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.		030393	1	35
				(2) HWY. 67 SIGNALS REHAB. (HOPE) (S)				

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

CONSTRUCTION PLANS

HWY. 67 SIGNALS REHAB.

(HOPE) (S)

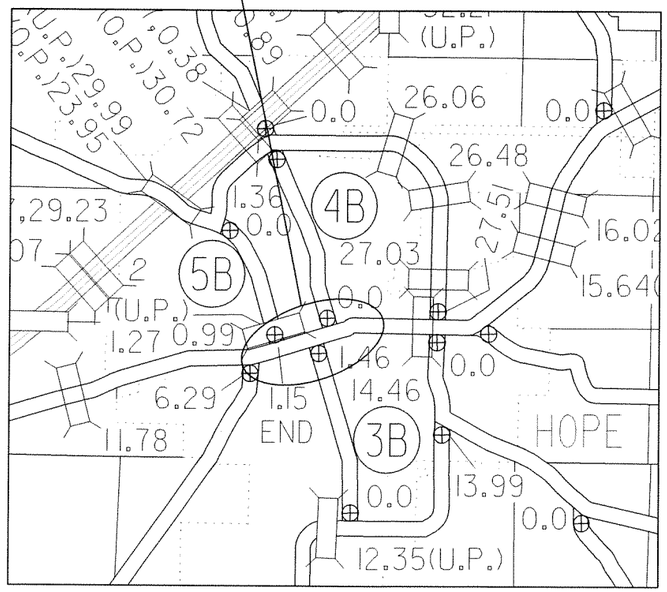
HEMPSTEAD COUNTY

ROUTE 29B, SECTION 3B
ROUTE 29B, SECTION 4B
ROUTE 67, SECTION 2
ROUTE 278B, SECTION 5B

FAP NO. STP-9207(II)

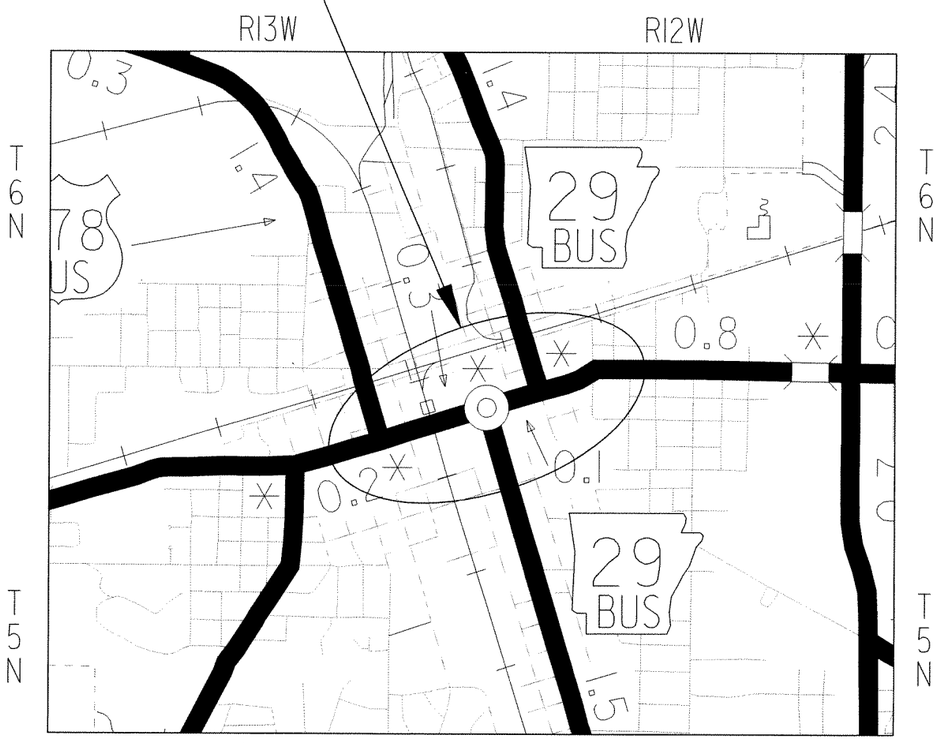
JOB 030393

PROJECT LOCATION



VICINITY MAP

PROJECT LOCATION



SCALE IN FEET
0 1000 2000 4000

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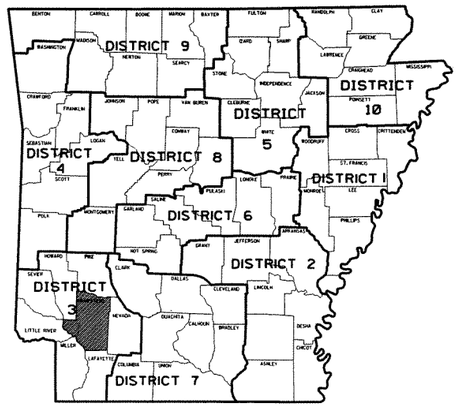

ARKANSAS HIGHWAY DISTRICT 03

MID POINT OF PROJECT

Long. 93°35'30" W
Lat. 33°40'01" N

CERTIFICATE OF AUTHORIZATION
GARVER LLC
No. 766
ARKANSAS ENGINEER

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
1-16-12

JOB 030393

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REVISED DATE:

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SHEET NO.	TITLE	DRAWING NO.	DATE
1	TITLE SHEET		
2	INDEX OF SHEETS, GOVERNING SPECIFICATIONS AND GENERAL NOTES		
3	TRAFFIC SIGNAL NOTES		
4	SUMMARY OF QUANTITIES AND REVISIONS		
5	SYSTEM MAP		
6	MAINTENANCE OF TRAFFIC		
7	CONTROL DETAIL SHEET (HWY. 278B/HERVEY ST.)		
8	SIGNALIZATION PLANS (HWY. 278B/HERVEY ST.)		
9	CONTROL DETAIL SHEET (ELM ST.)		
10	SIGNALIZATION PLANS (ELM ST.)		
11	CONTROL DETAIL SHEET (HWY. 29B/MAIN ST.)		
12-13	RAMP DETAILS (HWY. 29B/MAIN ST.)		
14	PERMANENT PAVEMENT MARKINGS (HWY. 29B/MAIN ST.)		
15-17	SIGNALIZATION PLANS (HWY. 29B/MAIN ST.)		
18	CONTROL DETAIL SHEET (WALNUT ST.)		
19	SIGNALIZATION PLANS (WALNUT ST.)		
20	CONTROL DETAIL SHEET (HWY. 29B/HAZEL ST.)		
21	SIGNALIZATION PLANS (HWY. 29B/HAZEL ST.)		
22-27	SIGNALIZATION DETAILS		
28	CURBING DETAILS	CG-1	11-29-07
29	DETAILS OF DRIVEWAYS & ISLANDS	DR-1	11-29-07
30	PAVEMENT MARKING DETAILS	PM-1	11-17-10
31	DETAILS OF SPECIAL ITEMS	SI-1	4-17-08
32	STANDARD TRAFFIC CONTROL FOR HIGHWAY CONSTRUCTION	TC-1	12-15-11
33	STANDARD TRAFFIC CONTROL FOR HIGHWAY CONSTRUCTION	TC-2	3-11-10
34	STANDARD TRAFFIC CONTROL FOR HIGHWAY CONSTRUCTION	TC-3	10-15-09
35	WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS	WR-1	11-10-05

GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON THE PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U.S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.
5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
6. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.

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.		030393	2	35

(2) INDEX OF SHEETS, GOVERNING SPECS. & GENERAL NOTES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
VICCI D. TINER

4-10-12

GOVERNING SPECIFICATIONS

ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2003, AND THE FOLLOWING SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS:

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	FHWA-1273 REVISIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
100-2	MANUAL FOR ASSESSING SAFETY HARDWAY (MASH)
102-1	BIDDING REQUIREMENTS AND CONDITIONS
105-1	CONSTRUCTION CONTROL MARKINGS
105-2	EQUIPMENT AND MATERIAL STORAGE ON BRIDGE STRUCTURES
105-3	CONTROL OF WORK
107-1	WORKER VISIBILITY
108-1	LIQUIDATED DAMAGES
600-1	WATER FOR VEGETATION
603-1	MAINTENANCE OF TRAFFIC
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-2	INSPECTION OF TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
711-1	CONCRETE PULL BOX
714-1	DESIGN AND MATERIAL REQUIREMENTS FOR TRAFFIC SIGNAL MAST ARMS AND POLES
715-1	DESIGN AND MATERIAL REQUIREMENTS FOR PEDESTAL POLES
719-2	THERMOPLASTIC PAVEMENT MARKING MATERIAL
JOB 030393	CABINET DRAWER ASSEMBLY
JOB 030393	COMMUNICATION CABLE-FIBER
JOB 030393	DOCUMENTATION OF PAYMENTS MADE TO DISADVANTAGED BUSINESS ENTERPRISES
JOB 030393	EDGE CARD VIDEO PROCESSOR
JOB 030393	ELECTRICAL CONDUCTORS-IN-CONDUIT
JOB 030393	ELECTRICAL CONDUCTORS FOR LUMINAIRES
JOB 030393	INTERNET BIDDING
JOB 030393	LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
JOB 030393	LED TRAFFIC SIGNAL HEAD
JOB 030393	LUMINAIRE ARM AND ATTACHMENT HARDWARE
JOB 030393	LUMINAIRE ASSEMBLY (CUTOFF TYPE)
JOB 030393	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT
JOB 030393	SERVICE POINT ASSEMBLY
JOB 030393	STREET NAME SIGN (MAST ARM MOUNTED)
JOB 030393	SYSTEM LOCAL CONTROLLER
JOB 030393	UTILITY ADJUSTMENTS
JOB 030393	VIDEO DETECTOR (COLOR)

DATE: 4/10/12 FILE NAME: t030393_ind.dgn

LOCATION:	HWY. 67			
CITY:	HOPE			
COUNTY:	HEMPSTEAD			
DISTRICT:	03	SCALE:	1"=NA'	DRAWN BY: CEM

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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.		030393	3	35
				(2)	TRAFFIC SIGNAL NOTES			

TRAFFIC SIGNAL NOTES

1. 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.
2. 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.
3. ELECTRICAL SERVICE SHALL BE PROVIDED BY THE CITY 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 USE RATED, WITH GROUND TYPICAL), AND PERFORM WIRING TO TAP INTO THE CITY'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 WHERE STREET LIGHTING IS INCLUDED. AS PART OF THE SIGNAL INSTALLATION, STREET LIGHTING CIRCUIT (2c/#12 AWG 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 ARKANSAS HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARDS AND DETAILS AND WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITIONS.
8. CONDUIT INSTALLED UNDER ROADWAY SURFACES SHALL BE INSTALLED BY PUSHING OR BORING METHODS. IF THE ENGINEER DETERMINES THIS IS NOT FEASIBLE, THEN A TRENCHING METHOD AS SHOWN IN THE DETAILS MAY BE USED.
9. TRAFFIC SIGNAL POLES SHALL BE GALVANIZED. BACKPLATES SHALL BE SUPPLIED FOR ALL SIGNAL HEADS.
10. 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.
11. ALL BOXES SHALL BE (TYPE 2 HD) UNLESS OTHERWISE INDICATED. ALL CONDUIT SHALL BE 3" DIAMETER UNLESS SPECIFIED ON PLANS.
12. CONTRACTOR SHALL NOTIFY ALL EXISTING UTILITY OWNERS BEFORE BEGINNING WORK ON THIS PROJECT.
13. LUMINAIRE ASSEMBLIES SHALL BE OF THE FULL CUTOFF TYPE.
14. 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.
15. THE LOCAL RADIO WITH ANTENNA SHALL BE COMPATIBLE WITH THE EXISTING CLOSED LOOP COORDINATION SYSTEM IN THE CITY OF HOPE.
16. 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 FEET 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.
17. 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. TRAFFIC SIGNAL POLES OR ANY OTHER NON-BREAKAWAY OBSTRUCTION SHALL NOT BE INSTALLED WITHIN THE CLEAR ZONE.
18. 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 IS KEYED INTO COMPETENT ROCK.
19. CONNECTION OF TRAFFIC SIGNAL DISPLAY TO FIELD WIRING SHALL UTILIZE AN APPROVED TERMINAL STRIP BEHIND HANDHOLE 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 POLE WITH FOUNDATION.
20. CONTROLLER CABINET LAYOUT AND ORIENTATION SHALL CONFORM TO IMSA STANDARDS.
21. 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.
22. TRAFFIC SIGNAL CONTRACTOR MUST NOTIFY 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.
23. 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.
24. NEW TRAFFIC SIGNALS MUST BE OPERATIONAL PRIOR TO REMOVAL OF EXISTING SIGNALS.
25. TRAFFIC SIGNAL EQUIPMENT REMOVED FROM THE INTERSECTIONS SHALL BE THE PROPERTY OF THE CITY OF HOPE. (SEE SPECIAL PROVISION)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER

1-16-12

DATE: 1/10/12 FILE NAME: t030393_ind2.dgn

LOCATION:	HWY. 67		
CITY:	HOPE		
COUNTY:	HEMPSTEAD		
DISTRICT:	03	SCALE: 1"=NA'	DRAWN BY: CEM

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				6	ARK.			
				JOB NO.		030393	4	35

(2) SUMMARY OF QUANTITIES AND REVISIONS

SUMMARY OF QUANTITIES

ITEM NO.	ITEM	HWY. 278B/ HERVEY ST. QUANTITY	ELM ST. QUANTITY	HWY. 29B/ MAIN ST. QUANTITY	WALNUT ST. QUANTITY	HWY. 29B/ HAZEL ST. QUANTITY	TOTAL QUANTITY	UNIT	
202	REMOVAL AND DISPOSAL OF CONCRETE CURB	0	0	26	0	0	26	LIN. FT.	
202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS	0	0	38	0	0	38	SQ. YD.	
202	REMOVAL AND DISPOSAL OF CONCRETE ISLANDS	0	0	12	0	0	12	SQ. YD.	
202	REMOVAL AND DISPOSAL OF CONCRETE WALKS	0	0	86	0	0	86	SQ. YD.	
505	PORTLAND CEMENT CONCRETE DRIVEWAY	0	0	21	0	0	21	SQ. YD.	
601	MOBILIZATION	0.20	0.20	0.20	0.20	0.20	1.00	L.S.	
SS&603	MAINTENANCE OF TRAFFIC	0.20	0.20	0.20	0.20	0.20	1.00	L.S.	
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	0	0	1730	0	0	1730	LIN. FT.	
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS (ARROWS)	0	0	6	0	0	6	EACH	
SS&604	SIGNS	120	48	48	48	72	336	SQ. FT.	
SS&604	TRAFFIC DRUMS	0	0	27	0	0	27	EACH	
SS&620	WATER	0	0	0.1	0	0	0.1	M.G.	
624	SOLID SODDING	0	0	5	0	0	5	SQ. YD.	
628	TOPSOIL FURNISHED AND PLACED	0	0	1	0	0	1	CU. YD.	
632	CONCRETE ISLAND	0	0	20	0	0	20	SQ. YD.	
633	CONCRETE WALKS	0	0	21	0	0	21	SQ. YD.	
634	CONCRETE CURB (TYPE A)	0	0	20	0	0	20	LIN. FT.	
641	WHEELCHAIR RAMPS (TYPE 3)	0	0	3	0	0	3	SQ. YD.	
641	WHEELCHAIR RAMPS (TYPE 4)	0	0	72	0	0	72	SQ. YD.	
SP&701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2 (8 PHASES)	0	1	1	1	1	4	EACH	**
SP&706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)	0	0	8	0	0	8	EACH	
SP&706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1 WAY)	0	0	3	0	0	3	EACH	
SP&707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	0	0	6	0	0	6	EACH	
708	TRAFFIC SIGNAL CABLE (5c/14 A.W.G.)	0	0	1561	0	0	1561	LIN. FT.	
708	TRAFFIC SIGNAL CABLE (7c/14 A.W.G.)	0	0	177	0	0	177	LIN. FT.	
708	TRAFFIC SIGNAL CABLE (12c/14 A.W.G.)	0	0	136	0	0	136	LIN. FT.	
708	TRAFFIC SIGNAL CABLE (20c/14 A.W.G.)	0	0	258	0	0	258	LIN. FT.	
709	GALVANIZED STEEL CONDUIT (1.25")	0	0	15	0	0	15	LIN. FT.	
709	GALVANIZED STEEL CONDUIT (2")	30	0	0	0	0	30	LIN. FT.	
710	NON-METALLIC CONDUIT (1.25")	0	0	9	0	0	9	LIN. FT.	
710	NON-METALLIC CONDUIT (2")	0	0	218	0	0	218	LIN. FT.	
710	NON-METALLIC CONDUIT (3")	0	0	308	0	0	308	LIN. FT.	
SS&711	CONCRETE PULL BOX (TYPE 2 HD)	0	0	8	0	0	8	EACH	
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (20')	0	0	1	0	0	1	EACH	
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (30')	0	0	1	0	0	1	EACH	
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (32')	0	0	1	0	0	1	EACH	
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (44')	0	0	1	0	0	1	EACH	
SS&715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	0	0	3	0	0	3	EACH	
SS&719	THERMOPLASTIC PAVEMENT MARKING WHITE (4")	0	0	220	0	0	220	LIN. FT.	
SS&719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")	0	0	142	0	0	142	LIN. FT.	
SS&719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")	0	0	422	0	0	422	LIN. FT.	
SS&719	THERMOPLASTIC PAVEMENT MARKING YELLOW (4")	0	0	1440	0	0	1440	LIN. FT.	
SS&719	THERMOPLASTIC PAVEMENT MARKING (WORDS)	0	0	3	0	0	3	EACH	
SS&719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	0	0	6	0	0	6	EACH	
721	RAISED PAVEMENT MARKERS (TYPE II)	0	0	33	0	0	33	EACH	
SP&733	VIDEO DETECTOR (CLR)	0	2	5	2	2	11	EACH	*
733	VIDEO CABLE	0	202	640	210	193	1245	LIN. FT.	
733	VIDEO MONITOR (CLR)	0	1	1	1	1	4	EACH	
SP&733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	0	1	3	1	1	6	EACH	*
SP&733	VIDEO EDGE CARD EXTENDER	0	0	1	0	0	1	EACH	
SP&733	VEHICLE DETECTOR RACK (16 CHANNEL)	0	1	1	1	1	4	EACH	
SP	ANTENNA CABLE (TYPE 6)	0	0	43	0	0	43	LIN. FT.	
SP	COMMUNICATION CABLE, FIBER (6 CHANNEL)	206	558	572	437	276	2049	LIN. FT.	
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2c/6 A.W.G.)	0	0	24	0	0	24	LIN. FT.	
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1c/8 A.W.G., EGC)	0	0	426	0	0	426	LIN. FT.	
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1c/12 A.W.G., EGC)	0	0	200	0	0	200	LIN. FT.	
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	0	0	594	0	0	594	LIN. FT.	
SP	LOCAL RADIO WITH ANTENNA	0	0	1	0	0	1	EACH	
SP	LUMINAIRE ARM AND ATTACHMENT HARDWARE	0	0	0	0.50	0.50	1.00	L.S.	
SP	LUMINAIRE ASSEMBLY	0	0	4	0	0	4	EACH	
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.20	0.20	0.20	0.20	0.20	1.00	L.S.	
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	0	0	1	0	0	1	EACH	
SP	TRAFFIC TIMER UNIT	1	0	0	0	0	1	EACH	
SP	18" STREET NAME SIGN	0	0	4	0	0	4	EACH	

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER

2-2-12

REVISION BOX

DATE	REVISION	SHEET NUMBER

* ONE ADDITIONAL VIDEO DETECTOR AND ONE ADDITIONAL VIDEO PROCESSOR, EDGE CARD PROVIDED FOR FUTURE USE AT HWY. 67 AT HWY. 29B/MAIN ST. INTERSECTION

** SYSTEM LOCAL CONTROLLERS COMMUNICATE WITH THE USE OF FIBER AND/OR RADIO

NOTE: VIDEO DETECTORS FOR NB DETECTION AT HWY. 67 AND WALNUT AND HWY. 67 AND HAZEL SHALL INCLUDE A 15' ARM.

LOCATION: HWY. 67
CITY: HOPE
COUNTY: HEMPSTEAD
DISTRICT: 03 SCALE: 1"=NA' DRAWN BY: CEM

DATE: 2/2/12 FILE NAME: t030393_qty.dgn

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WORKSPACE: AHTDV8
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REVISED DATE:

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.		030393	5	35

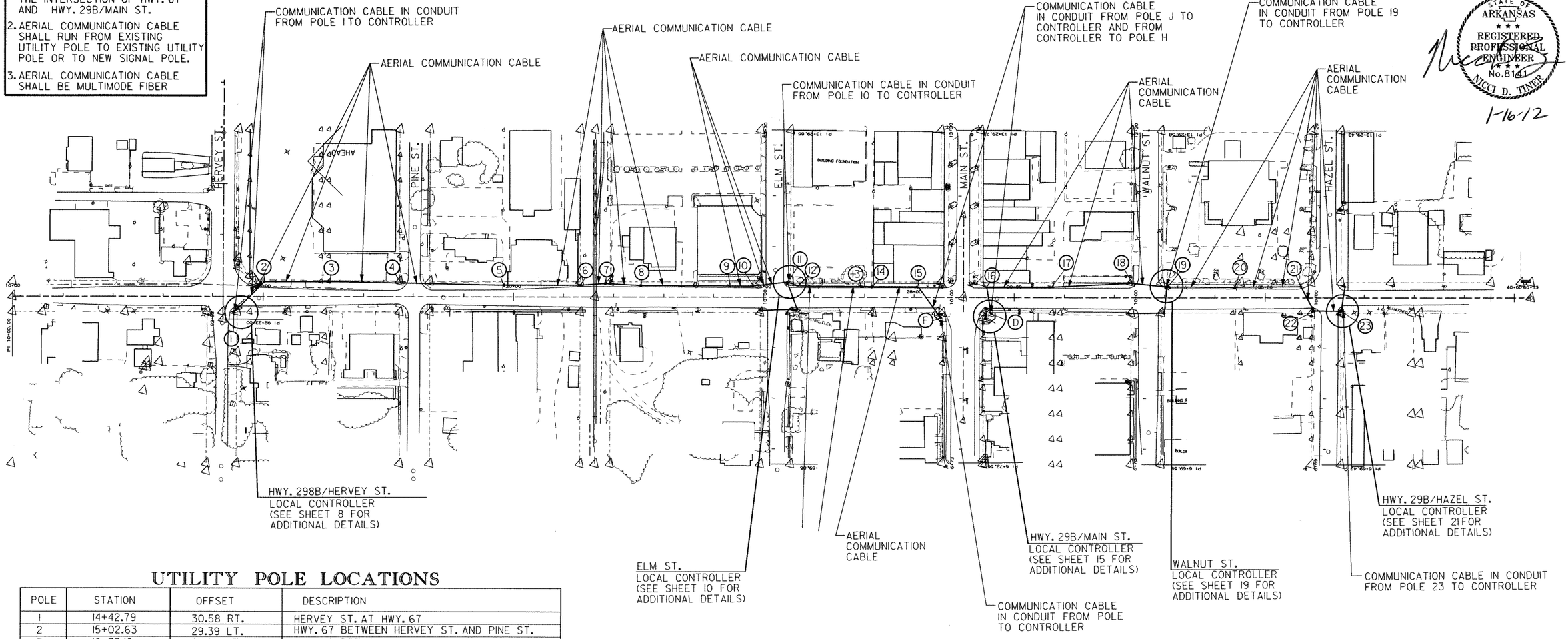
(2) SYSTEM MAP

NOTE:

1. FIBER TO SPREAD SPECTRUM RADIO MODULE SHALL BE INSTALLED IN THE CABINET AT THE INTERSECTION OF HWY. 67 AND HWY. 29B/MAIN ST.
2. AERIAL COMMUNICATION CABLE SHALL RUN FROM EXISTING UTILITY POLE TO EXISTING UTILITY POLE OR TO NEW SIGNAL POLE.
3. AERIAL COMMUNICATION CABLE SHALL BE MULTIMODE FIBER

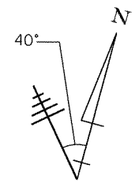
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER

1-16-12

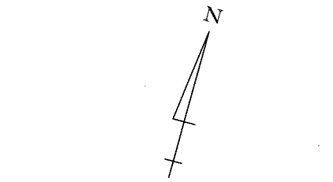


UTILITY POLE LOCATIONS

POLE	STATION	OFFSET	DESCRIPTION
1	14+42.79	30.58 RT.	HERVEY ST. AT HWY. 67
2	15+02.63	29.39 LT.	HWY. 67 BETWEEN HERVEY ST. AND PINE ST.
3	16+33.16	29.24 LT.	HWY. 67 BETWEEN HERVEY ST. AND PINE ST.
4	17+76.58	26.98 LT.	PINE ST. AT HWY. 67
5	19+80.24	22.56 LT.	HWY. 67 BETWEEN PINE ST. AND ELM ST.
6	21+34.91	22.87 LT.	HWY. 67 BETWEEN PINE ST. AND ELM ST.
7	21+83.45	26.32 LT.	HWY. 67 BETWEEN PINE ST. AND ELM ST.
8	22+54.26	22.60 LT.	HWY. 67 BETWEEN PINE ST. AND ELM ST.
9	24+32.93	21.81 LT.	HWY. 67 BETWEEN PINE ST. AND ELM ST.
10	24+78.60	21.81 LT.	ELM ST. AT HWY. 67
11	25+46.90	29.57 LT.	ELM ST. AT HWY. 67
12	25+68.59	22.17 LT.	ELM ST. AT HWY. 67
13	26+93.89	20.97 LT.	HWY. 67 BETWEEN ELM ST. AND MAIN ST.
14	27+15.05	20.79 LT.	HWY. 67 BETWEEN ELM ST. AND MAIN ST.
15	28+07.57	21.03 LT.	HWY. 67 BETWEEN ELM ST. AND MAIN ST.
16	29+45.39	20.65 LT.	MAIN ST. AT HWY. 67
F	28+53.65	39.85 RT.	MAIN ST. AT HWY. 67
D	29+54.18	31.50 RT.	MAIN ST. AT HWY. 67
17	30+72.98	20.60 LT	HWY. 67 BETWEEN MAIN ST. AND WALNUT ST.
18	32+35.79	28.15 LT.	WALNUT ST. AT HWY. 67
19	33+04.58	20. 85 LT.	WALNUT ST. AT HWY. 67
20	34.39.92	20.22 LT.	HWY. 67 BETWEEN WALNUT ST. AND HAZEL ST.
21	35+71.80	21.87 LT.	HAZEL ST. AT HWY. 67
22	35+98.07	25.81 RT.	HAZEL ST. AT HWY. 67
23	36+53.45	26.40 RT.	HAZEL ST. AT HWY. 67



ANTENNA ORIENTATION



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LOCATION:	HWY. 67
CITY:	HOPE
COUNTY:	HEMPSTEAD
DISTRICT:	03 SCALE: AS SHOWN DRAWN BY: CEM

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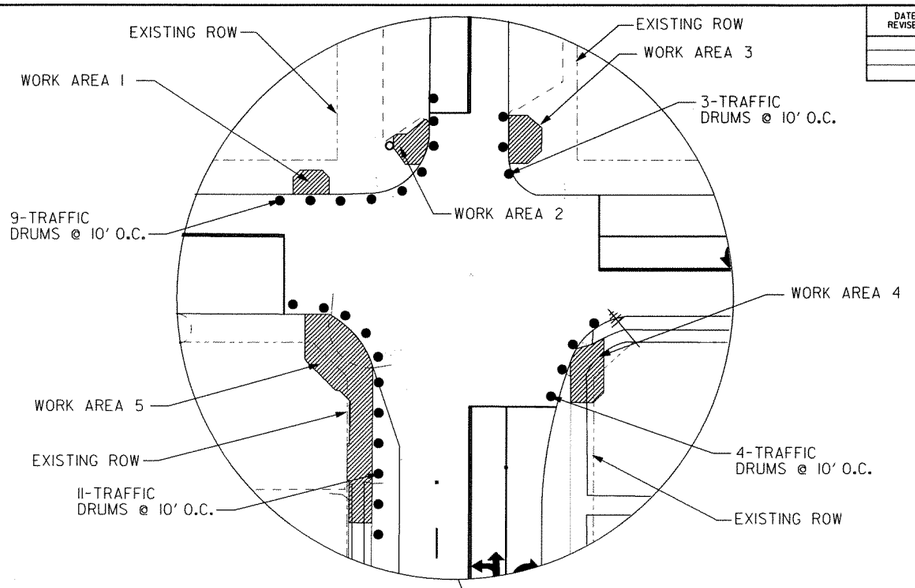
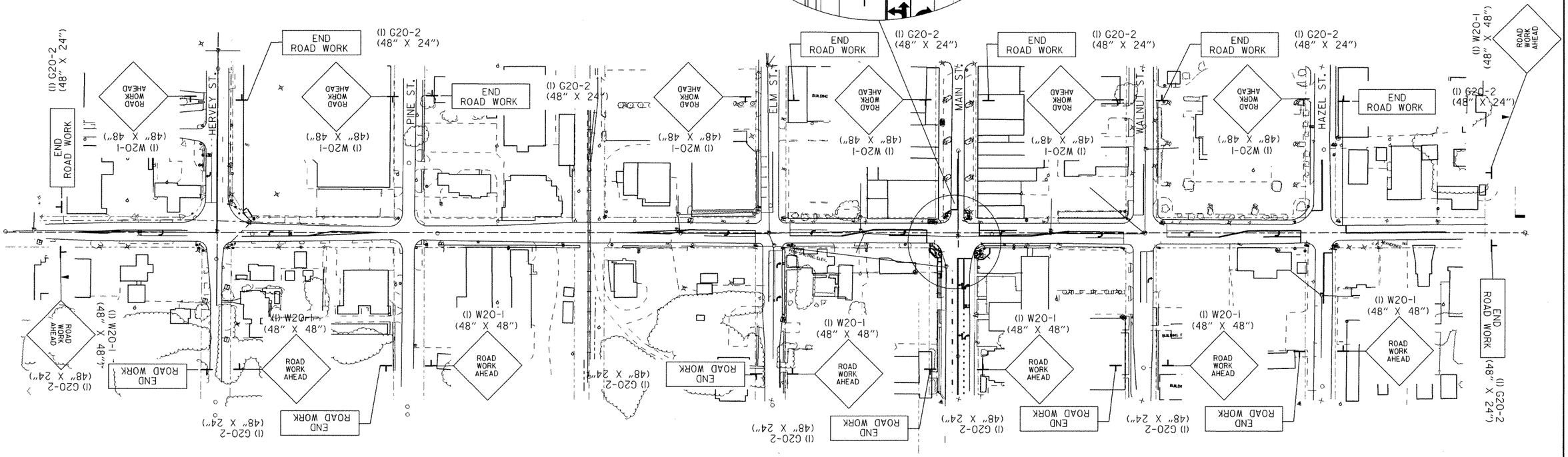
REVISED DATE:

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.		030393	6	35

(2) MAINTENANCE OF TRAFFIC



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
1-16-12



ADVANCE WARNING SIGNS

SIGN	DESCRIPTION	DIMENSION	TOTAL NO. REQ'D	TOTAL QUANTITY (SQ. FT.)
G20-2	END ROAD WORK	48" X 24"	14	112
W20-1	ROAD WORK AHEAD	48" X 48"	14	224
TOTAL				336

NOTE: ADVANCE WARNING SIGNS SHALL BE PLACED 500' PRIOR TO INTERSECTIONS.

ADVANCE WARNING DEVICES

ITEM	TOTAL QUANTITY	UNIT
TRAFFIC DRUMS	27	EACH
TOTAL	27	EACH

N

SCALE IN FEET
0 100 200 400
DATE: 1/10/12 FILE NAME: t030393_mot.dgn

LOCATION:	HWY. 67
CITY:	HOPE
COUNTY:	HEMPSTEAD
DISTRICT:	03 SCALE: AS SHOWN DRAWN BY: CEM

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WORKSPACE: AHTD
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REVISED DATE:

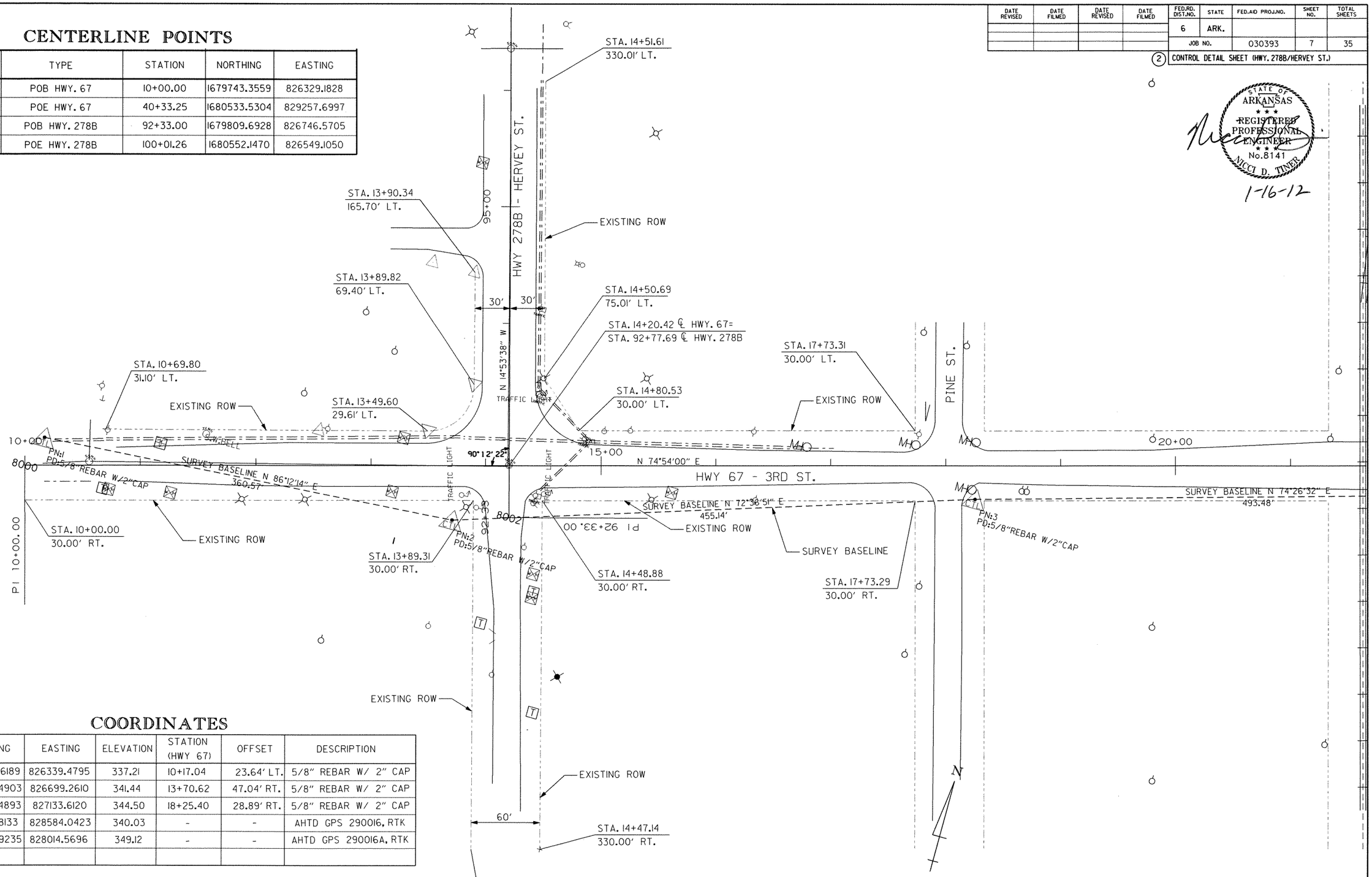
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030393	7	35

(2) CONTROL DETAIL SHEET (HWY. 278B/HERVEY ST.)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
1-16-12

CENTERLINE POINTS

NUMBER	TYPE	STATION	NORTHING	EASTING
8000	POB HWY. 67	10+00.00	1679743.3559	826329.1828
8001	POE HWY. 67	40+33.25	1680533.5304	829257.6997
8002	POB HWY. 278B	92+33.00	1679809.6928	826746.5705
8003	POE HWY. 278B	100+01.26	1680552.1470	826549.1050



COORDINATES

POINT	NORTHING	EASTING	ELEVATION	STATION (HWY 67)	OFFSET	DESCRIPTION
1	1679770.6189	826339.4795	337.21	10+17.04	23.64' LT.	5/8" REBAR W/ 2" CAP
2	1679794.4903	826699.2610	341.44	13+70.62	47.04' RT.	5/8" REBAR W/ 2" CAP
3	1679930.4893	827133.6120	344.50	18+25.40	28.89' RT.	5/8" REBAR W/ 2" CAP
100	1677388.8133	828584.0423	340.03	-	-	AHTD GPS 290016, RTK
101	1679226.9235	828014.5696	349.12	-	-	AHTD GPS 290016A, RTK

HORIZONTAL DATUM - NAD 83 (1997)
VERTICAL DATUM - NAVD 88
BASIS OF BEARINGS - ARKANSAS STATE PLANE COORDINATES (GRID)
DETERMINED FROM GPS CONTROL POINTS 290016-290016A
ALL DISTANCES ARE GROUND

SCALE IN FEET
0 40 80 160

DATE: 1/10/12 FILE NAME: t030393_s01.dgn

LOCATION:	HWY. 67 AND HWY. 278B/HERVEY STREET
CITY:	HOPE
COUNTY:	HEMPSTEAD
DISTRICT:	03 SCALE: AS SHOWN DRAWN BY: CEM

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WORKSPACE: AHTD
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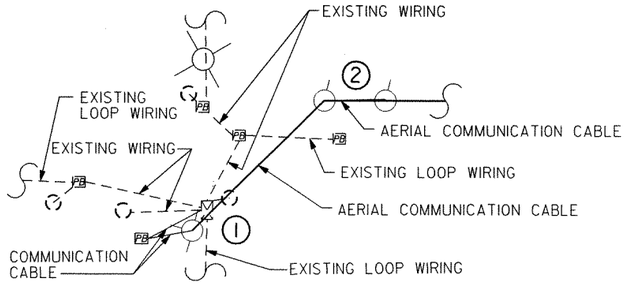
REVISED DATE:

NOTES:
1. COST OF TRAFFIC CONTROLLER MODIFICATION TO PROVIDE FIBER TO RADIO INTERFACE TO BE INCLUDED IN ITEM "TRAFFIC TIMER UNIT, EACH."
2. MODIFICATIONS TO THE TRAFFIC CONTROLLER SHALL BE COMPATIBLE WITH THE CITY'S EXISTING CLOSED LOOP COORDINATION SYSTEM.
3. 2" GALVANIZED STEEL CONDUIT ALONG POLE 1 FOR COMMUNICATION CABLE.
4. POLES 1, 2, AND 3 ARE EXISTING UTILITY POLES TO BE USED FOR AERIAL COMMUNICATION CABLE.

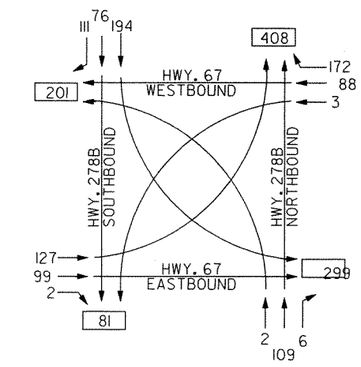
TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT	
601	MOBILIZATION	0.20	L.S.	
SS&603	MAINTENANCE OF TRAFFIC	0.20	L.S.	
709	GALVANIZED STEEL CONDUIT (2")	30	LIN. FT.	
SP	COMMUNICATION CABLE, FIBER (6 CHANNEL)	206	LIN. FT.	
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.20	L.S.	
SP	TRAFFIC TIMER UNIT	1	EACH	*

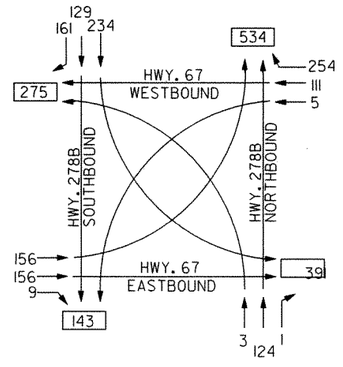
* TRAFFIC TIMER UNIT COMMUNICATES WITH THE USE OF FIBER AND/OR RADIO



WIRING DIAGRAM



HWY. 67 AT HWY. 278B/HERVEY STREET
TRAFFIC FLOW DIAGRAM
TRAFFIC VOLUME
A.M. PEAK HOUR



HWY. 67 AT HWY. 278B/HERVEY STREET
TRAFFIC FLOW DIAGRAM
TRAFFIC VOLUME
P.M. PEAK HOUR

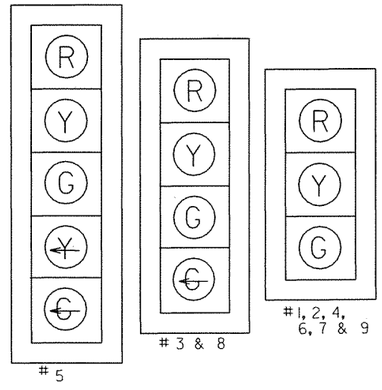
NOTE:
2011 TRAFFIC VOLUMES

INTERVAL CHART

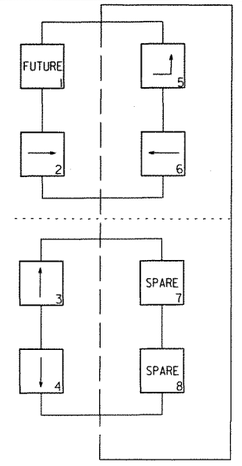
SIGNAL FACES	INTERSECTION INTERVALS								FLASH SEQ.
	2+5	CLR.	2+6	CLR.	3	CLR.	4	CLR.	
1 & 2	R	R	G	Y	R	R	R	R	Y
3	R	R	R	R	R	G/G	Y	R	R
4	R	R	R	R	R	G	Y	R	R
5	G/G	**/*	G	Y	R	R	R	R	R
6 & 7	G	**	G	Y	R	R	R	R	Y
8	R	R	R	R	R	R	G/G	Y	R
9	R	R	R	R	R	R	G	Y	R

** DENOTES GREEN OR YELLOW BALL DEPENDING ON NEXT PHASE

EXISTING SIGNAL FACES

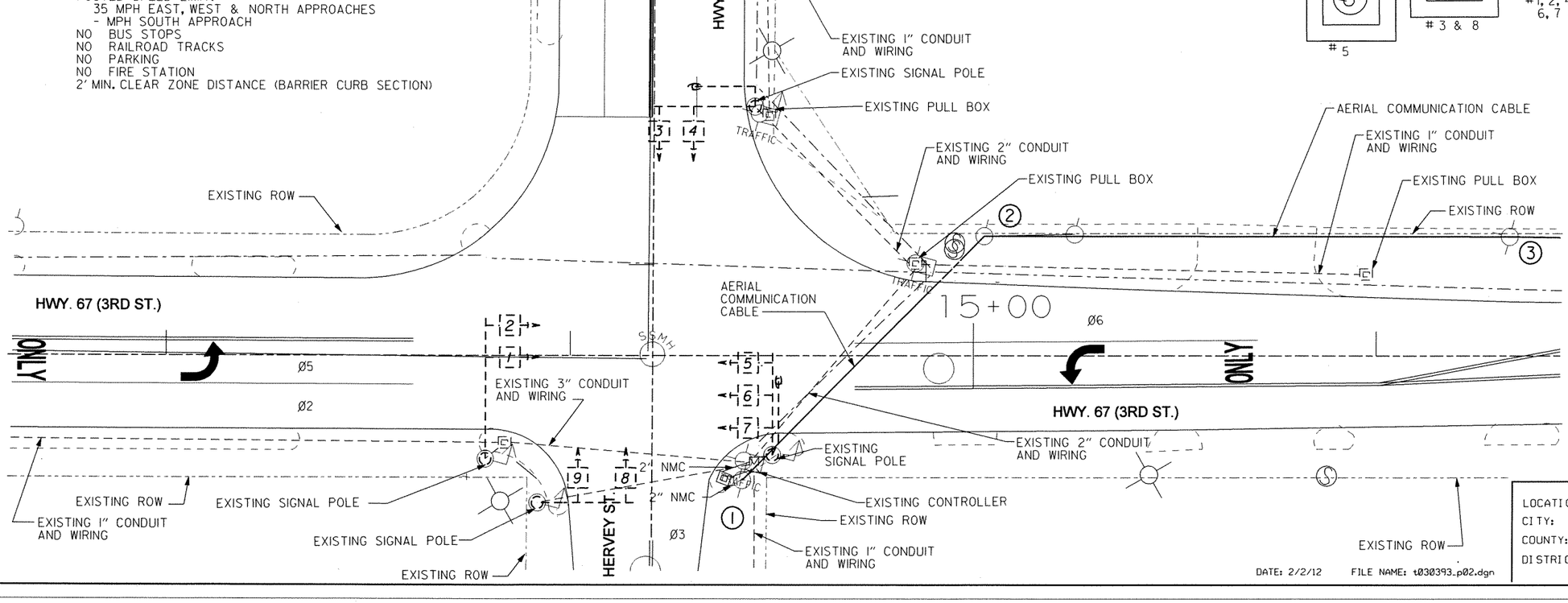


PHASING DIAGRAM



DESIGN PARAMETERS

POSTED SPEED LIMIT:
35 MPH EAST, WEST & NORTH APPROACHES
- MPH SOUTH APPROACH
NO BUS STOPS
NO RAILROAD TRACKS
NO PARKING
NO FIRE STATION
2' MIN. CLEAR ZONE DISTANCE (BARRIER CURB SECTION)



LEGEND

- TYPE 2 PULL BOX
- TYPE 1 PULL BOX
- CONTROLLER CABINET
- SIGNAL HEAD
- SIGNAL POLE, MAST ARM AND LUMINAIRE ARM
- NMC - NON METALLIC CONDUIT
- VIDEO DETECTOR

N

SCALE IN FEET
0 15 30 60

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.		030393	8	35

(2) SIGNALIZATION PLANS (HWY. 278B/HERVEY ST.)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
2-2-12

LOCATION:	HWY. 67 AT HWY. 278B/HERVEY STREET
CITY:	HOPE
COUNTY:	HEMPSTEAD
DISTRICT:	03 SCALE: AS SHOWN DRAWN BY: CEM

DATE: 2/2/12 FILE NAME: t030393_p02.dgn

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WORKSPACE: ARTDV8
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REVISED DATE:

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				6	ARK.			
				JOB NO.		030393	9	35

(2) CONTROL DETAIL SHEET (ELM ST.)

CENTERLINE POINTS

NUMBER	TYPE	STATION	NORTHING	EASTING
8000	POB HWY. 67	10+00.00	1679743.3559	826329.1828
8001	POE HWY. 67	40+33.25	1680533.5304	829257.6997
8004	POB ELM ST.	6+69.86	1679821.4106	827885.7668
8005	POE ELM ST.	13+29.86	1680458.6881	827714.0773

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
1-16-12

HORIZONTAL DATUM - NAD 83 (1997)
VERTICAL DATUM - NAVD 88
BASIS OF BEARINGS - ARKANSAS STATE PLANE COORDINATES (GRID)
DETERMINED FROM GPS CONTROL POINTS 290016-290016A
ALL DISTANCES ARE GROUND

COORDINATES

POINT	NORTHING	EASTING	ELEVATION	STATION (HWY 67)	OFFSET	DESCRIPTION
4	1680062.8455	827609.0134	349.55	23+18.87	24.94' RT.	5/8" REBAR W/ 2" CAP
5	1680221.8943	828224.6107	354.12	29+54.65	31.75' RT.	5/8" REBAR W/ 2" CAP
100	1677388.8133	828584.0423	340.03	-	-	AHTD GPS 290016, RTK
101	1679226.9235	828014.5696	349.12	-	-	AHTD GPS 290016A, RTK

SCALE IN FEET
0 40 80 160

DATE: 1/10/12 FILE NAME: t030393_s02.dgn

LOCATION: HWY. 67 AND ELM STREET
CITY: HOPE
COUNTY: HEMPSTEAD
DISTRICT: 03 SCALE: AS SHOWN DRAWN BY: CEM

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WORKSPACE: AHTD
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REVISED DATE:

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.		030393	10	35

(2) SIGNALIZATION PLANS (ELM ST.)

DETECTOR CHART

DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS			VIDEO DET. TUBE LENGTH	COMMENT
DETECTOR I.D. #	DIRECTION & LOCATION	TYPE	DET. #	CAB. TRM. #	AMP CHN. #	CON. INP. #	LOCAL PHS.	LOCAL SYS. DET. #	MSTR. SYS. DET. #		
VZ4I	SB NEAR	LOCAL			I	V4	4			23"	VD4
VZ8I	NB NEAR	LOCAL			2	V8	8			23"	VD8

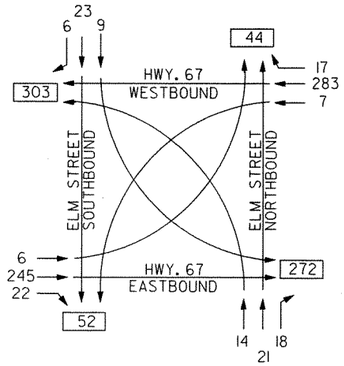
CONTROLLER INPUT ABBREVIATIONS:
V = VEHICLE INPUT
D = SYSTEM OR AUXILIARY INPUT
P = PEDESTRIAN INPUT

SPARE AMP CHN. #= 3-16

TRAFFIC SIGNAL QUANTITIES

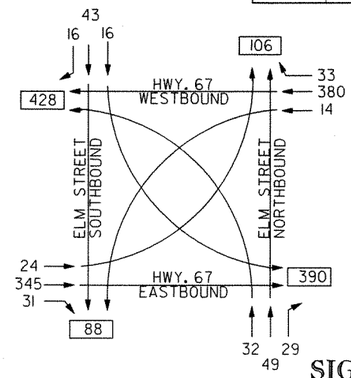
ITEM NO.	ITEM	QUANTITY	UNIT	
601	MOBILIZATION	0.20	L.S.	
SS&603	MAINTENANCE OF TRAFFIC	0.20	L.S.	
SP&701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2 (8 PHASES)	I	EACH	*
SP&733	VIDEO DETECTOR (CLR)	2	EACH	
733	VIDEO CABLE	202	LIN. FT.	
733	VIDEO MONITOR (CLR)	I	EACH	
SP&733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	I	EACH	
SP&733	VEHICLE DETECTOR RACK (16 CHANNEL)	I	EACH	
SP	COMMUNICATION CABLE, FIBER (6 CHANNEL)	558	LIN. FT.	
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.20	L.S.	

* SYSTEM LOCAL CONTROLLER COMMUNICATES WITH THE USE OF FIBER AND/OR RADIO



HWY. 67 AT ELM STREET
TRAFFIC FLOW DIAGRAM
TRAFFIC VOLUME
A.M. PEAK HOUR

NOTE:
2009 TRAFFIC VOLUMES

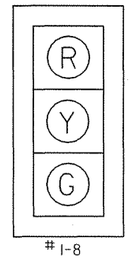


HWY. 67 AT ELM STREET
TRAFFIC FLOW DIAGRAM
TRAFFIC VOLUME
P.M. PEAK HOUR

INTERVAL CHART

SIGNAL FACES	INTERSECTION INTERVALS 2+6	CLR.	4+8	CLR.	FLASH SEQ.
I& 2	G	Y	R	R	Y
3 & 4	R	R	G	Y	R
5 & 6	G	Y	R	R	Y
7 & 8	R	R	G	Y	R

EXISTING SIGNAL FACES



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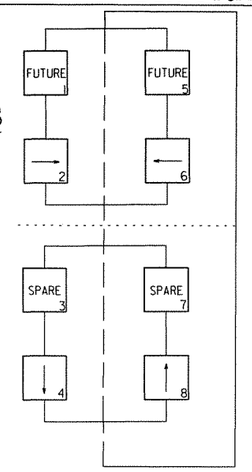
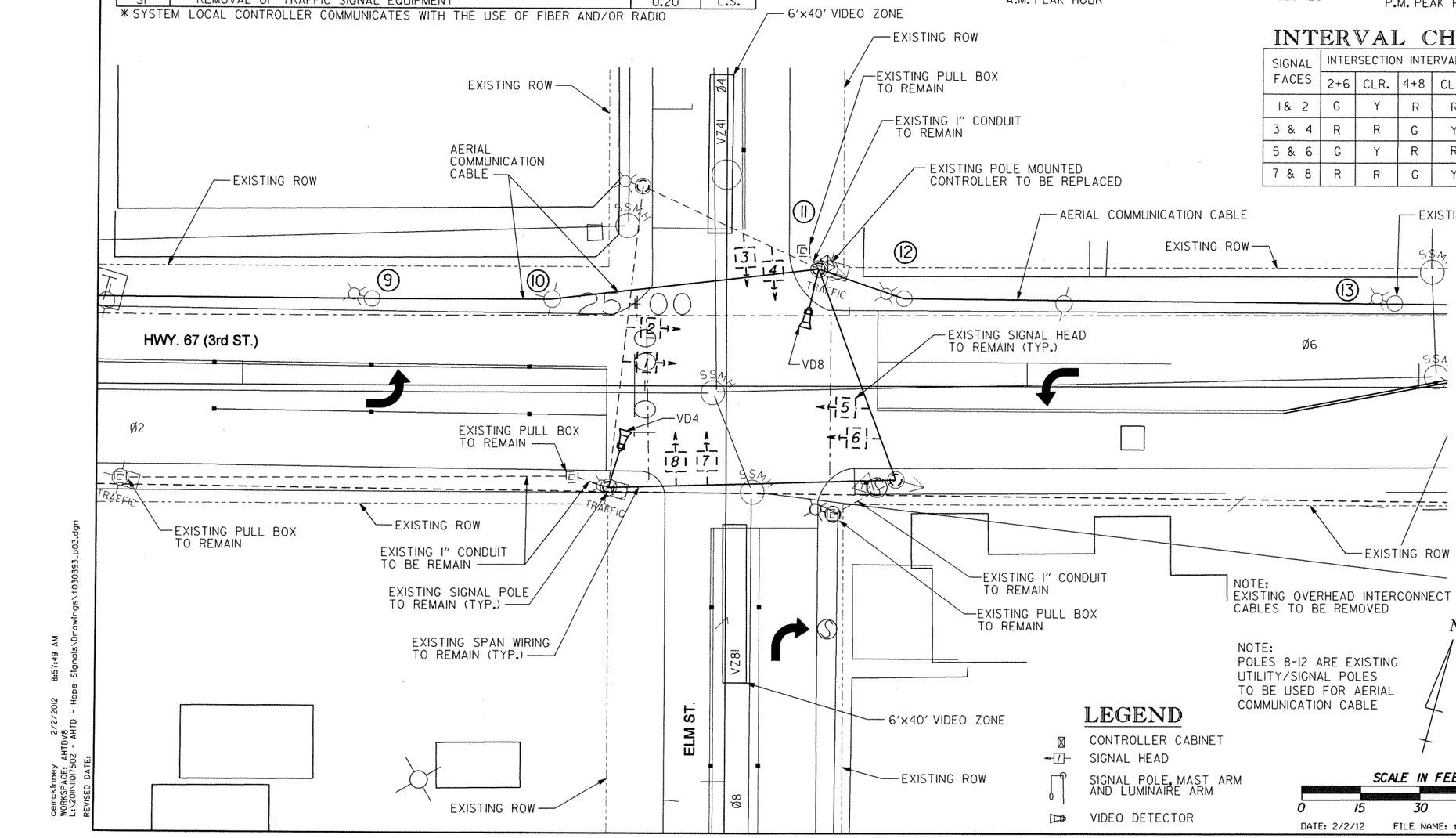
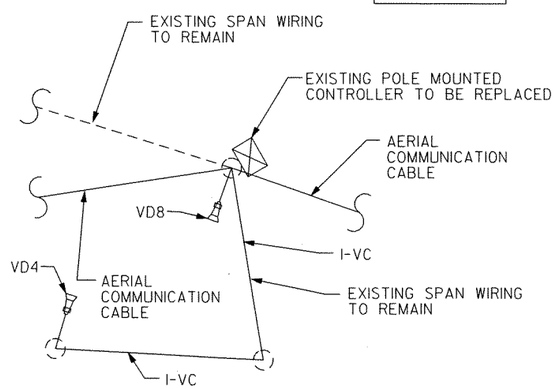
PHASING DIAGRAM







WIRING DIAGRAM

LEGEND

- CONTROLLER CABINET
- SIGNAL HEAD
- SIGNAL POLE, MAST ARM AND LUMINAIRE ARM
- VIDEO DETECTOR

SCALE IN FEET
0 15 30 60

DATE: 2/2/12 FILE NAME: t030393_p03.dgn

DESIGN PARAMETERS

POSTED SPEED LIMIT:
30 MPH EAST AND WEST APPROACHES
- MPH NORTH AND SOUTH APPROACHES
NO BUS STOPS
YES RAILROAD TRACKS
YES PARKING
NO FIRE STATION

LOCATION:	HWY. 67 AT ELM STREET
CITY:	HOPE
COUNTY:	HEMPSTEAD
DISTRICT:	03 SCALE: AS SHOWN DRAWN BY: CEM

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
2-2-12

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WORKSPACE: AHTDV8
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REVISED DATE:

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.		030393	II	35

(2) CONTROL DETAIL SHEET (HWY. 29B/MAIN ST.)

COORDINATES

POINT	NORTHING	EASTING	ELEVATION	STATION (HWY 67)	OFFSET	DESCRIPTION
4	1680062.8455	827609.0134	349.55	23+18.87	24.94' RT.	5/8" REBAR W/ 2" CAP
5	1680221.8943	828224.6107	354.12	29+54.65	31.75' RT.	5/8" REBAR W/ 2" CAP
6	1680374.7132	828558.4320	354.25	33+16.75	28.83' LT.	5/8" REBAR W/ 2" CAP
7	1680388.7383	828841.8770	353.60	35+94.06	31.47' RT.	5/8" REBAR W/ 2" CAP
100	1677388.8133	828584.0423	340.03			AHTD GPS 290016, RTK
101	1679226.9235	828014.5696	349.12			AHTD GPS 290016A, RTK

STATE OF ARKANSAS
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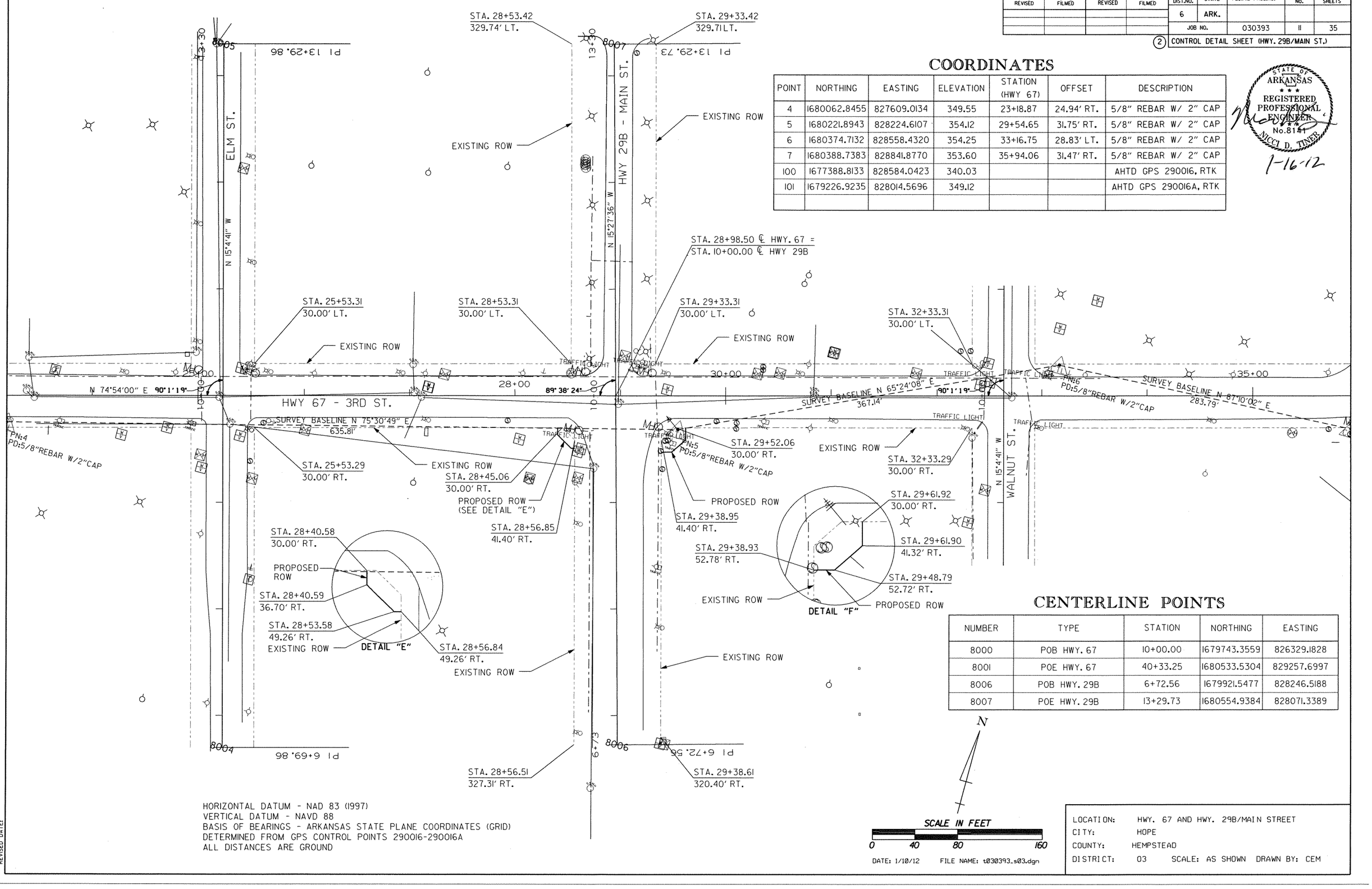
NICCI D. TINER
1-16-12



CENTERLINE POINTS

NUMBER	TYPE	STATION	NORTHING	EASTING
8000	POB HWY. 67	10+00.00	1679743.3559	826329.1828
8001	POE HWY. 67	40+33.25	1680533.5304	829257.6997
8006	POB HWY. 29B	6+72.56	1679921.5477	828246.5188
8007	POE HWY. 29B	13+29.73	1680554.9384	828071.3389

HORIZONTAL DATUM - NAD 83 (1997)
VERTICAL DATUM - NAVD 88
BASIS OF BEARINGS - ARKANSAS STATE PLANE COORDINATES (GRID)
DETERMINED FROM GPS CONTROL POINTS 290016-290016A
ALL DISTANCES ARE GROUND

N

SCALE IN FEET
0 40 80 160

DATE: 1/10/12 FILE NAME: t030393_s03.dgn

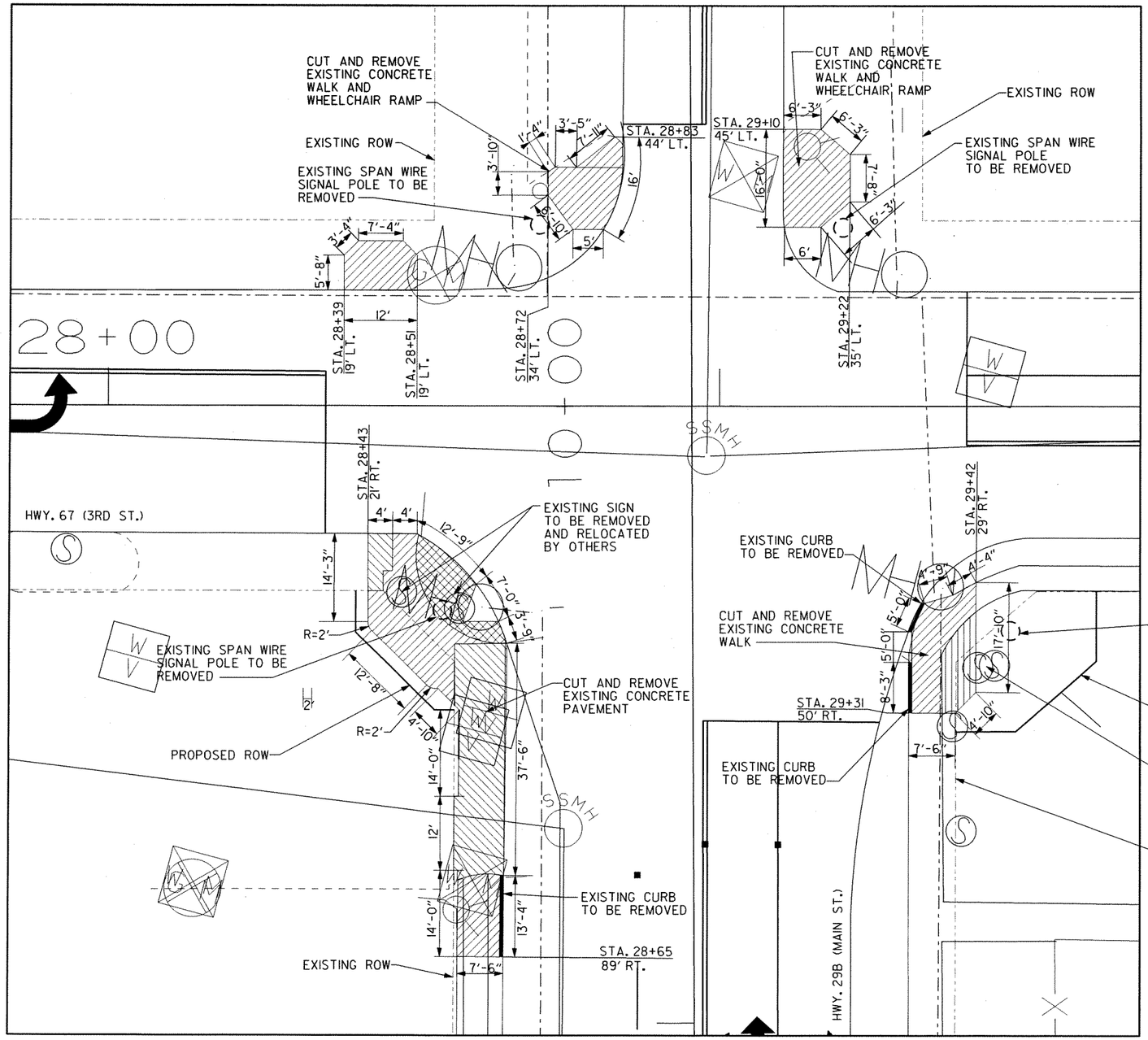
LOCATION: HWY. 67 AND HWY. 29B/MAIN STREET
CITY: HOPE
COUNTY: HEMPSTEAD
DISTRICT: 03 SCALE: AS SHOWN DRAWN BY: CEM

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.		030393	12	35

(2) RAMP DETAILS (HWY. 29B/MAIN ST.)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER

1-27-12



REMOVAL

NOTE: CROSSWALKS NOT SHOWN FOR CLARITY

REMOVAL AND DISPOSAL ITEMS

STA.	STA.	LOCATION HWY. 67	CURB	CONCRETE ISLANDS	CONCRETE WALK	CONCRETE DRIVEWAY	DESCRIPTION
			LIN. FT.	SQ. YD.	SQ. YD.	SQ. YD.	
28+38.53	28+50.53	LT.			10		EXISTING WALK
28+71.98	28+82.84	LT.			13		EXISTING WALK AND RAMP
29+10.46	29+21.45	LT.			17		EXISTING WALK AND RAMP
28+42.57	28+46.57	RT.				4	EXISTING DRIVEWAY
28+42.57	28+65.57	RT.			23		EXISTING WALK
28+50.68	28+65.51	RT.		12			EXISTING ISLAND
28+56.85	28+65.51	RT.				34	EXISTING DRIVEWAY
28+58.49	28+64.45	RT.			10		EXISTING WALK
28+64.45	28+65.51	RT.	13				EXISTING CURB
28+64.45	28+64.95	RT.	8				EXISTING CURB
29+31.21	29+61.71	RT.	5				EXISTING CURB
29+31.71	29+36.68	RT.			13		EXISTING WALK
		TOTALS	26	12	86	38	

NOTE: CURB STATIONING AND OFFSET REFERENCED FROM ℄ HWY. 67

LEGEND

- EXISTING CONCRETE CURB TO BE REMOVED
- EXISTING CONCRETE WALK TO BE REMOVED
- EXISTING CONCRETE ISLAND TO BE REMOVED
- EXISTING CONCRETE DRIVEWAY TO BE REMOVED
- EXISTING GRASS TO BE REMOVED

N

SCALE IN FEET
0 10 20 40

DATE: 1/27/12 FILE NAME: t030393_dt13.dgn

LOCATION: HWY. 67 AT HWY. 29B/MAIN STREET
CITY: HOPE
COUNTY: HEMPSTEAD
DISTRICT: 03 SCALE: AS SHOWN DRAWN BY: CEM

exporter 1/27/2012 11:53:31 AM
WORKSPACE: AHTD
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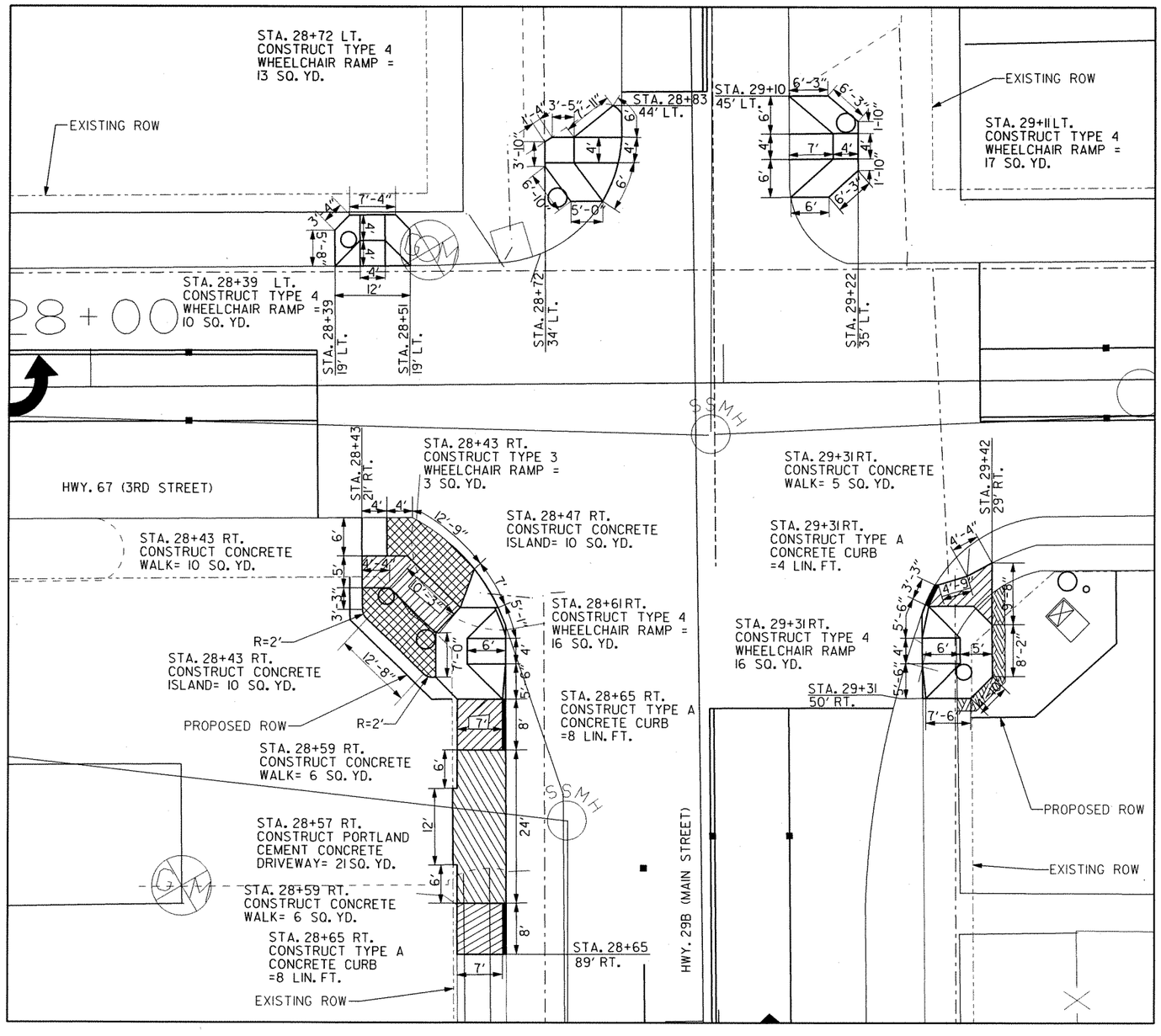
REVISED DATE:

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.		030393	13	35

(2) RAMP DETAILS (HWY. 29B/MAIN ST.)

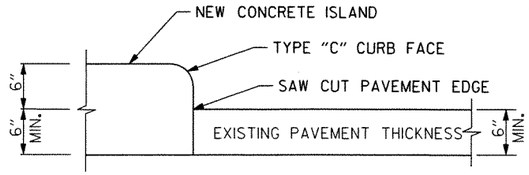


CONSTRUCTION

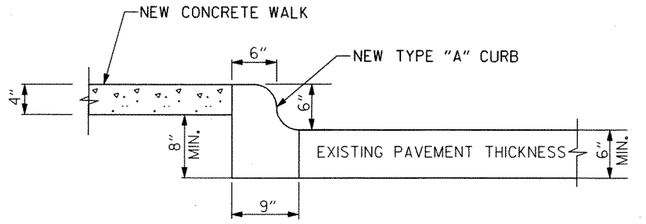
NOTE: CURB STATIONING AND OFFSET REFERENCED FROM ℄ HWY. 67

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER

2-2-12



CONCRETE ISLAND



TYPE "A" CONCRETE CURB

CURB AND RAMP QUANTITIES

ITEM NO.	ITEM	UNIT	QUANTITY
505	PORTLAND CEMENT CONCRETE DRIVEWAY	21	SQ. YD.
SS&620	WATER	0.1	M.G.
624	SOLID SODDING	5	SQ. YD.
628	TOPSOIL FURNISHED AND PLACED	1	CU. YD.
632	CONCRETE ISLAND	20	SQ. YD.
633	CONCRETE WALKS	21	SQ. YD.
634	CONCRETE CURB (TYPE A)	20	LIN. FT.
641	WHEELCHAIR RAMPS (TYPE 3)	3	SQ. YD.
641	WHEELCHAIR RAMPS (TYPE 4)	72	SQ. YD.

LEGEND

- CONCRETE CURB
- CONCRETE WALK
- CONCRETE ISLAND
- CONCRETE DRIVEWAY
- TOPSOIL FURNISHED AND PLACED (6" U.T.) WITH SOLID SODDING

N

SCALE IN FEET
0 10 20 40

DATE: 2/2/12 FILE NAME: t030393_dt14.dgn

LOCATION:	HWY. 67 AT HWY. 29B/MAIN STREET
CITY:	HOPE
COUNTY:	HEMPSTEAD
DISTRICT:	03 SCALE: AS SHOWN DRAWN BY: CEM

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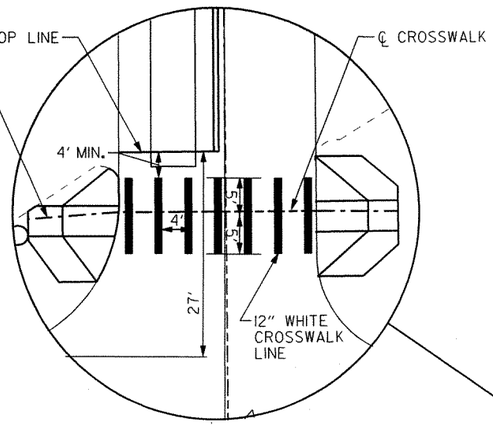
REVISED DATE:

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.		030393	14	35

(2) PERMANENT PAVEMENT MARKINGS (HWY. 29B/MAIN ST.)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
2-2-12



CROSSWALK DETAIL

3' DASH LINE DETAIL

PERMANENT MARKINGS QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	1730	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS (ARROWS)	6	EACH
SS&719	THERMOPLASTIC PAVEMENT MARKING WHITE (4")	220	LIN. FT.
SS&719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")	142	LIN. FT.
SS&719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")	422	LIN. FT.
SS&719	THERMOPLASTIC PAVEMENT MARKING YELLOW (4")	1440	LIN. FT.
SS&719	THERMOPLASTIC PAVEMENT MARKING (WORDS)	3	EACH
SS&719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	6	EACH
721	RAISED PAVEMENT MARKERS (TYPE II)	33	EACH

*RED FACES WRONG WAY TRAFFIC

NOTE:

ALL PERMANENT MARKINGS WITHIN 170' OF THE PROPOSED EASTBOUND STOP BAR AND WITHIN 180' OF THE PROPOSED WESTBOUND STOP BAR ARE TO BE REMOVED AND REPLACED AS SHOWN. ALL PERMANENT MARKINGS WITHIN 270' OF THE PROPOSED NORTHBOUND AND 100' OF THE PROPOSED SOUTHBOUND STOP BARS ARE TO BE REMOVED AND REPLACED AS SHOWN.

LOCATION:	HWY. 67 AND HWY. 29B/MAIN STREET
CITY:	HOPE
COUNTY:	HEMPSTEAD
DISTRICT:	03 SCALE: AS SHOWN DRAWN BY: CEM

DATE: 2/2/12 FILE NAME: t030393_pmt2.dgn

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REVISED DATE:

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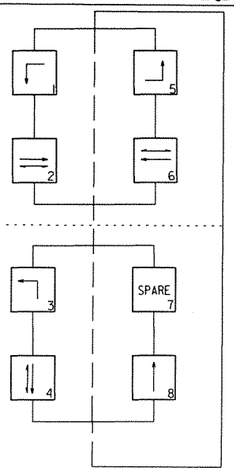
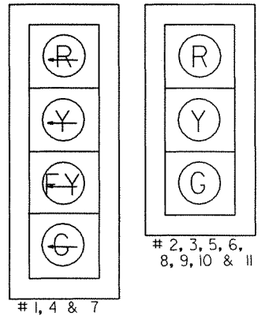
				6	ARK.			
				JOB NO.		030393	15	35
				②	SIGNALIZATION PLANS (HWY. 29B/MAIN ST.)			

PHASING DIAGRAM



SIGNAL FACES



NOTES:
1. CROSSWALKS NOT SHOWN FOR CLARITY
2. POLES 13-16 ARE EXISTING UTILITY POLES TO BE USED FOR AERIAL COMMUNICATION CABLE.

* 0.50" NMC FOR CONTROLLER OR POLE GROUND ROD CONNECTION. THE COST OF 0.50" NMC IS INCLUDED IN ITEM NO. 701 OR 714, RESPECTIVELY.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
2-2-12

ANTENNA ORIENTATION

TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT	
601	MOBILIZATION	0.20	L.S.	
SS&603	MAINTENANCE OF TRAFFIC	0.20	L.S.	
SP&701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2 (8 PHASES)	1	EACH	***
SP&706	TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1WAY)	8	EACH	
SP&706	TRAFFIC SIGNAL HEAD, LED, (4 SECTION, 1WAY)	3	EACH	
SP&707	COUNTDOWN PEDESTRIAN SIGNAL HEAD, LED	6	EACH	
708	TRAFFIC SIGNAL CABLE (5c/14 A.W.G.)	1561	LIN. FT.	
708	TRAFFIC SIGNAL CABLE (7c/14 A.W.G.)	177	LIN. FT.	
708	TRAFFIC SIGNAL CABLE (12c/14 A.W.G.)	136	LIN. FT.	
708	TRAFFIC SIGNAL CABLE (20c/14 A.W.G.)	258	LIN. FT.	
709	GALVANIZED STEEL CONDUIT (1.25")	15	LIN. FT.	
710	NON-METALLIC CONDUIT (1.25")	9	LIN. FT.	
710	NON-METALLIC CONDUIT (2")	218	LIN. FT.	
710	NON-METALLIC CONDUIT (3")	308	LIN. FT.	
SS&711	CONCRETE PULL BOX (TYPE 2 HD)	8	EACH	
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (20')	1	EACH	
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (30')	1	EACH	
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (32')	1	EACH	
SS&714	TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (44')	1	EACH	
SS&715	TRAFFIC SIGNAL PEDESTAL POLE WITH FOUNDATION	3	EACH	
SP&733	VIDEO DETECTOR (CLR)	5	EACH	**
733	VIDEO CABLE	640	LIN. FT.	
733	VIDEO MONITOR (CLR)	1	EACH	
SP&733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	3	EACH	**
SP&733	VIDEO EDGE CARD EXTENDER	1	EACH	
SP&733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	EACH	
SP	ANTENNA CABLE (TYPE 6)	43	LIN. FT.	
SP	COMMUNICATION CABLE, FIBER (6 CHANNEL)	572	LIN. FT.	
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2c/6 A.W.G.)	24	LIN. FT.	
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1c/8 A.W.G., EGC)	426	LIN. FT.	
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1c/12 A.W.G., EGC)	200	LIN. FT.	
SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES	594	LIN. FT.	
SP	LOCAL RADIO WITH ANTENNA	1	EACH	
SP	LUMINAIRE ASSEMBLY	4	EACH	
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.20	L.S.	
SP	SERVICE POINT ASSEMBLY (2 CIRCUITS)	1	EACH	
SP	18" STREET NAME SIGN	4	EACH	

** ONE ADDITIONAL VIDEO DETECTOR AND ONE ADDITIONAL VIDEO PROCESSOR, EDGE CARD SHALL BE PROVIDED FOR FUTURE USE.
*** SYSTEM LOCAL CONTROLLER COMMUNICATES WITH THE USE OF FIBER AND/OR RADIO

LEGEND

- TYPE 2 PULL BOX
- TYPE 1 PULL BOX
- CONTROLLER CABINET
- SIGNAL HEAD
- SIGNAL POLE, MAST ARM AND LUMINAIRE ARM
- NMC - NON METALLIC CONDUIT
- VIDEO DETECTOR
- ANTENNA

N

SCALE IN FEET
0 30 60 120

DATE: 2/2/12 FILE NAME: t030393_p04.dgn

DESIGN PARAMETERS

POSTED SPEED LIMIT:
30 MPH EAST & WEST APPROACHES
-MPH NORTH & SOUTH APPROACHES
NO BUS STOPS
NO RAILROAD TRACKS
NO PARKING
NO FIRE STATION
2' MIN. CLEAR ZONE DISTANCE (BARRIER CURB SECTION)

LOCATION:	HWY. 67 AT 29B/MAIN STREET
CITY:	HOPE
COUNTY:	HEMPSTEAD
DISTRICT:	03 SCALE: AS SHOWN DRAWN BY: CEM

cemckinney 2/2/2012 9:04:49 AM
WORKSPACE: ahtdv8
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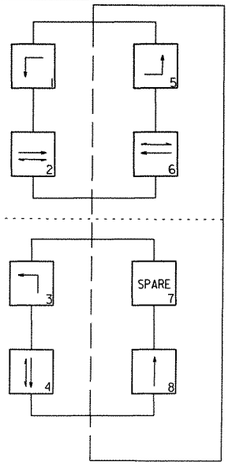
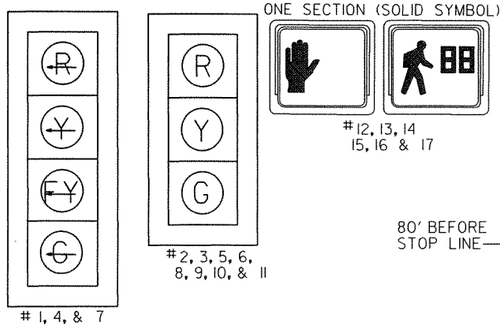
REVISED DATE:

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.		030393	16	35
				(2) SIGNALIZATION PLANS (HWY. 29B/MAIN ST.)				

PHASING DIAGRAM



SIGNAL FACES



NOTE: POLES 13-16 ARE EXISTING UTILITY POLES TO BE USED FOR AERIAL COMMUNICATION CABLE.

LEGEND

- TYPE 2 PULL BOX
- TYPE 1 PULL BOX
- CONTROLLER CABINET
- SIGNAL HEAD
- SIGNAL POLE, MAST ARM AND LUMINAIRE ARM
- NMC - NON METALLIC CONDUIT
- VIDEO DETECTOR

POLE DIMENSIONS

POLE	MAST ARM(S) LENGTH	MAST ARM(S) ORIENTATION ANGLE FROM HAND HOLE (CLOCKWISE)	VERTICAL SHAFT LENGTH	LUM. ARM LENGTH	LUM. ARM(S) ORIENTATION ANGLE FROM HAND HOLE (CLOCKWISE)	STATION HWY. 64	OFFSET	NORTHING	EASTING
A	-	-	15'-0"	-	-	28+40.71	23' LT.	1680244.9269	828100.3904
B	30 FT.	270 DEGREES	35'-0"	15'-0"	270 DEGREES	28+73.92	29' LT.	1680259.69	828130.80
C	20 FT.	180 DEGREES	35'-0"	15'-0"	180 DEGREES	29+19.54	41' LT.	1680282.5626	828171.8825
D	32 FT.	180 DEGREES	35'-0"	15'-0"	180 DEGREES	29+54.18	32' RT.	1680222.0142	828224.0914
E	-	-	15'-0"	-	-	29+37.74	46' RT.	1680204.1132	828111.9008
F	44 FT.	270 DEGREES	35'-0"	15'-0"	270 DEGREES	28+52.70	40' RT.	1680187.5192	828298.2968
G	-	-	15'-0"	-	-	28+46.40	33' RT.	1680192.4413	828120.4401

* 0.50" NMC FOR CONTROLLER OR POLE GROUND ROD CONNECTION. THE COST OF 0.50" NMC IS INCLUDED IN ITEM NO. 701 OR 714, RESPECTIVELY.

DESIGN PARAMETERS

POSTED SPEED LIMIT:
30 MPH EAST & WEST APPROACHES
-MPH NORTH & SOUTH APPROACHES
NO BUS STOPS
NO RAILROAD TRACKS
NO PARKING
NO FIRE STATION
2' MIN. CLEAR ZONE DISTANCE (BARRIER CURB SECTION)

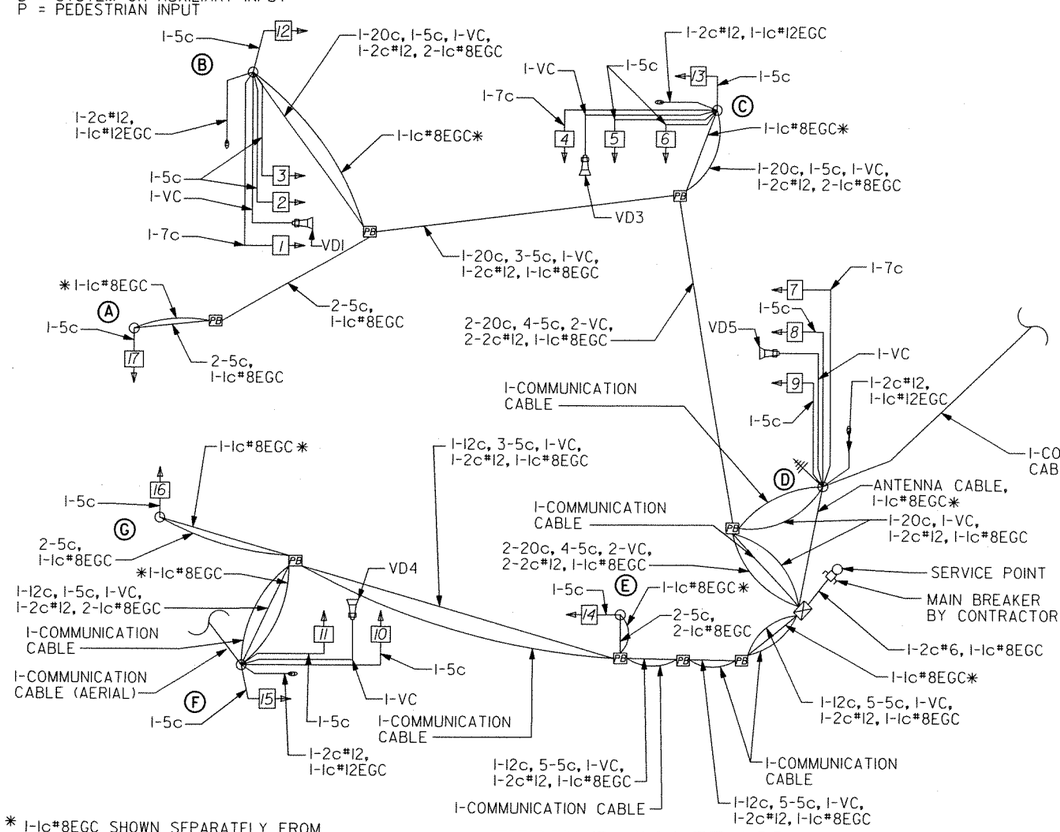
LOCATION:	HWY. 67 AT HWY. 29B/MAIN STREET
CITY:	HOPE
COUNTY:	HEMPSTEAD
DISTRICT:	03 SCALE: AS SHOWN DRAWN BY: CEM

DETECTOR CHART

DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS			VIDEO DET. TUBE LENGTH	COMMENT
							LOCAL		MSTR.		
DETECTOR I.D. #	DIRECTION & LOCATION	TYPE	DET. #	CAB. TRM. #	AMP CHN. #	CON. INP. #	PHS.	SYS. DET. #	SYS. DET. #		
VZII	WB LEFT FAR	COMB.			I	DI	I	I		23"	VDI
VZI2	WB LEFT NEAR	LOCAL			2	VI	I			23"	VDI
VZ2I	EB FAR	LOCAL			5	V2	2			23"	VD5
VZ22	EB NEAR	COMB.			6	D2	2	2		23"	VD5
VZ3I	NB FAR	COMB.			9	D3	3	3		23"	VD3
VZ32	NB NEAR	LOCAL			I0	V3	3			23"	VD3
VZ4I	SB FAR	COMB.			II	D4	4	4		23"	VD4
VZ42	SB NEAR	LOCAL			I2	V4	4			23"	VD4
VZ5I	EB LEFT FAR	COMB.			7	D5	5	5		23"	VD5
VZ52	EB LEFT NEAR	LOCAL			8	V5	5			23"	VD5
VZ6I	WB FAR	LOCAL			3	V6	6			23"	VDI
VZ62	WB NEAR	COMB.			4	D6	6	6		23"	VDI
PB2	W TO E	PED.				P2	2				
PB4	N TO S	PED.				P4	4				
PB6	E TO W	PED.				P6	6				

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

SPARE AMP CHN. #= 13-16

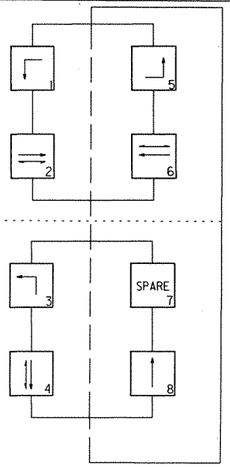


* I-Ic#8EGC SHOWN SEPARATELY FROM CONTROLLER OR POLE TO NEAREST PULL BOX IS INCLUDED IN ITEM NO. 701 OR 714, RESPECTIVELY.

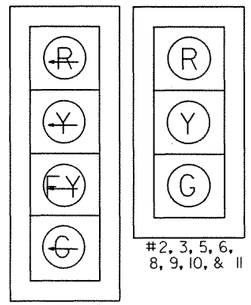
WIRING DIAGRAM

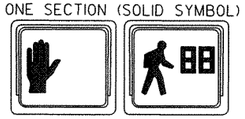
TYPICAL WIRING INCLUDES:
1. SEPARATE 5c/#14 AWG FROM EACH 3 SEC SIGNAL HEAD TO BASE OF POLE.
2. SEPARATE 7c/#14 AWG FROM EACH 4 SEC SIGNAL HEAD TO BASE OF POLE.
3. SEPARATE 5c/#14 AWG TO EACH POLE WITH PEDESTRIAN PUSH BUTTONS.
4. PROVIDE SEPARATE CONDUIT FOR ANTENNA CABLE.
5. ALL DETECTOR RACK CHANNELS, INCLUDING UNUSED, SHALL BE BROUGHT TO TERMINAL STRIP IN DETECTOR AREA ON CABINET.
6. THE LOCAL GOVERNMENT SHALL BE RESPONSIBLE FOR PROVIDING POWER TO THE SERVICE POINT.

PHASING DIAGRAM



SIGNAL FACES

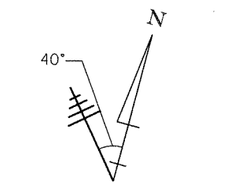


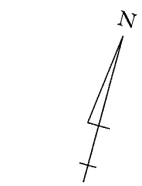


INTERVAL CHART

SIGNAL FACES	INTERSECTION INTERVALS												FLASH SEQ.
	1+5	CLR.	1+6	CLR.	2+5	CLR.	2+6	CLR.	3+8	CLR.	4+8	CLR.	
1	~~G~~	*	~~G~~	*	~~FY~~	***	~~FY~~	***	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
2 & 3	R	R	G	**	R	R	G	**	R	R	R	R	Y
4	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~G~~	*	~~FY~~	***	~~R~~
5+6	R	R	R	R	R	R	R	R	G	**	G	**	R
7	~~G~~	*	~~FY~~	***	~~G~~	*	~~FY~~	***	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
8+9	R	R	R	R	G	**	G	**	R	R	R	R	Y
10+11	R	R	R	R	R	R	R	R	R	R	G	Y	R
12+13	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	B
14+15	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	B
16+17	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	B

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



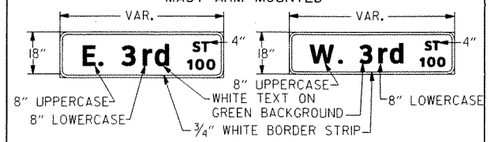


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030393	17	35

(2) SIGNALIZATION PLANS (HWY. 29B/MAIN ST.)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
1-27-12

TYPICAL OVERHEAD STREET NAME MARKER MAST ARM MOUNTED



NOTES:

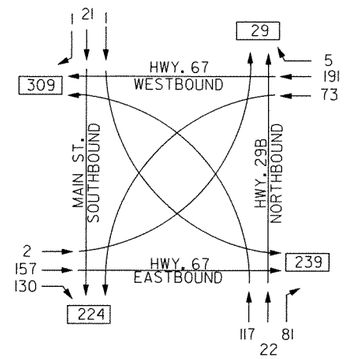
1. REFLECTIVE SHEETING SHALL COMPLY WITH ASTM 4956 TYPE 8 OR TYPE 9 REFLECTIVE SHEETING. SHEETING AND LEGEND SHALL BE APPLIED IN SUCH A MANNER TO PROVIDE WRINKLE AND BUBBLE FREE SURFACES. APPLICATION OF SHEETING IS CAUSE FOR REJECTION OF MATERIALS DUE TO WORKMANSHIP.

2. ALUMINUM SIGN BLANK SHALL BE ALLOY 6061-T6 OR 5052-H38. THE ALUMINUM SIGN SHALL ALSO BE ANODIZED. 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 HOPE.

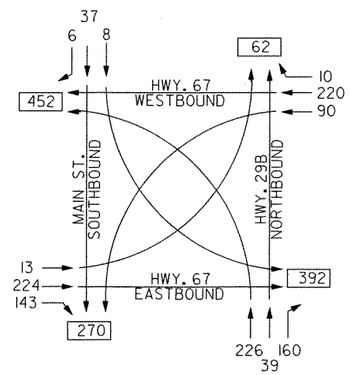
3. SEE STD. DETAIL SHEET FOR MORE INFORMATION FOR MOUNTING ON MAST ARM ASSEMBLY.

4. THE CLEARVIEW 5-W-R FONT SHALL BE USED FOR ALL LETTERS.

5. STREET NAME "W. 3RD ST. 100" ON POLE J. STREET NAME "E. 3RD ST. 100" ON POLE M. STREET NAME "MAIN ST. 300" ON POLE I AND STREET NAME "MAIN ST. 200" ON POLE K.



HWY. 67 AT HWY. 29B
TRAFFIC FLOW DIAGRAM
TRAFFIC VOLUME
A.M. PEAK HOUR



NOTE:
2011 TRAFFIC VOLUMES

HWY. 67 AT HWY. 29B
TRAFFIC FLOW DIAGRAM
TRAFFIC VOLUME
P.M. PEAK HOUR

LOCATION:	HWY. 67 AT HWY. 29B/MAIN STREET
CITY:	HOPE
COUNTY:	HEMPSTEAD
DISTRICT:	03 SCALE: 1"=NA' DRAWN BY: CEM

DATE: 1/27/12 FILE NAME: t030393_p04.dgn

computer 1/27/2012 11:37:09 AM
WORKSPACE: AHTD
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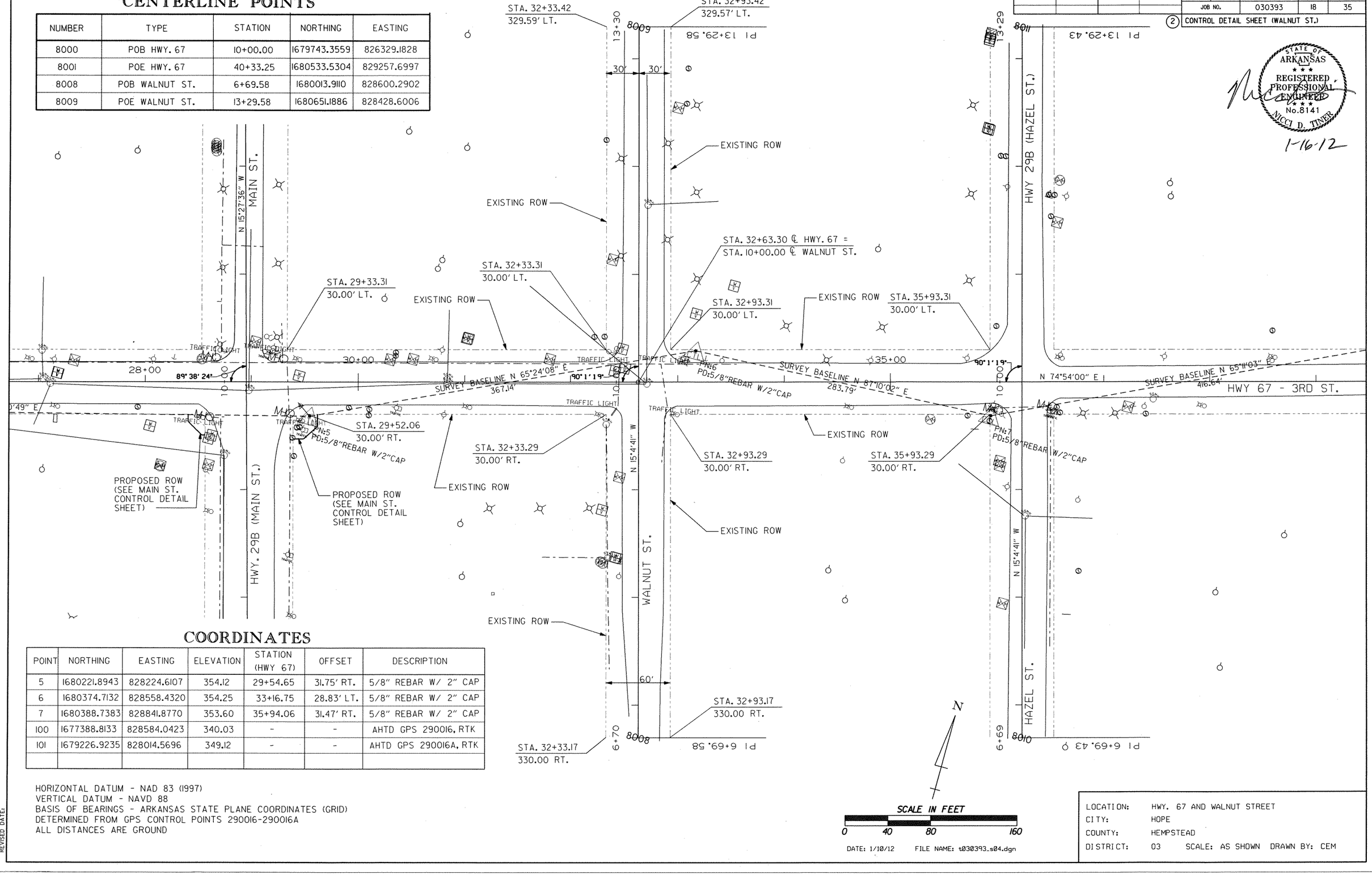
REVISED DATE:

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.		030393	18	35

(2) CONTROL DETAIL SHEET (WALNUT ST.)

CENTERLINE POINTS

NUMBER	TYPE	STATION	NORTHING	EASTING
8000	POB HWY. 67	10+00.00	1679743.3559	826329.1828
8001	POE HWY. 67	40+33.25	1680533.5304	829257.6997
8008	POB WALNUT ST.	6+69.58	1680013.9110	828600.2902
8009	POE WALNUT ST.	13+29.58	1680651.1886	828428.6006



COORDINATES

POINT	NORTHING	EASTING	ELEVATION	STATION (HWY 67)	OFFSET	DESCRIPTION
5	1680221.8943	828224.6107	354.12	29+54.65	31.75' RT.	5/8" REBAR W/ 2" CAP
6	1680374.7132	828558.4320	354.25	33+16.75	28.83' LT.	5/8" REBAR W/ 2" CAP
7	1680388.7383	828841.8770	353.60	35+94.06	31.47' RT.	5/8" REBAR W/ 2" CAP
100	1677388.8133	828584.0423	340.03	-	-	AHTD GPS 290016, RTK
101	1679226.9235	828014.5696	349.12	-	-	AHTD GPS 290016A, RTK

HORIZONTAL DATUM - NAD 83 (1997)
VERTICAL DATUM - NAVD 88
BASIS OF BEARINGS - ARKANSAS STATE PLANE COORDINATES (GRID)
DETERMINED FROM GPS CONTROL POINTS 290016-290016A
ALL DISTANCES ARE GROUND

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
1-16-12

N

SCALE IN FEET
0 40 80 160

DATE: 1/10/12 FILE NAME: t030393_s04.dgn

LOCATION:	HWY. 67 AND WALNUT STREET
CITY:	HOPE
COUNTY:	HEMPSTEAD
DISTRICT:	03 SCALE: AS SHOWN DRAWN BY: CEM

computer WORKSPACE: AHTD
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REVISED DATE: 1/11/2012 11:04:51 AM

DETECTOR CHART

DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS			VIDEO DET. TUBE LENGTH	COMMENT
							LOCAL		MSTR.		
DETECTOR I.D. #	DIRECTION & LOCATION	TYPE	DET. #	CAB. TRM. #	AMP CHN. #	CON. INP. #	PHS.	SYS. DET. #	SYS. DET. #		
VZ4I	SB NEAR	LOCAL			I	V4	4			23"	VD4
VZ8I	NB NEAR	LOCAL			2	V8	8			23"	VD8

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

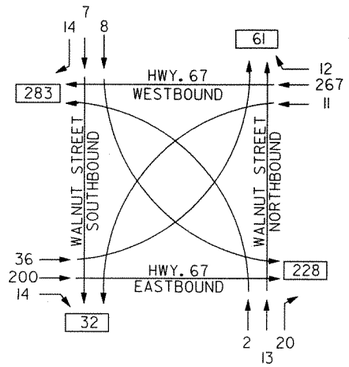
SPARE AMP CHN. #'s 3-16

TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT	
601	MOBILIZATION	0.20	L.S.	
SS&603	MAINTENANCE OF TRAFFIC	0.20	L.S.	
SP&701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2 (8 PHASES)	I	EACH	*
SP&733	VIDEO DETECTOR (CLR)	2	EACH	
733	VIDEO CABLE	210	LIN. FT.	
733	VIDEO MONITOR (CLR)	I	EACH	
SP&733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	I	EACH	
SP&733	VEHICLE DETECTOR RACK (I6 CHANNEL)	I	EACH	
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.20	L.S.	
SP	COMMUNICATION CABLE, FIBER (6 CHANNEL)	437	LIN. FT.	
SP	LUMINAIRE ARM AND ATTACHMENT HARDWARE	0.50	L.S.	

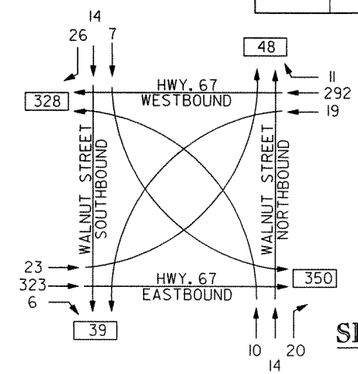
*SYSTEM LOCAL CONTROLLER COMMUNICATES WITH THE USE OF FIBER AND/OR RADIO

NOTE:
VD8 SHALL INCLUDE 15' ARM



HWY. 67 AT WALNUT STREET
TRAFFIC FLOW DIAGRAM
TRAFFIC VOLUME
A.M. PEAK HOUR

NOTE:
2009 TRAFFIC VOLUMES

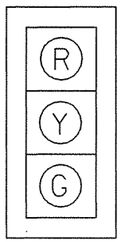


HWY. 67 AT WALNUT STREET
TRAFFIC FLOW DIAGRAM
TRAFFIC VOLUME
P.M. PEAK HOUR

INTERVAL CHART

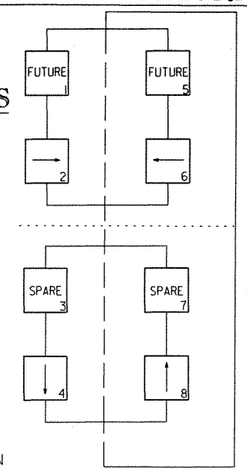
SIGNAL FACES	INTERSECTION INTERVALS				FLASH SEQ.
	2+6	CLR.	4+8	CLR.	
I & 2	G	Y	R	R	Y
3 & 4	R	R	G	Y	R
5 & 6	G	Y	R	R	Y
7 & 8	R	R	G	Y	R

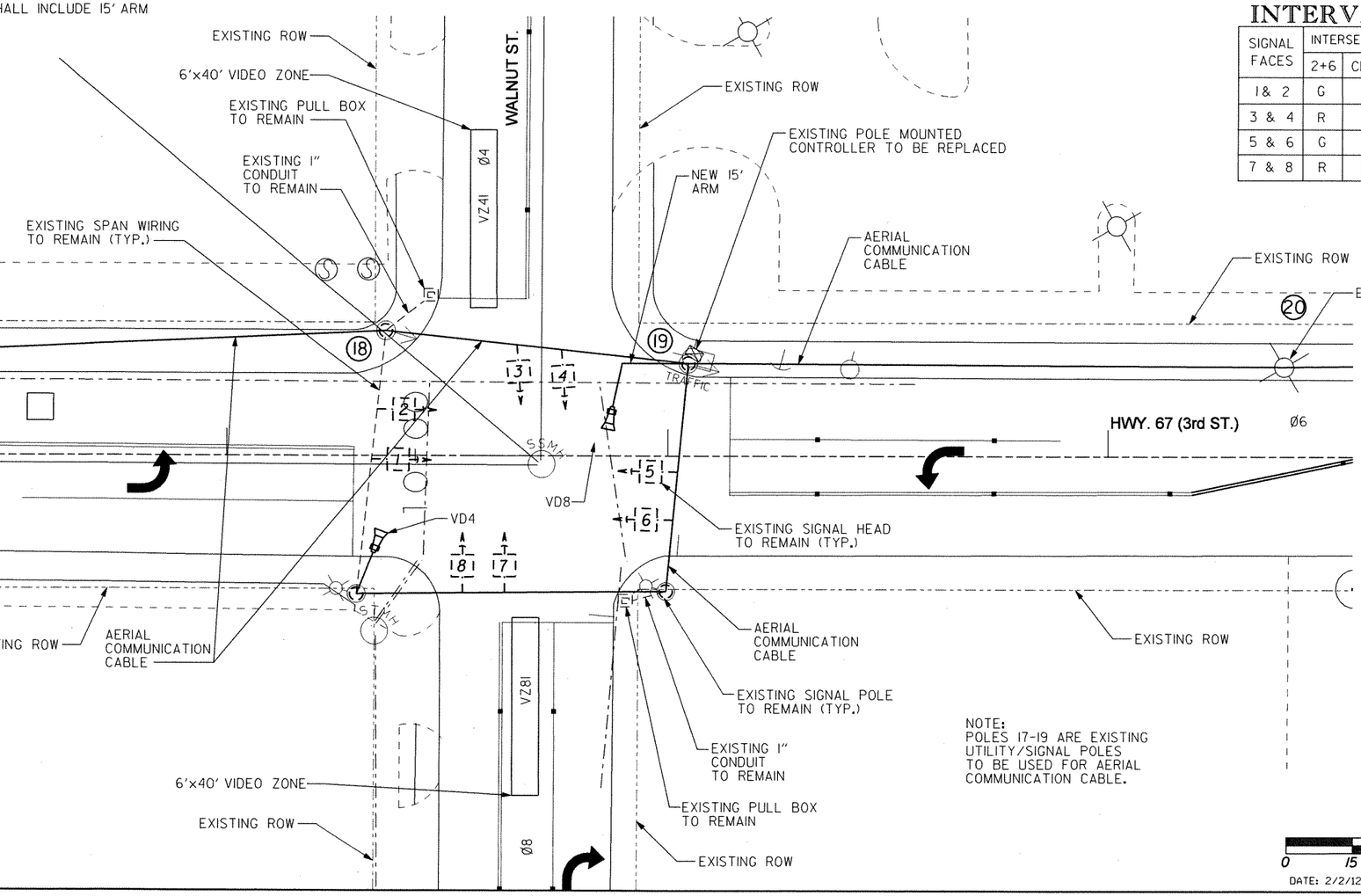
EXISTING SIGNAL FACES



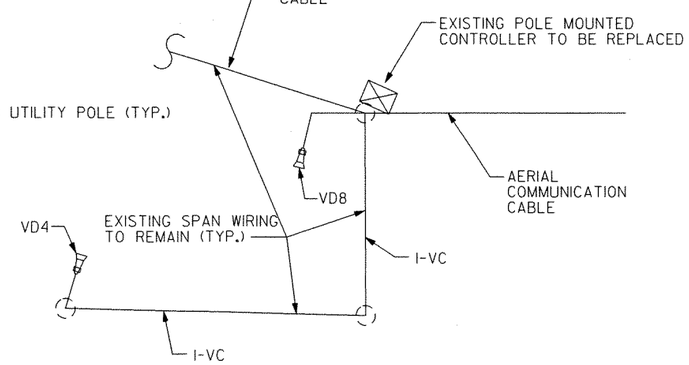
#I-8

PHASING DIAGRAM





NOTE:
POLES 17-19 ARE EXISTING UTILITY/SIGNAL POLES TO BE USED FOR AERIAL COMMUNICATION CABLE.



WIRING DIAGRAM

NOTE:
EXISTING OVERHEAD INTERCONNECT CABLES TO BE REMOVED

DESIGN PARAMETERS

POSTED SPEED LIMIT:
30 MPH EAST & WEST APPROACHES
- MPH NORTH & SOUTH APPROACHES
NO BUS STOPS
NO RAILROAD TRACKS
NO PARKING
NO FIRE STATION

N

SCALE IN FEET
0 15 30 60

DATE: 2/2/12 FILE NAME: t030393_p06.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.		030393	19	35

② SIGNALIZATION PLANS (WALNUT ST.)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
2-2-12

LOCATION:	HWY. 67 AT WALNUT STREET
CITY:	HOPE
COUNTY:	HEMPSTEAD
DISTRICT:	03 SCALE: AS SHOWN DRAWN BY: CEM

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WORKSPACE: AHTDV8
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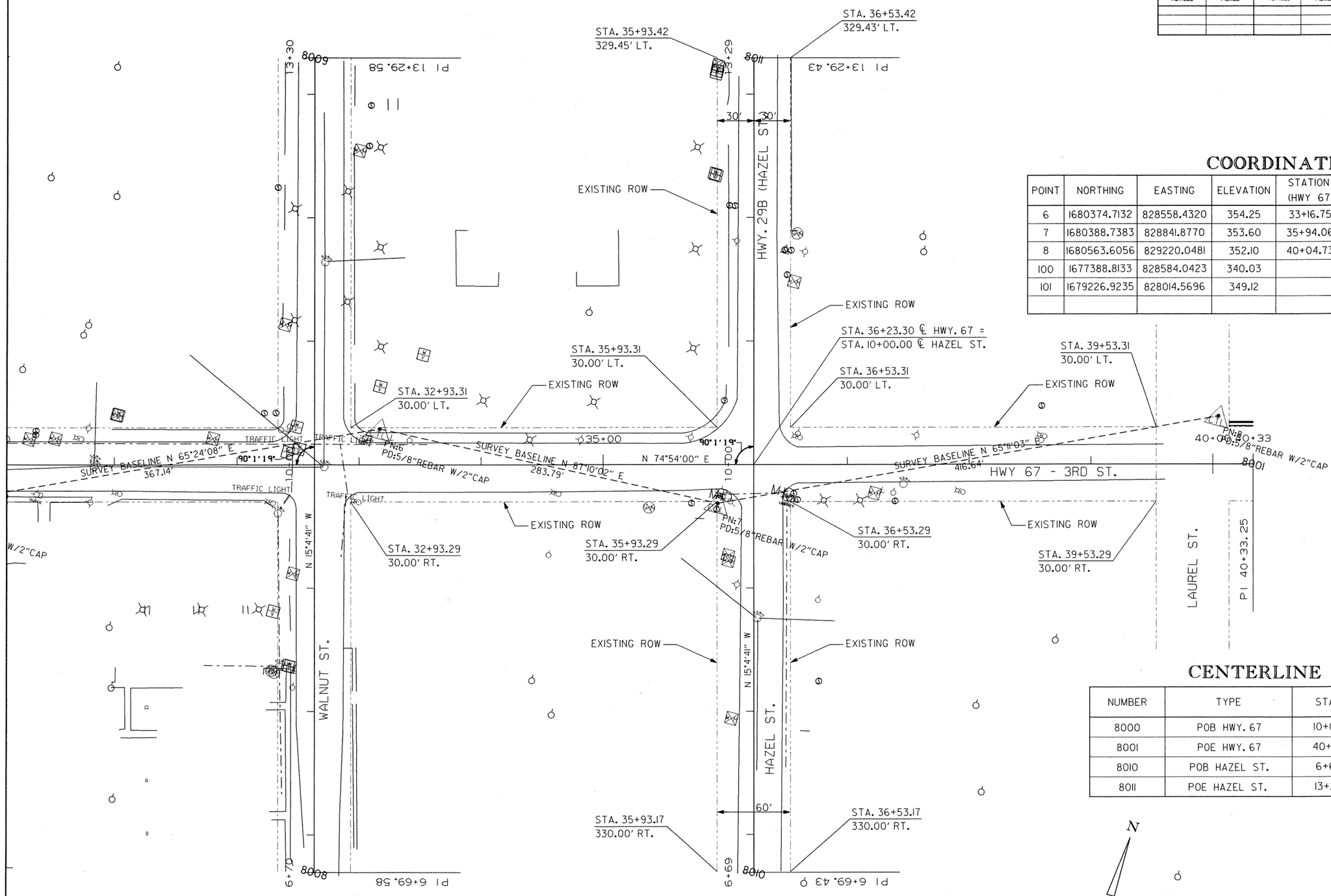
REVISED DATE:

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.		030393	20	35

(2) CONTROL DETAIL SHEET (HAZEL ST.)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
1-16-12



COORDINATES

POINT	NORTHING	EASTING	ELEVATION	STATION (HWY 67)	OFFSET	DESCRIPTION
6	1680374.7132	828558.4320	354.25	33+16.75	28.83' LT.	5/8" REBAR W/ 2" CAP
7	1680388.7383	828841.8770	353.60	35+94.06	31.47' RT.	5/8" REBAR W/ 2" CAP
8	1680563.6056	829220.0481	352.10	40+04.73	38.85' LT.	5/8" REBAR W/ 2" CAP
100	1677388.8133	828584.0423	340.03			AHTD GPS 290016, RTK
101	1679226.9235	828014.5696	349.12			AHTD GPS 290016A, RTK

CENTERLINE POINTS

NUMBER	TYPE	STATION	NORTHING	EASTING
8000	POB HWY. 67	10+00.00	1679743.3559	826329.1828
8001	POE HWY. 67	40+33.25	1680533.5304	829257.6997
8010	POB HAZEL ST.	6+69.43	1680107.5599	828947.8961
8011	POE HAZEL ST.	13+29.43	1680744.8374	828776.2065

HORIZONTAL DATUM - NAD 83 (1997)
VERTICAL DATUM - NAVD 88
BASIS OF BEARINGS - ARKANSAS STATE PLANE COORDINATES (GRID)
DETERMINED FROM GPS CONTROL POINTS 290016-290016A
ALL DISTANCES ARE GROUND

N

SCALE IN FEET
0 40 80 160

DATE: 1/10/12 FILE NAME: t030393_s05.dgn

LOCATION:	HWY. 67 AND HWY. 29B/HAZEL STREET
CITY:	HOPE
COUNTY:	HEMPSTEAD
DISTRICT:	03 SCALE: AS SHOWN DRAWN BY: CEM

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WORKSPACE: AHTD
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REVISED DATE:

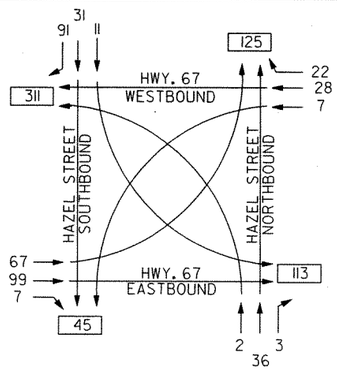
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030393	21	35
				②	SIGNALIZATION PLANS (HAZEL ST.)			

DETECTOR CHART

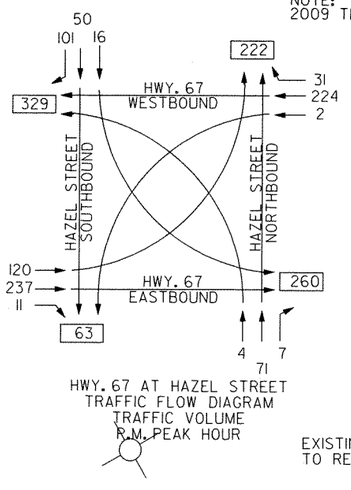
DETECTOR ASSIGNMENTS				HARDWARE INPUTS BY SUPPLIER			PROGRAM ASSIGNMENTS			VIDEO DET. TUBE LENGTH	COMMENT
DETECTOR I.D. #	DIRECTION & LOCATION	TYPE	DET. #	CAB. TRM. #	AMP CHN. #	CON. INP. #	LOCAL PHS.	LOCAL SYS. DET. #	MSTR. SYS. DET. #		
VZ41	SB NEAR	LOCAL			1	V4	4			23"	VD4
VZ81	NB NEAR	LOCAL			2	V8	8			23"	VD8

SPARE AMP CHN. #= 3-16

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



HWY. 67 AT HAZEL STREET
TRAFFIC FLOW DIAGRAM
TRAFFIC VOLUME
A.M. PEAK HOUR



HWY. 67 AT HAZEL STREET
TRAFFIC FLOW DIAGRAM
TRAFFIC VOLUME
P.M. PEAK HOUR

NOTE:
2009 TRAFFIC VOLUMES

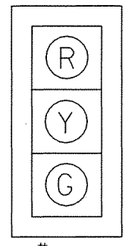
TRAFFIC SIGNAL QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT	
601	MOBILIZATION	0.20	L.S.	
SS&603	MAINTENANCE OF TRAFFIC	0.20	L.S.	
SP&701	SYSTEM LOCAL CONTROLLER TS2-TYPE 2 (8 PHASES)	1	EACH	*
SP&733	VIDEO DETECTOR (CLR)	2	EACH	
733	VIDEO CABLE	193	LIN. FT.	
733	VIDEO MONITOR (CLR)	1	EACH	
SP&733	VIDEO PROCESSOR, EDGE CARD (2 CAMERA)	1	EACH	
SP&733	VEHICLE DETECTOR RACK (16 CHANNEL)	1	EACH	
SP	COMMUNICATION CABLE, FIBER (6 CHANNEL)	276	LIN. FT.	
SP	LUMINAIRE ARM AND ATTACHMENT HARDWARE	0.50	L.S.	
SP	REMOVAL OF TRAFFIC SIGNAL EQUIPMENT	0.20	L.S.	

* SYSTEM LOCAL CONTROLLER COMMUNICATES WITH THE USE OF FIBER AND/OR RADIO

NOTE:
VD8 SHALL INCLUDE A 15' ARM.

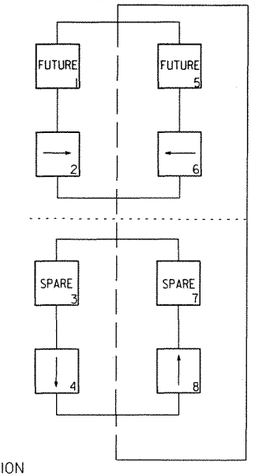
EXISTING SIGNAL FACES

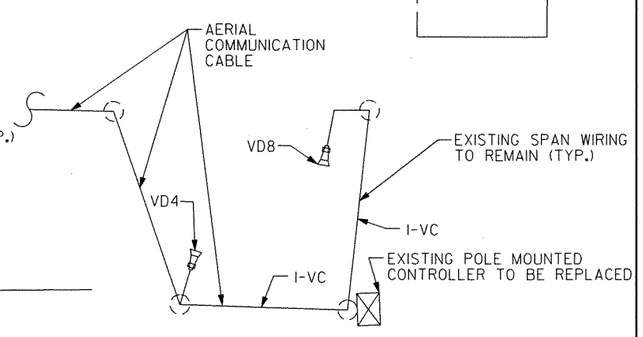


INTERVAL CHART

SIGNAL FACES	INTERSECTION INTERVALS 2+6	CLR.	4+8	CLR.	FLASH SEQ.
1& 2	G	Y	R	R	Y
3 & 4	R	R	G	Y	R
5 & 6	G	Y	R	R	Y
7 & 8	R	R	G	Y	R

PHASING DIAGRAM





WIRING DIAGRAM

NOTE:
EXISTING OVERHEAD INTERCONNECT CABLES TO BE REMOVED

NOTE:
POLES 20-22' ARE EXISTING UTILITY/SIGNAL POSED TO BE USED FOR AERIAL COMMUNICATION CABLE

N

DESIGN PARAMETERS

POSTED SPEED LIMIT:
30 MPH EAST & WEST APPROACHES
- MPH NORTH & SOUTH APPROACHES
NO BUS STOPS
NO RAILROAD TRACKS
NO PARKING
NO FIRE STATION

SCALE IN FEET
0 15 30 60
DATE: 2/2/12 FILE NAME: t030393_p07.dgn

LOCATION:	HWY. 67 AT HWY. 29B/HAZEL STREET
CITY:	HOPE
COUNTY:	HEMPSTEAD
DISTRICT:	03 SCALE: AS SHOWN DRAWN BY: CEM

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
2-2-12

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WORKSPACE: AHTDV8
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REVISED DATE:

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.		030393	22	35

(2) SIGNALIZATION DETAIL

NOTES, PED AND TRAFFIC SIGNAL HEAD SIGNS:
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 THE SIGNAL PLAN NOTES.

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.

EACH PEDESTRIAN PUSHBUTTON SHALL HAVE ONE R10-3E SIGN ATTACHED TO THE POLE ABOVE THE BUTTON. ALL SIGN FACES SHALL BE CONSTRUCTED OF HIGH INTENSITY SHEETING (TYPE III) WITH SILKSCREEN LEGEND AND BORDER.

ALL SIGN BLANKS SHALL BE CONSTRUCTED OF ALUMINUM ALLOY (ASTM DESIGNATION B-209. ALLOY 5052-H38) WITH THICKNESS OF 0.100 INCH.

GENERAL NOTES:
1. MAST ARM POLES SHALL BE MOUNTED A MINIMUM OF 4 FT. BEHIND CURB OR SHOULDER.

2. OCTAGONAL POLES AND ARMS MEETING THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS CAN BE INSTALLED IN LIEU OF ROUND. ALL POLES AND ARMS IN A JOB MUST BE THE SAME SHAPE.

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

USE FATIGUE CATEGORY I FOR ALL STRUCTURES ON ROUTES WHERE THE SPEED LIMIT IS 65 MPH AND GREATER AT THE STRUCTURE LOCATION AND ON ROUTES WHERE SPEED LIMIT IS GREATER THAN 45 MPH WITH AN ARM 60' OR LONGER.

USE FATIGUE CATEGORY II FOR STRUCTURES ON ROUTES WITH A SPEED LIMIT LESS THAN 65 MPH AND GREATER THAN 45 MPH WITH ARMS LESS THAN 60' AND ROUTES WITH SPEED LIMITS OF 45 MPH AND LESS WITH AN ARM 60' OR LONGER.

USE FATIGUE CATEGORY III FOR ALL STRUCTURES WHERE SPEED LIMIT IS 45 MPH AND LESS AND ARMS LESS THAN 60'.

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 A THICKNESS GREATER THAN 1/2" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.

DEAD LOAD: AS A MINIMUM, DESIGN SHALL BE BASED ON THE FIXED ATTACHMENTS SHOWN BELOW OR AS MODIFIED IN THE PLANS.

ALL SIGNAL HEADS TO BE ONE WAY, 12 INCH, AND HAVE 5 IN. BACK PLATES:

HEADS AT END OF ARM - ONE 4 SEC., 85 LB., 16.0 SQ. FT. ONE SIGN MOUNTED 3 FT. FROM SIGNAL * 2' X 0" X 2' * 6"; 20 LB. REMAINING HEADS SPACED A 8 FT. * 3 SEC., 56 LB., TWO 5 SEC):
14.4 SQ. FT. DESIGN TO ACCOMMODATE (INCLUDING
2 HEADS FOR ARMS 10 TO 16 FT.
2 HEADS FOR ARMS 10 TO 16 FT.; INCLUDING LB.
3 HEADS FOR 18 TO 24 FT. ARMS;
4 HEADS FOR OVER 26 FT. ARMS.

STREET NAME SIGN -- 72" X 18", 36 LB., MOUNTED SUCH THAT OUTSIDE EDGE IS NOT GREATER THAN 12 FT. FROM POLE. DEPENDING UPON POSITION OF SIGNAL HEAD ADJACENT TO POLE, SIGN MAY OVERLAP POLE SHAFT ROADWAY LUMINAIRES (WHERE REQUIRED ON PLAN SHEET) * VARIABLE ARM LENGTH (MAX.), 3.3 SQ. FT., 75 LB. PED SIGNALS -- TWO 2 SEC. 12 INCH MOUNTED 8 FT. FROM BASE OF POLE.
POST MOUNTED 3 SEC. SIGNAL HEAD AT 10 FT. ON SIDE OF POLE.

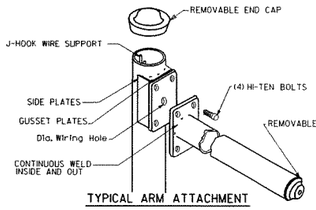
4. POLE/MAST ARM CAP -- POLE AND MAST ARMS CAPS SHALL BE PROVIDED, FABRICATED OF EITHER STEEL OR CAST ALUMINUM.

5. HAND HOLE -- HAND HOLES SHALL BE 4 X 6 INCHES FOR STANDARD, AND 3 X 5 INCHES FOR PED POLES, MINIMUM PLACED APPROXIMATELY 12 INCHES FROM BASE, AND SHALL BE FIXED WITH A BOLT DOWN COVER. A VACUUM FORMED ABS COVER IS AN ACCEPTABLE ALTERNATE TO STEEL. POLES GREATER THAN 21 FT. IN HEIGHT (FOR ROADWAY LUMINAIRE ATTACHMENT) SHALL INCLUDE A HAND HOLD WITHIN 12 INCHES OF MAST ARM(S) ATTACHMENT(S).

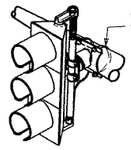
6. POLE/MAST ARM TAPER AND SLOPE - AVERAGE TAPER OF SIGNAL ARMS AND POLE SHALL BE 0.125 TO 0.15 INCHES PER FT.

MAST ARM CENTERLINE ANGLE AT ATTACHMENT POINT WITH POLE SHALL MAINTAIN NOT LESS THAN 0.5 DEGREES OR MORE THAN 4 DEGREES POSITIVE SLOPE WITH A LINE PERPENDICULAR TO THE POLE CENTERLINE. THE ARM SHALL MAINTAIN A POSITIVE AFTER IT IS PLACED UNDER LOAD.

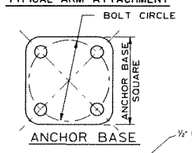
7. NUT COVERS - EACH POLE SHALL INCLUDE A BOLT DOWN NUT COVER FOR EACH ANCHOR BOLT.



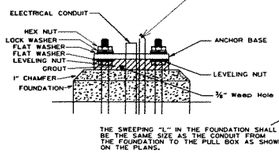
TYPICAL ARM ATTACHMENT

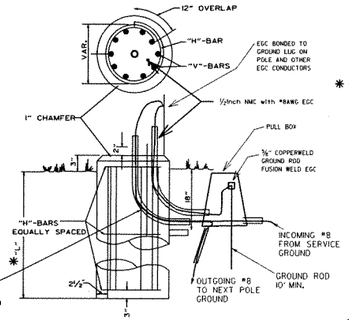


NOTE: THE SIGNAL SHALL BE CONNECTED TO THE MAST ARM BY BRACKETING AS DIRECTED BY THE ENGINEER.



ANCHOR BASE



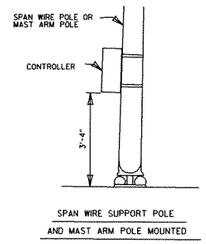


THE GROUND ROD SHALL BE FUSION WELDED TO A 1C/#8 A.W.G. SOLID COPPER GROUND WIRE. ATTACHMENT TO THE PRIMARY GROUND MAY BE BY AN APPROVED CLAMP. THE ROD IS TO BE LOCATED IN THE CONCRETE PULL BOX.

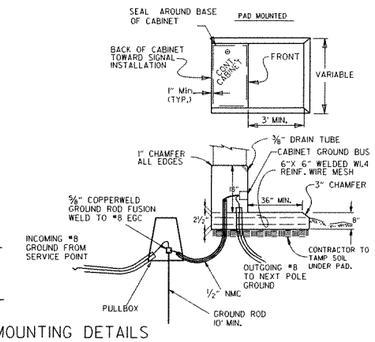
TYPICAL FOUNDATION DETAILS

POLE FOUNDATION MINIMUM DIMENSIONS AND STEEL REINFORCING. ALL REINFORCING STEEL SHALL BE GRADE 40 MIN.

ARM LENGTH	FDN. DIAMETER	DEPTH "L" *	STEEL VERT.	STEEL HORZ.	STEEL C/C.
PED	30"	7'-0"	12-#7 (6'-6")	10-#4	8.44"
2' to 12'	30"	10'-6"	12-#7 (10'-0")	15-#4	8.42"
over 12' to 20'	30"	11'-6"	12-#7 (11'-0")	16-#4	8.66"
over 20' to 35'	36"	12'-6"	13-#8 (12'-0")	17-#4	8.88"
over 35' to 50'	36"	13'-6"	13-#8 (13'-0")	19-#4	8.56"
over 50' to 72'	42"	14'-6"	18-#8 (14'-0")	20-#4	8.74"
Twins to 20'	30"	16'-0"	12-#6 (15'-6")	22-#4	8.76"
Twins over 20' to 44'	36"	16'-0"	13-#8 (15'-6")	22-#4	8.76"
Twins over 44' to 50'	42"	16'-0"	18-#8 (15'-6")	22-#4	8.76"
Twins over 50' to 72'	42"	16'-6"	18-#8 (16'-0")	23-#4	8.64"



SPAN WIRE SUPPORT POLE AND MAST ARM POLE MOUNTED



CONTROLLER CABINET MOUNTING 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.

8. GROUND ROD - A 10' X 5/8" GROUND ROD SHALL BE INSTALLED IN THE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND 1/2" NMC SHALL BE INCLUDED IN ITEM 714 FOR SIGNAL POLES AND ITEM 701 FOR THE CONTROLLER. THE PULL BOX AND CONDUCTOR BOX SHALL BE PAID FOR SEPARATELY.

9. POLE BASE/FOUNDATION - ANCHOR BOLTS SHALL INCLUDE AS A MINIMUM, ONE LEVELING NUT, TWO FLAT WASHERS, ONE LOCK WASHER, AND ONE HEX. NUT. PERIMETER OF ANCHOR BASE SHALL BE GROUTED WITH A 1/4" WEEP HOLE. ALL CONCRETE SHALL BE CLASS "S" OR GREATER.

10. CONCRETE - ALL CONCRETE FOR CONTROLLER CABINET AND POLE FOUNDATIONS SHALL BE CLASS "S" OR GREATER.

11. PEDESTRIAN PHASES - PEDESTRIAN MOVEMENTS SHALL BE PUSH BUTTON ACTUATED AND CONCURRENTLY TIMED, UNLESS OTHERWISE INDICATED ON THE PLAN SHEET(S). FURNISHING AND INSTALLING PED PUSH SWITCH SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM PEDESTRIAN SIGNAL HEAD.

SIGNAL OPERATION NOTES:

FLASHING OPERATION - PRIOR TO NORMAL OPERATION, SIGNAL SHALL BE FLASHED FOR A PERIOD OF 3 TO 5 WORK DAYS OR AS DIRECTED BY THE ENGINEER. 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 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.

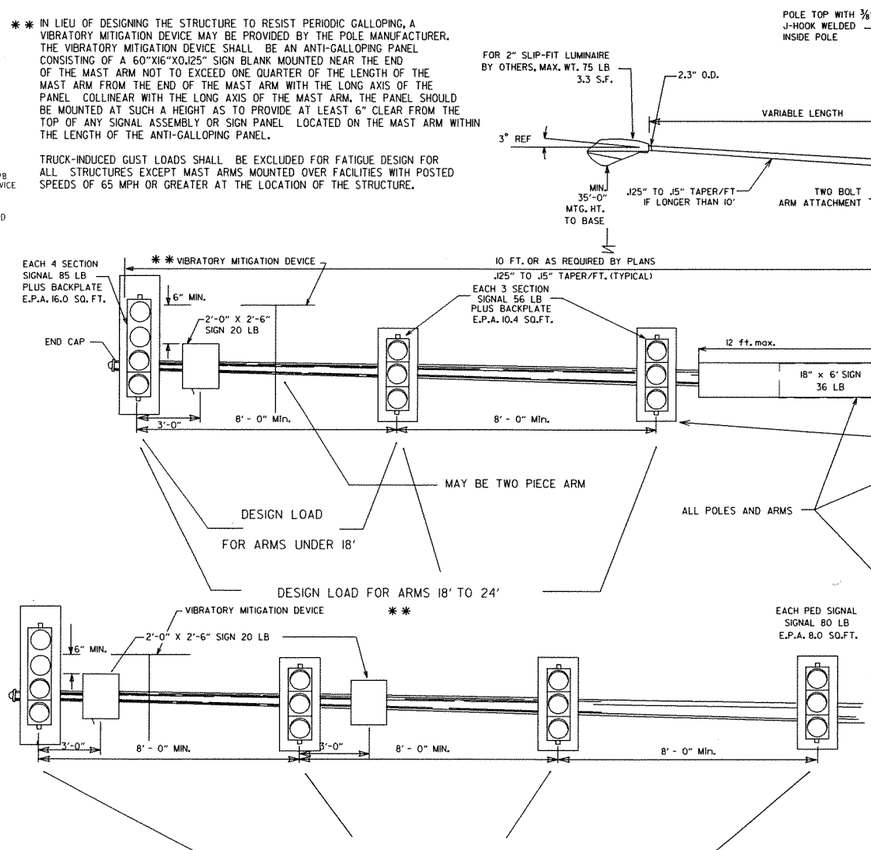
SPECIAL NOTE: 90 MPH WIND ZONE DESIGN, SEE NOTE 3. MINIMUM STRUCTURAL REQUIREMENTS.

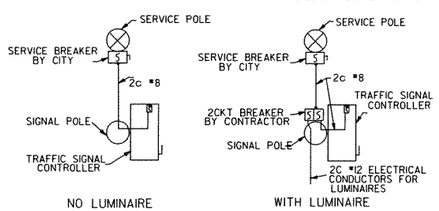
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
1-16-12

* WHEN THE GROUND ELEVATION AT THE POLE IS LOWER THAN THE ROADWAY ELEVATION, THE LENGTH OF FOUNDATION ABOVE THE GROUND MAY BE INCREASED TO PROVIDE THE REQUIRED SIGNAL HEAD CLEARANCE ABOVE THE ROADWAY. WHEN THE REQUIRED LENGTH OF FOUNDATION ABOVE THE GROUND IS 18" OR LESS, NO INCREASE IN DEPTH "L" WILL BE REQUIRED. WHEN THE REQUIRED LENGTH OF FOUNDATION ABOVE THE GROUND IS 5'-6" OR LESS, INCREASE DEPTH "L" BY 1'-0". FOR LENGTHS GREATER THAN 5'-6", DEPTH "L" SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER. LONGITUDINAL REINFORCING, AS SHOWN IN THE TABLE, SHALL BE PROVIDED FOR THE LENGTH OF THE EXTENDED SHAFT AND #4 TIES SHALL BE PROVIDED AT A SPACING NOT TO EXCEED 9" ON CENTERS. PAYMENT WILL BE IN ACCORDANCE WITH SECTION 714 OF THE STANDARD SPECIFICATIONS.

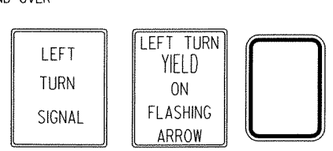
** IN LIEU OF DESIGNING THE STRUCTURE TO RESIST PERIODIC GALLOPING, A VIBRATORY MITIGATION DEVICE MAY BE PROVIDED BY THE POLE MANUFACTURER. THE VIBRATORY MITIGATION DEVICE SHALL BE AN ANTI-GALLOPING PANEL CONSISTING OF A 60"X16"X0.125" SIGN BLANK MOUNTED NEAR THE END OF THE MAST ARM NOT TO EXCEED ONE QUARTER OF THE LENGTH OF THE MAST ARM FROM THE END OF THE MAST ARM WITH THE LONG AXIS OF THE PANEL COLLINEAR WITH THE LONG AXIS OF THE MAST ARM. THE PANEL SHOULD BE MOUNTED AT SUCH A HEIGHT AS TO PROVIDE AT LEAST 6" CLEAR FROM THE TOP OF ANY SIGNAL ASSEMBLY OR SIGN PANEL LOCATED ON THE MAST ARM WITHIN THE LENGTH OF THE ANTI-GALLOPING PANEL.

TRUCK-INDUCED GUST LOADS SHALL BE EXCLUDED FOR FATIGUE DESIGN FOR ALL STRUCTURES EXCEPT MAST ARMS MOUNTED OVER FACILITIES WITH POSTED SPEEDS OF 65 MPH OR GREATER AT THE LOCATION OF THE STRUCTURE.





SERVICE DISCONNECT



DATE	REVISION	DATE FILM
7-21-11	REVISED VMD, SIGNAL HEADS	
5-21-09	REVISED GROUNDING	
7-30-08	REVISED GROUNDING	
4-25-08	ADDED VIBRATORY MITIGATION DEVICE & NOTES	
4-18-08	REVISED AASHTO NOTES	
4-17-08	REVISED TO 2001 AASHTO STANDARDS	
10-12-04	REVISED CABINET ORIENTATION	
6-23-04	REVISED	
5-11-04	REV. NOTE 3/AASHTO REQUIREMENTS	
6-11-01	REV. NOTES & POLE MAST ARM SLOPE	
4-11-01	REVISED POLE TAPERS	
4-25-00	REV. NOTES & SIGNAL HEAD PLACEMENT	
11-22-99	REVISED FOUNDATION DETAILS	
11-17-98	REVISED DETAILS AND NOTES	
11-21-95	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

SIGNALIZATION DETAILS
(Steel Pole With Mast Arm)

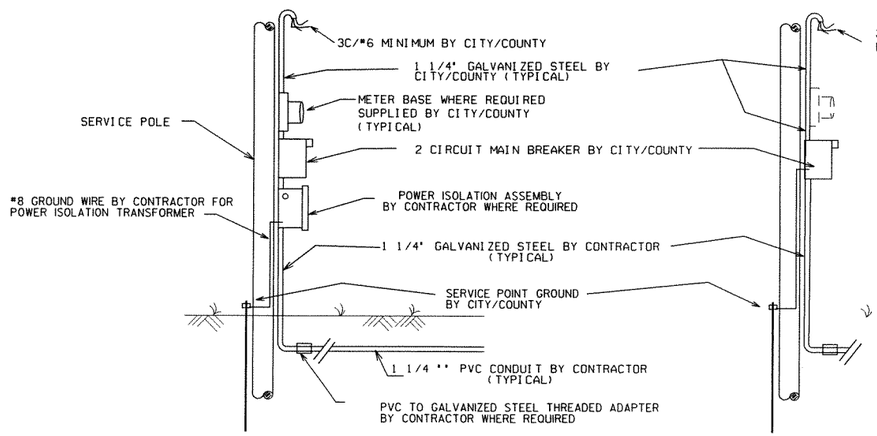
6-2-11
stdsd11.dgn

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.		030393	23	35

(2) SIGNALIZATION DETAILS

MAIN BREAKER NOT NEAR CONTROLLER CABINET SECONDARY REQUIRED

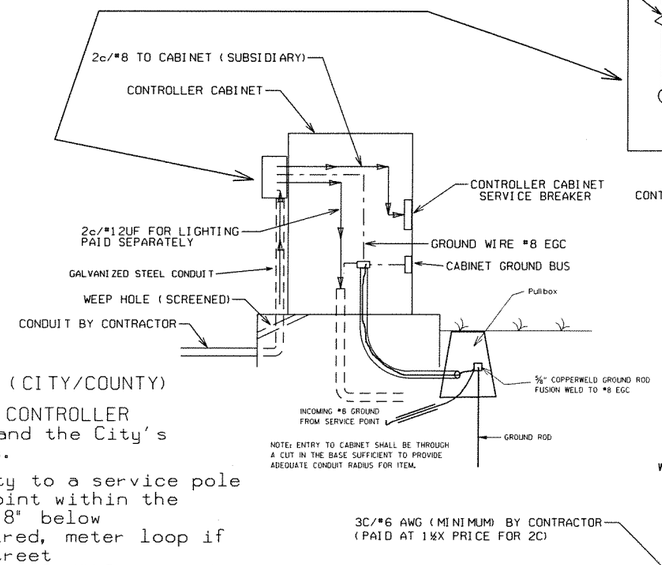
WITH POWER ISOLATION ASSEMBLY

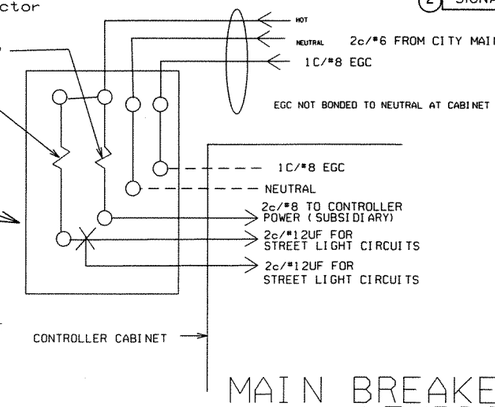


WITHOUT POWER ISOLATION ASSEMBLY

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)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
1-16-12

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.

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

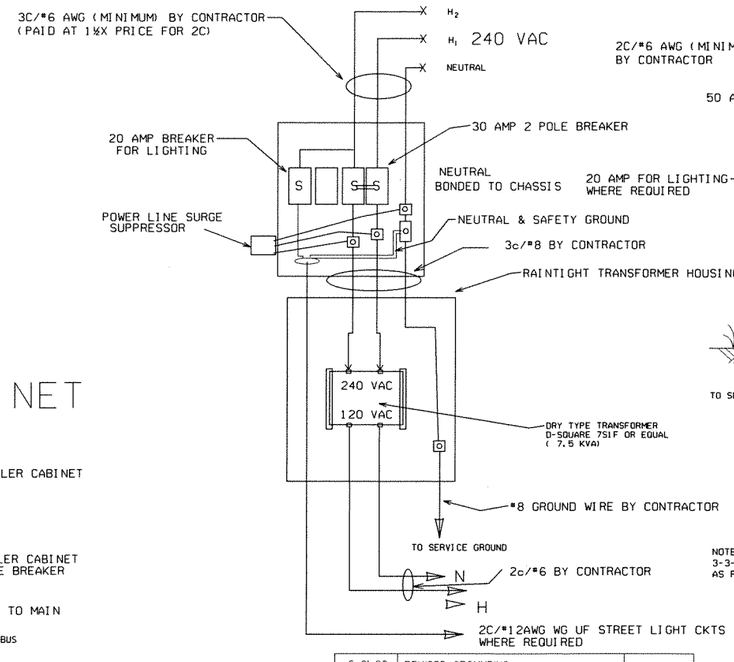
Electrical service typically falls into two categories: MAIN BREAKER NEAR CONTROLLER CABINET; and MAIN BREAKER NOT NEAR CONTROLLER CABINET. The Contractor's and the City's or County's responsibility varies accordingly as indicated on these details.

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, 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.

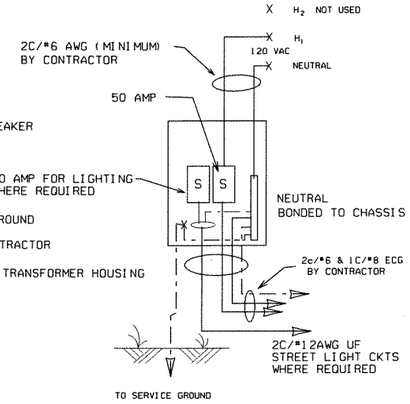
2. MAIN BREAKER NOT NEAR CONTROLLER CABINET: The Main Breaker assembly, galvanized steel conduit, weatherhead and wire above Main Breaker and connection to the utility shall be provided by City/County. Contractor shall provide as part of contract Secondary Breaker, conduit, wire and wiring to the Main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

WITH POWER ISOLATION ASSEMBLY 4 CIRCUIT MAIN BREAKER

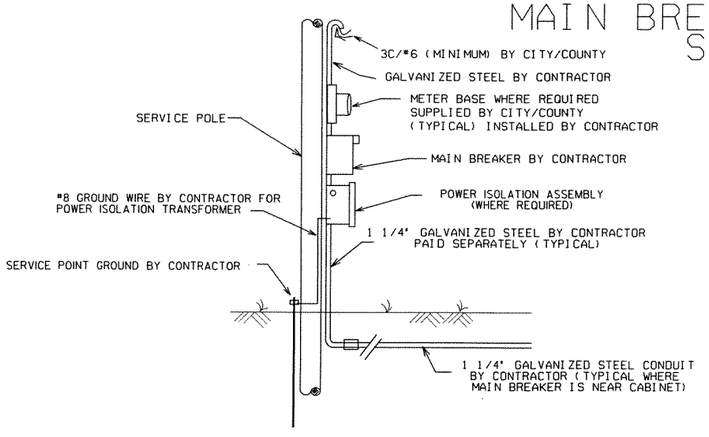


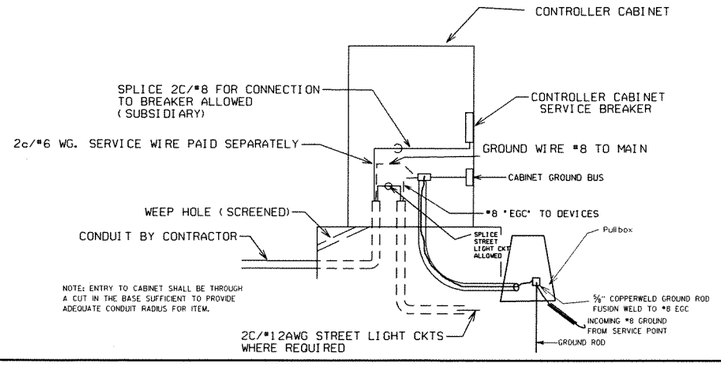
WITHOUT POWER ISOLATION ASSEMBLY 2 CIRCUIT MAIN BREAKER



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	REVISION	DATE FILM
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

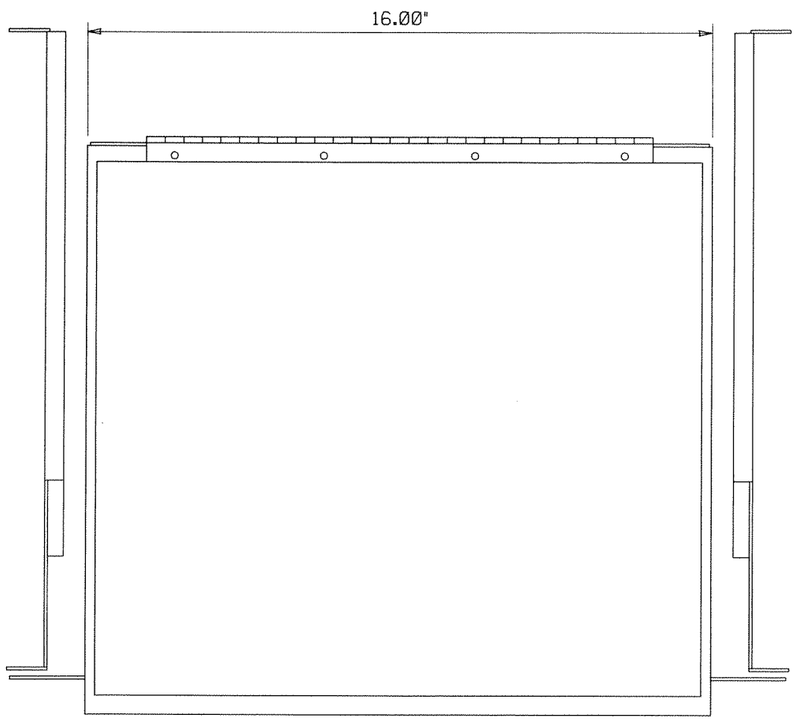
SIGNALIZATION DETAIL (Service Point)

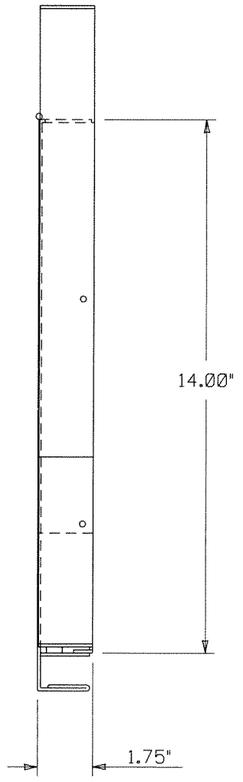
stdsd9.dgn

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.		030393	24	35

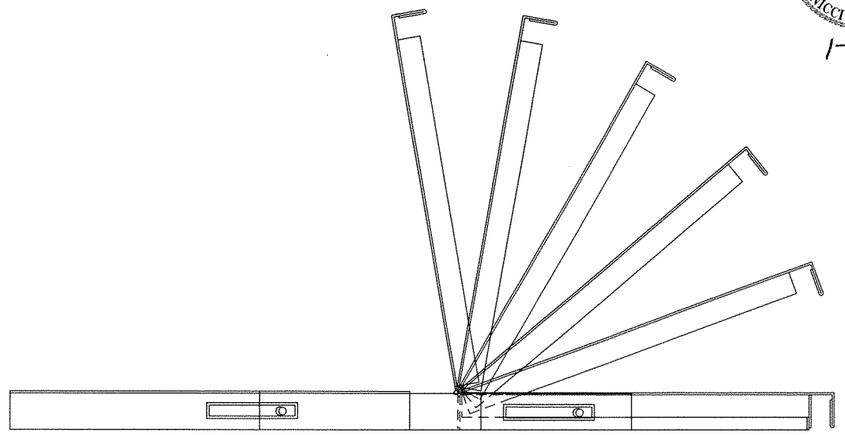
(2) SIGNALIZATION DETAILS

DRAWER PLAN VIEW

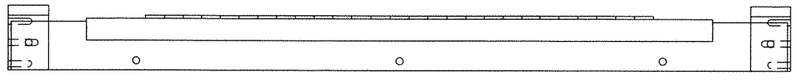




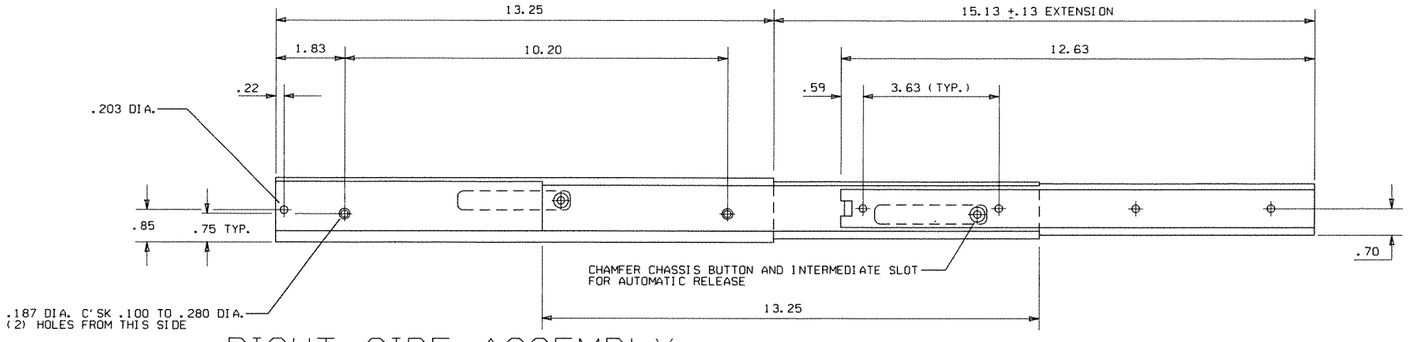
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
1-16-12



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

stdsd5.dgn

6-15-05	ISSUED	
DATE	REVISION	DATE FILM

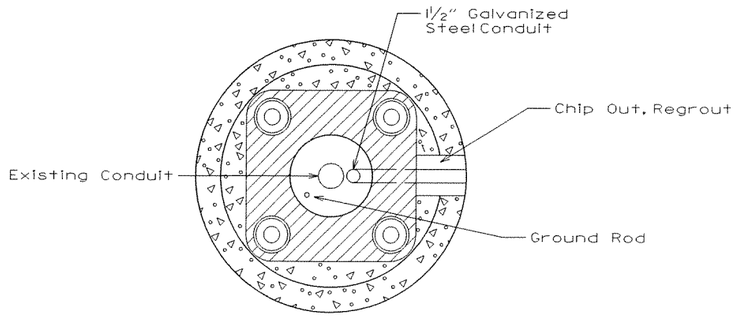
ARKANSAS STATE HIGHWAY COMMISSION

SIGNALIZATION DETAIL
(Controller Cabinet Utility Drawer)

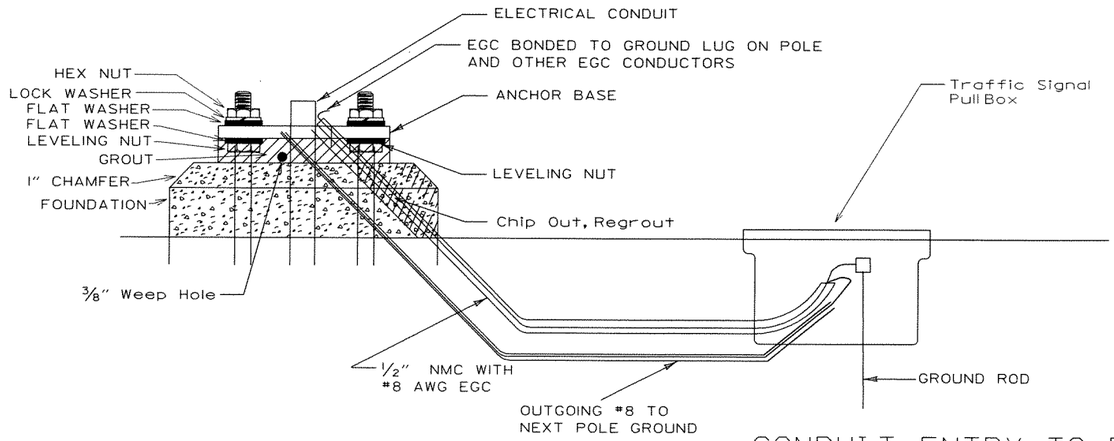
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030393	25	35

(2) SIGNALIZATION DETAILS

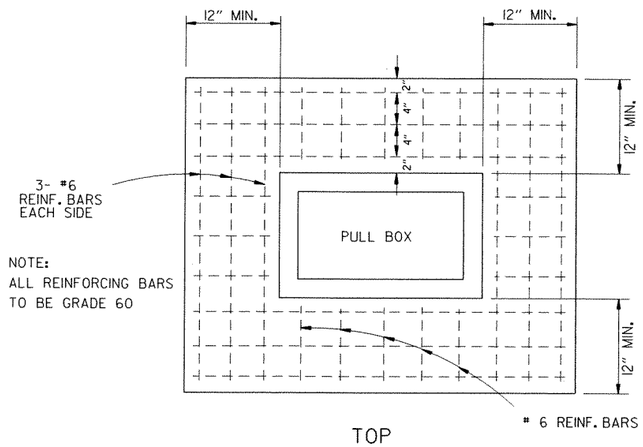
CONDUIT ENTRY TO EXISTING POLE BASE



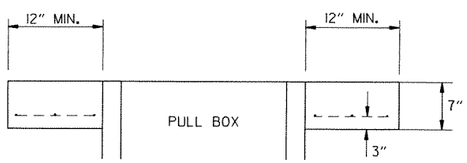
ANCHOR BASE



CONDUIT ENTRY TO EXISTING CONTROLLER CABINET

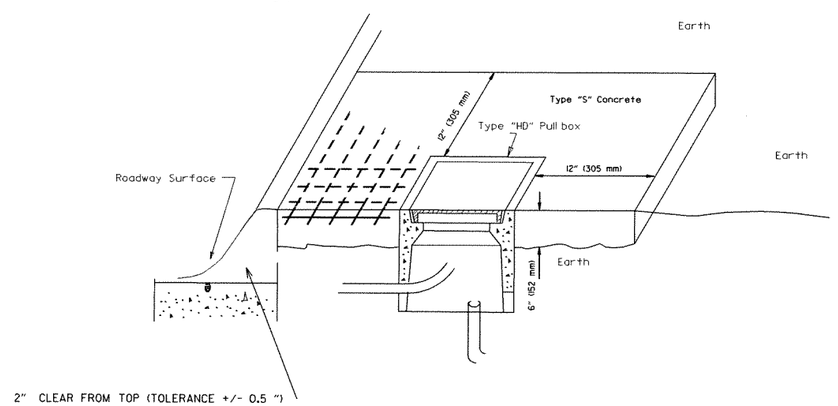


TOP

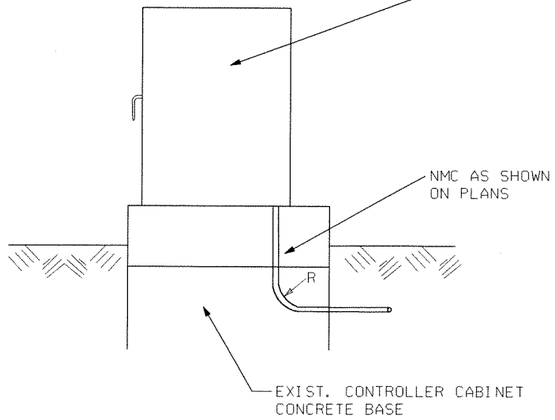


ELEVATION

Type "HD" Concrete Pull Box Detail



Note: All Type 1 and Type 2 HD pullboxes are installed with an apron of concrete 12" (305 mm) wide and 6" (152 mm) in depth. All payment shall be included in the price of the Type HD pullbox. Pullbox shall be installed flush to surrounding grade unless otherwise instructed by the engineer. The concrete shall be Class "S." Three #6 reinforcing bars in the apron on all sides of the pullbox is required in concrete.



NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
1-16-12

DATE	REVISION	DATE FILM
5-21-09	REVISED GROUNDING	
7-31-08	ADDED & REVISED CONDUIT ENTRY	
6-23-04	REVISED CLEARANCE AT CURB ENTRY	
1-4-02	ADDED REINFORCING TO BOX APRON	
7-2-01	REVISED	
12-27-99	REVISED NOTES	
11-18-98	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

SIGNALIZATION DETAIL
(Heavy Duty Pull Box)

stdsd6.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.		030393	26	35

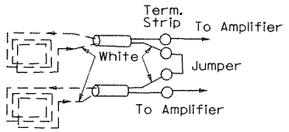
(2) SIGNALIZATION DETAILS

LOOP DETECTOR INSTALLATION AND TESTING

NOTES:

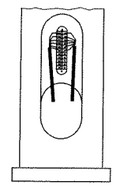
1. Loops with a perimeter greater than 40' shall have two turns. Loops with a perimeter less than or equal to 40' shall have three turns, unless otherwise noted on the plans. Quadrupole loops shall be two turns (2-4-2 configuration) unless otherwise noted.
2. Loop and feeder wire shall be continuous without splices except at the loop/feeder wire splice as shown. Splice shall be rosin soldered and waterproofed with an accepted splice kit. Drain wire shall be grounded in cabinet and insulated at loop to feeder splice.
3. The loop to feeder splice, feeder jacket and jacket of loop wire in duct shall be completely sealed and waterproofed.
4. Contractor may make connections to signal cable and loop to feeder connection at terminal strips mounted to pole inside hand hold cover as shown in detail. Terminals must be easily accessible, but protected against accidental contact. Connection of power carrying circuits must be separated from loop or logic circuits. All connections to terminal strips
* shall utilize spade lugs or as approved by the Engineer.
5. Each loop shall have a separate "feeder wire" unless otherwise noted. All feeder wires shall be labeled as to loop number as designated on the plans.
6. All loop wire entering pull boxes shall be enclosed in conduit. Each loop wire shall enter pull box or pole base through a separate piece of one inch (1"Ø) conduit.
7. Loop wire from loop to conduit is not twisted. Loop wire in the conduit must be twisted two to five turns per foot.
8. Warranty period for loops shall not commence until tested by the contractor and accepted by the Engineer. Contractor shall perform test and provide a record to the Engineer as listed in the Detector Loop Testing procedure.
9. Unless otherwise approved by the Engineer, backer rod shall be installed in short sections spaced not more than 18" apart and wedged into slot to hold cable in place. Cable shall be totally encapsulated in sealer.
* 10. "Hot Pour" sealer shall not be allowed with 705-Loop Wiring In Duct.
11. Where underground splices of signal cable are required, connections shall be soldered and completely waterproofed to the satisfaction of the Engineer. Waterproofing shall extend a minimum of two inches past the signal cable jacket and shall completely cover all individual conductors of the signal cable. Waterproofing does not apply to connections made in pole bases.
12. Contractor shall connect a separate neutral for each load switch represented on each signal pole. Only one neutral is required for pedestrian signals. A separate 5c (typical) is provided for pedestrian push buttons.
13. 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 controller. Controller cabinet shall be wired such power to load switches cannot backfeed to load switch power buss during flash operation.

SERIES CONNECTED LOOPS

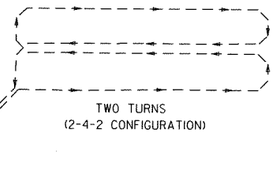


Wind loops counterclockwise; tag wire exiting slot and tie to white lead of feeder wire; when loops are tied to same vehicle detector, series connect in cabinet as shown.

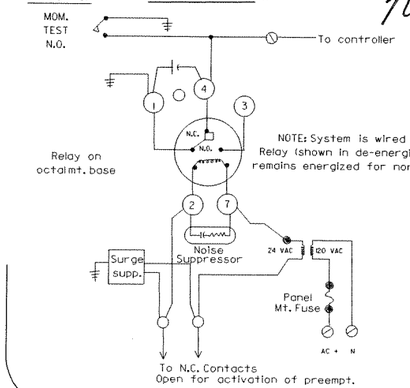
HANDHOLE TERMINAL



QUADRUPOLE LOOP

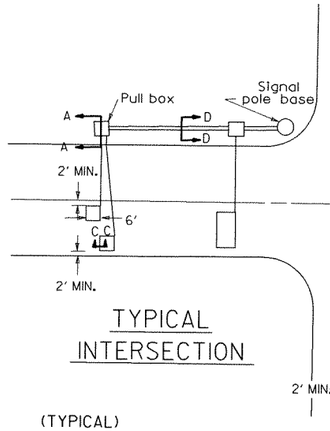


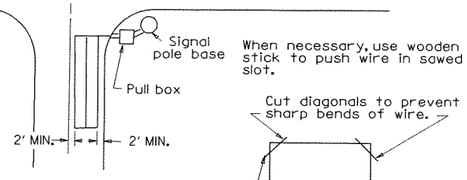
TRAFFIC SIGNAL PRE-EMPTION INTERFACE WIRING DIAGRAM



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
1-16-12

TYPICAL INTERSECTION





TYPICAL PROCEDURE FOR DETECTOR LOOP TESTING

(1) Disconnect and test continuity (< 10 ohms)
If continuity is bad, go to test 3

(2) Test insulation (@ 500 volt test > 10 Meg-ohm)

If tests 1& 2 are good, no further testing is necessary. Recorded results consist of tests 1& 2 from control cabinet with feeder wire connected to loop.

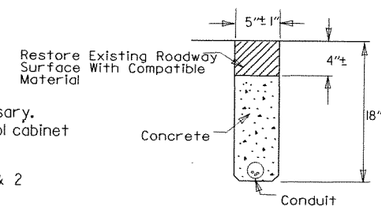
(3) Open splice (do not break connection) repeat test 1& 2
If test 3 is bad, go to test 4

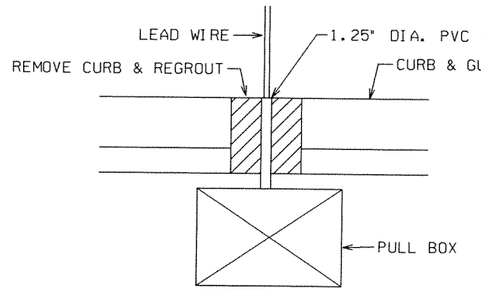
(4) Break splice, install jumper in cabinet, repeat tests 1& 2 separately for feeder and for loop

Failures typically result from broken wire in pavement, faulty insulation of loop or feeder wire, or poorly insulated splice connection.

TRENCHING DETAIL

(FOR SAW CUT TRENCH IN ROADWAY)





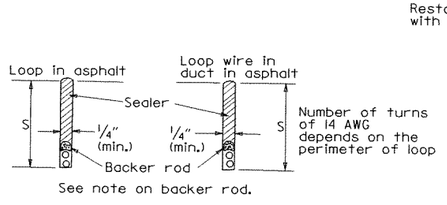
TYPICAL SECTIONS FOR PULSE AND PRESENCE LOOP DETECTORS

(TYPICAL)

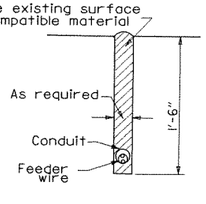
PREFORMS - SAW COMPLETELY THROUGH CURB

ALTERNATE - WHEN INSTALLING PREFORMS ON SUBSTRATE, LEAD-INS MAY BE INSTALLED IN CONDUIT UNDERNEATH THE CURB AND GUTTER.

SECTION A-A
1'-6" concrete combination curb and gutter



SECTION C-C
S=2½" in asphalt
S=1½" in concrete



SECTION D-D

SPECIAL NOTE
IF FEEDER WIRE JACKET IS LEFT UNSEALED and WATER IS ALLOWED TO ENTER JACKET, CONTRACTOR WILL BE REQUIRED TO REPLACE FEEDER AT NO COST TO THE DEPARTMENT.

DATE	REVISION	DATE FILM
5-17-01	REVISED	
4-11-01	REVISED	
2-4-00	REVISED PRE-EMPTION TEST SWITCH	
11-18-98	REVISED NOTES	
11-21-95	ISSUED	

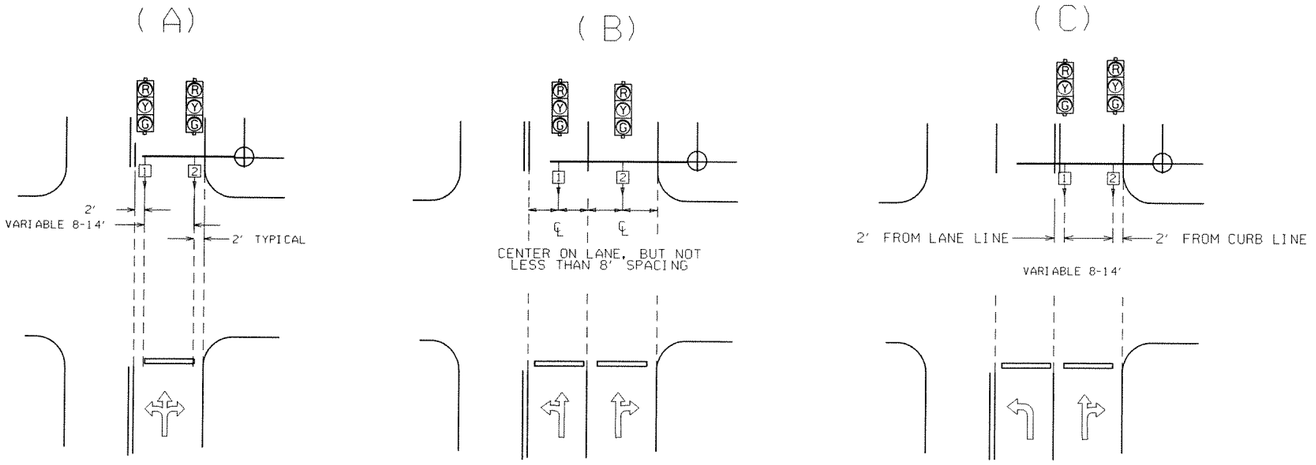
ARKANSAS STATE HIGHWAY COMMISSION

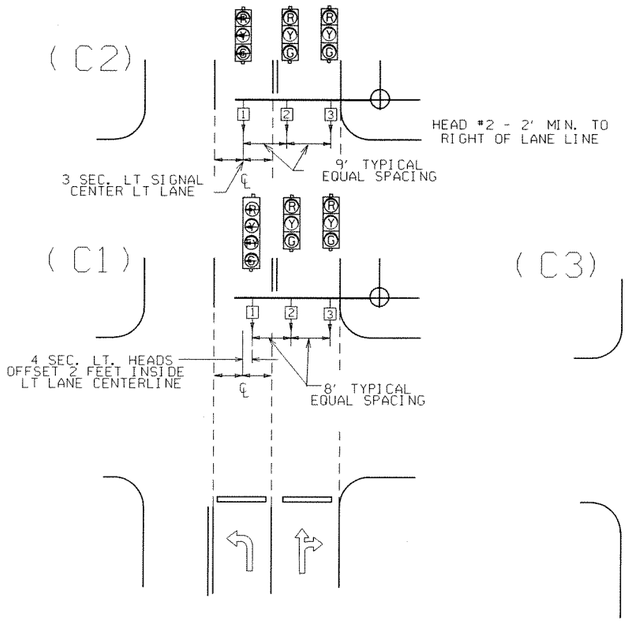
SIGNALIZATION DETAIL
(Loop Detector Installation)

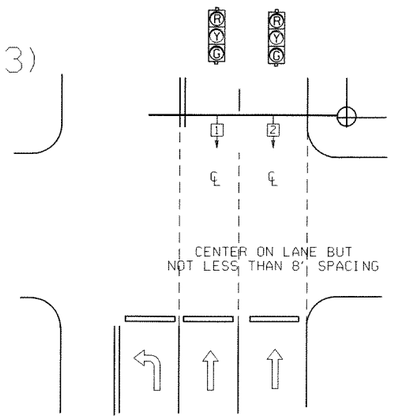
stdsd4.dgn

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.		030393	27	35

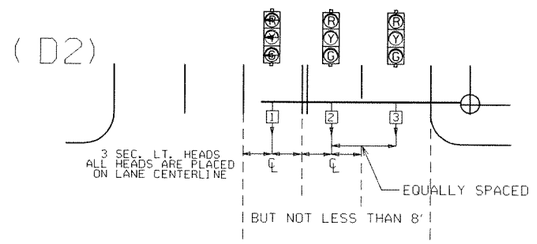
(2) SIGNALIZATION DETAILS

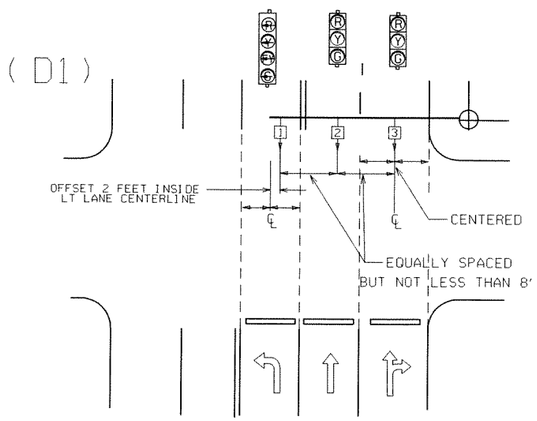




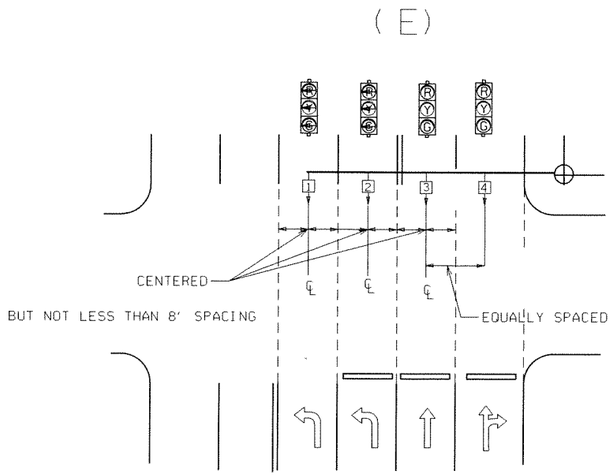


STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
1-16-12





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



℄ = 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.

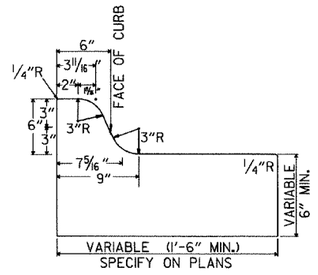
6. MAXIMUM MOUNTING HEIGHT OF SIGNAL FACES LOCATED BETWEEN 40 FEET AND 53 FEET FROM STOP BAR SHALL BE IN ACCORDANCE WITH FIGURE 4D-1 OF 2009 MUTCD.

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

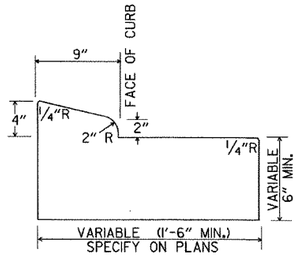
ARKANSAS STATE HIGHWAY COMMISSION

SIGNALIZATION DETAIL
(Signal Head Placement)

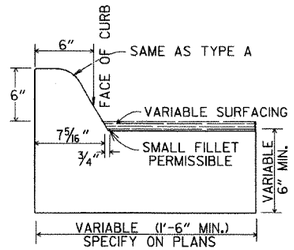
stdsd8.dgn



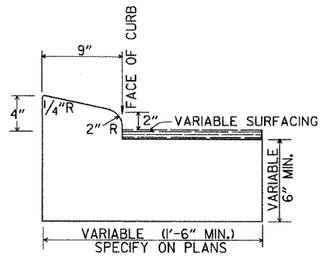
TYPE A



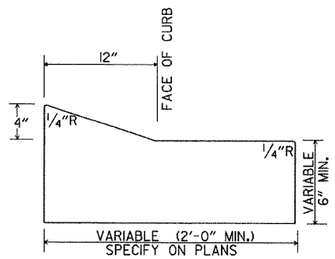
TYPE B-1



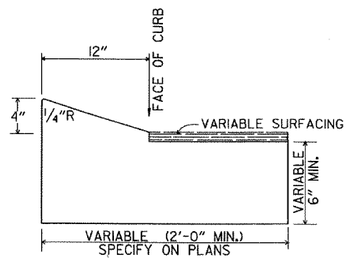
TYPE C



TYPE B-2

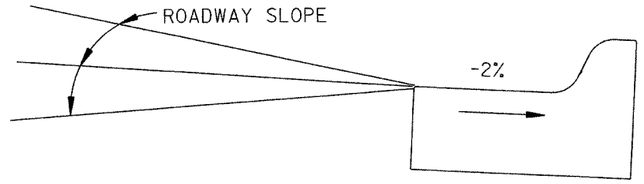


TYPE E-1



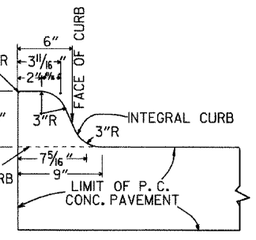
TYPE E-2

CONCRETE COMBINATION CURB AND GUTTER

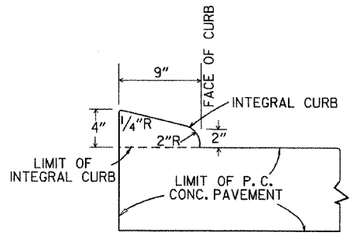


DETAIL OF GUTTER SLOPE

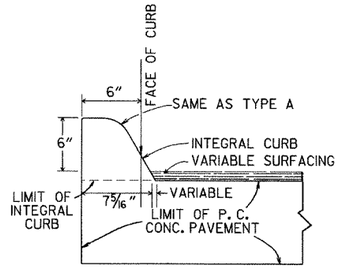
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

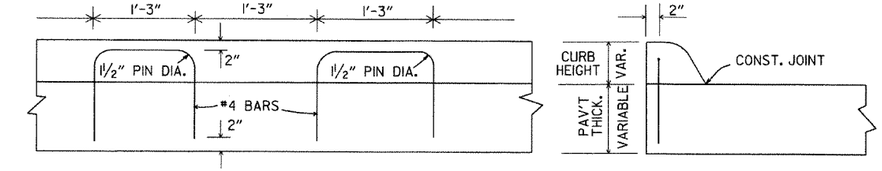


TYPE B

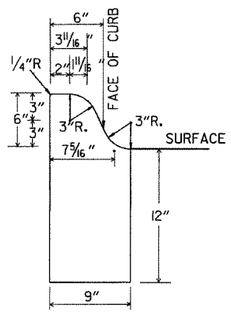


TYPE C

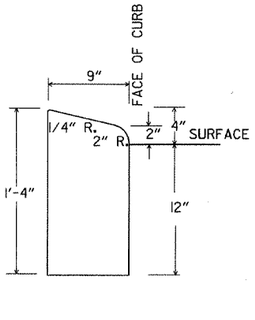
INTEGRAL CURB



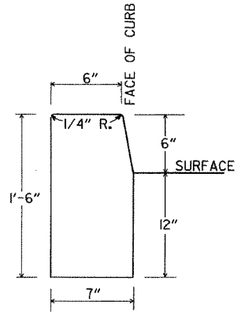
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



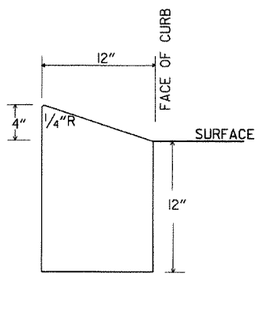
TYPE A



TYPE B

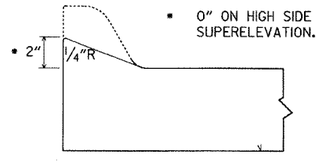


TYPE D



TYPE E

CONCRETE CURB



NOTE: USE MODIFIED CURB AS SPECIFIED ON STD. DR-1. COMPENSATION FOR MODIFIED CURB WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE TYPE OF CURB OR CURB AND GUTTER SPECIFIED.

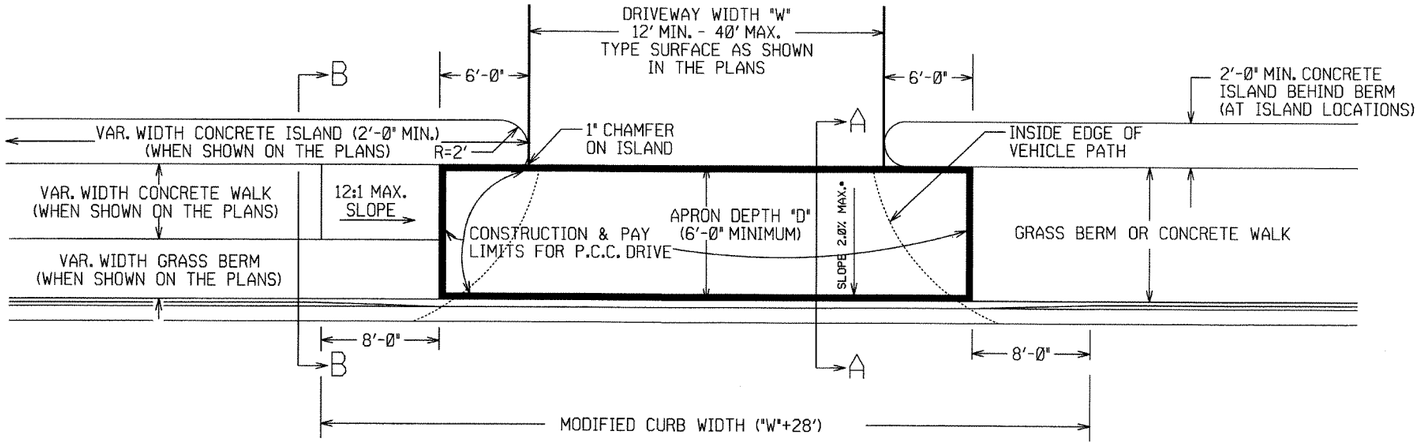
DETAILS OF MODIFIED CURB

DATE	REVISION	DATE FILMED
11-29-07	REVISED GUTTER SLOPE & MODIFIED CURB DETAILS	
11-10-05	ADDED DETAILS OF TYPE E CURBS	
11-16-01	REVISED CONCRETE CURB TYPE B	
11-18-98	REVISED MODIFIED CURB	
6-2-94	ADDED NOTE TO SPECIAL MODIFIED CURB	
8-5-93	CORRECTED GUTTER SLOPE	8-5-93
10-1-92	ADDED DETAILS OF GUTTER SLOPE	10-1-92
5-24-90	ADDED DETAILS OF MODIFIED CURB	5-24-90
11-30-89	VARIBLE DEPTH TYPE A & B	11-30-89
7-15-88	REVISED MODIFIED CURB	630-7-15-88
11-1-73	REVISED MODIFIED CURB	500-11-1-73
10-2-72	REVISED AND REDRAWN	512-10-2-72

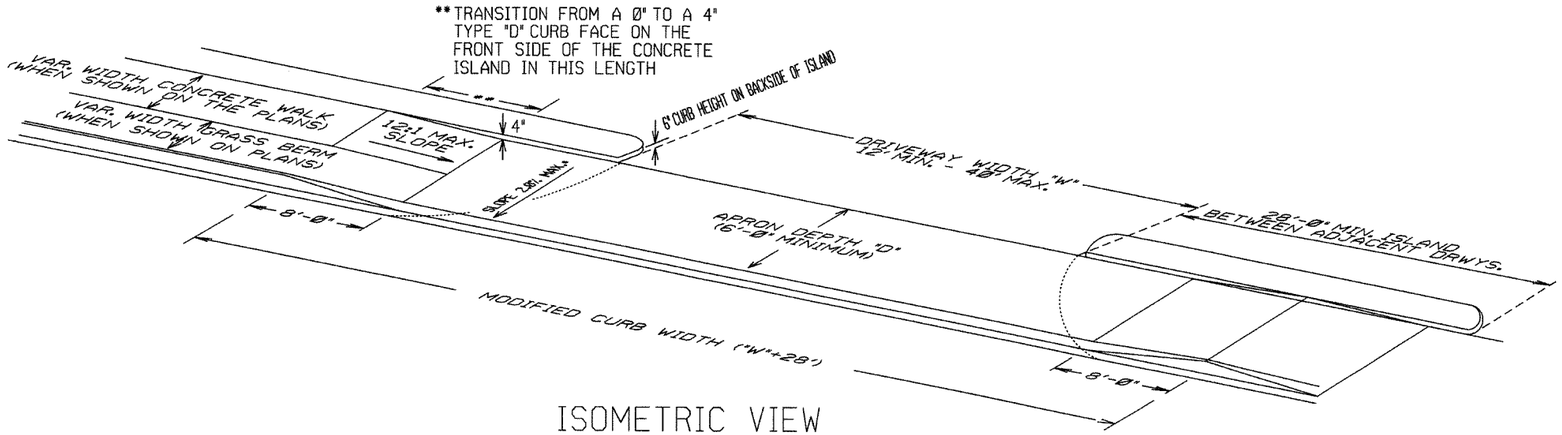
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

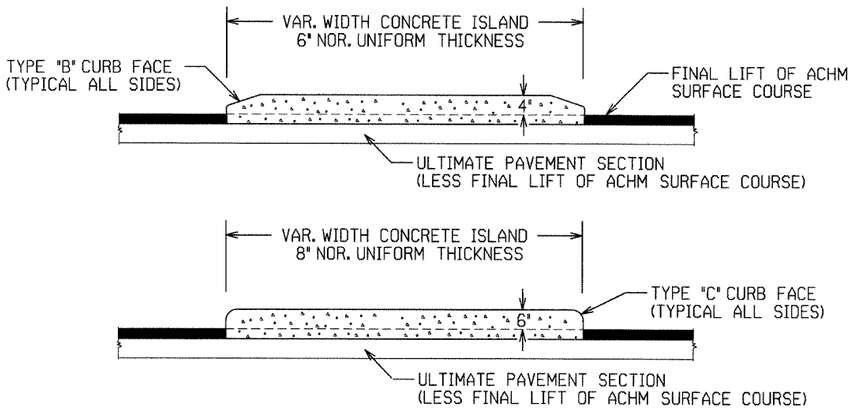
STANDARD DRAWING CG-1



PLAN VIEW

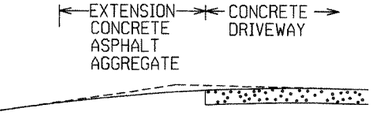


ISOMETRIC VIEW



CURBED ISLANDS FOR CHANNELIZATION

REFER TO PLANS FOR TYPE OF CURB FACE TO BE USED. NO DIRECT PAYMENT WILL BE MADE FOR THE CURB FACES SHOWN ON THE ISLAND DETAILS. PAYMENT FOR THE CURB FACE WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM "CONCRETE ISLAND".



EXTENSION TYPICAL SECTIONS

1: CONCRETE - 6" P.C. CONCRETE DRIVEWAY

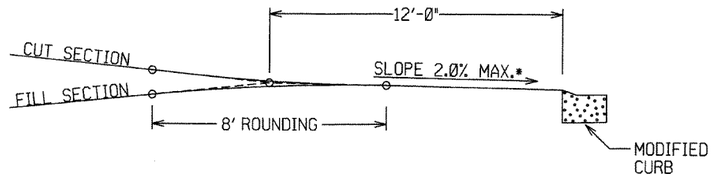
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE.(1") OR
4" ACHM BASE COURSE (1-1/2")

3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE

4: AGGREGATE - 6" AGGREGATE BASE COURSE

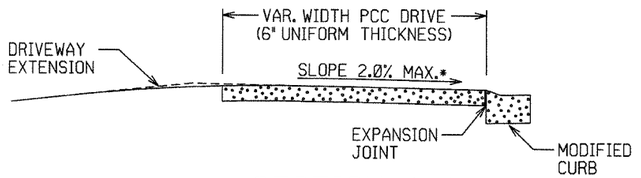
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

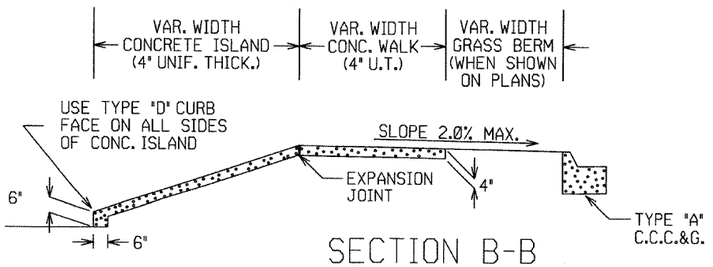


DRIVEWAY VERTICAL ALIGNMENT DETAILS

* NOTE: DRIVEWAYS MAY NOT BE SLOPED AWAY FROM THE ROADWAY UNLESS APPROVED BY THE ENGINEER.



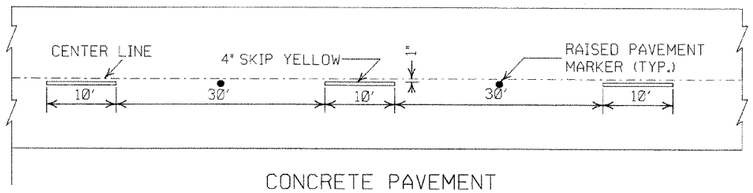
SECTION A-A



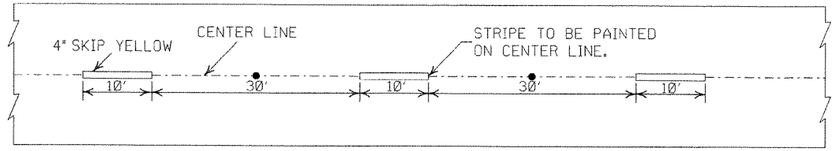
SECTION B-B
CURBED ISLAND BEHIND WALK

DATE REV	DATE FILMED	DESCRIPTION
11-29-07		ADDED CHANNELIZATION ISLAND WITH TYPE C CURB FACE & REVISED DRIVEWAY SLOPE NOTE & VERTICAL ALIGNMENT DETAIL
11-10-05		REV. APRON SLOPE & DEPTH OF AGG. BASE.
8-22-02		ADDED ISLAND DETAILS & NOTES
3-30-00		REV. MOD. CURB WIDTH & TRANS. NOTE
11-19-98		REVISED NOTES
11-18-98		REDRAWN AND REISSUED

ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF DRIVEWAYS & ISLANDS
STANDARD DRAWING DR-1

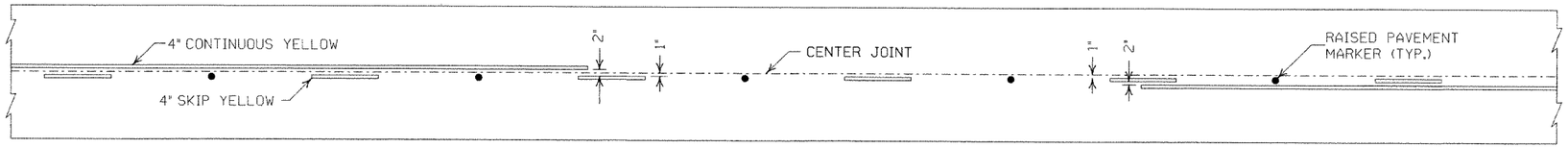


CONCRETE PAVEMENT

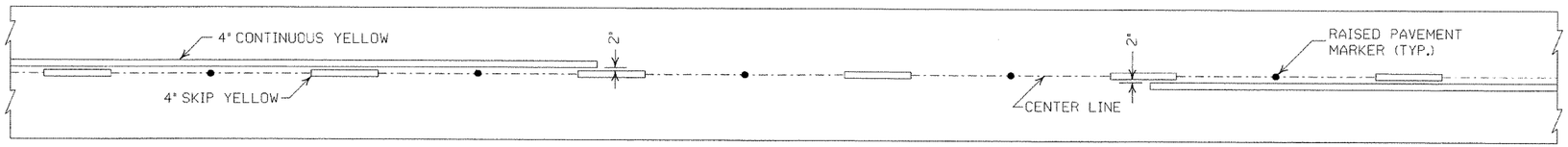


ASPHALT PAVEMENT

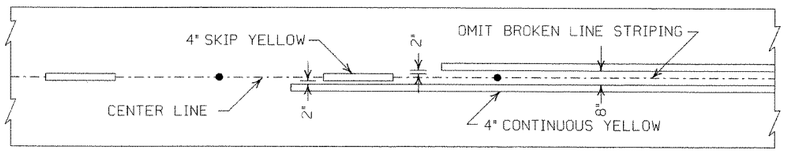
BROKEN LINE STRIPING



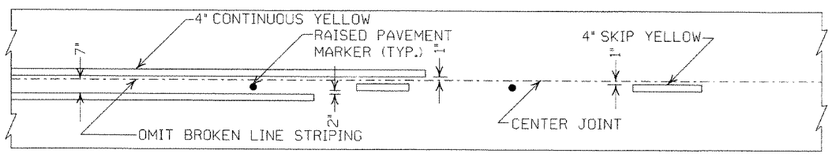
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

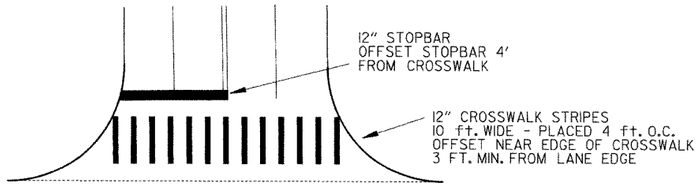


ASPHALT PAVEMENT



CONCRETE PAVEMENT

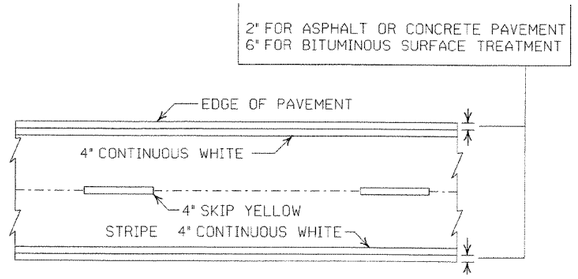
STRIPING AT ADJACENT NO PASSING LANES



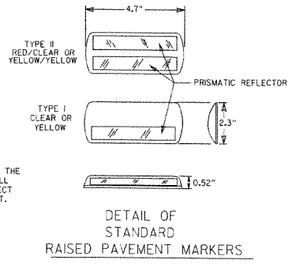
CROSSWALK AND STOPBAR DETAILS

NOTES:

1. ALL LINES SHALL HAVE A WIDTH OF 4 INCHES.
2. THE THICKNESS AND RATE OF PAINT APPLICATION SHALL BE AS SPECIFIED IN SECTION 718 OF THE STANDARD SPECIFICATIONS.
3. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
4. RAISED PAVEMENT MARKERS SHALL BE CENTERED BETWEEN SKIP LINES ON 40 FEET SPACING UNLESS OTHERWISE SHOWN ON THE PLANS.



PAVEMENT EDGE LINE MARKING



NOTE:
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

GENERAL NOTES:

THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND RAISED PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.

THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

NOTE:

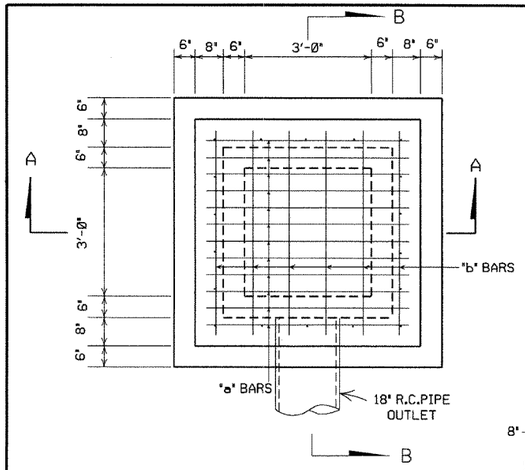
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.

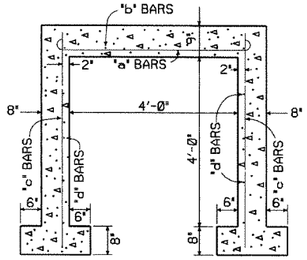
DATE	REVISION	FILMED
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80

ARKANSAS STATE HIGHWAY COMMISSION

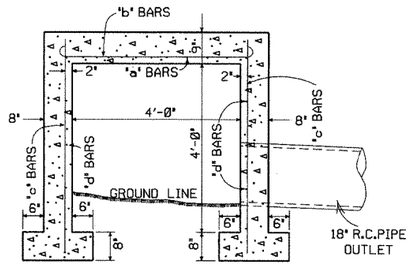
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1





SEC A-A

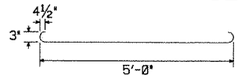


SEC B-B

STEEL SCHEDULE

BARS	NUMBER	LENGTH	SPACING
'a'	11	6'-0"	5"
'b'	6	6'-0"	10"
'c'	16	5'-1"	12"
'd'	16	5'-0"	12"

ALL STEEL TO BE #4 BARS



'a' & 'b' BARS

QUANTITIES

CONCRETE 3.40 CU. YDS.
REINFORCING STEEL 176 LB.

GENERAL NOTE:

THE PAY ITEMS FOR REINFORCED CONCRETE SPRING BOXES SHALL BE FOR THE QUANTITIES OF CONCRETE OF THE CLASS SPECIFIED, REINFORCING STEEL, EXCAVATION FOR STRUCTURES AND 18" R.C. PIPE CULVERT.

REINFORCED CONCRETE SPRING BOX

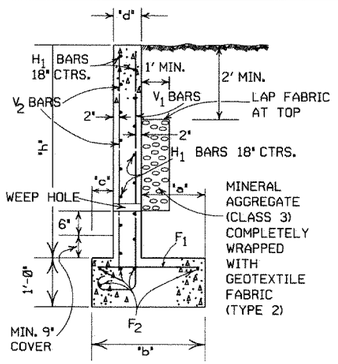
GENERAL NOTES

THE PAY ITEMS FOR THE CONSTRUCTION OF REINFORCED CONCRETE RETAINING WALL SHALL BE FOR THE QUANTITIES OF CONCRETE OF THE CLASS SPECIFIED, REINFORCING STEEL AND EXCAVATION FOR STRUCTURES.

MINERAL AGGREGATE WRAPPED WITH GEOTEXTILE FABRIC (CONTINUOUS) TO BE PLACED 1'-0" IN WIDTH AND 1'-0" IN HEIGHT AS A SUBSIDIARY ITEM TO THE VARIOUS PAY ITEMS.

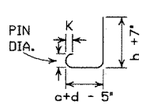
3" WEEP HOLES (MAX. SPACING 10'-0"CTRS.) TO BE PLACED WHERE SPECIFIED BY THE ENGINEER. THE CONTRACTOR WILL BE REQUIRED TO PLACE CONTRACTION JOINTS ON 20' CENTERS AND EXPANSION JOINTS ON 60' CENTERS.

ALL EXPOSED EDGES TO BE CHAMFERED ¾".



BENDING DIAGRAM

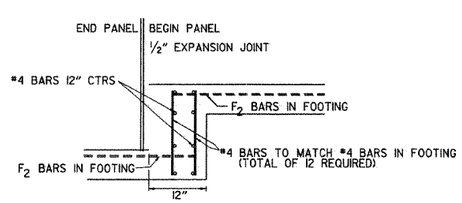
BAR SIZE	K	PIN DIA.
#4	4½"	2½"
#5	5"	3"



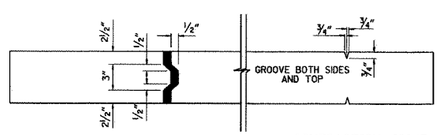
V1 BARS

STEEL SCHEDULE

'c'	'd'	'h'	'a'	'b'	V1 BARS SIZE	V1 BARS SPACING	F1 BARS SIZE	F1 BARS SPACING	H1 # 4 BARS SPAC.	V2 # 4 BARS SPAC.	F2 # 4 BARS NO. REQ'D.
8"	8"	1'-0"	8"	2'-0"	#4	12"	#4	18"	18"	18"	5
8"	8"	2'-0"	8"	2'-0"	#4	12"	#4	18"	18"	18"	5
8"	8"	3'-0"	8"	2'-0"	#4	12"	#4	18"	18"	18"	5
8"	8"	4'-0"	1'-2"	2'-6"	#4	12"	#4	12"	18"	18"	5
8"	8"	5'-0"	1'-8"	3'-0"	#4	9"	#4	9"	18"	18"	5
8"	8"	6'-0"	2'-2"	3'-6"	#4	6"	#4	6"	18"	18"	6
12"	8"	7'-0"	2'-4"	4'-0"	#4	8"	#4	8"	18"	18"	6
12"	8"	8'-0"	2'-10"	4'-6"	#4	6"	#4	6"	18"	18"	6
15"	10"	9'-0"	2'-11"	5'-0"	#4	5"	#4	5"	18"	18"	6
17"	10"	10'-0"	3'-3"	5'-6"	#5	6"	#5	6"	18"	18"	7



FOOTING STEPS

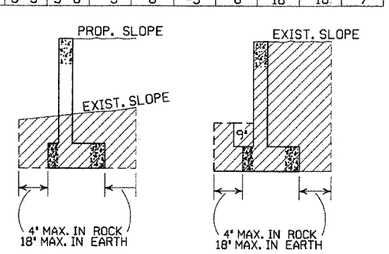


EXPANSION JOINT CONTRACTION JOINT

JOINT DETAILS

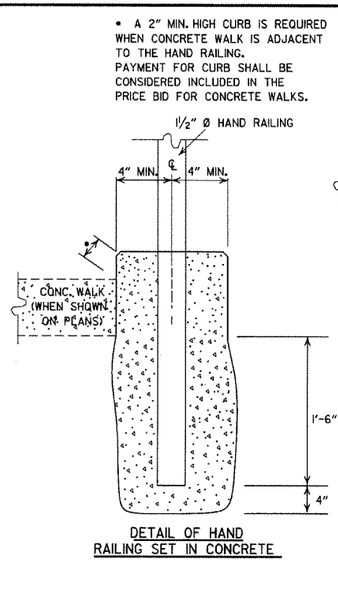
NOTE: JOINT MATERIAL SHALL BE PREFORMED MEETING THE REQUIREMENTS OF SUBSECTION 501.02(n) FOR TYPE 2

REINFORCED CONCRETE RETAINING WALL

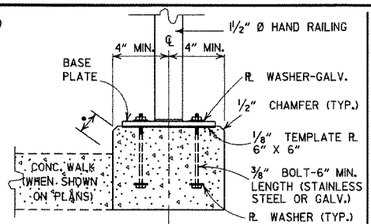


NOTE: HATCHED AREA DENOTES MAX. LIMITS OF EXCAVATION FOR STRUCTURES FOR RETAINING WALL.

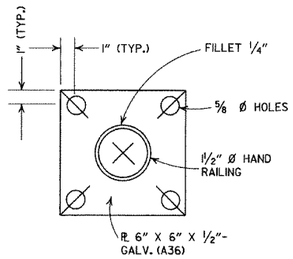
• A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.



DETAIL OF HAND RAILING SET IN CONCRETE

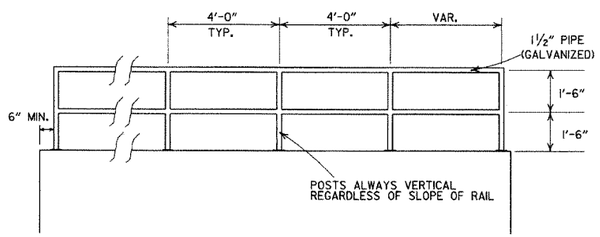


POST CONNECTION TO WALL

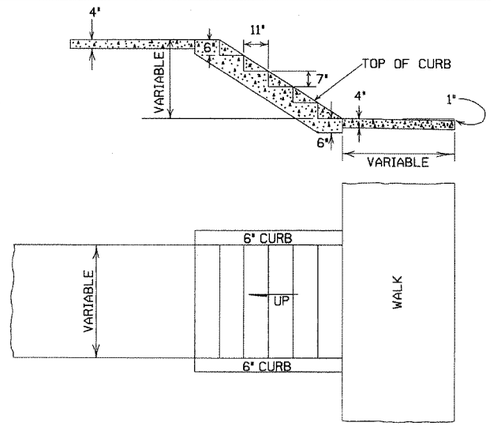


BASE PLATE

POST CONNECTION DETAILS



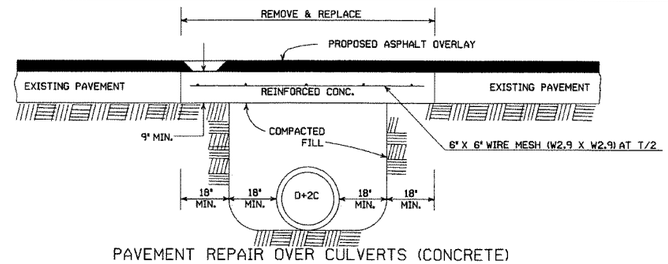
HAND RAILING DETAILS



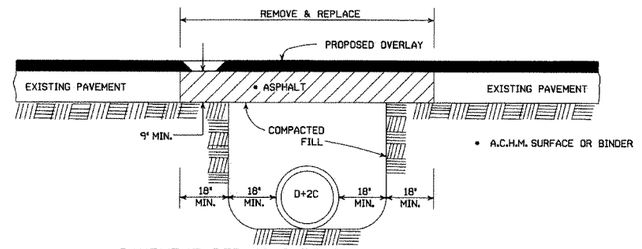
GENERAL NOTES

1. RISE AND TREAD DIMENSIONS OF STEPS MAY BE VARIED AS DIRECTED BY THE ENGINEER, HOWEVER, TREAD WIDTHS SHALL BE 11" MIN. ALL STEPS IN A FLIGHT SHALL HAVE CONSISTENT TREAD & RISER DIMENSIONS.
2. TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE WALKS AT 45' INTERVALS.

DETAILS OF CONCRETE STEPS & WALKS



PAVEMENT REPAIR OVER CULVERTS (CONCRETE)



PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

DATE	REVISION	DATE FILMED
5-25-06	REVISED PVMT REPAIR OVER CULVERTS (CONC); REVISED REINFORCED CONC SPRING BOX	
10-9-03	REVISED PIPE RAILING DETAILS TO HAND RAILING DETAILS	
4-10-03	REVISED RETAINING WALL DRAWING	
8-22-02	ADDED HAND RAILING DETAIL	
11-16-01	REVISED PVMT REPAIR OVER CULVERTS (CONC); CORRECTED SPELLING IN GENERAL NOTES	
11-18-98	ADDED GENERAL NOTES TO CONCRETE STEPS & WALKS	
7-02-98	ENLARGED PIPE	
4-03-97	ADDED NOTE TO STEEL BAR SCHED.	
10-18-96	CORRECTED SPELLING	
4-26-96	ADD WEEP HOLE;REV. JOINT SPACING IN RET. WALL	
6-2-94	CHANGED CONST. TO CONTRACTION JOINT	
10-1-92	CHANGED MESH FABRIC TO WIRE MESH	10-1-92
8-15-91	DELETED HDWL MODIFICATION DETAIL	8-15-91
11-8-90	DELETED COLD MIX FROM CULV'T. REPAIR	11-8-90
11-30-89	REV. RETAINING WALL STEEL SCHEDULE	11-30-89
11-17-88	V1 BARS BEHIND ARROW	665-11-17-88
7-15-88	REV. PAVEMENT REPAIR	649-7-15-88
	ADDED HDWL. MODS, DEL. PIPE UNDERDRAINS	
11-1-84	REV. TRENCH FOR PIPE UNDERDRAIN	510-11-1-84
1-4-83	ELIMINATED CONC. CLASS & ADDED CHAMFER NOTE	682-1-4-83
3-2-81	SPELLING OF "UNDERDRAIN"	721-3-2-81
4-20-79	REV. UNDERDRAIN DET.& PAVEMENT REPAIR	674-4-20-79
2-2-76	12"MIN. GRAN. MAT'L. OVER PIPE	919-2-2-76
4-10-75	REM. SPECS. FOR GRAN. MAT'L.	568-4-10-75-853
5-22-74	GRANULAR MAT'L. TO BE SB-3	567-5-22-74-740
10-2-72	REVISED AND REDRAWN	564-10-16-72

4-17-08	REV. JOINT & FOOTING STEP DETAILS
11-29-07	REVISED RETAINING WALL DRAINAGE

ARKANSAS STATE HIGHWAY COMMISSION

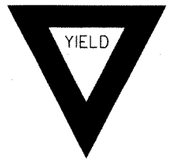
DETAILS OF SPECIAL ITEMS

STANDARD DRAWING SI - 1

R1-1

STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2



STD. 36"X36"X36"
EXPWY. 48"X48"X48"
FWY. 60"X60"X60"

R2-1

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R2-5A

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R2-5C

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-1

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

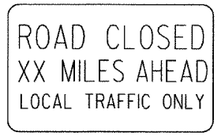
R5-1

STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

R11-2

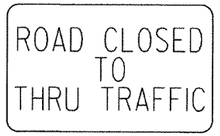
48"X30"

R11-3A



60"X30"

R11-4

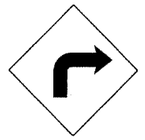


60"X30"

RSP-1

48"X30"

W1-1



STD. 36"X36"
FWY. 48"X48"

W1-2

STD. 36"X36"
FWY. 48"X48"

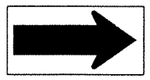
W1-3

STD. 48"X48"

W1-4

STD. 48"X48"

W1-6

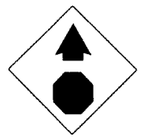


STD. 48"X24"
SPECIAL 60"X30"

W1-8

STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1

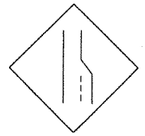


STD. 36"X36"
SPECIAL 48"X48"

W3-2

STD. 36"X36"
SPECIAL 48"X48"

W4-2



STD. 36"X36"
FWY. 48"X48"

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3

EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7

EXPWY. 36"X36"
FWY. 48"X48"

W9-2

STD. 36"X36"
FWY. 48"X48"

W13-1

STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

W20-7a

STD. 36"X36"
FWY. 48"X48"

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5

STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

W1-4b

STD. 48"X48"

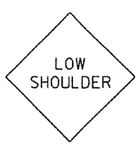
R56-1

STD. 18"X18"

W8-11

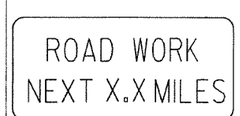
STD. 36"X36"
FWY. 48"X48"

W8-9



STD. 36"X36"
FWY. 48"X48"

G20-1



60"X24"

G20-2

48"X24"

OM-3L OM-3R

12"X36"

M4-9

STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

M4-10

48"X18"

R55-1

FINES DOUBLE
IN WORK ZONES *

WHEN WORKERS
ARE PRESENT **

36"X60"

* USE 6" C LETTERS
** USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

500 FT	1/2 MILE
1000 FT	3/4 MILE
1500 FT	1 MILE
	AHEAD

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

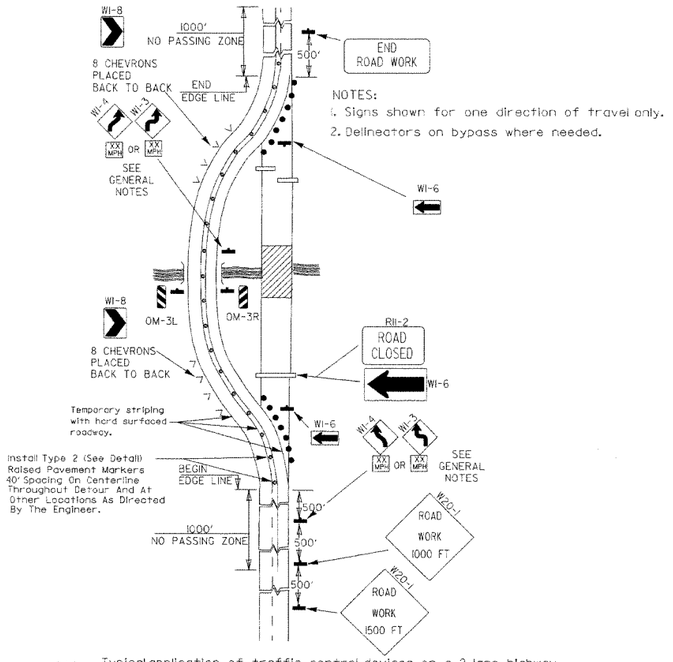
- NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

DATE	REVISION	FILMED
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

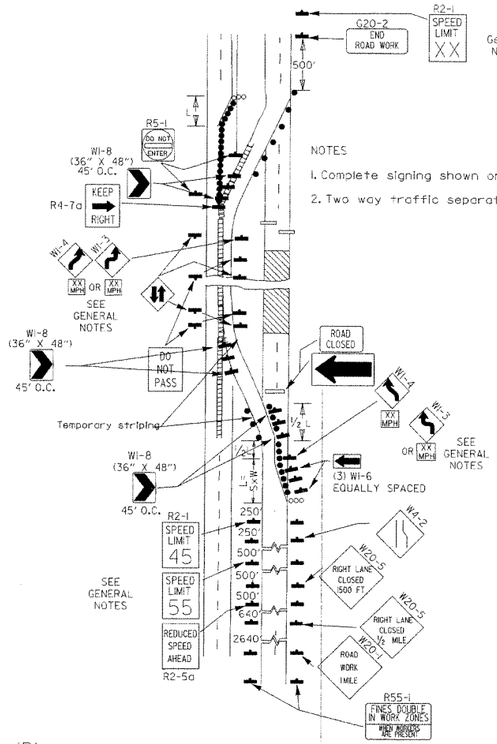
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



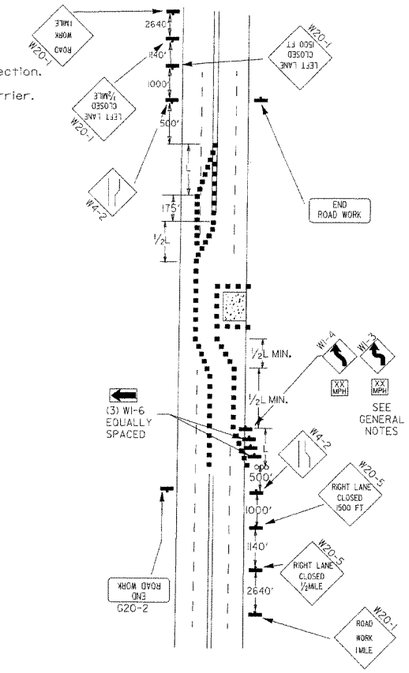
NOTES:
1. Signs shown for one direction of travel only.
2. Delineators on bypass where needed.

(A) Typical application of traffic control devices on a 2-lane highway where the entire roadway is closed and a bypass detour is provided.

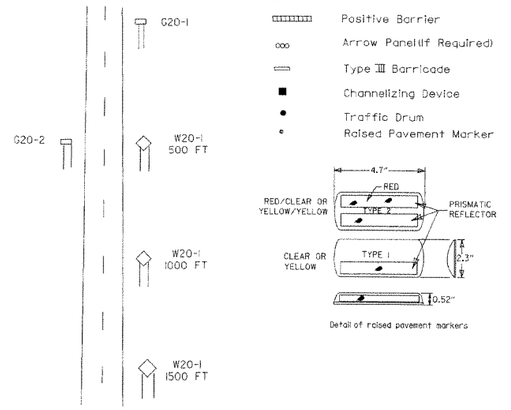


NOTES
1. Complete signing shown only in crossover direction.
2. Two way traffic separated with positive barrier.

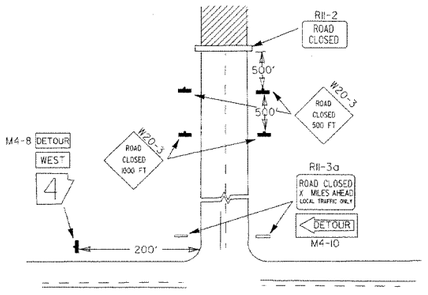
(B) Typical application - 4-lane divided roadway where one roadway is closed.



(C) Typical application - 4-lane undivided roadway where half of the roadway is closed.

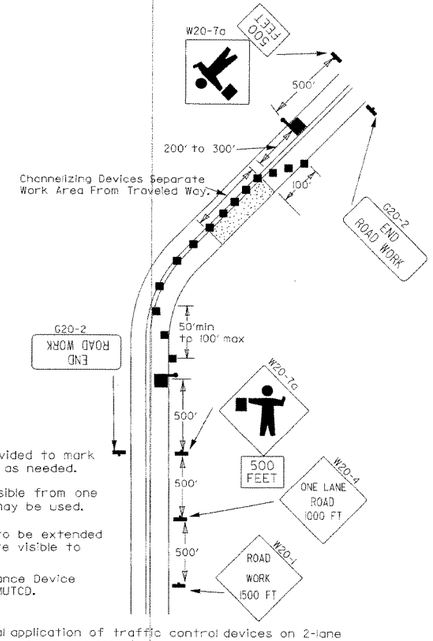


Typical advance warning sign placement



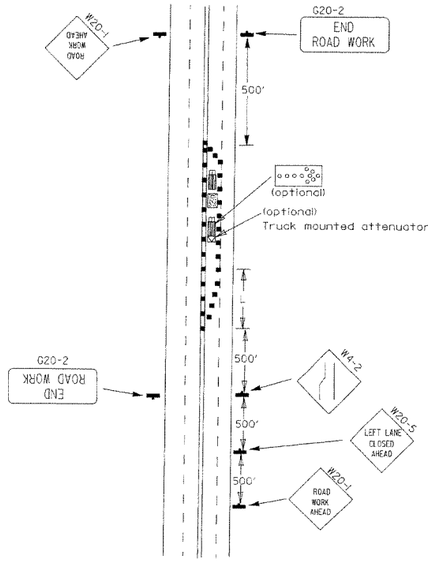
NOTES:
1. Regulatory traffic control devices to be modified as needed for the duration of the detour.
2. Street names may be used when desirable for directing detoured traffic.

(D) Typical application - roadway closed beyond detour point.



NOTES:
1. Flood lights should be provided to mark flagger stations at night as needed.
2. If entire work area is visible from one station, a single flagger may be used.
3. Channelizing devices are to be extended to a point where they are visible to approaching traffic.
4. Automated Flagger Assistance Device (AFAD) optional. Refer to MUTCD.

(E) Typical application of traffic control devices on 2-lane highway where one lane is closed and flagging is provided.



(F) Typical application - 4-lane undivided roadway with inside lane closed.

Taper formulae:

$L = SxW$ for speeds of 45mph or more.

$L = \frac{WS^2}{60}$ for speeds of 40mph or less.

Where:
L= Minimum length of taper.
S= Numerical value of posted speed limit prior to work or 85th percentile speed.
W= Width of offset.

GENERAL NOTES:

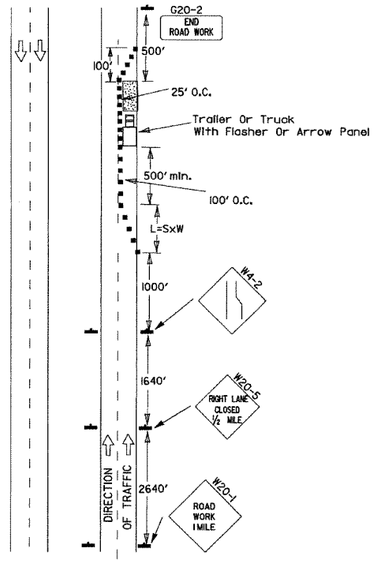
1. Advisory speed posted on WI-3 or WI-4 curve warning signs to be determined at site. Use WI-4 when speed is greater than 30mph and WI-3 when 30mph or less.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the R2-5A shall be installed at that location. Additional R2-1 45mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(xx) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-1 55mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(xx) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit, or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.

DATE	REVISION	FILMED
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON WI-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

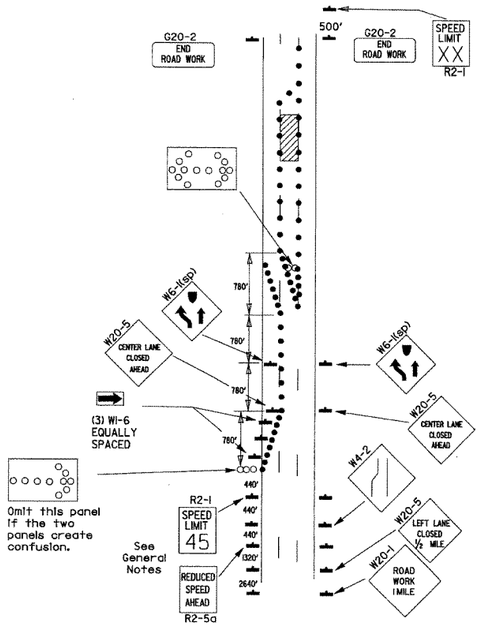
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

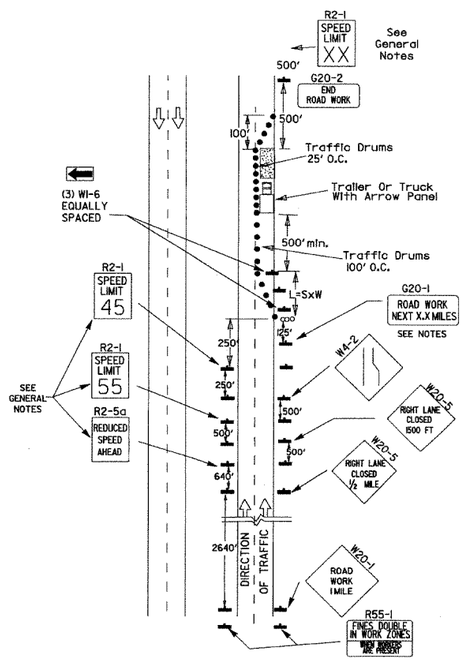
STANDARD DRAWING TC-2



(A) Typical application - daytime maintenance operations of short duration on a 4-lane divided roadway where half of the roadway is closed.



(B) Typical application - 3-lane oneway roadway where center lane is closed.



(C) Typical application - construction operations of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.

KEY:

ooo Arrow Panel (If Required)

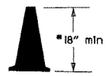
■ Channelizing Device

● Traffic drum

GENERAL NOTES:

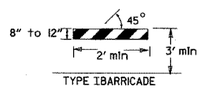
1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the R2-5A shall be installed at that location. Additional R2-1 45mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-1 55mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. The G20-1 sign will be required on jobs of over two miles in length. When the lane closure is not at the beginning of the project, the G20-1 sign shall be erected 125' in advance of the job limit. Additional W20-1 (1 MILE) signs are not required in advance of lane closures that begin inside the project limits.
8. Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
9. All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual For Assessing Safety Hardware (MASH).
10. Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.

Channelizing devices



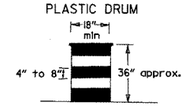
* When cones are used on freeways and multi-lane highways, they shall be 28" min. During hours of darkness, 28" cones shall be used on all roadways, and shall be reflectorized in accordance with the M.U.T.C.D.

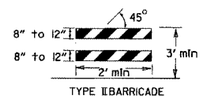
CONES



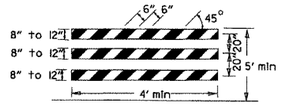
TYPE I BARRICADE

PLASTIC DRUM



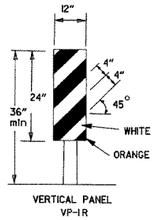


TYPE II BARRICADE



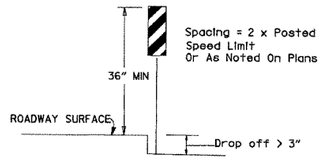
TYPE III BARRICADE

NOTE: For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.



VERTICAL PANEL
VP-1R

VERTICAL PANEL PLACEMENT



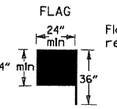
TRAFFIC CONTROL DEVICES
FOR
VERTICAL PAVEMENT DIFFERENTIALS

VERTICAL DIFFERENTIAL	LOCATIONS	TRAFFIC CONTROL
1" to 3"	Centerline, lane lines	W8-11
1" to 3"	Edge of shoulder	W8-9
Greater than 3"	Lane lines	Standard lane closure required
Greater than 3"	Edge of traveled lane	*RSP-1 and vertical panels, drums or concrete barrier
Greater than 3"	Edge of shoulder	*Vertical panels, drums or concrete barrier

* When shown on the plans concrete barrier will be used.

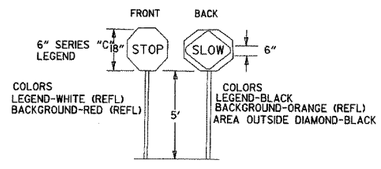
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

FLAG



Flag shall be of good grade red material

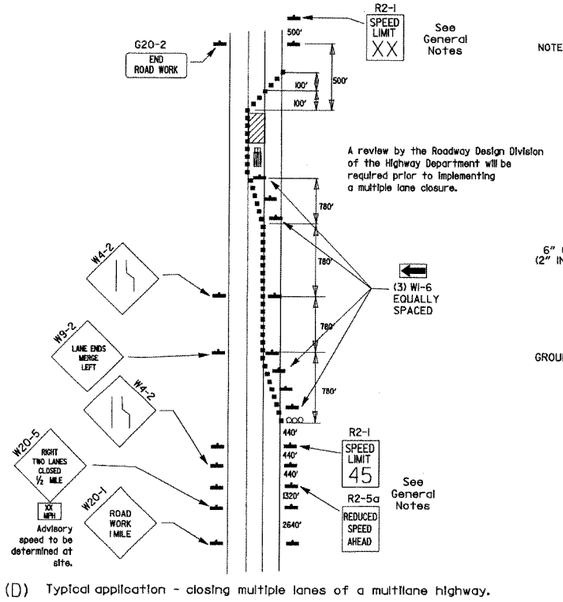
STOP SLOW PADDLE



NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)

NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.

SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.



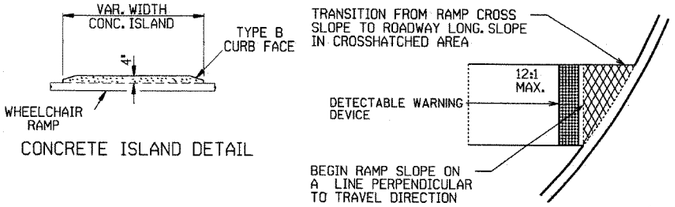
(D) Typical application - closing multiple lanes of a multilane highway.

DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1 & REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-3

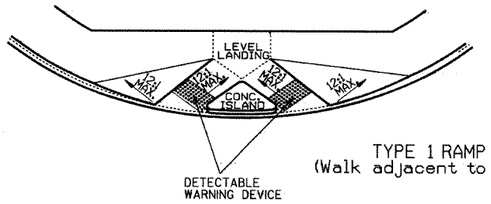


CONCRETE ISLAND DETAIL

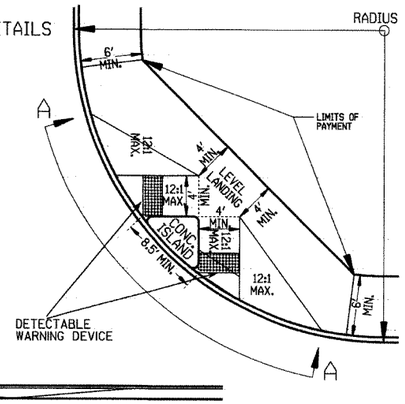
SLOPE TRANSITION DETAILS

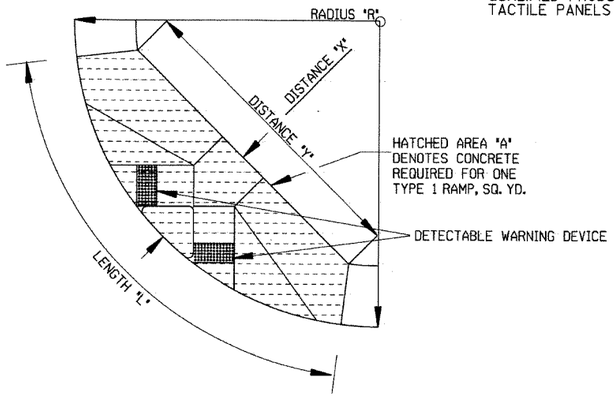
TYPE 1 RAMP DIMENSIONS AND QUANTITIES

RADIUS "R"	DISTANCE "X"	DISTANCE "Y"	LENGTH "L"	RAMP AREA "A"
FEET	FEET	FEET	FEET	SQ. YD.
15	11.67	18.82	32.18	26.21
20	11.52	22.28	35.46	30.07
25	11.43	26.60	38.77	33.80
30	11.37	30.26	40.93	36.90
35	11.33	33.51	43.11	39.77
40	11.30	36.45	45.26	42.45
45	11.27	39.16	47.34	44.97
50	11.25	41.69	49.36	47.35
55	11.24	44.07	51.31	49.63
60	11.22	46.33	53.21	51.80



TYPE 1 RAMP
(Walk adjacent to curb)

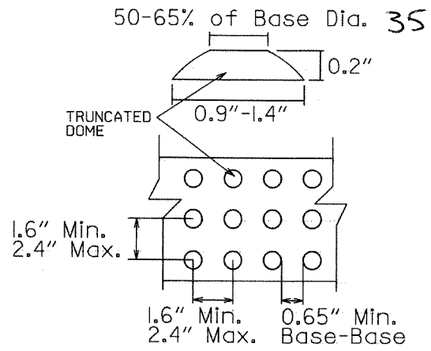




SECTION A-A

GENERAL NOTES FOR DETECTABLE WARNING DEVICES

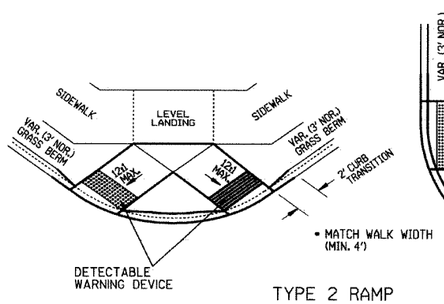
THE DETECTABLE WARNING DEVICE SHALL BE LOCATED SO THAT THE NEAREST EDGE OF THE DEVICE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB.
TRUNCATED DOMES IN THE DETECTABLE WARNING SURFACE SHALL MEET THE REQUIREMENTS OF THE GEOMETRIC CONFIGURATION SHOWN.
DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.
DETECTABLE WARNING DEVICE SHALL BE 24 INCHES IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE.
DETECTABLE WARNING DEVICE SHALL BE ON THE AHTD QUALIFIED PRODUCTS LIST FOR CAST-IN-PLACE TACTILE PANELS (ADA DETECTABLE WARNING).



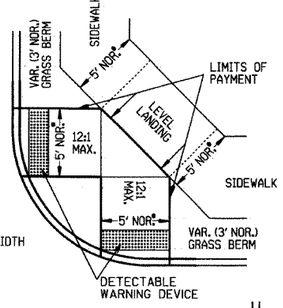
DETECTABLE WARNING DEVICE DETAIL

GENERAL NOTES:

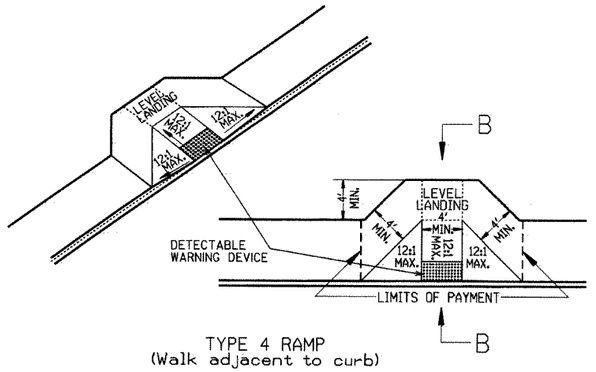
IN NEW CONSTRUCTION, UNLESS OTHERWISE INDICATED ON THE PLANS, WHEELCHAIR RAMPS ARE TO BE PROVIDED AT ALL CORNERS OF CURBED STREET INTERSECTIONS AND MID-BLOCK CROSSWALK LOCATIONS.
IN ALTERATIONS WHEELCHAIR RAMPS ARE TO BE PROVIDED AT CURBED STREET INTERSECTIONS WITH PEDESTRIAN TRAFFIC AND MID-BLOCK CROSSWALK LOCATIONS.
THE LENGTH OF THE RAMP SHALL BE SUCH THAT THE SLOPE DOES NOT EXCEED 12:1. THE SURFACE TEXTURE OF THE RAMP SHALL CONFORM TO A CLASS 6 FINISH ACCORDING TO SECTION 802.19.
THE NORMAL GUTTER GRADE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.
ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
THE MINIMUM THICKNESS OF THE RAMP, WALK, & LANDING SHALL BE 4".
THE MINIMUM WIDTH OF THE RAMPS SHALL BE THE WALK WIDTH OR 36", WHICHEVER IS GREATER.
RAMPS SHALL BE MODIFIED AS NECESSARY TO INSURE THAT THEY ARE PARALLEL TO A LINE DRAWN FROM THE CENTER OF ONE RAMP TO THE CENTER OF THE RAMP ON THE OPPOSITE SIDE OF THE INTERSECTION.
THE DIMENSIONS AND QUANTITIES SHOWN ON THIS DRAWING ARE FOR A 90° INTERSECTION ONLY. DIMENSIONS AND QUANTITIES FOR SKEWED INTERSECTIONS WILL VARY, AND ARE TO BE DETERMINED BY THE ENGINEER.



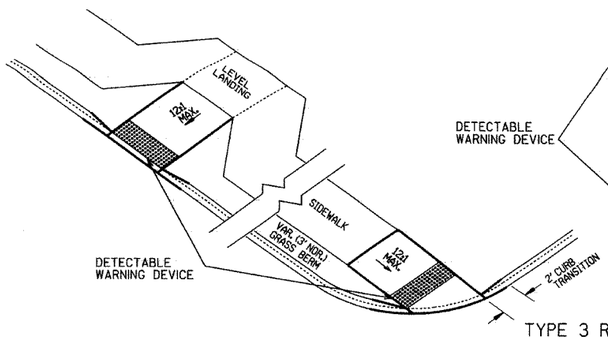
TYPE 2 RAMP

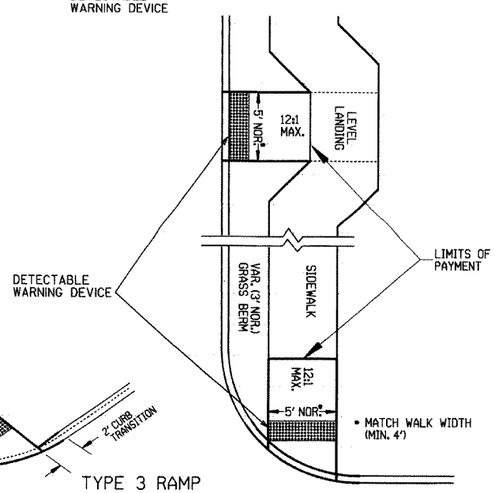


NOTE:
THE CROSS SLOPE OF THE RAMPS, LEVEL LANDINGS, AND SIDEWALKS SHALL NOT EXCEED 2.0% UNLESS REQUIRED TO MATCH STREET LONGTITUDINAL GRADE.

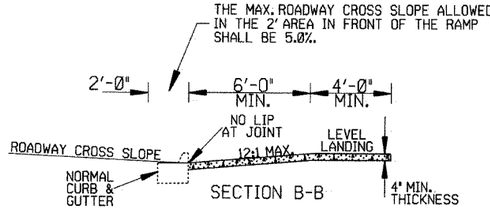


TYPE 4 RAMP
(Walk adjacent to curb)





TYPE 3 RAMP



SECTION B-B

RAMP SELECTION CRITERIA

FIRST CHOICE	TYPE 1	CORNER LOCATIONS WITH THE WALK ADJACENT TO THE CURB (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 2	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE INSUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 3	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE SUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 4	TANGENT LOCATIONS (BOTH NEW CONSTRUCTION AND ALTERATIONS).
SECOND CHOICE	TYPE 5	TANGENT LOCATIONS (ALTERATIONS ONLY).
THIRD CHOICE	TYPE 6	CORNER LOCATIONS (ALTERATIONS ONLY). THIS RAMP MAY BE USED ONLY IF THE TYPE 5 RAMPS CANNOT BE PLACED AT THE ENDS OF THE RADIUS.
FOURTH CHOICE		IF SITE CONSTRAINTS PREVENT THE CONSTRUCTION OF ANY OF THE TYPES LISTED, THEN AND ONLY THEN CAN THE 12:1 MAX. SLOPE ON THE RAMP BE EXCEEDED TO PROVIDE ACCESS TO THE STREET LEVEL (ALTERATIONS ONLY). THE SLOPE CAN BE STEEPENED TO A 10:1 MAX. FOR A MAX. LENGTH OF 5' OR A 8:1 MAX. FOR A MAX. LENGTH OF 2'. SLOPES STEEPER THAN 8:1 ARE NOT ALLOWED UNDER ANY CIRCUMSTANCES.

NOTE: IN ALTERATIONS, THE SELECTION OF THE TYPE OF WHEELCHAIR RAMP TO BE CONSTRUCTED SHALL BE BASED ON THE AMOUNT OF RIGHT-OF-WAY AVAILABLE, AND ON THE PRESENCE OF OTHER SITE CONSTRAINTS (UTILITIES, BUILDINGS, ETC.). THE TABLE ABOVE LISTS THE ORDER IN WHICH THE RAMPS ARE TO BE CONSIDERED.

AN ALTERATION IS DEFINED AS A PROJECT THAT CHANGES OR AFFECTS THE USE OF A PEDESTRIAN PATHWAY (OVERLAYS, SIGNALIZATION PROJECTS, ETC.) BUT DOES NOT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY. ALL PROJECTS THAT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY WILL USUALLY BE CONSIDERED NEW CONSTRUCTION FOR THE PURPOSES OF THE CHART ABOVE.

11-10-05	REVISED TO NEW SIDEWALK POLICY	
10-9-03	REVISED GEN. NOTES & ADDED NOTE	
4-10-03	REV. DETECTABLE WARNING DEVICES	
8-22-02	ADD DETECTABLE WARNING DEVICES	
3-30-00	ADD.SLOPE TRANS. & REV. ISL. DIMS.	
8-18-98	REVISED NOTES	
6-12-98	REVISED TEXTURE	
7-02-98	REDRAWN & REISSUED	
10-18-96	CORRECTED DIMENSIONS	10-18-96
5-24-90	FROM8:1TO12:1MAX.SLOPES	5-24-90
7-15-88	ADJUSTED MAX. SLOPE	652-7-15-88
7-14-88	INCLUD."CONC. ISLD."IN PAY ITEM	------
6-02-76	ISSUED-P.H.D.	299-7-28-76
DATE	REVISION	DATE FILM

ARKANSAS STATE HIGHWAY COMMISSION

WHEELCHAIR RAMPS
NEW CONSTRUCTION
AND ALTERATIONS

STANDARD DRAWING WR-1