

TRAFFIC CONTROL GENERAL NOTES

SCOPE

THESE NOTES AND SPECIFICATIONS SUPPLEMENT THE STATE OF OHIO'S CONSTRUCTION AND MATERIAL SPECIFICATIONS AND THE SUPPLEMENTAL SPECIFICATIONS NOTED ON THE TITLE SHEET. THE WORK TO BE PERFORMED BY THE CONTRACTOR IN CONNECTION WITH FURNISHING LABOR, SUPPLIES, EQUIPMENT, MATERIALS, AND PERFORMING ALL OPERATIONS NECESSARY FOR THE ACCEPTABLE INSTALLATION OF THE TRAFFIC CONTROL DEVICES, IN STRICT ACCORDANCE WITH THESE PLANS, NOTES AND SPECIFICATIONS. THESE NOTES, SCHEDULES, AND DRAWINGS ARE INTENDED TO PROVIDE ALL MATERIAL AND LABOR REQUIRED TO FURNISH AND INSTALL A COMPLETE TRAFFIC CONTROL SYSTEM.

ITEM 625 PULL BOX (18" X 24") SQUARE, AS PER PLAN

INSTALLATION OF THE PULL BOXES SHALL INCLUDE ALL THE EXCAVATION, BACKFILLING, GRADING, GRAVEL DRAINAGE FILL AND COMPACTION OF FILL MATERIALS AS SHOWN. THIS ITEM SHALL BE PAID FOR AT THE CONTRACT BID PRICE PER EACH ITEM 625 PULLBOX (18" X 24") AS PER PLAN, INSTALLED IN PLACE COMPLETED, ACCEPTED AND READY FOR SERVICE. THE PRICE PAID SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM AS SPECIFIED. THE COVER SHALL BE SECURED WITH TWO (2) RECESSED STAINLESS STEEL HEX-HEAD BOLTS AND THREADED INSERTS.

ITEM 625 - PULLBOX, MISC.: 13" X 24", AS PER PLAN

THIS ITEM SHALL BE USED FOR ANY PULLBOX LOCATED WITHIN THE SIDEWALK
SIZE: BOX - 13" X 24" X 26" DEEP (NOMINAL). BOX TO TAPER OUTWARD FROM TOP TO THE OPEN BOTTOM. INSIDE BOTTOM DIMENSIONS 20" W X 29.5" L MINIMUM.
COVER - 13 3/4" X 23 1/4" X 2" OVERALL HEIGHT. WT: 50LBS.
BOLTS - 1/4" HEXHEAD STAINLESS STEEL BOLTS AND STAINLESS STEEL THREADED INSERTS
LOAD CAPACITY: 15,000 LBS. ON A 10" X 10" AREA TESTED IN ACCORDANCE WITH WESTERN UNDERGROUND COMMITTEE GUIDE 3.6 COVER DEFLECTION TO BE LESS THAN 1/2" AT DESIGN LOAD AND SHOW NO SIGNS OF DAMAGE AFTER TEN CYCLES AT DESIGN LOAD.

MATERIAL AND CONSTRUCTION:

BOX - THE BODY SHALL BE MADE OF FIBERGLASS REINFORCED POLYMER (FRP) WITH ISOPHTHALIT POLYESTER USING THE SPRAY-UP AND ROLL CONSTRUCTION METHOD. THE MATERIAL SHALL HAVE STABILIZERS TO RESIST UV DEGRADATION IN ACCORDANCE WITH ASTM D-790 AND ASTM D-11501-74 SECTION 6, PROCEDURE B. THE TOP RING OF THE BOX SHALL BE MADE OF POLYMER CONCRETE USING A POLYESTER BINDER WITH AGGREGATE FILLERS AND CHOPPED FIBERGLASS WITH A MINIMUM TENSILE STRENGTH OF 1900 PSI. THE RING SHALL HAVE THE SAME UV RESISTANCE AS THE FRP MATERIAL. THE THREADED INSERTS (2) FOR THE COVER BOLTS SHALL BE STAINLESS STEEL.

COVER - THE COVER SHALL BE MADE WITH A THICK MOLDING COMPOUND (TMC) USING THE COMPRESSION MOLDING METHOD. THE TMC SHALL CONSIST OF A MINIMUM 10% FIBERGLASS IN A CALCIUM CARBONATE AND POLYESTER RESIN MATRIX. THE COVER SHALL BE MARKED "TRAFFIC" AND HAVE A NON-SKID SURFACE AND THE SAME UV RESISTANCE AS THE FRP MATERIAL. TWO RECESSED HEX HEAD STAINLESS STEEL BOLTS AND WASHERS SHALL BE USED TO SECURE THE COVER TO THE BOX.

CONDUIT OPENINGS: OPENINGS IN THE SIDE OF THE PULLBOX WHICH ARE REQUIRED TO INSERT CONDUIT (INTO THE PULLBOX) SHALL BE DRILLED IN THE FIELD, ONCE THESE LOCATIONS HAVE BEEN DETERMINED. THE OPENING SHALL NOT EXCEED THE CONDUIT OUTSIDE DIAMETER BY MORE THAN FIVE (5) PERCENT. ALL OPENINGS IN THE PULLBOX SHALL BE THOROUGHLY GROUTED WITH CEMENT MORTAR AFTER PLACING THE CONDUIT. OPENINGS SHALL NOT BE MADE AT THE THICKENED EDGES OF THE PULLBOX.

ITEM 632 VEHICULAR SIGNAL HEAD, 3-SECTION, & 5-SECTION 12" LENS, 1-WAY AS PER PLAN

SECTION 732.01 OF THE SPECIFICATIONS IS MODIFIED FOR THIS PROJECT AS FOLLOWS:

- SIGNAL HEADS AND VISORS SHALL BE CONSTRUCTED OF UV STABILIZED POLYCARBONATE PLASTIC AND MEET ITE SPECIFICATIONS;
- PLASTIC LENSES SHALL BE USED;
- PIPE, SPACERS, AND FITTINGS CONSTRUCTED OF GALVANIZED STEEL OR ALUMINUM;
- PROPER EXTERIOR COLORS SHALL BE OBTAINED BY THE USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING;
- VEHICULAR SIGNAL HEADS SHALL HAVE A FEDERAL YELLOW FINISH.
- SIGNAL HEADS SHALL BE RIGIDLY MOUNTED ON THE MAST ARMS, WITH THE CENTERLINE RED LENS MATCHING TO CENTERLINE OF MAST ARM.

THE CITY SHALL FIELD LOCATE ALL SIGNAL HEADS FOR THE CONTRACTOR.

CITY OF MENTOR CONTACT PERSON:

MR. PAUL CIUPA
ASSISTANT TO THE CITY ENGINEER - TRAFFIC
(216)255-1100

ITEM 632 SIGNAL SUPPORT TYPE TC-81.20 DESIGN _____ ARM, AS PER PLAN

THE CONTRACTOR SHALL FIELD DRILL ALL HOLES INTO THE SIGNAL SUPPORT FOR VEHICLE SIGNAL HEADS, PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN PUSHBUTTONS. THE VEHICLE SIGNAL HEADS, PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN PUSHBUTTONS ARE TO BE LOCATED BY THE CITY OF MENTOR BEFORE THE CONTRACTOR FIELD DRILLS THE HOLES. NO PRE-DRILLED SIGNAL WIRING HOLES WILL BE ALLOWED.

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UNDERDRAINS FOR PULL BOXES

AN UNDERDRAIN SHALL BE INSTALLED FOR EACH PULLBOX TO THE CLOSEST INLET OR UNDERDRAIN. THE LENGTH OF OUTLET SHALL NOT EXCEED 20 FEET. AN ESTIMATED QUANTITY OF 100 LINEAR FEET OF ITEM 603, 4" CONDUIT, TYPE E, 707.15 IS INCLUDED IN THE GENERAL SUMMARY FOR THIS PURPOSE.

ITEM 632 REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN

TRAFFIC SIGNAL INSTALLATIONS, INCLUDING SIGNAL HEADS, STRAIN POLES, CABINET AND CONTROLLER SHALL BE STORED ON THE PROJECT FOR SALVAGE BY THE CITY OF MENTOR IN ACCORDANCE WITH THE FOLLOWING LISTING.

ITEMS TO BE STORED ARE:

ALL SIGNAL HEADS
ALL CONTROLLERS W/CABINETS AND ACCESSORIES
EXISTING STRAIN POLES (STEEL)
EXISTING PEDESTALS
PEDESTRIAN SIGNAL HEADS AND PUSHBUTTONS
SCHOOL FLASHER SIGNS
CLOSED LOOP MASTER CONTROLLER
PULLBOXES

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

ITEM 632 PEDESTRIAN SIGNAL HEADS, TYPE D-2, AS PER PLAN

SECTION 732.05 OF THE SPECIFICATIONS IS MODIFIED FOR THIS PROJECT AS FOLLOWS:

- SIGNAL HEADS AND VISORS SHALL BE CONSTRUCTED OF ALUMINUM AND MEET ITE SPECIFICATIONS.
- PLASTIC LENSES SHALL BE USED.
- PIPE, SPACERS, AND FITTINGS SHALL BE CONSTRUCTED OF ALUMINUM AND MEET ITE SPECIFICATIONS.
- LAMPS SHALL BE RATED FROM 8000 BURNING HOURS, AND SHALL BE A MINIMUM OF 116 WATTS.
- THE PEDESTRIAN SIGNALS SHALL HAVE A BLACK OUTSIDE COLOR.
- THE PEDESTRIAN SIGNALS SHALL BE CLAM SHELL MOUNTED.

ITEM 632 LOOP DETECTOR UNITS, DELAY AND EXTENSION TYPE, AS PER PLAN

- EACH AMPLIFIER SHALL BE NUMBERED TO CORRESPOND TO ITS LOOP NUMBER, DIRECTION/LANE (I.E., WBLL, WBRLL, WBLT, ...) AND PHASE. THE LOOP NUMBERS AND PHASES ARE SHOWN ON THE INTERSECTION SIGNAL PLANS.
- THE AMPLIFIER SHALL BE AUTOMATICALLY SELF TUNING, RELAY TYPE AND ALL CONTACTS SHALL BE INCLUDED IN THE WIRING HARNESS.
- THE UNITS ELECTRICAL CONNECTION PLUGS OR WIRING HARNESS SHALL ALLOW READY REPLACEMENTS WITH SINGLE CHANNEL AMPLIFIER AS DESCRIBED IN 732.07.
- EACH AMPLIFIER SHALL HAVE SYSTEM LOOP OUTPUT FEATURES FOR I VOLUME, II OCCUPANCY. THE COUNT OUTPUT SHALL BE WIRED SO THAT COUNTS CAN BE OBTAINED BY UPLOADING THROUGH A LAPTOP MICROCOMPUTER OR A TELEPHONE MODEM DIALED UP BY A PERSONAL COMPUTER.

ITEM 632 DETECTOR LOOP, AS PER PLAN

VEHICLE LOOP DETECTORS SHALL BE INSTALLED IN THE LEVELING COURSE BEFORE FINAL OVERLAY.

THE SIGNAL CONTRACTOR SHALL CONTACT THE CITY OF MENTOR ENGINEERING DEPARTMENT BEFORE INSTALLATION OF VEHICLE DETECTION LOOPS FOR ASSISTANCE IN LOCATION MARKING.

ITEM 633 CONTROLLER, ACTUATED, BY PHASE, SOLID STATE DIGITAL MICROPROCESSOR, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING ACTUATED, SOLID STATE DIGITAL MICROPROCESSOR TYPE CONTROLLERS WITH SECONDARY COORDINATOR, MENU DRIVEN PROMPTS, INTERNAL TBC, TELEMETRY UNIT, AND ALL OTHER ACCESSORIES THAT ARE NECESSARY TO MAKE THE CONTROLLER COMPLETELY FUNCTIONAL AND OPERATIONAL AS SHOWN IN THE PLANS WITH THE CITY'S CLOSED LOOP SYSTEM.

THE CONTROLLER AND CABINET SHALL CONFORM TO O. D. O. T. SPECIFICATION 633 AND SHALL HAVE THE FOLLOWING FEATURES:

- THE CABINET SHALL BE A P44 WITH A REAR DOOR FOR BACKPANEL ACCESS AND A 16 POSITION BACKPANEL.
- THE LOAD SWITCHES SHALL PROVIDE INPUT AND OUTPUT INDICATIONS
- THE CONFLICT MONITOR SHALL BE CAPABLE OF 12 CHANNEL MONITORING, AS PER PLAN AND HAVE EXTENDED MONITORING, LCD DISPLAY, FAULT/EVENT STORAGE AND REPORTING.
- THE FOLLOWING SWITCHES SHALL BE ACCESSIBLE VIA THE POLICE PANEL DOOR:
 - SIGNAL SHUTDOWN
 - FLASH CONTROL
 - MANUAL CONTROL JACK, ACTIVATING MANUAL CONTROL WITH SEPARATE MANUAL PUSHBUTTON CORD.
- THE FOLLOWING SWITCHES SHALL BE MOUNTED ON THE SWITCH PANEL IN THE CABINET:
 - RUN-STOP NORMAL
 - CONTROLLER SHUTDOWN
 - DETECTOR TEST
- A FLORESCENT SERVICE LAMP WITH DOOR ACTIVATED ON/OFF SWITCH.
- THE CABINET EXTERIOR SHALL BE ALUMINUM COLORED AND THE INTERIOR SHALL BE WHITE.
- THE CONTRACTOR SHALL FURNISH FOR APPROVAL A CABINET PLAN SHOWING COMPONENT PLACEMENT.
- THE CONTRACTOR SHALL CONTACT THE CITY ENGINEER FOR THE REQUIRED HOOK-UPS OF BOTH THE GRAPHICS CHANNELS AND THE SYSTEM LOOP CHANNEL ASSIGNMENTS.
- ONE SPARE CONDUIT TO THE CLOSEST PULLBOX.
- THE CONTROLLER SHALL BE A TRANSYT 3000.

TRAFFIC CONTROL STANDARD 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 ITEMS 630, 631, 633, 730, 731, AND 733.

ITEM 632 CONCRETE FOR ANCHOR BASE FOUNDATIONS

THE SIGNAL SUPPORT FOUNDATIONS SHALL BE INSTALLED PRIOR TO THE CONTRACTOR ORDERING THE SIGNAL SUPPORTS. IF THE SIGNAL SUPPORT FOUNDATION HAS TO BE RELOCATED DUE TO CONFLICTS WITH EXISTING UTILITIES, THE LOCATION OF THE RELOCATED FOUNDATION SHALL BE APPROVED BY THE ENGINEER. IF THE REVISED LOCATION REQUIRES THE REDESIGN OF THE SIGNAL SUPPORT, THE ENGINEER WILL PROVIDE THE REDESIGN PRIOR TO INSTALLING THE FOUNDATION. IF NECESSARY TO ENSURE PROPER ANCHOR BOLT SIZES, THE CONTRACTOR CAN DRILL THE HOLE FOR THE FOUNDATION AND LEAVE IT SECURELY COVERED PRIOR TO ORDERING ANCHOR BOLTS AND SIGNAL SUPPORTS. THE FOUNDATION SHOULD BE CONSTRUCTED AS SOON AS THE ANCHOR BOLTS ARE AVAILABLE. IF A REDESIGN OF THE SIGNAL SUPPORT IS REQUIRED DUE TO UTILITY CONFLICTS, THE CONTRACTOR WILL NOT BE ALLOWED A TIME EXTENSION, THEREFORE THE FOUNDATIONS SHOULD BE INSTALLED AS SOON AS POSSIBLE DURING THE CONSTRUCTION PROJECT.

ITEM 630 SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN

SIGNS MOUNTED ON PROPOSED TRAFFIC SIGNAL MAST ARMS SHALL BE RIGIDLY ATTACHED TO THE MAST ARM PER TC-16.20 IN. IN LIEU OF TC-41.41 OR ANOTHER METHOD OF RIGID ATTACHMENT AS APPROVED BY THE ENGINEER.

THE CONTRACTOR SHALL INSURE THE SIGN FACE IS MOUNTED PERPENDICULAR (90 DEGREES) TO THE DIRECTION OF TRAFFIC.

PAYMENT FOR ITEM 630 SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN, SHALL BE MADE AT THE CONTRACT UNIT PRICE BID FOR EACH. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, TOOLS, EQUIPMENT AND ALL PARTS TO ERECT ONE INDIVIDUAL SIGN.

ITEM 630 SIGN, DOUBLE FACED, STREET NAME

STREET NAMES SHALL CONSIST OF 4" WHITE LETTERS SERIES C OR D ON A BLUE BACKGROUND. THE SIGN HEIGHT SHALL BE 8" HIGH WITH THE WIDTH RANGING 24" TO 36".