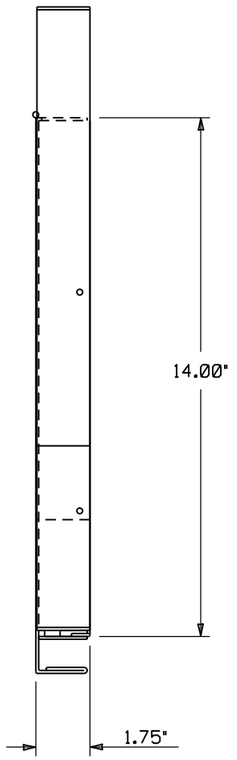
(2) SIGNALIZATION DETAILS

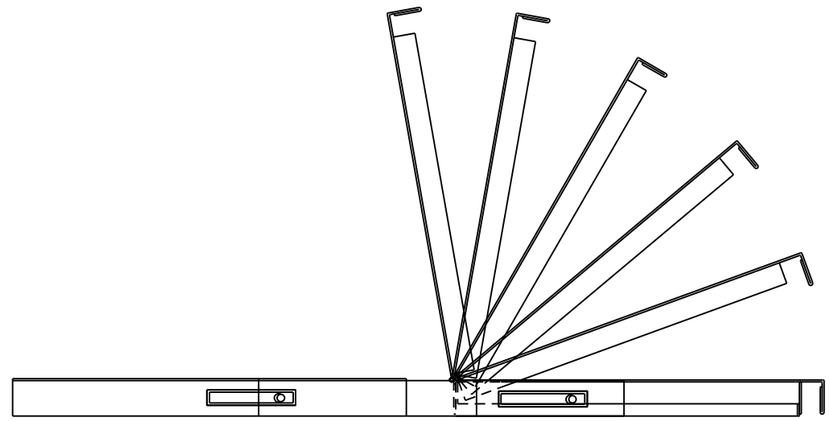
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4794

PRELIMINARY NOT FOR REVISION

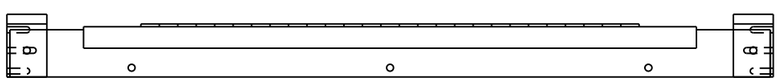
DRAWER PLAN VIEW



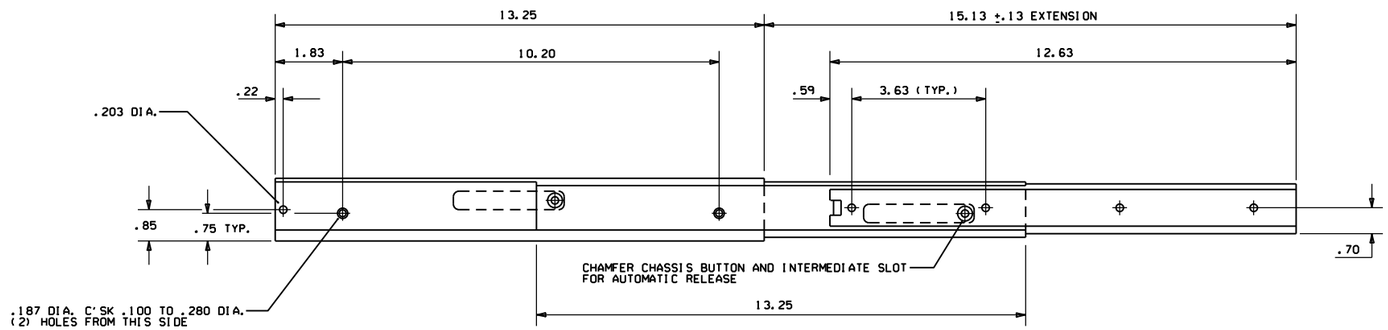




NOTES:
1. RIGHT HAND SLIDE SHOWN. LEFT SLIDE OPPOSITE.
2. GENERAL DEVICES (CC3002-99-0102) OR EQUAL AND CONTAINS (1) RIGHT HAND SLIDE ASSEMBLY, (1) LEFT HAND SLIDE ASSEMBLY.
3. ALL HARDWARE NECESSARY TO FASTEN SLIDE ASSEMBLY TO UNDERSIDE OF CONTROLLER SHELF SHALL BE INCLUDED.



FRONT VIEW



RIGHT SIDE ASSEMBLY

6-15-05	ISSUED	
DATE	REVISION	DATE FILM

ARKANSAS STATE HIGHWAY COMMISSION

SIGNALIZATION DETAIL
(Controller Cabinet Utility Drawer)

stdsd5.dgn