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ITEM 633 CONTROLLER, ACTUATED, EIGHT PHASE, SOLID STATE DIGITAL MICROPROCESSOR, WITH INTERNAL TIME BASE COORDINATION, WITH BASE MOUNTED CABINET, AS PER PLAN.

THE CONTROLLER SHALL BE A TRANSYT CORP. MODEL 1880 EL EIGHT (8) PHASE TIMMER WITH TELEMETRY, INTERVAL TIME BASE, PREEMPT, COORDINATION AND DETECTOR TIMING FUNCTIONS.

THE CONTROLLER SHALL BE HOUSED IN AN EIGHT (8) PHASE TYPE "P" CABINET WITH TWELVE POSITION BACK PANEL. THE CABINET WILL INCLUDE COMPLETE SYSTEM MONITORING, LOCAL FLASH, CMU FLASH, DOOR OPEN, TELEMETRY ISOLATION BOARDS AND FOUR (4) PEDESTRIAN OPTICALLY ISOLATED CALL INPUTS. THE CONFLICT MONITOR SHALL BE A TWELVE CHANNEL NEMA PLUS.

IN ADDITION TO NEMA REQUIREMENTS, THE CONFLICT MONITOR SHALL HAVE EXTENDED MONITORING, IN ACCORDANCE WITH 733.04, PART 3b. THE CONFLICT MONITOR SHALL INDEPENDENTLY MONITOR THE SIGNAL HEADS FOR EACH APPROACH. THE CONTROLLER SHALL BE KEYBOARD ENTRY. THE CONTROLLER HOUSING SHALL BE KEYS TO THE STATE MASTER. ALL ELECTRICAL CONNECTIONS ON THE BACK SIDE OF THE LOAD BAY PANEL SHALL BE SOLDERED.

AUXILIARY EQUIPMENT SHALL BE PROVIDED TO OPERATE THE "PREPARE TO STOP WHEN FLASHING" (PTSWF) SIGN BEACONS, AS PER PLAN. THE AUXILIARY EQUIPMENT SHALL BE SET TO HAVE THE "PTSWF" SIGNS START FLASHING SIX (6) SECONDS (WITH VARIABLE ADJUSTMENT FROM ZERO (0) TO TWENTY (20) SECONDS) BEFORE THE TERMINATION OF PHASE 1 GREEN. THE TWO BEACONS OF EACH SIGN SHALL FLASH SIMULTANEOUSLY. THE LUMINAIRE FOR THE "PTSWF" INSTALLATIONS SHALL HAVE A TEST SWITCH IN THE CONTROLLER CABINET AND SHALL HAVE A PHOTOELECTRIC CONTROL UNIT MOUNTED AT THE TOP OF STRAIN POLE A. BOTH LEAD-IN CABLES FOR THE "PTSWF" SIGN SHALL ENTER THE CONTROLLER HOUSING.

SEPARATE FLASHING UNITS WITH INDICATOR LIGHTS SHALL BE PROVIDED FOR THE "PTSWF" SIGN CIRCUITS THAT ARE INDEPENDENT OF THE FLASHER UNIT INCIDENTAL TO THE CONTROLLER. THE BEACONS FOR THE "PTSWF" SIGNS SHALL NOT BE ACTIVATED WHEN THE SIGNAL GOES TO THE FLASH MODE. WHEN THE SIGNAL IS IN THE FLASHING MODE, THE FLASHING RED AND AMBER FOR THE SIGNAL HEADS WILL NOT BE SIMULTANEOUSLY RED FOR THE MINOR ROADWAY AND AMBER FOR THE MAJOR ROADWAY.

PAYMENT FOR THE ITEM 633 CONTROLLER, ACTUATED, 8 PHASE, SOLID STATE, DIGITAL, MICROPROCESSOR WITH INTERNAL TIME COORDINATION WITH BASE MOUNTED CABINET WILL BE AT THE CONTRACT BID PRICE FOR EACH COMPLETE AND IN PLACE, INCLUDING ALL CONNECTIONS TESTED AND ACCEPTED.

POWER SUPPLY FOR TRAFFIC SIGNALS

ELECTRIC POWER SHALL BE OBTAINED FROM THE OHIO POWER COMPANY, 301 CLEVELAND AVE SW, P.O. BOX 24400, CANTON, OHIO 44701. POWER SUPPLIED SHALL BE 120 VOLTS.

UNDERGROUND UTILITIES

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

OHIO POWER CO. 301 CLEVELAND AVE SW P.O. BOX 24400 CANTON, OHIO 44701-4400 PHONE 216-456-8173	AMERITECH 150 EAST GAY STREET ROOM 6C COLUMBUS, OHIO 43215 PHONE: 614-223-8535
ZANESVILLE CITY WATER & SEWER CO. MUNICIPAL BUILDING, ROOM 2 ZANESVILLE, OHIO 43701 PHONE: 614-455-0650	COLUMBIA GAS OF OHIO 216 HIGHLAND AVENUE CAMBRIDGE, OHIO 43725 PHONE: 614-452-5467

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

GUARANTEE

THE CONTRACTOR SHALL GUARANTEE THAT THE TRAFFIC CONTROL SYSTEM INSTALLED AS PART OF THE CONTRACT SHALL OPERATE SATISFACTORILY FOR A PERIOD OF NINETY (90) DAYS FOLLOWING COMPLETION OF THE TEN DAY PERFORMANCE TEST. IN THE EVENT OF UNSATISFACTORY OPERATION, THE CONTRACTOR SHALL CORRECT FAULTY INSTALLATIONS, MAKE REPAIRS AND REPLACE DEFECTIVE PARTS WITH NEW PARTS OF EQUAL OR BETTER QUALITY. MATERIAL AND LABOR COSTS INCURRED IN CORRECTING UNSATISFACTORY OPERATION SHALL BE BORNE BY THE CONTRACTOR. THE GUARANTEE SHALL COVER THE FOLLOWING ITEMS OF THE TRAFFIC CONTROL SYSTEM: CONTROLLER, LOOP DETECTOR UNITS, MONITORS AND ASSOCIATED EQUIPMENT. THE COST OF GUARANTEEING THE TRAFFIC CONTROL SYSTEM WILL BE INCIDENTAL TO AND INCLUDED IN THE CONTRACT UNIT PRICE OF THE VARIOUS ITEMS MAKING UP THE SYSTEM.

632 LOOP DETECTOR UNIT, BY TYPE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF 632 AND 732.07 OR 732.08, LOOP DETECTOR UNITS SHALL HAVE THE FOLLOWING REQUIREMENTS OR FEATURES: THE OUTPUT DEVICE SHALL BE AN ELECTRO-MECHANICAL RELAY, AND ALL CONTACTS SHALL BE INCLUDED IN THE WIRING HARNESS, THE UNITS SHALL BE SELF-TUNING, ALL UNITS SHALL BE SINGLE CHANNEL DELAY AND EXTENSION TYPE.

TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS

REFERENCE TO SUPPLEMENTAL SPECIFICATIONS 857, 858, 861, 957, 958 AND 961 ON THE TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS IN THESE PLANS SHALL BE CONSIDERED TO READ AS RESPECTIVE REFERENCES TO ITEM 630, 631, 633, 730, 731, AND 733.

REFERENCES TO ITEM 608, 4" CONCRETE WALK ON THE TRAFFIC CONTROL STANDARD CONSTRUCTION IN THESE PLANS SHALL BE CONSIDERED TO READ 633, CONTROLLER WORK PAD. REFERENCES TO STANDARD CONSTRUCTION DRAWING HL-2 SHALL BE CONSIDERED TO READ AS REFERENCED TO THE STANDARD CONSTRUCTION DRAWING HL-10.12.

614 MAINTAINING TRAFFIC, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 614 MAINTAINING TRAFFIC, THE FOLLOWING SHALL APPLY:

NO LANE CLOSURE SHALL BE IMPLEMENTED DURING THE HOURS OF 6:00 A.M. TO 9:00 A.M. OR 3:00 P.M. TO 6:00 P.M. WEEKDAYS. WHEN IT IS NECESSARY TO CLOSE ONE LANE OF TRAFFIC ADJACENT TO THE WORK, THE CLOSURE SHALL BE ACCOMPLISHED BY THE APPLICATION OF TRAFFIC CONTROL DEVICES AS SHOWN ON ODOT STANDARD DRAWING MT-97.10. ALL ADVANCE WARNING SIGNS FOR ANY CONDITION WHICH RESTRICTS TRAFFIC SHALL BE ERECTED BEFORE ANY SUCH RESTRICTION IS PUT INTO EFFECT. ALL SUCH SIGNS SHALL BE COVERED OR REMOVED FROM THE VIEW OF TRAFFIC WHEN THEY ARE NOT APPLICABLE, AS DETERMINED BY THE ENGINEER.

FOR WORK WHICH IS CONFINED TO THE SHOULDER, TRAFFIC CONTROL SHALL CONFORM TO FIGURES C-11 THROUGH C-13 OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD). IF THE CONTRACTOR FAILS TO COMPLY WITH THE PROVISIONS FOR TRAFFIC CONTROL AS SET FORTH IN THESE PLANS AND PROVISIONS OF THE OMUTCD AND THE FAILURE RESULTS IN A CONDITION AT THE WORK SITE WHICH IS UNSAFE FOR TRAFFIC, THE ENGINEER SHALL SUSPEND WORK UNTIL THE CONTRACTOR COMPLIES WITH THE NECESSARY REQUIREMENTS.

TWO WAY TRAFFIC ON A MINIMUM OF ONE 12-FOOT LANE SHALL BE MAINTAINED BY USE OF THE EXISTING PAVEMENT. TWO-WAY ONE LANE TRAFFIC MAY BE PERMITTED DURING PLACEMENT OF LOOPS, SIGNAL SUPPORTS, OVERHEAD SIGNS, AND TRAFFIC SIGNAL HEADS, SUBJECT TO THE APPROVAL OF THE ENGINEER. SHORT DURATION CLOSURE (10 MINUTES) MAY BE PERMITTED UNDER THE DIRECTION OF FLAGGER(S) OR LAW ENFORCEMENT OFFICER(S) (LEO) TO ERECT SPAN WIRE. PAYMENTS FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR ITEM 614 MAINTAINING TRAFFIC.

UNDERDRAINS FOR PULLBOXES

REFERENCE IS MADE TO STANDARD CONSTRUCTION DRAWINGS FOR DETAILS OF DRAINING PULLBOXES. UNDERDRAINS FOR PULLBOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHERE THE LENGTH REQUIRED FOR A SATISFACTORY OUTLET DOES NOT EXCEED APPROXIMATELY 20 FEET. AN ESTIMATED QUANTITY OF 50 LIN. FT. OF ITEM 603 4" CONDUIT TYPE E IS INCLUDED IN THE GENERAL SUMMARY FOR THIS PURPOSE.

632 VEHICULAR SIGNAL HEAD, BY TYPE, AS PER PLAN

BALANCE ADJUSTERS, SHOWN ON TC-85.20 OF THE STANDARD CONSTRUCTION DRAWINGS SHALL NOT BE USED.

ALL WIRE ENTRANCES AND TWO WAY MOUNTING BRACKETS SHALL UTILIZE TRI-STUD TYPE HARDWARE TO MOUNT THE SIGNAL HEAD TO THE WIRE ENTRANCES OR TWO WAY MOUNTING BRACKET.

ADJUSTABLE SIGNAL HANGERS SHALL BE USED IN PLACE OF DROP PIPE TO MAINTAIN UNIFORM SIGNAL HEAD CLEARANCES WHEN REQUIRED. THE ADJUSTABLE SIGNAL HANGER SHALL UTILIZE TRI-STUD TYPE MOUNTING HARDWARE TO ATTACH THE SIGNAL HEAD TO THE HANGER.

THIS ITEM SHALL CONFORM TO ITEM 632 EXCEPT THE ENTRANCE FITTING SHALL BE OF THE TRI-STUD DESIGN WITH SERRATED RINGS IN ORDER TO ACHIEVE POSITIVE LOCKING.

ALL SIGNAL HEADS SHALL UTILIZE TUNNEL VISORS WITH AN OPENING AT THE BOTTOM.

ITEM 614 STOP-AND-GO SIGNAL ACTUATION

THE NEW SIGNAL, INSTALLED BY THE CONTRACTOR, SHALL OPERATE IN A "FLASH" MODE FOR SEVEN CONSECUTIVE DAYS BEFORE BEING PLACED IN A "STOP-AND-GO" MODE FOR THE TEN DAY BURN TEST.

THE SIGNAL SHALL NOT BE PLACED IN "STOP-AND-GO" OPERATION EITHER THE DAY PRECEDING OR DURING:

- A) A NATIONAL HOLIDAY
- B) A HOLIDAY WEEKEND
- C) A WEEKEND

A DAY BETWEEN A NATIONAL HOLIDAY AND A SATURDAY OR SUNDAY IS CONSIDERED A PART OF THE WEEKEND (EX: THE FRIDAY AFTER THANKSGIVING IS CONSIDERED PART OF THE WEEKEND).

WITH THE EXCEPTION OF PERMANENT SUPPORTS AND SIGNAL AHEAD SIGNS INCLUDED AS BID ITEMS IN THE PLAN, THE COST OF ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS ITEM ARE INCLUDED IN ITEM 614 MAINTAINING TRAFFIC.

631 SIGN FLASHER ASSEMBLY, AS PER PLAN

THE SIGN FLASHER ASSEMBLY SHALL INCLUDE A PAIR OF FLASHING BEACONS FOR PLACEMENT ABOVE AND BELOW THE "PREPARE TO STOP WHEN FLASHING" SIGNS, MERCURY VAPOR LUMINAIRE WITH SUPPORT ARM AND ALL MOUNTING HARDWARE AS SHOWN IN THE DETAIL. A BEACON SHALL CONSIST OF A SINGLE 12-INCH SIGNAL HEAD AND YELLOW LENS WITH NOMINAL 60 WATT LAMP COMPLYING WITH REQUIREMENTS OF ITEM 632. ITEM 631 SIGN FLASHER ASSEMBLY, AS PER PLAN, SHALL BE MEASURED AS A COMPLETE UNIT IN PLACE, TESTED AND ACCEPTED.

CALCULATED
CHECKED

TRAFFIC SIGNAL
GENERAL NOTES

146-60 CONNECTOR ROAD