

LOCATION MAP

LATITUDE: N39°14'33" LONGITUDE: W84°20'51"

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

DESIGN DESIGNATION

NONE

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:
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 8 TRAFFIC OPERATIONS
505 SOUTH SR 741
LEBANON, OH 45036

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

D08-TSG-FY2022

CITY OF CINCINNATI
UNION, PIERCE, BATAVIA,
SYCAMORE, SYMMES, AND DEERFIELD TOWNSHIPS
CLERMONT, HAMILTON AND WARREN COUNTIES

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2019 SPECIFICATIONS

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

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

FEDERAL PROJECT NUMBER
E191453

RAILROAD INVOLVEMENT
NONE

PROJECT DESCRIPTION

PROJECT WILL INSTALL RADAR DETECTION AND IMPLEMENT SIGNAL PERFORMANCE MEASURES ALONG THE CLE-125 AND HAM/WAR-22 CORRIDORS. FLASHING YELLOW ARROW WILL BE INSTALLED ON HAM/WAR-22. INSTALL OVERHEAD RAMP METER SIGNAL ON HAM-75 NB ENTRANCE AT MITCHELL AVE.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA: N/A ACRES*
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: N/A ACRES*
NOTICE OF INTENT EARTH DISTURBED AREA: N/A ACRES*

* MAINTENANCE PROJECT

ENGINEER'S SEAL:		STANDARD CONSTRUCTION DRAWINGS			SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
	RM-4.5	7/21/17	TC-83.10	1/17/20	800-2019	1/15/21
	TC-83.20	7/21/17			809	1/15/21
	TC-85.10	4/17/20			821	4/20/21
	TC-85.20	7/20/18			909	1/15/21
	TC-85.21	7/16/21				
	TC-85.22	1/19/18				
	MT-95.31	7/19/19				
	MT-95.32	4/19/19				
	MT-95.45	1/17/20				
	MT-101.90	7/17/20				
TC-21.50	4/17/20					
TC-41.41	7/19/19					
TC-52.20	1/15/21					
TC-81.22	7/16/21					

APPROVED
DATE 2-14-2022
Tammy K Campbell
DISTRICT DEPUTY DIRECTOR

APPROVED _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION
DATE _____

DESIGN AGENCY



DESIGNER TCS
REVIEWER MAG
PROJECT ID 110596
SHEET TOTAL P.1 | 23

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.

THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER SHALL BE NOTIFIED 72 HOURS PRIOR TO THE FINISH OF THE PROJECT SO THAT A FINAL INSPECTION CAN BE SCHEDULED. THE CONTRACTOR WILL BE PROVIDED WITH A PUNCHLIST OF ITEMS TO CORRECT FROM THE INSPECTION. ONCE THE PUNCHLIST ITEMS HAVE BEEN CORRECTED AND REVIEWED BY THE PROJECT ENGINEER, THE PROJECT WILL BE ACCEPTED.

GUARANTEE
 THE CONTRACTOR SHALL GUARANTEE THAT THE TRAFFIC CONTROL SYSTEM INSTALLED AS PART OF THIS CONTRACT SHALL OPERATE SATISFACTORILY FOR A PERIOD OF 120 DAYS AFTER THE FINAL ACCEPTANCE OF THE TRAFFIC SIGNAL AND COMPLETION OF ALL PUNCH LIST ITEMS. 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 SIGNALS INSTALLATION: CONTROLLER, CABINET, UNINTERRUPTABLE 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.

MATERIALS
 ALL MATERIALS FURNISHED FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMS) DATED AS SHOWN ON SHEET 1. FURNISH NEW MATERIALS AND EQUIPMENT OF FIRST QUALITY, OF CURRENT DESIGN AND FREE FROM DEFECTS. NO USED MATERIAL WILL BE PERMITTED.

CONTRACTOR SHALL SUPPLY A PAPER COPY AND AN ELECTRONIC COPY IN ADOBE ACROBAT FORMAT TO THE PROJECT AND DISTRICT TRAFFIC ENGINEER FOR APPROVAL.

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:

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

- 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.
- METALLIC CONDUIT CARRYING THE LOOP WIRES FROM IN THE PAVEMENT TO THE PULL BOX SPLICE LOCATION WILL ONLY BE BONDED AT THE PULL BOX END, AND WILL NOT CONTAIN AN EQUIPMENT GROUNDING CONDUCTOR.
- IF MULTIPLE CONDUIT RUNS BEGIN AND END AT THE SAME POINTS, ONLY ONE EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED.
- IF AN EQUIPMENT GROUNDING CONDUCTOR IS NEEDED IN CONDUIT BETWEEN SIGNALIZED INTERSECTIONS FOR UNDERGROUND INTERCONNECT CABLE, THE GROUNDING SYSTEM FOR EACH SIGNALIZED INTERSECTION WILL BE SEPARATED ABOUT MIDWAY BETWEEN THE INTERSECTIONS.
- 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

- 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.
- THE 725.05 CONDUIT SHALL HAVE THE INSIDE AND OUTSIDE DIAMETERS OF THE CONDUIT DEBURRED AT ALL TERMINATION POINTS.
- BOTH ENDS OF METALLIC CONDUIT SHALL BE BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.
- 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

- 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:
 - USE 4 AWG BETWEEN THE POWER SERVICE AND SUPPORTS, POLES, PEDESTALS, CONTROLLER OR FLASHER CABINETS.
 - USE A MINIMUM 8 AWG BETWEEN LOOP DETECTOR PULL BOXES AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.A.1 ABOVE.
 - USE A MINIMUM 8 AWG BETWEEN THE "PREPARE TO STOP WHEN FLASHING" INSTALLATION (INCLUDING SUPPORT) AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.A.1 ABOVE.
 - 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.

- IN A HIGHWAY LIGHTING SYSTEM, THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE THE SAME WIRE SIZE AS THE DUCT CABLE OR DISTRIBUTION CABLE CIRCUIT CONDUCTORS, WITH THE MINIMUM CONDUCTOR SIZE OF 4 AWG. BONDING JUMPERS WILL BE MINIMUM SIZE 4 AWG.
- GROUND ROD.
 - 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.
- THE TYPICAL GROUNDING CONDUCTOR (GROUND WIRE) SHALL BE 4 AWG INSULATED COPPER.

- 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.	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

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

- 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.
- 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.

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

- WAR-22 @ COLUMBIA RD (WCEO PERMIT PROJECT) - SIGNAL MODIFICATION FOR NB RIGHT TURN LANE
- CLE-125-4.11 (PID 110992) - ADD SB RIGHT TURN LANE ON BACH BUXTON AND REBUILD SIGNAL
- CLE-125-5.13 (PID 112408) - RESURFACING PROJECT BEGINNING JUST EAST OF AMELIA OLIVE BRANCH AND INCLUDING THE SIGNALIZED INTERSECTIONS OF LORI LN AND WOODLANDS/GLEN MARY DR.
- DOB-HSIP SIGNALS (PID 110452) - REBUILDING THE SIGNAL AT SR 125/AMELIA OLIVE BRANCH.

THE CONTRACTOR SHALL COORDINATE THEIR WORK AT THE ABOVE LOCATIONS WITH THE PROJECT ENGINEER TO AVOID ANY UNNECESSARY CONFLICTS.

ITEM 632 - SIGNALIZATION, MISC.: UNLASH AND RELASH MESSENGER WIRE

THE CONTRACTOR SHALL REMOVE EXISTING MESSENGER WIRE LASHING RODS AND REINSTALL THEM AS NECESSARY FOR THE INSTALLATION OF ANY NEW CABLES ON THE EXISTING INTERSECTION SIGNAL SPANS. THE CABLES SHALL ENTER THE EXISTING STRAIN POLE THROUGH THE POLE CABLE ENTRANCE FITTING AND USE THE EXISTING CONDUIT SYSTEM TO GET TO THE CONTROLLER CABINET. THE NEW CABLES SHALL BE SUPPORTED BY A NEW CABLE SUPPORT ASSEMBLY AT THE TOP OF THE STRAIN POLE.

THE NEW SIGNAL CABLES SHALL BE BID BY SEPARATE BID ITEMS. PAYMENT FOR ITEM 632 "SIGNALIZATION MISC.: UNLASH AND RELASH MESSENGER WIRE" SHALL BE MADE AT THE CONTRACT UNIT PRICE PER PER FOOT AND SHALL INCLUDE ALL LABOR, MATERIALS, CABLE SUPPORT ASSEMBLIES AND EQUIPMENT TO INSTALL NEW CABLES ON EXISTING SIGNAL SPAN WIRE INSTALLATIONS.

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.

IF THE LOSS OF VEHICLE DETECTION IS KNOWN PRIOR TO THE START OF CONSTRUCTION, IT SHALL BE DISCUSSED AT THE PRECONSTRUCTION MEETING. AT SUCH TIME, THE DISTRICT TRAFFIC ENGINEER SHALL ADVISE THE PROJECT ENGINEER AND CONTRACTOR ON THE APPROPRIATE ACTION TO RECTIFY ANY LOSS OF VEHICLE DETECTION. THIS MAY INCLUDE PLACING THE TRAFFIC SIGNAL ON MINIMUM OR MAXIMUM RECALL, MODIFYING THE MINIMUM GREEN TIMES, AND REMOVING THE MALFUNCTIONING DETECTION FROM SERVICE. WHERE NON-INTRUSIVE DETECTION (I.E. VIDEO, RADAR) ALREADY EXISTS, THE CONTRACTOR SHALL INSURE THAT DETECTION IS OPERATING AND MAINTAINED BY RECONFIGURING THE DETECTION UNITS ACCORDINGLY DURING ALL CONSTRUCTION PHASES. THIS IS TO AVOID THE SIGNAL FROM MAXING OUT THE EFFECTED SIGNAL PHASE AND CREATING UNNECESSARY DELAYS.

LOCATIONS WHERE NON-INTRUSIVE DETECTION IS PROPOSED AND THE EXISTING VEHICLE DETECTION IS TO BE ABANDONED OR REMOVED, THE NON-INTRUSIVE VEHICLE DETECTION SHALL BE INSTALLED, CONFIGURED AND MADE FULLY FUNCTIONAL PRIOR TO THE EXISTING DETECTION BEING DISABLED. 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.

COOPERATION BETWEEN CONTRACTORS

THE CONTRACTOR IS ADVISED OF THE FOLLOWING PROJECTS WHICH WILL BE UNDER CONSTRUCTION IN 2022 AND FALL WITHIN THE LIMITS OF THIS PROJECT:

- WAR-22 @ COLUMBIA RD (WCEO PERMIT PROJECT) - SIGNAL MODIFICATION FOR NB RIGHT TURN LANE
- CLE-125-4.11 (PID 110992) - ADD SB RIGHT TURN LANE ON BACH BUXTON AND REBUILD SIGNAL
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THE CONTRACTOR SHALL COORDINATE THEIR WORK AT THE ABOVE LOCATIONS WITH THE PROJECT ENGINEER TO AVOID ANY UNNECESSARY CONFLICTS.

ITEM 632 - SIGNALIZATION, MISC.: UNLASH AND RELASH MESSENGER WIRE

THE CONTRACTOR SHALL REMOVE EXISTING MESSENGER WIRE LASHING RODS AND REINSTALL THEM AS NECESSARY FOR THE INSTALLATION OF ANY NEW CABLES ON THE EXISTING INTERSECTION SIGNAL SPANS. THE CABLES SHALL ENTER THE EXISTING STRAIN POLE THROUGH THE POLE CABLE ENTRANCE FITTING AND USE THE EXISTING CONDUIT SYSTEM TO GET TO THE CONTROLLER CABINET. THE NEW CABLES SHALL BE SUPPORTED BY A NEW CABLE SUPPORT ASSEMBLY AT THE TOP OF THE STRAIN POLE.

THE NEW SIGNAL CABLES SHALL BE BID BY SEPARATE BID ITEMS. PAYMENT FOR ITEM 632 "SIGNALIZATION MISC.: UNLASH AND RELASH MESSENGER WIRE" SHALL BE MADE AT THE CONTRACT UNIT PRICE PER PER FOOT AND SHALL INCLUDE ALL LABOR, MATERIALS, CABLE SUPPORT ASSEMBLIES AND EQUIPMENT TO INSTALL NEW CABLES ON EXISTING SIGNAL SPAN WIRE INSTALLATIONS.

DETECTION MAINTENANCE

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IF THE LOSS OF VEHICLE DETECTION IS KNOWN PRIOR TO THE START OF CONSTRUCTION, IT SHALL BE DISCUSSED AT THE PRECONSTRUCTION MEETING. AT SUCH TIME, THE DISTRICT TRAFFIC ENGINEER SHALL ADVISE THE PROJECT ENGINEER AND CONTRACTOR ON THE APPROPRIATE ACTION TO RECTIFY ANY LOSS OF VEHICLE DETECTION. THIS MAY INCLUDE PLACING THE TRAFFIC SIGNAL ON MINIMUM OR MAXIMUM RECALL, MODIFYING THE MINIMUM GREEN TIMES, AND REMOVING THE MALFUNCTIONING DETECTION FROM SERVICE. WHERE NON-INTRUSIVE DETECTION (I.E. VIDEO, RADAR) ALREADY EXISTS, THE CONTRACTOR SHALL INSURE THAT DETECTION IS OPERATING AND MAINTAINED BY RECONFIGURING THE DETECTION UNITS ACCORDINGLY DURING ALL CONSTRUCTION PHASES. THIS IS TO AVOID THE SIGNAL FROM MAXING OUT THE EFFECTED SIGNAL PHASE AND CREATING UNNECESSARY DELAYS.

LOCATIONS WHERE NON-INTRUSIVE DETECTION IS PROPOSED AND THE EXISTING VEHICLE DETECTION IS TO BE ABANDONED OR REMOVED, THE NON-INTRUSIVE VEHICLE DETECTION SHALL BE INSTALLED, CONFIGURED AND MADE FULLY FUNCTIONAL PRIOR TO THE EXISTING DETECTION BEING DISABLED. 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.

GENERAL NOTES

DESIGN AGENCY 

DESIGNER: TCS
 REVIEWER: MAG
 PROJECT ID: 110596
 SHEET: P.2 TOTAL: 23

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 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 ON 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 4 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 TO SERVICE WITHIN 8 HOURS AFTER THE CONTRACTORS 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 SPECIFIED ABOVE, THE ENGINEER MAY INVOKE THE PROVISIONS OF SECTION 105.15 AND ANY SUBSEQUENT BILLINGS TO THE STATE FOR POLICE SERVICES AND MAINTENANCE SERVICES BY STATE 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 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 9 AM AND 3 PM 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 POLICE, HIRED BY THE CONTRACTOR.

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

THE CONTRACTOR SHALL MAINTAIN COMPLETE RECORDS OF MALFUNCTIONS INCLUDING:

1. TIME OF NOTIFICATION OF MALFUNCTION;
2. TIME OF WORK CREW'S 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 REOCCURENCE;
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. MAINTAINING TRAFFIC

THE CONTRACTOR SHALL MAINTAIN TWO-WAY TRAFFIC AT ALL TIMES THROUGHOUT THE DURATION OF THE PROJECT BY USE OF THE EXISTING PAVEMENT AND IN ACCORDANCE WITH THE REQUIREMENTS OF ITEM 614. A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED ON ALL ROADS, EXCEPT FROM 6AM TO 8PM WHEN ALL LANES SHALL BE MAINTAINED BY USE OF THE EXISTING PAVEMENT.
 CONSTRUCTION SHALL BE COMPLETED SUCH THAT ONLY ONE LANE AT ANY GIVEN TIME IS AFFECTED DURING CONSTRUCTION.

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

IT IS THE INTENTION TO PERFORM THE REQUIRED WORK WITH THE LEAST INCONVENIENCE TO, AND THE MAXIMUM SAFETY OF, THE CONTRACTOR AND THE TRAVELLING PUBLIC. ANY VARIANCES FROM THE INTENT OF THESE MAINTENANCE OF TRAFFIC NOTES MUST BE APPROVED IN WRITING BY THE ENGINEER. EXCEPT AS MODIFIED BELOW OR AS SHOWN IN THE MAINTENANCE OF TRAFFIC PLANS, THE REQUIREMENTS FOR MAINTAINING TRAFFIC AS INDICATED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION, AND PERTINENT ITEMS OF THE SPECIFICATIONS AND PROPOSAL SHALL APPLY.

TRAFFIC IS TO BE MAINTAINED IN A UNIFORM PATTERN THROUGHOUT LANE SHIFTS. ACCESS TO ALL PROPERTY OWNERS SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THIS PROJECT. THE CONTRACTOR SHALL ARRANGE HIS OPERATION SO AS TO PREVENT ANY INTERFERENCE TO THE CONTINUOUS FLOW OF TRAFFIC. ALL VEHICLES, EQUIPMENT, WORKERS AND THEIR ACTIVITIES ARE RESTRICTED TO ONE SIDE OF THE PAVEMENT UNLESS OTHERWISE APPROVED BY THE ENGINEER.

CONSTRUCTION VEHICLES SHALL ALWAYS MOVE WITH AND NOT AGAINST THE FLOW OF TRAFFIC. CONSTRUCTION VEHICLES AND EQUIPMENT SHALL NOT PARK OR STOP EXCEPT WITHIN DESIGNATED WORK AREAS AND SHALL ENTER AND LEAVE THE WORK AREA IN A MANNER WHICH WILL NOT BE HAZARDOUS TO, OR INTERFERE WITH, THE NORMAL FLOW OF TRAFFIC.
 PERSONAL VEHICLES ARE NOT PERMITTED ON THE RIGHT-OF-WAY EXCEPT IN SPECIFIC AREAS DESIGNATED BY THE ENGINEER.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH CMS 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.

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

- CHRISTMAS FOURTH OF JULY
- NEW YEAR'S DAY LABOR DAY
- MEMORIAL DAY THANKSGIVING DAY

THE PERIOD OF TIME THAT THE LANES ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY OR EVENT FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

DAY OF HOLIDAY OR EVENT	TIMES ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	6 AM FRIDAY THRU 7 PM MONDAY
MONDAY	6 AM FRIDAY THRU 7 PM TUESDAY
TUESDAY	6 AM MONDAY THRU 7 PM WEDNESDAY
WEDNESDAY	6 AM TUESDAY THRU 7 PM THURSDAY
THURSDAY (THANKSGIVING ONLY)	6 AM WEDNESDAY THRU 7 PM FRIDAY
FRIDAY	6 AM THURSDAY THRU 7 PM MONDAY
SATURDAY	6 AM FRIDAY THRU 7 PM MONDAY

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 SET UP 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 SHOULD LIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, DETOUR ROUTES IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

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 BUSINESS DAYS PRIOR TO CLOSURE
LANE CLOSURES & RESTRICTIONS	>= 2 WEEKS	14 BUSINESS 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

WINDOW CONTRACT TABLE

DESCRIPTION OF CRITICAL WORK	CALENDAR DAYS TO COMPLETE	DISINCENTIVE \$ PER DAY	WORK WINDOW START	WORK WINDOW END
ALL WORK ON HAM/WAR-22/3	90	PER CMS 108.07	7/15/2022	6/1/2023
ALL WORK ON CLE-125	90	PER CMS 108.07	1/1/2023	6/1/2023

DUE TO THE NATURE OF THE WORK, AND TO MINIMIZE IMPACTS TO THE TRAVELLING PUBLIC, NO WORK IS TO BEGIN ON HAM/WAR-22/3 OR CLE-125 UNTIL ALL MATERIALS ARE AVAILABLE AND ON HAND. ONCE WORK HAS STARTED AT THESE LOCATIONS, IT WILL BE SUBJECT TO THE WINDOW CONTRACT TABLE ABOVE.

WORK FOR THE I-75 RAMP METER IS NOT SUBJECT TO THE WINDOW CONTRACT TABLE. IT IS NOT A REQUIREMENT TO HAVE ALL MATERIALS ON HAND TO BEGIN WORK AT THIS LOCATION. ALL WORK AT THE RAMP METER LOCATION SHALL BE COMPLETE BY THE FINAL CONTRACT COMPLETION DATE.

ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE
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 OMTUCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF CMS 614 AND THE OMTUCD, 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:

1. DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.
2. 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 MORORISTS THROUGH A RED LIGHT.)

IN ADDITION TO THE REQUIREMENTS OF CMS 614 AND THE OMTUCD, 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 AS APPROVED BY THE ENGINEER:

1. 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 SET-UP.)

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 MORORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MORORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIS IS APPROPRIATE.

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 CMS 614.03.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START FO THE SHIFT, IN ORDER TO RECEIVE ANY 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 WHICH WILL 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 QUANTITY AS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 164_HOURS (I.E. 4 HOURS PER INTERSECTION WITH AN ADDED 4 HOURS PER FYA LOCATION.)

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 AN LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614. LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

ITEM 632 - SIGNALIZATION, MISC.: CABINET INTERFACE DEVICE
THIS ITEM SHALL CONSIST OF FURNISHING A WAVETRONIX CLICK 666 CABINET INTERFACE DEVICE FOR CONNECTIVITY AND COMMUNICATION BETWEEN WAVETRONIX RADAR DETECTORS AND THE SIGNAL CONTROLLER. THIS ITEM WILL ALSO INCLUDE NECESSARY PARTS TO COMMUNICATE VIA SDLC. PAYMENT WILL BE PER EACH UNIT AND WILL INCLUDE ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR A FULLY FUNCTIONAL INSTALLATION IN THE SIGNAL CABINET.

ITEM 632 - REMOVAL OF MISCELLANEOUS SIGNAL ITEM: DETECTOR LOOPS

THIS ITEM WILL CONSIST OF THE REMOVAL AND DISPOSAL OF ALL LOOP DETECTORS AT AN INTERSECTION WHERE NEW RADAR DETECTION IS TO BE INSTALLED. PAYMENT WILL BE MADE PER INTERSECTION AND WILL INCLUDE ALL LOOP WIRING IN THE CABINET, ALONG SPANWIRES AND IN PULLBOXES AND CONDUITS. ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO REMOVE THE LOOPS SHALL BE INCLUDED IN THE UNIT PRICE BID PER INTERSECTION.

ITEM 632 - REMOVAL OF MISCELLANEOUS SIGNAL ITEM: WAVETRONIX UNITS IN CABINET

THIS PAY ITEM WILL COVER THE REMOVAL OF ANY EXISTING WAVETRONIX INTERFACE DEVICES (CLICK 112, CLICK 222 AND CLICK 204 UNITS) AND THEIR POWER SUPPLY. ALL REMOVED ITEMS SHALL BE SALVAGED AND RETURNED TO:
ODOT DISTRICT 8
ATTN: JIM JUDD
513-933-6692

PAYMENT WILL BE MADE PER EACH INTERSECTION LOCATION THAT THESE DEVICES ARE CURRENTLY IN USE.

ITEM 633 - CABINET, TYPE 332, AS PER PLAN

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

THE CABINET SHALL BE FURNISHED WITH AN EDI MONITOR AS ALLOWED ON THE TAP/APPROVED PRODUCTS LIST. THE CABINET SHALL ALSO COME EQUIPPED WITH AN AUXILIARY OUTPUT FILE. AT THE INTERSECTION OF HAM-22 AND FIELDS ERTTEL RD, THE CABINET RISER SHALL BE AT LEAST 18" HIGH TO ACCOMMODATE EXISTING AND PROPOSED WIRING.

THE CONTRACTOR SHALL NOT REASSIGN THE CABINET DETECTOR INPUTS IN ORDER TO REDUCE THE NUMBER OF 2-CHANNEL DETECTOR UNITS SUPPLIED AND SHALL USE THE STANDARD CALTRANS INPUT FILE DESIGNATIONS FOLLOWING PLAN INSERT SHEET 203324.

PAYMENT FOR ITEM 633 CABINET, TYPE 332, AS PER PLAN WILL BE AT THE CONTRACT BID PRICE PER EACH COMPLETE AND IN PLACE INCLUDING ALL CONNECTIONS TESTED AND ACCEPTED.

ITEM 633 - CONTROLLER ITEM, MISC.: AUXILIARY OUTPUT FILE

THIS ITEM SHALL CONSIST OF SUPPLYING AND INSTALLING AN AUXILIARY OUTPUT FILE THAT IS COMPATIBLE WITH THE EXISTING CABINET AT THE INTERSECTIONS NOTED IN THESE PLANS.

PAYMENT WILL BE PER EACH UNIT INSTALLED, AND WILL INCLUDE ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED FOR A FULLY FUNCTIONAL INSTALLATION.

ITEM 633 - CONTROLLER ITEM, MISC.: REPROGRAMMING OF EXISTING CONTROLLERS AND RADARS

THIS ITEM WILL COVER ANY REPROGRAMMING OR PHASING MODIFICATIONS REQUIRED FOR EXISTING CONTROLLERS WHICH ARE TO REMAIN IN SERVICE. THE REPROGRAMMING IS TO FOLLOW THE SCHEMA OUTLINED IN THE TYPICAL DETECTOR ASSIGNMENT ON SHEET 5.

THIS PAY ITEM WILL INCLUDE THE REPROGRAMMING OF DETECTION ZONES FOR ANY EXISTING RADARS WHICH WILL REMAIN IN SERVICE AT AN INTERSECTION. ALL RADARS SHALL BE REPROGRAMMED AS OUTLINED IN THE TYPICAL DETECTOR SET-UP ON SHEET 5.

CONTROLLER REPROGRAMMING WILL BE MEASURED PER EXISTING CONTROLLER PROGRAMMED OR MODIFIED. RADAR REPROGRAMMING WILL BE MEASURED PER INTERSECTION REGARDLESS OF THE NUMBER OF EXISTING RADARS REQUIRING THE REPROGRAMMING. PAYMENT WILL INCLUDE ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED TO COMPLETE THE WORK TO HAVE THE INTERSECTION OPERATE AS INTENDED.

SIGNAL CABLE

THE QUANTITY OF 7 CONDUCTOR, 5 CONDUCTOR AND LOOP LEAD-IN CABLE IN THE PLAN SUBSUMMARY IS FOR ESTIMATING PURPOSES ONLY. THE CONTRACTOR WILL BE COMPENSATED FOR THE ACTUAL LENGTHS OF CABLE INSTALLED, WHETHER ABOVE OR BELOW THESE ESTIMATES.

ITEM 633 - UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF C&MS 633 AND 733, POLE ATTACHMENT HARDWARE WILL BE INCLUDED FOR POLE-MOUNTED CABINETS, AND A CABINET RISER (8-INCH MINIMUM) AND ANCHOR BOLTS WILL BE PROVIDED FOR BASE-MOUNTED CABINETS. BEFORE PERFORMING THE WORK, THE CONTRACTOR, THE DISTRICT TRAFFIC ENGINEER AND THE PROJECT ENGINEER WILL PERFORM A SITE INSPECTION TO ESTABLISH THE LOCATION OF THE UPS CABINET AND FOUNDATION.

THE UPS CABINET SHALL INCLUDE A GENERATOR POWER PANEL WITH A HEAVY-DUTY POWER RELAY VERSUS THE LINE VOLTAGE GENERATOR SWITCH. THE GENERATOR INLET SHALL BE A RECESSED PANEL WITH A DOOR THAT IS FLUSH WITH THE EXTERNAL SIDE OF THE UPS CABINET. IT SHALL INCLUDE A RECESSED PLUG, AUTOMATIC TRANSFER SWITCH AND A DOOR THAT SECURELY CLOSES OVER THE POWER CORD.

THE CABINET SHALL HAVE A DOOR STOP MECHANISM AND THERMOSTATICALLY CONTROLLED FAN.

THE CABINET SHALL INCLUDE A BATTERY BALANCING DEVICE, ALPHAGARD, FROM ALPHA TECHNOLOGIES THAT REGULATES THE BATTERIES AND OPTIMIZES PERFORMANCE.

AFTER FOUR (4) HOURS OF BATTERY RUNTIME, THE SYSTEM SHALL BE PROGRAMMED TO SWITCH THE INTERSECTION FROM FULL OPERATION TO CONTROLLER AUTOMATIC FLASH OPERATION THROUGH THE MONITOR. THE CONTROLLER SHALL BE PROGRAMMED SO THAT FLASH OPERATION SHALL BEGIN ONCE THE INTERSECTION RUNS MINOR STREET GREEN (TYP. PH. 4 & 8), ALL-RED CLEARANCE, AND THEN FLASH OPERATION.

THE UPS OUTPUT NOTIFICATIONS FOR ON BATTERY, BATTERY 2-HOUR TIMER, AND LOW BATTERY SHALL BE WIRED INTO THE TRAFFIC SIGNAL CABINET BACK PANEL OR THROUGH THE CONTROLLER WITH A C11 TO PROVIDE SPECIAL STATUS ALARMS FOR EACH OUTPUT INTO THE SIGNAL CONTROLLER.

THIS ITEM SHALL INCLUDE A RED LED STATUS INDICATOR LAMP TO ALLOW MAINTENANCE PERSONNEL AND LAW ENFORCEMENT TO QUICKLY ASSESS WHETHER A TRAFFIC SIGNAL CABINET IS BEING POWERED BY A UPS. THE LED HOUSING SHALL BE NEMA 4X, IP65 OR IP66, RATED FOR OUTDOOR USE AND BE TAMPER/SHATTER RESISTANT. IT SHALL BE A DOMED ENCLOSURE CONTAINING A RED LENS WITH LED THAT IS VISIBLE FROM 100 FOOT MINIMUM. THE ENCLOSURE AND LED MODULE SHOULD BE PLACED ON THE SIDE OF THE UPS CABINET FACING TOWARDS THE MAINLINE ROADWAY AND SEALED FROM WATER INTRUSION. IT SHOULD BE WIRED USING MINIMUM 20GA STRANDED, INSULATED HOOKUP WIRE TO THE STATUS RELAY OUTPUTS OF THE UPS. THE WIRES SHALL BE TERMINATED BY LUGS AT THE DISPLAY END AND PERMANENTLY LABELED "BACKUP POWER STATUS DISPLAY," WITH WIRE POLARITY INDICATED. THE RED LED SHALL ONLY ILLUMINATE TO INDICATE THE CABINET IS OPERATING UNDER UPS BACKUP POWER (THE "BACKUP"OPERATING CONDITION). THIS ITEM INCLUDES PROGRAMMING THE UPS STATUS RELAY OUTPUTS TO PRODUCE THE LAMP STATUS DISPLAYS. THESE STATUS DISPLAYS WILL BE SOLID 100% DUTY CYCLE (NOT FLASHING) DISPLAYS. THE OPERATING VOLTAGE OF THE LED LAMP SHALL BE 120V AC UNLESS OTHERWISE INDICATED.

GENERAL NOTES

DESIGN AGENCY



DESIGNER TCS
REVIEWER MAG
PROJECT ID 110596
SHEET P.4 TOTAL 23

ITEM 809 - ADVANCE RADAR DETECTION, AS PER PLAN
THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING A WAVETRONIX SMARTSENSOR ADVANCE DETECTION UNIT (MODEL SS-200E). THE DETECTION UNIT SHALL INCLUDE THE FOLLOWING:

1. POWER SHALL BE PROVIDED FROM THE TRAFFIC CABINET.
2. 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.
3. 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.
4. 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.
5. A SERIAL TO ETHERNET COMMUNICATIONS MODULE AND ETHERNET CABLE (MIN. 7 FEET)
6. THE CONTRACTOR SHALL INSTALL THE RADAR DETECTION PRIOR TO MILLING/DISABLING THE EXISTING LOOPS.
7. THE INSTALLATION SHALL INCLUDE ALL CONTROLLER PROGRAMMING FOR COMPLETE INSTALLATION, WHICH INCLUDES MODIFICATIONS FOR REMOVAL OF EXISTING DETECTION.

PAYMENT FOR ITEM 809 ADVANCE 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, CONNECTIONS TESTED AND ACCEPTED.

ITEM 809 - ATC CONTROLLER, AS PER PLAN (PROGRAM AND INSTALL ONLY)

ALL REQUIREMENTS OF SS 809 SHALL BE FOLLOWED, ALONG WITH THE ADDITIONAL DESCRIPTION AS STATED BELOW. THE ATC CONTROLLER WILL BE PROVIDED BY THE DISTRICT WITHOUT PROGRAMMING. IN THE CASE OF A 332/336 CABINET TYPE, THE CONTROLLER WILL BE PROVIDED WITH THE POWER CORD.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE CONTROLLER. THE EXISTING CONTROLLER DATA WILL BE PROVIDED TO THE CONTRACTOR BY DISTRICT 8. ODOT WILL NOT BE RESPONSIBLE FOR THE PROGRAMMING. THE EXISTING DATA MAY REQUIRE UPDATES TO REFLECT THE PROPOSED CONDITIONS ACCORDING TO THE SCHEMA OUTLINED IN THE TYPICAL DETECTOR ASSIGNMENT. PHASING CHANGES AT HAM-22 AND FIELDS ETEL SHALL BE AS SHOWN ON SHEETS 11-12. ALL WORK TO INCLUDE THE UPDATES IS INCLUDED WITH THIS ITEM FOR PAYMENT.

THE CONTROLLER SHALL BE LISTED ON THE TAP AND BE AN ECONOLITE COBALT RACKMOUNT AND COMPATIBLE WITH THE EXISTING CABINET OR THE CABINET TYPE BEING INSTALLED. THE CONTROLLER SHALL BE INSTALLED PRIOR TO THE CABINET INTERFACE DEVICE AT EACH INTERSECTION.

PAYMENT SHALL BE MADE ONCE THE CONTROLLER IS PROGRAMMED, INSTALLED, TESTED, FUNCTIONING ACCORDING TO THE PLANS, AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS TO COMPLETE THE WORK.

ITEM 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. 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.
3. 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.
4. 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.
5. A SERIAL TO ETHERNET COMMUNICATIONS MODULE AND ETHERNET CABLE (MIN. 7 FEET)
6. THE CONTRACTOR SHALL INSTALL THE RADAR DETECTION PRIOR TO MILLING/DISABLING THE EXISTING LOOPS.
7. 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.

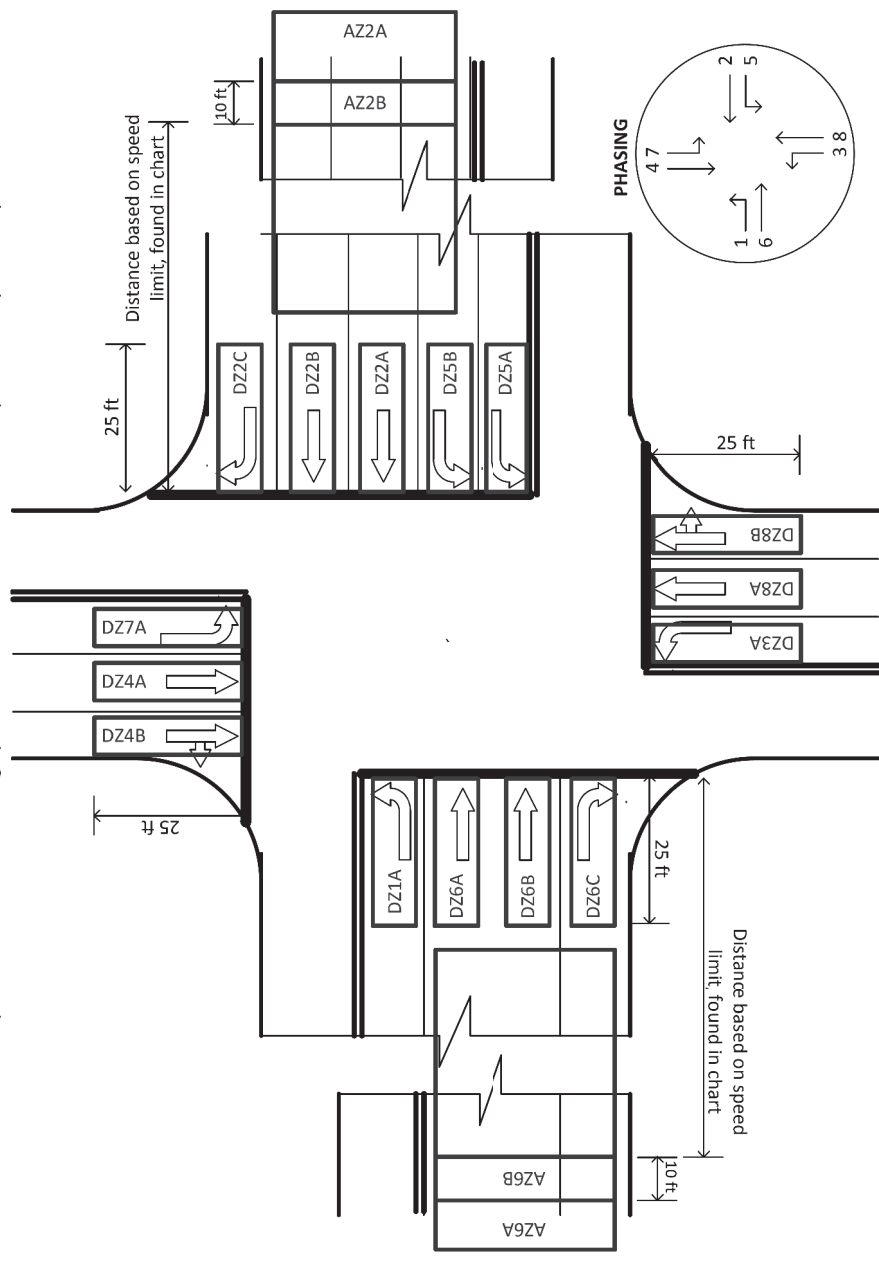
SALVAGED ITEMS

- ITEMS REMOVED FROM EACH INTERSECTION SHALL BE SALVAGED IN ACCORDANCE WITH THE LISTING BELOW:
1. CCTV CAMERAS AT KEMPER, FIELDS ETEL AND COLUMBIA
 2. ALL CONTROLLERS THAT ARE REPLACED WITH NEW ON THIS PROJECT.
 3. CABINETS AND ALL CONTENTS FROM 22/FIELDS ETEL AND 125/WOODLANDS/GLEN MARY DR

ALL ITEMS ABOVE SHALL BE RETURNED TO ODOT DISTRICT 8. CONTRACTOR SHALL CONTACT JIM JUDD AT 513-933-6692 TO ARRANGE FOR PICK UP OR DROP OFF. PAYMENT FOR THE REMOVAL AND SALVAGE IS INCIDENTAL TO THE ITEMS THEY ARE REPLACED BY ON THIS PROJECT, UNLESS OTHERWISE NOTED.

SPM Wavetronix Detector Set-Up

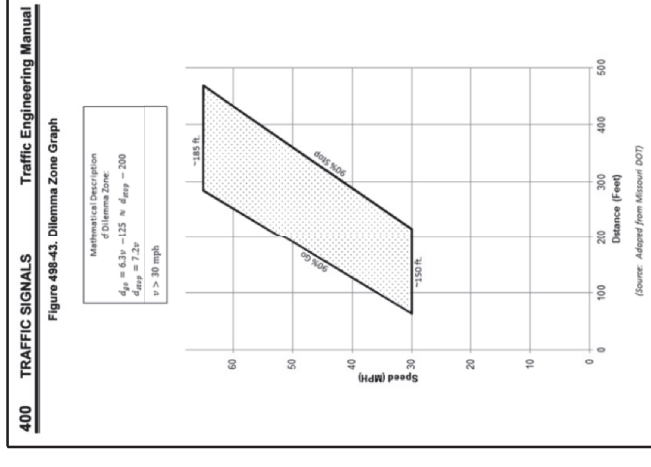
All stop line lanes must have their own detection channel assigned. Stop line lanes are to be 25 ft long. All advanced detection is to have channel 1 set-up as normal channel using Speed and ETAs and Channel 2 set up as 10ft a pulse loop as shown below.



Typical Detector Assignment

Phase	Detector Type	Detector Number	From Example
1	Stop Bar	1	DZ1A
1	Stop Bar	2	DZ6A
6	Stop Bar	3	DZ6A
6	Stop Bar	4	DZ6B
6	Stop Bar	5	DZ6C
6	Stop Bar	6	DZ6C
5	Stop Bar	7	DZ5A
5	Stop Bar	8	DZ5B
2	Stop Bar	9	DZ2A
2	Stop Bar	10	DZ2B
2	Stop Bar	11	DZ2C
2	Stop Bar	12	DZ2C
3	Stop Bar	13	DZ3A
3	Stop Bar	14	DZ3A
8	Stop Bar	15	DZ8A
8	Stop Bar	16	DZ8B
8	Stop Bar	17	DZ8B
8	Stop Bar	18	DZ8B
7	Stop Bar	19	DZ7A
7	Stop Bar	20	DZ7A
4	Stop Bar	21	DZ4A
4	Stop Bar	22	DZ4B
4	Stop Bar	23	DZ4B
4	Stop Bar	24	DZ4B
2	Advanced	25	AZ2A
2	Advanced	26	AZ2B
4	Advanced	27	AZ2B
4	Advanced	28	AZ2B
6	Advanced	29	AZ6A
6	Advanced	30	AZ6B
8	Advanced	31	AZ6B
8	Advanced	32	AZ6B

Detector assignments for each phase shall start with the leftmost lane and move right as shown in example.



ITEM 632 - POWER SERVICE, AS PER PLAN

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIALS NECESSARY FOR A POWER SERVICE PER ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS SECTION 625.15.

THE POWER SERVICE SHALL BE A METERED 120 / 240 VOLT SERVICE, POLE MOUNTED WITH AERIAL POWER COMPANY FEED PER ODOT STANDARD DRAWING ITS-15.11.

THE ITS RELATED POWER SERVICES SHALL BE MARKED WITH "ITS". DISCONNECT SWITCHES SHALL BE FUSIBLE, RATED FOR 60 AMPS WITH NEMA 4X ENCLOSURE, AND SHALL BE FUSED AT 30 AMPS. THIS SERVICE SHALL PROVIDE 120 VOLTS TO EACH RELATED SITE.

THE CONTRACTOR SHALL COORDINATE WITH POWER COMPANY AND PROVIDE APPROPRIATE INSPECTIONS TO POWER COMPANY IN ORDER TO ENERGIZE SERVICE. CONTACT DISTRICT 8 TRAFFIC OPERATIONS TO OBTAIN ADDRESS TO BE USED FOR POWER SERVICE.

THE POWER SERVICE POLE SHALL ALSO BE USED AS A WIRELESS REPEATER POLE, AND IS INCLUDED WITH THIS ITEM FOR PAYMENT. THE LOCATION OF THIS POLE SHALL BE APPROVED BY THE ENGINEER.

THE POWER SERVICE RISER AND METER/DISCONNECT SHALL BE ORIENTED ON THE SIDE OF THE POLE THAT IS AWAY FROM TRAFFIC. THE CONTRACTOR SHALL INSTALL A 2" RIGID CONDUIT RISER FOR COMMUNICATION, PER ITS-15.11, ON THE SIDE OF THE POLE WHICH IS CLOSEST TO TRAFFIC. THE COMMUNICATION RISER SHALL CONNECT INTO THE BOTTOM OF THE COMMUNICATION ENCLOSURE CABINET.

THE CONTRACTOR SHALL PROVIDE POWER TO THE COMMUNICATION ENCLOSURE CABINET BY INSTALLING 2" RIGID CONDUIT FROM THE BOTTOM OF THE DISCONNECT TO THE BOTTOM OF THE COMMUNICATION ENCLOSURE CABINET, AND INSTALLING 3 - #6 AWG DISTRIBUTION CABLES TO FULLY POWER THE CABINET. THE POWER SERVICE SHALL NOT CONSIST OF ANY PULL BOXES OR CONDUITS UNDERGROUND, EXCEPT FOR THE 1" RIGID CONDUIT FOR THE GROUND WIRE TO CONNECT TO THE GROUND ROD PER ITS-15.11.

ALL LABOR, PARTS, MATERIALS AND EQUIPMENT ASSOCIATED WITH THE ABOVE WORK SHALL BE INCLUDED WITH THE UNIT PRICE BID FOR ITEM 632 - POWER SERVICE, AS PER PLAN.

ITEM 633 - CONTROLLER ITEM, MISC.: COMMUNICATION ENCLOSURE

THIS ITEM WILL CONSIST OF SUPPLYING AND INSTALLING A CABINET ENCLOSURE CONFORMING TO CMS 733.05, WHICH WILL HOUSE COMMUNICATIONS DEVICES INSTALLED BY OTHERS. ENCLOSURE SHALL ALSO COME EQUIPPED WITH A BANK OF 4 POWER OUTLETS FOR COMMUNICATION DEVICES. ALL AUXILIARY EQUIPMENT LISTED IN 733.05 SHALL BE SUPPLIED. SOLID STATE FLASHER IS NOT REQUIRED.

REPEATER LOCATION SHOWN BELOW IS APPROXIMATE FOR INFORMATION ONLY. DRAWING IS NOT TO SCALE. INTENT IS TO PROVIDE CLEAR LINE OF SIGHT TO THE SIGNALS AT BENNETT RD AND MERWIN-TEN MILE. ACTUAL LOCATION WILL BE ESTABLISHED PENDING SITE REVIEW MEETING BETWEEN ENGINEER AND CONTRACTOR.

ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION
625	32000	1	EACH	GROUND ROD
632	70001	1	EACH	POWER SERVICE, AS PER PLAN
633	99000	1	EACH	CONTROLLER ITEM, MISC.: COMMUNICATION ENCLOSURE

GENERAL NOTES



DESIGN AGENCY

PRE-CONSTRUCTION MEETING

ODOT WILL PROVIDE TIMING INFORMATION AND CONTROLLER SETTINGS FOR ALL INTERSECTIONS AT THE PRE-CONSTRUCTION MEETING.

FLASHING YELLOW ARROW ACTIVATION

FYA ACTIVATION WILL BEGIN ONCE ALL SPM EQUIPMENT IS INSTALLED. COMPLETE AND APPROVED BY THE PROJECT ENGINEER. FURTHERMORE, ACTIVATION OF THE NEW HEADS SHALL TAKE PLACE AFTER 9PM. START TIMES PRIOR TO 9PM MAY BE ACCOMMODATED AT THE APPROVAL OF THE ENGINEER.

ITEM 630 - SIGN. FLAT SHEET

THIS ITEM OF WORK SHALL FOLLOW ALL THE REQUIREMENTS OF CMS SECTIONS 630 AND 730. SIGNS SHALL BE MOUNTED 2 FEET TO THE LEFT OF THE FLASHING YELLOW ARROW SIGNAL HEAD AND FACE THE SAME DIRECTION AS THE FLASHING YELLOW ARROW SIGNAL HEAD.

ITEM 632 - REMOVAL OF MISC. TRAFFIC CONTROL ITEM: (BY TYPE)

IN ADDITION TO CMS 632, THE REMOVED EQUIPMENT SHALL BE STORED AND DELIVERED TO THE DISTRICT TRAFFIC DEPARTMENT UNLESS OTHERWISE INSTRUCTED, IN WRITING, TO THE CONTRACTOR TO DISPOSE OF IT.

JIM JUDD

505 S. STATE ROUTE 741
LEBANON, OHIO 45036
513-933-6692

ITEM 632 - REMOVAL OF MISC. TRAFFIC CONTROL ITEM: VEHICULAR

SIGNAL HEAD

THE REMOVAL OF THIS ITEM SHALL INCLUDE THE VEHICULAR SIGNAL HEAD AND ALL THE MOUNTING HARDWARE ATTACHING THE SIGNAL TO THE MESSENGER WIRE AND TETHER WIRE.

ITEM 632 - REMOVAL OF MISC. TRAFFIC CONTROL ITEM: SPANWIRE SIGN

THIS ITEM SHALL INCLUDE THE REMOVAL OF AN EXISTING SIGN AND HANGER ASSEMBLIES FROM THE MESSENGER WIRE AS INDICATED IN THE PLANS.

ITEM 632 - SIGNALIZATION, MISC.: RELOCATE VEHICULAR SIGNAL

HEAD

THIS ITEM CONSISTS OF RELOCATING EXISTING SIGNAL HEADS AS DIRECTED IN THE PLANS. PAYMENT FOR ITEM 632, SIGNALIZATION MISC.: RELOCATE VEHICULAR SIGNAL HEAD, SHALL BE MADE AT THE CONTRACT UNIT PRICE PER VEHICULAR SIGNAL HEAD RELOCATED.

ITEM 632 - VEHICULAR SIGNAL HEAD, MISC.: 3-SECTION FLASHING YELLOW ARROW (POLYCARBONATE)

THIS ITEM SHALL CONFORM TO THE SPECIFICATIONS DEFINED IN CMS 632. IN ADDITION, THE YELLOW ARROW LED SHALL BE A BI-MODAL YEL/YEL ARROW LED. THE BI-MODAL LED WILL HAVE AN EXTRA CONDUCTOR WHICH ALLOWS THE BOTH THE SOLID YELLOW ARROW AND FLASHING YELLOW ARROW TO BE MONITORED ON DIFFERENT CHANNELS IN THE CABINET. THIS FOLLOWS THE STANDARD CONFIGURATION OUTLINED IN THE EDI 2010ECL OPERATIONS MANUAL. THE OPERATION OF THE 3-SECTION FLASHING YELLOW ARROW SHALL FOLLOW THE GUIDELINES DEFINED IN FHWA INTERIM APPROVAL IA-17. ALL SIGNAL LEDS SHALL BE 12 INCHES.

ITEM 633 - CONTROLLER ITEM, MISC.: FLASHING YELLOW ARROW CABINET SET-UP

THIS ITEM CONSISTS OF PROGRAMMING/CONFIGURING THE ECONOLITE COBALT TRAFFIC SIGNAL CONTROLLER, EDI 2010ECL CONFLICT MONITOR, AND CALTRANS 332 TRAFFIC SIGNAL CABINET TO RUN FLASHING YELLOW ARROW ON THE PHASES CALLED OUT IN THE PLANS. THE FLASHING YELLOW ARROW SHALL BE SET-UP USING THE STANDARD CONFIGURATION OUTLINED IN THE EDI 2010ECL OPERATIONS MANUAL REVISION: NOVEMBER 2014 SECTION 2.20.1. THIS CONFIGURATION UTILIZES AN AUXILIARY OUTPUT FILE TO DRIVE THE RED ARROW, YELLOW ARROW, AND FLASHING YELLOW ARROW OUTPUTS WHILE THE GREEN ARROW IS BEING DRIVEN BY A STANDARD PHASE OUTPUT. FOR INTERSECTIONS THAT ARE ALREADY UTILIZING AN AUXILIARY OUTPUT FILE FOR PHASE OVERLAPS, THE PHASE OVERLAPS CAN BE ADJUSTED TO ACCOMMODATE THE FLASHING YELLOW ARROW OUTPUTS.

THE PERMISSIVE FLASHING YELLOW ARROWS AT CRESTVIEW/MEIJER, CORNELL AND FIELDS ERTLE DO NOT HAVE A GREEN ARROW. THE RED ARROW, YELLOW ARROW, AND FLASHING YELLOW ARROW SHALL BE DRIVEN BY THE AUXILIARY OUTPUT FILE AND PROGRAMMED TO RUN WITH THE MAINLINE PHASES IN THE CONTROLLER.

WHEN CALLED OUT ON PHASE 1, THE FLASHING YELLOW ARROW SHALL RUN DURING PHASES 6 & 5 AND WHEN CALLED OUT ON PHASE 5, THE FLASHING YELLOW ARROW SHALL RUN DURING PHASES 2 & 1. THE LEFT TURN PHASES SHALL RUN A CLEARANCE INTERVAL BEFORE DISPLAYING THE FLASHING YELLOW ARROW.

SIGNAL OPERATION CHANGED SIGNS

CONCURRENT WITH THE ACTIVATION OF ANY NEW FLASHING YELLOW ARROW INSTALLATION, A SIGNAL OPERATION CHANGED SIGN (W23-H2B, 30X30) SHALL BE INSTALLED. THE SIGNS SHALL BE DISPLAYED A MINIMUM OF 14-DAYS AND A MAXIMUM OF 30-DAYS. THE SIGNS SHALL BE INSTALLED ON AFFECTED MAINLINE APPROACHES TO AN INTERSECTION, TYPICALLY 2 PER INTERSECTION. SIGNS SHALL BE INSTALLED ON THE MAST ARM OR SPANWIRE ADJACENT TO THE SIGNAL HEADS.

ALL COSTS RESULTING FROM THE ABOVE REQUIREMENTS, INCLUDING THE REMOVAL OF THESE SIGNS, SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC.

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, AS PER

PLAN

CONCURRENT WITH THE ACTIVATION OF THE FLASHING YELLOW ARROWS, THE CONTRACTOR SHALL PROVIDE TWO PCMS WITH ONE PLACED AT THE START OF THE CORRIDOR AND THE OTHER PLACED AT THE END OF THE GENERAL WORK AREA. IT IS THE INTENT THAT THE SECOND SIGN WILL BE RELOCATED AS WORK PROGRESSES THROUGH THE CORRIDOR TO ENCOMPASS THE ACTIVE FYA INTERSECTIONS. THE PCMS WILL BE IN PLACE A MINIMUM OF ONE WEEK BEFORE ACTIVATION AND THREE WEEKS AFTER ACTIVATION. THE STARTING PERIOD AND SIGN LOCATIONS WILL BE DETERMINED BY THE PROJECT ENGINEER.

PCMS DISPLAY:

PANEL 1 NEW SIGNAL DISPLAY
PANEL 2 YIELD ON FLASHING YELLOW ARROW

ALL COSTS RESULTING FROM THE ABOVE REQUIREMENTS, INCLUDING THE MOVEMENT FO PCMS, SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN (SNMT).



SHEET NUM.	PART.				ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
	1/NHS/OT	2/S-2/OT	3/SAF/OT	4/SAF/OT						
4					202	30700	80	FT	ROADWAY CONCRETE BARRIER REMOVED	
					622	10161	80	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN	21
					630	79000	29	EACH	TRAFFIC CONTROL SIGN HANGER ASSEMBLY, SPAN WIRE	
	29				630	80100	233.5	SF	SIGN, FLAT SHEET	
	217.5				630	84010	1	EACH	CONCRETE BARRIER MEDIAN OVERHEAD SIGN SUPPORT FOUNDATION, TYPE TC-21.50	
					630	84900	2	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
					630	89902	3	EACH	REMOVAL OF MISCELLANEOUS TRAFFIC CONTROL ITEM, SPANWIRE SIGN	7
					625	25500	43	FT	TRAFFIC SIGNALS CONDUIT, 3", 725.04	
					625	29400	43	FT	TRENCH IN PAVED AREA	
					625	30700	1	EACH	PULL BOX, 725.08, 18"	
					625	32000	2	EACH	GROUND ROD	
	29				632	04000	29	EACH	VEHICULAR SIGNAL HEAD, MISC.: 3-SECTION FLASHING YELLOW	7
					632	04904	4	EACH	ARROW, POLYCARBONATE, BLACK	
	22				632	05006	22	EACH	VEHICULAR SIGNAL HEAD, (LED), 2-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, BLACK	
	28				632	20731	28	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, BLACK	
					632	20731	28	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	7
	44				632	20750	44	EACH	ACCESSIBLE PEDESTRIAN PUSHBUTTON	
	51				632	25000	51	EACH	COVERING OF VEHICULAR SIGNAL HEAD	
	28				632	25010	28	EACH	COVERING OF PEDESTRIAN SIGNAL HEAD	
	3,700				632	40500	5,450	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	
	6,050				632	40700	6,050	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	
					632	65300	5,500	FT	LOOP DETECTOR LEAD-IN CABLE, 2 CONDUCTOR, NO. 14 AWG	
					632	70001	1	EACH	POWER SERVICE, AS PER PLAN	6
					632	72110	1	EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 4	
					632	90020	15	EACH	REMOVAL OF MISCELLANEOUS TRAFFIC SIGNAL ITEM: WAVETRONIX UNITS IN CABINET	4
					632	90020	9	EACH	REMOVAL OF MISCELLANEOUS TRAFFIC SIGNAL ITEM: DETECTOR LOOPS	4
	27				632	90020	27	EACH	REMOVAL OF MISCELLANEOUS TRAFFIC SIGNAL ITEM: VEHICULAR SIGNAL HEAD	7
	23				632	90400	23	EACH	SIGNALIZATION, MISC.: CABINET INTERFACE DEVICE	4
					632	90400	24	EACH	SIGNALIZATION, MISC.: RELOCATE VEHICULAR SIGNAL HEAD	7
	8,950				632	90500	8,950	FT	SIGNALIZATION, MISC.: UNLASH AND RELASH MESSENGER WIRE	2
					633	65521	2	EACH	CABINET, TYPE 332, AS PER PLAN	4
	2				633	75001	2	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN	4
	2				633	99000	19	EACH	CONTROLLER ITEM, MISC.: AUXILIARY OUTPUT FILE	4
	19				633	99000	2	EACH	CONTROLLER ITEM, MISC.: REPROGRAMMING OF EXISTING CONTROLLERS	4
	2				633	99000	18	EACH	CONTROLLER ITEM, MISC.: REPROGRAMMING OF EXISTING RADARS	4
	16				633	99000	1	EACH	CONTROLLER ITEM, MISC.: COMMUNICATION ENCLOSURE	6
					633	99000	16	EACH	CONTROLLER ITEM, MISC.: FLASHING YELLOW ARROW CABINET SET-UP	7
					809	60000	17	EACH	CCTV IP-CAMERA SYSTEM, DOME-TYPE	
	17				809	60040	3	EACH	CCTV IP-CAMERA SYSTEM, QUAD MULTI-VIEW FIXED WITH PTZ	
	3				809	64550	1,470	FT	ETHERNET CABLE, OUTDOOR-RATED	
	1,470				809	65990	2	EACH	ITS DEVICE, MISC.: REMOVAL OF RAMP METER PEDESTAL	21
					809	69001	36	EACH	ADVANCE RADAR DETECTION, AS PER PLAN	5
	34				809	69101	34	EACH	STOP LINE RADAR DETECTION, AS PER PLAN	5
	23				809	69123	23	EACH	ATC CONTROLLER, AS PER PLAN. (PROGRAM AND INSTALL ONLY)	5
					614	11110	164	HOUR	MAINTENANCE OF TRAFFIC LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
164					614	18601	2	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	7
					614	11000	LS		INCIDENTALS MAINTAINING TRAFFIC	
					614	11001	LS		MAINTAINING TRAFFIC, AS PER PLAN	21
					624	10000	LS		MOBILIZATION	

GENERAL SUMMARY



DESIGN AGENCY

BASIC TIMING CHART

COORDINATION TIMING PLANS				
DAY(S) OF WEEK	PLAN NAME	HOURS	PLAN NO. OR CYCLE/SPLIT/OFFSET	CYCLE LENGTH (SEC)
SAT-SUN	FREE	0:00 TO 9:00	100	-
SAT-SUN	MID	9:00 TO 19:00	4	135
SAT-SUN	FREE	19:00 TO 0:00	100	-
M-F	FREE	0:00 TO 6:30	100	-
M-F	AM PEAK	6:30 TO 9:00	1	130
M-F	OFF PEAK	9:00 TO 11:00	2	130
M-F	MID PEAK	11:00 TO 13:15	3	130
M-F	OFF PEAK	13:15 TO 15:15	2	130
M-F	PM PEAK	15:15 TO 19:30	7	150
M-F	FREE	19:30 TO 0:00	100	-
			5	100
			6	100

General Notes:

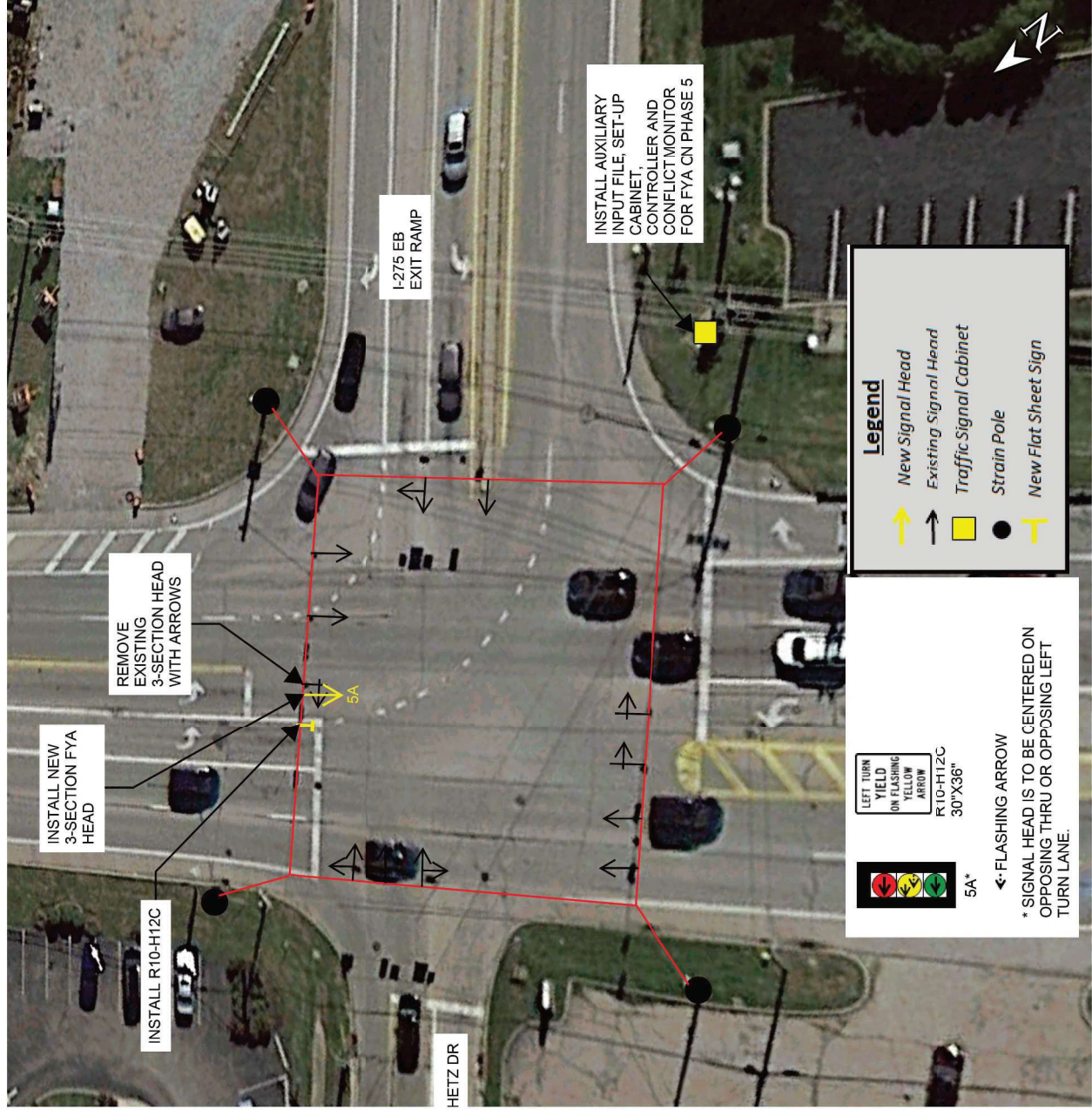
- All offsets are measured from the referenced phase
- All offsets are measured from $\phi 2$ & $\phi 6$ END OF GREEN / BEGINNING OF YELLOW

US 22/ SR 3 AT FIELDS ERTEL RD									
PHASE	1	2	3	4	5	6	7	8	
DIRECTION	-	NB	-	EB	NBLT	SB	-	WB	
PLAN NO. OR C/S/O	SPLITS (G+Y+AR) IN SECONDS								
1	-	69	-	21	16	53	-	40	0
2	-	54	-	36	16	38	-	40	0
3	-	56	-	34	17	39	-	40	0
4	-	58	-	37	16	42	-	40	0
5	-	46	-	33	12	34	-	21	5
6	-	45	-	40	11	34	-	15	68
7	-	66	-	44	16	50	-	44	0

INTERSECTION: US 22/SR 3 @ FIELDS ERTEL									
START UP									
MAINTAINING AGENCY: ODOT									
DUAL ENTRY: YES									
REST IN RED: RING 1 RING 2									
PHASES: A B C D									
OVERLAP									
START IN: ALL-RED FLASH 9, 6									
TIME FOR: FLASH, ALL RED (SEC.): 2+6									
FIRST PHASE(S): GREEN									
COLOR DISPLAYED:									
INTERVAL OR FEATURE									
INTERSECTION MOVEMENT (PHASE)									
DIRECTION	1	2	3	4	5	6	7	8	
	-	NB	-	EB	NBLT	SB	-	WB	
MINIMUM GREEN (INITIAL)	-	20	-	10	7	20	-	10	
ADDED INITIAL	-	-	-	-	-	-	-	-	
MAXIMUM INITIAL	-	-	-	-	-	-	-	-	
PASSAGE TIME (PRESET GAP)	-	5	-	3	3	5	-	3	
TIME BEFORE REDUCTION	-	-	-	-	-	-	-	-	
MINIMUM GAP	-	-	-	-	-	-	-	-	
TIME TO REDUCE	-	-	-	-	-	-	-	-	
MAXIMUM GREEN I	-	30	-	30	15	30	-	40	
MAXIMUM GREEN II	-	70	-	30	12	70	-	50	
YELLOW CHANGE	-	4	-	4	4	4	-	4	
ALL RED CLEARANCE	-	2	-	3	2	2	-	3	
DELAYED GREEN (LPI) *	-	-	-	-	-	-	-	-	
FLASHING YELLOW ARROW DELAY^	-	-	-	-	-	-	-	-	
WALK	-	13	-	-	-	11	-	11	
PEDESTRIAN CLEARANCE	-	13	-	-	-	20	-	21	
		MAXIMUM		(ON/OFF)		YES		YES	
RECALL		MINIMUM		(ON/OFF)		-		-	
MEMORY		PEDESTRIAN		(ON/OFF)		-		-	
		(ON/OFF)		(ON/OFF)		-		-	

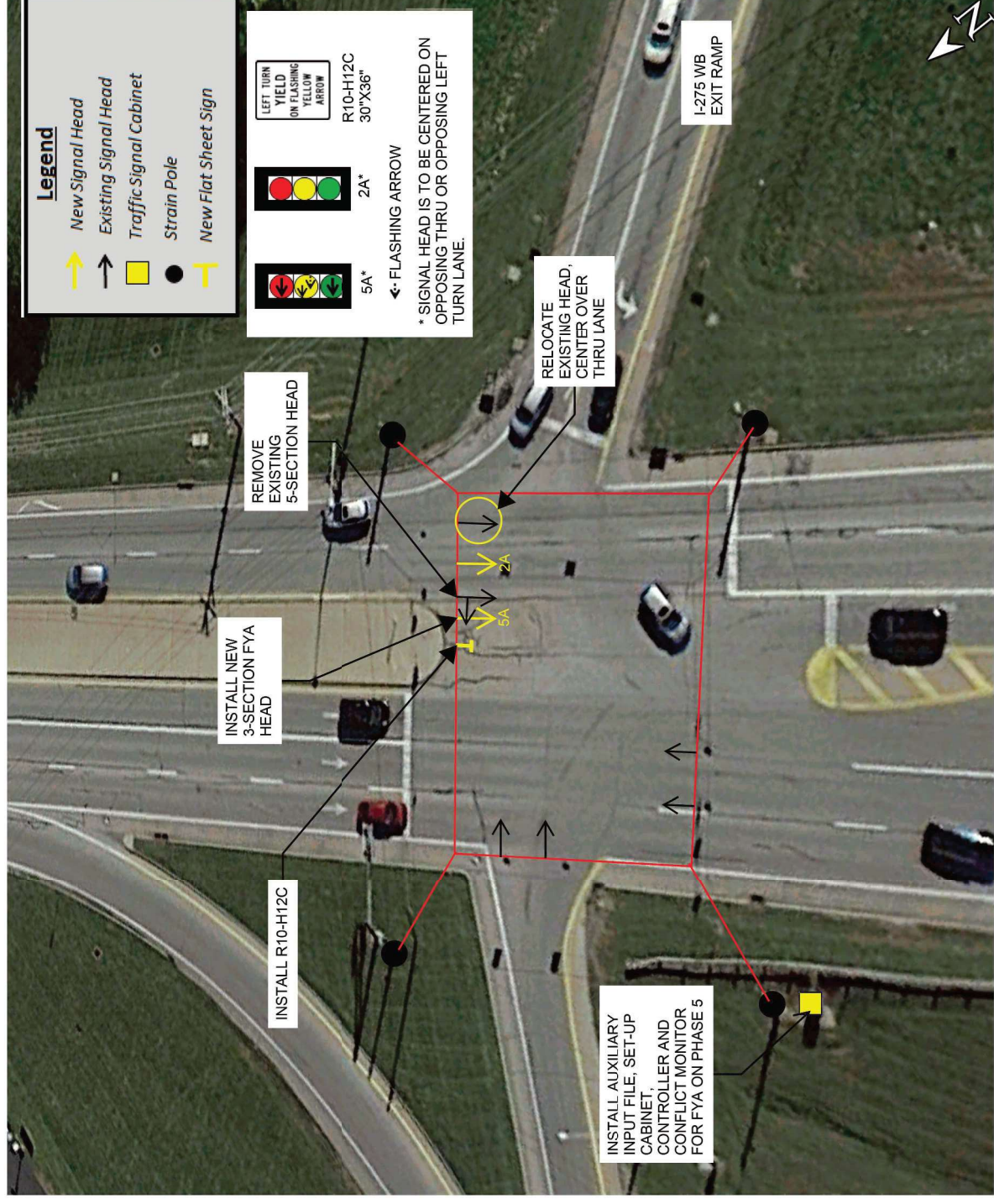
*VOLUME DENSITY CONTROLS

HAM-22 & I-275 EB EXIT RAMP/HETZ DR



DRAWING NOT TO SCALE

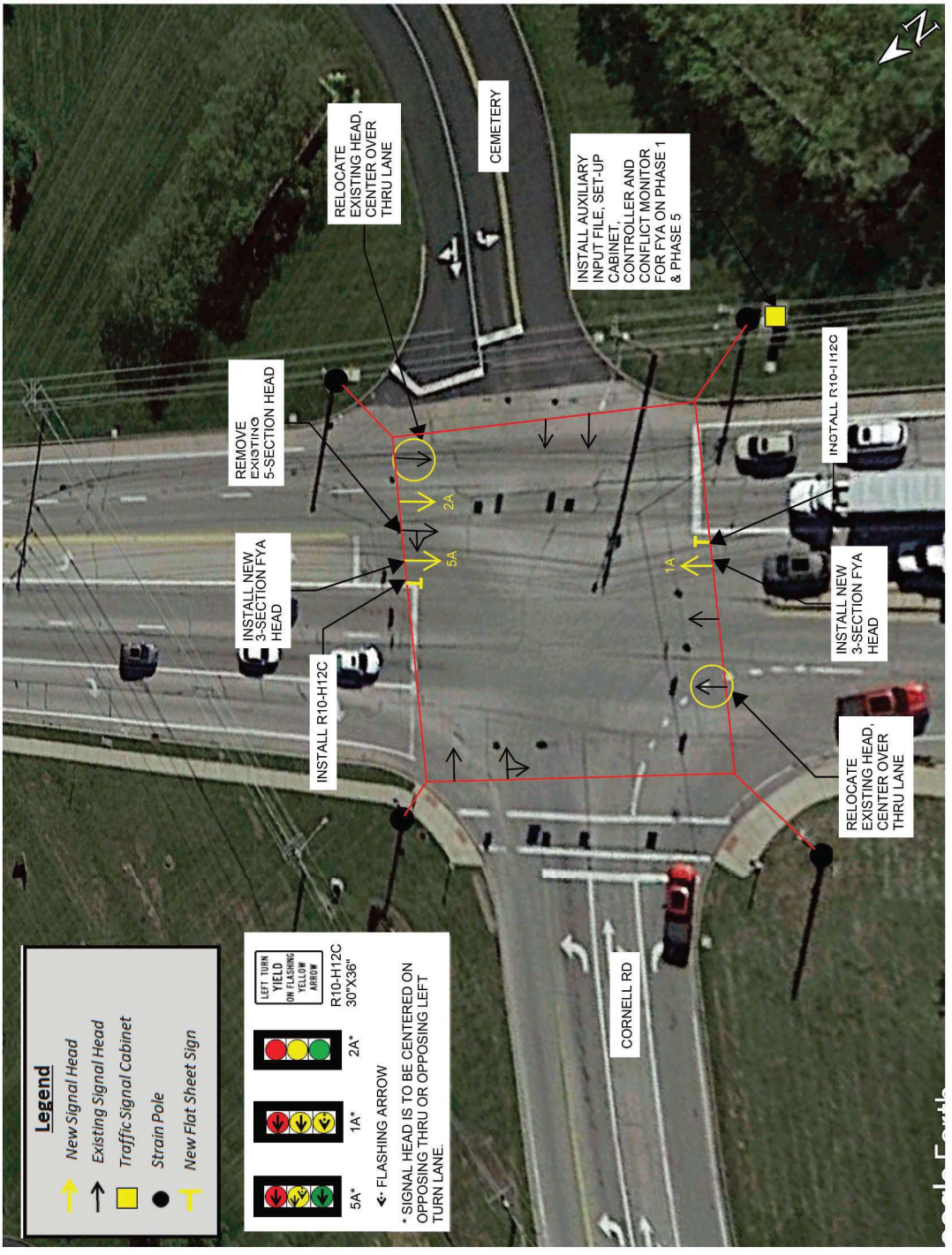
HAM-22 & I-275 WB EXIT RAMP



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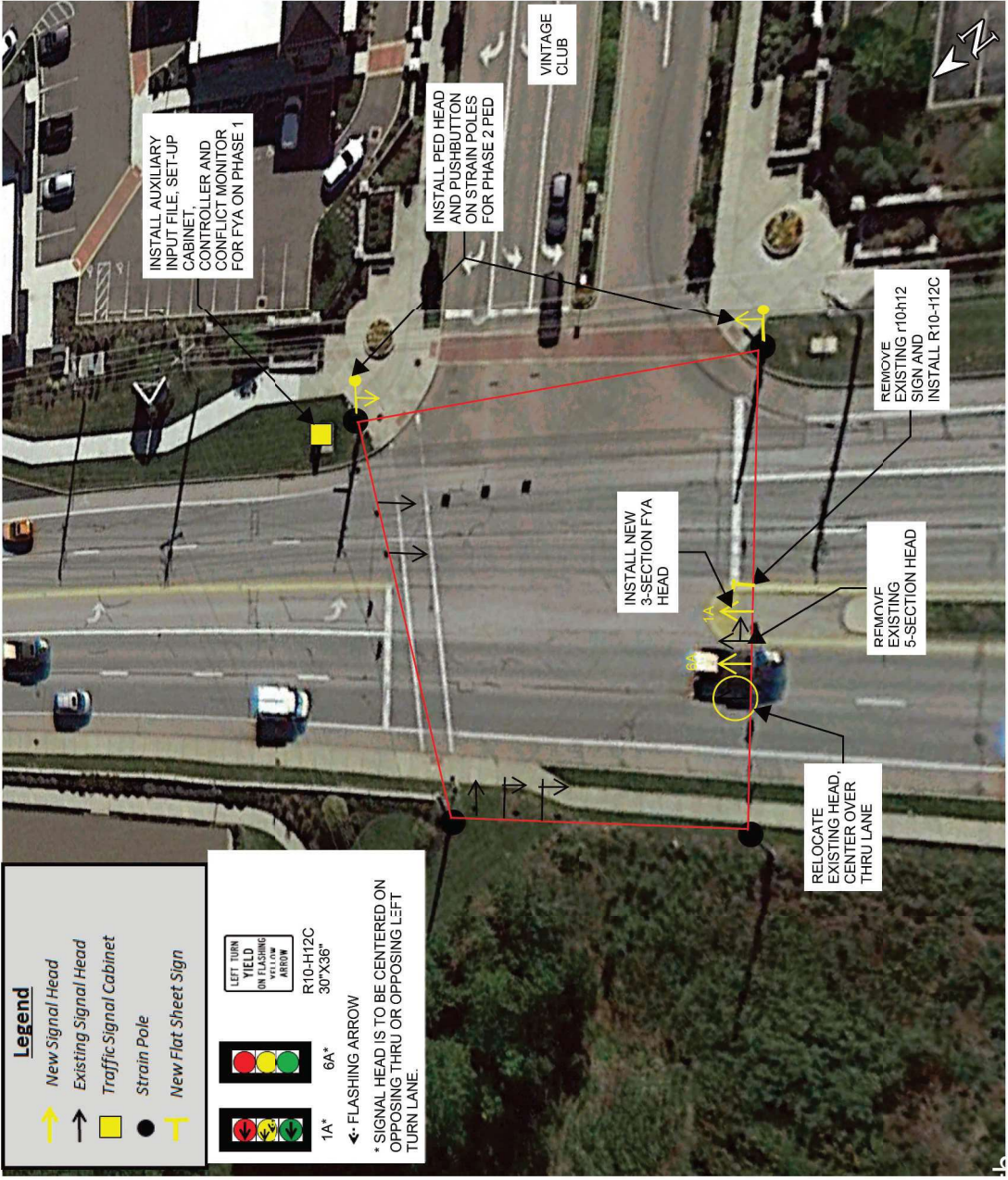


HAM-22 & CORNELL RD



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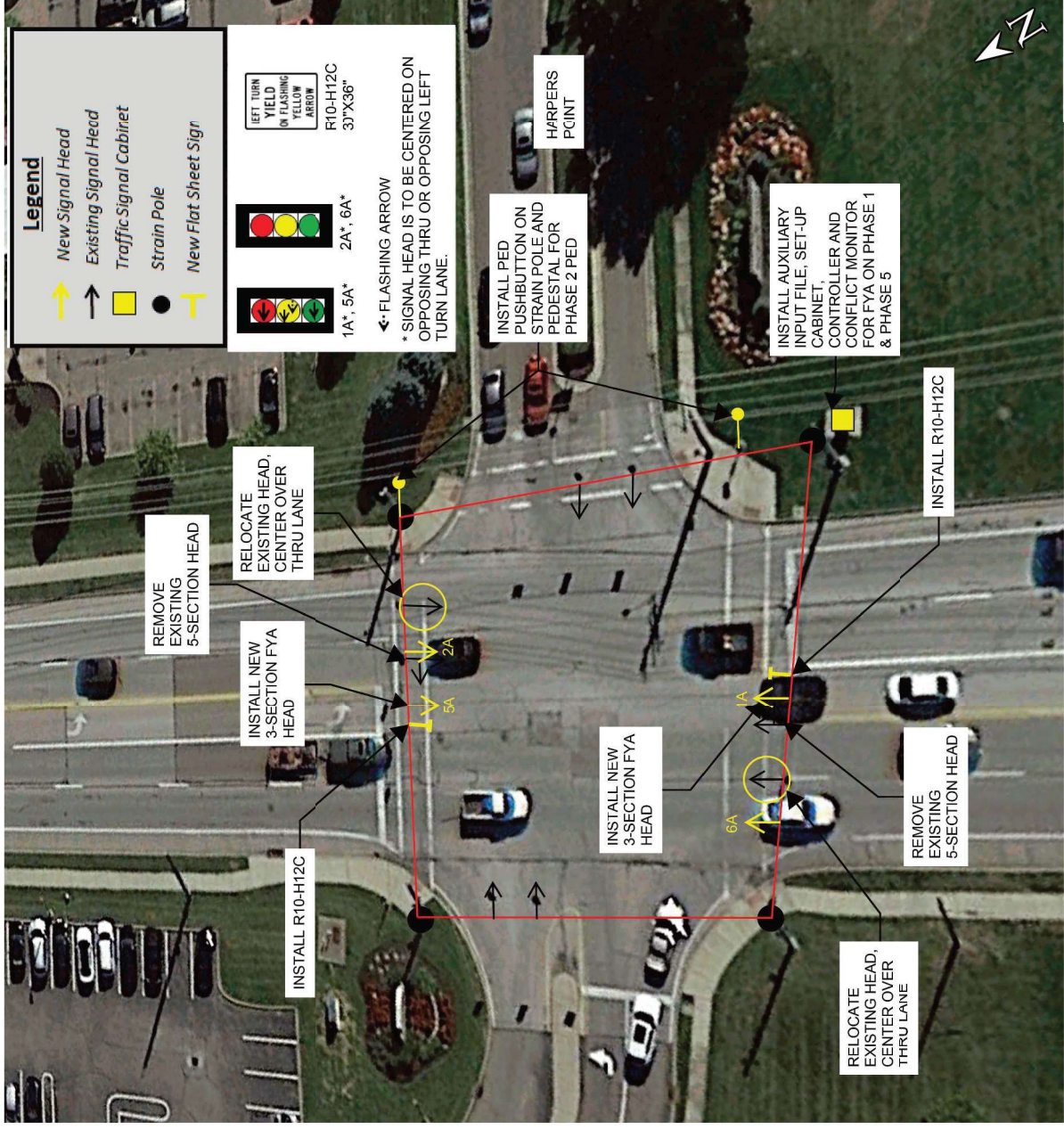
HAM-22 & VINTAGE CLUB



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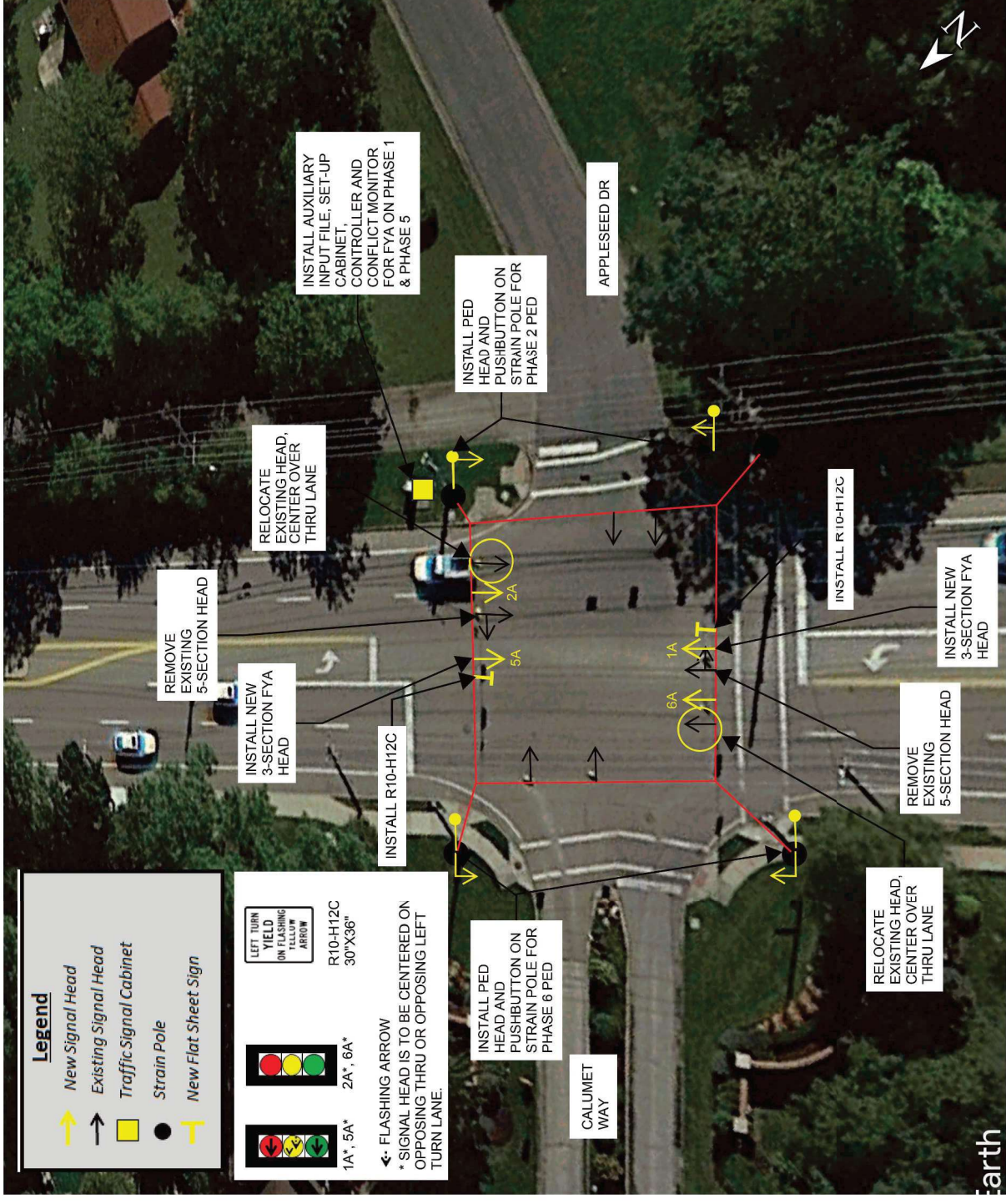


HAM-22 & HARPERS POINT



DRAWING NOT TO SCALE

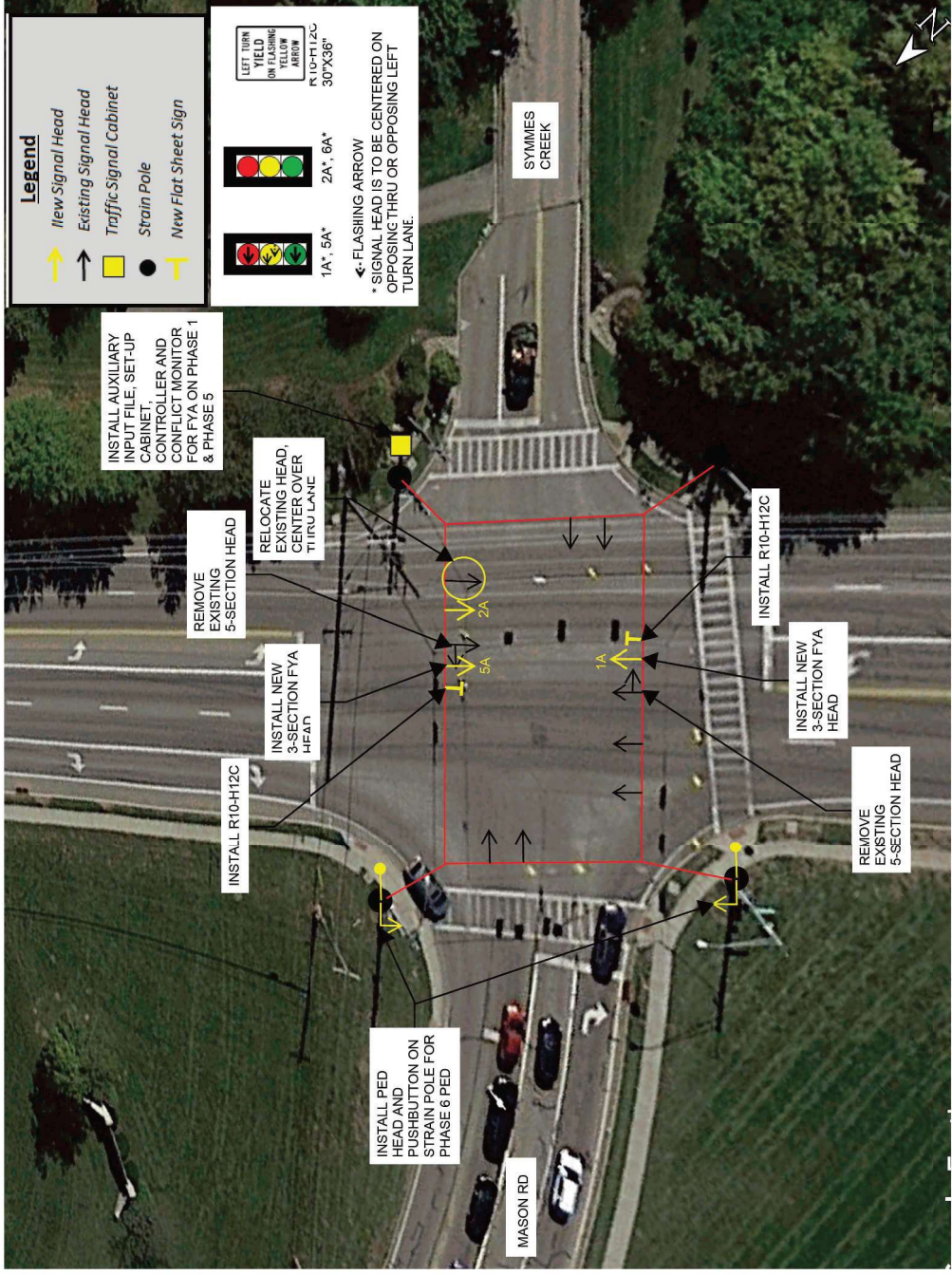
HAM-22 & CALUMET WAY/APPLESEED



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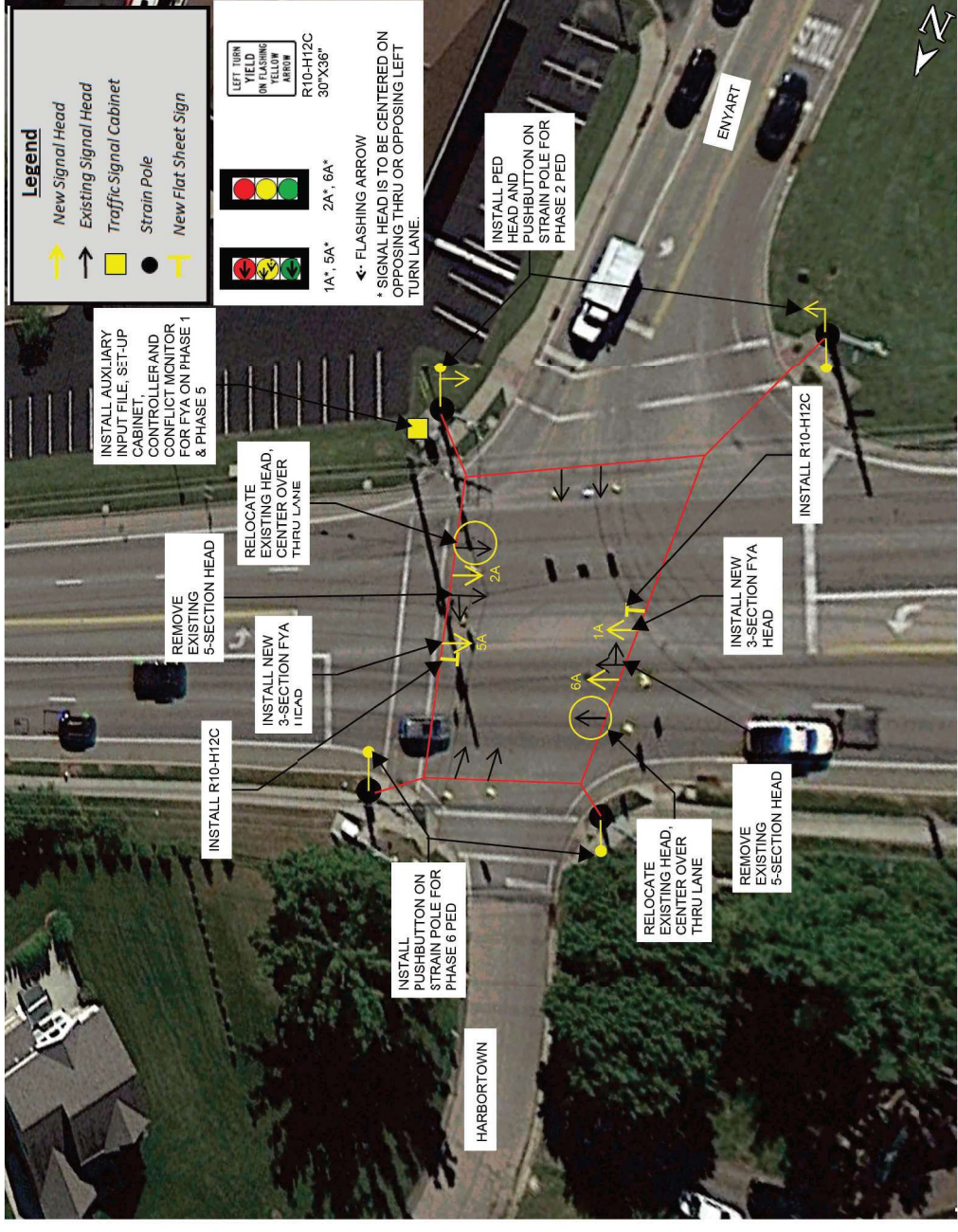


HAM-22 & MASON RD/SYMMES CREEK



DRAWING NOT TO SCALE

HAM-22 & ENYART/HARBORTOWN



DRAWING NOT TO SCALE

FYA DETAILS

DESIGN AGENCY

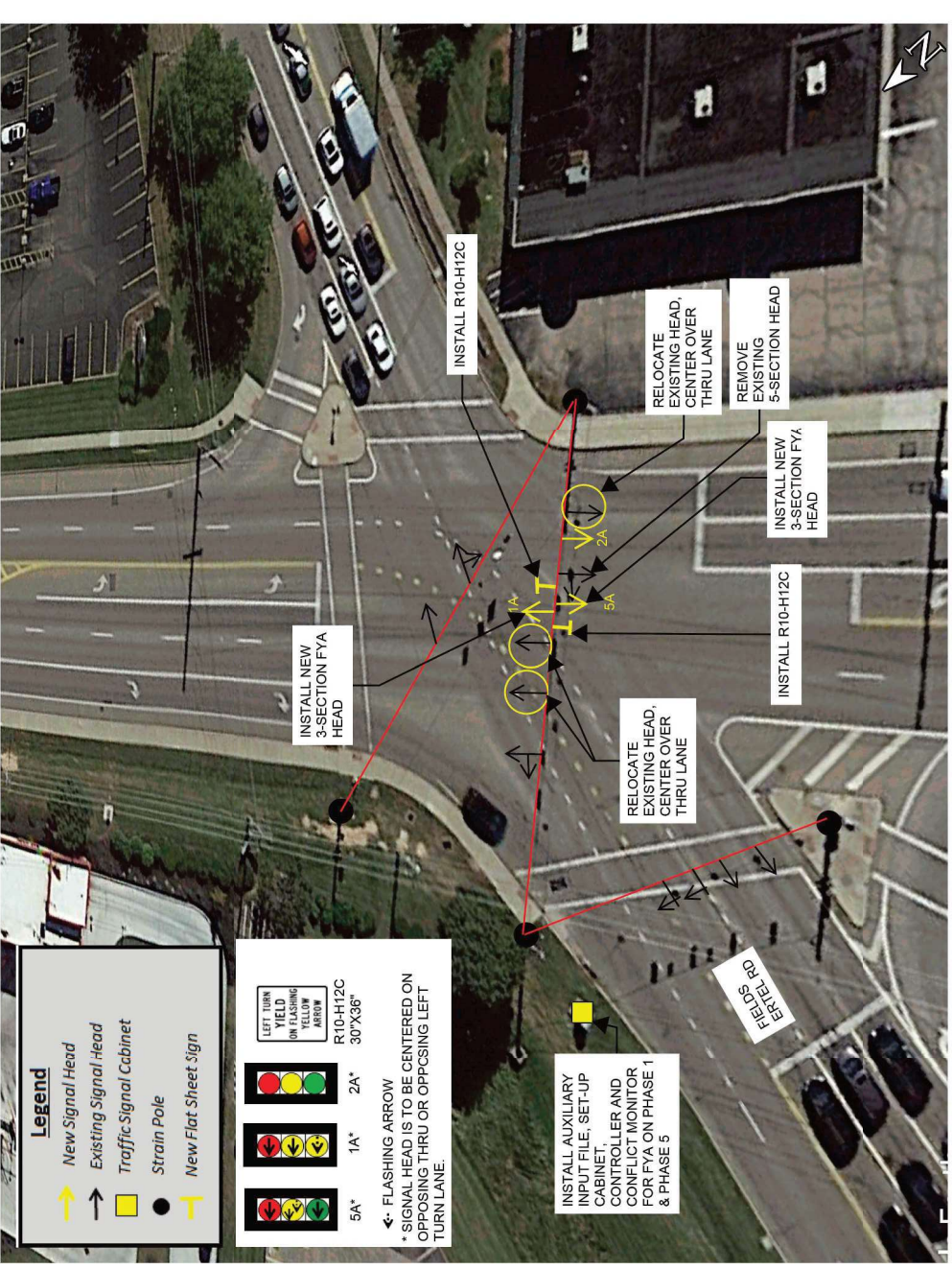


DESIGNER	TCS
REVIEWER	MAG
PROJECT ID	110596
SHEET	TOTAL
P. 16	23



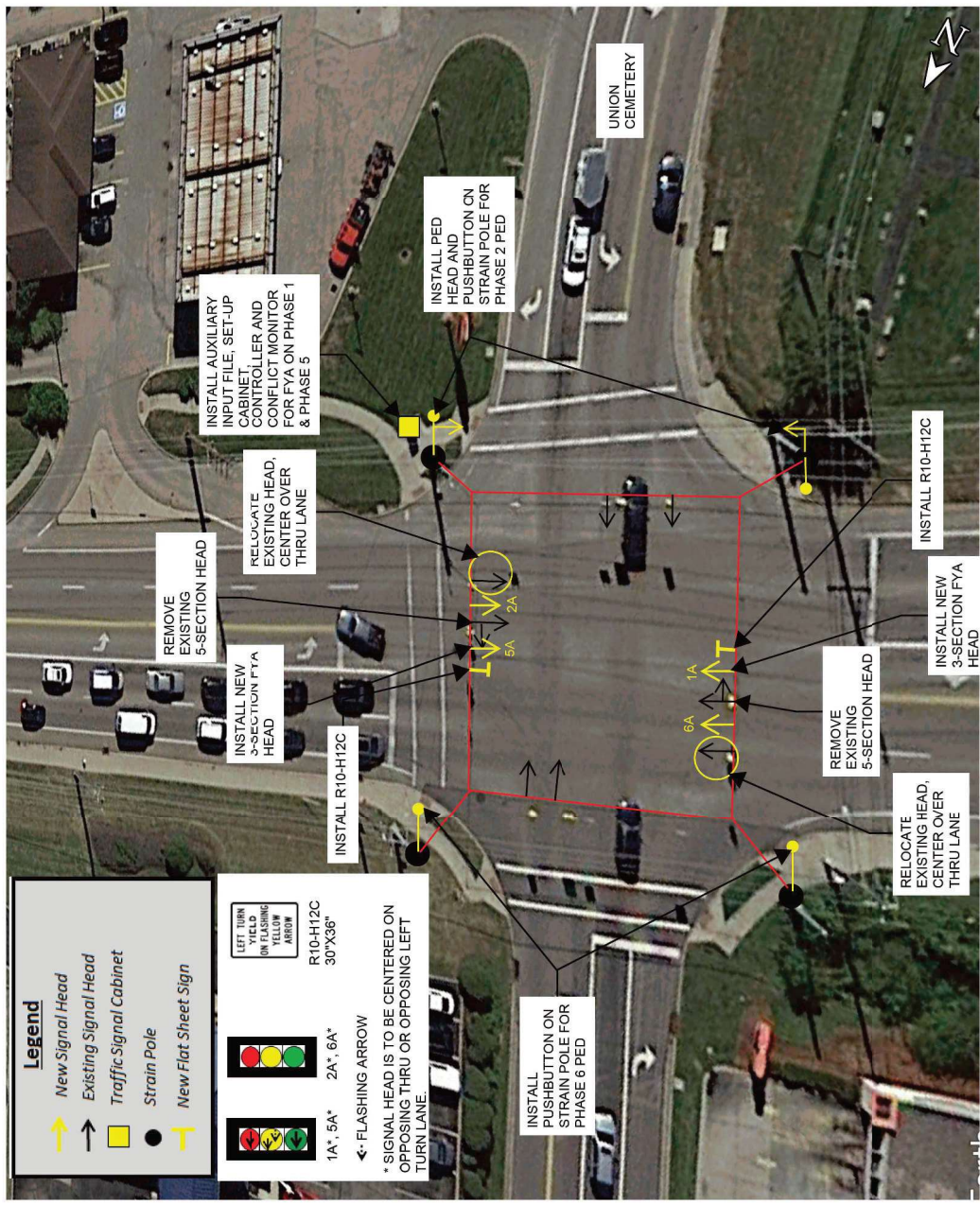
FYA DETAILS

HAM-22 & FIELDS ERTEL RD



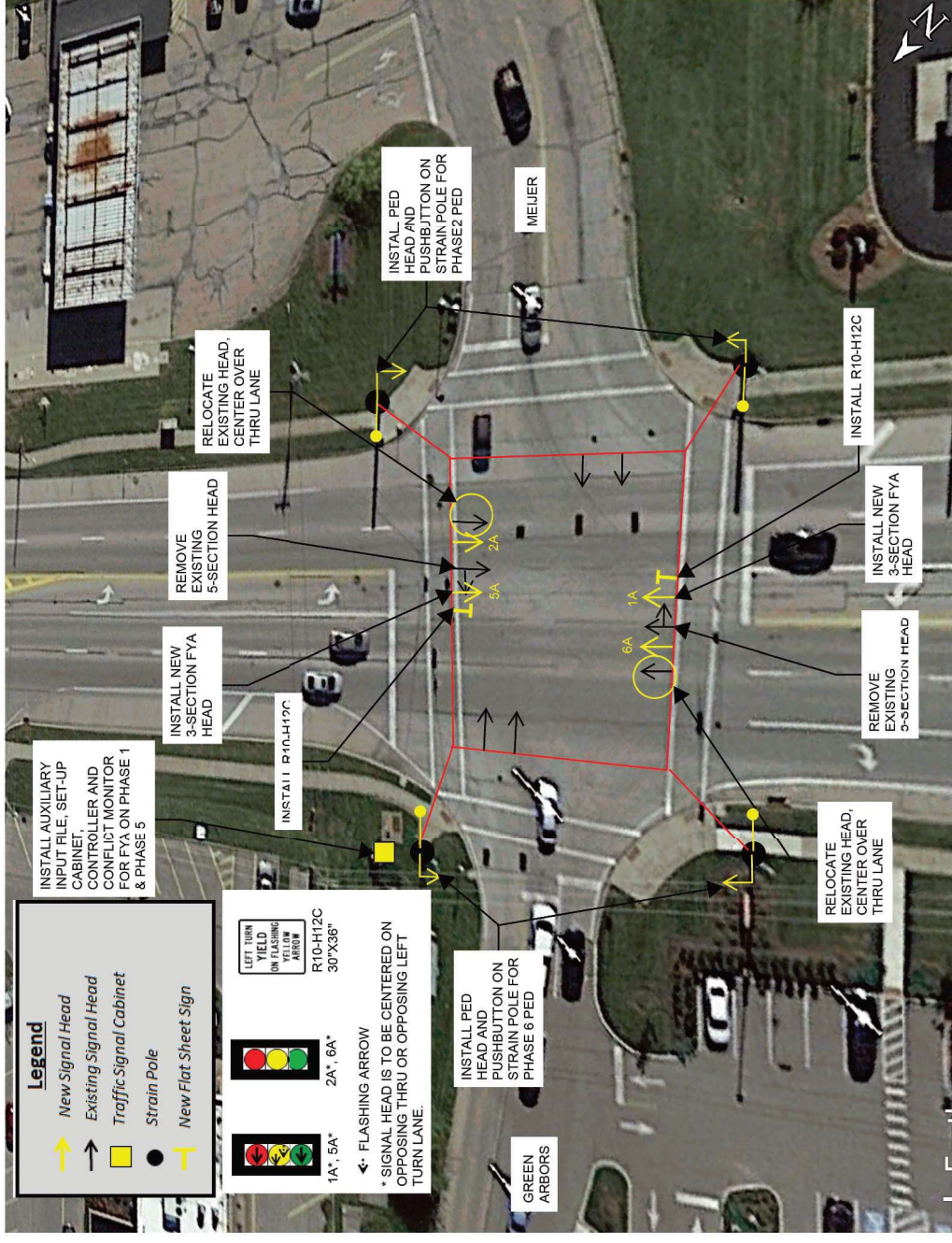
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HAM-22 & UNION CEMETERY



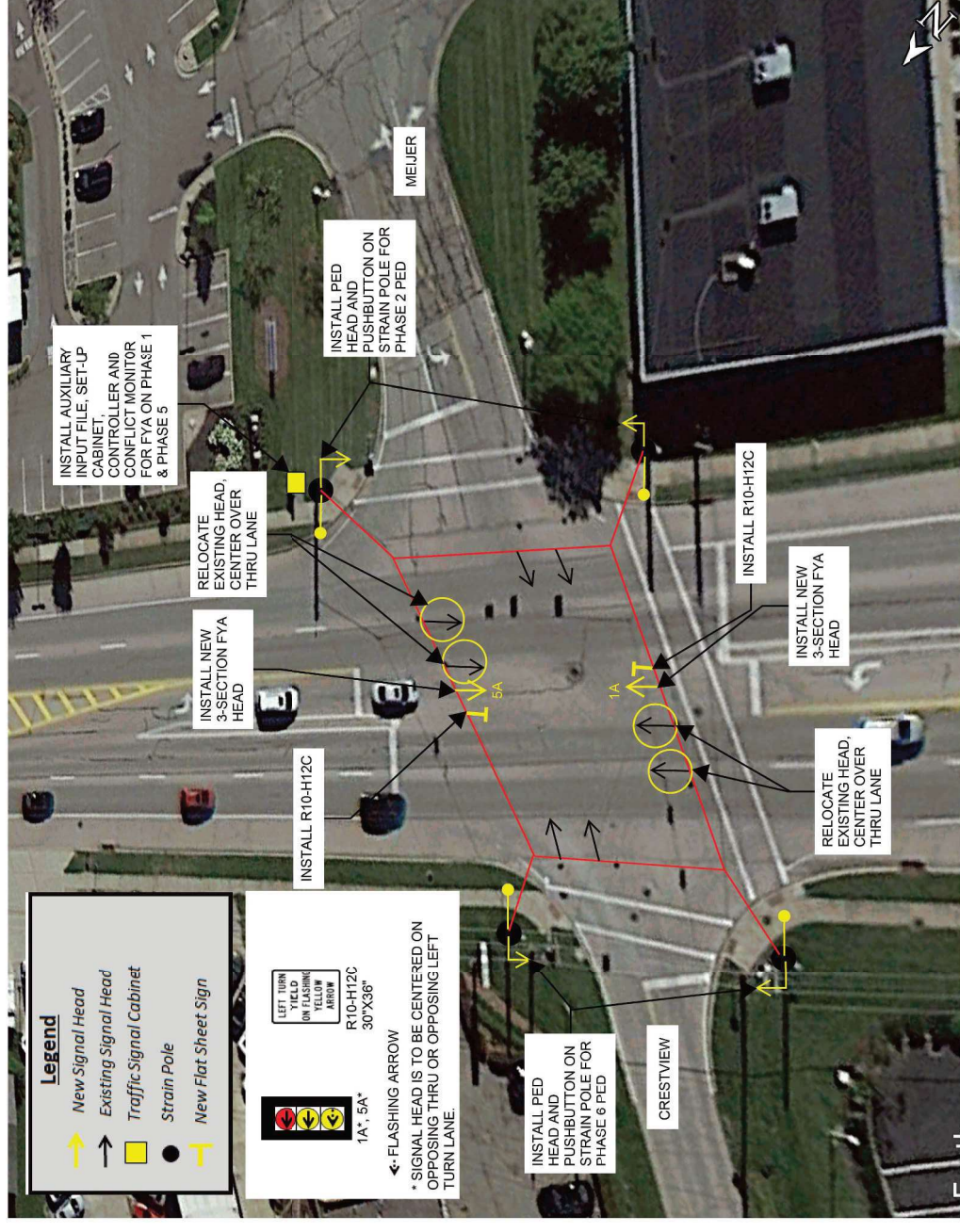
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WAR-22 & GREEN ARBORS/MEIJER



DRAWING NOT TO SCALE

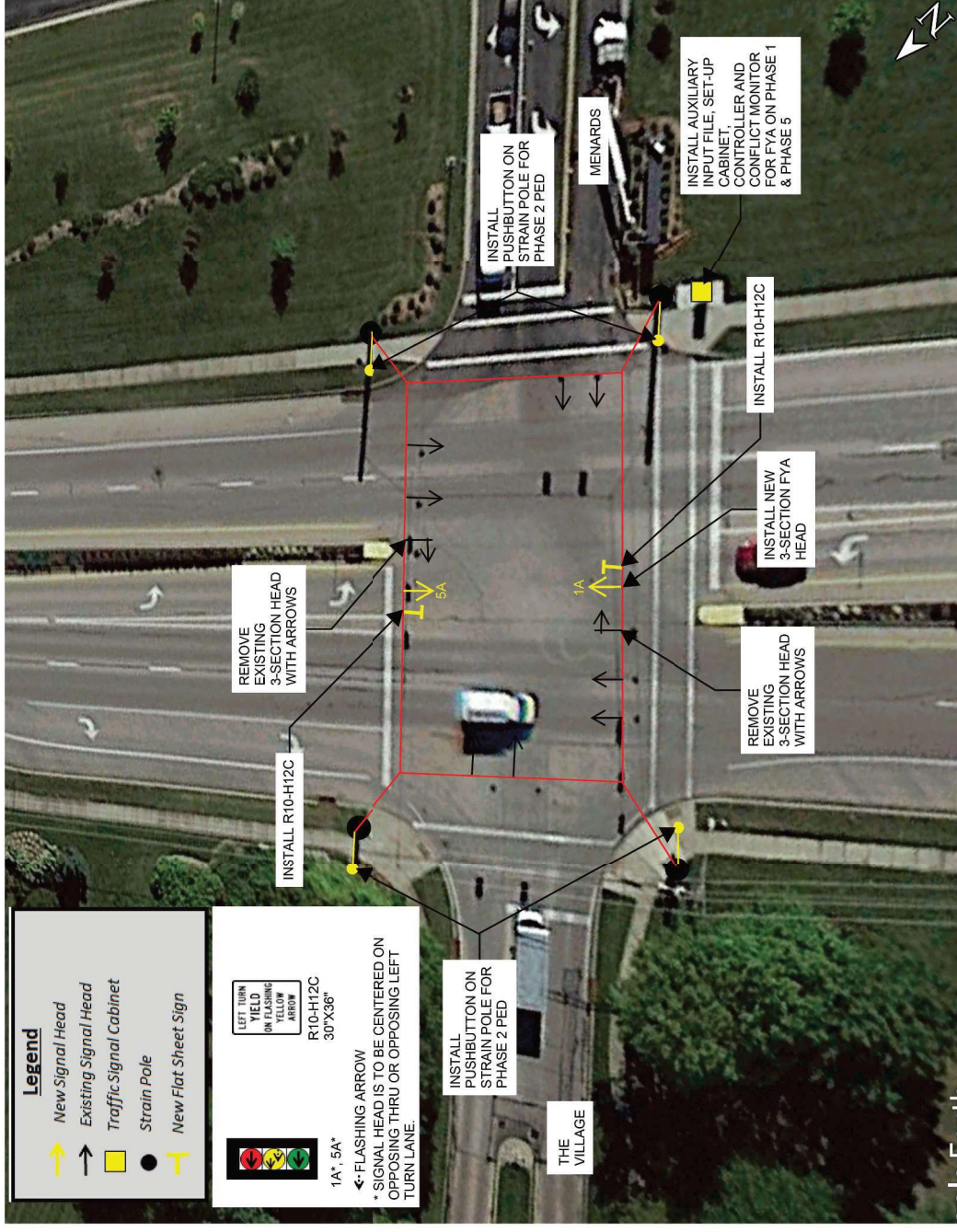
WAR-22 & CRESTVIEW/MEIJER



DRAWING NOT TO SCALE

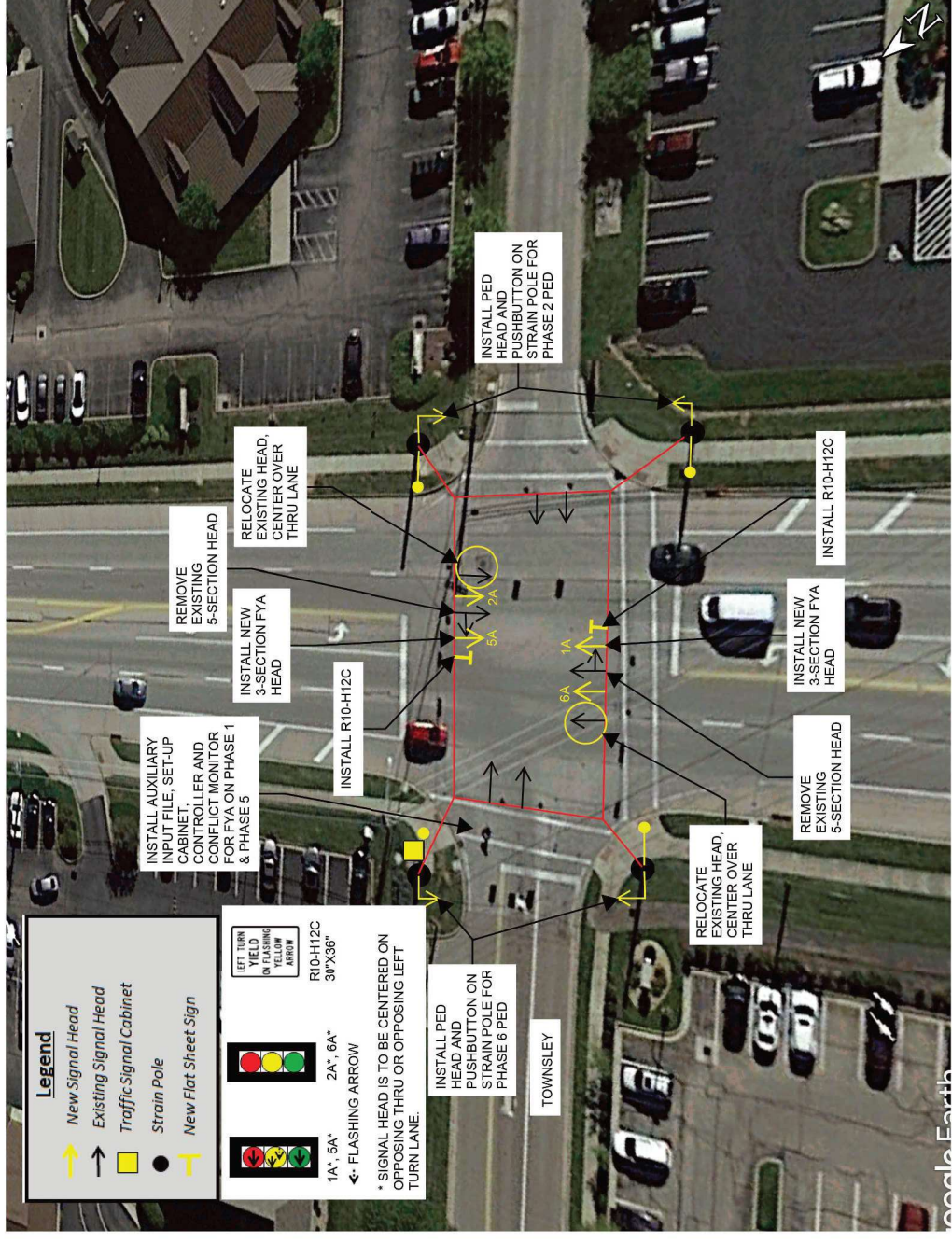


WAR-22 & VILLAGE/MENARDS



DRAWING NOT TO SCALE

WAR-22 & TOWNSLEY



DRAWING NOT TO SCALE

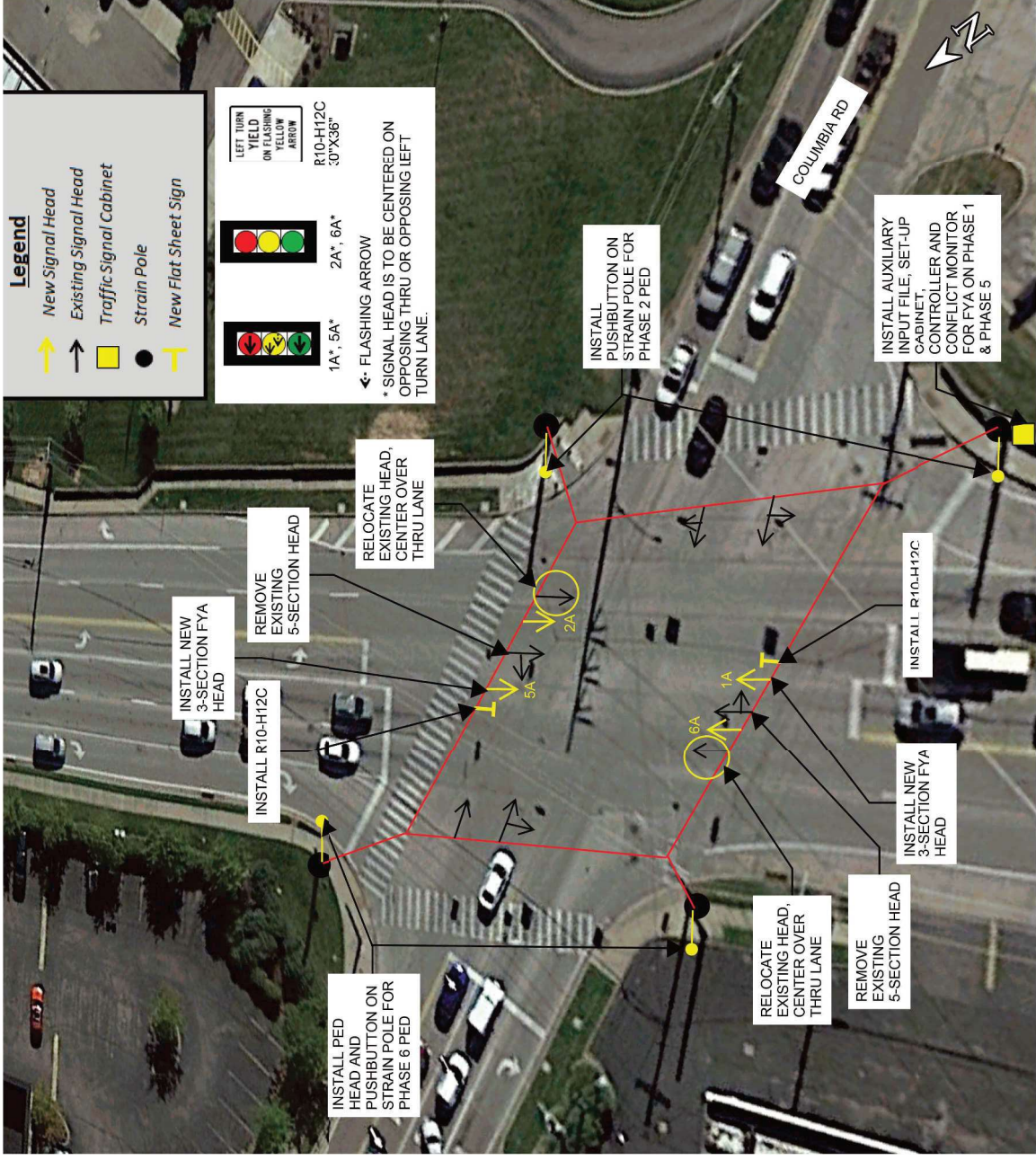
FYA DETAILS

DESIGN AGENCY



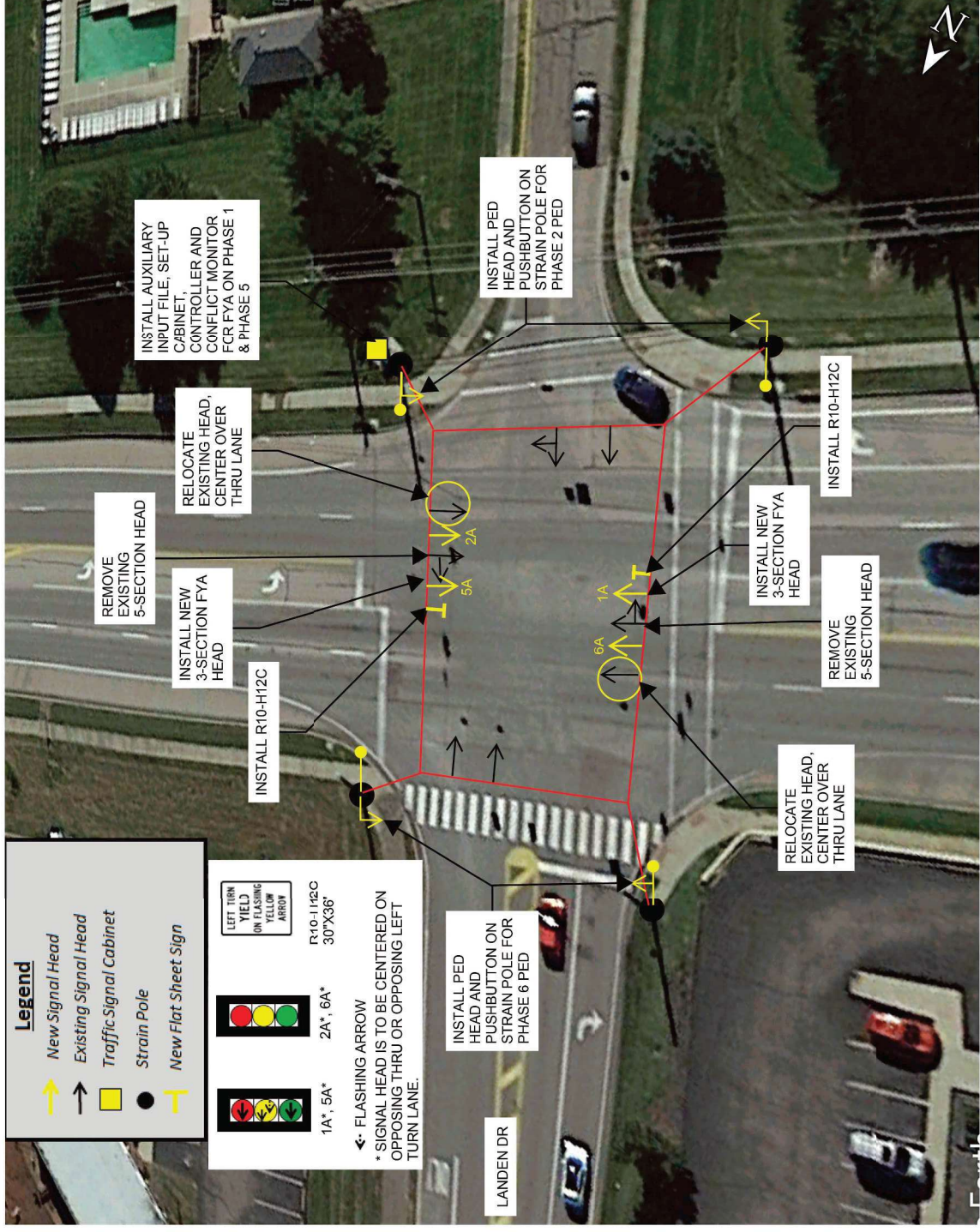
DESIGNER	TCS
REVIEWER	MAG
PROJECT ID	110596
SHEET	P. 19
TOTAL	23

WAR-22 & COLUMBIA RD



DRAWING NOT TO SCALE

WAR-22 & LANDEN DR



DRAWING NOT TO SCALE

FYA DETAILS

DESIGN AGENCY



DESIGNER	TCS
REVIEWER	MAG
PROJECT ID	110596
SHEET	P.20
TOTAL	23

ITEM 809 - ITS DEVICE, MISC.: REMOVAL OF RAMP METER PEDESTAL
THIS ITEM CONSISTS OF REMOVAL OF THE EXISTING RAMP METER PEDESTALS INCLUDING THE ATTACHED SIGNAL HEADS AND ALL ASSOCIATED WIRING. THE FOUNDATION SHALL ALSO BE REMOVED TO 1' BELOW THE FINISHED GRADE AND FILLED IN WITH MATERIAL SIMILAR TO THE SURROUNDING AREA.

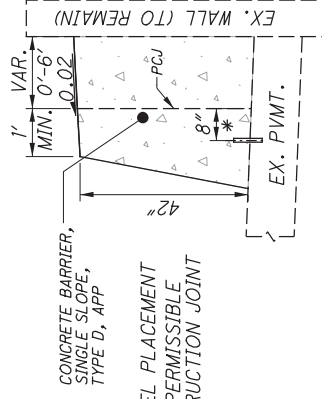
THE WIRING AND FOUNDATION MATERIAL SHALL BE DISPOSED OF. THE SIGNAL HEADS AND PEDESTAL SHALL BE SALVAGED FOR DELIVERY.

PAYMENT FOR THIS ITEM SHALL BE MADE AT THE CONTRACT UNIT PRICE PER EACH REMOVED AND PROPERLY DISPOSED OF OR DELIVERED AS SPECIFIED ABOVE.

ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN

THIS ITEM SHALL CONFORM TO ALL REQUIREMENTS AND SPECIFICATIONS OF SCD RM-4.5 EXCEPT THAT THE WIDTH OF THE TOP OF BARRIER SHALL VARY PER THIS PLAN SO THAT THE BACK OF THE BARRIER REPLACES THE BACK OF THE EXISTING BARRIER AGAINST THE RETAINING WALL. DOWEL BASE OF BARRIER INTO EXISTING CONCRETE PAVEMENT PER DOWELING DETAILS IN SCD RM-4.5. TRANSITION EACH END OF PROPOSED BARRIER TO THE EXISTING TYPE D BARRIER SHAPE AND DOWEL INTO EXISTING BARRIER PER THE CONSTRUCTION JOINTS NOTE IN SCD RM-4.5.

ALL EQUIPMENT, LABOR, AND MATERIALS (INCLUDING CONCRETE AND DOWELS) SHALL BE PAID FOR UNDER ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN. ALL REINFORCING FOR THE SIGNAL POLE FOUNDATION SHALL BE PAID FOR UNDER THE PERTINENT TRAFFIC ITEMS.



* DOWEL PLACEMENT PCJ - PERMISSIBLE CONSTRUCTION JOINT

CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN DETAIL

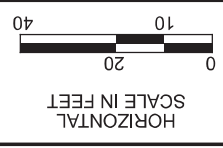
ITEM 614 - MAINTAINING TRAFFIC, AS PER PLAN

MAINTAINING TRAFFIC SHALL BE PER ODOT SCD MT-95.45 EXCEPT THE SIGN SPACING MAY BE ADJUSTED TO FIT WITHIN THE LENGTH OF THE RAMP APPROACHING THE WORK. THE PB SHOWN IN MT-95.45 MAY BE DRUMS AS LONG AS THE WORK ZONE DROP OFF REQUIREMENTS ARE MET PER ODOT SCD MT-101.90. THE RAMP SHALL REMAIN OPEN TO TRAFFIC AT ALL TIMES.

THE DRUMS MAY BE PLACED ON THE ADJACENT EDGE LINE IF NECESSARY DURING WORKING HOURS. IF SO, W5-4 RAMP NARROWS* SIGN SHALL BE PLACED INSTEAD OF THE W21-5a SIGN CLOSEST TO THE WORK AREA SHOWN IN MT-95.45. THE DRUMS SHALL BE PLACED 2' OFF THE EDGE LINE DURING NON-WORKING HOURS.

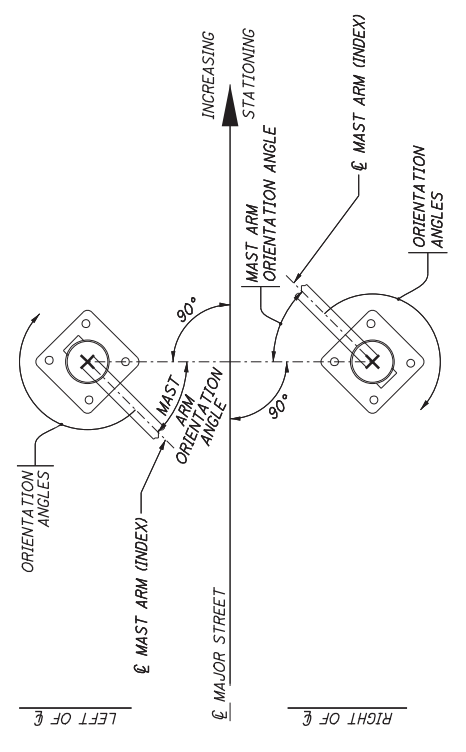
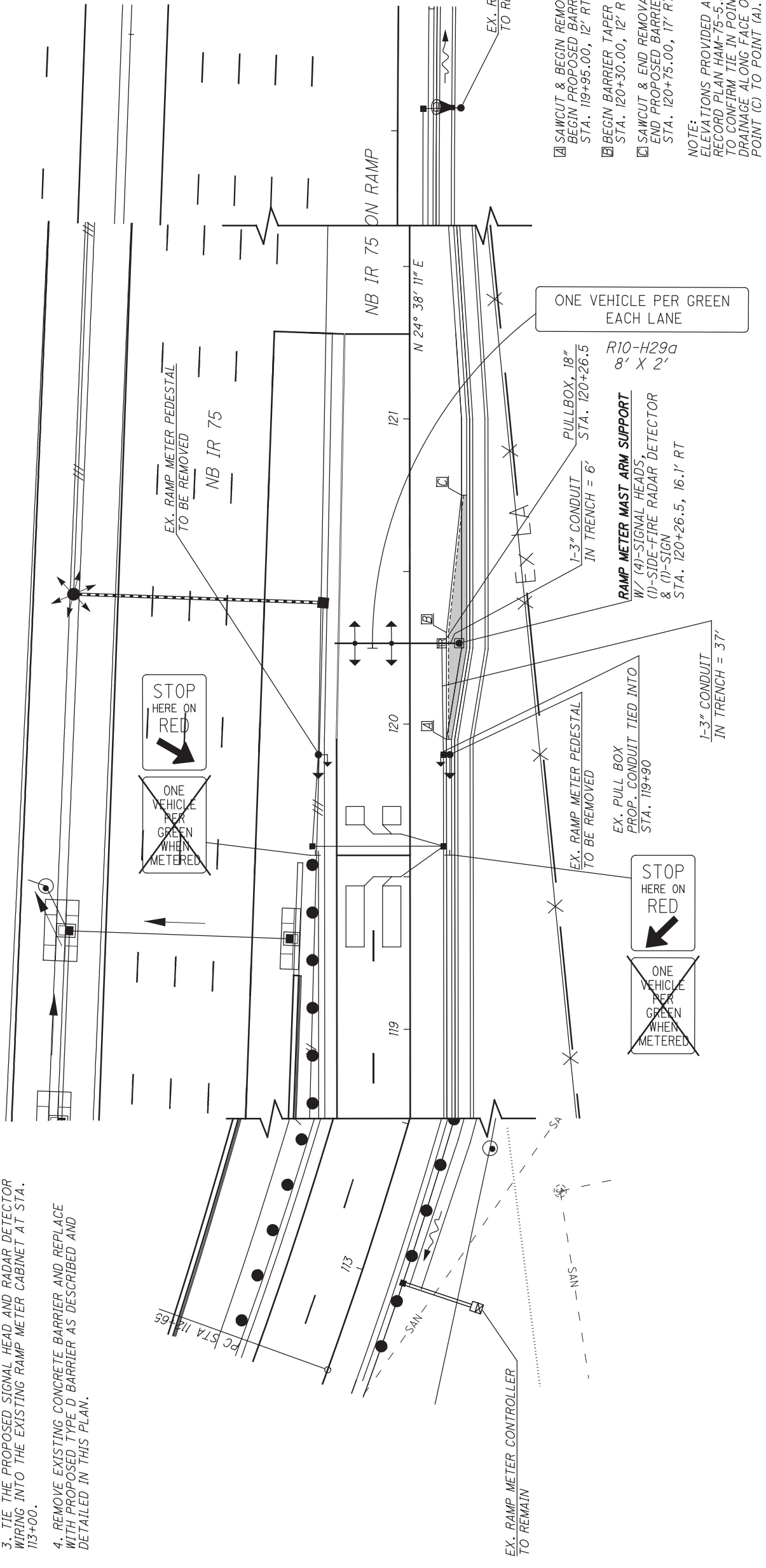
ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&MS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING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

TRAFFIC SURVEILLANCE QUANTITIES			
ITEM	QUAN.	UNITS	DESCRIPTION
614	1	LS	MAINTAINING TRAFFIC, AS PER PLAN
202	80	FEET	CONCRETE BARRIER REMOVED
622	80	FEET	CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN
625	43	FEET	CONDUIT, 3", 725.04
625	43	FEET	TRENCH IN PAVED AREA
625	1	EACH	PULL BOX, 725.08, 18"
625	1	EACH	GROUND ROD
630	16	SQ. FT.	SIGN, FLAT SHEET
630	2	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL
632	1750	FEET	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG
632	4	EACH	VEHICULAR SIGNAL HEAD, LED, 2-SECTION, 12" LENS, 1-WAY, POLYCARBONATE
630	1	EACH	CONCRETE BARRIER MEDIAN OVERHEAD SUPPORT FOUNDATION, TYPE TC-21.50
632	1	EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 4
809	2	EACH	ITS DEVICE, MISC.: REMOVAL OF RAMP METER PEDESTAL



TRAFFIC SURVEILLANCE PLAN
NORTHBOUND I-75 ENTRANCE RAMP AT MITCHELL AVE.

DESIGN AGENCY	
DESIGNER	BPT
REVIEWER	EMW
PROJECT ID	110596
SHEET	P. 22
TOTAL	23



- NOTES**
1. THIS PLAN IS TO MODIFY THE EXISTING RAMP METER. ALL EXISTING RAMP METER EQUIPMENT NOT SHOWN SHALL REMAIN AS IS.
 2. REMOVE THE EXISTING PEDESTAL WIRING.
 3. TIE THE PROPOSED SIGNAL HEAD AND RADAR DETECTOR WIRING INTO THE EXISTING RAMP METER CABINET AT STA. 113+00.
 4. REMOVE EXISTING CONCRETE BARRIER AND REPLACE WITH PROPOSED TYPE D BARRIER AS DESCRIBED AND DETAILED IN THIS PLAN.

- SAWCUT & BEGIN REMOVAL OF EX. TYPE D BARRIER BEGIN PROPOSED BARRIER, TYPE D, APP STA. 119+95.00, 12' RT, ELEV. 516.72
 - BEGIN BARRIER TAPER STA. 120+30.00, 12' RT, ELEV. 517.14
 - SAWCUT & END REMOVAL OF EX. TYPE D BARRIER END PROPOSED BARRIER, TYPE D, APP STA. 120+75.00, 17' RT, ELEV. 517.36
- NOTE:
ELEVATIONS PROVIDED ARE EXISTING BASED ON RECORD PLAN HAM-75-5.58 (PID 82278). CONTRACTOR TO CONFIRM TIE IN POINT (C) TO ENSURE POSITIVE DRAINAGE ALONG FACE OF PROPOSED BARRIER FROM POINT (C) TO POINT (A).

RAMP METER PLAN LEGEND

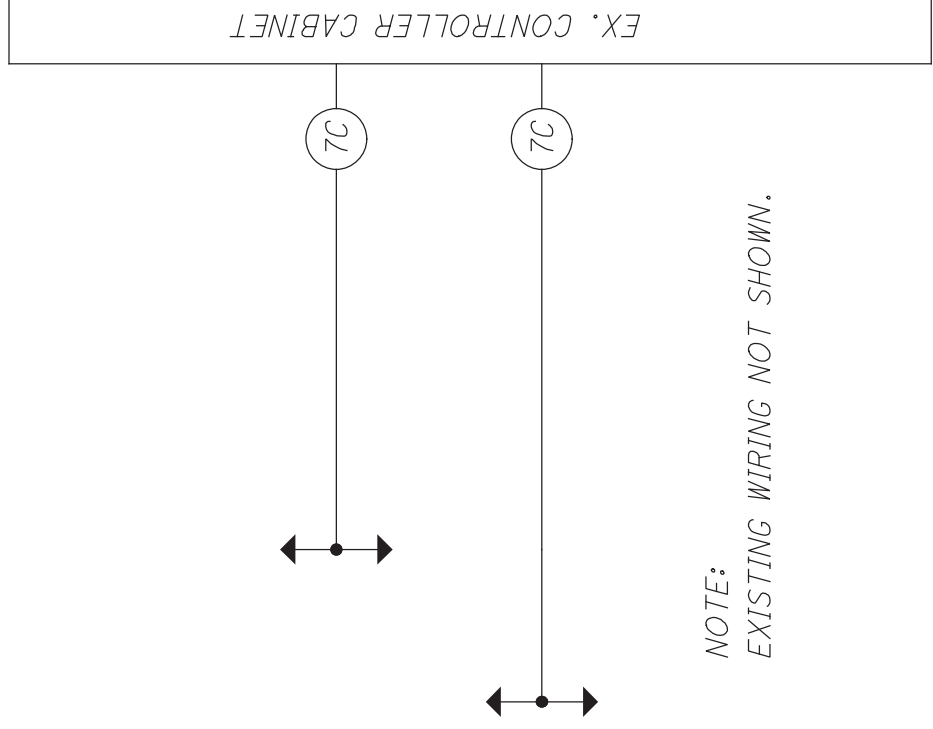
- MAST ARM SUPPORT
- EXISTING PEDESTAL
- PROPOSED PULLBOX
- EXISTING PULL BOX
- 2-SECTION SIGNAL HEADS
- RADAR DETECTION UNIT
- EXISTING DETECTOR LOOPS
- PROPOSED TOP OF BARRIER

MAST ARM TABLE

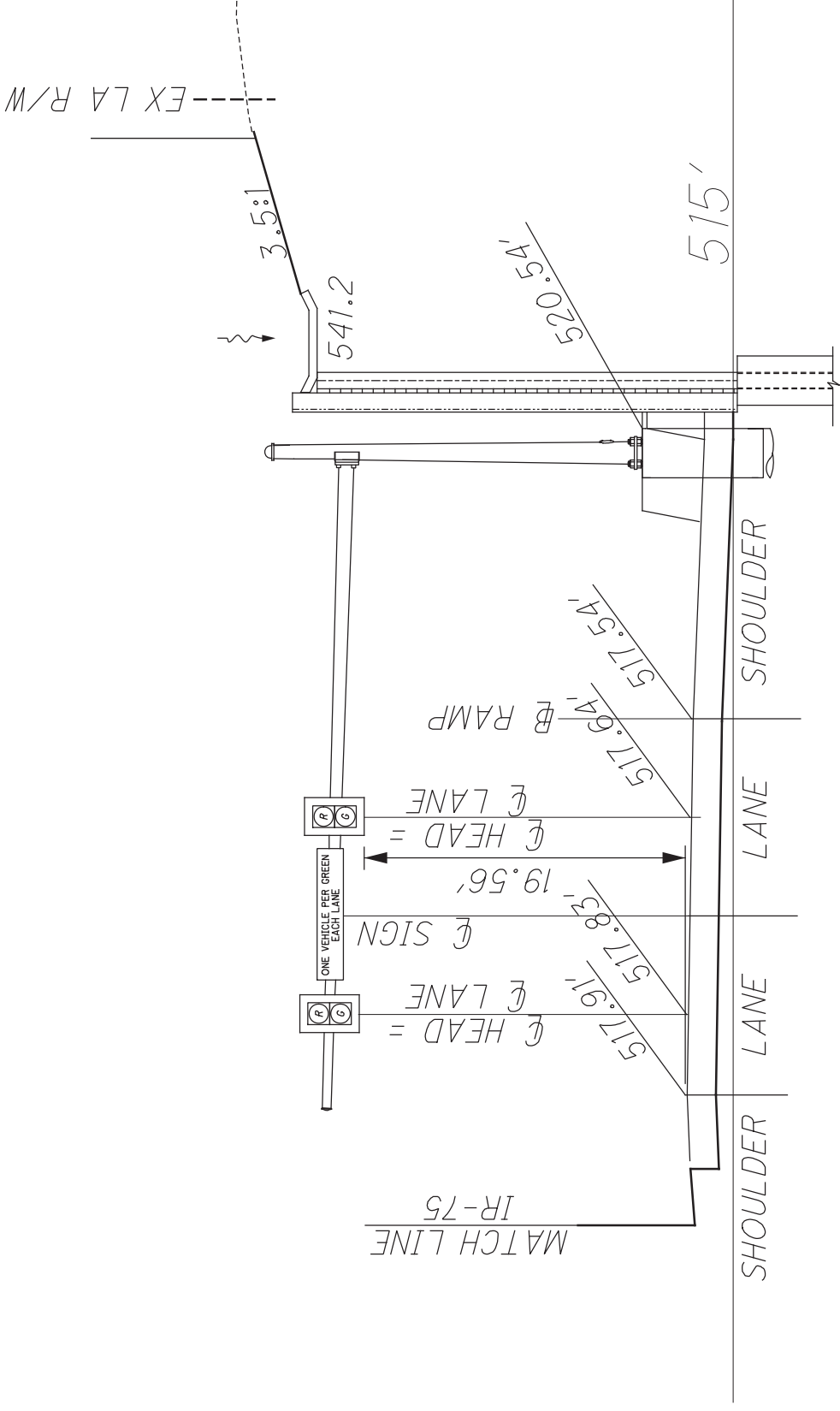
SUPPORT NO.	STATION	OFFSET	ELEVATION		DESIGN TYPE	DESIGN NO.	POLE HEIGHT	ARM HEIGHT	SIGNAL SUPPORT DETAILS				ORIENTATION ANGLES FROM MAST ARM A				
			A (Pavt. Elev.)	B (Top of Found.)					LENGTH OF ARM	LENGTH TO SIGNAL HEAD	LENGTH TO SIGNAL HEAD	LENGTH TO SIGN	LENGTH TO DETECTOR UNIT	MAST ARM A ANGLE	MAST ARM A ANGLE	HANDHOLE	
1	120+26.5	14.5 RT	518.47	521.02	TC-81.22	4	23	18	40	22	34	28	39	0	0	90	

POLE ORIENTATION

WIRING DIAGRAM



NOTE:
 EXISTING WIRING NOT SHOWN.



MAST ARM ELEVATION

TC-81.22 DESIGN 4
 STA. 120+26.5