

1

LOCATION MAP

LATITUDE: 40°51'00"N LONGITUDE: 81°26'40"W

PORTION TO BE IMPROVED	<div></div>
INTERSTATE HIGHWAY	<div></div>
FEDERAL ROUTES	<div></div>
STATE ROUTES	<div></div>
COUNTY & TOWNSHIP ROADS	<div></div>
OTHER ROADS	<div></div>

DESIGN DESIGNATION	SR 687	FRANK AVE.
CURRENT ADT (2023)	20,545	12,531
DESIGN YEAR ADT (2043)	20,545	12,531
DESIGN HOURLY VOLUME (2043)	1,644	1,168
DIRECTIONAL DISTRIBUTION	56%	63%
TRUCKS (24 HOUR B&C)	4%	6%
DESIGN SPEED	40 MPH	40 MPH
LEGAL SPEED	35 MPH	35 MPH
DESIGN FUNCTIONAL		
CLASSIFICATION	URBAN MINOR ARTERIAL	URBAN MAJOR COLLECTOR
NHS PROJECT	NO	NO

DESIGN EXCEPTIONS

NONE REQUIRED

ADA DESIGN WAIVERS

NONE REQUIRED

UNDERGROUND UTILITIES

Contact Two Working Days Before You Dig

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

PLAN PREPARED BY:
MOTT MACDONALD
20445 EMERALD PARKWAY, SUITE 100, CLEVELAND, OHIO 44135
PHONE: (216) 330-3640 FAX: (216) 265-2816

ENGINEER'S SEAL		STANDARD CONSTRUCTION DRAWINGS								SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
		BP-3.1	1/19/24	HL-10.12	7/21/23	MT-105.10	1/17/20	TC-65.11	1/19/24	800-2023	1/17/25
		BP-4.1	7/19/13	HL-30.11	7/21/23	MT-110.10	7/19/13	TC-71.10	4/21/23	809	7/19/24
		BP-5.1	7/15/22	HL-30.22	1/15/21	MT-120.00	7/19/24	TC-81.11	1/19/24	821	4/20/12
				HL-40.10	7/19/24			TC-83.20	7/19/24	825	7/19/24
		CB-3	7/19/24	HL-50.11	1/16/15	TC-21.11	7/16/21	TC-84.20	1/19/24	831	4/21/23
		CB-3A	7/19/24	HL-60.11	7/21/17	TC-21.21	1/20/23	TC-84.21	10/18/13	832	7/19/24
		DM-1.1	7/17/20	HL-60.31	7/19/24	TC-22.10	4/21/23	TC-85.21	1/19/24	909	7/19/24
		DM-1.2	7/16/21			TC-22.20	1/17/14	TC-85.22	4/21/23	921	7/19/24
		DM-3.1	1/18/13	MT-95.31	7/19/19	TC-41.20	10/18/13			931	4/21/23
		DM-4.3	1/15/16	MT-95.32	4/19/19	TC-41.30	4/21/23				
		DM-4.4	1/15/16	MT-95.61	4/19/19	TC-41.40	10/18/13				
		MH-3	7/19/24	MT-97.10	4/19/19	TC-41.41	7/19/19				
				MT-97.12	1/20/17	TC-42.20	10/18/13				
		RM-1.1	1/20/23	MT-99.20	4/19/19	TC-52.10	10/18/13				
				MT-101.90	7/17/20	TC-52.20	1/15/21				
				MT-102.20	4/19/19	TC-65.10	1/17/14				

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

STA-687-02.30

JACKSON TOWNSHIP

STARK COUNTY

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FEDERAL PROJECT NUMBER

E210448

RAILROAD INVOLVEMENT

NONE

PROJECT DESCRIPTION

TRAFFIC SIGNAL, TURN LANE AND STORM SEWER IMPROVEMENTS ON STATE ROUTE 687 (FULTON DRIVE NW) FROM FRANK AVENUE/SIBILA ROAD TO EVERHARD ROAD IN JACKSON TOWNSHIP.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA: 0.97 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 0.25 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA: 1.22 ACRES

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.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

Gerry Noirot, P.E.
District 04 Deputy Director

Pamela Boratyn
Director, Department of Transportation

TITLE SHEET

DESIGN AGENCY

MOTT MACDONALD
20445 EMERALD PKWY
SUITE 100
CLEVELAND, OH 44135

DESIGNER

SMS

REVIEWER

SJP 01/03/25

PROJECT ID

114831

SHEET TOTAL

P.1 90

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 JACKSON TOWNSHIP FOR POLICE SERVICES AND MAINTENANCE SERVICES BY CITY 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 CONST-RUCTION 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 JACKSON TOWNSHIP POLICE, HIRED BY THE CONTRACTOR:

1. STA-687 (FULTON DR) & FRANK AVE
2. STA-687 (FULTON DR) & EVERHARD RD

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.

ITEM 614, WORK ZONE TRAFFIC SIGNALS

THIS WORK SHALL CONSIST OF FURNISHING, ERECTING, OPERATING, MAINTAINING, AND REMOVING WORK ZONE TRAFFIC SIGNALS ON WOODEN STRAIN POLES. THE SIGNALS SHALL MATCH THE NUMBER, LOCATION, AND TIMING OF THE EXISTING SIGNALS. THE CONTRACTOR SHALL ARRANGE FOR AND PAY FOR POWER. ALL MATERIALS AND CONSTRUCTION SHALL COMPLY WITH APPLICABLE PORTIONS OF 630, 632, 633, 730, 732, AND 733 EXCEPT: THE SHOP DRAWING REQUIREMENT OF 632.04 IS WAIVED AND USED MATERIALS IN GOOD CONDITION ARE ACCEPTABLE. WORK SHALL INCLUDE ALL ADJUSTMENTS REQUIRED FOR CORRECT HEAD PLACEMENT AND OR SIGNAL TIMING FOR EACH PHASE OF CONSTRUCTION.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID FOR EACH LOCATION AND SHALL INCLUDE ALL MATERIALS, LABOR, INCIDENTALS, DETECTION AND EQUIPMENT NECESSARY TO CONSTRUCT, OPERATE, MAINTAIN, AND REMOVE THE WORK ZONE TRAFFIC SIGNAL.

SPECIAL WORK ZONE TRAFFIC SIGNAL 2 EACH

ITEM 614, BUSINESS ENTRANCE (M4-H15) SIGN, AS PER PLAN

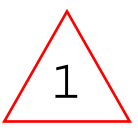
THE BUSINESS ENTRANCE (M4-H15) SIGN SHOULD BE PROVIDED AT EACH TEMPORARILY RELOCATED COMMERCIAL DRIVEWAY FOR WHICH THE RELOCATION IS NOT OBVIOUS TO THE MOTORIST. THE PROJECT ENGINEER SHALL DETERMINE WHETHER OR NOT THE DRIVEWAY RELOCATION IS, OR IS NOT, OBVIOUS AND WHETHER OR NOT A SIGN SHOULD BE PROVIDED. ONLY ONE SIGN PER BUSINESS SHALL BE PERMITTED. THE SIGN SHALL BE 36 INCH X 48 INCH IN SIZE WITH FLUORESCENT ORANGE RETROREFLECTIVE SHEETING. THE SIGN LEGEND SHALL BE PLACED ON BOTH SIDES OF THE SIGN (BACK TO BACK). THE SIGN SHALL HAVE THE STANDARD M4-H15 LEGEND WITH THE WORD "BUSINESS" ON THE TOP LINE, EXCEPT UNDER UNUSUAL CIRCUMSTANCES WHERE IT MAY NOT BE INTUITIVE THAT A DRIVEWAY SERVES A SPECIFIC BUSINESS. IN SUCH UNUSUAL CASES, THE ACTUAL BUSINESS NAME MAY BE SUBSTITUTED FOR THE WORD "BUSINESS".

THE SIGN SHALL BE MOUNTED ON TWO #3 POSTS OR ON TEMPORARY POSTS IN ACCORDANCE WITH SCD MT-105.10 AND IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION. THE SIGN SHALL BE CLEARLY VISIBLE AND SHALL CLEARLY IDENTIFY THE LOCATION OF THE DRIVEWAY. THE SIGN SHOULD BE POSITIONED AT 90 DEGREES TO THE DIRECTION(S) OF TRAFFIC. THE SIGN MAY NEED TO BE MOVED FOR EACH PHASE OF THE MAINTENANCE OF TRAFFIC OPERATIONS.

PAYMENT FOR ALL COSTS ASSOCIATED WITH MANUFACTURING, MOUNTING, RELOCATING, AND REMOVING THE SIGN, INCLUDING ALL LABOR, MATERIALS AND EQUIPMENT SHALL BE INCLUDED IN THE CONTRACT PRICE PER EACH FOR ITEM 614-BUSINESS ENTRANCE SIGN.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THIS ITEM.

ITEM 614, BUSINESS ENTRANCE SIGN, AS PER PLAN 10 EACH



ACCESS TO PROPERTIES

ACCESS SHALL BE MAINTAINED TO ALL RESIDENTIAL AND COMMERCIAL PROPERTIES EXCEPT WHEN A DRIVEWAY MUST BE CLOSED FOR CONSTRUCTION. ALL RESIDENTS AND PROPERTY OWNERS SHALL BE PROVIDED WRITTEN NOTIFICATION BY THE CONTRACTOR A MINIMUM OF 48 HOURS PRIOR TO THE CLOSURE. THE NOTICE SHALL LIST THE TIME THE CLOSURE WILL BE IN EFFECT AND SHALL LIST 24-HOUR EMERGENCY PHONE NUMBERS OF THE CONTRACTOR RESPONSIBLE FOR THE CLOSURE. THE TIMES SHALL BE COORDINATED WITH EACH RESIDENT AND PROPERTY OWNER. EVERY EFFORT MUST BE MADE TO ACCOMODATE THE RESIDENT OR OWNER'S NEED FOR ACCESS WHICH INCLUDES PROVIDING AN ADEQUATE OPENING IN THE CONSTRUCTION DRUMS DIRECTLY ADJACENT TO THE DRIVEWAY. ACCESS MAY BE MAINTAINED WITH THE USE OF ASPHALT, AGGREGATE, OR STEEL PLATES.

WHERE A PROPERTY HAS MORE THAN ONE DRIVEWAY, DRIVES SHALL BE CONSTRUCTED ONE AT A TIME. THE DRIVEWAYS ON FRANK AVENUE SHALL EACH BE REMOVED, REPLACED AND REOPENED TO TRAFFIC WITHIN A 48-HOUR TIME PERIOD. VEHICLES, MATERIALS, AND EQUIPMENT SHALL NOT BE STORED WITHIN A DRIVEWAY.

THE FOLLOWING ESTIMATED QUANTITIES ARE INCLUDED FOR USE AS DIRECTED BY THE ENGINEER FOR THE MAINTENANCE OF DRIVEWAYS:

ITEM 410, TRAFFIC COMPACTED SURFACE, TYPE A OR B	100 CY
ITEM 616, WATER	50 MGAL

[illegible]

DRIVE SUBSUMMARY



USGS MAP: CANTON WEST QUADRANGLE
(CANTON WEST, OH)
OHIO - STARK COUNTY

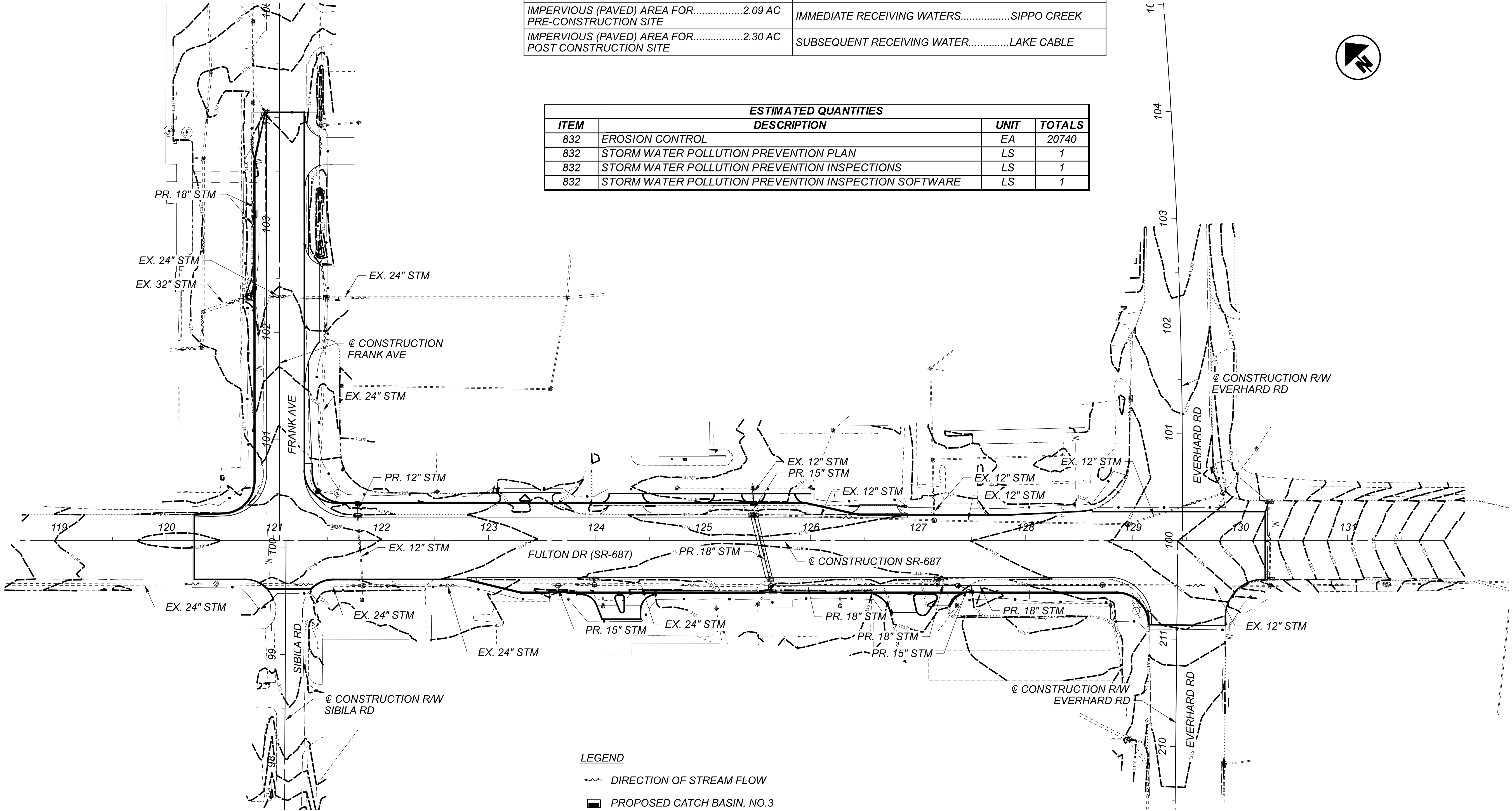
* LONGITUDE 81° 26' 40" W
* LATITUDE 40° 51' 00" N

* LATITUDE AND LONGITUDE TO
APPROX. CENTER OF PROJECT

1

PROJECT DATA	
TOTAL AREA (RIGHT-OF-WAY).....1.47 AC	RUNOFF COEFFICIENT FOR.....0.3-0.6 PRE-CONSTRUCTION SITE
PROJECT EARTH DISTURBED AREA.....0.97 AC	RUNOFF COEFFICIENT FOR.....0.9 POST CONSTRUCTION SITE
ESTIMATED CONTRACTOR EARTH.....0.25 AC DISTURBED AREA	POST CONSTRUCTION BMP: VEGETATED BIOFILTERS WERE NOT NEEDED FOR THIS PROJECT.
NOTICE OF INTENT EARTH.....1.22 AC DISTURBED AREA	
IMPERVIOUS (PAVED) AREA FOR.....2.09 AC PRE-CONSTRUCTION SITE	IMMEDIATE RECEIVING WATERS.....SIPPO CREEK
IMPERVIOUS (PAVED) AREA FOR.....2.30 AC POST CONSTRUCTION SITE	SUBSEQUENT RECEIVING WATER.....LAKE CABLE

ESTIMATED QUANTITIES			
ITEM	DESCRIPTION	UNIT	TOTALS
832	EROSION CONTROL	EA	20740
832	STORM WATER POLLUTION PREVENTION PLAN	LS	1
832	STORM WATER POLLUTION PREVENTION INSPECTIONS	LS	1
832	STORM WATER POLLUTION PREVENTION INSPECTION SOFTWARE	LS	1



LEGEND

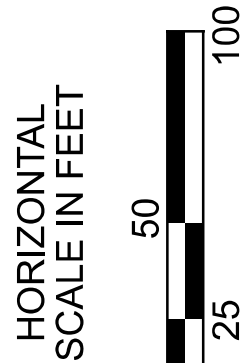
- DIRECTION OF STREAM FLOW
- PROPOSED CATCH BASIN, NO.3
- PROPOSED CATCH BASIN, NO. 3A
- PROPOSED MANHOLE

NOTE:

FOR SOIL PROFILE INFORMATION, SEE GEOTECHNICAL PROFILES SHEET 81 TO SHEET 89

PROJECT DESCRIPTION:

TRAFFIC SIGNAL, TURN LANE AND STORM SEWER IMPROVEMENTS
ON STATE ROUTE 687 (FULTON DRIVE NW) FROM FRANK AVENUE/SIBILA
ROAD TO EVERHARD ROAD IN JACKSON TOWNSHIP.



PROJECT SITE PLAN
BEGIN PROJECT TO END PROJECT

DESIGN AGENCY

M M
MOTT
MACDONALD

20445 EMERALD PKWY
SUITE 100
CLEVELAND, OH 44135

DESIGNER

SMS

REVIEWER

SJP 01/03/25

PROJECT ID

114831

SHEET

P.41

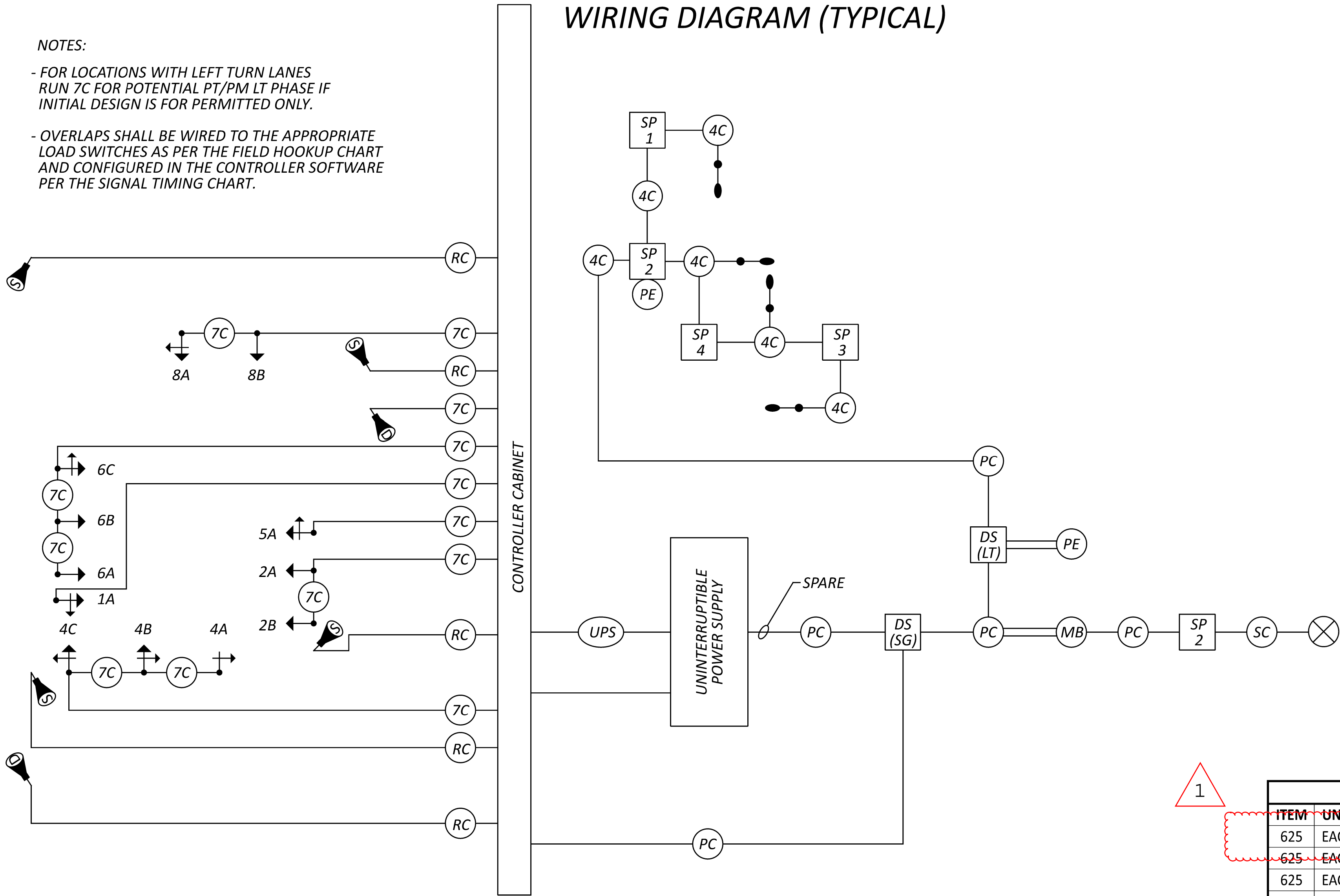
TOTAL

90

NOTES:

- FOR LOCATIONS WITH LEFT TURN LANES
RUN 7C FOR POTENTIAL PT/PM LT PHASE IF
INITIAL DESIGN IS FOR PERMITTED ONLY.

- OVERLAPS SHALL BE WIRED TO THE APPROPRIATE
LOAD SWITCHES AS PER THE FIELD HOOKUP CHART
AND CONFIGURED IN THE CONTROLLER SOFTWARE
PER THE SIGNAL TIMING CHART.



LEGEND

	TRAFFIC SIGNAL, 4 OR 5 UNIT HEAD, 12"		SERVICE CABLE, 3 CONDUCTOR, NO. 8 AWG
	TRAFFIC SIGNAL, 2 UNIT, 3 UNIT, OR PHB HEAD 12"		POWER CABLE, 2 CONDUCTOR, NO. 8 AWG
	TRAFFIC SIGNAL, 3 UNIT HEAD, 12" WITH ARROWS		SIGNAL SUPPORT POLE NO. __
	DILEMMA ZONE RADAR DETECTION UNIT		METER BASE
	STOP LINE RADAR DETECTION UNIT		SIGNAL CABLE, 4 CONDUCTOR, NO. 14 AWG
	LUMINAIRE, CONVENTIONAL		LIGHTING DISCONNECT SWITCH
	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG		SIGNAL DISCONNECT SWITCH
	RADAR DETECTION CABLE		UNINTERRUPTIBLE POWER SUPPLY CABLE
	INTERCONNECT CABLE		HAND/ OFF/ AUTO SWITCH
	PHOTOELECTRIC CELL		
	POWER SOURCE		

FIELD WIRING HOOKUP CHART (TEM FORM 496-16)

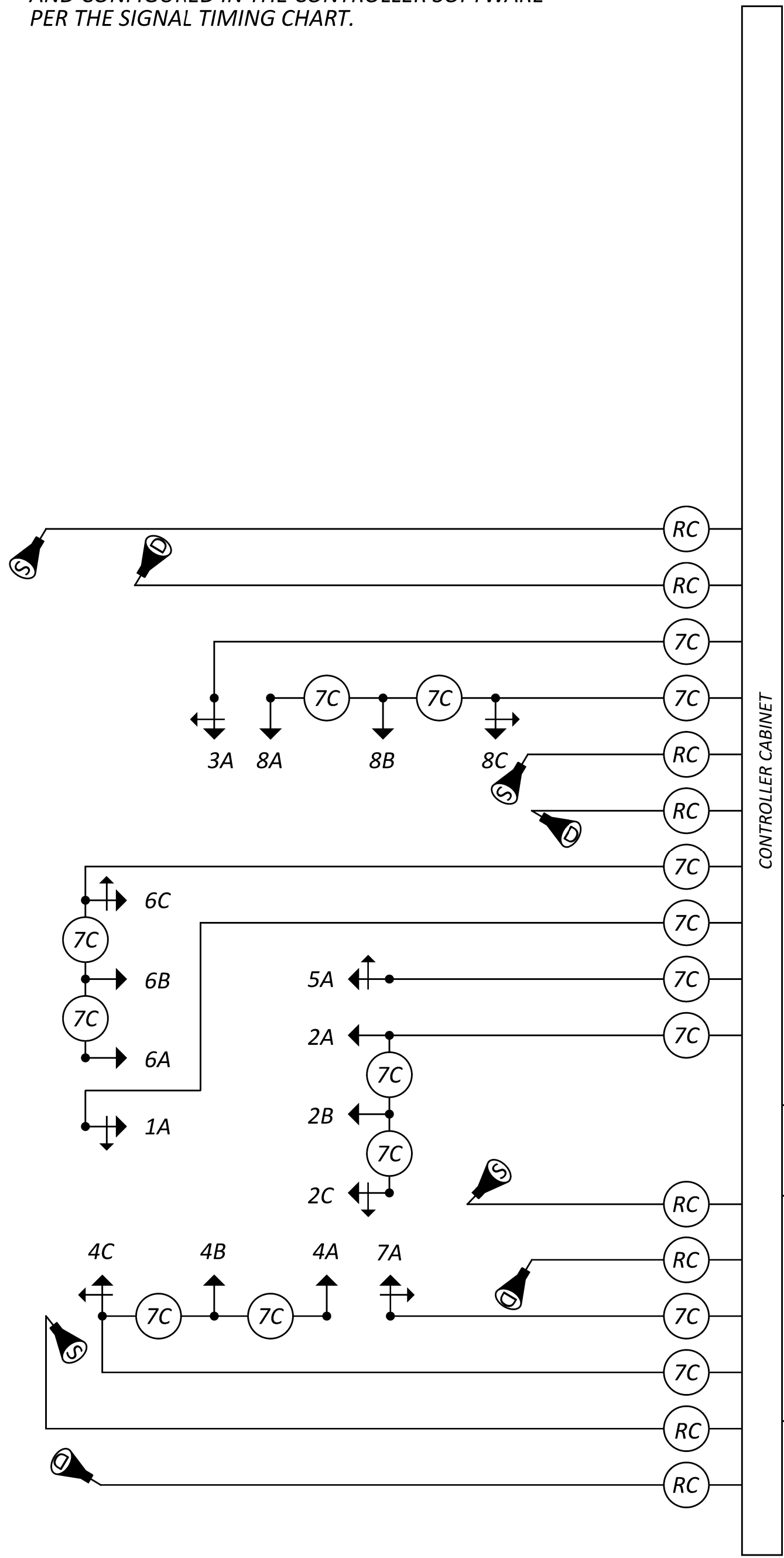
SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH	SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
1A (WB LT)	R	Φ6 R	R	6A, 6B (WB)	R	Φ6 R	R
	Y	Φ6 Y			Y	Φ6 Y	
	G	Φ6 G			G	Φ6 G	
	←Y→	Φ1 Y		6C (WB RT)	R	Φ6 R	R
	←G→	Φ1 G			Y	Φ6 Y	
2A, 2B (EB)	R	Φ2 R	R	G	Φ6 G	Φ4 Y / LS 10 Y Φ4 G / LS 10 G	
	Y	Φ2 Y			→Y→		
	G	Φ2 G			→G→		
4A (SB LT)	R	Φ4 R	R	8A (NB LT)	R	Φ8 R	R
	Y	Φ4 Y			Y	Φ8 Y	
	G	Φ4 G			G	Φ8 G	
4B (SB)	R	Φ4 R	R		←G→	Φ8 G	
	Y	Φ4 Y		R		Φ8 R	
	G	Φ4 G		Y		Φ8 Y	
	←G→	Φ4 G		G		Φ8 G	
4C (SB RT)	R	Φ4 R	R				
	Y	Φ4 Y					
	G	Φ4 G					
	→Y→	Φ5 Y / LS 9 Y					
	→G→	Φ5 G / LS 9 G					
5A (EB LT)	R	Φ2 R	R	OVERLAPS			
	Y	Φ2 Y					
	G	Φ2 G		OLA	→Y→	Φ5 Y / LS 9 Y	OUT
	←Y→	Φ5 Y			→G→	Φ5 G / LS 9 G	
	←G→	Φ5 G			OLB	→Y→	Φ4 Y / LS 10 Y
LS = LOAD SWITCH				→G→		Φ4 G / LS 10 G	

1

TRAFFIC SIGNAL QUANTITIES			
ITEM	UNIT	DESCRIPTION	QUANTITY
625	EACH	BRACKET ARM, 6'	4
625	EACH	LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), (TYPE III, 8,500-11,000 LUMENS, 240V/120V)	4
625	EACH	PULL BOX, 725.08, 24"	1
625	EACH	PULL BOX, 725.08, 18"	4
625	FT	CONDUIT, 2", 725.04	4
625	FT	CONDUIT, 3", 725.04	24
625	FT	CONDUIT, 4", 725.04	40
625	FT	CONDUIT, JACKED OR DRILLED, 725.04, (4")	201
625	FT	TRENCH	68
625	EACH	ARC FLASH CALCULATIONS AND LABEL (FRANK AVENUE)	1
625	EACH	GROUND ROD	5
625	EACH	LUMINAIRE REMOVED	4
625	EACH	LUMINAIRE SUPPORT REMOVED	4
625	FT	UNDERGROUND WARNING / MARKING TAPE, AS PER PLAN	269
632	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCCARBONATE, BLACK	6
632	EACH	VEHICULAR SIGNAL HEAD, (LED), 4-SECTION, 12" LENS, 1-WAY, POLYCCARBONATE, BLACK	2
632	EACH	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCCARBONATE, BLACK	4
632	EACH	STRAIN POLE FOUNDATION	4
632	EACH	COMBINATION STRAIN POLE, TYPE TC-81.11, DESIGN 10	4
632	FT	MESSENGER WIRE, 7 STRAND, 3/8 inch DIA., with Accessories	328
632	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	721
632	FT	SIGNAL CABLE, 4 CONDUCTOR, NO. 14 AWG	545
632	FT	POWER CABLE, 2 CONDUCTOR, NO. 4 AWG	106
632	EACH	POWER SERVICE, AS PER PLAN	1
632	EACH	COVERING OF VEHICULAR SIGNAL HEAD	12
632	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN	1
632	EACH	TETHER WIRE, WITH ACCESSORIES	328
633	EACH	CABINET, TYPE TS2, AS PER PLAN	1
633	EACH	CABINET FOUNDATION, AS PER PLAN	1
633	EACH	CONTROLLER WORK PAD, AS PER PLAN	1
633	EACH	UNINTERRUPTIBLE POWER SUPPLY, 1000 WATT, AS PER PLAN	1
809	EACH	ADVANCE RADAR DETECTION, AS PER PLAN, RE-USE & INSTALLATION OF EXISTING EQUIPMENT	2
809	EACH	STOP LINE RADAR DETECTION, AS PER PLAN, RE-USE & INSTALLATION OF EXISTING EQUIPMENT	4

NOTES:

- FOR LOCATIONS WITH LEFT TURN LANES RUN 7C FOR POTENTIAL PT/PM LT PHASE IF INITIAL DESIGN IS FOR PERMITTED ONLY.
- OVERLAPS SHALL BE WIRED TO THE APPROPRIATE LOAD SWITCHES AS PER THE FIELD HOOKUP CHART AND CONFIGURED IN THE CONTROLLER SOFTWARE PER THE SIGNAL TIMING CHART.



WIRING DIAGRAM (TYPICAL)

LEGEND

- TRAFFIC SIGNAL, 4 OR 5 UNIT HEAD, 12"
- TRAFFIC SIGNAL, 2 UNIT, 3 UNIT, OR PHB HEAD 12"
- TRAFFIC SIGNAL, 3 UNIT HEAD, 12" WITH ARROWS
- DILEMMA ZONE RADAR DETECTION UNIT
- STOP LINE RADAR DETECTION UNIT
- LUMINAIRE, CONVENTIONAL

- SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
- RADAR DETECTION CABLE
- INTERCONNECT CABLE
- PHOTOELECTRIC CELL
- POWER SOURCE
- SERVICE CABLE, 3 CONDUCTOR, NO. 8 AWG
- POWER CABLE, 2 CONDUCTOR, NO. 8 AWG
- SIGNAL SUPPORT POLE NO. __
- METER BASE
- SIGNAL CABLE, 4 CONDUCTOR, NO. 14 AWG
- LIGHTING DISCONNECT SWITCH
- SIGNAL DISCONNECT SWITCH
- UNINTERRUPTIBLE POWER SUPPLY CABLE
- HAND/ OFF/ AUTO SWITCH

FIELD WIRING HOOKUP CHART (TEM FORM 496-16)

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH	SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
1A (WB LT)	R	Φ6 R	R	6A, 6B (WB)	R	Φ6 R	R
	Y	Φ6 Y			Y	Φ6 Y	
	G	Φ6 G			G	Φ6 G	
	←Y	Φ1 Y		6C (WB RT)	R	Φ6 R	R
	←G	Φ1 G			Y	Φ6 Y	
R	Φ2 R	G	Φ6 G				
Y	Φ2 Y	→Y→	Φ7 Y / LS 12 Y				
2A, 2B (EB)	G	Φ2 G	R		→G→	Φ7 G / LS 12 G	
2C (EB RT)	R	Φ2 R	R	7A (SB LT)	R	Φ4 R	R
	Y	Φ2 Y			Y	Φ4 Y	
	G	Φ2 G			G	Φ4 G	
	→Y→	Φ3 Y / LS 10 Y			←Y	Φ7 Y	
	→G→	Φ3 G / LS 10 G			←G	Φ7 G	
3A (NB LT)	R	Φ8 R	R	8A, 8B (NB)	R	Φ8 R	R
	Y	Φ8 Y			Y	Φ8 Y	
	G	Φ8 G			G	Φ8 G	
	←Y	Φ3 Y		8C (NB RT)	R	Φ8 R	R
	←G	Φ3 G			Y	Φ8 Y	
		G	Φ8 G				
4A, 4B (SB)	R	Φ4 R	R		→Y→	Φ1 Y / LS 9 Y	
	Y	Φ4 Y			→G→	Φ1 G / LS 9 G	
	G	Φ4 G					
4C (SB RT)	R	Φ4 R	R				
	Y	Φ4 Y					
	G	Φ4 G					
	→Y→	Φ5 Y / LS 11 Y		OLA	→Y→	Φ1 Y / LS 9 Y	OUT
	→G→	Φ5 G / LS 11 G			→G→	Φ1 G / LS 9 G	
5A (EB LT)	R	Φ2 R	R	OLB	→Y→	Φ3 Y / LS 10 Y	OUT
	Y	Φ2 Y			→G→	Φ3 G / LS 10 G	
	G	Φ2 G		OLC	→Y→	Φ5 Y / LS 11 Y	OUT
	←Y	Φ5 Y			→G→	Φ5 G / LS 11 G	
	←G	Φ5 G			→Y→	Φ7 Y / LS 12 Y	
LS = LOAD SWITCH				OLD	→G→	Φ7 G / LS 12 G	
OVERLAPS							

TRAFFIC SIGNAL QUANTITIES			
ITEM	UNIT	DESCRIPTION	QUANTITY
625	EACH	BRACKET ARM, 6'	4
625	EACH	LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), (TYPE III; 8,500-11,000 LUMENS, 240V/120V)	4
625	EACH	PULL BOX, 725.08, 24"	1
625	EACH	PULL BOX, 725.08, 18"	4
625	FT	CONDUIT, 2", 725.04	5
625	FT	CONDUIT, 3", 725.04	18
625	FT	CONDUIT, 4", 725.04	40
625	FT	CONDUIT, JACKED OR DRILLED, 725.04, (4")	274
625	FT	TRENCH	63
625	EACH	ARC FLASH CALCULATIONS AND LABEL (EVERHARD ROAD)	1
625	EACH	GROUND ROD	5
625	EACH	LUMINAIRE REMOVED	4
625	EACH	LUMINAIRE SUPPORT REMOVED	4
625	FT	UNDERGROUND WARNING / MARKING TAPE, AS PER PLAN	337
632	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, BLACK	8
632	EACH	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, BLACK	8
632	EACH	STRAIN POLE FOUNDATION	4
632	EACH	COMBINATION STRAIN POLE, TYPE TC-81.11, DESIGN 12	4
632	FT	MESSANGER WIRE, 7 STRAND, 3/8 inch DIA., with Accessories	441
632	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	1389
632	FT	SIGNAL CABLE, 4 CONDUCTOR, NO. 14 AWG	669
632	FT	POWER CABLE, 2 CONDUCTOR, NO. 4 AWG	328
632	EACH	POWER SERVICE, AS PER PLAN	1
632	EACH	COVERING OF VEHICULAR SIGNAL HEAD	16
632	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN	1
632	EACH	TETHER WIRE, WITH ACCESSORIES	441
633	EACH	CABINET, TYPE TS2, AS PER PLAN	1
633	EACH	CABINET FOUNDATION, AS PER PLAN	1
633	EACH	CONTROLLER WORK PAD, AS PER PLAN	1
633	EACH	UNINTERRUPTIBLE POWER SUPPLY, 1000 WATT, AS PER PLAN	1
809	EACH	ADVANCE RADAR DETECTION, AS PER PLAN, RE-USE & INSTALLATION OF EXISTING EQUIPMENT	4
809	EACH	STOP LINE RADAR DETECTION, AS PER PLAN, RE-USE & INSTALLATION OF EXISTING EQUIPMENT	4