

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
348	2009-078 TS	COOK	33	1

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
**PLANS FOR PROPOSED  
FEDERAL AID HIGHWAY**

FOR INDEX OF SHEETS, SEE SHEET NUMBER 2

DISTRICT 1  
HIGHWAY SAFETY IMPROVEMENT PROJECT  
TRAFFIC SIGNAL MODERNIZATION

F.A.P. ROUTE 348 /U.S. 34 (OGDEN AVE.) TO JOLIET RD./41ST STREET AND  
U.S. RTE 34 (OGDEN AVE.) AT PERSHING RD./39TH STREET /MILLER RD.

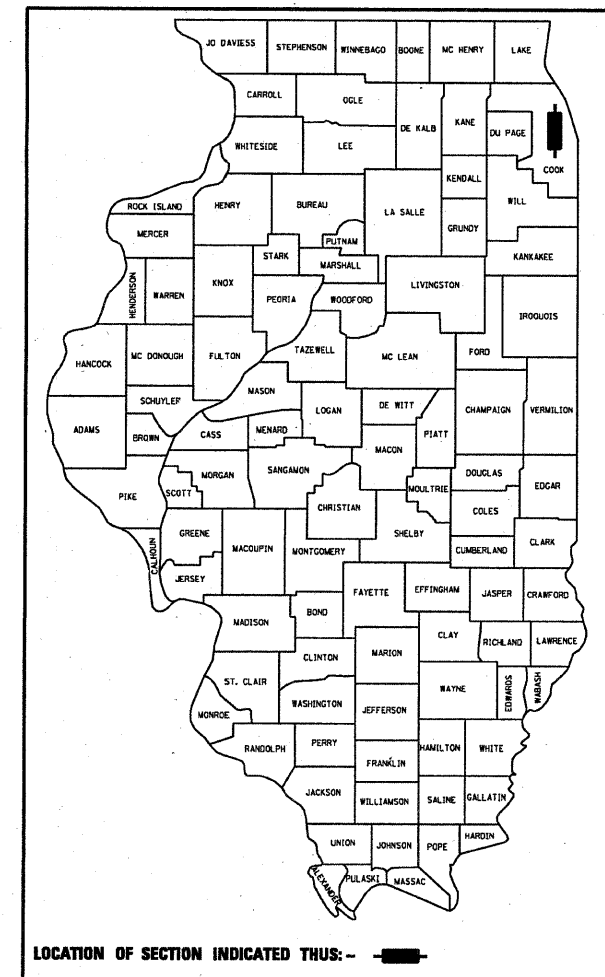
PROJECT: ACHSIP-0348(046)

SECTION 2009-078 TS

COOK COUNTY

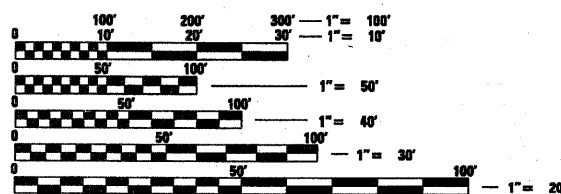
C-91-859-09

RIVERSIDE, BERWYN, LYONS AND STICKNEY TOWNSHIPS



STANDARDS

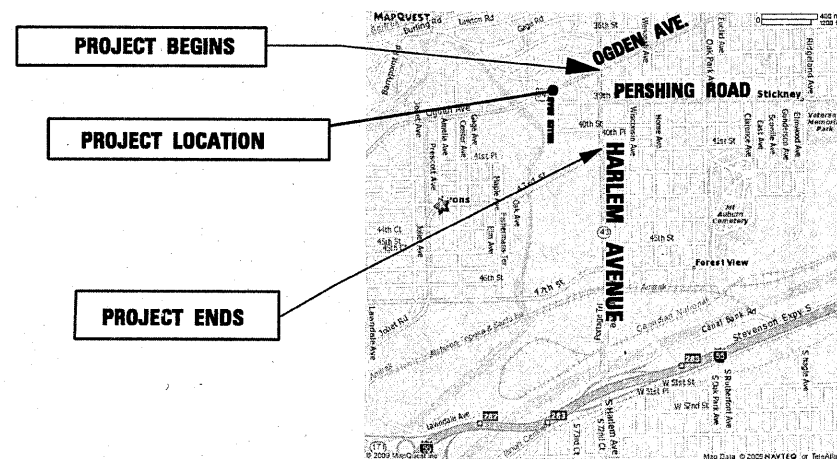
- |                    |                    |
|--------------------|--------------------|
| STANDARD 424001-05 | STANDARD 814001-02 |
| STANDARD 606001-04 | STANDARD 814006-02 |
| STANDARD 701501-05 | STANDARD 857001-01 |
| STANDARD 701601-06 | STANDARD 862001-01 |
| STANDARD 701701-06 | STANDARD 873001-02 |
| STANDARD 701801-04 | STANDARD 877001-04 |
| STANDARD 720001-01 | STANDARD 878001-08 |
| STANDARD 720016-02 | STANDARD 880001-01 |
| STANDARD 780001-02 | STANDARD 880006-01 |
| STANDARD 805001-01 | STANDARD 886001-01 |



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

BEFORE STARTING ANY EXCAVATION, THE CONTRACTOR SHALL CALL "J.U.L.I.E." AT (800) 892-0123 OR 811 FOR FIELD LOCATIONS OF BURIED ELECTRIC, TELEPHONE AND GAS UTILITIES. 48 HOUR NOTIFICATION IS REQUIRED.

SCALES { PLAN 1"=20'  
INTERCONNECT 1"=50'



LOCATION MAP



DISTRICT 1 BUREAU OF TRAFFIC: STEVE TRAVIA/DARYLE DREW (847) 705-4420

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED Oct. 21, 2009  
Donna M. O'Keefe  
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

December 4, 2009  
Charles G. Ingemund  
ENGINEER OF DESIGN AND ENVIRONMENT

December 4, 2009  
Christine M. Reed  
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY  
OF THE STATE OF ILLINOIS

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- U.S. RTE. 34 (OGDEN AVENUE)  
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  27. INTERCONNECT PLAN (SHEET 2 OF 6)
  28. INTERCONNECT PLAN (SHEET 3 OF 6)
  29. INTERCONNECT PLAN (SHEET 4 OF 6)
  30. INTERCONNECT PLAN (SHEET 5 OF 6)
  31. INTERCONNECT PLAN (SHEET 6 OF 6)
  32. INTERCONNECT SCHEMATIC
  33. MAST ARM MOUNTED STREET NAME SIGNS

FILE NAME *	USER NAME * Kanthaphixaybo	DESIGNED - TCM/BPR	REVISED - 09/08/2009 PER IDOT
ct:\pwwork\VPWIDOT\KANTHAPHIXAYBO\001496	22\T090006-TS.dgn	DRAWN - TCM/BPR	REVISED -
	PLOT SCALE = *SCALESHORT*	CHECKED - TCM	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**INDEX OF SHEETS  
ILL RTE 43 (HARLEM AVE.) FROM JOLIET RD./41ST ST. TO U.S. RTE 34  
AND AT U.S. RTE 34 (OGDEN AVE.) AND PERSHING ROAD /39TH STREET**

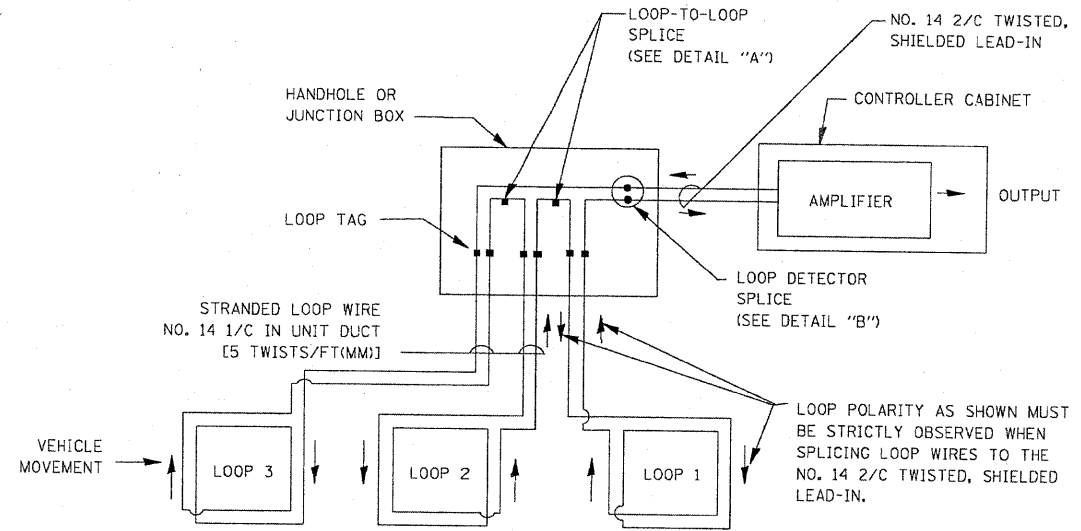
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
348	2009 078 TS	COOK	33	2
			CONTRACT NO. 60115	

# SUMMARY OF QUANTITIES

CODE NO.	SUMMARY OF QUANTITIES ITEM	UNIT	GRAND TOTAL	CONSTRUCTION CODE		Y031-1F		STICKNEY		Y031-1F		Y031-1F		BERWYN		Y031-1F		Y031-1F			
				90% FED		100% FED		100% MUNICIPALITY		90% FED		100% FED		100% MUNICIPALITY		90% FED		100% FED		100% STATE	
				ILL RTE 43 (HARLEM AVE.) JOLIET ROAD/41ST STREET	ILL RTE 43 (HARLEM AVE.) PERSHING ROAD	ILL RTE 43 (HARLEM AVE.) U. S. RTE. 34 (OGDEN AVE.)	ILL RTE 43 (HARLEM AVE.) PERSHING ROAD	ILL RTE 43 (HARLEM AVE.) U. S. RTE. 34 (OGDEN AVE.)	ILL RTE 43 (HARLEM AVE.) PERSHING ROAD/MILLER RD	ILL RTE 43 (HARLEM AVE.) PERSHING ROAD/MILLER RD	ILL RTE 43 (HARLEM AVE.) PERSHING ROAD/MILLER RD	ILL RTE 43 (HARLEM AVE.) PERSHING ROAD/MILLER RD	ILL RTE 43 (HARLEM AVE.) PERSHING ROAD/MILLER RD	ILL RTE 43 (HARLEM AVE.) PERSHING ROAD/MILLER RD	ILL RTE 43 (HARLEM AVE.) PERSHING ROAD/MILLER RD	ILL RTE 43 (HARLEM AVE.) PERSHING ROAD/MILLER RD	ILL RTE 43 (HARLEM AVE.) PERSHING ROAD/MILLER RD	ILL RTE 43 (HARLEM AVE.) PERSHING ROAD/MILLER RD	ILL RTE 43 (HARLEM AVE.) PERSHING ROAD/MILLER RD	ILL RTE 43 (HARLEM AVE.) PERSHING ROAD/MILLER RD	ILL RTE 43 (HARLEM AVE.) PERSHING ROAD/MILLER RD
42400200	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH	SO FT	941	78																	
44000600	DETECTABLE WARNINGS	SO FT	422	50																	
44000500	COMBINATION CURB AND GUTTER REMOVAL	FOOT	144	26																	
60605000	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	4																		
67100100	MOBILIZATION	L SUM	1	.20																	
70102620	TRAFFIC CONTROL AND PROTECTION, STANDARD 701501	L SUM	1	.20																	
70102630	TRAFFIC CONTROL AND PROTECTION, STANDARD 701601	L SUM	1	.20																	
70102635	TRAFFIC CONTROL AND PROTECTION, STANDARD 701701	L SUM	1	.20																	
70102640	TRAFFIC CONTROL AND PROTECTION, STANDARD 701801	L SUM	1	.20																	
*72000100	SIGN PANEL - TYPE 1	SO FT	24	24																	
*72000200	SIGN PANEL - TYPE 2	SO FT	75	25																	
*78000100	THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS	SO FT	36.4																		
*78000400	THERMOPLASTIC PAVEMENT MARKING - LINE 6"	FOOT	1540	56																	
*78000650	THERMOPLASTIC PAVEMENT MARKING - LINE 24"	FOOT	503	40																	
81000600	CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL	FOOT	1418	672																	
81000700	CONDUIT IN TRENCH, 2 1/2" DIA., GALVANIZED STEEL	FOOT	306	237																	
81001000	CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL	FOOT	42	32																	
81018500	CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL	FOOT	634	223																	
81018600	CONDUIT PUSHED, 2 1/2" DIA., GALVANIZED STEEL	FOOT	85	14																	
81018800	CONDUIT PUSHED, 3-1/2" DIA., GALVANIZED STEEL	FOOT	91																		
81018900	CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL	FOOT	752	326																	
81019000	CONDUIT PUSHED, 5" DIA., GALVANIZED STEEL	FOOT	133																		
81400100	HANDHOLE	EACH	15	8																	
81400200	HEAVY-DUTY HANDHOLE	EACH	5	1																	
81400300	DOUBLE HANDHOLE	EACH	3	1																	
81900200	TRENCH AND BACKFILL FOR ELECTRICAL WORK	FOOT	1855	1035																	
85000200	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	2																		
85700205	FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, SPECIAL	EACH	1	1																	
85700305	FULL-ACTUATED CONTROLLER AND TYPE V CABINET, SPECIAL	EACH	1																		
86000105	MASTER CONTROLLER (SPECIAL)	EACH	1																		
X8620020	UNINTERRUPTIBLE POWER SUPPLY	EACH	4	1																	
86400100	TRANSCEIVER - FIBER OPTIC	EACH	2	1																	
87301215	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C	FOOT	3054	156																	
87301225	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C	FOOT	4059	199																	
87301245	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	FOOT	4546	2568																	
87301255	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C	FOOT	5440	1328																	
87301305	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1-PAIR	FOOT	6035	2104																	
87301805	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C	FOOT	617	569																	
X8730027	ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C	FOOT	1388	849																	
X8730250	ELECTRIC CABLE IN CONDUIT, NO. 20 3C, TWISTED, SHIELDED	FOOT	919																		
87502480	TRAFFIC SIGNAL POST, GALVANIZED STEEL 14 FT.	EACH	3	3																	
87502500	TRAFFIC SIGNAL POST, GALVANIZED STEEL 16 FT.	EACH	8																		
87502520	TRAFFIC SIGNAL POST, GALVANIZED STEEL 18 FT.	EACH	2	2																	
87700140	STEEL MAST ARM ASSEMBLY AND POLE, 20 FT.	EACH	1	1																	
87700240	STEEL MAST ARM ASSEMBLY AND POLE, 40 FT.	EACH	1	1																	
87700170	STEEL MAST ARM ASSEMBLY AND POLE, 26 FT.	EACH	1	1																	
87700220	STEEL MAST ARM ASSEMBLY AND POLE, 36 FT.	EACH	2																		
87700250	STEEL MAST ARM ASSEMBLY AND POLE, 42 FT.	EACH	1																		
87700260	STEEL MAST ARM ASSEMBLY AND POLE, 44 FT.	EACH	1																		
87700280	STEEL MAST ARM ASSEMBLY AND POLE, 48 FT.	EACH	1	1																	
87800100	CONCRETE FOUNDATION, TYPE A	FOOT	36	20																	
87800150	CONCRETE FOUNDATION, TYPE C	FOOT	8	4																	
87800400	CONCRETE FOUNDATION, TYPE E 30-DIAMETER	FOOT	67.5	40.5																	
87800415	CONCRETE FOUNDATION, TYPE E 36-DIAMETER	FOOT	40	14																	
87900200	DRILL EXISTING HANDHOLE	EACH	9	2																	
88030020	SIGNAL HEAD, L E D, 1-FACE, 3-SECTION, MAST-ARM MOUNTED	EACH	16	1																	
88030050	SIGNAL HEAD, L E D, 1-FACE, 3-SECTION, BRACKET MOUNTED	EACH	5	2																	
88000220	SIGNAL HEAD, L E D, 1-FACE, 4-SECTION, BRACKET MOUNTED	EACH	2																		
88030080	SIGNAL HEAD, L E D, 1-FACE, 4-SECTION, MAST ARM MOUNTED	EACH	4	2																	
88030100	SIGNAL HEAD, L E D, 1-FACE, 5-SECTION, BRACKET MOUNTED	EACH	4																		
88030110	SIGNAL HEAD, L E D, 1-FACE, 5-SECTION, MAST-ARM MOUNTED	EACH	11	1																	
88030210	SIGNAL HEAD, L E D, 2-FACE, 3-SECTION, BRACKET MOUNTED	EACH	3	1																	
88030220	SIGNAL HEAD, L E D, 2-FACE, 5-SECTION, BRACKET MOUNTED	EACH	3																		
88030240	SIGNAL HEAD, L E D, 2-FACE, 1-3 SECTION, 1-5 SECTION, BRACKET MOUNTED	EACH	2	1																	
88024130	OPTICALLY PROGRAMMED SIGNAL HEAD, 1-FACE, 3-SECTION, MAST ARM MOUNTED	EACH	4	4																	
88024120	OPTICALLY PROGRAMMED SIGNAL HEAD, 1-FACE, 3-SECTION, BRACKET MOUNTED	EACH	1	1																	
88102717	PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER	EACH	10	2																	
88102747	PEDESTRIAN SIGNAL HEAD, LED, 2-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER	EACH	6																		
88200210	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM	EACH	28	8																	
88500100	INDUCTIVE LOOP DETECTOR	EACH	19	7																	
88600100	DETECTOR LOOP, TYPE I	FOOT	1383	692																	
88800100	PEDESTRIAN PUSH-BUTTON	EACH	16	2																	
89000100	TEMPORARY TRAFFIC SIGNAL INSTALLATION	EACH	2	1																	
89501400	RELOCATE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, DETECTOR UNIT	EACH	5																		
89501410	RELOCATE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, PHASING UNIT	EACH	2																		
<del>89502200</del>	<del>MODIFY EXISTING CONTROLLER</del>	<del>EACH</del>	<del>1</del>	<del>1</del>																	
89502300	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT	FOOT	5733																		
89502375	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT	EACH	4	1																	
89502380	REMOVE EXISTING HANDHOLE	EACH	25	11																	

**LOOP DETECTOR NOTES**

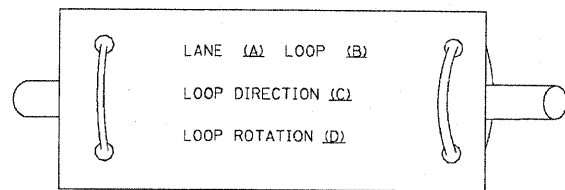
- EACH PAIR OF LOOP WIRES SHALL BE PLACED IN A SEPARATE UNIT DUCT FROM THE EDGE OF PAVEMENT TO THE HANDHOLE. SPACING BETWEEN THE HOLES DRILLED IN THE PAVEMENT SHALL NOT BE LESS THAN 6" (150 mm). UNIT DUCT SHALL BE INCLUDED IN THE COST OF THE LOOP WIRE.
- THE NUMBER OF LOOP TURNS SHALL BE AS RECOMMENDED BY THE AMPLIFIER MANUFACTURER. ALL ADJACENT SIDES OF THE LOOPS SHALL BE INSTALLED IN SUCH A WAY THAT THE CURRENT FLOW IS IN THE SAME DIRECTION TO REINFORCE ITS MAGNETIC FIELDS FOR SMALL VEHICLE DETECTION.
- EACH LOOP LEAD-IN SHALL BE IDENTIFIED AND PERMANENTLY TAGGED IN THE HANDHOLE. EACH LEAD-IN CABLE TAG SHALL INDICATE THE LOCATION OF THE LOOP, LOOP ROTATION (CLOCKWISE/COUNTERCLOCKWISE), LOOP LEAD-IN DIRECTION (IN OR OUT), LOOP CABLE NUMBER AND LOCATION IN CABINET, AND NUMBER OF TURNS IN THE DETECTOR LOOPS IN WATER PROOF INK AS INDICATED ON THE DISTRICT 1 STANDARD TRAFFIC SIGNAL DESIGN DETAIL. THE CONTRACTOR SHALL MARK LOOP LOCATIONS ON RECORD DRAWINGS AND PRESENT TO THE ENGINEER AFTER FINAL INSPECTION. LOOPS SHALL BE MARKED BY LANE AND LOOP NUMBER. SEE DETAIL BELOW.
- ALL LOOP CABLE SHALL BE FASTENED WITH PLASTIC TIE WRAP TO THE HANDHOLE HOOKS.
- IN ASPHALT PAVEMENT, LOOPS SHOULD BE PLACED IN THE BINDER AND DIVESHOLES MARKED AT THE CURB WITH A SAW-CUT. THE SAW-CUT SHALL BE CUT IN ACCORDANCE WITH LOCAL AND E.P.A. DUST CONTROL REQUIREMENTS. DETECTOR LOOP(S) SHALL NOT BE INSTALLED IN WET CONDITIONS AND THE SAW-CUTS MUST BE FREE OF DEBRIS AND RESIDUE SUCH AS DUST AND WATER WHICH IS TO BE ACHIEVED BY THE USE OF COMPRESSED AIR, WIRE BRUSHING AND HEAT DRYING ACCORDING TO SEALANT MANUFACTURER REQUIREMENTS. THE DETECTOR WIRE SHALL BE HELD IN PLACE BY THE USE OF FORM WEDGES. WEDGES SHALL BE SPACED NO MORE THAN 18" (450 mm) APART.
- LOOP SPLICES SHALL BE SOLDERED USING A SOLDERING IRON. BLOW TORCHES OR OTHER DEVICES WHICH OXIDIZE COPPER CABLE SHALL NOT BE ALLOWED FOR SOLDERING OPERATIONS. SEE DETAIL BELOW RIGHT.
- PERFORMED DETECTOR LOOPS SHALL BE USED, AS SHOWN ON THE PLANS, WHERE NEW CONCRETE PAVEMENT IS PROPOSED. THE INSTALLATION OF PERFORMED LOOPS SHALL BE IN ACCORDANCE WITH THE DISTRICT 1 SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.



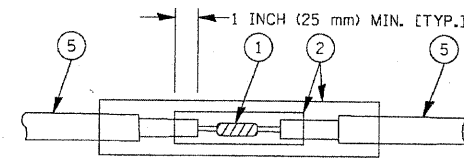
**DETECTOR LOOP WIRING SCHEMATIC**

- LOOPS SHALL BE SPLICED IN SERIES.
- SAW-CUTS SHALL BE A MINIMUM WIDTH OF 5/16" (8 mm).
- SAW-CUT DEPTHS SHALL BE 3" (75 mm). IF IN CONCRETE, THE SAW-CUT DEPTH SHALL BE TO THE TOP OF THE REINFORCEMENT.
- LOOP CORNERS SHALL BE DRILLED WITH A 2" (50 mm) DIAMETER CORE.

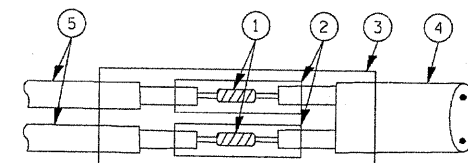
**LOOP LEAD-IN CABLE TAG**



- LANE 1 IS THE LANE CLOSEST TO THE CENTERLINE OF THE ROADWAY
- LOOP #1 IS THE LOOP IN THE LANE CLOSEST TO THE INTERSECTION.
- LABEL LOOP CABLE "IN" OR LOOP CABLE "OUT".
- LABEL LOOP CABLE CLOCKWISE OR LOOP CABLE COUNTERCLOCKWISE.



**DETAIL "A"  
LOOP-TO-LOOP SPLICE**



**DETAIL "B"  
LOOP-TO-CONTROLLER SPLICE**

**LOOP DETECTOR SPLICE**

- WESTERN UNION SPLICE SOLDERED WITH ROSIN CORE FLUX. ALL EXPOSED SURFACES OF THE SOLDER SHALL BE SMOOTH.
- WCSMW 30/100 HEAT SHRINK TUBE, MINIMUM LENGTH 3" (75 mm), UNDERWATER GRADE.
- WCS 200/750 HEAT SHRINK TUBE, MINIMUM LENGTH 6" (150 mm), UNDERWATER GRADE.
- NO. 14 2/C TWISTED, SHIELDED CABLE.
- LOOP CONDUCTOR WITH FLEXIBLE PLASTIC TUBE.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
DISTRICT ONE  
STANDARD TRAFFIC SIGNAL  
DESIGN DETAILS

SCALE: VERT. NONE  
HORIZ. NONE  
DATE 09/11/2007

DESIGNED BY: BL  
CHECKED BY: EB/TC  
DRAWN BY: EB/TC

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
34B	2009 07B TS	COOK	33	4

FILE NAME = P:\P-07-1600-7-10\Design\SH1004.DGN	USER NAME = rdelham	DESIGNED - TCM/BPR	REVISED - 09/08/2009 PER 100T
		DRAWN - TCM/BPR	REVISED -
		CHECKED - TCM	REVISED -
		DATE - 07/02/2009	REVISED -

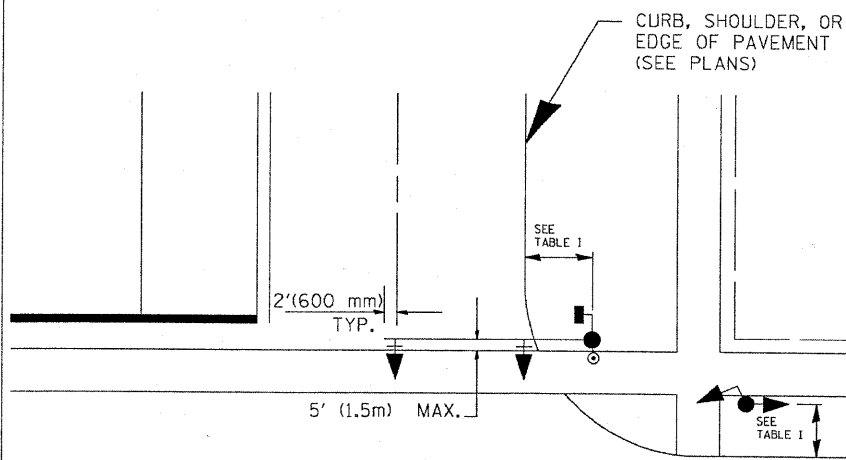
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**DISTRICT ONE  
STANDARD TRAFFIC SIGNAL DESIGN DETAILS**

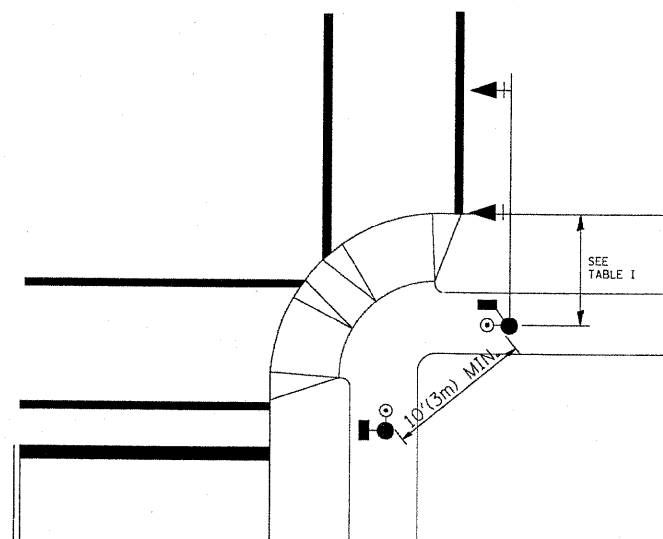
SCALE: NTS SHEET NO. 1 OF 4 SHEETS STA. TO STA. CONTRACT NO. 60115

**TRAFFIC SIGNAL MAST ARM AND POST**

MAST ARM MOUNTED SIGNAL IN PROPOSED & FUTURE SIDEWALK AREA. INTERSECTION SHOWN WITH PEDESTRIAN SIGNAL AND PUSHBUTTON DETECTOR



**PEDESTRIAN SIGNAL PUSHBUTTON**



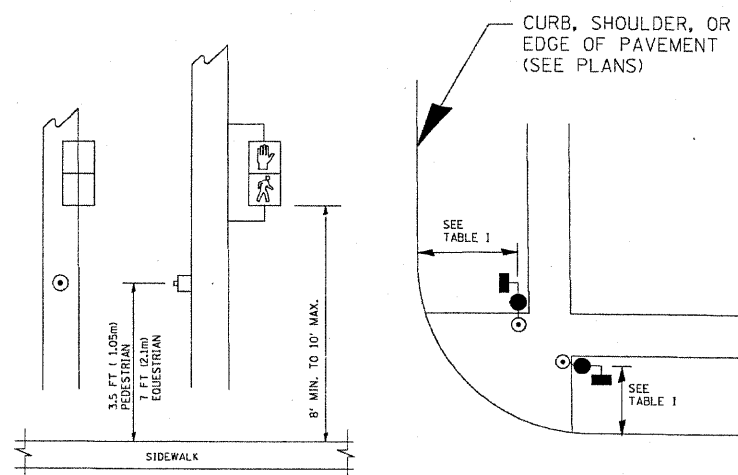
RECOMMENDED PUSHBUTTON LOCATIONS FOR ACCESSIBLE PEDESTRIAN SIGNALS SHALL BE IN ACCORDANCE WITH THE CURRENT MUTCD (SEE NOTE 1). TO MEET MUTCD REQUIREMENTS, PEDESTRIAN SIGNAL PUSHBUTTONS MAY HAVE TO BE MOUNTED ON A SEPARATE POST.

**NOTES:**

- AT ACCESSIBLE PEDESTRIAN SIGNAL LOCATIONS WITH PEDESTRIAN ACTUATION, EACH PUSHBUTTON SHALL ACTIVATE BOTH THE WALK INTERVAL AND THE ACCESSIBLE PEDESTRIAN SIGNALS.  
 AT ACCESSIBLE PEDESTRIAN SIGNAL LOCATIONS, PUSHBUTTONS SHOULD CLEARLY INDICATE WHICH CROSSWALK SIGNAL IS ACTUATED BY EACH PUSHBUTTON. PUSHBUTTONS AND TACTILE ARROWS SHOULD HAVE HIGH VISUAL CONTRAST (SEE THE DEPARTMENT OF JUSTICE'S AMERICANS WITH DISABILITIES ACT STANDARDS FOR ACCESSIBLE DESIGN, 1991). TACTILE ARROWS SHOULD POINT IN THE SAME DIRECTION AS THE ASSOCIATED CROSSWALK. AT CORNERS OF SIGNALIZED LOCATIONS WITH ACCESSIBLE PEDESTRIAN SIGNALS WHERE PEDESTRIAN PUSHBUTTONS ARE PROVIDED, THE PUSHBUTTONS SHOULD BE SEPARATED BY THE DISTANCE OF AT LEAST 10 FT (3m). THIS ENABLES PEDESTRIANS WHO HAVE VISUAL DISABILITIES TO DISTINGUISH AND LOCATE THE APPROPRIATE PUSHBUTTON.  
 PUSHBUTTONS FOR ACCESSIBLE PEDESTRIAN SIGNALS SHOULD BE LOCATED AS FOLLOWS:  
 A: ADJACENT TO A LEVEL ALL-WEATHER SURFACE TO PROVIDE ACCESS FROM A WHEELCHAIR, AND WHERE THERE IS AN ALL WEATHER SURFACE, WHEELCHAIR ACCESSIBLE ROUTE TO THE RAMP.  
 B: WITHIN 5 FT (1.5m) OF THE CROSSWALK EXTENDED.  
 C: WITHIN 10 FT (3m) OF THE EDGE OF CURB, SHOULDER, OR PAVEMENT.  
 D: PARALLEL TO THE CROSSWALK TO BE USED (SEE MUTCD FIGURE 4E-2).  
 E: NORMAL PEDESTRIAN PUSHBUTTON MOUNTING HEIGHT SHOULD BE 3.5 FT (1.05m) ABOVE ADJACENT SIDEWALK
- PEDESTRIAN SIGNAL FACES SHALL BE MOUNTED WITH THE BOTTOM OF THE HOUSING NOT LESS THAN 8 FT (2.4m) NOR MORE THAN 10 FT (3.0m) ABOVE THE SIDEWALK LEVEL AND SO THERE IS A PEDESTRIAN INDICATION IN THE LINE OF PEDESTRIANS' VISION WHICH PERTAINS TO THE CROSSWALK BEING USED.
- THE BOTTOM OF THE HOUSING OF A VEHICLE SIGNAL FACE, NOT MOUNTED OVER A ROADWAY, SHALL BE AT LEAST 10 FT (3.0m) BUT NOT MORE THAN 15 FT (4.5m) ABOVE THE SIDEWALK OR, ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE HIGHWAY IF NO SIDEWALKS EXIST.
- THE BOTTOM OF THE HOUSING OF A VEHICLE SIGNAL FACE, MOUNTED OVER A ROADWAY, SHALL BE ACCORDING TO CURRENT STATE STANDARDS 877001 AND 877006. (16 FT (5m) MIN., 18 FT (5.5m) MAX., FROM HIGHEST POINT OF PAVEMENT)

**PEDESTRIAN SIGNAL POST**

PEDESTRIAN SIGNAL HEAD AND PEDESTRIAN PUSHBUTTON DETECTOR LOCATION



**TABLE I**

TRAFFIC SIGNAL EQUIPMENT	COMBINATION CONCRETE CURB AND GUTTER (MIN. DIST. FROM BACK OF CURB)	SHOULDER/NON-CURBED AREA (MIN. DIST. FROM EDGE OF PAVEMENT)
TRAFFIC SIGNAL MAST ARM POLE	6 FT (1.8m)	SHOULDER WIDTH + 2FT(0.6m), MINIMUM 10FT(3.0m)
TRAFFIC SIGNAL POST	4 FT (1.2m)	SHOULDER WIDTH + 2FT(0.6m), MINIMUM 10FT(3.0m)
PEDESTRIAN SIGNAL POST	4 FT (1.2m)	SHOULDER WIDTH + 2FT(0.6m), MINIMUM 10FT(3.0m)
PEDESTRIAN PUSHBUTTON	SEE NOTE 1	SEE NOTE 1

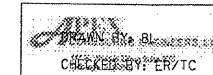
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**DISTRICT ONE  
STANDARD TRAFFIC SIGNAL DESIGN DETAILS**

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
DISTRICT ONE  
STANDARD TRAFFIC SIGNAL  
DESIGN DETAILS

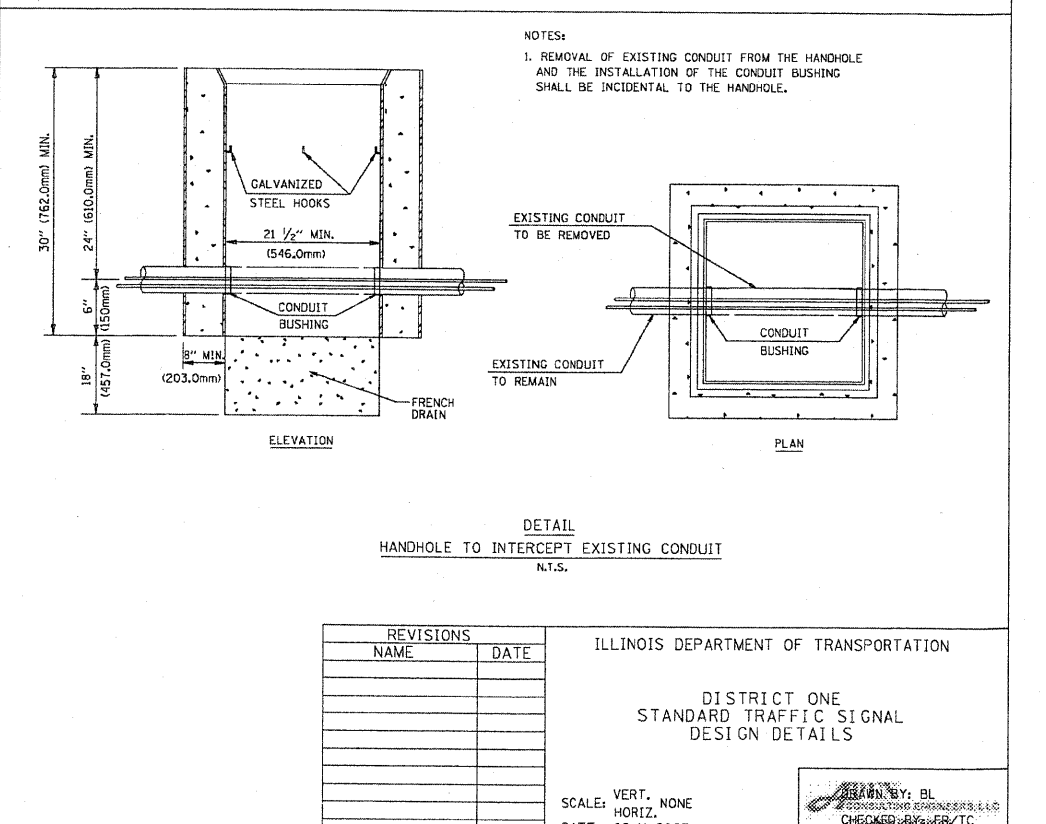
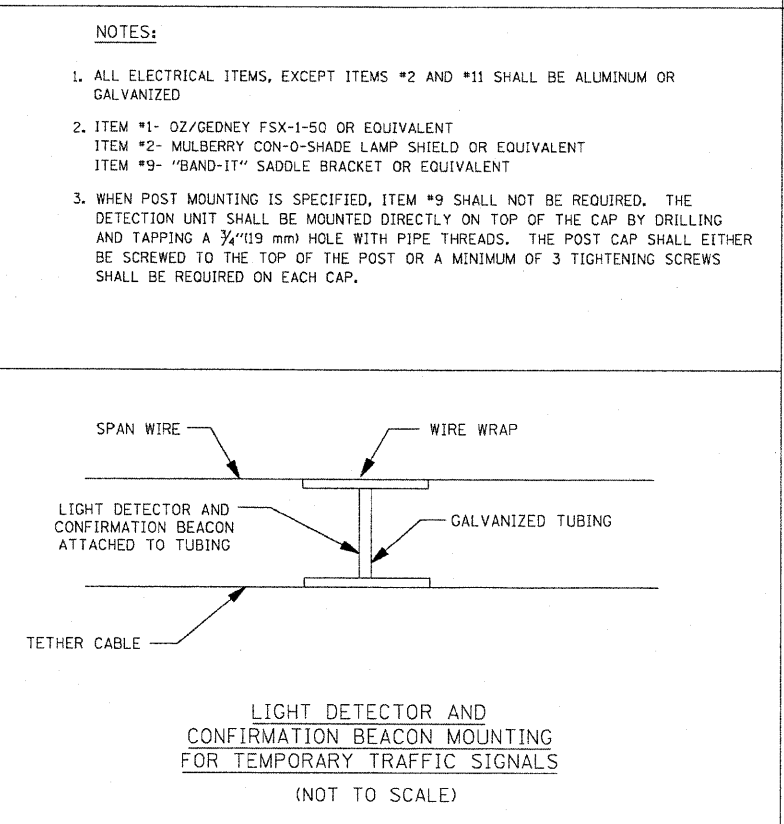
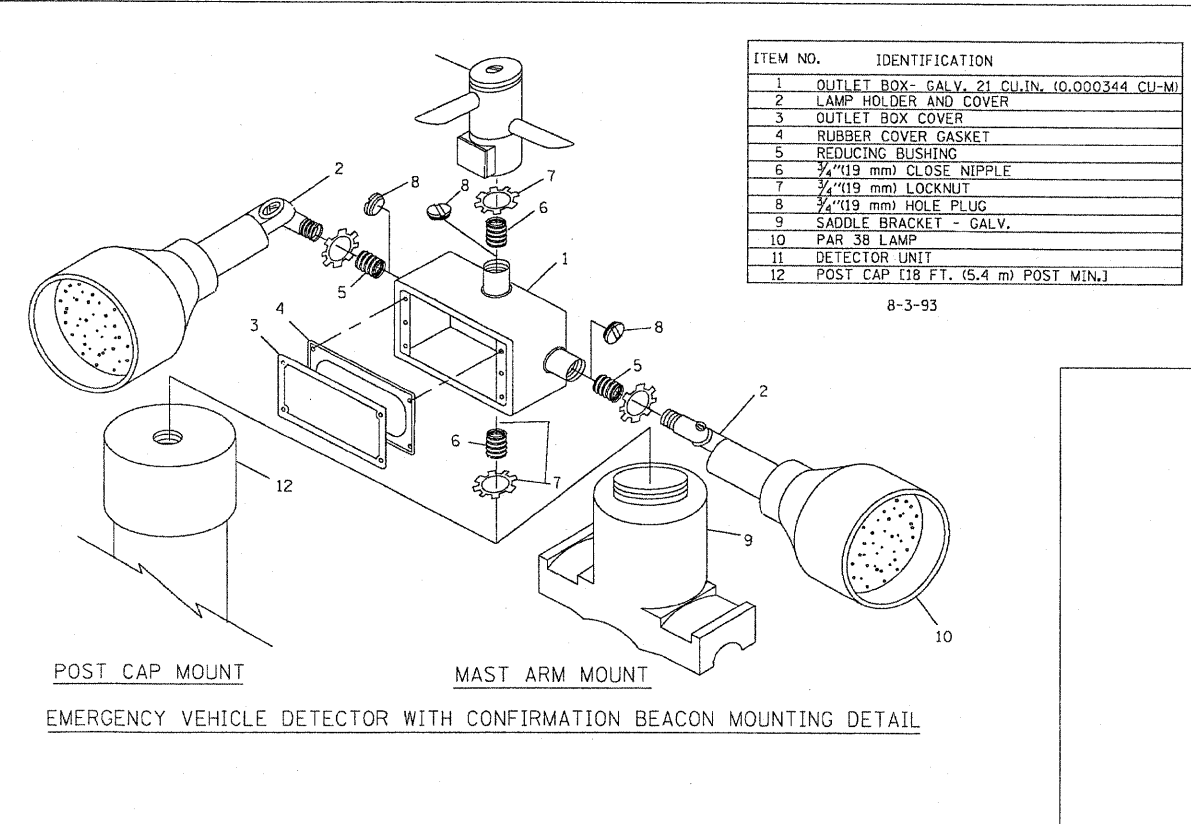
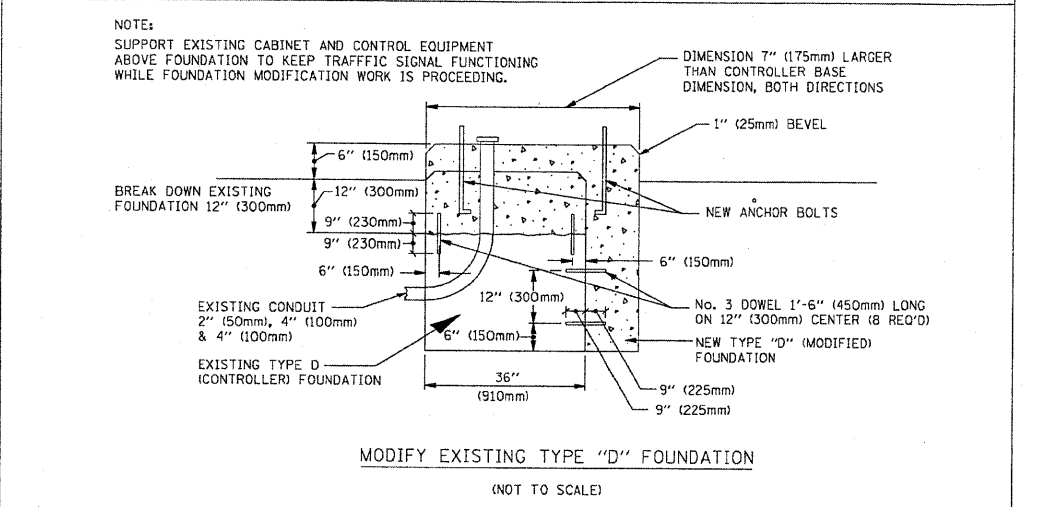
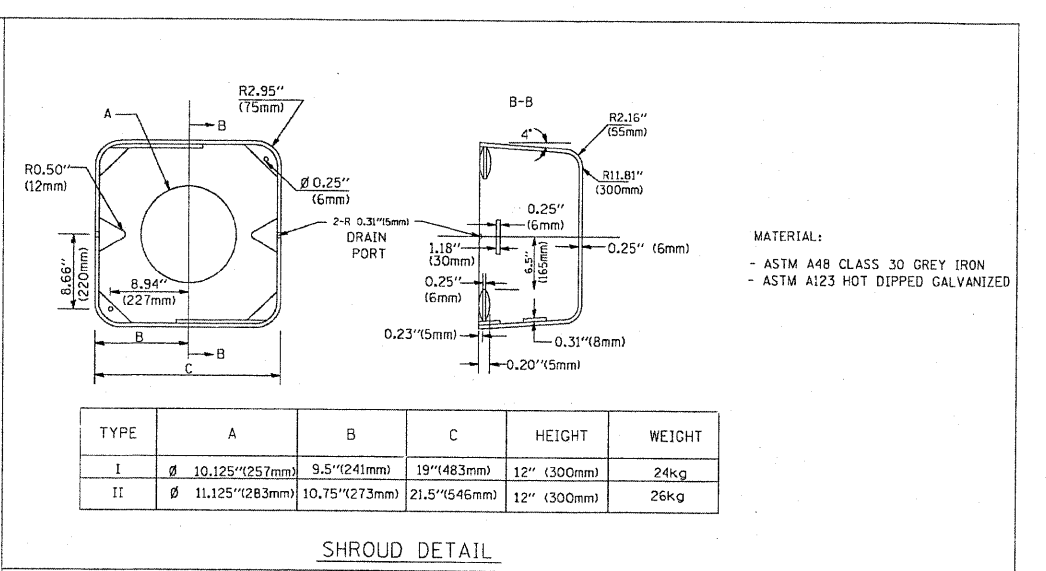
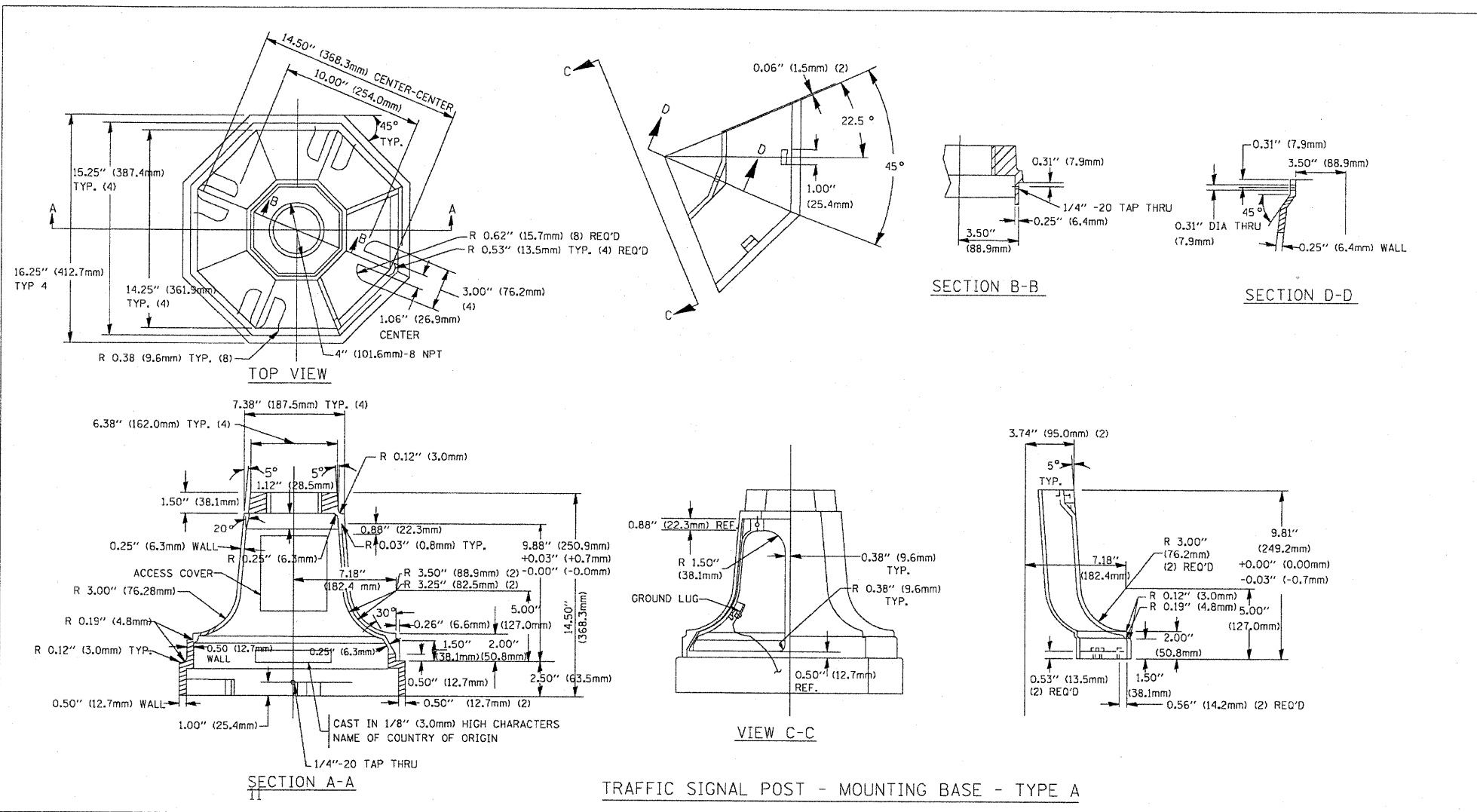
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HORIZ. NONE  
DATE 09-11-2007



FILE NAME = P:\AP-07-1600-7-10\Design\SH005.DGN	USER NAME = rdahhen	DESIGNED - TCM/BPR	REVISED - 09/08/2009 PER IDOT
		DRAWN - TCM/BPR	REVISED -
		CHECKED - TCM	REVISED -
		DATE - 07/02/2009	REVISED -

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
348	2009 07B TS	COOK	33	5
CONTRACT NO. 60115				





MATCH LINE B-B

RESTORATION OF WORK AREA, RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCIDENTAL TO THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL, ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIAN, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.

**EXISTING EQUIPMENT TO BE REMOVED LEGEND**

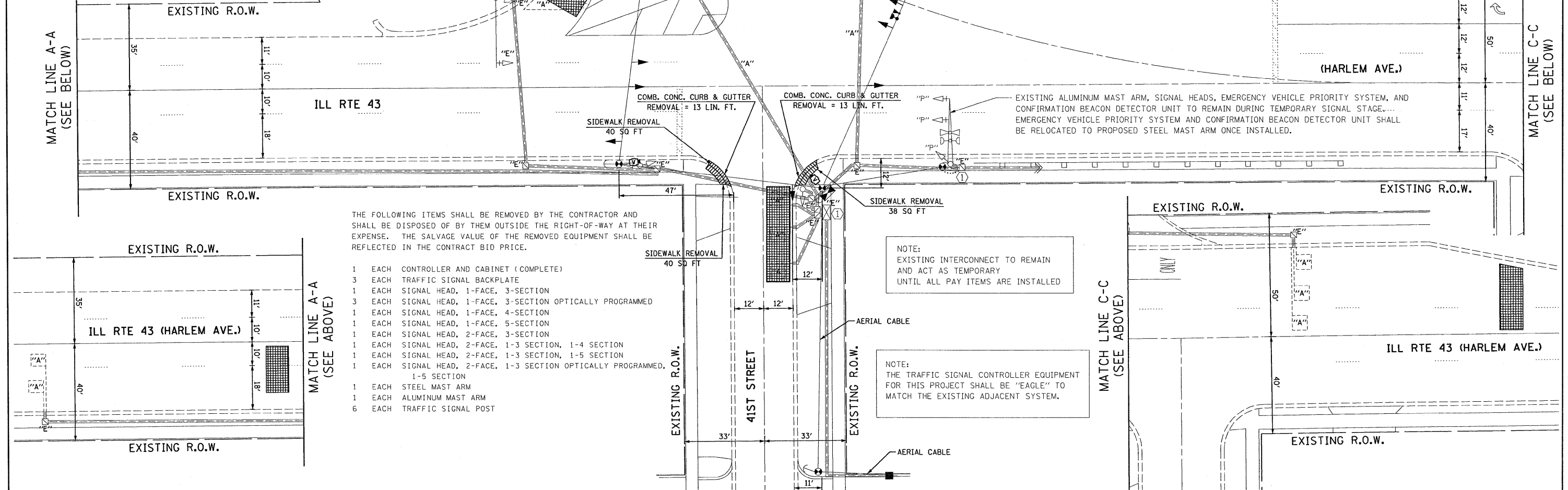
- EXISTING SIGNAL HEAD TO BE REMOVED
- EXISTING SERVICE INSTALLATION TO BE REMOVED
- EXISTING STREET LIGHT, FOUNDATION AND LUMINAIRE TO REMAIN
- EXISTING CONTROLLER TO BE REMOVED
- EXISTING HANDHOLE TO BE REMOVED
- EXISTING PEDESTRIAN SIGNAL HEAD TO BE REMOVED
- EXISTING PEDESTRIAN PUSH BUTTON TO BE REMOVED
- EMERGENCY VEHICLE LIGHT DETECTOR TO BE REMOVED
- CONFIRMATION BEACON TO BE REMOVED
- EXISTING HEAVY-DUTY HANDHOLE TO BE REMOVED
- EXISTING SIGNAL POST AND FOUNDATION TO BE REMOVED
- EXISTING ALUMINUM MAST ARM POLE AND FOUNDATION TO BE REMOVED
- EXISTING STEEL MAST ARM POLE AND FOUNDATION TO BE REMOVED
- EXISTING CONDUIT TO BE ABANDONED

**TEMPORARY TRAFFIC SIGNAL LEGEND**

- TEMPORARY TRAFFIC SIGNAL HEAD
- SPAN WIRE MOUNTED ORIGINAL LOCATION
- TEMPORARY TRAFFIC SIGNAL HEAD SPAN WIRE MOUNTED SECONDARY LOCATION
- TEMPORARY WOOD POLE (CLASS 5 OR BETTER) 45 FOOT MINIMUM
- TEMPORARY CONTROLLER CABINET
- TEMPORARY SPAN WIRE, TETHER WIRE, AND CABLE
- TEMPORARY SERVICE INSTALLATION
- TEMPORARY PEDESTRIAN SIGNAL HEAD, BRACKET MOUNTED
- TEMPORARY PEDESTRIAN PUSHBUTTON DETECTOR MICROWAVE VEHICLE SENSOR
- EMERGENCY VEHICLE LIGHT DETECTOR CONFIRMATION BEACON
- VEHICLE DETECTOR, INDUCTION LOOP COMMON TRENCH
- UNIT DUCT
- G.S. CONDUIT IN TRENCH OR PUSHED
- HANDHOLE
- TEMPORARY HEAVY-DUTY HANDHOLE
- EXISTING WOOD POLE
- VIDEO DETECTOR
- WIRELESS INTERCONNECT (ANTENNA)
- VIDEO DETECTOR ZONE
- GUY WIRE

**NOTES FOR TEMPORARY TRAFFIC SIGNALS**

1. ALL CONTROL EQUIPMENT INCLUDING EMERGENCY PRE-EMPTION AND COMMUNICATION DEVICES FOR THE TEMPORARY TRAFFIC SIGNAL(S) SHALL BE FURNISHED BY THE CONTRACTOR.
2. ONLY CONTROLLERS SUPPLIED BY ONE OF THE DISTRICT APPROVED CLOSED LOOP EQUIPMENT MANUFACTURERS WILL BE APPROVED FOR USE AT TEMPORARY SIGNAL LOCATIONS. ALL CONTROLLERS USED FOR TEMPORARY TRAFFIC SIGNALS SHALL BE FULLY ACTUATED NEMA MICROPROCESSOR BASED WITH RS232 DATA ENTRY PORTS COMPATIBLE WITH EXISTING MONITORING SOFTWARE APPROVED BY IDOT DISTRICT 1, INSTALLED IN A NEMA TS1 OR TS2 CABINET. ONLY ONE BRAND OF CONTROLLER WILL BE ACCEPTED FOR ANY ONE CONTRACT.
3. ALL TRAFFIC SIGNAL SECTIONS AND PEDESTRIAN SIGNAL SECTIONS SHALL BE 12". HEADS SHALL BE PLACED AS INDICATED ON THE TEMPORARY TRAFFIC SIGNAL PLAN OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH ENOUGH CABLE SLACK TO RELOCATE HEADS TO ANY POSITION ON THE SPAN WIRE OR AT LOCATIONS ILLUSTRATED ON THE PLANS FOR CONSTRUCTION STAGING. THE TEMPORARY TRAFFIC SIGNAL SHALL REMAIN IN OPERATION DURING ALL SIGNAL HEAD RELOCATIONS. EACH TEMPORARY TRAFFIC SIGNAL HEAD SHALL HAVE ITS OWN CABLE FROM THE CONTROLLER CABINET TO THE SIGNAL HEAD.
4. ALL EXISTING STREET NAME AND INTERSECTION REGULATORY SIGNS SHALL BE REMOVED FROM EXISTING POLES, RELOCATED AND SECURELY FASTENED TO THE SIGNAL SPAN WIRE OR WOOD POLE AS DIRECTED BY THE ENGINEER.
5. ANY TEMPORARY SIGNAL WITHIN AN EXISTING CLOSED LOOP TRAFFIC SIGNAL SYSTEM SHALL BE INTERCONNECTED TO THAT SYSTEM USING SIMILAR BRAND CONTROL EQUIPMENT.
6. THE TEMPORARY TRAFFIC SIGNAL SHALL HAVE THE SIGNAL HEAD DISPLAYS, SIGNAL HEAD PLACEMENTS AND CONTROLLER PHASING MATCH THE EXISTING TRAFFIC SIGNAL, AT THE TIME OF THE TURN ON, IF NO TRAFFIC STAGING IS IN PLACE OR WILL NOT BE STAGED ON THE DAY OF THE TURN ON.



THE FOLLOWING ITEMS SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE DISPOSED OF BY THEM OUTSIDE THE RIGHT-OF-WAY AT THEIR EXPENSE. THE SALVAGE VALUE OF THE REMOVED EQUIPMENT SHALL BE REFLECTED IN THE CONTRACT BID PRICE.

- 1 EACH CONTROLLER AND CABINET (COMPLETE)
- 3 EACH TRAFFIC SIGNAL BACKPLATE
- 1 EACH SIGNAL HEAD, 1-FACE, 3-SECTION
- 3 EACH SIGNAL HEAD, 1-FACE, 3-SECTION OPTICALLY PROGRAMMED
- 1 EACH SIGNAL HEAD, 1-FACE, 4-SECTION
- 1 EACH SIGNAL HEAD, 1-FACE, 5-SECTION
- 1 EACH SIGNAL HEAD, 2-FACE, 3-SECTION
- 1 EACH SIGNAL HEAD, 2-FACE, 1-3 SECTION, 1-4 SECTION
- 1 EACH SIGNAL HEAD, 2-FACE, 1-3 SECTION, 1-5 SECTION
- 1 EACH SIGNAL HEAD, 2-FACE, 1-3 SECTION OPTICALLY PROGRAMMED, 1-5 SECTION
- 1 EACH STEEL MAST ARM
- 1 EACH ALUMINUM MAST ARM
- 6 EACH TRAFFIC SIGNAL POST

NOTE: EXISTING INTERCONNECT TO REMAIN AND ACT AS TEMPORARY UNTIL ALL PAY ITEMS ARE INSTALLED

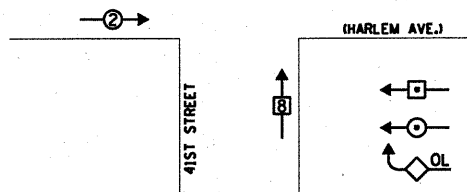
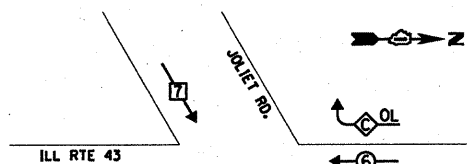
NOTE: THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "EAGLE" TO MATCH THE EXISTING ADJACENT SYSTEM.

FILE NAME =	USER NAME = kanthaphixaybc	DESIGNED - TCM/BPR	REVISED - 09/08/2009 PER IDOT	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TEMPORARY TRAFFIC SIGNAL INSTALLATION AND REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT PLAN -ILL RTE 43 (HARLEM AVE.) AT JOLIET ROAD /41ST STREET</b>			F.A.P. RTE. 348	SECTION 2009 078 TS	COUNTY COOK	TOTAL SHEETS 33	SHEET NO. 8
CONTRACT NO. 60115	PLOT SCALE = #SCALESHORT#	CHECKED - TCM	REVISED -		SCALE: 1"=20'	SHEET NO. OF SHEETS STA. TO STA.	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					
	PLOT DATE = 11/9/2009	DATE - 07/02/2009	REVISED -									

10:35:52 11/09/2009



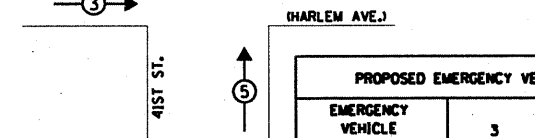
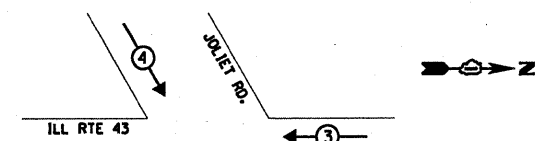
**TEMPORARY CONTROLLER SEQUENCE**



- LEGEND**
- ◀ □ ▶ SINGLE ENTRY PHASE
  - ◀ ○ ▶ DUAL ENTRY PHASE
  - ◀ ○ ▶ OVERLAP
  - NUMBER REFERS TO ASSOCIATED PHASE

**TEMPORARY PHASE DESIGNATION DIAGRAM**

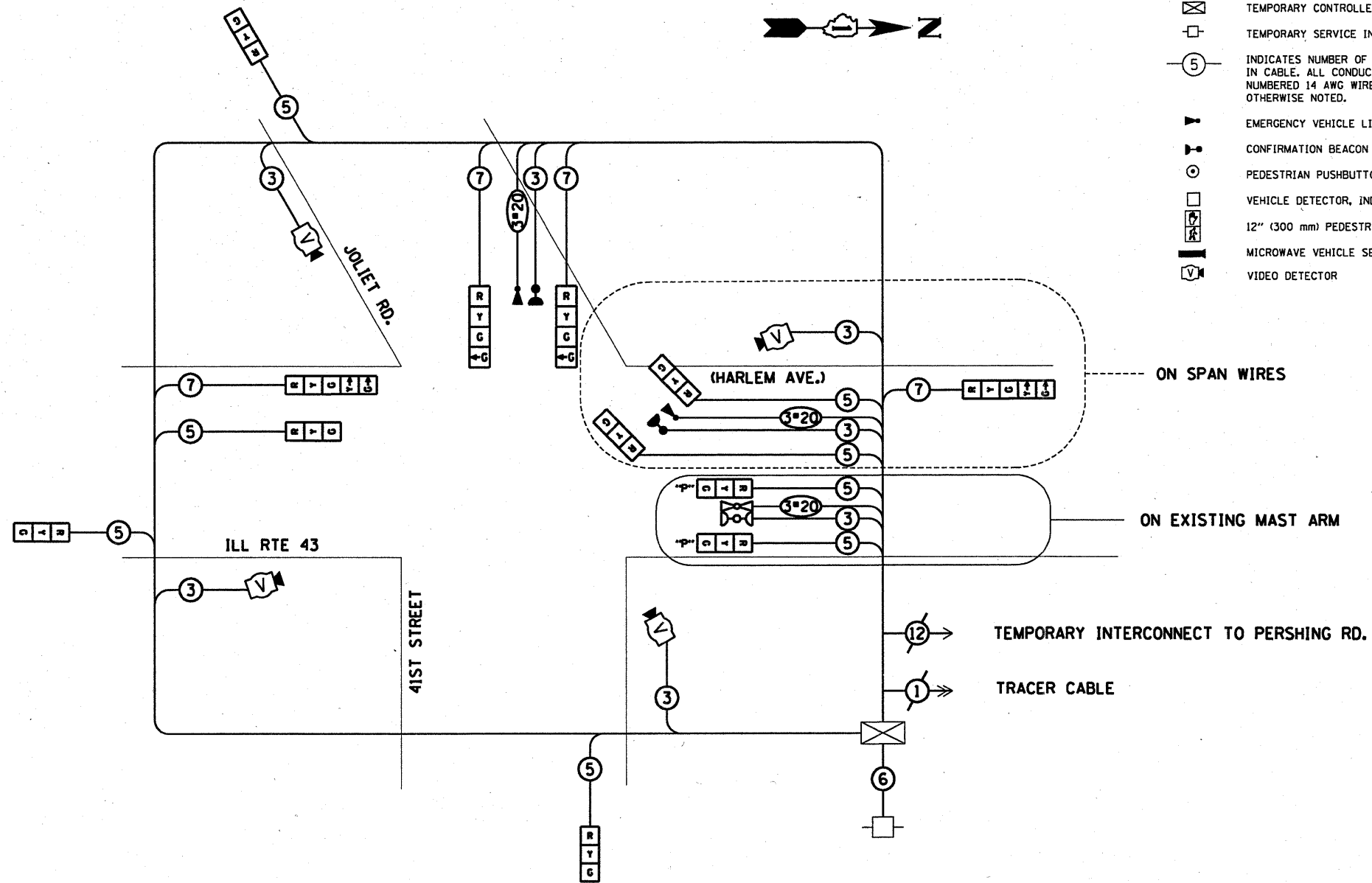
**TEMPORARY EMERGENCY VEHICLE PREEMPTION SEQUENCE**



PROPOSED EMERGENCY VEHICLE PREEMPTOR			
EMERGENCY VEHICLE PREEMPTOR	3	4	5
MOVEMENT	← →	↘	↑

**TEMPORARY CABLE DIAGRAM LEGEND**

- ◻ R TEMPORARY TRAFFIC SIGNAL SECTION OR PEDESTRIAN SIGNAL SECTION, 12" (300 mm)
- ◻ TEMPORARY CONTROLLER CABINET
- ◻ TEMPORARY SERVICE INSTALLATION
- ⑤ INDICATES NUMBER OF CONDUCTORS IN CABLE. ALL CONDUCTORS TO BE NUMBERED 14 AWG WIRE UNLESS OTHERWISE NOTED.
- ▶ EMERGENCY VEHICLE LIGHT DETECTOR
- ▶ CONFIRMATION BEACON
- PEDESTRIAN PUSHBUTTON DETECTOR
- ◻ VEHICLE DETECTOR, INDUCTION LOOP
- ◻ 12" (300 mm) PEDESTRIAN SIGNAL SECTION
- ◻ MICROWAVE VEHICLE SENSOR
- ◻ VIDEO DETECTOR

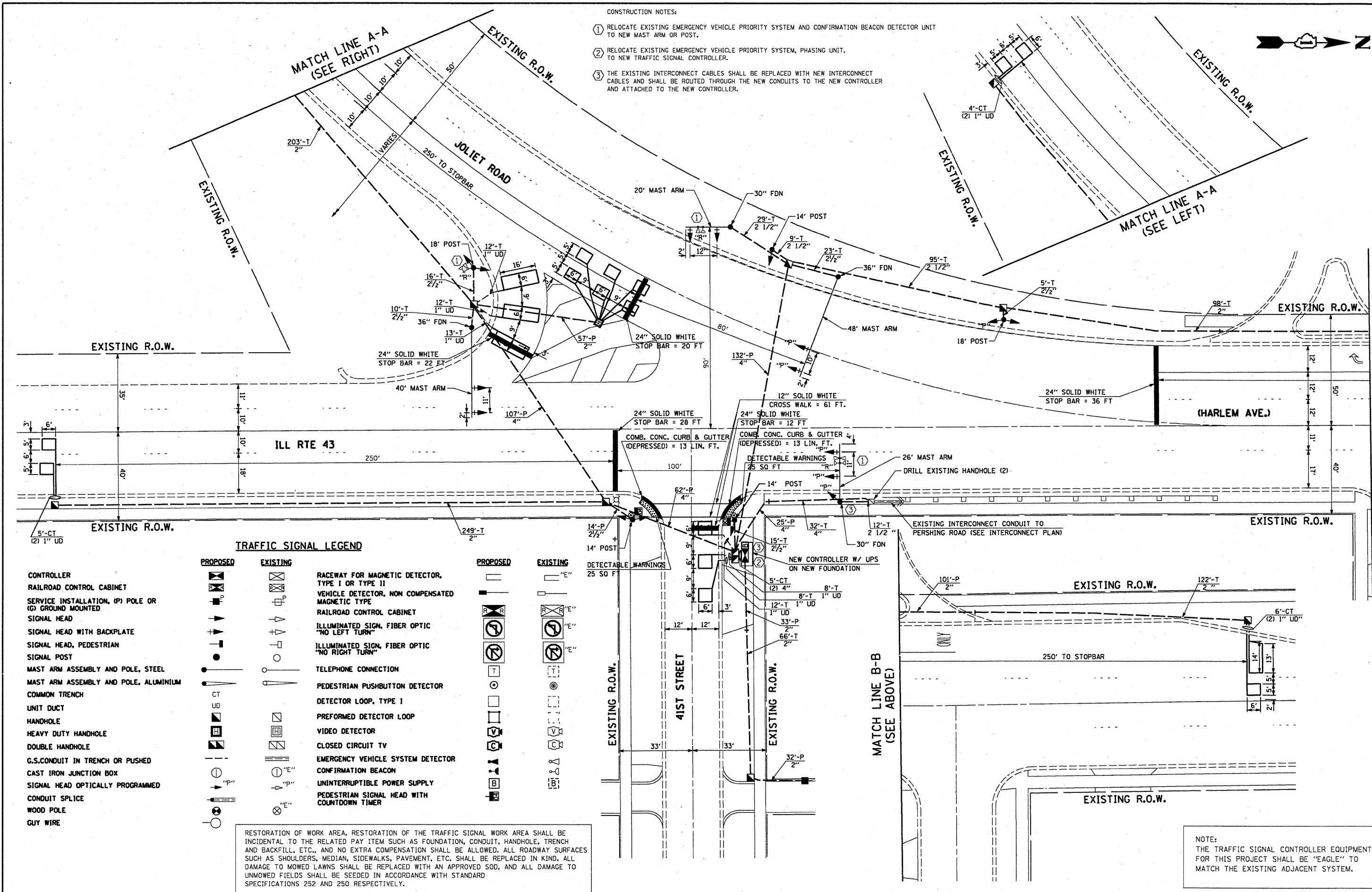


**TEMPORARY CABLE PLAN**

NOTE:  
THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "EAGLE" TO MATCH THE EXISTING ADJACENT SYSTEM.

I.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO. LAMPS	WATTAGE INCAND.	WATTAGE LED	% OPERATION	
SIGNAL (RED)	12	17	0	0.50	102.0
(YELLOW)	12	25	0	0.25	75.0
(GREEN)	14	15	0	0.25	52.5
ARROW	6	12	0	0.10	7.2
PED. SIGNAL	-	25	0	1.00	-
CONTROLLER	1	100	0	1.00	100.0
ILLUM. SIGN	-	-	0	0.05	-
FLASHER	-	-	-	0.05	-
ENERGY COSTS TO:				TOTAL=	337.6
VILLAGE OF STICKNEY 6533 PERSHING ROAD STICKNEY, IL 60402					
ENERGY SUPPLY CONTACT: JUANITA VEIGELT					
PHONE: (815) 724-5657					
COMPANY: COMMONWEALTH EDISON					

- CONSTRUCTION NOTES:
- RELOCATE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM AND CONFIRMATION BEACON DETECTOR UNIT TO NEW MAST ARM OR POST.
  - RELOCATE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, PHASING UNIT, TO NEW TRAFFIC SIGNAL CONTROLLER.
  - THE EXISTING INTERCONNECT CABLES SHALL BE REPLACED WITH NEW INTERCONNECT CABLES AND SHALL BE ROUTED THROUGH THE NEW CONDUITS TO THE NEW CONTROLLER AND ATTACHED TO THE NEW CONTROLLER.



**TRAFFIC SIGNAL LEGEND**

PROPOSED	EXISTING	PROPOSED	EXISTING
CONTROLLER	[Symbol]	RACEWAY FOR MAGNETIC DETECTOR, TYPE I OR TYPE II	[Symbol]
RAILROAD CONTROL CABINET	[Symbol]	VEHICLE DETECTOR, NON COMPENSATED MAGNETIC TYPE	[Symbol]
SERVICE INSTALLATION, (P) POLE OR (G) GROUND MOUNTED	[Symbol]	RAILROAD CONTROL CABINET	[Symbol]
SIGNAL HEAD	[Symbol]	ILLUMINATED SIGN, FIBER OPTIC "NO LEFT TURN"	[Symbol]
SIGNAL HEAD WITH BACKPLATE	[Symbol]	ILLUMINATED SIGN, FIBER OPTIC "NO RIGHT TURN"	[Symbol]
SIGNAL HEAD, PEDESTRIAN	[Symbol]	TELEPHONE CONNECTION	[Symbol]
SIGNAL POST	[Symbol]	PEDESTRIAN PUSHBUTTON DETECTOR	[Symbol]
MAST ARM ASSEMBLY AND POLE, STEEL	[Symbol]	DETECTOR LOOP, TYPE I	[Symbol]
MAST ARM ASSEMBLY AND POLE, ALUMINIUM	[Symbol]	PERFORMED DETECTOR LOOP	[Symbol]
COMMON TRENCH	[Symbol]	VIDEO DETECTOR	[Symbol]
UNIT DUCT	[Symbol]	CLOSED CIRCUIT TV	[Symbol]
HANDHOLE	[Symbol]	EMERGENCY VEHICLE SYSTEM DETECTOR	[Symbol]
HEAVY DUTY HANDHOLE	[Symbol]	CONFIRMATION BEACON	[Symbol]
DOUBLE HANDHOLE	[Symbol]	UNINTERRUPTIBLE POWER SUPPLY	[Symbol]
G.S.CONDUIT IN TRENCH OR PUSHED	[Symbol]	PEDESTRIAN SIGNAL HEAD WITH COUNTDOWN TIMER	[Symbol]
CAST IRON JUNCTION BOX	[Symbol]		
SIGNAL HEAD OPTICALLY PROGRAMMED	[Symbol]		
CONDUIT SPLICE	[Symbol]		
WOOD POLE	[Symbol]		
GUY WIRE	[Symbol]		

RESTORATION OF WORK AREA. RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCIDENTAL TO THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL, ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIAN, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.

NOTE:  
THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "EAGLE" TO MATCH THE EXISTING ADJACENT SYSTEM.

**CABLE PLAN LEGEND**

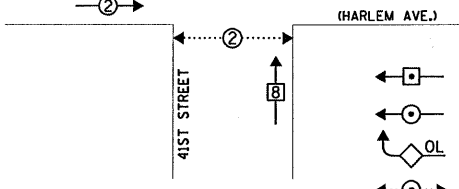
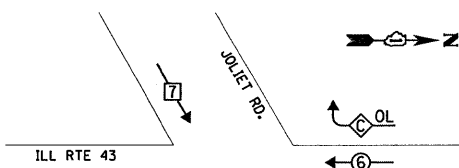
PROPOSED	EXISTING	DESCRIPTION
		8" (200mm) TRAFFIC SIGNAL SECTION
		12" (300mm) TRAFFIC SIGNAL SECTION
		12" (300mm) PEDESTRIAN SIGNAL SECTION
		12" (300mm) PEDESTRIAN SIGNAL SECTION
		CONTROLLER CABINET
		SERVICE INSTALLATION
		TELEPHONE CONNECTION
		MAGNETIC DETECTOR
		PUSHBUTTON DETECTOR
		VEHICLE DETECTOR, INDUCTION LOOP
		DENOTES NUMBER OF CONDUCTORS. ALL CABLE NO. 14 EXCEPT AS INDICATED. ALL LOOP DETECTOR CABLE TO BE SHIELDED.
		SIGNAL FACE WITH BACKPLATE. "P" INDICATES PROGRAMMED HEAD
		RAILROAD CONTROL CABINET
		ILLUMINATED SIGN, FIBER OPTIC "NO LEFT TURN"
		ILLUMINATED SIGN, FIBER OPTIC "NO RIGHT TURN"
		GROUND ROD AT HANDHOLE, DOUBLE HANDHOLE, OR CONTROLLER
		GROUND ROD AT POST OR MAST ARM POLE
		GROUND ROD AT ELECTRIC SERVICE INSTALLATION
		GROUND CABLE IN CONDUIT NO. 6 SOLID COPPER (GREEN)
		FIBER OPTIC CABLE IN CONDUIT NO.62.5/125 2-MM12F & SM12F
		MICROWAVE VEHICLE SENSOR
		VIDEO DETECTOR
		CLOSED CIRCUIT TV
		EMERGENCY VEHICLE LIGHT DETECTOR
		CONFIRMATION BEACON
		UNINTERRUPTIBLE POWER SUPPLY
		PEDESTRIAN SIGNAL HEAD WITH COUNTDOWN TIMER

NOTE: THE EXISTING INTERCONNECT CABLES SHALL BE REPLACED WITH NEW INTERCONNECT CABLES AND SHALL BE ROUTED THROUGH THE EXISTING CONDUITS TO THE NEW CONTROLLER AND ATTACHED TO THE NEW CONTROLLER.

NOTE: ALL EXISTING CONFIRMATION BEACONS SHALL BE RETROFITTED WITH LED INDICATIONS. THIS WORK SHALL BE INCIDENTAL TO THE PAY ITEM: UNINTERRUPTIBLE POWER SUPPLY

NOTE: THE END OF THE TRACER CABLE SHALL BE TIED TO A CABLE HOOK IN THE DOUBLE HANDHOLE CLOSEST TO THE CONTROLLER FOUNDATION.

**CONTROLLER SEQUENCE**

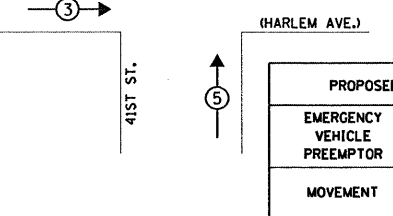
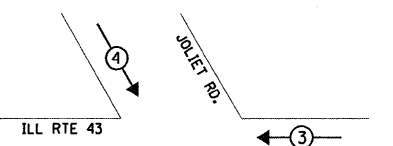


**LEGEND**  
 SINGLE ENTRY PHASE  
 DUAL ENTRY PHASE  
 OVERLAP  
 PEDESTRIAN PHASE  
 NUMBER REFERS TO ASSOCIATED PHASE

**PHASE DESIGNATION DIAGRAM**

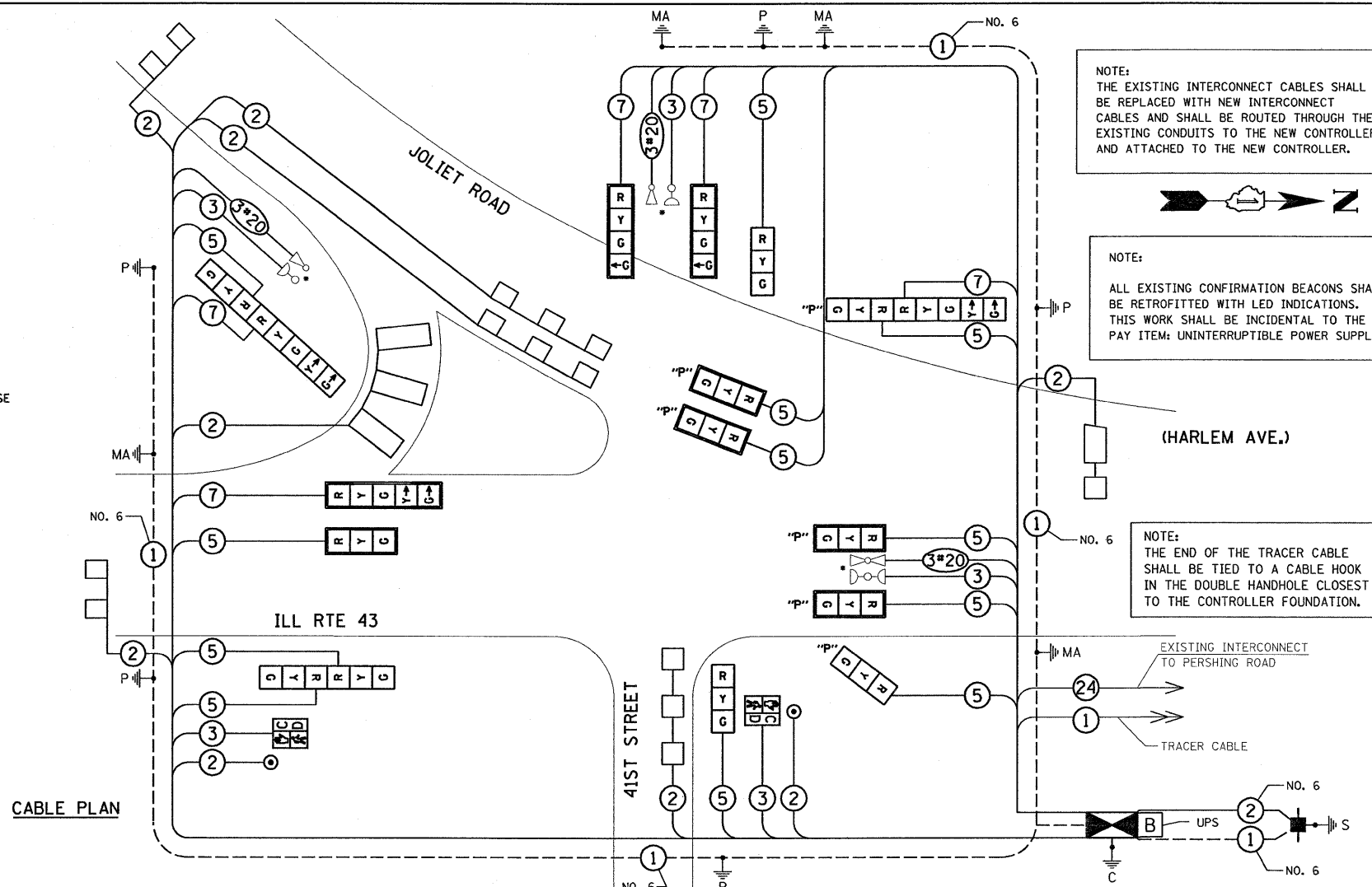
OVERLAP LETTER C = PERMISSIVE PHASE 6 + PROTECTED PHASE 4

**EMERGENCY VEHICLE PREEMPTION SEQUENCE**



PROPOSED EMERGENCY VEHICLE PREEMPTOR				
EMERGENCY VEHICLE PREEMPTOR	3	4	5	
MOVEMENT				

**CABLE PLAN**



**SCHEDULE OF INTERSECTION QUANTITIES**

QUANTITY	UNIT	ITEM	QUANTITY	UNIT	ITEM
78	SO FT	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH	618	FOOT	ELECTRIC CABLE IN CONDUIT, NO. 20 3C, TWISTED, SHIELDED
78	SO FT	SIDEWALK REMOVAL	3	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL 14 FT.
50	SO FT	DETECTABLE WARNINGS	2	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL 18 FT.
26	FOOT	COMBINATION CURB AND GUTTER REMOVAL	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 20 FT.
26	FOOT	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6. 24	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 26 FT.
24	SO FT	SIGN PANEL - TYPE 1	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 40 FT.
25	SO FT	SIGN PANEL - TYPE 2	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 48 FT.
56	FOOT	THERMOPLASTIC PAVEMENT MARKING - LINE 6"	20	FOOT	CONCRETE FOUNDATION, TYPE A
120	FOOT	THERMOPLASTIC PAVEMENT MARKING - LINE 24"	4	FOOT	CONCRETE FOUNDATION, TYPE C
672	FOOT	CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL	40.5	FOOT	CONCRETE FOUNDATION, TYPE E 30" DIAMETER
237	FOOT	CONDUIT IN TRENCH, 2 1/2" DIA., GALVANIZED STEEL	13	FOOT	CONCRETE FOUNDATION, TYPE E 36" DIAMETER
32	FOOT	CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL	2	EACH	DRILL EXISTING HANDHOLE
223	FOOT	CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL	1	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, MAST ARM MOUNTED
14	FOOT	CONDUIT PUSHED, 2 1/2" DIA., GALVANIZED STEEL	2	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, BRACKET MOUNTED
326	FOOT	CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL	2	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 4-SECTION, MAST ARM MOUNTED
8	EACH	HANDHOLE	1	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 5-SECTION, MAST ARM MOUNTED
1	EACH	HEAVY-DUTY HANDHOLE	1	EACH	SIGNAL HEAD, L.E.D., 2-FACE, 3-SECTION, BRACKET MOUNTED
1	EACH	DOUBLE HANDHOLE	1	EACH	SIGNAL HEAD, L.E.D., 2-FACE, 1-3 SECTION, 1-5 SECTION, BRACKET MOUNTED
1035	FOOT	TRENCH AND BACKFILL FOR ELECTRICAL WORK	4	EACH	OPTICALLY PROGRAMMED SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, MAST ARM MOUNTED
1	EACH	FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, SPECIAL	1	EACH	OPTICALLY PROGRAMMED SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, BRACKET MOUNTED
1	EACH	UNINTERRUPTIBLE POWER SUPPLY	1	EACH	COMBINATION SIGNAL HEAD, 2-FACE, 1-3 SECTION OPTICALLY PROGRAMMED, 1-5 SECTION, BRACKET MOUNTED
1	EACH	TRANSCEIVER - FIBER OPTIC	1	EACH	PEDESTRIAN SIGNAL HEAD, L.E.D., 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER
156	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C	2	EACH	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM
792	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C	7	EACH	INDUCTIVE LOOP DETECTOR
2568	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	692	FOOT	DETECTOR LOOP, TYPE I
1328	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C	2	EACH	PEDESTRIAN PUSH-BUTTON
2104	FOOT	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	3	EACH	RELOCATE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, DETECTOR UNIT
569	FOOT	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C	1	EACH	RELOCATE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, PHASING UNIT
849	FOOT	ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C	1	EACH	TEMPORARY TRAFFIC SIGNAL INSTALLATION
1	EACH	TEMPORARY TRAFFIC SIGNAL TIMINGS	1	EACH	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
1	EACH	SERVICE INSTALLATION, POLE MOUNT	11	EACH	REMOVE EXISTING HANDHOLE
			9	EACH	REMOVE EXISTING CONCRETE FOUNDATION

FOUNDATION (DEPTH)	FT. (m)	CABLE SLACK	FT. (m)	VERTICAL	FT. (m)
TYPE A - POST	4 (1.2)	HANDHOLE	6.5 (2.0)	ALL FOUNDATIONS	3.5 (1.0)
D - CONTROLLER	4 (1.2)	DOUBLE HANDHOLE	13 (4.0)	MAST ARM (L) POLE	20'-H-2'
E - M. ARM POLE		SIGNAL POST	2 (1.0)		6m+L-0.6m
		24" (600mm)	10 (3.0)	CONTROLLER CAB.	1 (0.5)
		30" (750mm)	15 (4.6)	FIBER OPTIC	13 (4.0)
				ELECTRIC SERVICE	1 (0.5)
				GROUND CABLE	1 (0.5)
				POST MOUNTED	6 (1.8)

\* PAID FOR BY MUNICIPALITY

NOTE: THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "EAGLE" TO MATCH THE EXISTING ADJACENT SYSTEM.

I.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO. LAMPS	WATTAGE INCAND.	WATTAGE LED	% OPERATION	
SIGNAL (RED)	17	17	0.50		144.50
(YELLOW)	17	25	0.25		106.25
(GREEN)	17	15	0.25		63.75
ARROW	8	12	0.10		9.60
PED. SIGNAL	2	25	1.00		50.00
CONTROLLER	1	100	1.00		100.00
ILLUM. SIGN			0.05		-
FLASHER			0.05		-
ENERGY COSTS TO:					TOTAL= 474.10
VILLAGE OF STICKNEY 6533 PERSHING ROAD STICKNEY, IL 60402					
ENERGY SUPPLY CONTACT: JUANITA VEIGELT PHONE: (815) 724-5657 COMPANY: COMMONWEALTH EDISON					

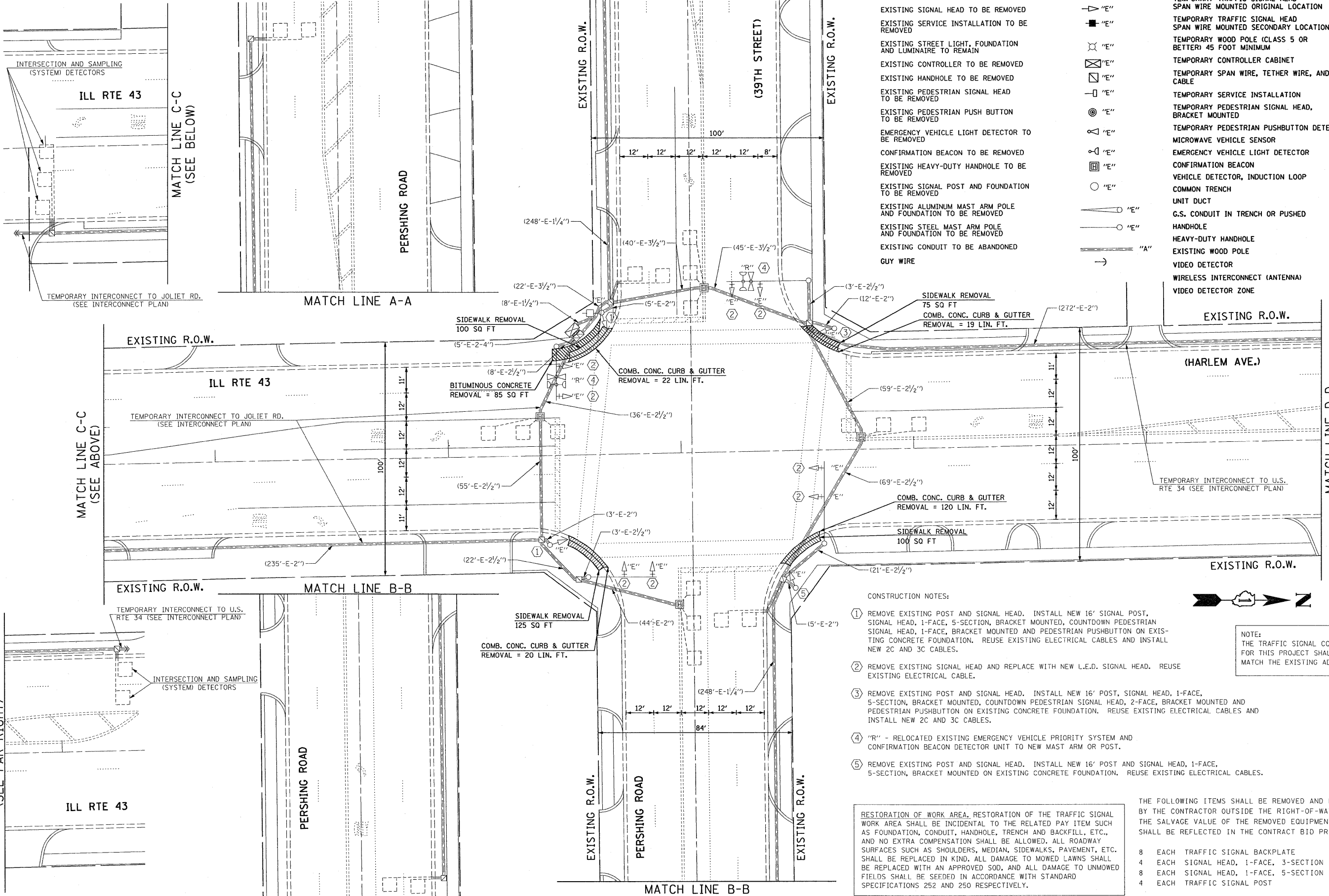
MATCH LINE A-A

EXISTING EQUIPMENT TO BE REMOVED LEGEND

TEMPORARY TRAFFIC SIGNAL LEGEND

- EXISTING SIGNAL HEAD TO BE REMOVED
- EXISTING SERVICE INSTALLATION TO BE REMOVED
- EXISTING STREET LIGHT, FOUNDATION AND LUMINAIRE TO REMAIN
- EXISTING CONTROLLER TO BE REMOVED
- EXISTING HANDHOLE TO BE REMOVED
- EXISTING PEDESTRIAN SIGNAL HEAD TO BE REMOVED
- EXISTING PEDESTRIAN PUSH BUTTON TO BE REMOVED
- EMERGENCY VEHICLE LIGHT DETECTOR TO BE REMOVED
- CONFIRMATION BEACON TO BE REMOVED
- EXISTING HEAVY-DUTY HANDHOLE TO BE REMOVED
- EXISTING SIGNAL POST AND FOUNDATION TO BE REMOVED
- EXISTING ALUMINUM MAST ARM POLE AND FOUNDATION TO BE REMOVED
- EXISTING STEEL MAST ARM POLE AND FOUNDATION TO BE REMOVED
- EXISTING CONDUIT TO BE ABANDONED
- GUY WIRE

- TEMPORARY TRAFFIC SIGNAL HEAD
- SPAN WIRE MOUNTED ORIGINAL LOCATION
- TEMPORARY TRAFFIC SIGNAL HEAD
- SPAN WIRE MOUNTED SECONDARY LOCATION
- TEMPORARY WOOD POLE (CLASS 5 OR BETTER) 45 FOOT MINIMUM
- TEMPORARY CONTROLLER CABINET
- TEMPORARY SPAN WIRE, TETHER WIRE, AND CABLE
- TEMPORARY SERVICE INSTALLATION
- TEMPORARY PEDESTRIAN SIGNAL HEAD, BRACKET MOUNTED
- TEMPORARY PEDESTRIAN PUSHBUTTON DETECTOR
- MICROWAVE VEHICLE SENSOR
- EMERGENCY VEHICLE LIGHT DETECTOR
- CONFIRMATION BEACON
- VEHICLE DETECTOR, INDUCTION LOOP
- COMMON TRENCH
- UNIT DUCT
- G.S. CONDUIT IN TRENCH OR PUSHED
- HANDHOLE
- HEAVY-DUTY HANDHOLE
- EXISTING WOOD POLE
- VIDEO DETECTOR
- WIRELESS INTERCONNECT (ANTENNA)
- VIDEO DETECTOR ZONE



CONSTRUCTION NOTES:

- 1 REMOVE EXISTING POST AND SIGNAL HEAD. INSTALL NEW 16' SIGNAL POST, SIGNAL HEAD, 1-FACE, 5-SECTION, BRACKET MOUNTED, COUNTDOWN PEDESTRIAN SIGNAL HEAD, 1-FACE, BRACKET MOUNTED AND PEDESTRIAN PUSHBUTTON ON EXISTING CONCRETE FOUNDATION. REUSE EXISTING ELECTRICAL CABLES AND INSTALL NEW 2C AND 3C CABLES.
- 2 REMOVE EXISTING SIGNAL HEAD AND REPLACE WITH NEW L.E.D. SIGNAL HEAD. REUSE EXISTING ELECTRICAL CABLE.
- 3 REMOVE EXISTING POST AND SIGNAL HEAD. INSTALL NEW 16' POST, SIGNAL HEAD, 1-FACE, 5-SECTION, BRACKET MOUNTED, COUNTDOWN PEDESTRIAN SIGNAL HEAD, 2-FACE, BRACKET MOUNTED AND PEDESTRIAN PUSHBUTTON ON EXISTING CONCRETE FOUNDATION. REUSE EXISTING ELECTRICAL CABLES AND INSTALL NEW 2C AND 3C CABLES.
- 4 "R" - RELOCATED EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM AND CONFIRMATION BEACON DETECTOR UNIT TO NEW MAST ARM OR POST.
- 5 REMOVE EXISTING POST AND SIGNAL HEAD. INSTALL NEW 16' POST AND SIGNAL HEAD, 1-FACE, 5-SECTION, BRACKET MOUNTED ON EXISTING CONCRETE FOUNDATION. REUSE EXISTING ELECTRICAL CABLES.

RESTORATION OF WORK AREA. RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCIDENTAL TO THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL, ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIAN, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.

NOTE: THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "EAGLE" TO MATCH THE EXISTING ADJACENT SYSTEM.

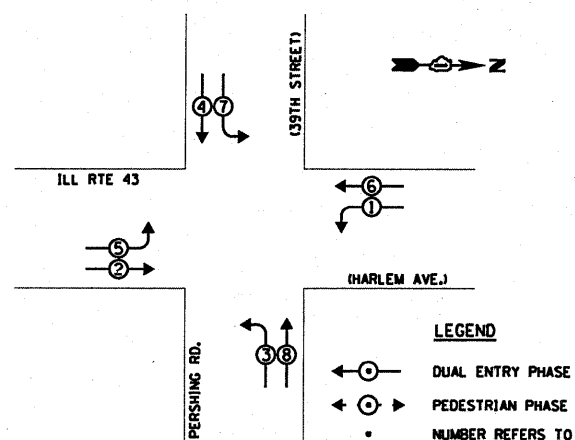
THE FOLLOWING ITEMS SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR OUTSIDE THE RIGHT-OF-WAY AT THEIR EXPENSE. THE SALVAGE VALUE OF THE REMOVED EQUIPMENT SHALL BE REFLECTED IN THE CONTRACT BID PRICE.

- 8 EACH TRAFFIC SIGNAL BACKPLATE
- 4 EACH SIGNAL HEAD, 1-FACE, 3-SECTION
- 8 EACH SIGNAL HEAD, 1-FACE, 5-SECTION
- 4 EACH TRAFFIC SIGNAL POST

FILE NAME =	USER NAME = kcanthaphixaybc	DESIGNED - TCM/BPR	REVISED - 09/08/2009 PER IDOT	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TEMPORARY TRAFFIC SIGNAL INSTALLATION AND REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT PLAN - ILL RTE 43 (HARLEM AVE.) AT PERSHING ROAD</b>			F.A.P. RTE. 348	SECTION 2009 078 TS	COUNTY COOK	TOTAL SHEETS 33	SHEET NO. 12
DRAWN - TCM/BPR	CHECKED - TCM	DATE - 07/02/2009	REVISED -		SCALE: 1"=20'	SHEET NO.	OF SHEETS	STA.	TO STA.	CONTRACT NO. 60115		
PLOT SCALE = #SCALESHORT#	PLOT DATE = 11/9/2009									FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT

10:36:17 11/09/2009

**CONTROLLER SEQUENCE**



**PHASE DESIGNATION DIAGRAM**

TEMPORARY INTERCONNECT - SEE TEMPORARY INTERCONNECT SCHEMATIC

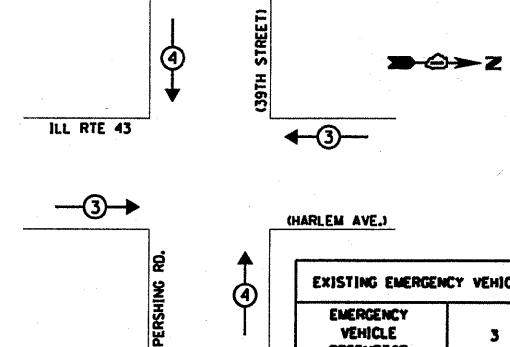
TO JOLIET ROAD TO THE SOUTH AND TO U.S. RTE 34 TO THE NORTH

INTERSECTION AND SAMPLING (SYSTEM) DETECTORS

TRACER CABLE

EXISTING INTERCONNECT TO JOLIET ROAD/41ST STREET

**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**

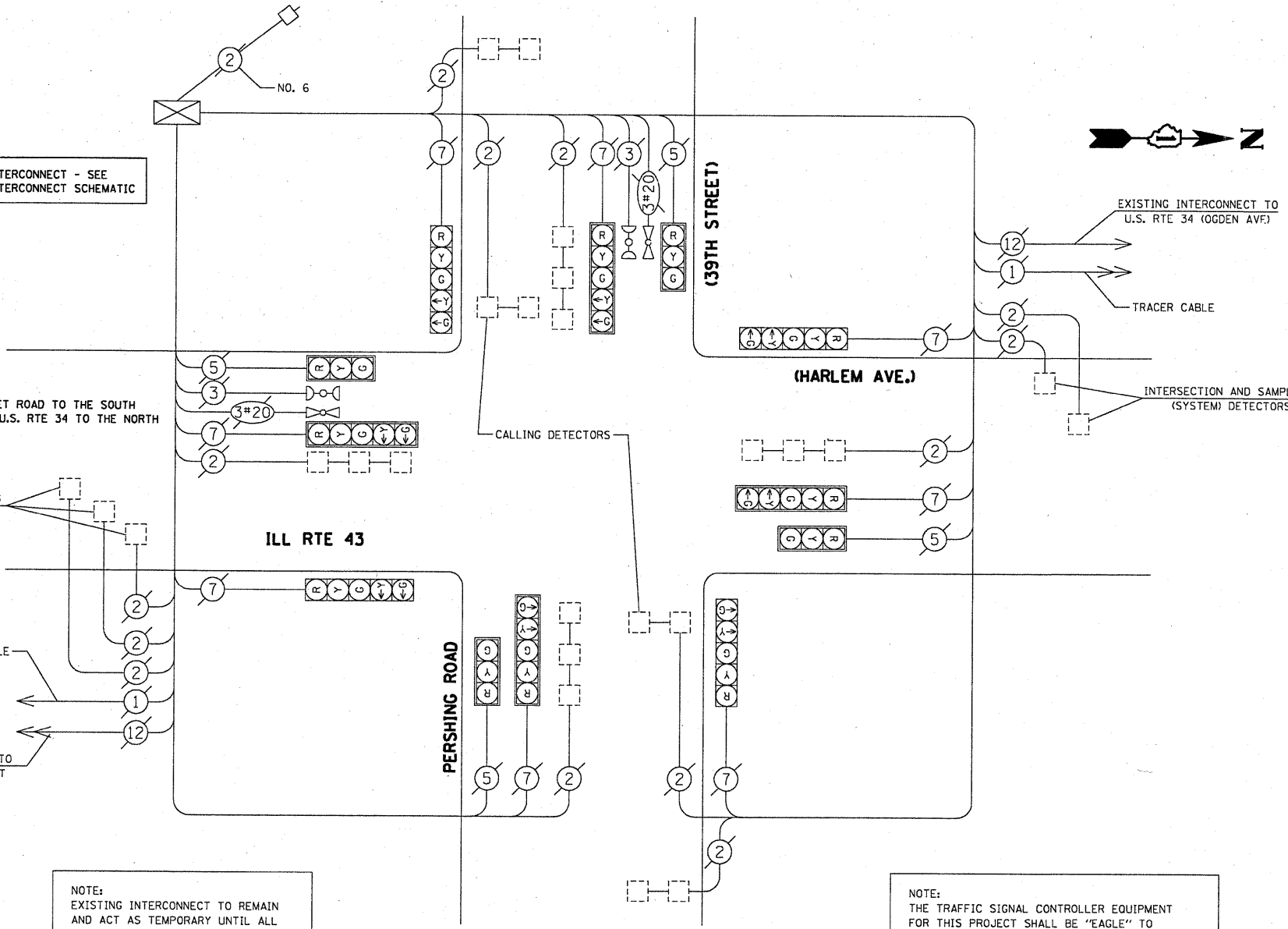


EXISTING EMERGENCY VEHICLE PREEMPTOR			
EMERGENCY VEHICLE PREEMPTOR	3	4	
MOVEMENT	←→	↑↓	

NOTE: EXISTING INTERCONNECT TO REMAIN AND ACT AS TEMPORARY UNTIL ALL PAY ITEMS ARE INSTALLED.

NOTE: THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "EAGLE" TO MATCH THE EXISTING ADJACENT SYSTEM.

**EXISTING CABLE PLAN**



**CABLE PLAN LEGEND**

- | PROPOSED | EXISTING |   |
|----------|----------|---|
| [Symbol] | [Symbol] | 8" (200mm) TRAFFIC SIGNAL SECTION   |
| [Symbol] | [Symbol] | 12" (300mm) TRAFFIC SIGNAL SECTION  |
| [Symbol] | [Symbol] | 12" (300mm) PEDESTRIAN SIGNAL SECTION   |
| [Symbol] | [Symbol] | 12" (300mm) PEDESTRIAN SIGNAL SECTION   |
| [Symbol] | [Symbol] | CONTROLLER CABINET SERVICE INSTALLATION   |
| [Symbol] | [Symbol] | TELEPHONE CONNECTION  |
| [Symbol] | [Symbol] | MAGNETIC DETECTOR   |
| [Symbol] | [Symbol] | PUSHBUTTON DETECTOR   |
| [Symbol] | [Symbol] | VEHICLE DETECTOR, INDUCTION LOOP  |
| [Symbol] | [Symbol] | 2 DENOTES NUMBER OF CONDUCTORS. ALL CABLE NO. 14 EXCEPT AS INDICATED. ALL LOOP DETECTOR CABLE TO BE SHIELDED. |
| [Symbol] | [Symbol] | SIGNAL FACE WITH BACKPLATE. "P" INDICATES PROGRAMMED HEAD   |
| [Symbol] | [Symbol] | RAILROAD CONTROL CABINET  |
| [Symbol] | [Symbol] | ILLUMINATED SIGN, FIBER OPTIC "NO LEFT TURN"  |
| [Symbol] | [Symbol] | ILLUMINATED SIGN, FIBER OPTIC "NO RIGHT TURN"   |
| [Symbol] | [Symbol] | GROUND ROD AT HANDHOLE, DOUBLE HANDHOLE, OR CONTROLLER  |
| [Symbol] | [Symbol] | GROUND ROD AT POST OR MAST ARM POLE   |
| [Symbol] | [Symbol] | GROUND ROD AT ELECTRIC SERVICE INSTALLATION   |
| [Symbol] | [Symbol] | GROUND CABLE IN CONDUIT NO. 6 SOLID COPPER (GREEN)  |
| [Symbol] | [Symbol] | FIBER OPTIC CABLE IN CONDUIT NO. 62.5/125 2-MM12F & SMI2F   |
| [Symbol] | [Symbol] | MICROWAVE VEHICLE SENSOR  |
| [Symbol] | [Symbol] | VIDEO DETECTOR  |
| [Symbol] | [Symbol] | CLOSED CIRCUIT TV   |
| [Symbol] | [Symbol] | EMERGENCY VEHICLE LIGHT DETECTOR  |
| [Symbol] | [Symbol] | CONFIRMATION BEACON   |
| [Symbol] | [Symbol] | UNINTERRUPTIBLE POWER SUPPLY  |
| [Symbol] | [Symbol] | PEDESTRIAN SIGNAL HEAD WITH COUNTDOWN TIMER   |

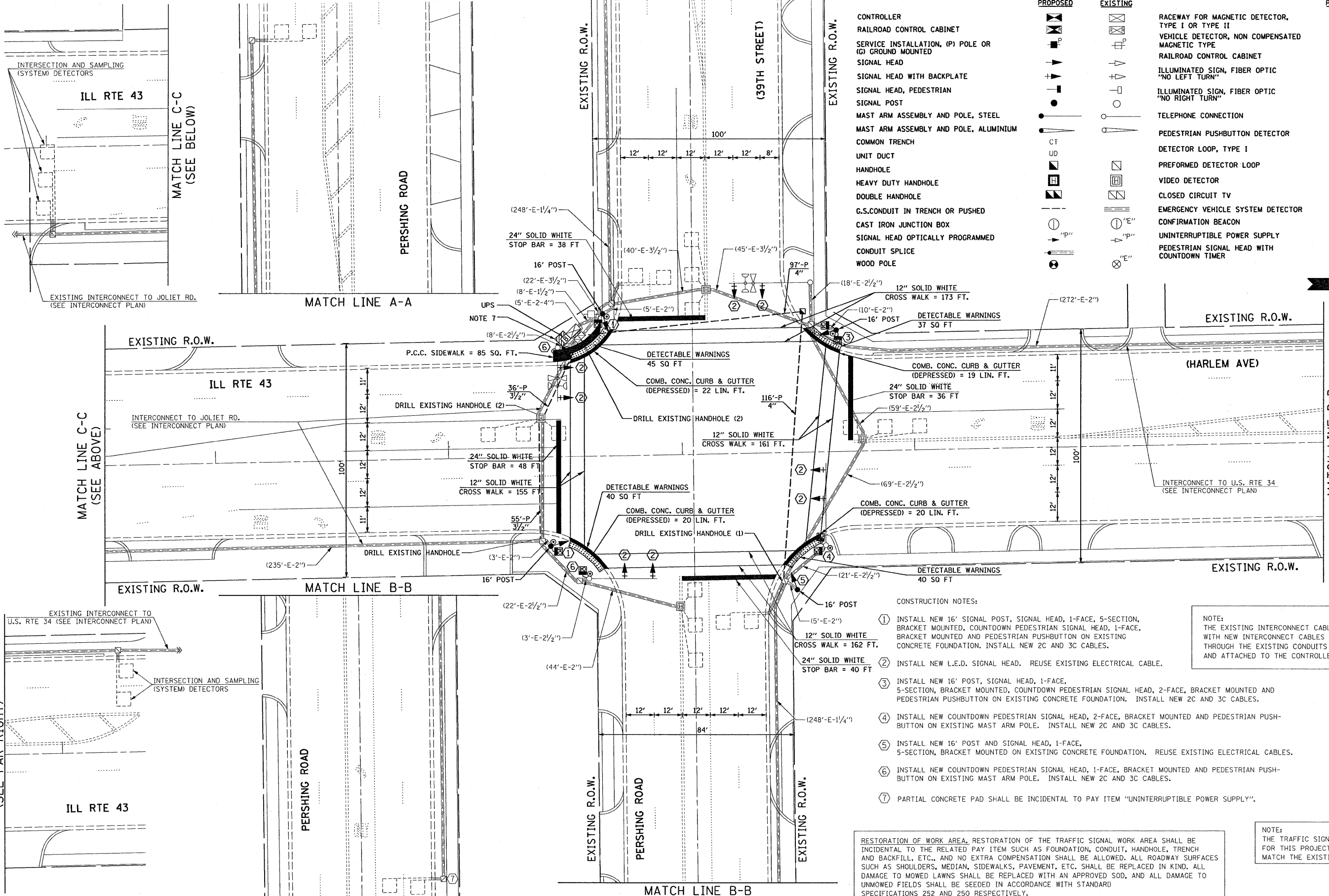
I.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO. LAMPS	WATTAGE (INCAND.)	LED	% OPERATION	
SIGNAL (RED)	12	135		0.50	810.00
(YELLOW)	12	135		0.25	405.00
(GREEN)	12	135		0.25	405.00
ARROW	16	135		0.10	216.00
PED. SIGNAL	-	90		1.00	-
CONTROLLER	1	100		1.00	100.00
ILLUM. SIGN	-	84		0.05	-
FLASHER	-			0.05	-
ENERGY COSTS TO:					TOTAL= 1936.00
VILLAGE OF STICKNEY 6533 PERSHING ROAD STICKNEY, IL 60402					
ENERGY SUPPLY CONTACT:	JUANITA VEIGELT				
PHONE:	(815) 724-5657				
COMPANY:	COMMONWEALTH EDISON				

FOUNDATION (DEPTH)	FT. (m)	CABLE SLACK	FT. (m)	VERTICAL	FT. (m)
TYPE A - POST	4 (1.2)	HANDHOLE	6.5 (2.0)	ALL FOUNDATIONS	3.5 (1.0)
D - CONTROLLER	4 (1.2)	DOUBLE HANDHOLE	13 (4.0)	MAST ARM (L) POLE	20'+L-2'
E - M. ARM POLE		SIGNAL POST	2 (1.0)		(6m+L-0.6m)±
24" (600mm)	10 (3.0)	CONTROLLER CAB.	1 (0.5)	BRACKET MOUNTED	13 (4.0)
30" (750mm)	15 (4.6)	FIBER OPTIC	13 (4.0)	PED. PUSHBUTTON	4 (1.2)
		ELECTRIC SERVICE	1 (0.5)	ELECTRIC SERVICE	13.5 (4.1)
		GROUND CABLE	1 (0.5)	SERVICE TO GROUND	13.5 (4.1)
				POST MOUNTED	6 (1.8)

MATCH LINE A-A

TRAFFIC SIGNAL LEGEND

PROPOSED	EXISTING	PROPOSED	EXISTING



- CONSTRUCTION NOTES:
- INSTALL NEW 16' SIGNAL POST, SIGNAL HEAD, 1-FACE, 5-SECTION, BRACKET MOUNTED, COUNTDOWN PEDESTRIAN SIGNAL HEAD, 1-FACE, BRACKET MOUNTED AND PEDESTRIAN PUSHBUTTON ON EXISTING CONCRETE FOUNDATION. INSTALL NEW 2C AND 3C CABLES.
  - INSTALL NEW L.E.D. SIGNAL HEAD. REUSE EXISTING ELECTRICAL CABLE.
  - INSTALL NEW 16' POST, SIGNAL HEAD, 1-FACE, 5-SECTION, BRACKET MOUNTED, COUNTDOWN PEDESTRIAN SIGNAL HEAD, 2-FACE, BRACKET MOUNTED AND PEDESTRIAN PUSHBUTTON ON EXISTING CONCRETE FOUNDATION. INSTALL NEW 2C AND 3C CABLES.
  - INSTALL NEW COUNTDOWN PEDESTRIAN SIGNAL HEAD, 2-FACE, BRACKET MOUNTED AND PEDESTRIAN PUSHBUTTON ON EXISTING MAST ARM POLE. INSTALL NEW 2C AND 3C CABLES.
  - INSTALL NEW 16' POST AND SIGNAL HEAD, 1-FACE, 5-SECTION, BRACKET MOUNTED ON EXISTING CONCRETE FOUNDATION. REUSE EXISTING ELECTRICAL CABLES.
  - INSTALL NEW COUNTDOWN PEDESTRIAN SIGNAL HEAD, 1-FACE, BRACKET MOUNTED AND PEDESTRIAN PUSHBUTTON ON EXISTING MAST ARM POLE. INSTALL NEW 2C AND 3C CABLES.
  - PARTIAL CONCRETE PAD SHALL BE INCIDENTAL TO PAY ITEM "UNINTERRUPTIBLE POWER SUPPLY".

NOTE:  
THE EXISTING INTERCONNECT CABLES SHALL BE REPLACED WITH NEW INTERCONNECT CABLES AND SHALL BE ROUTED THROUGH THE EXISTING CONDUITS TO THE CONTROLLER AND ATTACHED TO THE CONTROLLER.

RESTORATION OF WORK AREA, RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCIDENTAL TO THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL, ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIAN, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDING IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.

NOTE:  
THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "EAGLE" TO MATCH THE EXISTING ADJACENT SYSTEM.

FILE NAME =	USER NAME = kcanthephixaybc	DESIGNED - TCM/BPR	REVISED - 09/08/2009 PER IDOT
ar\pw_work\pvidot\kcanthephixaybc\d015009	NT090809-TS.dgn	DRAWN - TCM/BPR	REVISED -
	PLOT SCALE = #SCALESHORT#	CHECKED - TCM	REVISED -
	PLOT DATE = 11/6/2009	DATE - 07/02/2009	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

<b>PROPOSED TRAFFIC SIGNAL INSTALLATION PLAN</b>			
<b>- ILL RTE 43 (HARLEM AVE.) AT PERSHING ROAD</b>			
SCALE: 1"=20'	SHEET NO. OF SHEETS	STA. TO STA.	

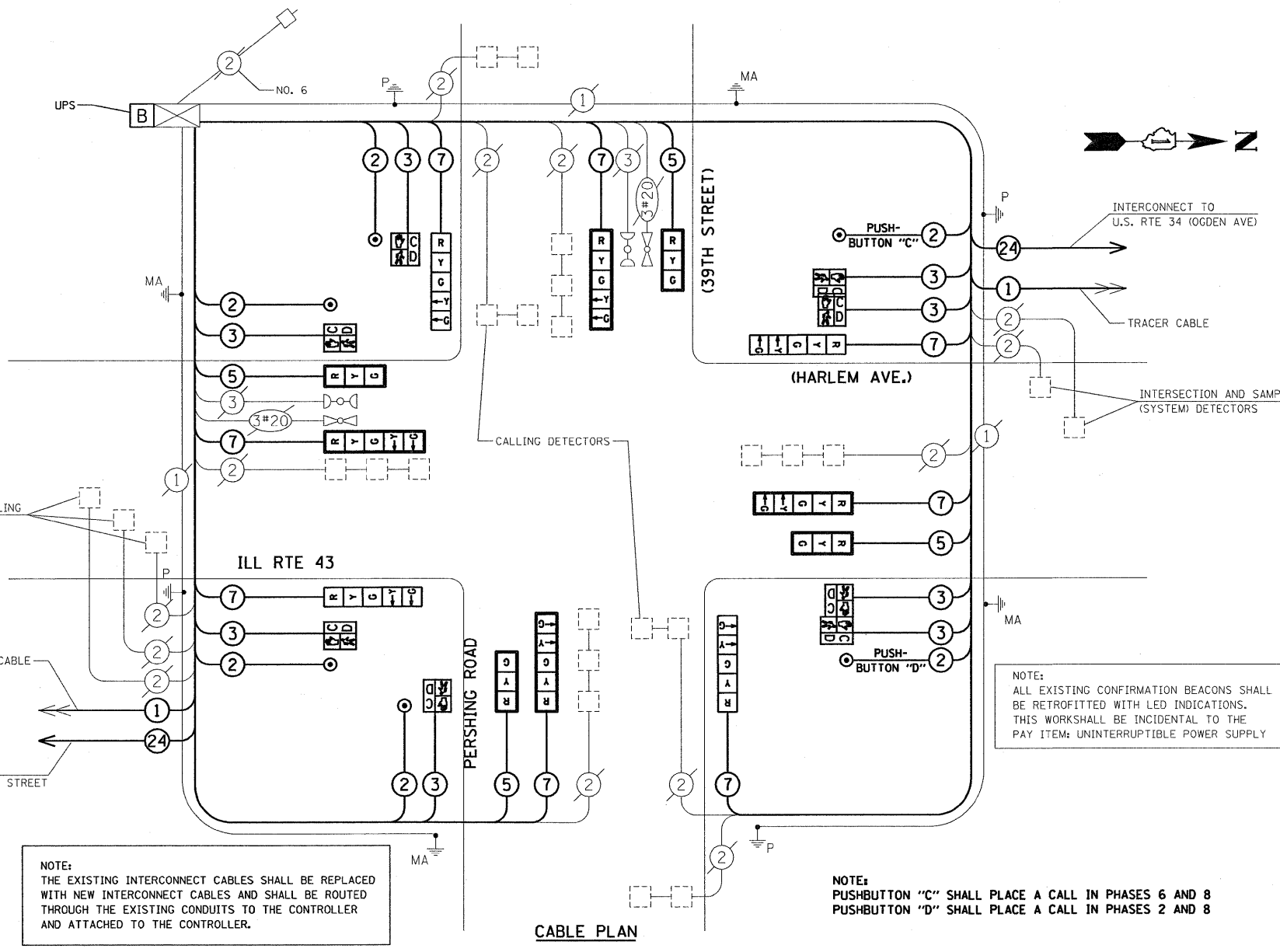
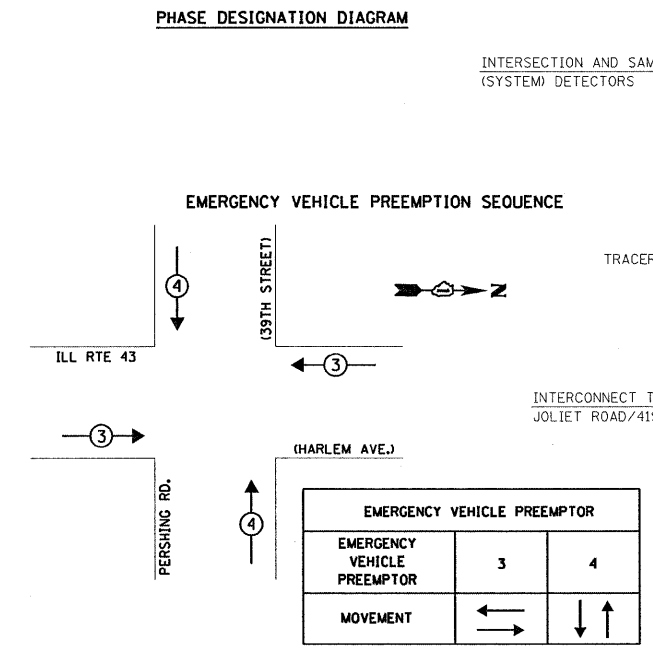
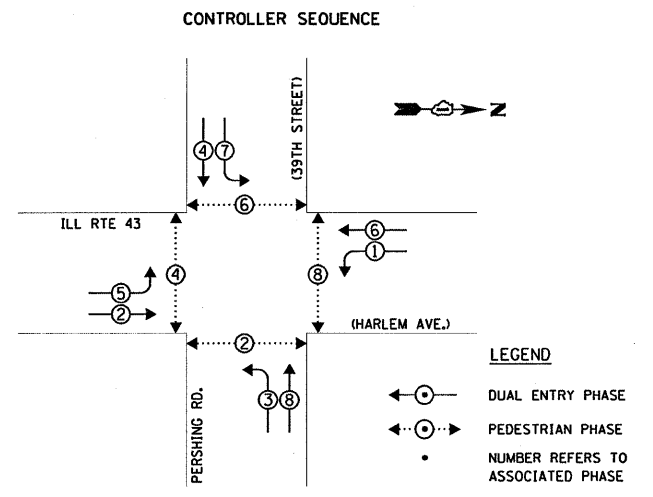
F.A.P. RTE. 348	SECTION 2009 078 TS	COUNTY COOK	TOTAL SHEETS 33	SHEET NO. 14
CONTRACT NO. 60115				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

0:37 11/06/2009

**CABLE PLAN LEGEND**

PROPOSED	EXISTING	DESCRIPTION
		8" (200mm) TRAFFIC SIGNAL SECTION
		12" (300mm) TRAFFIC SIGNAL SECTION
		12" (300mm) PEDESTRIAN SIGNAL SECTION
		12" (300mm) PEDESTRIAN SIGNAL SECTION
		CONTROLLER CABINET
		SERVICE INSTALLATION
		TELEPHONE CONNECTION
		MAGNETIC DETECTOR
		PUSHBUTTON DETECTOR
		VEHICLE DETECTOR, INDUCTION LOOP
		DENOTES NUMBER OF CONDUCTORS. ALL CABLE NO. 14 EXCEPT AS INDICATED. ALL LOOP DETECTOR CABLE TO BE SHIELDED.
		SIGNAL FACE WITH BACKPLATE. "P" INDICATES PROGRAMMED HEAD
		RAILROAD CONTROL CABINET
		ILLUMINATED SIGN, FIBER OPTIC "NO LEFT TURN"
		ILLUMINATED SIGN, FIBER OPTIC "NO RIGHT TURN"
		GROUND ROD AT HANDHOLE, DOUBLE HANDHOLE, OR CONTROLLER
		GROUND ROD AT POST OR MAST ARM POLE
		GROUND ROD AT ELECTRIC SERVICE INSTALLATION
		GROUND ROD IN CONDUIT NO. 6 SOLID COPPER (GREEN)
		FIBER OPTIC CABLE IN CONDUIT NO. 62.5/125 2-MM12F & SM12F
		MICROWAVE VEHICLE SENSOR
		VIDEO DETECTOR
		CLOSED CIRCUIT TV
		EMERGENCY VEHICLE LIGHT DETECTOR
		CONFIRMATION BEACON
		UNINTERRUPTIBLE POWER SUPPLY
		PEDESTRIAN SIGNAL HEAD WITH COUNTDOWN TIMER

NOTE: THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "EAGLE" TO MATCH THE EXISTING ADJACENT SYSTEM.



NOTE: THE EXISTING INTERCONNECT CABLES SHALL BE REPLACED WITH NEW INTERCONNECT CABLES AND SHALL BE ROUTED THROUGH THE EXISTING CONDUITS TO THE CONTROLLER AND ATTACHED TO THE CONTROLLER.

NOTE: PUSHBUTTON "C" SHALL PLACE A CALL IN PHASES 6 AND 8. PUSHBUTTON "D" SHALL PLACE A CALL IN PHASES 2 AND 8.

**SCHEDULE OF INTERSECTION QUANTITIES**

QUANTITY	UNIT	ITEM	QUANTITY	UNIT	ITEM
400	SO FT	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH	4	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL 16 FT.
400	SO.FT.	SIDEWALK REMOVAL	6	EACH	DRILL EXISTING HANDHOLE
162	SO FT	DETECTABLE WARNINGS	4	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, MAST ARM MOUNTED
81	FOOT	COMBINATION CURB AND GUTTER REMOVAL	4	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 5-SECTION, BRACKET MOUNTED
81	FOOT	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24	4	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 5-SECTION, MAST ARM MOUNTED
85	SO.FT.	BITUMINOUS CONCRETE REMOVAL	4	EACH	PEDESTRIAN SIGNAL HEAD, L.E.D., 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER
624	FOOT	THERMOPLASTIC PAVEMENT MARKING - LINE 6"	2	EACH	PEDESTRIAN SIGNAL HEAD, L.E.D., 2-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER
161	FOOT	THERMOPLASTIC PAVEMENT MARKING - LINE 24"	8	EACH	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM
213	FOOT	CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL	6	EACH	PEDESTRIAN PUSHBUTTON
91	FOOT	CONDUIT PUSHED, 3 1/2" DIA., GALVANIZED STEEL	1	EACH	MODIFY EXISTING CONTROLLER
1	EACH	HANDHOLE	1	EACH	REMOVE ELECTRIC CABLE FROM CONDUIT
1	EACH	UNINTERRUPTIBLE POWER SUPPLY	1	EACH	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
1	EACH	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	2	EACH	FRAME AND GRATE TO BE REMOVED AND REPLACED WITH TYPE 1 FRAME
2199	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C	3393	FOOT	REMOVE ELECTRIC CABLE FROM CONDUIT
1935	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C	1	EACH	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
994	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	2	EACH	FRAME AND GRATE TO BE REMOVED AND REPLACED WITH TYPE 1 FRAME
1831	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C			

I.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO. LAMPS	WATTAGE INCAND.	LED	% OPERATION	
SIGNAL (RED)	12		17	0.50	102.00
(YELLOW)	12		25	0.25	75.00
(GREEN)	12		15	0.25	45.00
ARROW	16		12	0.10	19.20
PED. SIGNAL	8		25	1.00	200.00
CONTROLLER	1		100	1.00	100.00
ILLUM. SIGN	-		-	0.05	-
FLASHER	-		-	0.05	-
ENERGY COSTS TO: VILLAGE OF STICKNEY, 6533 PERSHING ROAD, STICKNEY, IL 60402					TOTAL = 541.20
ENERGY SUPPLY CONTACT: JUANITA VEIGELT, (815) 724-5657, COMMONWEALTH EDISON					

FOUNDATION (DEPTH)	FT. (m)	CABLE SLACK	FT. (m)	VERTICAL	FT. (m)
TYPE A - POST	4 (1.2)	HANDHOLE	6.5 (2.0)	ALL FOUNDATIONS	3.5 (1.0)
D - CONTROLLER	4 (1.2)	DOUBLE HANDHOLE	13 (4.0)	MAST ARM (L) POLE	20'+L-2=
E - M. ARM POLE	2 (0.6)	SIGNAL POST	2 (0.6)	(6m+L-0.6m)=	
24" (600mm)	10 (3.0)	CONTROLLER CAB.	1 (0.5)	BRACKET MOUNTED	13 (4.0)
30" (750mm)	15 (4.6)	FIBER OPTIC	13 (4.0)	PED. PUSHBUTTON	4 (1.2)
		ELECTRIC SERVICE	1 (0.5)	ELECTRIC SERVICE	13.5 (4.1)
		GROUND CABLE	1 (0.5)	SERVICE TO GROUND	13.5 (4.1)
				POST MOUNTED	6 (1.8)

**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**

SCHEDULE OF QUANTITIES, CABLE PLAN, PHASE DESIGNATION DIAGRAM AND EMERGENCY VEHICLE PREEMPTION SEQUENCE				F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
ILL RTE 43 (HARLEM AVE.) AT PERSHING ROAD				348	2009 078 TS	COOK	33	15
SCALE: NTS				SHEET NO.	OF SHEETS	STA.	TO STA.	FED. ROAD DIST. NO.
						ILLINOIS	FED. AID PROJECT	CONTRACT NO. 60115

**NOTES FOR TEMPORARY TRAFFIC SIGNALS**

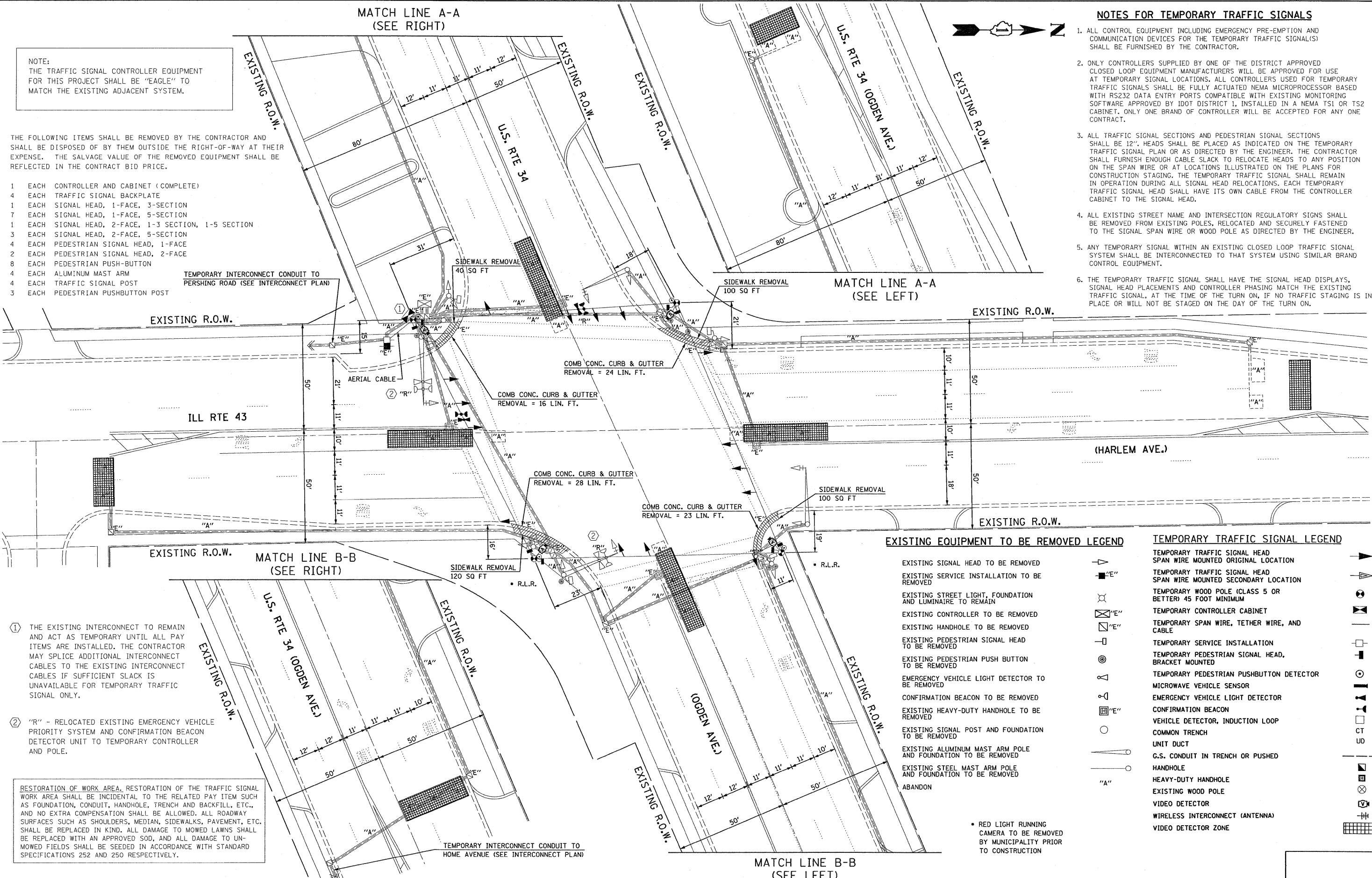
1. ALL CONTROL EQUIPMENT INCLUDING EMERGENCY PRE-EMPTION AND COMMUNICATION DEVICES FOR THE TEMPORARY TRAFFIC SIGNAL(S) SHALL BE FURNISHED BY THE CONTRACTOR.
2. ONLY CONTROLLERS SUPPLIED BY ONE OF THE DISTRICT APPROVED CLOSED LOOP EQUIPMENT MANUFACTURERS WILL BE APPROVED FOR USE AT TEMPORARY SIGNAL LOCATIONS. ALL CONTROLLERS USED FOR TEMPORARY TRAFFIC SIGNALS SHALL BE FULLY ACTUATED NEMA MICROPROCESSOR BASED WITH RS232 DATA ENTRY PORTS COMPATIBLE WITH EXISTING MONITORING SOFTWARE APPROVED BY IDOT DISTRICT 1. INSTALLED IN A NEMA TS1 OR TS2 CABINET. ONLY ONE BRAND OF CONTROLLER WILL BE ACCEPTED FOR ANY ONE CONTRACT.
3. ALL TRAFFIC SIGNAL SECTIONS AND PEDESTRIAN SIGNAL SECTIONS SHALL BE 12". HEADS SHALL BE PLACED AS INDICATED ON THE TEMPORARY TRAFFIC SIGNAL PLAN OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH ENOUGH CABLE SLACK TO LOCATE HEADS TO ANY POSITION ON THE SPAN WIRE OR AT LOCATIONS ILLUSTRATED ON THE PLANS FOR CONSTRUCTION STAGING. THE TEMPORARY TRAFFIC SIGNAL SHALL REMAIN IN OPERATION DURING ALL SIGNAL HEAD RELOCATIONS. EACH TEMPORARY TRAFFIC SIGNAL HEAD SHALL HAVE ITS OWN CABLE FROM THE CONTROLLER CABINET TO THE SIGNAL HEAD.
4. ALL EXISTING STREET NAME AND INTERSECTION REGULATORY SIGNS SHALL BE REMOVED FROM EXISTING POLES, RELOCATED AND SECURELY FASTENED TO THE SIGNAL SPAN WIRE OR WOOD POLE AS DIRECTED BY THE ENGINEER.
5. ANY TEMPORARY SIGNAL WITHIN AN EXISTING CLOSED LOOP TRAFFIC SIGNAL SYSTEM SHALL BE INTERCONNECTED TO THAT SYSTEM USING SIMILAR BRAND CONTROL EQUIPMENT.
6. THE TEMPORARY TRAFFIC SIGNAL SHALL HAVE THE SIGNAL HEAD DISPLAYS, SIGNAL HEAD PLACEMENTS AND CONTROLLER PHASING MATCH THE EXISTING TRAFFIC SIGNAL, AT THE TIME OF THE TURN ON, IF NO TRAFFIC STAGING IS IN PLACE OR WILL NOT BE STAGED ON THE DAY OF THE TURN ON.

NOTE:  
THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "EAGLE" TO MATCH THE EXISTING ADJACENT SYSTEM.

THE FOLLOWING ITEMS SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE DISPOSED OF BY THEM OUTSIDE THE RIGHT-OF-WAY AT THEIR EXPENSE. THE SALVAGE VALUE OF THE REMOVED EQUIPMENT SHALL BE REFLECTED IN THE CONTRACT BID PRICE.

- 1 EACH CONTROLLER AND CABINET (COMPLETE)
- 4 EACH TRAFFIC SIGNAL BACKPLATE
- 1 EACH SIGNAL HEAD, 1-FACE, 3-SECTION
- 7 EACH SIGNAL HEAD, 1-FACE, 5-SECTION
- 1 EACH SIGNAL HEAD, 2-FACE, 1-3 SECTION, 1-5 SECTION
- 3 EACH SIGNAL HEAD, 2-FACE, 5-SECTION
- 4 EACH PEDESTRIAN SIGNAL HEAD, 1-FACE
- 2 EACH PEDESTRIAN SIGNAL HEAD, 2-FACE
- 8 EACH PEDESTRIAN PUSH-BUTTON
- 4 EACH ALUMINUM MAST ARM
- 4 EACH TRAFFIC SIGNAL POST
- 3 EACH PEDESTRIAN PUSHBUTTON POST

TEMPORARY INTERCONNECT CONDUIT TO PERSHING ROAD (SEE INTERCONNECT PLAN)



- 1 THE EXISTING INTERCONNECT TO REMAIN AND ACT AS TEMPORARY UNTIL ALL PAY ITEMS ARE INSTALLED. THE CONTRACTOR MAY SPLICE ADDITIONAL INTERCONNECT CABLES TO THE EXISTING INTERCONNECT CABLES IF SUFFICIENT SLACK IS UNAVAILABLE FOR TEMPORARY TRAFFIC SIGNAL ONLY.
- 2 "R" - RELOCATED EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM AND CONFIRMATION BEACON DETECTOR UNIT TO TEMPORARY CONTROLLER AND POLE.

RESTORATION OF WORK AREA. RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCIDENTAL TO THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL, ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIAN, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UN-MOWED FIELDS SHALL BE SEED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.

**EXISTING EQUIPMENT TO BE REMOVED LEGEND**

- EXISTING SIGNAL HEAD TO BE REMOVED
- EXISTING SERVICE INSTALLATION TO BE REMOVED
- EXISTING STREET LIGHT, FOUNDATION AND LUMINAIRE TO REMAIN
- EXISTING CONTROLLER TO BE REMOVED
- EXISTING HANDHOLE TO BE REMOVED
- EXISTING PEDESTRIAN SIGNAL HEAD TO BE REMOVED
- EXISTING PEDESTRIAN PUSH BUTTON TO BE REMOVED
- EMERGENCY VEHICLE LIGHT DETECTOR TO BE REMOVED
- CONFIRMATION BEACON TO BE REMOVED
- EXISTING HEAVY-DUTY HANDHOLE TO BE REMOVED
- EXISTING SIGNAL POST AND FOUNDATION TO BE REMOVED
- EXISTING ALUMINUM MAST ARM POLE AND FOUNDATION TO BE REMOVED
- EXISTING STEEL MAST ARM POLE AND FOUNDATION TO BE REMOVED
- ABANDON

**TEMPORARY TRAFFIC SIGNAL LEGEND**

- TEMPORARY TRAFFIC SIGNAL HEAD SPAN WIRE MOUNTED ORIGINAL LOCATION
- TEMPORARY TRAFFIC SIGNAL HEAD SPAN WIRE MOUNTED SECONDARY LOCATION
- TEMPORARY WOOD POLE (CLASS 5 OR BETTER) 45 FOOT MINIMUM
- TEMPORARY CONTROLLER CABINET
- TEMPORARY SPAN WIRE, TETHER WIRE, AND CABLE
- TEMPORARY SERVICE INSTALLATION
- TEMPORARY PEDESTRIAN SIGNAL HEAD, BRACKET MOUNTED
- TEMPORARY PEDESTRIAN PUSHBUTTON DETECTOR
- MICROWAVE VEHICLE SENSOR
- EMERGENCY VEHICLE LIGHT DETECTOR
- CONFIRMATION BEACON
- VEHICLE DETECTOR, INDUCTION LOOP
- COMMON TRENCH
- UNIT DUCT
- G.S. CONDUIT IN TRENCH OR PUSHED
- HANDHOLE
- HEAVY-DUTY HANDHOLE
- EXISTING WOOD POLE
- VIDEO DETECTOR
- WIRELESS INTERCONNECT (ANTENNA)
- VIDEO DETECTOR ZONE

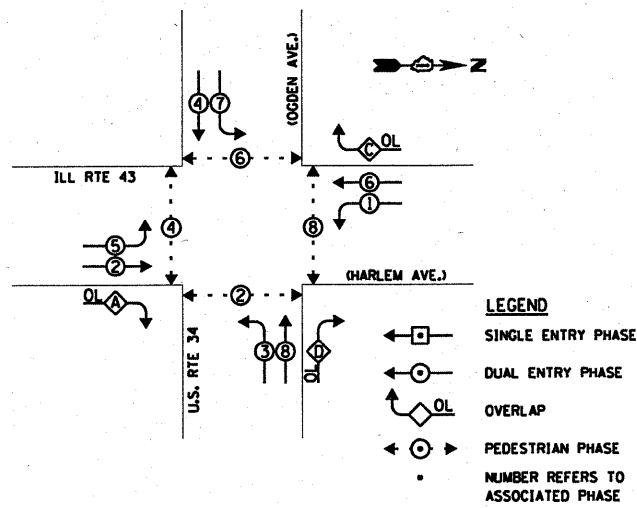
• RED LIGHT RUNNING CAMERA TO BE REMOVED BY MUNICIPALITY PRIOR TO CONSTRUCTION

FILE NAME =	USER NAME = konthaphixaybc	DESIGNED - TCM/BPR	REVISED - 09/08/2009 PER IDOT	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TEMPORARY TRAFFIC SIGNAL INSTALLATION AND REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT PLAN -ILL RTE 43 (HARLEM AVE.) AT U.S. RTE 34 (OGDEN AVE.)</b>			F.A.P. RTE. 348	SECTION 2009 078 TS	COUNTY COOK	TOTAL SHEETS 33	SHEET NO. 16
CONTRACT NO. 60115	SCALE: 1"=20'	CHECKED - TCM	REVISED -		SHEET NO. OF SHEETS STA. TO STA.	FED. ROAD DIST. NO. ILLINOIS	FED. AID PROJECT					

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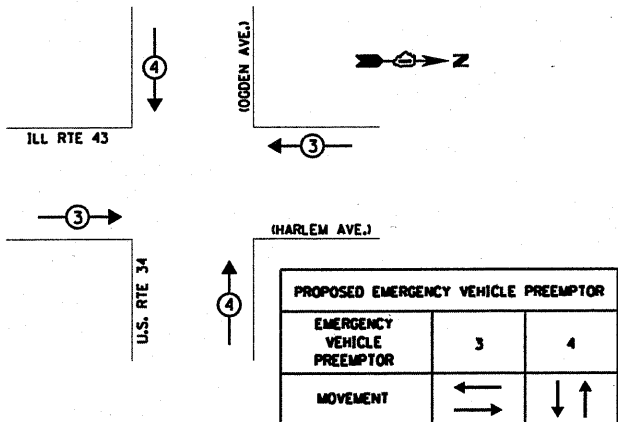
**TEMPORARY CONTROLLER SEQUENCE**



**TEMPORARY PHASE DESIGNATION DIAGRAM**

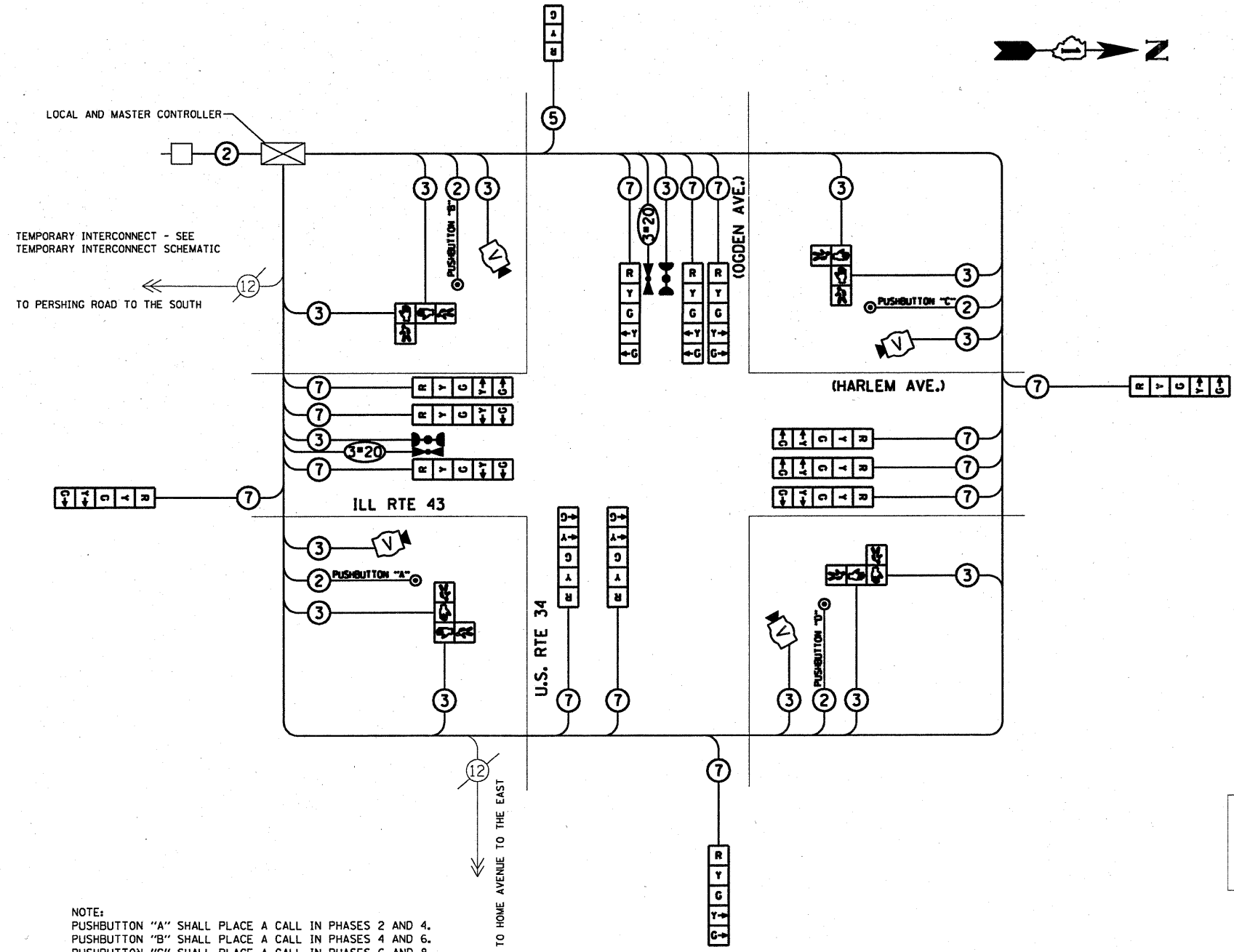
OVERLAP LETTER	PERMISSIVE PHASE	PROTECTED PHASE
A =	2 +	3
C =	6 +	7
D =	8 +	1

**EMERGENCY VEHICLE PREEMPTION SEQUENCE**



**TEMPORARY CABLE DIAGRAM LEGEND**

- R TEMPORARY TRAFFIC SIGNAL SECTION OR PEDESTRIAN SIGNAL SECTION, 12" (300 mm)
- X TEMPORARY CONTROLLER CABINET
- TEMPORARY SERVICE INSTALLATION
- ⑤ INDICATES NUMBER OF CONDUCTORS IN CABLE. ALL CONDUCTORS TO BE NUMBERED 14 AWG WIRE UNLESS OTHERWISE NOTED.
- EMERGENCY VEHICLE LIGHT DETECTOR
- CONFIRMATION BEACON
- PEDESTRIAN PUSHBUTTON DETECTOR
- VEHICLE DETECTOR, INDUCTION LOOP
- 12" (300 mm) PEDESTRIAN SIGNAL SECTION
- MICROWAVE VEHICLE SENSOR
- VIDEO DETECTOR



**TEMPORARY CABLE PLAN**

NOTE:  
THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "EAGLE" TO MATCH THE EXISTING ADJACENT SYSTEM.

NOTE:  
PUSHBUTTON "A" SHALL PLACE A CALL IN PHASES 2 AND 4.  
PUSHBUTTON "B" SHALL PLACE A CALL IN PHASES 4 AND 6.  
PUSHBUTTON "C" SHALL PLACE A CALL IN PHASES 6 AND 8.  
PUSHBUTTON "D" SHALL PLACE A CALL IN PHASES 2 AND 8.

I.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO. LAMPS	WATTAGE INCAND.	WATTAGE LED	% OPERATION	
SIGNAL (RED)	15	17	0.50	102.0	
(YELLOW)	15	25	0.25	75.0	
(GREEN)	15	15	0.25	45.0	
ARROW	28	12	0.10	14.4	
PED. SIGNAL	8	25	1.00	200.0	
CONTROLLER	1	100	1.00	100.0	
ILLUM. SIGN			0.05		
FLASHER			0.05		
ENERGY COSTS TO:					TOTAL = 536.4
CITY OF BERWYN 6700 26TH STREET BERWYN, IL 60402					
ENERGY SUPPLY CONTACT: JUANITA VEIGELT PHONE: (815) 724-5657 COMPANY: COMMONWEALTH EDISON					

MATCH LINE A-A  
(SEE RIGHT)

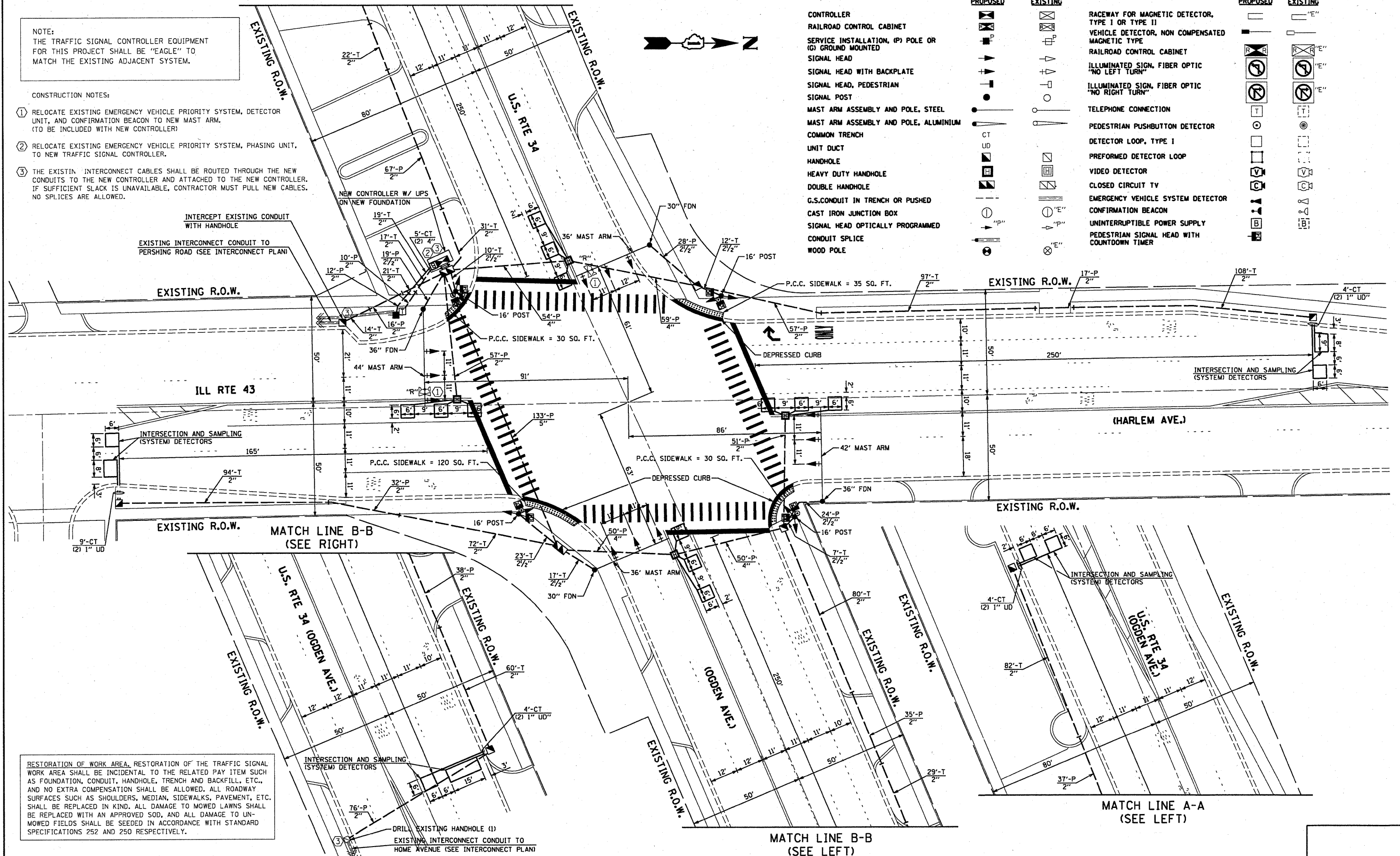
NOTE:  
THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "EAGLE" TO MATCH THE EXISTING ADJACENT SYSTEM.

CONSTRUCTION NOTES:

- RELOCATE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, DETECTOR UNIT, AND CONFIRMATION BEACON TO NEW MAST ARM. (TO BE INCLUDED WITH NEW CONTROLLER)
- RELOCATE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, PHASING UNIT, TO NEW TRAFFIC SIGNAL CONTROLLER.
- THE EXISTING INTERCONNECT CABLES SHALL BE ROUTED THROUGH THE NEW CONDUITS TO THE NEW CONTROLLER AND ATTACHED TO THE NEW CONTROLLER. IF SUFFICIENT SLACK IS UNAVAILABLE, CONTRACTOR MUST PULL NEW CABLES. NO SPLICES ARE ALLOWED.

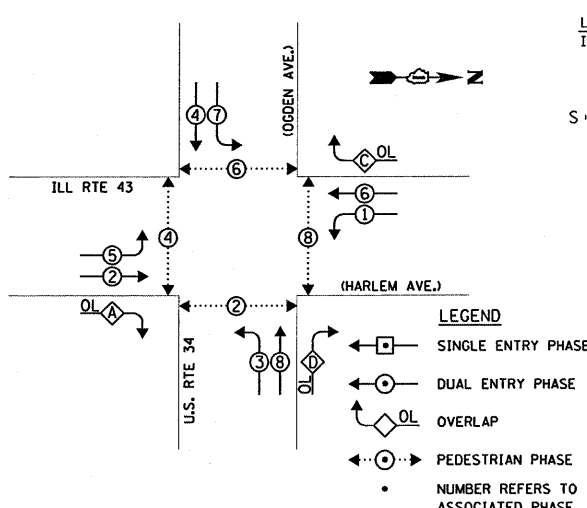
TRAFFIC SIGNAL LEGEND

	PROPOSED	EXISTING		PROPOSED	EXISTING
CONTROLLER			RACEWAY FOR MAGNETIC DETECTOR, TYPE I OR TYPE II		
RAILROAD CONTROL CABINET			VEHICLE DETECTOR, NON COMPENSATED MAGNETIC TYPE		
SERVICE INSTALLATION, (P) POLE OR (G) GROUND MOUNTED			RAILROAD CONTROL CABINET		
SIGNAL HEAD			ILLUMINATED SIGN, FIBER OPTIC "NO LEFT TURN"		
SIGNAL HEAD WITH BACKPLATE			ILLUMINATED SIGN, FIBER OPTIC "NO RIGHT TURN"		
SIGNAL HEAD, PEDESTRIAN			TELEPHONE CONNECTION		
SIGNAL POST			PEDESTRIAN PUSHBUTTON DETECTOR		
MAST ARM ASSEMBLY AND POLE, STEEL			DETECTOR LOOP, TYPE I		
MAST ARM ASSEMBLY AND POLE, ALUMINIUM			PERFORMED DETECTOR LOOP		
COMMON TRENCH			VIDEO DETECTOR		
UNIT DUCT			CLOSED CIRCUIT TV		
HANDHOLE			EMERGENCY VEHICLE SYSTEM DETECTOR		
HEAVY DUTY HANDHOLE			CONFIRMATION BEACON		
DOUBLE HANDHOLE			UNINTERRUPTIBLE POWER SUPPLY		
G.S.CONDUIT IN TRENCH OR PUSHED			PEDESTRIAN SIGNAL HEAD WITH COUNTDOWN TIMER		
CAST IRON JUNCTION BOX					
SIGNAL HEAD OPTICALLY PROGRAMMED					
CONDUIT SPLICE					
WOOD POLE					

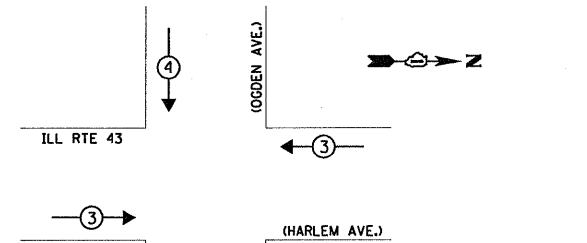


RESTORATION OF WORK AREA, RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCIDENTAL TO THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL, ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIAN, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.

**CONTROLLER SEQUENCE**



**EMERGENCY VEHICLE PREEMPTION SEQUENCE**



PROPOSED EMERGENCY VEHICLE PREEMPTOR	
EMERGENCY VEHICLE PREEMPTOR	3 4
MOVEMENT	← → ↓ ↑

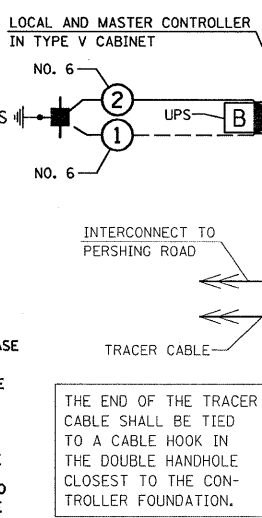
**I.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. LAMPS	WATTAGE INCAND.	WATTAGE LED	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	20		17	0.50	170.00
(YELLOW)	20		25	0.25	125.00
(GREEN)	20		15	0.25	75.00
ARROW	26		12	0.10	31.20
PED. SIGNAL	8		25	1.00	200.00
CONTROLLER	1		100	1.00	100.00
ILLUM. SIGN				0.05	-
FLASHER				0.05	-
ENERGY COSTS TO:				TOTAL=	701.20

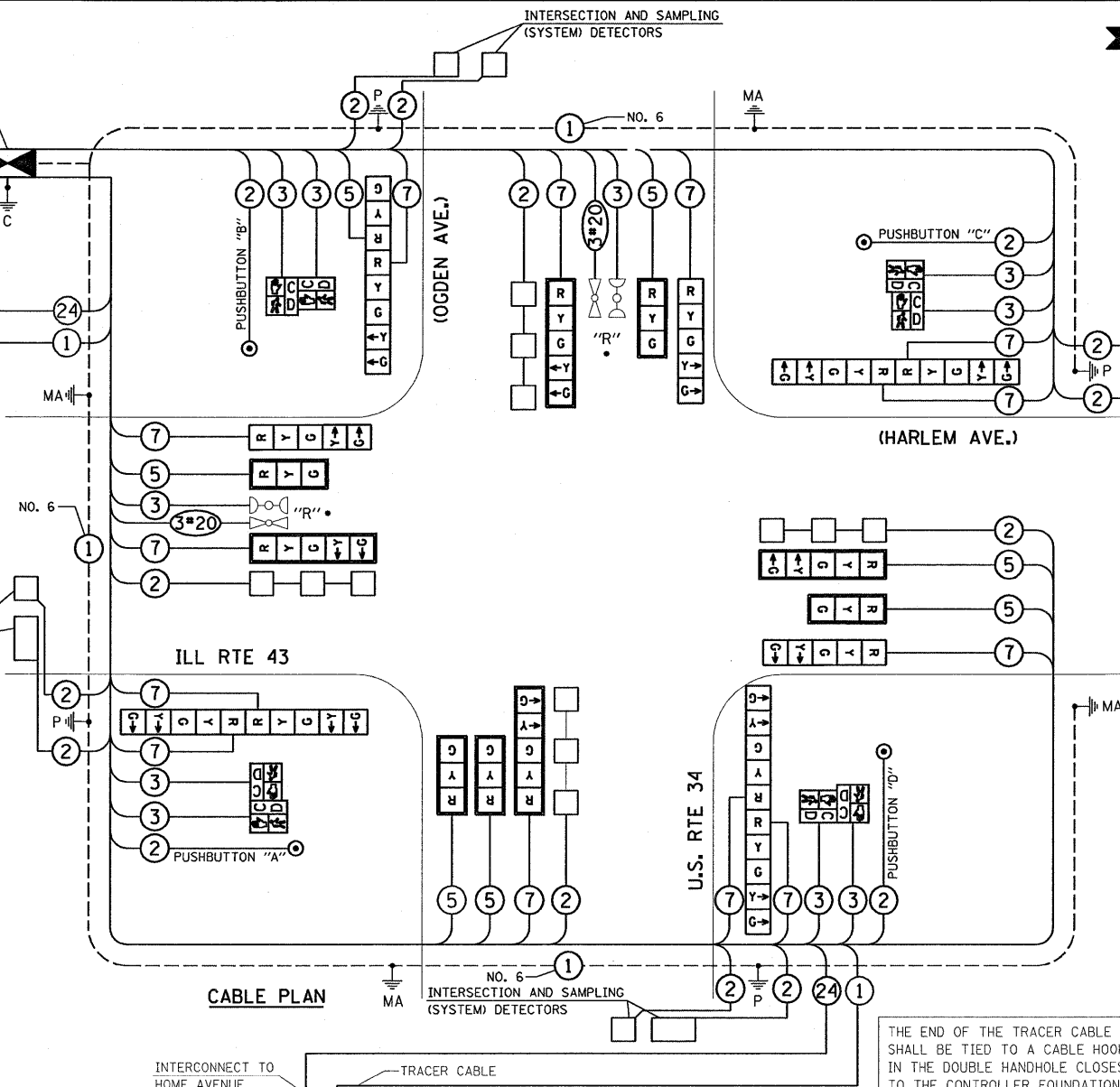
ENERGY SUPPLY CONTACT: JUANITA VEIGELT  
 PHONE: (815) 724-5657  
 COMPANY: COMMONWEALTH EDISON

FOUNDATION (DEPTH)	FT. (m)	CABLE SLACK	FT. (m)	VERTICAL	FT. (m)
TYPE A - POST	4 (1.2)	HANDHOLE	6.5 (2.0)	ALL FOUNDATIONS	3.5 (1.0)
D - CONTROLLER	4 (1.2)	DOUBLE HANDHOLE	13 (4.0)	MAST ARM (L) POLE	20'-L-2"
E - M. ARM POLE		SIGNAL POST	2 (1.0)		(6m+L-0.6m)=
	24" (600mm)	CONTROLLER CAB.	1 (0.5)	BRACKET MOUNTED	13 (4.0)
	30" (750mm)	FIBER OPTIC	13 (4.0)	PED. PUSHBUTTON	4 (1.2)
		ELECTRIC SERVICE	1 (0.5)	ELECTRIC SERVICE	13.5 (4.1)
		GROUND CABLE	1 (0.5)	SERVICE TO GROUND	13.5 (4.1)
				POST MOUNTED	6 (1.8)

FILE NAME = USER NAME = kanthaphixaybo  
 DESIGNED - TCM/BPR  
 DRAWN - TCM/BPR  
 CHECKED - TCM  
 DATE - 07/02/2009



THE END OF THE TRACER CABLE SHALL BE TIED TO A CABLE HOOK IN THE DOUBLE HANDHOLE CLOSEST TO THE CONTROLLER FOUNDATION.



**SCHEDULE OF INTERSECTION QUANTITIES**

QUANTITY	UNIT	ITEM
360	SO FT	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH
360	SO FT	SIDEWALK REMOVAL
162	SO FT	DETECTABLE WARNINGS
43	FOOT	COMBINATION CURB AND GUTTER REMOVAL
43	FOOT	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24
50	SO FT	SIGN PANEL - TYPE 2
36.4	SO FT	THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS
700	FOOT	THERMOPLASTIC PAVEMENT MARKING - LINE 6"
182	FOOT	THERMOPLASTIC PAVEMENT MARKING - LINE 24"
746	FOOT	CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL
69	FOOT	CONDUIT IN TRENCH, 1 1/2" DIA., GALVANIZED STEEL
10	FOOT	CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL
411	FOOT	CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL
71	FOOT	CONDUIT PUSHED, 2 1/2" DIA., GALVANIZED STEEL
213	FOOT	CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL
133	FOOT	CONDUIT PUSHED, 5" DIA., GALVANIZED STEEL
6	EACH	HANDHOLE
4	EACH	HEAVY-DUTY HANDHOLE
2	EACH	DOUBLE HANDHOLE
820	FOOT	TRENCH AND BACKFILL FOR ELECTRICAL WORK
1	EACH	FULL-ACTUATED CONTROLLER AND TYPE V CABINET, SPECIAL
1	EACH	UNINTERRUPTIBLE POWER SUPPLY
1	EACH	TRANSCEIVER - FIBER OPTIC
699	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C
1036	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C
984	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C
2281	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C
3931	FOOT	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR

QUANTITY	UNIT	ITEM
48	FOOT	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C
539	FOOT	ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C
301	FOOT	ELECTRIC CABLE IN CONDUIT, NO. 20 3C, TWISTED, SHIELDED
4	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL 16 FT.
2	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 36 FT.
1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 42 FT.
1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 44 FT.
16	FOOT	CONCRETE FOUNDATION, TYPE A
4	FOOT	CONCRETE FOUNDATION, TYPE C
27	FOOT	CONCRETE FOUNDATION, TYPE E 30" DIAMETER
26	FOOT	CONCRETE FOUNDATION, TYPE E 36" DIAMETER
1	EACH	DRILL EXISTING HANDHOLE
6	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, MAST ARM MOUNTED
6	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 5-SECTION, MAST ARM MOUNTED
3	EACH	SIGNAL HEAD, L.E.D., 2-FACE, 5-SECTION, BRACKET MOUNTED
1	EACH	SIGNAL HEAD, L.E.D., 2-FACE, 1-3 SECTION, 1-5 SECTION, BRACKET MOUNTED
4	EACH	PEDESTRIAN SIGNAL HEAD, L.E.D., 2-FACE, BRACKET MOUNTED W/ COUNTDOWN TIMER
12	EACH	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM
12	EACH	INDUCTIVE LOOP DETECTOR
691	FOOT	DETECTOR LOOP, TYPE I
4	EACH	PEDESTRIAN PUSH-BUTTON
1	EACH	TEMPORARY TRAFFIC SIGNAL INSTALLATION
1	EACH	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
1	EACH	REMOVE EXISTING HANDHOLE
1	EACH	REMOVE EXISTING CONCRETE FOUNDATION
1	EACH	TEMPORARY TRAFFIC SIGNAL TIMINGS
1	EACH	SERVICE INSTALLATION, POLE MOUNT
2	EACH	RELOCATE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, DETECTOR UNIT
1	EACH	RELOCATE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, PHASING UNIT
3	EACH	FRAME AND GRATE TO BE REMOVED AND REPLACE WITH TYPE 1 FRAME

\* 100 PERCENT PAYMENT BY MUNICIPALITY

**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**

**SCHEDULE OF QUANTITIES, CABLE PLAN, PHASE DESIGNATION DIAGRAM AND EMERGENCY VEHICLE PREEMPTION SEQUENCE ILL RTE 43 (HARLEM AVE.) AT U.S. RTE 34 (OGDEN AVE.)**

SCALE: NTS SHEET NO. OF SHEETS STA. TO STA.

**CABLE PLAN LEGEND**

PROPOSED	EXISTING	DESCRIPTION
G	G	8" (200mm) TRAFFIC SIGNAL SECTION
R	R	12" (300mm) TRAFFIC SIGNAL SECTION
W	W	12" (300mm) PEDESTRIAN SIGNAL SECTION
W	W	12" (300mm) PEDESTRIAN SIGNAL SECTION
CB	CB	CONTROLLER CABINET
SI	SI	SERVICE INSTALLATION
TC	TC	TELEPHONE CONNECTION
MD	MD	MAGNETIC DETECTOR
PD	PD	PUSHBUTTON DETECTOR
VD	VD	VEHICLE DETECTOR, INDUCTIVE LOOP
2	2	DENOTES NUMBER OF CONDUCTORS. ALL CABLE NO. 14 EXCEPT AS INDICATED. ALL LOOP DETECTOR CABLE TO BE SHIELDED.
R Y G	R Y G	SIGNAL FACE WITH BACKPLATE. "P" INDICATES PROGRAMMED HEAD
"E"	"E"	RAILROAD CONTROL CABINET
"E"	"E"	ILLUMINATED SIGN, FIBER OPTIC "NO LEFT TURN"
"E"	"E"	ILLUMINATED SIGN, FIBER OPTIC "NO RIGHT TURN"
H/C	H/C	GROUND ROD AT HANDHOLE, DOUBLE HANDHOLE, OR CONTROLLER
P	P	GROUND ROD AT POST OR MAST ARM POLE
S	S	GROUND ROD AT ELECTRIC SERVICE INSTALLATION
1	1	GROUND CABLE IN CONDUIT NO. 6 SOLID COPPER (GREEN)
24	24	FIBER OPTIC CABLE IN CONDUIT NO.62.5/125 2-MM12F & SM12F
MC	MC	MICROWAVE VEHICLE SENSOR
VD	VD	VIDEO DETECTOR
CC	CC	CLOSED CIRCUIT TV
EV	EV	EMERGENCY VEHICLE LIGHT DETECTOR
CB	CB	CONFIRMATION BEACON
UPS	UPS	UNINTERRUPTIBLE POWER SUPPLY
PS	PS	PEDESTRIAN SIGNAL HEAD WITH COUNTDOWN TIMER

NOTE: PUSHBUTTON "A" SHALL PLACE A CALL IN PHASES 2 AND 4. PUSHBUTTON "B" SHALL PLACE A CALL IN PHASES 4 AND 6. PUSHBUTTON "C" SHALL PLACE A CALL IN PHASES 6 AND 8. PUSHBUTTON "D" SHALL PLACE A CALL IN PHASES 2 AND 8.

NOTE: THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "EAGLE" TO MATCH THE EXISTING ADJACENT SYSTEM.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
348	2009 078 TS	COOK	33	19
CONTRACT NO. 60115				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

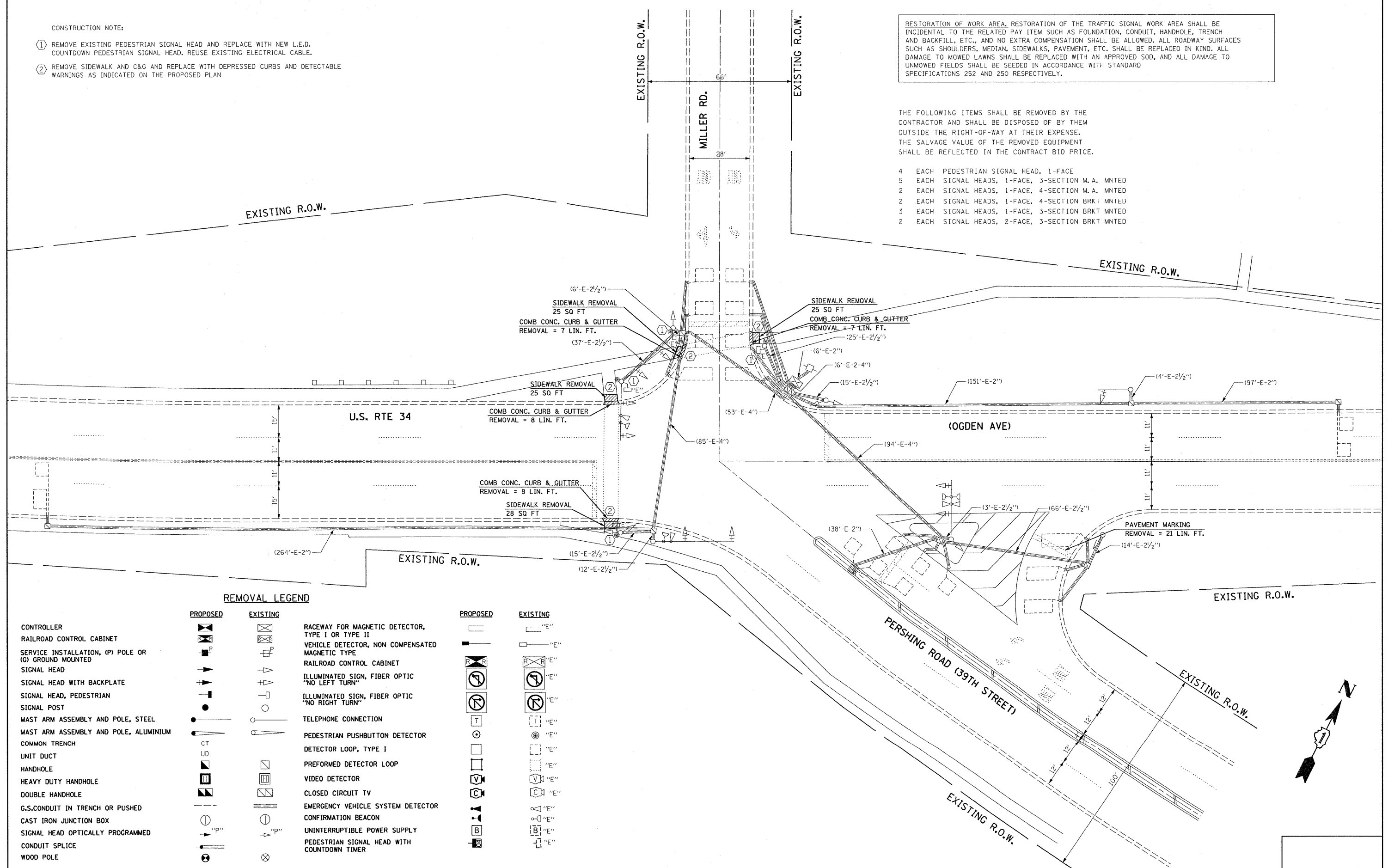
CONSTRUCTION NOTE:

- ① REMOVE EXISTING PEDESTRIAN SIGNAL HEAD AND REPLACE WITH NEW L.E.D. COUNTDOWN PEDESTRIAN SIGNAL HEAD. REUSE EXISTING ELECTRICAL CABLE.
- ② REMOVE SIDEWALK AND C&G AND REPLACE WITH DEPRESSED CURBS AND DETECTABLE WARNINGS AS INDICATED ON THE PROPOSED PLAN

RESTORATION OF WORK AREA. RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCIDENTAL TO THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL, ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIAN, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDING IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.

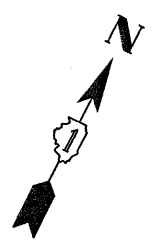
THE FOLLOWING ITEMS SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE DISPOSED OF BY THEM OUTSIDE THE RIGHT-OF-WAY AT THEIR EXPENSE. THE SALVAGE VALUE OF THE REMOVED EQUIPMENT SHALL BE REFLECTED IN THE CONTRACT BID PRICE.

- 4 EACH PEDESTRIAN SIGNAL HEAD, 1-FACE
- 5 EACH SIGNAL HEADS, 1-FACE, 3-SECTION M.A. MNTD
- 2 EACH SIGNAL HEADS, 1-FACE, 4-SECTION M.A. MNTD
- 2 EACH SIGNAL HEADS, 1-FACE, 4-SECTION BRKT MNTD
- 3 EACH SIGNAL HEADS, 1-FACE, 3-SECTION BRKT MNTD
- 2 EACH SIGNAL HEADS, 2-FACE, 3-SECTION BRKT MNTD



REMOVAL LEGEND

	PROPOSED	EXISTING		PROPOSED	EXISTING
CONTROLLER	[Symbol]	[Symbol]	RACEWAY FOR MAGNETIC DETECTOR, TYPE I OR TYPE II	[Symbol]	[Symbol]
RAILROAD CONTROL CABINET	[Symbol]	[Symbol]	VEHICLE DETECTOR, NON COMPENSATED MAGNETIC TYPE	[Symbol]	[Symbol]
SERVICE INSTALLATION, (P) POLE OR (G) GROUND MOUNTED	[Symbol]	[Symbol]	RAILROAD CONTROL CABINET	[Symbol]	[Symbol]
SIGNAL HEAD	[Symbol]	[Symbol]	ILLUMINATED SIGN, FIBER OPTIC "NO LEFT TURN"	[Symbol]	[Symbol]
SIGNAL HEAD WITH BACKPLATE	[Symbol]	[Symbol]	ILLUMINATED SIGN, FIBER OPTIC "NO RIGHT TURN"	[Symbol]	[Symbol]
SIGNAL HEAD, PEDESTRIAN	[Symbol]	[Symbol]	TELEPHONE CONNECTION	[Symbol]	[Symbol]
SIGNAL POST	[Symbol]	[Symbol]	PEDESTRIAN PUSHBUTTON DETECTOR	[Symbol]	[Symbol]
MAST ARM ASSEMBLY AND POLE, STEEL	[Symbol]	[Symbol]	DETECTOR LOOP, TYPE I	[Symbol]	[Symbol]
MAST ARM ASSEMBLY AND POLE, ALUMINIUM	[Symbol]	[Symbol]	PREFORMED DETECTOR LOOP	[Symbol]	[Symbol]
COMMON TRENCH	[Symbol]	[Symbol]	VIDEO DETECTOR	[Symbol]	[Symbol]
UNIT DUCT	[Symbol]	[Symbol]	CLOSED CIRCUIT TV	[Symbol]	[Symbol]
HANDHOLE	[Symbol]	[Symbol]	EMERGENCY VEHICLE SYSTEM DETECTOR	[Symbol]	[Symbol]
HEAVY DUTY HANDHOLE	[Symbol]	[Symbol]	CONFIRMATION BEACON	[Symbol]	[Symbol]
DOUBLE HANDHOLE	[Symbol]	[Symbol]	UNINTERRUPTIBLE POWER SUPPLY	[Symbol]	[Symbol]
G.S.CONDUIT IN TRENCH OR PUSHED	[Symbol]	[Symbol]	PEDESTRIAN SIGNAL HEAD WITH COUNTDOWN TIMER	[Symbol]	[Symbol]
CAST IRON JUNCTION BOX	[Symbol]	[Symbol]			
SIGNAL HEAD OPTICALLY PROGRAMMED	[Symbol]	[Symbol]			
CONDUIT SPLICE	[Symbol]	[Symbol]			
WOOD POLE	[Symbol]	[Symbol]			



10:36:40 11/09/2009

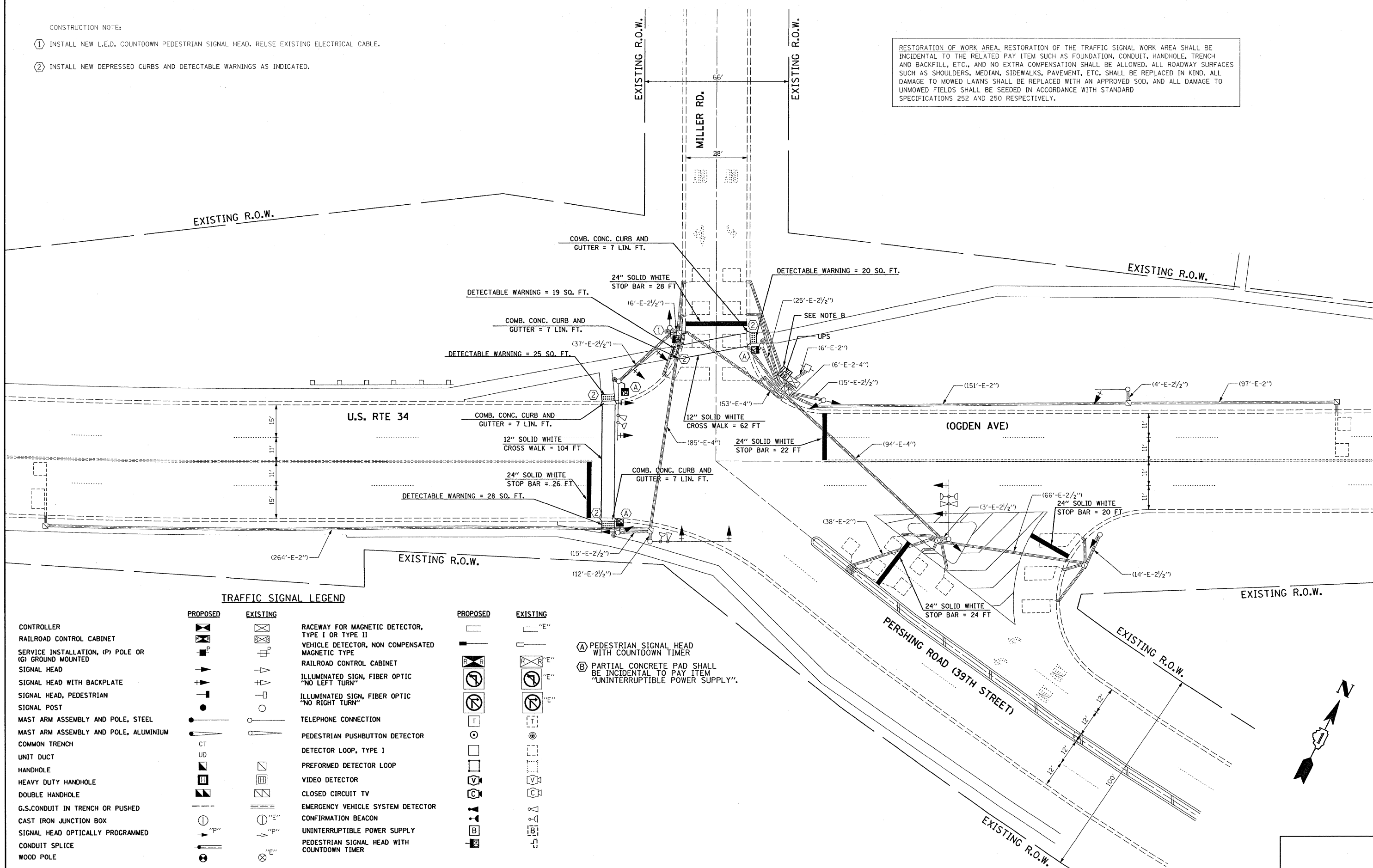
FILE NAME =	USER NAME = kenthaphixaybc	DESIGNED - TCM/BPR	REVISED - 09/08/2009 PER IDOT	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>		<b>TEMPORARY TRAFFIC SIGNAL INSTALLATION &amp; REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT PLAN U.S. RTE 34 (OGDEN AVE.) AT PERSHING ROAD (39TH STREET)/MILLER ROAD</b>		F.A.P. RTE. 348	SECTION 2009 078 TS	COUNTY COOK	TOTAL SHEETS 33	SHEET NO. 20
CONTRACT NO. 60115	SCALE: 1"=20'	SHEET NO. OF SHEETS	STA. TO STA.					FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



CONSTRUCTION NOTE:

- ① INSTALL NEW L.E.D. COUNTDOWN PEDESTRIAN SIGNAL HEAD, REUSE EXISTING ELECTRICAL CABLE.
- ② INSTALL NEW DEPRESSED CURBS AND DETECTABLE WARNINGS AS INDICATED.

RESTORATION OF WORK AREA, RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCIDENTAL TO THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL, ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIAN, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.



TRAFFIC SIGNAL LEGEND

	PROPOSED	EXISTING		PROPOSED	EXISTING
CONTROLLER	[Symbol]	[Symbol]	RACEWAY FOR MAGNETIC DETECTOR, TYPE I OR TYPE II	[Symbol]	[Symbol]
RAILROAD CONTROL CABINET	[Symbol]	[Symbol]	VEHICLE DETECTOR, NON COMPENSATED MAGNETIC TYPE	[Symbol]	[Symbol]
SERVICE INSTALLATION, (P) POLE OR (G) GROUND MOUNTED	[Symbol]	[Symbol]	RAILROAD CONTROL CABINET	[Symbol]	[Symbol]
SIGNAL HEAD	[Symbol]	[Symbol]	ILLUMINATED SIGN, FIBER OPTIC "NO LEFT TURN"	[Symbol]	[Symbol]
SIGNAL HEAD WITH BACKPLATE	[Symbol]	[Symbol]	ILLUMINATED SIGN, FIBER OPTIC "NO RIGHT TURN"	[Symbol]	[Symbol]
SIGNAL HEAD, PEDESTRIAN	[Symbol]	[Symbol]	TELEPHONE CONNECTION	[Symbol]	[Symbol]
SIGNAL POST	[Symbol]	[Symbol]	PEDESTRIAN PUSHBUTTON DETECTOR	[Symbol]	[Symbol]
MAST ARM ASSEMBLY AND POLE, STEEL	[Symbol]	[Symbol]	DETECTOR LOOP, TYPE I	[Symbol]	[Symbol]
MAST ARM ASSEMBLY AND POLE, ALUMINIUM	[Symbol]	[Symbol]	PREFORMED DETECTOR LOOP	[Symbol]	[Symbol]
COMMON TRENCH	[Symbol]	[Symbol]	VIDEO DETECTOR	[Symbol]	[Symbol]
UNIT DUCT	[Symbol]	[Symbol]	CLOSED CIRCUIT TV	[Symbol]	[Symbol]
HANDHOLE	[Symbol]	[Symbol]	EMERGENCY VEHICLE SYSTEM DETECTOR	[Symbol]	[Symbol]
HEAVY DUTY HANDHOLE	[Symbol]	[Symbol]	CONFIRMATION BEACON	[Symbol]	[Symbol]
DOUBLE HANDHOLE	[Symbol]	[Symbol]	UNINTERRUPTIBLE POWER SUPPLY	[Symbol]	[Symbol]
G.S.CONDUIT IN TRENCH OR PUSHED	[Symbol]	[Symbol]	PEDESTRIAN SIGNAL HEAD WITH COUNTDOWN TIMER	[Symbol]	[Symbol]
CAST IRON JUNCTION BOX	[Symbol]	[Symbol]			
SIGNAL HEAD OPTICALLY PROGRAMMED	[Symbol]	[Symbol]			
CONDUIT SPLICE	[Symbol]	[Symbol]			
WOOD POLE	[Symbol]	[Symbol]			

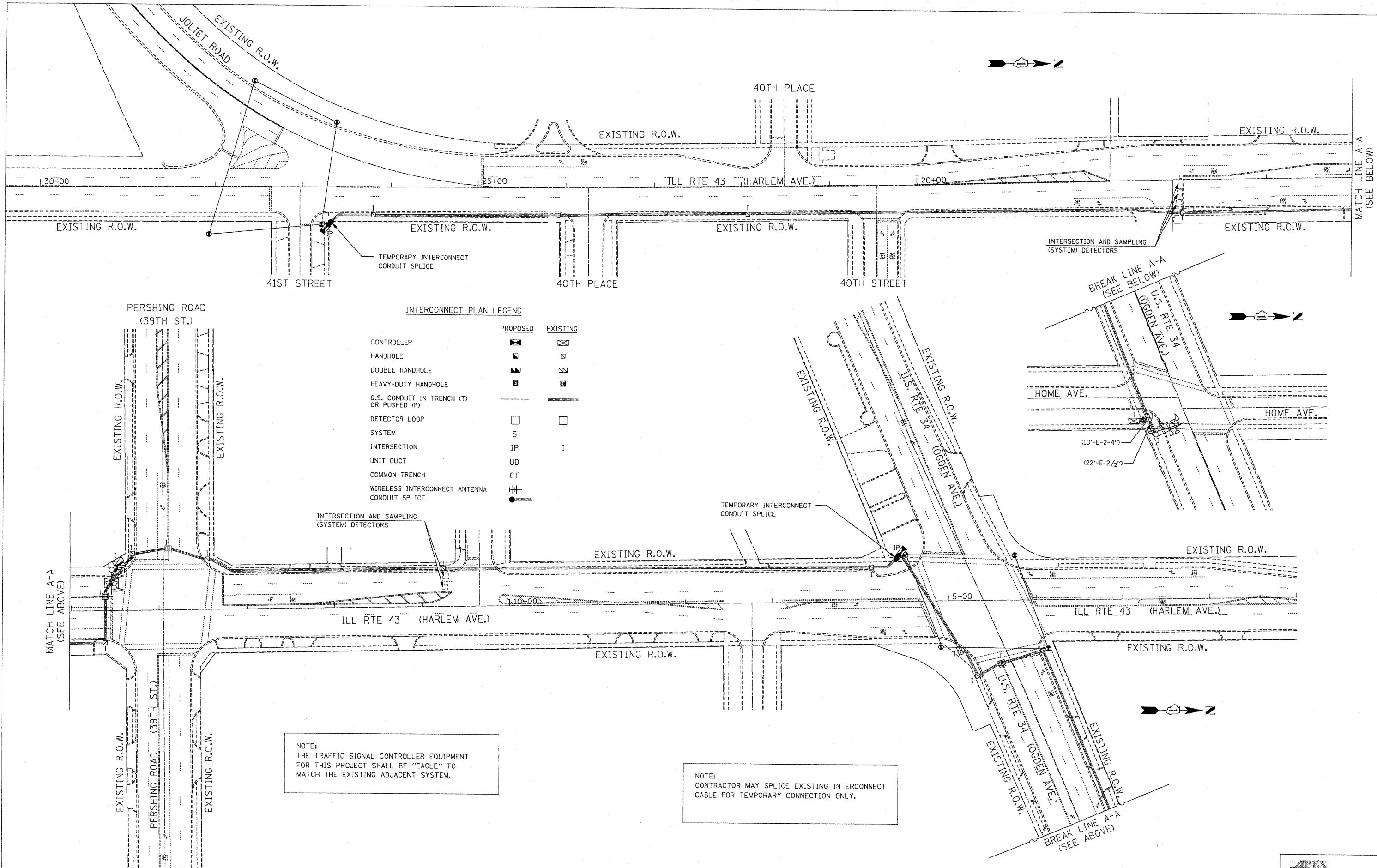
- (A) PEDESTRIAN SIGNAL HEAD WITH COUNTDOWN TIMER
- (B) PARTIAL CONCRETE PAD SHALL BE INCIDENTAL TO PAY ITEM "UNINTERRUPTIBLE POWER SUPPLY".



06:50:54 11/06/2009

FILE NAME =	USER NAME = konthapixaybc	DESIGNED - TCM/BPR	REVISED - 09/08/2009 PER IDOT	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>PROPOSED TRAFFIC SIGNAL INSTALLATION PLAN</b>			F.A.P. RTE. 348	SECTION 2009 078 TS	COUNTY COOK	TOTAL SHEETS 33	SHEET NO. 22
CONTRACT NO. 60115	DRAWN - TCM/BPR		REVISED -		SCALE: 1"=20'	SHEET NO. OF SHEETS	STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
	CHECKED - TCM		REVISED -									
	DATE - 07/02/2009		REVISED -									





**INTERCONNECT PLAN LEGEND**

	PROPOSED	EXISTING
CONTROLLER	☒	☒
HANDHOLE	■	■
DOUBLE HANDHOLE	▣	▣
HEAVY-DUTY HANDHOLE	■	■
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)	—	—
DETECTOR LOOP	□	□
SYSTEM	S	S
INTERSECTION	IP	I
UNIT DUCT	UD	UD
COMMON TRENCH	CT	CT
WIRELESS INTERCONNECT ANTENNA	⊥	⊥
CONDUIT SPLICE	●	●

NOTE:  
THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "EAGLE" TO MATCH THE EXISTING ADJACENT SYSTEM.

NOTE:  
CONTRACTOR MAY SPLICE EXISTING INTERCONNECT CABLE FOR TEMPORARY CONNECTION ONLY.

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USER NAME = rdahon  
PLOT SCALE = 1:100  
PLOT DATE = 10/19/2009

DESIGNED - TCM/BPR  
DRAWN - TCM/BPR  
CHECKED - TCM  
DATE - 07/02/2009

REVISED - 09/08/2009 PER IDOT  
REVISED -  
REVISED -  
REVISED -

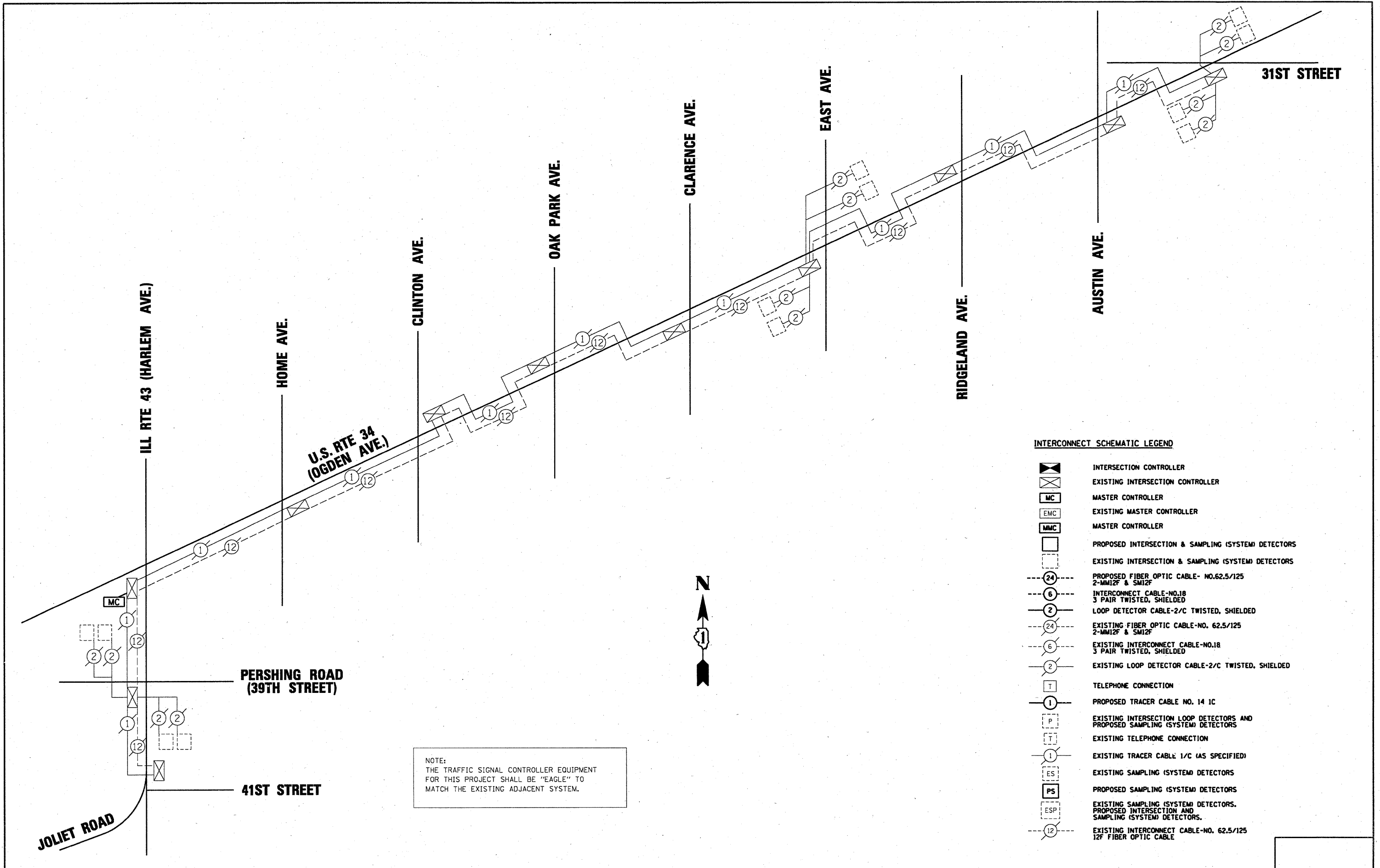
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TEMPORARY INTERCONNECT PLAN  
ILL RTE 43 (HARLEM AVE.)  
FROM JOLIET RD./41ST STREET TO U.S. RTE 34 (OGDEN AVE.)**

SCALE: 1"=50' SHEET NO. OF SHEETS STA. TO STA.

F.A.P. RTE. 348	SECTION 2009 078 TS	COUNTY COOK	TOTAL SHEETS 33	SHEET NO. 24
CONTRACT NO. 60115				





NOTE:  
 THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT  
 FOR THIS PROJECT SHALL BE "EAGLE" TO  
 MATCH THE EXISTING ADJACENT SYSTEM.

- INTERCONNECT SCHEMATIC LEGEND**
- INTERSECTION CONTROLLER
  - EXISTING INTERSECTION CONTROLLER
  - MASTER CONTROLLER
  - EXISTING MASTER CONTROLLER
  - MASTER CONTROLLER
  - PROPOSED INTERSECTION & SAMPLING (SYSTEM) DETECTORS
  - EXISTING INTERSECTION & SAMPLING (SYSTEM) DETECTORS
  - PROPOSED FIBER OPTIC CABLE- NO.62.5/125  
2-MM12F & SM12F
  - INTERCONNECT CABLE-NO.18  
3 PAIR TWISTED, SHIELDED
  - LOOP DETECTOR CABLE-2/C TWISTED, SHIELDED
  - EXISTING FIBER OPTIC CABLE-NO. 62.5/125  
2-MM12F & SM12F
  - EXISTING INTERCONNECT CABLE-NO.18  
3 PAIR TWISTED, SHIELDED
  - EXISTING LOOP DETECTOR CABLE-2/C TWISTED, SHIELDED
  - TELEPHONE CONNECTION
  - PROPOSED TRACER CABLE NO. 14 1C
  - EXISTING INTERSECTION LOOP DETECTORS AND  
PROPOSED SAMPLING (SYSTEM) DETECTORS
  - EXISTING TELEPHONE CONNECTION
  - EXISTING TRACER CABLE 1/C (AS SPECIFIED)
  - EXISTING SAMPLING (SYSTEM) DETECTORS
  - PROPOSED SAMPLING (SYSTEM) DETECTORS
  - EXISTING SAMPLING (SYSTEM) DETECTORS,  
PROPOSED INTERSECTION AND  
SAMPLING (SYSTEM) DETECTORS.
  - EXISTING INTERCONNECT CABLE-NO. 62.5/125  
12F FIBER OPTIC CABLE

FILE NAME =	USER NAME = kanthaphixeybo	DESIGNED - TCM/BPR	REVISED - 09/08/2009 PER IDOT
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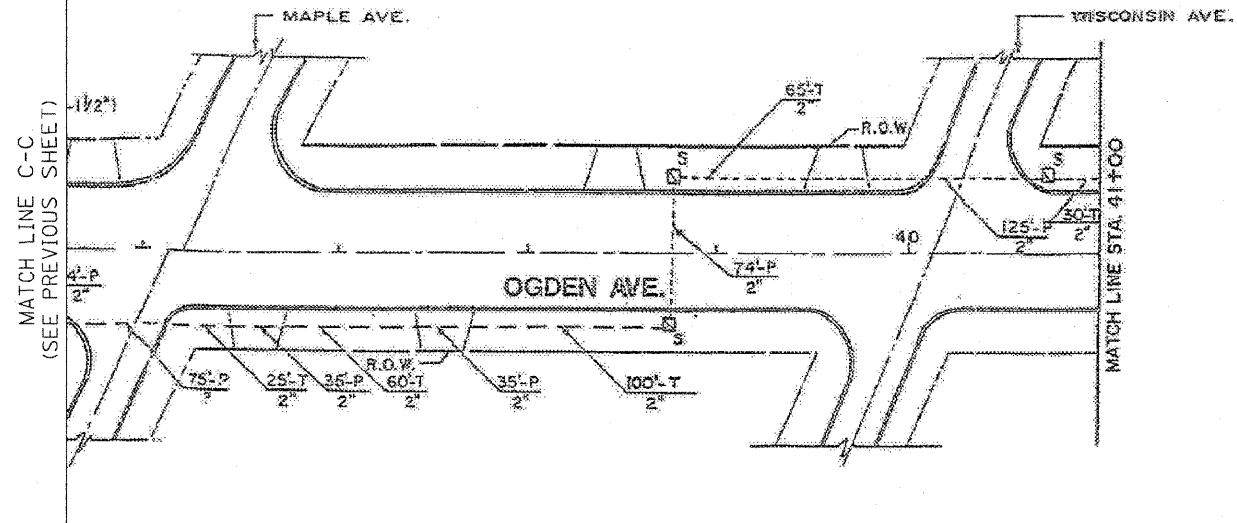
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**TEMPORARY INTERCONNECT SCHEMATIC  
 ILL RTE 43 (HARLEM AVE.) AND U.S. RTE 34 (OGDEN AVE.)**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
348	2009 078 TS	COOK	33	25
			CONTRACT NO. 60115	



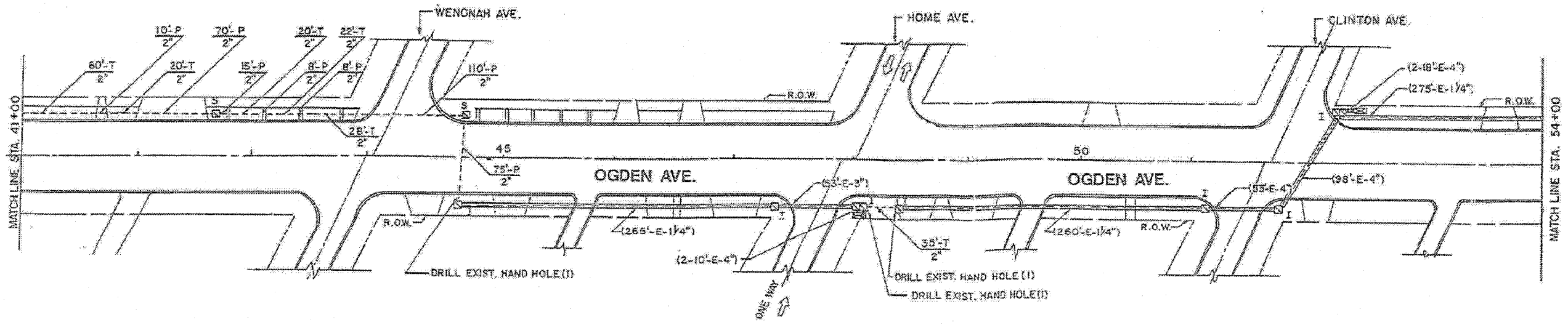
NOTE:  
THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT  
FOR THIS PROJECT SHALL BE "EAGLE" TO  
MATCH THE EXISTING ADJACENT SYSTEM.



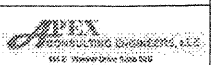
INTERCONNECT PLAN LEGEND

	PROPOSED	EXISTING
CONTROLLER	☒	☒
HANDHOLE	◻	◻
DOUBLE HANDHOLE	◻	◻
HEAVY-DUTY HANDHOLE	◻	◻
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)	---	---
DETECTOR LOOP	□	□
SYSTEM	S	S
INTERSECTION	IP	I
UNIT DUCT	UD	UD
COMMON TRENCH	CT	CT
WIRELESS INTERCONNECT ANTENNA	⊥	⊥

FOR INFORMATION ONLY

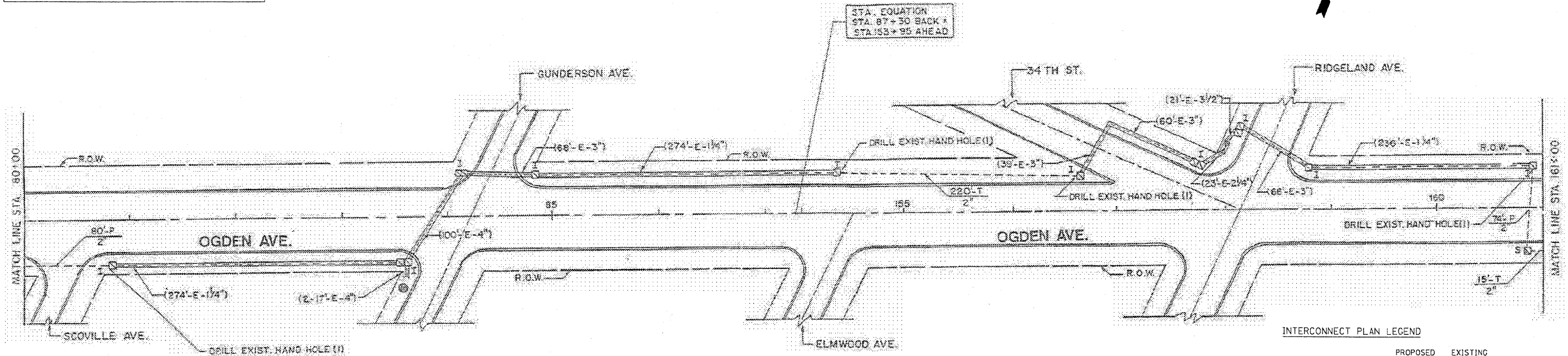


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PLOT SCALE = 1:100	CHECKED - TCM	DATE - 07/02/2009	REVISED -			SCALE: 1"=50'	SHEET NO. OF SHEETS	STA. TO STA.	FED. ROAD DIST. NO. ILLINOIS	FED. AID PROJECT	CONTRACT NO. 60115
PLOT DATE = 10/9/2009	DATE - 07/02/2009	REVISED -	REVISED -								





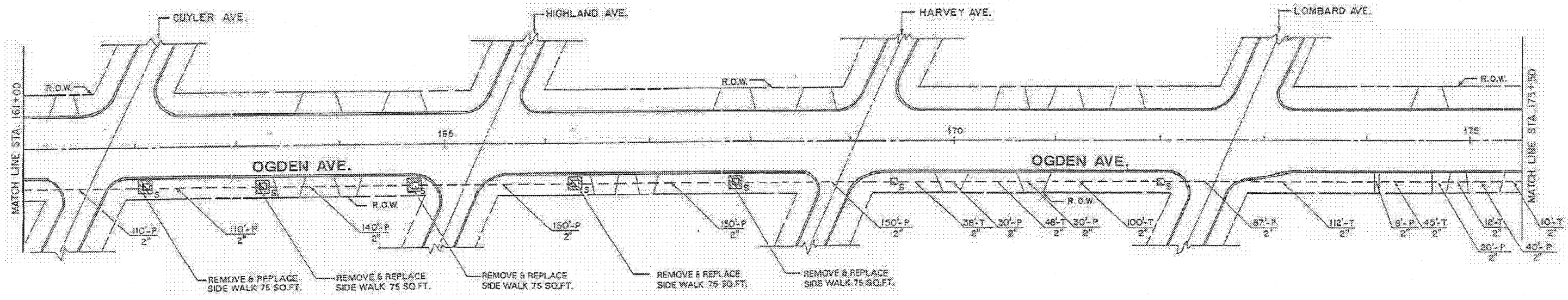
NOTE:  
THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT  
FOR THIS PROJECT SHALL BE "EAGLE" TO  
MATCH THE EXISTING ADJACENT SYSTEM.



FOR INFORMATION ONLY

INTERCONNECT PLAN LEGEND

	PROPOSED	EXISTING
CONTROLLER		
HANDHOLE		
DOUBLE HANDHOLE		
HEAVY-DUTY HANDHOLE		
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)		
DETECTOR LOOP		
SYSTEM	S	
INTERSECTION	IP	I
UNIT DUCT	UD	
COMMON TRENCH	CT	
WIRELESS INTERCONNECT ANTENNA		



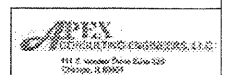
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		CHECKED - TCM	REVISED -
		DATE - 07/02/2009	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

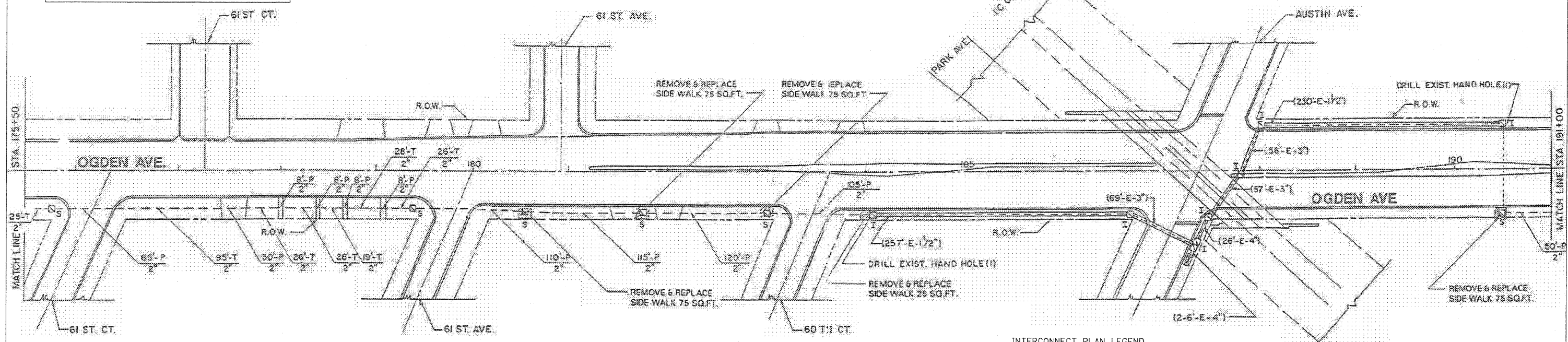
**INTERCONNECT PLAN (SHEET 4 OF 6)  
U.S. RTE 34 (OGDEN AVE.)  
FROM ILL RTE 43 (HARLEM AVE.) TO CENTRAL AVE.**

SCALE: 1"=50'    SHEET NO. OF SHEETS    STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
34B	2009 078 TS	COOK	33	29
CONTRACT NO. 60115				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



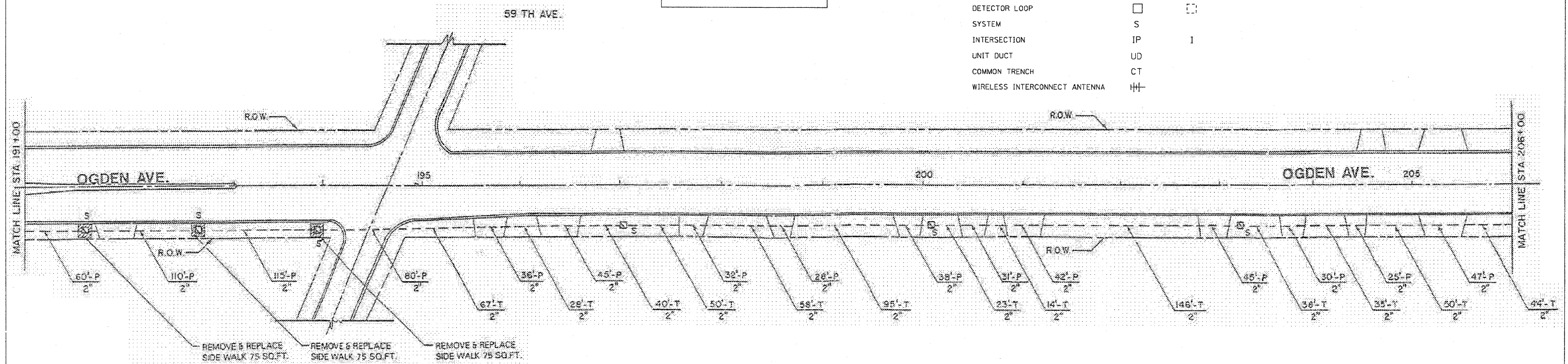
NOTE:  
THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT  
FOR THIS PROJECT SHALL BE "EAGLE" TO  
MATCH THE EXISTING ADJACENT SYSTEM.



FOR INFORMATION ONLY

INTERCONNECT PLAN LEGEND

	PROPOSED	EXISTING
CONTROLLER		
HANDHOLE		
DOUBLE HANDHOLE		
HEAVY-DUTY HANDHOLE		
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)		
DETECTOR LOOP		
SYSTEM	S	S
INTERSECTION	IP	I
UNIT DUCT	UD	
COMMON TRENCH	CT	
WIRELESS INTERCONNECT ANTENNA		



FILE NAME =  
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PLOT SCALE = 1:100  
PLOT DATE = 10/1/2009

DESIGNED - TCM/BPR  
DRAWN - TCM/BPR  
CHECKED - TCM  
DATE - 07/02/2009

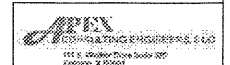
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REVISED -  
REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

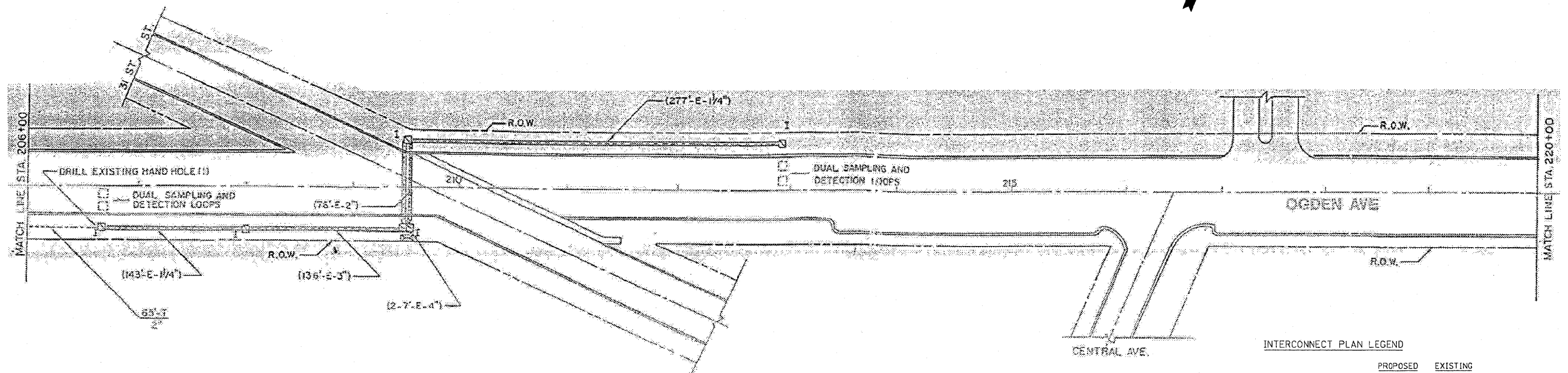
**INTERCONNECT PLAN (SHEET 5 OF 6)  
U.S. RTE 34 (OGDEN AVE.)  
FROM ILL RTE 43 (HARLEM AVE.) TO CENTRAL AVE.**

SCALE: 1"=50' SHEET NO. OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
348	2009 078 TS	COOK	33	30
CONTRACT NO. 60115				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				



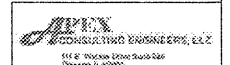
NOTE:  
THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT  
FOR THIS PROJECT SHALL BE "EAGLE" TO  
MATCH THE EXISTING ADJACENT SYSTEM.

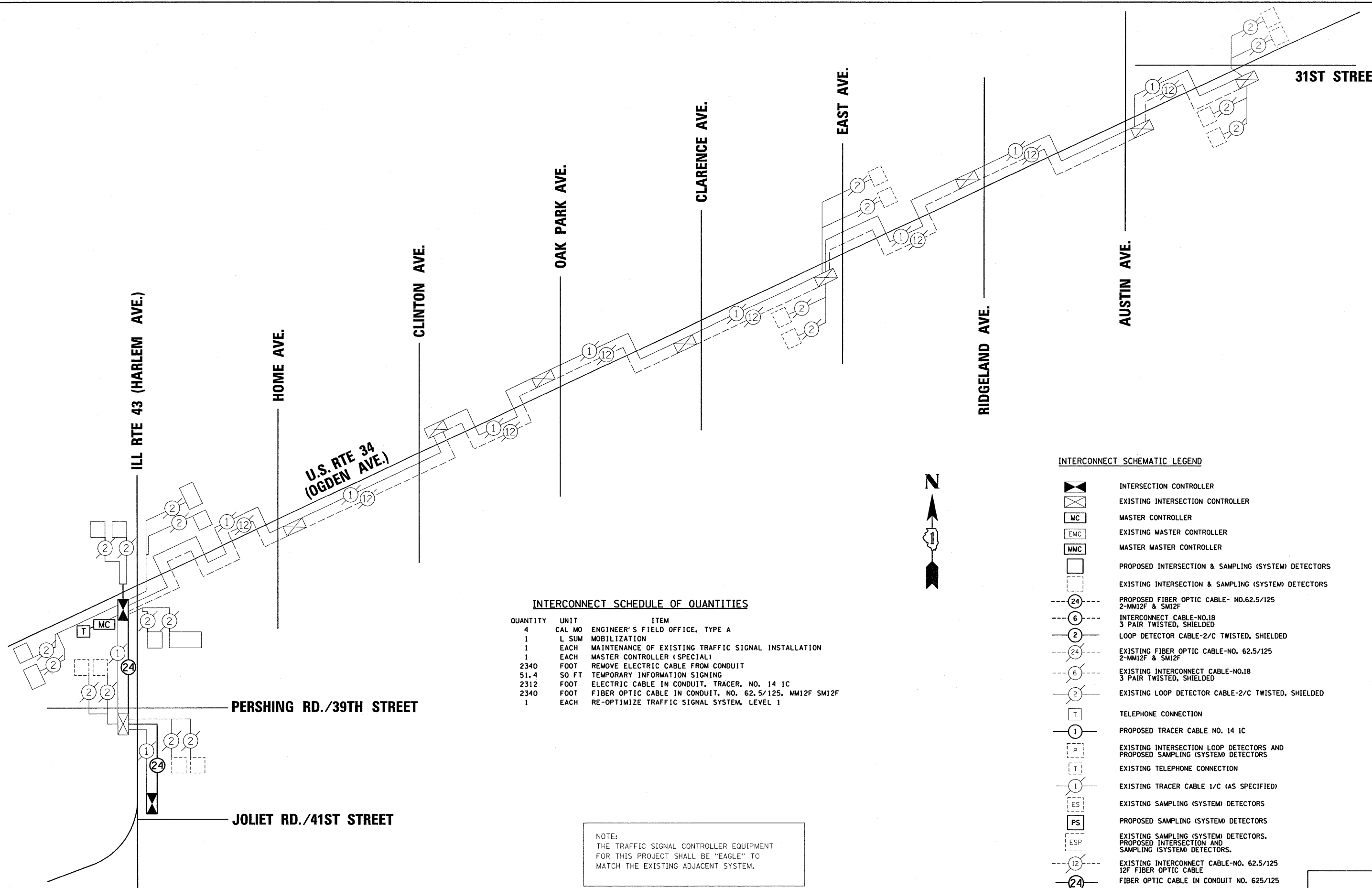


FOR INFORMATION ONLY

INTERCONNECT PLAN LEGEND

	PROPOSED	EXISTING
CONTROLLER	☒	☒
HANDHOLE	■	■
DOUBLE HANDHOLE	▣	▣
HEAVY-DUTY HANDHOLE	■	■
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)	—	—
DETECTOR LOOP	□	□
SYSTEM	S	I
INTERSECTION	IP	I
UNIT DUCT	UD	
COMMON TRENCH	CT	
WIRELESS INTERCONNECT ANTENNA	⊥	





**INTERCONNECT SCHEDULE OF QUANTITIES**

QUANTITY	UNIT	ITEM
4	CAL MO	ENGINEER'S FIELD OFFICE, TYPE A
1	L SUM	MOBILIZATION
1	EACH	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION
1	EACH	MASTER CONTROLLER (SPECIAL)
2340	FOOT	REMOVE ELECTRIC CABLE FROM CONDUIT
51.4	SO FT	TEMPORARY INFORMATION SIGNING
2312	FOOT	ELECTRIC CABLE IN CONDUIT, TRACER, NO. 14 1C
2340	FOOT	FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125, MM12F SM12F
1	EACH	RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM, LEVEL 1

NOTE:  
THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "EAGLE" TO MATCH THE EXISTING ADJACENT SYSTEM.

**INTERCONNECT SCHEMATIC LEGEND**

- INTERSECTION CONTROLLER
- EXISTING INTERSECTION CONTROLLER
- MASTER CONTROLLER
- EXISTING MASTER CONTROLLER
- MASTER MASTER CONTROLLER
- PROPOSED INTERSECTION & SAMPLING (SYSTEM) DETECTORS
- EXISTING INTERSECTION & SAMPLING (SYSTEM) DETECTORS
- PROPOSED FIBER OPTIC CABLE- NO.62.5/125 2-MM12F & SM12F
- EXISTING FIBER OPTIC CABLE-NO. 62.5/125 2-MM12F & SM12F
- PROPOSED INTERCONNECT CABLE-NO.18 3 PAIR TWISTED, SHIELDED
- EXISTING INTERCONNECT CABLE-NO.18 3 PAIR TWISTED, SHIELDED
- PROPOSED LOOP DETECTOR CABLE-2/C TWISTED, SHIELDED
- EXISTING LOOP DETECTOR CABLE-2/C TWISTED, SHIELDED
- TELEPHONE CONNECTION
- PROPOSED TRACER CABLE NO. 14 1C
- EXISTING INTERSECTION LOOP DETECTORS AND PROPOSED SAMPLING (SYSTEM) DETECTORS
- EXISTING TELEPHONE CONNECTION
- EXISTING TRACER CABLE 1/C (AS SPECIFIED)
- EXISTING SAMPLING (SYSTEM) DETECTORS
- PROPOSED SAMPLING (SYSTEM) DETECTORS
- EXISTING SAMPLING (SYSTEM) DETECTORS, PROPOSED INTERSECTION AND SAMPLING (SYSTEM) DETECTORS.
- EXISTING INTERCONNECT CABLE-NO. 62.5/125 12F FIBER OPTIC CABLE
- FIBER OPTIC CABLE IN CONDUIT NO. 62.5/125

FILE NAME =	USER NAME = kanthaphixaybc	DESIGNED - TCM/BPR	REVISED - 09/08/2009 PER IDOT
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	PLOT SCALE = #SCALESHORT#	CHECKED - TCM	REVISED -
	PLOT DATE = 10/21/2009	DATE - 07/02/2009	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

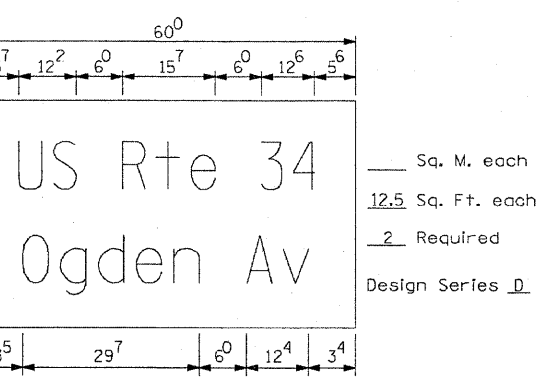
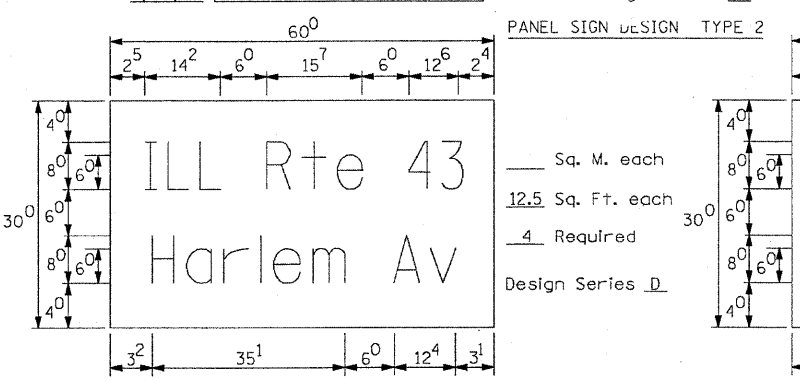
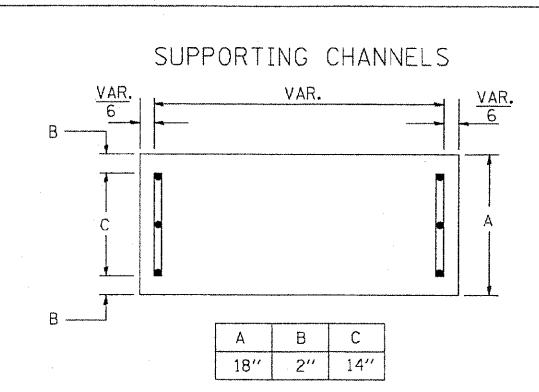
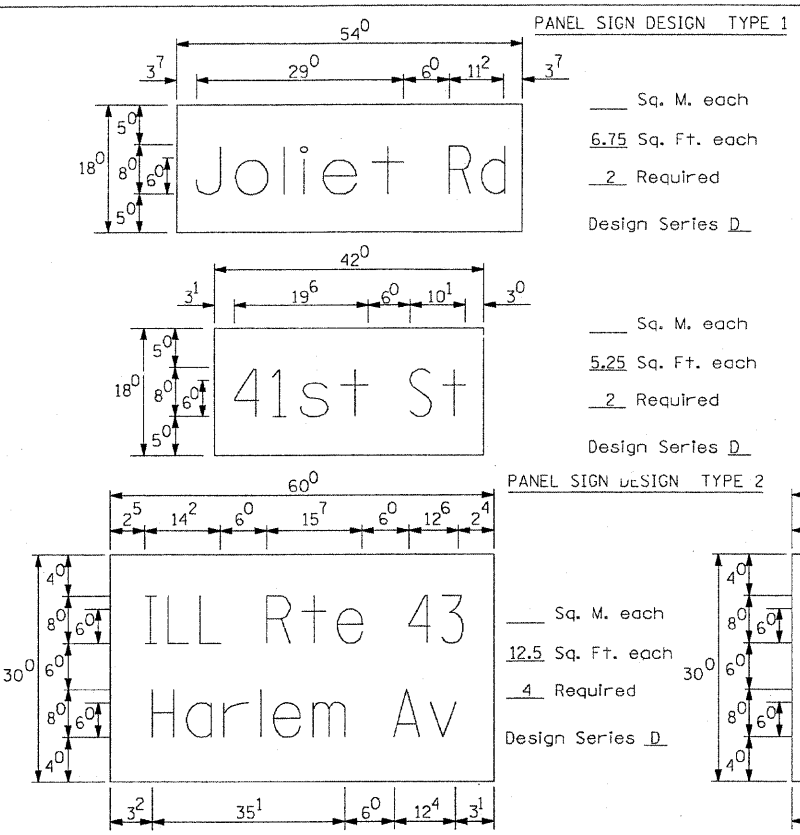
**INTERCONNECT SCHEMATIC  
ILL RTE 43 (HARLEM AVE.) AND U.S. RTE 34 (OGDEN AVE.)**

SCALE: N.T.S. SHEET NO. OF SHEETS STA. TO STA.

F.A.P. RTE. 348	SECTION 2009 078 TS	COUNTY COOK	TOTAL SHEETS 33	SHEET NO. 32
FED. ROAD DIST. NO. ILLINOIS		FED. AID PROJECT		
CONTRACT NO. 60115				

06:30:55 10/21/2009



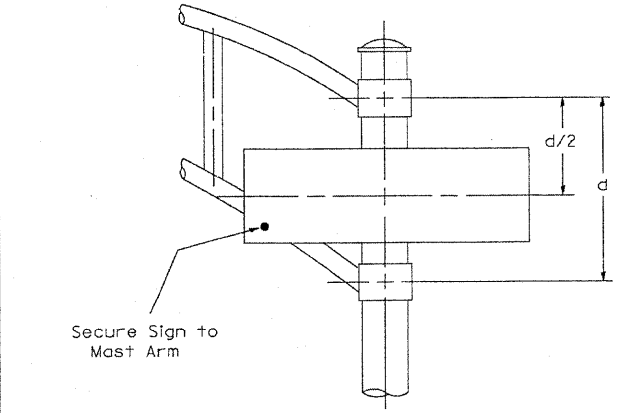


**GENERAL NOTES**

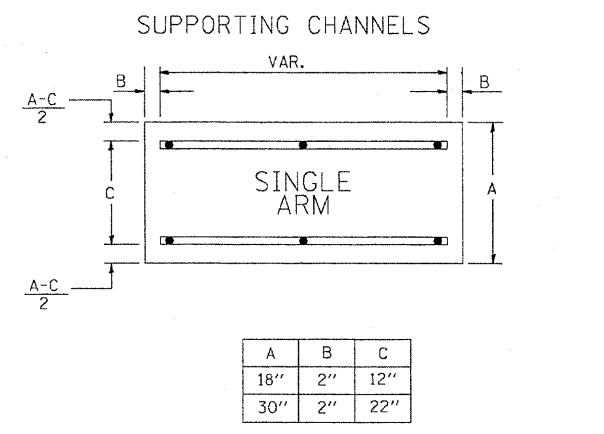
- WHERE MAST ARM MOUNTED STREET NAME SIGNS ARE SPECIFIED, THE MAST ARM ASSEMBLY AND POLES SHALL BE DESIGNED TO SUPPORT THE LOADINGS CALLED FOR ON STANDARDS 834001, 834006 AND 834011, AS APPLICABLE, PLUS TWO (2) SIGN PANELS 2'-6" x 6'-0" MOUNTED AS SHOWN. THE DESIGN SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS" AS PUBLISHED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS FOR 80 M.P.H. WIND VELOCITY.
- ALL SIGNS SHALL HAVE A WHITE REFLECTORIZED LEGEND AND BORDER ON A GREEN REFLECTORIZED BACKGROUND, TYPE A SHEETING.
- THE SIGN LENGTH SHOULD BE INCREASED IN 6-INCH INCREMENTS, BUT THE OVERALL LENGTH SHOULD NOT EXCEED 6'-0".
- ALL BORDERS SHALL BE 3/4" WIDE AND CORNER RADIUS SHALL BE 2-1/4".
- SIGNFIX ALUMINUM CHANNEL FRAMING SYSTEM SHALL BE USED FOR ALL SIGNS ATTACHED TO SIGNAL POLES AND POSTS. LOCAL SUPPLIERS OF THE SIGNFIX ALUMINUM CHANNEL FRAMING SYSTEM ARE:
  - \* A.K.T. CORPORATION SCHAUMBURG, IL
  - \* TUCKER COMPANY, INC. WAUWATOSA, WI
  - \* AMERICAN FABRICATION CO. CHICAGO HEIGHTS, IL
  - \* WESTERN TRAFFIC CONTROL, INC. CICERO, IL

- PARTS LISTING:**
- SIGN CHANNEL PART #HPN053 (MED. CHANNEL)
  - SIGN SCREWS 1/4" x 14 x 1" H.W.H. #3
  - BRACKETS SELF TAPPING WITH NEOPRENE WASHER
  - CHANNEL CLAMPS WITH STAINLESS STEEL STRAPPING

OTHER BRANDS OF MOUNTING HARDWARE ARE ACCEPTABLE, BASED UPON THE DEPARTMENT'S APPROVAL AND COMPATIBILITY WITH THE CHANNEL/BRACKET OF THE ABOVE PRODUCT.



**DUAL ARM SIGNFIX ALUMINUM CHANNEL FRAMING SYSTEM**  
Should be used. See Note #5.



Upper Case To Lower Case  
Spacing Chart 8-6 Inch Series "C & D"

EXAMPLE, 2<sup>3</sup> DENOTES 3/8"

SERIES	SECOND LETTER																			
	a c d e		g o q		b h i k l		m n p r u		f w		j		s t		v y		x		z	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
A W X	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>2</sup>	1 <sup>4</sup>	0 <sup>6</sup>	1 <sup>0</sup>	1 <sup>1</sup>	1 <sup>4</sup>	0 <sup>6</sup>	1 <sup>0</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>2</sup>	1 <sup>4</sup>	
B	1 <sup>4</sup>	1 <sup>5</sup>	2 <sup>0</sup>	2 <sup>1</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>7</sup>	
C E G	1 <sup>4</sup>	1 <sup>5</sup>	2 <sup>0</sup>	2 <sup>1</sup>	1 <sup>2</sup>	1 <sup>4</sup>	0 <sup>6</sup>	1 <sup>0</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>5</sup>	
D O Q R	1 <sup>4</sup>	1 <sup>5</sup>	2 <sup>0</sup>	2 <sup>1</sup>	1 <sup>4</sup>	1 <sup>5</sup>	0 <sup>6</sup>	1 <sup>0</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>5</sup>	
F	0 <sup>5</sup>	0 <sup>6</sup>	1 <sup>4</sup>	1 <sup>5</sup>	0 <sup>6</sup>	1 <sup>0</sup>	0 <sup>5</sup>	0 <sup>6</sup>	0 <sup>6</sup>	1 <sup>0</sup>	0 <sup>6</sup>	1 <sup>0</sup>	0 <sup>6</sup>	1 <sup>0</sup>	0 <sup>6</sup>	1 <sup>0</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>2</sup>	
H I M N	2 <sup>0</sup>	2 <sup>1</sup>	2 <sup>2</sup>	2 <sup>4</sup>	2 <sup>0</sup>	2 <sup>1</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>6</sup>	1 <sup>7</sup>	2 <sup>0</sup>	2 <sup>1</sup>	2 <sup>0</sup>	2 <sup>1</sup>	2 <sup>0</sup>	2 <sup>1</sup>	2 <sup>1</sup>	
J U	2 <sup>0</sup>	2 <sup>1</sup>	2 <sup>0</sup>	2 <sup>1</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>6</sup>	1 <sup>7</sup>	2 <sup>0</sup>	2 <sup>1</sup>	2 <sup>0</sup>	2 <sup>1</sup>	2 <sup>1</sup>	
K L	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>1</sup>	1 <sup>2</sup>	0 <sup>5</sup>	0 <sup>6</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	
P	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>2</sup>	1 <sup>4</sup>	0 <sup>5</sup>	0 <sup>6</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	
S	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>2</sup>	1 <sup>4</sup>	0 <sup>6</sup>	1 <sup>0</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	
T	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>6</sup>	1 <sup>7</sup>	0 <sup>6</sup>	1 <sup>0</sup>	0 <sup>6</sup>	1 <sup>0</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	
V	0 <sup>6</sup>	1 <sup>0</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>1</sup>	1 <sup>2</sup>	0 <sup>6</sup>	1 <sup>0</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	
Y	0 <sup>5</sup>	0 <sup>6</sup>	1 <sup>4</sup>	1 <sup>5</sup>	0 <sup>6</sup>	1 <sup>0</sup>	0 <sup>5</sup>	0 <sup>6</sup>	0 <sup>5</sup>	0 <sup>7</sup>	0 <sup>5</sup>	0 <sup>6</sup>	0 <sup>6</sup>	1 <sup>0</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	
Z	1 <sup>6</sup>	1 <sup>7</sup>	2 <sup>2</sup>	2 <sup>4</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>6</sup>	1 <sup>7</sup>	2 <sup>0</sup>	2 <sup>1</sup>	2 <sup>0</sup>	2 <sup>1</sup>	2 <sup>1</sup>	

Lower Case To Lower Case  
Spacing Chart 6 Inch Series "C & D"

SERIES	SECOND LETTER																			
	a c d e		g o q		b h i k l		m n p r u		f w		j		s t		v y		x		z	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
ad h g i j	1 <sup>6</sup>	1 <sup>7</sup>	2 <sup>2</sup>	2 <sup>4</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>7</sup>	
l m n q u	1 <sup>6</sup>	1 <sup>7</sup>	2 <sup>2</sup>	2 <sup>4</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>7</sup>	
b f k o p s	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>1</sup>	1 <sup>2</sup>	0 <sup>5</sup>	0 <sup>6</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	
c e	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>2</sup>	1 <sup>4</sup>	0 <sup>6</sup>	1 <sup>0</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	
r	0 <sup>6</sup>	1 <sup>0</sup>	1 <sup>2</sup>	1 <sup>4</sup>	0 <sup>6</sup>	1 <sup>0</sup>	0 <sup>3</sup>	0 <sup>3</sup>	0 <sup>5</sup>	0 <sup>6</sup>	0 <sup>5</sup>	0 <sup>6</sup>	0 <sup>6</sup>	1 <sup>0</sup>	0 <sup>6</sup>	1 <sup>0</sup>	0 <sup>6</sup>	1 <sup>0</sup>	1 <sup>0</sup>	
t z	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>2</sup>	1 <sup>4</sup>	0 <sup>6</sup>	1 <sup>0</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>4</sup>	
v y	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>1</sup>	1 <sup>2</sup>	0 <sup>5</sup>	0 <sup>6</sup>	0 <sup>6</sup>	1 <sup>0</sup>	0 <sup>6</sup>	1 <sup>0</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>4</sup>	
w	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>1</sup>	1 <sup>2</sup>	0 <sup>5</sup>	0 <sup>6</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>4</sup>	
x	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>1</sup>	1 <sup>2</sup>	0 <sup>5</sup>	0 <sup>6</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>4</sup>	

Number To Number  
Spacing Chart 8 Inch Series "C & D"

SERIES	SECOND NUMBER																			
	0		1		2		3		4		5		6		7		8		9	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
0 9	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>6</sup>	1 <sup>7</sup>
1	2 <sup>0</sup>	2 <sup>1</sup>	2 <sup>0</sup>	2 <sup>1</sup>	2 <sup>0</sup>	2 <sup>1</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>4</sup>	1 <sup>5</sup>	2 <sup>0</sup>	2 <sup>1</sup>	2 <sup>0</sup>	2 <sup>1</sup>	1 <sup>4</sup>	1 <sup>5</sup>	2 <sup>0</sup>	2 <sup>1</sup>	2 <sup>0</sup>	2 <sup>1</sup>
2 3 4	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>
5	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>
6	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>2</sup>	1 <sup>5</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>
7	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>2</sup>	1 <sup>5</sup>	0 <sup>5</sup>	0 <sup>6</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>2</sup>	1 <sup>4</sup>
8	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>2</sup>	1 <sup>5</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>4</sup>	1 <sup>5</sup>

UPPER AND LOWER CASE LETTER WIDTHS

LETTERS	6 INCH UPPER CASE LETTERS				LETTERS	6 INCH LOWER CASE LETTERS	
	SERIES		SERIES			SERIES	
	C	D	C	D		C	D
A	3 <sup>6</sup>	5 <sup>0</sup>	5 <sup>0</sup>	6 <sup>5</sup>	a	3 <sup>5</sup>	4 <sup>2</sup>
B	3 <sup>2</sup>	4 <sup>0</sup>	4 <sup>3</sup>	5 <sup>3</sup>	b	3 <sup>5</sup>	4 <sup>2</sup>
C	3 <sup>2</sup>	4 <sup>0</sup>	4 <sup>3</sup>	5 <sup>3</sup>	c	3 <sup>5</sup>	4 <sup>1</sup>
D	3 <sup>2</sup>	4 <sup>0</sup>	4 <sup>3</sup>	5 <sup>3</sup>	d	3 <sup>5</sup>	4 <sup>2</sup>
E	3 <sup>0</sup>	3 <sup>5</sup>	4 <sup>0</sup>	4 <sup>7</sup>	e	3 <sup>5</sup>	4 <sup>2</sup>
F	3 <sup>0</sup>	3 <sup>5</sup>	4 <sup>0</sup>	4 <sup>7</sup>	f	2 <sup>3</sup>	2 <sup>6</sup>
G	3 <sup>2</sup>	4 <sup>0</sup>	4 <sup>3</sup>	5 <sup>3</sup>	g	3 <sup>5</sup>	4 <sup>2</sup>
H	3 <sup>2</sup>	4 <sup>0</sup>	4 <sup>3</sup>	5 <sup>3</sup>	h	3 <sup>5</sup>	4 <sup>2</sup>
I	0 <sup>7</sup>	0 <sup>7</sup>	1 <sup>1</sup>	1 <sup>2</sup>	i	1 <sup>1</sup>	1 <sup>1</sup>
J	3 <sup>0</sup>	3 <sup>6</sup>	4 <sup>0</sup>	5 <sup>0</sup>	j	2 <sup>0</sup>	2 <sup>2</sup>
K	3 <sup>2</sup>	4 <sup>1</sup>	4 <sup>3</sup>	5 <sup>4</sup>	k	3 <sup>5</sup>	4 <sup>2</sup>
L	3 <sup>0</sup>	3 <sup>5</sup>	4 <sup>0</sup>	4 <sup>7</sup>	l	1 <sup>1</sup>	1 <sup>1</sup>
M	3 <sup>7</sup>	4 <sup>5</sup>	5 <sup>1</sup>	6 <sup>1</sup>	m	6 <sup>0</sup>	7 <sup>0</sup>
N	3 <sup>2</sup>	4 <sup>0</sup>	4 <sup>3</sup>	5 <sup>3</sup>	n	3 <sup>5</sup>	4 <sup>2</sup>
O	3 <sup>4</sup>	4 <sup>2</sup>	4 <sup>5</sup>	5 <sup>5</sup>	o	3 <sup>6</sup>	4 <sup>3</sup>
P	3 <sup>2</sup>	4 <sup>0</sup>	4 <sup>3</sup>	5 <sup>3</sup>	p	3 <sup>5</sup>	4 <sup>2</sup>
Q	3 <sup>4</sup>	4 <sup>2</sup>	4 <sup>5</sup>	5 <sup>5</sup>	q	3 <sup>5</sup>	4 <sup>2</sup>
R	3 <sup>2</sup>	4 <sup>0</sup>	4 <sup>3</sup>	5 <sup>3</sup>	r	2 <sup>6</sup>	3 <sup>2</sup>
S	3 <sup>2</sup>	4 <sup>0</sup>	4 <sup>3</sup>	5 <sup>3</sup>	s	3 <sup>6</sup>	4 <sup>2</sup>
T	3 <sup>0</sup>	3 <sup>5</sup>	4 <sup>0</sup>	4 <sup>7</sup>	t	2 <sup>7</sup>	3 <sup>2</sup>
U	3 <sup>2</sup>	4 <sup>0</sup>	4 <sup>3</sup>	5 <sup>3</sup>	u	3 <sup>5</sup>	4 <sup>2</sup>
V	3 <sup>5</sup>	4 <sup>4</sup>	4 <sup>7</sup>	6 <sup>0</sup>	v	4 <sup>2</sup>	4 <sup>7</sup>
W	4 <sup>4</sup>	5 <sup>2</sup>	6 <sup>0</sup>	7 <sup>0</sup>	w	5 <sup>5</sup>	6 <sup>4</sup>
X	3 <sup>4</sup>	4 <sup>0</sup>	4 <sup>5</sup>	5 <sup>3</sup>	x	4 <sup>4</sup>	5 <sup>1</sup>
Y	3 <sup>6</sup>	5 <sup>0</sup>	5 <sup>0</sup>	6 <sup>6</sup>	y	4 <sup>6</sup>	5 <sup>3</sup>
Z	3 <sup>2</sup>	4 <sup>0</sup>	4 <sup>3</sup>				