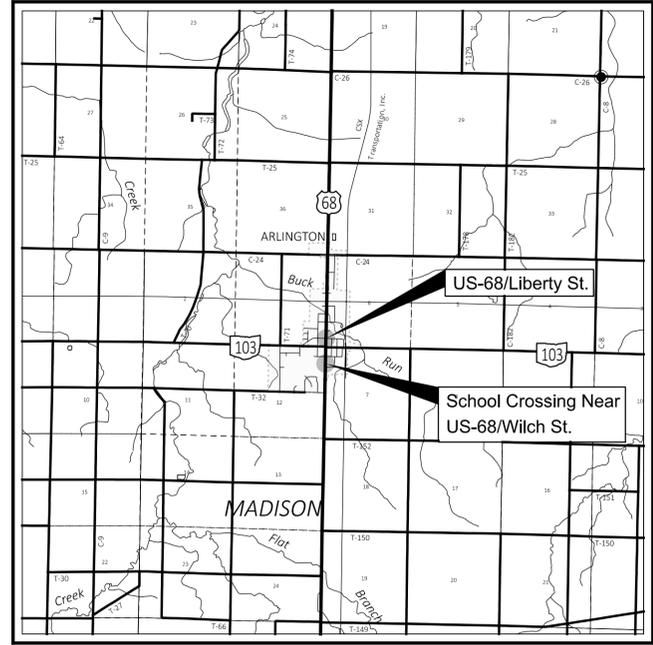


STATE OF OHIO  
 DEPARTMENT OF TRANSPORTATION

HAN-68-ARLINGTON SIGNALS

MADISON TOWNSHIP  
 HANCOCK COUNTY



LOCATION MAP

LATITUDE: 40°53'36" LONGITUDE: 83°39'04"



PORTION TO BE IMPROVED	-----
INTERSTATE HIGHWAY	=====
FEDERAL ROUTES	=====
STATE ROUTES	=====
COUNTY & TOWNSHIP ROADS	=====
OTHER ROADS	-----

DESIGN DESIGNATION

CURRENT ADT (2024)	8400
DESIGN YEAR ADT (2044)	11,000
DESIGN HOURLY VOLUME (2044)	1300
DIRECTIONAL DISTRIBUTION	54.4
TRUCKS (24 HOUR B&C)	16
DESIGN SPEED	35 MPH
LEGAL SPEED	35 MPH
DESIGN FUNCTIONAL CLASSIFICATION:	
03 MINOR ARTERIAL, 07 LOCAL ROAD	
NHS PROJECT	NO

DESIGN EXCEPTIONS

NONE

ADA DESIGN WAIVERS

NONE REQUIRED

**UNDERGROUND UTILITIES**  
 Contact Two Working Days  
 Before You Dig

**OHIO811.org**  
 Before You Dig

OHIO811, 8-1-1, or 1-800-362-2764  
 (Non members must be called directly)

PLAN PREPARED BY:  
 ODOT, DISTRICT 1  
 1885 NORTH MCCULLOUGH ST.  
 LIMA, OHIO 45801

ENGINEER'S SEAL

INDEX OF SHEETS:

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STANDARD CONSTRUCTION DRAWINGS				SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
BP-5.1	7/15/22	TC-42.20	10/18/13	800-2023	7/21/23
		TC-52.10	10/18/13	809	1/20/23
DM-4.3	1/15/16	TC-52.20	1/15/21	832	7/21/23
DM-4.4	1/15/16	TC-71.10	4/21/23	909	7/21/23
		TC-74.10	7/21/23	916	7/21/23
HL-30.11	7/21/23	TC-81.11	1/20/23		
HL-30.22	1/15/21	TC-83.10	1/17/20		
		TC-83.20	7/15/22		
MT-97.10	4/19/19	TC-84.20	10/18/13		
MT-101.60	4/21/23	TC-84.21	10/18/13		
MT-120.00	1/20/23	TC-85.10	10/21/22		
		TC-85.21	4/21/23		
TC-21.21	1/20/23	TC-85.22	4/21/23		
TC-41.30	4/21/23	TC-87.10	7/21/23		
TC-41.40	10/18/13				
TC-41.41	7/19/19				

FEDERAL PROJECT NUMBER

'NON-FEDERAL'

RAILROAD INVOLVEMENT

NONE

PROJECT DESCRIPTION

REPLACE THE SIGNAL AT US 68 AND LIBERTY STREET.  
 ALSO REPLACE THE SIGNAL IN FRONT OF ARLINGTON HIGH SCHOOL WITH AN RRFB CROSSING TO PROMOTE PEDESTRIAN SAFETY.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA:	<0.1 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	<0.1 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	N/A (NOI NOT REQUIRED)*

\*ROUTINE MAINTENANCE PROJECT

2023 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS, CHANGES LISTED IN THE PROPOSAL, AND THE SUPPLEMENTAL SPECIFICATION 800 VERSION INDICATED ON THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

*Christopher A. Hughes*  
 Christopher A. Hughes, P.E.  
 District 01 Deputy Director

*Jack Marchbanks*  
 Jack Marchbanks, PhD  
 Director, Department of Transportation

DESIGN AGENCY



DESIGNER	TAB
REVIEWER	
PROJECT ID	LMD 09-11-23
	118746
SHEET	TOTAL
P.1	18

TITLE SHEET

**UTILITIES**

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

Arlington Water  
Arlington Water Superintendent 419-348-3197  
Brett Price (Street Commissioner) 419-348-3198

American Electric Power  
Paul Paxton 740-348-5322

Arlington Natural Gas  
Tim Poole 419-299-3330

Frontier Communications  
Eric Massengill 740-396-2306

AT&T  
Rob Fey 419-508-2463

Charter Communications  
Sean Beavis 419-632-6723

Independent Fiber  
Sarah Emans 419-739-3124

**UTILITIES**

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

**CONSTRUCTION NOISE**

ACTIVITIES AND LAND USE ADJACENT TO THIS PROJECT MAY BE AFFECTED BY CONSTRUCTION NOISE. IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, DO NOT OPERATE POWER-OPERATED CONSTRUCTION-TYPE DEVICES BETWEEN THE HOURS OF 9 PM AND 7 AM. IN ADDITION, DO NOT OPERATE AT ANY TIME ANY DEVICE IN SUCH A MANNER THAT THE NOISE CREATED SUBSTANTIALLY EXCEEDS THE NOISE CUSTOMARILY AND NECESSARILY ATTENDANT TO THE REASONABLE AND EFFICIENT PERFORMANCE OF SUCH EQUIPMENT.

**CLEARING AND GRUBBING**

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

**WORK LIMITS**

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

**AIRWAY/HIGHWAY CLEARANCE FOR AIRPORTS AND HELIPORTS**

THIS PROJECT HAS BEEN IDENTIFIED AS BEING WITHIN THE INFLUENCE AREA OF A PUBLIC USE AIRPORT OR HELIPORT. NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT AT MAXIMUM OPERATING HEIGHT SHALL EXCEED A HEIGHT OF 65 FT. IF ANY TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT WILL EXCEED THIS HEIGHT, FURTHER COORDINATION WITH THE FEDERAL AVIATION ADMINISTRATION (FAA), AND ODOT OFFICE OF AVIATION, WILL BE NECESSARY PRIOR TO ERECTING SUCH TEMPORARY STRUCTURES OR OPERATING SUCH EQUIPMENT ON THE PROJECT. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT FORM 7460-1 TO THE FAA. NOTIFY THE ODOT OFFICE OF AVIATION WHEN SUBMITTING FAA FORM 7460-1.

NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT SHALL EXCEED THE PERMISSIBLE HEIGHT, UNTIL A COPY OF THE FAA APPROVAL AND THE ODOT OFFICE OF AVIATION PERMIT HAS BEEN FURNISHED TO THE PROJECT ENGINEER.

FEDERAL AVIATION ADMINISTRATION  
SOUTHWEST REGIONAL OFFICE  
OBSTRUCTION EVALUATION GROUP  
10101 HILLWOOD PARKWAY  
FORT WORTH, TX 76177  
FAX: (817) 222-5920  
HTTP://CEAAA.FAA.GOV

OHIO DEPARTMENT OF TRANSPORTATION  
OFFICE OF AVIATION  
2829 WEST DUBLIN-GRANVILLE ROAD  
COLUMBUS, OHIO 43235  
OHIO.AIRPORT.PROTECTION@DOT.OHIO.GOV

**SURVEYING PARAMETERS**

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE SHEET 2 OF THE PLANS FOR A TABLE CONTAINING PROJECT CONTROL INFORMATION.

USE THE FOLLOWING PROJECT CONTROL, VERTICAL POSITIONING, AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

**PROJECT CONTROL**

POSITIONING METHOD: ODOT REAL TIME NETWORK (2011) and DIFFERENTIAL LEVELING

MONUMENT TYPE: TYPE B

**VERTICAL POSITIONING**

ORTHOMETRIC HEIGHT DATUM: NAVD 88  
GEOID: 18

**HORIZONTAL POSITIONING**

REFERENCE FRAME: NAD83 (2011 ADJ, 2010.0)  
ELLIPSOID: GRS 80  
COORDINATE SYSTEM: O.D.O.T. HANCOCK LDP\*  
HANCOCK LDP PROJECTION PARAMETERS:  
PROJECTION: LCC 1 PARALLEL  
CENTRAL LATITUDE: N 41°03'00"  
CENTRAL LONGITUDE: W 83°39'00"  
FALSE NORTHING: 100,000 METERS  
FALSE EASTING: 50,000 METERS  
PROJECTION SCALE FACTOR: 1.000030

\*THE LOW DISTORTION PROJECTION (LDP) IS A LOCAL COUNTY PROJECTION DEVELOPED BY O.D.O.T. THE DISTORTION BETWEEN GROUND AND GRID IS SO MINIMAL THAT THERE IS NO NEED FOR A SCALE FACTOR TO ADJUST BETWEEN GRID AND GROUND

COORDINATES. CONTACT THE DISTRICT SURVEY DEPARTMENT FOR FURTHER INFORMATION OR QUESTIONS.

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS 623.

UNITS ARE IN U.S. SURVEY FEET. USE THE FOLLOWING CONVERSION FACTOR: 1 METER = 3.280833333 U.S. SURVEY FEET.

BASIS OF BEARINGS:  
BEARINGS ARE BASED ON GRID NORTH OF THE O.D.O.T. LOW DISTORTION PROJECTION – HANCOCK COUNTY

BASIS OF EXISTING CENTERLINE OF R/W AND THE R/W LIMITS: THE CENTERLINE OF RIGHT OF WAY AND RIGHT OF WAY LIMITS WERE ESTABLISHED USING THE FOLLOWING OHIO DEPARTMENT OF TRANSPORTATION PLANS: HAN-68-5.10 PHASE 1 DATED 1/22/2018 and HAN-68-4.70 PHASE 2 DATED 5/15/2019; AS FOUND ON FILE AT THE OHIO DEPARTMENT OF TRANSPORTATION-DISTRICT ONE OFFICE AT LIMA, OHIO.

ESTABLISHMENT OF C/L OF R/W STATIONING:  
THE STATIONING OF S.R. 68 WAS ESTABLISHED BY ACCEPTING AN IRON PIPE FOUND MARKING A PROPERTY CORNER AS BEING STATION 385+04.93 PER SAID "HAN-68-4.70 PHASE 2 DATED 5/15/2019.

UTILITY STATEMENT FOR SURVEY BASEMAP:  
UNDERGROUND UTILITY LOCATIONS ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY. THEIR LOCATION AS MARKED ON THE GROUND BY THE UTILITY COMPANY OR THEIR REPRESENTATIVES PER OHIO811 CONFIRMATION NUMBER

(A308100217, DATED 3/22/2023 and A308100251 DATED 3/22/2023) WERE SURVEYED AND MAPPED AS A PART OF THIS PROJECT. OHIO811 UTILITY DAMAGE PREVENTION LAWS WERE FOLLOWED AND THERE IS NO DIRECT KNOWLEDGE OR CONTROL OF HOW THESE MARKS WERE PLACED, NOR KNOWLEDGE OF THE ACCURACY AS TO THEIR INTENDED DEPICTION OF SUBSURFACE UTILITY FACILITIES.

**SEEDING AND MULCHING**

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

659, TOPSOIL 4 CU. YD.  
659, SEEDING AND MULCHING 35 SQ. YD.  
659, COMMERCIAL FERTILIZER 0.01 TON  
659, WATER 1 M. GAL.

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

**EROSION CONTROL**

THE QUANTITY BELOW HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR EROSION CONTROL

ITEM 832 EROSION CONTROL = 1,000 EACH

PROJECT CONTROL TABLE						
STATION/OFFSET		PROJECT COORDINATES (SEE SURVEY PARAMETERS)			MONUMENT DESCRIPTION	
STATION (C/L of Constuction)	OFFSET (C/L of Constuction)	NORTHING(ft) (HAN LDP)	EASTING(ft) (HAN LDP)	ELEV(ft) (NAVD88/18)	PT #	DESCRIPTION
<b>HAN-68-4.82</b>						
HORIZONTAL CONTROL (C/L of Constuction)						
385+04.93	37.30' LT	269008.524	163717.343		CP1	½" ID Pipe Found
388+45.05	0	269348.398	163756.891	864.38	CP102	PK Nail Set on the Paint line of US 68
390+90.68	0	269594.018	163758.516	863.44	CP101	PK Nail Set on the Paint line of US 68
392+08.98	37.82' LT	269712.574	163721.475		CP2	½" Iron Pin Found
VERTICAL CONTROL (C/L of Constuction)						
389+42	24' LT	269446	163733	865.17	BM101	MNSPK in SE face of LPOLE on the SE corner US 68 and Liberty St
390+09	17' RT	269512	163775	865.59	BM102	MNSPK in SE face of LPOLE on the NW corner US 68 and Liberty St
<b>HAN-68-5.10</b>						
HORIZONTAL CONTROL (C/L of Constuction)						
401+40.37	37.78' RT	270643.483	163721.714		CP4	¾" Rebar found
403+95.85	0	270899.146	163767.677	864.26	CP204	PK Nail Set on the Paint line of US 68
406+94.52	0	271197.813	163769.715	864.42	CP202	PK Nail Set on the Paint line of US 68
411+08.53	31.96' RT	252776.206	197350.294		CP5	¾" ID Pipe Found
VERTICAL CONTROL (C/L of Constuction)						
404+99	17' RT	271002	163743	867.16	BM201	MNSPK in SE Face of LPOLE on the SE corner of US 68 and Liberty St
405+94	25' LT	271198	163770	866.69	BM202	MNSPK in SE Face of LPOLE on the NW corner of US 68 and Liberty St
<b>LIBERTY ST</b>						
HORIZONTAL CONTROL (C/L of Constuction)						
8+82.30	0	271024.501	163649.582	864.53	CP203	PK Nail Set on the Paint line of Liberty St
11+16.19	0	271020.296	163883.438	864.53	CP203	PK Nail Set on the Paint line of Liberty St

\*This elevation may be subject to seasonal changes. Confirm elevation against other primary vertical control and benchmarks just prior to the start of construction activities.

DESIGN AGENCY



DESIGNER  
**TAB**

REVIEWER  
LMD 09/11/23

PROJECT ID  
**118746**

SHEET TOTAL  
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**PERSONAL PROTECTION EQUIPMENT (PPE)**

THE CONTRACTOR SHALL FOLLOW ALL REQUIREMENTS OF SECTIONS XXIV AND XXXIV OF THE OHIO DEPARTMENT OF TRANSPORTATION SAFETY & HEALTH STANDARD OPERATING PROCEDURE 220-006(SP) EFFECTIVE: NOVEMBER 1, 2018 (EXCEPT AS AMENDED BELOW) AND ALL SUBSEQUENT UPDATES POSTED AT THE FOLLOWING WEBSITE:

HTTP://WWW.DOT.STATE.OH.US/POLICY/POLICIESANDSOPS/POLICIES/220-006(SP).PDF

AMENDMENTS TO THE REQUIREMENTS OF THIS DOCUMENT ARE:

XXIV. HEAD PROTECTION (HARD HATS) ALL PERSONS WITHIN THE RIGHT-OF-WAY OF ANY HIGHWAY OR ANY OTHER TYPE OF ROADWAY OR CONSTRUCTION SITE WHO ARE EXPOSED TO EITHER TRAFFIC (VEHICLES USING THE HIGH- WAY FOR PURPOSES OF TRAVEL) OR CONSTRUCTION EQUIPMENT WITHIN THE WORK AREA, REGARDLESS OF JOB TYPE, SHALL WEAR APPROPRIATE HEAD PROTECTION. ALL HARD HATS MUST MEET OR EXCEED ANSI Z89.1-2009 TYPE 1, CLASS E-G REQUIRE- MENTS.

XXXIV. SAFETY APPAREL AND VEST (HIGH VISIBILITY) ALL PERSONS WITHIN THE RIGHT-OF-WAY OF ANY HIGHWAY OR ANY OTHER TYPE OF ROADWAY OR CONSTRUCTION SITE WHO ARE EXPOSED TO EITHER TRAFFIC (VEHICLES USING THE HIGH- WAY FOR PURPOSES OF TRAVEL) OR CONSTRUCTION EQUIPMENT WITHIN THE WORK AREA, REGARDLESS OF JOB TYPE, SHALL WEAR A HIGH-VISIBILITY SAFETY VEST THAT MEETS THE PERFORMANCE CLASS II OR CLASS III REQUIREMENTS OF THE ANSI/ ISEA107-2015 PUBLICATION ENTITLED "AMERICAN NATIONAL STANDARD FOR HIGH-VISIBILITY SAFETY APPAREL AND ACCESSORIES."

WORKERS MAY WEAR AN ANSI CLASS II OR ANSI CLASS III APPROVED RAIN SUIT, JACKET OR OTHER APPAREL WITHOUT A SAFETY VEST OVER IT.

WALK REMOVED AND REPLACED

TO ACCOMODATE THE REMOVAL OF EXISTING AND INSTALLATION OF PROPOSED TRAFFIC SIGNAL ELEMENTS, THE FOLLOWING QUANTITIES ARE PROVIDED:

202, WALK REMOVED	40 SF	
202, CURB AND GUTTER REMOVED	20 FT	
304, AGGREGATE BASE	2 CY	
608, 4" CONCRETE WALK	20 SF	
608, CURB RAMP	20 SF	
609, COMBINATION CURB AND GUTTER, TYPE 2	20 FT	

COMBINATION CURB AND GUTTER, TYPE 2 SHALL BE CONSTRUCTED ACCORDING TO SCD BP-5.1 EXCEPT THAT TOTAL WIDTH SHALL BE 2' IN LIEU OF THE STANDARD 2' 6".

CURB RAMPS, WALK, AND CURB AND GUTTER SHOULD BE RESTORED TO MATCH EXISTING GRADES. ITEM 304 AGGREGATE BASE SHALL BE USED TO BRING SUBSURFACE TO GRADE. EXISTING CURB RAMP TRUNCATED DOMES AND ASPHALT PAVEMENT SHOULD NOT BE DISTURBED.

WINDOW CONTRACT TABLE				
DESCRIPTION OF CRITICAL WORK	CALENDAR DAYS TO COMPLETE	DISINCENTIVE \$ PER DAY	WORK WINDOW	
			START	END
ALL TRAFFIC SIGNAL REMOVAL AND INSTALLATION WORK NEEDING TO BE COMPLETE AT THE INTERSECTION OF LIBERTY STREET AND US 68 WHILE LIBERTY ST. IS CLOSED TO TRAFFIC	30	\$400 PER DAY	DATE OF COMPLETED CONTRACT	COMPLETION DATE

**ITEM SPECIAL - MAILBOX SUPPORT**

THIS WORK SHALL CONSIST OF FURNISHING AND ERECTING MAILBOX SUPPORTS AND ANY ASSOCIATED MOUNTING HARDWARE IN ACCORDANCE WITH PLAN DETAILS, AND ATTACHING AN OWNER-SUPPLIED MAILBOX AT LOCATIONS SPECIFIED IN THE PLAN, OR OTHERWISE ESTABLISHED BY THE ENGINEER.

WOOD POSTS SHALL BE NOMINAL 4 INCHES BY 4 INCHES SQUARE OR 4.5 INCHES DIAMETER ROUND, AND CONFORM TO 710.14.

STEEL POSTS SHALL BE NOMINAL PIPE SIZE 2 INCHES I.D., AND CONFORM TO AASHTO M 181.

ALL HARDWARE INCLUDING BUT NOT LIMITED TO PLATES, SCREWS, BOLTS, AND ETC. SHALL BE COMMERCIAL-GRADE GALVANIZED STEEL.

POSTS SHALL BE SET PER THE FIRST PARAGRAPH OF 606.03, AND SHALL IN NO INSTANCE BE ENCASED IN CONCRETE.

THE MAILBOX SHALL BE SECURELY AND NEATLY ATTACHED BY THE CONTRACTOR TO THE NEW SUPPORT. THE CONTRACTOR SHALL FURNISH ALL NECESSARY ATTACHMENT HARDWARE (NUTS, BOLTS, PLATES, SPACERS, AND WASHERS) AS NECESSARY TO ACCOMMODATE THE COMPLETE INSTALLATION.

IN THE ABSENCE OF A NEW BOX SUPPLIED BY THE OWNER, THE CONTRACTOR SHALL SALVAGE THE EXISTING BOX AND PLACE IT ON THE NEW SUPPORT. DUE CARE SHALL BE EXERCISED IN SUCH AN OPERATION, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING ANY BOX DAMAGED BY IMPROPER HANDLING ON HIS PART, AS JUDGED AND DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE LOCAL POST MASTER REGARDING THE TIMING OF THE MOVEMENT OF ANY MAILBOX TO A NEW LOCATION.

PAYMENT UNDER THIS ITEM SHALL BE LIMITED TO FINAL PERMANENT INSTALLATIONS. TEMPORARY INSTALLATIONS SHALL BE IN ACCORDANCE WITH 107.10. HOWEVER, THE SAME MATERIAL AND SIZE LIMITATIONS AS FOR PERMANENT INSTALLATIONS SHALL APPLY.

MAILBOX SUPPORTS, COMPLETE IN PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH, FOR ITEM SPECIAL MAILBOX SUPPORT SYSTEM, (SINGLE) (DOUBLE).

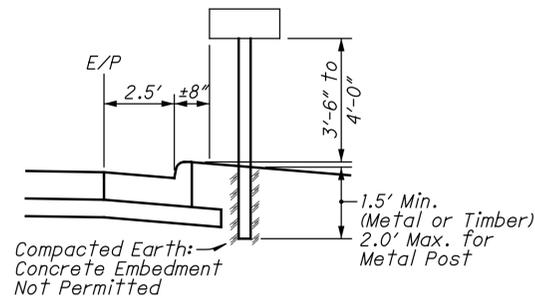
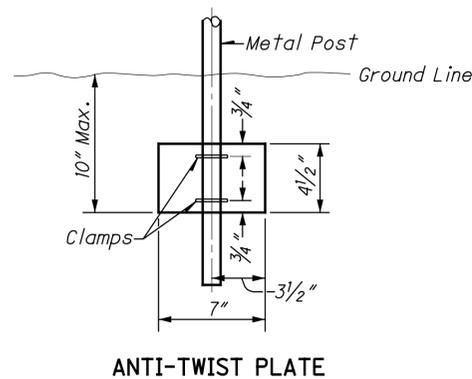
**ITEM SPECIAL - MAILBOX REMOVED AND RESET**

THIS WORK SHALL CONSIST OF REMOVING MAILBOXES, MAIL-BOX SUPPORTS AND ANY ASSOCIATED MOUNTING HARDWARE IN ACCORDANCE WITH PLAN DETAILS.

IN THE ABSENCE OF A NEW BOX SUPPLIED BY THE OWNER, THE CONTRACTOR SHALL SALVAGE THE EXISTING BOX FOR PLACEMENT ON A NEW SUPPORT. DUE CARE SHALL BE EXERCISED IN SUCH AN OPERATION, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING ANY BOX DAMAGED BY IMPROPER HANDLING ON HIS PART, AS JUDGED AND DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSAL OF THE REMOVED MAILBOX SUPPORTS AND ANY MAILBOXES AND ASSOCIATED MOUNTING HARDWARE THAT ARE NOT RESET.

THE ABOVE REMOVAL AND ANY SALAVAGING FOR RESET WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH, FOR ITEM SPECIAL - MAILBOX REMOVED AND RESET.



DESIGN AGENCY



DESIGNER  
**LMD**  
 REVIEWER

PROJECT ID  
**118746**

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**ITEM 614, MAINTAINING TRAFFIC**

A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES, EXCEPT FOR A PERIOD NOT TO EXCEED 30 CONSECUTIVE CALENDAR DAYS, WHEN THROUGH TRAFFIC ON LIBERTY STREET MAY BE CLOSED. REFER TO PN 129 AND THE WINDOW CONTRACT TABLE ON SHEET 3 FOR ADDITIONAL STIPULATIONS.

ACCESS TO ADJACENT PROPERTY WITHIN THE WORK LIMITS SHALL BE MAINTAINED BY THE CONTRACTOR AT ALL TIMES AS PER 614.02(a).

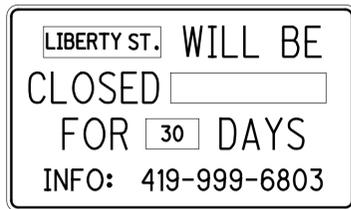
NOTICE OF CLOSURE SIGNS (W20-H13) SHALL BE ERECTED BY THE CONTRACTOR PRIOR TO THE SCHEDULED ROAD OR RAMP CLOSURE IN ACCORDANCE WITH THE NOTICE OF CLOSURE TIME TABLE BELOW. AT THE APPROVAL OF THE ENGINEER, PORTABLE CHANGEABLE MESSAGE SIGNS MAY BE USED IN LIEU OF THE STANDARD FLATSHEET SIGN FOR CLOSURE DURATIONS OF LESS THAN 1 WEEK.

THE SIGNS SHALL BE ERECTED ON THE RIGHT-HAND SIDE OF THE ROAD/RAMP FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT OR NEAR THE POINT OF CLOSURE. THE SIGNS MAY BE ERECTED ANYWHERE ON RAMPS AS LONG AS THEY ARE VISIBLE TO THE MOTORISTS USING THE RAMP. ON ENTRANCE RAMPS, THE SIGN SHALL BE ERECTED WELL IN ADVANCE OF THE MERGE AREA TO AVOID DISTRACTING MOTORISTS.

NOTICE OF CLOSURE SIGN TIME TABLE

ITEM	DURATION OF CLOSURE	SIGN DISPLAYED TO PUBLIC
RAMP &	>=2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
ROAD	> 12 HOURS & < 2 WEEKS	7 CALENDAR DAYS PRIOR TO CLOSURE
CLOSURES	<= 12 HOURS	2 BUSINESS DAYS PRIOR TO CLOSURE

THE SIGN SHALL DISPLAY THE DATE OF THE CLOSURE IN MMM-DD FORMAT AND THE NUMBER OF DAYS OF THE CLOSURE. THE LAST LINE OF THE W20-H13 SIGN LISTS A PHONE NUMBER WHICH A MOTORIST MAY CALL FOR ADDITIONAL INFORMATION. THIS IS TO BE A SPECIFIC OFFICE WITHIN THE DISTRICT RATHER THAN THE GENERAL SWITCHBOARD NUMBER.



**W20-H13**

NOTE: THE CONTRACTOR IS TO SUPPLY THE DATE

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN STANDARD 48 X 30 INCH ROAD CLOSED SIGNS, SIGN SUPPORTS, BARRICADES AND LIGHTS, AS DETAILED IN SCD MT-101.60 AT THE FOLLOWING LOCATIONS DURING PERIODS IN WHICH THE AFFECTED ROADS ARE CLOSED TO TRAFFIC.

- LIBERTY STREET AND CUMBERLAND STREET INTERSECTION
- LIBERTY STREET AND UNION STREET INTERSECTION
- LIBERTY STREET AND UNNAMED ALLEY INTERSECTION

**ITEM 614, MAINTAINING TRAFFIC (CONTINUED)**

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN SIGNS AND SIGN SUPPORTS, AS DETAILED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AND TYPE III BARRICADES OF THE TYPE AND LOCATION AS FOLLOWS:

- LIBERTY STREET AND US 68 INTERSECTION ON BOTH LEGS OF LIBERTY STREET

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&MS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

**ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS**

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY SHALL BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

DURING A TRAFFIC SIGNAL INSTALLATION WHEN IMPACTING THE NORMAL FUNCTION OF THE SIGNAL OR THE FLOW OF TRAFFIC, OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G., DIRECTING MOTORISTS THROUGH A RED LIGHT).

IN ADDITION TO THE REQUIREMENT OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY SHOULD BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS AS APPROVED BY THE ENGINEER:

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP).

IN GENERAL, LEOS SHOULD BE POSITIONED IN ADVANCE OF AND ON THE SAME SIDE AS THE LANE RESTRICTION (OR AT THE POINT OF ROAD CLOSURE), AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH SIGNALIZED INTERSECTIONS IN WORK ZONES.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

**ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS (CONTINUED)**

THE LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

ENSURE PROVIDED LEOS HAVE BEEN TRAINED APPROPRIATE TO THE JOB DECISIONS THEY ARE REQUIRED TO MAKE WHILE ON THE PROJECT, IN ACCORDANCE WITH C&MS 614.03.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE THAT SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LEOS WITH PATROL CAR REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

**ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 16 HOURS**

THE HOURS PAID SHALL INCLUDE ANY MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF A LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

**NOTIFICATION OF TRAFFIC RESTRICTIONS**

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITTEN NOTIFICATION IS SUBMITTED IN A TIMELY MANNER TO ALLOW THE PROJECT ENGINEER TO MEET THE REQUIRED TIME FRAMES SET FORTH IN THE TABLE BELOW TO INFORM THE SPECIAL HAULING PERMITS SECTION (HAULING.PERMITS@DOT.OHIO.GOV) AND THE DISTRICT PUBLIC INFORMATION OFFICE (PIO). THIS NOTIFICATION SHALL BE RECEIVED BY THE PROJECT ENGINEER PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE SIGNS OR MESSAGE BOARDS.

INFORMATION SHOULD INCLUDE, BUT IS NOT LIMITED TO, ALL CONSTRUCTION ACTIVITIES THAT IMPACT OR INTERFERE WITH TRAFFIC AND SHALL LIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, NUMBER OF LANES CLOSED, MINIMUM VERTICAL CLEARANCE, MINIMUM WIDTH OF DRIVABLE PAVEMENT, DETOUR ROUTES, IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

NOTIFICATION OF TRAFFIC RESTRICTIONS TIME TABLE

ITEM	DURATION OF CLOSURE	NOTICE DUE TO PERMITS & PIO
RAMP & ROAD CLOSURES	>= 2 WEEKS	21 CALENDAR DAYS PRIOR TO CLOSURE
	> 12 HOURS & < 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	<= 12 HOURS	4 CALENDAR DAYS PRIOR TO CLOSURE
LANE CLOSURES & RESTRICTIONS	>= 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	< 2 WEEKS	5 BUSINESS DAYS PRIOR TO CLOSURE
START OF CONSTRUCTION & TRAFFIC PATTERN CHANGES	N/A	14 CALENDAR DAYS PRIOR TO IMPLEMENTATION

ANY UNFORESEEN CONDITIONS NOT SPECIFIED IN THE PLANS REQUIRING TRAFFIC RESTRICTIONS SHALL ALSO BE REPORTED TO THE PROJECT ENGINEER USING THE NOTIFICATION TIME TABLE.



DESIGNER	EJS
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SHEET NUM.								PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
2	3	7	8	14			01/SAF/21	EXT	TOTAL					
													ROADWAY	
	40							40	202	30000	40	SF	WALK REMOVED	3
	20							20	202	32500	20	FT	CURB AND GUTTER REMOVED	3
	2							2	304	20000	2	CY	AGGREGATE BASE	3
	20							20	608	10000	20	SF	4" CONCRETE WALK	3
	20							20	608	52000	20	SF	CURB RAMP	3
	20							20	609	12000	20	FT	COMBINATION CURB AND GUTTER, TYPE 2	3
		1						1	SPECIAL	69050000	1	EACH	MAILBOX SUPPORT	3
		1						1	SPECIAL	69050350	1	EACH	MAILBOX REMOVED AND RESET	3
													EROSION CONTROL	
4								4	659	00300	4	CY	TOPSOIL	2
35								35	659	10000	35	SY	SEEDING AND MULCHING	2
0.01								0.01	659	20000	0.01	TON	COMMERCIAL FERTILIZER	2
1								1	659	35000	1	MGAL	WATER	2
1,000								1,000	832	30000	1,000	EACH	EROSION CONTROL	2
													TRAFFIC CONTROL	
		48						48	630	03100	48	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
		4						4	630	08600	4	EACH	SIGN POST REFLECTOR	
		2						2	630	79000	2	EACH	SIGN HANGER ASSEMBLY, SPAN WIRE	
		6						6	630	79500	6	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED	
		60						60	630	80100	60	SF	SIGN, FLAT SHEET	
		11						11	630	84900	11	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
		6						6	630	86002	6	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
		2						2	630	97700	2	EACH	SIGNING, MISC.:SOLAR-POWERED RECTANGULAR RAPID FLASHING BEACON (RRFB) SIGN ASSEMBLY WITH PEDESTRIAN LIGHT	
			57					57	642	00500	57	FT	STOP LINE, TYPE 1	
			453					453	642	00620	453	FT	CROSSWALK LINE, 12", TYPE 1	
			2					2	642	01110	2	EACH	SCHOOL SYMBOL MARKING, 96", TYPE 1	
			30					30	642	20802	30	FT	YIELD LINE, TYPE 1	
			90					90	642	30000	90	FT	REMOVAL OF PAVEMENT MARKING	
													TRAFFIC SIGNALS	
				13				13	625	25500	13	FT	CONDUIT, 3", 725.04	
				11				11	625	25600	11	FT	CONDUIT, 4", 725.04	
				115				115	625	25908	115	FT	CONDUIT, JACKED OR DRILLED, 725.052, 3"	
				24				24	625	29002	24	FT	TRENCH, 24" DEEP	
				3				3	625	30706	3	EACH	PULL BOX, 725.08, 24"	
				4				4	625	32000	4	EACH	GROUND ROD	
				8				8	632	05006	8	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, 15 YEAR LEDS, BLACK	
				8				8	632	20731	8	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	
				8				8	632	20750	8	EACH	ACCESSIBLE PEDESTRIAN PUSHBUTTON	
				8				8	632	25000	8	EACH	COVERING OF VEHICULAR SIGNAL HEAD	
				8				8	632	25010	8	EACH	COVERING OF PEDESTRIAN SIGNAL HEAD	
				67				67	632	30200	67	FT	MESSENGER WIRE, 7 STRAND, 3/8" DIAMETER WITH ACCESSORIES	
				67				67	632	30600	67	FT	TETHER WIRE, WITH ACCESSORIES	
				164				164	632	40400	164	FT	SIGNAL CABLE, 4 CONDUCTOR, NO. 14 AWG	
				1,122				1,122	632	40500	1,122	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	
				2				2	632	64000	2	EACH	STRAIN POLE FOUNDATION	
				2				2	632	64020	2	EACH	PEDESTAL FOUNDATION	
				47				47	632	66104	47	FT	POWER CABLE, 3 CONDUCTOR, NO. 10 AWG	
				55				55	632	69700	55	FT	SERVICE CABLE, 3 CONDUCTOR, NO. 8 AWG	
				1				1	632	70001	1	EACH	POWER SERVICE, AS PER PLAN	12
				2				2	632	86140	2	EACH	STRAIN POLE, TYPE TC-81.11, DESIGN 12, BLACK	
				2				2	632	89900	2	EACH	PEDESTAL, 8", TRANSFORMER BASE, BLACK	
				2				2	632	90101	2	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN	11
				1				1	633	65511	1	EACH	CABINET, TYPE JS-2, AS PER PLAN	11
				1				1	633	67100	1	EACH	CABINET FOUNDATION	
				1				1	633	67200	1	EACH	CONTROLLER WORK PAD	
				2				2	809	69101	2	EACH	STOP LINE RADAR DETECTION, AS PER PLAN	12
				1				1	809	69123	1	EACH	ATC CONTROLLER, AS PER PLAN	11
				1				1	809	69201	1	EACH	EMERGENCY VEHICLE PREEMPTION, AS PER PLAN	13

GENERAL SUMMARY

DESIGN AGENCY



DESIGNER  
**LMD**

REVIEWER

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**118746**

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SHEET NUM.

PART.

ITEM

ITEM

GRAND

UNIT

DESCRIPTION

SEE SHEET NO.

2

3

7

8

14

01/SAF/21

ITEM

EXT

TOTAL

4

4

809

69211

4

EACH

PREEMPT RECEIVING UNIT, AS PER PLAN

13

164

164

809

69221

164

FT

PREEMPT DETECTOR CABLE, AS PER PLAN

13

1

1

809

69231

1

EACH

PREEMPT PHASE SELECTOR, AS PER PLAN

13

4

4

809

69241

4

EACH

PREEMPT CONFIRMATION LIGHT, AS PER PLAN

13

INCIDENTALS

LS

614

11000

LS

MAINTAINING TRAFFIC

4

LS

623

10000

LS

CONSTRUCTION LAYOUT STAKES AND SURVEYING

LS

624

10000

LS

MOBILIZATION

GENERAL SUMMARY

DESIGN AGENCY



DESIGNER

LMD

REVIEWER

PROJECT ID

118746

SHEET

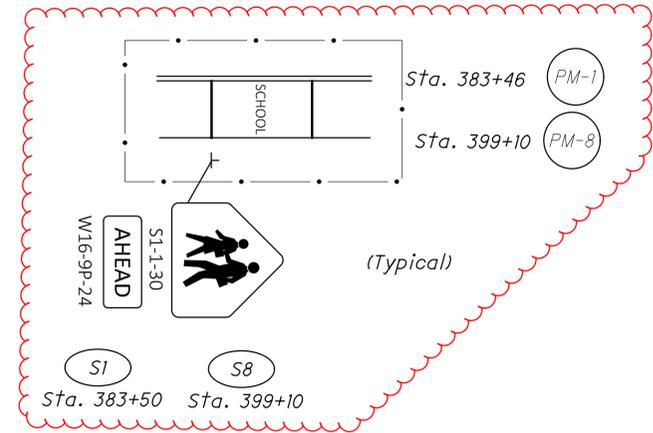
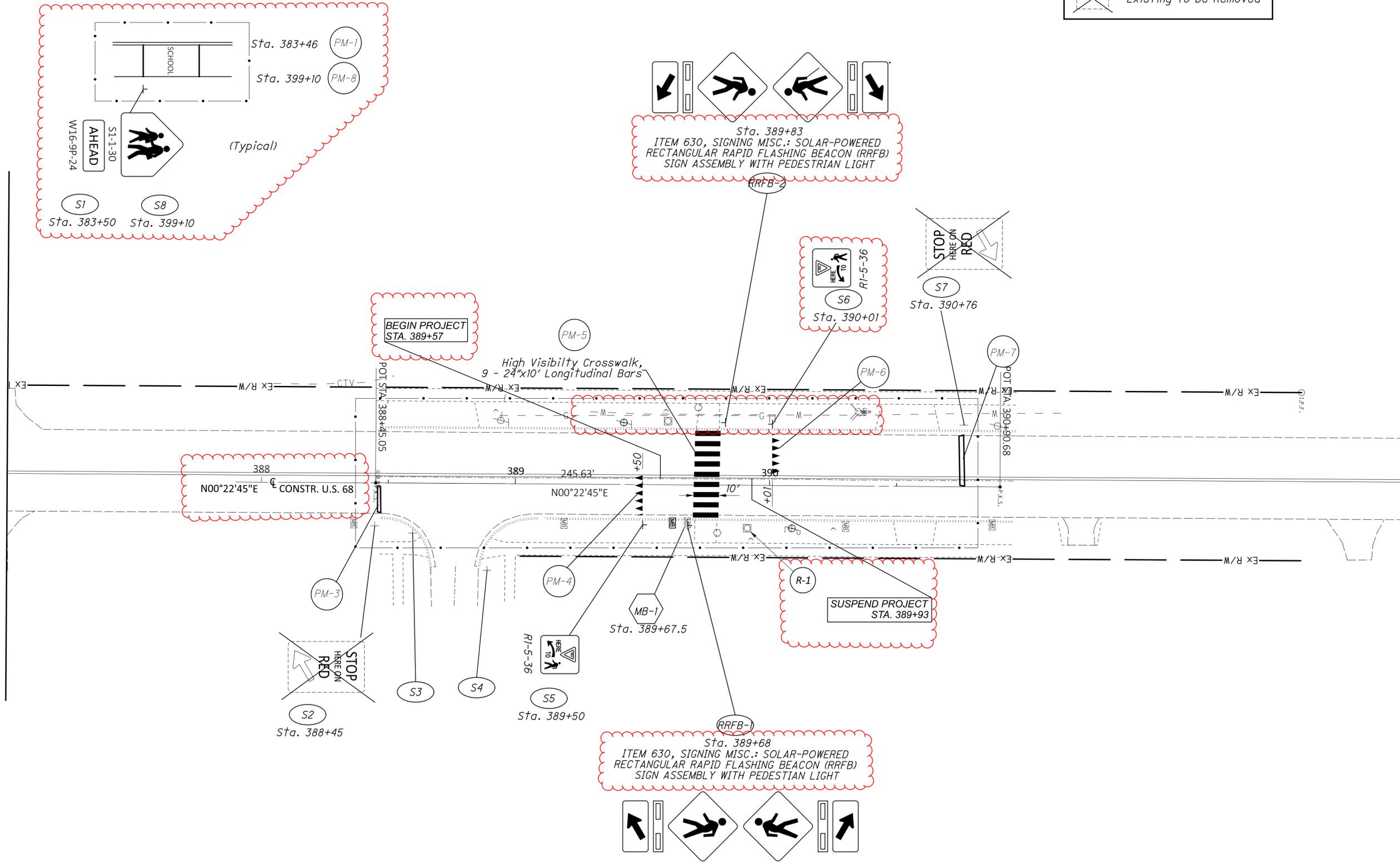
P.6

TOTAL

18

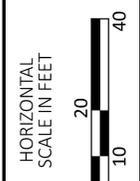
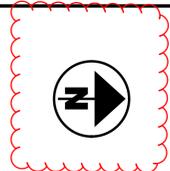






**SIGN LEGEND**

- New
- Existing to be Removed and Reerected
- Existing to be Removed

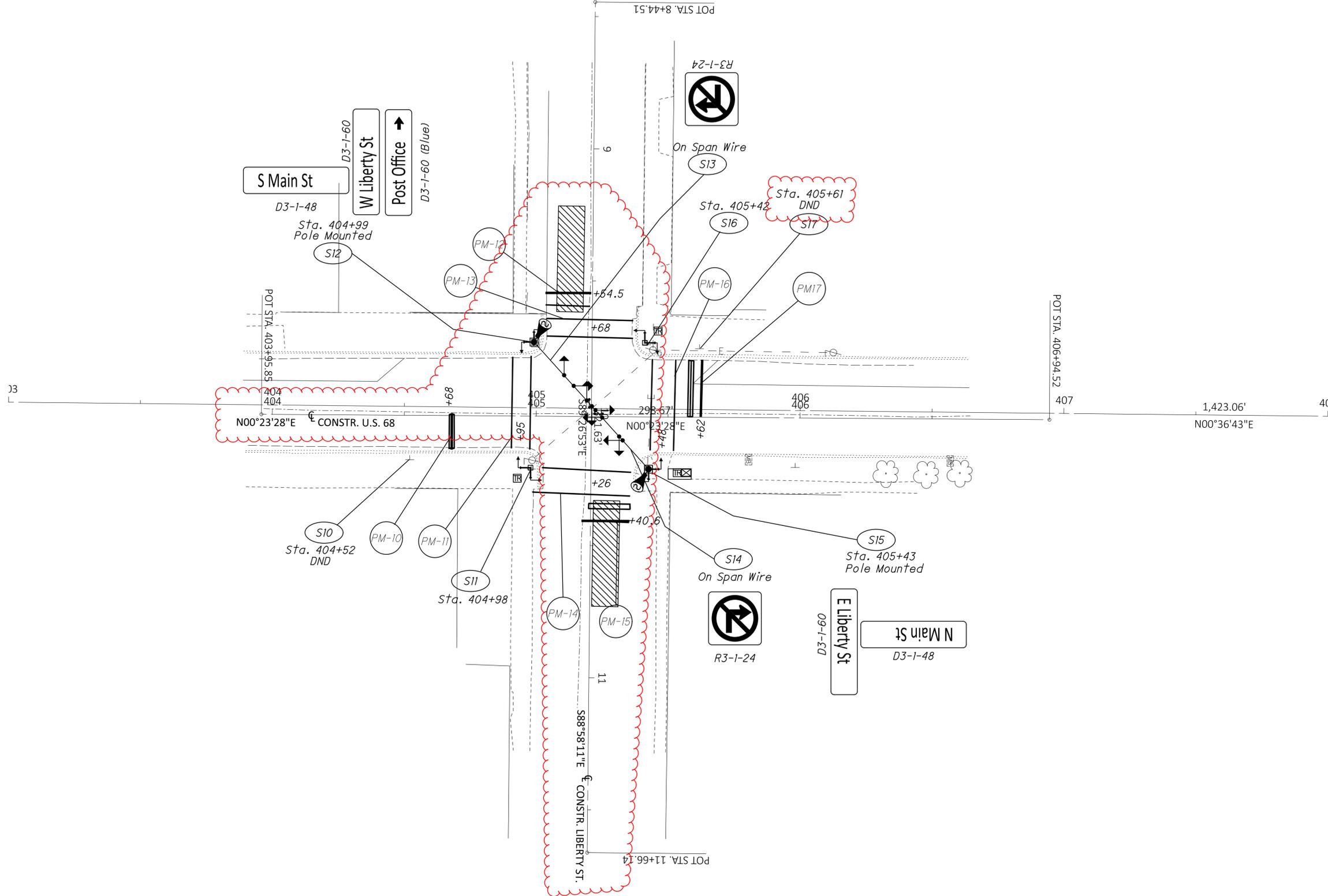


TRAFFIC CONTROL PLAN SHEET



DESIGNER

TAB	
REVIEWER	
LMD 09/11/23	
PROJECT ID	
118746	
SUBSET	TOTAL
0	0
SHEET	TOTAL
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TRAFFIC CONTROL  
PLAN SHEET



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SUBSET	0
TOTAL	0
SHEET	P.10
TOTAL	18

**POWER SUPPLY FOR TRAFFIC SIGNALS**

ELECTRIC POWER SHALL BE OBTAINED FROM AMERICAN ELECTRIC POWER AT THE LOCATION(S) INDICATED ON THE PLANS. POWER SUPPLIED SHALL BE 120 VOLTS.

**SIGNAL ACTIVATION**

PRIOR TO ACTIVATING THE NEW TRAFFIC SIGNAL TO STOP-AND-GO MODE AND/OR REMOVING THE EXISTING TRAFFIC SIGNAL FROM SERVICE, ALL ITEMS IN THE PROPOSED SIGNAL PLAN SHALL BE FULLY COMPLETED, (I.E., VEHICLE DETECTION, PEDESTRIAN SIGNAL HEADS, ETC.) IF THERE ARE CONSTRUCTABILITY ISSUES (I.E., ROADWAY WIDENING, ETC.) THAT PREVENT THE SIGNAL FROM BEING COMPLETED PRIOR TO ACTIVATION, IT SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER. THE DISTRICT TRAFFIC ENGINEER WILL THEN REVIEW, APPROVE OR REJECT PROPOSALS TO ACTIVATE THE TRAFFIC SIGNAL PRIOR TO COMPLETION.

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER AT LEAST 10 WORKING DAYS PRIOR TO SCHEDULING THE FINAL INSPECTION OF THE SIGNAL INSTALLATION. FINAL INSPECTION IS NOT CONSIDERED COMPLETE UNTIL DESIGNATED DISTRICT TRAFFIC PERSONNEL INSPECT THE TRAFFIC SIGNAL AND ISSUE WRITTEN APPROVAL.

IF ISSUES ARE FOUND DURING THE FINAL INSPECTION THAT EFFECT THE SAFETY OF THE TRAVELING PUBLIC AND/OR THE EFFICIENCY OF THE INTERSECTION, THE SIGNAL SHALL NOT BE ACTIVATED ON THE PROPOSED DATE. ANY PUNCH LIST ITEMS THAT ARE FOUND SHALL BE CORRECTED AND REINSPECTED BY DISTRICT TRAFFIC PERSONNEL PRIOR TO FINAL ACCEPTANCE. CITY FORCES SHALL ONLY ASSUME DAY TO DAY MAINTENANCE OF THE TRAFFIC SIGNAL AFTER FINAL WRITTEN ACCEPTANCE HAS BEEN ISSUED.

**DETECTION MAINTENANCE**

IF VEHICLE DETECTION BECOMES UNEXPECTEDLY DISABLED, REQUIRES MODIFICATION, OR IS SCHEDULED TO BE TEMPORARILY REMOVED DURING THE CONSTRUCTION PROJECT, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER.

THE CONTRACTOR SHALL CONTINUE TO MAINTAIN AND MODIFY THE DETECTION UNTIL FINAL ACCEPTANCE OF THE TRAFFIC SIGNAL. THIS IS TO ENSURE VEHICLE DETECTION REMAINS FULLY FUNCTIONAL THROUGHOUT CONSTRUCTION.

**GROUNDING AND BONDING**

THE REQUIREMENTS OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (C&MS) AND THE TC SERIES OF STANDARD CONSTRUCTION DRAWINGS ARE MODIFIED AS FOLLOWS:

1. ALL METALLIC PARTS CONTAINING ELECTRICAL CONDUCTORS SHALL BE PERMANENTLY JOINED TO FORM AN EFFECTIVE GROUND FAULT CURRENT PATH BACK TO THE GROUNDED CONDUCTOR IN THE POWER SERVICE DISCONNECT SWITCH.

A. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN METALLIC CONDUITS (725.04) IN ADDITION TO THE CONDUCTORS SPECIFIED AND BOND THE CONDUIT TO THIS GROUNDING CONDUCTOR.

B. WHEN AN EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED IN PLASTIC CONDUIT (725.05), THE INSTALLATION SHALL INCLUDE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR IN ADDITION TO THE CONDUCTORS SPECIFIED.

C. IF MULTIPLE CONDUIT RUNS BEGIN AND END AT THE SAME POINTS, ONLY ONE EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED.

D. THE MESSENGER WIRE AT SIGNALIZED INTERSECTIONS WILL BE USED AS THE CONDUCTIVE PATH FROM CORNER TO CORNER IF CONDUIT IS NOT PROVIDED UNDER THE ROADWAY. WHEN CONDUIT CONNECTS THE CORNERS OF AN INTERSECTION, AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE USED IN THE CONDUIT.

2. CONDUITS.

A. THE 725.04 CONDUIT SHALL HAVE GROUNDING BUSHINGS INSTALLED AT ALL TERMINATION POINTS. THE BUSHING MATERIAL SHALL BE COMPATIBLE WITH GALVANIZED STEEL CONDUIT AND THE GROUNDING LUG MATERIAL SHALL BE COMPATIBLE FOR USE WITH COPPER WIRE. THREADED OR COMPRESSION TYPE BUSHINGS MAY BE USED.

B. THE 725.05 CONDUIT SHALL HAVE THE INSIDE AND OUTSIDE DIAMETERS OF THE CONDUIT DEBURRED AT ALL TERMINATION POINTS.

C. BOTH ENDS OF METALLIC CONDUIT SHALL BE BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.

D. METALLIC CONDUIT MAY BE BONDED TO METALLIC BOXES THROUGH THE USE OF CONDUIT FITTINGS UL APPROVED FOR THIS TYPE OF CONNECTION, WITH THE BOX BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.

3. WIRE FOR GROUNDING AND BONDING.

A. USE INSULATED, COPPER WIRE FOR THE EQUIPMENT GROUNDING CONDUCTOR. BONDING JUMPERS IN BOXES AND ENCLOSURES MAY BE BARE OR INSULATED COPPER WIRE. WIRE SIZE SHALL BE AS FOLLOWS:

I. USE 4 AWG BETWEEN THE POWER SERVICE AND SUPPORTS, POLES, PEDESTALS, CONTROLLER OR FLASHER CABINETS.

II. THE INSULATION SHALL BE GREEN OR GREEN WITH YELLOW STRIPE(S). FOR 4 AWG OR LARGER, INSULATION MAY ALSO BE BLACK WITH GREEN TAPE/LABELS INSTALLED AT ALL ACCESS POINTS.

4. GROUND ROD.

A. A 3/4-INCH SCHEDULE 40 PVC CONDUIT WILL BE USED IN FOUNDATIONS AND CONCRETE WALLS FOR THE GROUNDING CONDUCTOR (GROUND WIRE) RACEWAY TO THE GROUND ROD. SHOULD METALLIC CONDUIT BE USED, BOTH ENDS OF THE CONDUIT SHALL BE BONDED TO THE GROUNDING CONDUCTOR.

B. THE TYPICAL GROUNDING CONDUCTOR (GROUND WIRE) SHALL BE 4 AWG INSULATED, COPPER.

5. THE GREEN CONDUCTOR IN SIGNAL CABLES (CONDUCTOR #4) SHALL NOT BE USED TO SUPPLY POWER TO A SIGNAL INDICATION. IT WILL BE CONNECTED TO THE SIGNAL BODY AS AN EQUIPMENT GROUND IN ALUMINUM HEADS AND IT WILL BE UNUSED IN PLASTIC HEADS. UNUSED CONDUCTORS SHALL BE GROUNDED IN THE CABINET. TYPICAL USE OF CONDUCTORS IS AS FOLLOWS:

COND. NO.	COLOR	VEHICLE SIGNAL	PEDESTRIAN SIGNAL
1	BLACK	GREEN BALL	#1 WALK
2	WHITE	AC NEUTRAL	AC NEUTRAL
3	RED	RED BALL	#1 DW/FDW
4	GREEN	EQUIPMENT GROUND	EQUIPMENT GROUND
5	ORANGE	YELLOW BALL	#2 DW/FDW
6	BLUE	GREEN ARROW	#2 WALK
7	WHITE/BLACK	STRIPE YELLOW ARROW	NOT USED

6. POWER SERVICE AND DISCONNECT SWITCH.

A. AT THE POWER SERVICE LOCATION, THE GROUNDING CONDUCTOR (GROUND WIRE) FROM THE DISCONNECT SWITCH NEUTRAL (AC-) BAR TO THE GROUND ROD SHALL BE A CONTINUOUS, UNSPLICED CONDUCTOR. IF SPLICED, IT SHALL BE AN EXOTHERMIC WELD BUTT SPLICE.

B. THE SERVICE NEUTRAL (AC-) SHALL ONLY BE CONNECTED TO GROUND AT THE PRIMARY POWER SERVICE DISCONNECT SWITCH.

I. NEMA CONTROLLER CABINETS: IF A POWER SERVICE DISCONNECT SWITCH IS LOCATED BEFORE THE CONTROLLER CABINET, THE NEUTRAL (AC-) AND THE GROUNDING BARS IN THE CONTROLLER CABINET SHALL NOT BE CONNECTED TOGETHER AS SHOWN IN NEMA TS-2, FIGURE 5-4.

II. IF SECONDARY DISCONNECT SWITCHES ARE CONNECTED AFTER THE PRIMARY DISCONNECT SWITCH, THE NEUTRAL (AC-) SHALL ONLY BE GROUNDED AT THE PRIMARY SWITCH. EQUIPMENT GROUNDING CONDUCTORS SHALL BE BROUGHT TO THE PRIMARY SWITCH, BUT SHALL BE GROUNDED AT BOTH SECONDARY AND PRIMARY SWITCHES.

7. PAYMENT - ALL MATERIALS AND WORK REQUIRED TO COMPLETE THE EFFECTIVE GROUND FAULT CURRENT PATH SYSTEM ARE INCIDENTAL TO THE CONDUCTORS INSTALLED BY CONTRACT.

**GUARANTEE**

THE CONTRACTOR SHALL GUARANTEE THAT THE TRAFFIC CONTROL SYSTEM INSTALLED AS PART OF THIS CONTRACT SHALL OPERATE SATISFACTORILY FOR A PERIOD OF 90 DAYS FOLLOWING COMPLETION OF THE 10-DAY PERFORMANCE TEST. IN THE EVENT OF UNSATISFACTORY OPERATION, THE CONTRACTOR SHALL CORRECT FAULTY INSTALLATIONS, MAKE REPAIRS AND REPLACE DEFECTIVE PARTS WITH NEW PARTS OF EQUAL OR BETTER QUALITY.

EQUIPMENT, MATERIAL AND LABOR COSTS INCURRED IN CORRECTING AN UNSATISFACTORY OPERATION SHALL BE BORNE BY THE CONTRACTOR.

THE GUARANTEE SHALL COVER THE FOLLOWING ITEMS OF THE TRAFFIC CONTROL SYSTEM: CONTROLLER, CABINET, UNINTERRUPTIBLE POWER SUPPLY, VEHICLE DETECTION EQUIPMENT, LED LAMP UNITS, NETWORK AND COMMUNICATION/ INTERCONNECT EQUIPMENT.

CUSTOMARY MANUFACTURER'S GUARANTEES FOR THE FOREGOING ITEMS SHALL BE TURNED OVER TO THE STATE OR THE MAINTAINING AGENCY FOLLOWING ACCEPTANCE OF THE EQUIPMENT.

THE COST OF GUARANTEEING THE TRAFFIC CONTROL SYSTEM WILL BE INCIDENTAL TO AND INCLUDED IN THE CONTRACT UNIT PRICE OF THE VARIOUS ITEMS MAKING UP THE SYSTEM.

**632 REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN**

TRAFFIC SIGNAL INSTALLATIONS, INCLUDING SIGNAL HEADS, CABLE, MESSENGER WIRE, SIGNAL SUPPORTS, CABINET(S), CONTROLLER, ETC., SHALL BE REMOVED IN ACCORDANCE WITH C&MS 632.26 AND AS INDICATED ON THE PLANS. UNLESS NOTED, POWER SERVICES SHALL BE REMOVED IN ACCORDANCE WITH C&MS 625.21.F. REMOVED ITEMS SHALL BE STORED AS PART OF A NEW INSTALLATION ON THE PROJECT OR STORED ON THE PROJECT FOR SALVAGE BY THE VILLAGE OF ARLINGTON IN ACCORDANCE WITH THE LISTING GIVEN HEREIN.

SALVAGE ITEMS:  
-BOTH (2) WOODEN AND (2) STEEL SIGNAL POLES  
-ALL (4) 4-WAY SIGNAL HEADS

REMOVED ITEMS SHALL BE DELIVERED TO THE NEAREST VILAGE OF ARLINGTON FACILITY WHOSE ADDRESS IS LISTED BELOW:

VILLAGE OF ARLINGTON, ATTN: AL LATTA (419-722-2715)

IN THE EVENT THE ITEMS STORED ON THE PROJECT FOR SALVAGE BY THE LOCAL AGENCY ARE NOT REMOVED, THE CONTRACTOR SHALL, WHEN DIRECTED BY THE ENGINEER IN WRITING, REMOVE AND DISPOSE OF THE ITEMS AT NO ADDITIONAL COST TO THE PROJECT.

IN ADDITION TO THE REQUIREMENTS OF C&MS 632, THE EXISTING STRAIN POLE FOUNDATIONS AT THE INTERSECTION OF US-68 AND LIBERTY ST SHALL BE REMOVED TO THE DEPTH REQUIRED FOR PROPER INSTALLATION OF THE PROPOSED STRAIN POLE FOUNDATIONS.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE AND WILL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, AND EQUIPMENT AND OTHER INCIDENTALS NECESSARY FOR REMOVAL OF THE EXISTING TRAFFIC SIGNAL INSTALLATIONS.

**STRAIN POLE AND PEDESTAL FOUNDATION ELEVATIONS**

ELEVATIONS SHOWN IN THE PLANS FOR STRAIN POLE AND PEDESTAL FOUNDATIONS ARE FOR COMPUTATIONAL PURPOSES ONLY. THE ACTUAL ELEVATION OF THE FOUNDATION SHALL BE IN ACCORDANCE WITH TRAFFIC SCD TC-21.21 PROVIDED THE EXISTING SLOPE IS LESS THAN 6:1.

AT LOCATIONS WHERE THE EXISTING SLOPE IS 6:1 OR GREATER, THE BURIED DEPTH OF FOUNDATION, AS SHOWN IN SCD TC-21.21 SHALL APPLY TO THE LOW SIDE OF THE SLOPE. THE TOP OF THE FOUNDATION SHALL BE SET 2 INCHES ABOVE THE EXISTING SURFACE ON THE HIGH SIDE OF THE SLOPE. THE ADDITIONAL DEPTH OF FOUNDATION NECESSARY TO MEET THESE REQUIREMENTS SHALL BE ADDED TO THE FORMED TOP.

**WORK INSPECTION**

THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER WITH 72-HOUR NOTICE OF ANY SIGNAL WORK TO BE PERFORMED AT THE INTERSECTION SITE(S) SO THAT INSPECTION SERVICES CAN BE SUPPLIED.

**809 ATC CONTROLLER, AS PER PLAN**

THE CONTROLLER UNIT SHALL BE FURNISHED AND INSTALLED PER SS 809 AND BE LISTED ON THE TRAFFIC AUTHORIZED PRODUCTS (TAP) LIST.

THE CONTROLLER SHALL BE A SIEMENS EAGLE M60 LOADED WITH 3.58F SOFTWARE AND COMPATIBLE WITH THE CABINET TYPE BEING INSTALLED.

DESIGN AGENCY



DESIGNER  
**LMD**  
REVIEWER

PROJECT ID  
**118746**

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**633 CABINET, TYPE TS-2, AS PER PLAN**

THE CABINET SHALL BE FURNISHED AND INSTALLED ACCORDING TO CMS 633 AND 733 AND BE LISTED ON THE TRAFFIC AUTHORIZED PRODUCTS LIST (TAP).

THE GROUND-MOUNTED CABINET SHALL BE A NEMA TS-2, TYPE 1, CABINET SIZE 7 WITH 16 LOAD SWITCH BAYS, LED UNDER-SHELF LIGHTING, POWER HARNESSES FOR BOTH TS2 TYPE 1 AND TYPE 2 CONTROLLERS AND SHALL HAVE A MINIMUM OF THREE SHELVES.

EACH CABINET SHALL COME EQUIPPED WITH TWO 16-CHANNEL CABINET DETECTOR RACKS (CDR) INCLUDING BUS INTERFACE UNITS (BIU). THE LOOP DETECTOR TERMINATION PANEL FOR THE SECOND DETECTOR RACK SHALL BE OMITTED.

THE CABINET SHALL BE FURNISHED WITH AN EDI MMU AS ALLOWED ON THE TAP/APPROVED PRODUCTS LIST.

PAYMENT FOR ITEM 633 CABINET, TYPE TS-2, AS PER PLAN WILL BE AT THE CONTRACT BID PRICE PER EACH COMPLETE AND IN PLACE INCLUDING ALL CONNECTIONS TESTED AND ACCEPTED.

**809 STOP-LINE RADAR DETECTION, AS PER PLAN**

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING A WAVETRONIX SMARTSENSOR MATRIX DETECTION UNIT. THE DETECTION UNIT SHALL INCLUDE THE FOLLOWING:

1. POWER SHALL BE PROVIDED FROM THE TRAFFIC CABINET.
2. ALL REQUIRED INPUTS CARDS SHALL BE INCLUDED IN THE TRAFFIC CABINET AND SHALL BE COMPATIBLE WITH CALTRANS, NEMA TS1 AND NEMA TS2 DETECTOR RACKS. THE CARDS SHALL PROVIDE TRUE PRESENCE DETECTOR CALLS OR CONTACT CLOSURE TO THE TRAFFIC CONTROLLER.
3. THE UNIT SHALL BE MOUNTED DIRECTLY TO A POLE OR MAST ARM, AS RECOMMENDED BY THE MANUFACTURER. CABLE(S) SHALL BE PROVIDED AS REQUIRED AND RECOMMENDED BY THE MANUFACTURER.
4. SURGE PROTECTION DEVICES, AS RECOMMENDED BY THE MANUFACTURER SHALL BE INCLUDED BOTH AT THE POLE WHERE THE UNIT IS LOCATED TO PROTECT THE UNIT AND IN THE TRAFFIC CABINET TO PROTECT THE CABINET ELECTRONICS.
5. THE MANUFACTURER'S REPRESENTATIVE SHALL BE ON SITE DURING INSTALLATION AND TESTING AND SHALL PROVIDE ONSITE TRAINING ON THE SETUP, OPERATION AND MAINTENANCE OF THE UNIT.
6. A SERIAL TO ETHERNET COMMUNICATIONS MODULE AND ETHERNET CABLE (MINIMUM 7 FEET).
7. THE POWER SUPPLY AND COMMUNICATION MODULES SHALL BE SECURED TO A SINGLE PANEL THAT CAN BE MOUNTED INTERIOR TO THE TRAFFIC CABINET. THE PANEL SHALL INCLUDE MODULAR-PLUG STYLE CONNECTIONS FOR UP TO FOUR (4) SENSOR CABLES. ADDITIONAL SENSORS MAY BE HARD-WIRED TO THE COMMUNICATION MODULES, AS NECESSARY.
8. THE CONTRACTOR SHALL INSTALL THE RADAR DETECTION PRIOR TO MILLING/DISABLING EXISTING LOOPS.
9. THE INSTALLATION SHALL INCLUDE ALL CONTROLLER PROGRAMMING FOR COMPLETE INSTALLATION, WHICH INCLUDES MODIFICATIONS FOR REMOVAL OF EXISTING DETECTION.

PAYMENT FOR ITEM 809 STOP-LINE RADAR DETECTION, AS PER PLAN SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH UNIT, COMPLETE AND IN PLACE INCLUDING ALL REQUIRED CABINET HARDWARE, MOUNTING BRACKETS, CABLES, CONDUIT AND CONNECTIONS TESTED AND ACCEPTED.

**632 PEDESTRIAN SIGNAL HEAD (LED), (COUNTDOWN), TYPE D2, AS PER PLAN**

IN ADDITION TO THE REQUIREMENTS OF C&MS 632 AND 732 THE FOLLOWING SHALL APPLY:

1. SIGNAL HEADS AND VISORS SHALL BE CONSTRUCTED OF BLACK POLYCARBONATE PLASTIC AND MEET ITE SPECIFICATIONS.
2. PROPER EXTERIOR COLORS SHALL BE OBTAINED BY USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING.
3. PIPE, SPACERS AND FITTINGS CONSTRUCTED OF POLYCARBONATE PLASTIC MAY BE USED IN LIEU OF GALVANIZED STEEL OR ALUMINUM.
4. THE PEDESTRIAN SIGNAL HEAD SHALL BE OF THE LED COUNTDOWN TYPE.
5. NEW ATTACHMENT HARDWARE AND FITTINGS SHALL BE USED.
6. THE LIGHT EMITTING DIODE (LED) MODULES SHALL MEET THE REQUIREMENTS OF C&MS 732.04. THE CONTRACTOR SHALL PROVIDE ODOT, IN WRITING, WITH THE LED MANUFACTURER NAME, SERIAL NUMBER, PART NUMBER, DESCRIPTION OF LAMP, AND DATE OF MANUFACTURE FOR ALL LED UNITS THAT ARE TO BE USED IN THE SIGNAL HEAD PRIOR TO INSTALLATION, FOR ACCEPTANCE AND WARRANTY PURPOSES.

PAYMENT FOR ITEM 632 PEDESTRIAN SIGNAL HEAD (LED), (COUNTDOWN), TYPE D2, AS PER PLAN SHALL BE MADE FOR THE NUMBER OF COMPLETE SIGNAL HEAD FURNISHED AND INSTALLED, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS AND NEW ATTACHMENT HARDWARE.

**MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION**

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC SIGNAL/FLASHER INSTALLATIONS WITHIN THE PROJECT UNDER THE FOLLOWING CONDITIONS:

1. EXISTING SIGNAL/FLASHER INSTALLATIONS WHICH THE PLANS REQUIRE THE CONTRACTOR TO ADJUST, MODIFY, ADD ONTO OR REMOVE, OR WHICH THE CONTRACTOR ACTUALLY ADJUSTS, MODIFIES OR OTHERWISE DISTURBS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ENTIRE INSTALLATION (AT AN INTERSECTION) FROM THE TIME HIS OPERATIONS FIRST DISTURB THE INSTALLATION UNTIL THE INSTALLATION HAS BEEN SUBSEQUENTLY REMOVED OR MODIFIED AND THE WORK IS ACCEPTED.
2. NEW OR REUSED SIGNAL/FLASHER INSTALLATIONS OR DEVICES, INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THESE FROM THE TIME OF INSTALLATION UNTIL THE WORK IS ACCEPTED.

THE CONTRACTOR SHALL CORRECT AS QUICKLY AS POSSIBLE ALL OUTAGES OR MALFUNCTIONS. HE SHALL PROVIDE THE MAINTAINING AGENCY AND THE ENGINEER SUCH ADDRESSES AND PHONE NUMBERS WHERE HIS MAINTENANCE FORCES CAN BE CONTACTED. THE CONTRACTOR SHALL PROVIDE ONE OR MORE PERSONS TO RECEIVE ALL CALLS AND DISPATCH THE NECESSARY MAINTENANCE FORCES TO CORRECT OUTAGES. SUCH A PERSON OR PERSONS MAY BE USED TO PERFORM OTHER DUTIES AS LONG AS PROMPT ATTENTION IS GIVEN

TO THESE CALLS AND A PERSON IS READILY AVAILABLE CONTINUOUSLY 24 HOURS A DAY, 7 DAYS A WEEK. ALL LAMP OUTAGES, CABLE OUTAGES, ELECTRICAL FAILURES, EQUIPMENT MALFUNCTIONS AND MISALIGNED SIGNAL HEADS SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK TO SERVICE WITHIN FOUR HOURS AFTER THE CONTRACTOR HAS BEEN NOTIFIED OF THE OUTAGE.

IN THE EVENT NEW SIGNALS ARE DAMAGED PRIOR TO ACCEPTANCE, ALL DAMAGED EQUIPMENT EXCEPT POLES AND CONTROL EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK IN SERVICE WITHIN 8 HOURS AFTER THE CONTRACTOR'S NOTIFICATION OF THE OUTAGE. THE CONTRACTOR SHALL ARRANGE FOR FULL TRAFFIC CONTROL UNTIL THE SIGNAL IS BACK IN OPERATION. IF POLES AND/OR CONTROL EQUIPMENT ARE DAMAGED AND MUST BE REPLACED, THE CONTRACTOR SHALL MAKE TEMPORARY REPAIRS AS NECESSARY TO BRING THE SIGNAL BACK INTO FULL OPERATION WITHIN THE ALLOWED 8-HOUR PERIOD, AND SHALL MAKE PERMANENT REPAIRS OR REPLACEMENT AS SOON THEREAFTER AS POSSIBLE.

NONE OF THE ABOVE SHALL BE CONSTRUED AS COLLECTIVE OR CONSECUTIVE OUTAGE TIME PERIODS AT ANY ONE LOCATION. THAT IS, WHERE MORE THAN ONE OUTAGE OCCURS AT ANY ONE LOCATION THEN THE ALLOTTED TIME LIMIT SHALL BE FOR THE WORST SINGLE OUTAGE.

WHERE OUTAGES ARE THE DIRECT RESULT OF A VEHICLE ACCIDENT THE RESPONSE OF THE CONTRACTOR SHALL BE AS OUTLINED ABOVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COLLECTION OF ANY COMPENSATION FOR THIS WORK FROM THOSE PARTIES RESPONSIBLE FOR THE DAMAGE.

WHERE THE CONTRACTOR HAS FAILED TO, OR CANNOT RESPOND TO, AN OUTAGE OR SIGNAL EQUIPMENT MALFUNCTION, AT THESE LOCATIONS WITHIN HIS RESPONSIBILITY, WITHIN PERIODS AS SPECIFIED ABOVE, THE ENGINEER MAY INVOKE THE PROVISIONS OF SECTION 105.15 AND ANY SUBSEQUENT BILLINGS TO THE STATE OR THE VILLAGE OF ARLINGTON FOR POLICE SERVICES AND MAINTENANCE SERVICES BY VILLAGE FORCES SHALL BE DEDUCTED FROM MONIES DUE OR TO BECOME DUE THE CONTRACTOR IN ACCORDANCE WITH PROVISIONS OF SECTION 105.15.

THE CONTRACTOR SHALL PROVIDE THE MAINTENANCE SERVICE ENTIRELY WITH HIS FORCES OR HE MAY CHOOSE TO ENTER INTO A COOPERATIVE UNDERSTANDING WITH THE LOCAL MAINTAINING AGENCY TO PROVIDE THE MAINTENANCE. THE CONTRACTOR SHALL INFORM THE ENGINEER, IN WRITING, OF THE MAINTENANCE METHOD SELECTED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY TRAFFIC SIGNAL COMPONENTS REQUIRED TO BE HANDLED DURING THE RELOCATION OF POLES AND REVISIONS TO THE SIGNAL SYSTEM. WHEN A TRAFFIC SIGNAL MUST BE TAKEN OUT OF SERVICE BY THE CONTRACTOR, DUE TO CONSTRUCTION PROCEDURES, THIS OUTAGE SHALL NOT EXCEED 4 HOURS AND SHALL NOT INCLUDE THE HOURS OF 6 AM TO 6 PM. ANY SIGNALIZED INTERSECTION, WHERE THE SIGNAL IS OUT OF SERVICE DUE TO CONSTRUCTION PROCEDURES, OR DUE TO AN OUTAGE OR MALFUNCTION OF EQUIPMENT AS DESCRIBED ABOVE, SHALL BE PROTECTED, BY THE CONTRACTOR, BY THE INSTALLATION OF TEMPORARY "STOP" SIGNS, EXCEPT FOR THE FOLLOWING INTERSECTIONS WHICH SHALL BE PROTECTED BY OFF-DUTY VILLAGE OF ARLINGTON POLICE, HIRED BY THE CONTRACTOR:

1. MAIN ST. AND LIBERTY ST.
2. SIGNAL AT PED CROSSING IN FRONT OF ARLINGTON HIGH SCHOOL

ANY VEHICULAR TRAFFIC SIGNAL HEAD, EITHER NEW OR EXISTING WHICH WILL BE OUT OF OPERATION SHALL BE COVERED IN THE MANNER DESCRIBED IN 632.25.

THE CONTRACTOR SHALL MAINTAIN COMPLETE RECORDS OF MALFUNCTIONS INCLUDING:

1. TIME OF NOTIFICATION OF MALFUNCTION;
2. TIME OF WORK CREWS ARRIVAL TO CORRECT THE MALFUNCTION;
3. ACTIONS TAKEN TO CORRECT THE MALFUNCTION, INCLUDING A LIST OF PARTS REPAIRED OR REPLACED;
4. A DIAGNOSIS OF REASON FOR THE MALFUNCTION AND PROBABILITY OF REOCCURRENCE;
5. TIME OF COMPLETION OF THE REPAIR AND SYSTEM RESTORED TO FULL SERVICE.

A COPY OF THESE RECORDS SHALL BE PROVIDED TO THE ENGINEER WITHIN THREE (3) WORKING DAYS FOLLOWING COMPLETION OF EACH REPAIR.

ALL COSTS RESULTING FROM THE ABOVE REQUIREMENTS SHALL BE CONSIDERED TO BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614, MAINTAINING TRAFFIC.

**632, POWER SERVICE, AS PER PLAN**

IN ADDITION TO THE REQUIREMENTS OF THE SPECIFICATIONS, THE FOLLOWING IS ADDED. THE POWER SUPPLYING AGENCIES FOR THIS PROJECT ARE:

AMERICAN ELECTRIC POWER  
PAUL PAXTON 740-348-5322

THE ENGINEER SHALL ENSURE THAT EACH POWER SERVICE ELECTRICAL ENERGY ACCOUNT IS IN THE NAME OF AND THAT THE BILLING ADDRESS IS TO THE MAINTAINING AGENCY NOTED IN THE PLANS. THIS SHALL BE DONE NOT ONLY FOR EACH NEW POWER SERVICE ESTABLISHED BY THIS PROJECT BUT ALSO FOR EACH EXISTING POWER SERVICE, SINCE THERE MAY BE A REASSIGNMENT OF THE RESPONSIBILITY FOR AN EXISTING SERVICE AS A RESULT OF THE WORK PERFORMED BY THIS PROJECT.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH C&MS ITEM 632, "POWER SERVICE, AS PER PLAN" WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

DESIGN AGENCY



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**809 EMERGENCY VEHICLE PREEMPTION, AS PER PLAN**

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING PREEMPTION EQUIPMENT IN THE LOCATIONS AND LOCAL CONTROLLERS AS SHOWN IN THE PLANS. THE PREEMPTION SHALL CONFORM TO ODOT SUPPLEMENTAL SPECIFICATION 809 AND SHALL UTILIZE COMMUNICATIONS TO IDENTIFY THE PRESENCE OF AN EMERGENCY PRIORITY VEHICLE. IT SHALL CAUSE THE TRAFFIC SIGNAL CONTROLLER TO SELECT A PRE-PROGRAMMED PREEMPTION PLAN THAT WILL DISPLAY AND HOLD THE DESIRED SIGNAL PHASE FOR THE DIRECTION OF THE EMERGENCY VEHICLE. THE MODEL SUPPLIED SHALL BE OPTICON IR MANUFACTURED BY GLOBAL TRAFFIC TECHNOLOGIES LLC.

THE COMMUNICATIONS MEDIUM SHALL EMPLOY EITHER SOUND, LIGHT OR RADIO DETECTION TECHNIQUES TO DETERMINE AND LOG THE PRESENCE OF THE EMERGENCY VEHICLE. THE SYSTEM SHALL DETECT THE PRESENCE OF THE VEHICLE THROUGH AN EMITTING DEVICE LOCATED ON THE EMERGENCY VEHICLE. THE SYSTEM SHALL ACTIVATE THE PREEMPTION SEQUENCE BY APPLYING A SIGNAL TO ONE OF THE CONTROLLER'S PREEMPT DISCRETE INPUTS. THE SYSTEM SHALL BE COMPLETELY COMPATIBLE WITH THE CONTROLLER.

THE EQUIPMENT SHALL BE SHELF OR RACK MOUNTED AND EASILY REMOVABLE AND REPLACEABLE WITHIN THE CABINET. SUPPLY EQUIPMENT COMPLETELY WIRED IN THE CONTROLLER CABINET AND TESTED. THE SYSTEM SHALL BE CAPABLE OF PREEMPTING AND RECEIVING PRIORITY FOR EACH APPROACH TO THE INTERSECTION. IT SHALL BE POSSIBLE TO DETECT THE EMERGENCY VEHICLE AT LEAST 2000 FEET FROM THE INTERSECTION IN AN 80dB-A NOISE ENVIRONMENT.

ALL PREEMPTION PLANS SHOULD BE PROGRAMMED TO PREVENT THE YELLOW TRAP, UNLESS AS DIRECTED BY THE DISTRICT TRAFFIC ENGINEER. YELLOW TRAP PREVENT WILL FORCE THE TRANSITION THROUGH YELLOW CHANGE AND RED CLEARANCE FOR RESOLUTION OF YELLOW TRAP IF ANY PHASE OPPOSING THE PREEMPTION CLEARANCE PHASE(S) IS ACTIVE AND DISPLAYING A GREEN OR FLASHING YELLOW ARROW INDICATION WHEN THE PREEMPTION PLAN IS ACTIVATED AND THE PREEMPTION CLEARANCE PHASE(S) ARE GREEN.

SUPPLY EACH INTERSECTION SHOWN IN THE PLANS WITH THE FOLLOWING COMPONENTS, EACH BID SEPARATELY:

1. PREEMPT RECEIVING UNIT.
2. PREEMPT DETECTOR CABLE.
3. PREEMPT PHASE SELECTOR ASSEMBLY AND INTERFACE WIRING PANEL.
4. CONFIRMATION LIGHT.

THE CONTRACTOR SHALL INVENTORY THE VILLAGE'S EXISTING EMITTERS TO DETERMINE COMPATIBILITY WITH THE PROPOSED SYSTEM. IF EXISTING EMITTERS ARE FOUND TO BE NOT COMPATIBLE, THEN THE VILLAGE SHALL BE SUPPLIED (AT COSTS INCIDENTAL TO THE SYSTEM) WITH THE EMITTERS, TRANSMITTERS, SWITCHES, WIRING AND ALL REQUIRED VEHICLE EQUIPMENT FOR THE FOLLOWING EMERGENCY VEHICLES. THE VILLAGE SHALL BE RESPONSIBLE FOR INSTALLING VEHICLE EQUIPMENT.

TWO (2) EMS VEHICLES

SIX (6) FIRE DEPARTMENT VEHICLES

THE VILLAGE SHALL BE SUPPLIED WITH SOFTWARE REQUIRED TO CALIBRATE, LOG, AND OPERATE THE SYSTEM. TWO (2) OPERATING AND INSTRUCTION MANUALS SHALL BE SUPPLIED WITH THE SOFTWARE.

THE CONTRACTOR SHALL THOROUGHLY TEST THE INSTALLED SYSTEM. AS A MINIMUM, THE CONTRACTOR SHALL VERIFY THAT ALL CONNECTIONS ARE PROPERLY MADE TO THE CONTROLLER CABINETS. THE CONTRACTOR SHALL CHECK THAT THE RANGE SETTING IS PROPER FOR EACH INTERSECTION. THE CONTRACTOR SHALL DETERMINE THAT ALL PHASE SELECTORS ARE SELECTING THE PROPER PHASE AND TIMING ACCURATELY. THE CONTRACTOR SHALL VERIFY THAT ALL VEHICLE EMITTERS ARE BEING PROPERLY DETECTED.

IF THE PROPOSED PREEMPT SYSTEM IS NOT COMPATIBLE WITH THE EXISTING SYSTEM, THE CONTRACTOR SHALL PROVIDE TRAINING FOR UP TO FIFTEEN (15) PERSONS IN THE OPERATION OF THE SYSTEM. IT SHALL BE PROVIDED WITHIN 48 HOURS OF THE INSTALLATION OF THE SYSTEM. IT SHALL CONSIST OF HANDS-ON INSTRUCTION FOR A MINIMUM OF SIXTEEN (16) HOURS. THE CONTRACTOR SHALL PROVIDE TRAINING FOR UP TO FOUR (4) PERSONS IN THE INSTALLATION AND MAINTENANCE OF THE SYSTEM. IT SHALL CONSIST OF A MINIMUM OF EIGHT (8) HOURS OF INSTRUCTION. TRAINING SHALL BE SUPPLIED WITHIN SEVEN (7) DAYS OF THE INSTALLATION OF THE SYSTEM. ALL TRAINING SHALL BE HELD IN A CITY SUPPLIED LOCATION. TRAINING SHALL BE CONDUCTED BY SOMEONE WHO HAS PERFORMED THIS WITHIN THE LAST YEAR AND DOES IT ON A REGULAR BASIS. THE COST OF TRAINING, INCLUDING COURSE MATERIAL, TRAVEL SUBSISTENCE AND RELATED COSTS, SHALL BE ENTIRELY BORNE BY THE CONTRACTOR AND SHALL BE INCIDENTAL TO THE PREEMPTION EQUIPMENT.

PAYMENT FOR ITEM 809 PREEMPTION SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH PREEMPTION IN PLACE AND FULLY OPERATIONAL AS SHOWN IN THE PLANS, EXCEPT FOR THOSE ITEMS BID SEPARATELY.

**809 PREEMPTION RECEIVING UNIT, AS PER PLAN**

RECEIVING UNITS SHALL BE OPTICOM BRAND RECEIVING UNITS SHALL CONSIST OF A LIGHTWEIGHT, WEATHERPROOF AND DIRECTIONAL ASSEMBLY. EACH RECEIVING UNIT SHALL BE 360 DEGREE ADJUSTABLE. THE RECEIVING UNIT SHALL BE CAPABLE OF SENDING THE PROPER ELECTRICAL SIGNAL TO THE TRAFFIC SIGNAL CONTROLLER VIA THE PREEMPTION DETECTOR CABLE. RECEIVING UNITS SHALL BE SUPPLIED WITH MAST ARM MOUNTING HARDWARE AS SHOWN IN THE PLANS.

FURNISH PREEMPTION RECEIVING UNITS WITH 60-MONTH WARRANTIES OR FOR THE MANUFACTURER'S STANDARD WARRANTY WHICHEVER IS GREATER. ENSURE THAT THE WARRANTY PERIOD BEGINS ON THE DATE OF SHIPMENT TO THE PROJECT. ENSURE THAT EACH UNIT HAS A PERMANENT LABEL OR STAMP INDICATING THE DATE OF SHIPMENT.

PAYMENT FOR ITEM 809 PREEMPTION RECEIVING UNIT SHALL BE AT THE CONTRACT UNIT FOR EACH RECEIVING UNIT IN PLACE, COMPLETELY INSTALLED AT THE LOCATION SHOWN IN THE PLANS, WIRED, TESTED AND ACCEPTED.

**809 PREEMPTION DETECTOR CABLE**

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING PREEMPTION DETECTOR HOME RUN CABLE IN THE LOCATIONS SHOWN IN THE PLANS. IT SHALL CONNECT THE PREEMPT RECEIVING UNITS TO THE PHASE SELECTORS IN THE LOCAL CONTROLLER CABINET.

PREEMPTION DETECTOR CABLE SHALL CONFORM TO ODOT SPECIFICATION 632. ONLY ONE EXTERNAL SPLICE SHALL BE PERMITTED BETWEEN PREEMPTION RECEIVER UNIT AND CONTROLLER CABINET. THIS SPLICE SHALL MEET THE REQUIREMENTS OF C&MS 632.23 USING A WATERPROOF EPOXY SPLICE KIT. THE CABLE SHALL BE APPROVED FOR BOTH OVERHEAD AND UNDERGROUND USE. THE JACKET SHALL

WITHSTAND EXPOSURE TO SUNLIGHT AND ATMOSPHERIC TEMPERATURES AND STRESSES REASONABLY EXPECTED IN NORMAL INSTALLATIONS.

PAYMENT FOR ITEM 809 PREEMPTION DETECTOR CABLE SHALL BE MADE AT THE CONTRACT UNIT PRICE PER FOOT FOR THE CABLE FURNISHED, IN PLACE, ALL CONNECTIONS MADE AND WIRING COMPLETED, TESTED AND ACCEPTED.

**809 PREEMPT PHASE SELECTOR**

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING PREEMPT PHASE SELECTORS INCLUDING WIRING INTERFACE PANELS IN THE LOCAL CONTROLLER CABINET AND ALL OTHER ACCESSORIES THAT ARE NECESSARY TO MAKE THE PREEMPT PHASE SELECTORS COMPLETELY FUNCTIONAL AND OPERATIONAL AS SHOWN IN THE PLANS. THIS ITEM SHALL INCLUDE THE EXTRA CABINET SPACE NECESSARY TO BE LOCATED IN THE LOCAL CONTROLLER CABINETS WHERE INDICATED IN THE PLANS.

THE PHASE SELECTORS SHALL CONSIST OF A MODULE OR MODULES THAT WILL PROVIDE THE NECESSARY INPUTS TO THE CONTROLLER. PHASE SELECTORS SHALL BE SUPPLIED WITH SUFFICIENT QUANTITIES OF CHANNELS TO PROVIDE PREEMPTION FOR ALL APPROACHES TO THE INTERSECTION SEPARATELY. POWER SHALL BE OBTAINED FROM THE PHASE SELECTOR OR PHASE SELECTOR POWER SUPPLY AND NOT FROM THE LOCAL CONTROLLER TIMER.

THE PHASE SELECTORS SHALL HAVE FRONT PANEL INDICATORS FOR ACTIVE PREEMPT CHANNEL STATUS. IT SHALL HAVE TEST SWITCHES TO ACTIVATE ALL PREEMPT CHANNELS.

FURNISH PREEMPT PHASE SELECTORS WITH 60-MONTH WARRANTIES OR FOR THE MANUFACTURER'S STANDARD WARRANTY WHICHEVER IS GREATER. ENSURE THAT THE WARRANTY PERIOD BEGINS ON THE DATE OF SHIPMENT TO THE PROJECT. ENSURE THAT EACH UNIT HAS A PERMANENT LABEL OR STAMP INDICATING THE DATE OF SHIPMENT.

PAYMENT FOR ITEM 809 PREEMPT PHASE SELECTOR SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH PHASE SELECTOR IN PLACE, COMPLETELY INSTALLED IN THE LOCAL CONTROLLER SHOWN IN THE PLANS, WIRED, TESTED AND

**809 PREEMPT CONFIRMATION LIGHT, LED**

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING PREEMPT CONFIRMATION LIGHTS INCLUDING HARDWARE AND ALL OTHER ACCESSORIES THAT ARE NECESSARY TO MAKE THE PREEMPT CONFIRMATION LIGHT COMPLETELY FUNCTIONAL AND OPERATIONAL AS SHOWN IN THE PLANS.

A CONFIRMATION LIGHT SHALL BE SUPPLIED FOR EACH INTERSECTION TO INDICATE THAT THE EMERGENCY VEHICLE HAS ACHIEVED CONTROL OF THE TRAFFIC SIGNAL.

THE CONFIRMATION LIGHT SHALL BE A WEATHER TIGHT LIGHTING FIXTURE. IT SHALL BE SUPPLIED WITH A GLOBE, LED LAMP AND MOUNTING HARDWARE TO ATTACH TO THE TRAFFIC SIGNAL MAST ARM. THE CONFIRMATION LIGHT SHALL BE POWERED BY A LOAD SWITCH IN THE TRAFFIC SIGNAL CONTROLLER. SIGNAL CABLE CONFORMING TO 732.19 SHALL BE USED FOR CONFIRMATION LIGHTS. A MINIMUM OF 4-CONDUCTOR CABLE SHALL BE USED WITH THE GREEN WIRE SERVING AS THE SAFETY GROUND CONDUCTOR. PAYMENT FOR ITEM 809 PREEMPT CONFIRMATION LIGHT, LED SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH LIGHT IN PLACE, COMPLETELY INSTALLED IN THE LOCATION SHOWN IN THE PLANS, WIRED, TESTED AND ACCEPTED.

DESIGN AGENCY



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**HAN-68-ARLINGTON SIGNALS**

MODEL: Sheet\_SurvFI\_PAPER SIZE: 34x22 (in.) DATE: 12/12/2023 TIME: 1:23:09 PM USER: ldavis65  
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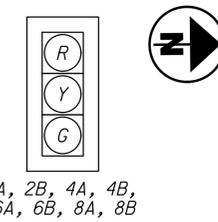
REF NO.	SHEET NO.	STATION TO STATION		TO	625	625	625	625	625	625	632	632	632	632	632	632	632	632	632	632	632	632	632		
		TRENCH, 24" DEEP FT	CONDUIT, 3", 725.04 FT		CONDUIT, 4", 725.04 FT	CONDUIT, JACKED OR DRILLED, 725.052, 3" FT	PULL BOX, 725.08, 24" EACH	GROUND ROD EACH	VEHICULAR SIGNAL HEAD, (LED), 3- SECTION, 12" LENS, 1-WAY, POLYCARBONATE, 15 YEAR LED, BLACK EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN EACH	COVERING OF VEHICULAR SIGNAL HEAD EACH													COVERING OF PEDESTRIAN SIGNAL HEAD EACH	ACCESSIBLE PEDESTRIAN PUSHBUTTON EACH
CC1	15	405+57.00	28.0' RT						1																
SP1	15	405+42.50	20.0' RT							1	8	2	8	2	2	459		1		47	55	1	1		
SP2	15	404+99.00	28.0' LT							1		2		2	2	287		1					1		
PS1	15	405+41.00	28.0" LT							1		2		2	2	182								1	
PS2	15	405+00.00	19.5' RT						1	1		2		2	2	194						1		1	
PB1	15	405+46.00	32.5' LT																						
PB2	15	404+93.00	23.5' RT						1																
C1	15	PS1		PB1	7	7																			
C2	15	PB1		CC1				54																	
C3	15	SP1		CC1	11		11																		
C4	15	PB2		CC1				61																	
C5	15	PS2		PB2	6	6																			
TOTALS CARRIED TO GENERAL SUMMARY					24	13	11	115	3	4	8	8	8	8	8	1122		2	2	47	55	1	2	2	
REF NO.	SHEET NO.	STATION TO STATION		TO	632	633	633	633	809	809	632	632	809	809	809	809	809	632	632	632	632	632	632	632	
		REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN EACH	CABINET, TYPE TS-2, AS PER PLAN EACH		CABINET FOUNDATION EACH	CONTROLLER WORK PAD EACH	ATC CONTROLLER, AS PER PLAN EACH	STOP LINE RADAR DETECTION, AS PER PLAN EACH	MESSENGER WIRE, 7 STRAND, 3/8" DIAMETER WITH ACCESSORIES FT	TETHER WIRE, WITH ACCESSORIES FT	EMERGENCY VEHICLE PREEMPTION, AS PER PLAN EACH	PREEMPT RECEIVING UNIT, AS PER PLAN EACH	PREEMPT DETECTOR CABLE, AS PER PLAN FT	PREEMPT PHASE SELECTOR, AS PER PLAN EACH	PREEMPT CONFIRMATION LIGHT, AS PER PLAN EACH	SIGNAL CABLE, 4 CONDUCTOR, NO. 14 AWG FT									
CC1	15	405+57.00	28.0' RT		1	1	1	1	1				1												
SP1	15	405+42.50	20.0' RT							1	67	67		4	164		4	164							
SP2	15	404+99.00	28.0' LT							1															
PS1	15	405+41.00	28.0" LT																						
PS2	15	405+00.00	19.5' RT																						
PB1	15	405+46.00	32.5' LT																						
PB2	15	404+93.00	23.5' RT																						
C1	15	PS1		PB1																					
C2	15	PB1		CC1																					
C3	15	SP1		CC1																					
C4	15	PB2		CC1																					
C5	15	PS2		PB2																					
R1	9				1																				
TOTALS CARRIED TO GENERAL SUMMARY					2	1	1	1	1	2	67	67	1	4	164	1	4	164							

**SIGNAL SUBSUMMARY**

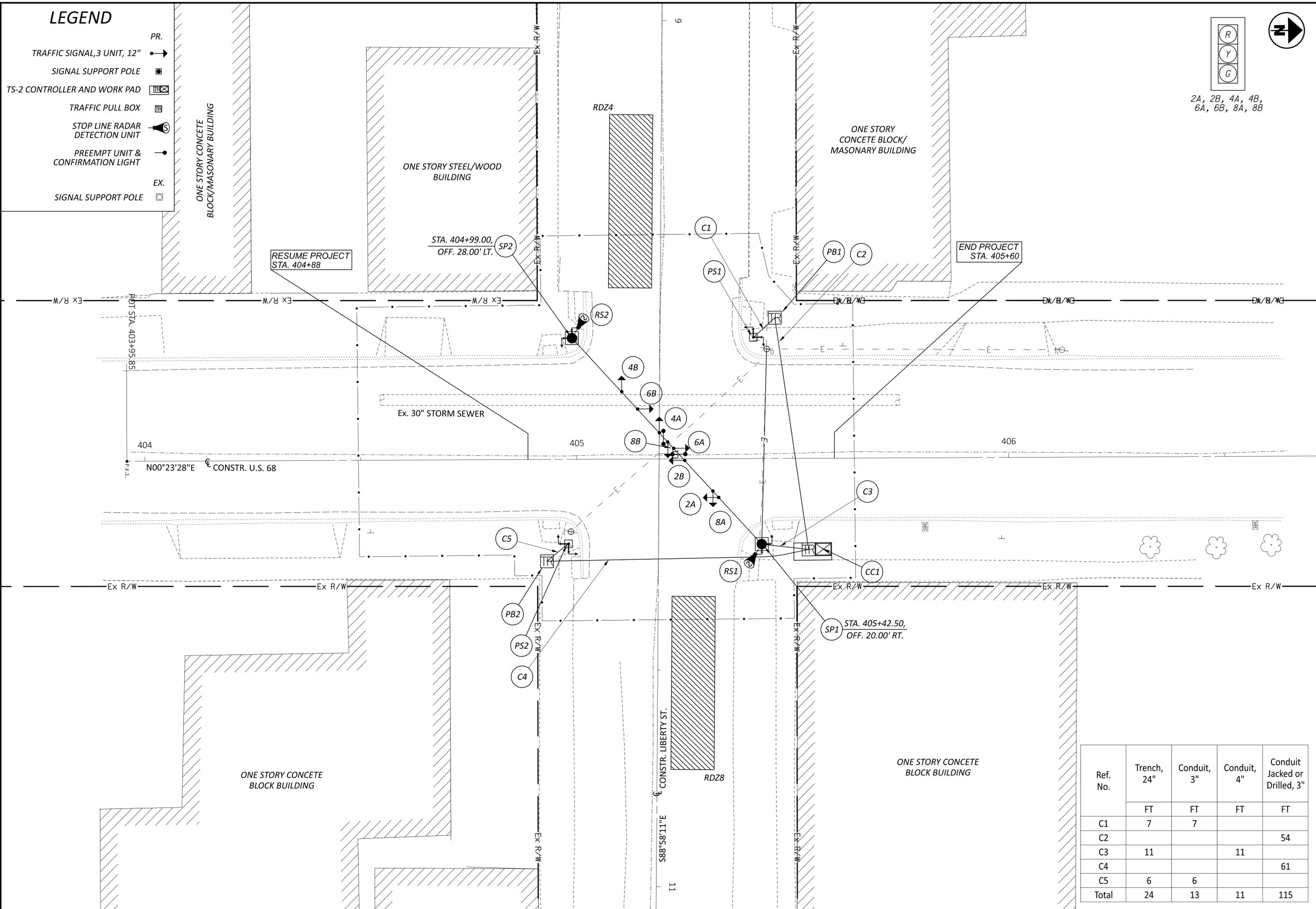
DESIGN AGENCY  
  
 DESIGNER  
**LMD**  
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**LEGEND**

- PR. TRAFFIC SIGNAL, 3 UNIT, 12"
- SIGNAL SUPPORT POLE
- TS-2 CONTROLLER AND WORK PAD
- TRAFFIC PULL BOX
- STOP LINE RADAR DETECTION UNIT
- PREEMPT UNIT & CONFIRMATION LIGHT
- EX. SIGNAL SUPPORT POLE



2A, 2B, 4A, 4B,  
6A, 6B, 8A, 8B



**SIGNAL PLAN**  
HAN-68 / LIBERTY ST.

Ref. No.	Trench, 24"	Conduit, 3"	Conduit, 4"	Conduit Jacked or Drilled, 3"
	FT	FT	FT	FT
C1	7	7		
C2				54
C3	11		11	
C4				61
C5	6	6		
<b>Total</b>	<b>24</b>	<b>13</b>	<b>11</b>	<b>115</b>

DESIGN AGENCY

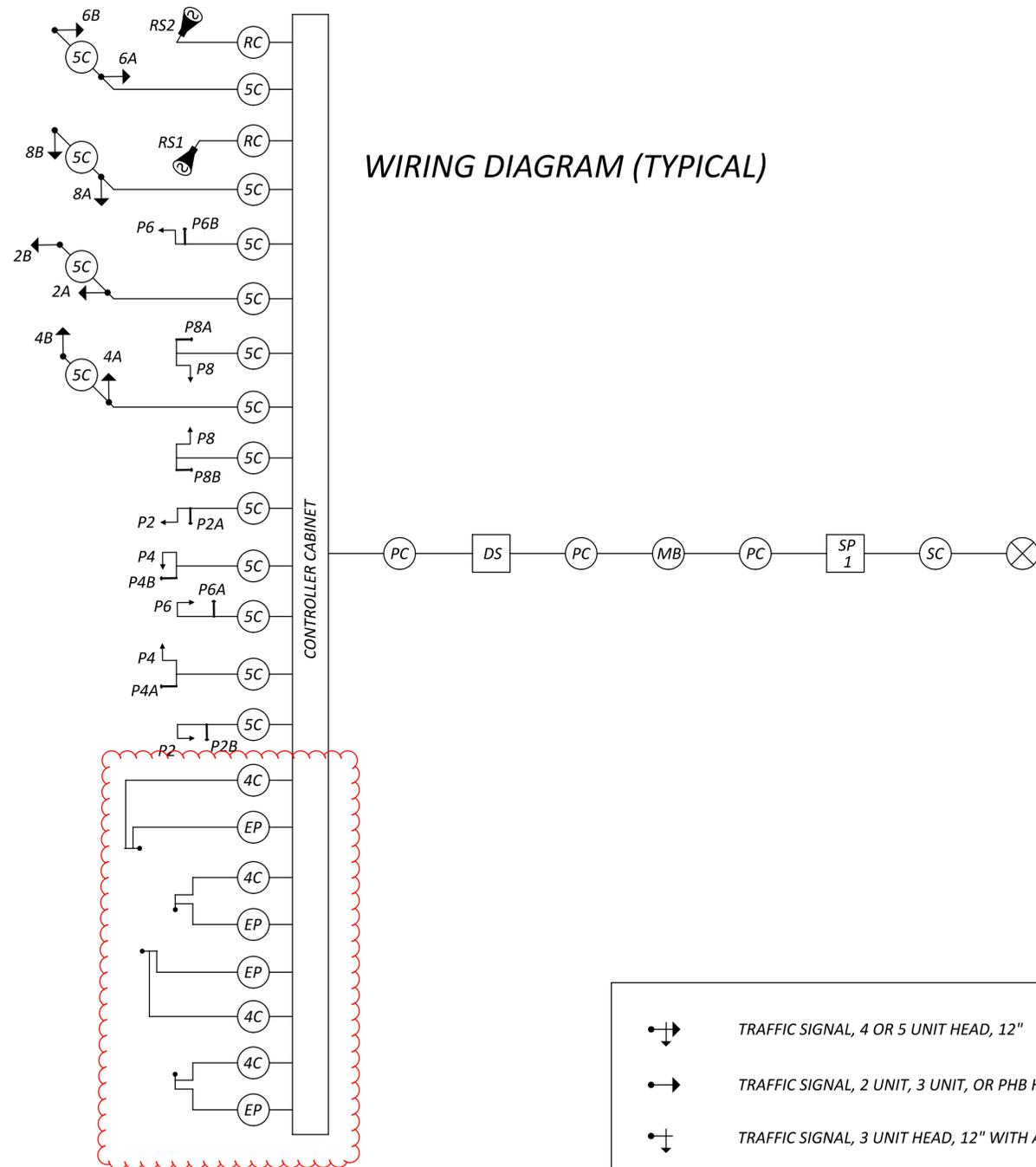
DESIGNER **LMD**

REVIEWER

PROJECT ID **118746**

SHEET TOTAL  
P.15 | 18





WIRING DIAGRAM (TYPICAL)

TEM Form 496-16 Field Wiring Hook-up Chart

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH	SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
2A, 2B (NB)	R	Φ2 R	R	PEDESTRIAN MOVEMENTS			
	Y	Φ2 Y		P2	W	Φ2 PED/ LS 10 G	OUT
	G	Φ2 G		NORTH	DW	Φ2 PED/ LS 10 R	
4A, 4B (EB)	R	Φ4 R	R	P4	W	Φ4 PED/ LS 11 G	OUT
	Y	Φ4 Y		EAST	DW	Φ4 PED/ LS 11 R	
	G	Φ4 G		SOUTH	W	Φ6 PED/ LS 12 G	OUT
6A, 6B (SB)	R	Φ6 R	R	P6	DW	Φ6 PED/ LS 12 R	
	Y	Φ6 Y		P8	W	Φ8 PED/ LS 13 G	
	G	Φ6 G		WEST	DW	Φ8 PED/ LS 13 R	
8A, 8B (WB)	R	Φ8 R	R	OVERLAPS			
	Y	Φ8 Y		-	-	-	-
	G	Φ8 G		-	-	-	
LS = LOAD SWITCH				-	-	-	-

LEGEND

	TRAFFIC SIGNAL, 4 OR 5 UNIT HEAD, 12"		PREEMPTION DETECTOR CABLE		SERVICE CABLE, 3 CONDUCTOR, NO. X AWG
	TRAFFIC SIGNAL, 2 UNIT, 3 UNIT, OR PHB HEAD 12"		2/C NO. XX AWG (LEAD-IN CABLE)		POWER CABLE, 2 CONDUCTOR, NO. X AWG
	TRAFFIC SIGNAL, 3 UNIT HEAD, 12" WITH ARROWS		VEHICLE LOOP DETECTOR		SIGNAL SUPPORT POLE NO. __
	PEDESTRIAN SIGNAL		SIGNAL CABLE, 5 CONDUCTOR, NO. XX AWG		METER BASE
	PEDESTRIAN PUSH BUTTON		SIGNAL CABLE, 7 CONDUCTOR, NO. XX AWG		NO. X AWG DISTRIBUTION CABLE
	DILEMMA ZONE RADAR DETECTION UNIT		RADAR DETECTION CABLE		SIGNAL CABLE, 4 CONDUCTOR, NO. XX AWG
	STOP LINE RADAR DETECTION UNIT		VIDEO CAMERA CABLE		DUAL LIGHTING/SIGNAL DISCONNECT SWITCH
	VIDEO DETECTION CAMERA		INTERCONNECT CABLE		FLASHER CABINET
	PREEMPT UNIT & CONFIRMATION LIGHT		PHOTOELECTRIC CELL		UNINTERRUPTIBLE POWER SUPPLY CABLE
	ETHERNET RADIO		POWER SOURCE		HAND/ ON/ AUTO SWITCH



INTERSECTION: US-68 / Liberty St.									
MAINTAINING AGENCY: Village of Arlington									
START UP		DUAL ENTRY: ON		PHASES: 2 AND 6					
REST IN RED:		RING 1		RING 2					
START IN:	ALL-RED FLASH	OVERLAP		A	B	C	D		
TIME FOR: FLASH, ALL RED (SEC.):	9, 6	PHASES		-	-	-	-		
FIRST PHASE(S):	2 & 6								
COLOR DISPLAYED:	GREEN								
INTERVAL OR FEATURE		CONTROLLER MOVEMENT NO.							
INTERSECTION MOVEMENT (PHASE)		1	2	3	4	5	6	7	8
DIRECTION			NB	-	EB	-	SB	-	WB
MINIMUM GREEN (INITIAL) (SEC.)			20	-	10	-	20	-	10
ADDED INITIAL *(SEC./ACTUATION)		-	-	-	-	-	-	-	-
MAXIMUM INITIAL *(SEC.)		-	-	-	-	-	-	-	-
PASSAGE TIME (PRESET GAP) (SEC.)			0.5	-	3	-	0.5	-	3
TIME BEFORE REDUCTION *(SEC.)		-	-	-	-	-	-	-	-
MINIMUM GAP *(SEC.)		-	-	-	-	-	-	-	-
TIME TO REDUCE *(SEC.)		-	-	-	-	-	-	-	-
MAXIMUM GREEN I (SEC.)			40	-	25	-	40	-	25
MAXIMUM GREEN II (SEC.)			40	-	25	-	40	-	25
YELLOW CHANGE (SEC.)			4.1	-	3.4	-	4.1	-	3.4
ALL RED CLEARANCE (SEC.)			1.0	-	1.0	-	1.0	-	1.0
DELAYED GREEN (LPI) * (SEC.)		-	-	-	-	-	-	-	-
FLASHING YELLOW ARROW DELAY^ (SEC.)		-	-	-	-	-	-	-	-
WALK (SEC.)		-	4	-	4	-	4	-	4
PEDESTRIAN CLEARANCE (SEC.)		-	11	-	11	-	11	-	11
RECALL	MAXIMUM (ON/OFF)	-	-	-	-	-	-	-	-
	MINIMUM (ON/OFF)	-	ON	-	-	-	ON	-	-
	PEDESTRIAN (ON/OFF)	-	-	-	-	-	-	-	-
MEMORY (ON/OFF)	-	-	-	-	-	-	-	-	
<b>*VOLUME DENSITY CONTROLS</b>									
# FOR CROSSINGS WITH PEDESTRIAN PUSHBUTTONS, LPI'S (LEADING PEDESTRIAN INTERVALS) MAY BE IMPLEMENTED (3-6 SEC.) IN ACCORDANCE WITH LPI DURATION TIME PER THE ODOT SIGNAL CALCULATIONS - CLEARANCE INTERVALS SPREADSHEET									
^ WHEN IMPLEMENTING FYA, A MINIMUM 3 SEC. DELAY SHALL BE PROGRAMMED PER FYA PHASE.									

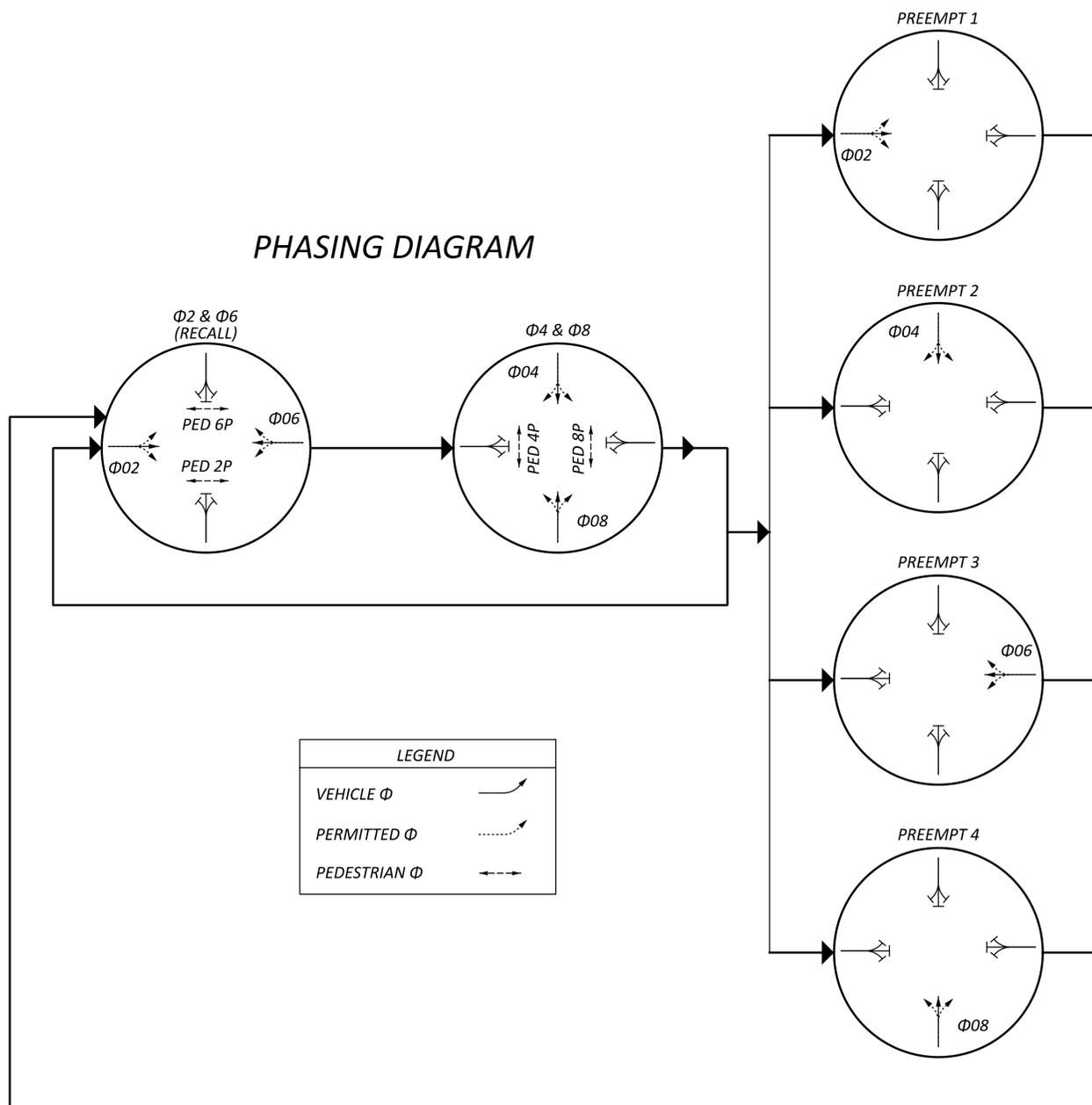
- NOTES:
- All movements shall be actuated. The primary through movement shall have min recall active to rest in green.
  - For protected/ permissive phases, implement call omits to avoid yellow ball trap.
  - Enable  $\Phi 1, 3$  and  $\Phi 5, 7$  detector switching to allow  $\Phi 1$  and  $\Phi 5$  to extend  $\Phi 2$  and  $\Phi 6$  or  $\Phi 3$  and  $\Phi 7$  to extend  $\Phi 4$  and  $\Phi 8$ , respectively, when allocated green time for left turn phases are exhausted.
  - Countdown pedestrian signal heads shall go to zero on yellow per OMUTCD Figure 4E-2.
  - Radar detection units for dilemma zone detection shall place a constant call to the controller when vehicle travel times to the stop bar are between 2.5 and 6.0 seconds. Speed trigger shall be set for vehicles traveling 35 MPH and greater.
  - Radar shall have queue detection configured and a zone placed at 100-200 feet from the stop bar for slow moving vehicle extensions. Speed trigger shall be set at 1 - 35 MPH.
  - All detector delays shall be placed on the controller.
  - For any entry to flashing operation programming shall run minor street green (typ.  $\Phi 4$  &  $\Phi 8$ ), all-red clearance and then flashing operation.

Radar Detection Chart

DETECTION ZONE	MOVEMENT	PULSE OR PRESENCE	ASSOCIATED PHASE	DELAY PROGRAMMED IN CONTROLLER (SEC.)	EXTENSION PROGRAMMED IN CONTROLLER (SEC.)	PURPOSE	DETECTION ZONE LENGTH (FT)
RDZ4	EB	Presence	4	10		Stop-Line	40
RDZ8	WB	Presence	8	10		Stop-Line	40

Note: Advance/Dilemma Zone Speed Threshold: 30 MPH  
Purpose: Stop-Line or Advance Detection

PHASING DIAGRAM



WIRING DETAILS