

FOR INDEX OF SHEETS, HIGHWAY STANDARDS, AND DETAILS SEE SHEET NO. 2

11-4-2016 LETTING ITEM 036

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

**PLANS FOR PROPOSED  
FEDERAL AID HIGHWAY**

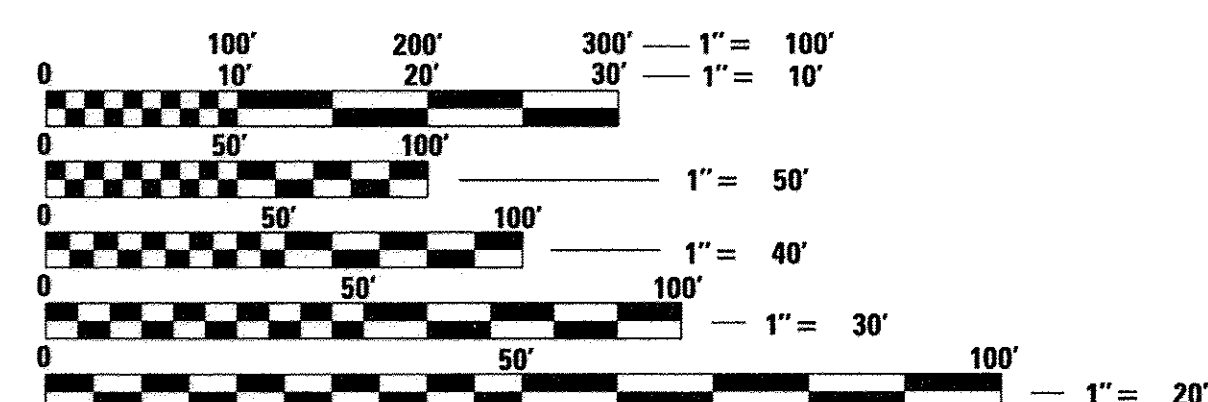
VARIOUS ROUTES  
ADAPTIVE SIGNAL CONTROL TECHNOLOGIES  
(ASCT) INSTALLATION  
SECTION: 13-00159-00-TL  
PROJECT NO.: CMM-M-4003(228)  
CITY OF NAPERVILLE  
DuPAGE AND WILL COUNTIES  
JOB NO.: C-91-026-14

F.A.U. R.T.E. 750, 920, 981 & 226	SECTION 13-00159-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 50	SHEET NO. 1
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO.		



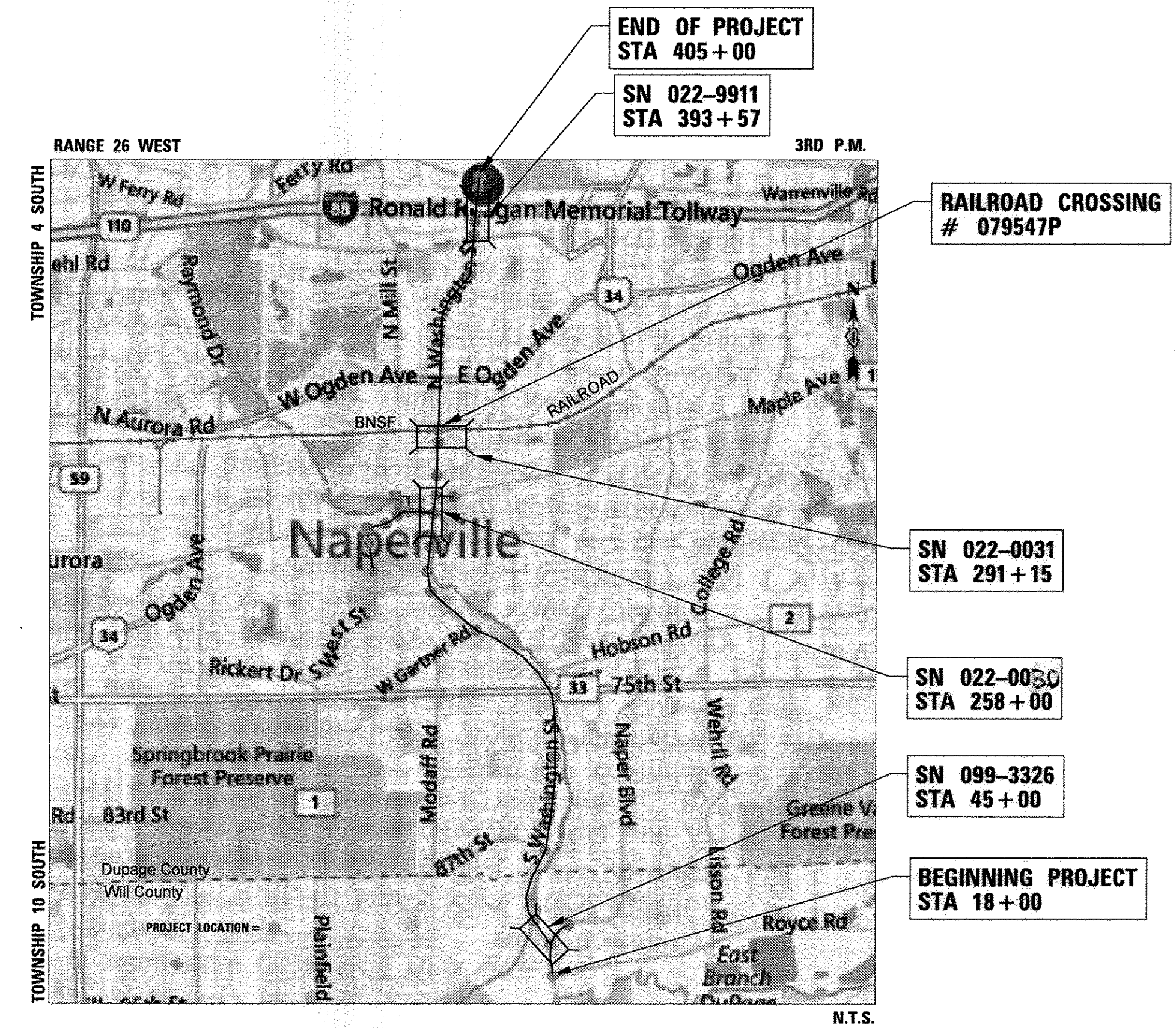
TRAFFIC DATA

FAU NUMBERS	ROUTE SEGMENT	SPEED (MPH)	ADT (2012)	CLASSIFICATION
2552	WASHINGTON STREET ROYCE ROAD TO NAPER BOULEVARD	45	26,900	URBAN 4 LANE, OTHER PRINCIPAL ARTERIAL
	WASHINGTON STREET - NAPER BLVD. TO DUPAGE/WILL COUNTY LINE	45	19,700	URBAN 4 LANE, MINOR ARTERIAL
	WASHINGTON STREET - DUPAGE/WILL COUNTY LINE TO 75TH STREET	40	22,600	URBAN 4 LANE, MINOR ARTERIAL
	WASHINGTON STREET - 75TH STREET TO AURORA AVENUE	30/35/40	28,500	URBAN 4 LANE, MINOR ARTERIAL
	WASHINGTON STREET AURORA AVENUE TO US ROUTE 34	25/30	22,000	URBAN 4 LANE, MINOR ARTERIAL
1522	WASHINGTON STREET - US ROUTE 34 TO WARRENVILLE ROAD	30/35	16,000	URBAN 4 LANE, MINOR ARTERIAL
	AURORA AVENUE - WEST STREET TO WASHINGTON STREET	30	18,100	URBAN 4 LANE, MINOR ARTERIAL
2546	WEST STREET - MARTIN AVENUE TO AURORA AVENUE	30	17,000	URBAN 4 LANE, MINOR ARTERIAL
1487	CHICAGO AVENUE - WASHINGTON STREET TO ELLSWORTH STREET	30	12,800	URBAN 4 LANE, MINOR ARTERIAL



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.

J.U.L.I.E.  
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
1-800-892-0123  
OR 811



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

APPROVED August 4, 2016  
*Andrew Hyde*  
CITY OF NAPERVILLE, DEPUTY CITY ENGINEER

PASSED August 18, 2016  
*Christopher Holt*  
DISTRICT ONE ENGINEER OF LOCAL ROADS & STREETS

RELEASING FOR BID BASED ON LIMITED REVIEW August 18, 2016  
*John Erdman*  
REGIONAL ENGINEER

**PRINTED BY THE AUTHORITY  
OF THE STATE OF ILLINOIS**

*George M. Ziegler* 8/08/2016  
ENGINEER DATE

GEORGE M. ZIEGLER  
ILLINOIS REGISTRATION No. 062-045853  
EXPIRATION DATE: 11-30-2017

**CB** CHRISTOPHER B. BURKE ENGINEERING, LTD.  
9575 W. Higgins Road, Suite 600  
Rosemont, Illinois 60018  
(847) 823-0500

CONTRACT NO. 61D23

PROGRAM AND OFFICE ENGINEER: CHARLES F. RIDDLE P.E. (847) 705-4406, SCHAUMBURG, IL

NAPERVILLE, LISLE AND DUPAGE TOWNSHIPS  
NET LENGTH = 45,008 FEET (8.52 MILES)  
GROSS LENGTH = 45,008 FEET (8.52 MILES)

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**HIGHWAY STANDARDS**

STD. No.	DESCRIPTION
000001-06	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001006	DECIMAL OF AN INCH AND OF A FOOT
701101-05	OFF-RD OPERATIONS, MULTILANE, 15' (4.5 m) TO 24" (600 mm) FROM PAVEMENT EDGE
701427-04	LANE CLOSURE, MULTILANE, INTERMITTENT OR MOVING OPERATION, FOR SPEEDS < 40 MPH
701806-10	URBAN SINGLE LANE CLOSURE, MULTILANE, 2W WITH MOUNTABLE MEDIAN
701701-10	URBAN LANE CLOSURE, MULTILANE INTERSECTION
701801-06	SIDEWALK, CORNER, OR CROSSWALK CLOSURE
701901-05	TRAFFIC CONTROL DEVICES
814001-03	HANDHOLES
857001-01	STANDARD PHASE DESIGNATION DIAGRAMS AND PHASE SEQUENCES
886001-01	DETECTOR LOOP INSTALLATIONS
886006-01	TYPICAL LAYOUTS FOR DETECTION LOOPS

DATE	BY	DATE	BY
DATE	BY	DATE	BY

**CHRISTOPHER B. BURKE** ENGINEERING LTD.  
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 Rosemont, Illinois 60018  
 (847) 823-0500



**TS SHT NO. 2**

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**INDEX SHEETS AND HIGHWAY STANDARDS**

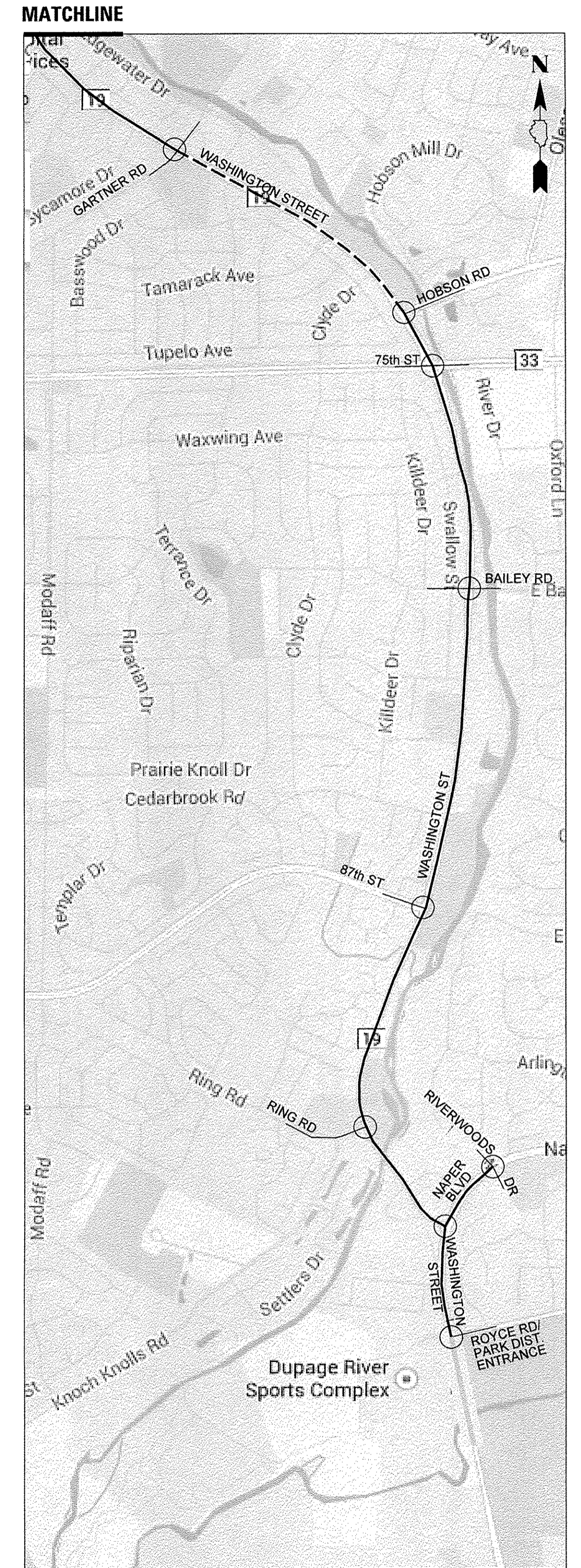
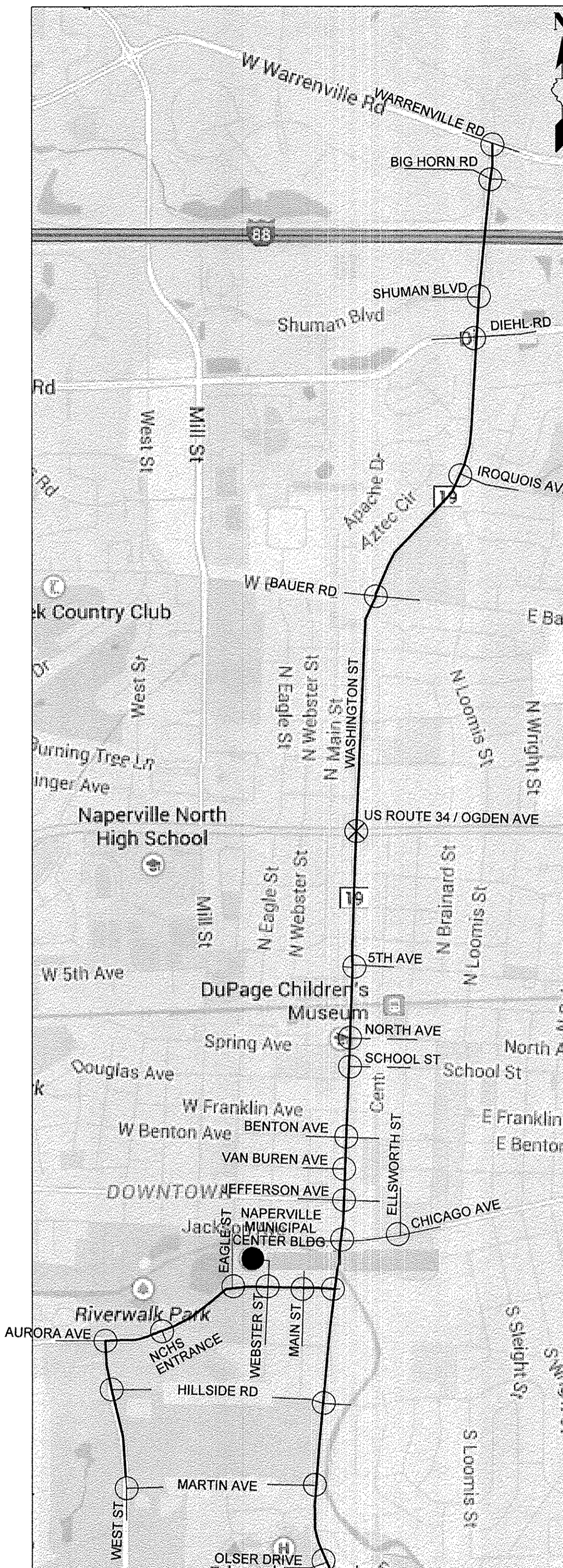
FILE NAME INX_150042	USER NAME = fbariso	DESIGNED - EAJ / TFS	REVISED -	SCALE: SHEET NO. OF SHEETS STA. TO STA.	F.A.U. RTE. 2552, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 2
	PLOT SCALE = 1"	CHECKED - GMZ	REVISED -		CONTRACT NO. 61D23				
	PLOT DATE = 6/16/2016	DATE = 6/10/2016	REVISED -		FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

**GENERAL NOTES**

**LOCATION MAP**

- ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF NAPERVILLE DESIGN MANUAL AND STANDARD SPECIFICATIONS (CURRENT EDITION), IDOT'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS; BOTH ADOPTED APRIL 1, 2016 BY THE ILLINOIS DEPARTMENT OF TRANSPORTATION AND ALL AMENDMENTS THERETO; IN CASE OF CONFLICT, THE MORE RESTRICTIVE PROVISIONS SHALL APPLY. ANY REFERENCE TO STANDARDS IN THE PLANS OR SPECIAL PROVISIONS SHALL BE INTERPRETED TO BE LATEST STANDARDS OF THE DEPARTMENT.
- THE CITED STANDARD SPECIFICATIONS, CODES AND PERMITS, WITH THESE CONSTRUCTION PLANS AND DETAILS, ARE ALL TO BE CONSIDERED PART OF THE CONTRACT.
- INCIDENTAL ITEMS OR ACCESSORIES NECESSARY TO COMPLETE THIS WORK MAY NOT BE SPECIFICALLY NOTED BUT ARE CONSIDERED A PART OF THIS CONTRACT.
- THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH UTILITY COMPANIES, LOCAL GOVERNMENT AGENCIES AND IDOT.
- THE EXACT LOCATION OF ALL UTILITIES SHALL BE FIELD VERIFIED BY THE CONTRACTOR BEFORE ORDERING ANY MATERIALS AND STARTING ANY WORK. THE CONTRACTOR SHALL CALL "JULIE" AT (800) 892-0123 OR 811 FOR FIELD LOCATIONS OF BURIED UTILITIES (48 HOURS NOTIFICATION REQUIRED). ALL UTILITY COORDINATION SHALL BE IN ACCORDANCE WITH ARTICLES 105.07 AND 107.31 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND APPLICABLE SECTIONS OF THE SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS. THE CONTRACTOR SHALL LOCATE ALL UTILITIES IN THE AREA OF CONSTRUCTION, JULIE, LOCATE, PROTECT, AND HAND DIG AS REQUIRED TO PROTECT EXISTING NDPU-E FACILITIES. NDPU-E WILL NOT RELOCATE FACILITIES DUE TO THIS PROJECT. THE COST FOR ALL NECESSARY "POT-HOLING" SHALL BE INCLUDED IN THE COST OF THE CONTRACT PAY ITEMS FOR UNDERGROUND CONDUIT, GALVANIZED STEEL, 2" DIA. AND DETECTOR LOOP, TYPE 1. THE CONTRACTOR SHALL CONTACT RON RITTER AT 630-420-4183 TO COORDINATE ANY UTILITY RELATED ISSUES.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SAFETY ON THE JOB PER OSHA REGULATIONS. THE CONTRACTOR SHALL GIVE NOTICES AND COMPLY WITH APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ALL PUBLIC AUTHORITIES BEARING ON SAFETY OF PERSONS OR PROPERTY OR THEIR PROTECTION FROM DAMAGE, INJURY OR LOSS.
- TRAFFIC CONTROL MUST BE PROVIDED FOR ANY ACTIVITY THAT IMPACTS TRAFFIC FLOW. THIS INCLUDES, BUT IS NOT LIMITED TO, ROAD CLOSURES REQUIRING DETOURS, DAILY LANE CLOSURES, LONG TERM LANE CLOSURES, NARROW LANES, AND CONSTRUCTION VEHICLES ENTERING AND EXITING THE PUBLIC ROADWAY. ALL TRAFFIC CONTROL SETUPS MAY BE INSPECTED BY THE CITY OF NAPERVILLE TO ENSURE THAT THEY ARE PROVIDING POSITIVE GUIDANCE TO MOTORISTS AND ARE NOT IN THEMSELVES PRESENTING A HAZARDOUS SITUATION. A REPRESENTATIVE OF THE CONTRACTOR MUST PROVIDE PHONE NUMBERS AT WHICH THEY CAN BE REACHED 24 HOURS A DAY AND ON WEEKENDS SO THAT THEY CAN MAINTAIN TRAFFIC CONTROL DEVICES. THE CONTRACTOR SHALL EMPLOY THE APPROPRIATE METHODS OF TRAFFIC CONTROL IN ACCORDANCE WITH THE PLANS, SPECIFICATIONS AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, SUCH THAT THE SAFETY OF VEHICLES, AND PEDESTRIANS IS PRESERVED AT ALL TIMES. THE ERECTION AND MAINTENANCE OF THE TRAFFIC CONTROL DEVICES SHALL BE TO THE SATISFACTION OF THE ENGINEER (IN COORDINATION WITH CITY).
- ANY TEMPORARY OPEN HOLES SHOULD BE BARRICADED AND PROTECTED IN ACCORDANCE WITH APPLICABLE STANDARDS.
- LANE CLOSURES ON ARTERIAL ROADWAYS WITHIN THE CITY OF NAPERVILLE ARE NOT PERMITTED BETWEEN THE HOURS OF 6AM-9AM AND 3PM-7PM MONDAY THROUGH FRIDAY, UNLESS OTHERWISE PERMITTED BY THE ENGINEER (IN COORDINATION WITH THE CITY). LANE CLOSURES ON ARTERIAL STREETS ARE PERMITTED BETWEEN 7AM AND 7PM ON WEEKENDS, UNLESS OTHERWISE PERMITTED BY THE ENGINEER (IN COORDINATION WITH THE CITY). ARTERIAL ROADWAYS ARE DEFINED AS BOTH MAJOR AND MINOR ARTERIAL ROADWAYS AS DESIGNATED ON THE CITY'S MASTER THOROUGHFARE PLAN, LATEST EDITION. ANY WORK THAT IMPACTS A TRAFFIC LANE ON AN ARTERIAL ROADWAY REQUIRES AN ARROWBOARD AS PART OF THE TRAFFIC CONTROL. AT THE END OF EACH DAY OF WORK, THE ROADWAY MUST BE COMPLETELY REOPENED TO TRAFFIC. ANY OPEN HOLES MUST BE PLATED OR COLD PATCHED; THE CITY WILL NOT ALLOW THE HOLES TO BE FILLED WITH GRAVEL.
- THE CONTRACTOR SHALL CHECK THE PROPOSED TRAFFIC SIGNAL EQUIPMENT LOCATIONS FOR OVERHEAD UTILITY CONFLICTS. THE CONTRACTOR SHALL COORDINATE ANY CONFLICTS WITH THE UTILITY COMPANIES AND THE RESIDENT ENGINEER BEFORE ORDERING MATERIALS.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION. THIS SHALL INCLUDE LOCATING THE MAST ARM FOUNDATIONS AND VERIFYING THE MAST ARMS LENGTHS.
- ALL COSTS RELATED TO MODIFYING EXISTING CONTROLLER CABINETS FOR CABINET RELATED PAY ITEMS AS SHOWN ON THE PLANS SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THOSE RELATED PAY ITEMS. THIS INCLUDES COSTS FOR FURNISHING ALL CABINET MATERIALS, HARDWARE, WIRING, CONTROLLER SOFTWARE UPGRADES, LOAD SWITCHES, AND LABOR REQUIRED. NO ADDITIONAL COMPENSATION SHALL BE GIVEN FOR THIS WORK.

- THE CONTRACTOR SHALL PROTECT ALL EXISTING BURIED/IN PAVEMENT TRAFFIC SIGNAL CONDUIT AND CABLING INCLUDING DETECTOR LOOPS WHEN INSTALLING NEW VEHICLE DETECTION SYSTEMS AS SPECIFIED IN THE SPECIFICATIONS, PLANS HEREIN AND AS DIRECTED BY THE ENGINEER. DAMAGE TO EXISTING BURIED/IN PAVEMENT TRAFFIC SIGNAL CONDUIT AND CABLING INCLUDING DETECTOR LOOPS CAUSED BY THE CONTRACTOR SHALL BE REPAIRED OR SAID DAMAGED EQUIPMENT SHALL BE REPLACED IN KIND BY THE CONTRACTOR AT THE SATISFACTION OF THE ENGINEER. NO ADDITIONAL COMPENSATION WILL BE APPROVED. EXISTING INOPERABLE DETECTORS/DETECTION SYSTEMS ENCOUNTERED BY THE CONTRACTOR SHALL BE REPAIRED/REPLACED BY THE CONTRACTOR AT THE CONTRACT UNIT PRICE OF ANY APPLICABLE PAY ITEMS OR PER ARTICLE 109.04 OF THE STANDARD SPECIFICATIONS.



- LEGEND:**
- ⊗ = IDOT SIGNALIZED INTERSECTION (NO IMPROVEMENT)
  - = SIGNALIZED INTERSECTION WITHIN PROJECT LIMITS
  - = NAPERVILLE MUNICIPAL CENTER BUILDING
  - = PROJECT LIMITS

DATE	BY	DATE	BY
DATE	BY	DATE	BY

**TS SHT NO. 3**

FILE NAME NOT_150042	USER NAME = fboriso N:\NAPERVILLE\150042\TRAFFIC\	DESIGNED - EAJ / TFS	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>GENERAL NOTES AND LOCATION MAP</b>	SCALE:	SHEET NO. OF SHEETS	STA. TO STA.	F.A.U. R.T.E. 2552, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 3	CONTRACT NO. 61D23
PLOT SCALE = 1"	CHECKED - GMZ	REVISED -	FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT								
PLOT DATE = 8/16/2016	DATE - 6/10/2016	REVISED -												

**CHRISTOPHER B. BURKE** ENGINEERING LTD.  
9575 West Higgins Road, Suite 600  
Rosemont, Illinois 60018  
(847) 823-0500

# SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	TOTAL	CONSTRUCTION CODE: 0021						
				STU FUNDS (80% FEDERAL / 20% LOCAL)						
				Washington Street @ Royce Road	Washington Street @ Naper Boulevard	Naper Boulevard @ River Woods Drive	Washington Street @ Ring Road	Washington Street @ 87th Street	Washington Street @ Bailey Road	
67100100	MOBILIZATION	LSUM	1							
70102625	TRAFFIC CONTROL AND PROTECTION, STANDARD 701606	LSUM	1							
70102635	TRAFFIC CONTROL AND PROTECTION, STANDARD 701701	LSUM	1							
70102640	TRAFFIC CONTROL AND PROTECTION, STANDARD 701801	LSUM	1							
85000200	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	32	1	1	1	1	1	1	
87301305	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	9,158	384	463	726	591	799	470	
88500500	INDUCTION LOOP DETECTOR AMPLIFIER	EACH	12			1	1		1	
XX006938	OPTIMIZE TRAFFIC SIGNAL SYSTEM (SPECIAL)	EACH	1							
XX007739	WIRELESS VEHICLE DETECTION SYSTEM	EACH	31	1	1	1	1	1	1	
Z0076504	TRAFFIC MANAGEMENT SYSTEM INSTALLATION	LSUM	1							
△ Z0076600	TRAINEES	HOUR	500							
△ Z0076604	TRAINEES TRAINING PROGRAM GRADUATE	HOUR	500							

△ Construction code for TRAINEES and TRAINEES TRAINING PROGRAM GRADUATE pay items: 0042

PROFILE  
 DESIGNED - \_\_\_\_\_  
 PLOTTED - \_\_\_\_\_  
 GRADES CHECKED - \_\_\_\_\_  
 STRUCTURE NOTATIONS CHECKED - \_\_\_\_\_  
 NOTE BOOK NO. \_\_\_\_\_  
 DATE \_\_\_\_\_  
 BY \_\_\_\_\_

PLAN  
 SURVEYED - \_\_\_\_\_  
 REVISIONS - \_\_\_\_\_  
 R.T. OF WAY CHECKED - \_\_\_\_\_  
 CADD FILE NAME - \_\_\_\_\_  
 NOTE BOOK NO. \_\_\_\_\_  
 DATE \_\_\_\_\_  
 BY \_\_\_\_\_

**CHRISTOPHER B. BURKE**  
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 Rosemont, Illinois 60018  
 (617) 923-0500

**TS SHT NO. 4**

FILE NAME SUM_150042-01	USER NAME = fbariso	DESIGNED - EAJ / TFS	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>SUMMARY OF QUANTITIES</b>	F.A.U. RTE. 2552, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY	TOTAL SHEETS 80	SHEET NO. 4
	PLOT SCALE = 20'	CHECKED - GMZ	REVISED -				DUPAGE & WILL			CONTRACT NO. 61D23
	PLOT DATE = 8/16/2016	DATE = 6/10/2016	REVISED -		SCALE:		SHEET NO. OF SHEETS	STA.	TO STA.	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

# SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	TOTAL	CONSTRUCTION CODE: 0021									
				STU FUNDS (80% FEDERAL / 20% LOCAL)									
				Washington Street @ Gartner Road	Washington Street @ Osler Drive	Washington Street @ Martin Avenue	Washington Street @ Hillside Road	Washington Street @ Aurora Avenue	Washington Street @ Chicago Avenue	Washington Street @ Jefferson Avenue	Washington Street @ Van Buren Avenue	Washington Street @ Benton Avenue	Washington Street @ School Street
67100100	MOBILIZATION	LSUM	1										
70102625	TRAFFIC CONTROL AND PROTECTION, STANDARD 701606	LSUM	1										
70102635	TRAFFIC CONTROL AND PROTECTION, STANDARD 701701	LSUM	1										
70102640	TRAFFIC CONTROL AND PROTECTION, STANDARD 701801	LSUM	1										
85000200	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	32	1	1	1	1	1	1	1	1	1	1
87301305	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	9,158	458		727	776						
88500500	INDUCTION LOOP DETECTOR AMPLIFIER	EACH	12	1		1	1						
XX006938	OPTIMIZE TRAFFIC SIGNAL SYSTEM (SPECIAL)	EACH	1										
XX007739	WIRELESS VEHICLE DETECTION SYSTEM	EACH	31	1	1	1	1	1	1	1	1	1	1
Z0076504	TRAFFIC MANAGEMENT SYSTEM INSTALLATION	LSUM	1										
△ Z0076600	TRAINEES	HOUR	500										
△ Z0076604	TRAINEES TRAINING PROGRAM GRADUATE	HOUR	500										

△ Construction code for TRAINEES and TRAINEES TRAINING PROGRAM GRADUATE pay items: 0042

PROFILE SURVEYED \_\_\_\_\_ DATE \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_  
 NO. \_\_\_\_\_  
 GRADES CHECKED \_\_\_\_\_  
 STRUCTURE NOTATIONS CHKD \_\_\_\_\_  
 PLAN SURVEYED \_\_\_\_\_ DATE \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_  
 NO. \_\_\_\_\_  
 GRADES CHECKED \_\_\_\_\_  
 CAD FILE NAME \_\_\_\_\_  
**CHRISTOPHER B. BURKE**  
 ENGINEERING LTD.  
 9575 West Higgins Road, Suite 600  
 Rosemont, Illinois 60018  
 (847) 923-0500

TS SHT NO. 5

FILE NAME SUM_150042-02	USER NAME = fbariso	DESIGNED - EAJ / TFS	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>SUMMARY OF QUANTITIES</b>	F.A.U. RTE. 2552, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY	TOTAL SHEETS 80	SHEET NO. 5	
	N:\NAPERVILLE\150042\TRAFFIC\	DRAWN - FPB	REVISED -			SCALE:	SHEET NO. OF SHEETS	STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	CONTRACT NO. 61D23
	PLOT SCALE = 20'	CHECKED - GMZ	REVISED -								
	PLOT DATE = 8/16/2016	DATE - 6/10/2016	REVISED -								

# SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	TOTAL	CONSTRUCTION CODE: 0021								
				STU FUNDS (80% FEDERAL / 20% LOCAL)								
				Washington Street @ North Avenue	Washington Street @ 5th Avenue	Washington Street @ Bauer Road	Washington Street @ Iroquois Avenue	Washington Street @ Diehl Road	Washington Street @ Shuman Boulevard	Washington Street @ Bighorn Road	Washington Street @ Warrenville Road	
67100100	MOBILIZATION	LSUM	1									
70102625	TRAFFIC CONTROL AND PROTECTION, STANDARD 701606	LSUM	1									
70102635	TRAFFIC CONTROL AND PROTECTION, STANDARD 701701	LSUM	1									
70102640	TRAFFIC CONTROL AND PROTECTION, STANDARD 701801	LSUM	1									
85000200	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	32	1	1	1	1	1	1	1	1	1
87301305	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	9,158						842	750		
88500500	INDUCTION LOOP DETECTOR AMPLIFIER	EACH	12						1	1		
XX006938	OPTIMIZE TRAFFIC SIGNAL SYSTEM (SPECIAL)	EACH	1									
XX007739	WIRELESS VEHICLE DETECTION SYSTEM	EACH	31	1	1	1	1	1	1	1	1	1
Z0076504	TRAFFIC MANAGEMENT SYSTEM INSTALLATION	LSUM	1									
△ Z0076600	TRAINEES	HOUR	500									
△ Z0076604	TRAINEES TRAINING PROGRAM GRADUATE	HOUR	500									

△ Construction code for TRAINEES and TRAINEES TRAINING PROGRAM GRADUATE pay items: 0042

PROFILE SURVEYED _____ PLOTTED _____ NOTE BOOK NO. _____ STRUCTURE NOTATION CHKD _____	PLAN SURVEYED _____ ALIGNED _____ CHECKED _____ DATE _____ BY _____
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 8575 West Higgins Road, Suite 600  
 Rosemont, Illinois 60018  
 (847) 823-0500

TS SHT NO. 6

FILE NAME SUM_150042-03	USER NAME = fbariso	DESIGNED - EAJ / TFS	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>SUMMARY OF QUANTITIES</b>	F.A.U. RTE. 2502, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 6
	PLOT SCALE = 20'	CHECKED - GMZ	REVISED -		SCALE:					
	PLOT DATE = 8/16/2016	DATE - 6/10/2016	REVISED -		SHEET NO. OF SHEETS	STA. TO STA.	CONTRACT NO. 61D23			
						FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

# SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	TOTAL	CONSTRUCTION CODE: 0021 STU FUNDS (80% FEDERAL / 20% LOCAL)							
				West Street @ Martin Avenue	West Street @ Hillside Road	Aurora Avenue @ West Street	Aurora Avenue @ NCHS Entrance	Aurora Avenue @ Eagle Street	Aurora Avenue @ Webster Street	Aurora Avenue @ Main Street	Chicago Avenue @ Ellsworth Street
67100100	MOBILIZATION	LSUM	1								
70102625	TRAFFIC CONTROL AND PROTECTION, STANDARD 701606	LSUM	1								
70102635	TRAFFIC CONTROL AND PROTECTION, STANDARD 701701	LSUM	1								
70102640	TRAFFIC CONTROL AND PROTECTION, STANDARD 701801	LSUM	1								
85000200	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	32	1	1	1	1	1	1	1	1
87301305	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	9,158	256	771	380	765				
88500500	INDUCTION LOOP DETECTOR AMPLIFIER	EACH	12	1	1	1	1				
XX006938	OPTIMIZE TRAFFIC SIGNAL SYSTEM (SPECIAL)	EACH	1								
XX007739	WIRELESS VEHICLE DETECTION SYSTEM	EACH	31	1	1	1	1	1		1	1
Z0076504	TRAFFIC MANAGEMENT SYSTEM INSTALLATION	LSUM	1								
△ Z0076600	TRAINEES	HOUR	500								
△ Z0076604	TRAINEES TRAINING PROGRAM GRADUATE	HOUR	500								

△ Construction code for TRAINEES and TRAINEES TRAINING PROGRAM GRADUATE pay items: 0042

PROFILE:  SAVED  NOT SAVED  
 GRADES CHECKED  NOT CHECKED  
 PLOT DATE NOTATION CHKD  
 NO. \_\_\_\_\_  
 BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 PLAN:  SURVEYED  PLOTTED  CHECKED  
 NOTE BOOK  RT. OF WAY CHECKED  
 NO. \_\_\_\_\_ CADD FILE NAME: \_\_\_\_\_  
**CHRISTOPHER B. BURKE** ENGINEERING LTD.  
 8575 West Higgins Road, Suite 600  
 Rosemont, Illinois 60018  
 (617) 823-0500

TS SHT NO. 7

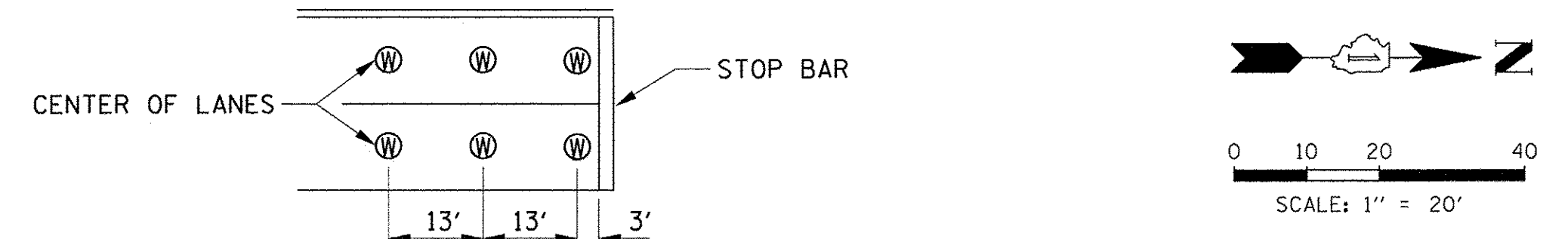
FILE NAME SUM_150042-04	USER NAME = fbariso	DESIGNED - EAJ / TFS	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>SUMMARY OF QUANTITIES</b>	F.A.U. RTE. 2552, 1522 & 2246	SECTION 13-00159-00-TL	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = 20'	CHECKED - CMZ	REVISED -		SCALE:		DUPAGE & WILL	80	7	
	PLOT DATE = 8/16/2016	DATE - 6/10/2016	REVISED -		SHEET NO. OF SHEETS STA. TO STA.		CONTRACT NO. 61D23			
							FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			

DATE	BY	DATE	BY
DATE	BY	DATE	BY
DATE	BY	DATE	BY
DATE	BY	DATE	BY

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ENGINEERING LTD.  
8575 West Higgins Road, Suite 600  
Rosemont, Illinois 60018  
(847) 823-0600

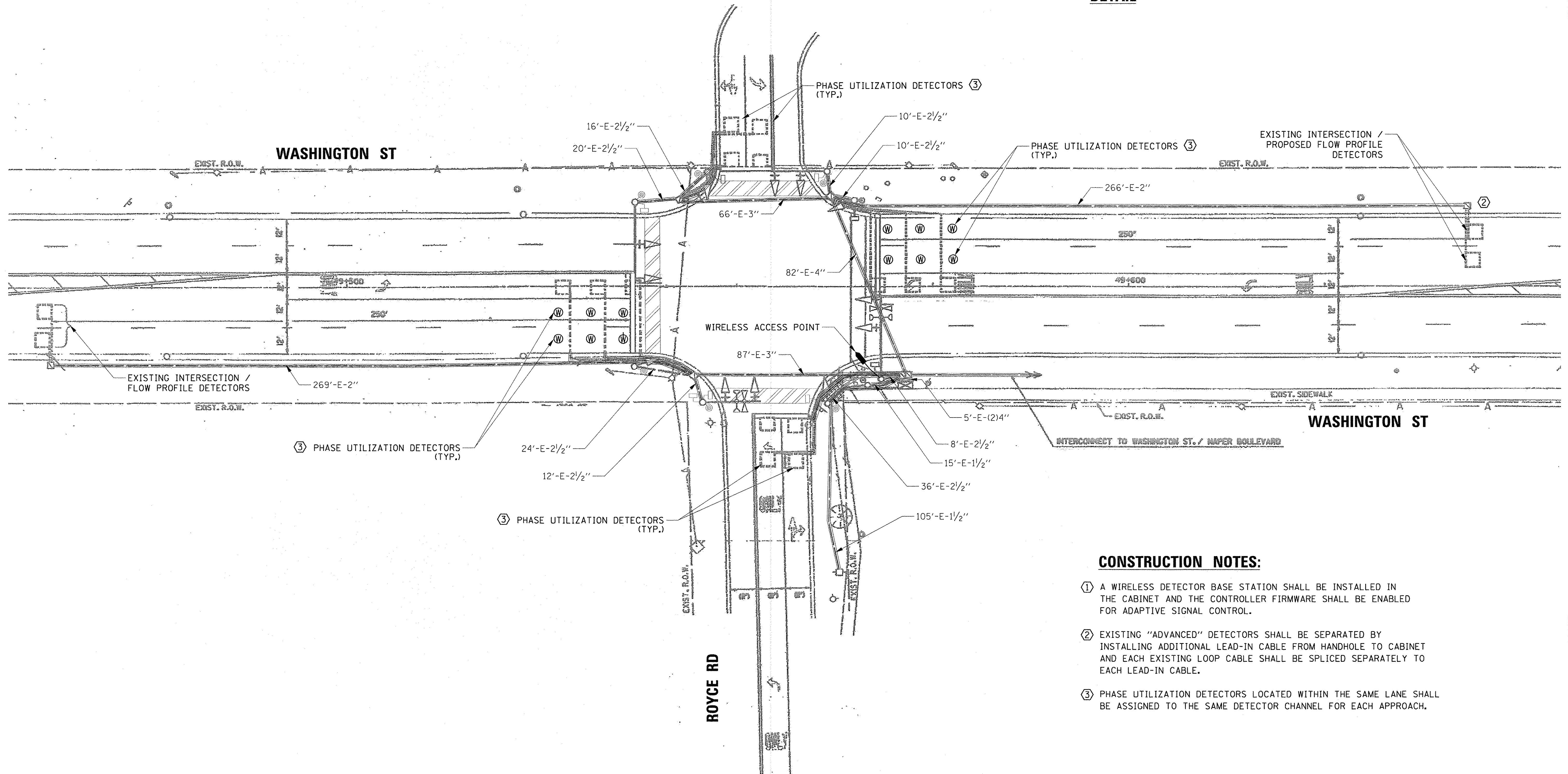
DATE	BY	DATE	BY
DATE	BY	DATE	BY
DATE	BY	DATE	BY
DATE	BY	DATE	BY

TS SHT NO. 8



**PARK DISTRICT ENTRANCE**

**WIRELESS MAGNETIC DETECTOR DETAIL**



**CONSTRUCTION NOTES:**

- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

FILE NAME TS01-1.Wash-Royce_SIG	USER NAME = fbariso N:\MAPERVILLE\150042\TRAFFIC\	DESIGNED - EAJ / TFS DRAWN - FPB	REVISED - REVISED - REVISED - REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TRAFFIC SIGNAL MODIFICATION PLAN WASHINGTON STREET AND ROYCE ROAD / PARK DISTRICT ENTRANCE	F.A.U. RTE. 2552, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 8	CONTRACT NO. 61D23
PLOT SCALE = 20'	PLOT DATE = 6/16/2016	CHECKED - GMZ DATE - 6/10/2016			SCALE:	SHEET NO. OF SHEETS	STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		

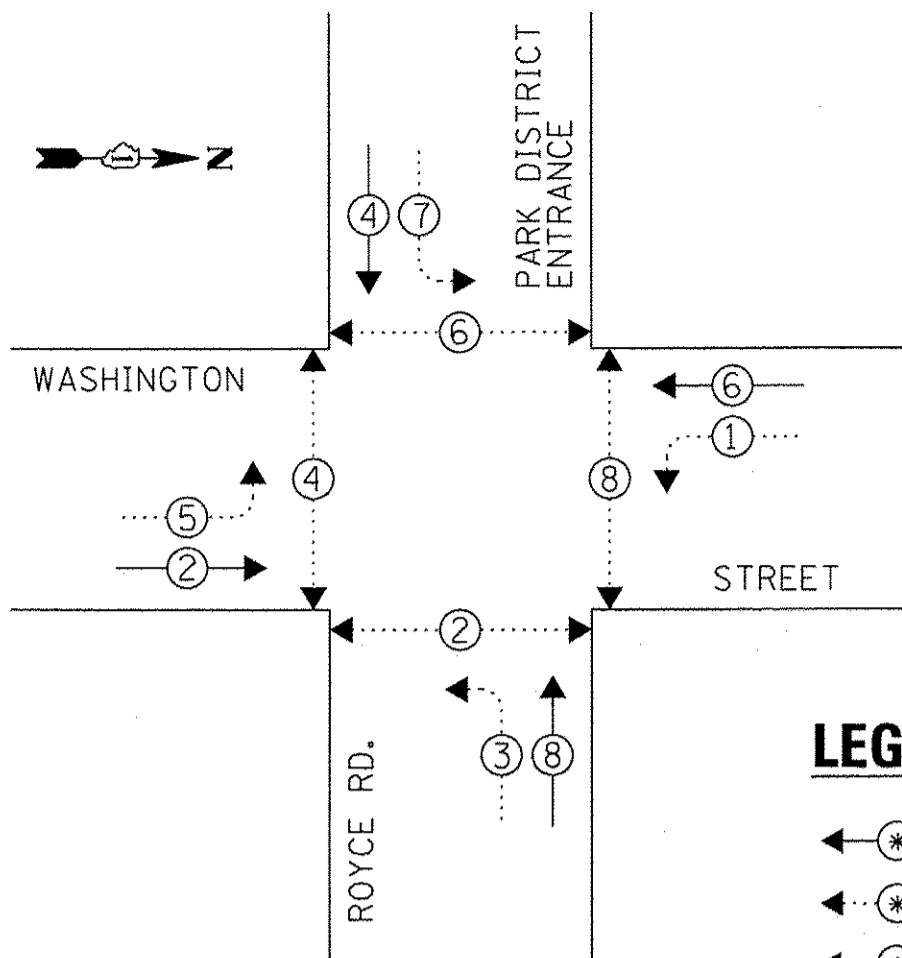


BY: DATE: SURVEYED: PLOTTED: CHECKED: RT. OF WAY CHECKED: CAD FILE NAME: PLAN NO. DATE: SURVEYED: PLOTTED: CHECKED: RT. OF WAY CHECKED: CAD FILE NAME: PROFILE NO. DATE: SURVEYED: PLOTTED: CHECKED: RT. OF WAY CHECKED: CAD FILE NAME: STRUCTURE NOTATION: CIPKO

TS SHT NO. 9

BY: DATE: SURVEYED: PLOTTED: CHECKED: RT. OF WAY CHECKED: CAD FILE NAME: PLAN NO. DATE: SURVEYED: PLOTTED: CHECKED: RT. OF WAY CHECKED: CAD FILE NAME: PROFILE NO. DATE: SURVEYED: PLOTTED: CHECKED: RT. OF WAY CHECKED: CAD FILE NAME: STRUCTURE NOTATION: CIPKO

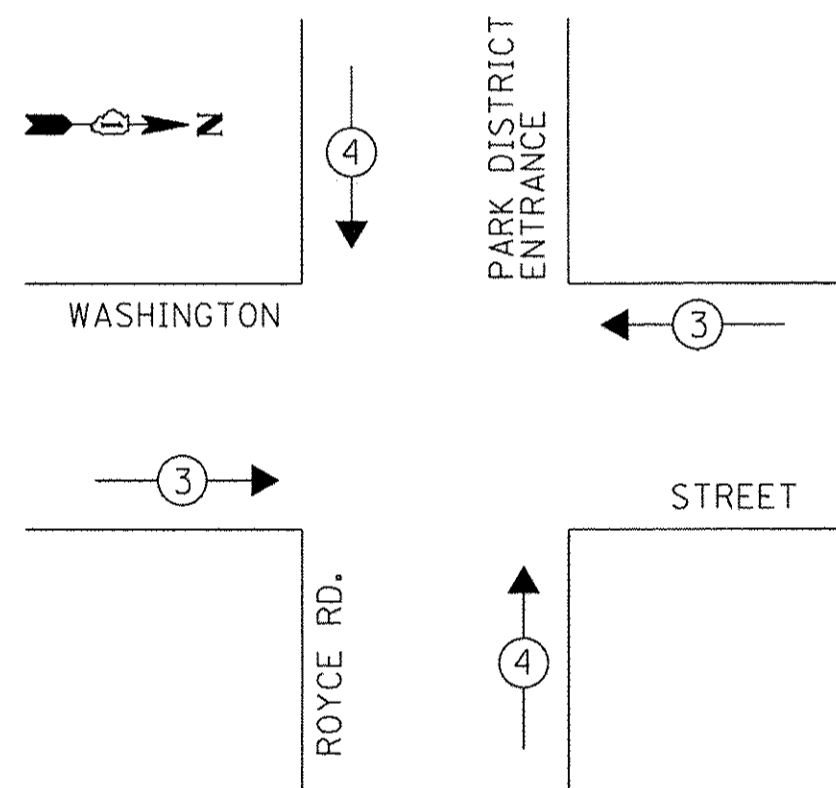
**EXISTING CONTROLLER SEQUENCE**



**LEGEND:**

- ← ⊙ → PROTECTED PHASE
- ← ⊙ ⊙ → PROTECTED/PERMITTED PHASE
- ← ⊙ ⊙ ⊙ → PEDESTRIAN PHASE
- ↔ OL OVERLAP

**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



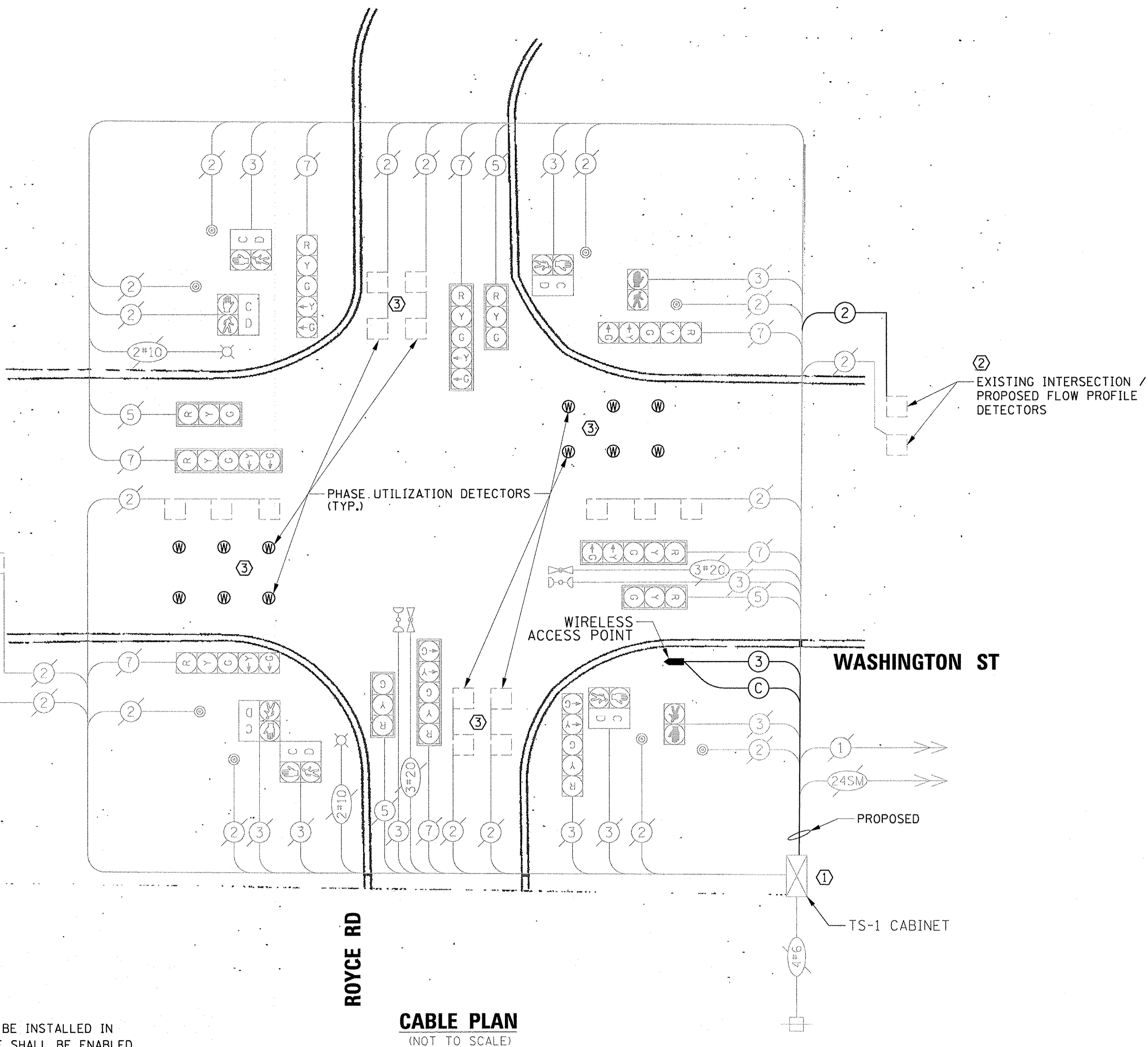
**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	12	11	50	71.5
(YELLOW)	12	20	5	13.0
(GREEN)	12	12	45	70.2
PROTECTED ARROW	16	10	10	16.0
PED. SIGNAL	8	20	100	40.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	2	250	50	250.0
ENERGY COSTS TO:			TOTAL =	560.7

CITY OF NAPERVILLE  
 400 S. EAGLE STREET  
 NAPERVILLE, IL 60540  
 ENERGY SUPPLY: NEW BUSINESS  
 PHONE: (866) 639-3532  
 COMPANY: COMMONWEALTH EDISON  
 ACCOUNT NUMBER: ---

**CONSTRUCTION NOTES:**

- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.



**CABLE PLAN**  
(NOT TO SCALE)

**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	384
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1

FILE NAME: TS01-2-Wash-Royce_CAB	USER NAME: fbariso	DESIGNED: EAJ / TFS	REVISED: -
	N:\NAPERVILLE\150042\TRAFFIC\	DRAWN: FPB	REVISED: -
	PLOT SCALE: 20'	CHECKED: GMZ	REVISED: -
	PLOT DATE: 6/16/2016	DATE: 6/10/2016	REVISED: -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

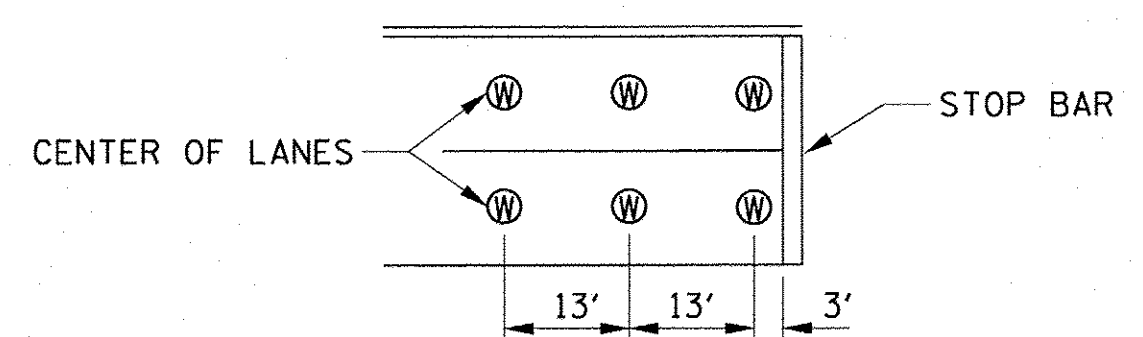
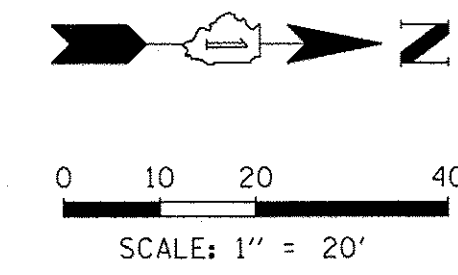
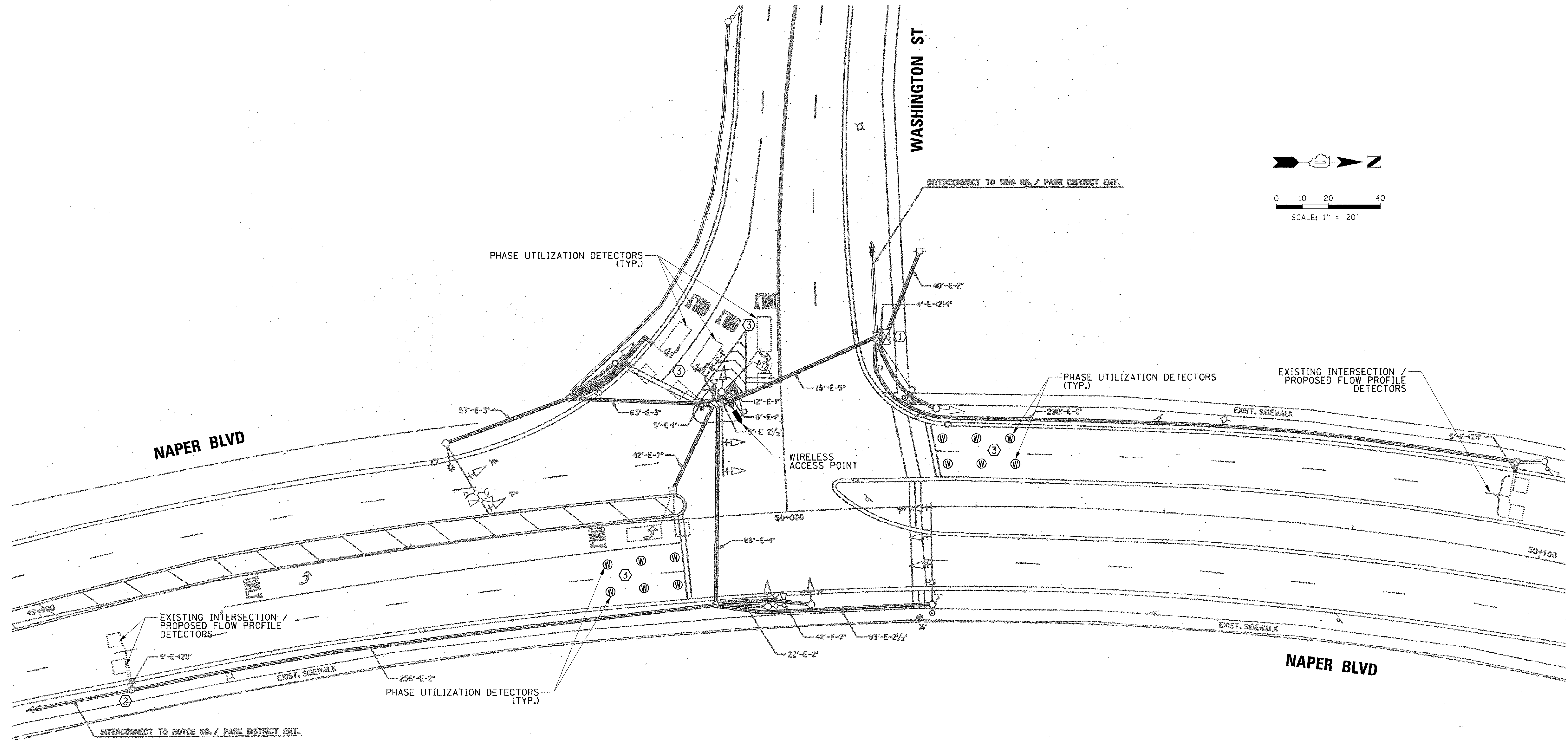
SCHEDULE OF QUANTITIES, CABLE PLAN, PHASE DESIGNATION  
 DIAGRAM AND EMERGENCY VEHICLE PREEMPTION SEQUENCE  
 WASHINGTON STREET AND ROYCE ROAD/PARK DISTRICT ENTRANCE

F.A.U. RTE. 2592, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 9
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 61D23	

DATE	BY	SURVEYED	PLANNED	NOTE BOOK	NO.
DATE	BY	PLOTTED	CHECKED	STRUCTURE NOTATIONS	CHK'D
DATE	BY	REVISIONS	CHECKED	STRUCTURE NOTATIONS	CHK'D
DATE	BY	REVISIONS	CHECKED	STRUCTURE NOTATIONS	CHK'D
DATE	BY	REVISIONS	CHECKED	STRUCTURE NOTATIONS	CHK'D

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(847) 823-0600

TS SHT NO. 10



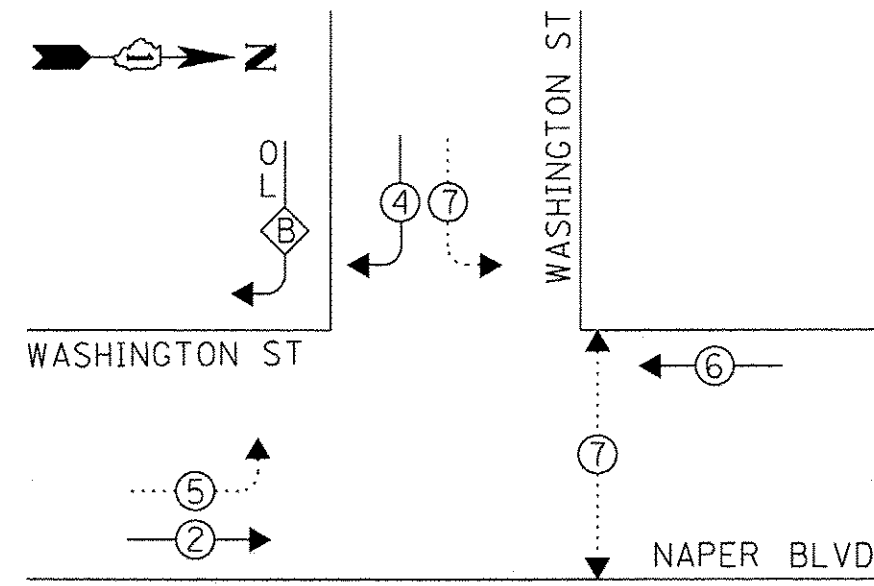
**WIRELESS MAGNETIC DETECTOR  
DETAIL**

**CONSTRUCTION NOTES:**

- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

FILE NAME TS02-1.Wash-Naper.SIG	USER NAME = fbariso N:\NAPERVILLE\150042\TRAFFIC\	DESIGNED - EAJ / TFS DRAWN - FPB	REVISED - REVISED - REVISED - REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TRAFFIC SIGNAL MODIFICATION PLAN WASHINGTON STREET AND NAPER BOULEVARD	F.A.U. RTE. 2552, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 10	CONTRACT NO. 61D23
PLOT SCALE = 20'	PLOT DATE = 6/16/2016	CHECKED - GMZ DATE - 6/10/2016	SCALE: SHEET NO. OF SHEETS STA. TO STA.	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT							

**EXISTING CONTROLLER SEQUENCE**



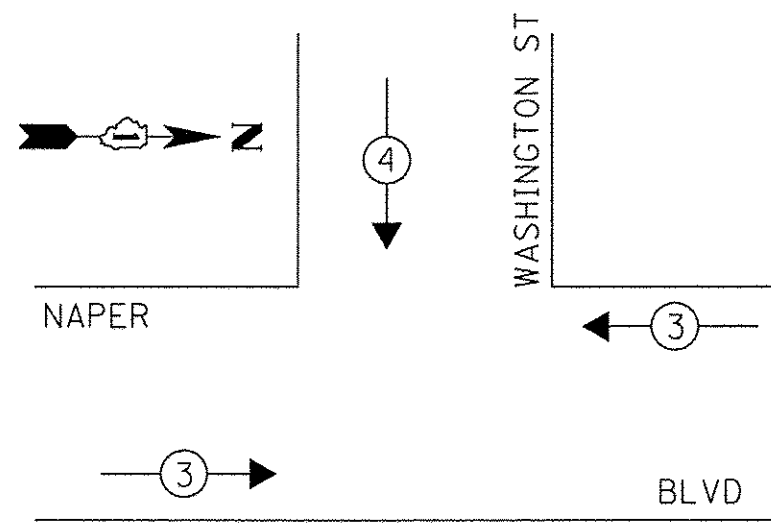
**LEGEND:**

- ⊛ PROTECTED PHASE
- ⊛ PEDESTRIAN PHASE
- ⊛ OVERLAP

**RIGHT TURN OVERLAP PHASE DESIGNATION**

OVERLAP LETTER	PERMISSIVE PHASE	PROTECTED PHASE
B	= 4	+ 5

**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**

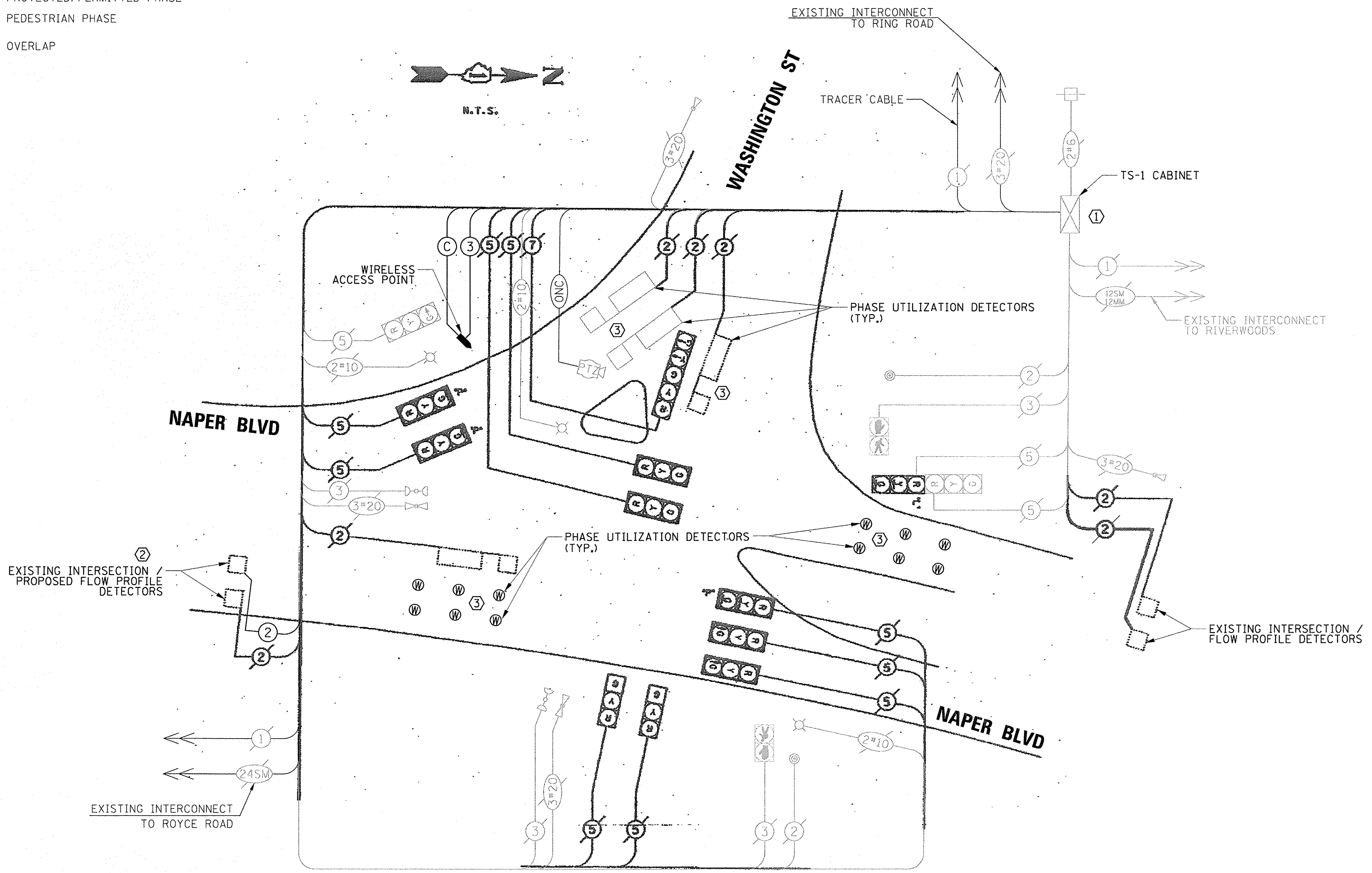


**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	13	11	50	71.5
(YELLOW)	13	20	5	13.0
(GREEN)	13	12	45	70.2
PROTECTED ARROW	2	10	10	2.0
PED. SIGNAL	2	20	100	40.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	2	250	50	250.0
TOTAL =				546.7

ENERGY COSTS TO:  
 CITY OF NAPERVILLE  
 400 S. EAGLE STREET  
 NAPERVILLE, IL 60540  
 ENERGY SUPPLY: CONTACT: NEW BUSINESS  
 PHONE: (866) 639-3532  
 COMPANY: COMMONWEALTH EDISON  
 ACCOUNT NUMBER: ---

TS SHT NO. 11



**CONSTRUCTION NOTES:**

- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

**CABLE PLAN**  
(NOT TO SCALE)

**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	463
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1

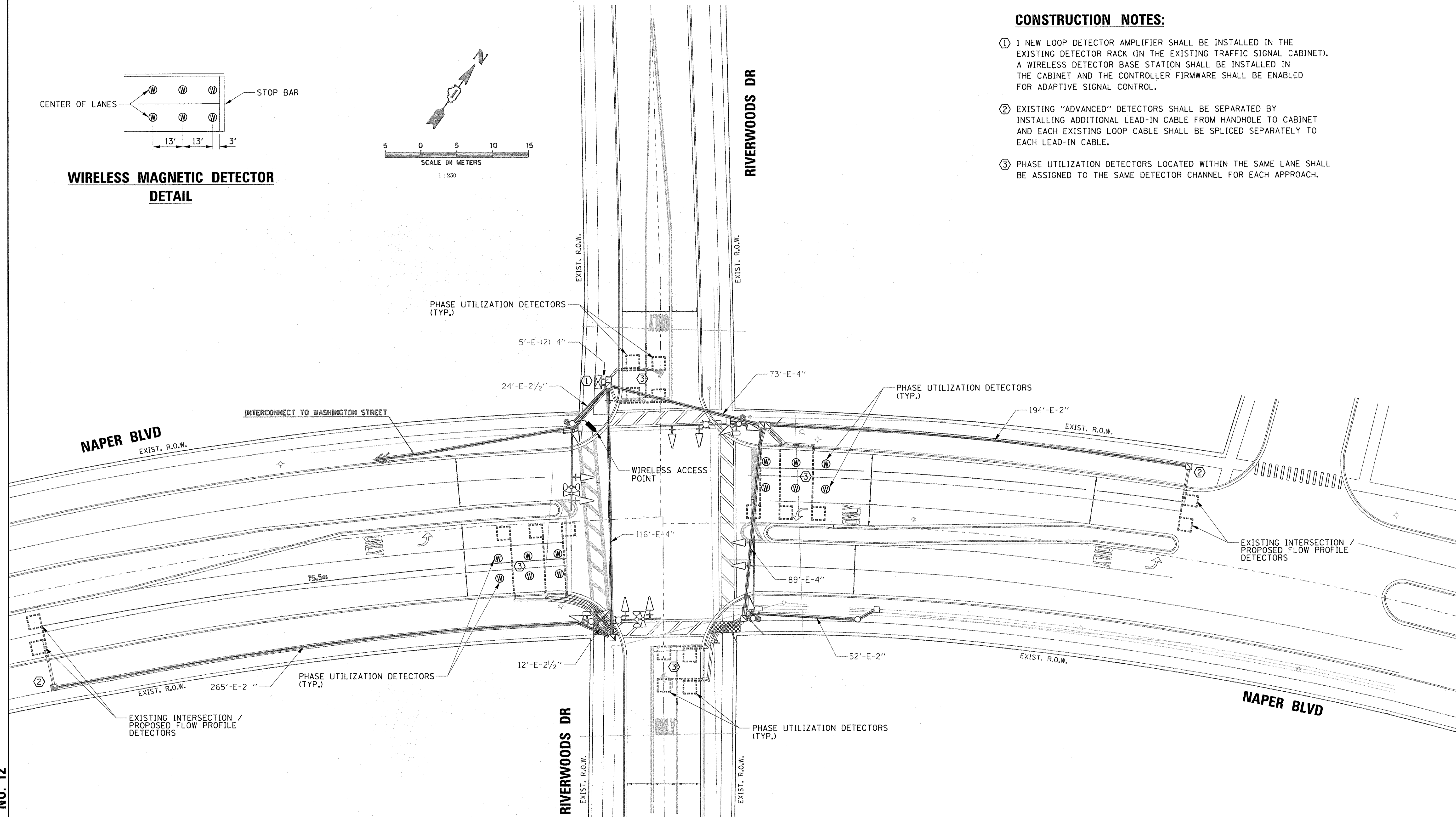
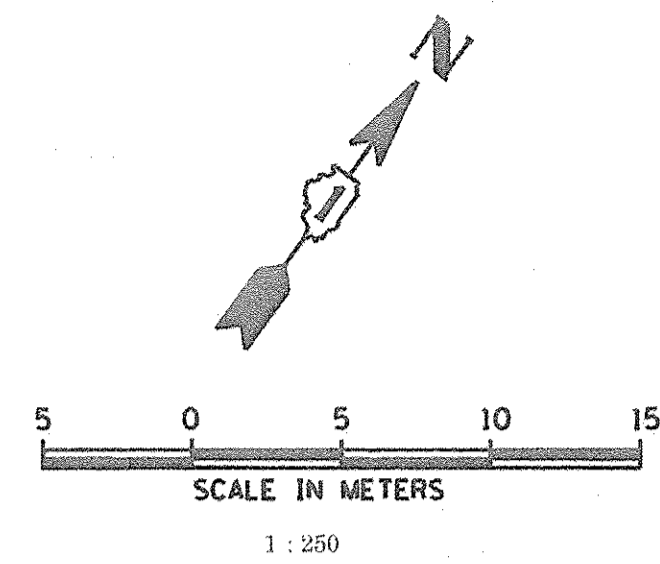
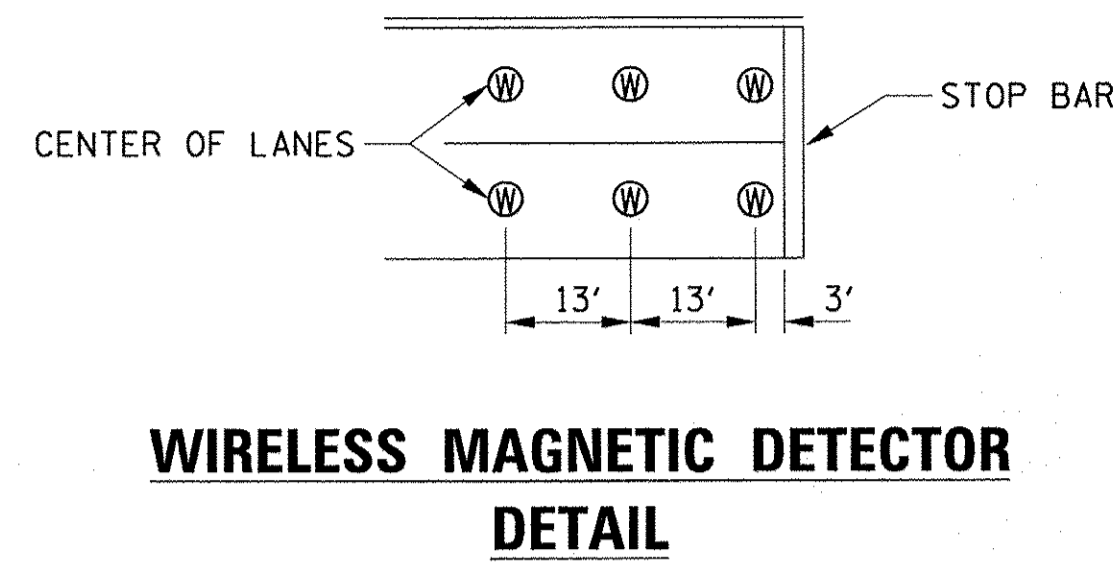
PROFILE SURVEYED, PLOTTED, CHECKED, SHADINGS, STRUCTURE, NOTATIONS OK'D  
 NO. \_\_\_\_\_  
 NOTE BOOK NO. \_\_\_\_\_  
 PLAN NO. \_\_\_\_\_  
 SURVEYED, PLOTTED, CHECKED, SHADINGS, STRUCTURE, NOTATIONS OK'D  
 NO. \_\_\_\_\_  
 NOTE BOOK NO. \_\_\_\_\_  
 ENGINEERING LTD.  
 CHRISTOPHER B. BURKE  
 8575 West Higgins Road, Suite 600  
 Rosemont, Illinois 60018  
 (847) 823-0680

DATE	BY	DATE	BY
DATE	BY	DATE	BY
DATE	BY	DATE	BY

CHRISTOPHER B. BURKE  
ENGINEERING LTD.  
9575 West Higgins Road, Suite 600  
Rosemont, Illinois 60018  
(847) 823-0800

DATE	BY
DATE	BY

TS SHT NO. 12



**CONSTRUCTION NOTES:**

- ① 1 NEW LOOP DETECTOR AMPLIFIER SHALL BE INSTALLED IN THE EXISTING DETECTOR RACK (IN THE EXISTING TRAFFIC SIGNAL CABINET). A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

FILE NAME TS03-1_Naper-Rvrwoods.SIG	USER NAME = fbariso N:\NAPERVILLE\150042\TRAFFIC\	DESIGNED - EAJ / TFS DRAWN - FPB CHECKED - GMZ DATE - 6/10/2016	REVISED - REVISED - REVISED - REVISED -
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNAL MODIFICATION PLAN  
NAPER BOULEVARD AND RIVERWOODS DRIVE

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

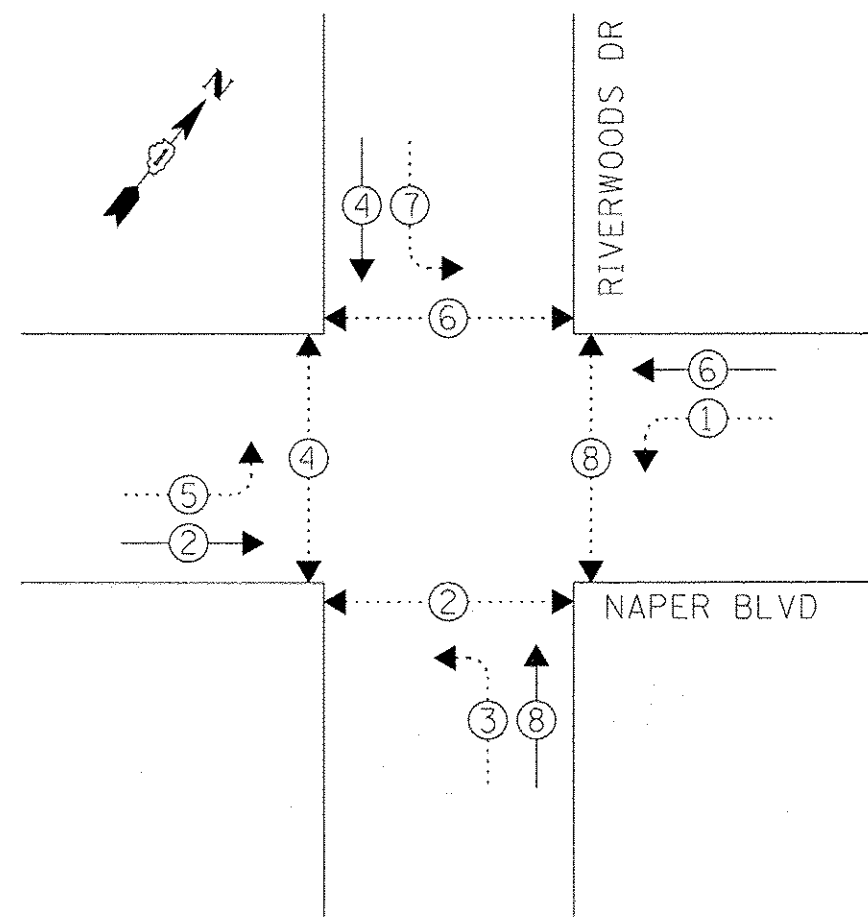
F.A.U. RTE. 252, 1522 & 2346	SECTION 13-00159-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 12
CONTRACT NO. 61D23			ILLINOIS FED. AID PROJECT	

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED \_\_\_\_\_ PLOTTED \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_ CHECKED \_\_\_\_\_  
 NO. \_\_\_\_\_ DATE \_\_\_\_\_  
 STRUCTURE NOTATION: CRKO

TS SHT NO. 13

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED \_\_\_\_\_ PLOTTED \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_ CHECKED \_\_\_\_\_  
 NO. \_\_\_\_\_ DATE \_\_\_\_\_  
 STRUCTURE NOTATION: CRKO

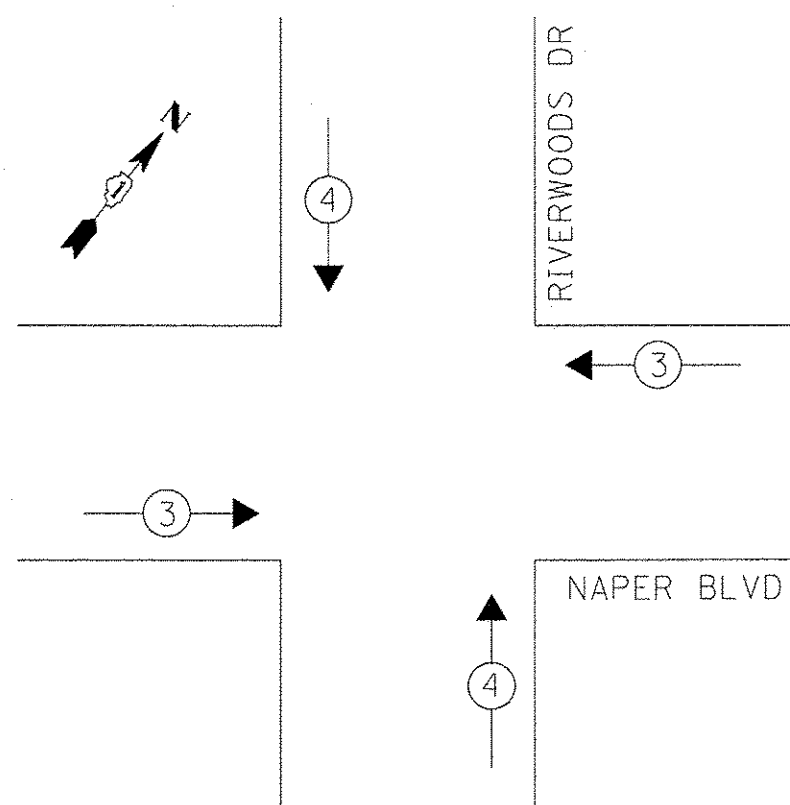
**EXISTING CONTROLLER SEQUENCE**



**LEGEND:**

- ← (⊙) PROTECTED PHASE
- ← (⊙) PROTECTED/PERMITTED PHASE
- ← (⊙) PEDESTRIAN PHASE
- ⊙ OL OVERLAP

**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

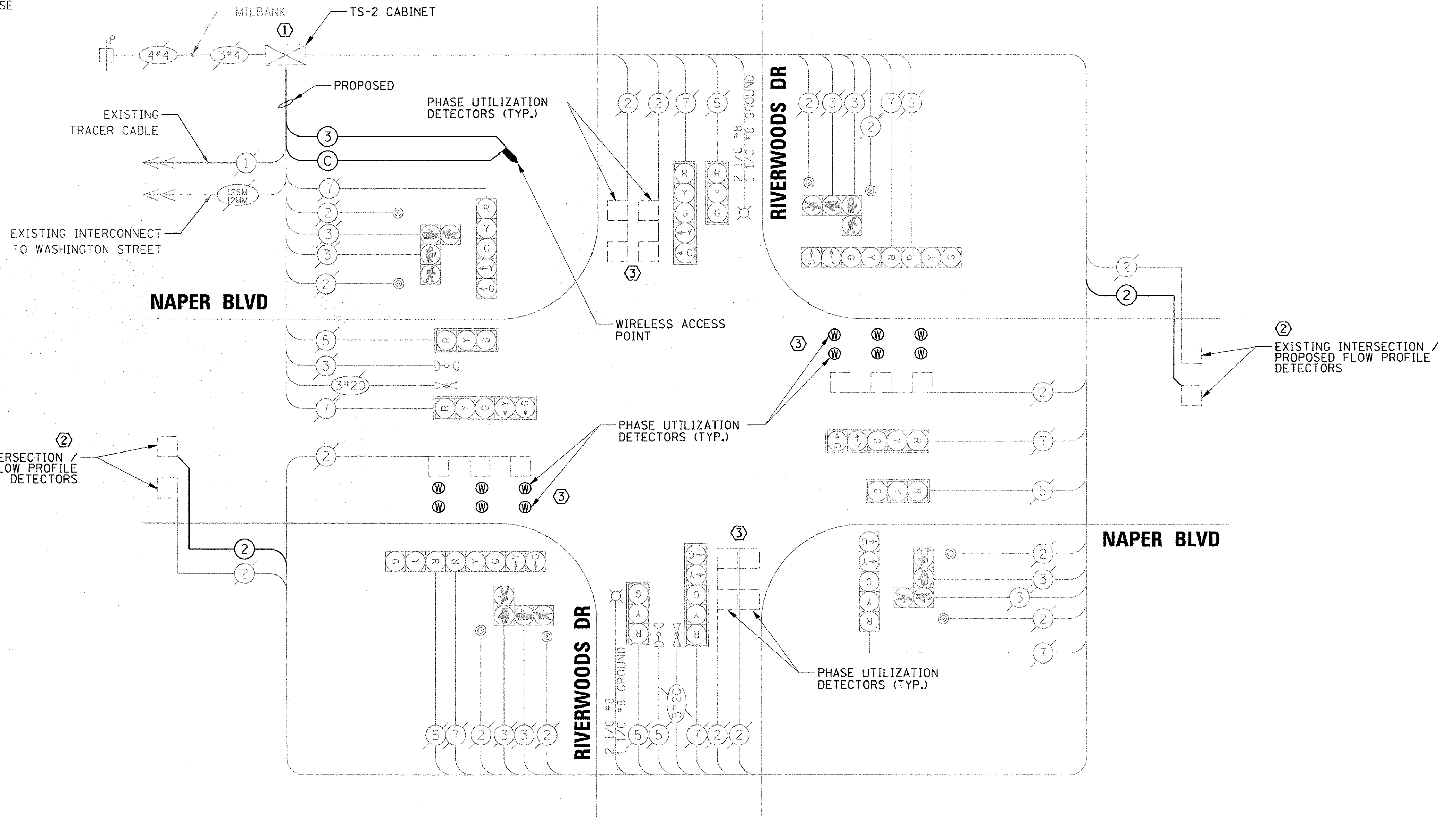
TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	14	11	50	77.0
(YELLOW)	14	20	5	14.0
(GREEN)	14	12	45	75.6
PROTECTED ARROW	16	10	10	16.0
PED. SIGNAL	8	20	100	160.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	2	250	50	250.0
TOTAL =				692.6

ENERGY COSTS TO:  
 CITY OF NAPERVILLE  
 400 S. EAGLE STREET  
 NAPERVILLE, IL 60540

ENERGY SUPPLY: CONTACT: NEW BUSINESS  
 PHONE: (866) 639-3532  
 COMPANY: COMMONWEALTH EDISON  
 ACCOUNT NUMBER: ---

**CONSTRUCTION NOTES:**

- ① 1 NEW LOOP DETECTOR AMPLIFIER SHALL BE INSTALLED IN THE EXISTING DETECTOR RACK (IN THE EXISTING TRAFFIC SIGNAL CABINET). A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.



**CABLE PLAN**  
(NOT TO SCALE)

**SCHEDULE OF QUANTITIES**

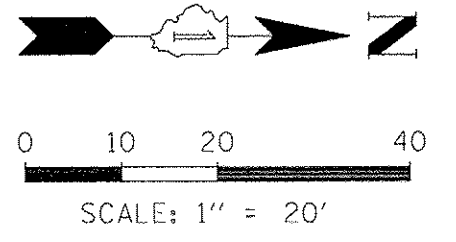
ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	726
INDUCTION LOOP DETECTOR AMPLIFIER	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SCHEDULE OF QUANTITIES, CABLE PLAN, PHASE DESIGNATION  
 DIAGRAM AND EMERGENCY VEHICLE PREEMPTION SEQUENCE  
 NAPER BOULEVARD AND RIVERWOODS DRIVE

F.A.U. RTE. 2552, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 13
SCALE: _____		SHEET NO. OF SHEETS STA. _____ TO STA. _____		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

FILE NAME TS03-2-Naper-Rvrwoods_CAB	USER NAME fbariso	DESIGNED - EAJ / TFS	REVISED -
	N:\NAPERVILLE\150042\TRAFFIC\	DRAWN - FPB	REVISED -
	PLOT SCALE = 20'	CHECKED - GMZ	REVISED -
	PLOT DATE = 8/16/2016	DATE - 6/10/2016	REVISED -

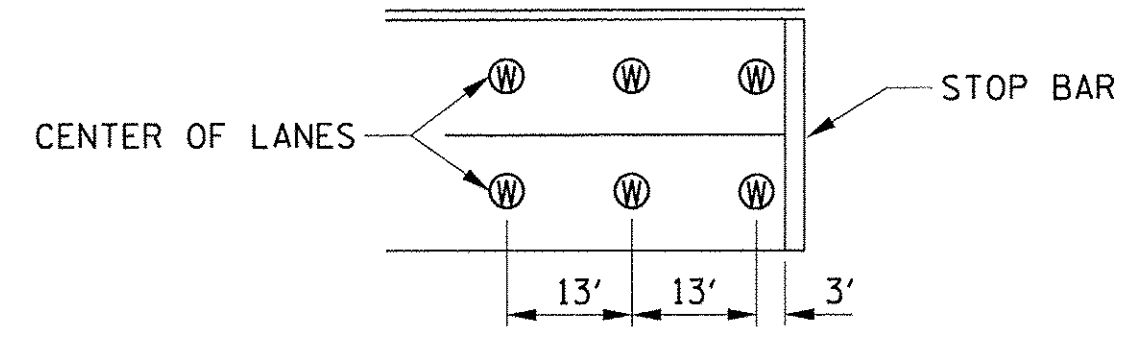
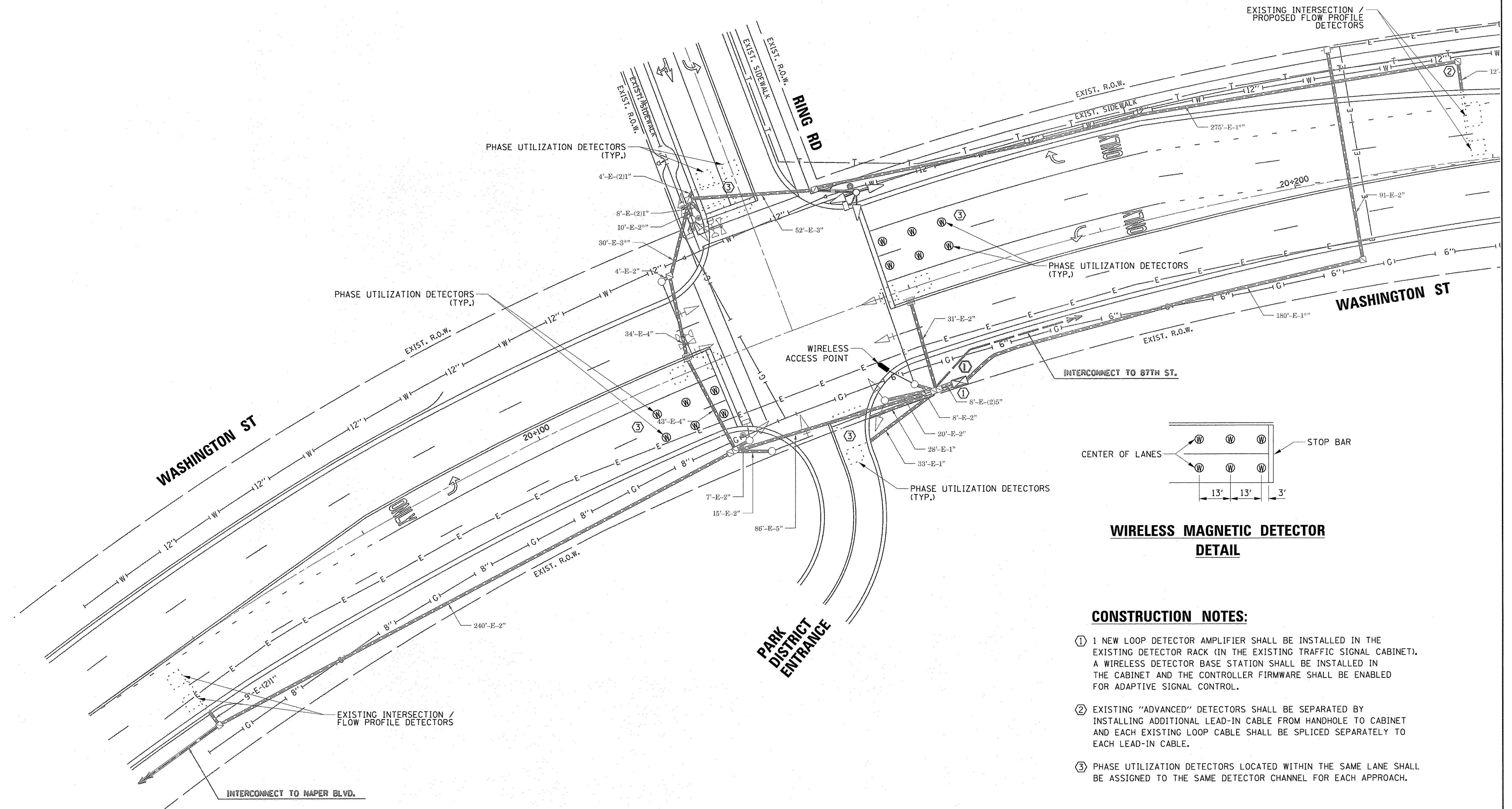


DATE	BY	DATE	BY
DATE	BY	DATE	BY
DATE	BY	DATE	BY

TS SHT NO. 14

**CHRISTOPHER B. BURKE**  
ENGINEERING LTD.  
8575 West Higgins Road, Suite 600  
Rosemont, Illinois 60018  
(847) 823-0500

DATE	BY
DATE	BY
DATE	BY



**WIRELESS MAGNETIC DETECTOR  
DETAIL**

**CONSTRUCTION NOTES:**

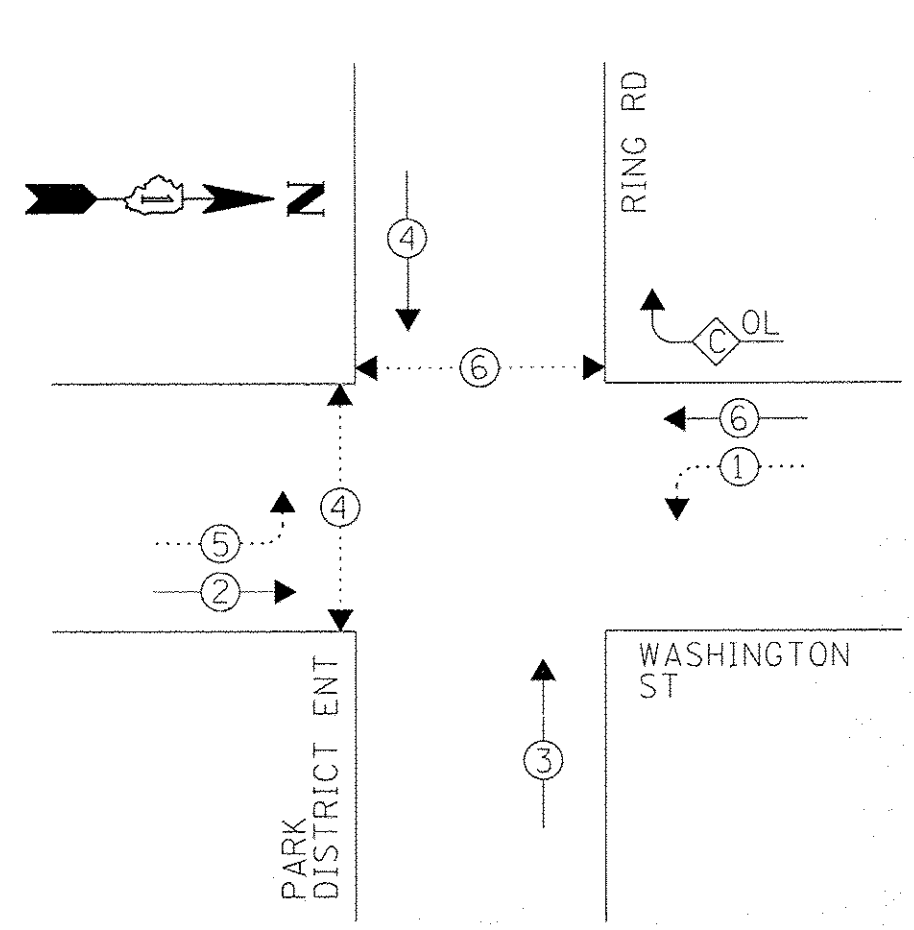
- ① 1 NEW LOOP DETECTOR AMPLIFIER SHALL BE INSTALLED IN THE EXISTING DETECTOR RACK (IN THE EXISTING TRAFFIC SIGNAL CABINET). A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

FILE NAME TS04-1-Wash+Ring_SIG	USER NAME = fbariso N:\MAPERVILLE\150042\TRAFFIC\	DESIGNED - EAJ / TFS DRAWN - FPB	REVISED - REVISED - REVISED - REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TRAFFIC SIGNAL MODIFICATION PLAN WASHINGTON STREET AND RING ROAD / PARK DISTRICT ENTRANCE</b>	F.A.U. RTE. 2552, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 14	CONTRACT NO. 61D23
PLOT SCALE = 20'	PLOT DATE = 8/16/2016	CHECKED - GMZ DATE - 6/10/2016	SCALE: SHEET NO. OF SHEETS STA. TO STA.			FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT				

TS SHT NO. 15  
 PROFILE CHECKED: [ ]  
 GRADES CHECKED: [ ]  
 PLOTTED: [ ]  
 DATE: [ ]  
 BY: [ ]  
 NOTE BOOK NO.: [ ]  
 STRUCTURE NOTATION: CHKD  
 PLAN NO.: [ ]  
 CHECKED: [ ]  
 DATE: [ ]  
 BY: [ ]  
 SURVEYED: [ ]  
 PLOTTED: [ ]  
 ALIGNMENT: [ ]  
 CHECKED: [ ]  
 DATE: [ ]  
 BY: [ ]  
 CADD FILE NAME: [ ]

CHRISTOPHER B. BURKE  
 ENGINEERING LTD.  
 8575 West Higgins Road, Suite 600  
 Rosemont, Illinois 60018  
 (847) 823-0500

**EXISTING CONTROLLER SEQUENCE**



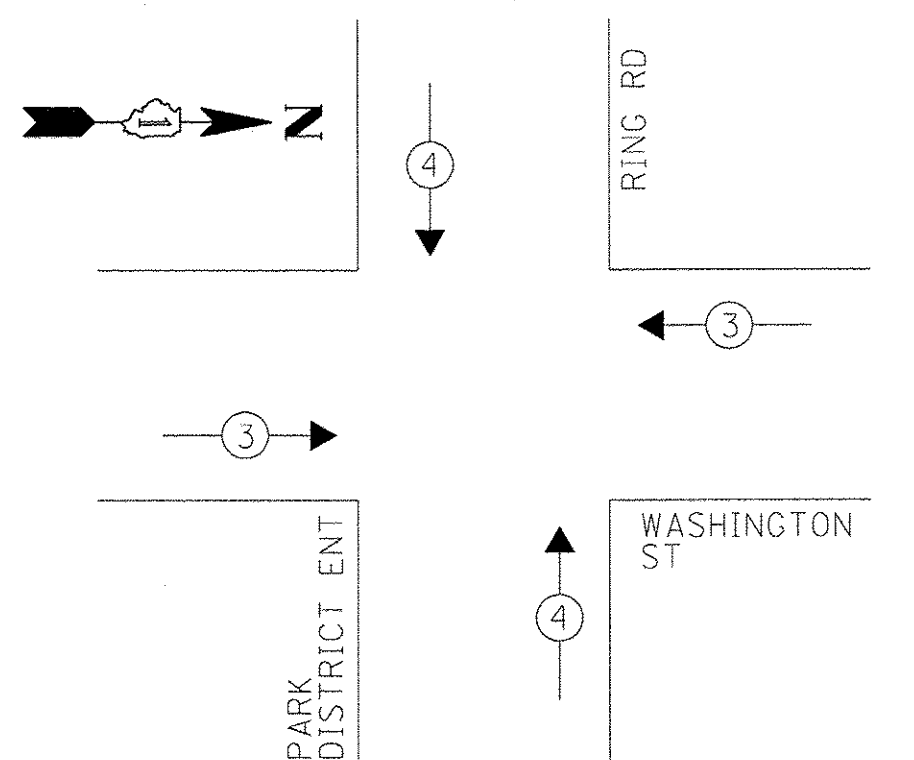
**LEGEND:**

- ← ⊙ → PROTECTED PHASE
- ← ⊙ ··· → PROTECTED/PERMITTED PHASE
- ← ⊙ ⊙ → PEDESTRIAN PHASE
- ← ⊙ OL → OVERLAP

**RIGHT TURN OVERLAP  
PHASE DESIGNATION**

OVERLAP LETTER	PERMISSIVE PHASE	PROTECTED PHASE
C	= 6	+ 4

**EXISTING EMERGENCY VEHICLE  
PREEMPTION SEQUENCE**



**TRAFFIC SIGNAL  
ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	13	11	50	71.5
(YELLOW)	13	20	5	13.0
(GREEN)	15	12	45	81.0
PROTECTED ARROW	8	10	10	8.0
PED. SIGNAL	4	20	100	80.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	2	250	50	250.0
ENERGY COSTS TO:			TOTAL =	603.5

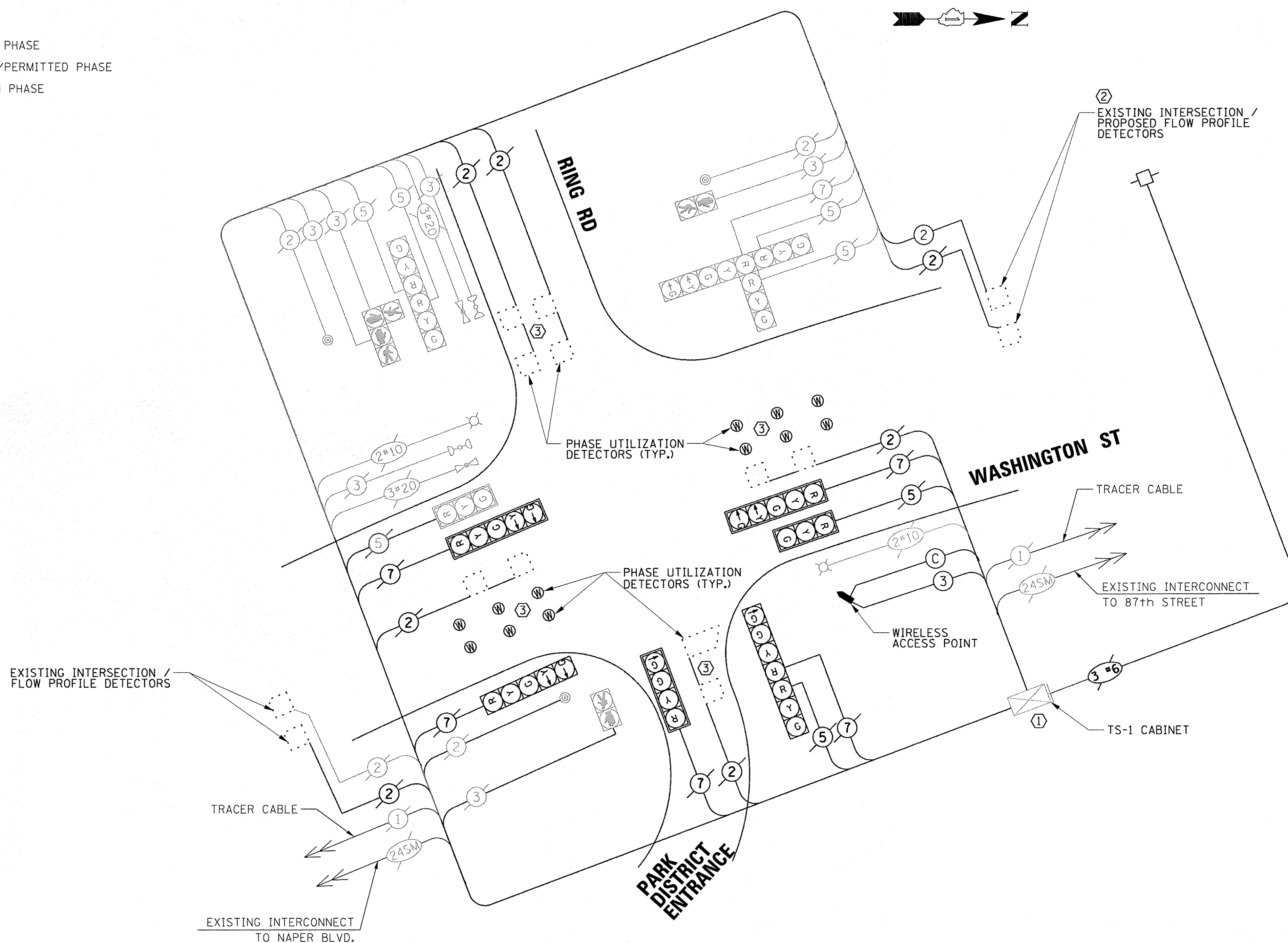
CITY OF NAPERVILLE  
 400 S. EAGLE STREET  
 NAPERVILLE, IL 60540  
 ENERGY SUPPLY: CONTACT: NEW BUSINESS  
 PHONE: (866) 639-3532  
 COMPANY: COMMONWEALTH EDISON  
 ACCOUNT NUMBER: ---

FILE NAME: T504-2\_Wash-Ring\_CAB  
 USER NAME: Fbar180  
 DESIGNED - EAJ / TFS  
 DRAWN - FPB  
 CHECKED - GMZ  
 PLOT DATE = 8/16/2016  
 REVISIONS:  
 REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

**CONSTRUCTION NOTES:**

- ① 1 NEW LOOP DETECTOR AMPLIFIER SHALL BE INSTALLED IN THE EXISTING DETECTOR RACK (IN THE EXISTING TRAFFIC SIGNAL CABINET). A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

**CABLE PLAN  
(NOT TO SCALE)**



**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	591
INDUCTION LOOP DETECTOR AMPLIFIER	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

**SCHEDULE OF QUANTITIES, CABLE PLAN, PHASE DESIGNATION  
 DIAGRAM AND EMERGENCY VEHICLE PREEMPTION SEQUENCE  
 WASHINGTON STREET AND RING ROAD/PARK DISTRICT ENTRANCE**

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2502, 1522 & 2546	13-00159-00-TL	DuPAGE & WILL	80	15
CONTRACT NO. 61D23				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

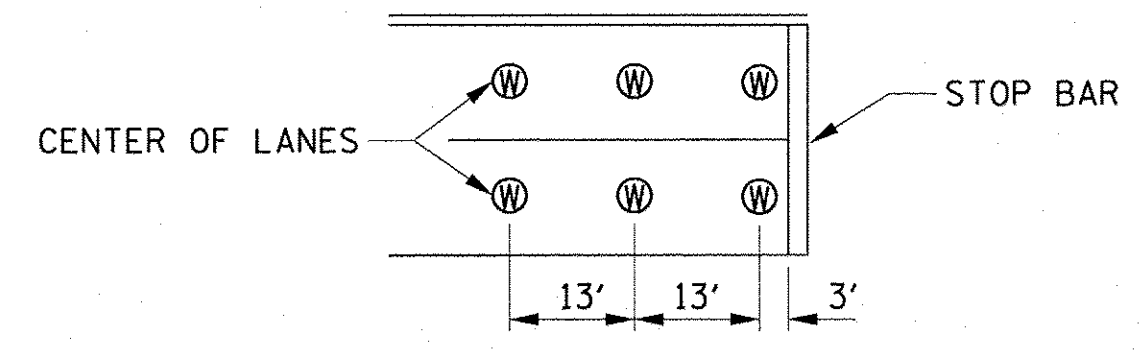
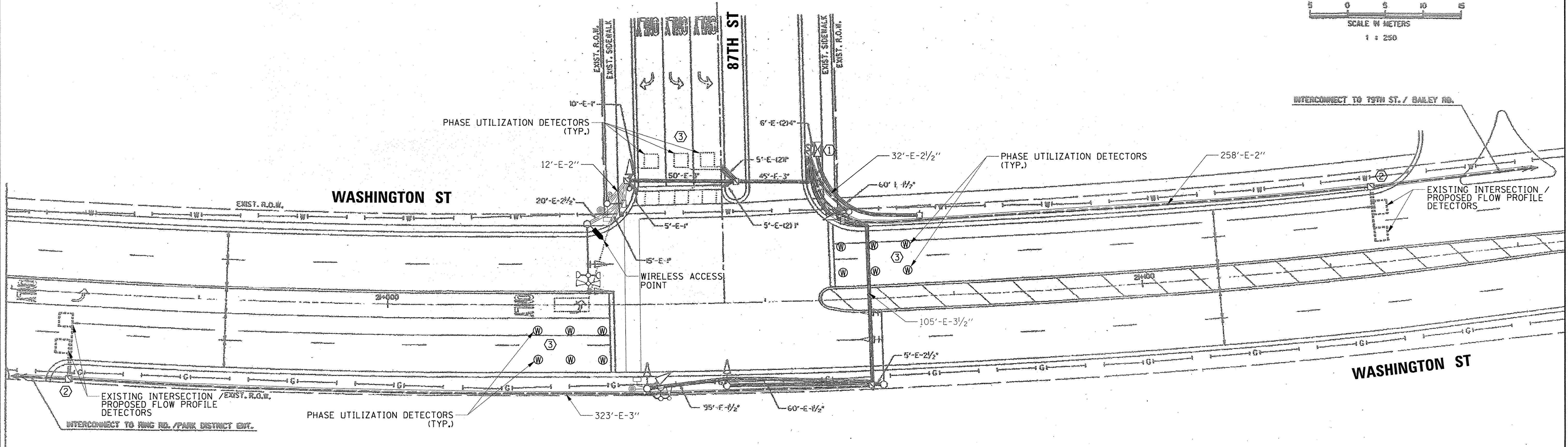
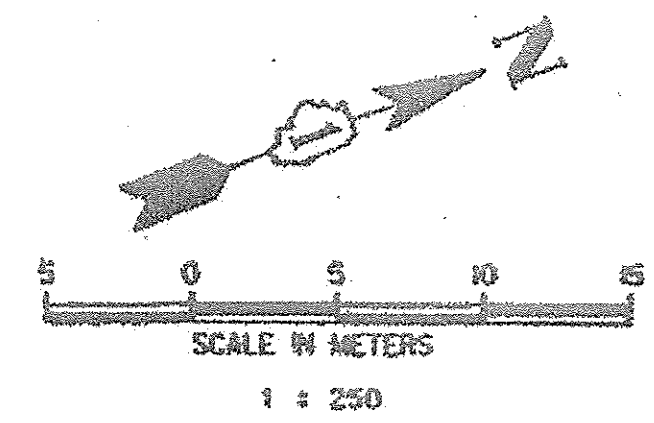
SCALE: SHEET NO. OF SHEETS STA. TO STA.

DATE	BY	DATE	BY
DATE	BY	DATE	BY
DATE	BY	DATE	BY

**CHRISTOPHER B. BURKE**  
 ENGINEERING LTD.  
 8515 West Higgins Road, Suite 600  
 Rosemont, Illinois 60018  
 (847) 823-0500

PROFILE SURVEYED  
 CHECKED  
 DATE NOTED  
 STRUCTURE NOTATIONS CHKD

TS SHT NO. 16



**WIRELESS MAGNETIC DETECTOR  
DETAIL**

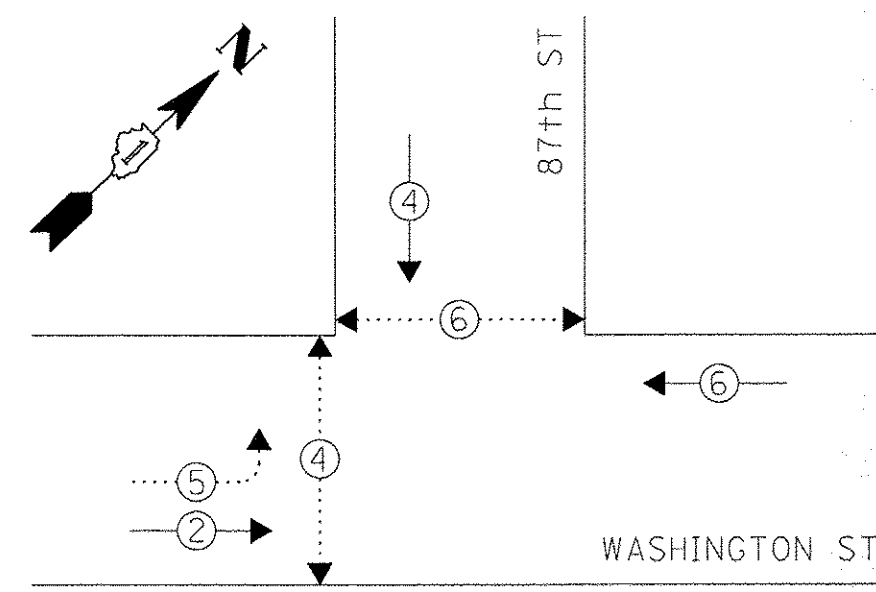
**CONSTRUCTION NOTES:**

- ① 1 NEW LOOP DETECTOR AMPLIFIER SHALL BE INSTALLED IN THE EXISTING DETECTOR RACK (IN THE EXISTING TRAFFIC SIGNAL CABINET). A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

FILE NAME TS05-1_Wash-87th.SIG	USER NAME = fbariso	DESIGNED - EAJ / TFS	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TRAFFIC SIGNAL MODIFICATION PLAN WASHINGTON STREET AND 87TH STREET</b>	F.A.U. RTE. 2552, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 16	
	PLOT SCALE = 20'	DRAWN - FPB	REVISED -			SCALE:	SHEET NO. OF SHEETS	STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	CONTRACT NO. 61D23
	PLOT DATE = 8/16/2016	CHECKED - GMZ	REVISED -								
		DATE - 6/10/2016	REVISED -								



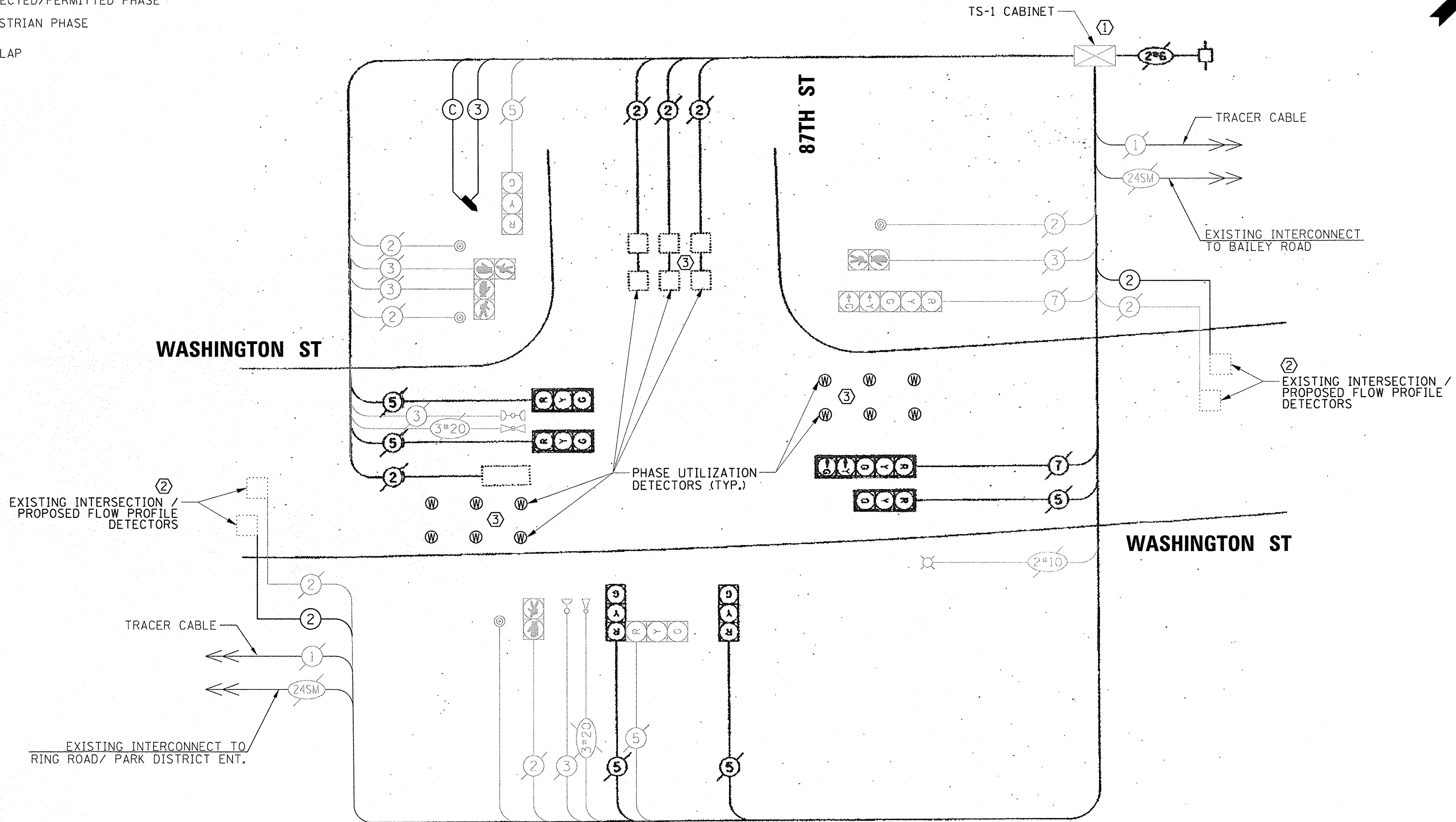
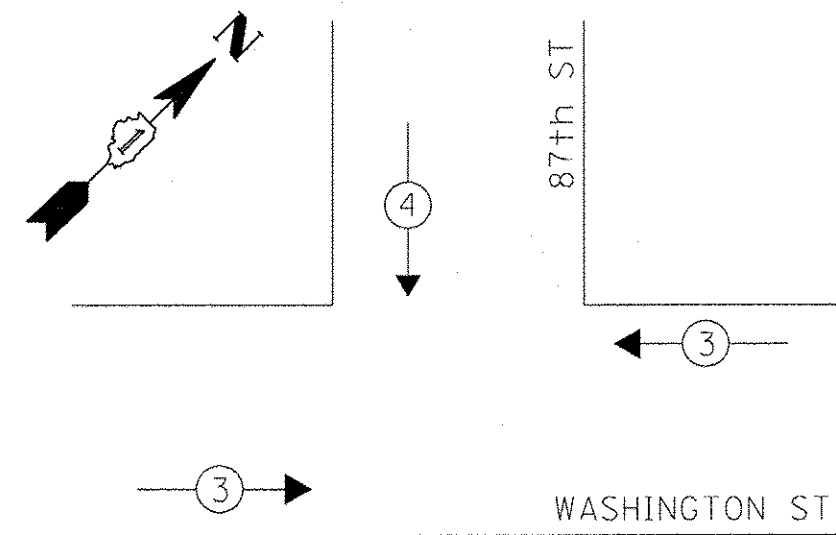
**EXISTING CONTROLLER SEQUENCE**



**LEGEND:**

- ← ⊙ ← PROTECTED PHASE
- ← ⊙ ⊙ ← PROTECTED/PERMITTED PHASE
- ← ⊙ ⊙ ⊙ ← PEDESTRIAN PHASE
- ◊ OL OVERLAP

**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



**CABLE PLAN**  
(NOT TO SCALE)

**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	799
INDUCTION LOOP DETECTOR AMPLIFIER	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1

**CONSTRUCTION NOTES:**

- ① 1 NEW LOOP DETECTOR AMPLIFIER SHALL BE INSTALLED IN THE EXISTING DETECTOR RACK (IN THE EXISTING TRAFFIC SIGNAL CABINET). A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	9	11	50	49.5
(YELLOW)	9	20	5	9.0
(GREEN)	9	12	45	48.6
PROTECTED ARROW	4	10	10	4.0
PED. SIGNAL	4	20	100	80.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	4	250	50	250.0
			TOTAL =	541.1

ENERGY COSTS TO:

CITY OF NAPERVILLE  
400 S. EAGLE STREET  
NAPERVILLE, IL 60540

ENERGY SUPPLY: CONTACT: NEW BUSINESS  
PHONE: (866) 639-3532  
COMPANY: COMMONWEALTH EDISON  
ACCOUNT NUMBER: ---

TS SHT NO. 17

DATE	BY	DATE	BY

CHRISTOPHER B. BURKE ENGINEERING LTD.  
9575 West Higgins Road, Suite 600  
Rosemont, Illinois 60018  
(847) 823-0500

DATE	BY	DATE	BY

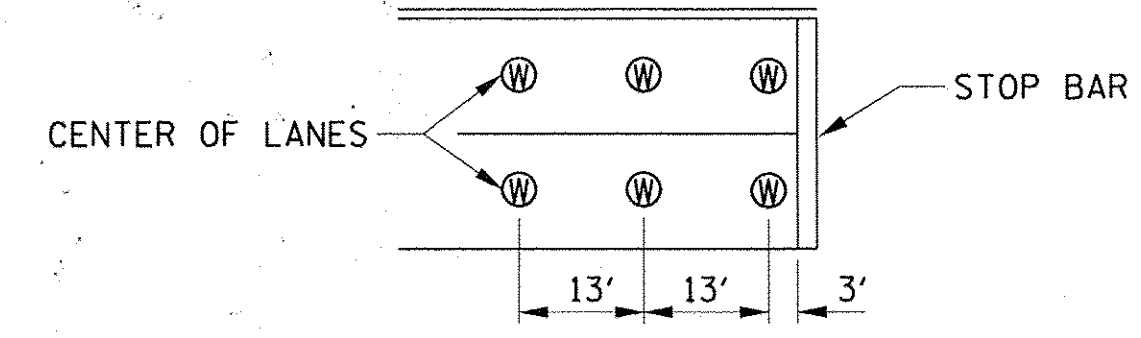
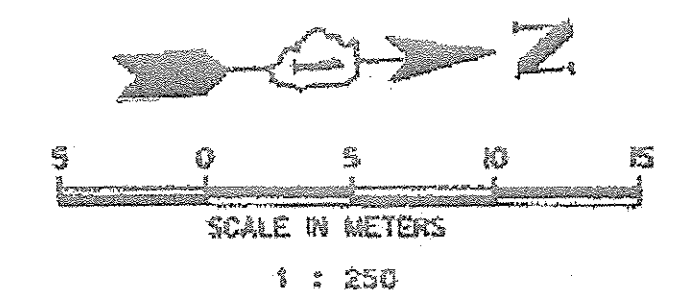
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SCHEDULE OF QUANTITIES, CABLE PLAN, PHASE DESIGNATION  
DIAGRAM AND EMERGENCY VEHICLE PREEMPTION SEQUENCE  
WASHINGTON STREET AND 87th STREET

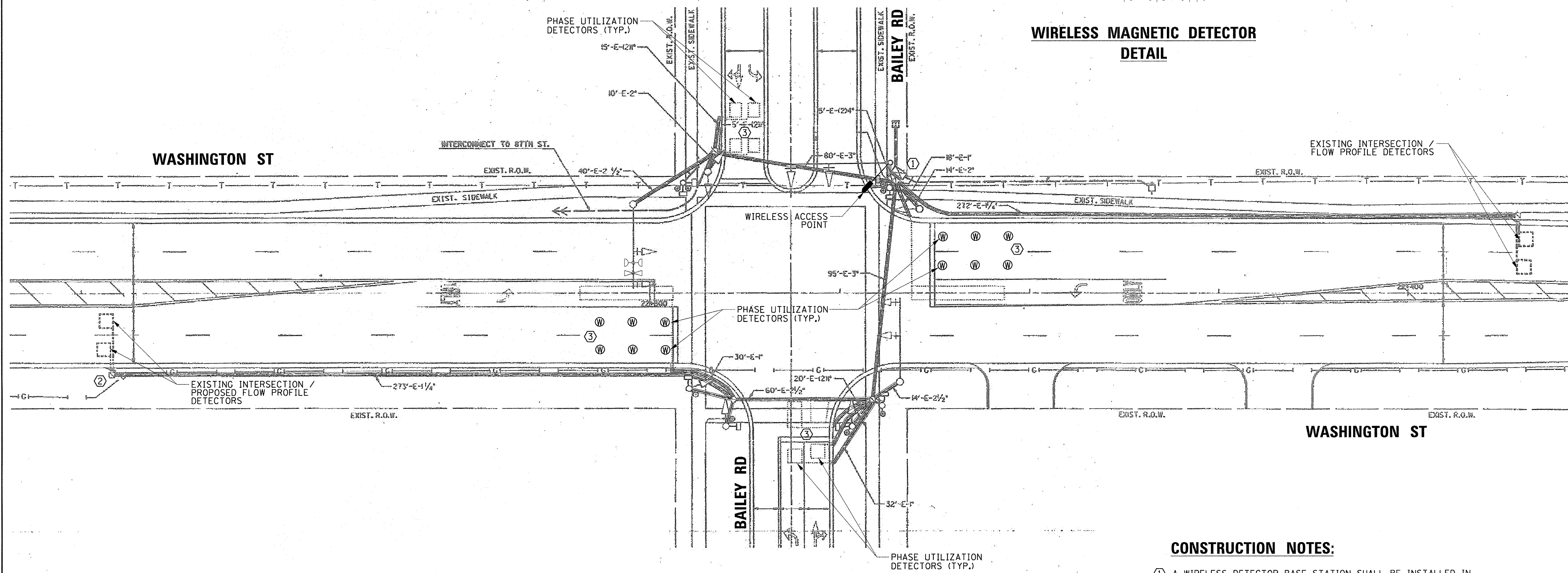
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2552, 1522 & 2546	13-00159-00-TL	DUPAGE & WILL	80	17
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	

FILE NAME	USER NAME	DESIGNED	REVISION
TS05-2_Wash-87th_CAB	fboriso	- EAJ / TFS	-
	N:\NAPERVILLE\150042\TRAFFIC\	DRAWN - FPB	REVISED -
	PLOT SCALE = 20'	CHECKED - GMZ	REVISED -
	PLOT DATE = 8/16/2016	DATE - 6/10/2016	REVISED -

FILE NAME: TS SHT NO. 18  
 USER NAME: fbariso  
 DESIGNED: EAJ / TFS  
 DRAWN: FPB  
 CHECKED: GMZ  
 DATE: 6/10/2016  
 REVISIONS:  
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**WIRELESS MAGNETIC DETECTOR  
DETAIL**



**CONSTRUCTION NOTES:**

- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

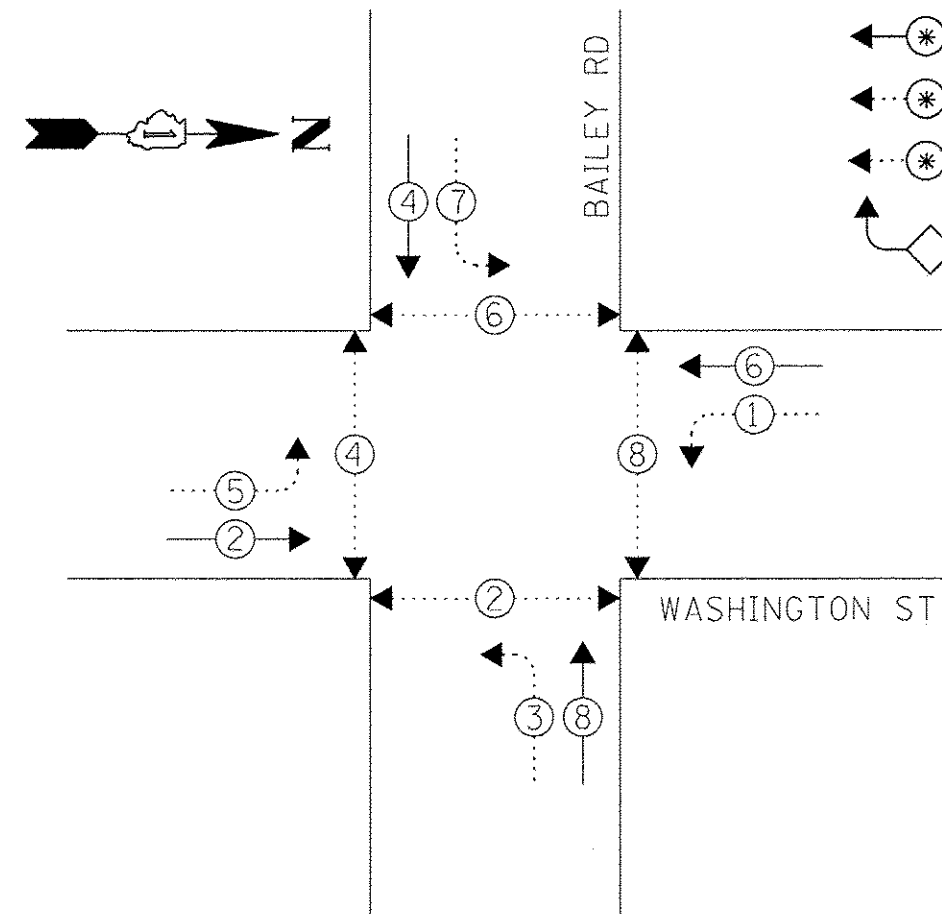
TS SHT NO. 18

FILE NAME 1506-1-Wash-Bailey-SIG	USER NAME = fbariso N:\MAPERVILLE\150042\TRAFFIC\	DESIGNED - EAJ / TFS DRAWN - FPB	REVISED - REVISED - REVISED - REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TRAFFIC SIGNAL MODIFICATION PLAN WASHINGTON STREET AND BAILEY ROAD</b>	F.A.U. RTE. 2552, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 18	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT
PLOT SCALE = 20'	CHECKED - GMZ	DATE - 6/10/2016	SCALE:			SHEET NO. OF SHEETS STA. TO STA.	CONTRACT NO. 61D23					

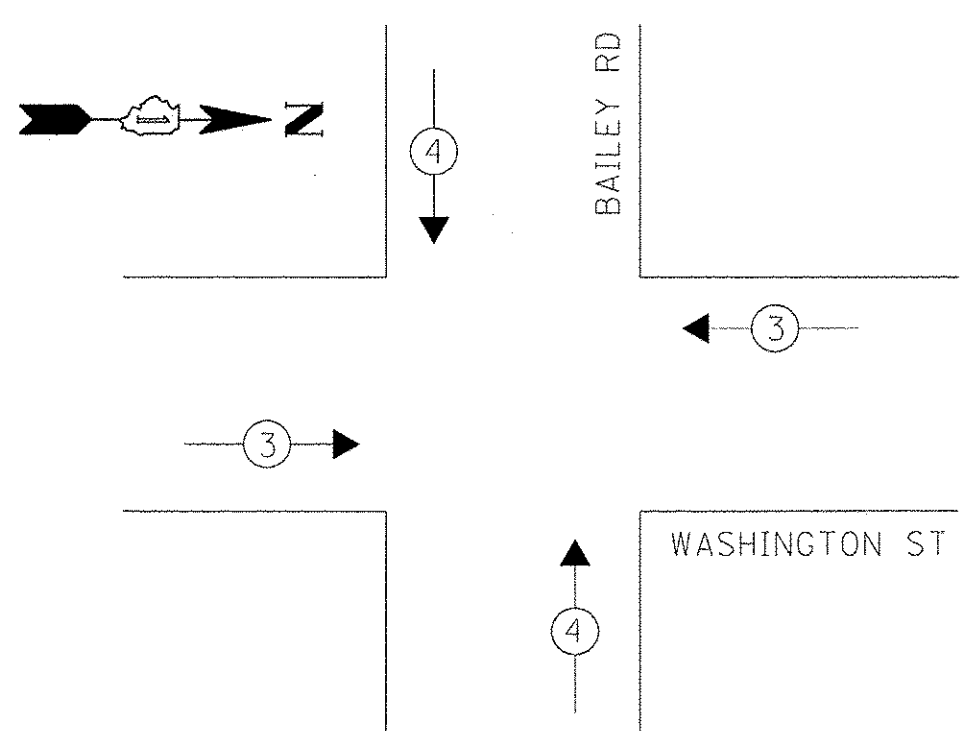
**EXISTING CONTROLLER SEQUENCE**

**LEGEND:**

- ← ⊙ → PROTECTED PHASE
- ← ⊙ ⊙ → PROTECTED/PERMITTED PHASE
- ← ⊙ ⊙ ⊙ → PEDESTRIAN PHASE
- ⊙ OL OVERLAP



**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	12	11	50	66.0
(YELLOW)	12	20	5	12.0
(GREEN)	12	12	45	64.8
PROTECTED ARROW	16	10	10	16.0
PED. SIGNAL	8	20	100	160.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	-	250	50	-
ENERGY COSTS TO:			TOTAL =	418.8

CITY OF NAPERVILLE  
400 S. EAGLE STREET  
NAPERVILLE, IL 60540

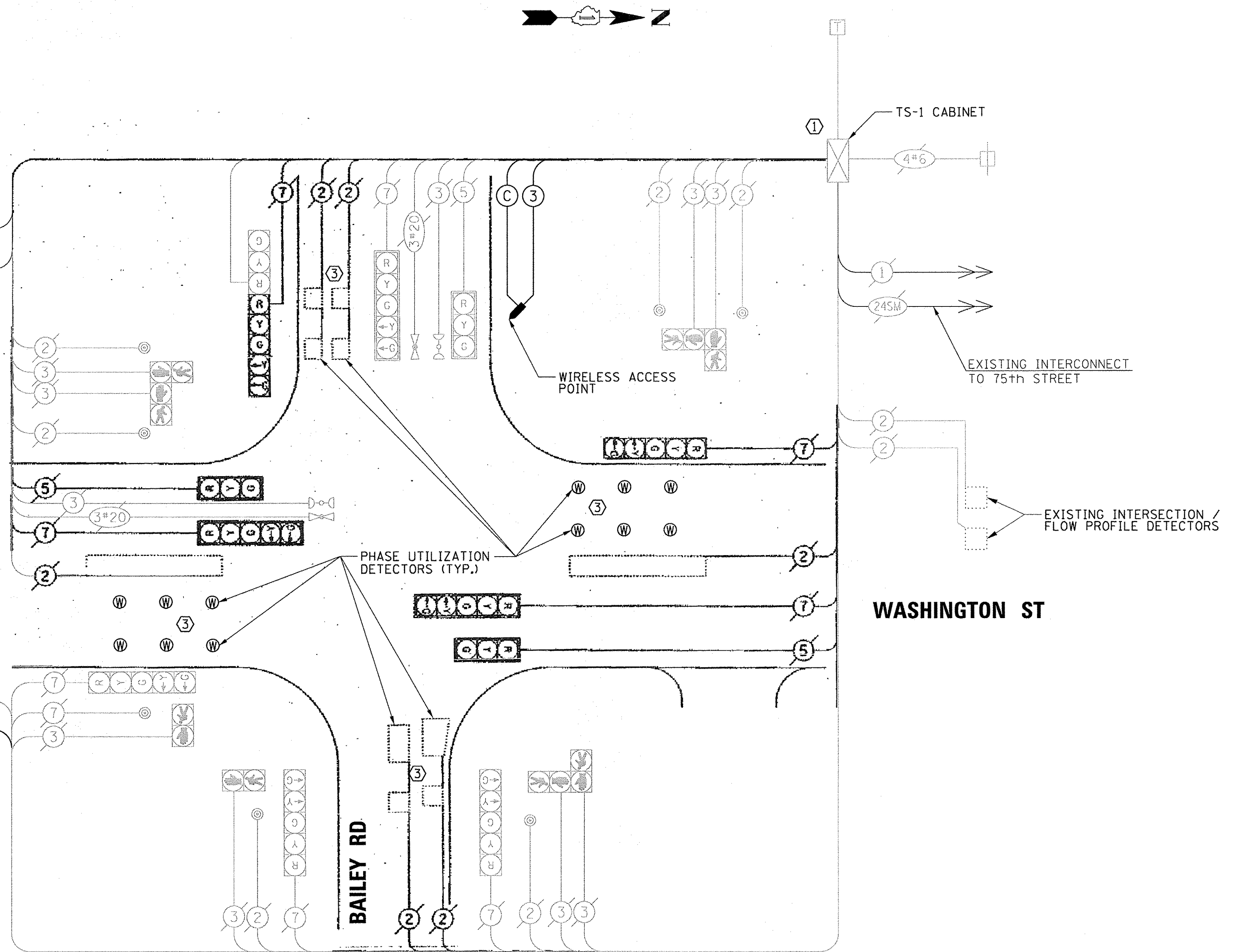
ENERGY SUPPLY: CONTACT: NEW BUSINESS  
PHONE: (866) 639-3532  
COMPANY: COMMONWEALTH EDISON  
ACCOUNT NUMBER: ---

**CONSTRUCTION NOTES:**

- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

EXISTING INTERCONNECT TO 87th STREET

EXISTING INTERSECTION / PROPOSED FLOW PROFILE DETECTORS



**CABLE PLAN**  
(NOT TO SCALE)

**SCHEDULE OF QUANTITIES**

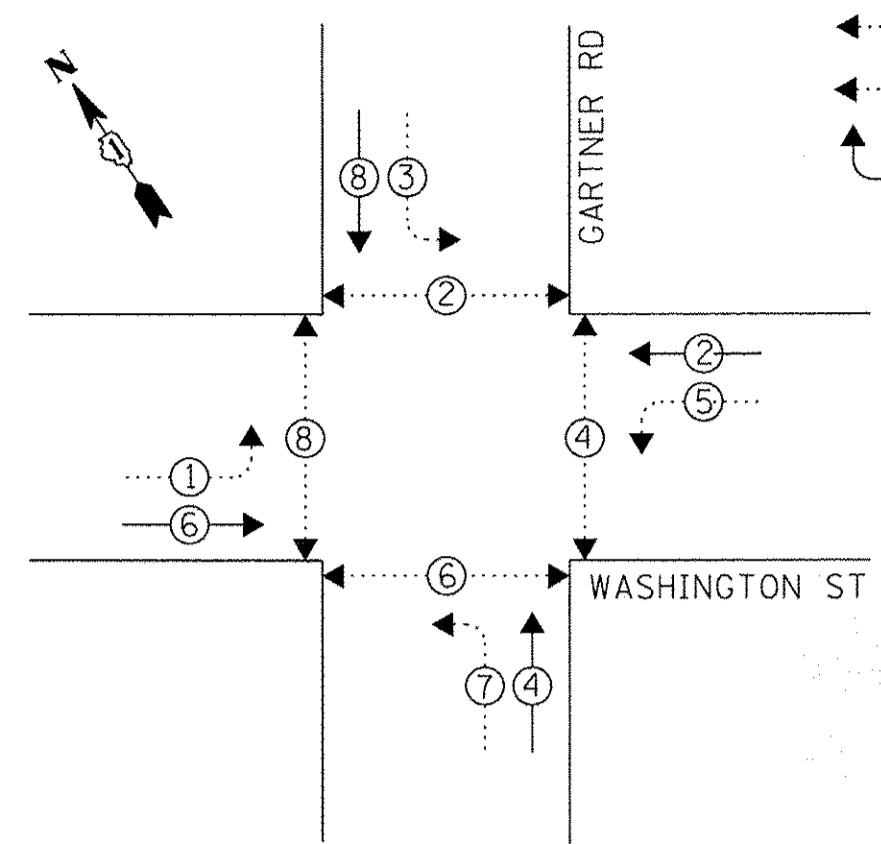
ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	470
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1

TS SHT NO. 19

BY: DATE: SURVEYED: CHECKED: ALIGNED: CHECKED: RT. OF WAY CHECKED: CADD FILE NAME: NO. DATE: PLAN: NOTE BOOK NO. ENGINEERING LTD. CHRISTOPHER B. BURKE 8575 West Higgins Road, Suite 600 Rosemont, Illinois 60018 (847) 823-0500



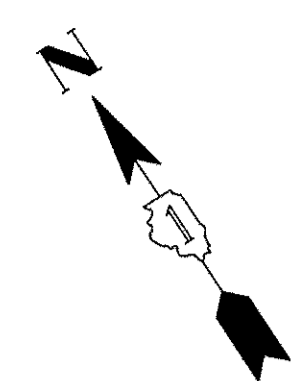
**EXISTING CONTROLLER SEQUENCE**



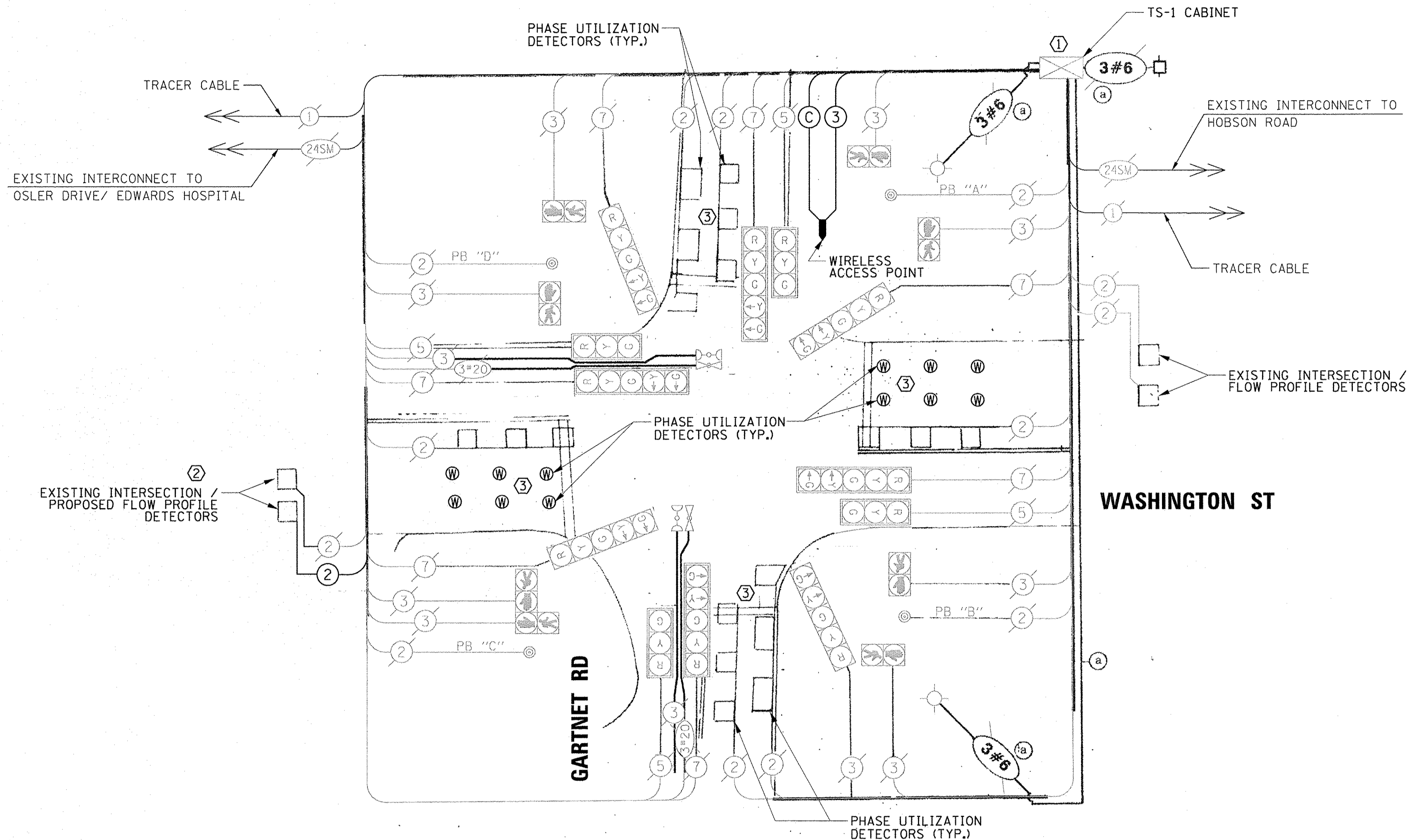
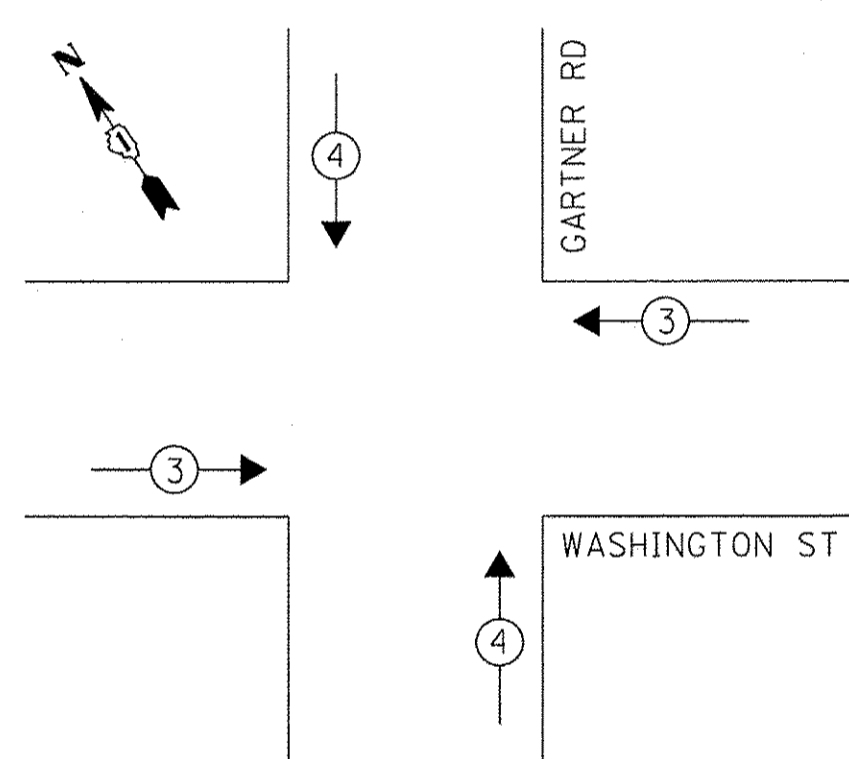
**LEGEND:**

- ←(\*)← PROTECTED PHASE
- ←(\*)... PROTECTED/PERMITTED PHASE
- ←(\*)→ PEDESTRIAN PHASE
- ◇ OL OVERLAP

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.



**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



**CABLE PLAN**  
(NOT TO SCALE)

**CONSTRUCTION NOTES:**

- ① 1 NEW LOOP DETECTOR AMPLIFIER SHALL BE INSTALLED IN THE EXISTING DETECTOR RACK (IN THE EXISTING TRAFFIC SIGNAL CABINET). A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	458
INDUCTION LOOP DETECTOR AMPLIFIER	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1

**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	12	11	50	66.0
(YELLOW)	12	20	5	12.0
(GREEN)	12	12	45	64.8
PROTECTED ARROW	16	10	10	16.0
PED. SIGNAL	8	20	100	160.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	2	250	50	250.0
			TOTAL =	668.8

ENERGY COSTS TO:  
 CITY OF NAPERVILLE  
 400 S. EAGLE STREET  
 NAPERVILLE, IL 60540  
 ENERGY SUPPLY: CONTACT: NEW BUSINESS  
 PHONE: (866) 639-3532  
 COMPANY: COMMONWEALTH EDISON  
 ACCOUNT NUMBER: ---

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_ PLOTTED: \_\_\_\_\_ CHECKED: \_\_\_\_\_  
 PLAN: \_\_\_\_\_ NO. \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_ PLOTTED: \_\_\_\_\_ CHECKED: \_\_\_\_\_  
 PROFILE: \_\_\_\_\_ NO. \_\_\_\_\_  
 NOTE BOOK: \_\_\_\_\_  
 STRUCTURE: \_\_\_\_\_ NOTATIONS: CHKD

TS SHT NO. 21

DATE	BY	DATE	BY
DATE	BY	DATE	BY
DATE	BY	DATE	BY

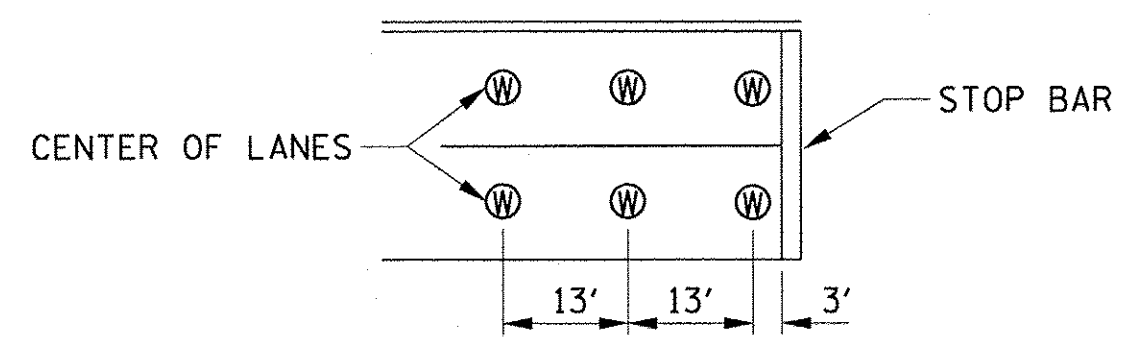
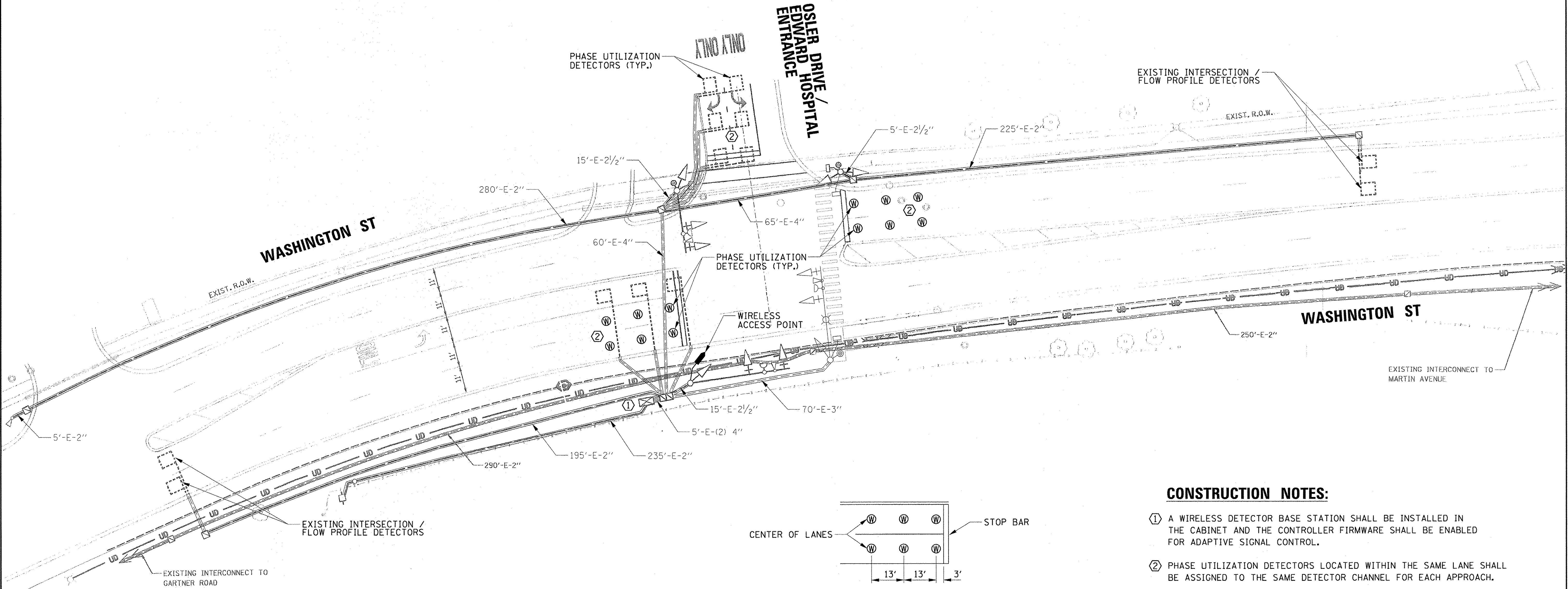
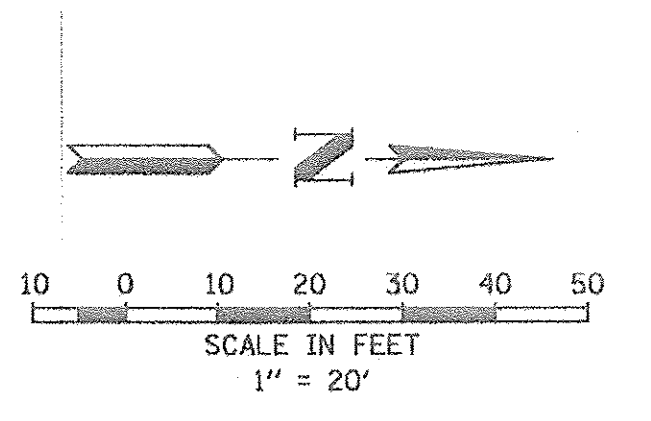
TS SHT NO. 22

FILE NAME	USER NAME = fbariso	DESIGNED - EAJ / TFS	REVISED -
1S00-1.Wash-Osler.SIG	N:\NAPERVILLE\150042\TRAFFIC\	DRAWN - FPB	REVISED -
	PLOT SCALE = 20'	CHECKED - GMZ	REVISED -
	PLOT DATE = 8/16/2016	DATE - 6/10/2016	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNAL MODIFICATION PLAN  
WASHINGTON ST. AND OSLER DR./EDWARD HOSPITAL ENT.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2582, 1522 & 2546	13-00159-00-TL	DuPAGE & WILL	80	22
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
	CONTRACT NO. 61D23			

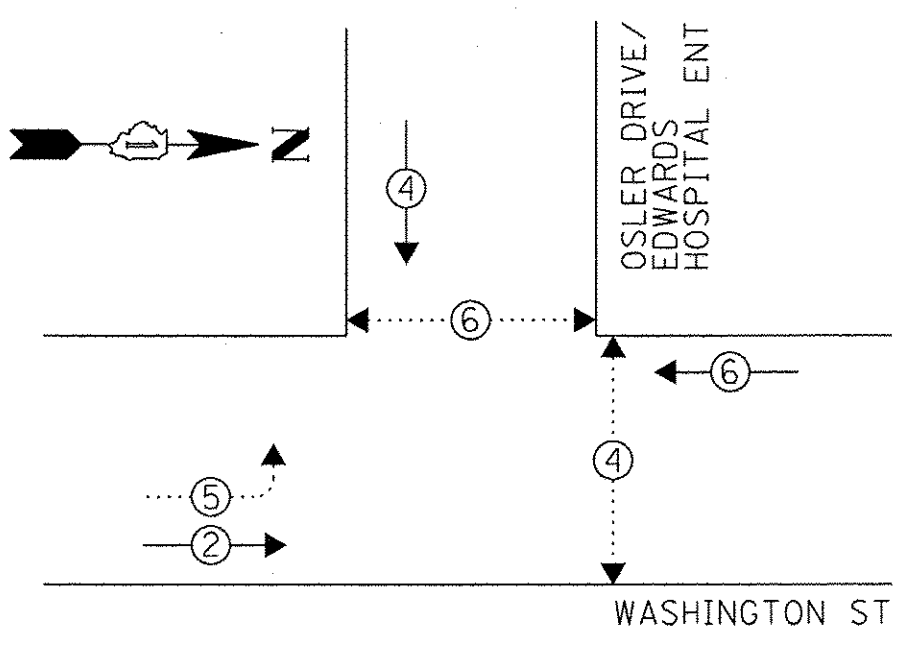


**CONSTRUCTION NOTES:**

- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

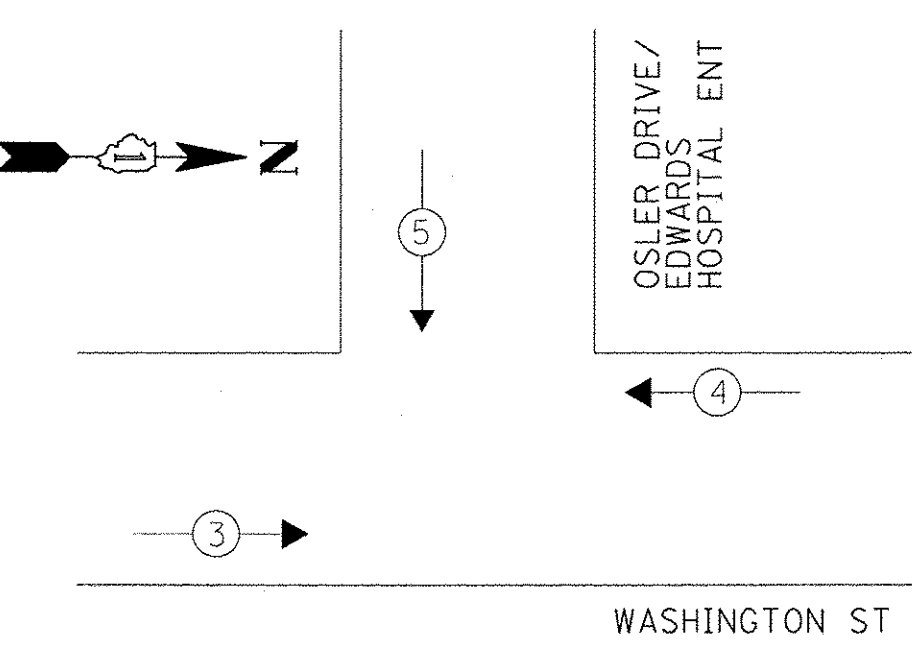
DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_ PLOTTED: \_\_\_\_\_ CHECKED: \_\_\_\_\_  
 PLAN: \_\_\_\_\_ NOTE BOOK: \_\_\_\_\_  
 NO. \_\_\_\_\_  
**CHRISTOPHER B. BURKE** ENGINEERING LTD.  
 8575 West Higgins Road, Suite 600  
 Rosemont, Illinois 60018  
 (847) 823-0600  
 DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_ PLOTTED: \_\_\_\_\_ CHECKED: \_\_\_\_\_  
 PROFILE: \_\_\_\_\_ NOTE BOOK: \_\_\_\_\_  
 NO. \_\_\_\_\_

**EXISTING CONTROLLER SEQUENCE**



- LEGEND:**
- ◀ (with star) PROTECTED PHASE
  - ◀ (with circle) PROTECTED/PERMITTED PHASE
  - ◀ (with star in circle) PEDESTRIAN PHASE
  - OL OVERLAP

**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



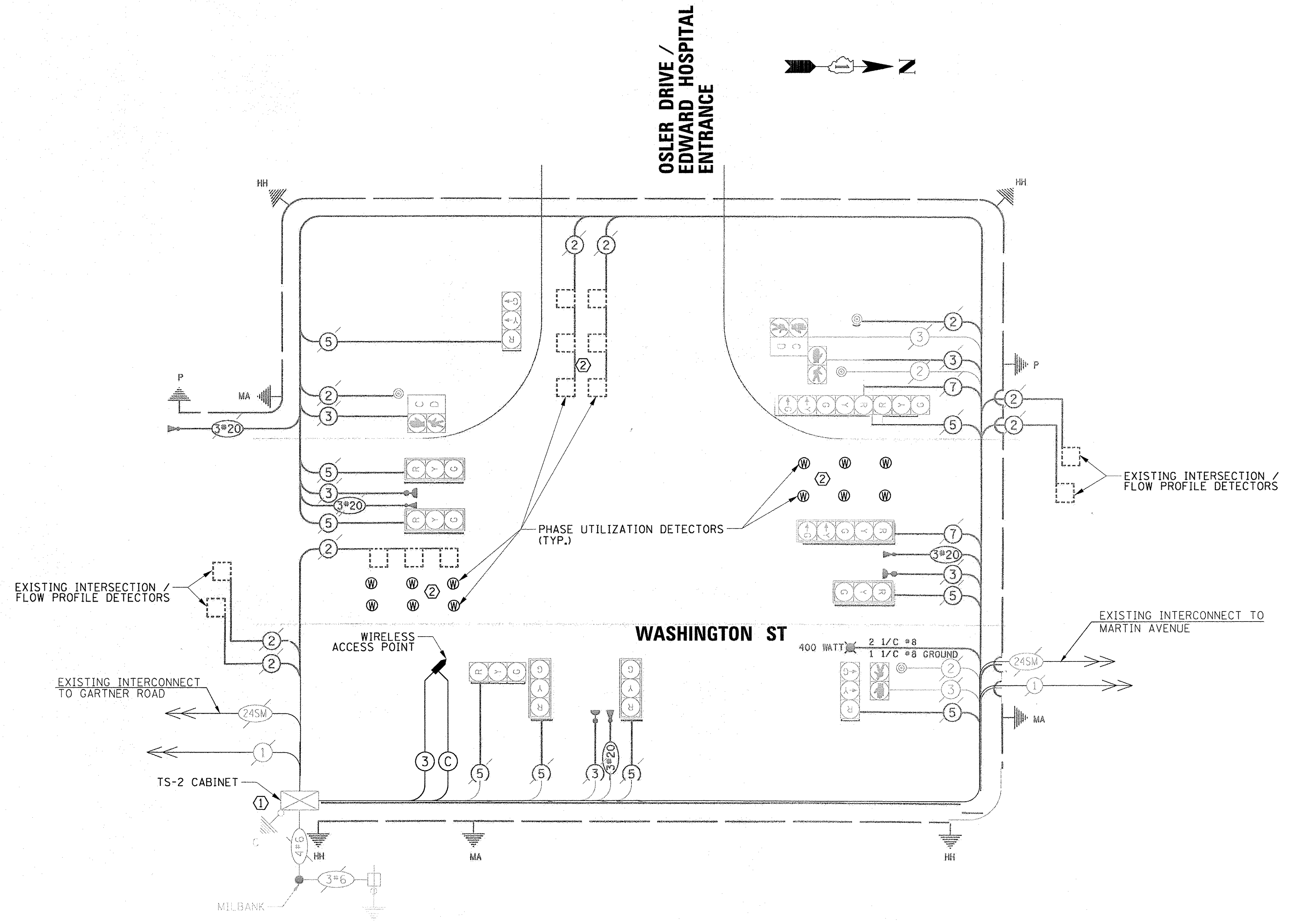
**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	11	11	50	60.5
(YELLOW)	11	20	5	11.0
(GREEN)	11	12	45	59.4
PROTECTED ARROW	4	10	10	4.0
PED. SIGNAL	4	20	100	80.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	-	250	50	-
ENERGY COSTS TO:			TOTAL =	314.9

CITY OF NAPERVILLE  
 400 S. EAGLE STREET  
 NAPERVILLE, IL 60540  
 ENERGY SUPPLY: CONTACT: NEW BUSINESS  
 PHONE: (866) 639-3532  
 COMPANY: COMMONWEALTH EDISON  
 ACCOUNT NUMBER: ---

- CONSTRUCTION NOTES:**
- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
  - ② PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

**CABLE PLAN**  
(NOT TO SCALE)



**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1

TS SHT NO. 23



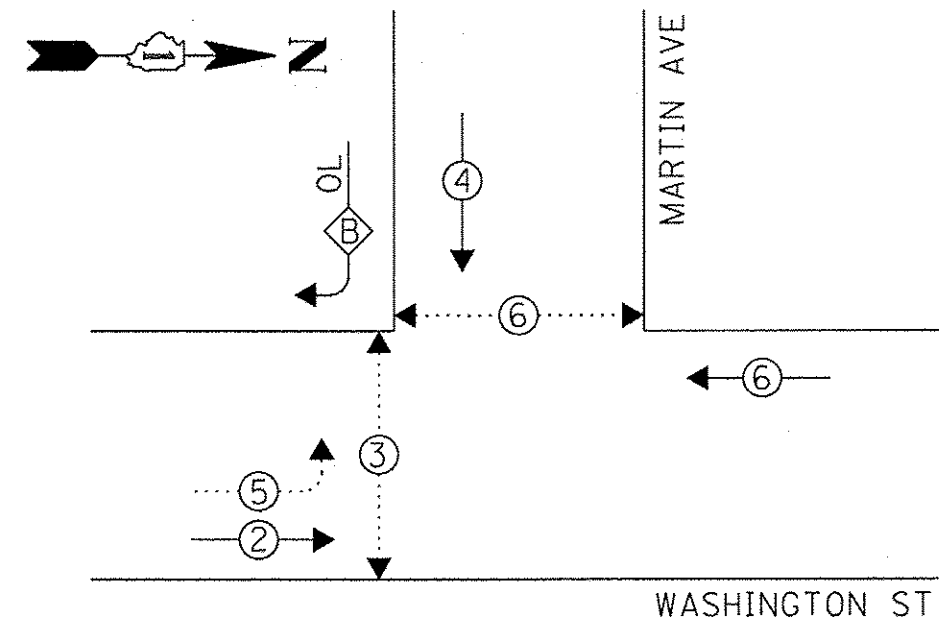


BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 SURVEYED \_\_\_\_\_  
 PLAN \_\_\_\_\_  
 CHECKED \_\_\_\_\_  
 NO. \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 SURVEYED \_\_\_\_\_  
 PROFILE \_\_\_\_\_  
 CHECKED \_\_\_\_\_  
 NO. \_\_\_\_\_

TS SHT NO. 25

FILE NAME: TS09-2.Wash-Martin\_CAB

**EXISTING CONTROLLER SEQUENCE**



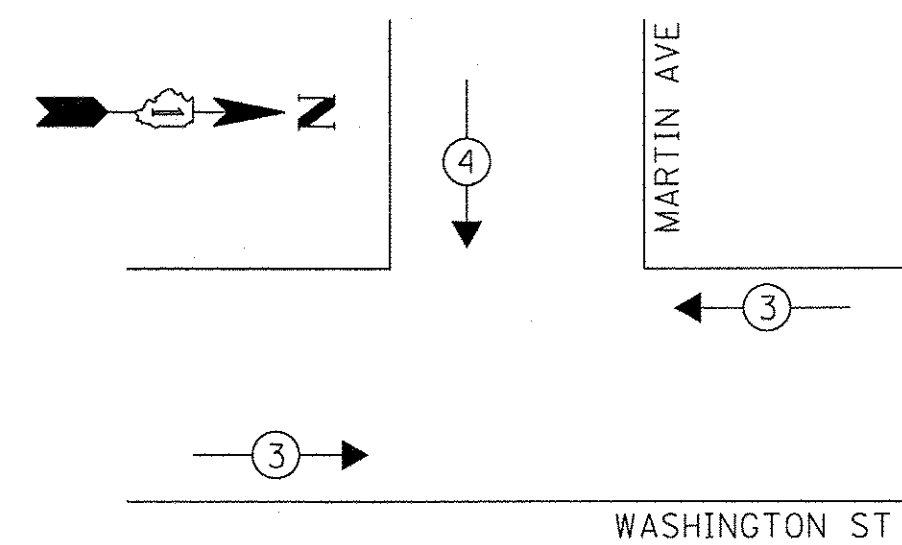
**LEGEND:**

- ← ⊙ → PROTECTED PHASE
- ← ⊙ ⊙ → PROTECTED/PERMITTED PHASE
- ← ⊙ ⊙ ⊙ → PEDESTRIAN PHASE
- ◊ OL OVERLAP

**RIGHT TURN OVERLAP PHASE DESIGNATION**

OVERLAP LETTER	PERMISSIVE PHASE	PROTECTED PHASE
B	= 4	+ 5

**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

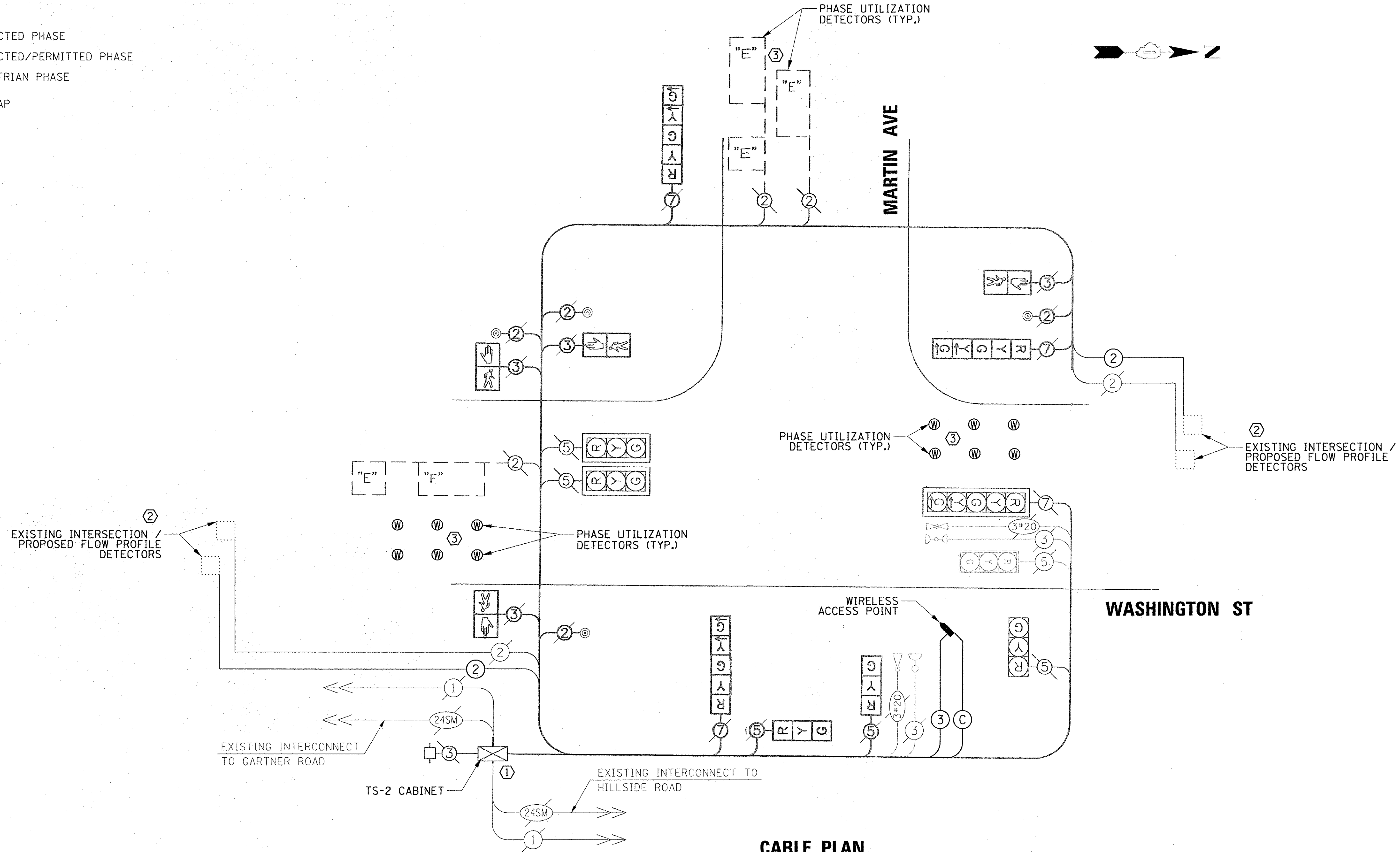
TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	10	11	50	55.0
(YELLOW)	10	20	5	10.0
(GREEN)	10	12	45	54.0
PROTECTED ARROW	8	10	10	8.0
PED. SIGNAL	4	20	100	80.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	-	250	50	-
ENERGY COSTS TO:		TOTAL =		307.0

CITY OF NAPERVILLE  
 400 S. EAGLE STREET  
 NAPERVILLE, IL 60540  
 ENERGY SUPPLY: CONTACT: NEW BUSINESS  
 PHONE: (866) 639-3532  
 COMPANY: COMMONWEALTH EDISON  
 ACCOUNT NUMBER: ---

**CONSTRUCTION NOTES:**

- ① 1 NEW LOOP DETECTOR AMPLIFIER SHALL BE INSTALLED IN THE EXISTING DETECTOR RACK (IN THE EXISTING TRAFFIC SIGNAL CABINET). A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

**CABLE PLAN**  
(NOT TO SCALE)



**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	727
INDUCTION LOOP DETECTOR AMPLIFIER	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SCHEDULE OF QUANTITIES, CABLE PLAN, PHASE DESIGNATION  
 DIAGRAM AND EMERGENCY VEHICLE PREEMPTION SEQUENCE  
 WASHINGTON STREET AND MARTIN AVENUE

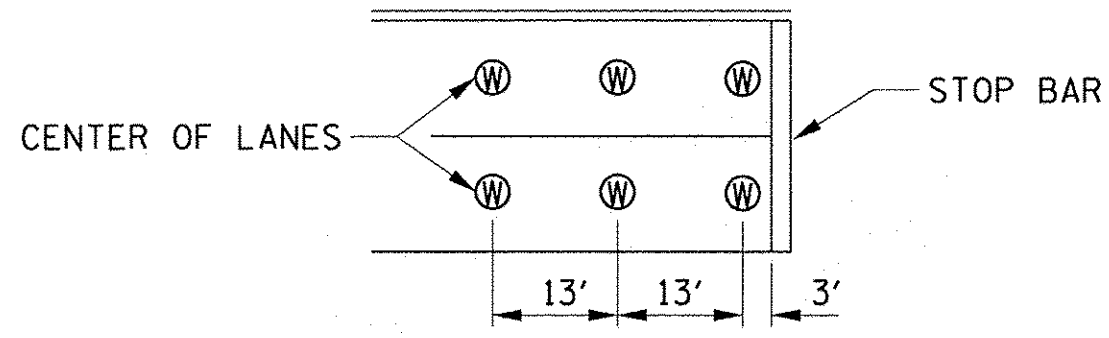
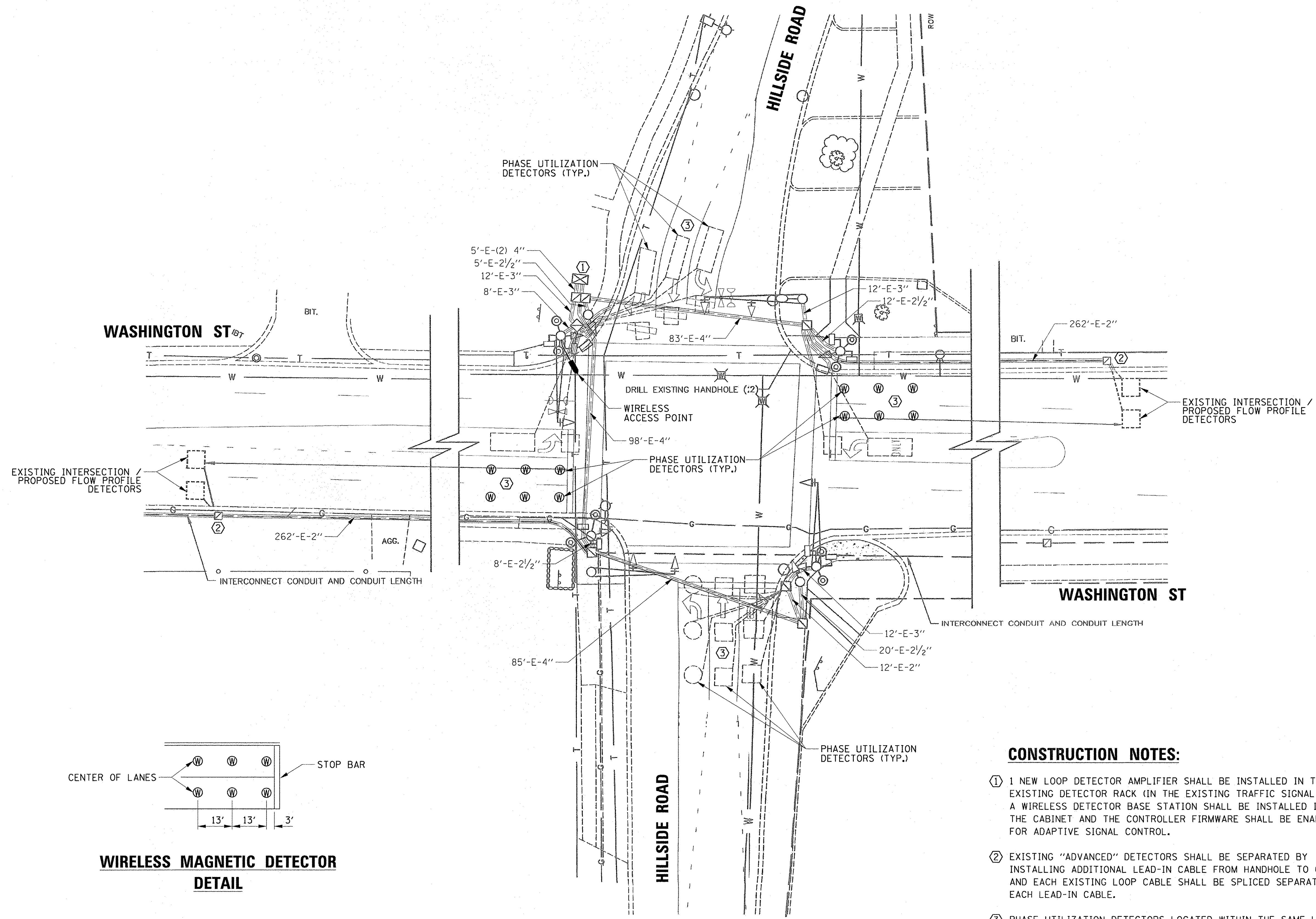
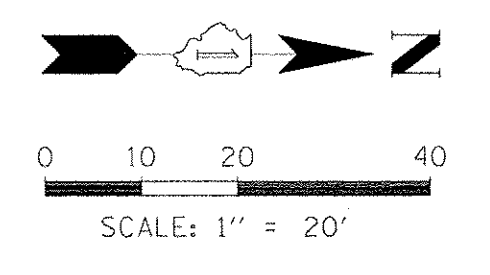
F.A.U. RTE. 2552, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 25
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	CONTRACT NO. 61D23		

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

SURVEYED \_\_\_\_\_ DATE \_\_\_\_\_  
 PLOTTED \_\_\_\_\_  
 CHECKED \_\_\_\_\_  
 BY \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_  
 NO. \_\_\_\_\_  
 STRUCTURE NOTATIONS CHFD  
 NO. \_\_\_\_\_  
 DATE \_\_\_\_\_  
 SURVEYED \_\_\_\_\_ DATE \_\_\_\_\_  
 PLOTTED \_\_\_\_\_  
 CHECKED \_\_\_\_\_  
 BY \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_  
 NO. \_\_\_\_\_  
 STRUCTURE NOTATIONS CHFD  
 NO. \_\_\_\_\_  
 DATE \_\_\_\_\_

**CHRISTOPHER B. BURKE**  
 ENGINEERING LTD.  
 9575 West Higgins Road, Suite 600  
 Rosemont, Illinois 60018  
 (847) 823-0500  
**CB**

TS SHT NO. 26



**WIRELESS MAGNETIC DETECTOR  
DETAIL**

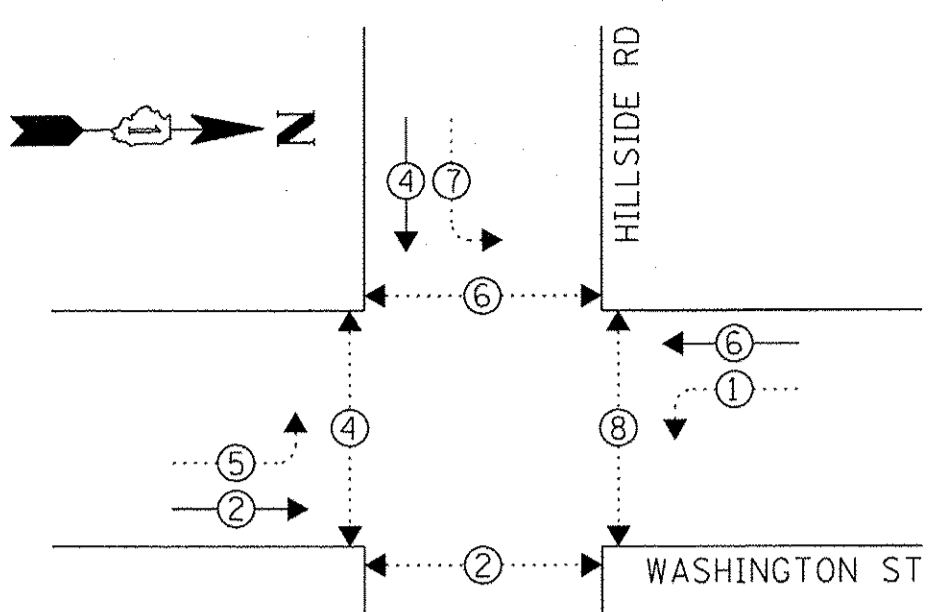
**CONSTRUCTION NOTES:**

- ① 1 NEW LOOP DETECTOR AMPLIFIER SHALL BE INSTALLED IN THE EXISTING DETECTOR RACK (IN THE EXISTING TRAFFIC SIGNAL CABINET). A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

FILE NAME 1510-1.Wash-Hillside.SIG	USER NAME = fbariso N:\NAPERVILLE\150042\TRAFFIC\	DESIGNED - EAJ / TFS DRAWN - FPB CHECKED - GMZ DATE - 6/10/2016	REVISED - REVISED - REVISED - REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TRAFFIC SIGNAL MODIFICATION PLAN WASHINGTON STREET AND HILLSIDE ROAD</b>	F.A.U. RTE. 2552, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 26
						SCALE:	SHEET NO. OF SHEETS STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	CONTRACT NO. 61D23

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_ PLOTTED: \_\_\_\_\_  
 PLAN: \_\_\_\_\_ NOTE BOOK: \_\_\_\_\_  
 NO. \_\_\_\_\_ NO. \_\_\_\_\_  
**CHRISTOPHER B. BURKE** ENGINEERING LTD.  
 8575 West Higgins Road, Suite 600  
 Rosemont, Illinois 60018  
 (847) 823-0500  
 DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_ PLOTTED: \_\_\_\_\_  
 PROFILE: \_\_\_\_\_ GRADES CHECKED: \_\_\_\_\_  
 NO. \_\_\_\_\_ NO. \_\_\_\_\_

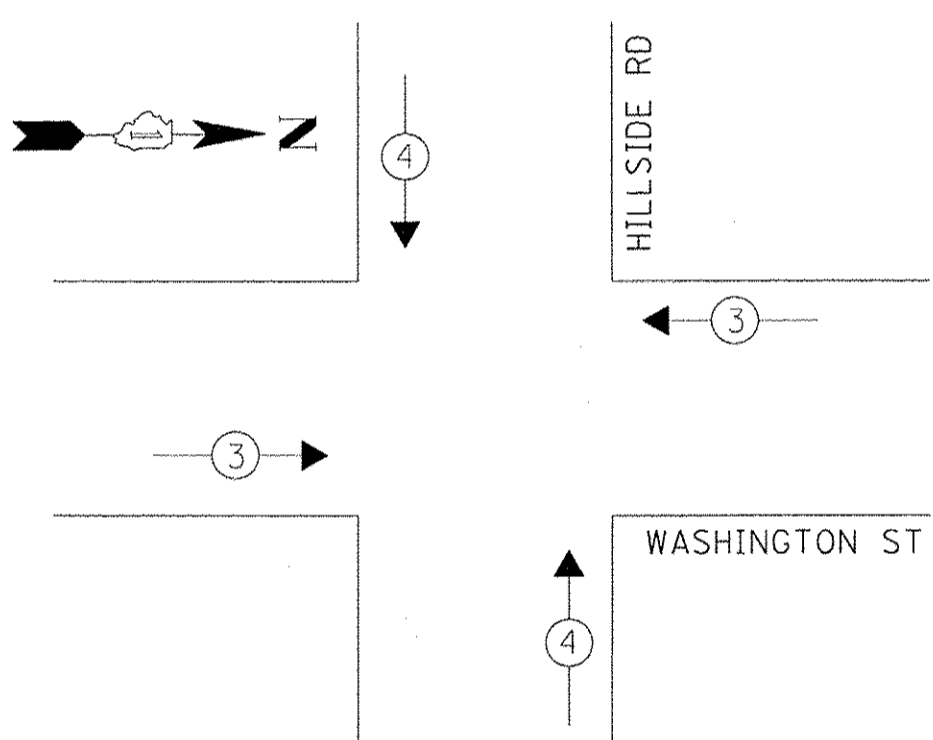
**EXISTING CONTROLLER SEQUENCE**



**LEGEND:**

- ← (with star) PROTECTED PHASE
- ← (with star and dashed line) PROTECTED/PERMITTED PHASE
- ← (with star and arrow) PEDESTRIAN PHASE
- ↔ OL OVERLAP

**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	12	11	50	66.0
(YELLOW)	12	20	5	12.0
(GREEN)	12	12	45	64.8
PROTECTED ARROW	16	10	10	16.0
PED. SIGNAL	8	20	100	160.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	1	250	50	250.0
ENERGY COSTS TO:				TOTAL = 668.8

CITY OF NAPERVILLE  
 400 S. EAGLE STREET  
 NAPERVILLE, IL 60540  
 ENERGY SUPPLY CONTACT: NEW BUSINESS  
 PHONE: (866) 639-3532  
 COMPANY: COMMONWEALTH EDISON  
 ACCOUNT NUMBER: ---

EXISTING INTERSECTION / PROPOSED FLOW PROFILE DETECTORS

PHASE UTILIZATION DETECTORS (TYP.)

EXISTING INTERCONNECT TO MARTIN AVENUE

PHASE UTILIZATION DETECTORS (TYP.)

**CABLE PLAN**  
(NOT TO SCALE)

**CONSTRUCTION NOTES:**

- ① 1 NEW LOOP DETECTOR AMPLIFIER SHALL BE INSTALLED IN THE EXISTING DETECTOR RACK (IN THE EXISTING TRAFFIC SIGNAL CABINET). A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	776
INDUCTION LOOP DETECTOR AMPLIFIER	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1

TS SHT NO. 27

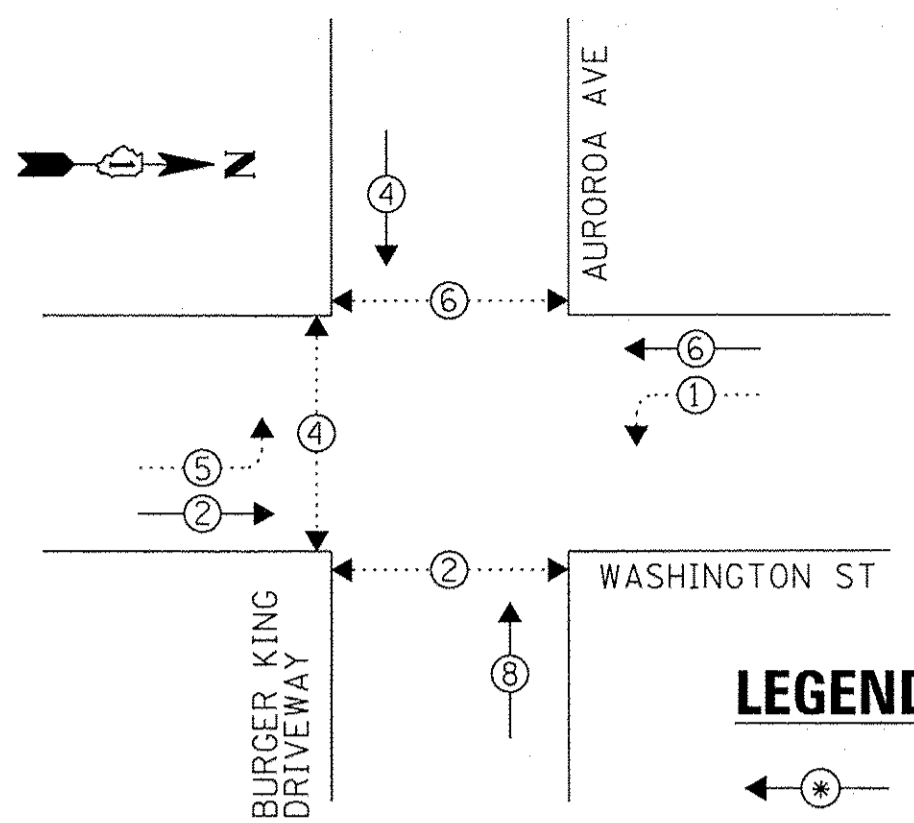


BY: DATE: SURVEYED: PLOTTED: CHECKED: R1. OF WAY CHECKED: CADD FILE NAME: PLAN: NOTE BOOK NO. SURVEYED: PLOTTED: CHECKED: R1. OF WAY CHECKED: CADD FILE NAME: PROFILE: NOTE BOOK NO. STRUCTURE NOTATIONS: CRKD

TS SHT NO. 29

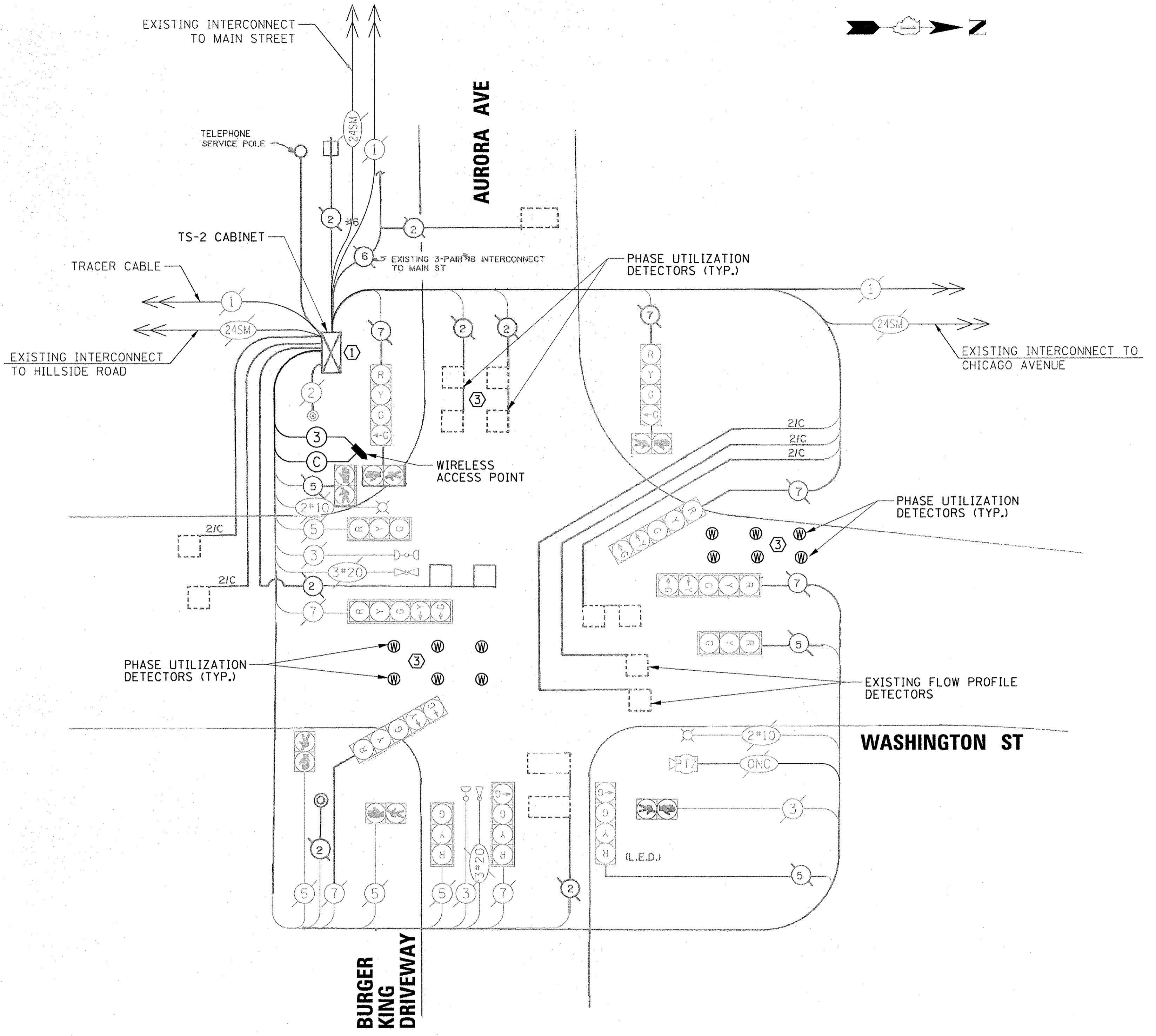
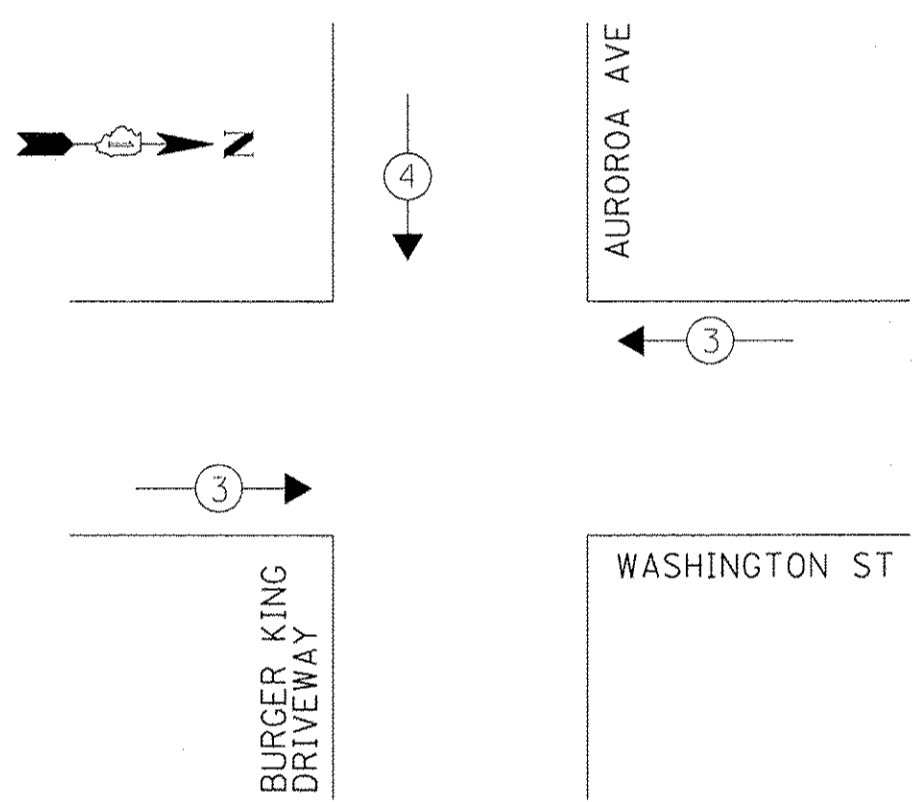
CHRISTOPHER B. BURKE ENGINEERING LTD. 9575 West Higgins Road, Suite 600 Rosemont, Illinois 60018 (847) 823-0500

**EXISTING CONTROLLER SEQUENCE**



- LEGEND:**
- ⬅️ (1) PROTECTED PHASE
  - ⬅️ (2) PROTECTED/PERMITTED PHASE
  - ⬅️ (3) PEDESTRIAN PHASE
  - ⬅️ (4) OVERLAP

**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



**CABLE PLAN**  
(NOT TO SCALE)

**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	11	11	50	60.5
(YELLOW)	11	20	5	11.0
(GREEN)	15	12	45	81.0
PROTECTED ARROW	8	10	10	8.0
PED. SIGNAL	6	20	100	120.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	2	250	50	250.0
TOTAL =				630.5

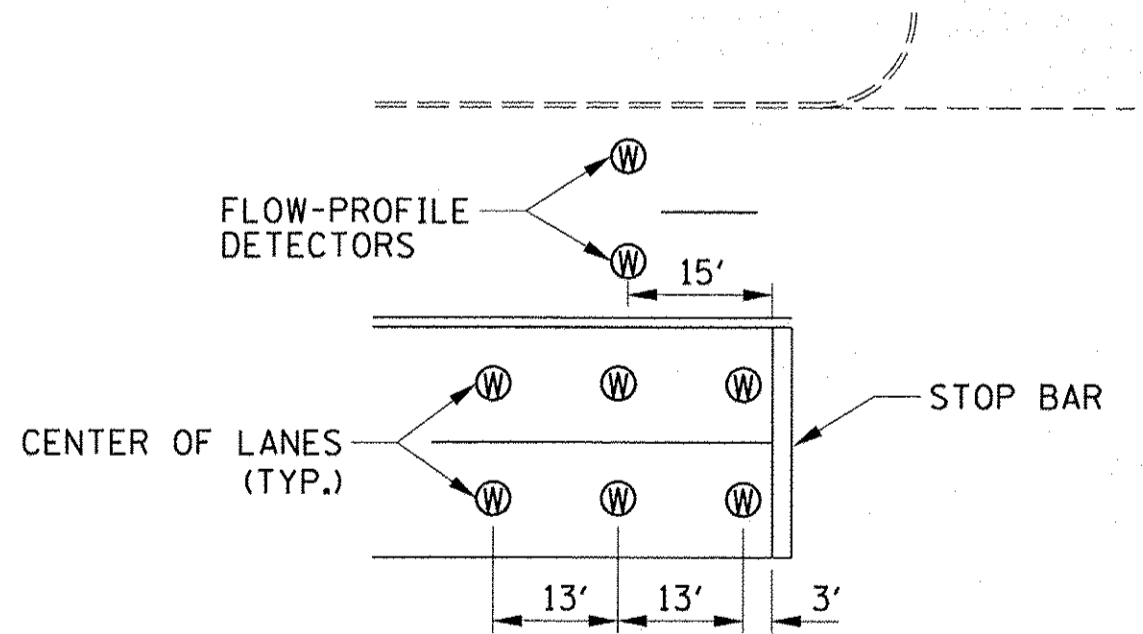
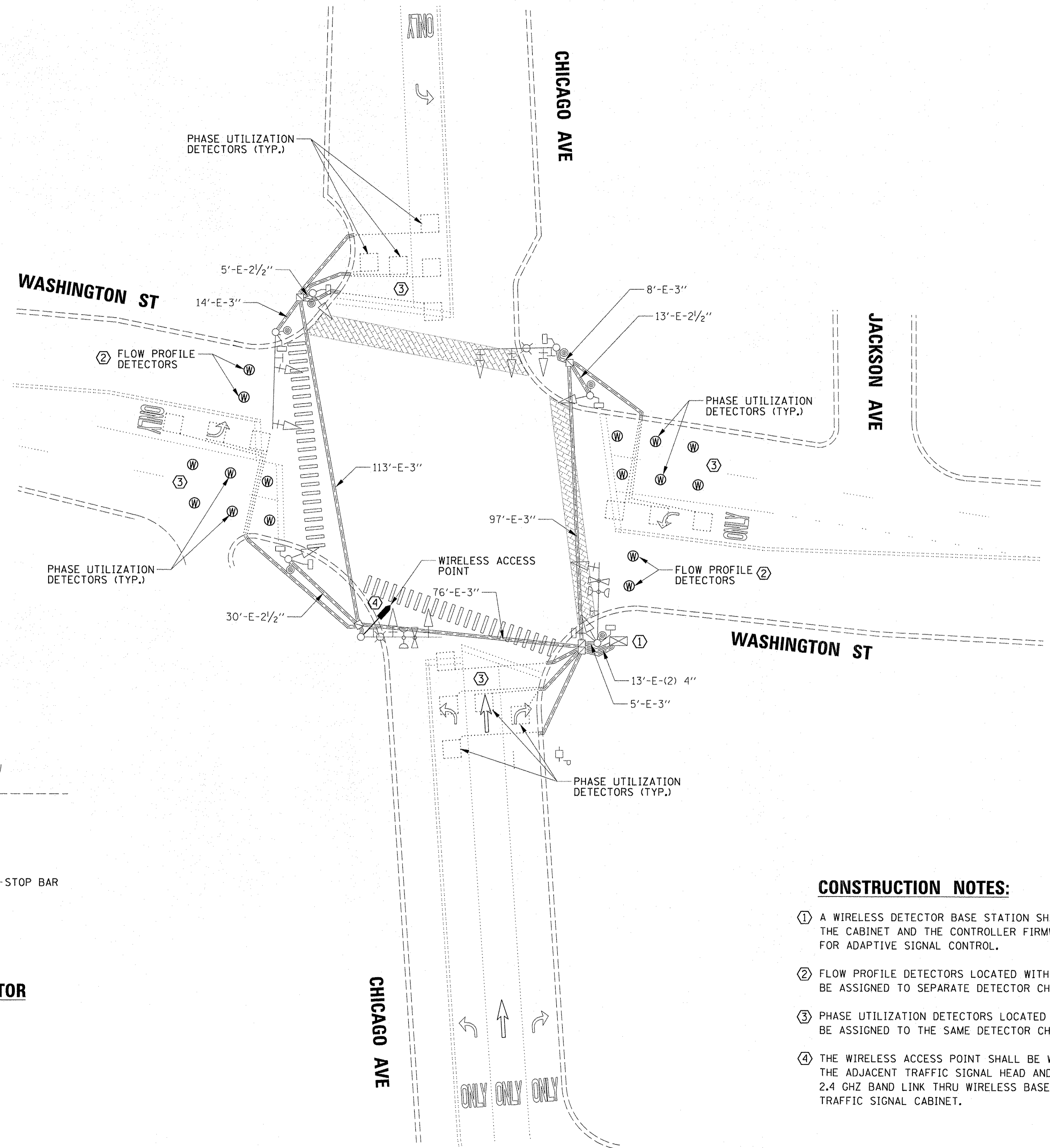
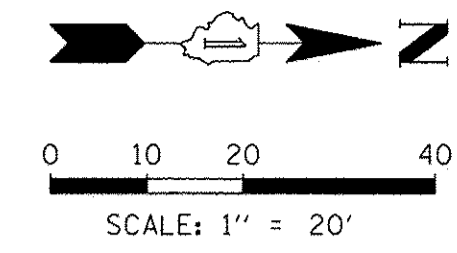
ENERGY COSTS TO:  
CITY OF NAPERVILLE  
400 S. EAGLE STREET  
NAPERVILLE, IL 60540  
ENERGY SUPPLY: CONTACT: NEW BUSINESS  
PHONE: (866) 639-3532  
COMPANY: COMMONWEALTH EDISON  
ACCOUNT NUMBER: ---

**CONSTRUCTION NOTES:**

- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② FLOW PROFILE DETECTORS LOCATED WITHIN SEPARATE LANES SHALL BE ASSIGNED TO SEPARATE DETECTOR CHANNELS FOR EACH APPROACH.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1



**WIRELESS MAGNETIC DETECTOR  
DETAIL**

**CONSTRUCTION NOTES:**

- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② FLOW PROFILE DETECTORS LOCATED WITHIN SEPARATE LANES SHALL BE ASSIGNED TO SEPARATE DETECTOR CHANNELS FOR EACH APPROACH.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.
- ④ THE WIRELESS ACCESS POINT SHALL BE WIRED TO DRAW POWER FROM THE ADJACENT TRAFFIC SIGNAL HEAD AND SHALL HAVE A WIRELESS 2.4 GHZ BAND LINK THRU WIRELESS BASE STATION LOCATED IN THE TRAFFIC SIGNAL CABINET.

DATE	BY	REVISIONS	DATE
DATE	BY	REVISIONS	DATE
DATE	BY	REVISIONS	DATE

**CHRISTOPHER B. BURKE** ENGINEERING LTD.  
 803 West Higgins Road, Suite 600  
 Naperville, Illinois 60563  
 (847) 823-6500

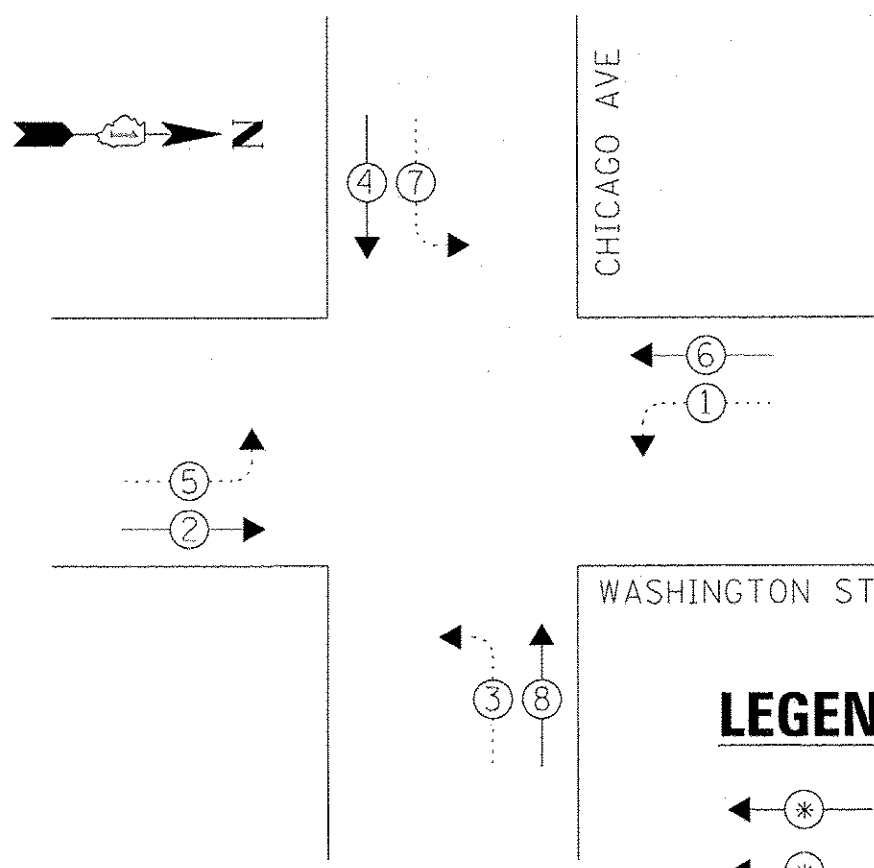
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NO.		
NOTE BOOK	PLOTTED	DATE
	GRADES CHECKED	
	STRUCTURE NOTATIONS CHKD	

TS SHT NO. 30

FILE NAME TS12-1.Wash-Chicago.SIG	USER NAME = fbariso	DESIGNED - EAJ / TFS	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TRAFFIC SIGNAL MODIFICATION PLAN WASHINGTON STREET AND CHICAGO AVENUE</b>	F.A.U. RTE. 2502, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 30	
	PLOT SCALE = 20'	DRAWN - FPB	REVISED -			SCALE:	SHEET NO. OF SHEETS STA. TO STA.	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		CONTRACT NO. 61D23	
	PLOT DATE = 8/16/2016	CHECKED - GMZ	REVISED -								
		DATE - 6/10/2016	REVISED -								

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 PLOTTED: \_\_\_\_\_  
 ALIGNED: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 FILE NAME: \_\_\_\_\_  
 CAD FILE NAME: \_\_\_\_\_  
 PLAN NO. \_\_\_\_\_  
 NOTE BOOK NO. \_\_\_\_\_  
**CHRISTOPHER B. BURKE** ENGINEERING LTD.  
 3575 West Higgins Road, Suite 600  
 Naperville, IL 60563  
 (847) 823-0500  
 DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 PLOTTED: \_\_\_\_\_  
 ALIGNED: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
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 CAD FILE NAME: \_\_\_\_\_  
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 NOTE BOOK NO. \_\_\_\_\_

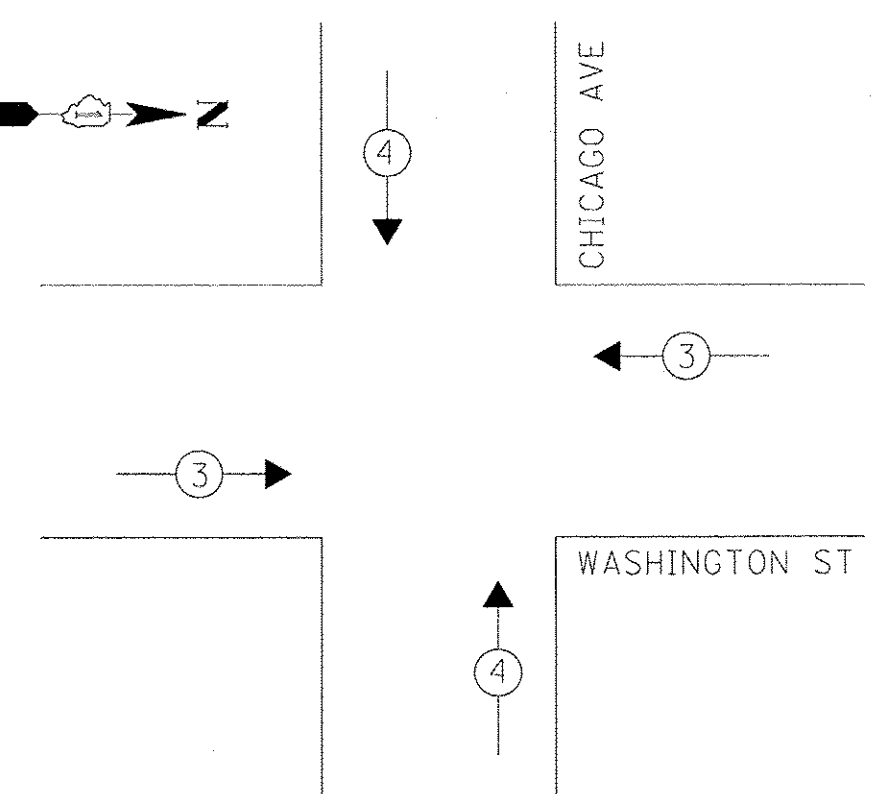
**EXISTING CONTROLLER SEQUENCE**



**LEGEND:**

- ◀ (arrow in circle) PROTECTED PHASE
- ◀ (arrow in circle with dot) PROTECTED/PERMITTED PHASE
- ◀ (arrow in circle with pedestrian) PEDESTRIAN PHASE
- OL OVERLAP

**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



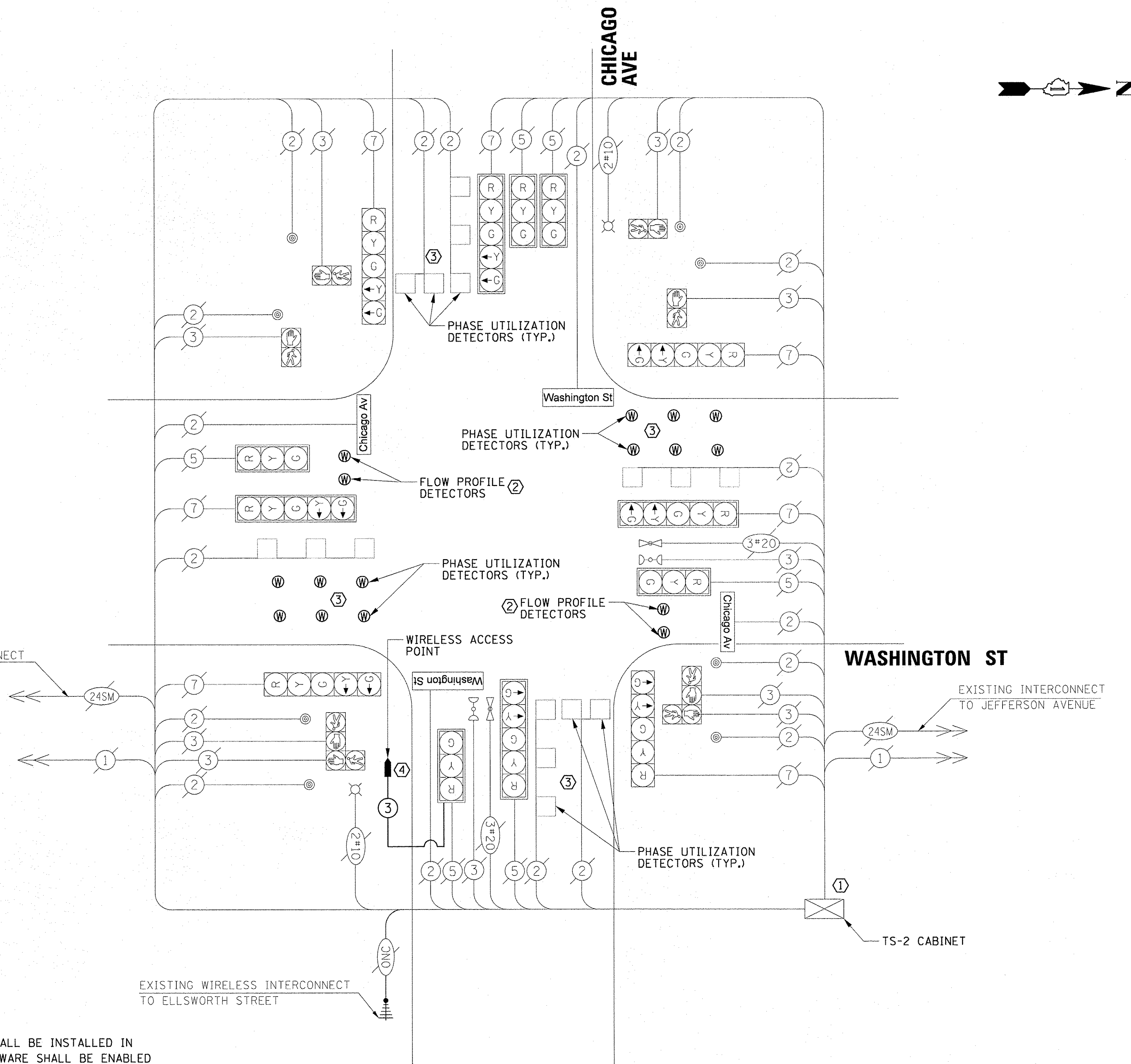
**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	13	11	50	71.5
(YELLOW)	13	20	5	13.0
(GREEN)	13	12	45	70.2
PROTECTED ARROW	16	10	10	16.0
PED. SIGNAL	8	20	100	160.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	2	250	50	250.0
			TOTAL =	520.7

ENERGY COSTS TO:  
 CITY OF NAPERVILLE  
 400 S. EAGLE STREET  
 NAPERVILLE, IL 60540  
 ENERGY SUPPLY: CONTACT: NEW BUSINESS  
 PHONE: (866) 639-3532  
 COMPANY: COMMONWEALTH EDISON  
 ACCOUNT NUMBER: ---

**CONSTRUCTION NOTES:**

- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② FLOW PROFILE DETECTORS LOCATED WITHIN SEPARATE LANES SHALL BE ASSIGNED TO SEPARATE DETECTOR CHANNELS FOR EACH APPROACH.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.
- ④ THE WIRELESS ACCESS POINT SHALL BE WIRED TO DRAW POWER FROM THE ADJACENT TRAFFIC SIGNAL HEAD AND SHALL HAVE A WIRELESS 2.4 GHZ BAND LINK THRU WIRELESS BASE STATION LOCATED IN THE TRAFFIC SIGNAL CABINET.



**CABLE PLAN**  
(NOT TO SCALE)

**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1

TS SHT NO. 31



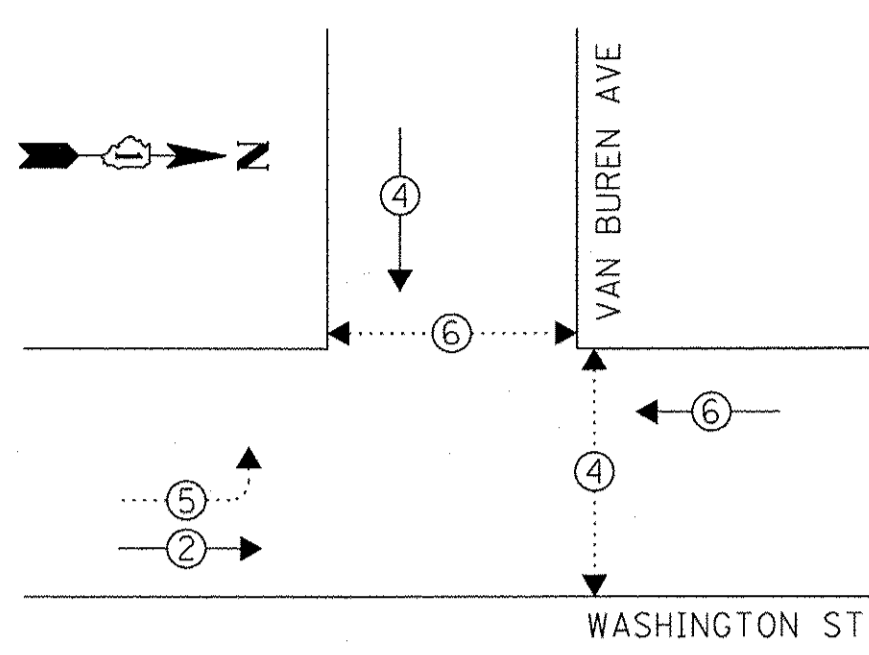








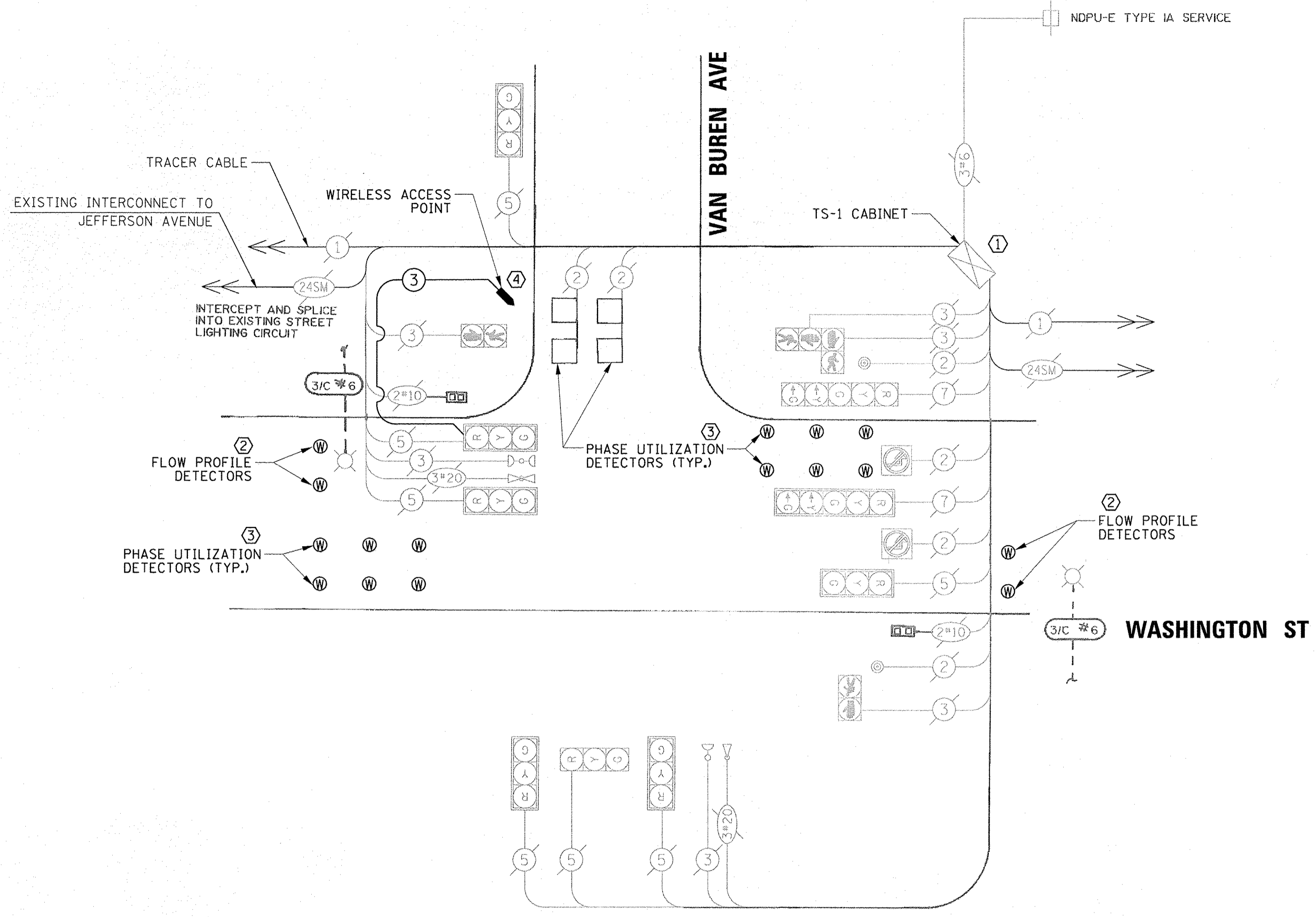
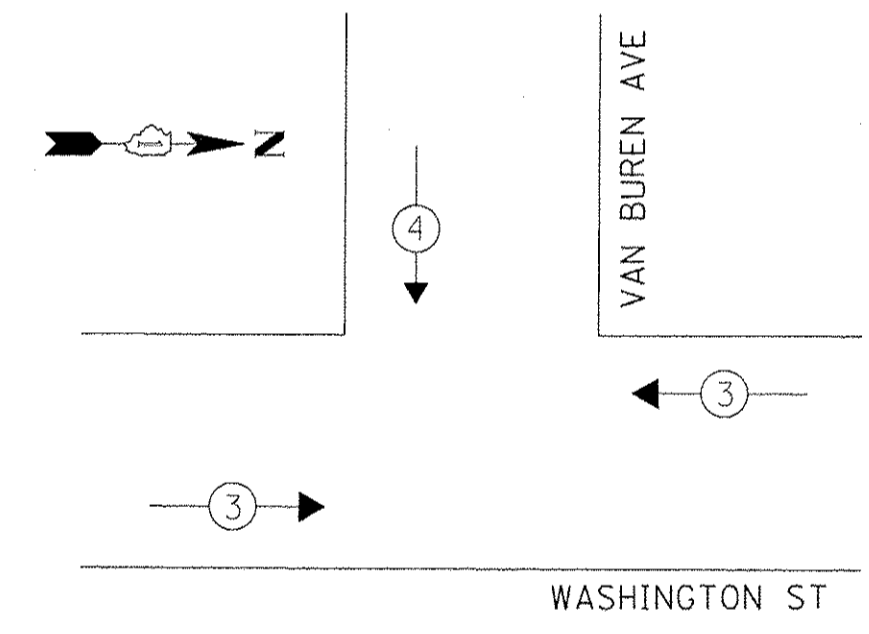
**EXISTING CONTROLLER SEQUENCE**



**LEGEND:**

- ← (4) → PROTECTED PHASE
- ← (5) → PROTECTED/PERMITTED PHASE
- ← (6) → PEDESTRIAN PHASE
- ◊ OL OVERLAP

**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



**CABLE PLAN**  
(NOT TO SCALE)

**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1

**CONSTRUCTION NOTES:**

- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② FLOW PROFILE DETECTORS LOCATED WITHIN SEPARATE LANES SHALL BE ASSIGNED TO SEPARATE DETECTOR CHANNELS FOR EACH APPROACH.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.
- ④ THE WIRELESS ACCESS POINT SHALL BE WIRED TO DRAW POWER FROM THE ADJACENT TRAFFIC SIGNAL HEAD AND SHALL HAVE A WIRELESS 2.4 GHZ BAND LINK THRU WIRELESS BASE STATION LOCATED IN THE TRAFFIC SIGNAL CABINET.

**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	9	11	50	49.5
(YELLOW)	9	20	5	9.0
(GREEN)	9	12	45	48.6
PROTECTED ARROW	4	10	10	4.0
PED. SIGNAL	4	20	100	80.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	2	120	50	120.0
LUMINAIRE	2	250	50	250.0
ENERGY COSTS TO:			TOTAL =	661.1

CITY OF NAPERVILLE  
400 S. EAGLE STREET  
NAPERVILLE, IL 60540  
ENERGY SUPPLY CONTACT: NEW BUSINESS  
PHONE: (866) 639-3532  
COMPANY: COMMONWEALTH EDISON  
ACCOUNT NUMBER: ---

TS SHT NO. 35  
 SURVEYED, PLOTTED, CHECKED, DATE, BY, PLAN, NOTE BOOK NO., ENGINEERING LTD., CHRISTOPHER B. BURKE, 8575 West Higgins Road, Suite 600, Rosemont, Illinois 60018, (847) 823-0900, C.B. ENGINEERING LTD.

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**SCHEDULE OF QUANTITIES, CABLE PLAN, PHASE DESIGNATION**  
**DIAGRAM AND EMERGENCY VEHICLE PREEMPTION SEQUENCE**  
**WASHINGTON STREET AND VAN BUREN AVENUE**

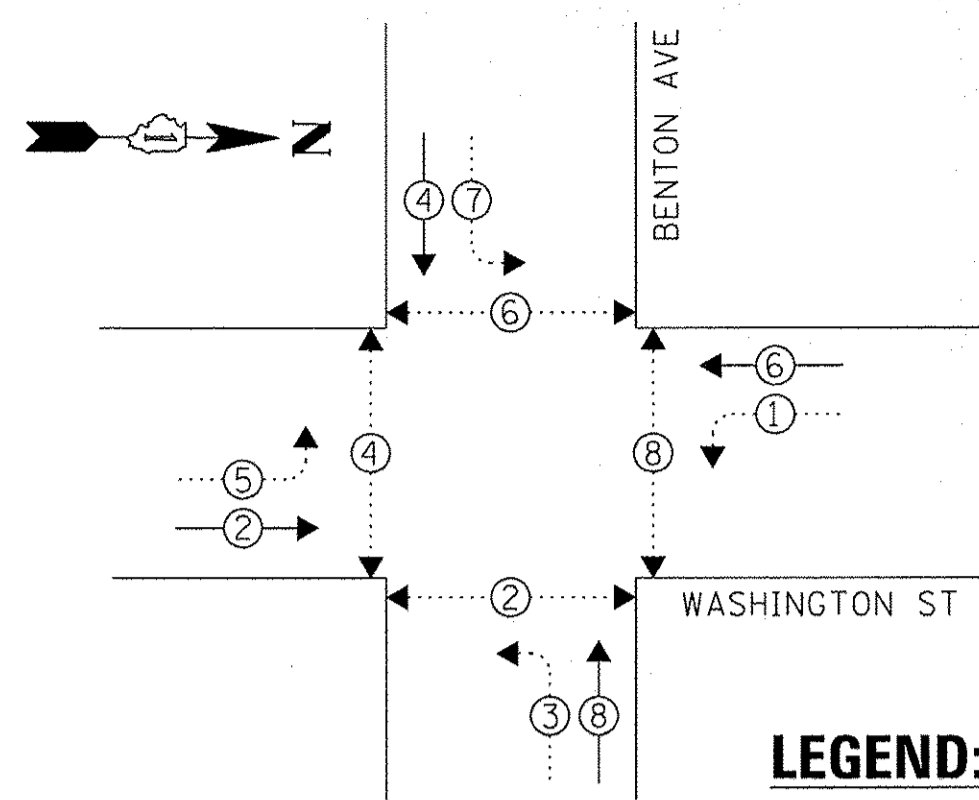
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TS14-2-Wash-VanBuren_CAB	fbariso	EAJ / TFS	-	2552, 1522 & 2546	13-00159-00-TL	DuPAGE & WILL	80	35
		DRAWN	REVISIONS	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				
		FPB	-	CONTRACT NO. 61D23				
		CHECKED	REVISIONS					
		GMZ	-					
		DATE	REVISIONS					
		6/10/2016	-					



DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
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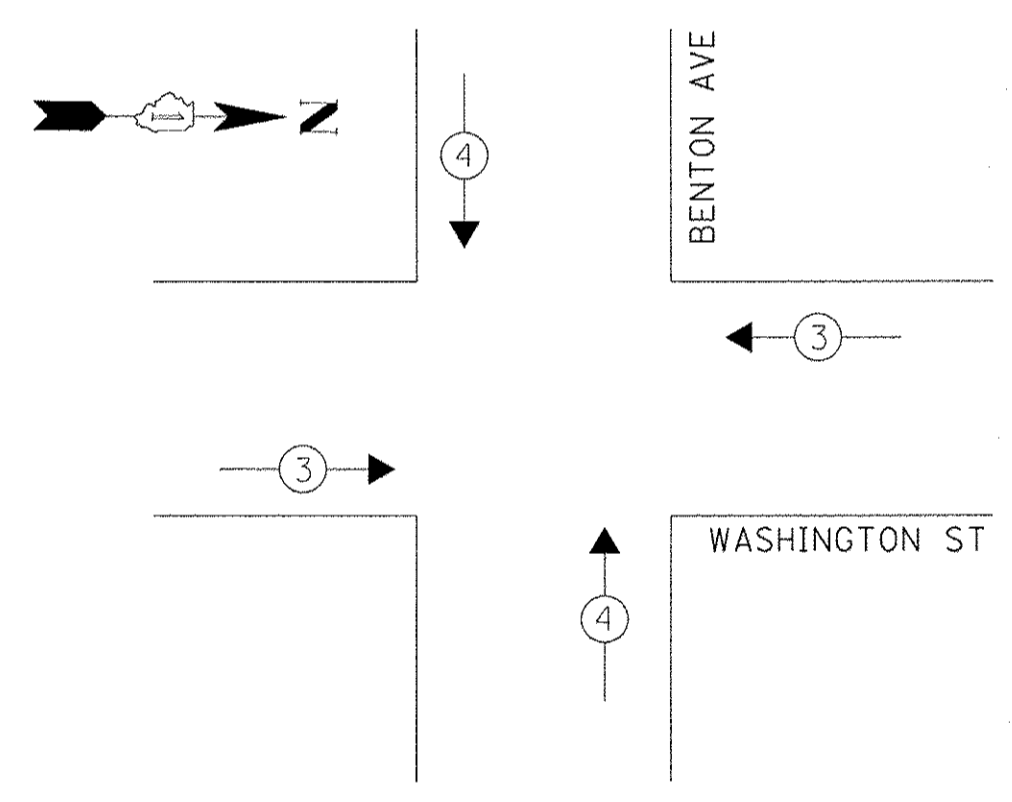
TS SHT NO. 37

**EXISTING CONTROLLER SEQUENCE**



- LEGEND:**
- ◀ (with star) PROTECTED PHASE
  - ◀ (with circle) PROTECTED/PERMITTED PHASE
  - ◀ (with star and circle) PEDESTRIAN PHASE
  - ◊ OL OVERLAP

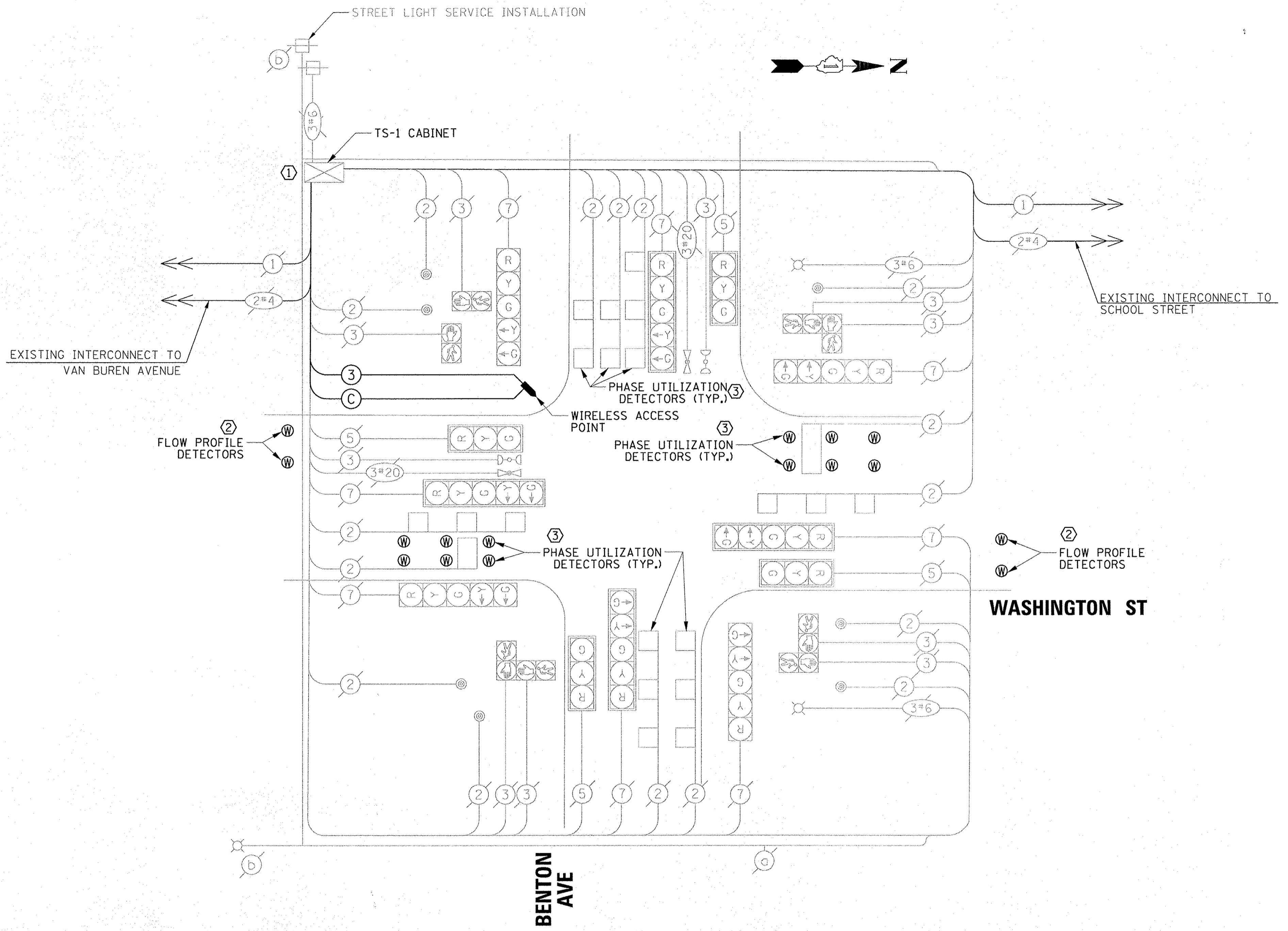
**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	12	11	50	66.0
(YELLOW)	12	20	5	12.0
(GREEN)	12	12	45	64.8
PROTECTED ARROW	16	10	10	16.0
PED. SIGNAL	8	20	100	160.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	2	250	50	250.0
			TOTAL =	668.8

ENERGY COSTS TO:  
 CITY OF NAPERVILLE  
 400 S. EAGLE STREET  
 NAPERVILLE, IL 60540  
 ENERGY SUPPLY CONTACT: NEW BUSINESS  
 PHONE: (866) 639-3532  
 COMPANY: COMMONWEALTH EDISON  
 ACCOUNT NUMBER: ---



**CABLE PLAN**  
(NOT TO SCALE)

- CONSTRUCTION NOTES:**
- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
  - ② FLOW PROFILE DETECTORS LOCATED WITHIN SEPARATE LANES SHALL BE ASSIGNED TO SEPARATE DETECTOR CHANNELS FOR EACH APPROACH.
  - ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

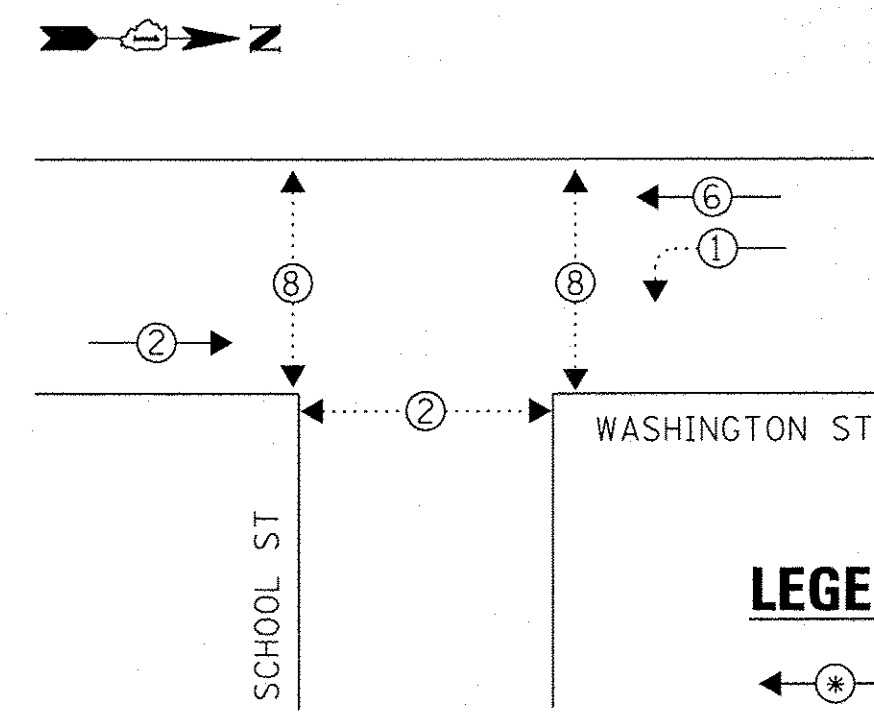
**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1



DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_ PLOTTED: \_\_\_\_\_  
 PLAN: \_\_\_\_\_ CHECKED: \_\_\_\_\_  
 NOTE BOOK: \_\_\_\_\_ NO. \_\_\_\_\_  
 CADD FILE NAME: \_\_\_\_\_  
 CHRISTOPHER B. BURKE ENGINEERING LTD.  
 8575 West Higgins Road, Suite 600  
 Rosemont, Illinois 60018  
 (847) 823-0500  
 DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_ PLOTTED: \_\_\_\_\_  
 PROFILE: \_\_\_\_\_ CHECKED: \_\_\_\_\_  
 NOTE BOOK: \_\_\_\_\_ NO. \_\_\_\_\_  
 STRUCTURE: \_\_\_\_\_ NOTATION: \_\_\_\_\_

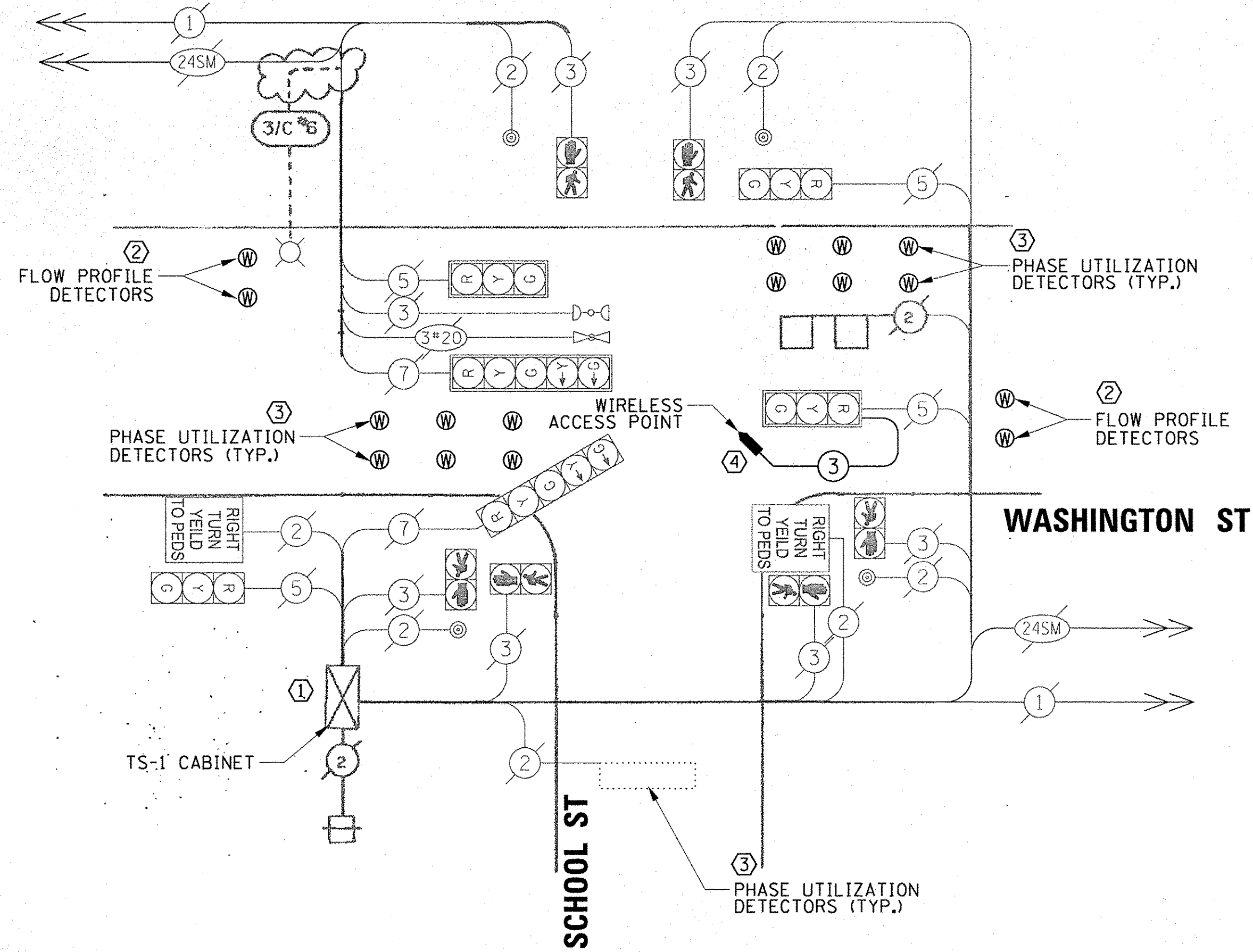
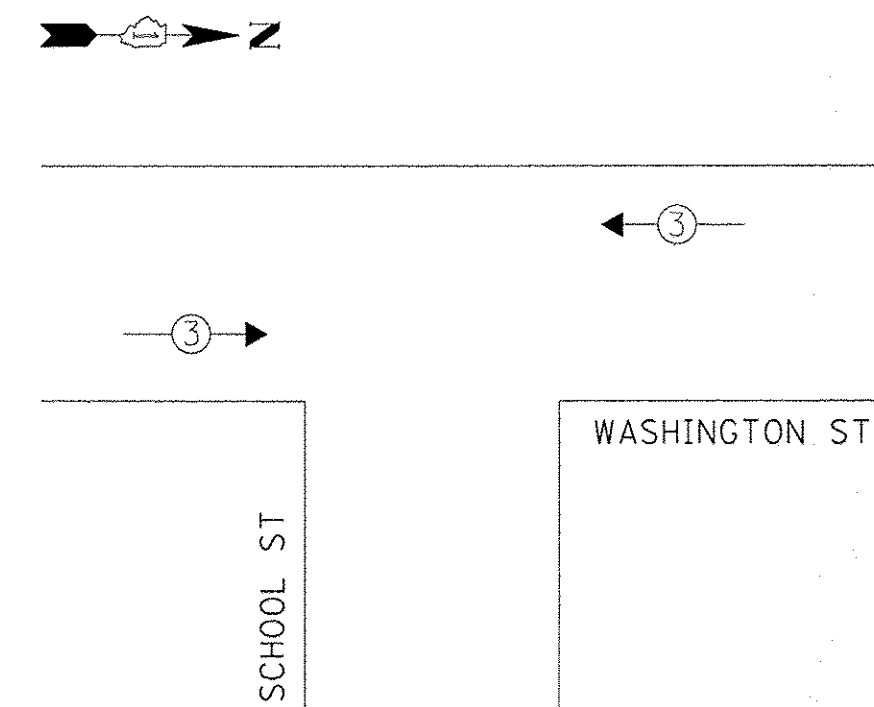
**EXISTING CONTROLLER SEQUENCE**



**LEGEND:**

- ⬅️⊙➡️ PROTECTED PHASE
- ⬅️⊙➡️⋯ PROTECTED/PERMITTED PHASE
- ⬅️⊙➡️⋯⊙➡️ PEDESTRIAN PHASE
- ⬅️⊙➡️⋯⊙➡️ OVERLAP

**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



**CABLE PLAN**  
(NOT TO SCALE)

**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	5	11	50	27.5
(YELLOW)	5	20	5	5.0
(GREEN)	5	12	45	27.0
PROTECTED ARROW	4	10	10	4.0
PED. SIGNAL	6	20	100	120.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	2	120	50	120.0
LUMINAIRE	1	250	50	125.0
ENERGY COSTS TO:			TOTAL =	528.5

**CONSTRUCTION NOTES:**

- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② FLOW PROFILE DETECTORS LOCATED WITHIN SEPARATE LANES SHALL BE ASSIGNED TO SEPARATE DETECTOR CHANNELS FOR EACH APPROACH.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.
- ④ THE WIRELESS ACCESS POINT SHALL BE WIRED TO DRAW POWER FROM THE ADJACENT TRAFFIC SIGNAL HEAD AND SHALL HAVE A WIRELESS 2.4 GHZ BAND LINK THRU WIRELESS BASE STATION LOCATED IN THE TRAFFIC SIGNAL CABINET.

**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1

ENERGY COSTS TO:  
 CITY OF NAPERVILLE  
 400 S. EAGLE STREET  
 NAPERVILLE, IL 60540  
 ENERGY SUPPLY: CONTACT: NEW BUSINESS  
 PHONE: (866) 639-3532  
 COMPANY: COMMONWEALTH EDISON  
 ACCOUNT NUMBER: ---

TS SHT NO. 39



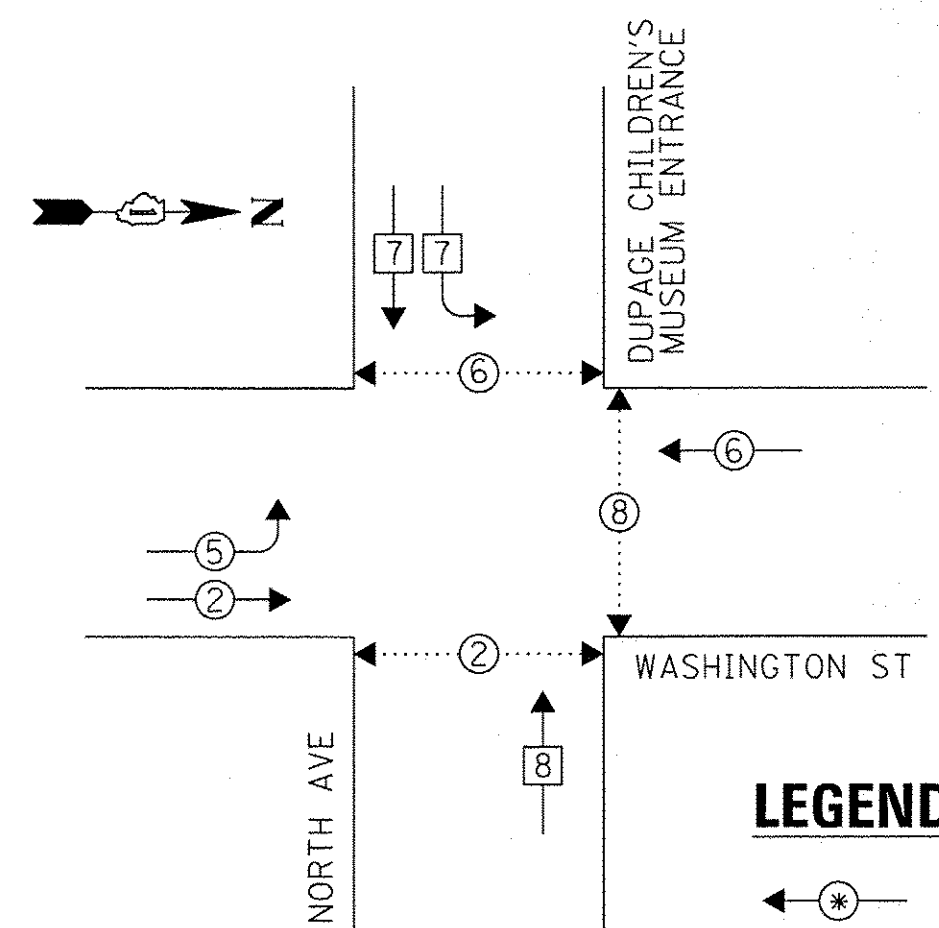


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TS SHT NO. 41

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
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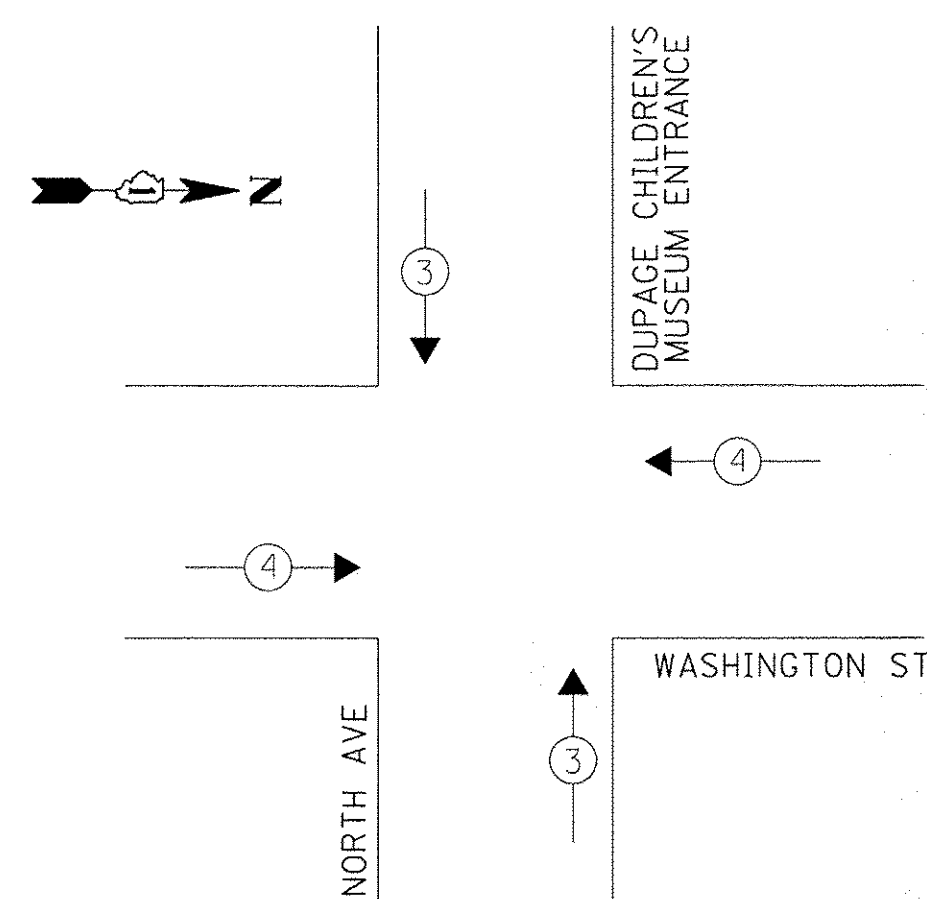
**EXISTING CONTROLLER SEQUENCE**



**LEGEND:**

- ⊙ → PROTECTED PHASE
- ⊙ → PROTECTED/PERMITTED PHASE
- ⊙ → PEDESTRIAN PHASE
- DL → OVERLAP

**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	13	11	50	71.5
(YELLOW)	14	20	5	14.0
(GREEN)	14	12	45	52.5
PROTECTED ARROW	6	10	10	6.0
PED. SIGNAL	6	20	100	120.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	2	250	50	250.0
ENERGY COSTS TO:			TOTAL =	614.0

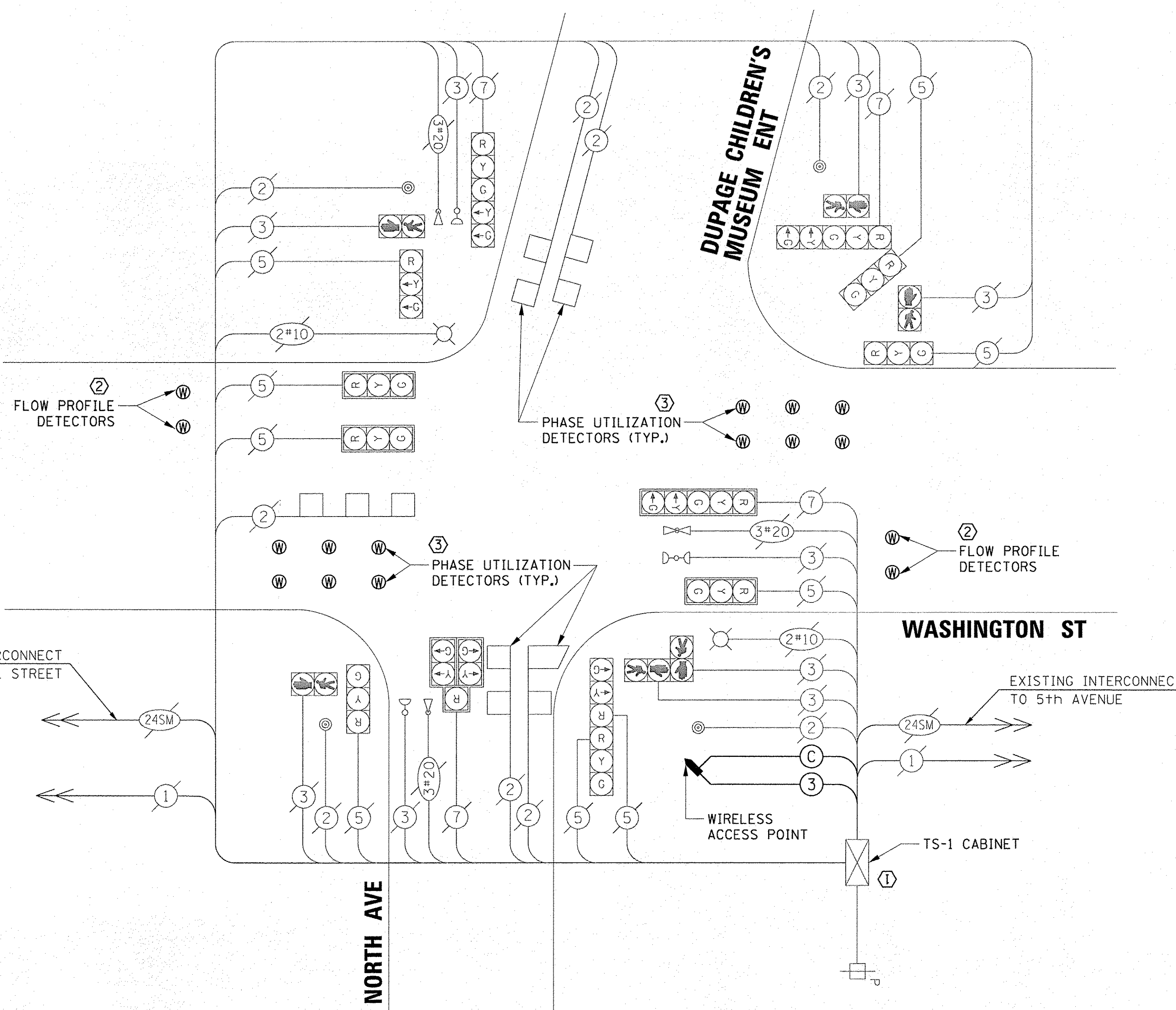
CITY OF NAPERVILLE  
 400 S. EAGLE STREET  
 NAPERVILLE, IL 60540  
 ENERGY SUPPLY: CONTACT: NEW BUSINESS  
 PHONE: (866) 639-3532  
 COMPANY: COMMONWEALTH EDISON  
 ACCOUNT NUMBER: ---

**CONSTRUCTION NOTES:**

- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② FLOW PROFILE DETECTORS LOCATED WITHIN SEPARATE LANES SHALL BE ASSIGNED TO SEPARATE DETECTOR CHANNELS FOR EACH APPROACH.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

EXISTING INTERCONNECT TO SCHOOL STREET

EXISTING INTERCONNECT TO 5th AVENUE



**CABLE PLAN**  
(NOT TO SCALE)

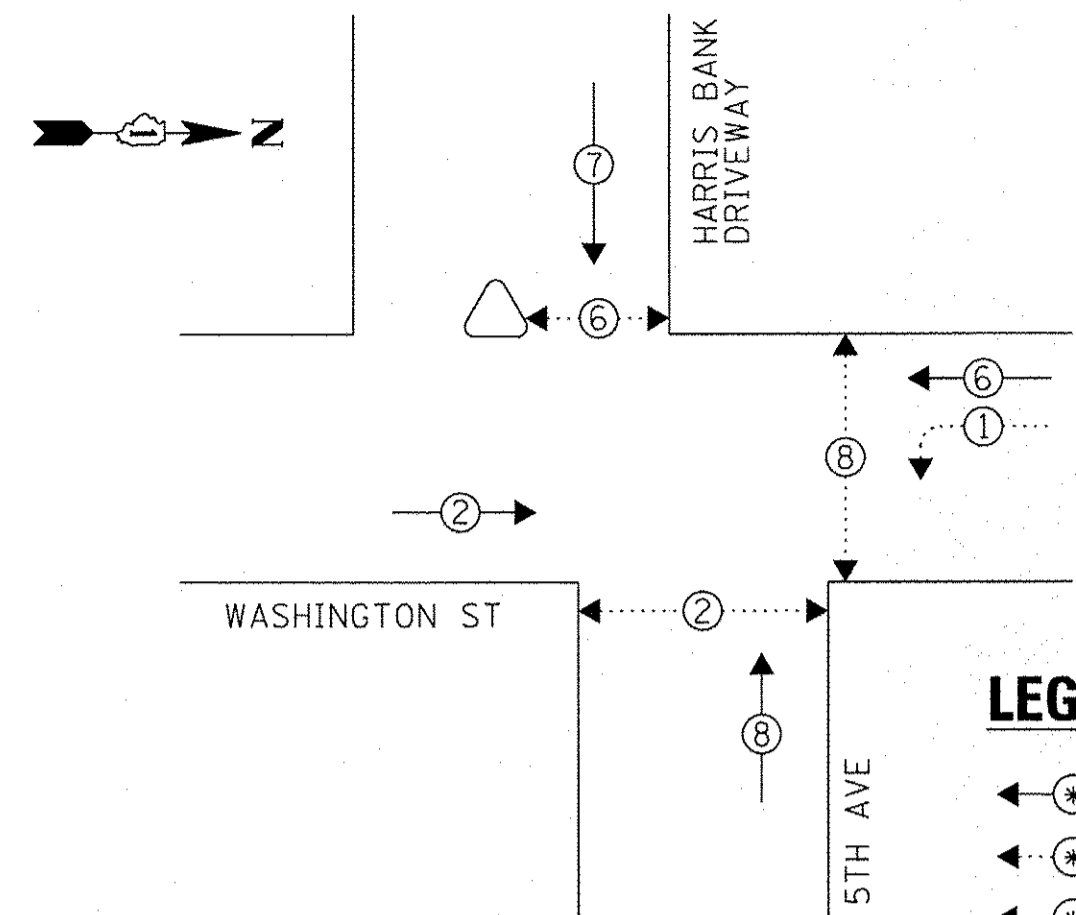
**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1





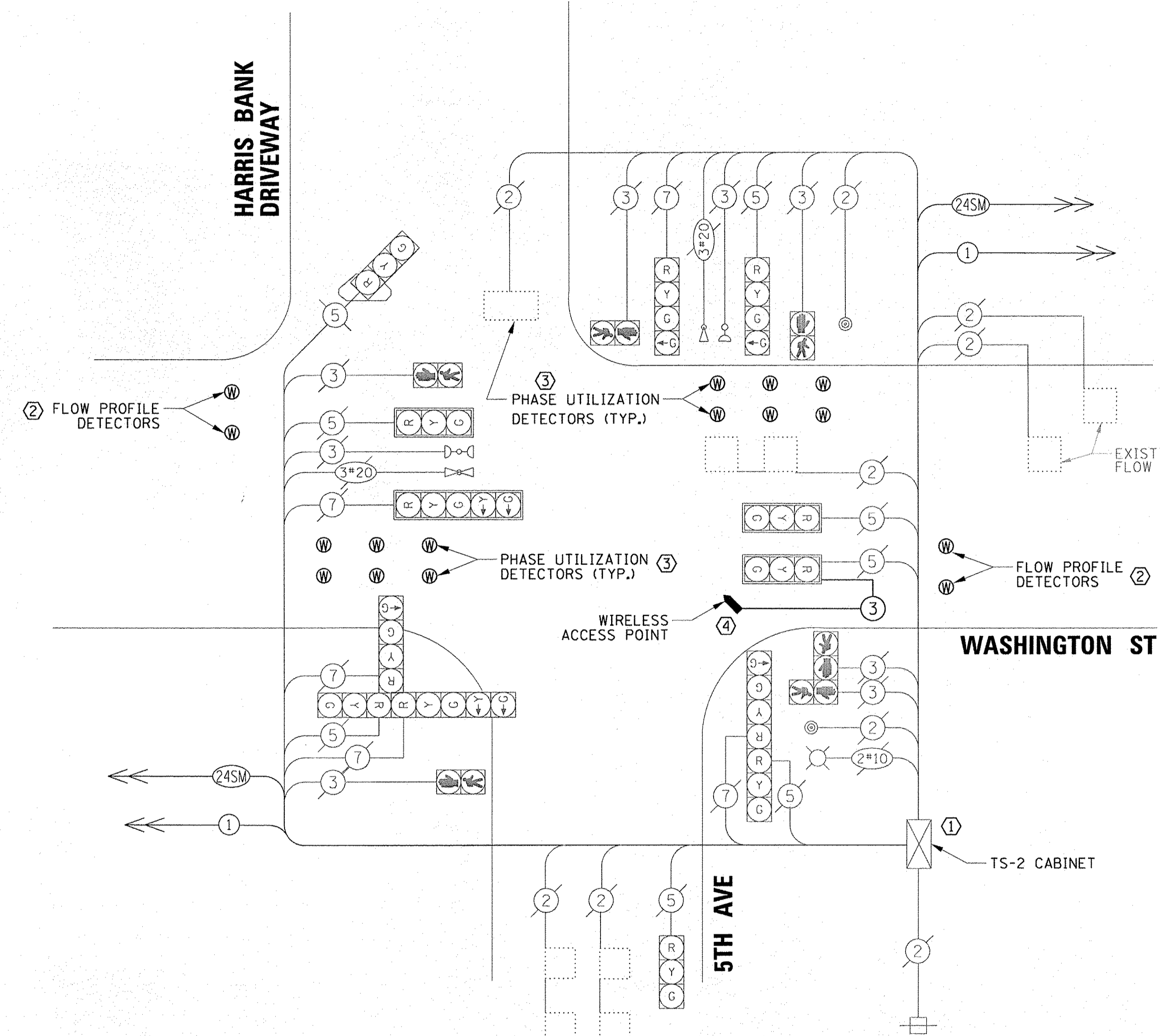
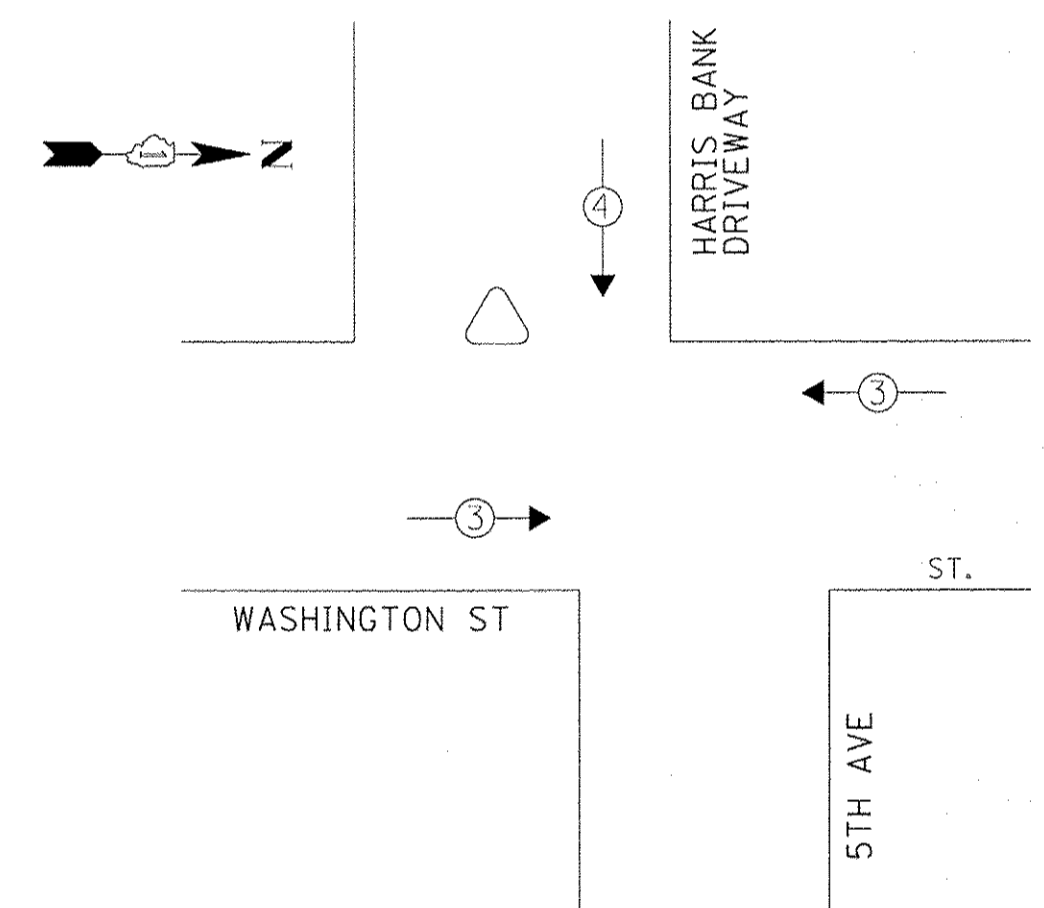
**EXISTING CONTROLLER SEQUENCE**



**LEGEND:**

- ⊙ PROTECTED PHASE
- ⊙ PROTECTED/PERMITTED PHASE
- ⊙ PEDESTRIAN PHASE
- OL OVERLAP

**EXISTING EMERGENCY VEHICLE  
PREEMPTION SEQUENCE**



**CABLE PLAN**  
(NOT TO SCALE)

**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1

**CONSTRUCTION NOTES:**

- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② FLOW PROFILE DETECTORS LOCATED WITHIN SEPARATE LANES SHALL BE ASSIGNED TO SEPARATE DETECTOR CHANNELS FOR EACH APPROACH.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.
- ④ THE WIRELESS ACCESS POINT SHALL BE WIRED TO DRAW POWER FROM THE ADJACENT TRAFFIC SIGNAL HEAD AND SHALL HAVE A WIRELESS 2.4 GHZ BAND LINK THRU WIRELESS BASE STATION LOCATED IN THE TRAFFIC SIGNAL CABINET.

**TRAFFIC SIGNAL  
ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	13	11	50	71.5
(YELLOW)	13	20	5	13.0
(GREEN)	17	12	45	91.8
PROTECTED ARROW	4	10	10	4.0
PED. SIGNAL	6	20	100	120.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	1	250	50	125.0
ENERGY COSTS TO:			TOTAL =	525.3

CITY OF NAPERVILLE  
400 S. EAGLE STREET  
NAPERVILLE, IL 60540

ENERGY SUPPLY: CONTACT: NEW BUSINESS  
PHONE: (866) 639-3532  
COMPANY: COMMONWEALTH EDISON  
ACCOUNT NUMBER: ---

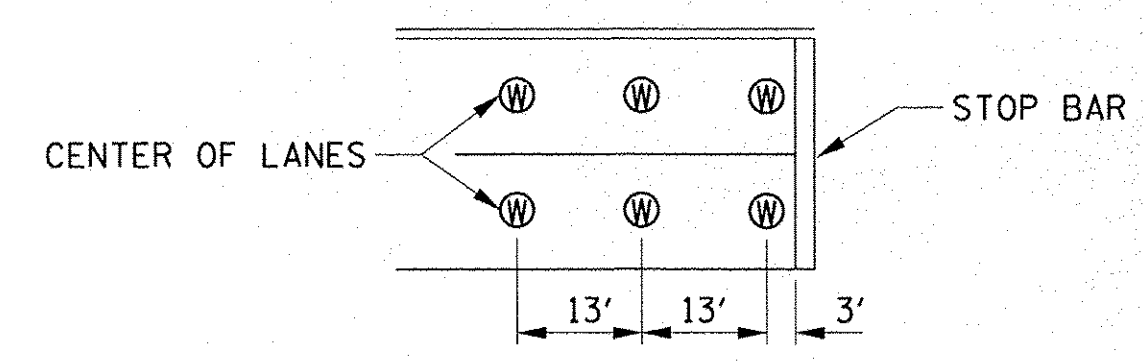
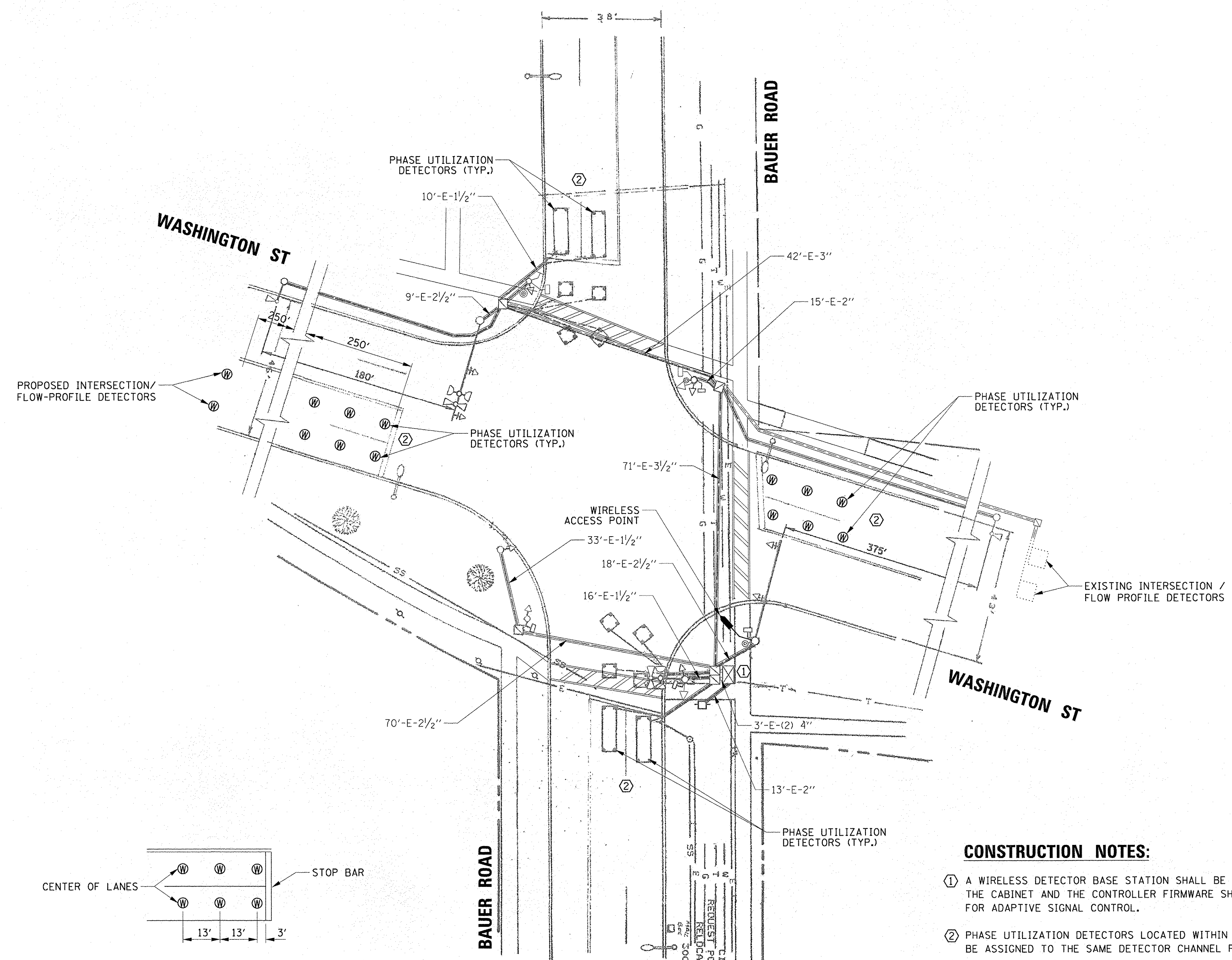
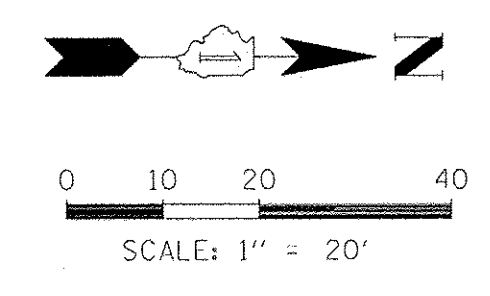
TS SHT NO. 43  
 PROFILE GRADES CHECKED STRUCTURE NOTATIONS OK'D  
 NOTE BOOK NO. \_\_\_\_\_  
 BY \_\_\_\_\_  
 DATE \_\_\_\_\_  
 CHISTOPHER B. BURKE ENGINEERING LTD.  
 2555 MacArthur Blvd., Suite 600  
 Rosemont, Illinois 60018  
 (847) 823-0500

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

**SCHEDULE OF QUANTITIES, CABLE PLAN, PHASE DESIGNATION  
DIAGRAM AND EMERGENCY VEHICLE PREEMPTION SEQUENCE  
WASHINGTON STREET AND 5th AVENUE**

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

F.A.U. RTE. 2552, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY DUPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 43
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		CONTRACT NO. 61D23		



**WIRELESS MAGNETIC DETECTOR  
DETAIL**

**CONSTRUCTION NOTES:**

- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

DATE	BY	DATE	BY
SURVEYED		SURVEYED	
PLAN		PLAN	
NOTE BOOK		NOTE BOOK	
NO.		NO.	
CHECKED		CHECKED	
BY		BY	
DATE		DATE	
STRUCTURE NOTATIONS OK'D		STRUCTURE NOTATIONS OK'D	
NO.		NO.	

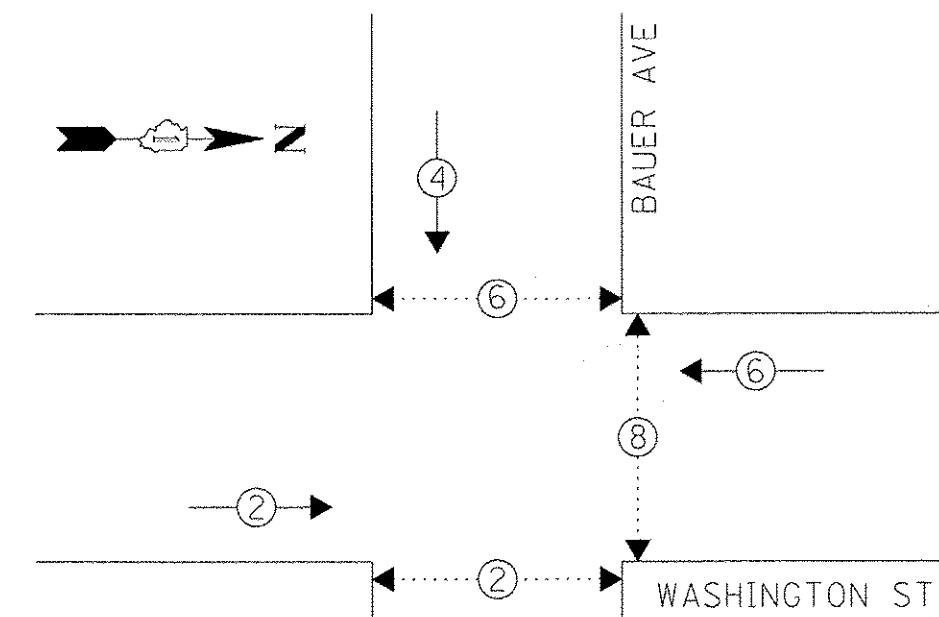
**TS SHT NO. 44**

FILE NAME TS19-1.Wash-Bauer.SIG	USER NAME = fboriso N:\NAPERVILLE\150042\TRAFFIC\	DESIGNED - EAJ / TFS DRAWN - FPB CHECKED - GMZ DATE - 6/10/2016	REVISED - REVISED - REVISED - REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TRAFFIC SIGNAL MODIFICATION PLAN WASHINGTON STREET AND BAUER ROAD</b>	F.A.U. RTE. 2552, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 44
						SCALE:	SHEET NO. OF SHEETS STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	CONTRACT NO. 61D23

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED \_\_\_\_\_ PLOTTED \_\_\_\_\_  
 ALIGNED \_\_\_\_\_ CHECKED \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_ CADD FILE NAME \_\_\_\_\_  
 PLAN NO. \_\_\_\_\_  
 ENGINEERING LTD.  
**CHRISTOPHER B. BURKE**  
 9575 West Higgins Road, Suite 600  
 Rosemont, Illinois 60018  
 (847) 823-0500  
 DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED \_\_\_\_\_ PLOTTED \_\_\_\_\_  
 ALIGNED \_\_\_\_\_ CHECKED \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_ CADD FILE NAME \_\_\_\_\_  
 PROFILE NO. \_\_\_\_\_

TS SHT NO. 45

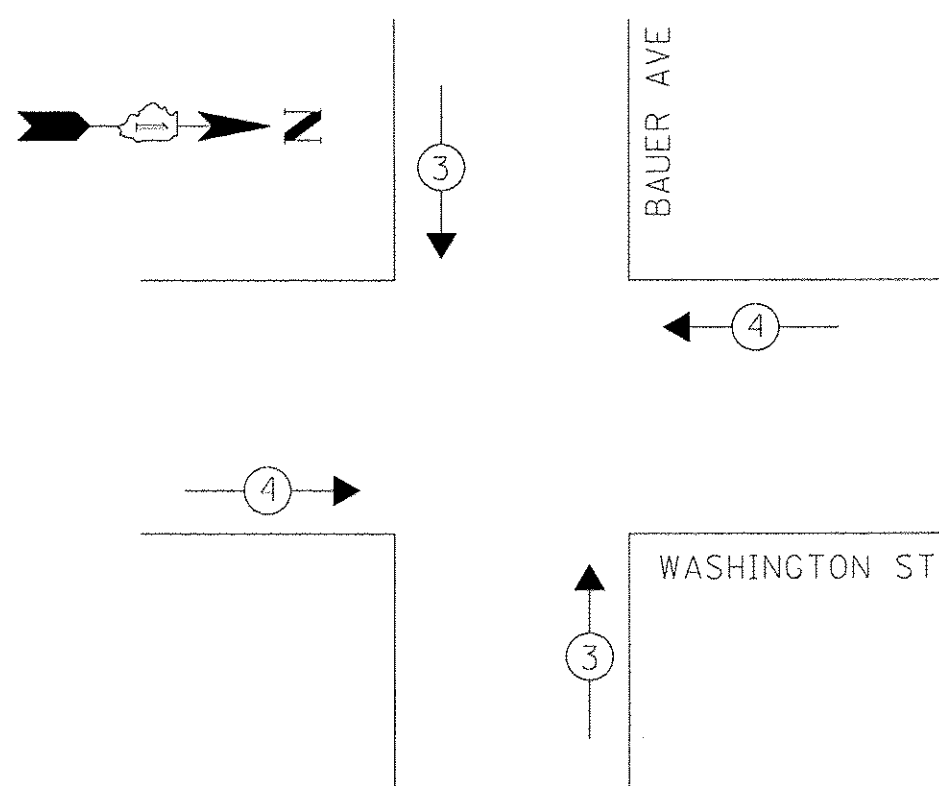
**EXISTING CONTROLLER SEQUENCE**



**LEGEND:**

- ⊙ PROTECTED PHASE
- ⊙⋯ PROTECTED/PERMITTED PHASE
- ⊙⋯⊙ PEDESTRIAN PHASE
- ⊙⊙ OVERLAP

**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	12	11	50	66.0
(YELLOW)	12	20	5	12.0
(GREEN)	12	12	45	64.8
PROTECTED ARROW	-	10	10	-
PED. SIGNAL	6	20	100	120.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	-	250	50	-
ENERGY COSTS TO:			TOTAL =	362.8

CITY OF NAPERVILLE  
 400 S. EAGLE STREET  
 NAPERVILLE, IL 60540  
 ENERGY SUPPLY: CONTACT: NEW BUSINESS  
 PHONE: (866) 639-3532  
 COMPANY: COMMONWEALTH EDISON  
 ACCOUNT NUMBER: ---

FILE NAME	USER NAME = fbariso	DESIGNED -	EAJ / TFS	REVISED -	
TS19-2_Wash-Bauer_CAB	N:\NAPERVILLE\150042\TRAFFIC\	DRAWN -	FPB	REVISED -	
	PLOT SCALE = 28'	CHECKED -	GMZ	REVISED -	
	PLOT DATE = 8/16/2016	DATE -	6/10/2016	REVISED -	

EXISTING INTERCONNECT TO US 34/OGDEN AVENUE

PROPOSED INTERSECTION / FLOW PROFILE DETECTORS

PHASE UTILIZATION DETECTORS (TYP.)

EXISTING INTERSECTION / FLOW PROFILE DETECTORS

EXISTING INTERCONNECT TO IROQUOIS AVENUE

WIRELESS ACCESS POINT

TS-2 CABINET

**CABLE PLAN**  
(NOT TO SCALE)

- CONSTRUCTION NOTES:**
- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
  - ② PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

**SCHEDULE OF QUANTITIES, CABLE PLAN, PHASE DESIGNATION DIAGRAM AND EMERGENCY VEHICLE PREEMPTION SEQUENCE WASHINGTON STREET AND BAUER ROAD**

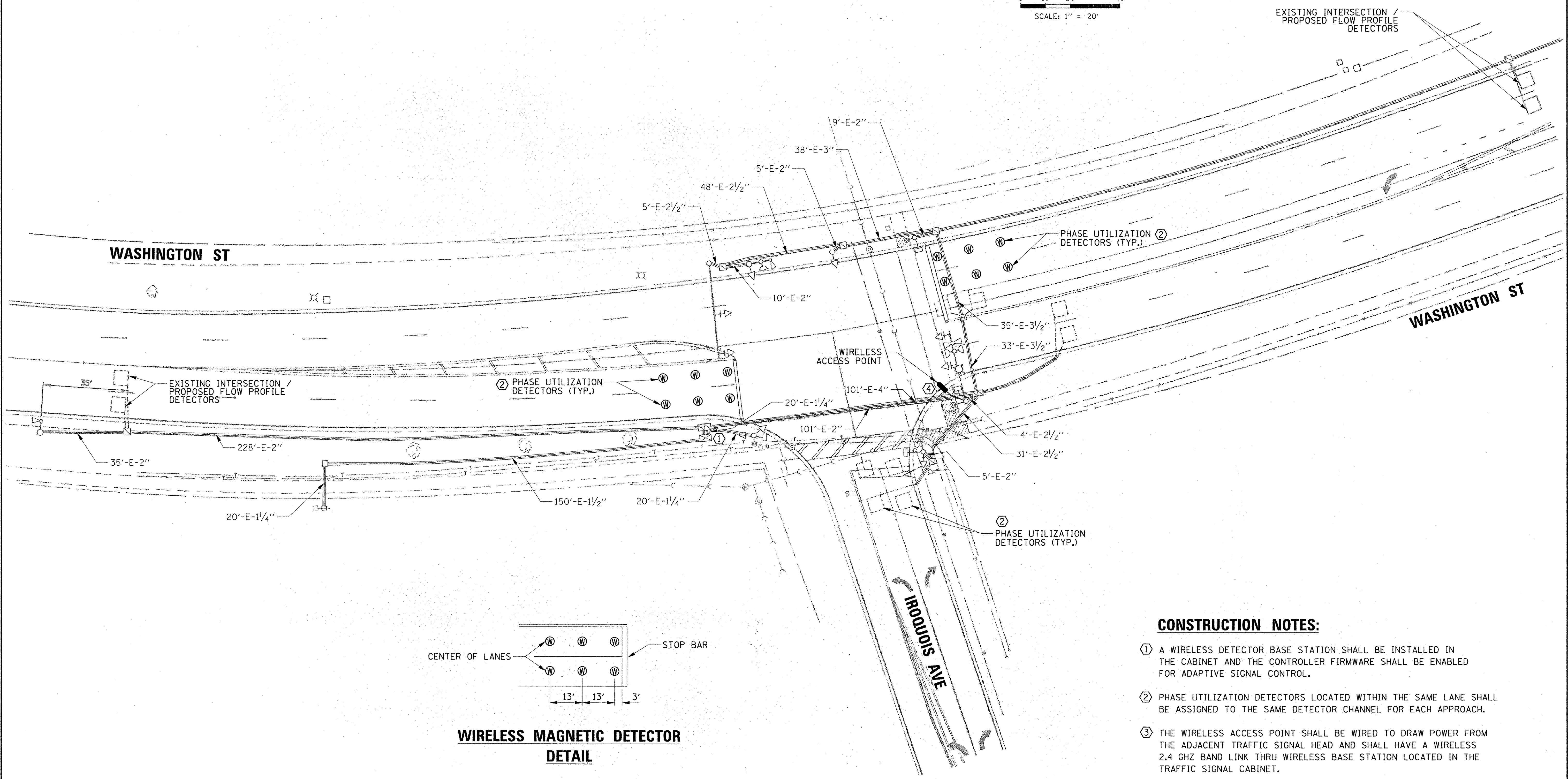
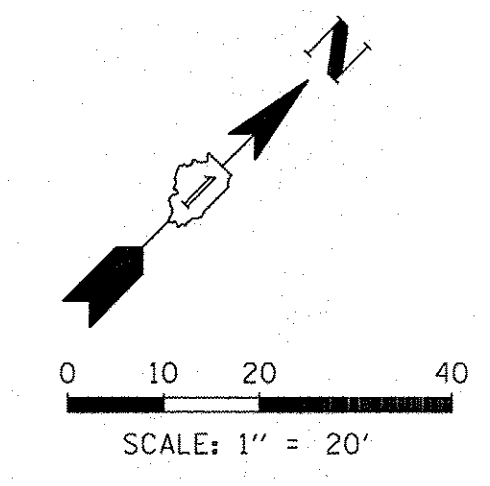
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2552, 1522 & 2546	13-00159-00-TL	DUPAGE & WILL	80	45
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	

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

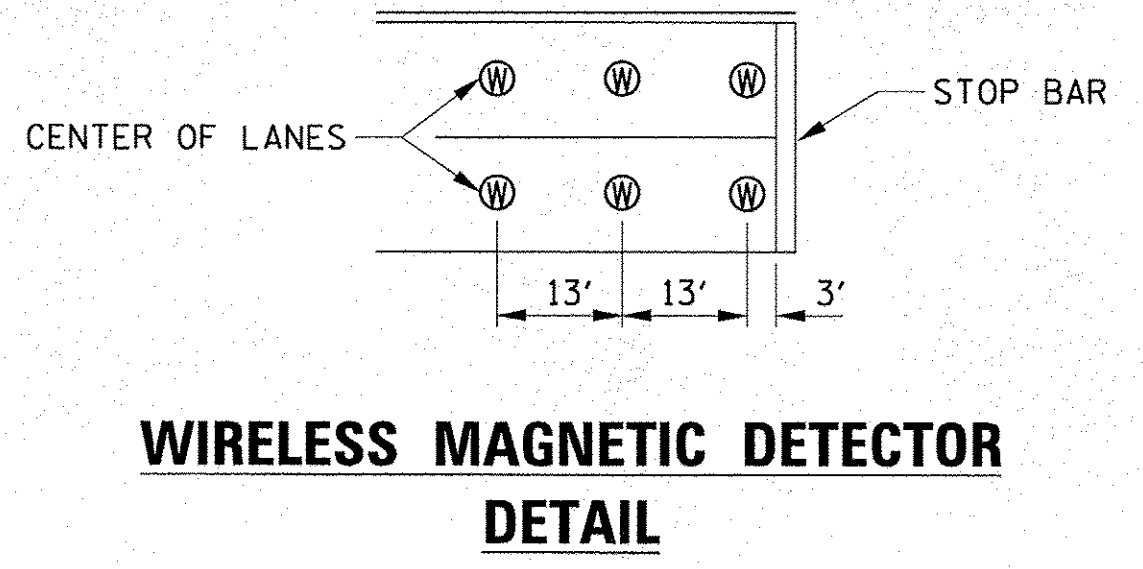
CONTRACT NO. 61D23

SURVEYED \_\_\_\_\_ DATE \_\_\_\_\_  
 PLOTTED \_\_\_\_\_  
 CHECKED \_\_\_\_\_  
 BY \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_  
 NO. \_\_\_\_\_  
 STRUCTURE NOTATIONS OK'D  
 CADD FILE NAME \_\_\_\_\_  
 NO. \_\_\_\_\_  
**CHRISTOPHER B. BURKE** ENGINEERING LTD.  
 9575 West Higgins Road, Suite 600  
 Rosemont, Illinois 60018  
 (847) 823-0500  
**C B**  
 BY \_\_\_\_\_ DATE \_\_\_\_\_  
 CHECKED \_\_\_\_\_  
 BY \_\_\_\_\_  
 DATE \_\_\_\_\_  
 NO. \_\_\_\_\_  
 NO. \_\_\_\_\_

TS SHT NO. 46

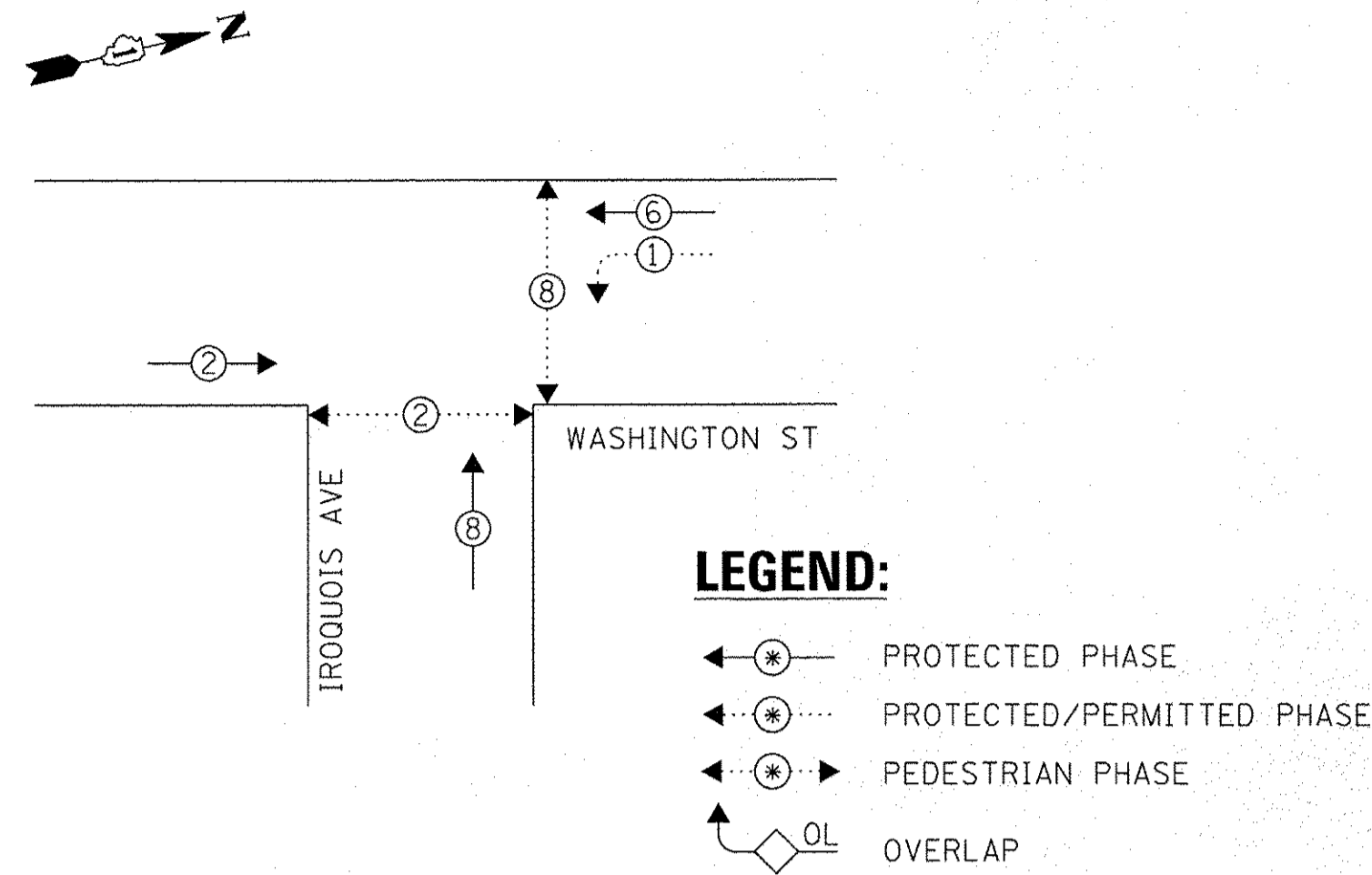


- CONSTRUCTION NOTES:**
- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
  - ② PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.
  - ③ THE WIRELESS ACCESS POINT SHALL BE WIRED TO DRAW POWER FROM THE ADJACENT TRAFFIC SIGNAL HEAD AND SHALL HAVE A WIRELESS 2.4 GHZ BAND LINK THRU WIRELESS BASE STATION LOCATED IN THE TRAFFIC SIGNAL CABINET.

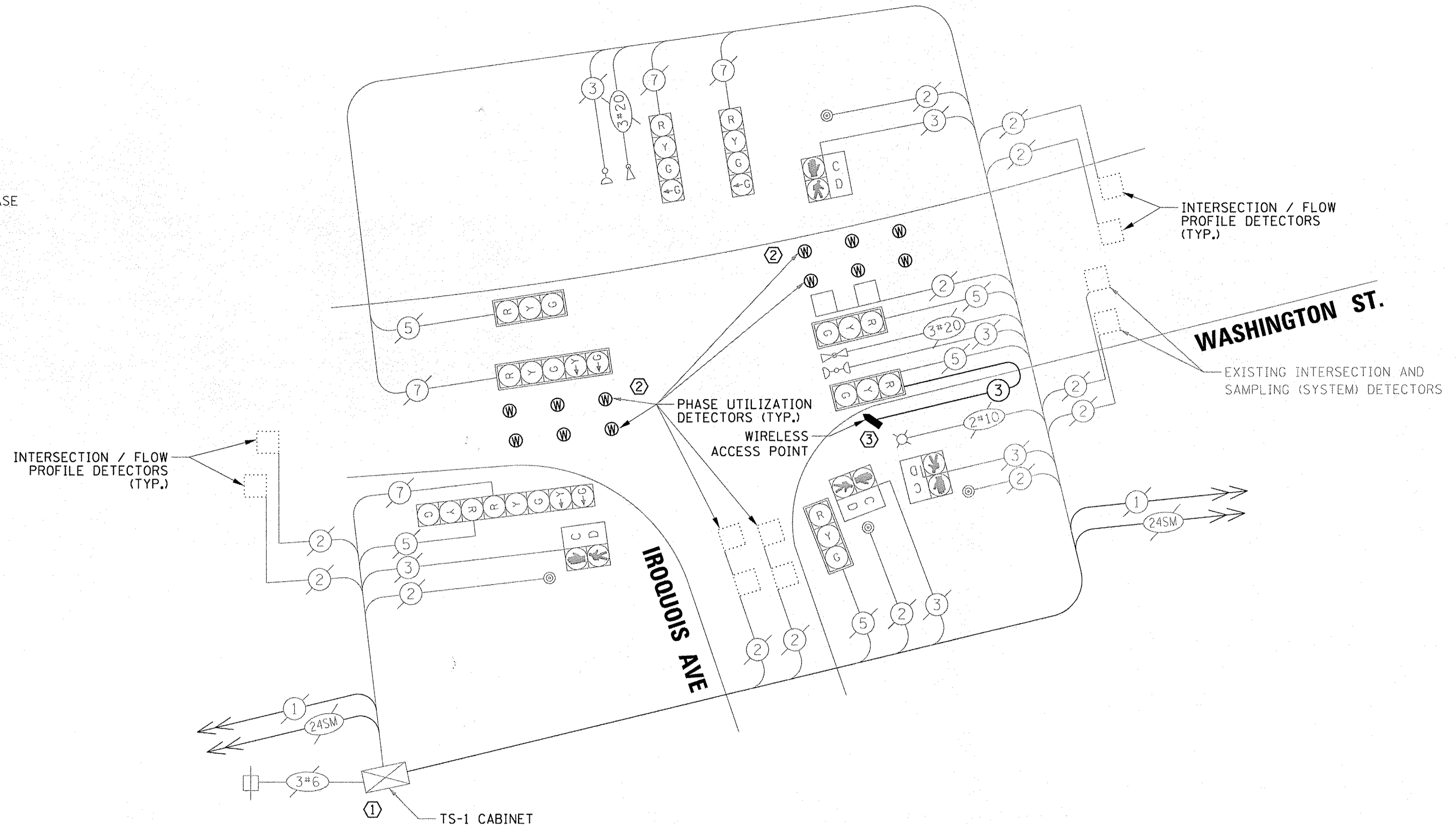
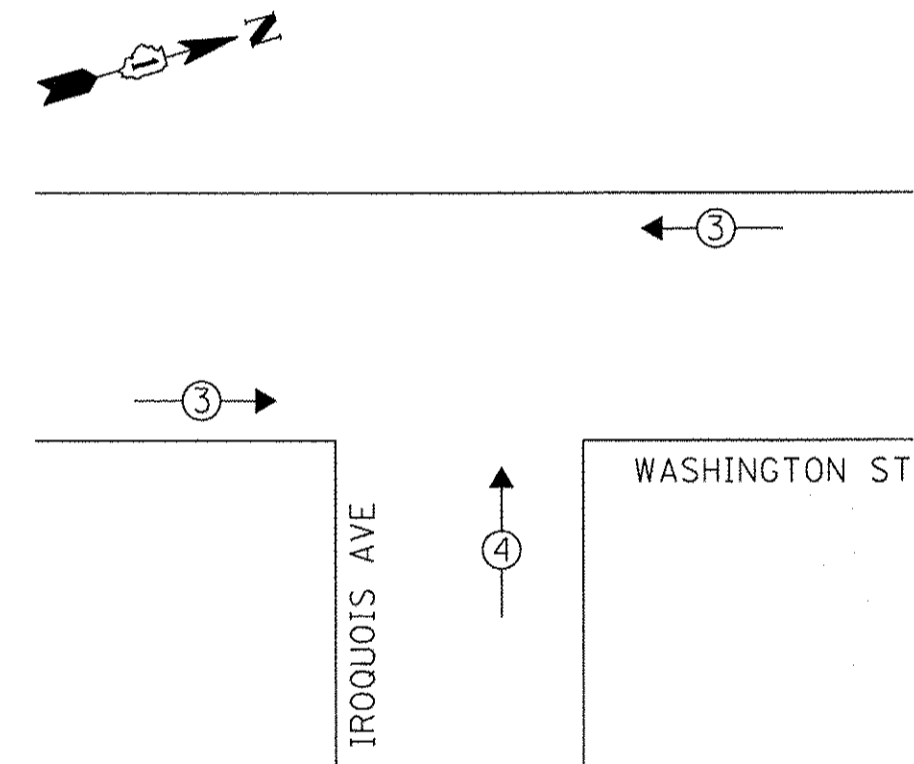


FILE NAME TS20-1.Wash-Iroquois.SIG	USER NAME = fbariso	DESIGNED - EAJ / TFS	REVISED -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>TRAFFIC SIGNAL MODIFICATION PLAN</b> <b>WASHINGTON STREET AND IROQUOIS AVENUE</b>	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	Na\NAPERVILLE\150042\TRAFFIC\	DRAWN - FPB	REVISED -			2532, 1522 & 2546	13-00159-00-TL	DuPAGE & WILL	80	46
	PLOT SCALE = 20'	CHECKED - GMZ	REVISED -			CONTRACT NO. 61D23				
	PLOT DATE = 8/16/2016	DATE - 6/10/2016	REVISED -			FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
					SCALE:	SHEET NO.	OF SHEETS	STA.	TO STA.	

**EXISTING CONTROLLER SEQUENCE**



**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



**CABLE PLAN**  
(NOT TO SCALE)

**CONSTRUCTION NOTES:**

- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.
- ③ THE WIRELESS ACCESS POINT SHALL BE WIRED TO DRAW POWER FROM THE ADJACENT TRAFFIC SIGNAL HEAD AND SHALL HAVE A WIRELESS 2.4 GHZ BAND LINK THRU WIRELESS BASE STATION LOCATED IN THE TRAFFIC SIGNAL CABINET.

**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1

**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	9	11	50	49.5
(YELLOW)	9	20	5	9.0
(GREEN)	11	12	45	59.4
PROTECTED ARROW	4	10	10	4.0
PED. SIGNAL	4	20	100	80.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	1	250	50	125.0
ENERGY COSTS TO:			TOTAL =	426.9

CITY OF NAPERVILLE  
400 S. EAGLE STREET  
NAPERVILLE, IL 60540

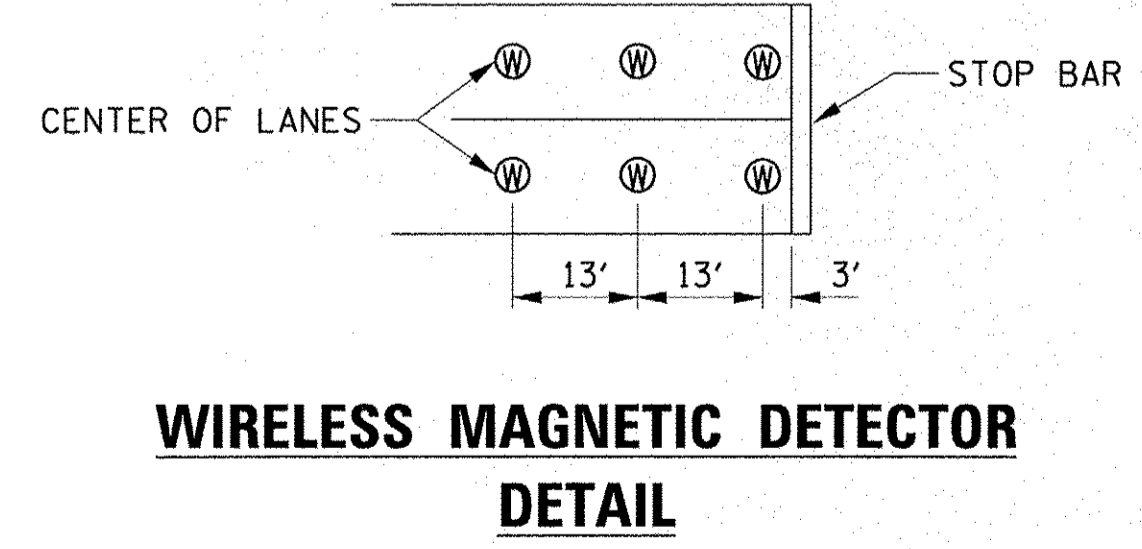
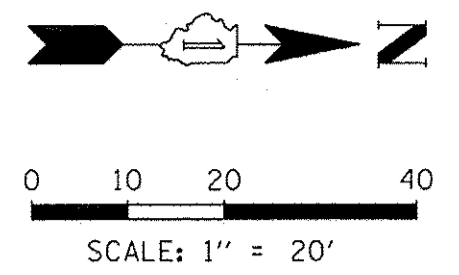
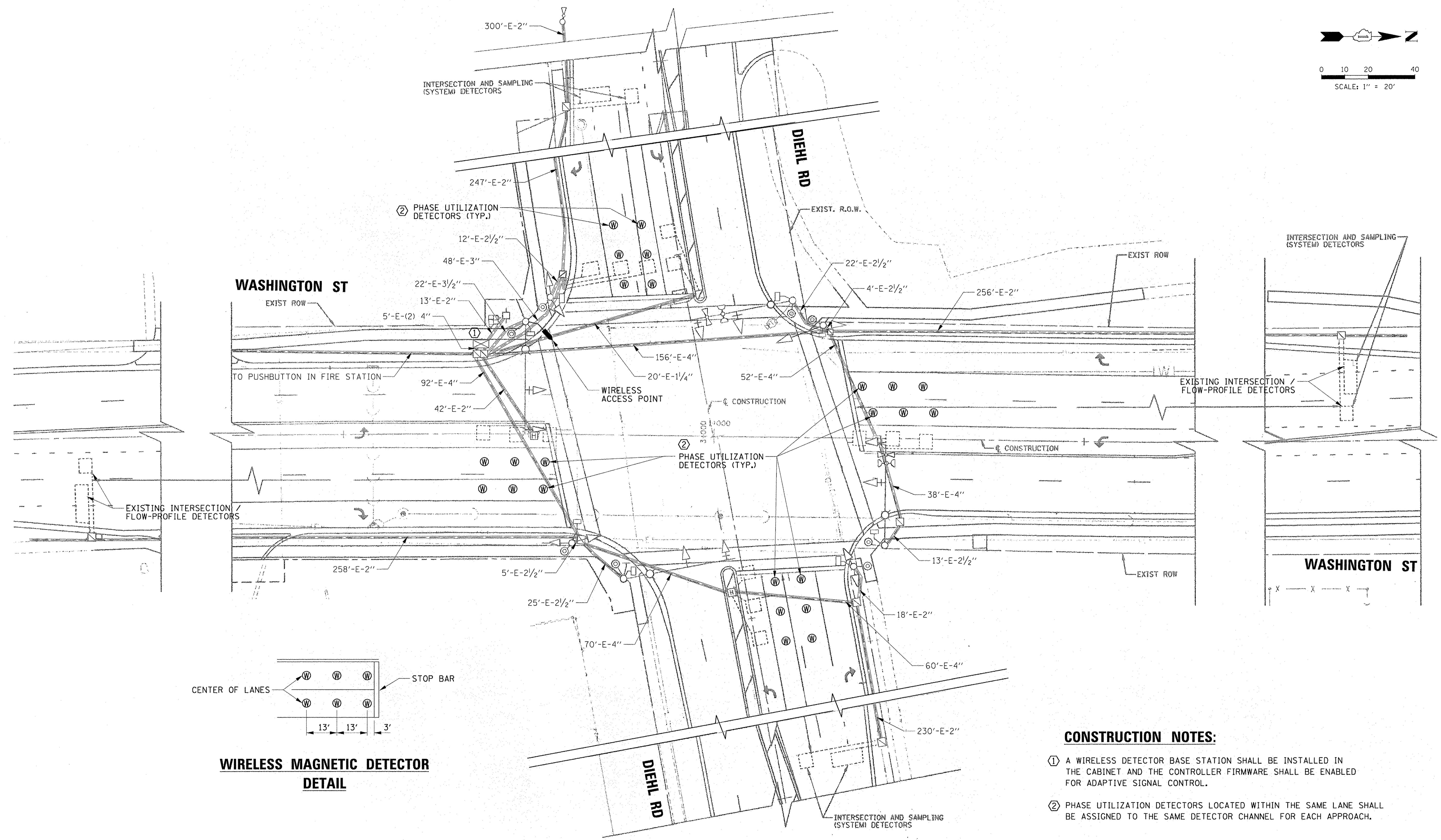
ENERGY SUPPLY: CONTACT: NEW BUSINESS  
PHONE: (866) 639-3532  
COMPANY: COMMONWEALTH EDISON  
ACCOUNT NUMBER: ---

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_ PLOTTED: \_\_\_\_\_  
 PLAN: \_\_\_\_\_ NOTE BOOK NO. \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_ PLOTTED: \_\_\_\_\_  
 PROFILE: \_\_\_\_\_ GRADES CHECKED: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_ PLOTTED: \_\_\_\_\_  
 TS SHT NO. 47

SURVEYED \_\_\_\_\_  
 PLOTTED \_\_\_\_\_  
 CHECKED \_\_\_\_\_  
 BY \_\_\_\_\_  
 DATE \_\_\_\_\_  
 NO. \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_  
 NO. \_\_\_\_\_  
 STRUCTURE NOTATIONS CHFD

TS SHT NO. 48

CHRISTOPHER B. BURKE  
 ENGINEERING LTD.  
 9575 West Higgins Road, Suite 600  
 Rosemont, Illinois 60018  
 (847) 823-0800



**CONSTRUCTION NOTES:**

- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

FILE NAME 1521-1.Wash-Diehl.SIG	USER NAME = fbariso N:\MAPERVILLE\150042\TRAFFIC\	DESIGNED - EAJ / TFS DRAWN - FPB CHECKED - GMZ DATE - 6/10/2016	REVISED - REVISED - REVISED - REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TRAFFIC SIGNAL MODIFICATION PLAN WASHINGTON STREET AND DIEHL ROAD</b>	F.A.J. RTE. 2552, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY DUPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 48	CONTRACT NO. 61023
						SCALE:	SHEET NO. OF SHEETS STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		

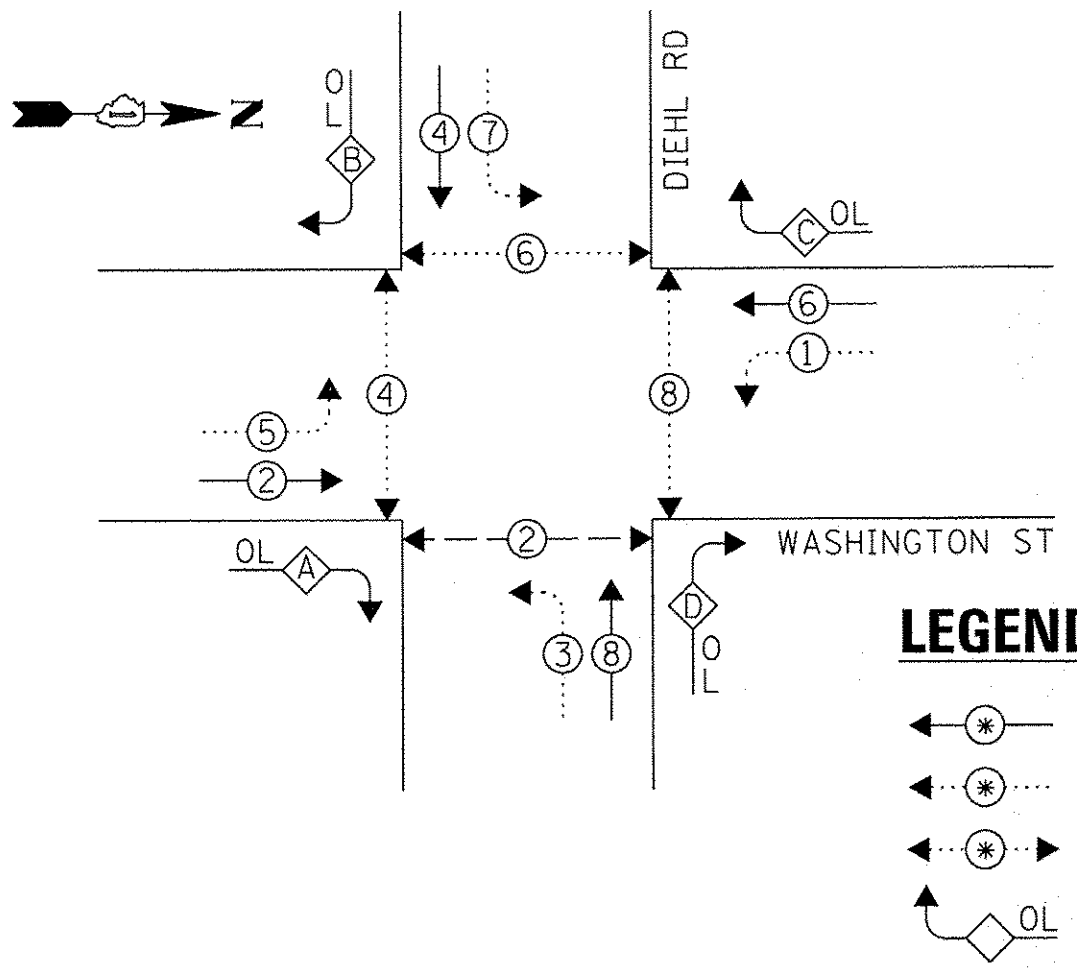


BY: DATE:   
 REVISIONS:   
 NO. DATE DESCRIPTION   
 1. 12/15/16 TS21-Wash-Diehl-CAB

TS SHT NO. 49

DATE:   
 BY:   
 CHECKED:   
 NO. DATE DESCRIPTION

**EXISTING CONTROLLER SEQUENCE**

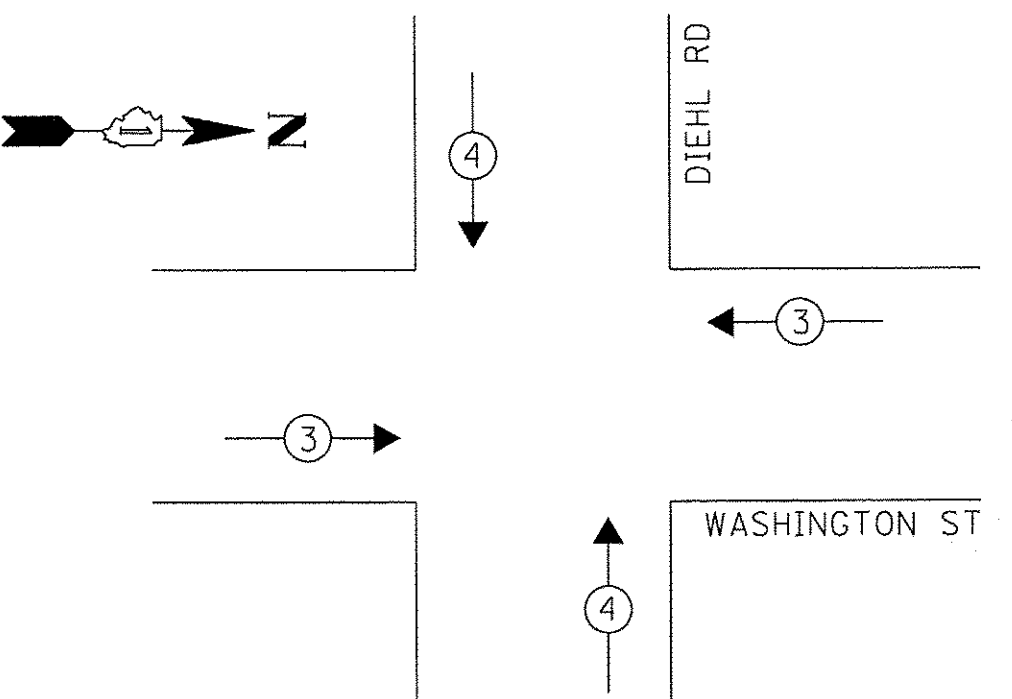


**LEGEND:**  
 ◀ ⊕ ▶ PROTECTED PHASE  
 ◀ ⊕ ⊕ ▶ PROTECTED/PERMITTED PHASE  
 ◀ ⊕ ▶ PEDESTRIAN PHASE  
 ◀ ⊕ ⊕ ▶ OVERLAP

**RIGHT TURN OVERLAP PHASE DESIGNATION**

OVERLAP LETTER	PERMISSIVE PHASE	PROTECTED PHASE
A	2	3
B	4	5
C	6	7
D	8	1

**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**

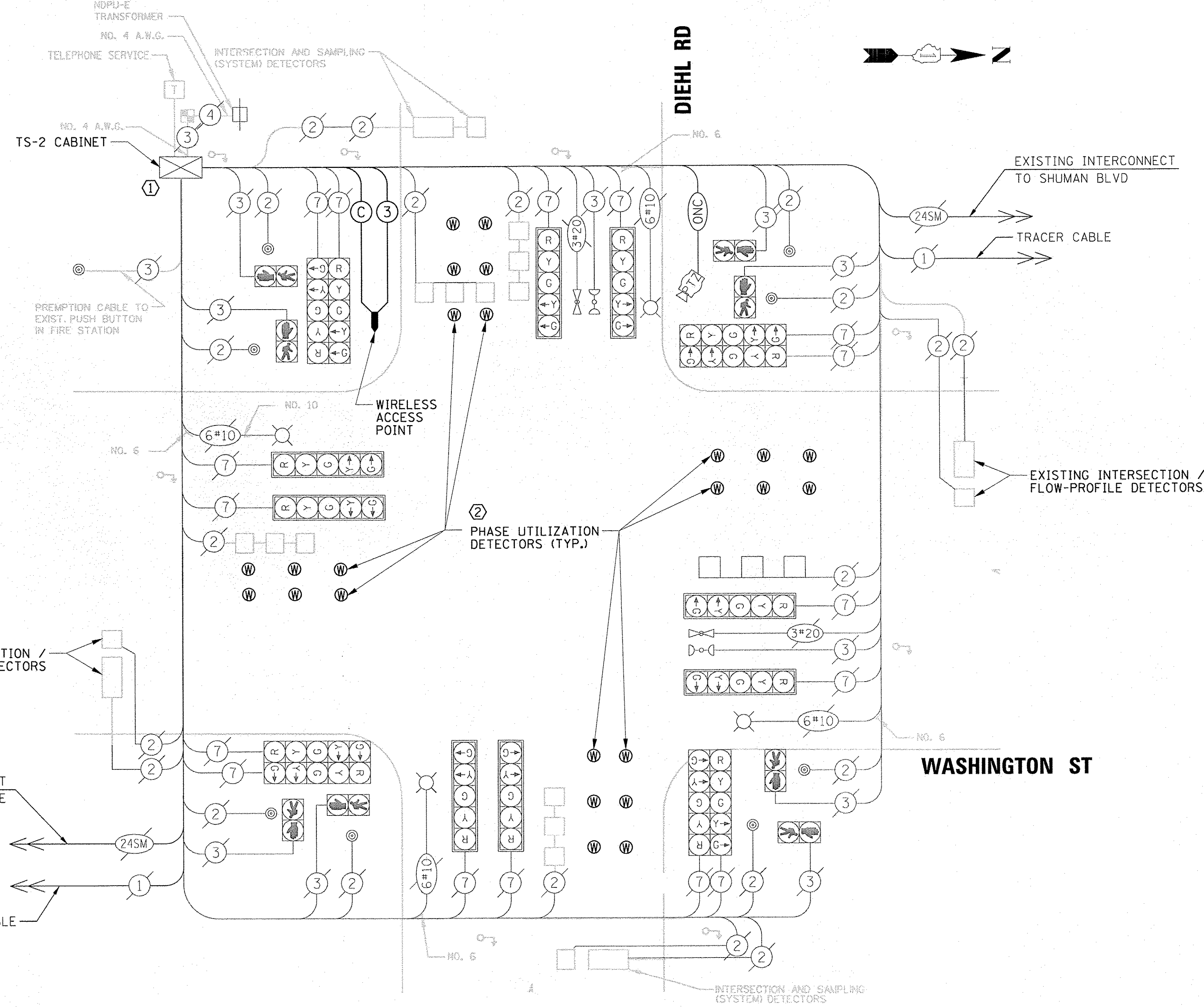


**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	16	11	50	88.0
(YELLOW)	16	20	5	16.0
(GREEN)	16	12	45	28.8
PROTECTED ARROW	32	10	10	32.0
PED. SIGNAL	8	20	100	160.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	4	250	50	500.0
TOTAL =				924.8

ENERGY COSTS TO:  
 CITY OF NAPERVILLE  
 400 S. EAGLE STREET  
 NAPERVILLE, IL 60540  
 ENERGY SUPPLY: CONTACT: NEW BUSINESS  
 PHONE: (866) 639-3532  
 COMPANY: COMMONWEALTH EDISON  
 ACCOUNT NUMBER: ---

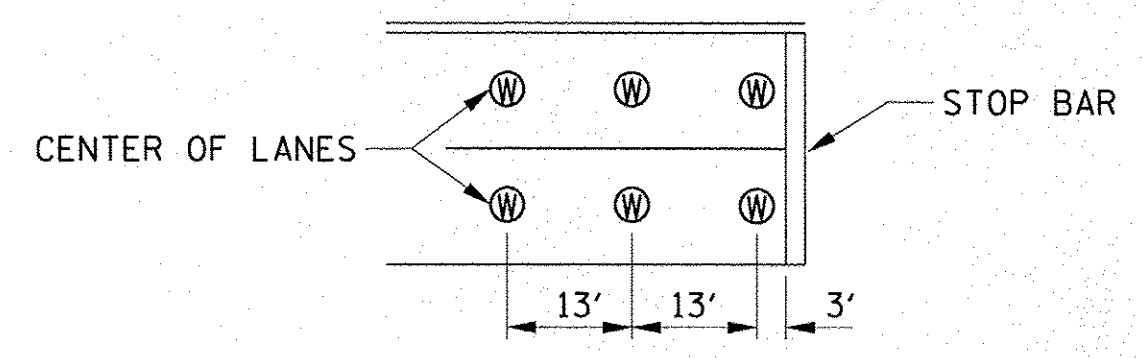
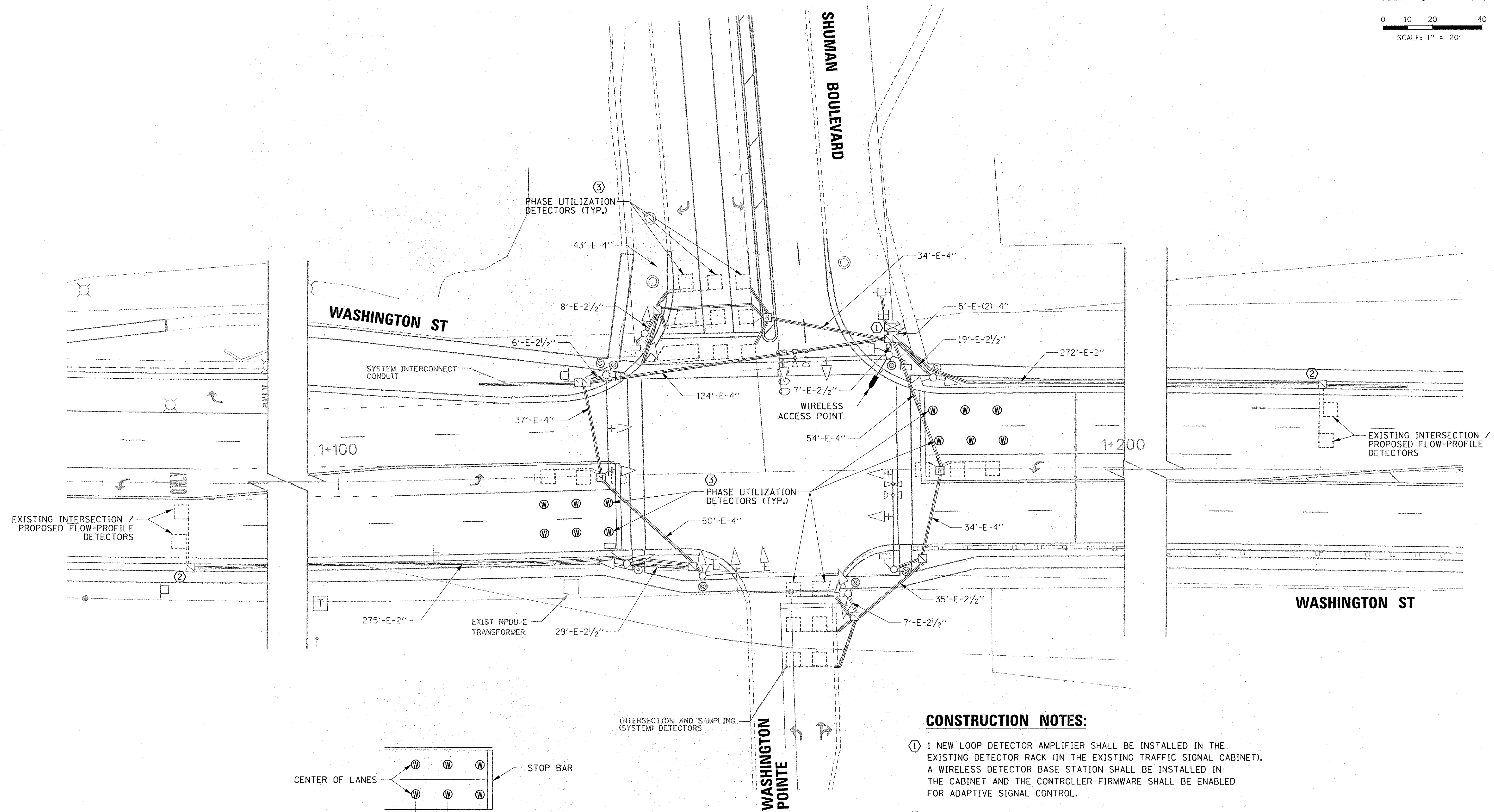
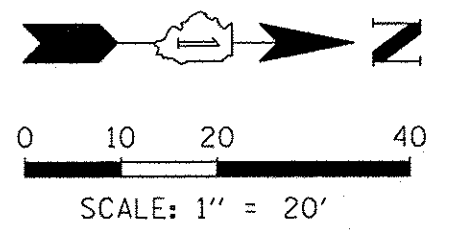
- CONSTRUCTION NOTES:**
- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
  - ② PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.



**CABLE PLAN**  
(NOT TO SCALE)

**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1



**WIRELESS MAGNETIC DETECTOR  
DETAIL**

**CONSTRUCTION NOTES:**

- ① 1 NEW LOOP DETECTOR AMPLIFIER SHALL BE INSTALLED IN THE EXISTING DETECTOR RACK (IN THE EXISTING TRAFFIC SIGNAL CABINET). A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

DATE	BY	DATE	BY
DATE	BY	DATE	BY
DATE	BY	DATE	BY
DATE	BY	DATE	BY
DATE	BY	DATE	BY

**CHRISTOPHER B. BURKE**  
ENGINEERING LTD.  
9575 West Higgins Road, Suite 600  
Rosemont, Illinois 60018  
(847) 823-0500

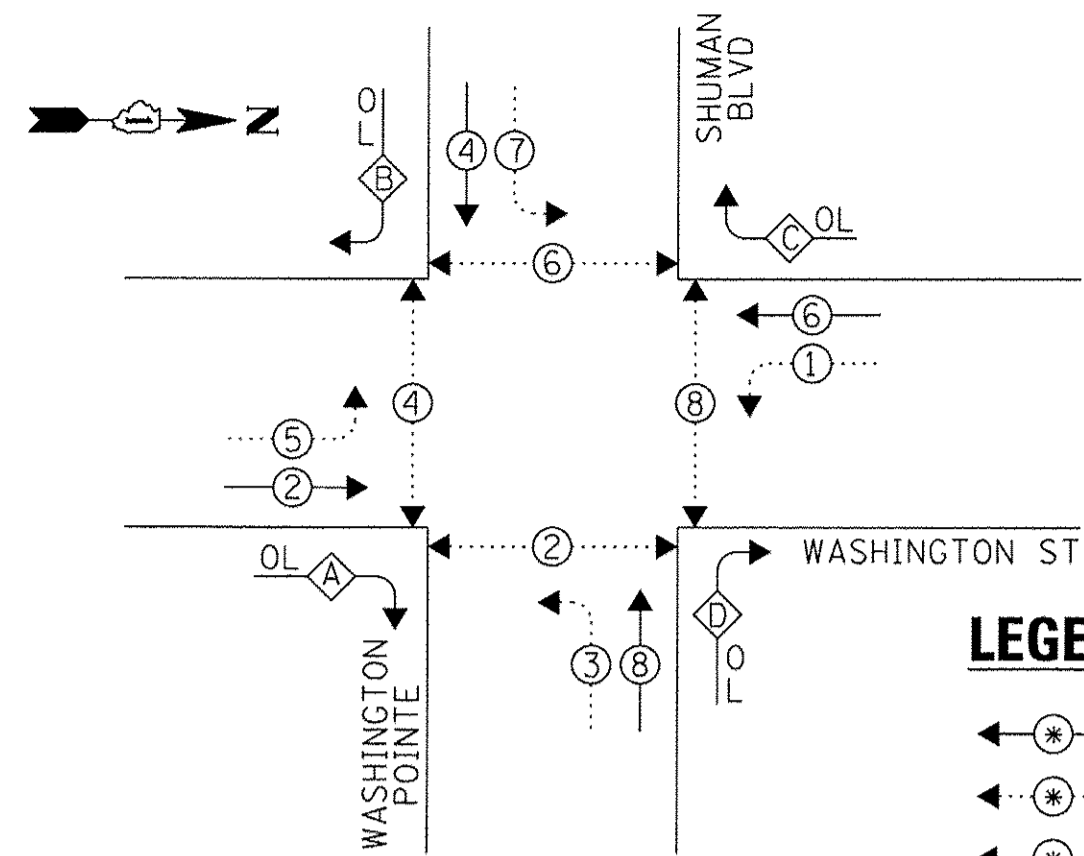
TS SHT NO. 50

FILE NAME TS22-L.Wash-Shuman_SIG	USER NAME = fbariso N:\NAPERVILLE\150042\TRAFFIC\	DESIGNED - EAJ / TFS	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TRAFFIC SIGNAL MODIFICATION PLAN WASHINGTON STREET &amp; SHUMAN BOULEVARD / WASHINGTON POINT</b>				F.A.I. RTE. 2552, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 50
PLOT SCALE = 20'		DRAWN - FPB	REVISED -		SCALE:	SHEET NO. OF SHEETS	STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	CONTRACT NO. 61D23			
PLOT DATE = 8/16/2016		CHECKED - GMZ	REVISED -										
		DATE - 6/10/2016	REVISED -										

BY: DATE: SURVEYED: CHECKED: ALIGNED: CHECKED: RT. OF WAY CHECKED: CAD FILE NAME: NO. DATE: SURVEYED: CHECKED: GRADES CHECKED: B.M. NOTED: STRUCTURE: NOTATION: CHFD: NO. DATE: SURVEYED: CHECKED: GRADES CHECKED: B.M. NOTED: STRUCTURE: NOTATION: CHFD: NO.

TS SHT NO. 51

**EXISTING CONTROLLER SEQUENCE**



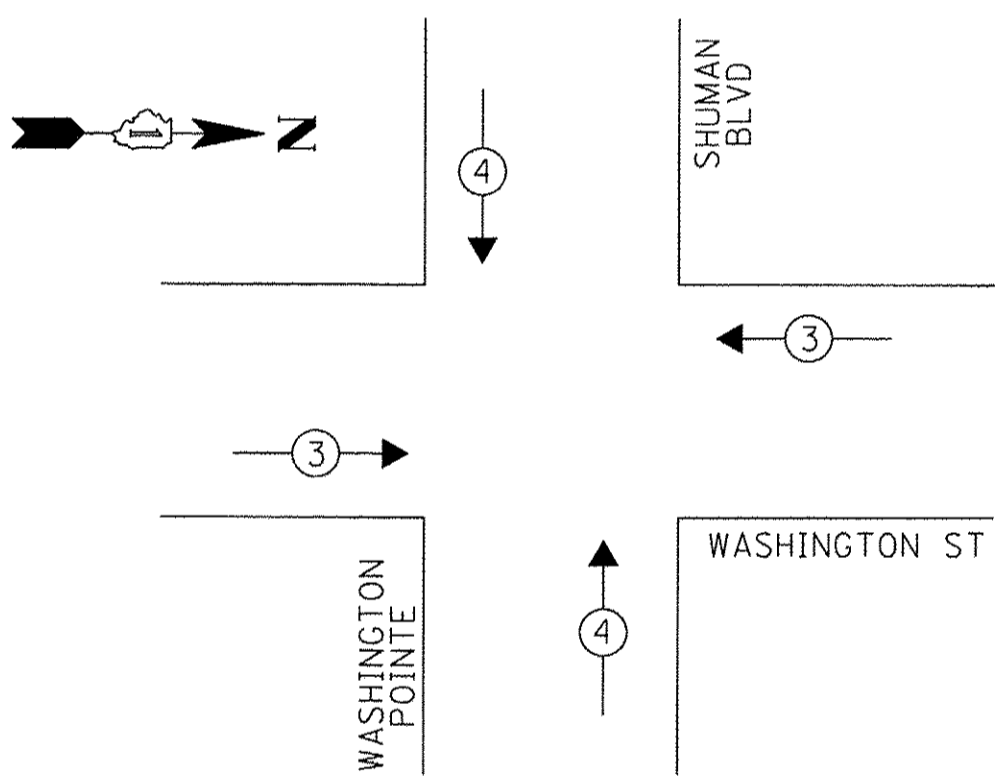
**LEGEND:**

- ← (circle with star) PROTECTED PHASE
- ← (circle with star and dot) PROTECTED/PERMITTED PHASE
- ← (circle with star and triangle) PEDESTRIAN PHASE
- ← (circle with star and diamond) OVERLAP

**RIGHT TURN OVERLAP PHASE DESIGNATION**

OVERLAP LETTER	PERMISSIVE PHASE	PROTECTED PHASE
B	= 4	+ 5

**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



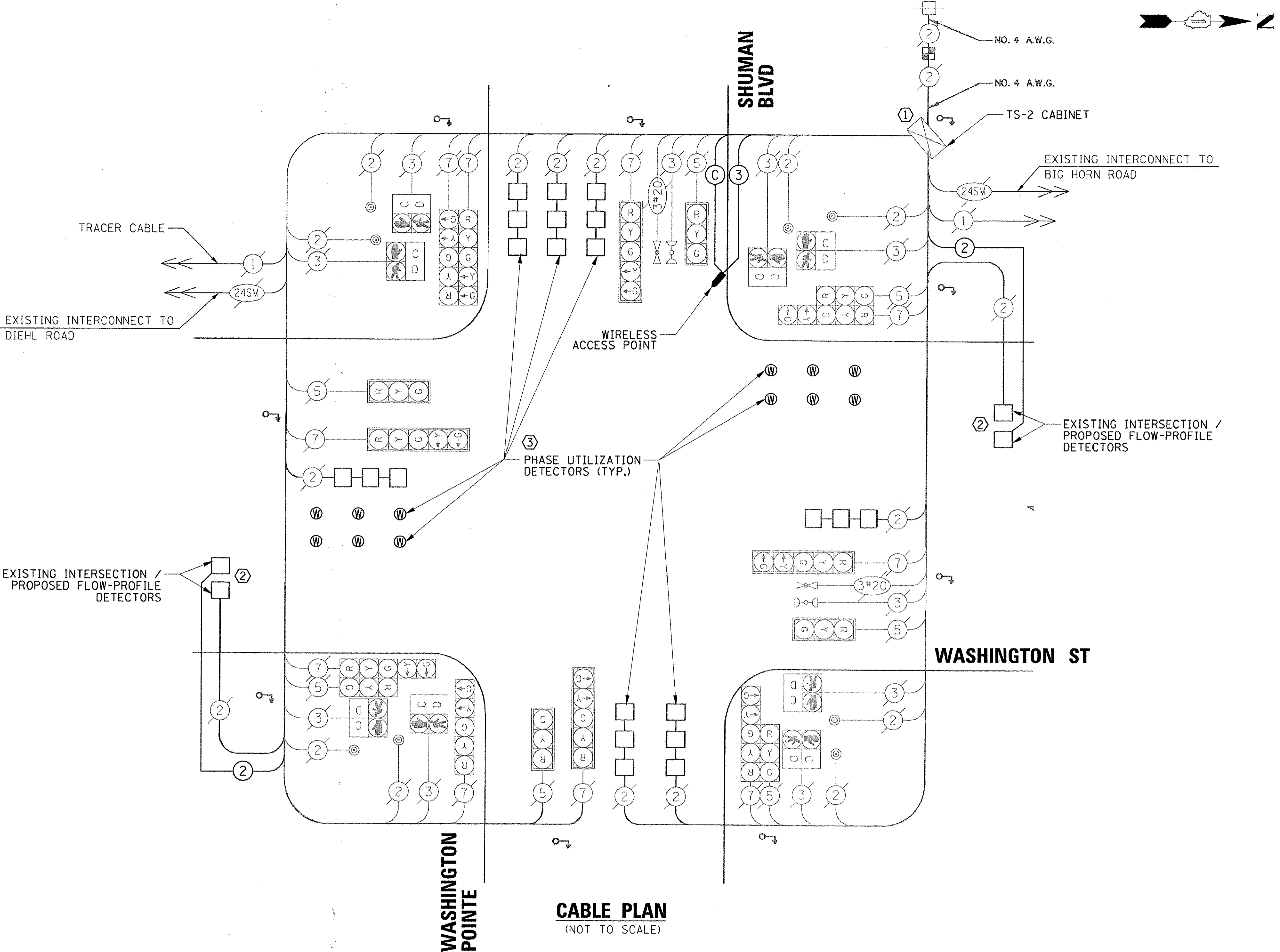
**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	17	11	50	66.0
(YELLOW)	17	20	5	12.0
(GREEN)	17	12	45	64.8
PROTECTED ARROW	20	10	10	16.0
PED. SIGNAL	8	20	100	40.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	-	250	50	-
TOTAL =				298.8

ENERGY COSTS TO:  
 CITY OF NAPERVILLE  
 400 S. EAGLE STREET  
 NAPERVILLE, IL 60540  
 ENERGY SUPPLY: CONTACT: NEW BUSINESS  
 PHONE: (866) 639-3532  
 COMPANY: COMMONWEALTH EDISON  
 ACCOUNT NUMBER: ---

**CONSTRUCTION NOTES:**

- ① 1 NEW LOOP AMPLIFIER SHALL BE INSTALLED IN THE EXISTING DETECTOR RACK (IN THE EXISTING TRAFFIC SIGNAL CABINET). A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.



**CABLE PLAN**  
(NOT TO SCALE)

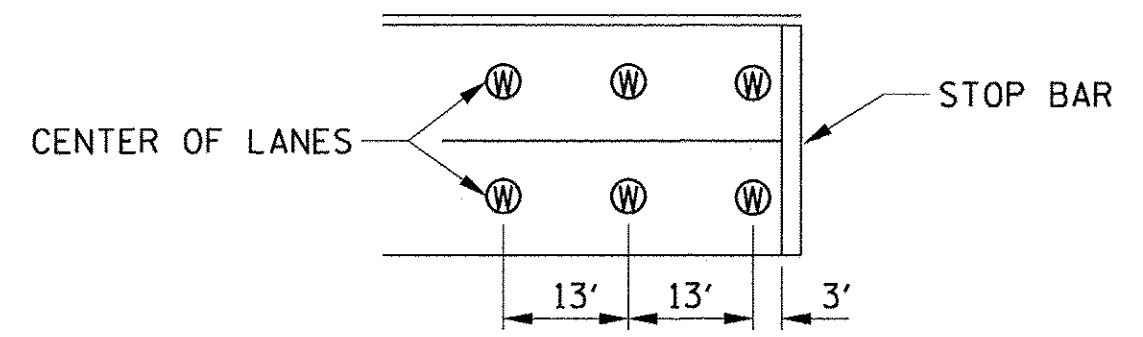
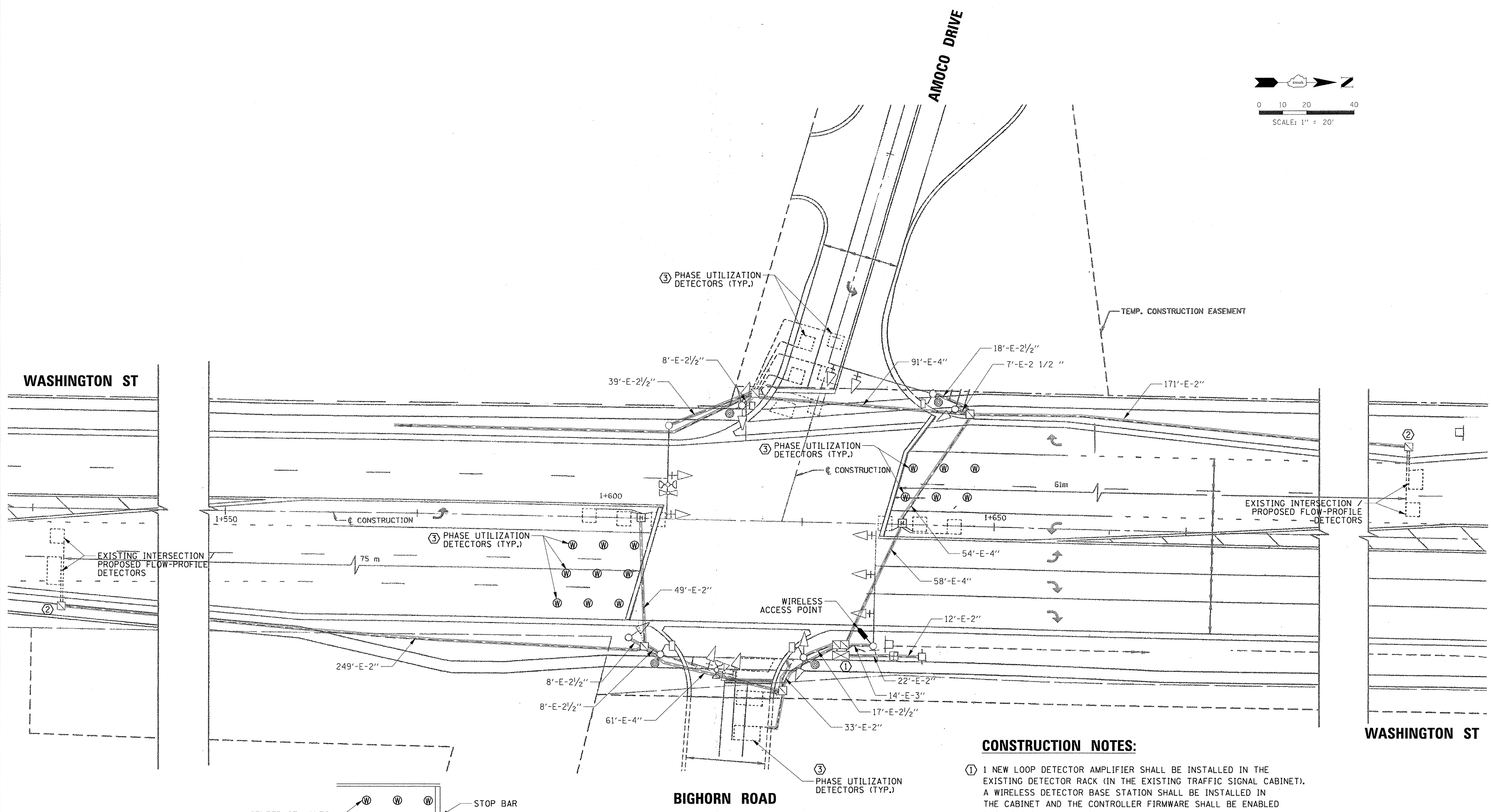
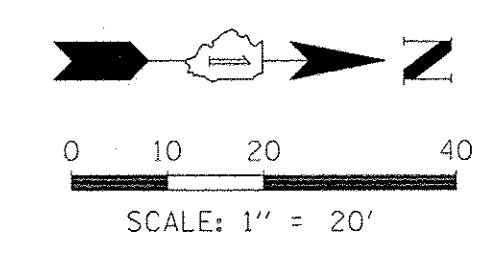
**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	842
INDUCTION LOOP DETECTOR AMPLIFIER	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1

PROFILE SURVEYED \_\_\_\_\_ DATE \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_  
 NO. \_\_\_\_\_  
 SURVEYED \_\_\_\_\_  
 GRADES CHECKED \_\_\_\_\_  
 E.M. NOTED \_\_\_\_\_  
 STRUCTURE NOTATIONS CHECKED \_\_\_\_\_  
 PLAN SURVEYED \_\_\_\_\_ DATE \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_  
 NO. \_\_\_\_\_  
 SURVEYED \_\_\_\_\_  
 ALIGNMENT CHECKED \_\_\_\_\_  
 P.L. OF WAY CHECKED \_\_\_\_\_  
 CADD FILE NAME \_\_\_\_\_

TS SHT NO. 52

CHRISTOPHER B. BURKE  
 ENGINEERING LTD.  
 8575 West Higgins Road, Suite 600  
 Rosemont, Illinois 60018  
 (847) 623-0500



**WIRELESS MAGNETIC DETECTOR  
DETAIL**

**CONSTRUCTION NOTES:**

- ① 1 NEW LOOP DETECTOR AMPLIFIER SHALL BE INSTALLED IN THE EXISTING DETECTOR RACK (IN THE EXISTING TRAFFIC SIGNAL CABINET). A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

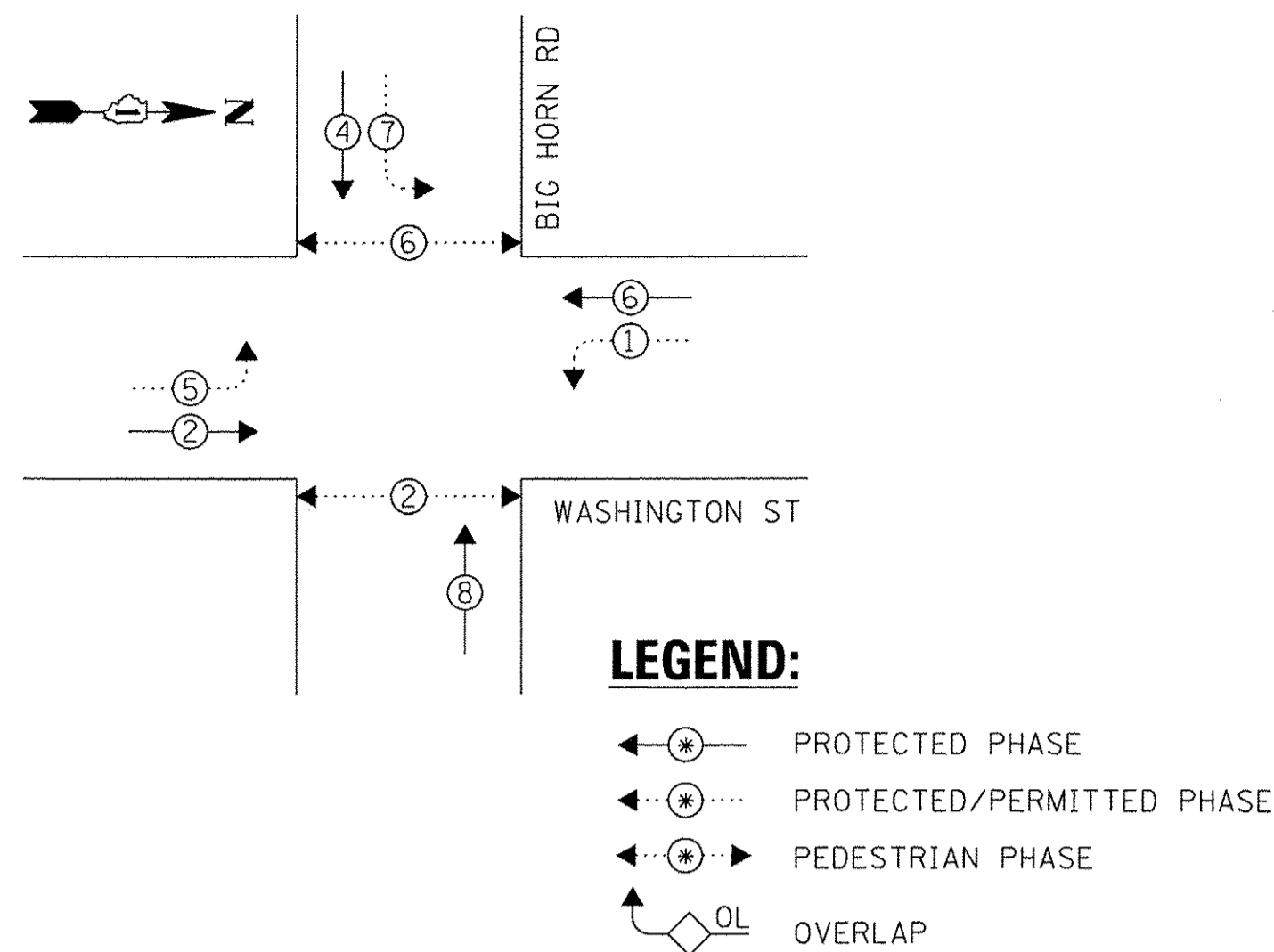
FILE NAME TS23-1_Wash-Bighorn.SIG	USER NAME = fbariso N:\NAPERVILLE\150042\TRAFFIC\	DESIGNED - EAJ / TFS DRAWN - FPB	REVISED - REVISED - REVISED - REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>		<b>TRAFFIC SIGNAL MODIFICATION PLAN WASHINGTON STREET AND BIG HORN ROAD</b>		F.A.U. RTE. 2552, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 52
PLOT SCALE = 20'	PLOT DATE = 8/16/2016	CHECKED - GMZ DATE - 6/10/2016	CONTRACT NO. 61D23					SCALE:	SHEET NO. OF SHEETS	STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED \_\_\_\_\_ ALIGNED \_\_\_\_\_ CHECKED \_\_\_\_\_  
 PLAN \_\_\_\_\_ NOTE BOOK \_\_\_\_\_  
 NO. \_\_\_\_\_  
 DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED \_\_\_\_\_ GRADES CHECKED \_\_\_\_\_  
 PROFILE \_\_\_\_\_ STRUCTURE NOTATION CHECKED \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_  
 NO. \_\_\_\_\_

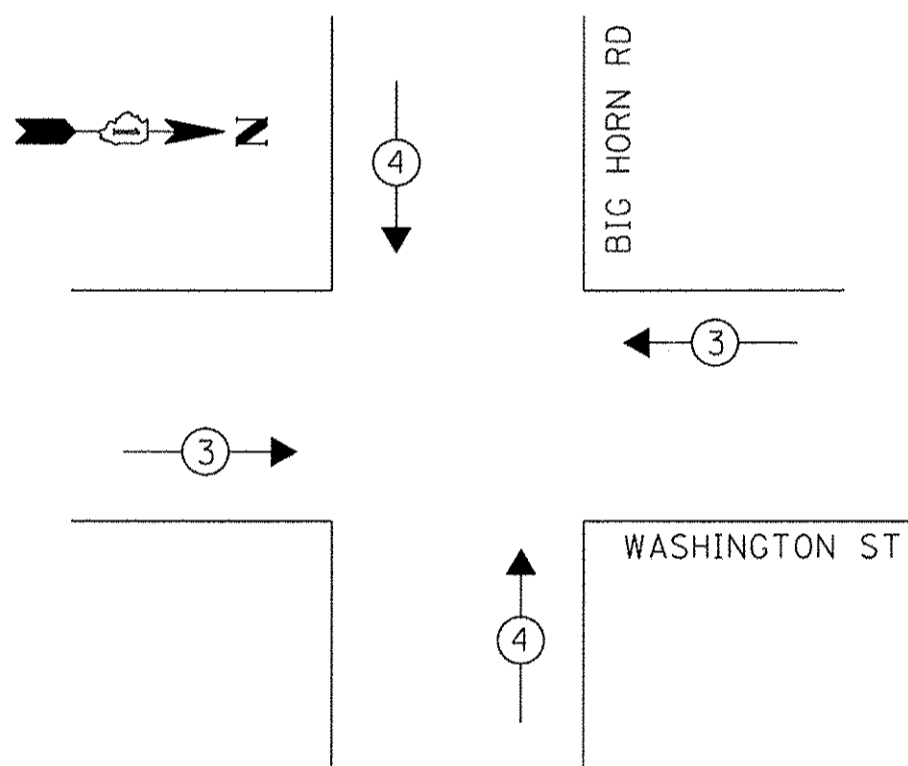
TS SHT NO. 53

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED \_\_\_\_\_  
 PROFILE \_\_\_\_\_

**EXISTING CONTROLLER SEQUENCE**



**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

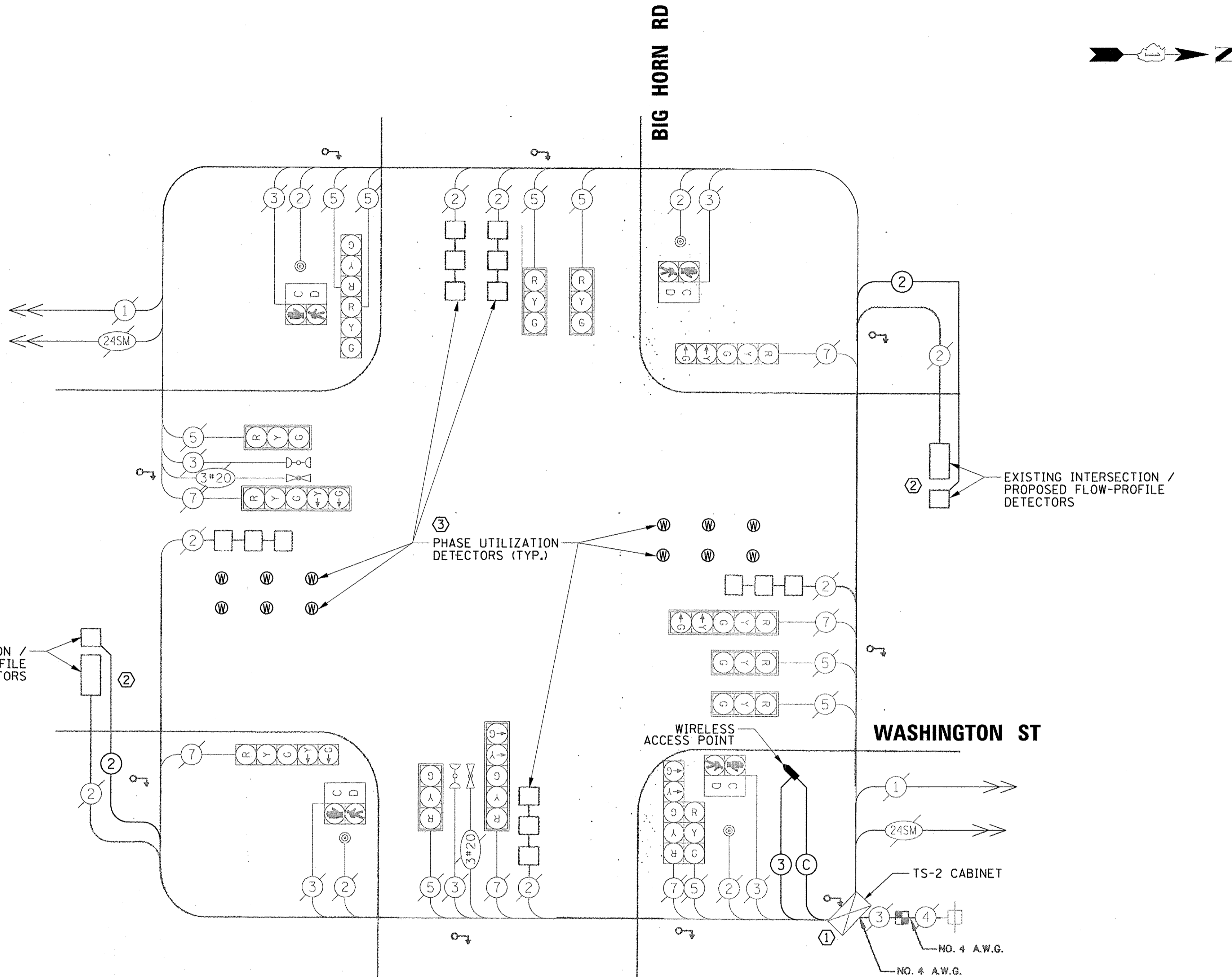
TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	15	11	50	82.5
(YELLOW)	15	20	5	15.0
(GREEN)	15	12	45	81.0
PROTECTED ARROW	12	10	10	12.0
PED. SIGNAL	4	20	100	80.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	-	250	50	-
TOTAL =				370.5

ENERGY COSTS TO:  
 CITY OF NAPERVILLE  
 400 S. EAGLE STREET  
 NAPERVILLE, IL 60540  
 ENERGY SUPPLY: CONTACT: NEW BUSINESS  
 PHONE: (866) 639-3532  
 COMPANY: COMMONWEALTH EDISON  
 ACCOUNT NUMBER: ---

**CONSTRUCTION NOTES:**

- 1 NEW LOOP DETECTOR AMPLIFIER SHALL BE INSTALLED IN THE EXISTING DETECTOR RACK (IN THE EXISTING TRAFFIC SIGNAL CABINET). A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- 2 EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- 3 PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

EXISTING INTERSECTION / PROPOSED FLOW-PROFILE DETECTORS



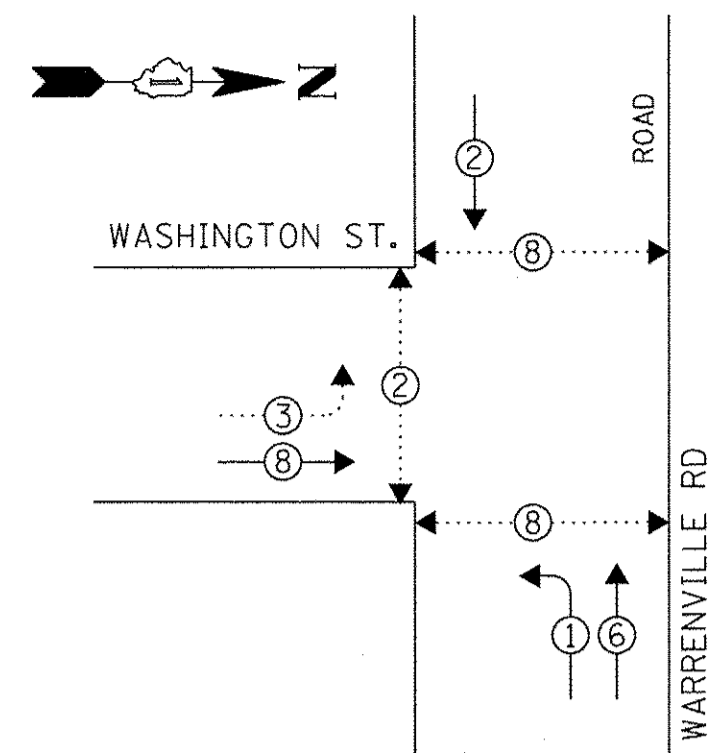
**CABLE PLAN**  
(NOT TO SCALE)

**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	750
INDUCTION LOOP DETECTOR AMPLIFIER	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1



**EXISTING CONTROLLER SEQUENCE**



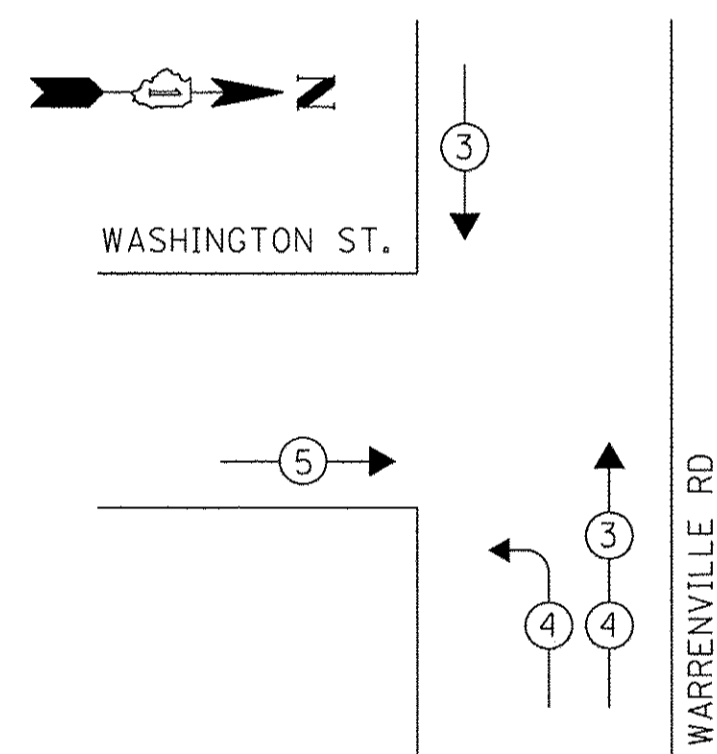
**LEGEND:**

- ⊙ ← \* → ⊙ PROTECTED PHASE
- ⊙ ← \* → ⊙ PROTECTED/PERMITTED PHASE
- ⊙ ← \* → ⊙ PEDESTRIAN PHASE
- ⊙ ← OL → ⊙ OVERLAP

**RIGHT TURN OVERLAP PHASE DESIGNATION**

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

**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	13	11	50	72.0
(YELLOW)	13	20	5	13.0
(GREEN)	13	12	45	70.0
PROTECTED ARROW	8	10	10	8.0
PED. SIGNAL	6	20	100	120.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	-	250	50	-
TOTAL =				383.0

ENERGY COSTS TO:

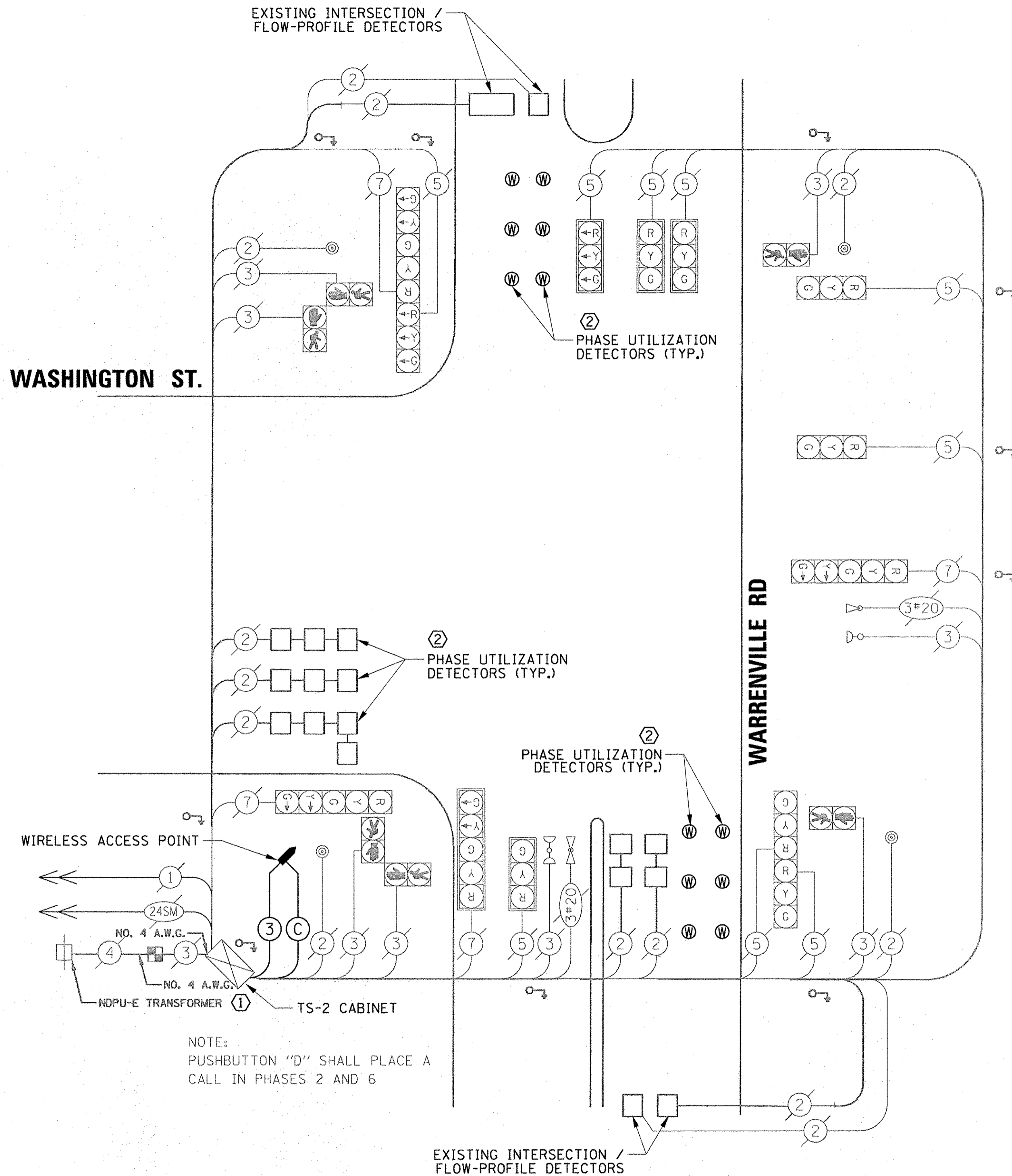
CITY OF NAPERVILLE  
400 S. EAGLE STREET  
NAPERVILLE, IL 60540

ENERGY SUPPLY: CONTACT: NEW BUSINESS  
PHONE: (866) 639-3532  
COMPANY: COMMONWEALTH EDISON  
ACCOUNT NUMBER: ---

**CONSTRUCTION NOTES:**

- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

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



**CABLE PLAN**  
(NOT TO SCALE)

**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1

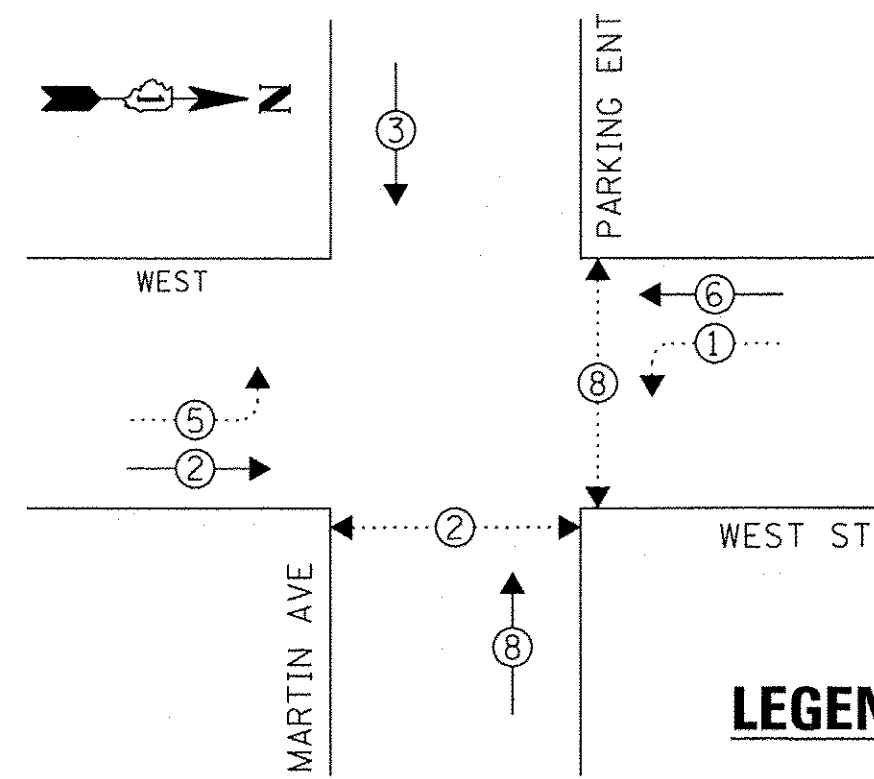
TS SHT NO. 55





DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED \_\_\_\_\_ ALIGNED \_\_\_\_\_ CHECKED \_\_\_\_\_  
 PLAN NOTE BOOK NO. \_\_\_\_\_  
 ENGINEERING LTD.  
**CHRISTOPHER B. BURKE**  
 9575 West Higgins Road, Suite 600  
 Rosemont, Illinois 60018  
 (847) 823-0500  
 DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED \_\_\_\_\_ CHECKED \_\_\_\_\_  
 PROFILE NOTE BOOK NO. \_\_\_\_\_  
 STRUCTURE NOTATION: CPKD

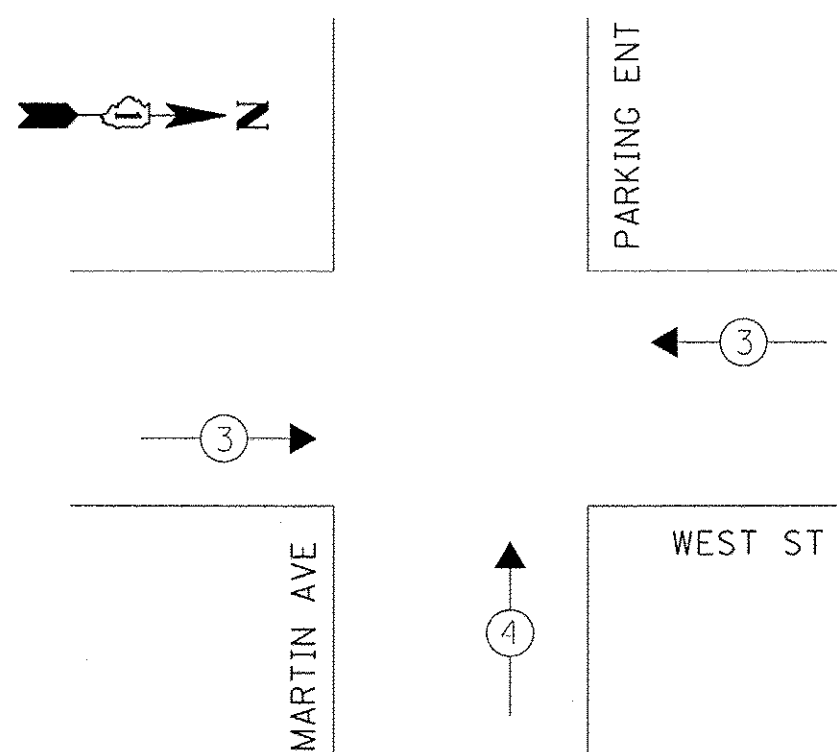
**EXISTING CONTROLLER SEQUENCE**



**LEGEND:**

- ← ⊙ → PROTECTED PHASE
- ← ⊙ ⊙ → PROTECTED/PERMITTED PHASE
- ← ⊙ ⊙ ⊙ → PEDESTRIAN PHASE
- OL OVERLAP

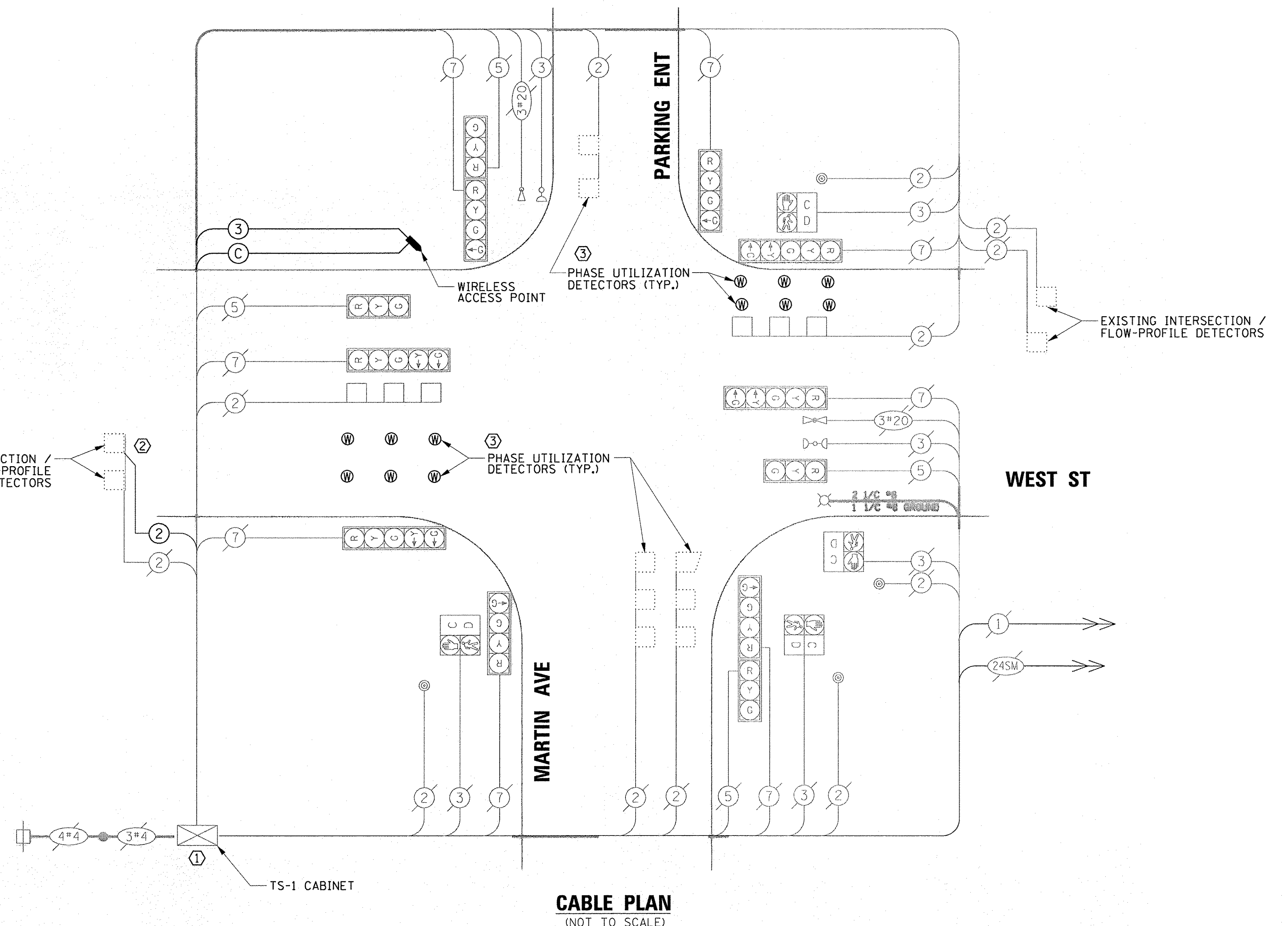
**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	12	11	50	66.0
(YELLOW)	12	20	5	12.0
(GREEN)	16	12	45	86.0
PROTECTED ARROW	8	10	10	8.0
PED. SIGNAL	4	20	100	80.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	-	250	50	-
ENERGY COSTS TO:			TOTAL =	352.0

CITY OF NAPERVILLE  
 400 S. EAGLE STREET  
 NAPERVILLE, IL 60540  
 ENERGY SUPPLY: CONTACT: NEW BUSINESS  
 PHONE: (866) 639-3532  
 COMPANY: COMMONWEALTH EDISON  
 ACCOUNT NUMBER: ---



**CABLE PLAN**  
(NOT TO SCALE)

**CONSTRUCTION NOTES:**

- ① 1 NEW LOOP DETECTOR AMPLIFIER SHALL BE INSTALLED IN THE EXISTING DETECTOR RACK (IN THE EXISTING TRAFFIC SIGNAL CABINET). A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

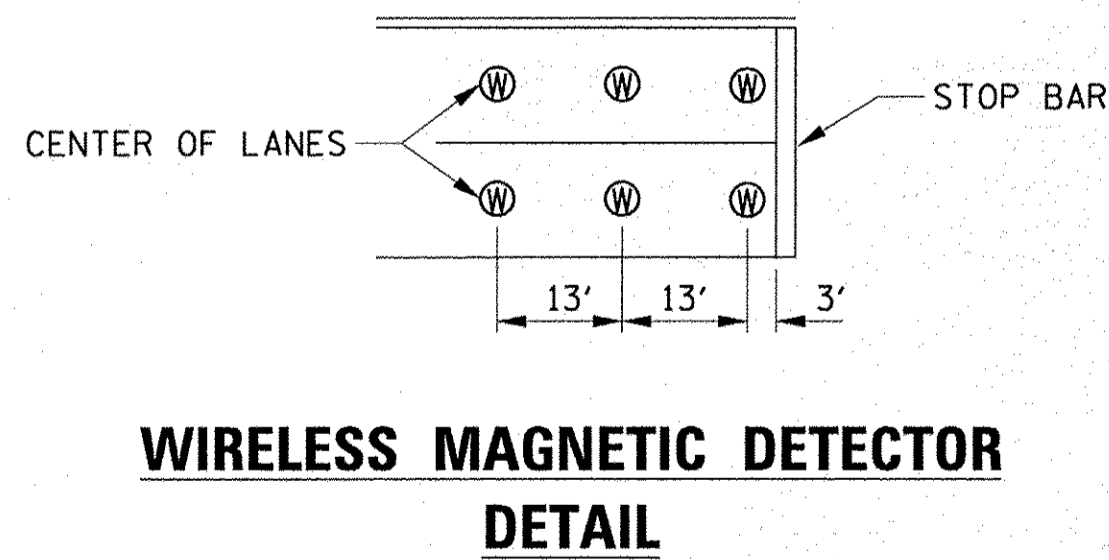
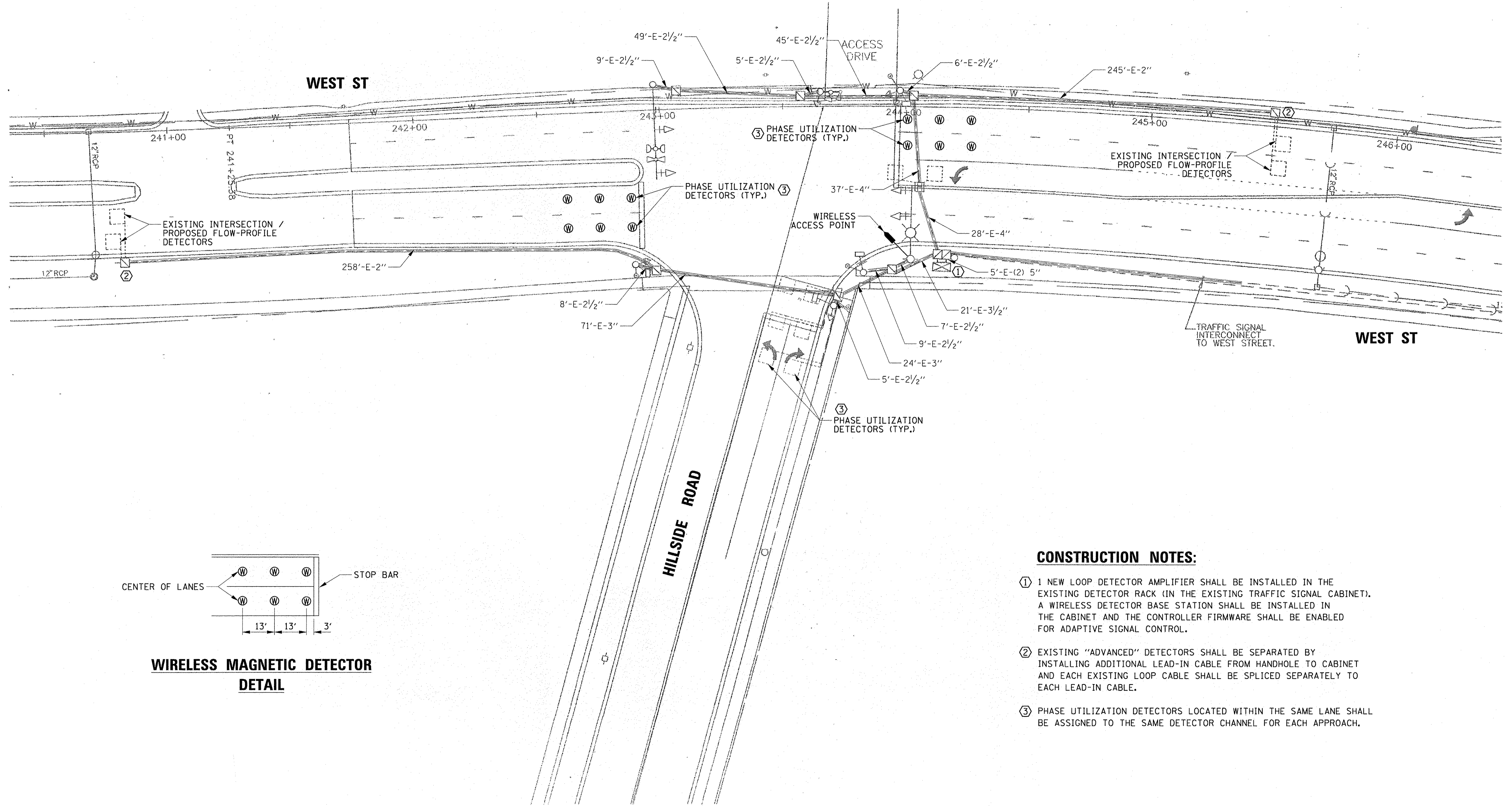
**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	256
INDUCTION LOOP DETECTOR AMPLIFIER	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1

TS SHT NO. 57

PROFILE	DESIGNED	DATE
	GRADES CHECKED	
PLAN	DESIGNED	DATE
	ALIGNED CHECKED	
BY	NOTED	
	CAD FILE NAME	
NO.	NO.	
	NO.	
NO.	NO.	
	NO.	
NO.	NO.	
	NO.	

CHRISTOPHER B. BURKE  
ENGINEERING LTD.  
2551 W. WASHINGTON ST.  
ROSEMONT, ILLINOIS 60018  
(847) 523-0500



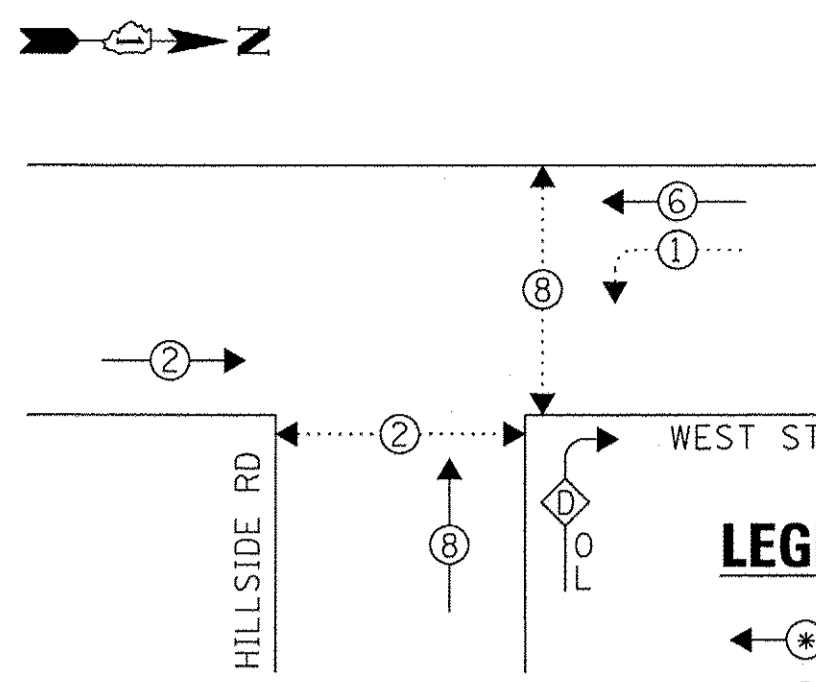
**CONSTRUCTION NOTES:**

- ① 1 NEW LOOP DETECTOR AMPLIFIER SHALL BE INSTALLED IN THE EXISTING DETECTOR RACK (IN THE EXISTING TRAFFIC SIGNAL CABINET). A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

TS SHT NO. 58

FILE NAME TS26-1-West-Hillside.SIG	USER NAME = fberiso N:\MAPERVILLE\150042\TRAFFIC\	DESIGNED - EAJ / TFS	REVISIONS	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TRAFFIC SIGNAL MODIFICATION PLAN WEST STREET AND HILLSIDE ROAD</b>	F.A.U. RTE. 2552, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 58
PLOT SCALE = 20'	CHECKED - GMZ	REVISIONS	FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT				
PLOT DATE = 8/16/2016	DATE - 6/10/2016	REVISIONS	CONTRACT NO. 61D23							
			SCALE:			SHEET NO. OF SHEETS STA. TO STA.				

**EXISTING CONTROLLER SEQUENCE**



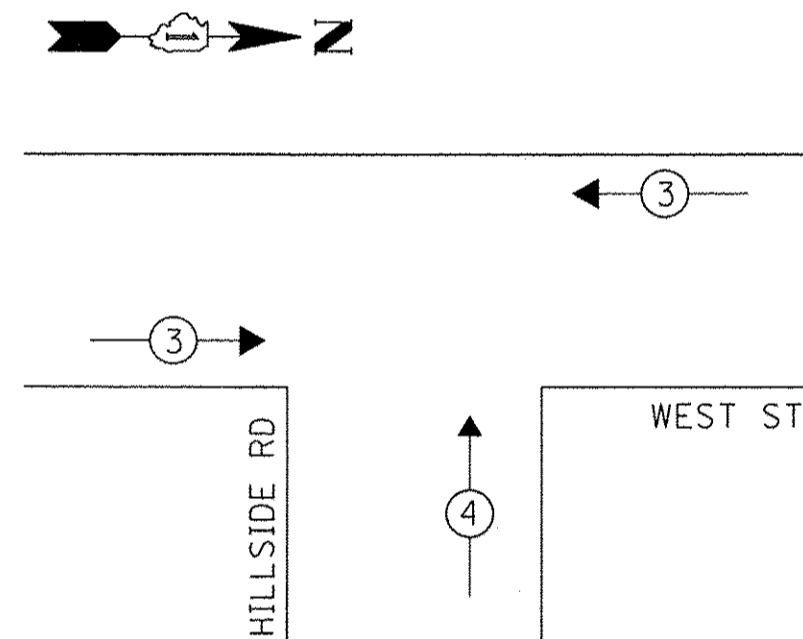
**LEGEND:**

- ← (P) → PROTECTED PHASE
- ← (P) ····· (P) → PROTECTED/PERMITTED PHASE
- ← (P) ····· (P) → PEDESTRIAN PHASE
- ← (P) → OL → OVERLAP

**RIGHT TURN OVERLAP PHASE DESIGNATION**

OVERLAP LETTER	PERMISSIVE PHASE	PROTECTED PHASE
D	= 8	+ 1

**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



EXISTING INTERSECTION / PROPOSED FLOW-PROFILE DETECTORS

EXISTING INTERCONNECT TO MARTIN AVENUE

TRACER CABLE

HILLSIDE RD

WEST ST

**CABLE PLAN**  
(NOT TO SCALE)

N.D.P.U. -  
E SERVICE POLE  
4254/N761

**CONSTRUCTION NOTES:**

- ① 1 NEW LOOP DETECTOR AMPLIFIER SHALL BE INSTALLED IN THE EXISTING DETECTOR RACK (IN THE EXISTING TRAFFIC SIGNAL CABINET). A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	771
INDUCTION LOOP DETECTOR AMPLIFIER	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1

**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	9	11	50	50.0
(YELLOW)	9	20	5	9.0
(GREEN)	9	12	45	49.0
PROTECTED ARROW	8	10	10	8.0
PED. SIGNAL	4	20	100	80.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	1	250	50	125.0
ENERGY COSTS TO:			TOTAL =	421.0

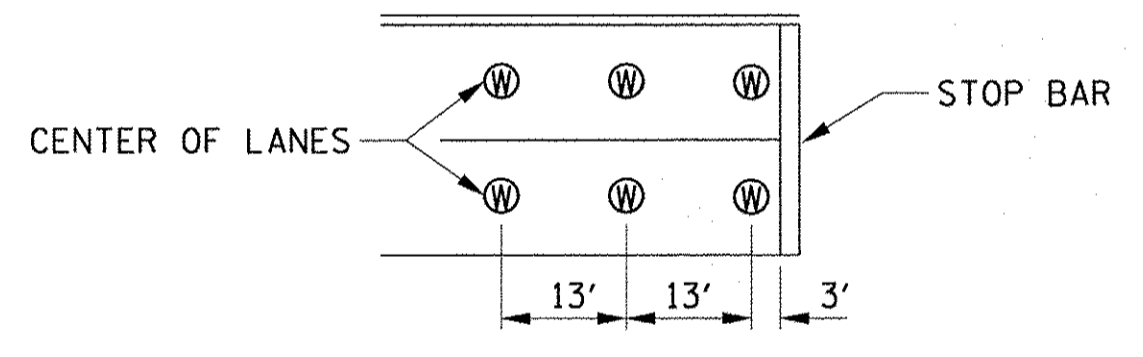
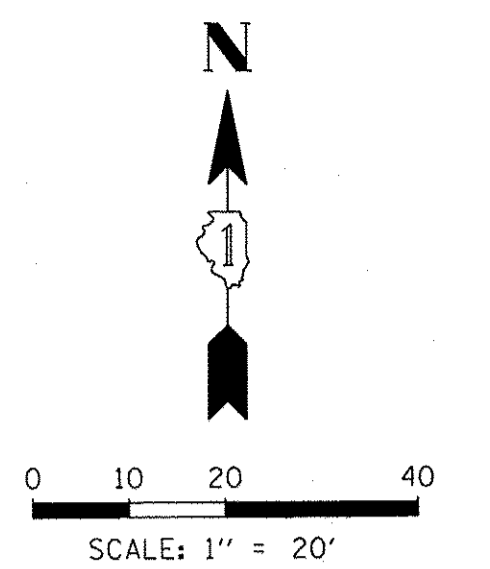
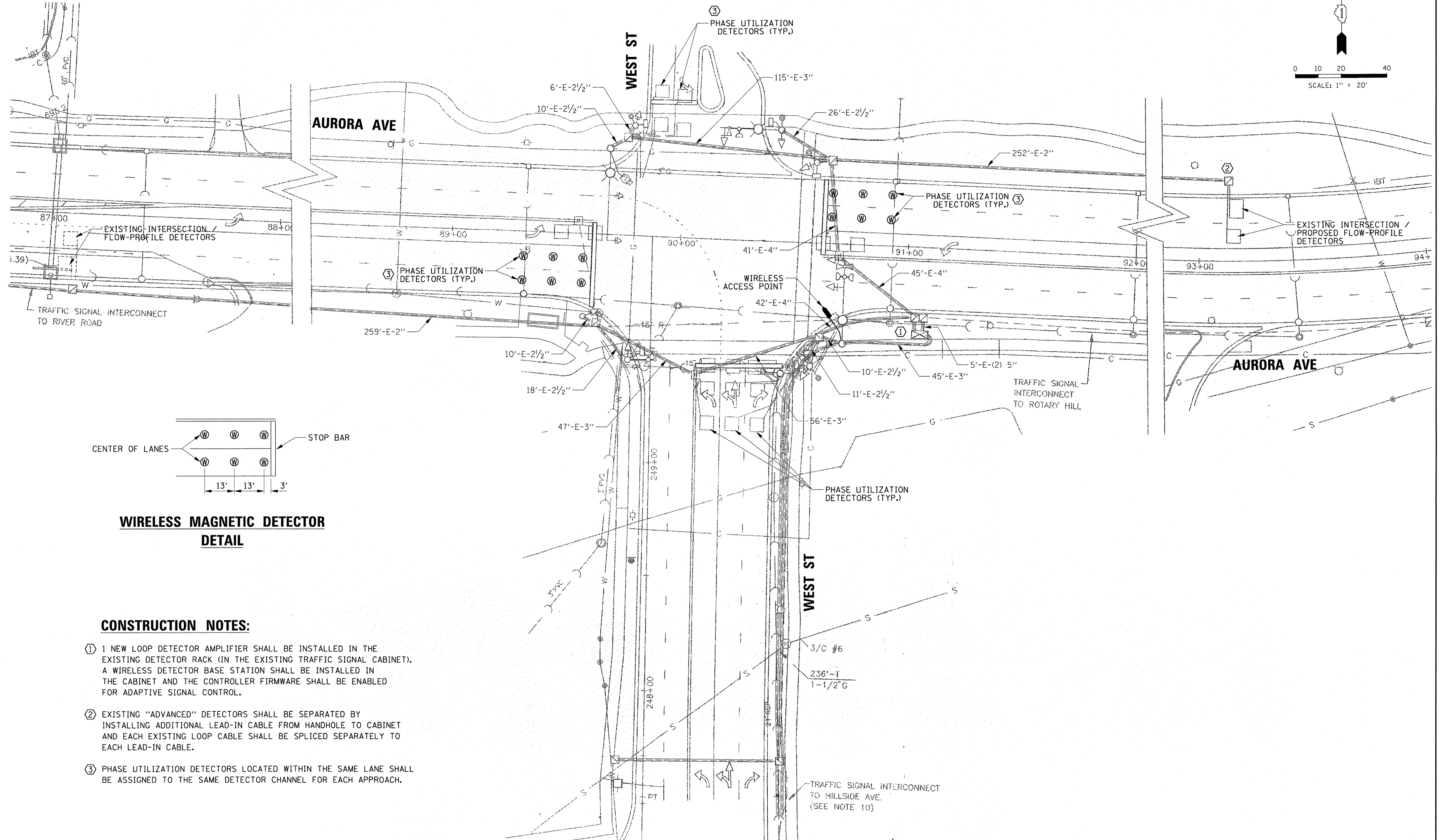
CITY OF NAPERVILLE  
400 S. EAGLE STREET  
NAPERVILLE, IL 60540  
ENERGY SUPPLY: CONTACT: NEW BUSINESS  
PHONE: (866) 639-3532  
COMPANY: COMMONWEALTH EDISON  
ACCOUNT NUMBER: ---

PROFILE: REVISIONS: DATE: BY: NO. DESCRIPTION: NO. DATE: BY: NO. DESCRIPTION: NO. DATE: BY: NO. DESCRIPTION:

TS SHT NO. 59

DATE	BY	DATE	BY
PLAN	NO.	PROFILE	NO.
SURVEYED PLOTTED ALIGNMENT CHECKED NOTE BOOK NO. _____ CADD FILE NAME _____ STRUCTURE NOTATIONS CHK'D			
<b>CHRISTOPHER B. BURKE</b> ENGINEERING LTD. 8575 West Higgins Road, Suite 600 Rosemont, Illinois 60018 (847) 823-0500			

TS SHT NO. 60



**WIRELESS MAGNETIC DETECTOR  
DETAIL**

**CONSTRUCTION NOTES:**

- ① 1 NEW LOOP DETECTOR AMPLIFIER SHALL BE INSTALLED IN THE EXISTING DETECTOR RACK (IN THE EXISTING TRAFFIC SIGNAL CABINET). A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

FILE NAME	USER NAME = fbairso
TS27-1-Aurora-West.SIG	N:\NAPERVILLE\150042\TRAFFIC\
	PLOT SCALE = 20'
	PLOT DATE = 8/16/2016

DESIGNED - EAJ / TFS	REVISED -
DRAWN - FPB	REVISED -
CHECKED - GMZ	REVISED -
DATE - 6/10/2016	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TRAFFIC SIGNAL MODIFICATION PLAN  
AURORA AVENUE AND WEST STREET**

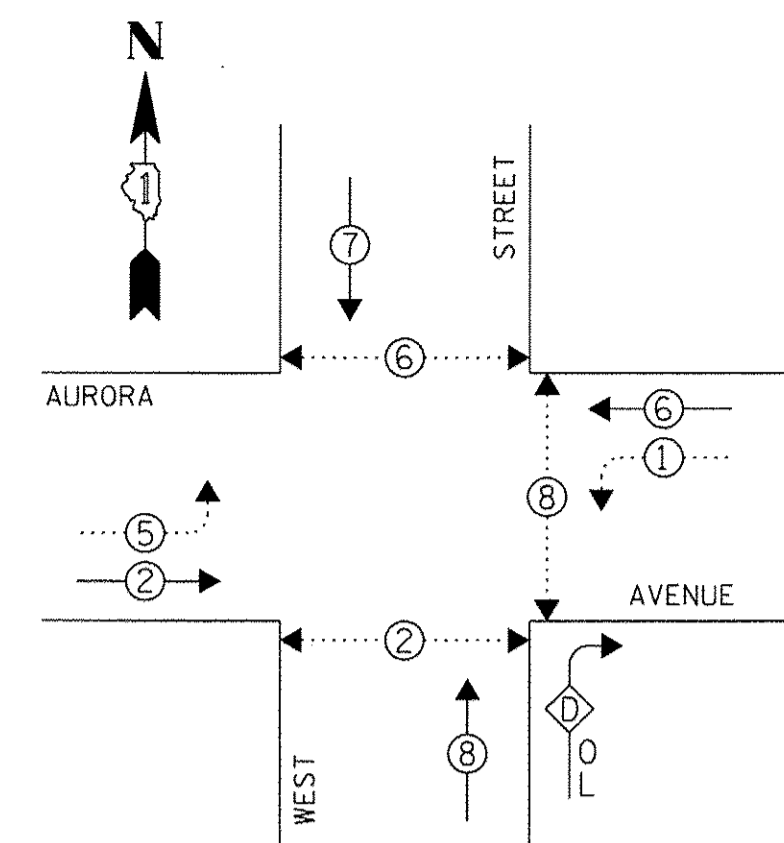
SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.U. RTE. 2552, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 60
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		CONTRACT NO. 61D23		

BY DATE  
 SURVEYED BY  
 ALTERNATE CHECKED BY  
 RT. OF WAY CHECKED BY  
 CADD FILE NAME  
 PLAN NO.  
 NOTE BOOK NO.  
 ENGINEERING LTD.  
 9575 West Higgins Road, Suite 600  
 Rosemont, Illinois 60018  
 (847) 625-0500  
 CHRISTOPHER B. BURKE  
 DATE  
 SURVEYED BY  
 B.M. NOTED  
 GRADES CHECKED  
 STRUCTURE NOTATIONS OK'D  
 NOTE BOOK NO.  
 PROFILE

TS SHT NO. 61

**EXISTING CONTROLLER SEQUENCE**

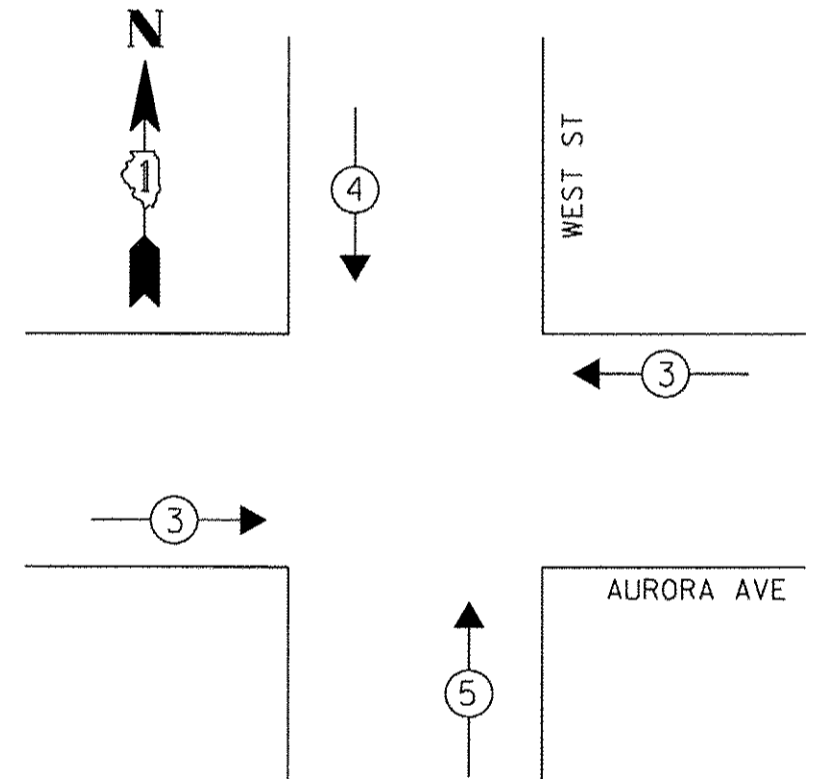


- LEGEND:**
- ← ⊙ → PROTECTED PHASE
  - ← ⊙ ⊙ → PROTECTED/PERMITTED PHASE
  - ← ⊙ ⊙ ⊙ → PEDESTRIAN PHASE
  - OL OVERLAP

**RIGHT TURN OVERLAP PHASE DESIGNATION**

OVERLAP LETTER	PERMISSIVE PHASE	PROTECTED PHASE
D	= 8	+ 1

**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



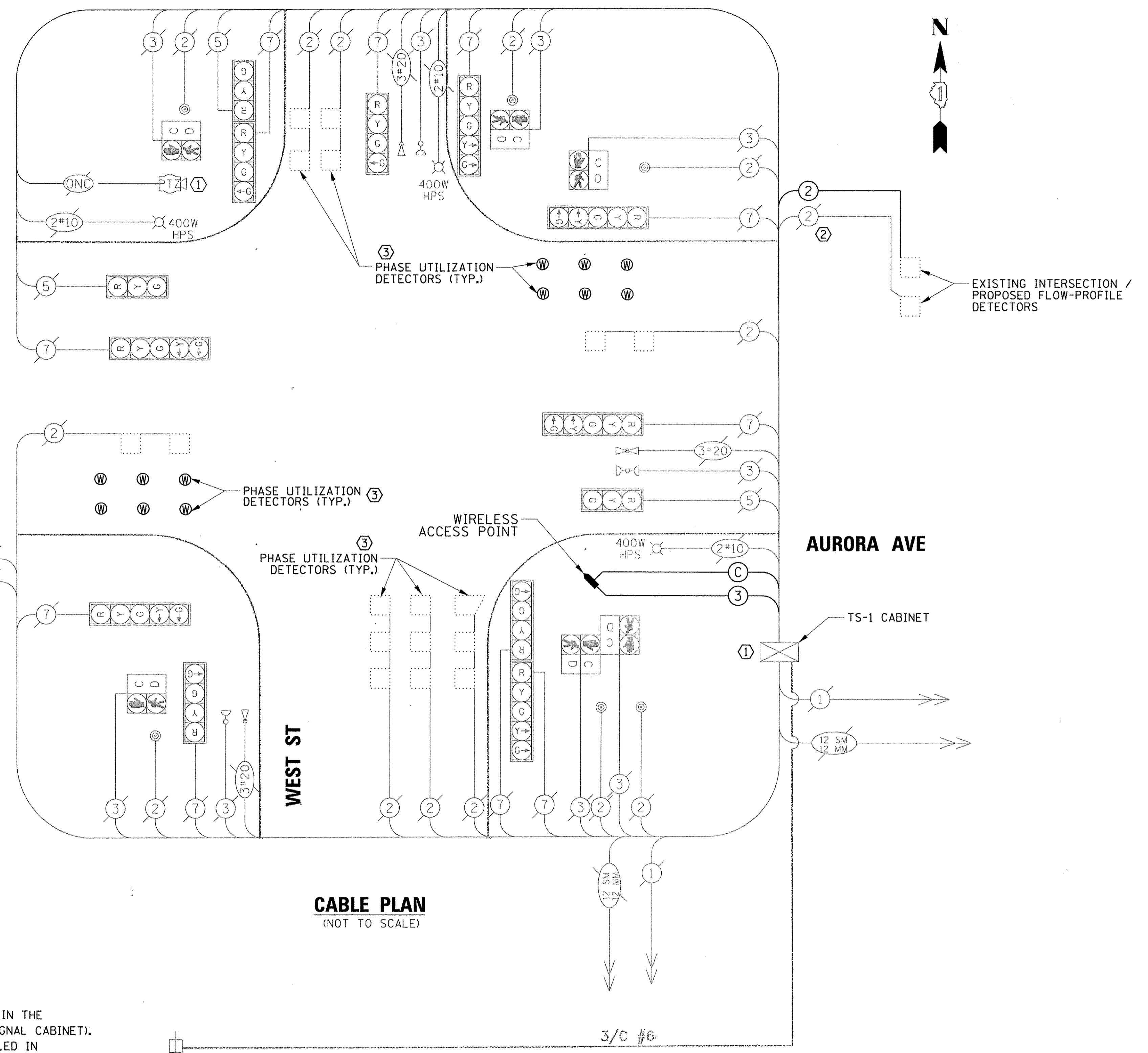
**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	13	11	50	72.0
(YELLOW)	13	20	5	13.0
(GREEN)	17	12	45	92.0
PROTECTED ARROW	12	10	10	12.0
PED. SIGNAL	6	20	100	120.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	3	250	50	375.0
ENERGY COSTS TO:				TOTAL = 784.0

CITY OF NAPERVILLE  
 400 S. EAGLE STREET  
 NAPERVILLE, IL 60540  
 ENERGY SUPPLY: CONTACT: NEW BUSINESS  
 PHONE: (866) 639-3532  
 COMPANY: COMMONWEALTH EDISON  
 ACCOUNT NUMBER: ---

**CONSTRUCTION NOTES:**

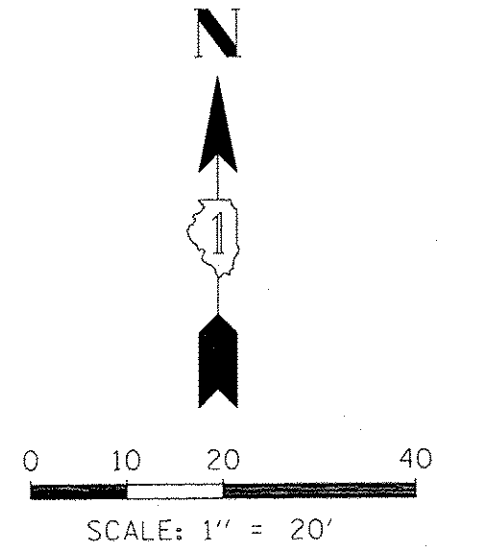
- ① 1 NEW LOOP DETECTOR AMPLIFIER SHALL BE INSTALLED IN THE EXISTING DETECTOR RACK (IN THE EXISTING TRAFFIC SIGNAL CABINET). A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.



**CABLE PLAN**  
(NOT TO SCALE)

**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	380
INDUCTION LOOP DETECTOR AMPLIFIER	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1

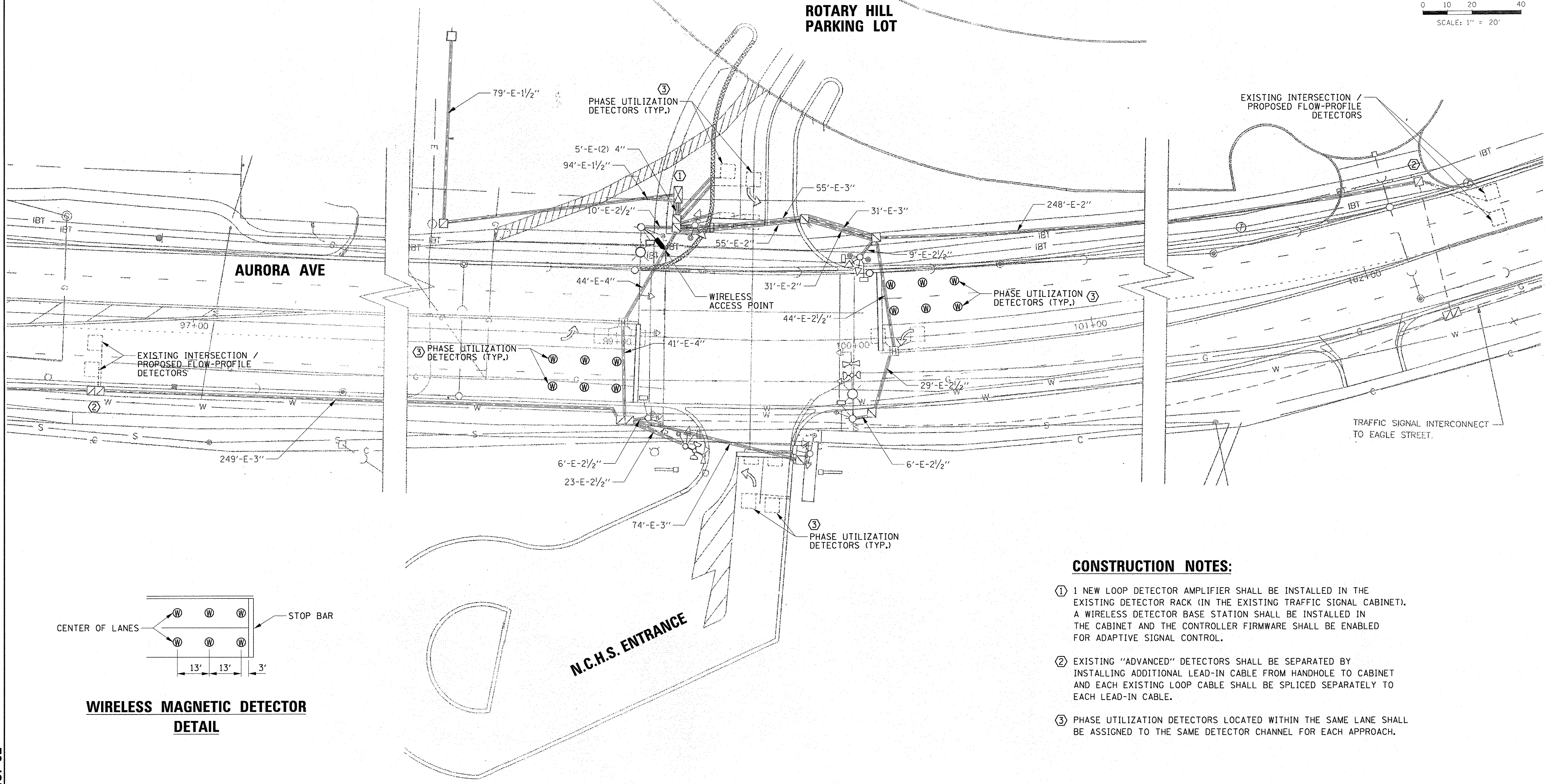


**ROTARY HILL  
PARKING LOT**

**AURORA AVE**

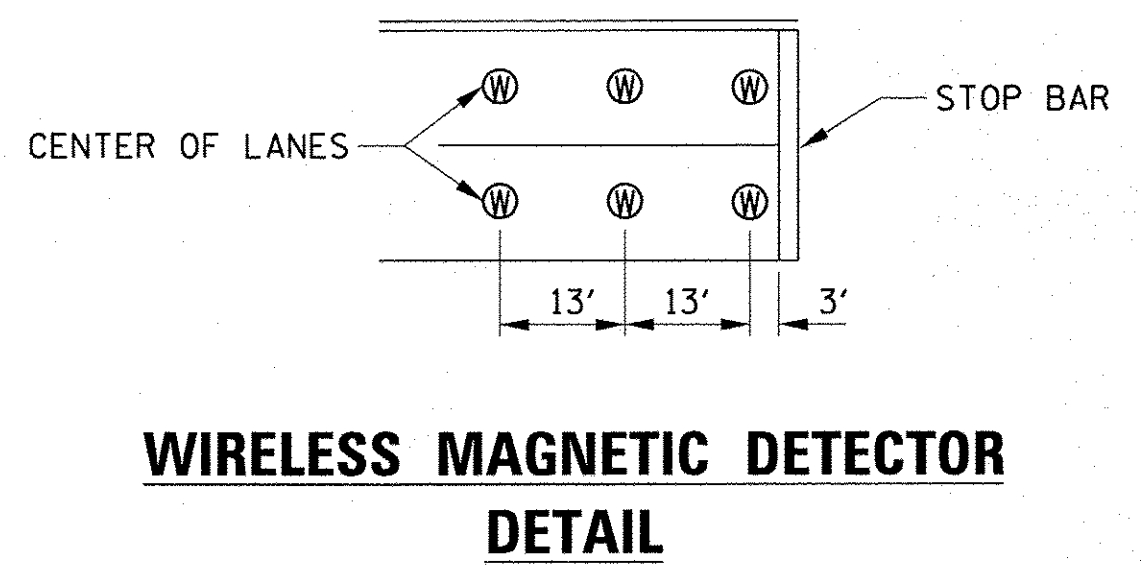
EXISTING INTERSECTION /  
PROPOSED FLOW-PROFILE  
DETECTORS

TRAFFIC SIGNAL INTERCONNECT  
TO EAGLE STREET.



**CONSTRUCTION NOTES:**

- ① 1 NEW LOOP DETECTOR AMPLIFIER SHALL BE INSTALLED IN THE EXISTING DETECTOR RACK (IN THE EXISTING TRAFFIC SIGNAL CABINET). A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.



**WIRELESS MAGNETIC DETECTOR  
DETAIL**

**N.C.H.S. ENTRANCE**

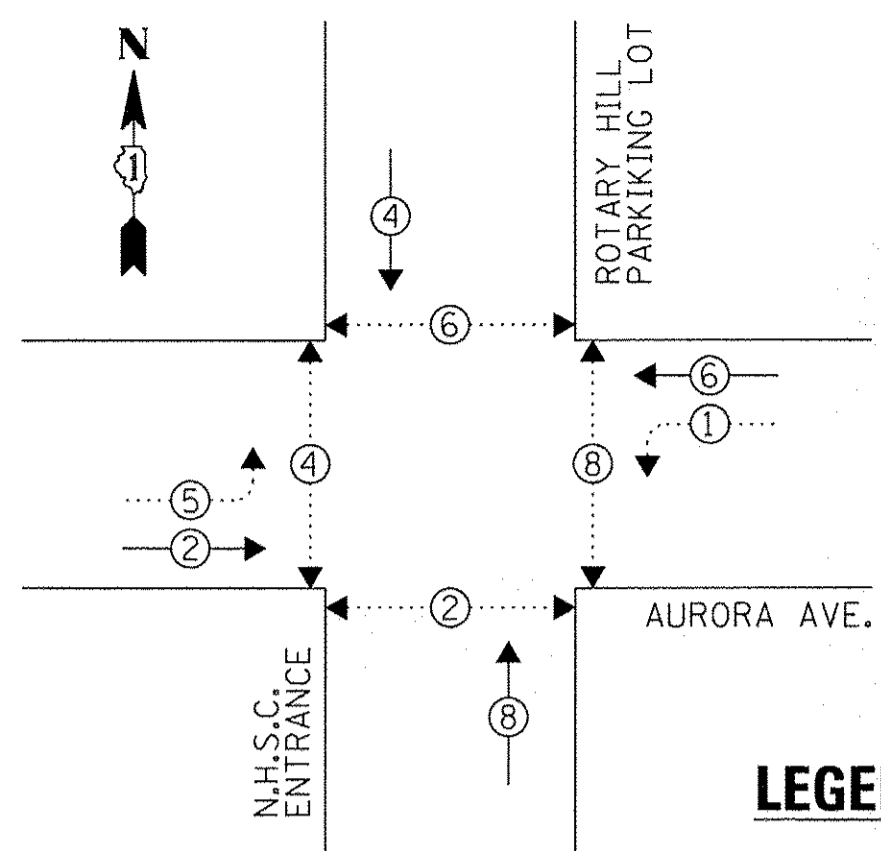
DATE	BY	REVIEWED	DATE

**TS SHT NO. 62**

FILE NAME TS28-1-Aurora-Nchs-SIG	USER NAME = fboriso	DESIGNED - EAJ / TFS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TRAFFIC SIGNAL MODIFICATION PLAN AURORA AVENUE AND NCHS ENTRANCE / ROTARY HILL PARKING LOT	F.A.U. RTE. 2552, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY DUPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 62
	PLOT SCALE = 28'	CHECKED - GMZ	REVISED -			CONTRACT NO. 61D23	FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT			
	PLOT DATE = 8/16/2016	DATE - 6/10/2016	REVISED -			SCALE: SHEET NO. OF SHEETS STA. TO STA.				

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 REVISIONS: \_\_\_\_\_  
 PLAN NO.: \_\_\_\_\_  
 ENGINEERING LTD. NO.: \_\_\_\_\_  
**CHRISTOPHER B. BURKE** ENGINEERING LTD.  
 8075 West Higgins Road, Suite 600  
 Naperville, IL 60563  
 (630) 823-0500  
 DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 REVISIONS: \_\_\_\_\_  
 PROFILE NO.: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 PLOTTED: \_\_\_\_\_  
 GRADES CHECKED: \_\_\_\_\_  
 STATIONING: \_\_\_\_\_  
 NOTATIONS CHECKED: \_\_\_\_\_

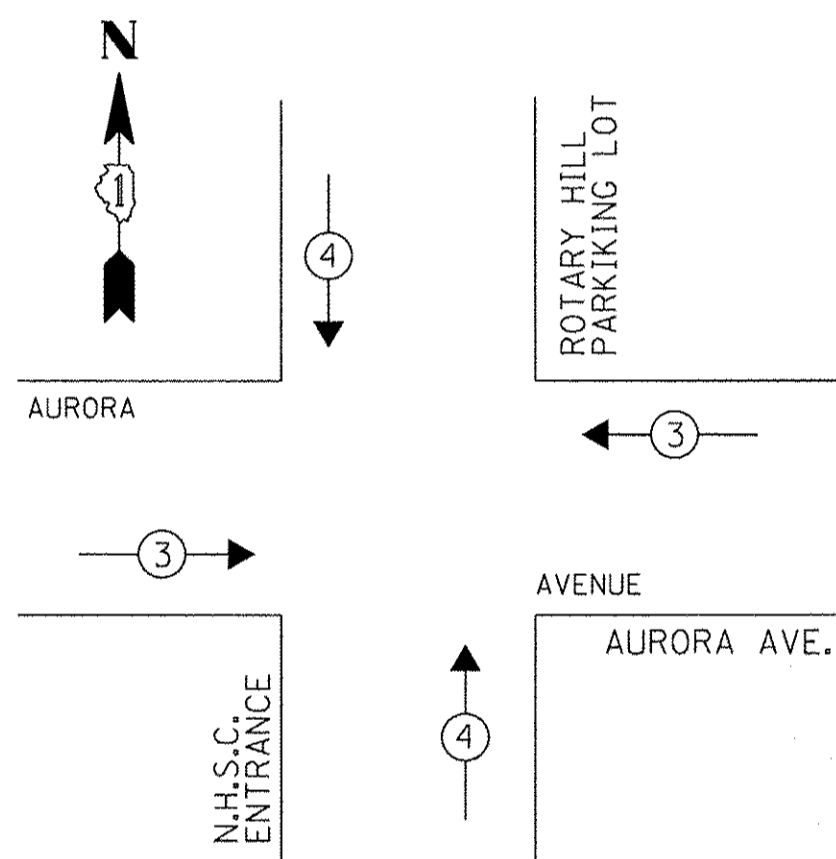
**EXISTING CONTROLLER SEQUENCE**



**LEGEND:**

- ⊙ PROTECTED PHASE
- ⊙⋯ PROTECTED/PERMITTED PHASE
- ⊙⋯⊙ PEDESTRIAN PHASE
- OL OVERLAP

**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	8	11	50	44.0
(YELLOW)	8	20	5	8.0
(GREEN)	8	12	45	43.0
PROTECTED ARROW	8	10	10	8.0
PED. SIGNAL	4	20	100	80.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	2	250	50	250.0
			TOTAL =	533.0

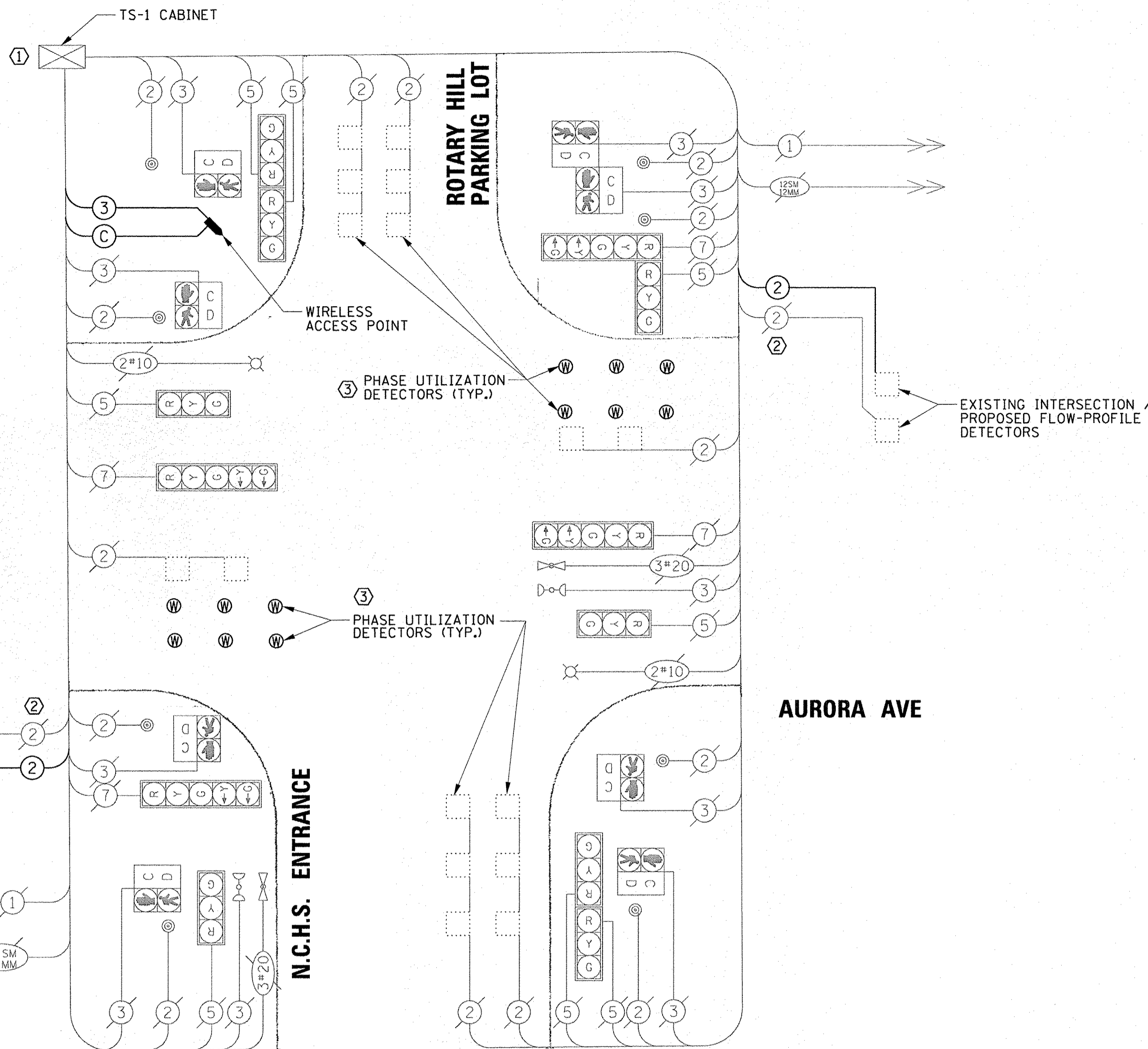
ENERGY COSTS TO:  
 CITY OF NAPERVILLE  
 400 S. EAGLE STREET  
 NAPERVILLE, IL 60540  
 ENERGY SUPPLY: CONTACT: NEW BUSINESS  
 PHONE: (866) 639-3532  
 COMPANY: COMMONWEALTH EDISON  
 ACCOUNT NUMBER: ---

EXISTING INTERSECTION / PROPOSED FLOW-PROFILE DETECTORS

EXISTING TRACER CABLE  
 12 SM 12 MM  
 EXISTING INTERCONNECT TO WEST STREET

**CONSTRUCTION NOTES:**

- ① 1 NEW LOOP DETECTOR AMPLIFIER SHALL BE INSTALLED IN THE EXISTING DETECTOR RACK (IN THE EXISTING TRAFFIC SIGNAL CABINET). A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② EXISTING "ADVANCED" DETECTORS SHALL BE SEPARATED BY INSTALLING ADDITIONAL LEAD-IN CABLE FROM HANDHOLE TO CABINET AND EACH EXISTING LOOP CABLE SHALL BE SPLICED SEPARATELY TO EACH LEAD-IN CABLE.
- ③ PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.



**CABLE PLAN**  
(NOT TO SCALE)

**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	765
INDUCTION LOOP DETECTOR AMPLIFIER	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

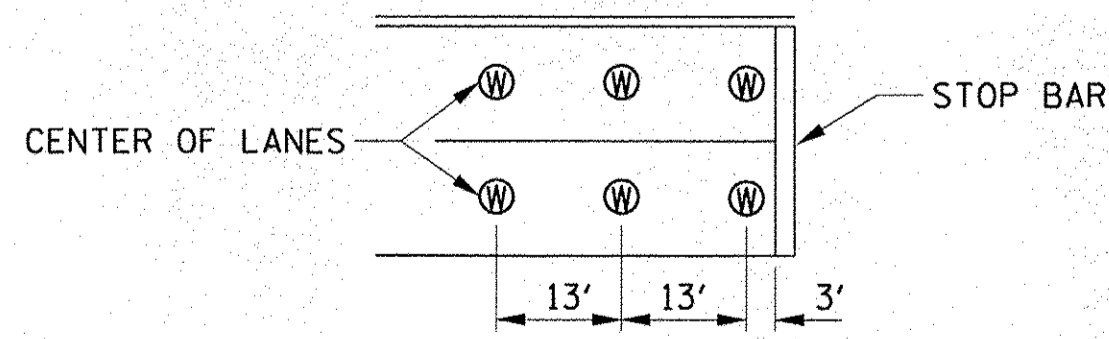
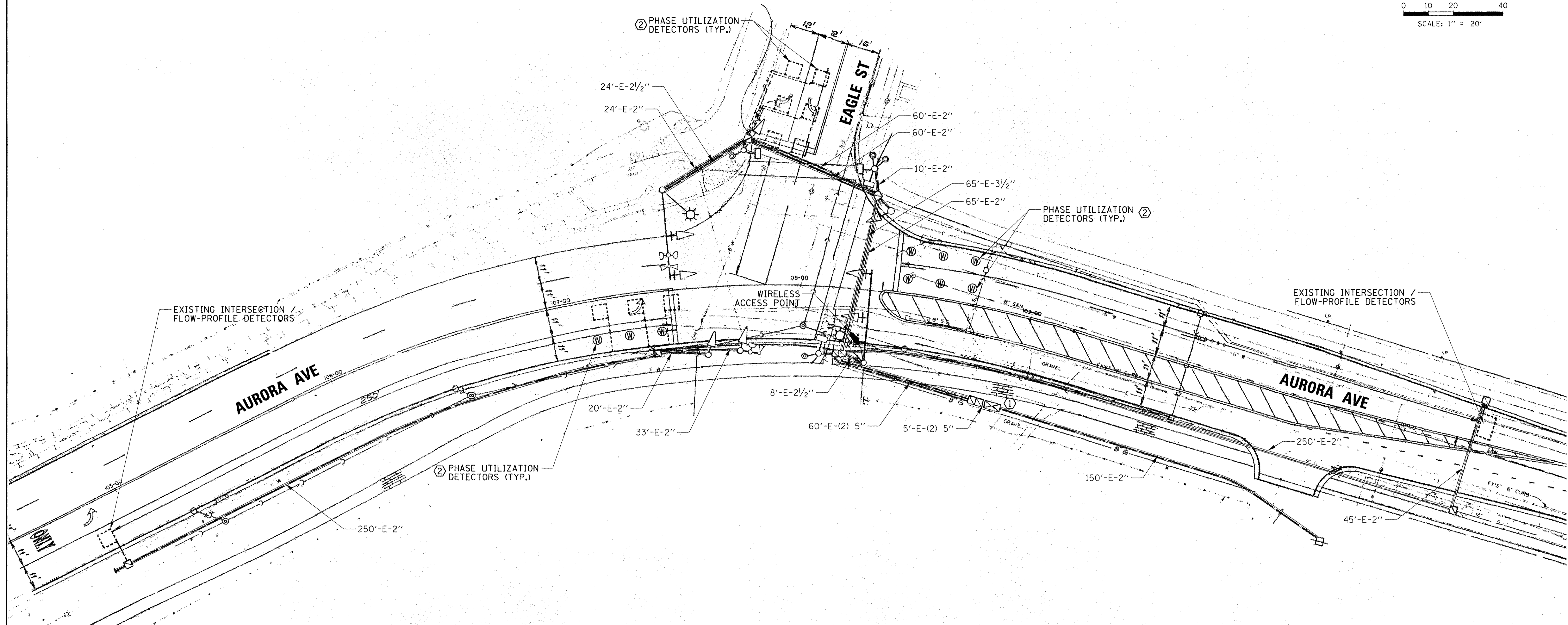
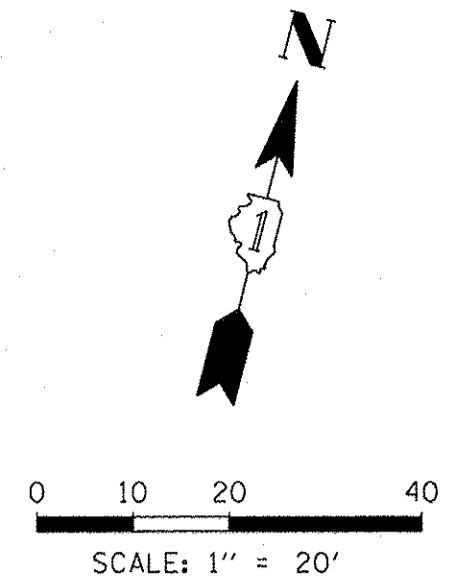
**SCHEDULE OF QUANTITIES, CABLE PLAN, PHASE DESIGNATION DIAGRAM AND EMERGENCY VEHICLE PREEMPTION SEQUENCE**  
 AURORA AVENUE AND NCHS ENTRANCE / ROTARY HILL PARKING LOT

F.A.U. RTE. 2552, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 63
SCALE: _____		SHEET NO. OF SHEETS STA. _____ TO STA. _____		CONTRACT NO. 61D23
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

TS SHT NO. 63

FILE NAME 1S28-2_Aurora-Nchs_CAB	USER NAME = fbariso	DESIGNED - EAJ / TFS	REVISED -
	N:\NAPERVILLE\150042\TRAFFIC\	DRAWN - FPB	REVISED -
	PLOT SCALE = 20'	CHECKED - GMZ	REVISED -
	PLOT DATE = 8/16/2016	DATE - 6/10/2016	REVISED -

DATE	BY	SURVEYED	ALIGNED	CHECKED	DATE	BY	STRUCTURE	NOTATION	CHKD
		PLAN	NOTE	BOOK					
<b>CHRISTOPHER B. BURKE</b> ENGINEERING LTD. 8575 West Higgins Road, Suite 600 Rosemont, Illinois 60018 (847) 823-0500									
DATE	BY	PROFILING	SHADES	CHECKED	DATE	BY	STRUCTURE	NOTATION	CHKD



**WIRELESS MAGNETIC DETECTOR  
DETAIL**

**CONSTRUCTION NOTES:**

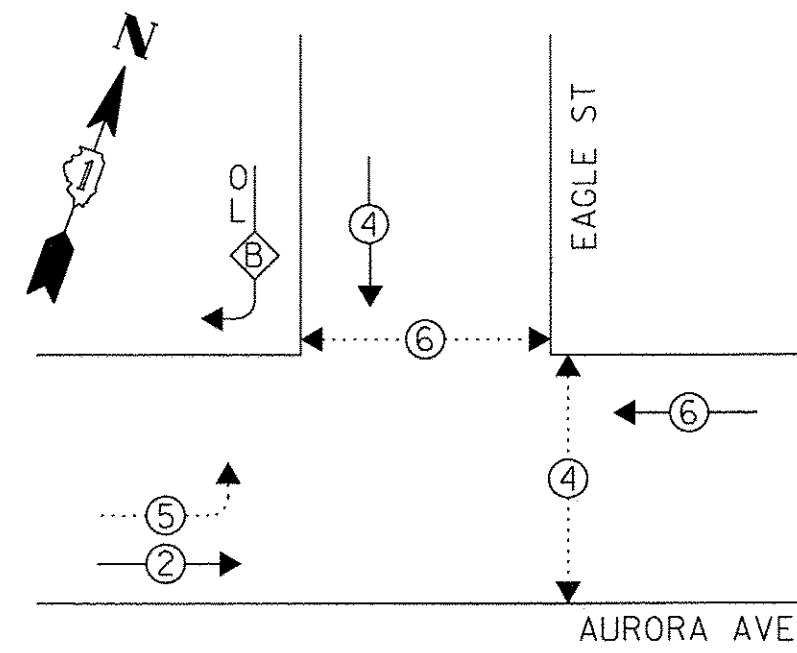
- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

TS SHT NO. 64

FILE NAME 1329-1-Aurora-Eagle.SIG	USER NAME = fbariso	DESIGNED - EAJ / TFS	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TRAFFIC SIGNAL MODIFICATION PLAN AURORA AVENUE AND EAGLE STREET</b>	F.A.U. RTE. 2592, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 64
	PLOT SCALE = 20'	DRAWN - FPB	REVISED -			CONTRACT NO. 61D23				
	PLOT DATE = 8/16/2016	CHECKED - GMZ	REVISED -			FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
		DATE - 6/10/2016	REVISED -			SCALE:	SHEET NO. OF SHEETS STA. TO STA.			



**EXISTING CONTROLLER SEQUENCE**



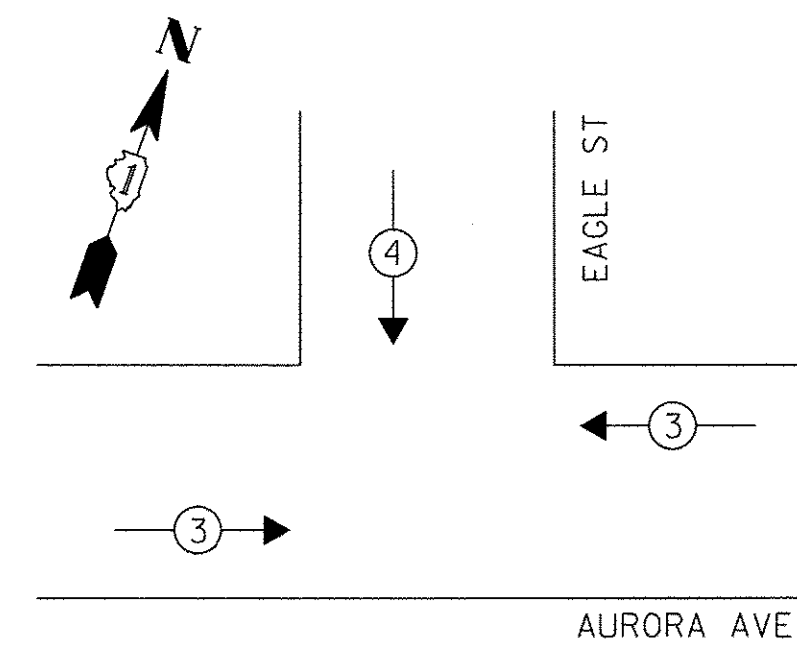
**LEGEND:**

- ⊙ PROTECTED PHASE
- ⊙⋯ PROTECTED/PERMITTED PHASE
- ⊙⋯⊙ PEDESTRIAN PHASE
- OL OVERLAP

**RIGHT TURN OVERLAP PHASE DESIGNATION**

OVERLAP LETTER	PERMISSIVE PHASE	PROTECTED PHASE
B	= 4	+ 5

**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



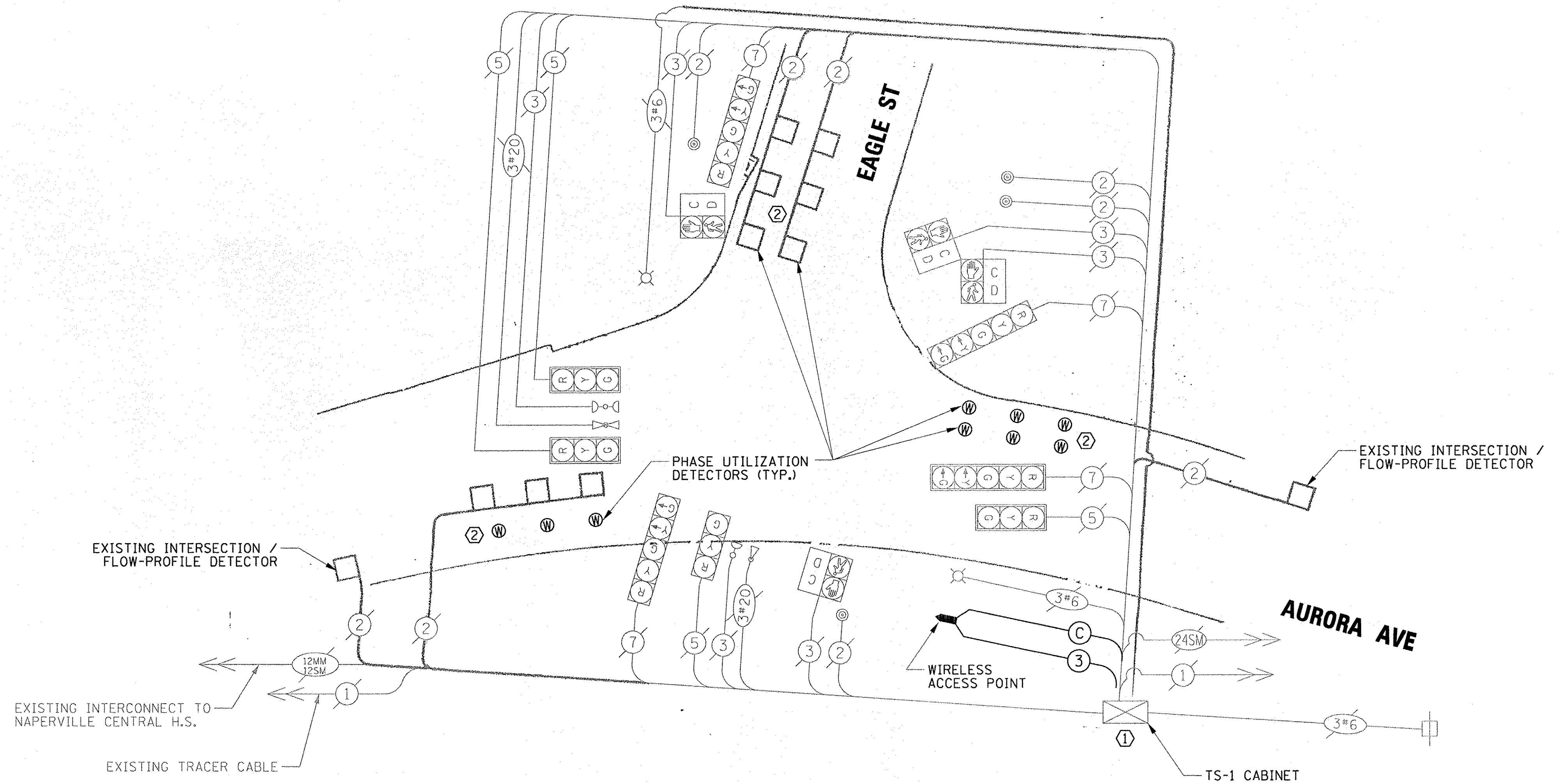
**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	8	11	50	44.0
(YELLOW)	8	20	5	8.0
(GREEN)	8	12	45	43.0
PROTECTED ARROW	8	10	10	8.0
PED. SIGNAL	4	20	100	80.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	2	250	50	125.0
			TOTAL =	408.0

ENERGY COSTS TO:

CITY OF NAPERVILLE  
400 S. EAGLE STREET  
NAPERVILLE, IL 60540

ENERGY SUPPLY: NEW BUSINESS  
PHONE: (866) 639-3532  
COMPANY: COMMONWEALTH EDISON  
ACCOUNT NUMBER: ---



**CABLE PLAN**  
(NOT TO SCALE)

**CONSTRUCTION NOTES:**

- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1

TS SHT NO. 65

DATE	BY	REVISION

PROFILE: \_\_\_\_\_  
 NOTE BOOK NO.: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 PLOTTED: \_\_\_\_\_  
 DESIGNED: \_\_\_\_\_  
 DRAWN: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 DATE: \_\_\_\_\_

FILE NAME	USER NAME = fbariso	DESIGNED - EAJ / TFS	REVISED -
TS38-1-Aurora-Webster_SIG	N:\NAPERVILLEN\150042\TRAFFIC\	DRAWN - FPB	REVISED -
	PLOT SCALE = 28"	CHECKED - GMZ	REVISED -
	PLOT DATE = 8/16/2016	DATE - 6/10/2016	REVISED -

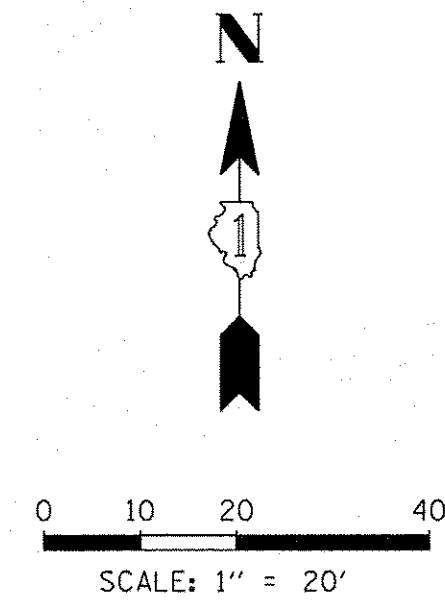
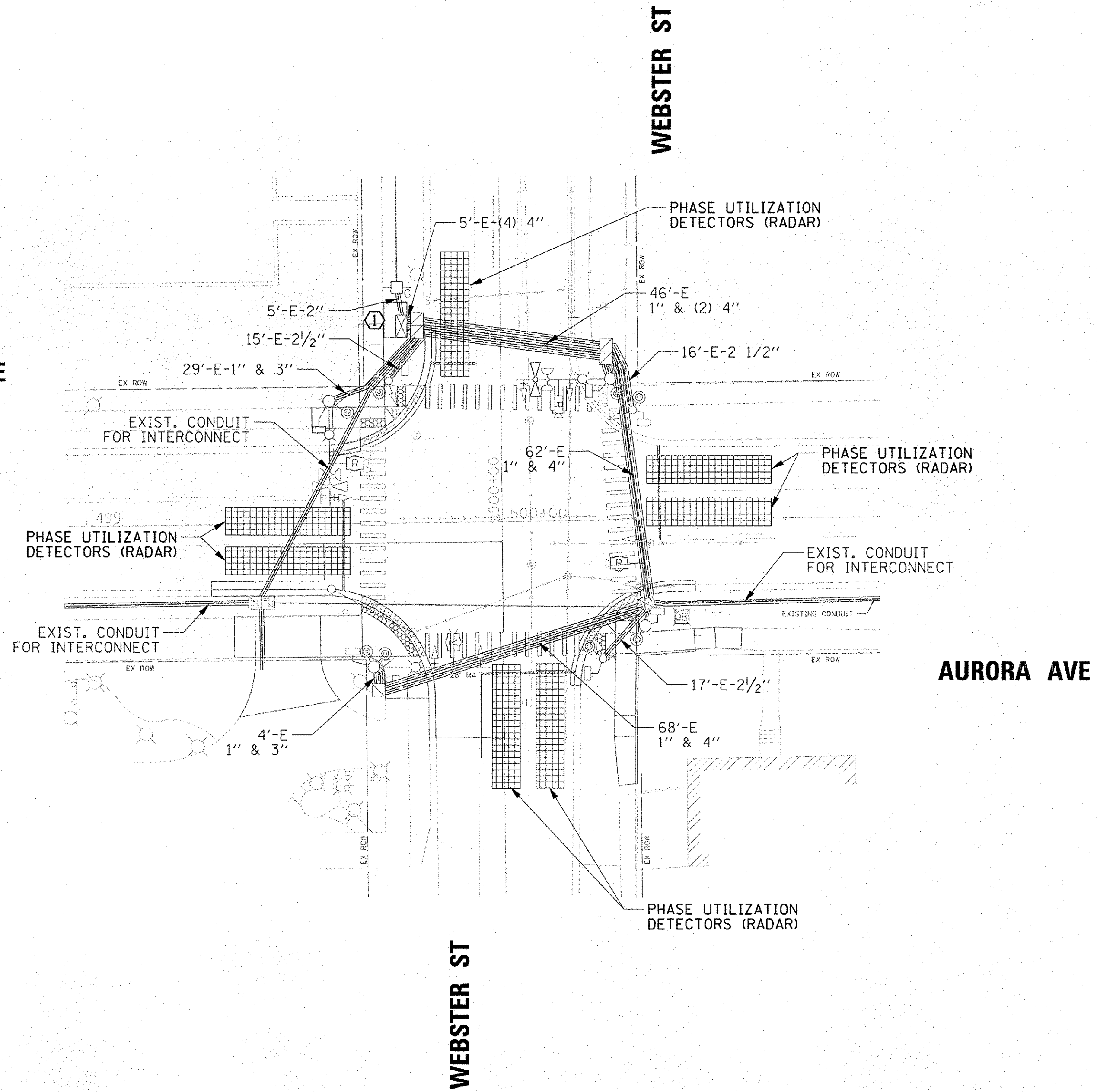
TS SHT NO. 66

**CHRISTOPHER B. BURKE**  
ENGINEERING LTD.  
8575 West Higgins Road, Suite 600  
Rosemont, Illinois 60018  
(847) 823-0500

DATE	BY	DATE

INTERSECTION / FLOW-PROFILE  
DETECTOR (RADAR)

INTERSECTION / FLOW-PROFILE  
DETECTOR (RADAR)



**CONSTRUCTION NOTE:**

- ① EXISTING RADAR DETECTION SHALL BE USED TO PROVIDE FLOW-PROFILE AND PHASE UTILIZATION DETECTORS. THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.

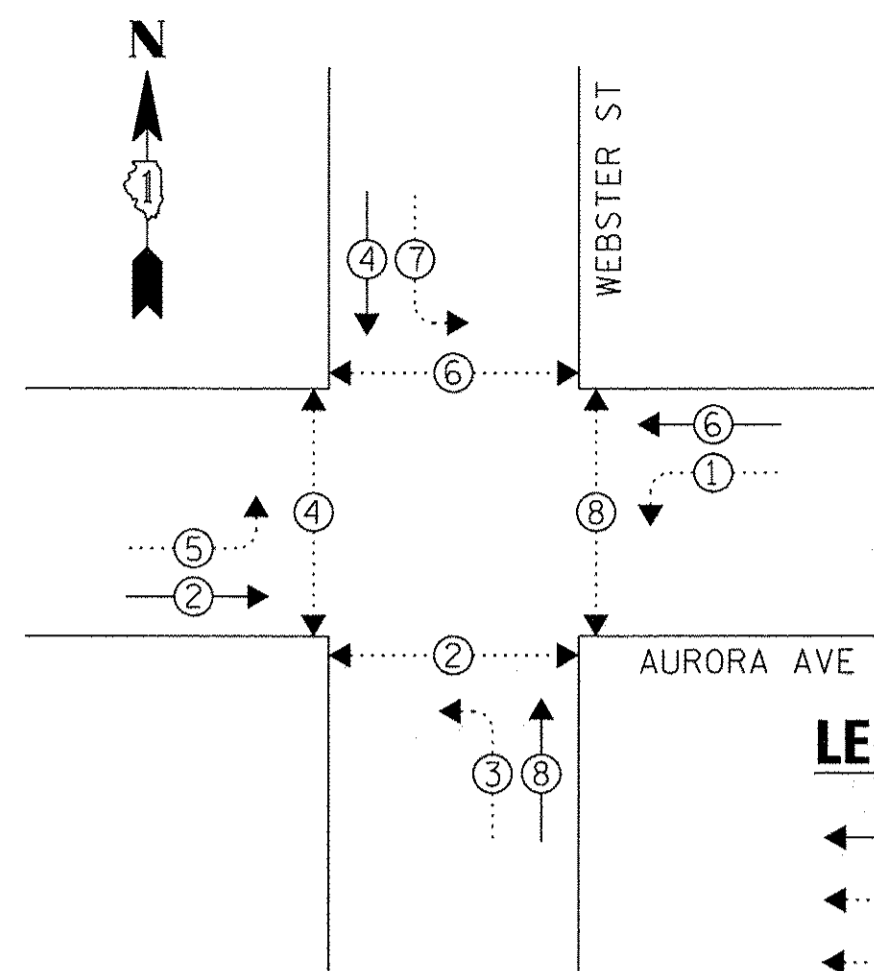
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TRAFFIC SIGNAL MODIFICATION PLAN  
AURORA AVENUE AND WEBSTER STREET**

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2552, 1522 & 2546	13-00159-00-TL	DuPAGE & WILL	80	66
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
CONTRACT NO. 61D23				

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

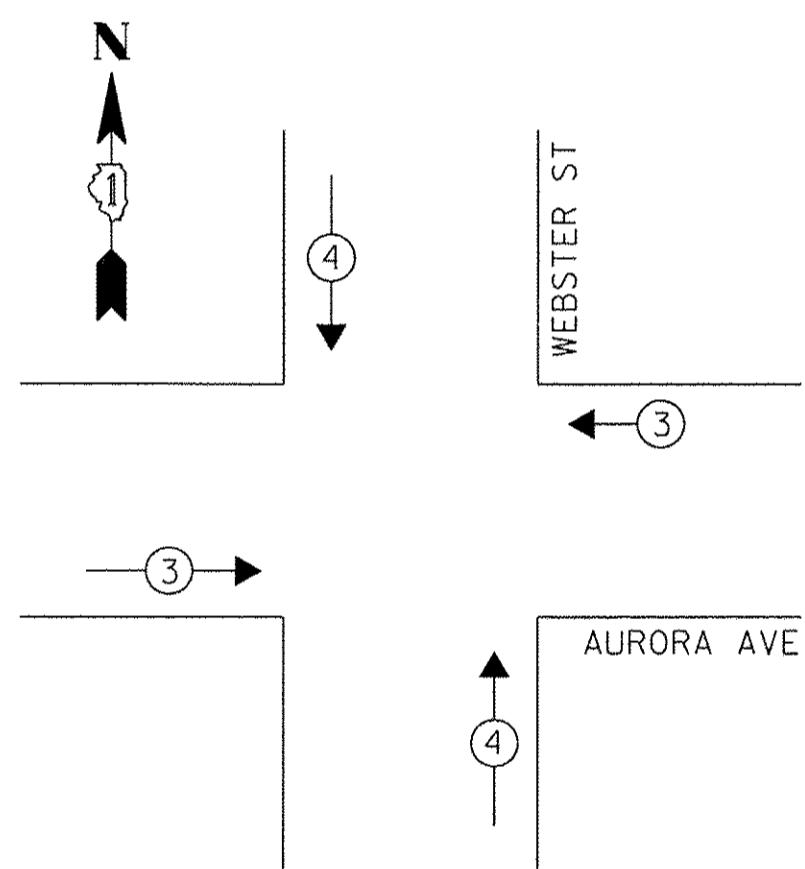
**EXISTING CONTROLLER SEQUENCE**



**LEGEND:**

- ⊙ PROTECTED PHASE
- ⊙ PROTECTED/PERMITTED PHASE
- ⊙ PEDESTRIAN PHASE
- OL OVERLAP

**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**

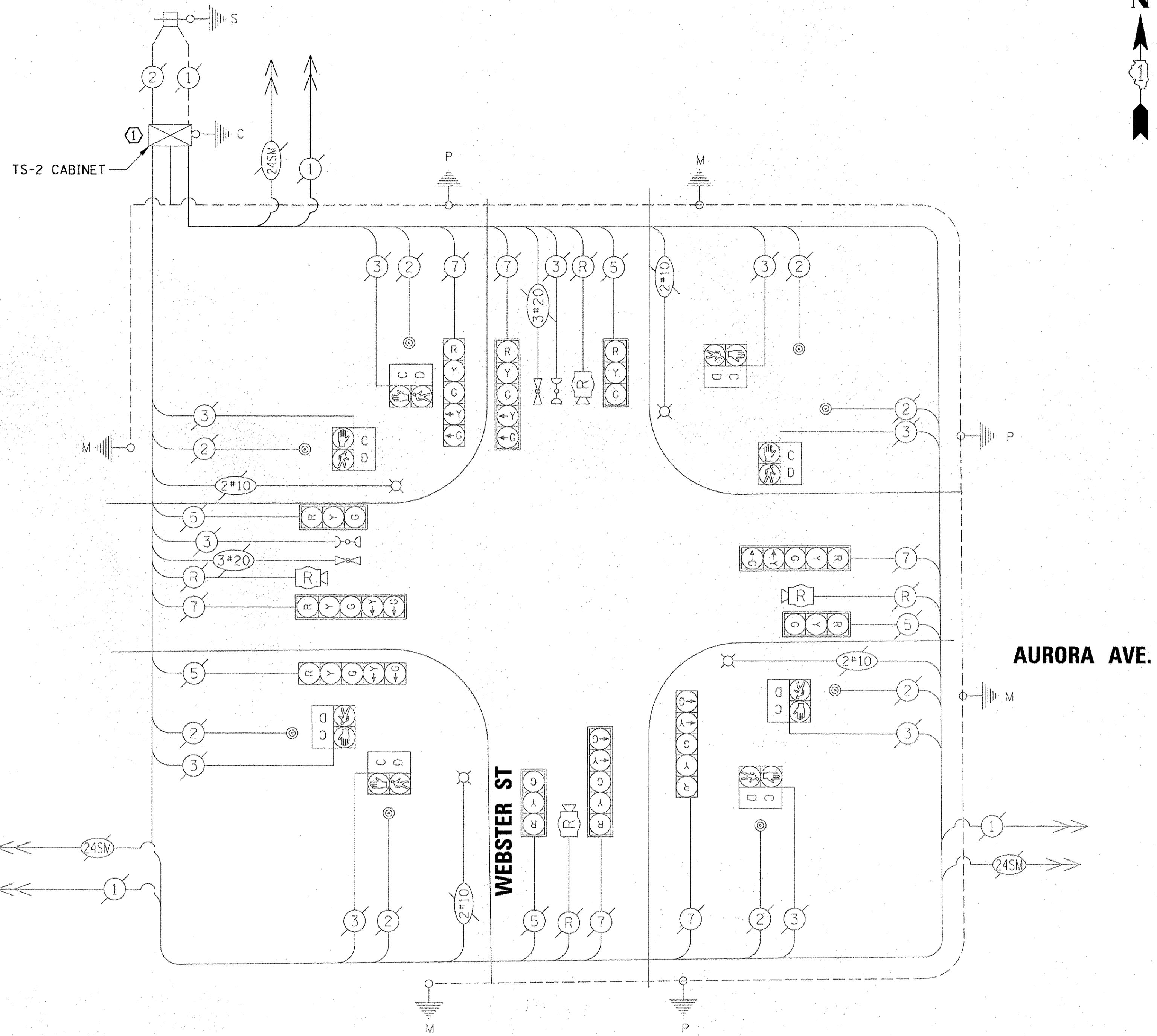


**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	10	11	50	55.0
(YELLOW)	10	20	5	10.0
(GREEN)	10	12	45	54.0
PROTECTED ARROW	8	10	10	8.0
PED. SIGNAL	8	20	100	160.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	2	250	50	250.0
TOTAL =				637.0

ENERGY COSTS TO:  
CITY OF NAPERVILLE  
400 S. EAGLE STREET  
NAPERVILLE, IL 60540

ENERGY SUPPLY: CONTACT: NEW BUSINESS  
PHONE: (866) 639-3532  
COMPANY: COMMONWEALTH EDISON  
ACCOUNT NUMBER: ---



**CABLE PLAN**  
(NOT TO SCALE)

**CONSTRUCTION NOTE:**

- 1 EXISTING RADAR DETECTION SHALL BE USED TO PROVIDE FLOW-PROFILE AND PHASE UTILIZATION DETECTORS. THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.

**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1

**TS SHT NO. 67**

DATE	BY	REVISIONS

**CHRISTOPHER B. BURKE**  
ENGINEERING LTD.  
2119 West Hill Road, Suite 600  
Naperville, IL 60563  
(847) 823-0500

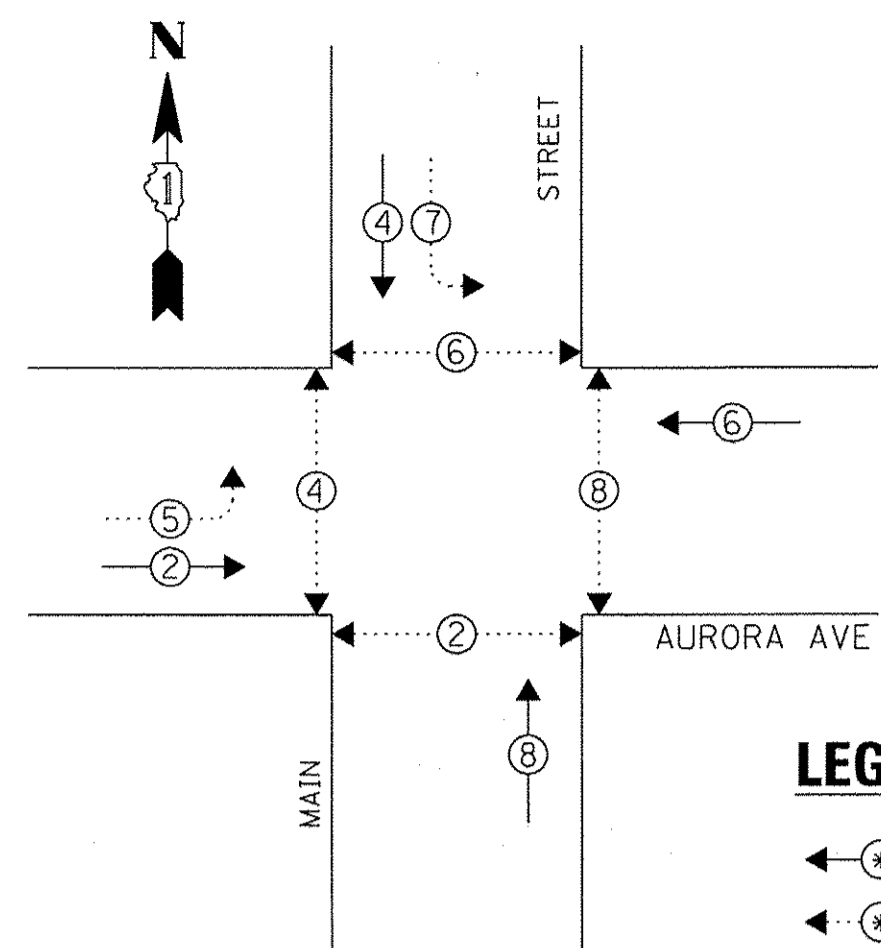


DATE	BY	REVISIONS

PLAN	NO.	NO.	NO.
REVISIONS	CHECKED	DATE	BY

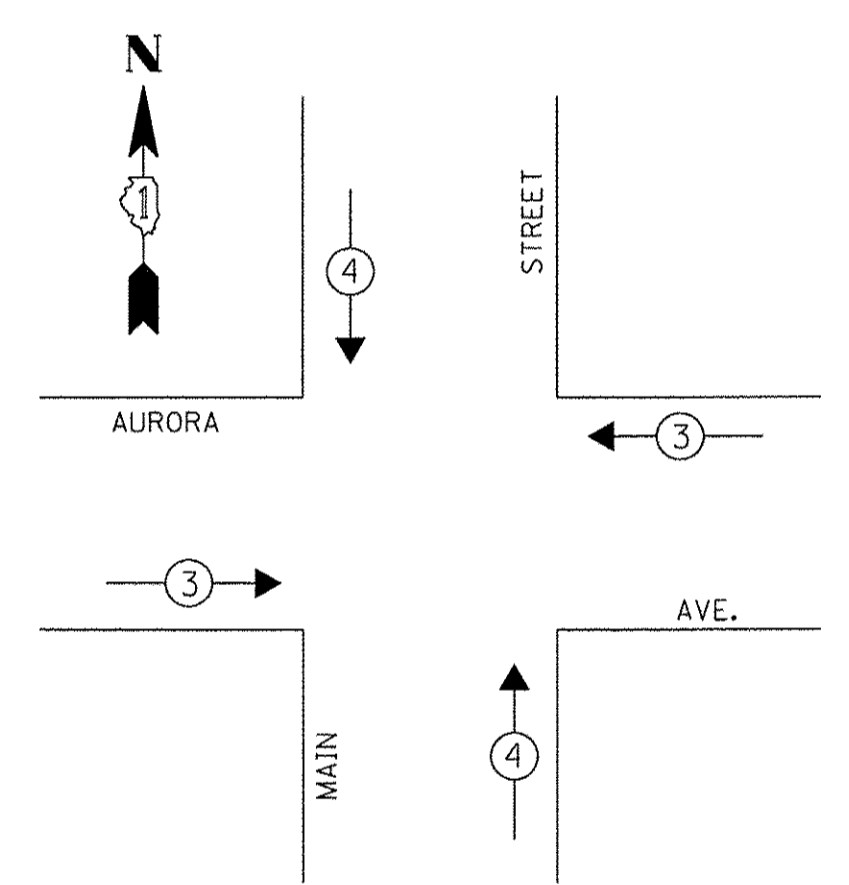


**EXISTING CONTROLLER SEQUENCE**



- LEGEND:**
- ← ⊙ → PROTECTED PHASE
  - ← ⊙ ⊙ → PROTECTED/PERMITTED PHASE
  - ← ⊙ ⊙ ⊙ → PEDESTRIAN PHASE
  - ↔ OL OVERLAP

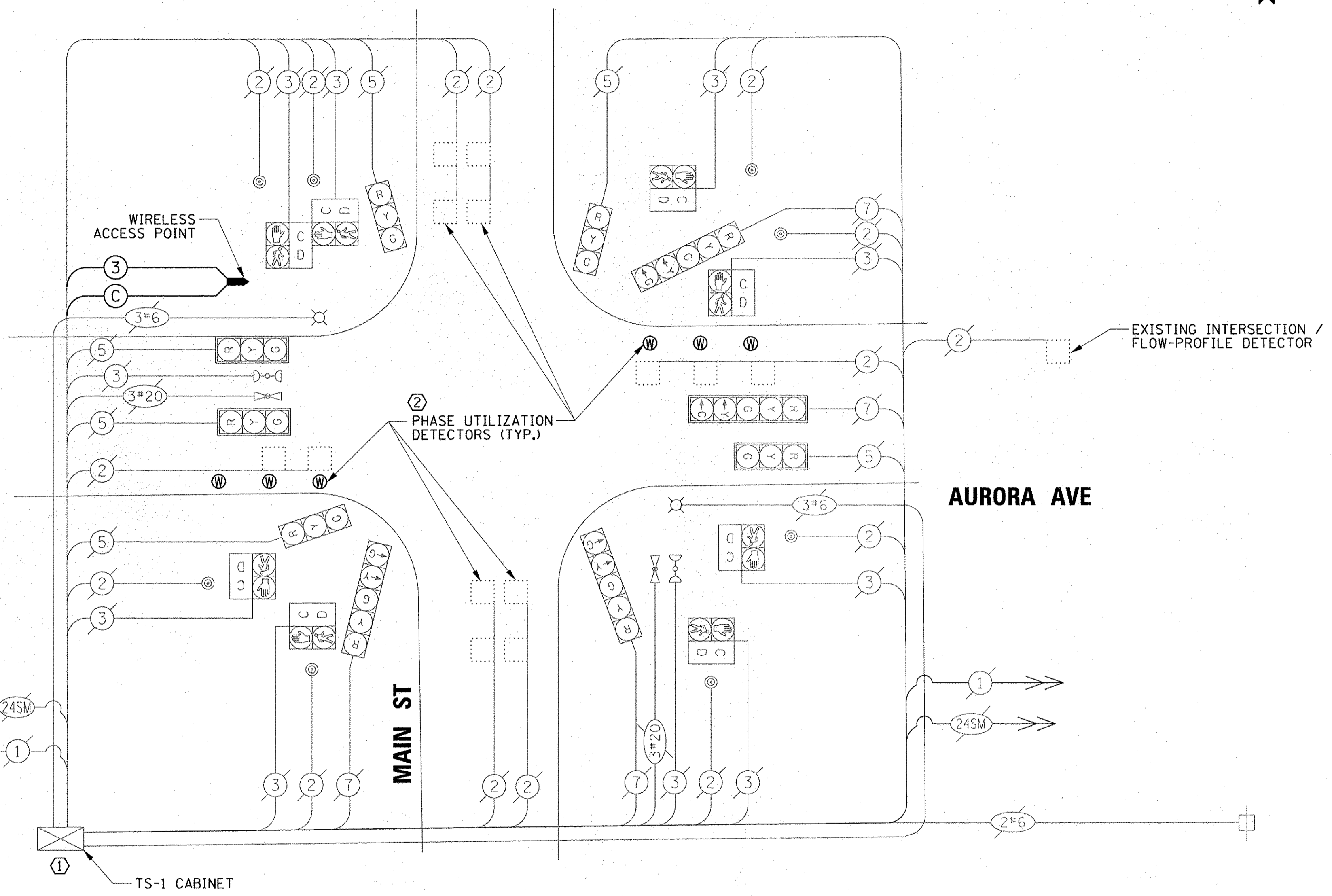
**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



INTERSECTION / FLOW PROFILE DETECTOR

EXISTING INTERCONNECT TO WEBSTER STREET

EXISTING TRACER CABLE



**CABLE PLAN**  
(NOT TO SCALE)

**CONSTRUCTION NOTES:**

- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1

**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	10	11	50	55.0
(YELLOW)	10	20	5	10.0
(GREEN)	10	12	45	54.0
PROTECTED ARROW	8	10	10	8.0
PED. SIGNAL	8	20	100	160.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	2	250	50	250.0
			TOTAL =	637.0

ENERGY COSTS TO:  
 CITY OF NAPERVILLE  
 400 S. EAGLE STREET  
 NAPERVILLE, IL 60540  
 ENERGY SUPPLY: CONTACT: NEW BUSINESS  
 PHONE: (866) 639-3532  
 COMPANY: COMMONWEALTH EDISON  
 ACCOUNT NUMBER: ---

TS SHT NO. 69  
 PROFILE: SURVEYED, PLOTTED, GRADES CHECKED, STRUCTURE NOTATIONS CHKD  
 NOTE BOOK NO. \_\_\_\_\_  
 CHANGELIST: \_\_\_\_\_  
 PLAN: SURVEYED, PLOTTED, ALIGNED, CHECKED, CADD FILE NAME  
 NO. \_\_\_\_\_  
 BY: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 ENGINEERING LTD.  
 CHRISTOPHER B. BURKE  
 8575 West Higgins Road, Suite 600  
 Rosemont, Illinois 60018  
 (847) 823-0500

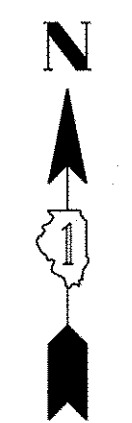
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SCHEDULE OF QUANTITIES, CABLE PLAN, PHASE DESIGNATION  
 DIAGRAM AND EMERGENCY VEHICLE PREEMPTION SEQUENCE  
 AURORA AVENUE AND MAIN STREET

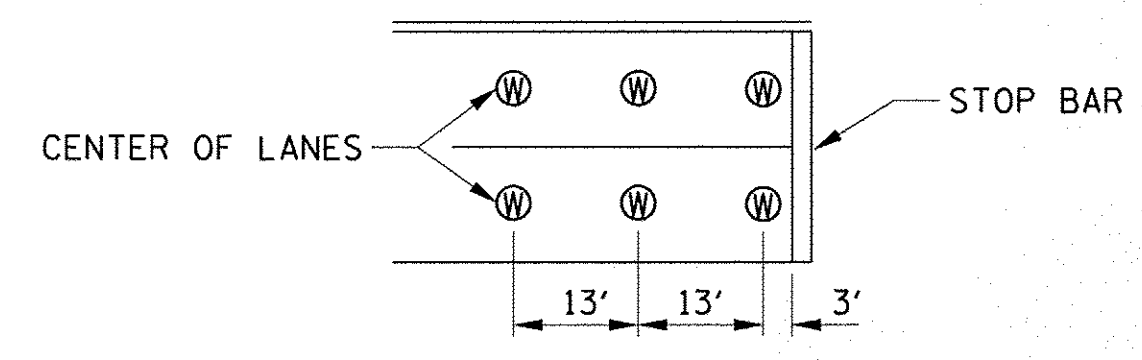
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2552, 1522 & 2546	13-00159-00-TL	DUPAGE & WILL	80	69
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	

FILE NAME	USER NAME = fbariso	DESIGNED - EAJ / TFS	REVISED -
TS31-2_Aurora-Main_CAB	N:\NAPERVILLE\150042\TRAFFIC\	DRAWN - FPB	REVISED -
	PLOT SCALE = 20'	CHECKED - GMZ	REVISED -
	PLOT DATE = 8/16/2016	DATE - 6/10/2016	REVISED -

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



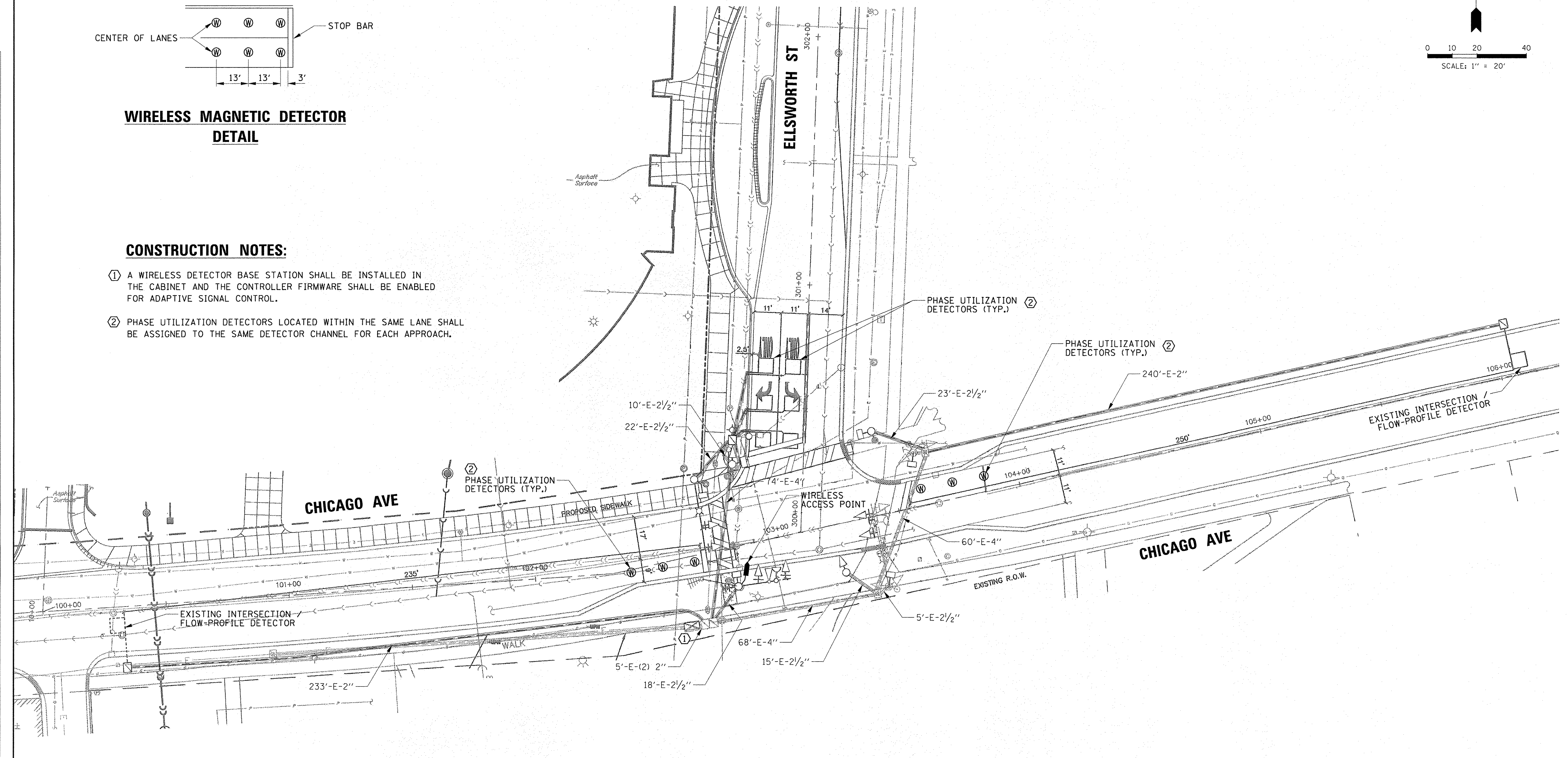
0 10 20 40  
SCALE: 1" = 20'



**WIRELESS MAGNETIC DETECTOR  
DETAIL**

**CONSTRUCTION NOTES:**

- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
- ② PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.



DATE	BY	REVISIONS

DATE	BY	REVISIONS

DATE	BY	REVISIONS

TS SHT NO. 70

FILE NAME	TS32-1.Chicago-Ellsworth.SIG
USER NAME	fbariso
DESIGNED	- EAJ / TFS
DRAWN	- FPB
CHECKED	- GMZ
DATE	- 6/10/2016

DESIGNED	- EAJ / TFS	REVISED	-
DRAWN	- FPB	REVISED	-
CHECKED	- GMZ	REVISED	-
DATE	- 6/10/2016	REVISED	-

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TRAFFIC SIGNAL MODIFICATION PLAN  
CHICAGO AVENUE AND ELLSWORTH STREET**

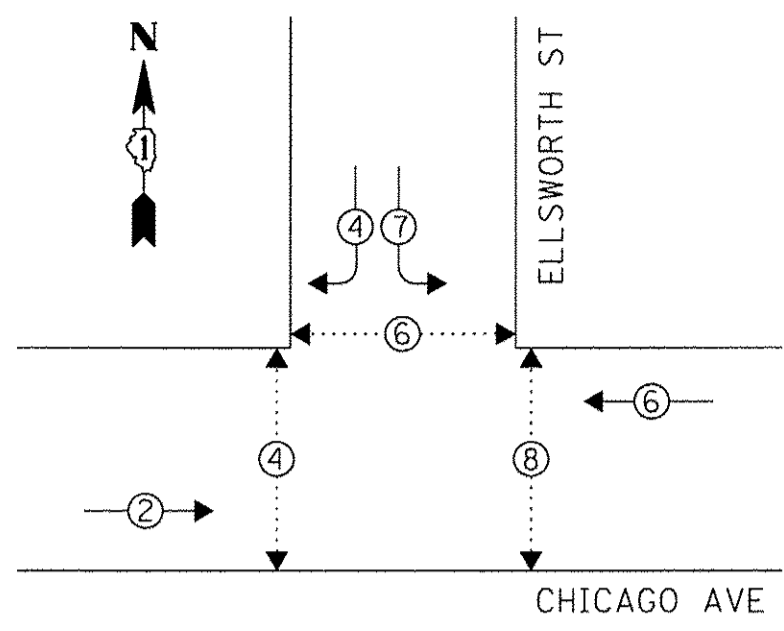
F.A.U. RT. 2552, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY DUPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 70
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_ PLOTTED: \_\_\_\_\_  
 ALIGNED: \_\_\_\_\_ CHECKED: \_\_\_\_\_  
 NOTE BOOK: \_\_\_\_\_ NO. \_\_\_\_\_  
 STRUCTURE: \_\_\_\_\_ NOTATIONS: CHKD  
 PROFILE: \_\_\_\_\_  
 DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_ PLOTTED: \_\_\_\_\_  
 ALIGNED: \_\_\_\_\_ CHECKED: \_\_\_\_\_  
 NOTE BOOK: \_\_\_\_\_ NO. \_\_\_\_\_  
 STRUCTURE: \_\_\_\_\_ NOTATIONS: CHKD

TS SHT NO. 71

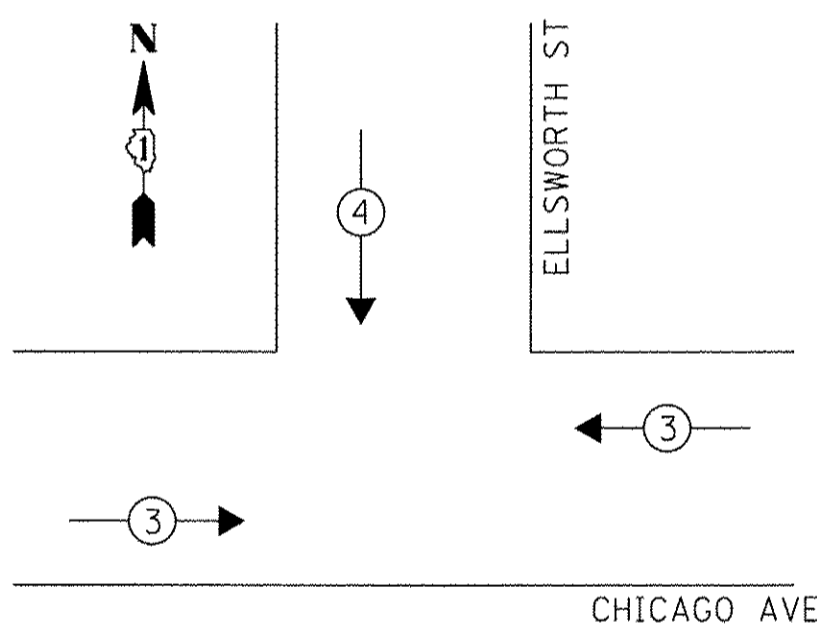
CHRISTOPHER B. BURKE  
 ENGINEERING LTD.  
 8745 West Higgins Road, Suite 600  
 Rosemont, Illinois 60018  
 (847) 823-0500

**EXISTING CONTROLLER SEQUENCE**



- LEGEND:**
- ← (circle with arrow) PROTECTED PHASE
  - ← (circle with arrow and dotted line) PROTECTED/PERMITTED PHASE
  - ← (circle with walking figure) PEDESTRIAN PHASE
  - OL (diamond with arrow) OVERLAP

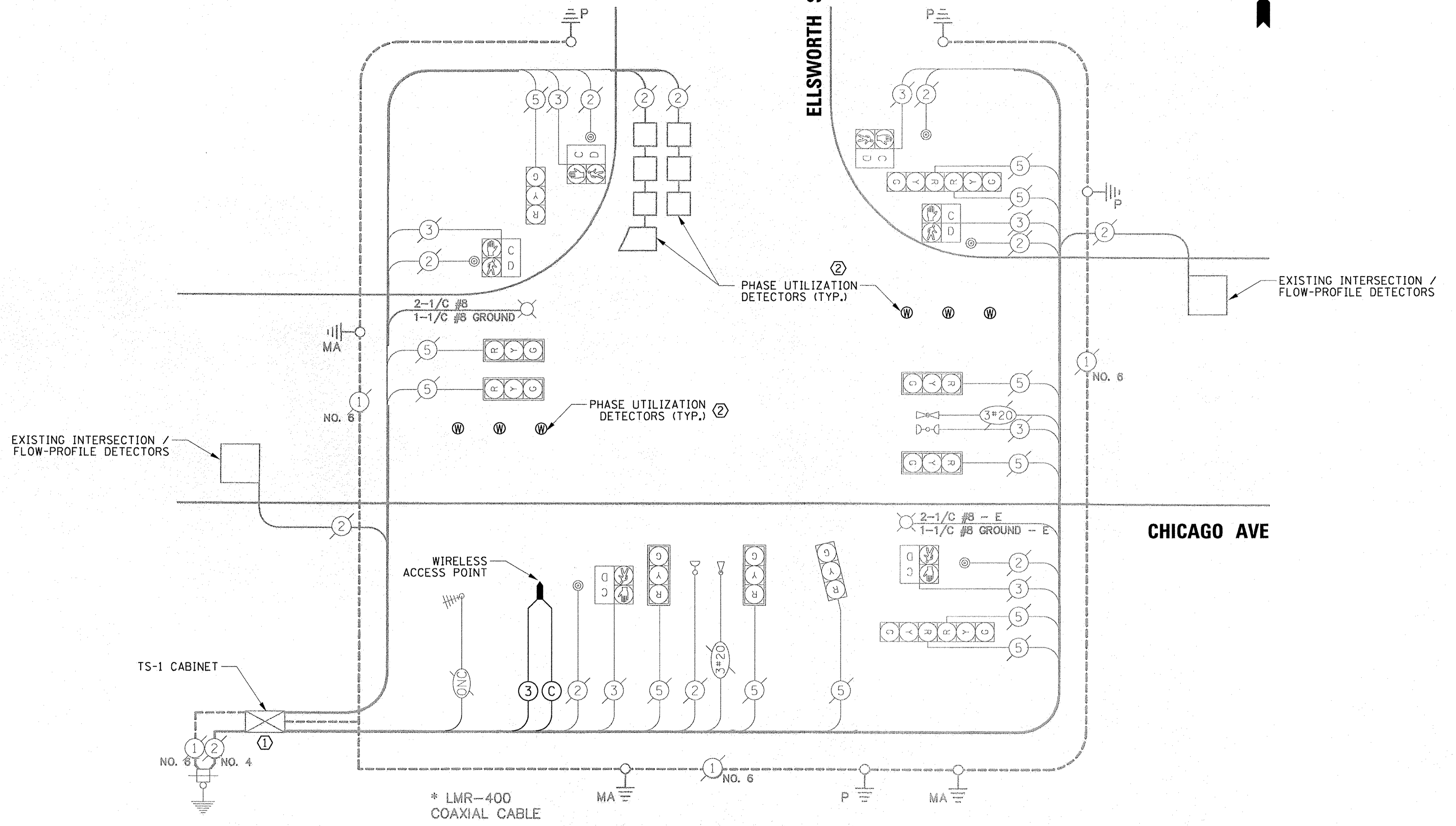
**EXISTING EMERGENCY VEHICLE PREEMPTION SEQUENCE**



**TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS**

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	13	11	50	72.0
(YELLOW)	13	20	5	13.0
(GREEN)	13	12	45	70.0
PROTECTED ARROW	8	10	10	8.0
PED. SIGNAL	6	20	100	120.0
CONTROLLER	1	100	100	100.0
UPS	-	25	100	-
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	-	250	50	-
			TOTAL =	383.0

ENERGY COSTS TO:  
 CITY OF NAPERVILLE  
 400 S. EAGLE STREET  
 NAPERVILLE, IL 60540  
 ENERGY SUPPLY: CONTACT: NEW BUSINESS  
 PHONE: (866) 639-3532  
 COMPANY: COMMONWEALTH EDISON  
 ACCOUNT NUMBER: ---



- CONSTRUCTION NOTES:**
- ① A WIRELESS DETECTOR BASE STATION SHALL BE INSTALLED IN THE CABINET AND THE CONTROLLER FIRMWARE SHALL BE ENABLED FOR ADAPTIVE SIGNAL CONTROL.
  - ② PHASE UTILIZATION DETECTORS LOCATED WITHIN THE SAME LANE SHALL BE ASSIGNED TO THE SAME DETECTOR CHANNEL FOR EACH APPROACH.

**CABLE PLAN**  
(NOT TO SCALE)

**SCHEDULE OF QUANTITIES**

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
WIRELESS VEHICLE DETECTION SYSTEM	EACH	1

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

**SCHEDULE OF QUANTITIES, CABLE PLAN, PHASE DESIGNATION DIAGRAM AND EMERGENCY VEHICLE PREEMPTION SEQUENCE**  
 CHICAGO AVENUE AND ELLSWORTH STREET

FILE NAME: TS32-2-Chicago-Ellsworth-CAB	USER NAME: fbariso	DESIGNED: EAJ / TFS	REVISED: -
	NO:\NAPERVILLE\150042\TRAFFIC\	DRAWN: FPB	REVISED: -
	PLOT SCALE = 20'	CHECKED: GMZ	REVISED: -
	PLOT DATE = 8/16/2016	DATE: 6/10/2016	REVISED: -

F.A.U. RTE. 2532, 1522 & 2546	SECTION 13-00159-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 71
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

# TRAFFIC SIGNAL LEGEND

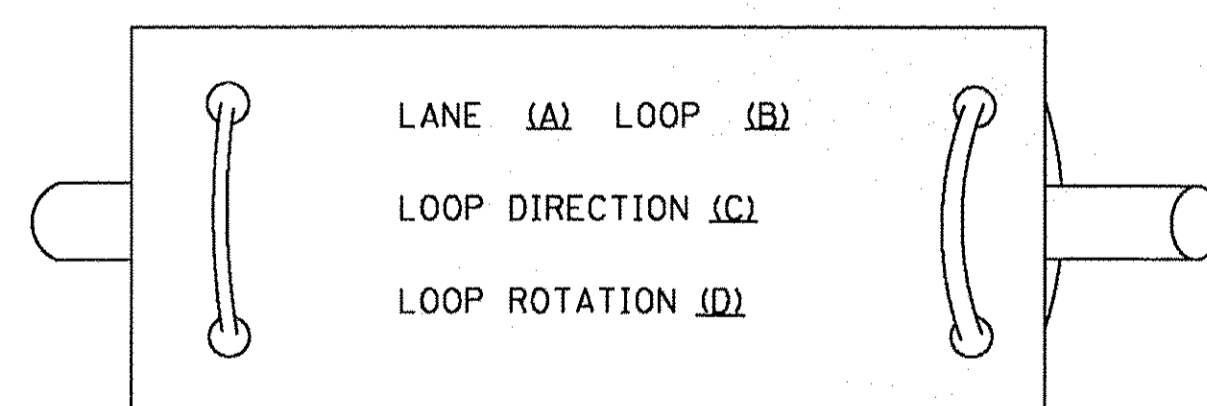
ITEM	REMOVAL	EXISTING	PROPOSED	ITEM	REMOVAL	EXISTING	PROPOSED	ITEM	REMOVAL	EXISTING	PROPOSED												
CONTROLLER CABINET				EMERGENCY VEHICLE LIGHT DETECTOR				ELECTRIC CABLE IN CONDUIT, TRACER, NO. 14 1/C, UNLESS NOTED OTHERWISE															
RAILROAD CONTROL CABINET				CONFIRMATION BEACON				COAXIAL CABLE															
COMMUNICATIONS CABINET				HANDHOLE				VENDOR CABLE FOR CAMERA															
MASTER CONTROLLER				HEAVY DUTY HANDHOLE				COPPER INTERCONNECT CABLE, NO. 18 3 PAIR TWISTED, SHIELDED															
MASTER MASTER CONTROLLER				DOUBLE HANDHOLE				FIBER OPTIC CABLE NO. 62.5/125, MM12F															
UNINTERRUPTABLE POWER SUPPLY				JUNCTION BOX				FIBER OPTIC CABLE NO. 62.5/125, MM12F SM12F															
SERVICE INSTALLATION, (P) POLE OR (G) GROUND MOUNT				UNDERGROUND CONDUIT, GALVANIZED STEEL (UC)				FIBER OPTIC CABLE NO. 62.5/125, MM12F SM24F															
TELEPHONE CONNECTION (P) POLE OR (G) GROUND MOUNT				TEMPORARY SPAN WIRE, TETHER WIRE, AND CABLE				FIBER OPTIC CABLE NO. 62.5/125, MM12F SM24F															
STEEL MAST ARM ASSEMBLY AND POLE				COMMON TRENCH				GROUND ROD AT (C) CONTROLLER, (H) HANDHOLE, (P) POST, (M) MAST ARM, OR (S) SERVICE															
ALUMINUM MAST ARM ASSEMBLY AND POLE				COILABLE NONMETALLIC CONDUIT (EMPTY)				CONTROLLER CABINET AND FOUNDATION TO BE REMOVED															
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE				SYSTEM ITEM		S	S	STEEL MAST ARM POLE AND FOUNDATION TO BE REMOVED															
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH PTZ CAMERA				INTERSECTION ITEM		I	IP	ALUMINUM MAST ARM POLE AND FOUNDATION TO BE REMOVED															
SIGNAL POST				REMOVE ITEM	R			STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE AND FOUNDATION TO BE REMOVED															
TEMPORARY WOOD POLE (CLASS 5 OR BETTER) 45 FOOT (13.7m) MINIMUM				RELOCATE ITEM	RL			SIGNAL POST AND FOUNDATION TO BE REMOVED															
GUY WIRE				ABANDON ITEM	A			INTERSECTION & SAMPLING (SYSTEM) DETECTOR															
SIGNAL HEAD				12" (300mm) TRAFFIC SIGNAL SECTION				SAMPLING (SYSTEM) DETECTOR															
SIGNAL HEAD CONSTRUCTION STAGES (NUMBERS INDICATE THE CONSTRUCTION STAGE)				12" (300mm) RED WITH 8" (200mm) YELLOW AND GREEN TRAFFIC SIGNAL FACE				QUEUE DETECTOR															
SIGNAL HEAD WITH BACKPLATE				SIGNAL FACE				PREFORMED QUEUE DETECTOR															
SIGNAL HEAD OPTICALLY PROGRAMMED				SIGNAL FACE WITH BACKPLATE. "P" INDICATES PROGRAMMED HEAD				PREFORMED INTERSECTION AND SAMPLING (SYSTEM) DETECTOR															
FLASHER INSTALLATION (S DENOTES SOLAR POWER)				"RB" INDICATES REFLECTIVE BACKPLATE				PREFORMED SAMPLING (SYSTEM) DETECTOR															
PEDESTRIAN SIGNAL HEAD				12" (300mm) PEDESTRIAN SIGNAL HEAD WALK/DON'T WALK SYMBOL				<h2 style="margin: 0;">RAILROAD SYMBOLS</h2> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">EXISTING</th> <th style="width: 50%;">PROPOSED</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table>				EXISTING	PROPOSED										
EXISTING	PROPOSED																						
PEDESTRIAN PUSHBUTTON DETECTOR				12" (300mm) PEDESTRIAN SIGNAL HEAD INTERNATIONAL SYMBOL, OUTLINED																			
ACCESSIBLE PEDESTRIAN PUSHBUTTON DETECTOR				12" (300mm) PEDESTRIAN SIGNAL HEAD INTERNATIONAL SYMBOL, SOLID																			
ILLUMINATED SIGN "NO LEFT TURN"				PEDESTRIAN SIGNAL HEAD, INTERNATIONAL SYMBOL, WITH COUNTDOWN TIMER																			
ILLUMINATED SIGN "NO RIGHT TURN"				RADIO INTERCONNECT																			
DETECTOR LOOP, TYPE I				RADIO REPEATER																			
PREFORMED DETECTOR LOOP				DENOTES NUMBER OF CONDUCTORS, ELECTRIC CABLE NO. 14, UNLESS NOTED OTHERWISE, ALL DETECTOR LOOP CABLE TO BE SHIELDED																			
MICROWAVE VEHICLE SENSOR				GROUND CABLE IN CONDUIT NO. 6 SOLID COPPER (GREEN)																			
VIDEO DETECTION CAMERA																							
VIDEO DETECTION ZONE																							
PAN, TILT, ZOOM CAMERA																							
WIRELESS DETECTOR SENSOR																							
WIRELESS ACCESS POINT																							



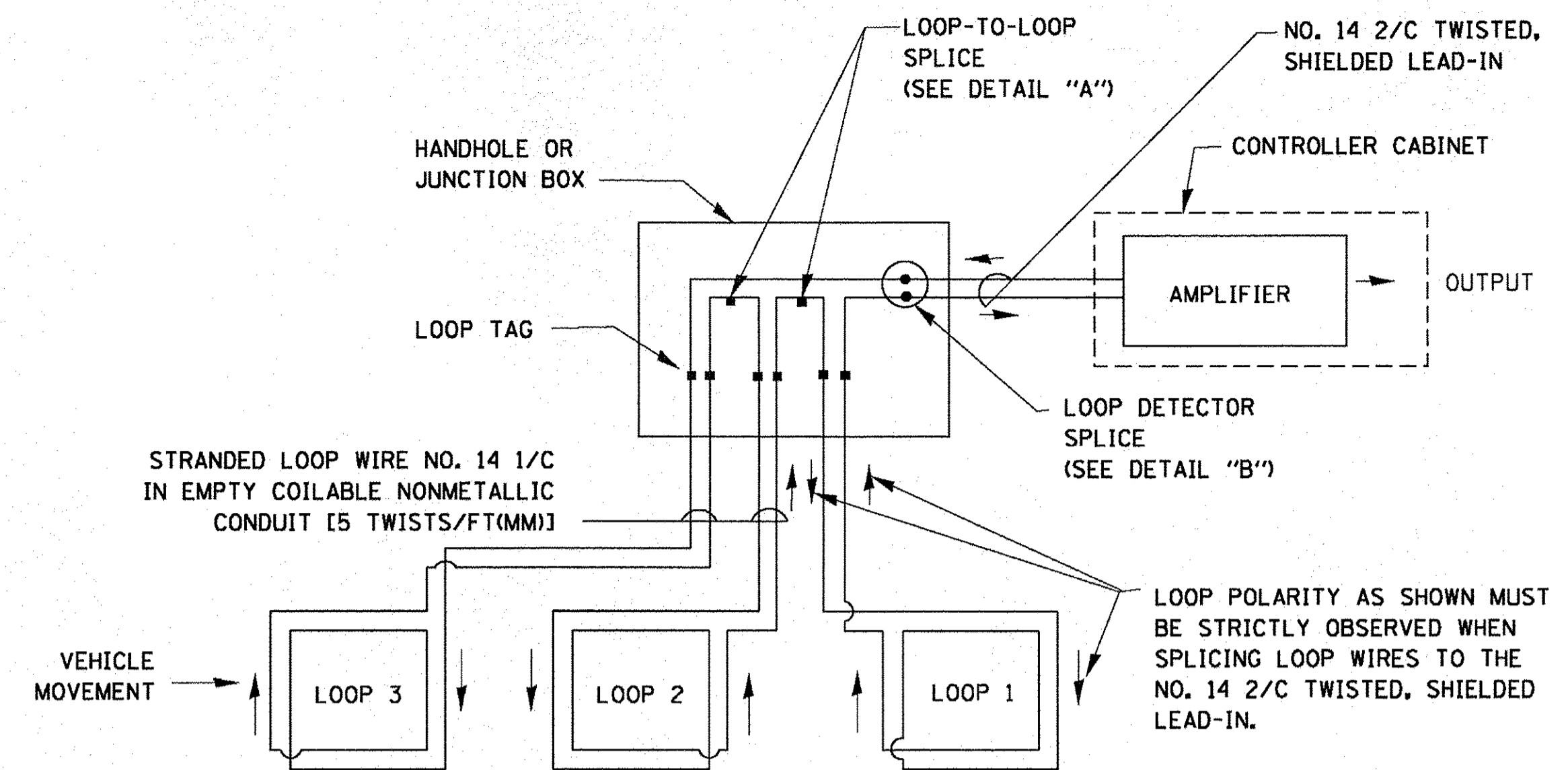
**LOOP DETECTOR NOTES**

1. EACH PAIR OF LOOP WIRES SHALL BE PLACED IN A SEPARATE EMPTY COILABLE NONMETALLIC CONDUIT FROM THE EDGE OF PAVEMENT TO THE HANDHOLE. SPACING BETWEEN THE HOLES DRILLED IN THE PAVEMENT SHALL NOT BE LESS THAN 6" (150 mm). EMPTY COILABLE NONMETALLIC CONDUIT SHALL BE INCLUDED IN THE COST OF THE LOOP WIRE.
2. 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.
3. 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.
4. ALL LOOP CABLE SHALL BE FASTENED WITH PLASTIC TIE WRAP TO THE HANDHOLE HOOKS.
5. IN ASPHALT PAVEMENT, LOOPS SHOULD BE PLACED IN THE BINDER AND DIVEHOLES 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.
6. 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.
7. PREFORMED DETECTOR LOOPS SHALL BE USED, AS SHOWN ON THE PLANS, WHERE NEW CONCRETE PAVEMENT IS PROPOSED. THE INSTALLATION OF PREFORMED LOOPS SHALL BE IN ACCORDANCE WITH THE DISTRICT 1 SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.

**LOOP LEAD-IN CABLE TAG**

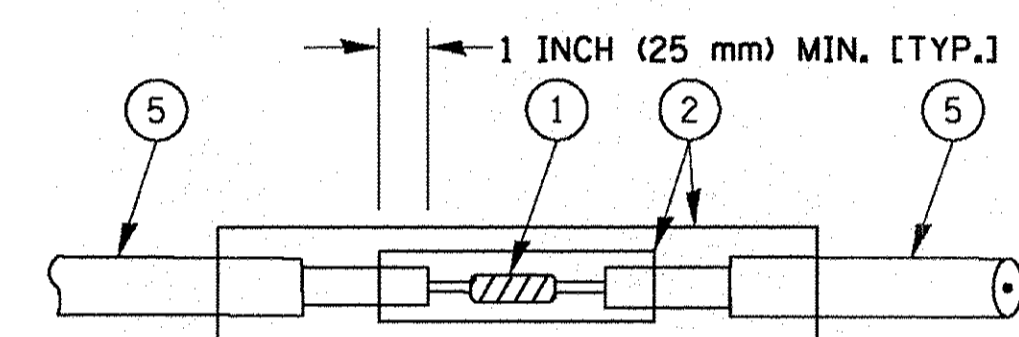


- A. LANE 1 IS THE LANE CLOSEST TO THE CENTERLINE OF THE ROADWAY
- B. LOOP #1 IS THE LOOP IN THE LANE CLOSEST TO THE INTERSECTION.
- C. LABEL LOOP CABLE "IN" OR LOOP CABLE "OUT".
- D. LABEL LOOP CABLE CLOCKWISE OR LOOP CABLE COUNTERCLOCKWISE.

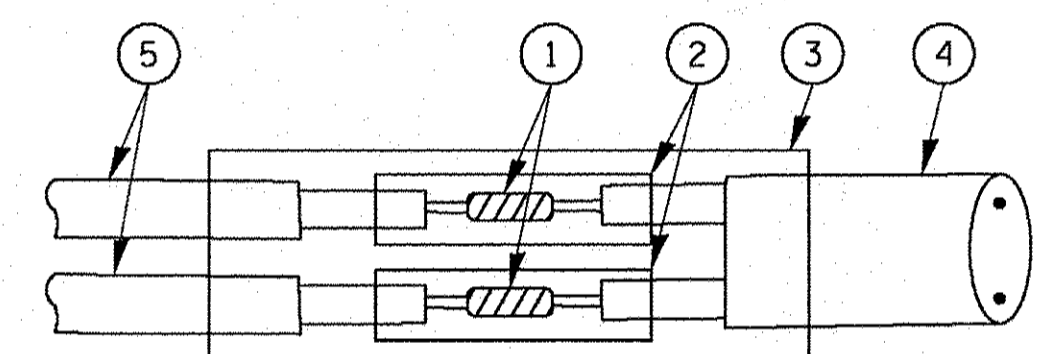


**DETECTOR LOOP WIRING SCHEMATIC**

- 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.

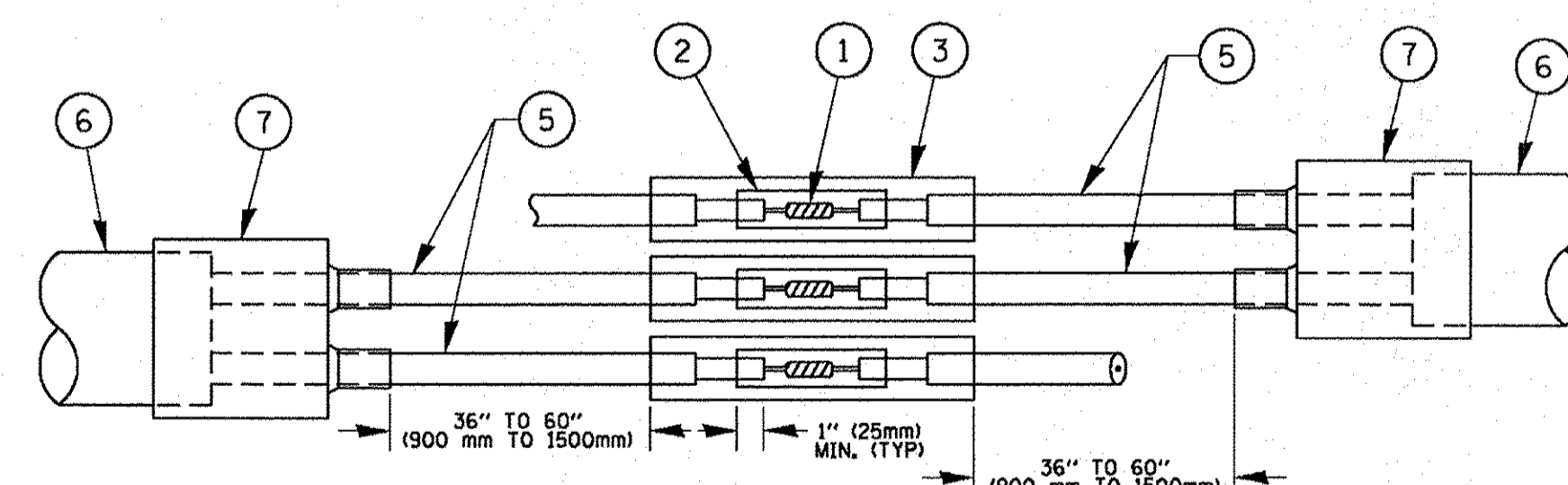


DETAIL "A"  
LOOP-TO-LOOP SPLICE

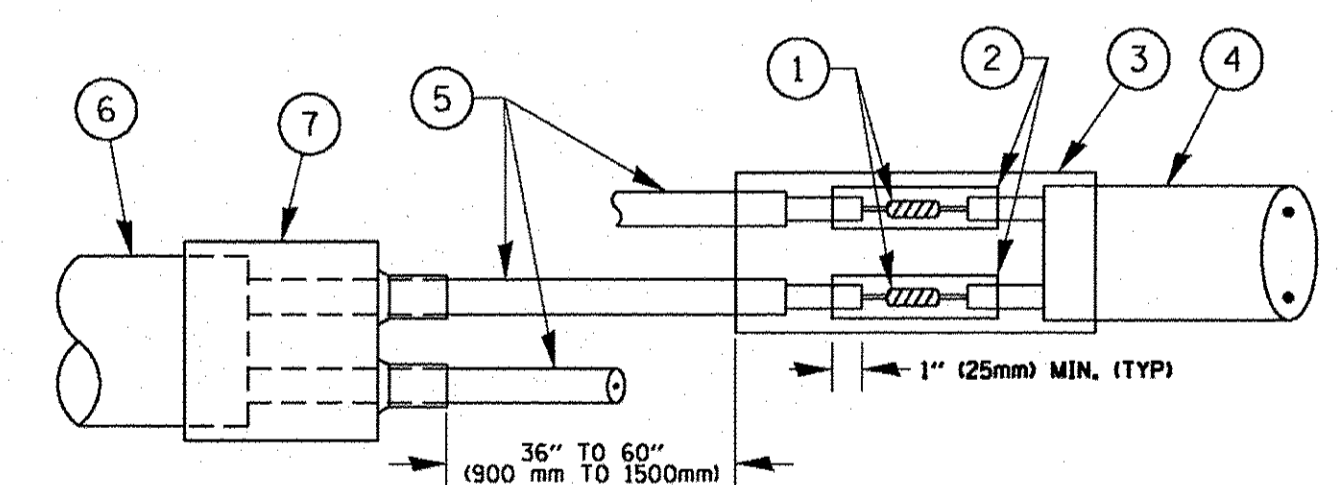


DETAIL "B"  
LOOP-TO-CONTROLLER SPLICE

**TYPE I LOOP**



DETAIL "A"  
LOOP-TO-LOOP SPLICE



DETAIL "B"  
LOOP-TO-CONTROLLER SPLICE

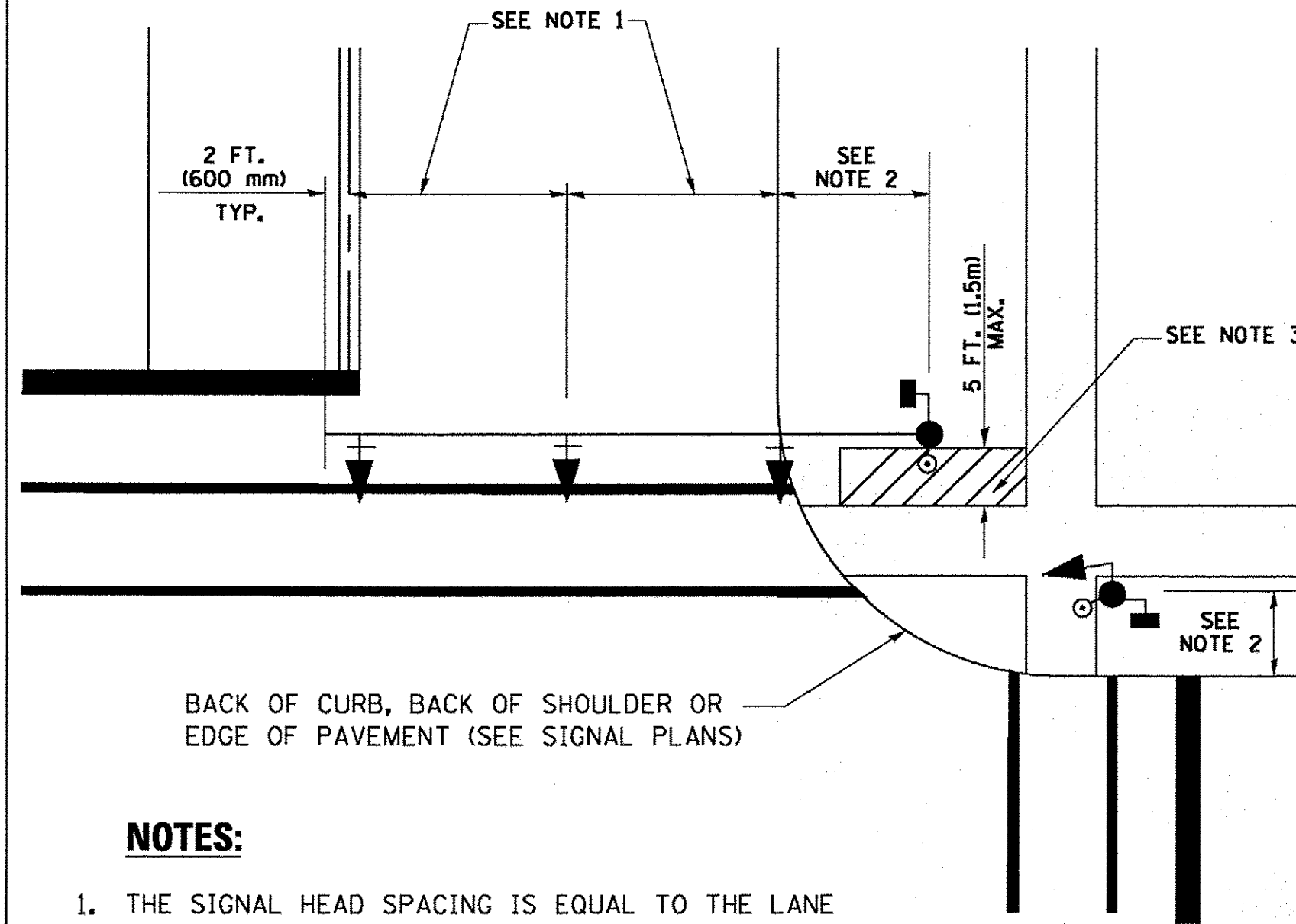
**PREFORMED LOOP**

**LOOP DETECTOR SPLICE**

- 1 WESTERN UNION SPLICE SOLDERED WITH ROSIN CORE FLUX. ALL EXPOSED SURFACES OF THE SOLDER SHALL BE SMOOTH. THE WESTERN UNION SPLICES SHALL BE STAGGERED.
- 2 WCSMW 30/100 HEAT SHRINK TUBE, MINIMUM LENGTH 3" (75 mm), UNDERWATER GRADE.
- 3 WCS 200/750 HEAT SHRINK TUBE, MINIMUM LENGTH 6" (150 mm), UNDERWATER GRADE.
- 4 NO. 14 2/C TWISTED, SHIELDED CABLE.
- 5 LOOP CONDUCTOR WITH FLEXIBLE PLASTIC TUBE.
- 6 PREFORMED LOOP
- 7 XL POLYOLEFIN 2 CONDUCTOR BREAKOUT SEALS. TYCO CBR-2 OR APPROVED EQUAL

FILE NAME =	USER NAME = foatemj	DESIGNED - DAD	REVISED - DAG 1-1-14	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS</b>			F.A.U. RTE. 2592, 1522 & 2546	SECTION 13-00158-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 73
ct:\pw_work\pwsidat\foatemj\d0108315\ts05.dgn	PLOT SCALE = 50.0000' / 1"	DRAWN - BCK	REVISED -		SCALE: NONE	SHEET NO. 2 OF 7 SHEETS	STA.	TO STA.	<b>TS-05</b> CONTRACT NO.			
PLOT DATE = 1/13/2014	DATE - 10-28-09	CHECKED - DAD	REVISED -		FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT							
		DATE - 10-28-09	REVISED -									

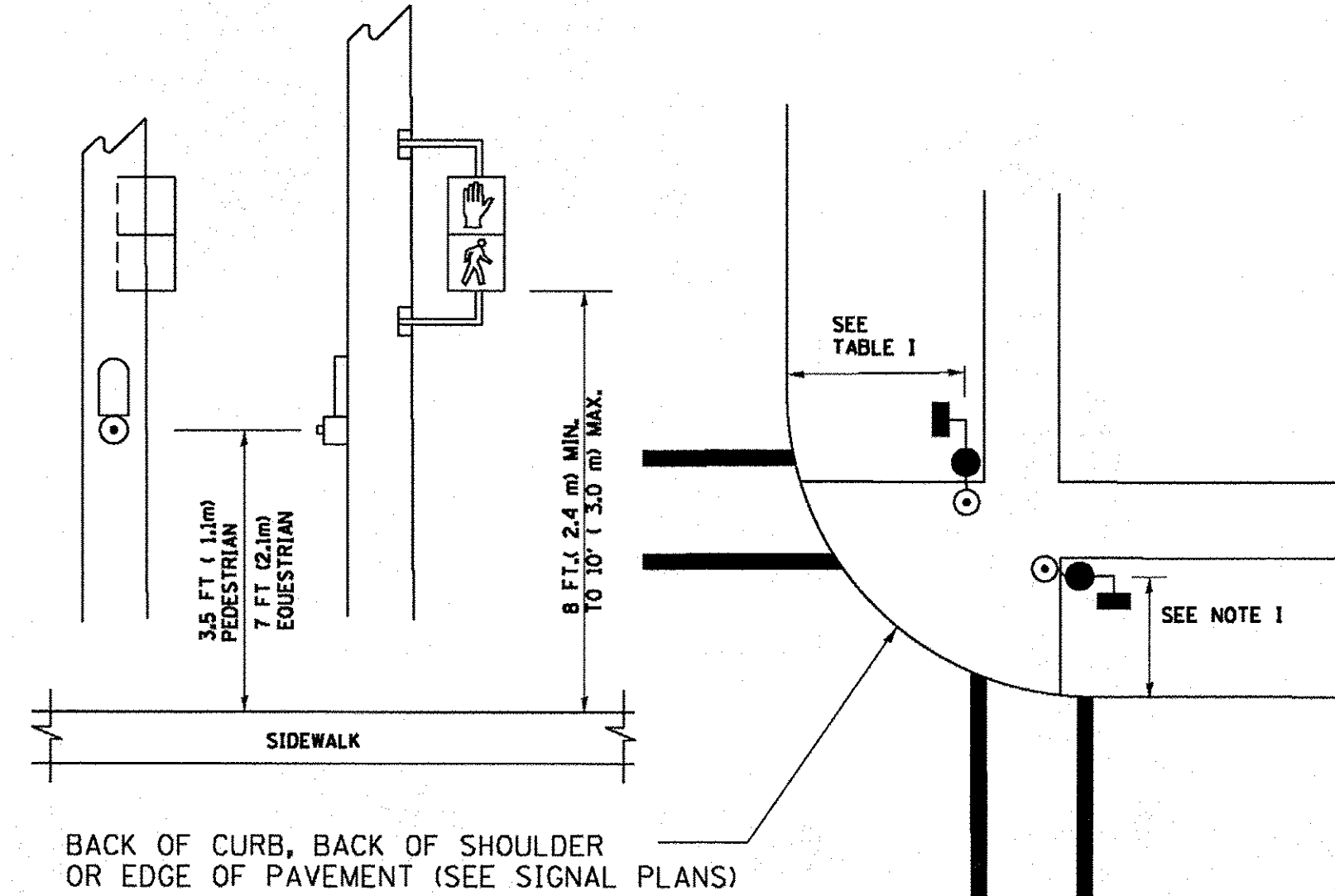
**TRAFFIC SIGNAL MAST ARM AND SIGNAL POST  
MAST ARM MOUNTED SIGNALS IN EXISTING, PROPOSED OR  
FUTURE SIDEWALK/BICYCLE PATH AREA. INTERSECTION SHOWN  
WITH PEDESTRIAN SIGNALS AND PEDESTRIAN PUSHBUTTON DETECTORS.**



**NOTES:**

1. THE SIGNAL HEAD SPACING IS EQUAL TO THE LANE WIDTH OR AS SHOWN ON THE TRAFFIC SIGNAL PLAN.
2. REFER TO THE TRAFFIC SIGNAL EQUIPMENT OFFSET TABLE.
3. PROVIDE A LEVEL ALL-WEATHER SURFACE (CONCRETE SIDEWALK, ASPHALT BICYCLE PATH SURFACE OR MATCHING MATERIAL TO THE ADJACENT SURFACE) UP TO THE MAST ARM SHAFT OR THE SIGNAL POST.
4. THE FACE OF THE PEDESTRIAN PUSHBUTTON SHALL BE PARALLEL TO THE CROSSWALK TO BE USED.
5. THE LOCATIONS AND INSTALLATION OF PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN PUSHBUTTONS SHALL MEET THE REQUIREMENTS OF THE MUTCD AND INFORMATION FOUND IN THE "AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES."

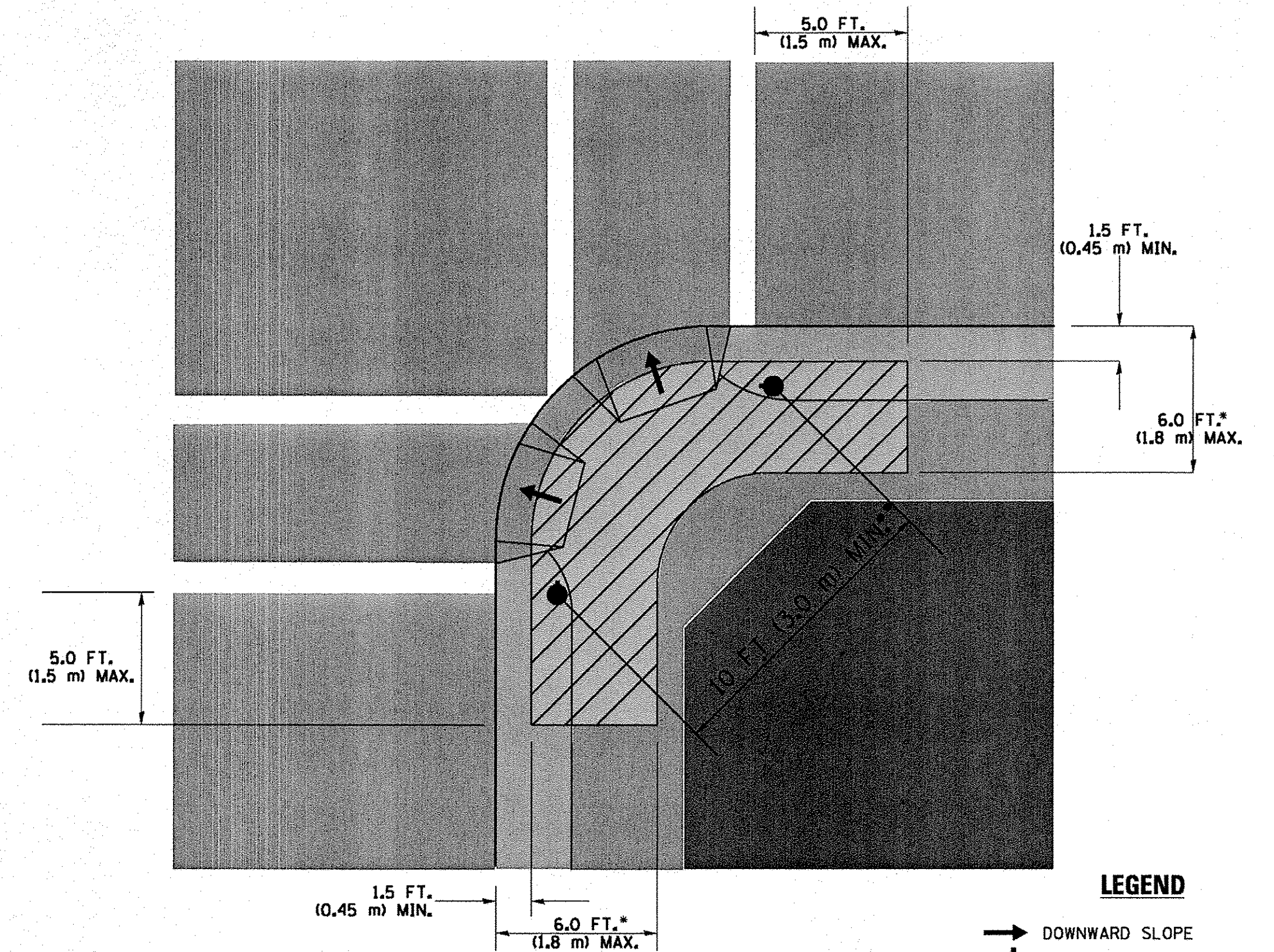
**PEDESTRIAN SIGNAL POST  
AND  
PEDESTRIAN PUSH BUTTON POST**



**NOTES:**

1. REFER TO THE TRAFFIC SIGNAL EQUIPMENT OFFSET TABLE.
2. PROVIDE A LEVEL ALL-WEATHER SURFACE (CONCRETE SIDEWALK, ASPHALT BICYCLE PATH SURFACE OR MATCHING MATERIAL TO THE ADJACENT SURFACE) UP TO THE PEDESTRIAN SIGNAL POST OR THE PEDESTRIAN PUSH BUTTON POST.
3. THE FACE OF THE PEDESTRIAN PUSHBUTTON SHALL BE PARALLEL TO THE CROSSWALK TO BE USED.
4. THE LOCATIONS AND INSTALLATION OF PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN PUSHBUTTONS SHALL MEET THE REQUIREMENTS OF THE MUTCD AND INFORMATION FOUND IN THE "AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES."

**RECOMMENDED PUSHBUTTON LOCATIONS**



**LEGEND**

- DOWNWARD SLOPE
- PEDESTRIAN PUSHBUTTON
- ▨ RECOMMENDED PUSHBUTTON LOCATIONS

- WHERE THERE ARE CONSTRAINTS THAT MAKE IT IMPRACTICAL TO PLACE THE PEDESTRIAN PUSHBUTTON BETWEEN 1.5 FT (0.45 m) AND 6 FT (1.8 m) FROM THE EDGE OF THE CURB, SHOULDER, OR PAVEMENT, IT SHOULD NOT BE FURTHER THAN 10 FT (3 m) FROM THE EDGE OF CURB, SHOULDER, OR PAVEMENT.
- WHERE THERE ARE CONSTRAINTS ON A PARTICULAR CORNER THAT MAKE IT IMPRACTICAL TO PROVIDE THE 10 FT (3 m) SEPERATION BETWEEN THE TWO PEDESTRIAN PUSHBUTTONS, THE PUSHBUTTONS MAY BE PLACED CLOSER TOGETHER OR ON THE SAME POLE.

**NOTES:**

1. PEDESTRIAN SIGNAL HEADS SHALL BE MOUNTED WITH THE BOTTOM OF THE SIGNAL HOUSING INCLUDING BRACKETS NOT LESS THAN 8 FT (2.4 m) OR MORE THAN 10 FT (3 m) ABOVE SIDEWALK LEVEL, AND SHALL BE POSITIONED AND ADJUSTED TO PROVIDE MAXIMUM VISIBILITY AT THE BEGINNING OF THE CONTROLLED CROSSWALK.
2. THE BOTTOM OF THE SIGNAL HOUSING (INCLUDING BRACKETS) OF A VEHICULAR SIGNAL FACE THAT IS NOT LOCATED OVER A HIGHWAY SHALL BE AT LEAST 8 FT (2.4 m) BUT NOT MORE THAN 19 FT (5.8 m) ABOVE THE SIDEWALK OR, IF THERE IS NO SIDEWALK, ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY.
3. THE BOTTOM OF THE SIGNAL HOUSING AND ANY RELATED ATTACHMENTS TO A SIGNAL FACE LOCATED OVER ANY PORTION OF A HIGHWAY SHALL BE ACCORDING TO CURRENT STATE STANDARDS 877001, 877002, 877006, 877011 AND 877012 WITH A MINIMUM OF 16 FT (5.0 m) AND A MAXIMUM OF 18 FT. (5.5 m) FROM THE HIGHEST POINT OF PAVEMENT.
4. THE BOTTOM OF THE TEMPORARY SPAN WIRE MOUNTED SIGNAL HOUSING AND ANY RELATED ATTACHMENTS TO A SIGNAL FACE LOCATED OVER ANY PORTION OF A HIGHWAY SHALL BE ACCORDING TO CURRENT STATE STANDARD 880001 WITH A MINIMUM OF 17 FT (5.18 m) FROM THE HIGHEST POINT OF PAVEMENT.
5. THE TOP OF THE SIGNAL HOUSING OF A SIGNAL FACE LOCATED OVER ANY PORTION OF A HIGHWAY SHALL NOT BE MORE THAN 25.6 FT (7.8 m) ABOVE THE PAVEMENT.

**TRAFFIC SIGNAL EQUIPMENT OFFSET**

TRAFFIC SIGNAL EQUIPMENT	COMBINATION CONCRETE CURB AND GUTTER (MINIMUM DISTANCE FROM BACK OF CURB TO CENTERLINE OF FOUNDATION)	SHOULDER/NON-CURBED AREA (MINIMUM DISTANCE FROM EDGE OF PAVEMENT TO CENTERLINE OF FOUNDATION)
TRAFFIC SIGNAL MAST ARM POLE	6 FT (1.8m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
TRAFFIC SIGNAL POST	4 FT (1.2m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
PEDESTRIAN SIGNAL POST	4 FT (1.2m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
PEDESTRIAN PUSHBUTTON POST	4 FT (1.2m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
TEMPORARY WOOD POLE	6 FT (1.8m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
CONTROLLER CABINET	6 FT (1.8m) MINIMUM DISTANCE SEE NOTE 2	SHOULDER WIDTH + 6 FT (1.8m), MINIMUM 16 FT (4.9m) SEE NOTE 3.
SERVICE INSTALLATION, GROUND MOUNT	6 FT (1.8m) MINIMUM DISTANCE SEE NOTE 2	SHOULDER WIDTH + 6 FT (1.8m), MINIMUM 16 FT (4.9m) SEE NOTE 3.

**NOTES:**

1. CONTACT THE "AREA TRAFFIC SIGNAL MAINTENANCE AND OPERATIONS ENGINEER" FOR ASSISTANCE IN LOCATING THE TRAFFIC SIGNAL EQUIPMENT WHEN THERE ARE CONFLICTS WITH DITCHES OR THE MINIMUM OFFSET DISTANCES CANNOT BE MET.
2. MINIMUM DISTANCE FROM THE BACK OF CURB TO THE ROADWAY SIDE OF THE FOUNDATION.
3. MINIMUM DISTANCE FROM THE EDGE OF PAVEMENT TO THE ROADWAY SIDE OF THE FOUNDATION.
4. ANY CHANGES TO THE OFFSETS OF THE FOUNDATIONS, FROM THE MINIMUM DISTANCES LISTED IN THE "TRAFFIC SIGNAL EQUIPMENT OFFSET" CHART AND THE TRAFFIC SIGNAL INSTALLATION PLAN, COULD EFFECT THE PLACEMENT OF THE SIGNAL HEADS, PEDESTRIAN SIGNAL HEADS AND THE PEDESTRIAN PUSHBUTTONS. THE SIGNAL HEAD PLACEMENT ON THE MAST ARMS SHALL REMAIN AS PER THE TRAFFIC SIGNAL INSTALLATION PLAN AND THE "TRAFFIC SIGNAL MAST ARM AND SIGNAL POST" DETAIL ABOVE. THE PROPOSED MAST ARM LENGTHS MAY NEED TO BE REVISED TO MEET THE ABOVE REQUIREMENTS. THE PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN PUSHBUTTONS MUST MEET THE REQUIREMENTS UNDER THE DETAILS ON THIS SHEET.

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**DISTRICT ONE  
STANDARD TRAFFIC SIGNAL DESIGN DETAILS**

F.A.J. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2552, 1522 & 2546	13-00158-00-TL	DuPAGE & WILL	80	74
<b>TS-05</b>		<b>CONTRACT NO.</b>		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

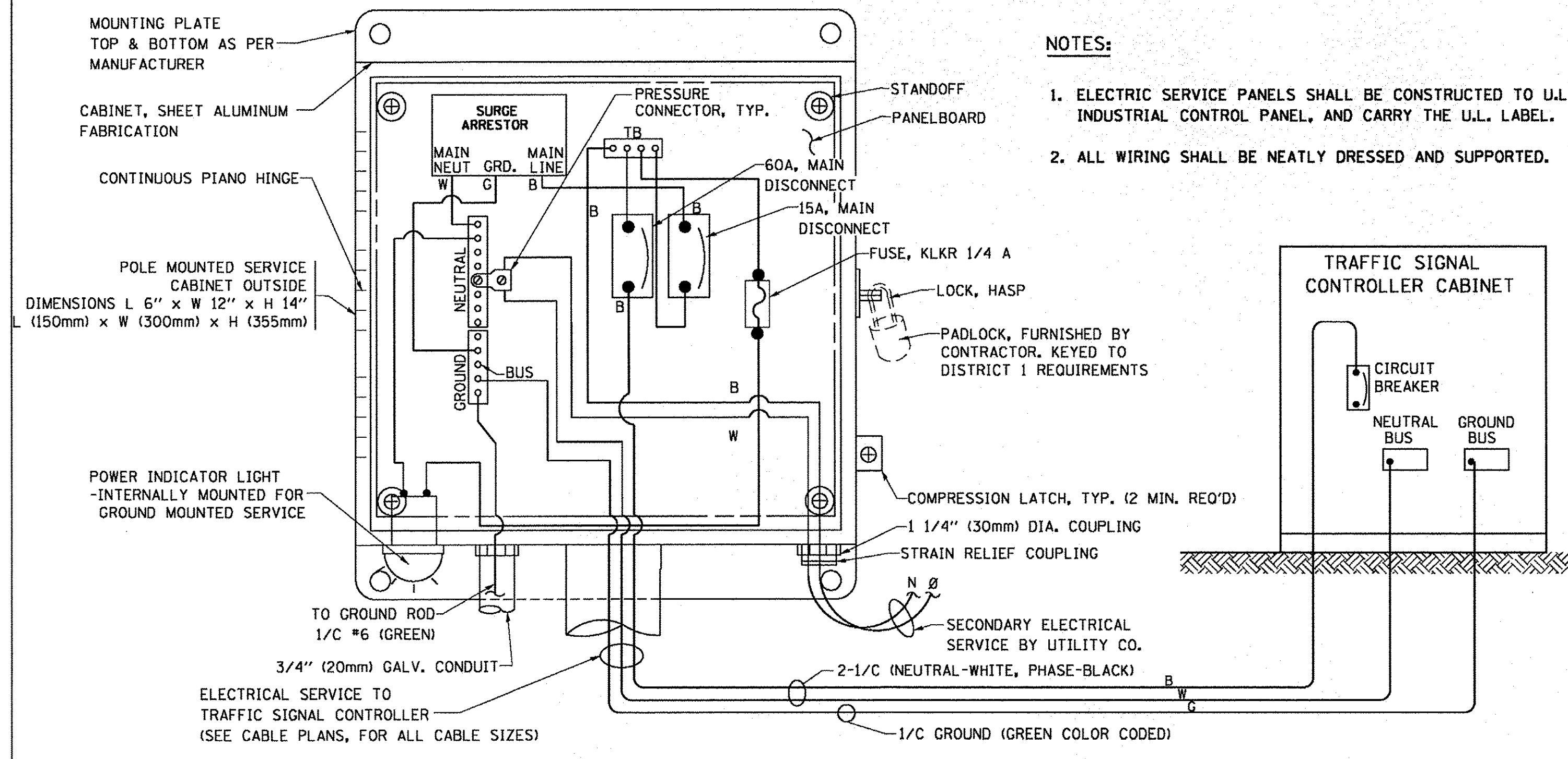
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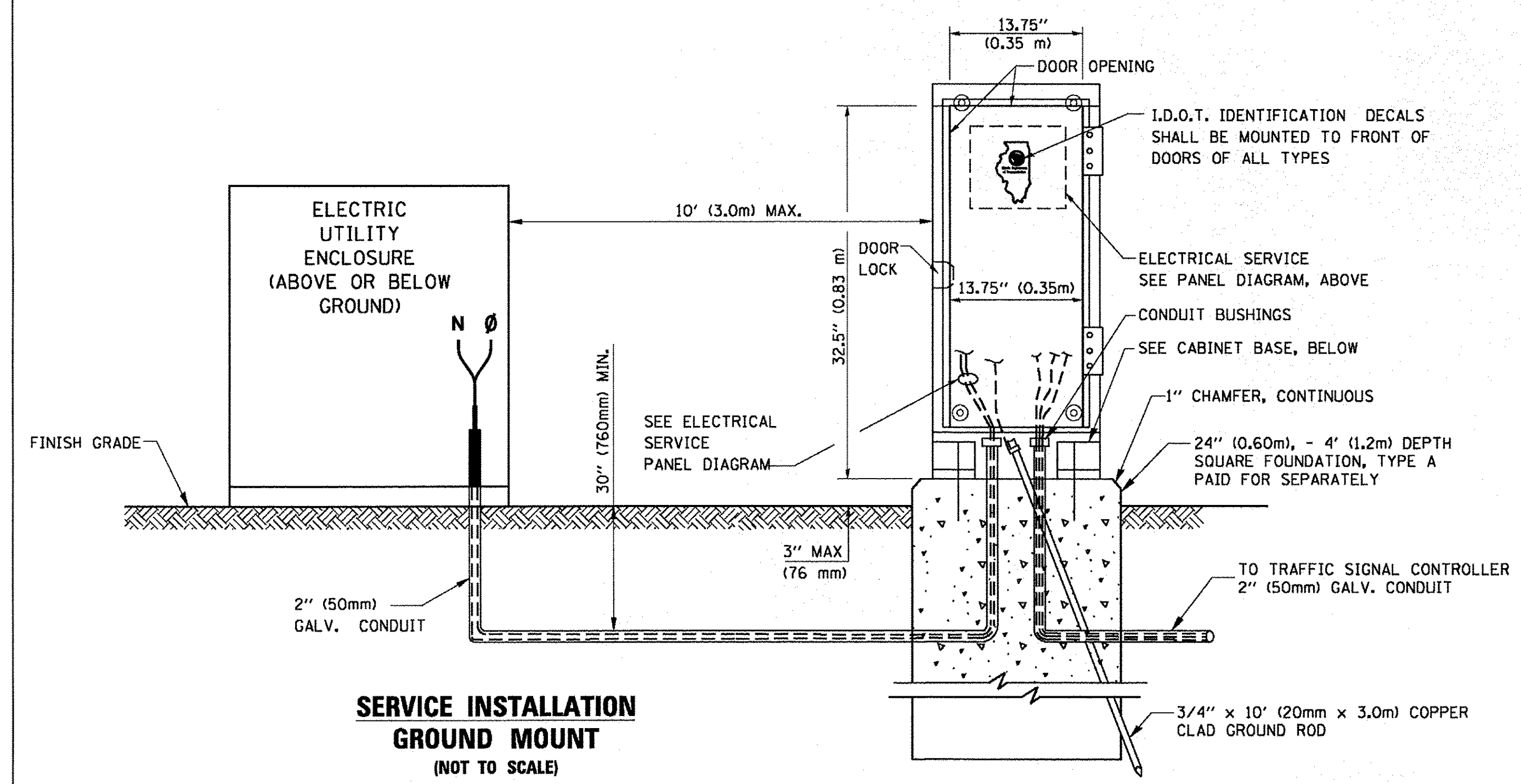
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DRAWN - BCK  
CHECKED - DAD  
DATE - 10-28-09

REVISED - DAG 1-1-14  
REVISED -  
REVISED -  
REVISED -

SCALE: NONE SHEET NO. 3 OF 7 SHEETS STA. TO STA.

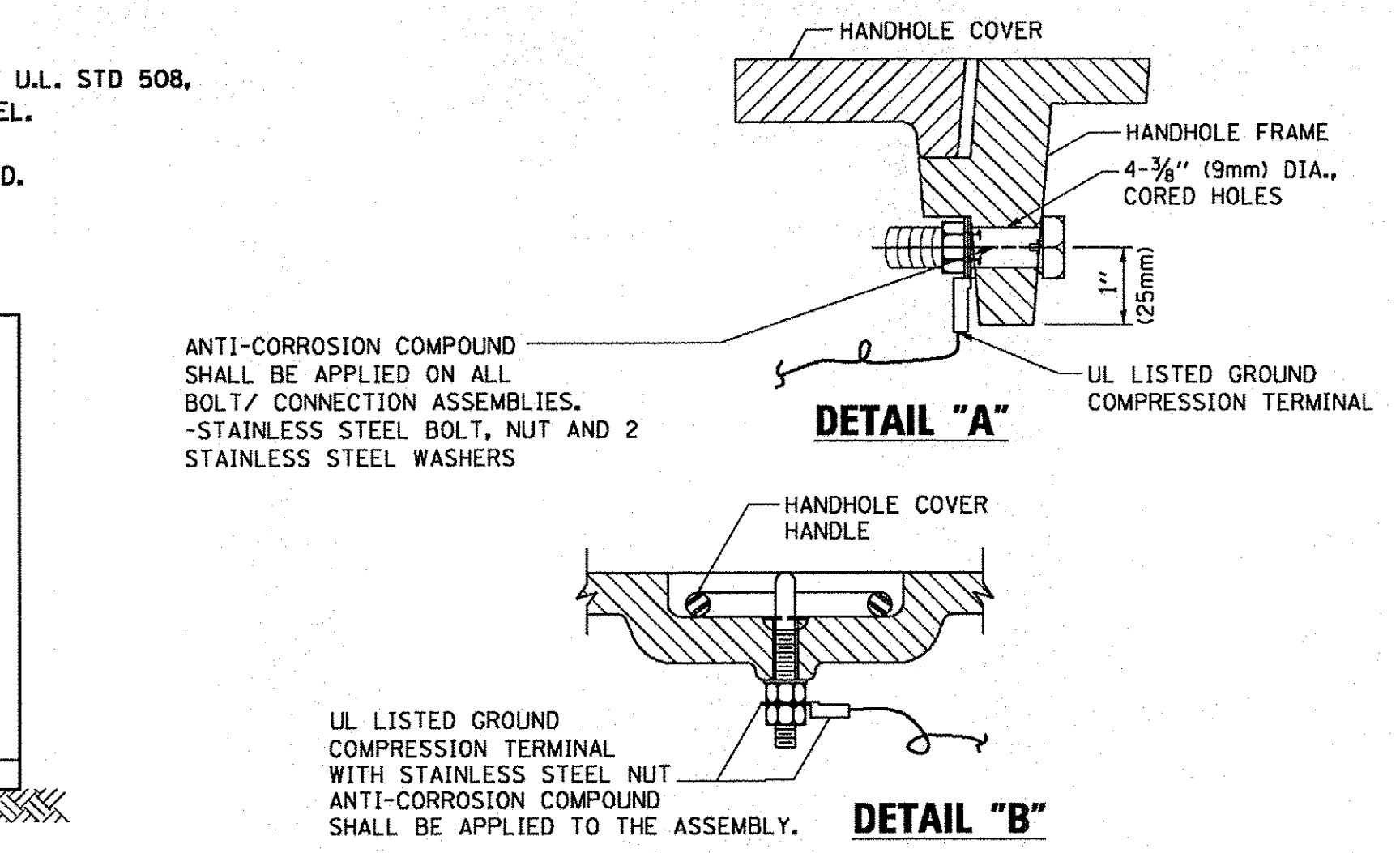
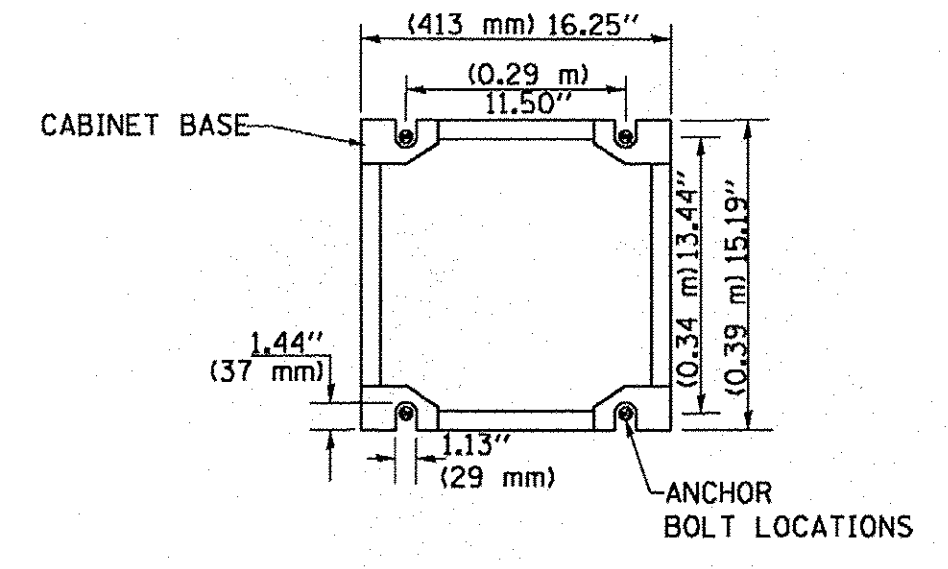


**ELECTRICAL SERVICE - PANEL DIAGRAM (TYPICAL FOR POLE AND GROUND MOUNTED SERVICE) SERVICE INSTALLATION POLE MOUNT (SHOWN) (NOT TO SCALE)**



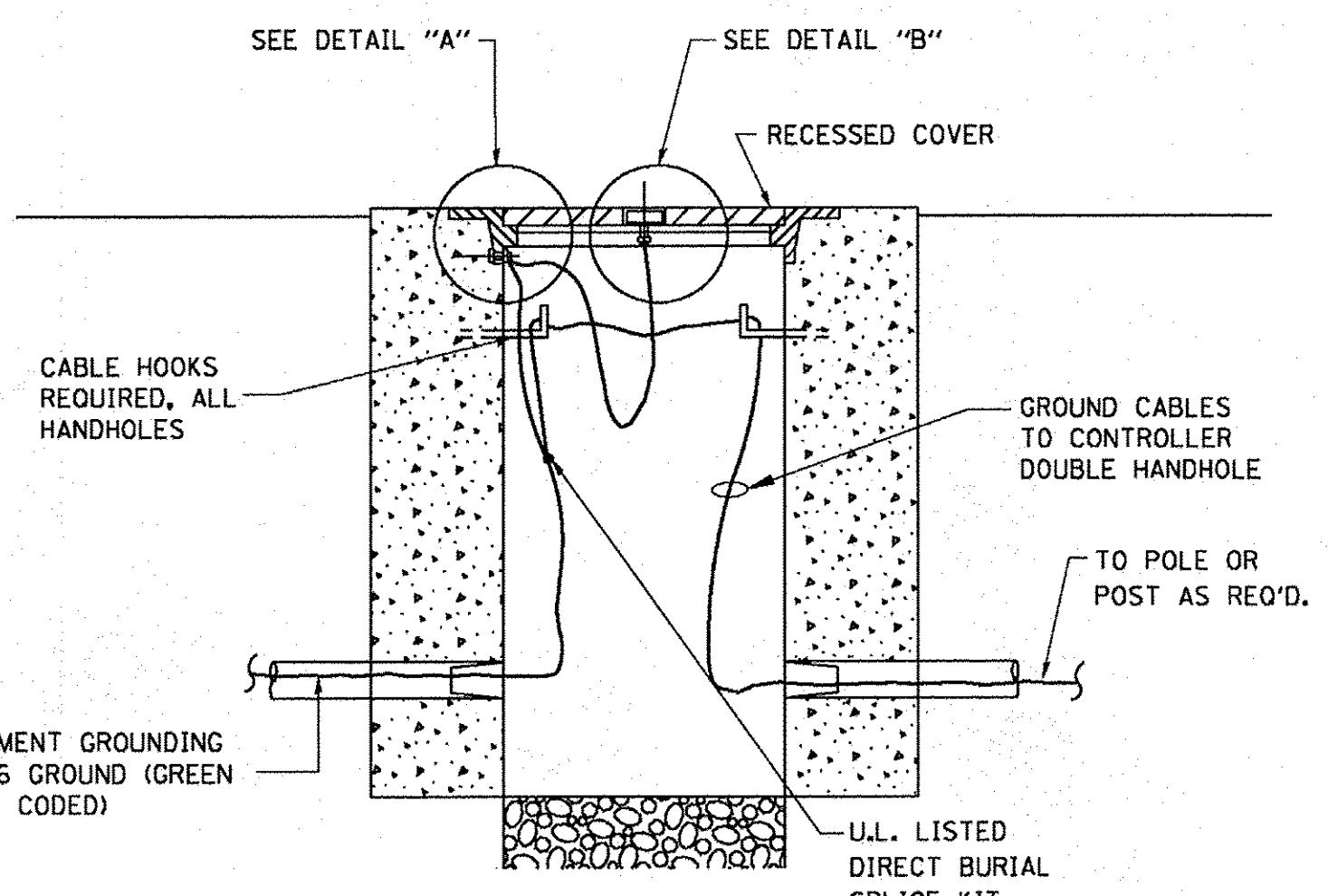
**SERVICE INSTALLATION GROUND MOUNT (NOT TO SCALE)**

**CABINET - BASE BOLT PATTERN (NOT TO SCALE)**

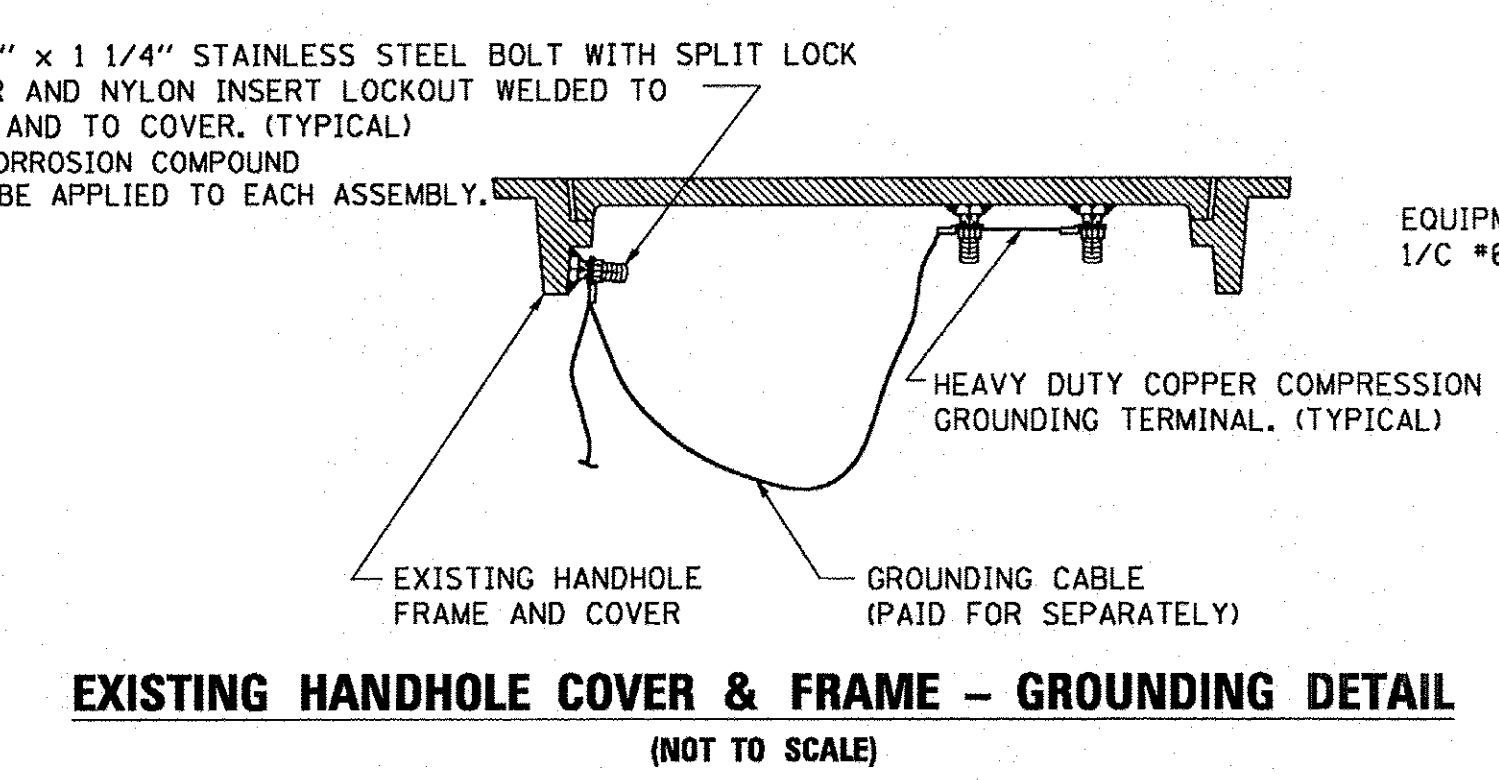


**NOTES: GROUNDING SYSTEM**

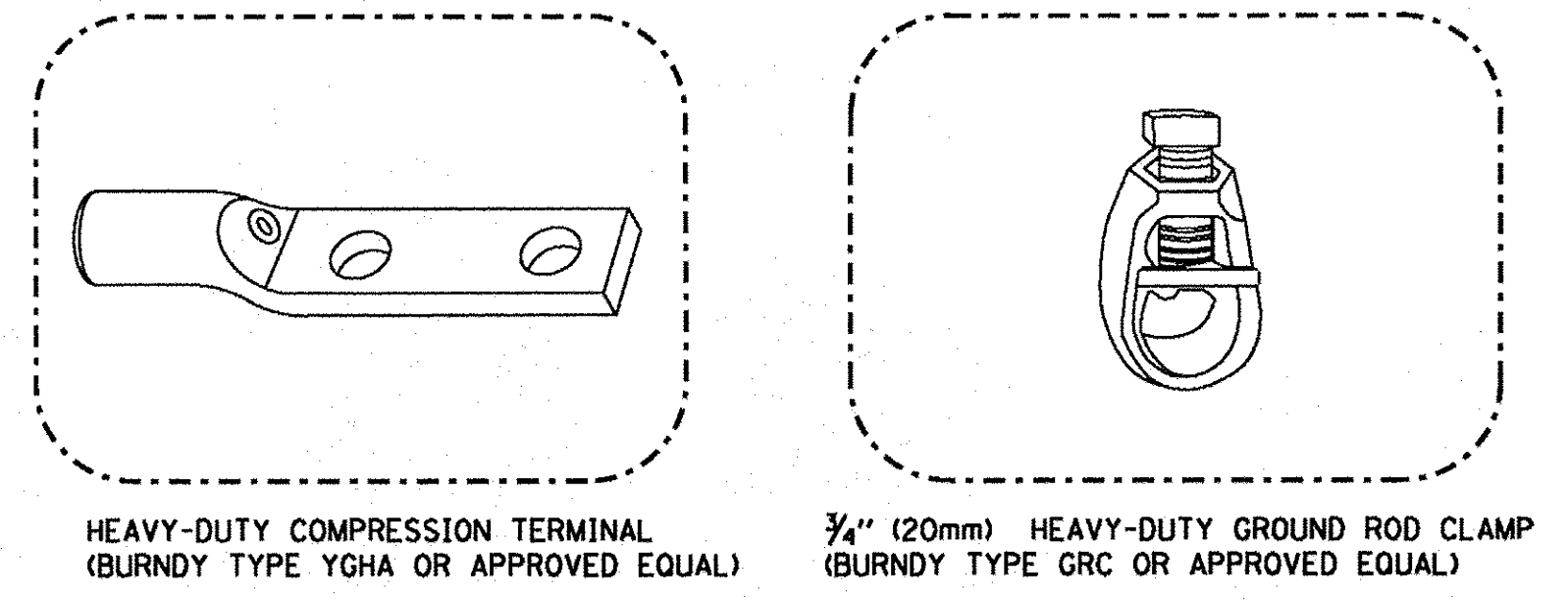
1. THE GROUNDING SYSTEM SHALL CONSIST OF AN INSULATED CONDUCTOR TYPE XLP, NO. 6 A.W.G., STRANDED COPPER TO BE INSTALLED IN RACEWAYS. THE GROUNDING CABLE SHALL BE INSTALLED IN A CONTINUOUS MANNER AS SHOWN ON THE CABLE PLAN PROVIDED. ALL GROUNDING CONDUCTORS SHALL BE BONDED TO METAL ENCLOSURE (HANDHOLE, POST, MAST ARM, CONTROLLER, ETC.). GROUND ROD SHALL BE 3/4" DIA. x 10'-0" (20mm x 3.0m) LONG, COPPER CLAD. ONE GROUND ROD SHALL BE INSTALLED AT ALL POST FOUNDATIONS, POLE FOUNDATIONS, CONTROLLER CABINET FOUNDATION AND ELECTRICAL SERVICE INSTALLATION AS INDICATED ON THE CABLE PLAN. IF THERE ARE ANY SPECIAL CONDITIONS SUCH AS SUB-SURFACE CONDITIONS OR INSTALLATION PROBLEMS, THE RESIDENT ENGINEER SHALL BE NOTIFIED OR CONTACT THE BUREAU OF TRAFFIC, ILLINOIS DEPARTMENT OF TRANSPORTATION DISTRICT ONE AT (847) 705-4139.
2. THE NEUTRAL CONDUCTOR AND THE GROUND CONDUCTOR SHALL BE CONNECTED IN THE SERVICE INSTALLATION. AT NO OTHER POINT IN THE TRAFFIC SIGNAL SYSTEM SHALL THE NEUTRAL AND GROUND CONDUCTORS BE CONNECTED.
3. ALL EQUIPMENT GROUNDING CONDUCTORS SHALL TERMINATE AT THE GROUND BUS IN THE CONTROLLER CABINET.
4. THE CONTRACTOR SHALL PROVIDE A GROUND CABLE WITH CONNECTORS BETWEEN THE HANDHOLE COVER AND HANDHOLE FRAME.



**HANDHOLE COVER & FRAME - GROUNDING DETAIL (NOT TO SCALE)**

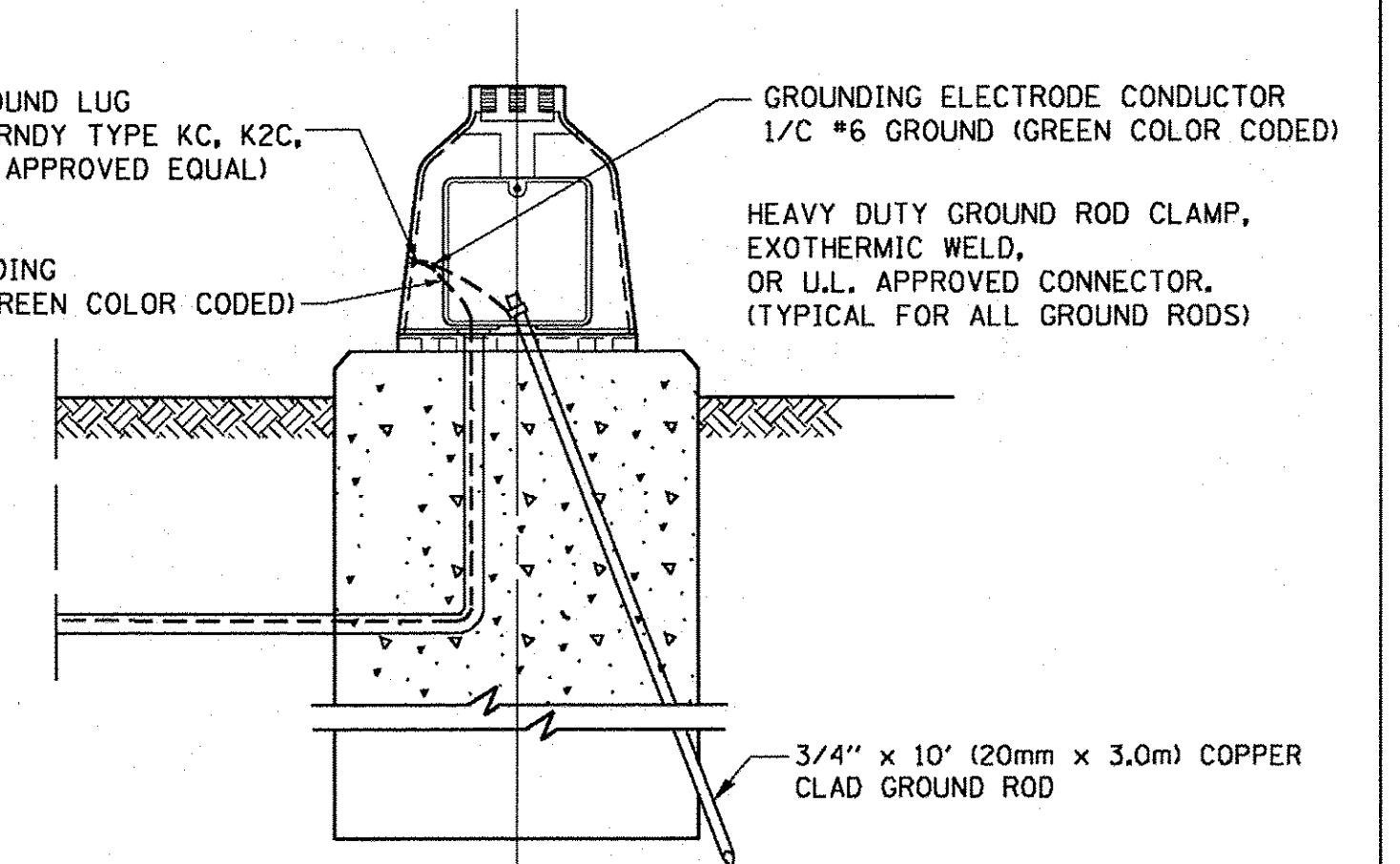


**EXISTING HANDHOLE COVER & FRAME - GROUNDING DETAIL (NOT TO SCALE)**

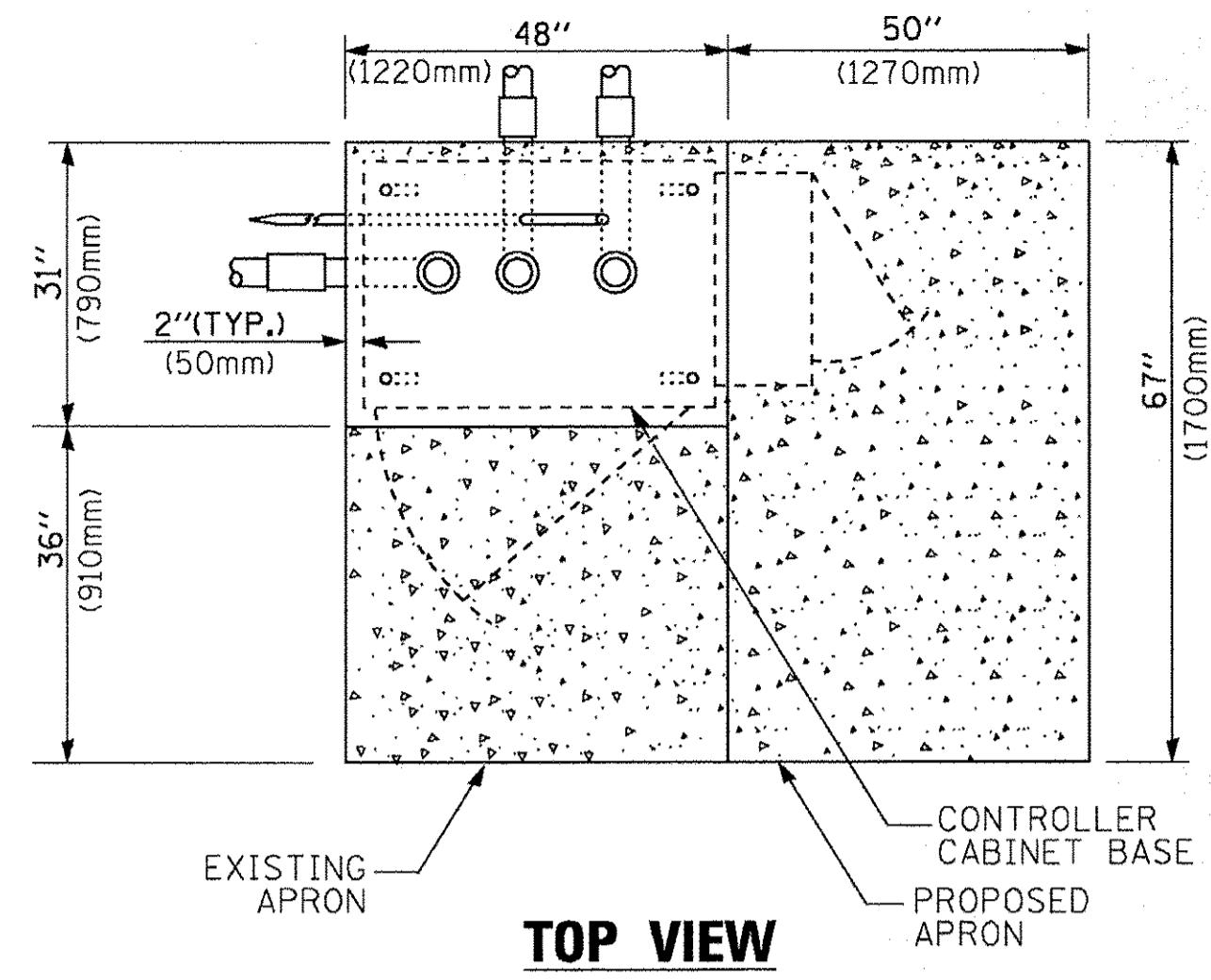


**NOTES:**

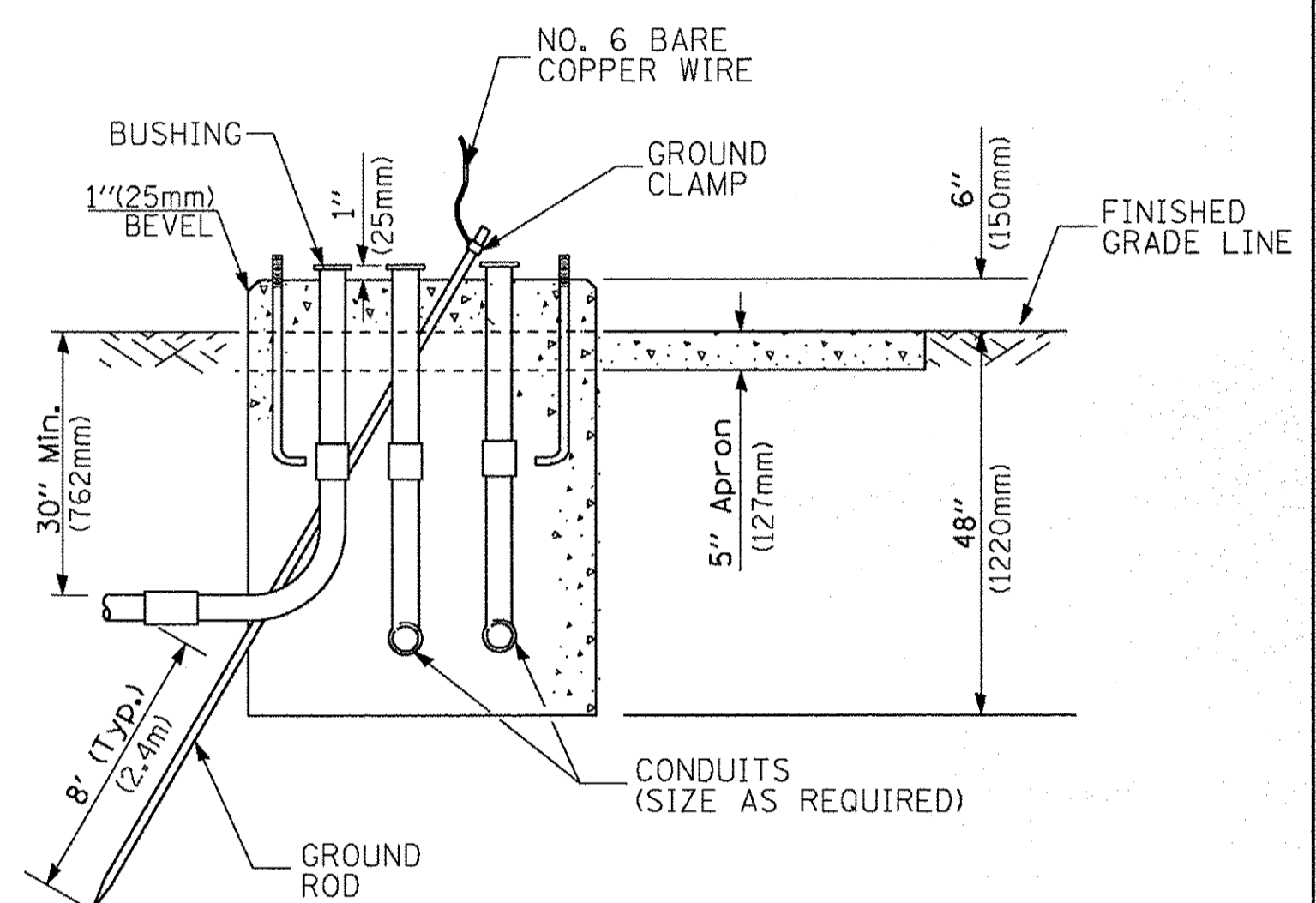
- ALL CLAMPS SHALL BE BRONZE OR COPPER, UL APPROVED.
- GROUND CABLE SHALL BE LOOPED OVER HOOKS IN THE HANDHOLES 6.5' (2.0m) SLACK SHALL BE PROVIDED IN SINGLE HANDHOLES 13' (4.0m) OF SLACK SHALL BE PROVIDED IN DOUBLE HANDHOLES. 5' (1.4m) OF SLACK SHALL BE PROVIDED BETWEEN FRAME AND COVER.



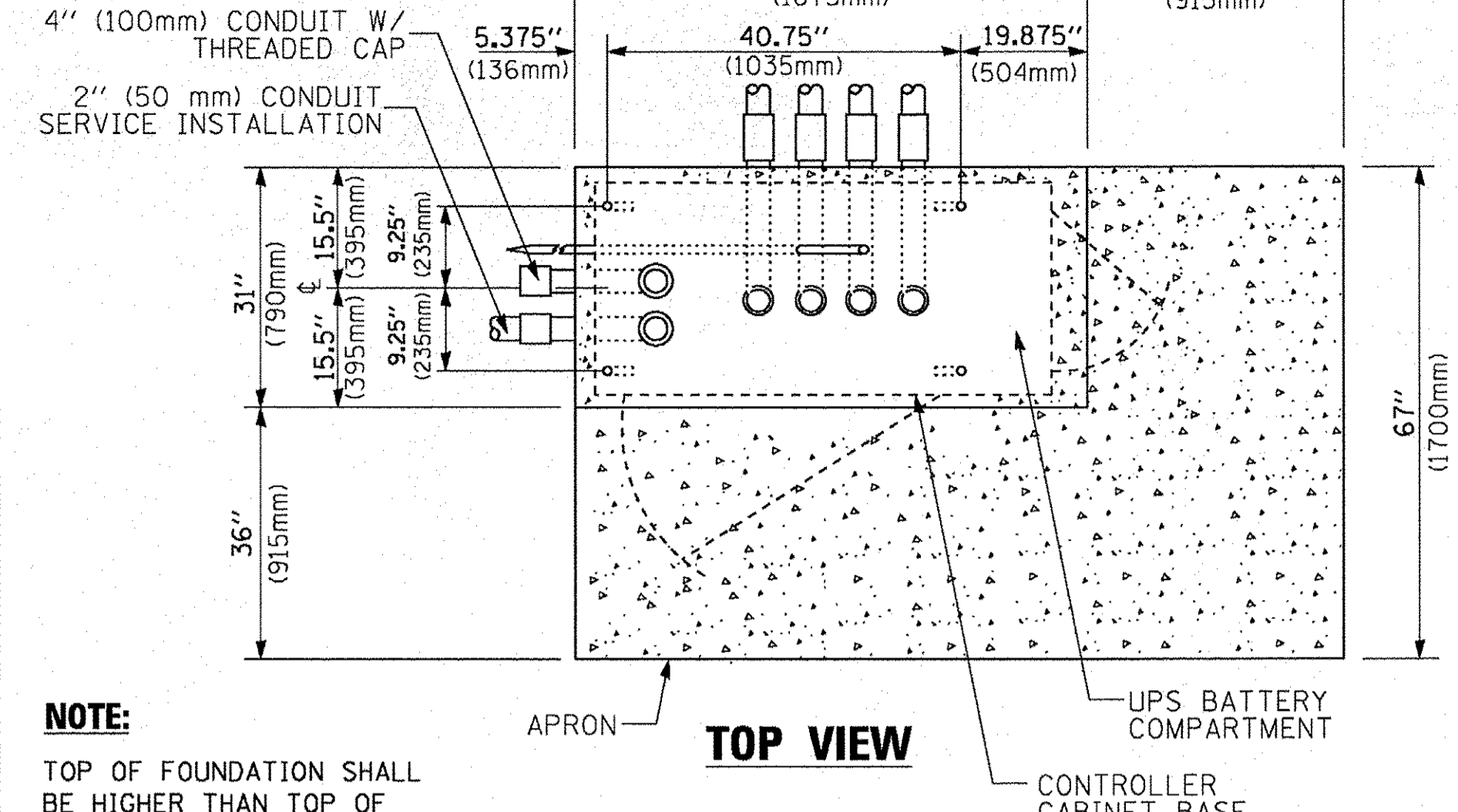
**MAST ARM POLE / POST-GROUNDING DETAIL (NOT TO SCALE)**



**TOP VIEW**

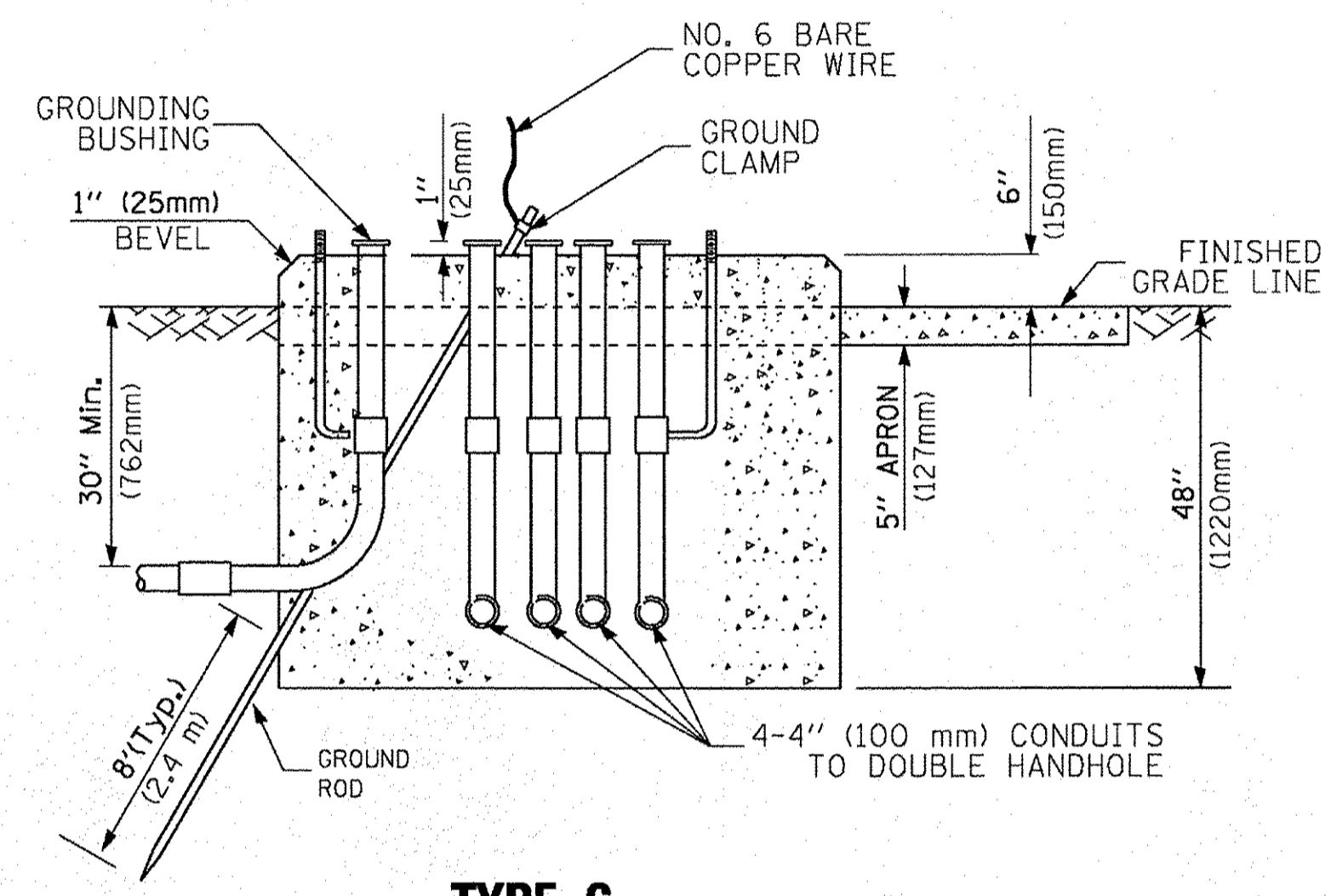


**TYPE D  
FOR GROUND MOUNTED  
CONTROLLER CABINET  
AND UPS BATTERY CABINET**

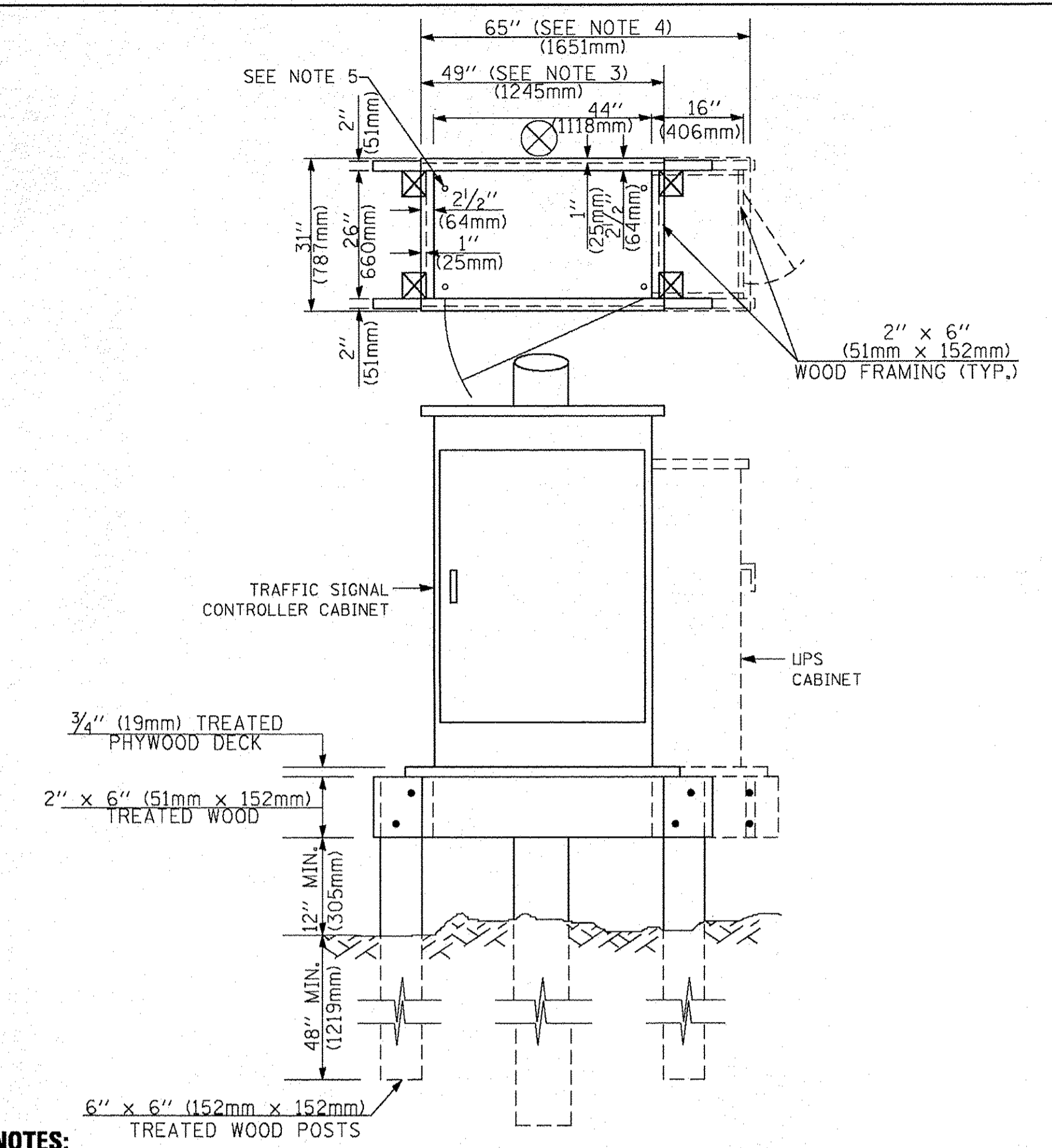


**TOP VIEW**

**NOTE:**  
TOP OF FOUNDATION SHALL BE HIGHER THAN TOP OF DOUBLE HANDHOLE



**TYPE C  
FOR GROUND MOUNTED  
SUPER P (TYPE IV) AND SUPER R (TYPE V)  
CONTROLLER CABINETS**



**NOTES:**

1. BASED ON CONTROLLER CABINET TYPE IV WITH BASE DIMENSIONS OF 26" x 44" (660mm x 1118mm). ADJUST PLATFORM SIZE TO FIT CABINET BASE DIMENSIONS BEING SUPPLIED.
2. BASED ON UNINTERRUPTIBLE POWER SUPPLY CABINET WITH BASE DIMENSIONS OF 16" x 25" (406mm x 635mm). ADJUST PLATFORM SIZE TO FIT CABINET BASE DIMENSIONS BEING SUPPLIED.
3. PLATFORM SIZE FOR CONTROLLER CABINET TYPE IV.
4. PLATFORM SIZE FOR CONTROLLER CABINET TYPE IV AND UNINTERRUPTIBLE POWER SUPPLY CABINET.
5. DRILLED HOLES THROUGH THE PLATFORM BASE TO MATCH THE CONTROLLER CABINET BOLT TEMPLATE. FASTEN THE CONTROLLER CABINET TO THE PLATFORM WITH CARRIAGE BOLTS, WASHERS AND NUTS.
6. FASTEN ALL SUPPORT WOOD FRAMING TO THE WOOD POSTS WITH 2 LAG SCREWS FOR EACH CONNECTION.

**TEMPORARY SIGNAL CONTROLLER  
WOOD SUPPORT PLATFORM**

CABLE SLACK LENGTH	FEET	METER
HANDHOLE	6.5	2.0
DOUBLE HANDHOLE	13.0	4.0
SIGNAL POST	2.0	0.6
MAST ARM	2.0	0.6
CONTROLLER CABINET	1.5	0.5
FIBER OPTIC AT CABINET	13.0	4.0
ELECTRIC SERVICE AT (CABINET OR SERVICE LOCATION)	1.5	0.5
GROUND CABLE (SIGNAL POST, MAST ARM, CABINET)	1.5	0.5
GROUND CABLE (BETWEEN FRAME AND COVER)	5.0	1.6

**CABLE SLACK**

VERTICAL CABLE LENGTH	FEET	METER
MAST ARM POLE (MAST ARM MOUNTED SIGNAL HEAD) (L = MAST ARM LENGTH - DISTANCE TO SIGNAL HEAD FROM END OF ARM)	20.0+L	6.0+L
BRACKET MOUNTED (MAST ARM POLE OR SIGNAL POLE)	13.0	4.0
PEDESTRIAN PUSH BUTTON	6.0	2.0
SERVICE INSTALLATION POLE MOUNT TO SERVICE DROP	13.5	4.1
SERVICE INSTALLATION POLE MOUNT TO GROUND	13.5	4.1
SERVICE INSTALLATION GROUND MOUNT	6.0	2.0
FOUNDATION (SIGNAL POST, MAST ARM POLE, CONTROLLER CABINET, SERVICE-GROUND MOUNT)	3.0	1.0

**VERTICAL CABLE LENGTH**

FOUNDATION	DEPTH
TYPE A - Signal Post	4'-0" (1.2m)
TYPE C - CONTROLLER W/ UPS	4'-0" (1.2m)
TYPE D - CONTROLLER	4'-0" (1.2m)
SERVICE INSTALLATION, GROUND MOUNT, TYPE A - SQUARE	4'-0" (1.2m)

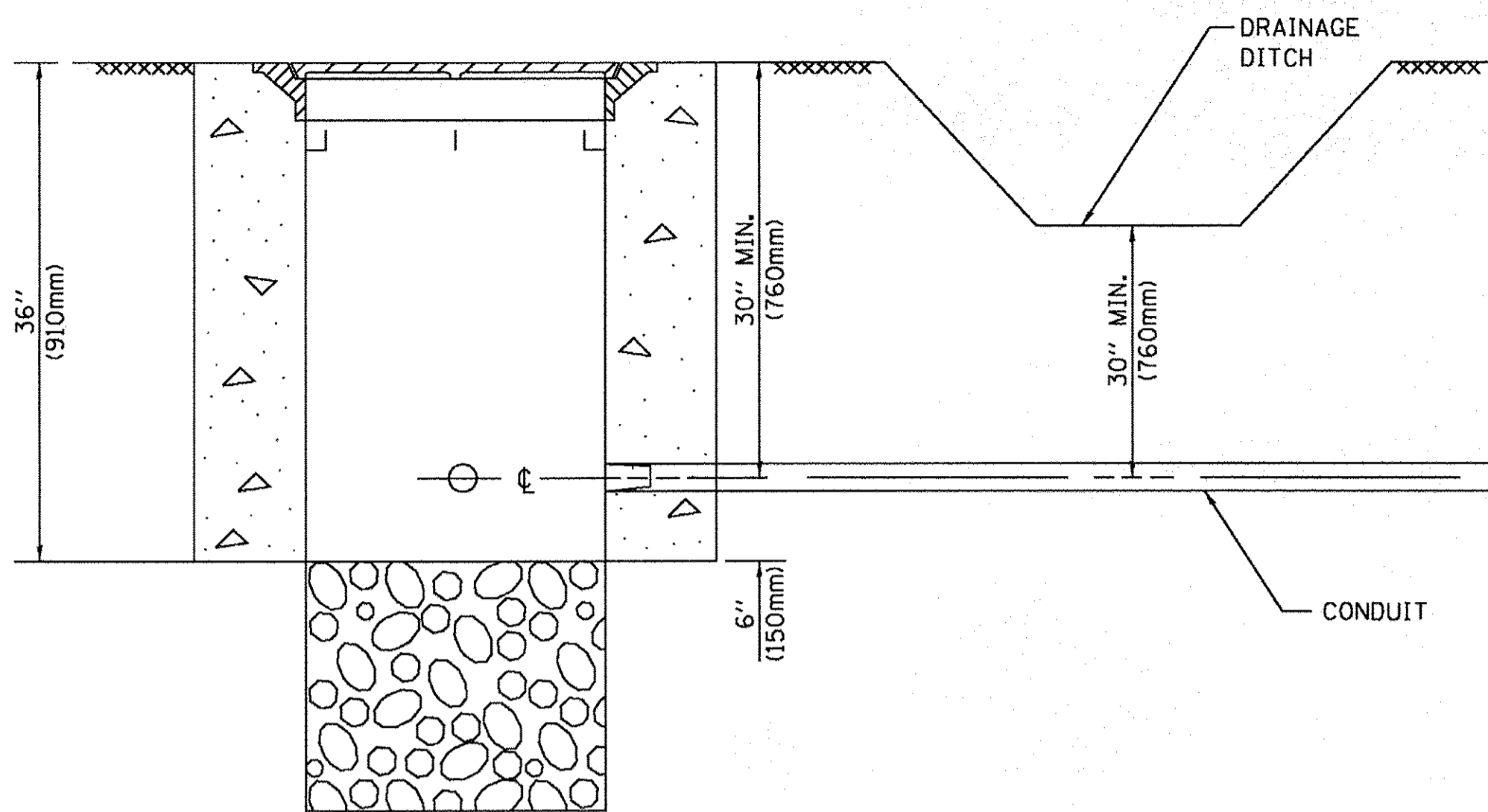
**DEPTH OF FOUNDATION**

Mast Arm Length	① Foundation Depth	Foundation Diameter	Spiral Diameter	Quantity of Rebars	Size of Rebars
Less than 30' (9.1 m)	10'-0" (3.0 m)	30" (750mm)	24" (600mm)	8	6(19)
Greater than or equal to 30' (9.1 m) and less than 40' (12.2 m)	13'-6" (4.1 m)	30" (750mm)	24" (600mm)	8	6(19)
Greater than or equal to 40' (12.2 m) and less than 50' (15.2 m)	11'-0" (3.4 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 50' (15.2 m) and up to 55' (16.8 m)	13'-0" (4.0 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 55' (16.8 m) and up to 65' (19.8 m)	15'-0" (4.6 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 65' (19.8 m) and less than 75' (22.9 m)	21'-0" (6.4 m)	42" (1060mm)	36" (900mm)	16	8(25)
Greater than or equal to 75' (22.9 m)	25'-0" (7.6 m)	42" (1060mm)	36" (900mm)	16	8(25)

**NOTES:**

1. These foundation depths are for sites which have cohesive soils (clayey silt, sandy clay, etc.) along the length of the shaft, with an average unconfined compressive strength (qu) > 1.0 tsf (100 kpa). This strength shall be verified by boring data prior to construction or with testing by the Engineer during foundation drilling. The Bureau of Bridges & Structures should be contacted for a revised design if other conditions are encountered.
2. Combination mast arm assemblies under 55 feet (16.8 m) shall use 36" (900 mm) diameter foundations.
3. Combination mast arm assemblies under 56 feet (16.8 m) through 75 feet (22.9 m) shall use 42" (1060 mm) diameter foundations.
4. For mast arm assemblies with dual arms refer to state standard 878001..

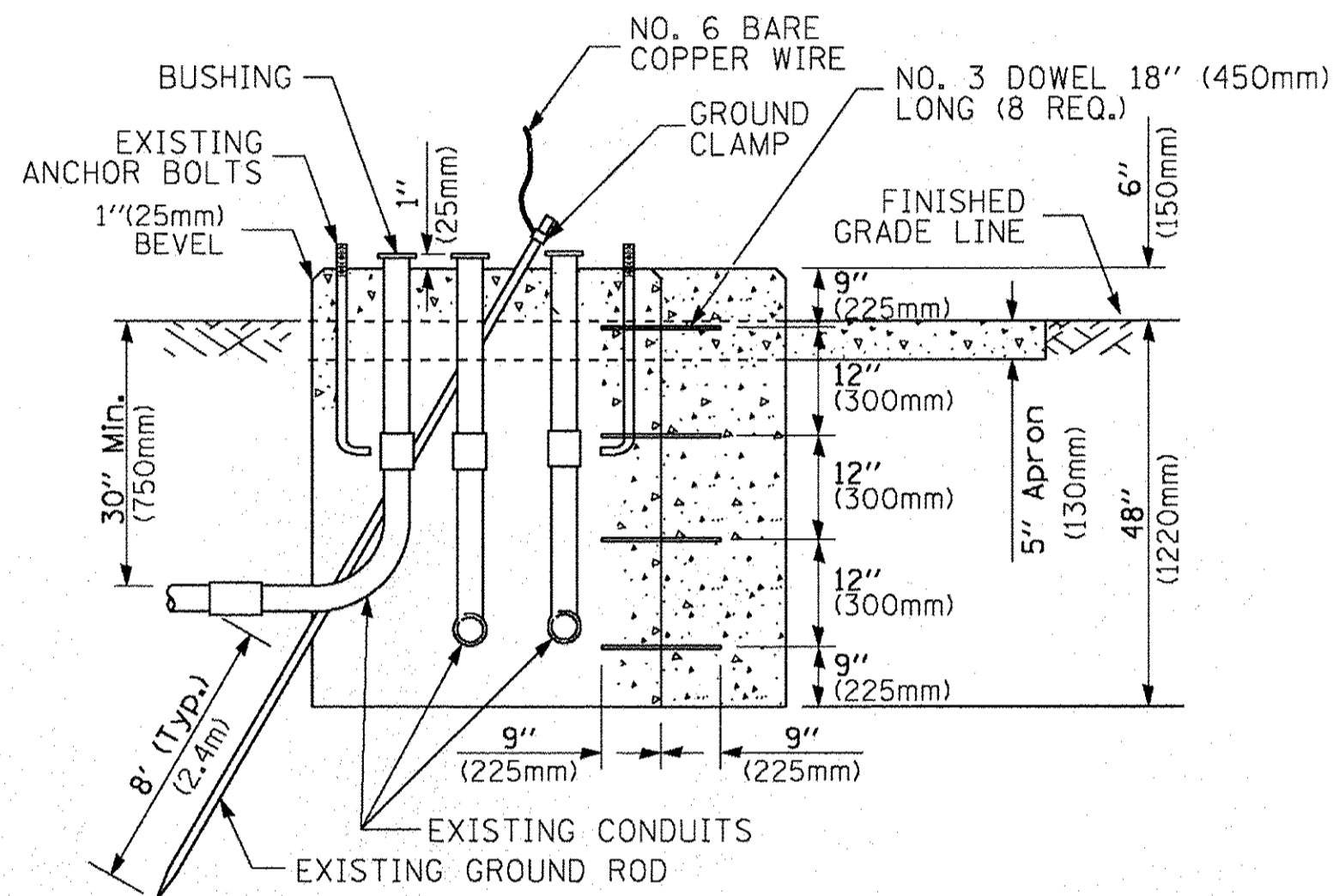
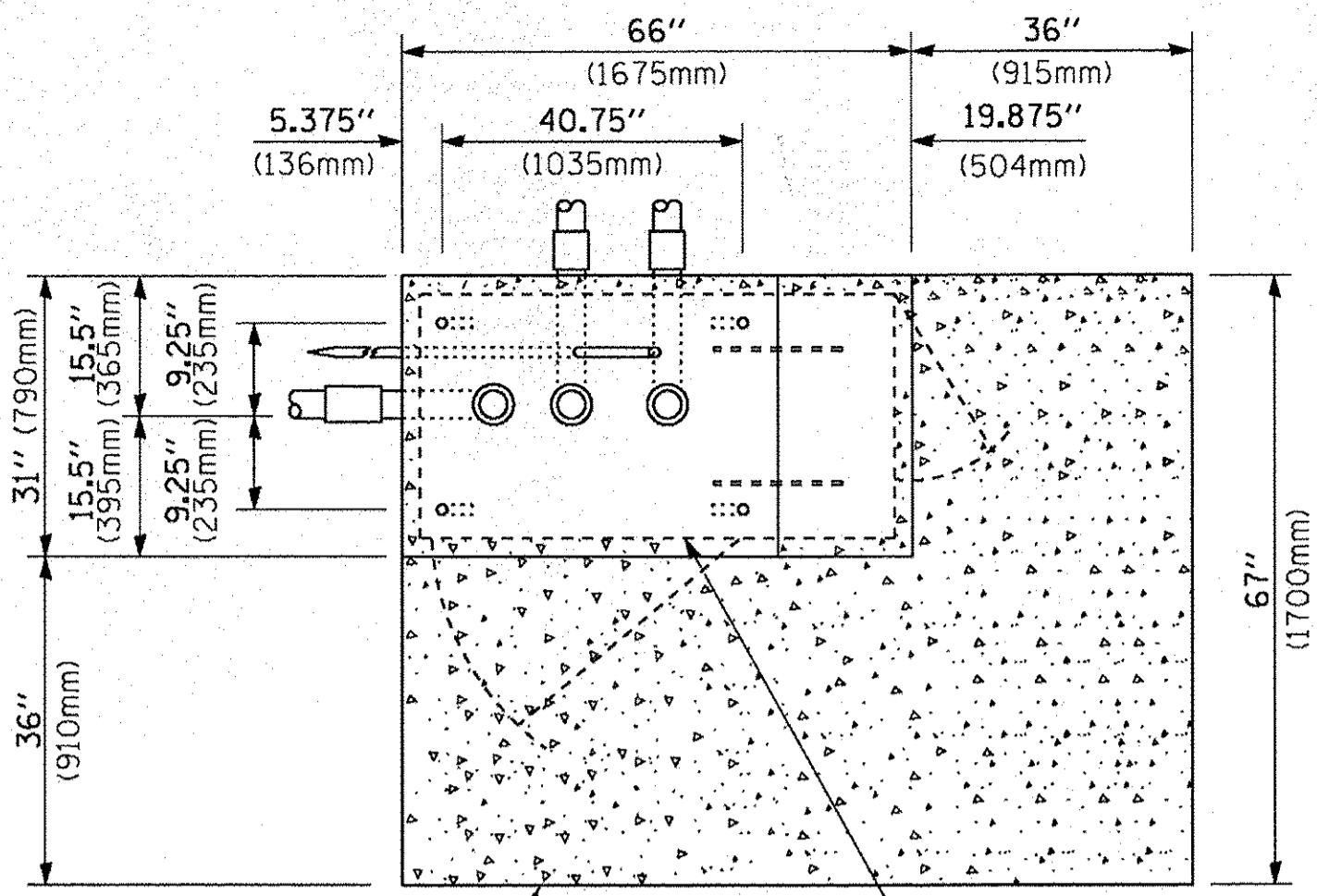
**DEPTH OF MAST ARM FOUNDATIONS, TYPE E**



**NOTES:**

1. CONDUIT DEPTH SHALL BE A MINIMUM OF 30" (760mm) BELOW THE BOTTOM OF THE DRAINAGE DITCH OR ANY SLOPING GROUND
2. THE MINIMUM CONDUIT DEPTH APPLIES TO ALL CONDUIT PLACED UNDER ROADWAY PAVEMENT, MULTI-USE PATHS, SIDEWALKS AND SOIL SURFACES.
3. THE MINIMUM CONDUIT DEPTH APPLIES TO ALL HANDHOLES, HEAVY DUTY HANDHOLES AND DOUBLE HANDHOLES.

**HANDHOLE WITH MINIMUM CONDUIT DEPTH**  
(NOT TO SCALE)

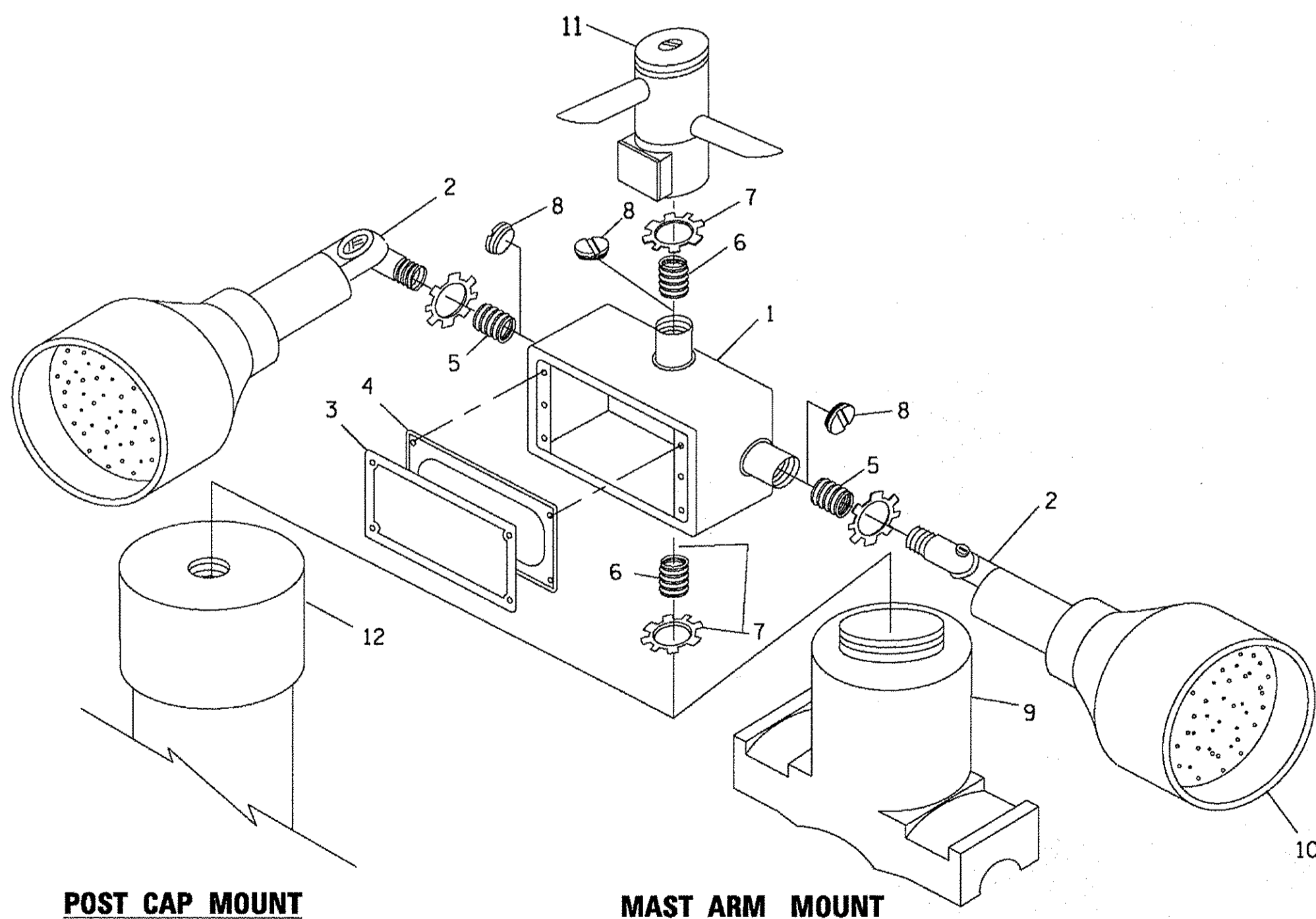


**MODIFY EXISTING TYPE "D" FOUNDATION TO TYPE "C" FOUNDATION**  
(NOT TO SCALE)

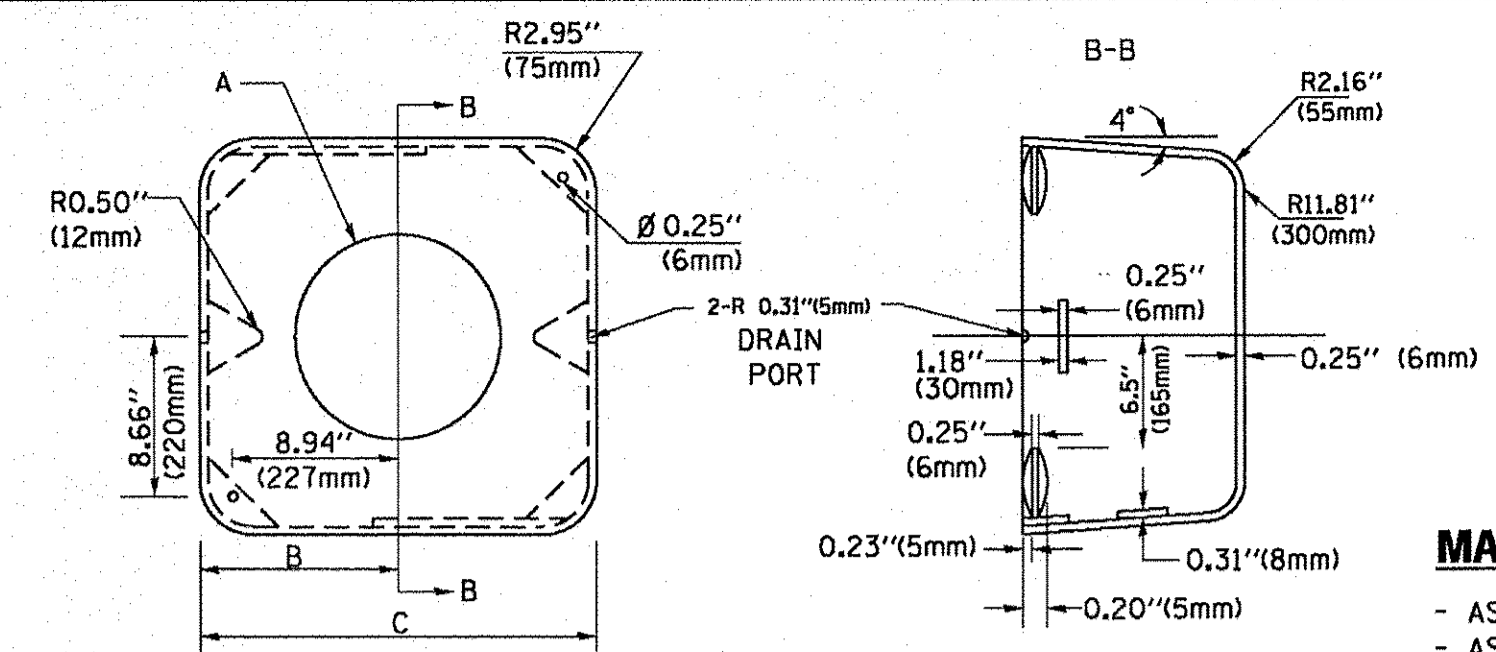
ITEM NO.	IDENTIFICATION
1	OUTLET BOX- GALV. 21 CU.IN. (0.000344 CU-M)
2	LAMP HOLDER AND COVER
3	OUTLET BOX COVER
4	RUBBER COVER GASKET
5	REDUCING BUSHING
6	3/4" (19 mm) CLOSE NIPPLE
7	3/4" (19 mm) LOCKNUT
8	3/4" (19 mm) HOLE PLUG
9	SADDLE BRACKET - GALV.
10	6 WATT PAR 38 LED FLOOD LAMP
11	DETECTOR UNIT
12	POST CAP [18 FT. (5.4 m) POST MIN.]

**NOTES:**

1. ALL ELECTRICAL ITEMS, EXCEPT ITEMS #2 AND #11 SHALL BE ALUMINUM OR GALVANIZED
2. ITEM #1- OZ/GEDNEY FSX-1-50 OR EQUIVALENT  
ITEM #2- MULBERRY CON-O-SHADE LAMP SHIELD OR EQUIVALENT  
ITEM #9- "BAND-IT" SADDLE BRACKET OR EQUIVALENT
3. WHEN POST MOUNTING IS SPECIFIED, ITEM #9 SHALL NOT BE REQUIRED. THE DETECTION UNIT SHALL BE MOUNTED DIRECTLY ON TOP OF THE CAP BY DRILLING AND TAPPING A 3/4" (19 mm) HOLE WITH PIPE THREADS. THE POST CAP SHALL EITHER BE SCREWED TO THE TOP OF THE POST OR A MINIMUM OF 3 TIGHTENING SCREWS SHALL BE REQUIRED ON EACH CAP.



**EMERGENCY VEHICLE DETECTOR WITH CONFIRMATION BEACON MOUNTING DETAIL**



**MATERIAL:**  
- ASTM A36 STEEL  
- ASTM A-123 HOT DIPPED GALVANIZED

A	B	C	HEIGHT	WEIGHT
VARIES	9.5" (241mm)	19" (483mm)	7" (178mm) - 12" (300mm)	53 lbs (24kg)
VARIES	10.75" (273mm)	21.5" (546mm)	7" (178mm) - 12" (300mm)	68 lbs (31 kg)
VARIES	13.0" (330mm)	26" (660mm)	7" (178mm) - 12" (300mm)	81 lbs (37 kg)
VARIES	18.5" (470mm)	37" (940mm)	7" (178mm) - 12" (300mm)	126 lbs (57 kg)

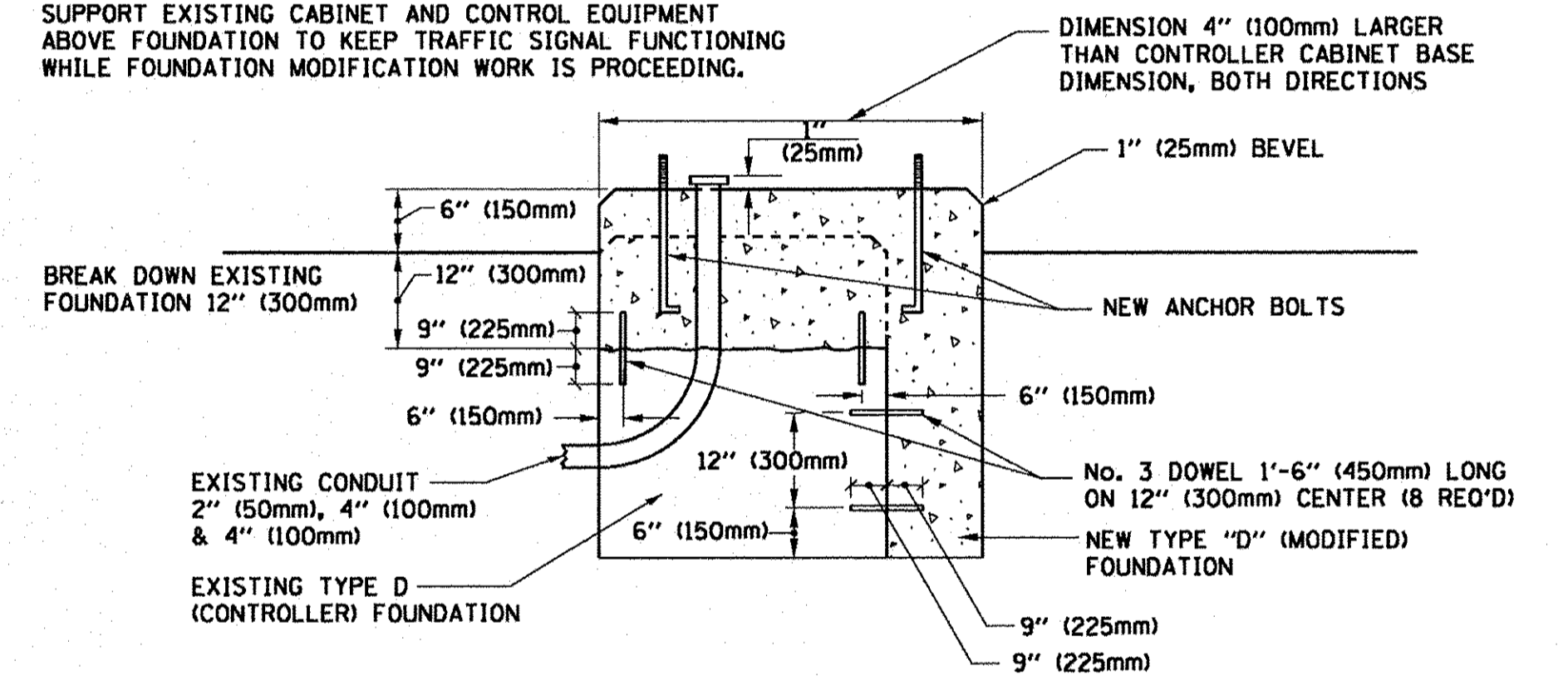
**SHROUD**

**NOTES:**

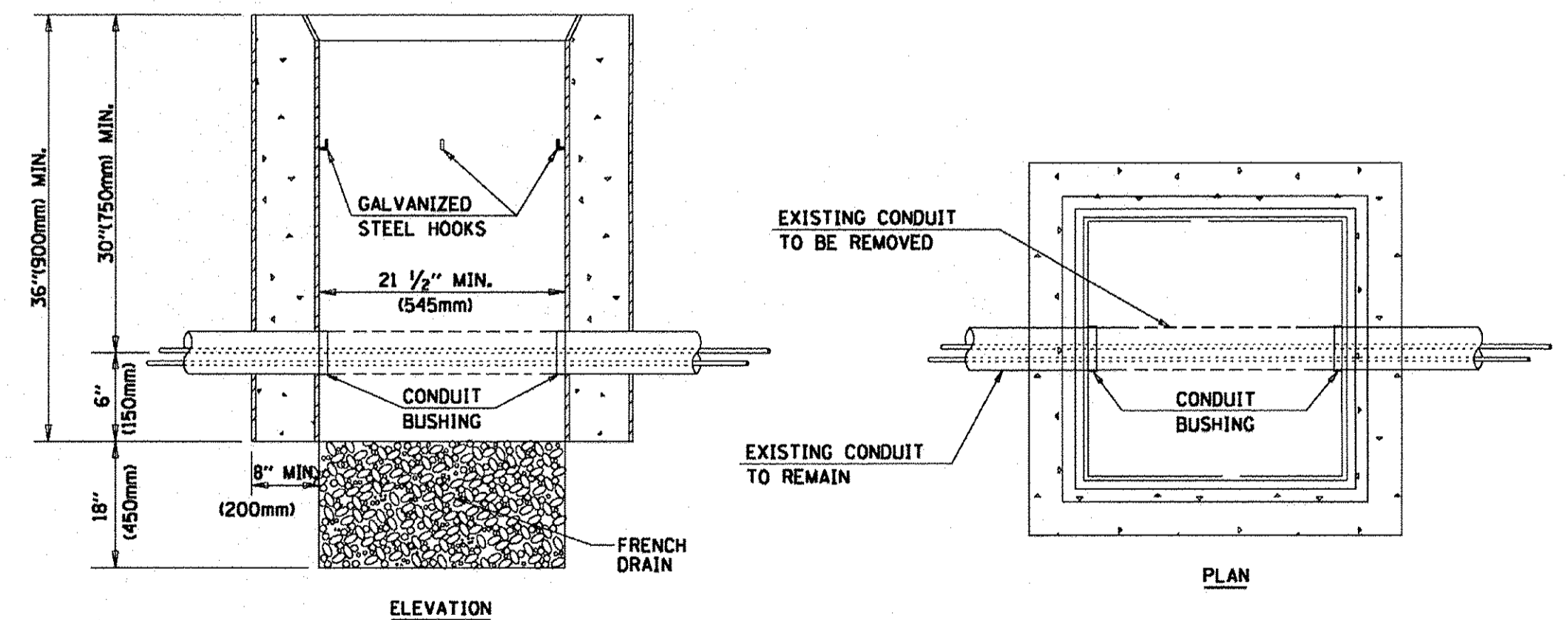
1. DIMENSION "A" IS EQUAL TO THE DIAMETER OF THE MAST ARM POLE AT THE TOP OF THE SHROUD. THE SHROUD SHALL BE TIGHT TO THE MAST ARM POLE.
2. THE SUPPLIER SHALL VERIFIED THE ABOVE DIMENSIONS BASED ON MAST ARM REQUIREMENTS.
3. THE HEIGHT OF THE SHROUD SHALL COVER THE ANCHOR BOLTS, NUTS AND MAST ARM POLE BASE.

**NOTE:**

SUPPORT EXISTING CABINET AND CONTROL EQUIPMENT ABOVE FOUNDATION TO KEEP TRAFFIC SIGNAL FUNCTIONING WHILE FOUNDATION MODIFICATION WORK IS PROCEEDING.



**MODIFY EXISTING TYPE "D" FOUNDATION**



**NOTES:**

1. HANDHOLE CONSTRUCTED PER STATE STANDARD 814001.
2. REMOVAL OF THE EXISTING CONDUIT FROM THE HANDHOLE AND THE INSTALLATION OF THE CONDUIT BUSHINGS SHALL BE INCLUDED WITH THE COST OF THE HANDHOLE.

**HANDHOLE TO INTERCEPT EXISTING CONDUIT**

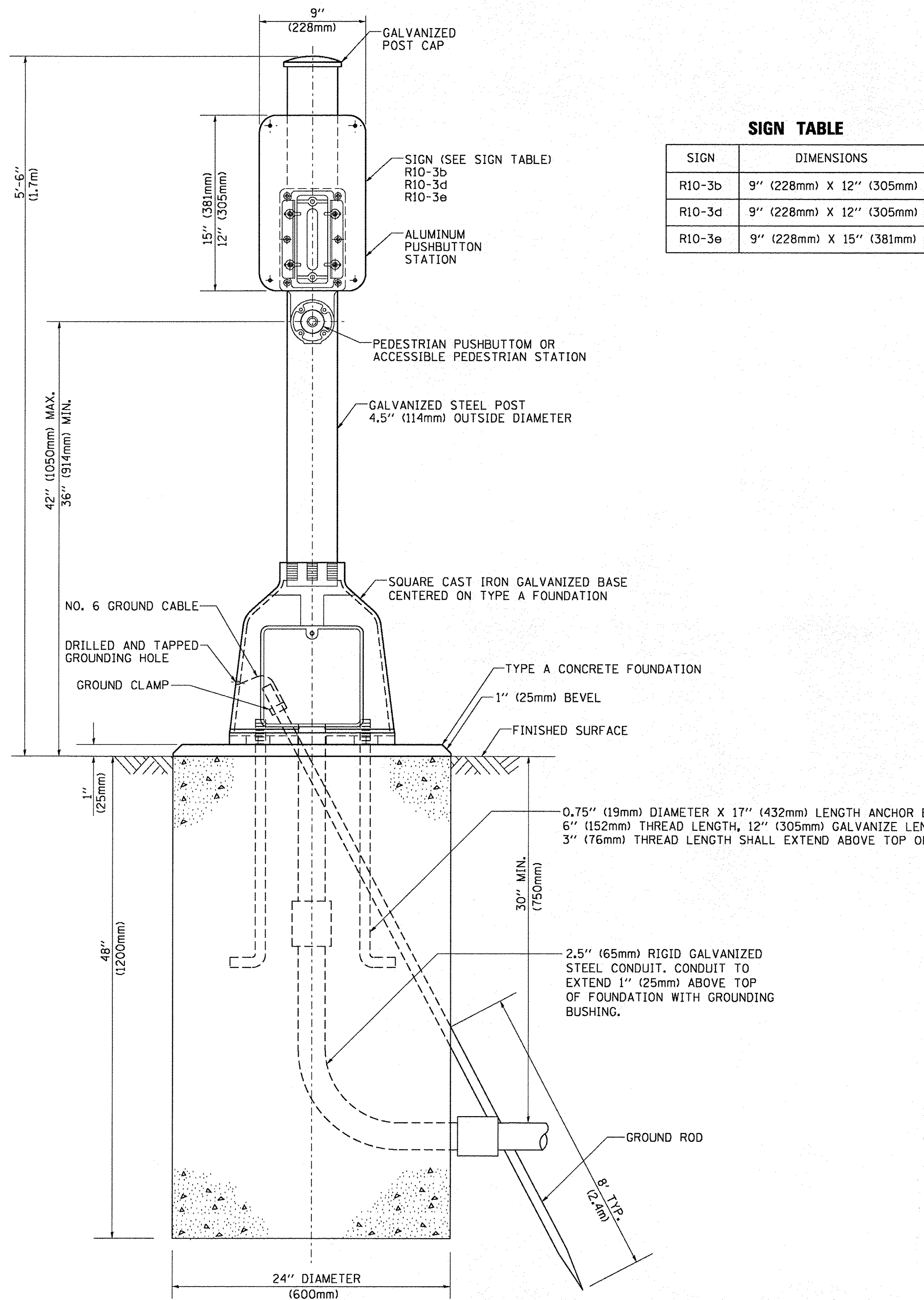
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PLOT DATE = 1/13/2014		DATE - 10-28-09	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**DISTRICT ONE  
STANDARD TRAFFIC SIGNAL DESIGN DETAILS**

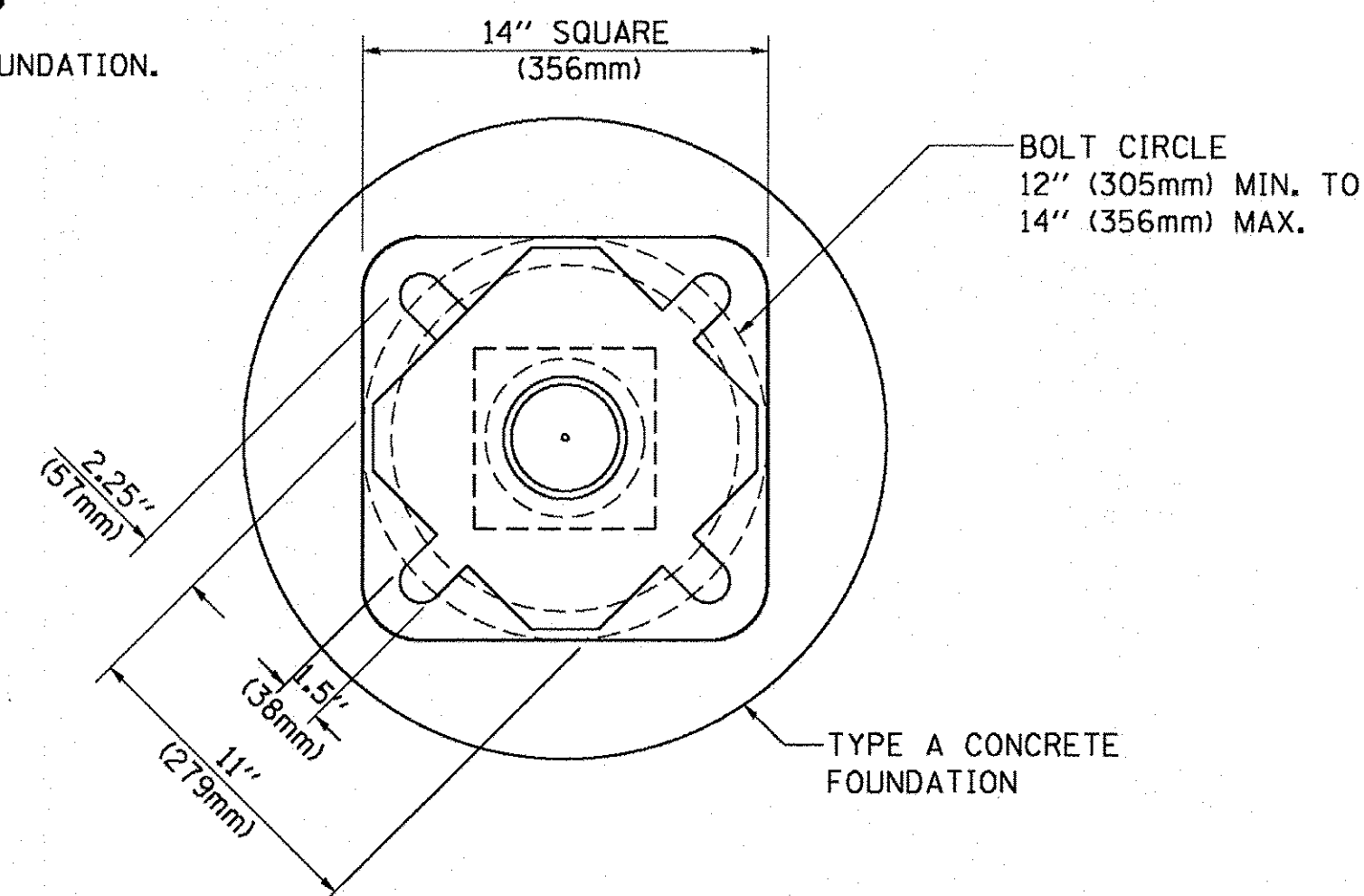
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TS-05		CONTRACT NO.		
FED. ROAD DIST. NO. 1 (ILLINOIS) FED. AID PROJECT				

SCALE: NONE SHEET NO. 6 OF 7 SHEETS STA. TO STA.



**SIGN TABLE**

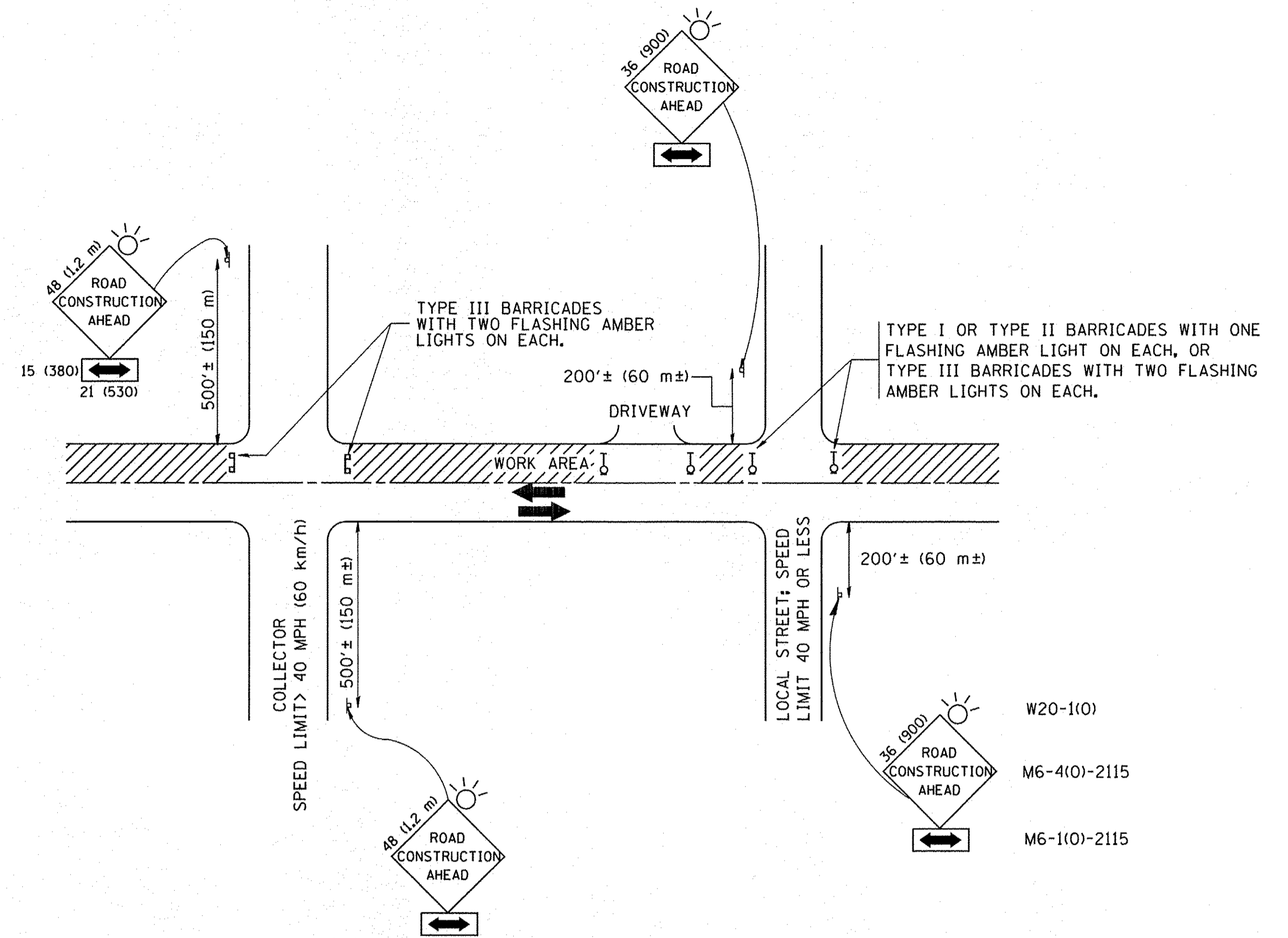
SIGN	DIMENSIONS
R10-3b	9" (228mm) X 12" (305mm)
R10-3d	9" (228mm) X 12" (305mm)
R10-3e	9" (228mm) X 15" (381mm)



**BOLT PATTERN**

**PEDESTRIAN PUSH BUTTON POST, TYPE A**

FILE NAME =	USER NAME = footemj	DESIGNED - DAG	REVISED - DAG 1-1-14	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS</b>		F.A.L. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
ct:\pw_work\pwidot\footemj\d0108315\ts05.dgn		DRAWN - GND	REVISED -		<b>TS-05</b>		2552, 1522 & 2546	13-00158-00-TL	DuPAGE & WILL	80	78
PLOT SCALE = 50.0000 / 1 in.		CHECKED - DAD	REVISED -		SCALE: NONE	SHEET NO. 7 OF 7 SHEETS	STA.	TO STA.	CONTRACT NO.		
PLOT DATE = 1/13/2014		DATE - 10/1/2012	REVISED -		FED. ROAD DIST. NO. 1   ILLINOIS FED. AID PROJECT						



TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS

**NOTES:**

**A. FOR NO LANE RESTRICTION ON THE SIDE ROAD OR DRIVEWAYS**

1. SIDE ROAD WITH A SPEED LIMIT OF 40 MPH (60 km/h) OR LESS AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:
  - a) ONE ROAD CONSTRUCTION AHEAD SIGN 36 x 36 (900x900) WITH A FLASHER AND FLAG MOUNTED ON IT APPROXIMATELY 200' (60 m) IN ADVANCE OF THE MAIN ROUTE.
  - b) THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE I, TYPE II OR TYPE III BARRICADES, 1/3 OF THE CROSS SECTION OF THE CLOSED PORTION.
2. SIDE ROAD WITH A SPEED LIMIT GREATER THAN 40 MPH (60 km/h) AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:
  - a) ONE ROAD CONSTRUCTION AHEAD SIGN 48 x 48 (1.2 m x 1.2 m) WITH A FLASHER MOUNTED ON IT APPROXIMATELY 500' (150 m) IN ADVANCE OF THE MAIN ROUTE.
  - b) THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE III BARRICADES, 1/2 OF THE CROSS SECTION OF THE CLOSED PORTION.
3. WHEN THE SIDE ROAD LIES BETWEEN THE BEGINNING OF THE MAINLINE SIGNING AND THE WORK ZONE, A SINGLE HEADED ARROW (M6-1) SHALL BE USED IN LIEU OF THE DOUBLE HEADED ARROW (M6-4).

**B. FOR A LANE CLOSURE ON A SIDE ROAD OR DRIVEWAY:**

- USE APPLICABLE PORTIONS OF THE TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES (STD. 701501, STD. 701606 OR THE APPROPRIATE STANDARD). THE SPACING OF SIGNS AND BARRICADES SHALL BE ADJUSTED FOR FIELD CONDITIONS AS DIRECTED BY THE ENGINEER. THE DIRECTIONAL ARROW SHALL BE COVERED OR REMOVED WHEN NO LONGER CONSISTENT WITH THE SIDE ROAD LANE CLOSURE.
- C. ADVANCE WARNING SIGNS ARE TO BE OMITTED ON DRIVEWAY UNLESS OTHERWISE NOTED.**
- D. THE TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS SHALL BE INCIDENTAL TO THE COST OF SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.**

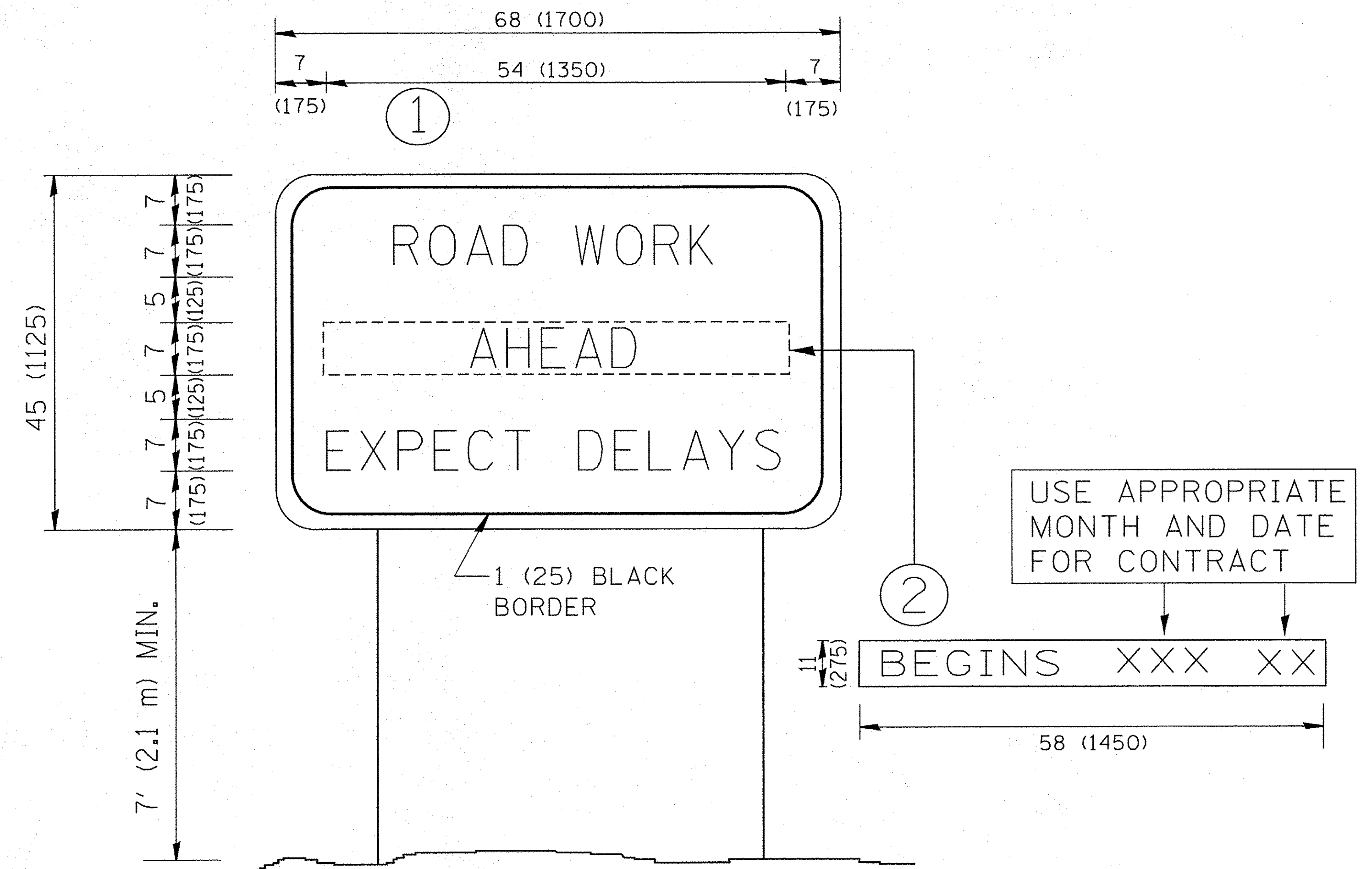
All dimensions are in millimeters (inches) unless otherwise shown.

FILE NAME = W:\diststd\22x34\tcl0.dgn	USER NAME = geglienobt	DESIGNED - LHA	REVISED - J. OBERLE 10-18-95
		DRAWN -	REVISED - A. HOUSEH 03-06-96
	PLOT SCALE = 50,000' / IN.	CHECKED -	REVISED - A. HOUSEH 10-15-96
	PLOT DATE = 1/4/2008	DATE - 06-89	REVISED - T. RAMMACHER 01-06-00

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS			
SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.

F.A.U. RTE. 2552, 1532 & 2546	SECTION 13-00158-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 79
<b>TC-10</b>		CONTRACT NO.		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



**NOTES:**

1. USE BLACK LETTERING ON ORANGE BACKGROUND.
2. ERECT SIGNS IN ADVANCE OF THE LOCATION FOR THE "ROAD CONSTRUCTION AHEAD" SIGN AT LOCATIONS AS DIRECTED BY THE ENGINEER.
3. ERECT SIGN ① WITH INSTALLED PANEL ② ONE WEEK PRIOR TO THE START OF CONSTRUCTION.
4. REMOVE PANEL ② SOON AFTER THE START OF CONSTRUCTION.
5. SEE SPECIAL PROVISION FOR "TEMPORARY INFORMATION SIGNING" FOR ADDITIONAL INFORMATION.
6. ONE SIGN ASSEMBLY EQUALS 25.70 SQ. FT. (2.3 SQ. M.)
7. SHALL BE PAID FOR AS TEMPORARY INFORMATION SIGNING.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME = W:\diststd\22x34\tc22.dgn	USER NAME = gegljanobt	DESIGNED - DRAWN -	REVISED - R. MIRS 09-15-97 REVISED - R. MIRS 12-11-97	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>ARTERIAL ROAD INFORMATION SIGN</b>			F.A.U. RTE. 2952, 1522 & 2546	SECTION 13-00158-00-TL	COUNTY DuPAGE & WILL	TOTAL SHEETS 80	SHEET NO. 80
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	PLOT DATE = 1/4/2008	DATE -	REVISED - C. JUCIUS 01-31-07									