TDOT P.I.N.: 115241.03
FEDERAL PROJECT NO.: CM-9700(40)
STATE PROJECT NO.: 79947-1416-54
LOCALLY MANAGED PROJECT

STATE OF TENNESSEE

SHELBY COUNTY

DIVISION OF PUBLIC WORKS

PLAN FOR PROPOSED IMPROVEMENTS

CONGESTION MANAGEMENT PROGRAM

DETECTION UPGRADE SET #2

SCOPE OF WORK

CONSTRUCTION INCLUDES THE INSTALLATION OF VIDEO VEHICLE DETECTION AND EMERGENCY VEHICLE PREEMPTION EQUIPMENT FOR THE INTERSECTIONS LISTED BELOW.

CITY OF MEMPHIS

-U.S. HWY. 64 AT BROTHER BLVD.

CITY OF BARTLETT

-ELMORE RD. AT BARTLETT BLVD.
-U.S. HWY. 70 AT APPLING RD.
-ST. ELMO RD. AT ALTRURIA RD.
-ST. ELMO RD. AT KIRBY WHITTEN RD.
-U.S. HWY. 70 AT MEMPHIS-ARLINGTON RD.

CITY OF GERMANTOWN

-WOLF RIVER BLVD. AT RIVERDALE RD.

SHELBY COUNTY

-NAVY RD. AT BETHUEL RD.
-MACON RD. AT BERRYHILL RD.
-FITE RD. AT U.S. HWY. 51
-OLD BROWNSVILLE RD. AT AUSTIN PEAY HWY.
-FITE RD. AT RALEIGH MILLINGTON RD.
-U.S. HWY. 70 AT BRUNSWICK RD.

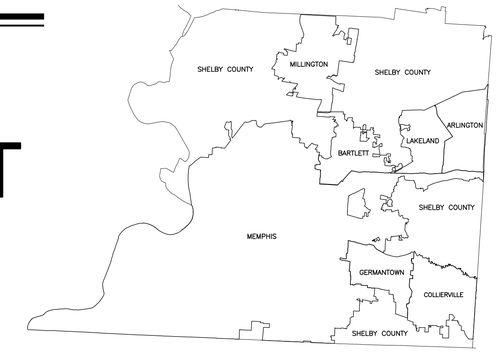
- PROJECT LOCATIONS

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES
3	QUANTITIES
4	TABULATED QUANTITIES
5	U.S. HWY. 64 AT BROTHER BLVD. INTERSECTION LAYOUT
6	U.S. HWY. 64 AT BROTHER BLVD. DETAILS
7	ELMORE RD. AT BARTLETT BLVD. INTERSECTION LAYOUT
8	U.S. HWY. 70 AT APPLING RD. INTERSECTION LAYOUT
9	ST. ELMO RD. AT ALTRURIA RD. INTERSECTION LAYOUT
10	ST. ELMO RD. AT KIRBY WHITTEN RD. INTERSECTION LAYOUT
11	U.S. HWY. 70 AT MEMPHIS-ARLINGTON RD. INTERSECTION LAYOUT
12	WOLF RIVER BLVD. AT RIVERDALE RD. INTERSECTION LAYOUT
13	NAVY RD. AT BETHUEL RD. INTERSECTION LAYOUT
14	MACON RD. AT BERRYHILL RD. INTERSECTION LAYOUT
15	FITE RD. AT U.S. HWY. 51 INTERSECTION LAYOUT
16	OLD BROWNSVILLE RD. AT AUSTIN PEAY HWY. INTERSECTION LAYOUT
17	FITE RD. AT RALEIGH MILLINGTON RD. INTERSECTION LAYOUT
18	U.S. HWY. 70 AT BRUNSWICK RD. INTERSECTION LAYOUT
19	VIDEO DETECTION DETAILS
20	ADVANCED LOOP DETECTION DETAILS
21	DETAILS

VICINITY MAP
NOT TO SCALE

EQUATIONS: NONE
EXCEPTIONS: NONE



LOCATION MAP
NOT TO SCALE

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. TOM NEEDHAM, P.E.
SHELBY COUNTY DIRECTOR OF PUBLIC WORKS
SHELBY COUNTY ENGINEER

1

CONGESTION MANAGEMENT PROGRAM (DETECTION UPGRADE SET #2)			
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
209-09.43	CURB INLET PROTECTION (TYPE 4)	EACH	30
701-01.01	CONCRETE SIDEWALK 4"	S.F.	250
701-02.01	CONCRETE CURB RAMP (RETROFIT)	S.F.	100
712-01	TRAFFIC CONTROL	L.S.	1
717-01	MOBILIZATION	L.S.	1
725-03.91	CURB MOUNTED CABLE MARKER	EACH	50
730-01.10	OVERHEAD UTILITY RELOCATION (UTILITY FEE)	L.S.	1
730-03.11	INSTALL SPLICE BOX (POLE-MOUNTED)	EACH	2
730-03.21	INSTALL PULL BOX (TYPE B)	EACH	4
730-05.01	ELECTRICAL SERVICE CONNECTION (FROM EXISTING CABINET TO NEW CABINET LOCATION)	EACH	4
730-11.12	RISER ASSEMBLY (3")	EACH	3
730-12.02	CONDUIT 2" DIAMETER (PVC)	L.F.	740
730-12.03	CONDUIT 3" DIAMETER (PVC)	L.F.	310
730-13.02	VEHICLE DETECTOR (VIDEO)	EACH	13
730-13.03	VEHICLE DETECTOR (4-CHANNEL, RACK-MOUNT)	EACH	2
730-13.06	VEHICLE DETECTOR (OPTICALLY ACTIVATED PRIORITY CONTROL)	EACH	12
730-14.01	SHIELDED DETECTOR CABLE	L.F.	740
730-14.02	SAW SLOT	L.F.	102
730-14.03	LOOP WIRE	L.F.	300
730-15.11	MODIFY CABINET (POLE-MOUNT ENTRANCE)	EACH	3
730-15.13	MODIFY CABINET (BASE-MOUNT ENTRANCE)	EACH	7
730-15.32	CABINET (EIGHT PHASE BASE MOUNTED)	EACH	4
730-16.02	EIGHT PHASE ACTUATED CONTROLLER	EACH	4
801-03	WATER (SEEDING & SODDING)	M.G.	1
803-01	SODDING (NEW SOD)	S.Y.	135

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 BE ITERIS VANTAGE SYSTEM OR APPROVED EQUIVALENT. INCLUDES DETECTION CAMERAS, PROCESSOR UNIT, CARD RACK, VIDEO REMOTE MANAGEMENT CARD WITH ETHERNET INTERFACE, POWER SUPPLY UNIT, SURGE PROTECTION EQUIPMENT (AN EDCO HSP-121BT1RU SERIES SURGE PROTECTION), MONITOR, MOUSE AND ALL CABLING, CONNECTIONS AND HARDWARE TO COMPLETE THE INSTALLATION OF A FULLY FUNCTIONAL VIDEO DETECTION SYSTEM. (1)
5. INSTALL ONE (1) DETECTOR CARD PER INTERSECTION APPROACH WHERE ADVANCE DETECTION LOOPS ARE TO BE REPAIRED OR REPLACED. SEE INTERSECTION LAYOUT SHEETS.
6. 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.
7. SEE INTERSECTION LAYOUT SHEETS AND VIDEO DETECTION DETAILS SHEET FOR CABINET MODIFICATION DETAILS.
8. THE TRAFFIC SIGNAL CONTROLLER SHALL BE AN EAGLE EPAC M52 KEYBOARD UNIT OR APPROVED EQUIVALENT WITH NTCIP COMPLIANT SOFTWARE AND SEPAC, 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 SSM12LEIP.
9. SEE TYPICAL COUNT ZONE DETAIL FOR ZONE LOCATION SETUP.
10. FOR JUNCTION BOX TO BE INSTALLED AT TOP OF POLE. (1)

REVISIONS

DATE	DESCRIPTIONS	APPROVED
1 10/2013	REVISED QUANTITIES AND FOOTNOTES	

DOUGLAS A. SKIPT REGISTERED ENGINEER AGRICULTURE COMMERCE NO. 001142 STATE OF TENNESSEE 10/15/13

Kimley-Horn and Associates, Inc.

DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
DETECTION UPGRADE SET #2
SHELBY COUNTY, TN.

QUANTITIES

SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: KHA DATE: 08/12 SCALE: N.T.S.
DESIGNED: KHA DATE: 08/12 CHECKED: JFC DATE: 08/12

DRAWING NAME: K:\MEM_TPTO\115087002 – Shelby County CMP 2\Design\Level 2 – VD_EVP\Bid Set 2\Plans\BidSet 2-03-Quantities.dwg Layout1 Oct 15, 2013 1:00PM BY: blaine.lynch

1

INTERSECTION LAYOUT SHEET NO.	INTERSECTION ID	LOCATION		CONTROLLER/CABINET WORK																					PULLBOXES AND RISERS		
				CONTROLLER		LOCAL SIGNAL CONTROLLER CABINET					CABINET ENTRANCE		EMERGENCY VEHICLE PREEMPTION					VIDEO DETECTION									
				REMOVE EXISTING CONTROLLER	INSTALL NEW 8-PHASE CONTROLLER	RETAIN EXISTING CABINET	REMOVE EXISTING POLE MOUNTED CABINET	INSTALL NEW BASE MOUNTED CABINET FOUNDATION	INSTALL NEW BASE MOUNTED CABINET	INSTALL VEHICLE DETECTOR CARD (4-CHANNEL, RACK-MOUNT)	RETAIN EXISTING BASE MOUNTED CABINET FOUNDATION	INSTALL 3" CONDUIT INTO EXTERIOR OF CABINET	INSTALL OPTICOM DETECTOR MODEL 711	INSTALL OPTICOM DETECTOR MODEL 722	INSTALL EVP CONFIRMATION BEACON	INSTALL EVP CONFIRMATION LAMP	INSTALL EVP PHASE SELECTOR MODEL 764 (4 CHANNEL)	VIDEO DETECTION CAMERA TYPE 1 MOUNT	VIDEO DETECTION CAMERA TYPE 2 MOUNT	VIDEO DETECTION CAMERA TYPE 3 MOUNT	VIDEO DETECTION CARD RACK	VIDEO DETECTION PROCESSOR (DUAL CHANNEL)	MONITOR AND MOUSE	VIDEO REMOTE MANAGEMENT CARD	INSTALL PULLBOX (TDOT TYPE B)	INSTALL SPLICE BOX (POLE-MOUNTED)	INSTALL 3" RISER WITH WEATHERHEAD
		PLAN SHEET CALL-OUT SYMBOL		-	C2	B1	-	B6	B6	D13	-	22	D14	D14	D15	D16	D17	D4	D5	D6	-	D10	-	D11	B11	B15	14
		ITEM NUMBER		-	730-16.02	-	-	-	730-15.32	730-13.03	-	-	730-13.06	730-13.06	730-13.06	730-13.06	730-13.06	730-13.02	730-13.02	730-13.02	730-13.02	730-13.02	730-13.02		730-03.21	730-03.11	730-11.12
		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
		CITY OF MEMPHIS																									
5	8018	U.S. HWY. 64	BROTHER BLVD.	1	1	-	-	-	1	-	1	1	4	-	2	4	1	-	4	-	1	2	1	1	-	-	-
		CITY OF BARTLETT																									
7	5131	ELMORE RD.	BARTLETT BLVD.	-	-	1	-	-	-	-	-	1	-	2	2	4	1	-	3	1	1	2	1	1	-	-	-
8	6121	U.S. HWY. 70	APPLING RD.	-	-	1	-	-	-	-	1	1	2	1	2	4	1	-	4	-	1	2	1	1	-	-	-
9	5475	ST. ELMO RD.	ALTRURIA RD.	-	-	1	-	-	-	-	1	1	2	1	2	4	1	-	4	-	1	2	1	1	-	-	-
10	6109	ST. ELMO RD.	KIRBY-WHITTEN RD.	-	-	1	-	-	-	-	1	1	-	2	2	4	1	-	4	-	1	2	1	1	-	-	-
11	6124	U.S. HWY. 70	MEMPHIS-ARLINGTON RD.	1	1	-	1	1	1	-	-	-	1	1	-	3	1	-	2	2	1	2	1	1	-	-	-
		CITY OF GERMANTOWN																									
12	5188	WOLF RIVER BLVD.	RIVERDALE RD.	-	-	1	-	-	-	1	1	1	1	1	2	3	1	-	3	-	1	2	1	1	2	-	-
		SHELBY COUNTY																									
13	5291	NAVY RD.	BETHUEL RD.	1	1	-	1	1	1	-	-		-	-	-	-	-	-	4	-	1	2	1	1	-	1	1
14	5367	MACON RD.	BERRYHILL RD.	-	-	1	-	-	-	-	1	1	1	1	2	3	1	-	3	-	1	2	1	1	-	-	-
15	5305	FITE RD.	U.S. HWY. 51	1	1	-	1	1	1	-	-	1	1	1	2	3	1	-	3	-	1	2	1	1	-	1	1
16	5434	OLD BROWNSVILLE RD.	AUSTIN PEAY HWY.	-	-	1	-	-	-	1	-	1	-	2	2	4	1	-	4	-	1	2	1	1	2	-	1
17	5302	FITE RD.	RALEIGH-MILLINGTON RD.	-	-	1	-	-	-	-	-	1	1	1	2	3	1	-	3	-	1	2	1	1	-	-	-
18	5194	U.S. HWY. 70	BRUNSWICK RD.	-	-	1	-	-	-	-	1	1	2	1	2	4	1	-	3	1	1	2	1	1	-	-	-
			TOTALS	4	4	9	3	3	4	2	7	11	15	14	22	43	12	0	44	4	13	26	13	13	4	2	3

REVISIONS

	DATE	DESCRIPTIONS	APPROVED
1	10/2013	REVISED QUANTITIES	

DOUGLAS A. JOHNSON
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
No. 001 NO.1
10/15/13
STATE OF TENNESSEE

Kimley-Horn and Associates, Inc.

DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
DETECTION UPGRADE SET #2
SHELBY COUNTY, TN.

TABULATED QUANTITIES

SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: KHA DATE: 08/12 SCALE: N.T.S.
DESIGNED: KHA DATE: 08/12 CHECKED: JFC DATE: 08/12

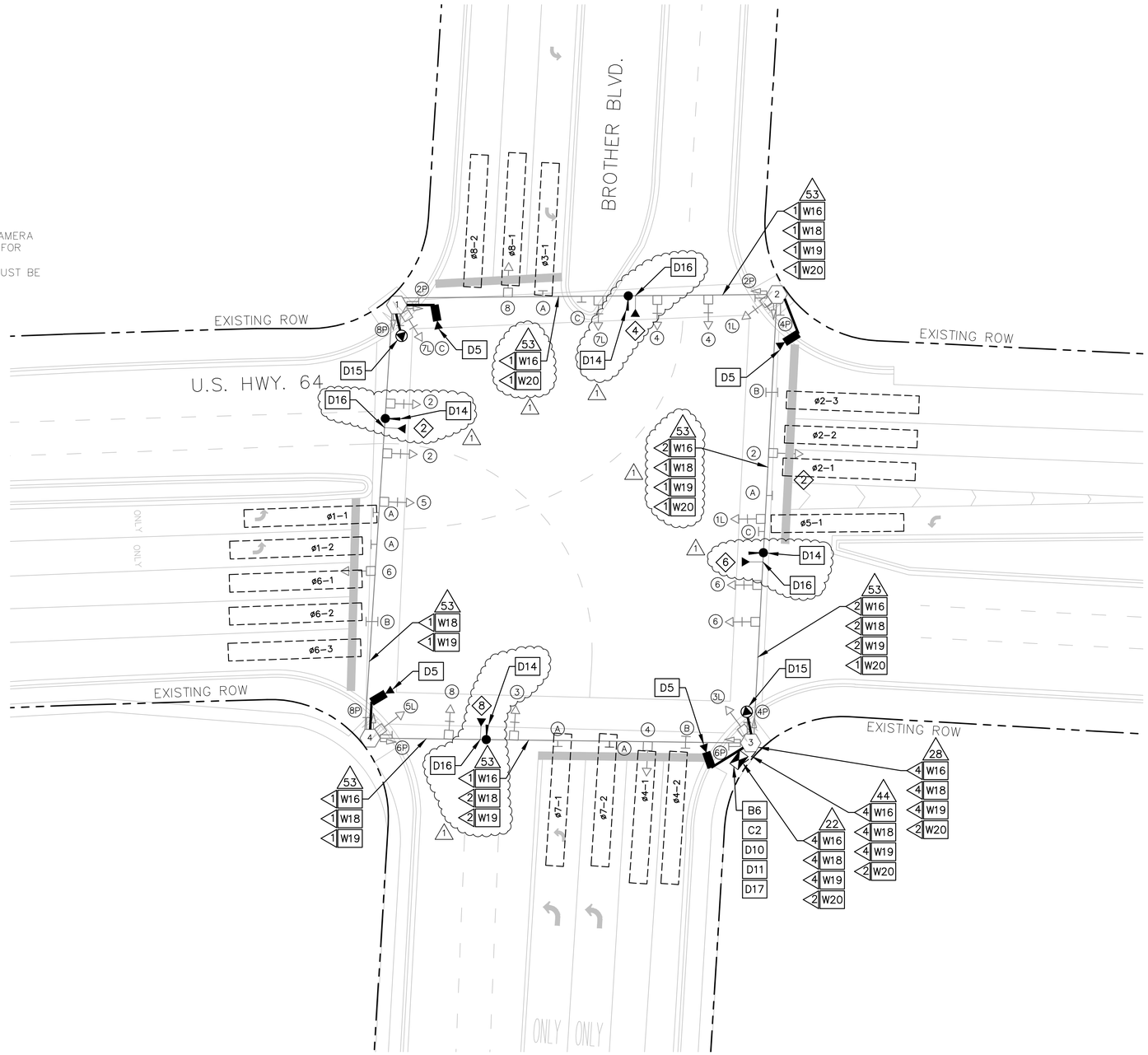
SHEET 4 OF 21

DRAWING NAME: K:\MEM_TPTO\115087002 - Shelby County CMP 2\Design\Level 2 - VD_EVP\Bid Set 2\Plans\BidSet 2-04-TabulatedQuantities.dwg Layout1 Oct 15, 2013 1:00PM BY: blaine.lynch

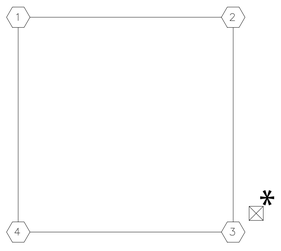
N

NOTES:

1) POLE 4: CONTRACTOR TO COORDINATE CAMERA INSTALLATION WITH MLGW AND ENGINEER FOR POTENTIAL OVERHEAD UTILITY CONFLICTS.
2) ALL CONDUIT WORK IS SCHEMATIC AND MUST BE PERFORMED WITHIN THE EXISTING R.O.W.

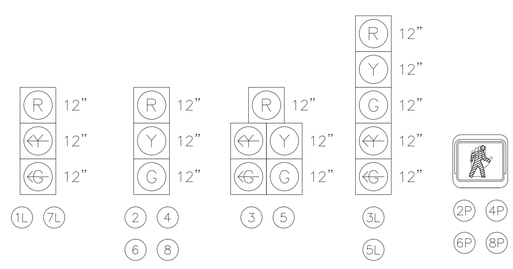


B1	RETAIN AND MODIFY EXISTING CABINET
B6	INSTALL BASE MOUNTED CABINET
B7	INSTALL POLE MOUNTED CABINET
B11	INSTALL STANDARD PULLBOX
B13	INSTALL PULLBOX (FIBER OPTIC–TYPE A)
B14	INSTALL PULLBOX (FIBER OPTIC–TYPE B)
B15	INSTALL JUNCTION BOX
C1	INSTALL 4–PHASE CONTROLLER
C2	INSTALL 8–PHASE CONTROLLER
C3	INSTALL FIELD MASTER CONTROLLER
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
D10	INSTALL VIDEO DETECTION PROCESSOR
D11	INSTALL VIDEO REMOTE MANAGEMENT CARD
D12	INSTALL 6' X 6' SYSTEM LOOP(S)
D13	INSTALL DETECTOR AMPLIFIER (4–CHANNEL) IN CABINET
D14	INSTALL EVP DETECTOR
D15	INSTALL EVP CONFIRMATION BEACON
D16	INSTALL EVP CONFIRMATION LAMP
D17	INSTALL EVP PHASE SELECTOR
D18	INSTALL SIGNAL HEAD
M2	TIE CONDUIT INTO EXISTING PULL BOX
M4	ATTACH CONDUIT TO EXISTING CONDUIT STUB–OUT
W13	2C SHIELDED DETECTOR CABLE(S)
W15	TELEPHONE CABLE(S)
W16	VIDEO DETECTOR CABLE(S)
W18	EVP DETECTOR CABLE(S)
W19	EVP CONFIRMATION LAMP POWER CABLE(S)
W20	EVP CONFIRMATION BEACON POWER CABLE(S)
12	REUSE EXISTING RISER WITH SEALING BUSHING
13	INSTALL 2" RISER WITH WEATHERHEAD
14	INSTALL 3" RISER WITH WEATHERHEAD
15	INSTALL 2" RISER WITH SEALING BUSHING
17	INSTALL 2" CONDUIT INTO EXISTING FOUNDATION
18	INSTALL 3" CONDUIT INTO EXISTING FOUNDATION
19	INSTALL 2" RISER INTO BOTTOM OF CABINET
21	INSTALL 2" CONDUIT INTO EXTERIOR OF CABINET
22	INSTALL 3" CONDUIT INTO EXTERIOR OF CABINET
26	INSTALL CABLES IN EXISTING STEEL MAST ARM POLE
27	INSTALL CABLES IN EXISTING STEEL POLE IN EXISTING WEATHERHEAD
28	INSTALL CABLES IN EXISTING STEEL POLE IN PROPOSED WEATHERHEAD
29	INSTALL CABLES IN EXISTING STEEL POLE IN PROPOSED SEALING BUSHING
30	INSTALL 1" RISER WITH WEATHERHEAD
41	REUSE EXISTING CONDUIT AND PULL BOX
43	INSTALL 2" PVC CONDUIT
44	INSTALL 3" PVC CONDUIT
47	INSTALL CABLES IN EXISTING CONDUIT (S) INTO CABINET
49	JACK OR BORE 2" CONDUIT
50	JACK OR BORE 3" CONDUIT
53	LASH TO EXISTING MESSENGER CABLE/SPANWIRE

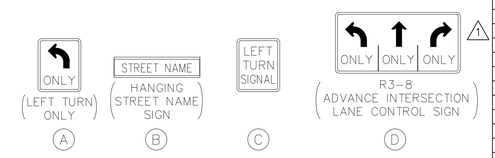


REMOVAL DIAGRAM

* EXISTING SIGNAL POLES AND CONTROLLER CABINET TO REMAIN.
– REMOVE ALL STOP BAR VEHICLE DETECTOR AMPLIFIERS FROM CABINET.



SIGNAL HEAD TYPES



EXISTING OVERHEAD SIGNS

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

REVISIONS

DATE	DESCRIPTIONS	APPROVED
10/2013	MOVED EVP DETECTORS	
	AND REMOVED PROP.	
	STRIPING	

DOUGLAS A. SKELTON REGISTERED ENGINEER AGRICULTURE COMMERCE No. 001142 STATE OF TENNESSEE 10/15/13

Kimley-Horn and Associates, Inc.

INTERSECTION I.D. #8018

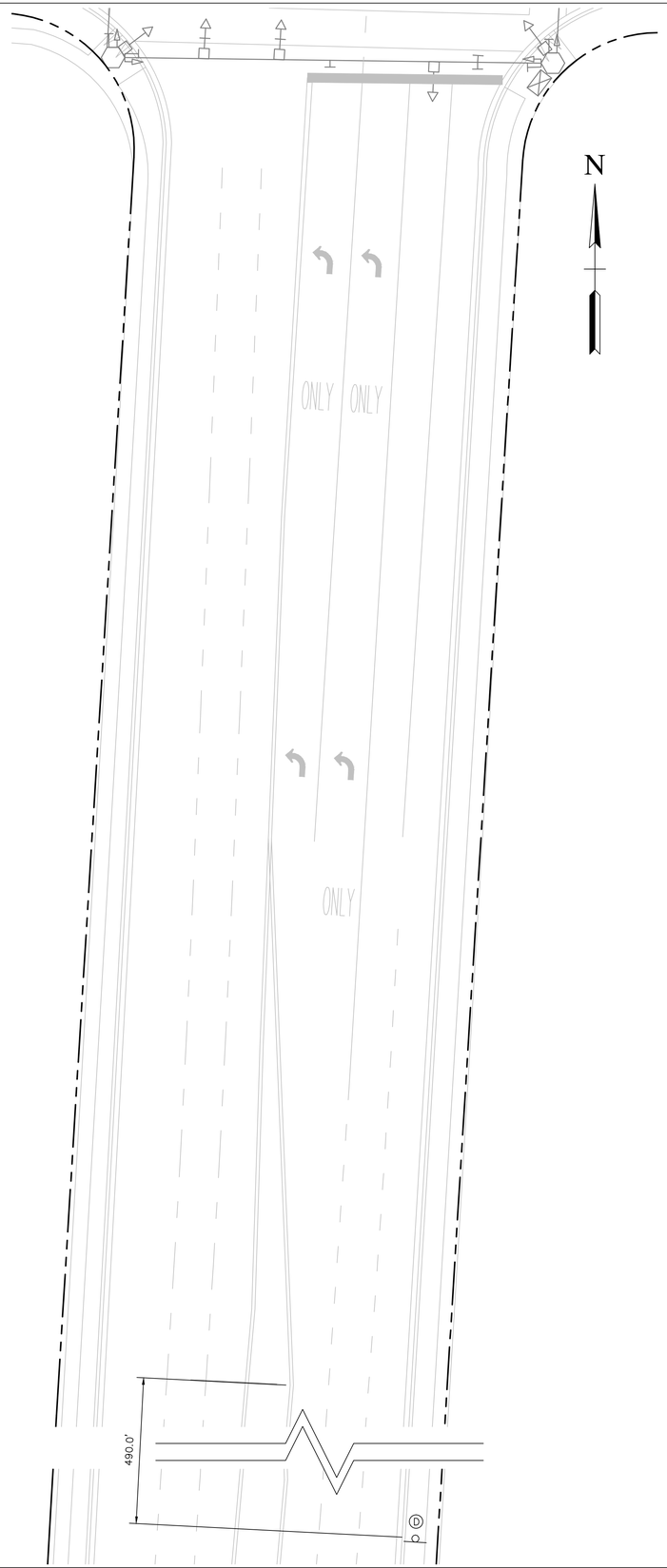
DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
DETECTION UPGRADE SET #2
SHELBY COUNTY, TN.

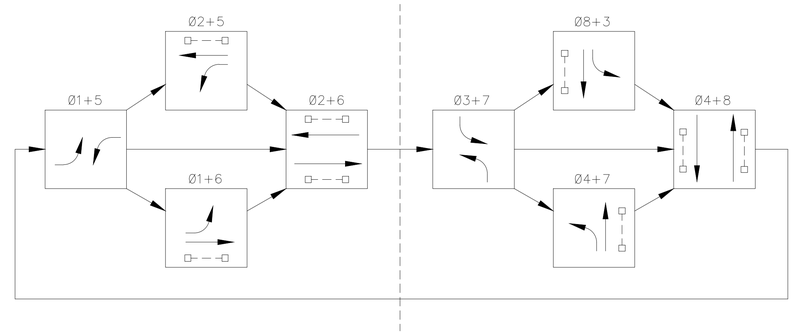
U.S. HWY. 64 AT BROTHER BLVD.
INTERSECTION LAYOUT

SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: KHA DATE: 08/12 SCALE: 1"=20'
DESIGNED: KHA DATE: 08/12 CHECKED: JFC DATE: 08/12
JURISDICTION: CITY OF MEMPHIS

SHEET 5 OF 21

DRAWING NAME: K:\MEM_TPTO\115087002 – Shelby County CMP 2\Design\Level 2 – VD_EVP\Bid Set 2\Plans\BidSet 2-05-US 64 Brother Blvd.dwg Layout1 Oct 15, 2013 1:00PM BY: blaine.lynch



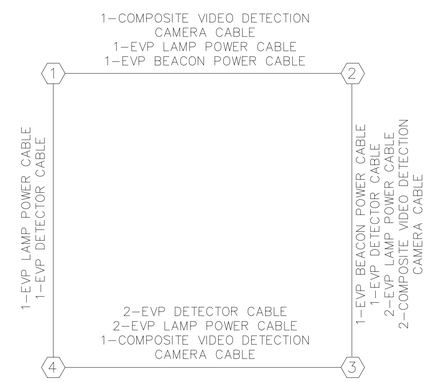


PHASE DIAGRAM

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

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

ZONE ASSIGNMENT CHART



GENERAL WIRING DIAGRAM

REVISIONS			
	DATE	DESCRIPTIONS	APPROVED
1	10/2013	REMOVED PROPOSED STRIPING	

Kimley-Horn and Associates, Inc.

INTERSECTION I.D. #8018

DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
DETECTION UPGRADE SET #2
SHELBY COUNTY, TN.

.S. HWY. 64 AT BROTHER BLVD.
DETAILS

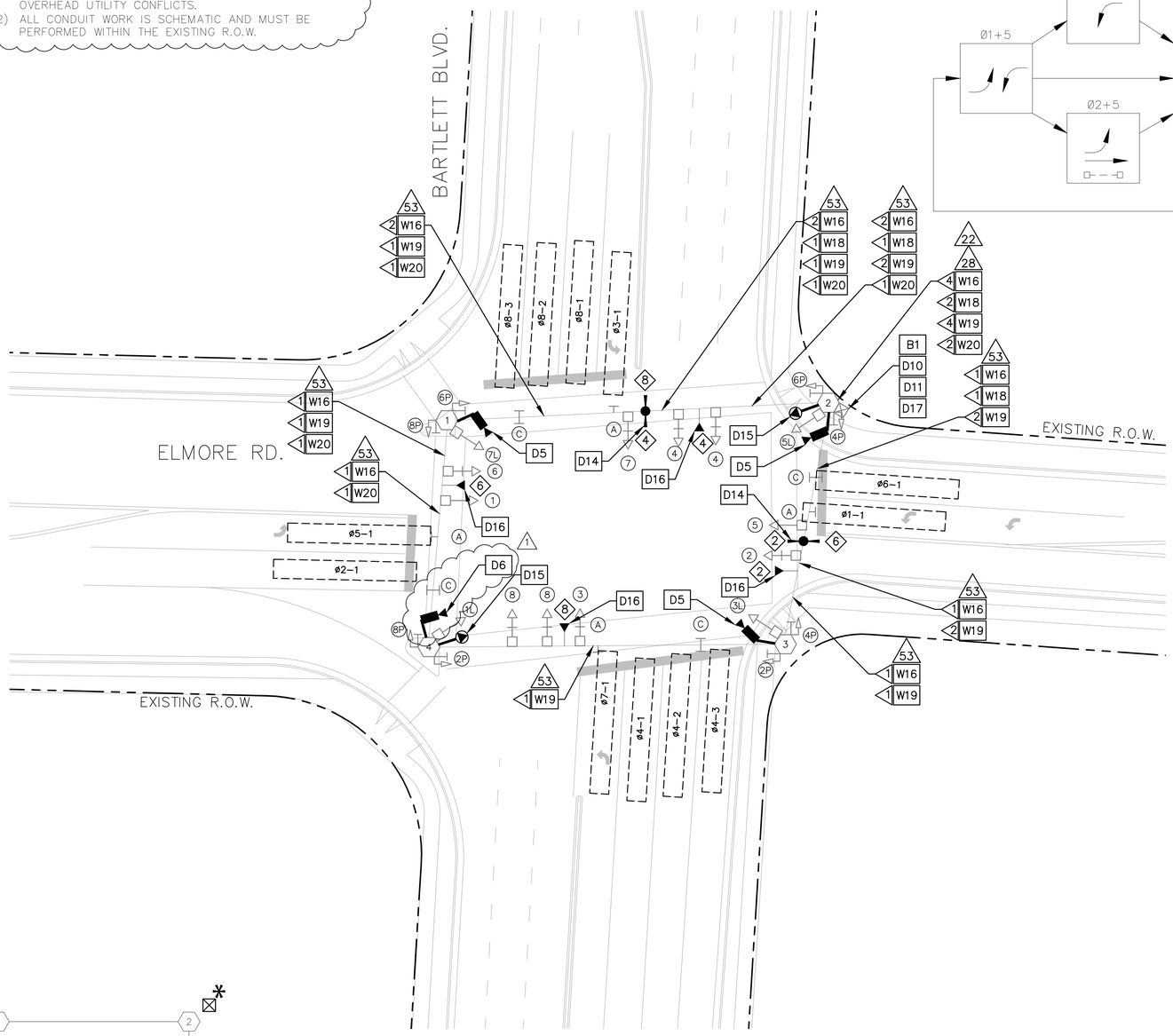
SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: KHA DATE: 08/12 SCALE: 1"=20'
DESIGNED: KHA DATE: 08/12 CHECKED: JFC DATE: 08/12
JURISDICTION: CITY OF BARTLETT

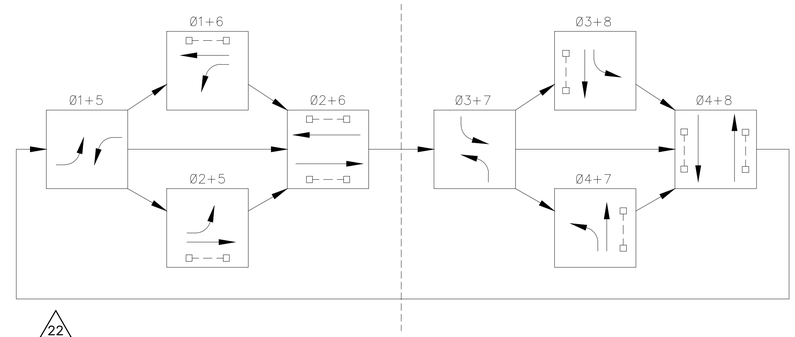
SHEET 6 OF 21

DRAWING NAME: K:\MEM_TPTO\115087002 - Shelby County CMP 2\Design\Level 2 - VD_EVP\Bid Set 2\Plans\BidSet 2-06-US 64 Brother Blvd.dwg Layout1 Oct 15, 2013 1:00PM BY: blaine.lynch

NOTES:

1) POLES 3 AND 4: CONTRACTOR TO COORDINATE CAMERA INSTALLATION WITH MLGW AND ENGINEER FOR POTENTIAL OVERHEAD UTILITY CONFLICTS.
2) ALL CONDUIT WORK IS SCHEMATIC AND MUST BE PERFORMED WITHIN THE EXISTING R.O.W.



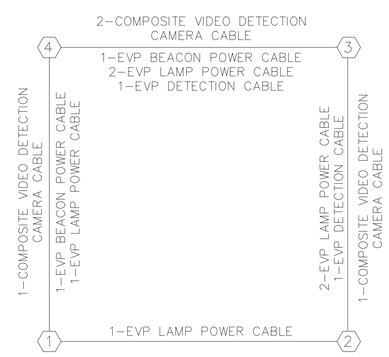


PHASE DIAGRAM

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

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

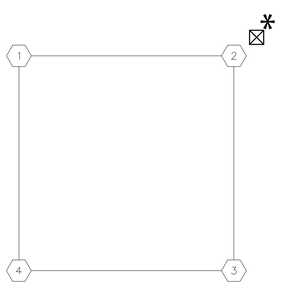
ZONE ASSIGNMENT CHART



GENERAL WIRING DIAGRAM

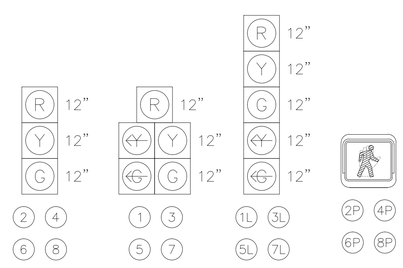
NUMBER OF CABLES, LOOPS, ETC.
X NUMBER OF CONDUCTORS, PAIRS, ETC.

B1 RETAIN AND MODIFY EXISTING CABINET
B6 INSTALL BASE MOUNTED CABINET
B7 INSTALL POLE MOUNTED CABINET
B11 INSTALL STANDARD PULLBOX
B13 INSTALL PULLBOX (FIBER OPTIC-TYPE A)
B14 INSTALL PULLBOX (FIBER OPTIC-TYPE B)
B15 INSTALL JUNCTION BOX
C1 INSTALL 4-PHASE CONTROLLER
C2 INSTALL 8-PHASE CONTROLLER
C3 INSTALL FIELD MASTER CONTROLLER
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
D10 INSTALL VIDEO DETECTION PROCESSOR
D11 INSTALL VIDEO REMOTE MANAGEMENT CARD
D12 INSTALL 6' X 6' SYSTEM LOOP(S)
D13 INSTALL DETECTOR AMPLIFIER (4-CHANNEL) IN CABINET
D14 INSTALL EVP DETECTOR
D15 INSTALL EVP CONFIRMATION BEACON
D16 INSTALL EVP CONFIRMATION LAMP
D17 INSTALL EVP PHASE SELECTOR
D18 INSTALL SIGNAL HEAD
M2 TIE CONDUIT INTO EXISTING PULL BOX
M4 ATTACH CONDUIT TO EXISTING CONDUIT STUB-OUT
W13 2C SHIELDED DETECTOR CABLE(S)
W15 TELEPHONE CABLE(S)
W16 VIDEO DETECTOR CABLE(S)
W18 EVP DETECTOR CABLE(S)
W19 EVP CONFIRMATION LAMP POWER CABLE(S)
W20 EVP CONFIRMATION BEACON POWER CABLE(S)
12 REUSE EXISTING RISER WITH SEALING BUSHING
13 INSTALL 2" RISER WITH WEATHERHEAD
14 INSTALL 3" RISER WITH WEATHERHEAD
15 INSTALL 2" RISER WITH SEALING BUSHING
17 INSTALL 2" CONDUIT INTO EXISTING FOUNDATION
18 INSTALL 3" CONDUIT INTO EXISTING FOUNDATION
19 INSTALL 2" RISER INTO BOTTOM OF CABINET
21 INSTALL 2" CONDUIT INTO EXTERIOR OF CABINET
22 INSTALL 3" CONDUIT INTO EXTERIOR OF CABINET
26 INSTALL CABLES IN EXISTING STEEL MAST ARM POLE
27 INSTALL CABLES IN EXISTING STEEL POLE IN EXISTING WEATHERHEAD
28 INSTALL CABLES IN EXISTING STEEL POLE IN PROPOSED WEATHERHEAD
29 INSTALL CABLES IN EXISTING STEEL POLE IN PROPOSED SEALING BUSHING
30 INSTALL 1" RISER WITH WEATHERHEAD
41 REUSE EXISTING CONDUIT AND PULL BOX
43 INSTALL 2" PVC CONDUIT
44 INSTALL 3" PVC CONDUIT
47 INSTALL CABLES IN EXISTING CONDUIT (S) INTO CABINET
49 JACK OR BORE 2" CONDUIT
50 JACK OR BORE 3" CONDUIT
53 LASH TO EXISTING MESSENGER CABLE/SPANWIRE



REMOVAL DIAGRAM

* EXISTING SIGNAL POLES AND CONTROLLER CABINET TO REMAIN.
– REMOVE ALL STOP BAR VEHICLE DETECTOR AMPLIFIERS FROM CABINET.



EXISTING SIGNAL HEAD TYPES

EXISTING OVERHEAD SIGNS

REVISIONS		
DATE	DESCRIPTIONS	APPROVED
10/2013	CHANGED CAMERA MOUNTING TYPE	

DOUGLAS A. SMITH REGISTERED ENGINEER AGRICULTURE COMMERCE No. 00114271 STATE OF TENNESSEE 10/15/13

Kimley-Horn and Associates, Inc.

INTERSECTION I.D. #5131

DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
DETECTION UPGRADE SET #2
SHELBY COUNTY, TN.

ELMORE RD. AT BARTLETT BLVD.
INTERSECTION LAYOUT

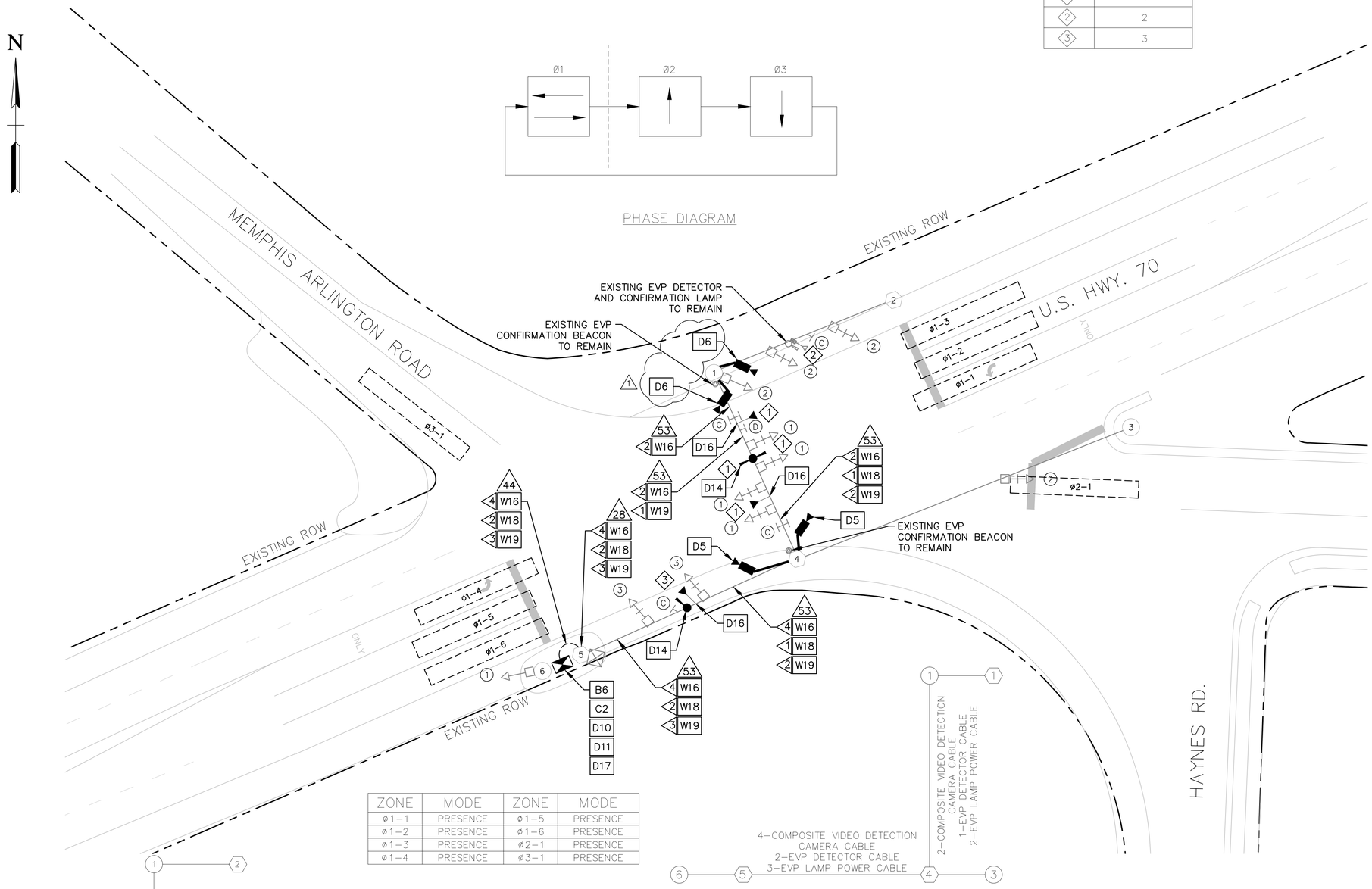
SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: KHA DATE: 08/12 SCALE: 1"=20'
DESIGNED: KHA DATE: 08/12 CHECKED: JFC DATE: 08/12
JURISDICTION: CITY OF BARTLETT

DRAWING NAME: K:\MEM_TPTO\115087002 – Shelby County CMP 2\Design\Level 2 – VD_EVP\Bid Set 2\Plans\BidSet 2-07-Elmore Rd Bartlett Blvd.dwg Layout1 Oct 15, 2013 1:00PM BY: blaine.lynch

NOTES:

1) POLE 1 AND 4: CONTRACTOR TO COORDINATE CAMERA INSTALLATION WITH MLGW AND ENGINEER FOR POTENTIAL OVERHEAD UTILITY CONFLICTS.
2) ALL CONDUIT WORK IS SCHEMATIC AND MUST BE PERFORMED WITHIN THE EXISTING R.O.W.

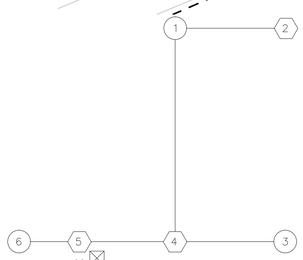
PREEMPT TABLE	
DETECTOR	PHASE(S) CALLED
1	1
2	2
3	3



ZONE	MODE	ZONE	MODE
Ø1-1	PRESENCE	Ø1-5	PRESENCE
Ø1-2	PRESENCE	Ø1-6	PRESENCE
Ø1-3	PRESENCE	Ø2-1	PRESENCE
Ø1-4	PRESENCE	Ø3-1	PRESENCE

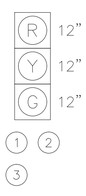
ZONE ASSIGNMENT CHART

GENERAL WIRING DIAGRAM



REMOVAL DIAGRAM

* EXISTING SIGNAL POLES TO REMAIN.
– REMOVE ALL STOP BAR VEHICLE DETECTOR AMPLIFIERS FROM CABINET.
– REMOVE EXISTING POLE-MOUNTED CABINET AND CONTROLLER.



EXISTING SIGNAL HEAD TYPES

EXISTING OVERHEAD SIGNS

B1	RETAIN AND MODIFY EXISTING CABINET
B6	INSTALL BASE MOUNTED CABINET
B7	INSTALL POLE MOUNTED CABINET
B11	INSTALL STANDARD PULLBOX
B13	INSTALL PULLBOX (FIBER OPTIC–TYPE A)
B14	INSTALL PULLBOX (FIBER OPTIC–TYPE B)
B15	INSTALL JUNCTION BOX
C1	INSTALL 4–PHASE CONTROLLER
C2	INSTALL 8–PHASE CONTROLLER
C3	INSTALL FIELD MASTER CONTROLLER
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
D10	INSTALL VIDEO DETECTION PROCESSOR
D11	INSTALL VIDEO REMOTE MANAGEMENT CARD
D12	INSTALL 6' X 6' SYSTEM LOOP(S)
D13	INSTALL DETECTOR AMPLIFIER (4–CHANNEL) IN CABINET
D14	INSTALL EVP DETECTOR
D15	INSTALL EVP CONFIRMATION BEACON
D16	INSTALL EVP CONFIRMATION LAMP
D17	INSTALL EVP PHASE SELECTOR
D18	INSTALL SIGNAL HEAD
M2	TIE CONDUIT INTO EXISTING PULL BOX
M4	ATTACH CONDUIT TO EXISTING CONDUIT STUB–OUT
W13	2C SHIELDED DETECTOR CABLE(S)
W15	TELEPHONE CABLE(S)
W16	VIDEO DETECTOR CABLE(S)
W18	EVP DETECTOR CABLE(S)
W19	EVP CONFIRMATION LAMP POWER CABLE(S)
W20	EVP CONFIRMATION BEACON POWER CABLE(S)
12	REUSE EXISTING RISER WITH SEALING BUSHING
13	INSTALL 2" RISER WITH WEATHERHEAD
14	INSTALL 3" RISER WITH WEATHERHEAD
15	INSTALL 2" RISER WITH SEALING BUSHING
17	INSTALL 2" CONDUIT INTO EXISTING FOUNDATION
18	INSTALL 3" CONDUIT INTO EXISTING FOUNDATION
19	INSTALL 2" RISER INTO BOTTOM OF CABINET
21	INSTALL 2" CONDUIT INTO EXTERIOR OF CABINET
22	INSTALL 3" CONDUIT INTO EXTERIOR OF CABINET
26	INSTALL CABLES IN EXISTING STEEL MAST ARM POLE
27	INSTALL CABLES IN EXISTING STEEL POLE IN EXISTING WEATHERHEAD
28	INSTALL CABLES IN EXISTING STEEL POLE IN PROPOSED WEATHERHEAD
29	INSTALL CABLES IN EXISTING STEEL POLE IN PROPOSED SEALING BUSHING
30	INSTALL 1" RISER WITH WEATHERHEAD
41	REUSE EXISTING CONDUIT AND PULL BOX
43	INSTALL 2" PVC CONDUIT
44	INSTALL 3" PVC CONDUIT
47	INSTALL CABLES IN EXISTING CONDUIT (S) INTO CABINET
49	JACK OR BORE 2" CONDUIT
50	JACK OR BORE 3" CONDUIT
53	LASH TO EXISTING MESSENGER CABLE/SPANWIRE

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

REVISIONS		
DATE	DESCRIPTIONS	APPROVED
1 10/2013	CHANGED CAMERA MOUNTING TYPE	

DOUGLAS A. SMITH REGISTERED ENGINEER AGRICULTURE COMMERCE No. 001142 STATE OF TENNESSEE 10/15/13

Kimley-Horn and Associates, Inc.

INTERSECTION I.D. #6124

DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
DETECTION UPGRADE SET #2
SHELBY COUNTY, TN.

U.S. HWY. 70 AT MEMPHIS–ARLINGTON RD. INTERSECTION LAYOUT

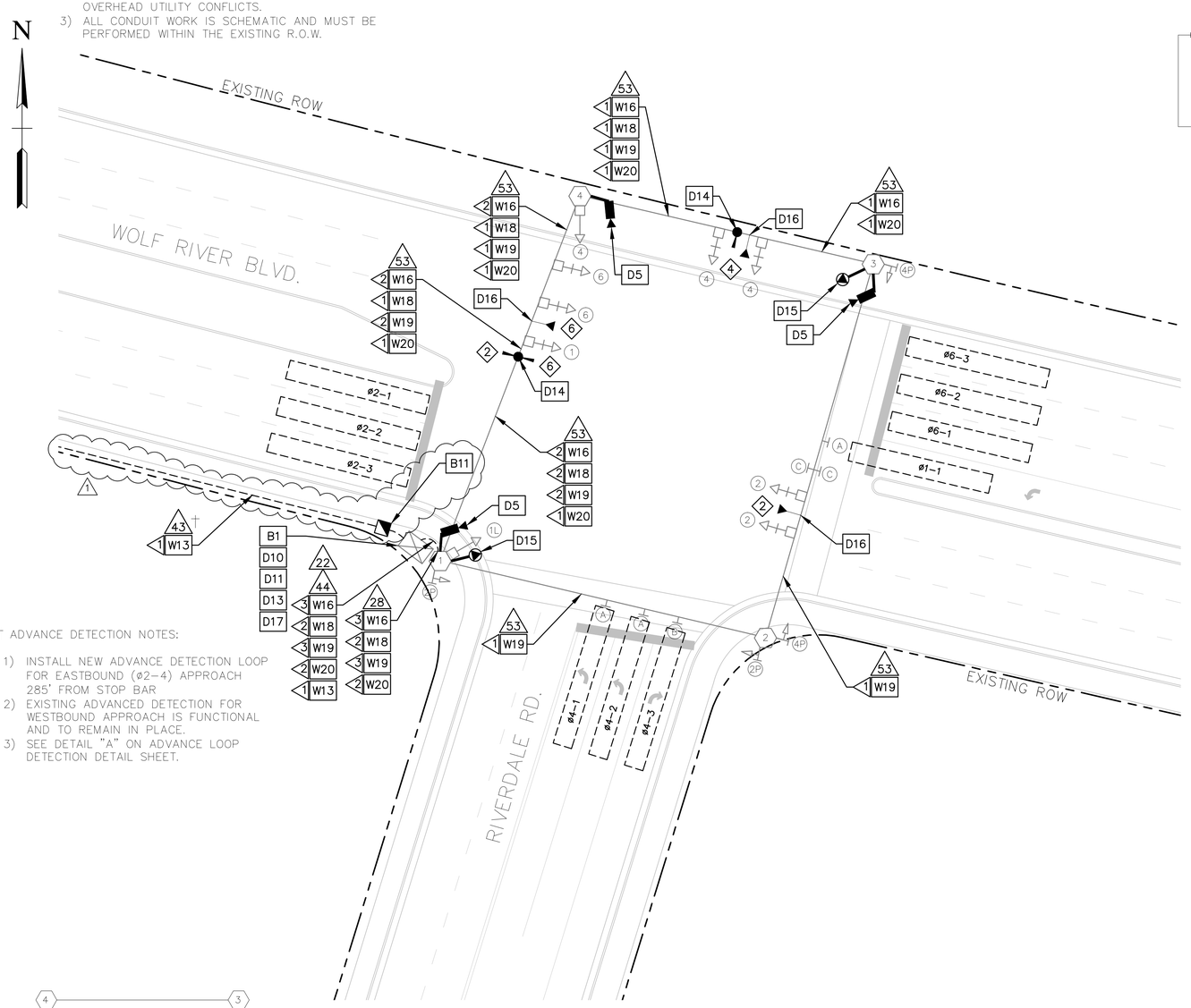
SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: KHA DATE: 08/12 SCALE: 1"=20'
DESIGNED: KHA DATE: 08/12 CHECKED: JFC DATE: 08/12
JURISDICTION: CITY OF BARTLETT

SHEET 11 OF 21

DRAWING NAME: K:\MEM_TPTO\115087002 – Shelby County CMP 2\Design\Level 2 – VD_EVP\Bid Set 2\Plans\BidSet 2-10-US Hwy 70 Memphis Arlington Rd.dwg Layout1 Oct 15, 2013 1:01PM BY: blaine.lynch

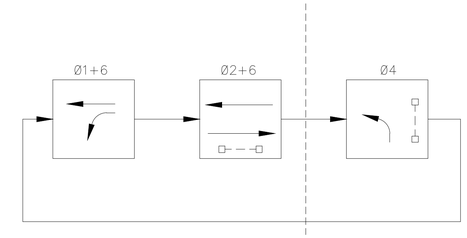
NOTES:

1) POLE 3 & 4: TREE TRIMMING REQUIRED FOR CAMERA INSTALLATION.
2) POLE 3: CONTRACTOR TO COORDINATE CAMERA INSTALLATION WITH MLGW AND ENGINEER FOR POTENTIAL OVERHEAD UTILITY CONFLICTS.
3) ALL CONDUIT WORK IS SCHEMATIC AND MUST BE PERFORMED WITHIN THE EXISTING R.O.W.



† ADVANCE DETECTION NOTES:

1) INSTALL NEW ADVANCE DETECTION LOOP FOR EASTBOUND (ø2-4) APPROACH 285' FROM STOP BAR
2) EXISTING ADVANCED DETECTION FOR WESTBOUND APPROACH IS FUNCTIONAL AND TO REMAIN IN PLACE.
3) SEE DETAIL "A" ON ADVANCE LOOP DETECTION DETAIL SHEET.



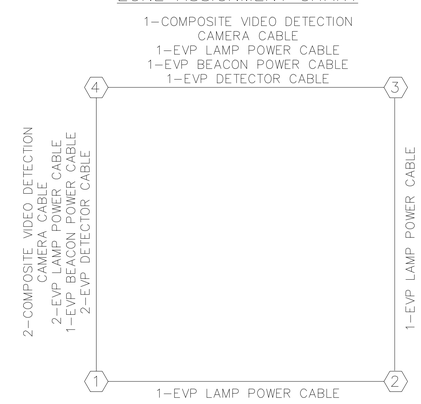
PHASE DIAGRAM

PREEMPT TABLE	
DETECTOR	PHASE(S) CALLED
2	2 & 6
4	4
6	1 & 6

ZONE	MODE	ZONE	MODE
ø1-1	PRESENCE	ø4-2	PRESENCE
ø2-1	PRESENCE	ø4-3	PRESENCE*
ø2-2	PRESENCE	ø6-1	PRESENCE
ø2-3	PRESENCE	ø6-2	PRESENCE
ø2-4	PULSE	ø6-3	PRESENCE
ø4-1	PRESENCE		

* 5 SECOND DELAY

ZONE ASSIGNMENT CHART



GENERAL WIRING DIAGRAM

B1	RETAIN AND MODIFY EXISTING CABINET
B6	INSTALL BASE MOUNTED CABINET
B7	INSTALL POLE MOUNTED CABINET
B11	INSTALL STANDARD PULLBOX
B13	INSTALL PULLBOX (FIBER OPTIC-TYPE A)
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B15	INSTALL JUNCTION BOX
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C2	INSTALL 8-PHASE CONTROLLER
C3	INSTALL FIELD MASTER CONTROLLER
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
D10	INSTALL VIDEO DETECTION PROCESSOR
D11	INSTALL VIDEO REMOTE MANAGEMENT CARD
D12	INSTALL 6' X 6' SYSTEM LOOP(S)
D13	INSTALL DETECTOR AMPLIFIER (4-CHANNEL) IN CABINET
D14	INSTALL EVP DETECTOR
D15	INSTALL EVP CONFIRMATION BEACON
D16	INSTALL EVP CONFIRMATION LAMP
D17	INSTALL EVP PHASE SELECTOR
D18	INSTALL SIGNAL HEAD
M2	TIE CONDUIT INTO EXISTING PULL BOX
M4	ATTACH CONDUIT TO EXISTING CONDUIT STUB-OUT
W13	2C SHIELDED DETECTOR CABLE(S)
W15	TELEPHONE CABLE(S)
W16	VIDEO DETECTOR CABLE(S)
W18	EVP DETECTOR CABLE(S)
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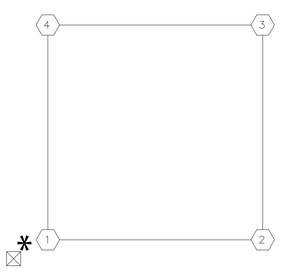
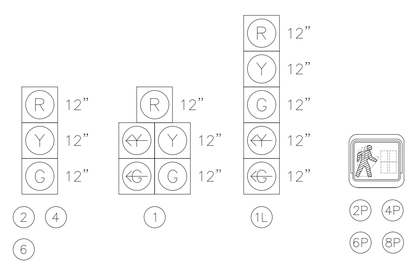
49	JACK OR BORE 2" CONDUIT
50	JACK OR BORE 3" CONDUIT
53	LASH TO EXISTING MESSENGER CABLE/SPANWIRE

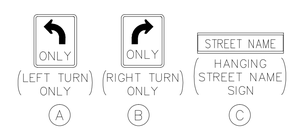


REMOVAL DIAGRAM

* EXISTING SIGNAL POLES AND CONTROLLER CABINET TO REMAIN.
- REMOVE ALL STOP BAR VEHICLE DETECTOR AMPLIFIERS FROM 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
1	10/2013	MOVED EB ADVANCE	
		DETECTION CONDUIT	

DOUGLAS A. SMITH REGISTERED ENGINEER AGRICULTURE COMMERCE No. 00114271 STATE OF TENNESSEE 10/15/13

Kimley-Horn and Associates, Inc.

INTERSECTION I.D. #5188

DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
DETECTION UPGRADE SET #2
SHELBY COUNTY, TN.

WOLF RIVER BLVD. AT RIVERDALE RD.
INTERSECTION LAYOUT

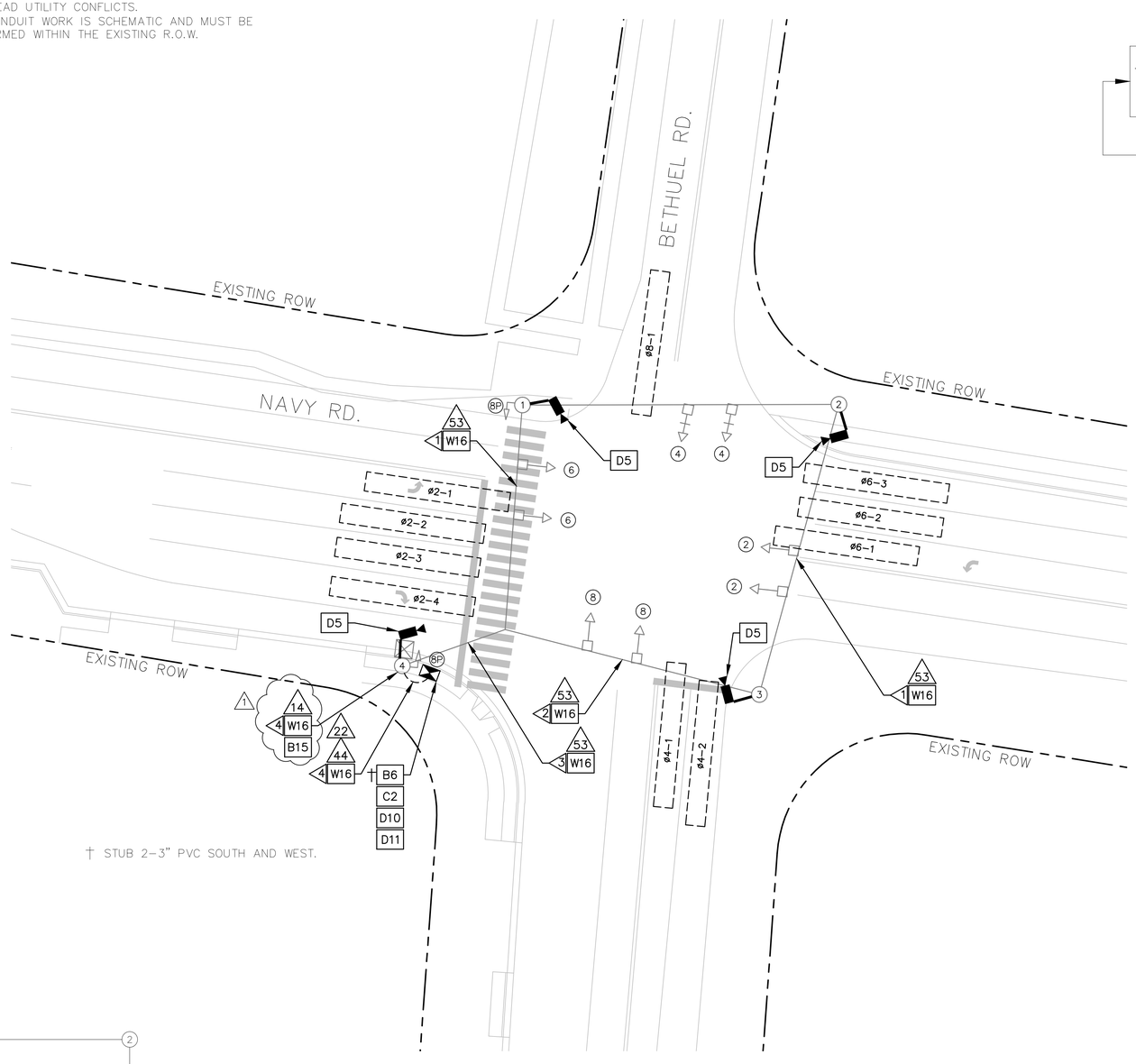
SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: KHA DATE: 08/12 SCALE: 1"=20'
DESIGNED: KHA DATE: 08/12 CHECKED: JFC DATE: 08/12
JURISDICTION: CITY OF GERMANTOWN

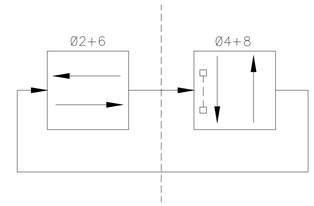
SHEET 12 OF 21

DRAWING NAME: K:\MEM_TPTO\115087002 - Shelby County CMP 2\Design\Level 2 - VD_EVP\Bid Set 2\Plans\BidSet 2-12-Wolf River Blvd Riverdale Rd.dwg Layout1 Oct 15, 2013 1:01PM BY: blaine.lynch

NOTES:

1) POLE 4: CONTRACTOR TO COORDINATE CAMERA INSTALLATION WITH MLGW AND ENGINEER FOR POTENTIAL OVERHEAD UTILITY CONFLICTS.
2) ALL CONDUIT WORK IS SCHEMATIC AND MUST BE PERFORMED WITHIN THE EXISTING R.O.W.



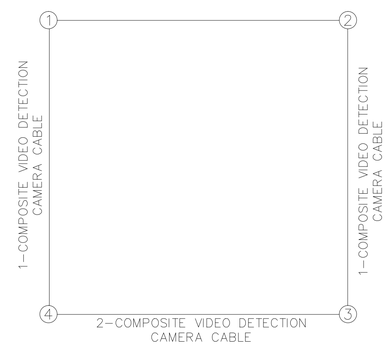


PHASE DIAGRAM

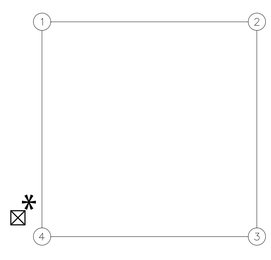
ZONE	MODE	ZONE	MODE
ø2-1	PRESENCE	ø4-2	PRESENCE*
ø2-2	PRESENCE	ø6-1	PRESENCE
ø2-3	PRESENCE	ø6-2	PRESENCE
ø2-4	PRESENCE*	ø6-3	PRESENCE
ø4-1	PRESENCE	ø8-1	PRESENCE

* 5 SECOND DELAY

ZONE ASSIGNMENT CHART

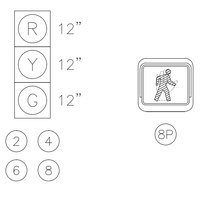


GENERAL WIRING DIAGRAM



REMOVAL DIAGRAM

* EXISTING SIGNAL POLES TO REMAIN.
- REMOVE ALL STOP BAR VEHICLE DETECTOR AMPLIFIERS FROM CABINET.
- REMOVE EXISTING POLE-MOUNTED CABINET AND CONTROLLER.



EXISTING SIGNAL HEAD TYPES

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53 LASH TO EXISTING MESSENGER CABLE/SPANWIRE

◁ NUMBER OF CABLES, LOOPS, ETC.
(X) NUMBER OF CONDUCTORS, PAIRS, ETC.

REVISIONS

	DATE	DESCRIPTIONS	APPROVED
1	10/2013	ADDED JUNCTION BOX	

DOUGLAS A. SMITH REGISTERED ENGINEER AGRICULTURE COMMERCE No. 0011421 STATE OF TENNESSEE 10/15/13

Kimley-Horn and Associates, Inc.

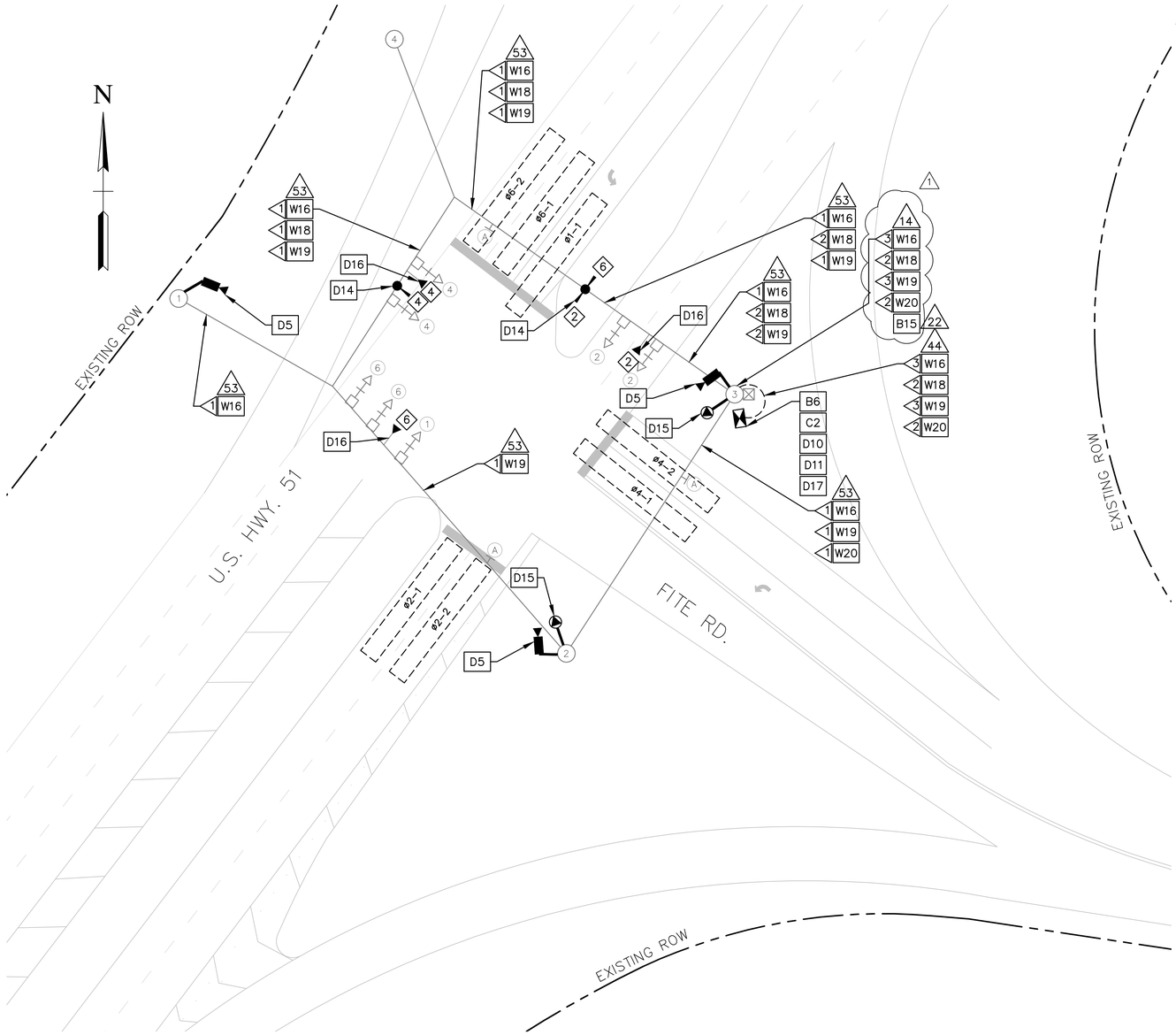
INTERSECTION I.D. #5291

DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
DETECTION UPGRADE SET #2
SHELBY COUNTY, TN.

NAVY RD. AT BETHUEL RD.
INTERSECTION LAYOUT

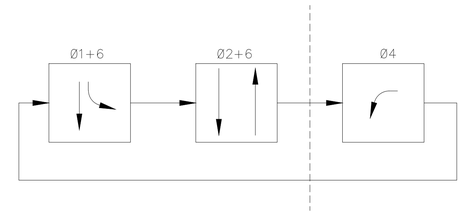
SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: KHA DATE: 08/12 SCALE: 1"=20'
DESIGNED: KHA DATE: 08/12 CHECKED: JFC DATE: 08/12
JURISDICTION: SHELBY COUNTY

DRAWING NAME: K:\MEM_TPTO\115087002 - Shelby County CMP 2\Design\Level 2 - VD_EVP\Bid Set 2\Plans\BidSet 2-13-Navy Rd Bethuel Rd.dwg Layout1 Oct 15, 2013 1:01PM BY: blaine.lynch



NOTES:

1) ALL CONDUIT WORK IS SCHEMATIC AND MUST BE PERFORMED WITHIN THE EXISTING R.O.W.
2) POLE 1 & 2: CONTRACTOR TO COORDINATE CAMERAL INSTALLATION WITH MLGW AND ENGINEER FOR POTENTIAL OVERHEAD UTILITY CONFLICTS.

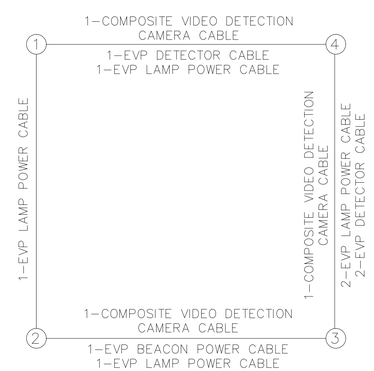


PHASE DIAGRAM

PREEMPT TABLE	
DETECTOR	PHASE(S) CALLED
2	2 & 6
4	4
6	1 & 6

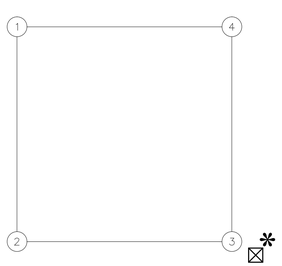
ZONE	MODE	ZONE	MODE
ø1-1	PRESENCE	ø4-1	PRESENCE
ø2-1	PRESENCE	ø4-2	PRESENCE
ø2-2	PRESENCE	ø6-1	PRESENCE
		ø6-2	PRESENCE

ZONE ASSIGNMENT CHART

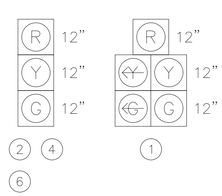


GENERAL WIRING DIAGRAM

B1	RETAIN AND MODIFY EXISTING CABINET
B6	INSTALL BASE MOUNTED CABINET
B7	INSTALL POLE MOUNTED CABINET
B11	INSTALL STANDARD PULLBOX
B13	INSTALL PULLBOX (FIBER OPTIC-TYPE A)
B14	INSTALL PULLBOX (FIBER OPTIC-TYPE B)
B15	INSTALL JUNCTION BOX
C1	INSTALL 4-PHASE CONTROLLER
C2	INSTALL 8-PHASE CONTROLLER
C3	INSTALL FIELD MASTER CONTROLLER
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
D10	INSTALL VIDEO DETECTION PROCESSOR
D11	INSTALL VIDEO REMOTE MANAGEMENT CARD
D12	INSTALL 6' X 6' SYSTEM LOOP(S)
D13	INSTALL DETECTOR AMPLIFIER (4-CHANNEL) IN CABINET
D14	INSTALL EVP DETECTOR
D15	INSTALL EVP CONFIRMATION BEACON
D16	INSTALL EVP CONFIRMATION LAMP
D17	INSTALL EVP PHASE SELECTOR
D18	INSTALL SIGNAL HEAD
M2	TIE CONDUIT INTO EXISTING PULL BOX
M4	ATTACH CONDUIT TO EXISTING CONDUIT STUB-OUT
W13	2C SHIELDED DETECTOR CABLE(S)
W15	TELEPHONE CABLE(S)
W16	VIDEO DETECTOR CABLE(S)
W18	EVP DETECTOR CABLE(S)
W19	EVP CONFIRMATION LAMP POWER CABLE(S)
W20	EVP CONFIRMATION BEACON POWER CABLE(S)
12	REUSE EXISTING RISER WITH SEALING BUSHING
13	INSTALL 2" RISER WITH WEATHERHEAD
14	INSTALL 3" RISER WITH WEATHERHEAD
15	INSTALL 2" RISER WITH SEALING BUSHING
17	INSTALL 2" CONDUIT INTO EXISTING FOUNDATION
18	INSTALL 3" CONDUIT INTO EXISTING FOUNDATION
19	INSTALL 2" RISER INTO BOTTOM OF CABINET
21	INSTALL 2" CONDUIT INTO EXTERIOR OF CABINET
22	INSTALL 3" CONDUIT INTO EXTERIOR OF CABINET
26	INSTALL CABLES IN EXISTING STEEL MAST ARM POLE
27	INSTALL CABLES IN EXISTING STEEL POLE IN EXISTING WEATHERHEAD
28	INSTALL CABLES IN EXISTING STEEL POLE IN PROPOSED WEATHERHEAD
29	INSTALL CABLES IN EXISTING STEEL POLE IN PROPOSED SEALING BUSHING
30	INSTALL 1" RISER WITH WEATHERHEAD
41	REUSE EXISTING CONDUIT AND PULL BOX
43	INSTALL 2" PVC CONDUIT
44	INSTALL 3" PVC CONDUIT
47	INSTALL CABLES IN EXISTING CONDUIT (S) INTO CABINET
49	JACK OR BORE 2" CONDUIT
50	JACK OR BORE 3" CONDUIT
53	LASH TO EXISTING MESSENGER CABLE/SPANWIRE



REMOVAL DIAGRAM



EXISTING SIGNAL HEAD TYPES

EXISTING OVERHEAD SIGNS

* EXISTING SIGNAL POLES TO REMAIN.
- REMOVE ALL STOP BAR VEHICLE DETECTOR AMPLIFIERS FROM CABINET.
- REMOVE EXISTING POLE-MOUNTED CABINET AND CONTROLLER

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

REVISIONS		
DATE	DESCRIPTIONS	APPROVED
10/2013	REVISED NOTES AND ADDED JUNCTION BOX	

DOUGLAS A. SMITH REGISTERED ENGINEER AGRICULTURE COMMERCE NO. 001142 STATE OF TENNESSEE 10/15/13

Kimley-Horn and Associates, Inc.

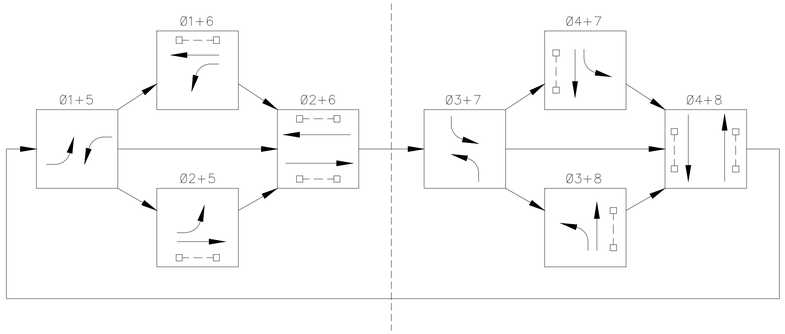
INTERSECTION I.D. #5305

DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
DETECTION UPGRADE SET #2
SHELBY COUNTY, TN.

FITE RD. AT U.S. HWY. 51
INTERSECTION LAYOUT

SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: KHA DATE: 08/12 SCALE: 1"=20'
DESIGNED: KHA DATE: 08/12 CHECKED: JFC DATE: 08/12
JURISDICTION: SHELBY COUNTY

DRAWING NAME: K:\WEM_TPTO\115087002 - Shelby County CMP 2\Design\Level 2 - VD_EVP\Bid Set 2\Plans\BidSet 2-15-Fite Rd. US Hwy 51.dwg Layout1 Oct 15, 2013 1:01PM BY: blaine.lynch



PHASE DIAGRAM

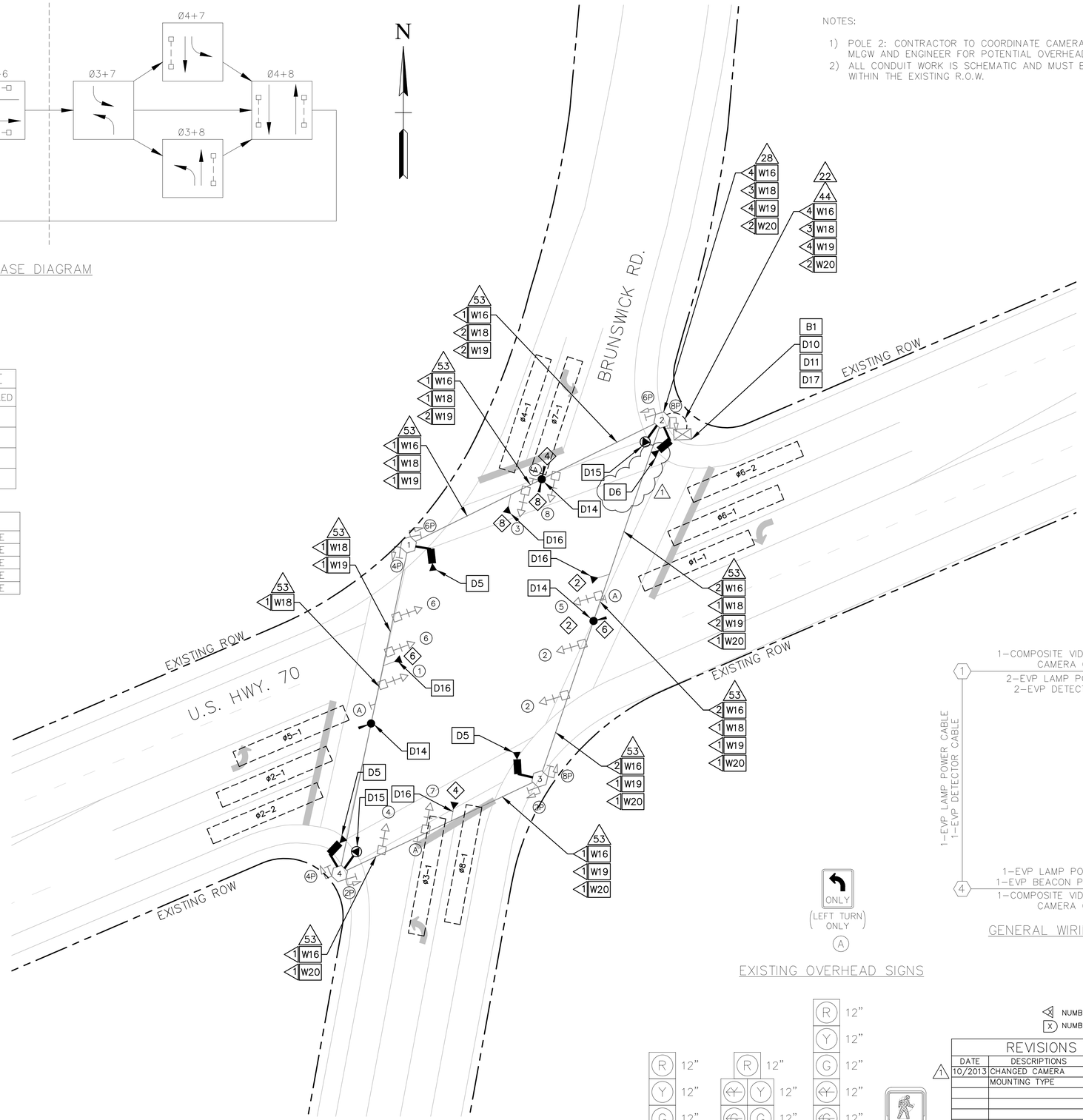
NOTES:

1) POLE 2: CONTRACTOR TO COORDINATE CAMERA INSTALLATION WITH MLGW AND ENGINEER FOR POTENTIAL OVERHEAD UTILITY CONFLICTS.
2) ALL CONDUIT WORK IS SCHEMATIC AND MUST BE PERFORMED WITHIN THE EXISTING R.O.W.

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

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

ZONE ASSIGNMENT CHART



EXISTING OVERHEAD SIGNS

B1	RETAIN AND MODIFY EXISTING CABINET
B6	INSTALL BASE MOUNTED CABINET
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B11	INSTALL STANDARD PULLBOX
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D11	INSTALL VIDEO REMOTE MANAGEMENT CARD
D12	INSTALL 6' X 6' SYSTEM LOOP(S)
D13	INSTALL DETECTOR AMPLIFIER (4–CHANNEL) IN CABINET
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D16	INSTALL EVP CONFIRMATION LAMP
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W13	2C SHIELDED DETECTOR CABLE(S)
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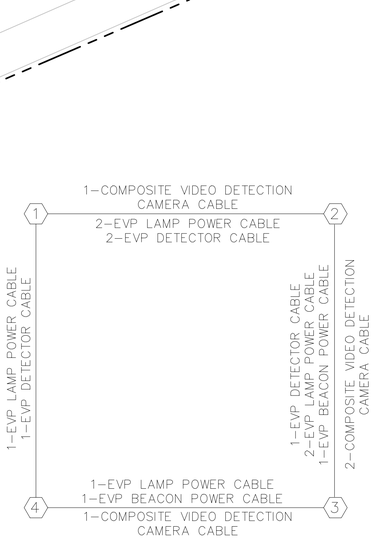
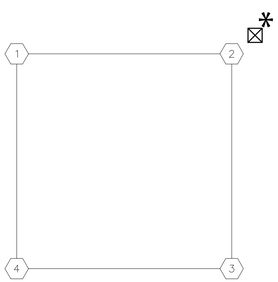
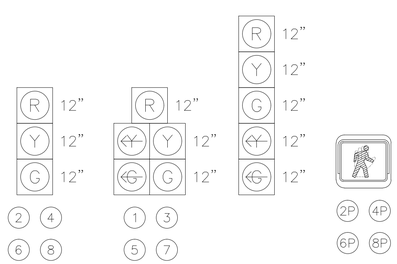


GENERAL WIRING DIAGRAM



REMOVAL DIAGRAM

* EXISTING SIGNAL POLES AND CONTROLLER CABINET TO REMAIN.
– REMOVE ALL STOP BAR VEHICLE DETECTOR AMPLIFIERS FROM CABINET.



EXISTING SIGNAL HEAD TYPES

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

REVISIONS		
DATE	DESCRIPTIONS	APPROVED
1 10/2013	CHANGED CAMERA MOUNTING TYPE	

Kimley-Horn and Associates, Inc.

INTERSECTION I.D. #5194

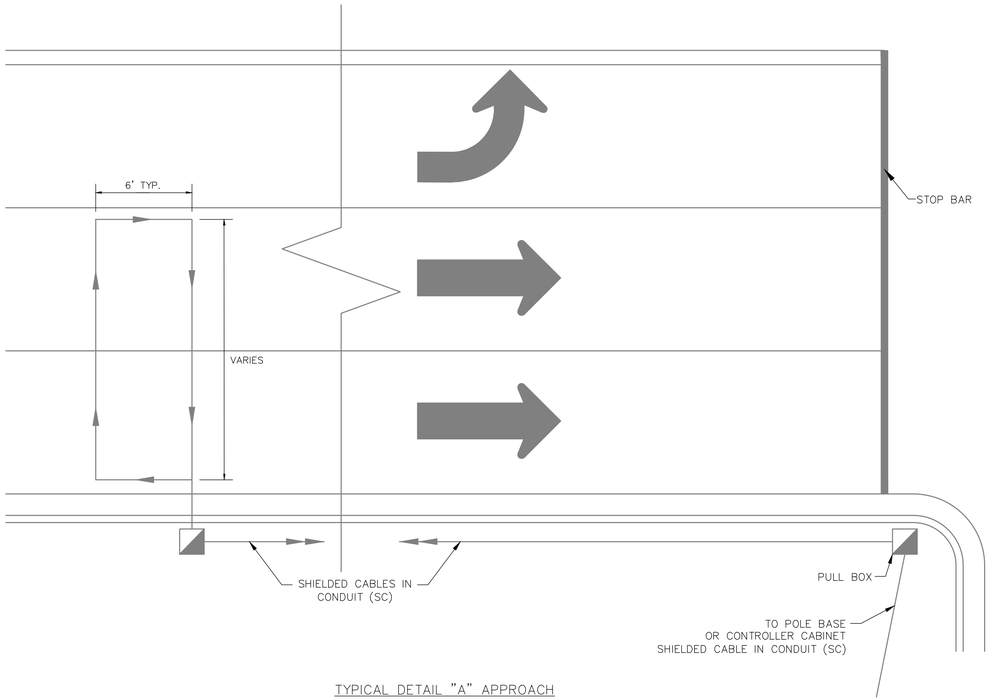
DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
DETECTION UPGRADE SET #2
SHELBY COUNTY, TN.

U.S. HWY. 70 AND BRUNSWICK RD.
INTERSECTION LAYOUT

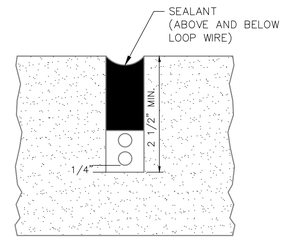
SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: KHA DATE: 08/12 SCALE: 1"=20'
DESIGNED: KHA DATE: 08/12 CHECKED: JFC DATE: 08/12
JURISDICTION: SHELBY COUNTY

SHEET 18 OF 21

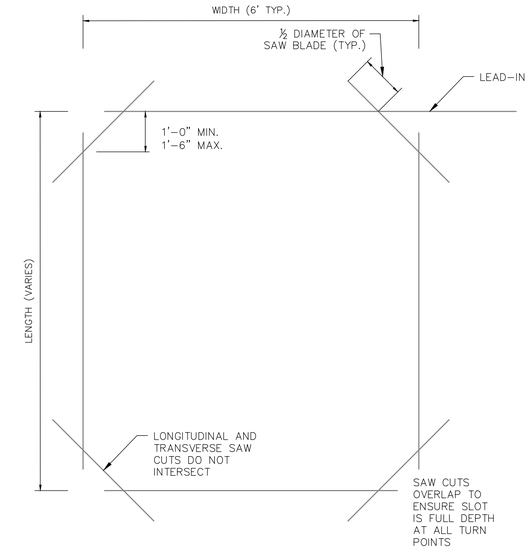
DRAWING NAME: K:\WEM_TPTO\115087002 – Shelby County CMP 2\Design\Level 2 – VD_EVP\Bid Set 2\Plans\BidSet 2-18-US Hwy 70 Brunswick Rd.dwg Layout1 Oct 15, 2013 1:01PM BY: blaine.lynch



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.

1 (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.

1 (G) AFTER THE LOOP WIRES ARE INSTALLED AND ALL CHECKS SATISFACTORILY COMPLETED, THE SLOT SHALL 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. 51-5. THE HOME RUN TO THE PULL BOX SHALL BE TWISTED 3 TIMES PER FOOT.

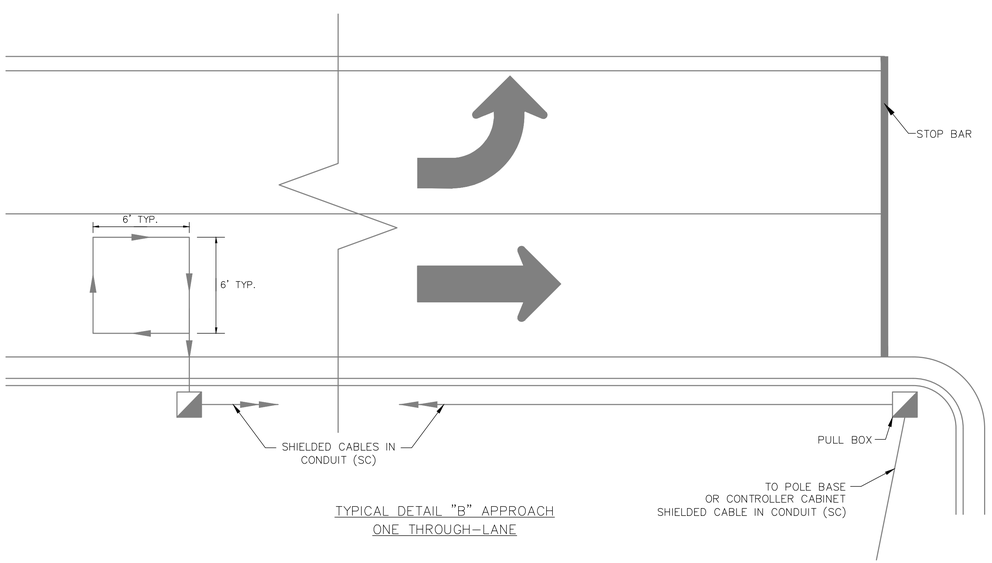
1 (I) SPLICES SHALL BE PERMITTED ONLY IN PULL BOXES, POLE BASES, CONDULETS, OR CABINETS AND SHALL BE WATERPROOF.

(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		
DATE	DESCRIPTIONS	APPROVED
1 10/2013	REVISED NOTES	

DOUGLAS A. SMITH REGISTERED ENGINEER AGRICULTURE COMMERCE No. 00114271 STATE OF TENNESSEE 10/15/13

Kimley-Horn and Associates, Inc.

DIVISION OF PUBLIC WORKS
CONGESTION MANAGEMENT PROGRAM
DETECTION UPGRADE SET #2
SHELBY COUNTY, TN.

'ANCED LOOP DETECTION DETAILS

SURVEY: N/A DATE: N/A BOOK: N/A
DRAFTED: KHA DATE: 08/12 SCALE: N.T.S.
DESIGNED: KHA DATE: 08/12 CHECKED: JFC DATE: 08/12

DRAWING NAME: K:\MEM_TPTO\115087002 - Shelby County CMP 2\Design\Level 2 - VD_EVP\Bid Set 2\Plans\BidSet 2-20-Details.dwg Layout1 Oct 15, 2013 1:02PM BY: blaine.lynch