

TEMPORARY WORK ZONE MARKINGS AND SIGNS

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR TEMPORARY WORK ZONE PAVEMENT MARKINGS AND SIGNS PER THE REQUIREMENTS OF THE STANDARD CONSTRUCTION DRAWINGS: IN ADDITION TO ODOT CMS 614.04 AND 614.11:

ITEM 614 - WORK ZONE MARKING SIGNS	TOTAL	64 EACH
UNEVEN LANES (W8-11-36)		16 EACH
NO EDGE LINES (W8-H12a-36)		16 EACH
NO PASSING ZONES (W14-3-40)		16 EACH
LOW SHOULDER (W8-9-36)		16 EACH

ITEM 614 - WORK ZONE STOP LINES, CLASS I (2 APPLICATIONS)		100 FT
ITEM 614 - WORK ZONE CENTER LINES, CLASS I (2 APPLICATIONS)		5.00 MILE

THE WORK ZONE MARKINGS SHALL BE PLACED IN THE SAME LOCATION AS THE PERMANENT MARKINGS ON THE FINAL SURFACE COURSE.

EQUIPMENT AND MATERIAL STORAGE

IN ORDER TO PROVIDE FOR THE SAFETY OF THE TRAVELING PUBLIC, THE CONTRACTOR'S ATTENTION IS DIRECTED TO 614.05. IN ADDITION, THE FOLLOWING PROVISIONS SHALL APPLY:

1. ANY REMOVED ITEMS SHALL NOT BE STORED ON THE RIGHT OF WAY FOR MORE THAN FOURTEEN (14) DAYS.
2. ALL DISTURBED AREAS SHALL BE RETURNED TO THEIR ORIGINAL CONDITION AT NO EXPENSE TO THE CITY.

FLASHING ARROW PANELS

WHEN FLASHING ARROW PANELS ARE UTILIZED FOR NIGHT LANE CLOSURES, SOLAR, ELECTRIC, OR BATTERY POWERED EQUIPMENT SHALL BE EXCLUSIVELY UTILIZED WHEN LOCATED WITHIN 300 FEET OF ANY RESIDENCE. DIESEL OR GASOLINE POWERED GENERATORS WILL NOT BE PERMITTED IN THESE AREAS, EXCEPT WHEN USED INTERMITTENTLY FOR THE SOLE PURPOSE OF CHARGING INTERNAL BATTERIES WHICH PROVIDE THE PRIMARY POWER FOR THE EQUIPMENT.

PLACEMENT OF ASPHALT CONCRETE COURSES

TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES EXCEPT THAT ONE-WAY TRAFFIC WILL BE PERMITTED FOR MINIMUM PERIODS OF TIME CONSISTENT WITH THE REQUIREMENTS OF THE SPECIFICATIONS FOR PROTECTION OF COMPLETED ASPHALT CONCRETE COURSES AND FOR PAVEMENT WIDENING OPERATIONS.

FLOODLIGHTING

FLOODLIGHTING OF THE WORK SITE FOR OPERATIONS CONDUCTED DURING NIGHT TIME PERIODS SHALL BE ACCOMPLISHED SO THAT THE LIGHTS DO NOT CAUSE GLARE TO THE DRIVERS ON THE ROADWAY. TO ENSURE THE ADEQUACY OF THE FLOODLIGHT PLACEMENT, THE CONTRACTOR AND THE ENGINEER SHALL DRIVE THROUGH THE WORK SITE EACH NIGHT WHEN THE LIGHTING IS IN PLACE AND OPERATIVE PRIOR TO COMMENCING ANY WORK. IF GLARE IS DETECTED, THE LIGHT PLACEMENT AND SHIELDING SHALL BE ADJUSTED TO THE SATISFACTION OF THE ENGINEER BEFORE WORK PROCEEDS.

PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614 - MAINTAINING TRAFFIC, AS PER PLAN.

TEMPORARY TRENCH RESTORATION

TRENCH RESTORATION IN PAVEMENT AREAS FOR THE STORM SEWER CONSTRUCTION (UNTIL THE NEW PAVEMENT IS CONSTRUCTED) SHALL BE IN ACCORDANCE WITH 611. THE ROADWAY SURFACE OVER THE TRENCHES SHALL BE ITEM 410 - TRAFFIC COMPACTED SURFACE, TYPE A OR B FOR SHORT PERIODS OF TIME. A MINIMUM OF 2" ITEM 614 - ASPHALT CONCRETE FOR MAINTAINING TRAFFIC SHALL BE PLACED AT THE TRENCH WITHIN 14 DAYS AS APPROVED BY THE ENGINEER. THE SURFACE SHALL BE MAINTAINED SMOOTH AND FREE OF RUTS, AS APPROVED BY THE ENGINEER.

THE FOLLOWING QUANTITY HAS BEEN PROVIDED FOR PAVEMENT SURFACE RESTORATION FOLLOWING INSTALLATION OF PIPES UNDER ITEM 611.

ITEM 614 - ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	15 CY
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THE ABOVE QUANTITY IS BASED ON A 614 ASPHALT CONCRETE FOR MAINTAINING TRAFFIC THICKNESS OF 2 INCHES AND A PAVEMENT RESTORATION WIDTH THAT INCLUDES THE TRENCH WIDTH PLUS TWO FEET ON EACH SIDE OF THE TRENCH FOR 611 ITEMS. THE TRENCH WIDTH WAS ASSUMED TO EQUAL THE SPAN TIMES 1.25 PLUS ONE FOOT.

ADDITIONAL MEASURES, MATERIALS MAY BE REQUIRED TO MAINTAIN A UNIFORM, SMOOTH SURFACE UNTIL THE NEW PAVEMENT IS CONSTRUCTED. PAYMENT FOR THIS WORK INCLUDING ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 - MAINTAINING TRAFFIC, AS PER PLAN.

TRAFFIC SIGNAL MODIFICATIONS

IN ADDITION TO THE REQUIREMENTS OF MAINTAINING TRAFFIC AT INTERSECTING ROADS AND DRIVES, AT ALL TIMES, THE CONTRACTOR SHALL BE REQUIRED TO MODIFY THE EXISTING SIGNAL INSTALLATION AT HIGH ST./MAIN ST.

THE TRAFFIC SIGNAL INSTALLATION SHALL BE MODIFIED TO OPERATE ON A PRETIMED MODE WITH THE OPERATIONAL VEHICLE DETECTORS, SIDE STREET APPROACHES TURNED OFF. THIS MODE SHALL BE IN OPERATION UNTIL THE NEW DETECTOR LOOPS ON THE APPROACHES ARE IN PLACE AND OPERATIONAL.

THE CONTRACTOR SHALL BE REQUIRED TO INVITE A VILLAGE REPRESENTATIVE TO BE PRESENT DURING TRAFFIC SIGNAL MODIFICATIONS.

THE CONTRACTOR SHALL CONTACT THE VILLAGE A MINIMUM OF 7 DAYS PRIOR TO THE REQUIRED MODIFICATIONS AND SHOULD EXPEDITE THE WORK IN THIS AREA TO LIMIT THE AMOUNT OF TIME THE EXISTING SIGNAL IS MODIFIED FROM NORMAL OPERATIONS.

ALL COSTS ASSOCIATED WITH THIS WORK SHALL BE INCLUDED IN THE LUMP SUM FOR ITEM 614 - MAINTAINING TRAFFIC, AS PER PLAN EXCEPT FOR LAW ENFORCEMENT OFFICER WITH PATROL CAR.

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 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 EXISTING SIGNAL INSTALLATION SHALL REMAIN IN OPERATION UNTIL THE NEW/PROPOSED SIGNAL INSTALLATION IS IN PLACE AND OPERATIONAL AS APPROVED BY THE ENGINEER.

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 VILLAGE OF HEBRON 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 12 HOURS AND SHALL NOT INCLUDE THE HOURS OF 6:00 AM TO 6:00 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.

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, AS PER PLAN.

ADDENDUM 1		
	11/16/23	REVISE TRAFFIC SIGNAL MODIFICATIONS NOTE
	11/20/23	REVISE WORK ZONE MARKING CLASS



ITEM 632 - SIGNAL SUPPORT FOUNDATION, AS PER PLAN

THIS PROJECT REQUIRES CONSTRUCTION OF MAST ARM SIGNAL SUPPORTS AND MAST ARM FOUNDATIONS IN LOCATIONS WHICH CONTAIN EXISTING UNDERGROUND UTILITIES. ORDERS FOR SIGNAL SUPPORTS SHALL BE PLACED SYSTEMATICALLY AFTER THEIR RESPECTIVE FOUNDATIONS HAVE BEEN CONSTRUCTED UNLESS WRITTEN PERMISSION HAS BEEN GIVEN BY ODOT/VILLAGE OF HEBRON ENGINEER TO ORDER SUPPORTS AT AN EARLIER DATE. FOUNDATIONS THAT HAVE BEEN CONSTRUCTED SHALL BE PROTECTED AS PER SECTION 107.07 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS.

WITHIN TWO (2) WEEKS OF RECEIVING A SIGNED CONTRACT, THE CONTRACTOR SHALL LAYOUT THE PERIMETER OF EACH FOUNDATION THEN CONTACT OUPS [811, 1-800-362-2764], AND OGPUPS [1-800-925-0988]. A MEETING BETWEEN THE CONTRACTOR, VILLAGE OF HEBRON ENGINEER AND A REPRESENTATIVE FROM THE MAINTAINING AGENCY WILL BE HELD ON SITE NO LATER THAN TWO (2) WEEKS AFTER THE OUPS NOTIFICATION. BASED UPON THE PRIORITIES DETERMINED AT THIS MEETING, THE CONTRACTOR WILL CONSTRUCT FOUNDATIONS BEGINNING WITH THE HIGHEST PRIORITY FIRST.

IF A UTILITY OR OTHER CONFLICT EXISTS WHICH REQUIRES THAT A MAST ARM SUPPORT BE CONSTRUCTED AT A LOCATION OTHER THAN WHAT IS INDICATED IN THE PLAN, THE MAINTAINING AGENCY AND THE ENGINEER SHALL DETERMINE WHETHER THE SPECIFIED MAST ARM SUPPORT SIZE IS APPROPRIATE. IF A LARGER MAST ARM SUPPORT IS REQUIRED, WITHIN TEN (10) WORKING DAYS, THE MAINTAINING AGENCY WILL PROVIDE THE CONTRACTOR WITH REVISED SUPPORT DATA. THE CONTRACTOR SHALL NOT ORDER THE SUPPORTS PRIOR TO RECEIVING THIS DATA. SUPPORT FOUNDATION LOCATIONS SHALL BE ADJUSTED ONLY WHEN APPROVED BY THE ENGINEER. IF THE MAST ARM SUPPORT DESIGN IS MODIFIED DUE TO REVISED FOUNDATION LOCATION, THE REVISED MAST ARM DESIGN WILL BE PAID FOR IN THE FINAL CHANGE ORDER TO THE PROJECT.

THE CONTRACTOR IS ADVISED TO LOCATE AND CONSTRUCT THE MAST ARM FOUNDATIONS AS SOON AS POSSIBLE IN ORDER TO PROVIDE AMPLE LEAD TIME TO ORDER THE MAST ARMS. ALL FOUNDATIONS SHALL BE EXCAVATED WITH EXTREME CAUTION AS APPROVED BY THE ENGINEER. NO TIME EXTENSIONS SHALL BE GRANTED FOR DELAYS WHICH ARE CAUSED BY THE CONTRACTOR'S FAILURE TO PLAN FOUNDATION WORK AS SOON AS POSSIBLE IN THE CONTRACTOR'S PROGRESS SCHEDULE.

THIS ITEM SHALL INCLUDE FURNISHING AND INSTALLING AN ADDITIONAL 3" CONDUIT ELL IN THE FOUNDATION AND CAPPING IT FOR FUTURE USE. LOCATIONS AND OREINTATIONS OF ADDITIONAL CONDUITS WILL BE AS SPECIFIED IN THE PLANS.

PAYMENT FOR ITEM 632 - SIGNAL SUPPORT FOUNDATION, AS PER PLAN SHALL BE MADE AT THE UNIT CONTRACT PRICE BID PER EACH. PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIAL, TOOLS, EQUIPMENT, AND OTHER INCIDENTALS NECESSARY TO EXCAVATE AND BUILD THE FOUNDATION SYSTEM, COMPLETE IN PLACE AND ACCEPTED.

GROUNDING AND BONDING

THE REQUIREMENTS OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMS) 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 (CMS 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 (CMS 725.051 OR CMS 725.052), 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.

GROUNDING AND BONDING (CONTINUED)

- CONDUITS.
 - THE CMS 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 CMS 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.
- 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.I. 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.I. 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. 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
- 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 SPICE.
 - 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.

GROUNDING AND BONDING (CONTINUED)

- 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.

ITEM 632 - COMBINATION SIGNAL SUPPORT, TYPE TC-12.31 DESIGN 10 POLE, WITH MAST ARMS TC-81.22 DESIGN 13 AND DESIGN 12, AS PER PLAN OR ITEM 632 - COMBINATION SIGNAL SUPPORT, TYPE TC-12.31 DESIGN 10 POLE, WITH MAST ARMS TC-81.22 DESIGN 13 AND DESIGN 13, AS PER PLAN

IN ADDITION TO PROVISIONS OF THE ODOT CMS, FURNISH AND INSTALL ORNAMENTAL SIGNAL SUPPORTS AS SPECIFIED IN THE PLANS. THE SIGNAL SUPPORT DESIGNER SHALL PROVIDE DRAWINGS OF A SIGNAL SUPPORT WITH STRUCTURAL ASPECTS OF THE DESIGN AND MATERIALS IN COMPLIANCE WITH THE 2013 AASHTO STANDARD SPECIFICATIONS, WITH 2022 INTERIM REVISIONS, FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS. THE SIGNAL SUPPORT SHALL BE ASTM A595 GRADE A WITH A MINIMUM YIELD STRENGTH OF 50 KSI.

THE FOLLOWING DESIGN PARAMETERS SHALL BE USED:

- BASIC WIND SPEED = 90 MPH
- DESIGN LIFE = 25 YEARS
- FATIGUE CATEGORY = III
- GALLOPING: NO
- TRUCK INDUCED GUST: NO

SUBMIT, TO THE ENGINEER PRIOR TO INCORPORATION: TWO COPIES OF THE SIGNAL SUPPORT DRAWINGS AND SHOP DRAWINGS, WHICH IDENTIFY AND DESCRIBE EACH MANUFACTURED SIGNAL SUPPORT AND SIGNAL SUPPORT ITEM WHICH IS BEING INCORPORATED INTO THE CONSTRUCTION. THE SIGNAL SUPPORT DRAWINGS AND SHOP DRAWINGS SHALL EACH BE REVIEWED, SEALED, STAMPED, AND DATED BY ONE (1) OHIO REGISTERED PROFESSIONAL ENGINEERS. PAYMENT FOR ITEM 632 "COMBINATION SIGNAL SUPPORT, TYPE TC-12.31 DESIGN 10 POLE, WITH MAST ARMS TC-81.22 DESIGN 13 AND DESIGN 12, AS PER PLAN OR ITEM 632 "COMBINATION SIGNAL SUPPORT, TYPE TC-12.31 DESIGN 10 POLE, WITH MAST ARMS TC-81.22 DESIGN 13 AND DESIGN 13, AS PER PLAN" SHALL BE MADE AT THE CONTRACT UNIT PRICE PER EACH COMPLETE AND IN PLACE AND SHALL INCLUDE ALL SIGNAL SUPPORT DESIGN, LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.

THE ORNAMENTAL MAST ARM SIGNAL SUPPORTS SHALL BE AS MANUFACTURED BY AMERON POLE PRODUCTS (TULSA, OK) INCLUDING A 36" WASHINGTON DECORATIVE CLAM SHELL BASE BY SPRING CITY ELECTRICAL (SPRING CITY, PA) TO MATCH THE EXISTING STREET LIGHTING POLES. THE SIGNAL SUPPORT UPRIGHTS AND MAST ARMS SHALL BE TAPERED AND ROUND. THE POLE MAST ARMS SHALL BE A SMOOTH TAPERED DESIGN WITH A 60" UPSWEEP (15' MAST ARM ATTACHMENT) AS SHOWN ON THE POLE DETAILS IN THE PLANS. THE TOP OF THE UPRIGHT SHALL BE FITTED WITH A SPRING CITY EDGEWATER DECORATIVE SPIKE FINIAL. THE DECORATIVE CLAM SHELL BASE SHALL BE MADE FROM CAST DUCTILE IRON PER ASTM A536-84 GRADE 65-45-12. THE POLES AND ARMS SHALL BE HOT DIPPED GALVANIZED PER ASTM A123 FOLLOWED BY A POWDER COAT OF OGF SUPER WET GLOSS BLACK THERMOSETTING SUPER DURABLE POWDER. THE POLE FINISH SHALL INCLUDE A 5-YEAR WARRANTY PER ODOT SS 916. THE POLE FINISH SHALL BE EQUAL TO FEDERAL 595B COLOR #17038 GLOSS BLACK. ALL MATERIALS SUPPLIED SHALL BE MANUFACTURED IN ACCORDANCE WITH THE BUY AMERICA PROVISIONS OF 23 CFR 635.410(C)(6), FHWA BUY AMERICA 23 U.S.C. 313 REQUIREMENTS AND THE BUILD AMERICA, BUY AMERICA (BABA) REQUIREMENTS. PAYMENT WILL BE AT THE CONTRACT UNIT PRICE FOR EACH, IN PLACE, ALL CONNECTIONS MADE AND WIRING COMPLETED, TESTED AND ACCEPTED.

ITEM 632 - PEDESTAL, 8", TRANSFORMER BASE

IN ADDITION TO THE REQUIREMENTS OF ODOT SPECIFICATION 632, 732, AND TC-83.20 PEDESTAL POLE BY HEIGHT, SHALL BE MANUFACTURED AS FOLLOWS TO MATCH THE EXISTING STREET LIGHTING POLES: THE POLE SHALL BE HAPCO ARLEN 17 SERIES STRAIGHT ALUMINUM POLE WITH A 12 FLUTE CROSS SECTION. THE TOP OF THE POLE SHALL BE FITTED WITH A POLE CAP OR TENON AS REQUIRED. THE POLES SHALL BE POWDER COATED PER AAMA 2604 (SUPER DURABLE). ALL STEPS INVOLVED IN THE FINISHING OF THE STRUCTURES SHALL BE COMPLETED AT THE LOCATION AT WHICH THE POLES WERE MANUFACTURED. THE POLE FINISH SHALL INCLUDE A 5-YEAR WARRANTY PER ODOT SS 916. THE POLE COLOR SHALL BE EQUAL TO FEDERAL 595B COLOR #17038 GLOSS BLACK (HAPCO P742). THE PEDESTAL ASSEMBLY SHALL BE HAPCO POLE PRODUCTS PART NUMBER ATS-08B4-4-SF12-P742.

TRAFFIC SIGNAL NOTES

DESIGN AGENCY



DESIGNER
PRS

REVIEWER
ALP 5-30-23

PROJECT ID
109934

SHEET TOTAL
59 67

ADDENDUM 1		
1	11/16/23	REVISE ITEM 632 SIGNAL SUPPORT, PEDESTAL NOTES