TDOT P.I.N.: 115241.12
FEDERAL PROJECT NO.: CM-NH-3(125)
STATE PE NO.: 79LPLM-F1-286
STATE CONSTRUCTION NO.: 79LPLM-F3-287
LOCALLY MANAGED PROJECT

STATE OF TENNESSEE

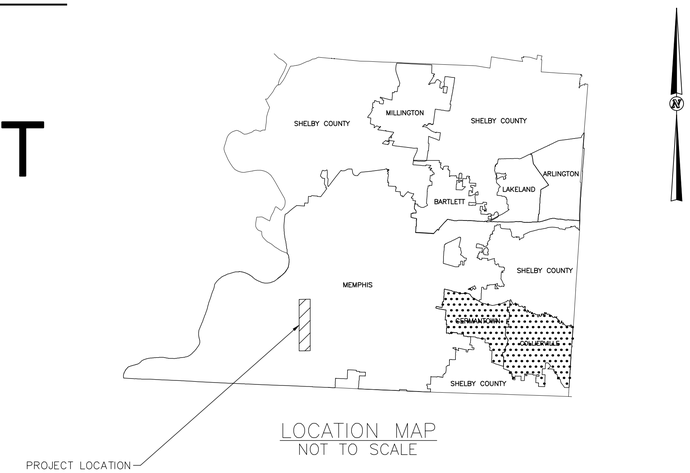
SHELBY COUNTY

DIVISION OF PUBLIC WORKS

PLAN FOR PROPOSED IMPROVEMENTS

CONGESTION MANAGEMENT PROGRAM

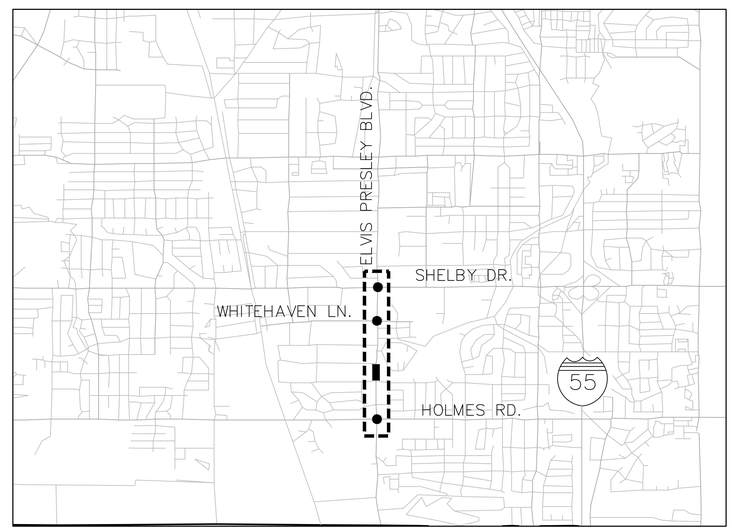
SIGNAL SYSTEM PROJECT SET #6



LOCATION MAP
NOT TO SCALE

SCOPE OF WORK

THE SCOPE OF WORK INCLUDES INSTALLING CONDUIT WITH FIBER OPTIC CABLE INTERCONNECT ALONG ELVIS PRESLEY BOULEVARD FROM SHELBY DRIVE TO HOLMES ROAD, THE INSTALLATION OF VIDEO DETECTION AND/OR EMERGENCY VEHICLE PREEMPTION EQUIPMENT AT SELECT INTERSECTIONS ALONG ELVIS PRESLEY BOULEVARD, INSTALLATION OF ETHERNET COMMUNICATION EQUIPMENT AT SELECT INTERSECTIONS IN COLLIERVILLE, TN AND GERMANTOWN, TN, AND UPGRADES TO THE GERMANTOWN AND COLLIERVILLE TMC'S.



ELVIS PRESLEY BOULEVARD VICINITY MAP
NOT TO SCALE

EQUATIONS: NONE
EXCEPTIONS: NONE

NOTES:

PROPOSALS MAY BE REJECTED BY THE COUNTY ENGINEER IF ANY OF THE UNIT PRICES CONTAINED THEREIN ARE OBVIOUSLY UNBALANCED, EITHER EXCESSIVE OR BELOW THE REASONABLE COST ANALYSIS VALUE.

CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ANY UTILITY COMPANY WHICH MAINTAINS A UTILITY LINE WITHIN THE BOUNDARIES OF THE PROJECT PRIOR TO THE INITIATION OF ANY CONSTRUCTION ON THE PROJECT OR IN THE STREETS BORDERING THE PROJECT. THE CONTRACTOR SHALL ALSO ASSUME RESPONSIBILITY FOR ALL DAMAGE TO ANY UTILITY LINES, WHETHER SHOWN ON THE CONSTRUCTION PLANS OR NOT, DURING WORK ON THE PROJECT.

THIS PROJECT TO BE CONSTRUCTED UNDER THE STANDARD SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION DATED MARCH 1, 2006 AND ADDITIONAL SPECIFICATIONS AND SPECIAL PROVISIONS CONTAINED IN THE PLANS AND IN THE PROPOSAL CONTRACT.

HON. MARK H. LUTTRELL, JR, MAYOR

APPROVED: _____ DATE: _____
MR. DARREN SANDERS, P.E.
SHELBY COUNTY ENGINEER

THE FOLLOWING SIGNATURES ONLY APPLY TO LOCATIONS WITHIN THE CITY OF MEMPHIS LIMITS.

REVIEWED: _____ DATE: _____
CITY OF MEMPHIS ENGINEER

REVIEWED: _____ DATE: _____
CITY OF MEMPHIS TRAFFIC ENGINEER

- PROJECT LOCATIONS
- PROJECT INTERSECTION LOCATIONS
- RADAR DETECTION SYSTEM LOCATIONS

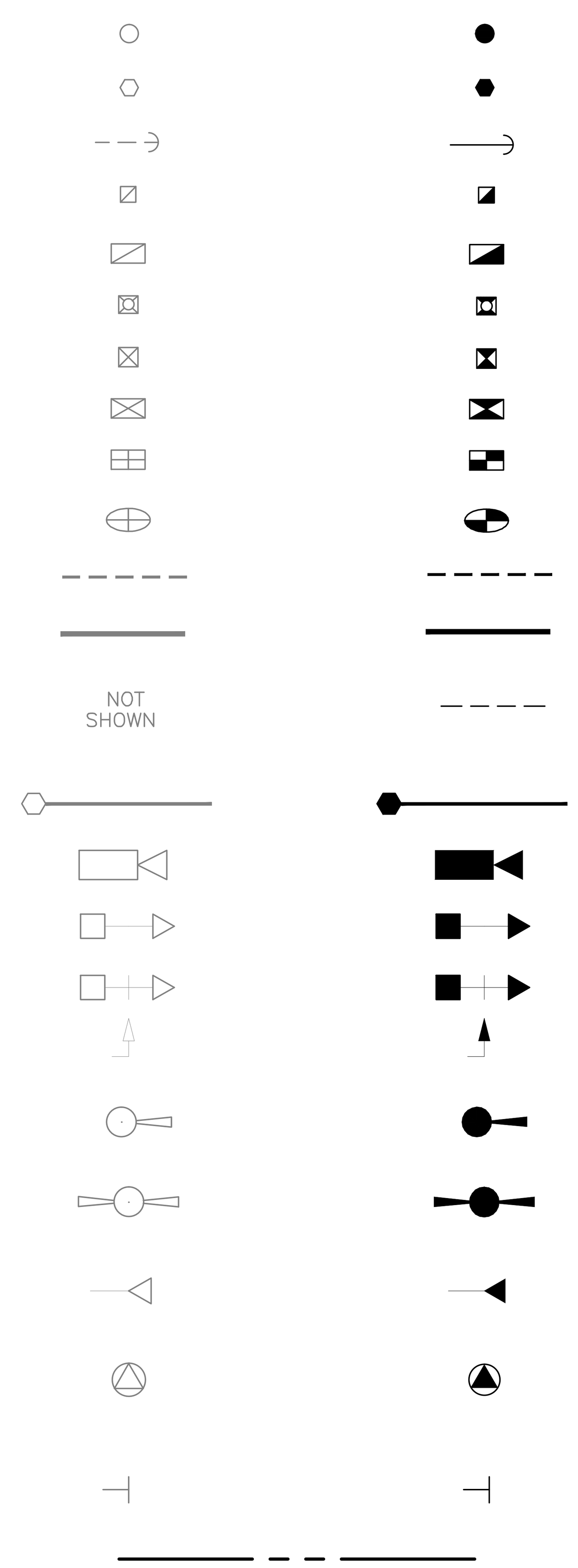
INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES
3	TABULATED QUANTITIES
4	QUANTITIES
5	CABLE LAYOUT/UTILITY SHEET KEY MAP AND SYSTEM DETECTOR LAYOUT
6	COMMUNICATIONS CABLE AND CHANNEL SCHEMATIC
7	PHASING DIAGRAMS
8-10	CABLE LAYOUT
11	GERMANTOWN CITY HALL LAYOUT
12-13	INTERSECTION LAYOUT
14-16	SPLICE DIAGRAM
17-19	EXISTING UTILITIES
20-22	MISCELLANEOUS DETAILS
23	ADVANCED LOOP DETECTION DETAILS
24	DETAILS

LEGEND

(FOR CABLE LAYOUT SHEETS)

EXISTING | PROPOSED



- WOOD POLE
- METAL/ALUMINUM PEDESTAL POLE
- GUY WITH ANCHOR
- STANDARD PULL BOX
- FIBER OPTIC PULL BOX
- POLE MOUNTED RDS CABINET
- POLE MOUNTED CONTROLLER CABINET
- BASE MOUNTED CONTROLLER CABINET
- BASE MOUNTED HUB CABINET
- SPLICE ENCLOSURE
- TRENCH CONDUIT
- JACKED OR BORED CONDUIT
- LOOP LEAD-IN WIRE IN SAW CUT
- MASTARM POLE
- VIDEO DETECTION CAMERA
- SIGNAL HEAD
- SIGNAL HEAD WITH BACKPLATE
- PEDESTRIAN SIGNAL HEAD
- SINGLE CHANNEL EMERGENCY VEHICLE PREEMPTION DETECTOR
- DUAL CHANNEL EMERGENCY VEHICLE PREEMPTION DETECTOR
- EMERGENCY VEHICLE PREEMPTION CONFIRMATION LAMP
- EMERGENCY VEHICLE PREEMPTION CONFIRMATION BEACON
- SIGN
- RIGHT OF WAY

UTILITY OWNERS

CITY OF MEMPHIS

TRAFFIC SIGNAL & COMMUNICATIONS	CITY OF MEMPHIS 980 S. THIRD ST. MEMPHIS TN, 38106 (901) 528-2844 JAY WALKO
GAS, WATER, & ELECTRIC:	MEMPHIS LIGHT, GAS, & WATER 220 S. MAIN ST. MEMPHIS, TN 38103 (901) 528-4186 KEITH LEDBURY
CATV:	COMCAST INC. 5450 WINCHESTER RD. MEMPHIS, TN 38115 (901) 365-1770 EXT. 4114 REX MORRIS
TELEPHONE:	AT&T 5530 STAGE RD. MEMPHIS, TN 38115 (901) 797-3501 ALEX LASKARIS
SEWER:	CITY OF MEMPHIS PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION 125 N. MAIN ST., RM. 630 MEMPHIS, TN 38103 (901) 576-6725 GARY VADEN

CITY OF GERMANTOWN

WATER & SEWER:	CITY OF GERMANTOWN 7700 SOUTHERN AVE. GERMANTOWN, TN 38183-0809 (901) 757-7350
TRAFFIC SIGNAL & COMMUNICATIONS:	CITY OF GERMANTOWN 1930 GERMANTOWN RD. SOUTH GERMANTOWN, TN 38138 (901) 757-7232 TIM GWALTNEY

TOWN OF COLLIERVILLE

WATER & SEWER:	TOWN OF COLLIERVILLE 500 KEOUGH RD. COLLIERVILLE, TN 38017 (901) 853-3215 TIM OVERLY
TRAFFIC SIGNAL & COMMUNICATIONS:	TOWN OF COLLIERVILLE 500 POPLAR VIEW PKWY. COLLIERVILLE, TN 38017 (901) 457-2340 STEVEN RUSSELL

GENERAL NOTES

MISCELLANEOUS

1. THE LOCATIONS OF ALL NEW PULL BOXES AND CABINETS ARE SCHEMATIC. ADDITIONAL PULL BOXES MAY BE REQUIRED FOR BORING UNDER DRIVEWAYS. THE ENGINEER SHALL APPROVE THE FINAL LOCATIONS OF ALL PULL BOXES IN THE FIELD. THE CONTRACTOR SHALL PROVIDE AS-BUILT DOCUMENTATION (RED-LINE OF PLAN SET) WHICH SHOWS EXACT, FINAL DIMENSIONS BETWEEN PULL BOXES AND OTHER POINTS OF CONDUIT TERMINATION.
2. CONTACT SHELBY COUNTY DEPARTMENT OF ROADS AND BRIDGES AT (901) 222-7742 AT LEAST 72 HOURS BEFORE BEGINNING ANY WORK ON THIS PROJECT.
3. SIGNAL EQUIPMENT AND INSTALLATION SHALL COMPLY WITH THE CITY OF MEMPHIS TRAFFIC SIGNAL SPECIFICATIONS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING THE SIGNAL TIMING IN THE CONTROLLER. CONTACT THE ENGINEER TO OBTAIN TIMINGS.
5. ALL SALVAGEABLE ITEMS TO BE DELIVERED TO THE CITY OF MEMPHIS TRAFFIC SIGNAL MAINTENANCE OFFICES.
6. THE CONTRACTOR SHALL DELIVER THE NEW CONTROLLER UNITS TO THE CITY OF MEMPHIS TRAFFIC SIGNAL MAINTENANCE OFFICE FOR REVIEW PRIOR TO INSTALLATION OF THE CONTROLLERS IN THE CABINET.
7. THE CONTRACTOR SHALL COIL 50' OF FIBER OPTIC CABLE IN ALL FIBER OPTIC PULL BOXES.
8. THE CONTRACTOR SHALL NOT SPLICE ANY VIDEO DETECTION OR EVP EQUIPMENT CABLES.
9. CONTRACTOR SHALL HAVE SIGNAL MAINTENANCE RESPONSIBILITY OF THE INTERSECTIONS ONCE WORK ON EACH INTERSECTION HAS BEGUN. THE RESPONSIBILITY SHALL EXTEND TO CONTRACT ITEMS ONLY AND SHALL END UPON SUBSTANTIAL COMPLETION AND ACCEPTANCE OF THE WORK AT THE INTERSECTION.

APPLICABLE CITY OF MEMPHIS DESIGN STANDARDS
TRAFFIC STANDARD SHEETS 1 THROUGH 10.

APPLICABLE T.D.O.T. STANDARD DRAWINGS
T-SG-2, T-SG-3, T-SG-5, T-SG-9A, T-WZ-50, T-FO-1, T-FO-2, T-FO-3, T-FO-4

SPECIAL DETAILS WITHIN THIS PLAN SET SHALL SUPERSEDE THOSE FOUND ON THE LISTED STANDARD DRAWINGS.

TRAFFIC CONTROL NOTES

1. NOTHING IN THIS PLAN IS INTENDED TO SUPERSEDE OR RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF INSTALLING THE APPROPRIATE TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE CURRENT STATE OF TENNESSEE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS."
2. THE CONTRACTOR SHALL BE REQUIRED TO NOTIFY THE JURISDICTION IN WHICH THE WORK IS BEING DONE A MINIMUM OF 72 HOURS PRIOR TO COMMENCING CONSTRUCTION OR IMPLEMENTING A TRAFFIC CONTROL PLAN. FOR THIS PROJECT THE CONTRACTOR SHALL CONTACT THE FOLLOWING AGENCIES:

   CITY OF MEMPHIS CONSTRUCTION INSPECTION
   (901) 636-2462

   CITY OF GERMANTOWN ENGINEERING
   (901) 757-7200

   TOWN OF COLLIERVILLE ENGINEERING
   (901) 457-2340

   ALL TRAFFIC CONTROL DEVICES MUST BE IN PLACE BEFORE CONSTRUCTION ACTIVITY BEGINS.
3. ALL TRAFFIC CONTROL DEVICES AND THEIR INSTALLATION SHALL MEET THE STANDARD PRESCRIBED IN THE STATE OF TENNESSEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND SHALL COMPLY WITH THE STATE OF TENNESSEE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SECTION 712 TEMPORARY TRAFFIC CONTROL.
4. ACCESS TO ADJACENT PROPERTIES SHALL BE MAINTAINED AT ALL TIMES.
5. SIDE STREET, DRIVEWAY ACCESS, AND SAFE PEDESTRIAN WAYS SHALL BE MAINTAINED AT ALL TIMES.
6. THE CONTRACTOR SHALL NOT BE PERMITTED TO PARK ANY VEHICLES OR CONSTRUCTION EQUIPMENT DURING PERIODS OF INACTIVITY, WITHIN THE RIGHT-OF-WAY OR WITHIN THIRTY (30) FEET OF THE EDGE OF PAVEMENT WHICHEVER IS LESS, WHEN THE LANE IS OPEN TO TRAFFIC, UNLESS PROTECTED BY GUARDRAIL, BRIDGE RAIL, AND/OR BARRIERS INSTALLED FOR OTHER PURPOSES. PRIVATELY OWNED VEHICLES SHALL NOT BE ALLOWED TO BE PARKED WITHIN THE RIGHT-OF-WAY OR WITHIN THIRTY (30) FEET OF AN OPEN TRAFFIC LANE WHICHEVER IS LESS, AT ANY TIME UNLESS PROTECTED AS DESCRIBED ABOVE.
7. IF USED, THE CONTRACTOR SHALL USE PLASTIC DRUMS WITH TYPE "C" WARNING LIGHTS TO SEPARATE TRAFFIC FROM THE CONSTRUCTION AREA.
8. DRUMS WITH TYPE "C" WARNING LIGHTS SHALL DELINEATE THE EDGE OF PAVEMENT THROUGH THE ENTIRE CONSTRUCTION AREA, IF USED.
9. THE CONTRACTOR SHALL COVER ALL EXISTING SIGNS THAT CONFLICT WITH THE TRAFFIC CONTROL PLAN SIGNS OR DEVICES DURING CONSTRUCTION AND THEY SHALL REMAIN COVERED DURING CONSTRUCTION AND UNTIL SUCH TIME THAT NO CONFLICT EXISTS.
10. DURING CONSTRUCTION, A MINIMUM OF ONE 11 FOOT LANE OF TRAFFIC IN EACH DIRECTION SHALL REMAIN OPEN TO TRAFFIC AT ALL TIMES.
11. ALL TEMPORARY OR PERMANENT TRAVELED SURFACE SHALL BE INSPECTED DAILY BY THE CONTRACTOR (INCLUDING WEEKENDS) AND NECESSARY PATCHING OR RE-FINISHING PERFORMED.
12. WORK WITHIN THE ROADWAY SHALL BE CONDUCTED BETWEEN 9:00 A.M. AND 4:00 P.M. THE ROADWAY SHALL BE COMPLETELY OPEN TO TRAFFIC AT ALL OTHER TIMES AND ALL INAPPROPRIATE SIGNS SHALL BE COVERED OR REMOVED.
13. THE CONTRACTOR SHALL CONTACT ALL APPROPRIATE AGENCIES BEFORE CLOSING ANY ROADWAYS.
14. THE CONTRACTOR SHALL CONTACT THE CITY OF MEMPHIS SIGNAL SHOP AT 901-528-2844 FOR LOCATION OF SIGNAL CONDUIT AND WIRES.

CABLE MARKERS

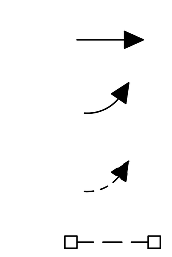
1. THE CONTRACTOR SHALL INSTALL CABLE MARKERS TO IDENTIFY THE PROPOSED SIGNAL CABLES AND FIBER OPTIC COMMUNICATION CABLES. LEGENDS AND COLORS FOR MARKERS ARE TO APPEAR ACCORDING TO THE INFORMATION SUPPLIED BY THE CITY OF MEMPHIS SIGNAL MAINTENANCE DEPARTMENT. THE MARKERS ARE TO BE PERMANENT, BRIGHTLY COLORED, NON-REFLECTIVE, WITH BLACK LETTERING. CURB MARKERS SHALL BE RED IN COLOR FOR TRAFFIC SIGNALS AND ORANGE IN COLOR FOR FIBER OPTIC CABLES. MARKERS ARE TO BE MANUFACTURED OF PLASTIC, VINYL OR FIBERGLASS MATERIAL THAT IS DURABLE, UV LIGHT-RESISTANT, WEATHER-PROOF AND SCRATCH-RESISTANT.
2. CURB MARKERS SHALL BE INSTALLED TO IDENTIFY CABLES THAT ARE IN OR NEAR THE STREET. CURB MARKERS ARE TO BE FOUR-INCH DIAMETER ROUND DISKS APPLIED TO CONCRETE OR METAL SURFACES WITH AN ADHESIVE ACCORDING TO THE RECOMMENDATIONS OF THE MANUFACTURER. CURB MARKERS ARE TO BE INSTALLED ON CABINET AND POLE FOUNDATIONS ON THE SIDE ABOVE THE CABLE. CURB MARKERS ARE TO BE INSTALLED ON THE STREET CURB OVER THE LOCATION OF CROSSING CABLES. CURB MARKERS ARE ALSO TO BE PLACED ON THE CURB AT 100-FOOT SPACING ALONG ANY RUN OF CABLE THAT IS PARALLEL TO THE CURB. WHERE PAVED SHOULDER EXISTS INSTEAD OF CURB, PLACE CURB MARKERS ON THE PAVEMENT SURFACE ONE FOOT FROM THE EDGE OF THE SURFACE, OR DIRECTLY OVER THE CONDUIT OR CABLE. CURB MARKERS ARE TO BE DURACAST STYLE CURB MARKERS AS MADE BY DAS MANUFACTURING, WILLIAM FRICK AND CO., OR APPROVED EQUAL. CURB MARKERS SHALL BE ABRASION AND UV-RESISTANT.
3. PAYMENT AT THE CONTRACT UNIT PRICE, PER EACH, SHALL BE MADE FOR EACH INSTALLED AND ACCEPTED CABLE MARKER AS FOLLOWS:

   ITEM NUMBER 730-12.42 – CURB MARKERS (CURB MOUNTED CABLE MARKERS)

UTILITIES

1. THE CONTRACTOR SHALL NOTIFY EACH INDIVIDUAL UTILITY OWNER OF THEIR PLAN OF OPERATION IN THE AREA OF THE UTILITIES. PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL CONTACT THE UTILITY OWNERS AND REQUEST THEM TO PROPERLY LOCATE THEIR RESPECTIVE UTILITY ON THE GROUND. THIS NOTIFICATION SHALL BE GIVEN AT LEAST THREE (3) BUSINESS DAYS PRIOR TO COMMENCEMENT OF OPERATIONS AROUND THE UTILITY.
2. IT IS THE CONTRACTOR'S RESPONSIBILTY TO LOCATE AND AVOID ALL UTILITIES AND UNDERGROUND STRUCTURES. THE CONTRACTOR SHOULD NOTE THAT EXISTING GAS LINES, WATER LINES, STORM DRAINAGE AND SANITARY SEWER STRUCTURES, AND OTHER UTILITIES MAY BE PRESENT.
3. EXISTING UTILITY LOCATIONS, AS SHOWN ON THESE PLANS, WERE COMPILED BASED ON INFORMATION AVAILABLE TO THE ENGINEER. UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND ARE NOT INTENDED TO BE EXACT OR COMPLETE.
4. SOME UTILITIES CAN BE LOCATED BY CALLING THE TENNESSEE ONE CALL SYSTEM, INC. AT 1-800-351-1111.
   THE CONTRACTOR SHALL CALL THE TENNESSEE ONE CALL SYSTEM, INC. AT LEAST 72 HOURS, BUT NOT MORE THAN FIVE (5) DAYS PRIOR TO ANY PLANNED EXCAVATION BY THE CONTRACTOR.

PHASE DIAGRAM LEGEND



- DISPLAYED VEHICULAR GREEN
- PROTECTED TURN
- PERMISSIVE TURN
- DISPLAYED WALK INDICATION

NOTE: CLEARANCE INTERVALS ARE NOT SHOWN

REVISIONS		
DATE	DESCRIPTIONS	APPROVED

DOUGLAS A. SMITH — AGRICULTURE COMMERCE — NO. 00118471 — STATE OF TENNESSEE — 7/19/15

Kimley»Horn

DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
SIGNAL SYSTEM PROJECT SET #6
SHELBY COUNTY, TN.

GENERAL NOTES

SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: KHA DATE: 12/13 SCALE: N.T.S.
DESIGNED: KHA DATE: 12/13 CHECKED: JFC DATE: 12/13
JURISDICTION:

DRAWING NAME: K:\MEM_TPTO\115087002 – Shelby County CMP 2\Design\Level 4 – Signal System\Bid Set 6\Cadd\Plans\BidSet 6-02-GeneralNotes.dwg Layout1 Jan 26, 2015 1:51PM BY: blaine.lynch

CABLE LAYOUT SHEET NO.	INTERSECTION/RDS ID	LOCATION		CONTROLLER/CABINET WORK																				PULLBOX/SPLICE ENCLOSURE				RADAR DETECTION SYSTEM				
				CONTROLLER/CABINET			CABINET ENTRANCE			EMERGEN				VIDEO DETECTION						FIBER OPTIC EQUIPMENT												
				RETAIN EXISTING CABINET	INSTALL NEW BASE MOUNTED CONTROLLER CABINET	INSTALL NEW 8-PHASE CONTROLLER	RETAIN EXISTING BASE MOUNTED CABINET FOUNDATION	INSTALL 2" CONDUIT INTO EXTERIOR OF CABINET	INSTALL CABLE IN EXISTING CONDUIT INTO CABINET	INSTALL OPTICOM DETECTOR MODEL 711	INSTALL EVP PHASE SELECTOR MODEL 754 (4-CHANNEL)	INSTALL EVP CONFIRMATION LAMP	INSTALL EVP CONFIRMATION BEACON	VIDEO DETECTION CAMERA TYPE 2 MOUNT	VIDEO DETECTION CAMERA TYPE 3 MOUNT	VIDEO DETECTION CARD RACK	VIDEO DETECTION PROCESSOR (DUAL CHANNEL)	VIDEO REMOTE MANAGEMENT CARD	MONITOR AND MOUSE	INSTALL ETHERNET SWITCH (TYPE A)	INSTALL SERIAL DEVICE SERVER	INSTALL FIBER DISTRIBUTION BOX IN LOCAL CONTROLLER CABINET	BLUETOOTH DETECTION SYSTEM	INSTALL PULLBOX (TYPE B)	INSTALL PULLBOX (F.O. TYPE B)	INSTALL WEATHERPROOF SPLICE ENCLOSURE IN PULLBOX	INSTALL 3" RISER WITH WEATHER HEAD	INSTALL RADAR DETECTION SYSTEM	INSTALL 20' ALUMINUM PEDESTAL POLE	INSTALL NEW PRIMARY POLE MOUNTED RDS CABINET (TYPE A)	INSTALL NEW SECONDARY POLE MOUNTED RDS CABINET (TYPE D)	MLGW POWER SERVICE CONNECTION
		PLAN SHEET CALL-OUT SYMBOL		B1	B3	C2	-	8	29	D1	D8	D3	D2	D5	D6	-	D9	D14	-	C6	C7	B7	D16	B9	B11	B6	13	D13	B13	D12	D15	B15
		ITEM NUMBER		-	-	730-16.02	-	-	-	730-13.06	730-13.06	730-13.06	730-13.06	730-13.02	730-13.02	730-13.02	730-13.02	920-13.04	730-13.02	725-03.09	725-21.22	730-03.31	725-21.88	730-03.21	730-03.24	725-02.79	730-11.12	725-21.91	730-23.30	725-24.01	725-24.04	714-25.09
		UNIT		EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH		EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
		CITY OF MEMPHIS																														
CL-01	6906	ELVIS PRESLEY BLVD	E. HOLMES RD	1	-	-	1	1	1	-	-	-	-	4	-	1	1	1	1	1	1	-	1	-	1	1	-	-	-	-	-	-
CL-01	-	ELVIS PRESLEY BLVD	BETWEEN E. HOLMES AND WHITEHAVEN	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	1	1	-	2	2	1	1	1
CL-02	6907	ELVIS PRESLEY BLVD	WHITEHAVEN LN.	-	1	1	-		-	3	3	3	2	2	2	1	1	1	1	1	-	1	-	1	1	1	1	-	-	-	-	-
CL-03	6596	ELVIS PRESLEY BLVD	SHELBY DR.	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
																							-									
		TOTALS		1	1	1	1		1	3	3	3	2	6	2	2	2	2	2	3	1	2	1	1	3	4	1	2	2	1	1	1

	CITY OF GERMANTOWN AND TOWN OF COLLIERVILLE TMC UPGRADES							
	Intersection ID			INSTALL ETHERNET SWITCH (TYPE A)	TERMINAL SERVER (SERIAL DEVICE SERVER)	COMPUTER FOR SIGNAL SYSTEM (RACK MOUNTED)	EIGHT PHASE ACTUATED CONTROLLER	VIDEO REMOTE MANAGEMENT CARD
		ITEM NUMBER		725-03.09	725-21.22	730-30.02	730-16.02	920-13.04
		UNIT		EACH	EACH	EACH	EACH	EACH
		TOWN OF COLLIERVILLE UPGRADES						
1)	5018	WINCHESTER ROAD	HOUSTON LEVEE ROAD	1	1	-	-	1
1)	7080	HOUSTON LEVEE ROAD	KOHL'S DRIVEWAY	1	1	-	-	-
1)	5074	POPLAR AVENUE	MARKET BOULEVARD	1	-	-	-	1
1)	5072	POPLAR AVENUE	BYHALIA ROAD	1	-	-	-	-
1)	5068	POPLAR AVENUE	HIGHWAY 72	1	1	-	-	1
1)	5209	POPLAR AVENUE	MAYNARD WAY	1	1	-	1	1
1)	5212	POPLAR AVENUE	PETERSON LAKE ROAD	1	-	-	-	-
1)	5216	POPLAR AVENUE	MAIN STREET	1	1	-	-	-
1)	5424	HOUSTON LEVEE ROAD	S.R. 385	1	1	-	-	-
1)	5575	HOUSTON LEVEE ROAD	COLLIERVILLE ROAD	1	1	-	-	-
1)	5572	HOUSTON LEVEE ROAD	MERCHANTS PARK CIRCLE	1	1	-	-	-
1)	5569	HOUSTON LEVEE ROAD	SHELBY DRIVE	1	1	-	-	-
1)	5537	SHELBY DRIVE	MERCHANTS PARK CIRCLE	1	1	-	-	-
2)	-	TOWN OF COLLIERVILLE TMC		4	4	-	-	4
			TOWN OF COLLIERVILLE TOTALS	17	14	0	1	8
		CITY OF GERMANTOWN TMC UPGRADES						
1)	5170	GERMANTOWN ROAD	STOUT ROAD	1	-	-	-	1
1)	5173	GERMANTOWN ROAD	POPLAR PIKE / MCVAY ROAD	1	1	-	-	-
1)	5490	POPLAR PIKE	GERMANTOWN ROAD / ARTHUR ROAD	1	1	-	-	-
1)	5583	POPLAR AVENUE	ARTHURWOOD COVE	-	-	-	-	1
1)	5149	POPLAR AVENUE	EXETER ROAD	-	-	-	-	1
1)	-	GERMANTOWN ROAD	HOSPITAL DRIVE	-	-	-	-	1
1)	5146	POPLAR AVENUE	GERMANTOWN ROAD	-	-	-	-	1
1)	5178	GERMANTOWN ROAD	NESHOBA DRIVE	-	-	-	-	1
1)	5184	GERMANTOWN ROAD	BRIERBROOK ROAD	-	-	-	-	1
1)	5578	GERMANTOWN ROAD	WOLF TRAIL COVE	-	-	-	-	1
1)	8887	WOLF RIVER BOULEVARD	KIMBROUGH ROAD	-	-	-	-	1
1)	8889	WOLF RIVER BOULEVARD	FARMINGTON BOULEVARD	-	-	-	-	1
1)	5563	FARMINGTON BOULEVARD	ALLENBY ROAD	1	1	-	-	-
1)	5167	FARMINGTON BOULEVARD	KIMBROUGH ROAD	1	1	-	-	-
1)	5478	FARMINGTON BOULEVARD	BRIERBROOK ROAD	1	1	-	-	-
1)	5164	FARMINGTON BOULEVARD	EXETER ROAD	1	1	-	-	1
1)	5566	KIMBROUGH ROAD	DOGWOOD ROAD	1	1	-	-	-
3)	-	CITY OF GERMANTOWN TMC		-	-	1	-	-
			CITY OF GERMANTOWN TOTALS	8	7	1	-	11
			TOTALS	25	21	1	1	19

NOTES:

1) ITEMS TO BE INSTALLED WITHIN EXISTING INTERSECTION CONTROLLER CABINETS.
2) ITEMS TO BE DELIVERED TO TOWN OF COLLIERVILLE TMC.
3) ITEMS TO BE INSTALLED WITHIN SERVER ROOM AT GERMANTOWN CITY HALL BUILDING.

REVISIONS

DATE	DESCRIPTIONS	APPROVED

DOUGLAS A. DONOHOO — REGISTERED ENGINEER — AGRICULTURE — COMMERCE — No. 00116111 — STATE OF TENNESSEE — 12/19/15

Kimley»Horn

DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
SIGNAL SYSTEM PROJECT SET #6
SHELBY COUNTY, TN.

TABULATED QUANTITIES

SURVEY: N/A DATE: N/A BOOK: N/A
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DESIGNED: KHA DATE: 12/13 CHECKED: JFC DATE: 12/13
JURISDICTION:

DRAWING NAME: K:\MEM_TPTO\115087002 - Shelby County CMP 2\Design\Level 4 - Signal System\Bid Set 6\Cadd\Plans\BidSet 6-04-Summary Of Work.dwg Layout1 Jan 26, 2015 1:52PM BY: blaine.lynch

	CONGESTION MANAGEMENT PROGRAM (SIGNAL SYSTEM SET #6)		
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
105-01	CONSTRUCTION STAKES, LINES AND GRADES	L.S.	1
201-01	CLEARING AND GRUBBING	L.S.	1
209-05	SEDIMENT REMOVAL	C.Y.	10
209-08.02	TEMPORARY SILT FENCE (WITH BACKING)	L.F.	100
209-09-43	CURB INLET PROTECTION (TYPE 4)	EACH	20
701-01.01	CONCRETE SIDEWALK	S.F.	20
712-01	TRAFFIC CONTROL	L.S.	1
717-01	MOBILIZATION	L.S.	1
714-25.09	ELECTRICAL CONNECTION (FOR MLGW COST ONLY)	EACH	1
725-02.79	FIBER SPLICE ENCLOSURE (WEATHER PROOF)	EACH	4
725-03.09	ETHERNET SWITCH (TYPE A)	EACH	26
725-21.22	TERMINAL SERVER (SERIAL DEVICE SERVER)	EACH	24
725-21.88	BLUETOOTH DETECTION SYSTEM	EACH	1
725-21.91	RADAR DETECTION SYSTEM	EACH	2
725-21.96	RDS COMM CABLE	L.F.	90
725-24.01	CABINET (TYPE A)	EACH	1
725-24.04	CABINET (TYPE D)	EACH	1
725-24.51	SYSTEM INTEGRATION	LS	1
730-03.31	FIBER DISTRIBUTION BOX	EACH	2
730-03.21	INSTALL PULL BOX (TYPE B)	EACH	1
730-03.23	INSTALL PULL BOX (FIBER OPTIC-TYPE A)	EACH	16
730-03.24	INSTALL PULL BOX (FIBER OPTIC-TYPE B)	EACH	3
730-05.01	ELECTRICAL SERVICE CONNECTION	EACH	2
730-08.40	INTERCONNECT CABLE - FIBER OPTIC (36-FIBER, SINGLE MODE)	L.F.	8690
730-08.41	INTERCONNECT CABLE - FIBER OPTIC (DROP CABLE, 6-FIBER, SINGLE MODE)	L.F.	660
730-08.42	INTERCONNECT CABLE - FIBER OPTIC (PULL AND REROUTE EXISTING CABLE)	L.F.	1050
730-11.12	RISER ASSEMBLY (3")	EACH	1
730-12.02	CONDUIT 2" DIAMETER (PVC)	L.F.	125
730-12.03	CONDUIT 3" DIAMETER (PVC)	L.F.	35
730-12.13	CONDUIT 2" DIAMETER (JACK AND BORE)	L.F.	7600
730-12.42	CURB MARKERS (CURB MOUNTED CABLE MARKERS)	EACH	12
730-13.02	VEHICLE DETECTOR (VIDEO)	EACH	2
730-13.06	VEHICLE DETECTOR (OPTICALLY ACTIVATED PRIORITY CONTROL)	EACH	2
730-15.11	MODIFY CABINET (BASE-MOUNT ENTRANCE)	EACH	1
730-15.32	CABINET (EIGHT PHASE BASE MOUNTED)	EACH	1
730-16.02	EIGHT PHASE ACTUATED CONTROLLER	EACH	2
730-23.30	PEDESTAL POLE (ALUMINUM, 20' LENGTH)	EACH	2
730-30.02	COMPUTER FOR SIGNAL SYSTEM (RACK MOUNTED)	EACH	1
801-03	WATER (SEEDING & SODDING)	M.G.	1
803-01	SODDING (NEW SOD)	S.Y.	15
920-10.04	WEATHERHEAD	EACH	1
920-13.04	VIDEO DETECTION REMOTE MANAGEMENT CARD	EACH	21

FOOTNOTES

1. FOR TREE TRIMMING AS DIRECTED BY THE ENGINEER.
2. TO BE USED AS DIRECTED BY THE ENGINEER.
3. SEE SUBSECTION 209.07 OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR MAINTENANCE REPLACEMENT.
4. TO INCLUDE ALL NECESSARY ITEMS TO PROVIDE TRAFFIC CONTROL IN ACCORDANCE WITH TDOT STANDARD DRAWING T-WZ-52
5. ALLOWANCE TO COVER THE COST ASSOCIATED WITH POWER CONNECTION FOR THE TRAFFIC SIGNAL OR RDS UNIT FROM THE TRANSFORMER TO THE DEMARCATION POINT.
6. SEE THE LATEST "CITY OF MEMPHIS - STANDARD CONSTRUCTION SPECIFICATIONS" FOR TECHNICAL REQUIREMENTS.
7. SEE CITY OF MEMPHIS STANDARD SPECIFICATIONS FOR "RUGGEDIZED ETHERNET CABINET SWITCH."
8. SEE CITY OF MEMPHIS STANDARD SPECIFICATIONS FOR "SERIAL DEVICE SERVER."
9. THE INSTALLATION SHALL INCLUDE BLUETOOTH SENSOR, NEMA ENCLOSURE, CONDUIT AND RISER FROM CONTROLLER CABINET TO SIGNAL POLE, POWER OVER ETHERNET SUBSYSTEM, ANTENNA, ETHERNET CABLE, AND ALL OTHER CABLING, CONNECTIONS AND HARWARE TO COMPLETE THE INSTALLATION OF A FULLY FUNCTIONAL BLUETOOTH DETECTION SYSTEM. THIS LUMP SUM ITEM ALSO INCLUDES THE BLUETOOTH SOFTWARE LICENSE FEE. THE LUMP SUM PRICE INCLUDES ALL SOFTWARE AND HARDWARE INSTALLATION AND INTEGRATION WORK PROVIDE A FULLY FUNCTIONAL BLUETOOTH SYSTEM THAT ALLOWS THE CITY TO MONITOR AND RETRIEVE TRAVEL TIME AND SPEED DATA REMOTELY.
10. SEE PROJECT SPECIAL PROVISIONS FOR RADAR DETECTION EQUIPMENT.
11. SEE PROJECT SPECIAL PROVISIONS FOR UTILITY CABINETS. TYPE A CABINETS ARE FOR PRIMARY CABINETS. TYPE D CABINETS ARE FOR SECONDARY CABINETS. TYPE D CABINET TO INCLUDE ALL NECESSARY CABLING TO CONNECT TO TYPE A CABINET.
12. SEE PROJECT SPECIAL PROVISIONS FOR SYSTEM INTEGRATION.
13. COST INCLUDES ALL LABOR AND MATERIALS (REMOVING AND REPLACING NECESSARY SIDE WALK PANELS, REPAIR LANDSCAPING, REMOVING EXISTING PULL BOX, AND OTHER MISCELLANEOUS MATERIALS) TO COMPLETE PULL BOX INSTALLATION.
14. CONTRACTOR RESPONSIBLE FOR ALL COST ASSOCIATED WITH POWER CONNECTION FOR TRAFFIC SIGNAL OR RDS UNIT FROM THE DEMARCATION POINT TO THE CABINET.
15. CONTRACTOR SHALL INSTALL A TRACER WIRE WITH THE FIBER OPTIC CABLE FOR ALL CONDUIT ROUTING. TRACER WIRE SHALL BE 10 AWG STRANDED COPPER CONDUCTOR CABLE WITH BOTH THHN AND THWN RATINGS AND YELLOW IN COLOR.
16. TO BE ITERIS VANTAGE SYSTEM OR APPROVED EQUIVALENT. INCLUDES DETECTION CAMERAS, PROCESSOR UNIT, CARD RACK, POWER SUPPLY UNIT, 10" COLOR LCD MONITOR, VIDEO REMOTE MANAGEMENT CARD, MOUSE AND ALL OTHER CABLING, CONNECTIONS AND HARDWARE TO COMPLETE THE INSTALLATION OF A FULLY FUNCTIONAL VIDEO DETECTION SYSTEM.
17. TO BE GTT OPTICOM SYSTEM OR APPROVED EQUIVALENT. INCLUDES OPTICAL DETECTORS, CONFIRMATION LAMPS (PAR 90), POLE-MOUNTED BEACONS, FOUR-CHANNEL PHASE SELECTOR, CARD RACK (OPTICOM 760) AND ALL CABLING, CONNECTIONS AND HARDWARE TO COMPLETE THE INSTALLATION OF A FULLY-FUNCTIONAL PREEMPTION SYSTEM, INCLUDING FIELD FINE-TUNING. EVP SYSTEM SHALL INCLUDE MULTI-MODE GPS/IR INTERSECTION EQUIPMENT.
18. THE TRAFFIC SIGNAL CONTROLLER SHALL BE AN EAGLE EPAC M52 KEYBOARD UNIT OR APPROVED EQUIVALENT WITH BUILT-IN ETHERNET PORT AND BUILT-IN PORT 3 FIBER MODEM (SINGLE MODE), AND BUILT-IN STRETCH AND DELAY FEATURES FOR EACH PHASE. THE TRAFFIC CONTROLLER INSTALLATION ALONG WITH ALL AUXILIARY EQUIPMENT TO BE INSTALLED IN THE CABINET SHALL BE MANUFACTURED, SUPPLIED AND INSTALLED IN ACCORDANCE WITH THE LATEST CITY OF MEMPHIS TRAFFIC SIGNAL CONTROLLER AND CABINET SPECIFICATIONS. THE INSTALLATION SHALL HAVE A 12-CHANNEL MALFUNCTION MONITOR UNIT INSTALLED AS MODEL EDI SSM12LE-P.
19. SEE PROJECT SPECIAL PROVISIONS FOR SPECIFICATIONS.
20. TO BE INSTALLED ON EXISTING SIGNAL POLE AT THE INTERSECTION OF HOLMES RD. AND ELVIS PRESLEY BLVD.
21. TO BE INSTALLED AS A PART OF TMC UPGRADES IN GERMANTOWN, TN AND COLLIERVILLE, TN. QUANTITY IS IN ADDITION TO THE VIDEO DETECTION REMOTE MANAGEMENT CARDS REQUIRED IN ITEM NO. 730-13.02.

REVISIONS

DATE	DESCRIPTIONS	APPROVED

DALLAS A. ARNOLD III
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
NO. 00114214
1/9/15
STATE OF TENNESSEE

Kimley»Horn

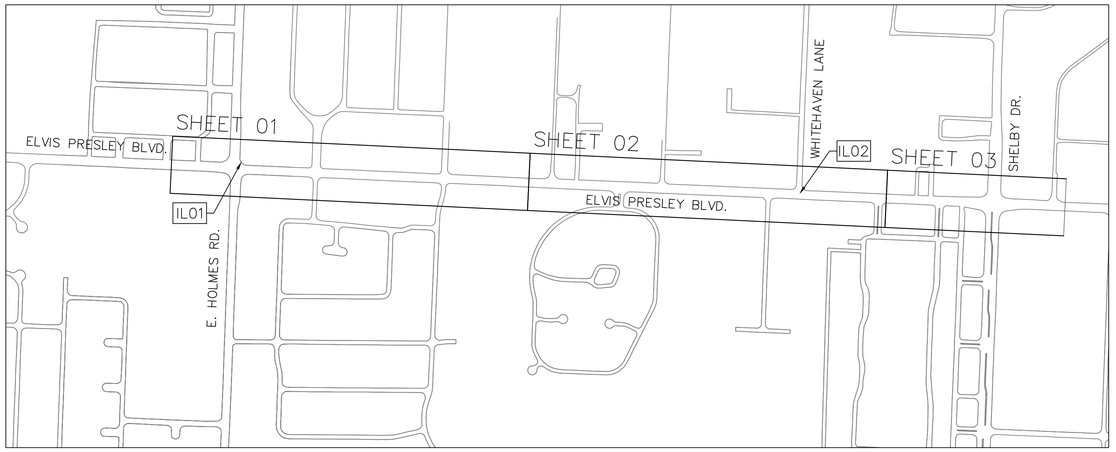
DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
SIGNAL SYSTEM PROJECT SET #6
SHELBY COUNTY, TN.

QUANTITIES

SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: KHA DATE: 12/13 SCALE: N.T.S.
DESIGNED: KHA DATE: 12/13 CHECKED: JFC DATE: 12/13
JURISDICTION: _____ SHEET 4 OF 24

DRAWING NAME: K:\WEM_TPTO\115087002 – Shelby County CMP 2\Design\Level 4 – Signal System\Bid Set 6\Cadd\Plans\BidSet 6-04-Quantities – Layout1.dwg Layout1 Jan 26, 2015 1:52PM BY: blaine.lynch

NOTE: INTERSECTION LAYOUT SHEETS SHOWN ONLY WHERE VIDEO DETECTION AND/OR EVP EQUIPMENT IS BEING INSTALLED.



LEGEND

(300) INTERSECTION ID.

[RD1] RADAR DETECTION SYSTEM

REVISIONS

DATE	DESCRIPTIONS	APPROVED

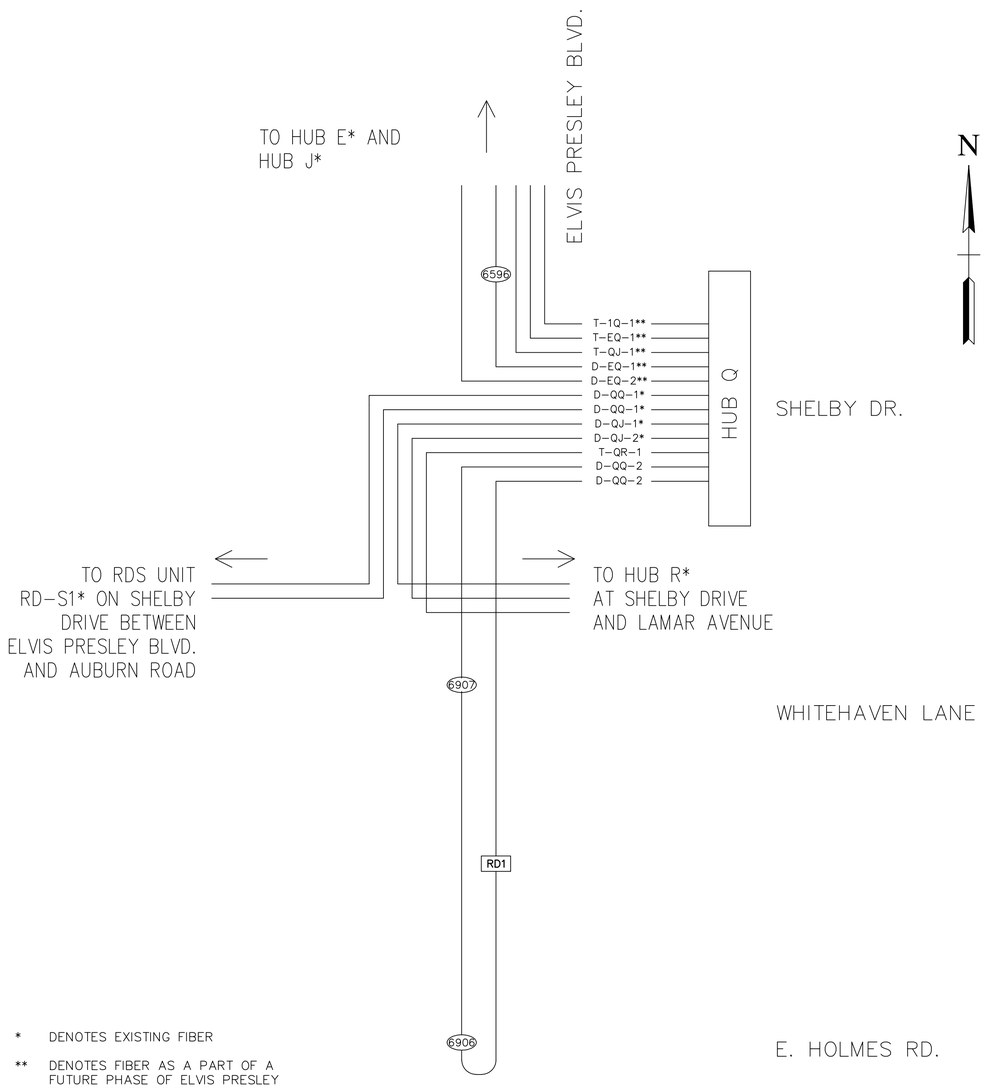
Kimley»Horn

DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
SIGNAL SYSTEM PROJECT SET #6
SHELBY COUNTY, TN.

CABLE LAYOUT/UTILITY SHEET KEY MAP AND SYSTEM DETECTOR LAYOUT

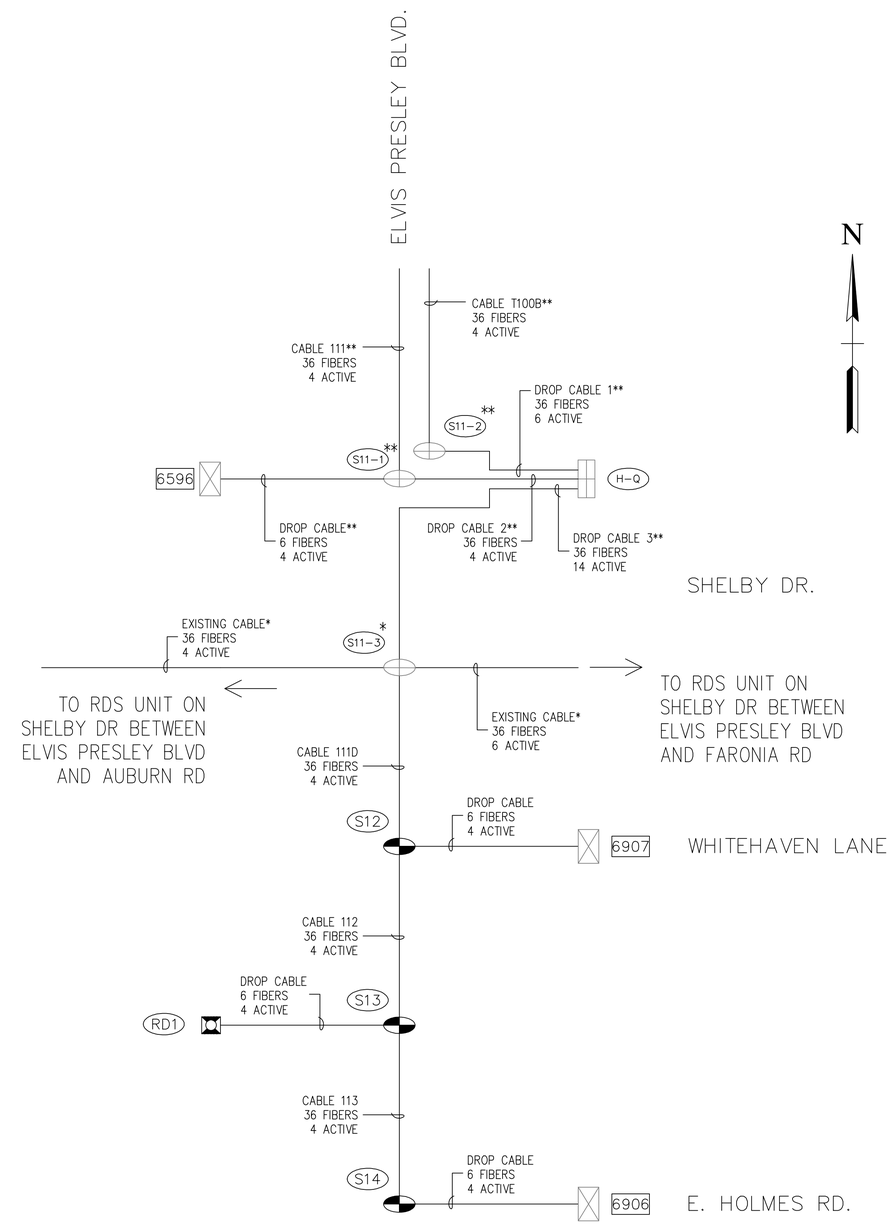
SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: KHA DATE: 12/13 SCALE: 1"=500'
DESIGNED: KHA DATE: 12/13 CHECKED: JFC DATE: 12/13
JURISDICTION: _____ SHEET 5 OF 24

DRAWING NAME: K:\WEM_TPTO\115087002 - Shelby County CMP 2\Design\Level 4 - Signal System\Bid Set 6\Cadd\Plans\BidSet 6-05-Plan Sheet and System Detectors Layout.dwg Layout1 Jan 26, 2015 1:52PM BY: blaine.lynch



* DENOTES EXISTING FIBER

** DENOTES FIBER AS A PART OF A FUTURE PHASE OF ELVIS PRESLEY BLVD. CONSTRUCTION



* DENOTES CABLE OR SPLICE ENCLOSURE INSTALLED AS A PART OF CM-STP-9409(59)

** DENOTES CABLE OR SPLICE ENCLOSURE TO BE INSTALLED AS A PART OF A FUTURE PHASE OF ELVIS PRESLEY BLVD. CONSTRUCTION.

LEGEND:

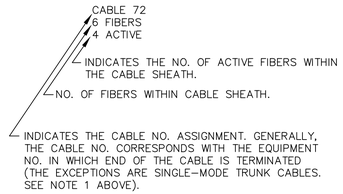
	EXISTING	PROPOSED
STANDARD PULL BOX		
OVERSIZED PULL BOX		
POLE MOUNTED CONTROLLER CABINET		
PEDESTAL MOUNTED CONTROLLER CABINET		
BASE MOUNTED CONTROLLER CABINET		
BASE MOUNTED HUB CABINET		
SPLICE ENCLOSURE		

XX	EQUIPMENT/CABINET REFERENCE DESIGNER
T/R	TRANSMIT/RECEIVE
REGEN	REGENERATION
STR	STRING (I.E. OPTICAL FIBER CIRCUIT)
—O—	CABLE BACKLASH
XXXX	INTERSECTION ID NUMBER

NOTES:

1. CABLES WITH THE "T" PREFIX (E.G., CABLE T9) ARE THE SINGLE-MODE TRUNKLINE CABLES. ALL OTHER CABLES ARE SINGLE-MODE POINT TO POINT COMMUNICATIONS CABLES.

2. CABLE IDENTIFICATION IS AS SHOWN IN THE FOLLOWING EXAMPLE:



3. INTERMEDIATE FIBER PULL BOXES ARE NOT SHOWN ON THIS SCHEMATIC.

E1

NOTES

1. THIS SCHEMATIC IS AN OVERVIEW OF THE BACKBONE NETWORK AND FIELD SUB-NETWORK TOPOLOGY. THE PURPOSE IS TO SHOW THE COMMUNICATION CHANNEL ASSIGNMENT AND THE UPSTREAM/DOWNSTREAM RELATIONSHIP OF THE LOCAL CONTROLLERS.

2. ALL SPLICE ENCLOSURES AND DROP CABLES ARE NOT SHOWN. SEE COMMUNICATION CABLE SCHEMATIC SHEET FOR CABLE AND SPLICE ENCLOSURE DETAILS. SEE SPLICE DIAGRAMS (SHEET SD01-SD03) FOR SPLICING DETAILS AND FIBER STRANDS IN USE.

3. EACH LINE SHOWN ON THIS SCHEMATIC REPRESENTS TWO STRANDS OF FIBERS (TRANSMIT AND RECEIVE).

4. COMMUNICATION CHANNELS ARE NAMED BY THE FOLLOWING CONVENTION:

CHANNEL TYPE	FROM HUB ID	TO HUB ID	CHANNEL SEQUENCE

CHANNELTYPE:
T – BACKBONE CHANNEL FOR HUB TO HUB COMMUNICATIONS
D – DISTRIBUTION CHANNEL FOR FIELD DEVICE COMMUNICATIONS

EXAMPLE:
T-GJ-1 BACKBONE CHANNEL #1 FROM HUB G TO J
D-JM-2 DISTRIBUTION CHANNEL #2 FROM HUB J TO M
T-1Q-1 BACKBONE CHANNEL #1 FROM TMC HUB 1 TO HUB Q

HUB ID:
CH – CITY HALL
LC – LOCAL CONTROLLER

REVISIONS

DATE	DESCRIPTIONS	APPROVED

DOUGLAS A. KIMLEY REGISTERED ENGINEER AGRICULTURE COMMERCE No. 00116231 STATE OF TENNESSEE 7/19/15

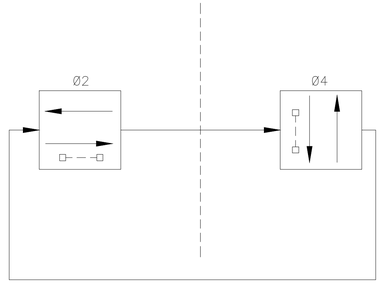
Kimley»Horn

DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
SIGNAL SYSTEM PROJECT SET #6
SHELBY COUNTY, TN.

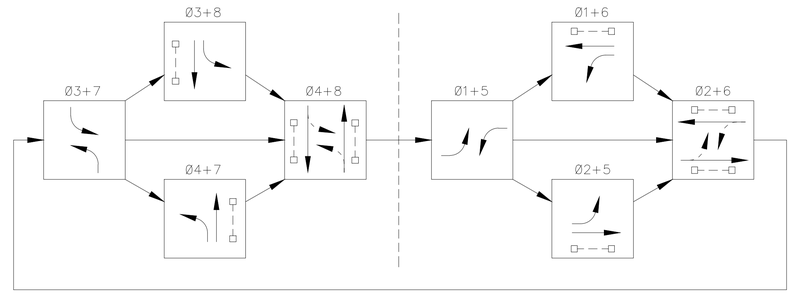
COMMUNICATIONS CABLE AND CHANNEL SCHEMATIC

SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: KHA DATE: 12/13 SCALE: N.T.S.
DESIGNED: KHA DATE: 12/13 CHECKED: JFC DATE: 12/13
JURISDICTION: SHEET 6 OF 24

DRAWING NAME: K:\MEM_TPTO\115087002 - Shelby County CMP 2\Design\Level 4 - Signal System\Bid Set 6\Cadd\Plans\BidSet 6-06-Communications Cable and Channel Schematic.dwg Layout1 Jan 26, 2015 1:53PM BY: blaine.lynch



INTERSECTION #6907
ELVIS PRESLEY BLVD. & WHITEHAVEN LN.



INTERSECTION #6906
ELVIS PRESLEY BLVD. & HOLMES RD.

NOTES:

1. ELVIS PRESLEY BLVD IS ALWAYS THE NOMINALLY NORTH–SOUTH STREET, UNLESS OTHERWISE NOTED.

2. PHASE 2 IS EAST BOUND AND PHASE 4 IS NORTH BOUND, UNLESS OTHERWISE SHOWN.

3. AT ALL INTERSECTIONS :

   a. SEQUENCE SHOWN IS IF ALL PHASES HAVE CALLS FOR SERVICE. PHASES WITHOUT CALLS MAY BE SKIPPED SUBJECT TO LIMITATION DESCRIBED IN NOTE 3b.

   b. TO PREVENT THE OCCURRENCE OF A "YELLOW TRAP" CONDITION FOR TRAFFIC TRAVELING IN THE OPPOSITE DIRECTION, A PROTECTED LEFT TURN PHASE SHALL NOT BE SERVED IMMEDIATELY FOLLOWING A PHASE WHICH INCLUDES THAT PARTICULAR LEFT TURN AS A PERMITTED MOVEMENT. ACCORDINGLY, FOR STANDARD NEMA PHASING:

      "PHASE 6 ON" SHALL RESULT IN A "PHASE OMIT" BEING APPLIED TO PHASE 1; AND

      "PHASE 8 ON" SHALL RESULT IN A "PHASE OMIT" BEING APPLIED TO PHASE 3; AND

      "PHASE 2 ON" SHALL RESULT IN A "PHASE OMIT" BEING APPLIED TO PHASE 5; AND

      "PHASE 4 ON" SHALL RESULT IN A "PHASE OMIT" BEING APPLIED TO PHASE 7.

REVISIONS

DATE	DESCRIPTIONS	APPROVED

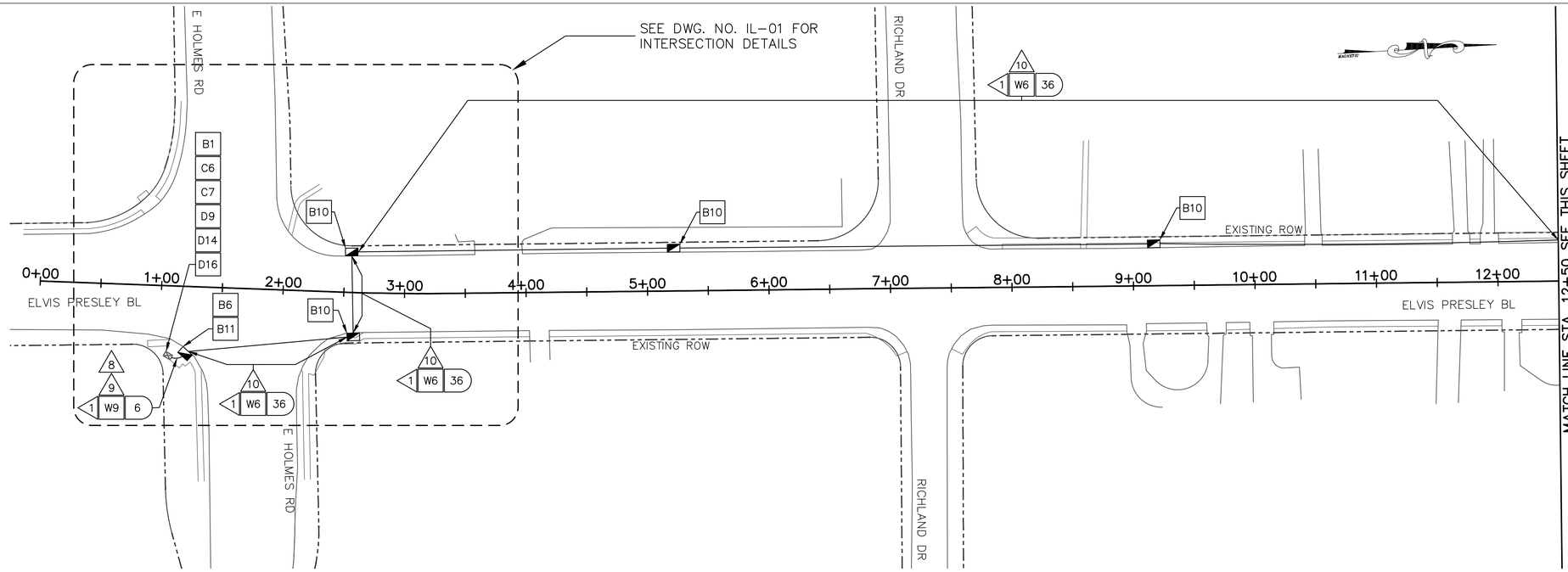
Kimley»Horn

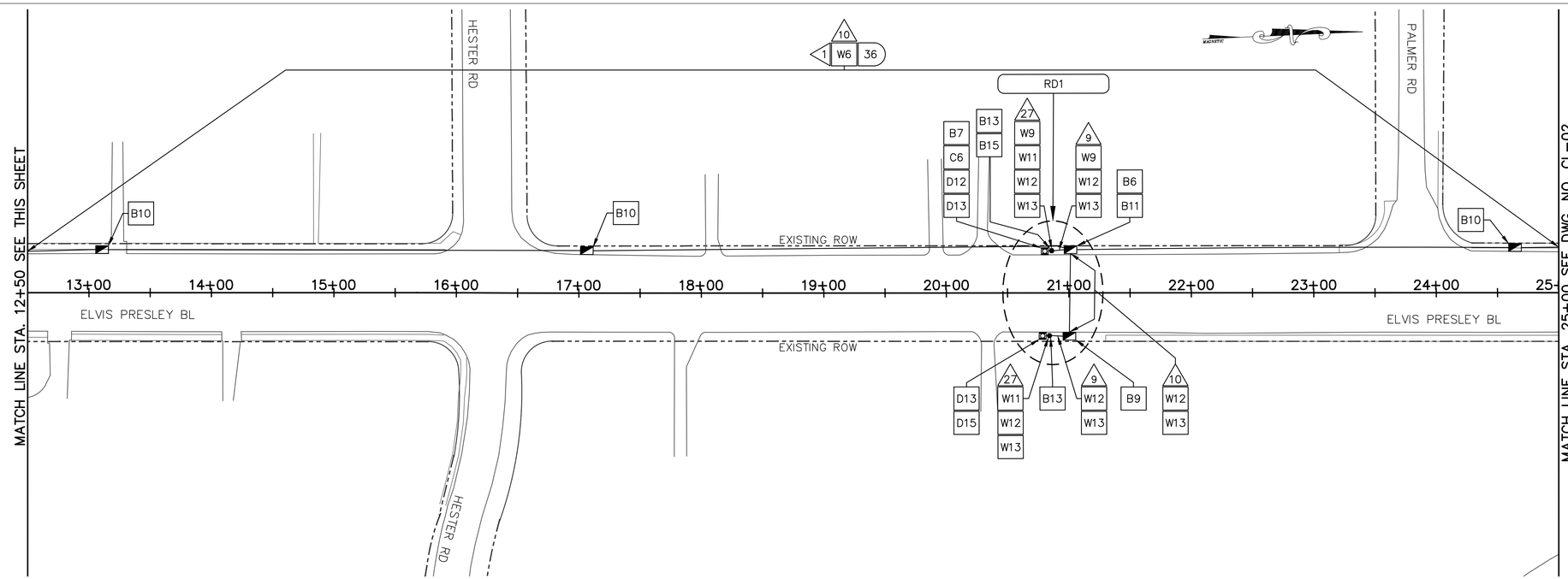
DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
SIGNAL SYSTEM PROJECT SET #6
SHELBY COUNTY, TN.

PHASING DIAGRAMS

SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: KHA DATE: 12/13 SCALE: N.T.S.
DESIGNED: KHA DATE: 12/13 CHECKED: JFC DATE: 12/13
JURISDICTION: _____ SHEET 7 OF 24

DRAWING NAME: K:\MEM_TPTO\115087002 – Shelby County CMP 2\Design\Level 4 – Signal System\Bid Set 6\Cadd\Plans\BidSet 6-07-Phasing Diagrams.dwg Layout1 Jan 26, 2015 1:53PM BY: blaine.lynch





B1	RETAIN AND MODIFY EXISTING CABINET
B3	INSTALL NEW BASE MOUNTED CONTROLLER CABINET
B6	INSTALL WEATHER PROOF SPLICE ENCLOSURE
B7	INSTALL FIBER DISTRIBUTION BOX
B9	INSTALL TRAFFIC SIGNAL PULLBOX
B10	INSTALL FIBER OPTIC PULLBOX TYPE A
B11	INSTALL FIBER OPTIC PULLBOX TYPE B
B13	INSTALL 20' PEDESTAL POLE
B15	MLGW POWER SERVICE CONNECTION
C2	INSTALL 8-PHASE CONTROLLER
C4	REMOVE EXISTING CONTROLLER AND INSTALL NEW CONTROLLER
C5	INSTALL FIBER OPTIC MODEM
C6	INSTALL ETHERNET CABINET SWITCH
C7	INSTALL SERIAL DEVICE SERVER
D1	INSTALL EVP DETECTOR
D2	INSTALL EVP CONFIRMATION BEACON
D3	INSTALL EVP CONFIRMATION LAMP
D4	INSTALL VIDEO DETECTION CAMERA WITH TYPE 1 MOUNT
D5	INSTALL VIDEO DETECTION CAMERA WITH TYPE 2 MOUNT
D6	INSTALL VIDEO DETECTION CAMERA WITH TYPE 3 MOUNT
D8	INSTALL EVP PHASE SELECTOR
D9	INSTALL VIDEO DETECTION PROCESSOR
D10	INSTALL DETECTOR AMPLIFIER (4-CHANNEL) IN CABINET
D11	REUSE SYSTEM DETECTOR AMPLIFIER(S) (SEE REMOVAL DIAGRAM)
D12	INSTALL NEW POLE MOUNTED RDS CABINET
D13	INSTALL RADAR DETECTION SYSTEM
D14	INSTALL VIDEO REMOTE MANAGEMENT CARD
D15	INSTALL NEW SECONDARY POLE MOUNTED RDS CABINET
D16	INSTALL BLUETOOTH DETECTION SYSTEM
W1	EVP DETECTOR CABLE(S)
W2	EVP CONFIRMATION BEACON POWER CABLE(S)
W3	EVP CONFIRMATION LAMP POWER CABLE(S)
W4	VIDEO DETECTOR CABLE(S)
W5	2C DETECTOR CABLE(S)
W6	SMFO CABLE
W9	DROP CABLES (6-FIBER)
W11	RDS CABLE
W12	RDS POWER CABLE
W13	ETHERNET DATA CABLE
3	INSTALL 2" RISER INTO BOTTOM OF CABINET
4	INSTALL 2" RISER WITH WEATHERHEAD
5	INSTALL 2" RISER WITH SEALING BUSHING
6	INSTALL 2" CONDUIT ENTRANCE INTO EXISTING FOUNDATION
7	INSTALL 2" RGS CONDUIT ON EXISTING STRUCTURE
8	INSTALL 2" CONDUIT INTO EXTERIOR OF CABINET
9	INSTALL 2" PVC CONDUIT
10	JACK AND BORE 2" CONDUIT
11	INSTALL 3" PVC CONDUIT
13	INSTALL 3" RISER WITH WEATHERHEAD
14	INSTALL 3" CONDUIT INTO EXTERIOR OF CABINET
17	REUSE EXISTING RISER WITH SEALING BUSHING
18	TIE CONDUIT INTO EXISTING PULLBOX
19	REUSE EXISTING CONDUIT
23	INSTALL CABLES IN EXISTING POLE IN EXISTING WEATHERHEAD
24	INSTALL CABLES IN EXISTING POLE IN PROPOSED WEATHERHEAD
25	INSTALL CABLES IN EXISTING WEATHERHEAD
27	INSTALL CABLES IN PROPOSED POLE
29	INSTALL CABLES IN EXISTING CONDUIT(S) INTO CABINET
30	LASH TO EXISTING MESSENGER WIRE/SPANWIRE

NUMBER OF CABLES, LOOPS, ETC.
X NUMBER OF CONDUCTORS, PAIRS, ETC.

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50 ft.

REVISIONS

DATE	DESCRIPTIONS	APPROVED

STEVEN HILL
REGISTERED PROFESSIONAL ENGINEER
No. 108270
STATE OF TENNESSEE
8/13/14

POWERS HILL DESIGN
CIVIL ENGINEERING. CIVIL RESPONSIBILITY.

Kimley»Horn

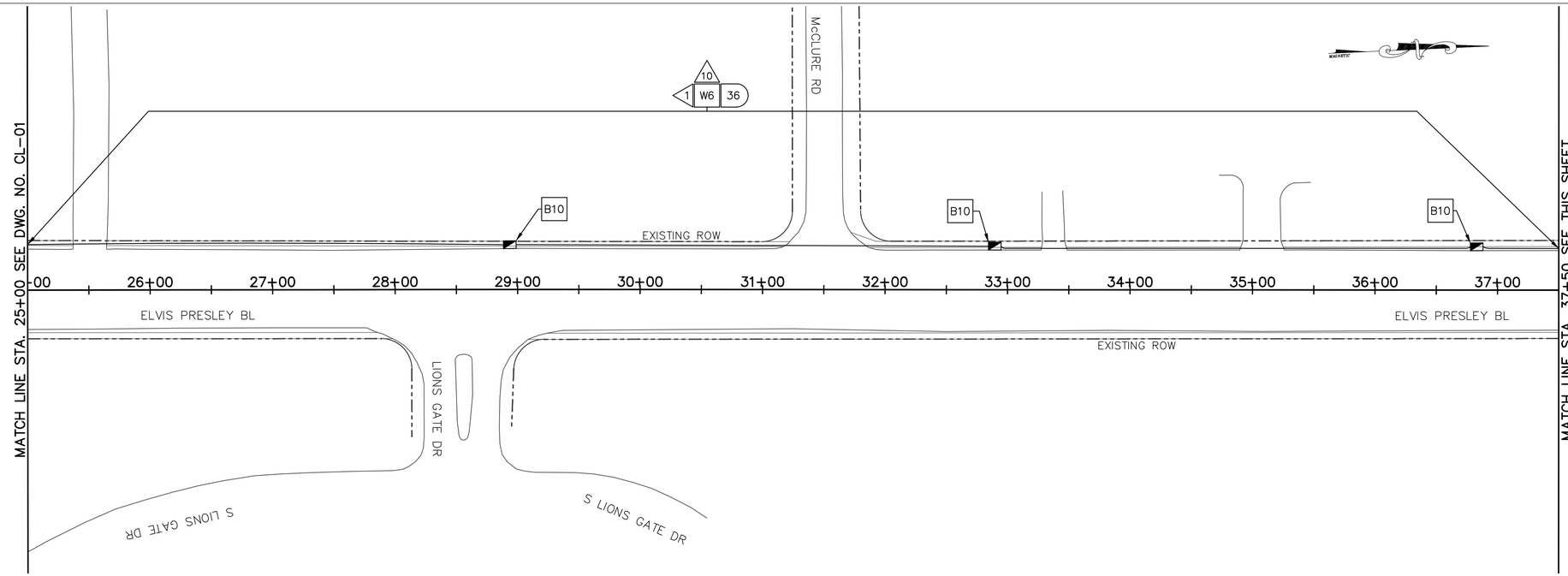
CL-01

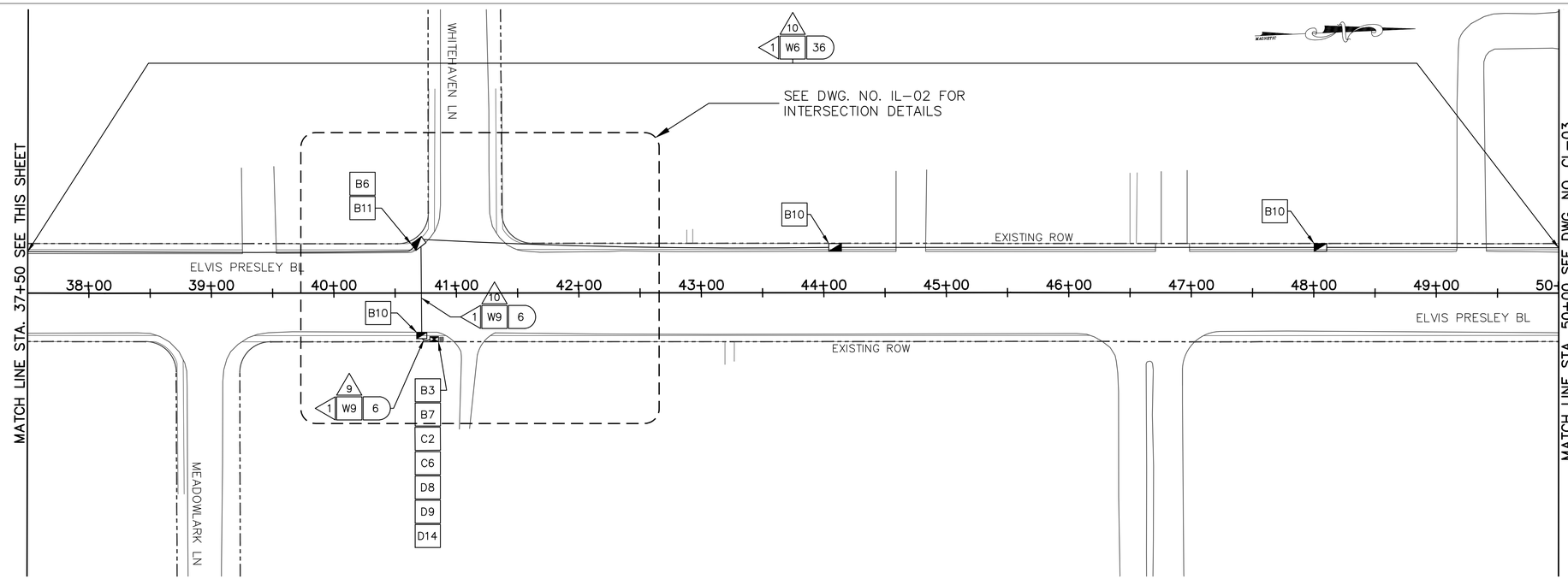
DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
SIGNAL SYSTEM PROJECT SET #6
SHELBY COUNTY, TN.

ELVIS PRESLEY BOULEVARD

CABLE LAYOUT
FROM 0+00 TO 25+00

SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: APL DATE: 02/14 SCALE: 1"=50'
DESIGNED: APL DATE: 02/14 CHECKED: SH DATE: 08/14
JURISDICTION: _____ SHEET 8 OF 24





B1	RETAIN AND MODIFY EXISTING CABINET
B3	INSTALL NEW BASE MOUNTED CONTROLLER CABINET
B6	INSTALL WEATHER PROOF SPLICE ENCLOSURE
B7	INSTALL FIBER DISTRIBUTION BOX
B9	INSTALL TRAFFIC SIGNAL PULLBOX
B10	INSTALL FIBER OPTIC PULLBOX TYPE A
B11	INSTALL FIBER OPTIC PULLBOX TYPE B
B13	INSTALL 20' PEDESTAL POLE
B15	MLGW POWER SERVICE CONNECTION
C2	INSTALL 8-PHASE CONTROLLER
C4	REMOVE EXISTING CONTROLLER AND INSTALL NEW CONTROLLER
C5	INSTALL FIBER OPTIC MODEM
C6	INSTALL ETHERNET CABINET SWITCH
C7	INSTALL SERIAL DEVICE SERVER
D1	INSTALL EVP DETECTOR
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D5	INSTALL VIDEO DETECTION CAMERA WITH TYPE 2 MOUNT
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D8	INSTALL EVP PHASE SELECTOR
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D12	INSTALL NEW POLE MOUNTED RDS CABINET
D13	INSTALL RADAR DETECTION SYSTEM
D14	INSTALL VIDEO REMOTE MANAGEMENT CARD
D15	INSTALL NEW SECONDARY POLE MOUNTED RDS CABINET
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W2	EVP CONFIRMATION BEACON POWER CABLE(S)
W3	EVP CONFIRMATION LAMP POWER CABLE(S)
W4	VIDEO DETECTOR CABLE(S)
W5	2C DETECTOR CABLE(S)
W6	SMFO CABLE
W9	DROP CABLES (6-FIBER)
W11	RDS CABLE
W12	RDS POWER CABLE
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3	INSTALL 2" RISER INTO BOTTOM OF CABINET
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19	REUSE EXISTING CONDUIT
23	INSTALL CABLES IN EXISTING POLE IN EXISTING WEATHERHEAD
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25	INSTALL CABLES IN EXISTING WEATHERHEAD
27	INSTALL CABLES IN PROPOSED POLE
29	INSTALL CABLES IN EXISTING CONDUIT(S) INTO CABINET
30	LASH TO EXISTING MESSENGER WIRE/SPANWIRE

NUMBER OF CABLES, LOOPS, ETC.
X NUMBER OF CONDUCTORS, PAIRS, ETC.

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50 ft.

REVISIONS

DATE	DESCRIPTIONS	APPROVED

STEVEN HILL REGISTERED ENGINEER No. 16272 STATE OF TENNESSEE 8/14/14

POWERS HILL DESIGN CIVIL ENGINEERING. CIVIL RESPONSIBILITY.
Kimley»Horn

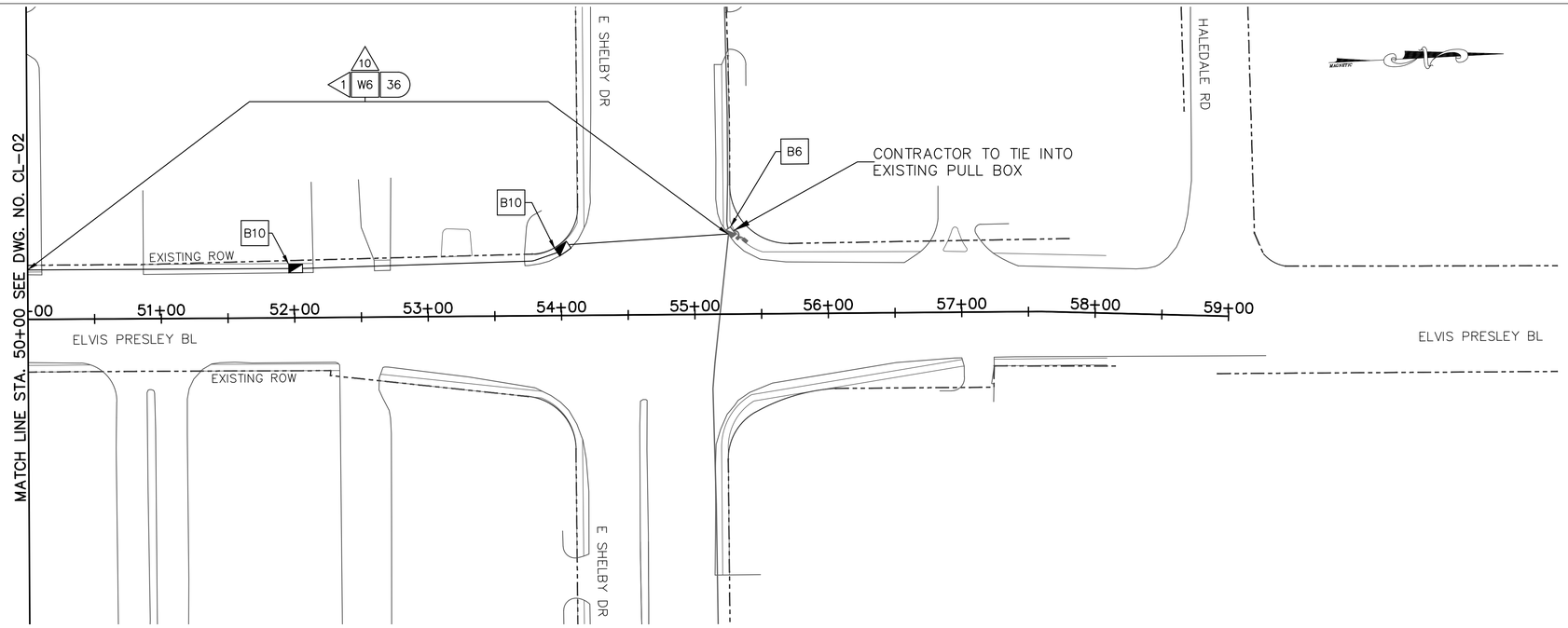
CL-02

DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
SIGNAL SYSTEM PROJECT SET #6
SHELBY COUNTY, TN.

ELVIS PRESLEY BOULEVARD

CABLE LAYOUT
FROM 25+00 TO 50+00

SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: APL DATE: 02/14 SCALE: 1"=50'
DESIGNED: APL DATE: 02/14 CHECKED: SH DATE: 08/14
JURISDICTION: _____ SHEET 9 OF 24



B1	RETAIN AND MODIFY EXISTING CABINET
B3	INSTALL NEW BASE MOUNTED CONTROLLER CABINET
B6	INSTALL WEATHER PROOF SPLICE ENCLOSURE
B7	INSTALL FIBER DISTRIBUTION BOX
B9	INSTALL TRAFFIC SIGNAL PULLBOX
B10	INSTALL FIBER OPTIC PULLBOX TYPE A
B11	INSTALL FIBER OPTIC PULLBOX TYPE B
B13	INSTALL 20' PEDESTAL POLE
B15	MLGW POWER SERVICE CONNECTION
C2	INSTALL 8-PHASE CONTROLLER
C4	REMOVE EXISTING CONTROLLER AND INSTALL NEW CONTROLLER
C5	INSTALL FIBER OPTIC MODEM
C6	INSTALL ETHERNET CABINET SWITCH
C7	INSTALL SERIAL DEVICE SERVER
D1	INSTALL EVP DETECTOR
D2	INSTALL EVP CONFIRMATION BEACON
D3	INSTALL EVP CONFIRMATION LAMP
D4	INSTALL VIDEO DETECTION CAMERA WITH TYPE 1 MOUNT
D5	INSTALL VIDEO DETECTION CAMERA WITH TYPE 2 MOUNT
D6	INSTALL VIDEO DETECTION CAMERA WITH TYPE 3 MOUNT
D8	INSTALL EVP PHASE SELECTOR
D9	INSTALL VIDEO DETECTION PROCESSOR
D10	INSTALL DETECTOR AMPLIFIER (4-CHANNEL) IN CABINET
D11	REUSE SYSTEM DETECTOR AMPLIFIER(S) (SEE REMOVAL DIAGRAM)
D12	INSTALL NEW POLE MOUNTED RDS CABINET
D13	INSTALL RADAR DETECTION SYSTEM
D14	INSTALL VIDEO REMOTE MANAGEMENT CARD
D15	INSTALL NEW SECONDARY POLE MOUNTED RDS CABINET
D16	INSTALL BLUETOOTH DETECTION SYSTEM
W1	EVP DETECTOR CABLE(S)
W2	EVP CONFIRMATION BEACON POWER CABLE(S)
W3	EVP CONFIRMATION LAMP POWER CABLE(S)
W4	VIDEO DETECTOR CABLE(S)
W5	2C DETECTOR CABLE(S)
W6	SMFO CABLE
W9	DROP CABLES (6-FIBER)
W11	RDS CABLE
W12	RDS POWER CABLE
W13	ETHERNET DATA CABLE
3	INSTALL 2" RISER INTO BOTTOM OF CABINET
4	INSTALL 2" RISER WITH WEATHERHEAD
5	INSTALL 2" RISER WITH SEALING BUSHING
6	INSTALL 2" CONDUIT ENTRANCE INTO EXISTING FOUNDATION
7	INSTALL 2" RGS CONDUIT ON EXISTING STRUCTURE
8	INSTALL 2" CONDUIT INTO EXTERIOR OF CABINET
9	INSTALL 2" PVC CONDUIT
10	JACK AND BORE 2" CONDUIT
11	INSTALL 3" PVC CONDUIT
13	INSTALL 3" RISER WITH WEATHERHEAD
14	INSTALL 3" CONDUIT INTO EXTERIOR OF CABINET
17	REUSE EXISTING RISER WITH SEALING BUSHING
18	TIE CONDUIT INTO EXISTING PULLBOX
19	REUSE EXISTING CONDUIT
23	INSTALL CABLES IN EXISTING POLE IN EXISTING WEATHERHEAD
24	INSTALL CABLES IN EXISTING POLE IN PROPOSED WEATHERHEAD
25	INSTALL CABLES IN EXISTING WEATHERHEAD
27	INSTALL CABLES IN PROPOSED POLE
29	INSTALL CABLES IN EXISTING CONDUIT(S) INTO CABINET
30	LASH TO EXISTING MESSENGER WIRE/SPANWIRE

NUMBER OF CABLES, LOOPS, ETC.
X NUMBER OF CONDUCTORS, PAIRS, ETC.

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50 ft.

REVISIONS

DATE	DESCRIPTIONS	APPROVED

STEVEN HILL REGISTERED ENGINEER AGRICULTURE COMMERCE 16275 STATE OF TENNESSEE 2/13/14

POWERS HILL DESIGN
CIVIL ENGINEERING. CIVIL RESPONSIBILITY.

Kimley»Horn

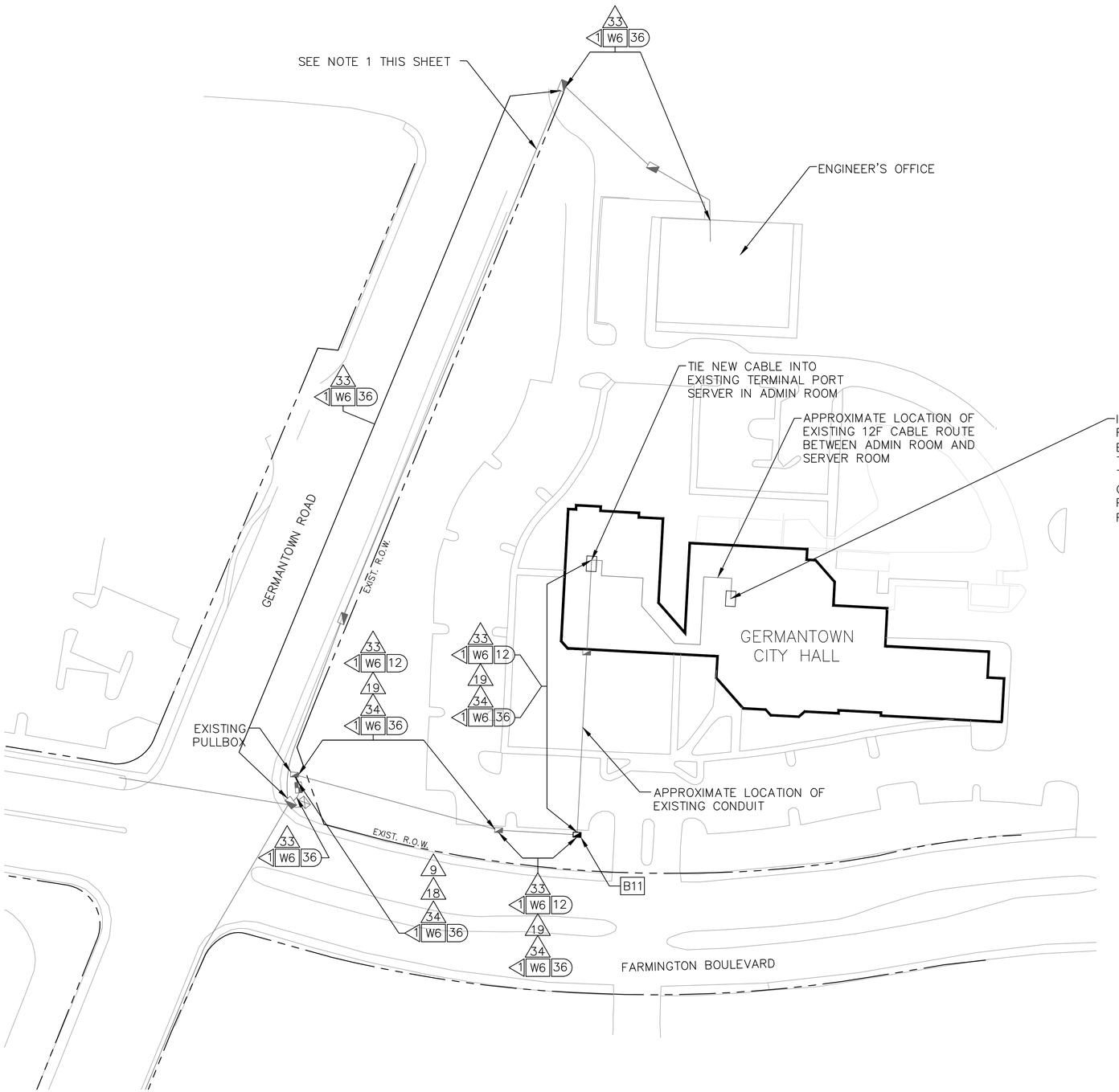
CL-03

DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
SIGNAL SYSTEM PROJECT SET #6
SHELBY COUNTY, TN.

ELVIS PRESLEY BOULEVARD

CABLE LAYOUT
FROM 50+00 TO 59+00

SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: APL DATE: 02/14 SCALE: 1"=50'
DESIGNED: APL DATE: 02/14 CHECKED: SH DATE: 08/14
JURISDICTION: _____ SHEET 10 OF 24



NOTE 1:
CONTRACTOR TO REMOVE EXISTING FIBER CONNECTING THE HUB CABINET AT THE INTERSECTION OF GERMANTOWN ROAD AND FARMINGTON BOULEVARD TO THE CITY OF GERMANTOWN ENGINEER'S OFFICE FROM EXISTING CONDUIT. ALL OTHER CABLES WITHIN THE EXISTING CONDUIT ARE TO REMAIN IN PLACE. CONTRACTOR TO RERUN REMOVED FIBER THROUGH THE EXISTING CONDUIT TO THE ADMIN ROOM IN CITY HALL AS SHOWN ON THIS SHEET.

INSTALL NEW RACK MOUNTED DESKTOP COMPUTER. RELOCATE EXISTING TERMINAL PORT SERVER AND ETHERNET SWITCH (TYPE B) FROM ENGINEER'S OFFICE TO SERVER ROOM.
THE CONTRACTOR SHALL CONTACT THE CITY OF GERMANTOWN AT LEAST THREE (3) BUSINESS DAYS PRIOR TO COMMENCING INSTALLATION. CONTACT TONY FISCHER (901-757-7324).

NUMBER OF CABLES, LOOPS, ETC.
X NUMBER OF CONDUCTORS, PAIRS, ETC.

B1	RETAIN AND MODIFY EXISTING CABINET
B3	INSTALL NEW BASE MOUNTED CONTROLLER CABINET
B6	INSTALL WEATHER PROOF SPLICE ENCLOSURE
B7	INSTALL FIBER DISTRIBUTION BOX
B9	INSTALL TRAFFIC SIGNAL PULLBOX
B10	INSTALL FIBER OPTIC PULLBOX TYPE A
B11	INSTALL FIBER OPTIC PULLBOX TYPE B
B13	INSTALL 20' PEDESTAL POLE
B15	MLGW POWER SERVICE CONNECTION
C2	INSTALL 8-PHASE CONTROLLER
C4	REMOVE EXISTING CONTROLLER AND INSTALL NEW CONTROLLER
C6	INSTALL ETHERNET CABINET SWITCH
C7	INSTALL SERIAL DEVICE SERVER
D1	INSTALL EVP DETECTOR
D2	INSTALL EVP CONFIRMATION BEACON
D3	INSTALL EVP CONFIRMATION LAMP
D5	INSTALL VIDEO DETECTION CAMERA WITH TYPE 2 MOUNT
D6	INSTALL VIDEO DETECTION CAMERA WITH TYPE 3 MOUNT
D8	INSTALL EVP PHASE SELECTOR
D9	INSTALL VIDEO DETECTION PROCESSOR
D10	INSTALL DETECTOR AMPLIFIER (4-CHANNEL) IN CABINET
D11	REUSE SYSTEM DETECTOR AMPLIFIER(S) (SEE REMOVAL DIAGRAM)
D12	INSTALL NEW POLE MOUNTED RDS CABINET
D13	INSTALL RADAR DETECTION SYSTEM
D14	INSTALL VIDEO REMOTE MANAGEMENT CARD
D15	INSTALL NEW SECONDARY POLE MOUNTED RDS CABINET
D16	INSTALL BLUETOOTH DETECTION SYSTEM
W1	EVP DETECTOR CABLE(S)
W2	EVP CONFIRMATION BEACON POWER CABLE(S)
W3	EVP CONFIRMATION LAMP POWER CABLE(S)
W4	VIDEO DETECTOR CABLE(S)
W5	2C DETECTOR CABLE(S)
W6	SMFO CABLE
W9	DROP CABLES (6-FIBER)
W11	RDS CABLE
W12	RDS POWER CABLE
W13	ETHERNET DATA CABLE
3	INSTALL 2" RISER INTO BOTTOM OF CABINET
4	INSTALL 2" RISER WITH WEATHERHEAD
5	INSTALL 2" RISER WITH SEALING BUSHING
6	INSTALL 2" CONDUIT ENTRANCE INTO EXISTING FOUNDATION
7	INSTALL 2" RGS CONDUIT ON EXISTING STRUCTURE
8	INSTALL 2" CONDUIT INTO EXTERIOR OF CABINET
9	INSTALL 2" PVC CONDUIT
10	JACK AND BORE 2" CONDUIT
11	INSTALL 3" PVC CONDUIT
13	INSTALL 3" RISER WITH WEATHERHEAD
14	INSTALL 3" CONDUIT INTO EXTERIOR OF CABINET
17	REUSE EXISTING RISER WITH SEALING BUSHING
18	TIE CONDUIT INTO EXISTING PULLBOX
19	REUSE EXISTING CONDUIT
23	INSTALL CABLES IN EXISTING POLE IN EXISTING WEATHERHEAD
24	INSTALL CABLES IN EXISTING POLE IN PROPOSED WEATHERHEAD
25	INSTALL CABLES IN EXISTING WEATHERHEAD
26	INSTALL CABLES IN EXISTING POLE
27	INSTALL CABLES IN PROPOSED POLE
29	INSTALL CABLES IN EXISTING CONDUIT(S) INTO CABINET
30	LASH TO EXISTING MESSENGER WIRE/SPANWIRE
33	REMOVE EXISTING FIBER CABLE
34	REUSE EXISTING FIBER CABLE

CL-04

REVISIONS

DATE	DESCRIPTIONS	APPROVED

DOUGLAS A. [illegible] AGRICULTURE COMMERCE No. 00116111 STATE OF TENNESSEE 12/19/15

Kimley»Horn

DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
SIGNAL SYSTEM PROJECT SET #6
SHELBY COUNTY, TN.

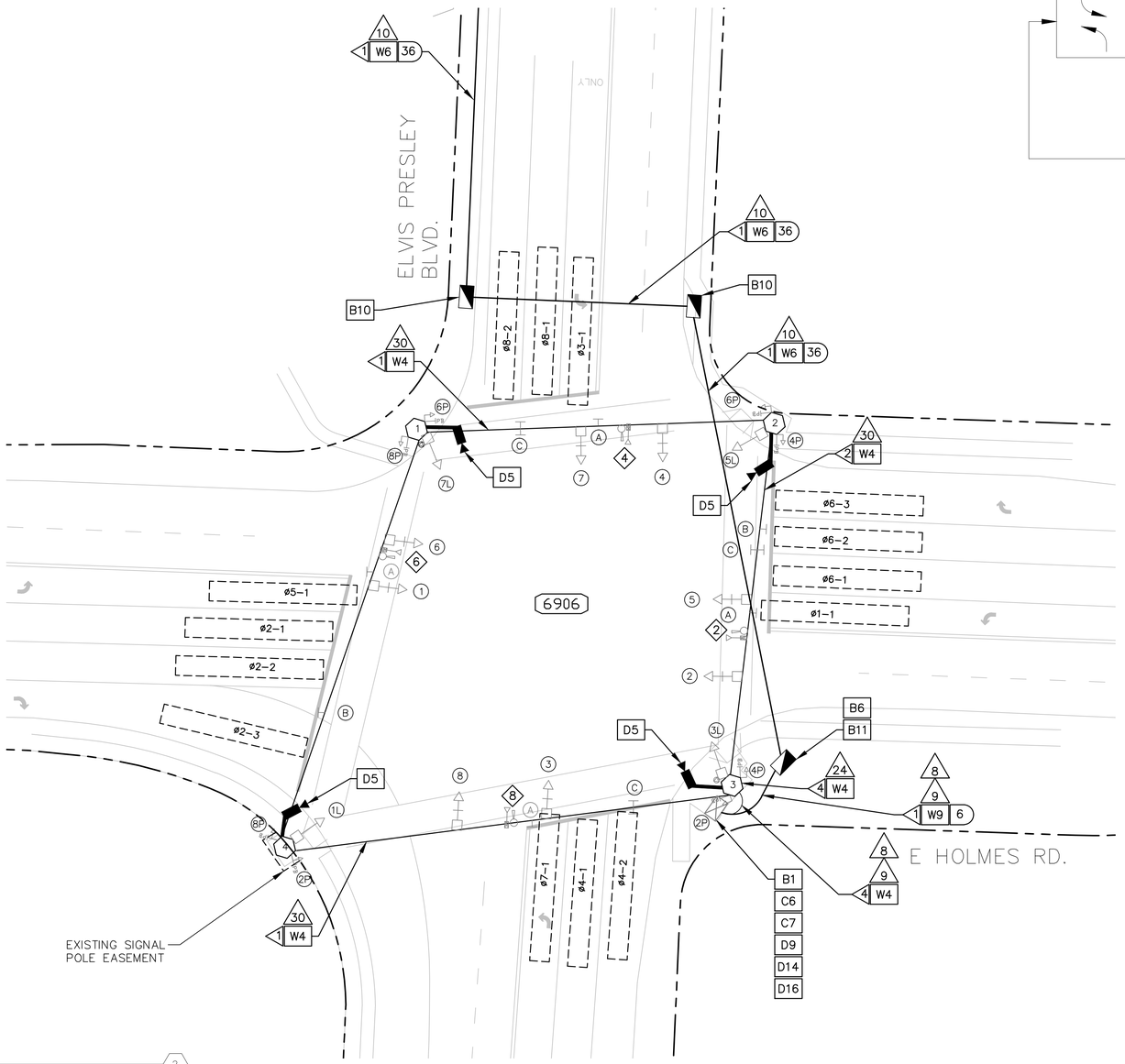
GERMANTOWN CITY HALL LAYOUT SHEET

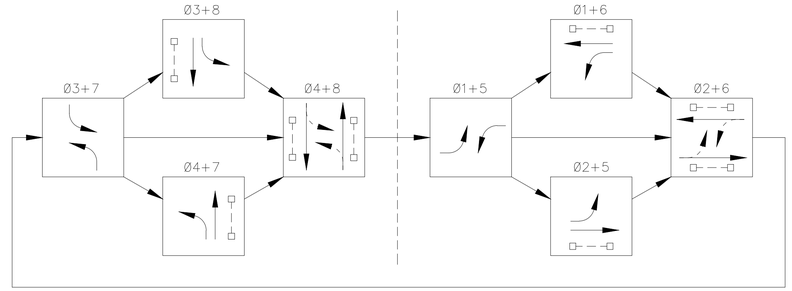
SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: KHA DATE: 12/13 SCALE: 1"=50'
DESIGNED: KHA DATE: 12/13 CHECKED: JFC DATE: 12/13
JURISDICTION:

DRAWING NAME: K:\WEM_TPTO\115087002 - Shelby County CMP 2\Design\Level 4 - Signal System\Bid Set 6\Cadd\Plans\BidSet 6-11-CL-04-City Hall Work.dwg Layout1 Jan 26, 2015 1:53PM BY: blaine.lynch

NOTES:

1) ALL CONDUIT WORK IS SCHEMATIC AND MUST BE PERFORMED WITHIN THE EXISTING R.O.W.





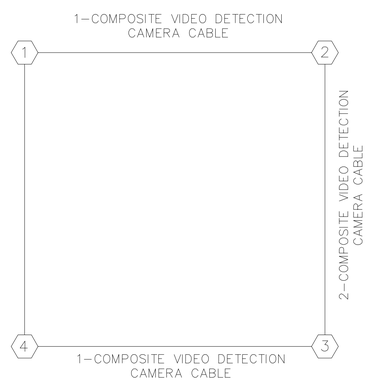
PHASE DIAGRAM

ZONE	MODE	ZONE	MODE
ø1–1	PRESENCE	ø5–1	PRESENCE
ø2–1	PRESENCE	ø6–1	PRESENCE
ø2–2	PRESENCE	ø6–2	PRESENCE
ø2–3*	PRESENCE	ø6–3*	PRESENCE
ø3–1	PRESENCE	ø7–1	PRESENCE
ø4–1	PRESENCE	ø8–1	PRESENCE
ø4–2	PRESENCE	ø8–2	PRESENCE

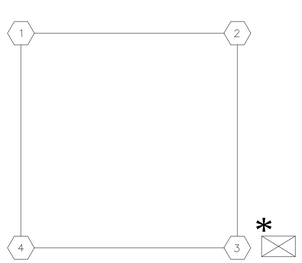
* 5 SECOND DELAY

ZONE ASSIGNMENT CHART

PREEMPT TABLE	
DETECTOR	PHASE(S) CALLED
2	2 & 6
4	4 & 8
6	2 & 6
8	4 & 8

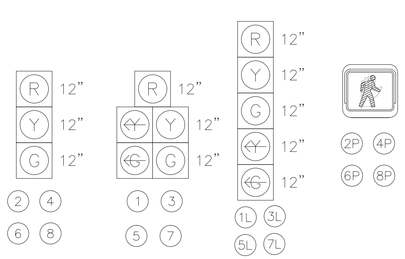


GENERAL WIRING DIAGRAM

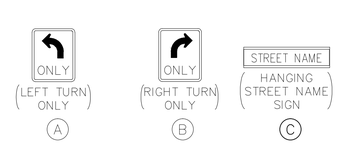


REMOVAL DIAGRAM

* EXISTING SIGNAL POLES AND CONTROLLER CABINET TO REMAIN.
- TURN OFF STOP BAR VEHICLE DETECTOR CHANNELS ON EXISTING AMPLIFIERS IN CABINET.
- ADVANCE DETECTION AMPLIFIERS TO REMAIN.



EXISTING SIGNAL HEAD TYPES



EXISTING OVERHEAD SIGNS

NUMBER OF CABLES, LOOPS, ETC.
X NUMBER OF CONDUCTORS, PAIRS, ETC.

REVISIONS		
DATE	DESCRIPTIONS	APPROVED

Kimley»Horn

B1	RETAIN AND MODIFY EXISTING CABINET
B3	INSTALL NEW BASE MOUNTED CONTROLLER CABINET
B6	INSTALL WEATHER PROOF SPLICE ENCLOSURE
B7	INSTALL FIBER DISTRIBUTION BOX
B9	INSTALL TRAFFIC SIGNAL PULLBOX
B10	INSTALL FIBER OPTIC PULLBOX TYPE A
B11	INSTALL FIBER OPTIC PULLBOX TYPE B
B13	INSTALL 20' PEDESTAL POLE
B15	MLGW POWER SERVICE CONNECTION
C2	INSTALL 8–PHASE CONTROLLER
C4	REMOVE EXISTING CONTROLLER AND INSTALL NEW CONTROLLER
C6	INSTALL ETHERNET CABINET SWITCH
C7	INSTALL SERIAL DEVICE SERVER
D1	INSTALL EVP DETECTOR
D2	INSTALL EVP CONFIRMATION BEACON
D3	INSTALL EVP CONFIRMATION LAMP
D5	INSTALL VIDEO DETECTION CAMERA WITH TYPE 2 MOUNT
D6	INSTALL VIDEO DETECTION CAMERA WITH TYPE 3 MOUNT
D8	INSTALL EVP PHASE SELECTOR
D9	INSTALL VIDEO DETECTION PROCESSOR
D10	INSTALL DETECTOR AMPLIFIER (4–CHANNEL) IN CABINET
D11	REUSE SYSTEM DETECTOR AMPLIFIER(S) (SEE REMOVAL DIAGRAM)
D12	INSTALL NEW POLE MOUNTED RDS CABINET
D13	INSTALL RADAR DETECTION SYSTEM
D14	INSTALL VIDEO REMOTE MANAGEMENT CARD
D15	INSTALL NEW SECONDARY POLE MOUNTED RDS CABINET
D16	INSTALL BLUETOOTH DETECTION SYSTEM
W1	EVP DETECTOR CABLE(S)
W2	EVP CONFIRMATION BEACON POWER CABLE(S)
W3	EVP CONFIRMATION LAMP POWER CABLE(S)
W4	VIDEO DETECTOR CABLE(S)
W5	2C DETECTOR CABLE(S)
W6	SMFO CABLE
W9	DROP CABLES (6–FIBER)
W11	RDS CABLE
W12	RDS POWER CABLE
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3	INSTALL 2" RISER INTO BOTTOM OF CABINET
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18	TIE CONDUIT INTO EXISTING PULLBOX
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23	INSTALL CABLES IN EXISTING POLE IN EXISTING WEATHERHEAD
24	INSTALL CABLES IN EXISTING POLE IN PROPOSED WEATHERHEAD
25	INSTALL CABLES IN EXISTING WEATHERHEAD
26	INSTALL CABLES IN EXISTING POLE
27	INSTALL CABLES IN PROPOSED POLE
29	INSTALL CABLES IN EXISTING CONDUIT(S) INTO CABINET
30	LASH TO EXISTING MESSENGER WIRE/SPANWIRE
33	REMOVE EXISTING FIBER CABLE
34	REUSE EXISTING FIBER CABLE

IL–01

DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
SIGNAL SYSTEM PROJECT SET #6
SHELBY COUNTY, TN.

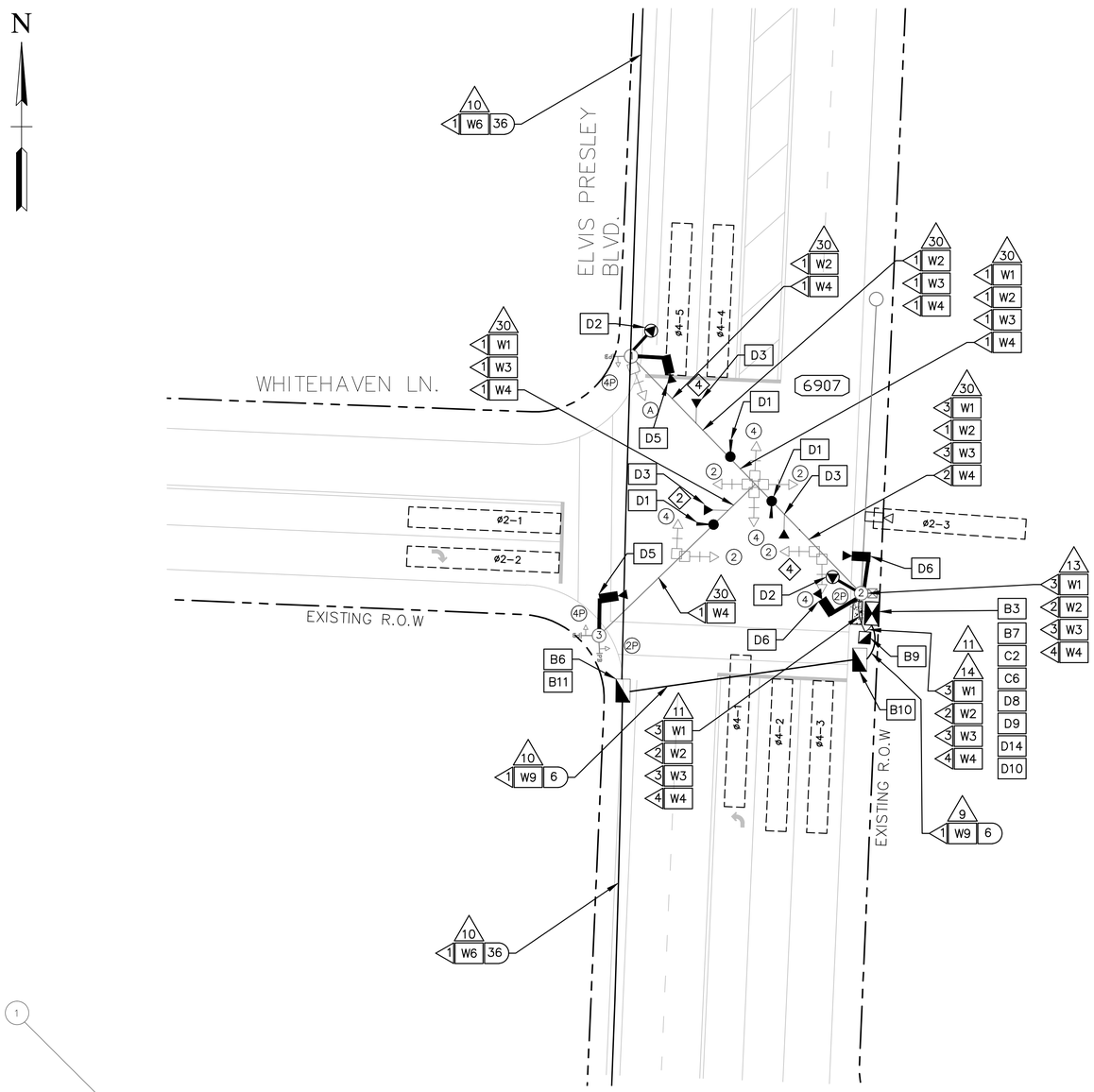
HOLMES RD. AT ELVIS PRESLEY BLVD. INTERSECTION LAYOUT

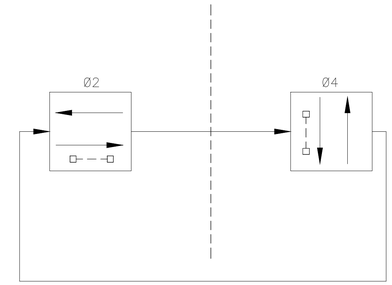
SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: KHA DATE: 12/13 SCALE: 1"=20'
DESIGNED: KHA DATE: 12/13 CHECKED: JFC DATE: 12/13
JURISDICTION: CITY OF MEMPHIS

DRAWING NAME: K:\WEM_TPTO\115087002 – Shelby County CMP 2\Design\Level 4 – Signal System\Bid Set 6\Cadd\Plans\BidSet 6-12-IL-01-Elvis Presley at Holmes Rd.dwg Layout Jan 26, 2015 1:53PM BY: blaine.lynch

NOTES:

1) ALL CONDUIT WORK IS SCHEMATIC AND MUST BE PERFORMED WITHIN THE EXISTING R.O.W.





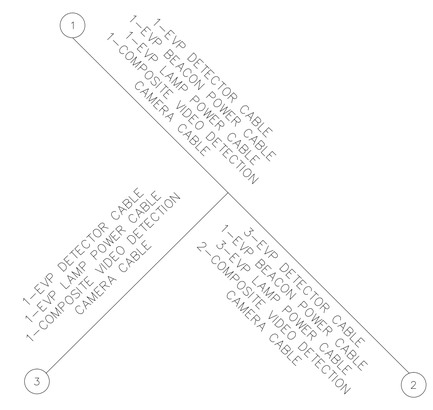
PHASE DIAGRAM

PREEMPT TABLE	
DETECTOR	PHASE(S) CALLED
2	2
4	4

ZONE	MODE	ZONE	MODE
ø2-1	PRESENCE	ø4-2	PRESENCE
ø2-2*	PRESENCE	ø4-3	PRESENCE
ø2-3	PRESENCE	ø4-4	PRESENCE
ø4-1	PRESENCE	ø4-5	PRESENCE

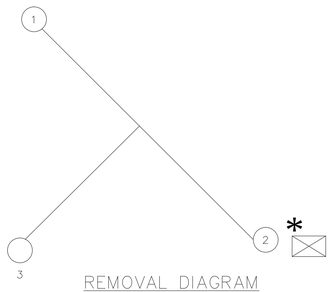
* 5 SECOND DELAY

ZONE ASSIGNMENT CHART



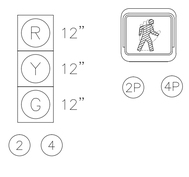
GENERAL WIRING DIAGRAM

NUMBER OF CABLES, LOOPS, ETC.
X NUMBER OF CONDUCTORS, PAIRS, ETC.



REMOVAL DIAGRAM

* EXISTING SIGNAL POLES TO REMAIN.
- TURN OFF STOP BAR VEHICLE DETECTOR CHANNELS ON EXISTING AMPLIFIERS IN CABINET.
- ADVANCE DETECTION AMPLIFIERS TO REMAIN.
- REMOVE EXISTING SPAN-WIRE MOUNTED CAMERA.
- REMOVE EXISTING CABINET



EXISTING SIGNAL HEAD TYPES

B1	RETAIN AND MODIFY EXISTING CABINET
B3	INSTALL NEW BASE MOUNTED CONTROLLER CABINET
B6	INSTALL WEATHER PROOF SPLICE ENCLOSURE
B7	INSTALL FIBER DISTRIBUTION BOX
B9	INSTALL TRAFFIC SIGNAL PULLBOX
B10	INSTALL FIBER OPTIC PULLBOX TYPE A
B11	INSTALL FIBER OPTIC PULLBOX TYPE B
B13	INSTALL 20' PEDESTAL POLE
B15	MLGW POWER SERVICE CONNECTION
C2	INSTALL 8-PHASE CONTROLLER
C4	REMOVE EXISTING CONTROLLER AND INSTALL NEW CONTROLLER
C6	INSTALL ETHERNET CABINET SWITCH
C7	INSTALL SERIAL DEVICE SERVER
D1	INSTALL EVP DETECTOR
D2	INSTALL EVP CONFIRMATION BEACON
D3	INSTALL EVP CONFIRMATION LAMP
D5	INSTALL VIDEO DETECTION CAMERA WITH TYPE 2 MOUNT
D6	INSTALL VIDEO DETECTION CAMERA WITH TYPE 3 MOUNT
D8	INSTALL EVP PHASE SELECTOR
D9	INSTALL VIDEO DETECTION PROCESSOR
D10	INSTALL DETECTOR AMPLIFIER (4-CHANNEL) IN CABINET
D11	REUSE SYSTEM DETECTOR AMPLIFIER(S) (SEE REMOVAL DIAGRAM)
D12	INSTALL NEW POLE MOUNTED RDS CABINET
D13	INSTALL RADAR DETECTION SYSTEM
D14	INSTALL VIDEO REMOTE MANAGEMENT CARD
D15	INSTALL NEW SECONDARY POLE MOUNTED RDS CABINET
D16	INSTALL BLUETOOTH DETECTION SYSTEM
W1	EVP DETECTOR CABLE(S)
W2	EVP CONFIRMATION BEACON POWER CABLE(S)
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W4	VIDEO DETECTOR CABLE(S)
W5	2C DETECTOR CABLE(S)
W6	SMFO CABLE
W9	DROP CABLES (6-FIBER)
W11	RDS CABLE
W12	RDS POWER CABLE
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3	INSTALL 2" RISER INTO BOTTOM OF CABINET
4	INSTALL 2" RISER WITH WEATHERHEAD
5	INSTALL 2" RISER WITH SEALING BUSHING
6	INSTALL 2" CONDUIT ENTRANCE INTO EXISTING FOUNDATION
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23	INSTALL CABLES IN EXISTING POLE IN EXISTING WEATHERHEAD
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25	INSTALL CABLES IN EXISTING WEATHERHEAD
26	INSTALL CABLES IN EXISTING POLE
27	INSTALL CABLES IN PROPOSED POLE
29	INSTALL CABLES IN EXISTING CONDUIT(S) INTO CABINET
30	LASH TO EXISTING MESSENGER WIRE/SPANWIRE
33	REMOVE EXISTING FIBER CABLE
34	REUSE EXISTING FIBER CABLE

IL-02

REVISIONS		
DATE	DESCRIPTIONS	APPROVED

DOUGLAS A. KIMLEY AGRICULTURE & COMMERCE No. 00113621 STATE OF TENNESSEE 7/19/15

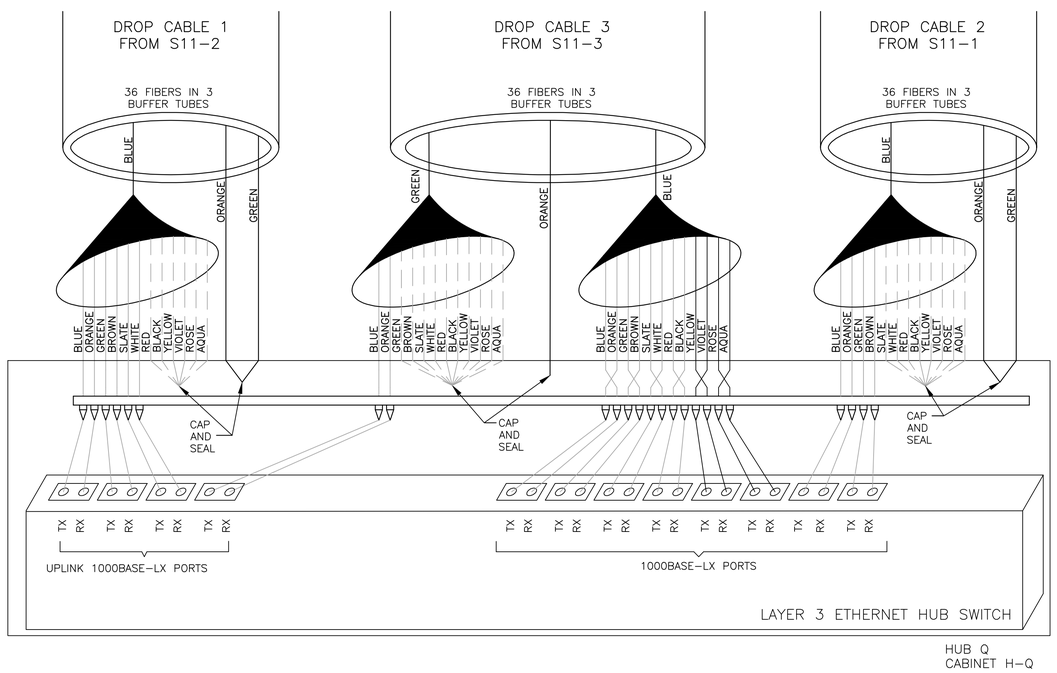
Kimley»Horn

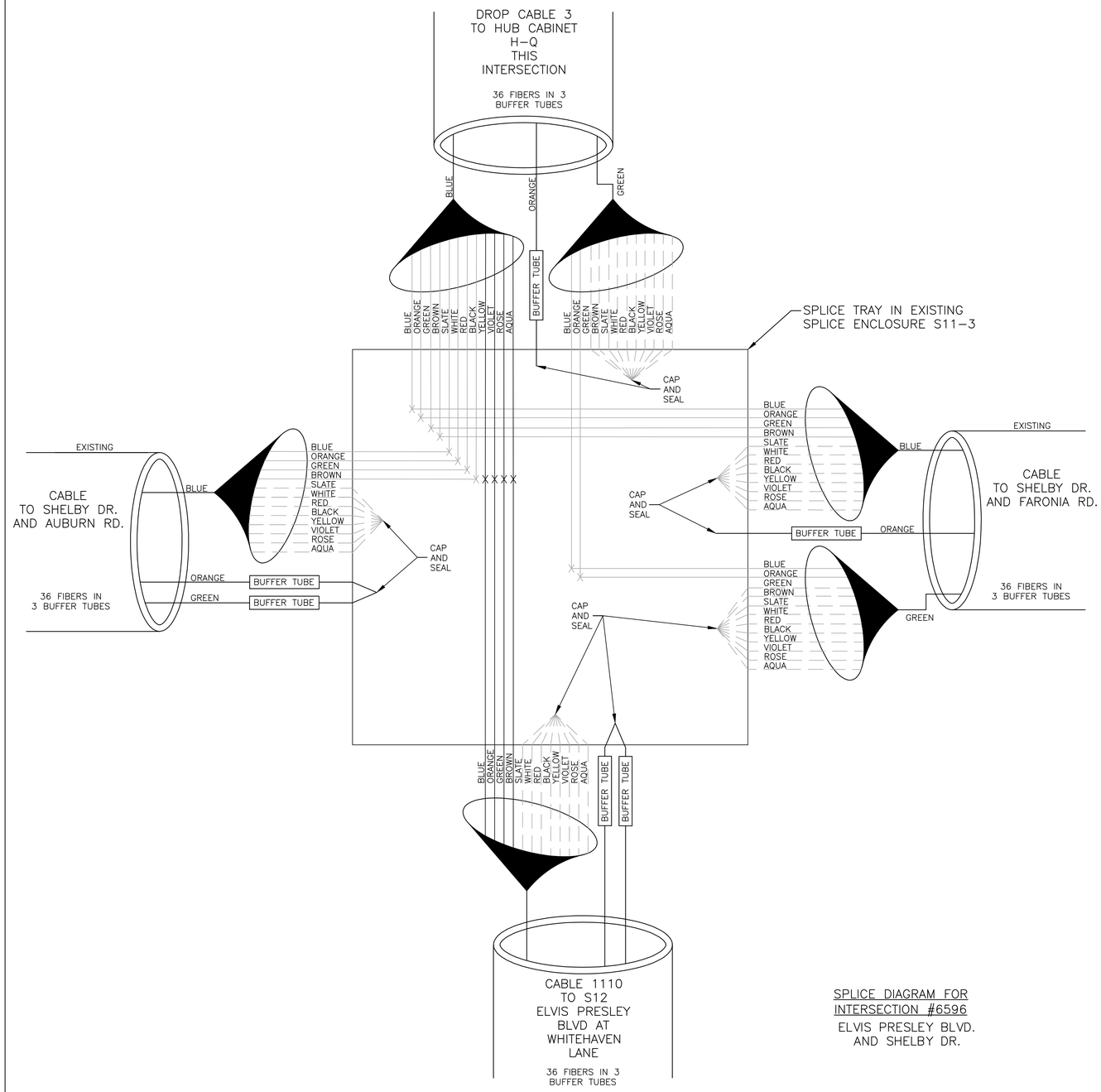
DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
SIGNAL SYSTEM PROJECT SET #6
SHELBY COUNTY, TN.

WHITEHAVEN LN. AT ELVIS PRESLEY BLVD.
INTERSECTION LAYOUT

SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: KHA DATE: 12/13 SCALE: 1"=20'
DESIGNED: KHA DATE: 12/13 CHECKED: JFC DATE: 12/13
JURISDICTION: CITY OF MEMPHIS

DRAWING NAME: K:\MEM_TPTO\115087002 - Shelby County CMP 2\Design\Level 4 - Signal System\Bid Set 6\Cadd\Plans\BidSet 6-13-IL-02-Elvis Presley at Whitehaven Ln.dwg Layout Jan 26, 2015 1:53PM BY: blaine.lynch





SPLICE DIAGRAM FOR
INTERSECTION #6596
ELVIS PRESLEY BLVD.
AND SHELBY DR.

NOTES:
1. FIBER INTERCONNECT CENTER RACKS ARE SCHEMATIC ONLY ACTUAL EQUIPMENT FORM MAY VARY.

COLOR CODE
TIA/EIA 598-A

(1) BLUE	(7) RED
(2) ORANGE	(8) BLACK
(3) GREEN	(9) YELLOW
(4) BROWN	(10) VIOLET
(5) SLATE	(11) ROSE
(6) WHITE	(12) AQUA

X – FUSION SPLICE INDIVIDUAL FIBER

BUFFER TUBE — SPLICE OR EXPRESS ENTIRE BUFFER TUBE AS NOTED

ACTIVE EXISTING FIBER

ACTIVE FIBER

INACTIVE FIBER

CONNECTION/SPLICE TO BE MADE BY OTHERS.

REVISIONS

DATE	DESCRIPTIONS	APPROVED

DOUGLAS A. KIMLEY
REGISTERED ENGINEER
AGRICULTURE COMMERCE
No. 101140-11
12/19/15
STATE OF TENNESSEE

Kimley»Horn

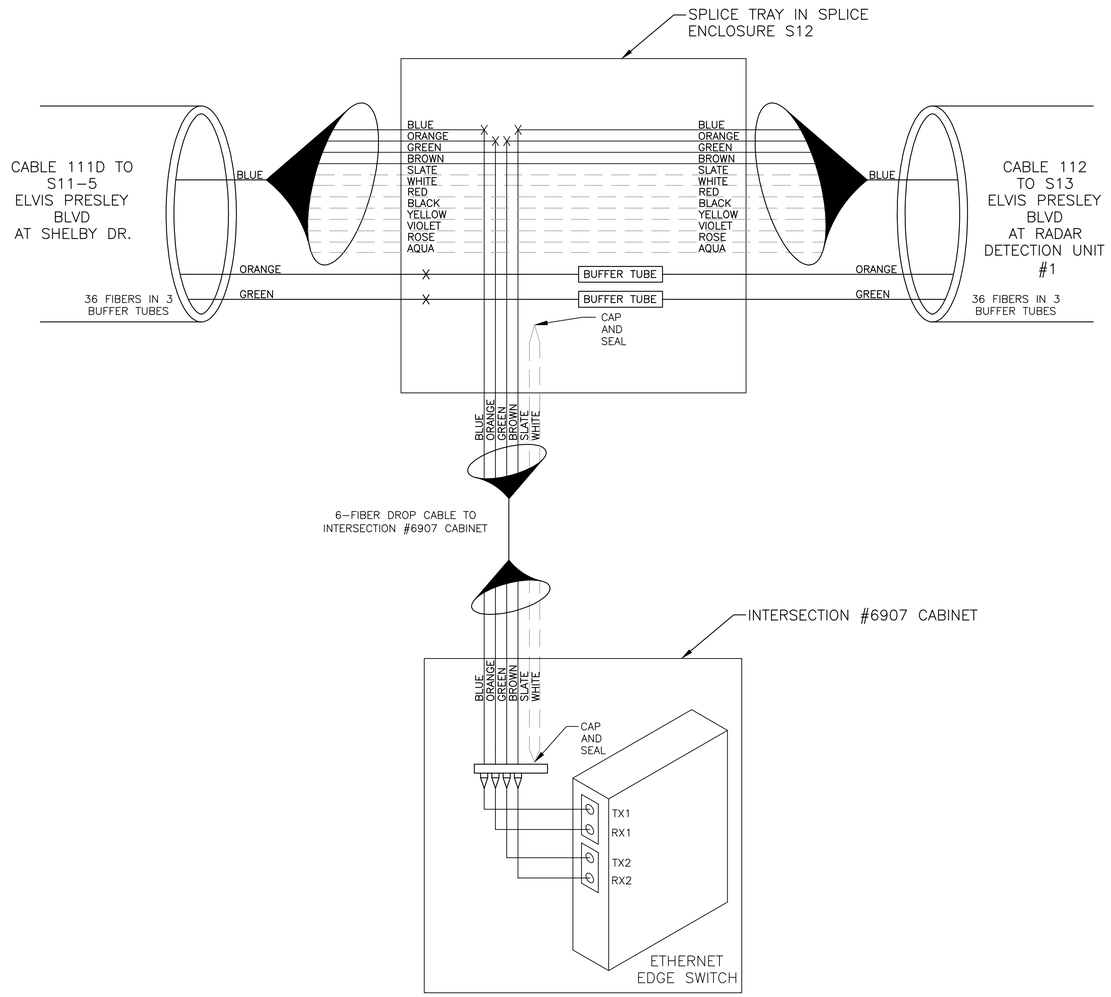
SD-01

DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
SIGNAL SYSTEM PROJECT SET #6
SHELBY COUNTY, TN.

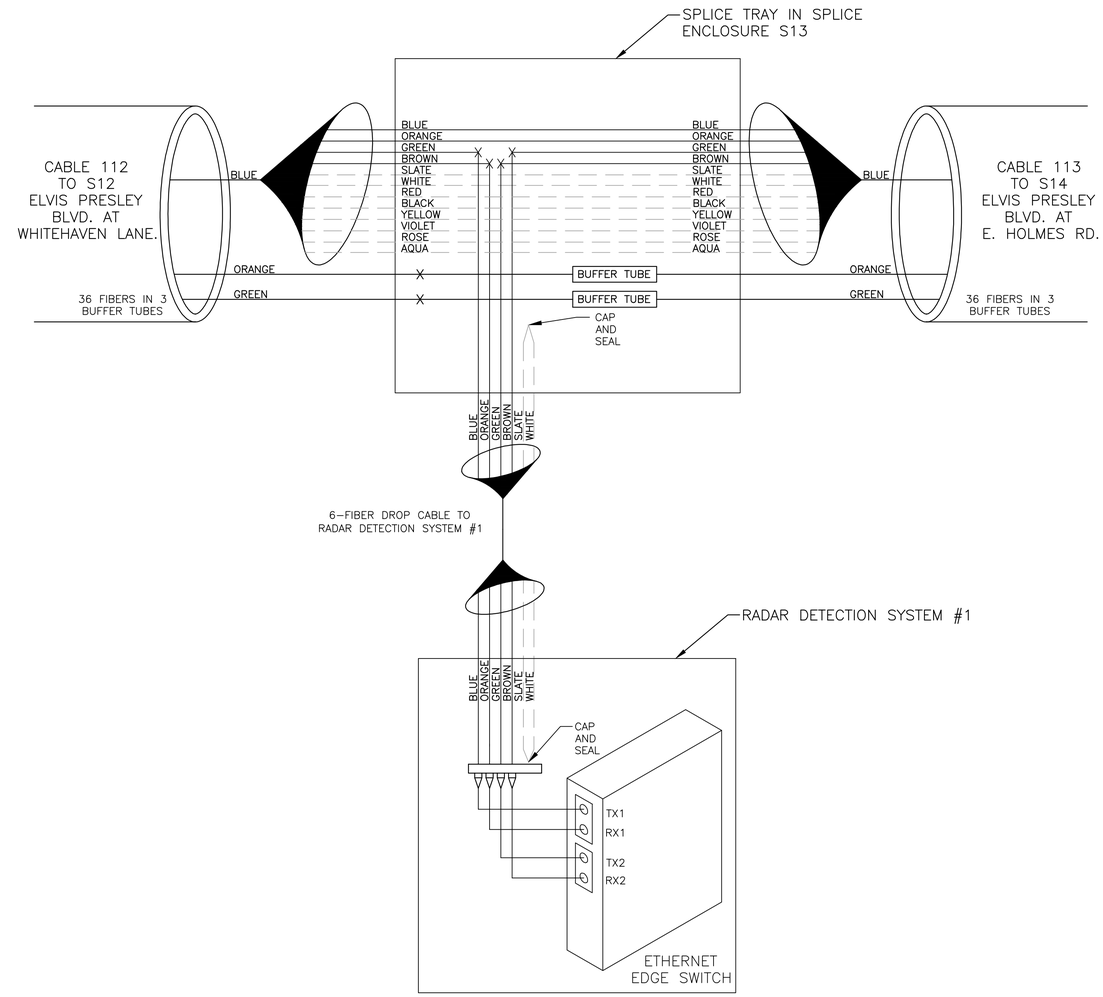
SPLICE DIAGRAM

SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: KHA DATE: 12/13 SCALE: N.T.S.
DESIGNED: KHA DATE: 12/13 CHECKED: JFC DATE: 12/13
JURISDICTION: _____ SHEET 14 OF 24

DRAWING NAME: K:\MEM_TPTO\115087002 – Shelby County CMP 2\Design\Level 4 – Signal System\Bid Set 6\Cadd\Plans\BidSet 6-14-SD-01.dwg Layout1 Jan 26, 2015 1:53PM BY: blaine.lynch



SPLICE DIAGRAM FOR
INTERSECTION #6907
ELVIS PRESLEY BLVD. AND
WHITEHAVEN LANE



SPLICE DIAGRAM FOR
RADAR DETECTION SYSTEM #1

NOTES:
1. FIBER INTERCONNECT CENTER RACKS ARE SCHEMATIC ONLY ACTUAL EQUIPMENT FORM MAY VARY.

COLOR CODE
TIA/EIA 598-A

(1) BLUE (7) RED
(2) ORANGE (8) BLACK
(3) GREEN (9) YELLOW
(4) BROWN (10) VIOLET
(5) SLATE (11) ROSE
(6) WHITE (12) AQUA

X – FUSION SPLICE INDIVIDUAL FIBER

BUFFER TUBE – SPLICE OR EXPRESS ENTIRE BUFFER TUBE AS NOTED

ACTIVE EXISTING FIBER
ACTIVE FIBER
INACTIVE FIBER
CONNECTION/SPLICE TO BE MADE BY OTHERS.

REVISIONS

DATE	DESCRIPTIONS	APPROVED

Kimley»Horn

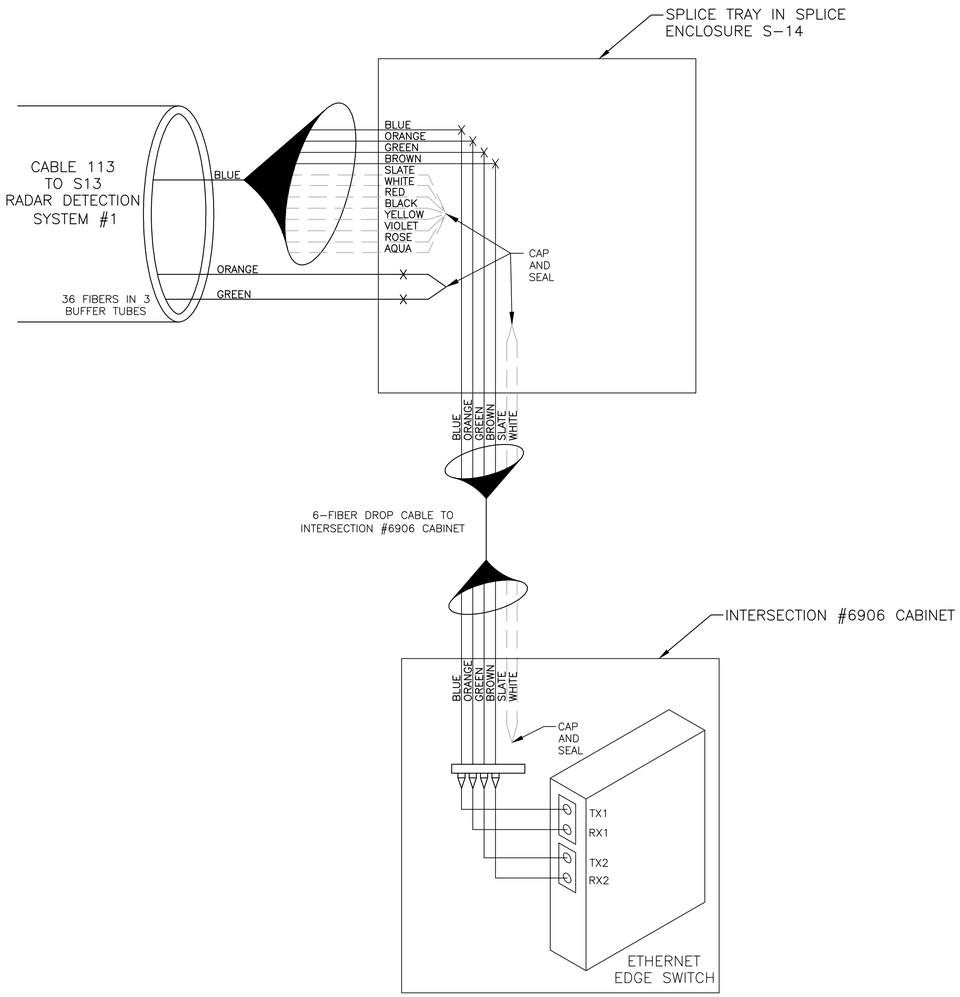
SD-02

DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
SIGNAL SYSTEM PROJECT SET #6
SHELBY COUNTY, TN.

SPLICE DIAGRAM

SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: KHA DATE: 12/13 SCALE: N.T.S.
DESIGNED: KHA DATE: 12/13 CHECKED: JFC DATE: 12/13
JURISDICTION:

DRAWING NAME: K:\WEM_TPTO\115087002 – Shelby County CMP 2\Design\Level 4 – Signal System\Bid Set 6\Cadd\Plans\BidSet 6-15-SD-02.dwg Layout1 Jan 26, 2015 1:53PM BY: blaine.lynch



SPLICE DIAGRAM FOR INTERSECTION #6906
ELVIS PRESLEY BLVD. AND E. HOLMES RD.

NOTES:
1. FIBER INTERCONNECT CENTER RACKS ARE SCHEMATIC ONLY ACTUAL EQUIPMENT FORM MAY VARY.

COLOR CODE TIA/EIA 598-A

(1) BLUE	(7) RED
(2) ORANGE	(8) BLACK
(3) GREEN	(9) YELLOW
(4) BROWN	(10) VIOLET
(5) SLATE	(11) ROSE
(6) WHITE	(12) AQUA

X – FUSION SPLICE INDIVIDUAL FIBER

BUFFER TUBE – SPLICE OR EXPRESS ENTIRE BUFFER TUBE AS NOTED

ACTIVE EXISTING FIBER

ACTIVE FIBER

INACTIVE FIBER

CONNECTION/SPLICE TO BE MADE BY OTHERS.

REVISIONS

DATE	DESCRIPTIONS	APPROVED

DALLAS A. ARMSTRONG REGISTERED ENGINEER AGRICULTURE COMMERCE NO. 00114211 STATE OF TENNESSEE 1/9/15

Kimley»Horn

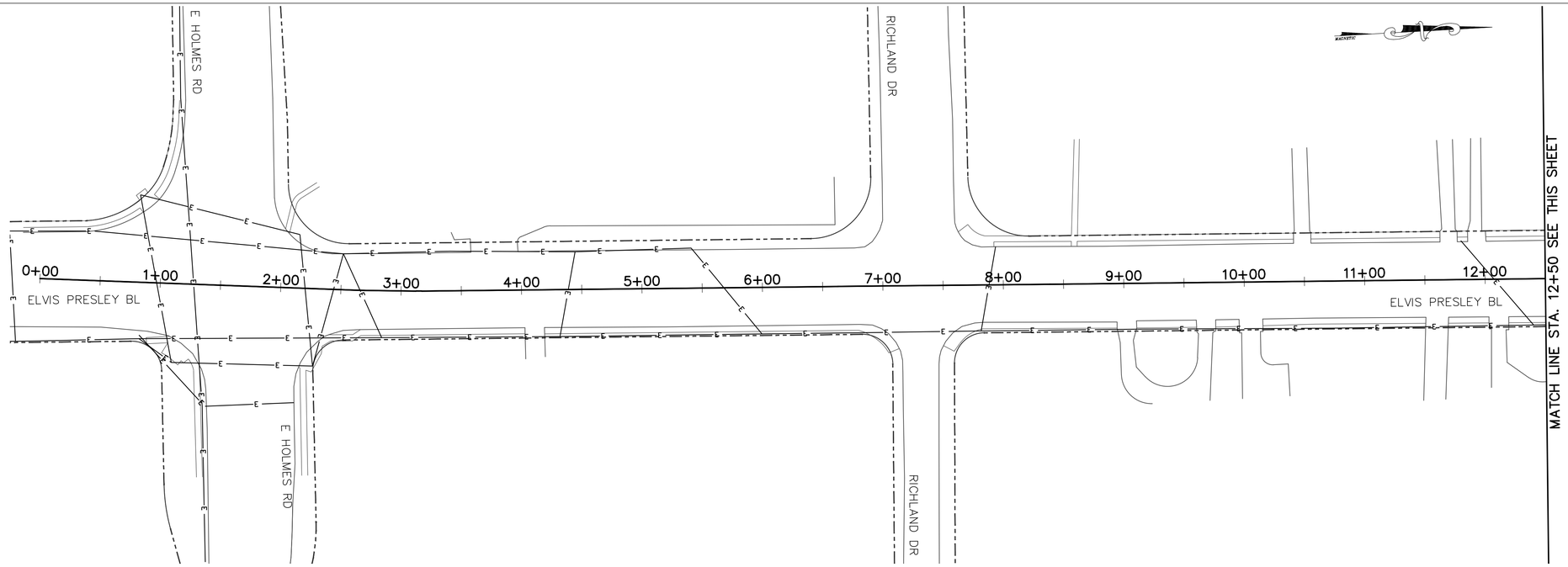
SD-03

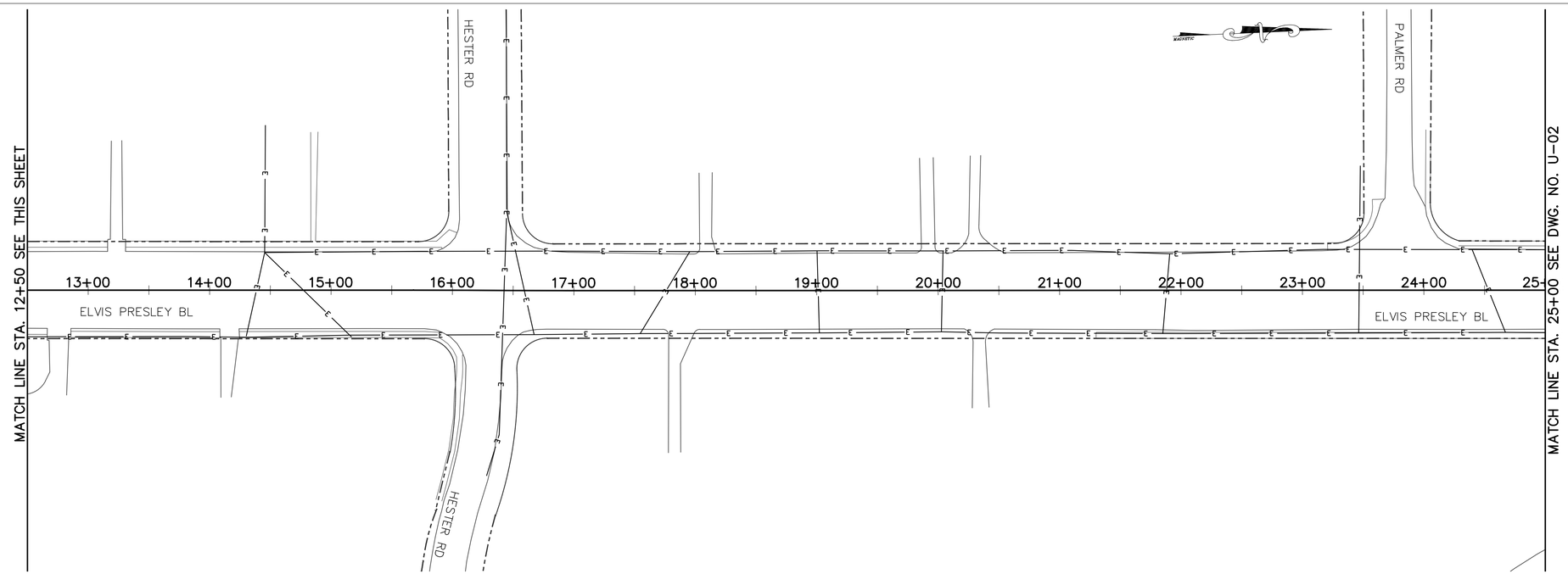
DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
SIGNAL SYSTEM PROJECT SET #6
SHELBY COUNTY, TN.

SPLICE DIAGRAM

SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: KHA DATE: 12/13 SCALE: N.T.S.
DESIGNED: KHA DATE: 12/13 CHECKED: JFC DATE: 12/13
JURISDICTION:

DRAWING NAME: K:\WEM_TPTO\115087002 – Shelby County CMP 2\Design\Level 4 – Signal System\Bid Set 6\Cadd\Plans\BidSet 6-16-SD-03 – Layout1.dwg Layout1 Jan 26, 2015 1:53PM BY: blaine.lynch





LEGEND

——E——E——	EXISTING ELECTRIC LINE
——W——W——	EXISTING WATER LINE
——G——G——	EXISTING GAS LINE
——G(A)——G(A)——	ABANDONED GAS LINE

SOME UTILITY INFORMATION FOR THE PROJECT WORK AREA WAS NOT PROVIDED. CONTRACTOR TO VERIFY UTILITY LOCATIONS PRIOR TO CONSTRUCTION.

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50 ft.

REVISIONS		
DATE	DESCRIPTIONS	APPROVED

STEVEN HILL REGISTERED ENGINEER NO. 16272 STATE OF TENNESSEE 2/13/14

POWERS HILL DESIGN
CIVIL ENGINEERING. CIVIL RESPONSIBILITY.

Kimley»Horn

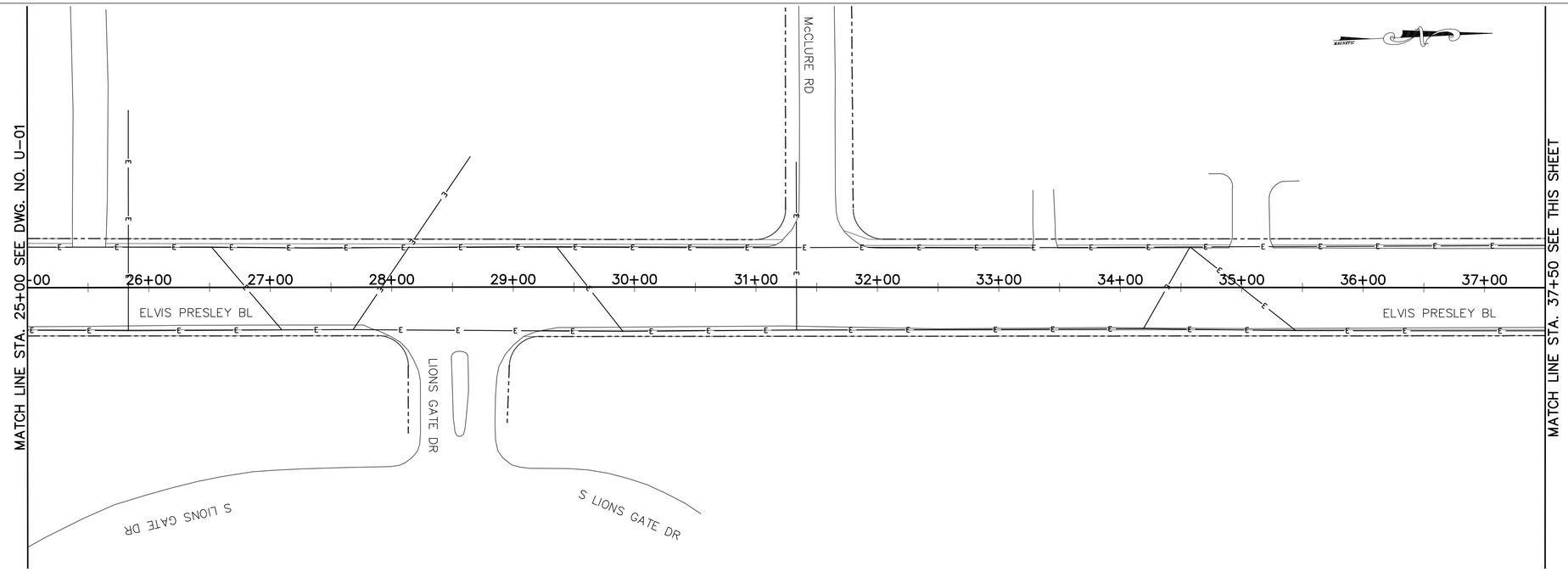
U–01

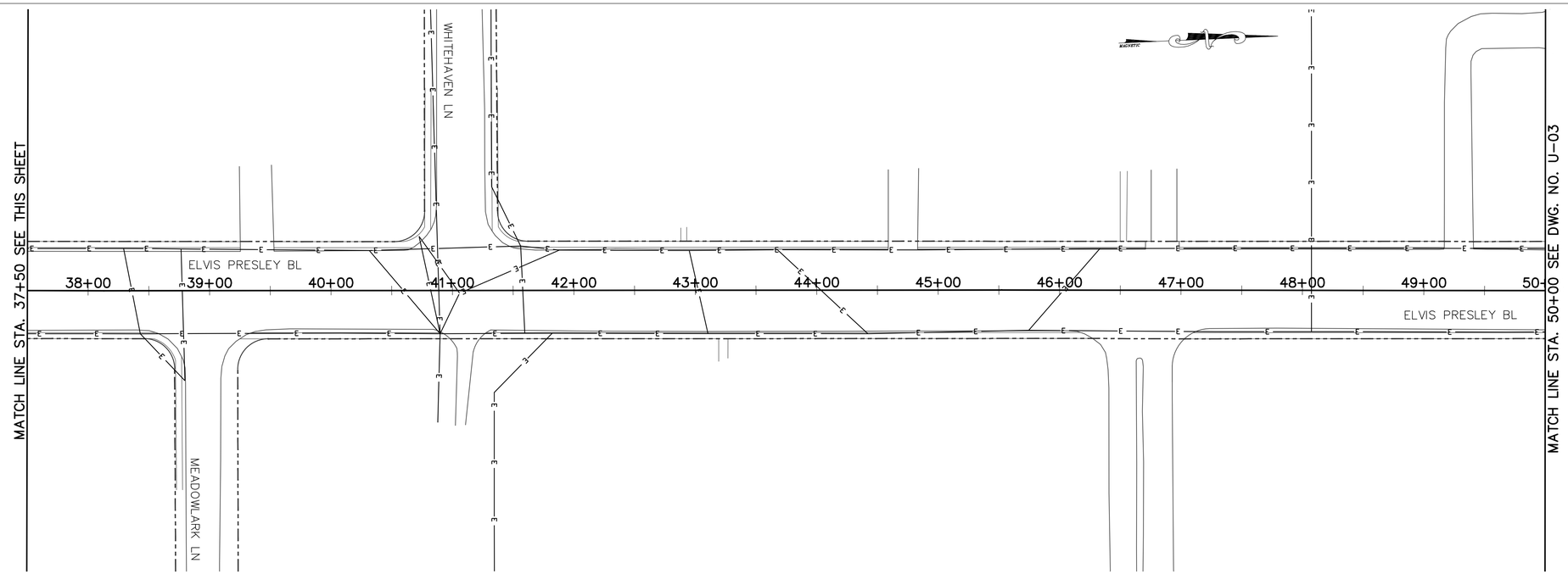
DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
SIGNAL SYSTEM PROJECT SET #6
SHELBY COUNTY, TN.

ELVIS PRESLEY BOULEVARD

EXISTING UTILITIES
FROM 0+00 TO 25+00

SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: APL DATE: 02/14 SCALE: 1"=50'
DESIGNED: APL DATE: 02/14 CHECKED: SH DATE: 08/14
JURISDICTION: _____ SHEET 17 OF 24





LEGEND

E	EXISTING ELECTRIC LINE
W	EXISTING WATER LINE
G	EXISTING GAS LINE
G(A)	ABANDONED GAS LINE

SOME UTILITY INFORMATION FOR THE PROJECT WORK AREA WAS NOT PROVIDED. CONTRACTOR TO VERIFY UTILITY LOCATIONS PRIOR TO CONSTRUCTION.

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50 ft.

REVISIONS		
DATE	DESCRIPTIONS	APPROVED

STEVEN HILL REGISTERED ENGINEER No. 16272 STATE OF TENNESSEE 2/13/14

POWERS HILL DESIGN
CIVIL ENGINEERING. CIVIL RESPONSIBILITY.

Kimley»Horn

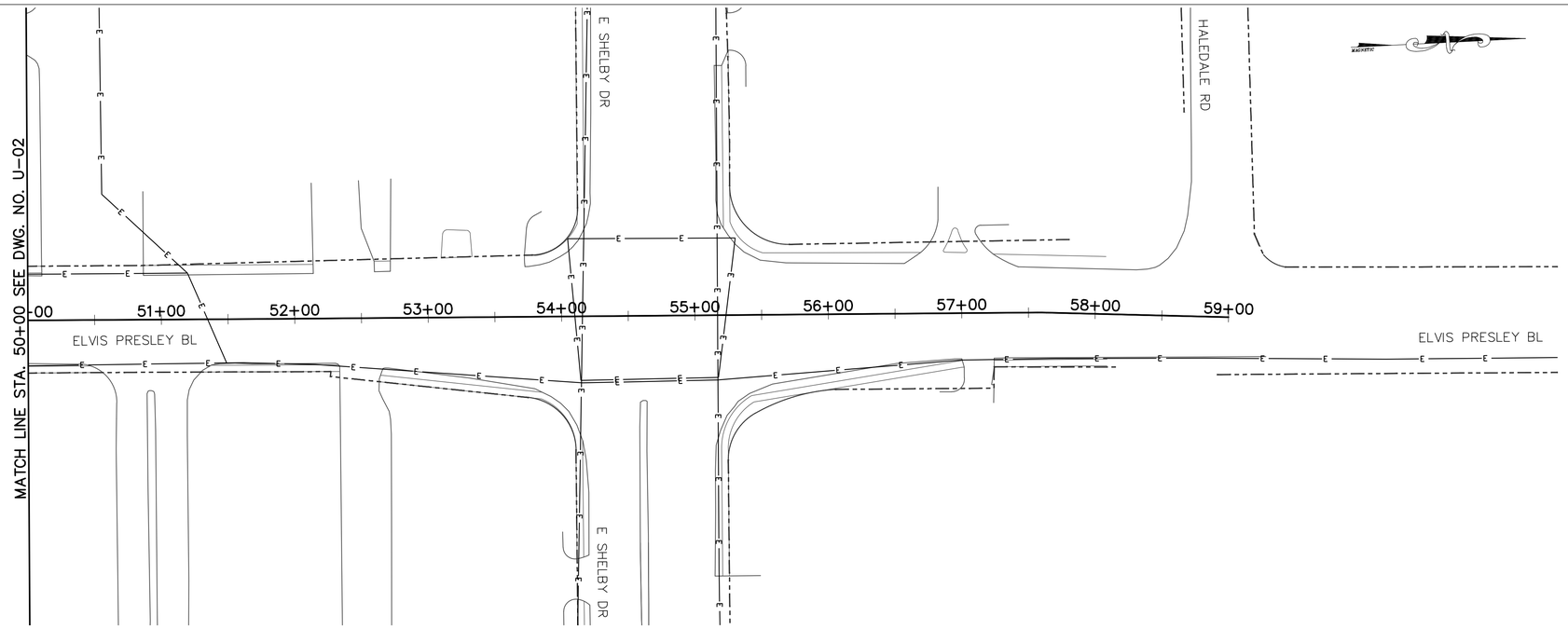
U-02

DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
SIGNAL SYSTEM PROJECT SET #6
SHELBY COUNTY, TN.

ELVIS PRESLEY BOULEVARD

EXISTING UTILITIES
FROM 25+00 TO 50+00

SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: APL DATE: 02/14 SCALE: 1"=50'
DESIGNED: APL DATE: 02/14 CHECKED: SH DATE: 08/14
JURISDICTION: _____ SHEET 18 OF 24



LEGEND

—E—E—	EXISTING ELECTRIC LINE
—W—W—	EXISTING WATER LINE
—G—G—	EXISTING GAS LINE
—G(A)—G(A)—	ABANDONED GAS LINE

SOME UTILITY INFORMATION FOR THE PROJECT WORK AREA WAS NOT PROVIDED. CONTRACTOR TO VERIFY UTILITY LOCATIONS PRIOR TO CONSTRUCTION.

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50 ft.

REVISIONS		
DATE	DESCRIPTIONS	APPROVED

STEVEN HILL REGISTERED ENGINEER No. 16270 STATE OF TENNESSEE 2/13/14

POWERS HILL DESIGN
CIVIL ENGINEERING. CIVIL RESPONSIBILITY.

Kimley»Horn

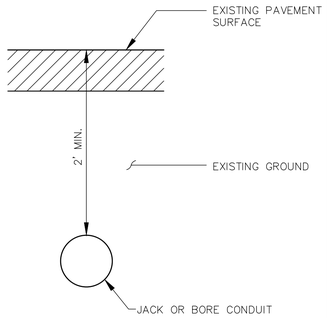
U-03

DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
SIGNAL SYSTEM PROJECT SET #6
SHELBY COUNTY, TN.

ELVIS PRESLEY BOULEVARD

EXISTING UTILITIES
FROM 50+00 TO 59+00

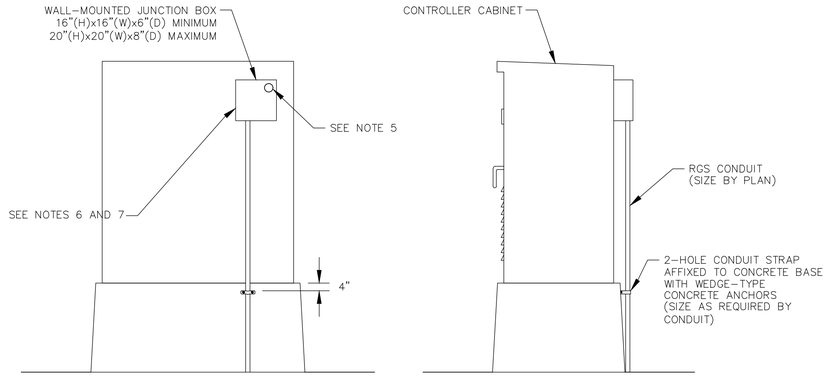
SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: APL DATE: 02/14 SCALE: 1"=50'
DESIGNED: APL DATE: 02/14 CHECKED: SH DATE: 08/14
JURISDICTION: _____ SHEET 19 OF 24



NOTE:
1. CONTRACTOR SHALL SET DEPTH TO AVOID EXISTING UTILITIES (MINIMUM OF 2' DEPTH)

DETAIL OF JACKED OR BORED CONDUIT

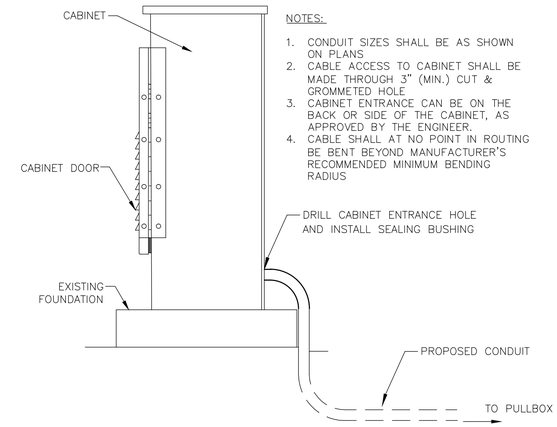
N.T.S.



BACK VIEW

SIDE VIEW

9 DETAILS FOR INSTALLING NEW CONDUIT INTO EXISTING BASE MOUNTED CABINET FOUNDATION



NOTES:

1. CONDUIT SIZES SHALL BE AS SHOWN ON PLANS
2. CABLE ACCESS TO CABINET SHALL BE MADE THROUGH 3" (MIN.) CUT & GROMMETED HOLE
3. CABINET ENTRANCE CAN BE ON THE BACK OR SIDE OF THE CABINET, AS APPROVED BY THE ENGINEER.
4. CABLE SHALL AT NO POINT IN ROUTING BE BENT BEYOND MANUFACTURER'S RECOMMENDED MINIMUM BENDING RADIUS

14 UNDERGROUND ROUTING DETAILS FOR INSTALLING INTO EXISTING BASE MOUNTED CABINET FOUNDATION

NOTES:

1. THIS DETAIL IS THE APPROVED METHOD FOR ENTRY INTO A SOLID-BASE CABINET FOUNDATION THAT HAS NO SPARE CONDUITS AVAILABLE. ALL OTHER CASES MUST RECEIVE PRIOR APPROVAL FROM THE CITY OF MEMPHIS.

2. WALL-MOUNTED JUNCTION BOX SHALL BE A NEMA 3R CONTINUOUS HINGED ENTRY BOX OR APPROVED EQUIVALENT. THE NEMA 3R BOX SHALL BE MADE OF GALVANIZED STEEL WITH A POWDER COATED FINISH AND SHALL HAVE A CONTINUOUS HINGE THAT IS MADE OF GALVANIZED STEEL WITH A STAINLESS STEEL PIN ON THE LEFT SIDE AND CAPTIVE SCREWS ON THE RIGHT SIDE. THE NEMA 3R BOX SHALL HAVE A HASP PROVISION (OR APPROVED ALTERNATE) ON THE RIGHT SIDE FOR PADLOCKING DOOR FOR SECURING THE DOOR.

3. THE BOX SHALL BE MOUNTED ON THE BACK SIDE OF THE CABINET NEAR THE TOP. ALTERNATIVE LOCATIONS ON THE CABINET TO SECURE THE WALL-MOUNTED JUNCTION BOX MUST HAVE PRIOR APPROVAL BY THE CITY OF MEMPHIS.

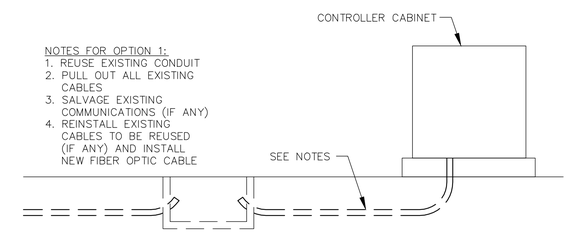
4. CONDUIT STRAP IS NOT TO BE SECURED TO THE CABINET. CONDUIT STRAP MUST BE SECURED TO THE CABINET FOUNDATION.

5. DRILL HOLE INTO CABINET AND INSTALL THREADED NIPPLE. INSTALL RUBBER GASKET, FLAT METAL WASHER AND LOCKER RING ON BOTH SIDES.

6. JUNCTION BOX SHALL BE ATTACHED SECURELY TO THE CABINET WITH FOUR METAL SCREWS. MOUNTING HOLES SHALL BE INSIDE THE BOX AROUND THE FOUR CORNERS.

7. THE CONTRACTOR SHALL APPLY SEALANT BETWEEN THE EDGE OF THE JUNCTION BOX AND THE CABINET. SEALANT SHALL BE RATED FOR OUTDOOR USE, WATER-PROOF BELOW WATER LINES, UV RESISTANT AND CLEAR OR GRAY IN COLOR.

NOTES FOR OPTION 1:
1. REUSE EXISTING CONDUIT
2. PULL OUT ALL EXISTING CABLES
3. SALVAGE EXISTING COMMUNICATIONS (IF ANY)
4. REINSTALL EXISTING CABLES TO BE REUSED (IF ANY) AND INSTALL NEW FIBER OPTIC CABLE



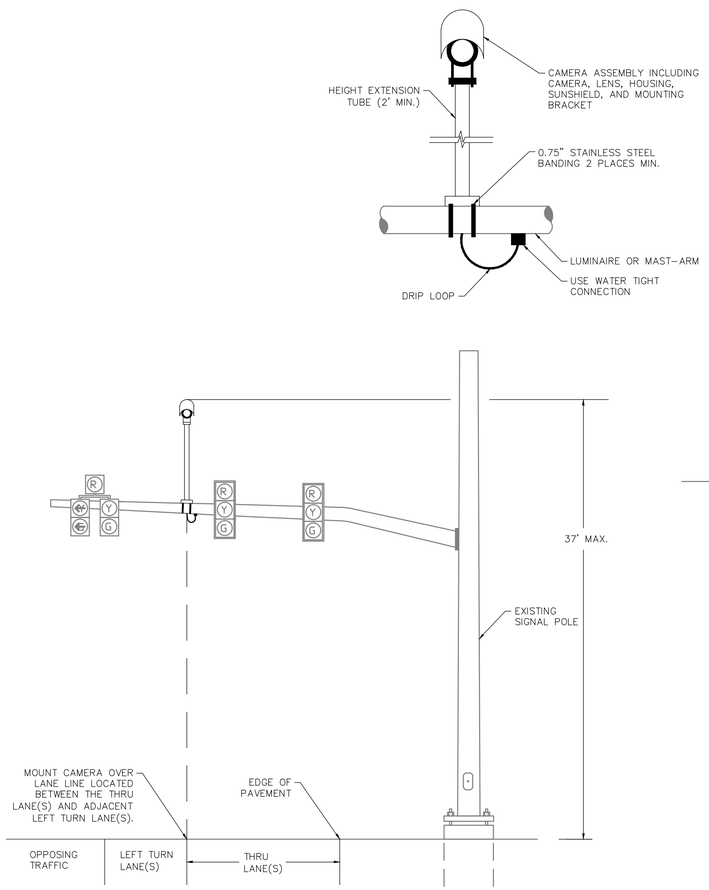
OPTION 1 (SHOWN)- REUSE EXISTING CONDUIT

OPTION 2 (NOT SHOWN)- INSTALL CONDUIT ENTRANCE INTO FOUNDATION AND CONNECT TO PULL BOX (SEE DETAIL THIS SHEET)

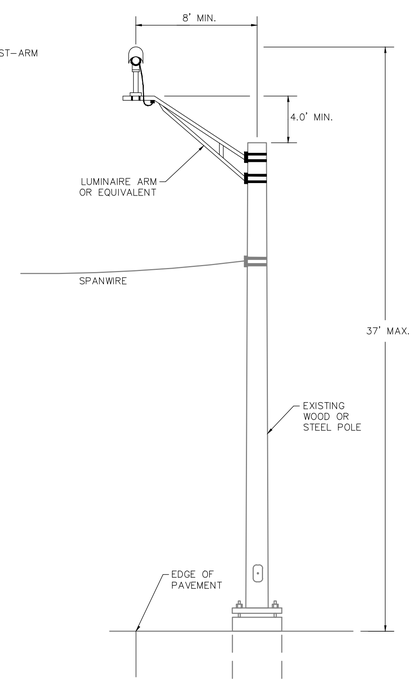
UNDERGROUND ROUTING

VIDEO DETECTION CAMERA MOUNTING NOTES:

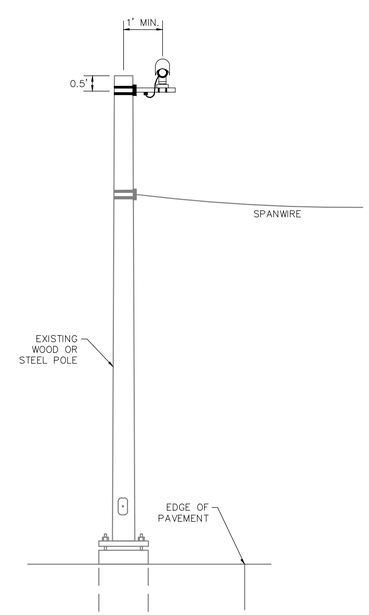
1. WHEN AIMING CAMERA, HORIZON SHALL NOT BE VISIBLE IN THE FIELD OF VIEW.
2. CAMERA ENCLOSURE ASSEMBLY SHALL BE ROTATABLE AFTER INSTALLATION TO PROVIDE PROPER ALIGNMENT.
3. VIDEO CABLE SHALL BE BELDEN OR ENGINEER-APPROVED EQUAL.
4. SUNSHIELD SHALL BE EXTENDED TO THE MAXIMUM EXTENT WITHOUT BEING IN THE CAMERA FIELD OF VIEW.



TYPE 1 MOUNT



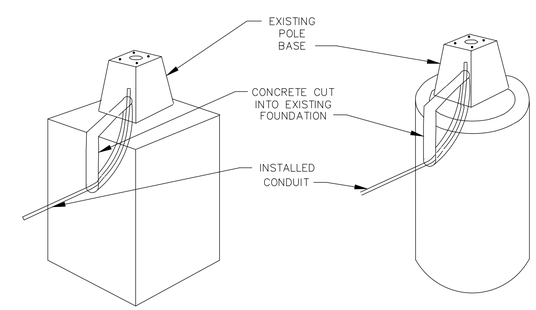
TYPE 2 MOUNT



TYPE 3 MOUNT

VIDEO DETECTION CAMERA MOUNTING DETAILS

N.T.S.



NOTES:

1. CONCRETE CUTS SHALL NOT BE MORE THAN 1" GREATER THAN THE DIAMETER OF THE CONDUIT BEING INSTALLED.
2. FILL ALL CONCRETE CUTS WITH GROUT.
3. ALL WORK ASSOCIATED WITH TYING CONDUIT INTO AN EXISTING FOUNDATION SHALL BE DONE WITHOUT INTERFERING WITH THE OPERATION OF THE SIGNAL.

DETAILS FOR INSTALLING NEW CONDUIT INTO EXISTING PEDESTAL/ POLE FOUNDATION

REVISIONS

DATE	DESCRIPTIONS	APPROVED

DOUGLAS A. ANDERSON — REGISTERED ENGINEER — AGRICULTURE — COMMERCE — NO. 00113211 — STATE OF TENNESSEE — 12/19/15

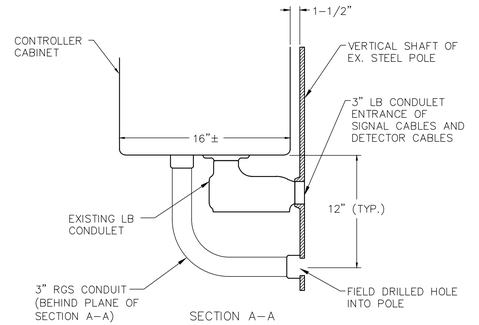
Kimley»Horn

DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
SIGNAL SYSTEM PROJECT SET #6
SHELBY COUNTY, TN.

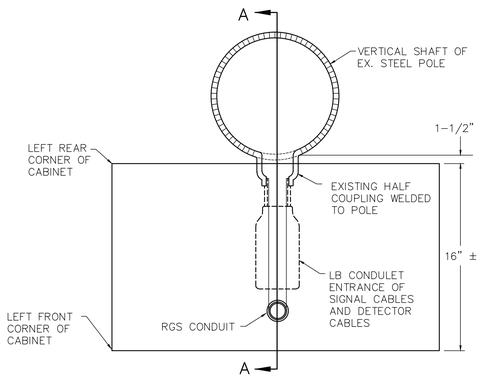
MISCELLANEOUS DETAILS

SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: KHA DATE: 12/13 SCALE: N.T.S.
DESIGNED: KHA DATE: 12/13 CHECKED: JFC DATE: 12/13
JURISDICTION:

DRAWING NAME: K:\MEM_TPTO\115087002 - Shelby County CMP 2\Design\Level 4 - Signal System\Bid Set 6\Cadd\Plans\BidSet 6-20-Details-01 - Layout1.dwg Layout1 Jan 26, 2015 1:53PM BY: blaine.lynch

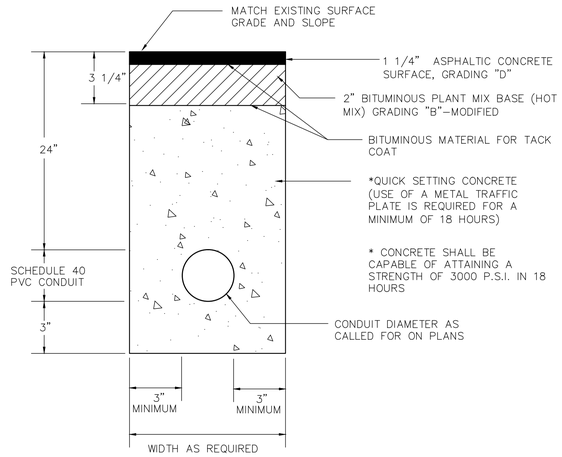


SECTION A–A



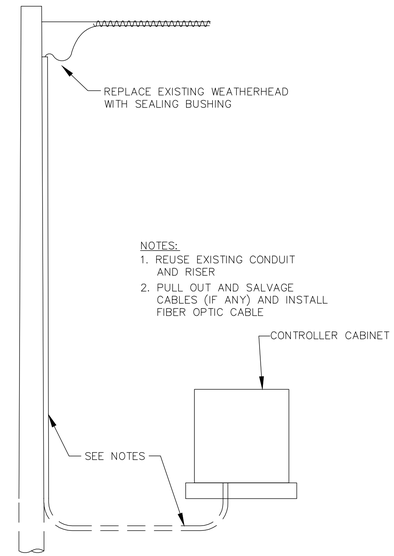
DETAIL OF PROPOSED CONDUIT SWEEP
INTO BOTTOM OF STEEL POLE MOUNTED CABINET

N.T.S.



DETAIL OF TRENCHED
ENCASED CONDUIT

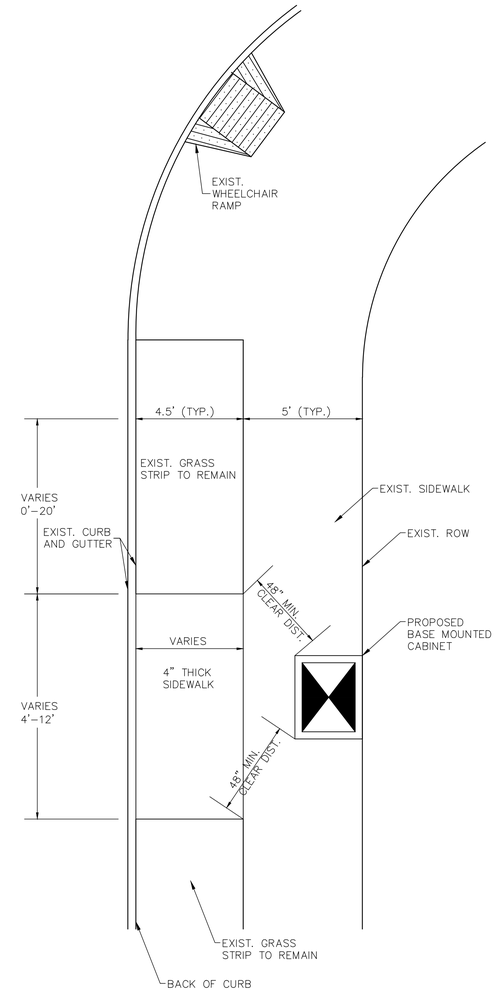
N.T.S.



OPTION 1 (SHOWN)– REUSE EXISTING RISER (USE THIS OPTION ONLY IF THERE IS A SPARE EXISTING RISER OR IF AN EXISTING RISER CONTAINS ONLY EXISTING COMMUNICATIONS CABLE)

OPTION 2 (NOT SHOWN)– INSTALL NEW CONDUIT INTO FOUNDATION AND CONNECT TO NEW RISER (SEE DETAIL THIS SHEET)

AERIAL ROUTING

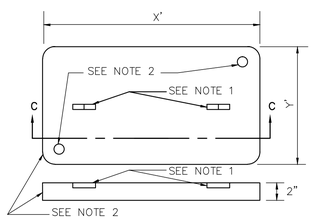


NOTES:

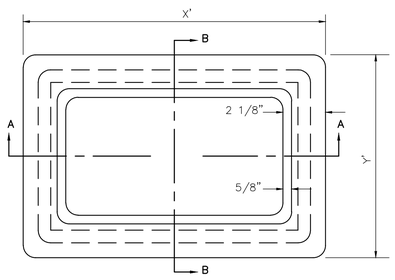
1. CABINET LOCATION AND LIMITS OF NEW SIDEWALK AS DIRECTED BY THE ENGINEER.
2. MAINTAIN A MINIMUM CLEAR PATH OF 48" FROM THE EDGE OF THE CABINET BASE TO THE EDGE OF SIDEWALK.
3. FINAL CABINET LOCATION SHALL BE APPROVED BY THE ENGINEER.

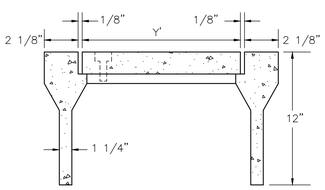
TYPICAL BASE MOUNTED CABINET INSTALLATION
AND SIDEWALK REPLACEMENT DETAILS

N.T.S.



SECTION C–C





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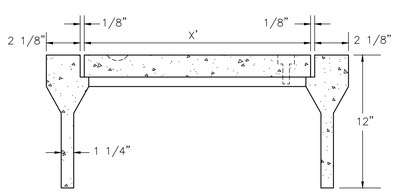

SECTION A–A

DETAIL OF STANDARD PULL BOX
DESIGN AND INSTALLATION

COVER

TYPE	X'	Y'
STANDARD	17 1/4"	10 1/4"

PULL BOX

TYPE	X'	Y'
STANDARD	21 3/4"	14 3/4"

NOTES:

1. NOTCHES SHALL BE PROVIDED FOR REMOVING THE COVER.
2. BRASS "L" BOLTS AND NUTS ARE TO BE PROVIDED IN DIAGONAL CORNERS – TWO REQUIRED (3/8").
3. COVER TO HAVE ROUGHENED TOP SURFACE OF 1/8" IN RELIEF. THE WORDS "TRAFFIC SIGNAL" TO BE INSCRIBED ON THE TOP COVER WITH LETTERS 1-1/2" HIGH WITH 1/8" RELIEF.
4. CONCRETE TO BE 5000 PSI.
5. CONDUITS MAY ENTER THE BOX AT AN ANGLE OF APPROX. 45 DEGREES FROM HORIZONTAL. RADIUS SHALL BE 24" (MIN.).
6. GROUNDING ELECTRODE AND GROUND WIRE REQUIRED ONLY IF PULL BOX CONTAINS METALLIC CONDUITS WITH CIRCUITS HAVING VOLTAGES GREATER THAN 24 VOLTS AND ONLY IF CONDUITS NOT OTHERWISE GROUNDED WITHIN 1000 LINEAR FEET.
7. A KNOCK-OUT MAY BE USED AT THE BOTTOM OF THE ENDS OF BOX IF NECESSARY TO ACCOMMODATE THE DEPTH OF EXISTING CONDUITS. IF USED, KNOCK-OUTS SHALL BE SEALED WITH GROUT AFTER BOX IS PLACED OVER CONDUITS.
8. NUMBER AND SIZES OF CONDUITS SHALL BE AS REQUIRED BY THE PLANS. NO MORE THAN 8 CONDUITS SHALL ENTER A PULL BOX . NO MORE THAN 3 OF THOSE CONDUITS SHALL BE 2" OR LARGER.
9. EXCEPT FOR DIMENSIONS AND ANGLE OF ENTERING CONDUITS, DESIGN AND INSTALLATION DETAILS SHALL BE SAME FOR STANDARD PULL BOX AND OVERSIZED PULL BOX.

REVISIONS

DATE	DESCRIPTIONS	APPROVED

DOUGLAS A. KIMLEY REGISTERED ENGINEER AGRICULTURE COMMERCE No. 00114011 STATE OF TENNESSEE 12/19/15

Kimley»Horn

DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
SIGNAL SYSTEM PROJECT SET #6
SHELBY COUNTY, TN.

MISCELLANEOUS DETAILS

SURVEY: N/A DATE: N/A BOOK: N/A
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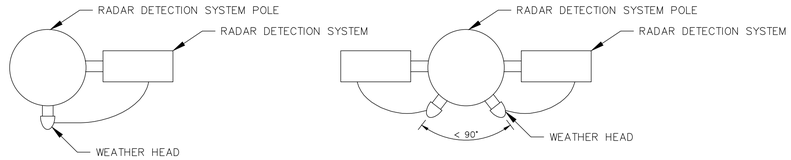
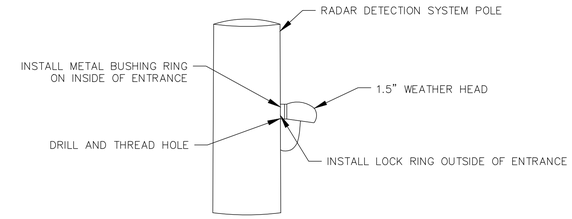


CASE 1: ONE RADAR DETECTION SYSTEM ON ONE POLE

NOTE: OFFSET HEIGHT BETWEEN WEATHER HEADS BY 2".

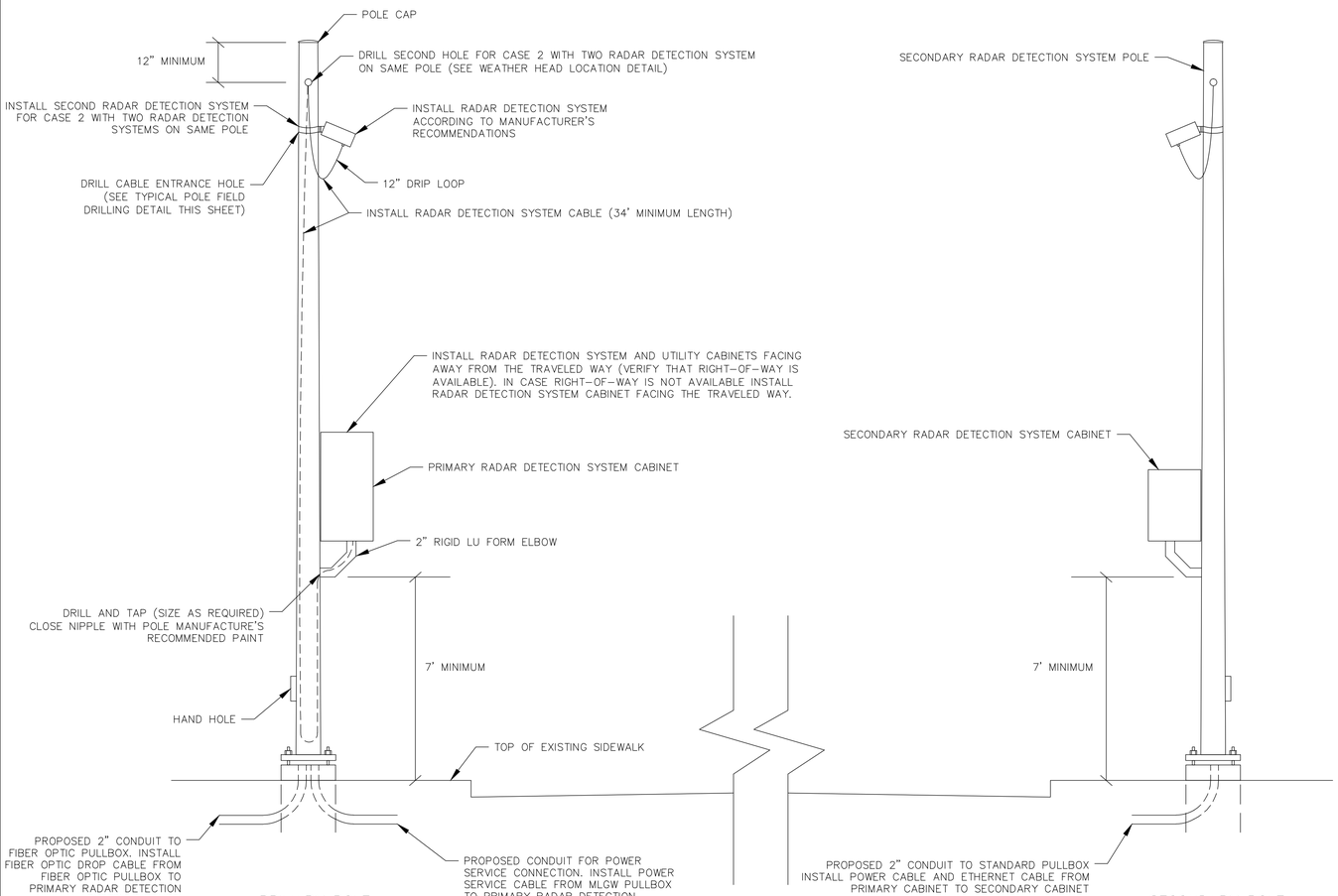
CASE 2: TWO RADAR DETECTION SYSTEMS ON ONE POLE

WEATHER HEAD LOCATION DETAIL (PLAN VIEW)



NOTE: SEE WEATHER HEAD LOCATION DETAIL FOR POSITIONING OF WEATHER HEAD(S) RELATIVE TO THE RADAR DETECTION SYSTEMS.

TYPICAL POLE FIELD DRILLING DETAIL



PRIMARY POLE

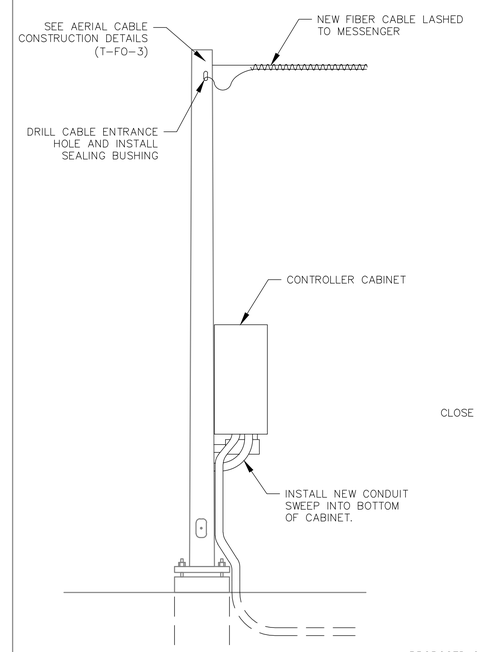
INSTALL POWER AND ETHERNET CABLES FROM SECONDARY RADAR DETECTION SYSTEM CABINET TO PRIMARY RADAR DETECTION SYSTEM CABINET (IF SECONDARY POLE AND RADAR DETECTION SYSTEM UNIT IS CALLED FOR ON PLAN SHEETS)

SECONDARY POLE

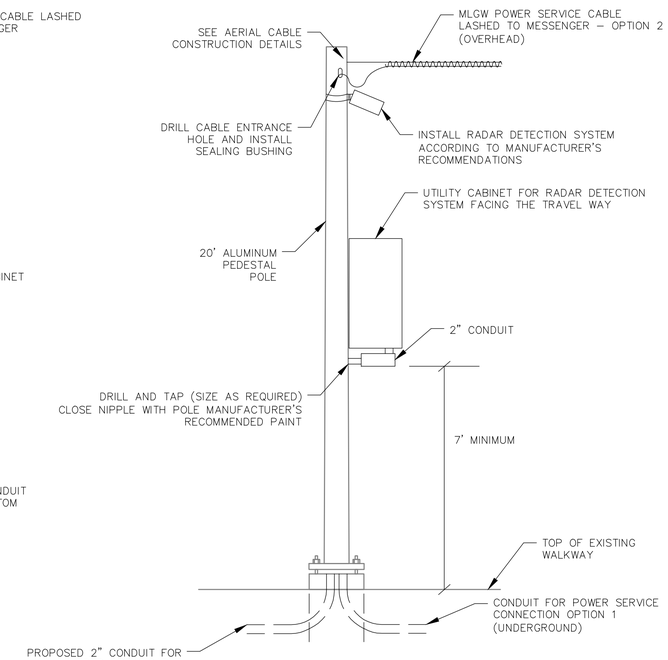
NOTE: INSTALL SECONDARY RADAR DETECTION SYSTEM POLE AS NEEDED FOR PLAN SHEETS.

TYPICAL RADAR DETECTION SYSTEM (RDS)

ON NEW 20' ALUMINUM PEDESTAL POLE



AERIAL AND/OR UNDERGROUND ROUTING STEEL POLE ON FOUNDATION



RADAR DETECTION SYSTEM (RDS) CABINET INSTALLATION DETAILS

POLE MOUNTED CABINET DETAILS

NOTES:

1. SEE PROJECT SPECIAL PROVISIONS FOR MATERIAL AND INSTALLATION REQUIREMENTS FOR RDS UNIT, PRIMARY RADAR DETECTION SYSTEM CABINET, SECONDARY RADAR DETECTION SYSTEM CABINET AND RADAR DETECTION SYSTEM CABLE.

2. SEE TDOT STANDARD DRAWING TSG-10 FOR CONCRETE PEDESTAL POLE FOUNDATION DETAILS. ALTERNATIVELY, A STEEL ANCHOR FOUNDATION CAN BE USED. SEE TDOT STANDARD DRAWING T-L-1 FOR STEEL ANCHOR FOUNDATION DETAILS.

REVISIONS

DATE	DESCRIPTIONS	APPROVED

DOUGLAS A. KIMLEY REGISTERED ENGINEER AGRICULTURE COMMERCE NO. 00114214 STATE OF TENNESSEE 12/19/15

Kimley»Horn

DIVISION OF PUBLIC WORKS
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SIGNAL SYSTEM PROJECT SET #6
SHELBY COUNTY, TN.

MISCELLANEOUS DETAILS

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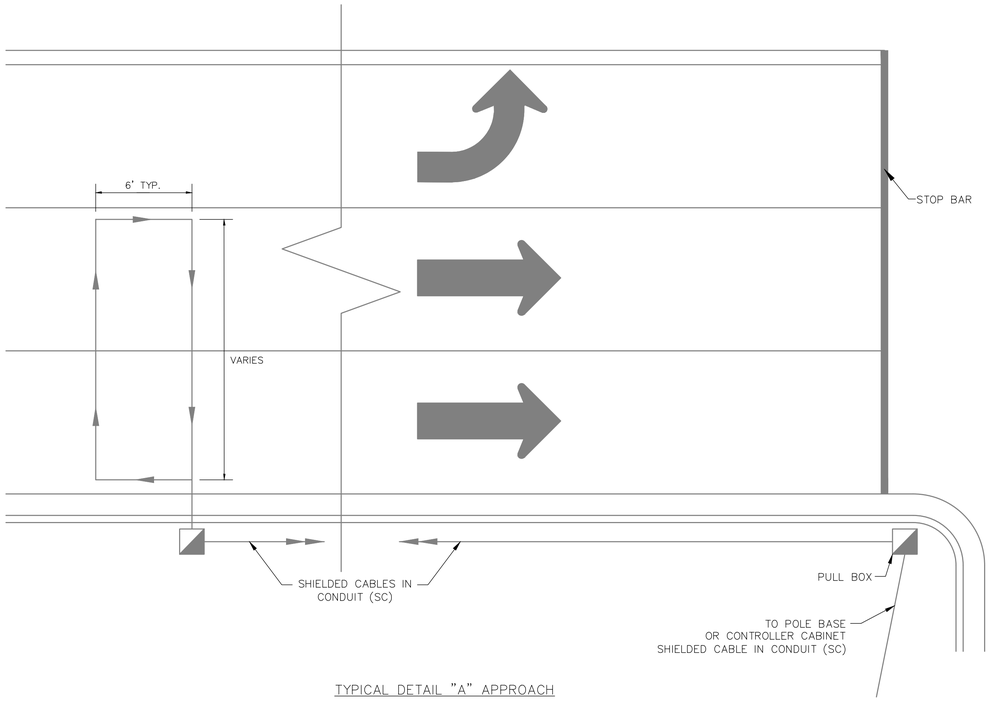
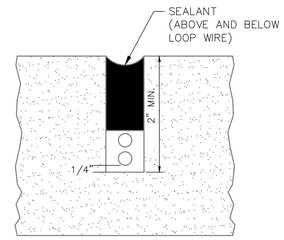
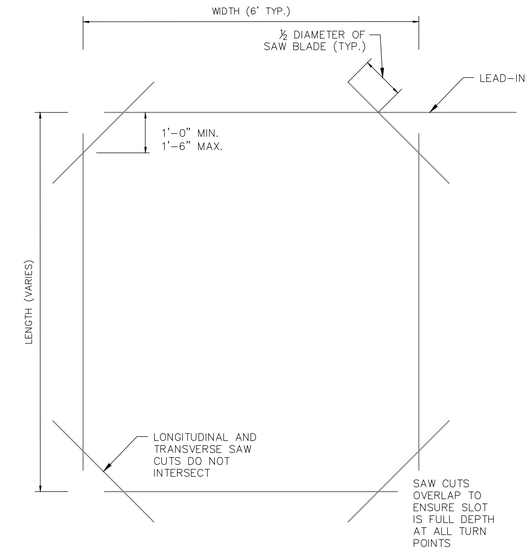


TYPICAL DETAIL "A" APPROACH
TWO OR MORE THROUGH-LANE



TYPICAL SAW SLOT AND LOOP WIRE DETAIL



SAW SLOT CONSTRUCTION DETAIL

LOOP TURNS		
LOOP LENGTH	NO. TURNS IN ASPHALT	NO. TURNS IN CONCRETE
6-24	3	4
24-50	2	3

INDUCTION DETECTION LOOP NOTES

(A) THE DETECTOR LOOPS SHALL BE OF THE SIZE AND LOCATION DETAILED IN THE PLANS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

(B) THE CONTRACTOR SHALL INSTALL LOOPS BY WET CUTTING A NARROW SLOT (⅜ INCH WIDE) IN THE ROADWAY SURFACE WITH A DIAMOND SAW. INSTALLING THE WIRE AND BACKFILLING WITH A SUITABLE SEALER. SAW SLOTS SHALL BE A MINIMUM OF 2" IN DEPTH.

(C) THE CONTRACTOR SHALL EXERCISE CARE IN PLACING THE DETECTION LOOPS AND LEAD-INS IN THE PAVEMENT SLOTS. PRESSURE CLEAN WITH WATER, THEN FILTERED COMPRESSED AIR SHALL BE USED TO REMOVE ALL DUST AND MOISTURE FROM THE SLOT. THE LOOP WIRE WILL THEN BE PUSHED INTO THE SLOTS WITHOUT THE USE OF SHARP OBJECTS WHICH MIGHT DAMAGE THE WIRE INSULATION. USE OF METAL TOOLS IS NOT PERMITTED.

(D) THE DETECTION LOOPS IN ANY GIVEN TRAFFIC LANE SHALL BE WIRED TOGETHER IN SERIES TO ENTER ONE DETECTOR SENSOR UNIT UNLESS OTHERWISE NOTED ON THE PLANS. IF THE MANUFACTURER OF THE RELATED DETECTOR SENSOR UNIT RECOMMENDS ANOTHER WIRING SCHEME. APPROVAL SHALL BE OBTAINED FROM THE ENGINEER BEFORE CHANGING THE WIRING.

(E) BEFORE THE SLOTS ARE SEALED, THE RESISTANCE OF THE DETECTION LOOPS AND LEAD-INS (INCLUDING SPLICES) SHALL BE CHECKED AGAINST GROUND WITH A MEGGAR. A RESISTANCE OF LESS THAN TEN MEGAOHMS WILL INDICATE A FAULT REQUIRING CORRECTION BEFORE THE SLOT IS SEALED.

(F) ALSO BEFORE THE SLOTS ARE SEALED, THE INDUCTANCE OF THE DETECTION LOOP AND LEAD-INS SHALL BE CHECKED AT THE LOCATION OF THE DETECTOR SENSOR UNIT. THE INDUCTANCE SHALL BE NO LESS THAN 50 MICROHENRIES AND NO MORE THAN 300 MICROHENRIES. IF IT MEASURES OUT OF THIS RANGE ADDITIONAL TURNS SHALL BE ADDED OR SPLICING OF THE LOOPS (SERIES AND/OR PARALLEL) SHALL BE CHANGED TO PROVIDE AN INDUCTANCE READING BETWEEN 50 AND 300 MICROHENRIES.

(G) AFTER THE LOOP WIRES ARE INSTALLED AND ALL CHECKS SATISFACTORILY COMPLETED, THE SLOT SHALL THEN BE BACKFILLED AND SEALED WITH AN APPROVED LOOP SEALANT TO WITHIN ⅛" OF THE PAVEMENT SURFACE. SURPLUS SEALANT SHALL BE REMOVED FROM THE ADJACENT ROAD SURFACE WITHOUT THE USE OF SOLVENTS. ASPHALTIC BASED SEALERS ARE NOT ACCEPTABLE.

(H) LOOPS AND HOME RUNS TO PULL BOXES SHALL BE ONE CONTINUOUS LENGTH OF NO. 14 AWG STRANDED CROSS-LINK POLYETHYLENE SINGLE CONDUCTOR WIRE. WHICH MEET THE REQUIREMENTS OF I.M.S.A. SPECIFICATION NO. 51-3. THE HOME RUN TO THE PULL BOX SHALL BE TWISTED 3 TIMES PER FOOT.

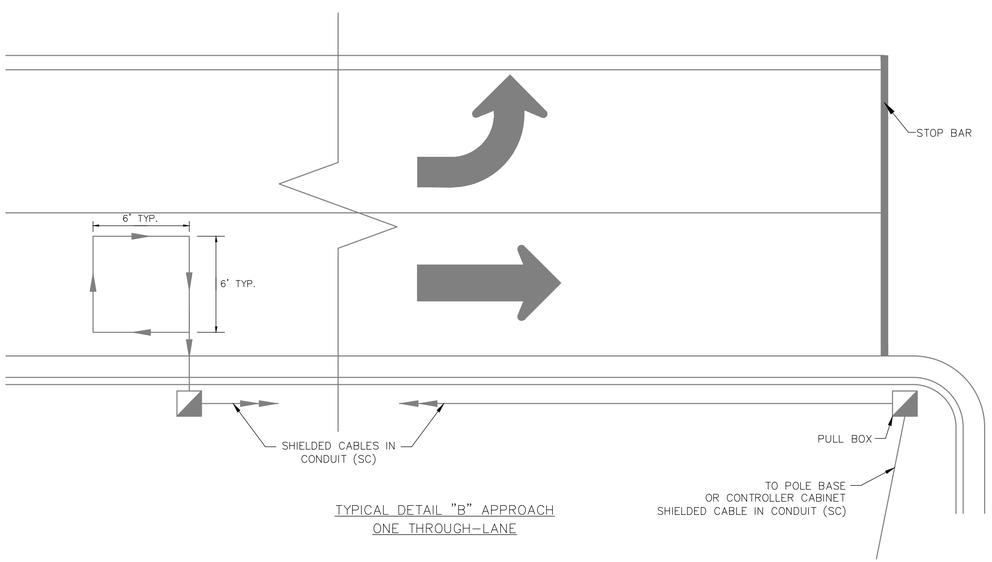
(I) SPLICES SHALL BE PERMITTED ONLY IN PULL BOXES, POLE BASES, CONDULETS, OR CABINETS AND SHALL BE WATERPROOF.

(J) ALL CABLE FROM PULL BOX TO CONTROLLER SHALL CONSIST OF A TWISTED PAIR OF SHIELDED CABLES, NO. 14 AWG STRANDED, WHICH MEET THE REQUIREMENTS OF I.M.S.A. SPECIFICATION NO. 50-2.

(K) ALL CABLES ARE TO BE COLOR-CODED. ALL LOOP LEAD-INS ARE TO BE LABELED IN PULL BOXES, SHIELDED CABLE TO BE LABELED IN CONTROLLER CABINETS.

(L) NO LOOPS ARE TO BE INSTALLED THROUGH, OVER, OR UNDER TRANSVERSE CONCRETE JOINTS IN CONCRETE PAVEMENT. AND NO MANHOLES, INLETS, ETC. MAY BE LOCATED WITHIN A LOOP. IF ANY OF THE ABOVE ARE ENCOUNTERED THE LOCATION OF THE LOOP MAY BE VARIED SLIGHTLY AS DIRECTED BY THE ENGINEER, IF THE ABOVE ITEMS ARE UNAVOIDABLE, SMALLER LOOPS IN THE SERIES MAY BE USED. SMALLER LOOPS USED TO REPLACE ONE LARGE LOOP MAY BE CONNECTED TO ONE CHANNEL.

(M) ALL LOOPS TO BE CENTERED IN TRAVEL LANE.



TYPICAL DETAIL "B" APPROACH
ONE THROUGH-LANE

REVISIONS

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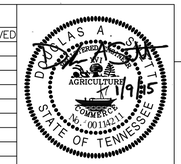

Kimley»Horn

DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
SIGNAL SYSTEM PROJECT SET #6
SHELBY COUNTY, TN.

ADVANCED LOOP DETECTION DETAILS

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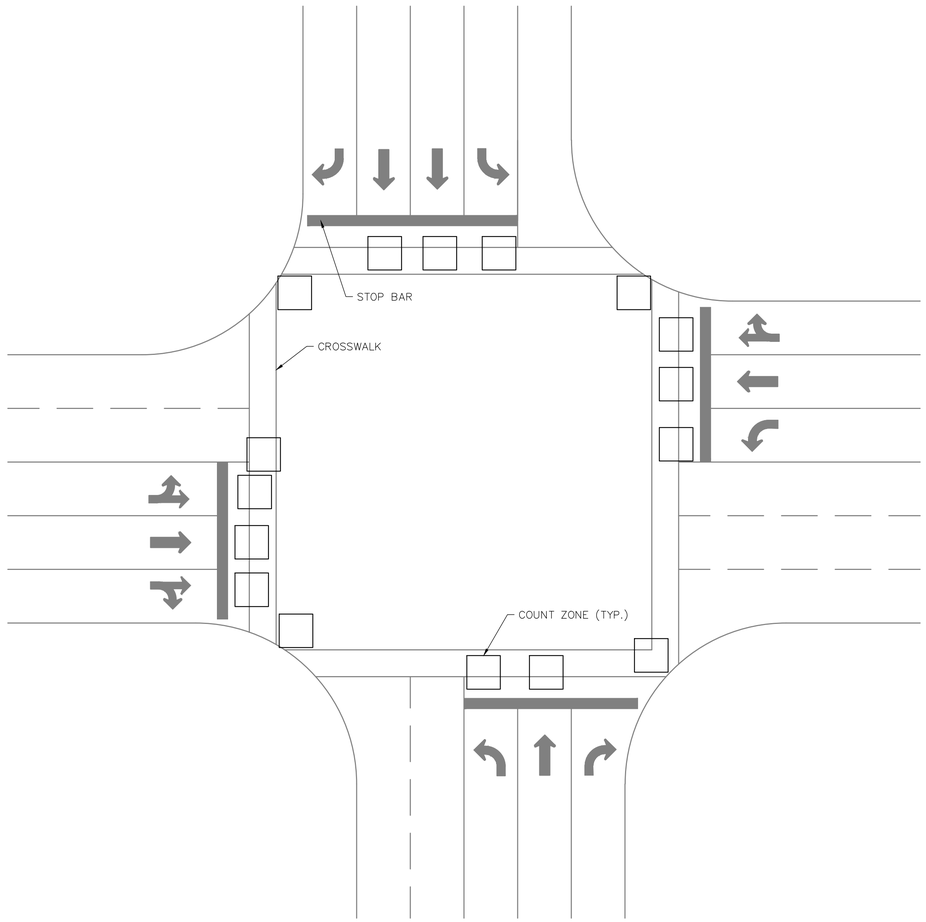
NOTES:

1. ALL COUNT ZONES TO BE DRAWN AS 6'X6' ZONES
2. ALL COUNT ZONES TO BE SET TO DIRECTIONAL AND TO COUNT ALL THE TIME UNLESS DIRECTED OTHERWISE BY THE ENGINEER
3. ALL COUNT ZONE LOCATIONS TO BE APPROVED BY THE ENGINEER PRIOR TO FINAL ACCEPTANCE OF THE INTERSECTION
4. COUNT ZONES TO BE NUMBERED SEQUENTIALLY AFTER THE DETECTION ZONES ACCORDING TO THE PHASE ASSIGNMENT AT THE INTERSECTION.



COUNT ZONE DETAIL

REVISIONS		
DATE	DESCRIPTIONS	APPROVED

Kimley»Horn

DOUGLAS A. SCOTT
AGRICULTURE
COMMERCE
No. 00116211
STATE OF TENNESSEE
12/19/15

DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
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SHELBY COUNTY, TN.

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