

**ROADWAY**

**WORK LIMITS**

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

**CLEARING AND GRUBBING**

A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

**ADA RAMP LOCATIONS**

ALL RAMP LOCATIONS INDICATED ON THESE PLANS ARE APPROXIMATE. ALL LOCATIONS AND ITEMS ARE SUBJECT TO ADJUSTMENT IN THE FIELD "AS DIRECTED BY THE ENGINEER" AT NO ADDITIONAL COST.

**PAVEMENT WARPING - AS DIRECTED BY THE ENGINEER**

CONTINGENCY QUANTITIES HAVE BEEN PROVIDED FOR PAVEMENT WARPING. AT THE DIRECTION OF THE ENGINEER, THE CONTRACTOR SHALL USE THESE QUANTITIES TO ENSURE POSITIVE DRAINAGE AT THE INTERSECTIONS LISTED BELOW OR AT OTHER LOCATIONS AS DIRECTED BY THE ENGINEER:

SUPERIOR AVE. & EMILY ST.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR PAVEMENT WARPING:

**ITEM 441 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PR64-22 4 CY**

**ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE 30 SY**

**ITEM 202 - REMOVAL ITEMS**

THE COST OF REMOVING AND DISPOSING OF ITEMS PURSUANT TO ITEM 202.05 INCLUDING, BUT NOT LIMITED TO, SIDEWALK REMOVALS SHALL INCLUDE THE COST FOR SAW CUTTING.

**ITEM 253 - PAVEMENT REPAIR, MISC.: STREET OPENING REPAIR, TYPE A AND TYPE B**

PAYMENT SHALL INCLUDE ALL MATERIALS AND WORK NECESSARY TO PERFORM PAVEMENT REPAIR TO THE LIMITS SHOWN IN THE PLANS.

**ITEM 202 - PAVEMENT REMOVED, AS PER PLAN**

IT IS ANTICIPATED THAT OLD STREETCAR TRACKS ARE BURIED UNDER THE EXISTING ASPHALT ALONG EUCLID AVENUE IN EAST CLEVELAND. THE EXACT LOCATION, LIMITS, AND TYPE OF TRACK IS UNKNOWN, BUT RECORD DRAWINGS FOR PORTIONS OF EUCLID FROM 1948 SUGGEST THAT THE TRACKBED IS APPROXIMATELY 18' WIDE, WITH ONE TRACK IN EACH DIRECTION, SYMMETRIC ABOUT THE CENTER OF PAVEMENT. THE

REMOVAL OF THE TRACKS IS NOT REQUIRED FOR THIS PROJECT. THE PROPOSED CONCRETE MEDIAN SHALL BE PLACED ON TOP OF THE TRACKS AND BACKFILL WITH ASPHALT. REMOVE EXISTING ASPHALT CONCRETE PAVEMENT FROM ABOVE EXISTING STREETCAR RAIL AND TIES TO ALLOW PLACEMENT OF PROPOSED CONCRETE MEDIAN, TYPE 6 CURB, AND REPLACEMENT ASPHALT PAVEMENT AROUND THE

PERIMETER OF PROPOSED MEDIAN ISLANDS. SAWCUT THE PERIMETER OF THE EXISTING PAVEMENT REMOVAL LIMITS TO A MINIMUM DEPTH OF 4". A FULL DEPTH SAWCUT IS NOT REQUIRED AND SHOULD BE AVOIDED TO PREVENT CATCHING THE SAW BLADE ON THE EXPECTED BURIED RAIL. SAWCUTTING THE PERIMETER OF

REMOVAL LIMITS IS INCIDENTAL TO THIS PAY ITEM.

**ITEM 202 - WALK REMOVED, AS PER PLAN**

THE CONTRACTOR SHALL REMOVE ADA RAMPS TO AN 8-INCH DEPTH. IF THE PAVEMENT IS LESS THAN 8-IN THICK THE CONTRACTOR SHALL EXCAVATE TO A 8-IN DEPTH.

ALL OTHER SIDEWALKS SHALL BE REMOVED TO A 4-IN DEPTH. IF THE SIDEWALK IS LESS THAN 4-IN THICK THE CONTRACTOR SHALL EXCAVATE TO A 4-IN DEPTH.

EXCAVATED SOILS ARE THE CONTRACTOR'S RESPONSIBILITY TO REMOVE AND DISPOSE OF COMPLETELY OFF-SITE.

SIDEWALK SHALL BE REMOVED AT THE NEAREST JOINT. EDGES OF EXISTING CONCRETE SHALL BE SAWCUT SMOOTH.

THE COST FOR EXCAVATION, SOIL REMOVAL, AND SAW CUTTING SHALL BE INCIDENTAL TO THIS ITEM. ALL ITEMS TO RESTORE AREAS WHERE WALK IS REMOVED AND NOT REPLACED, SUCH AS BUT NOT LIMITED TO TOPSOIL, SEEDING, AND MULCHING, SHALL BE INCIDENTAL TO THIS ITEM. NO SEPARATE PAYMENT WILL BE MADE.

**CONTINGENCY QUANTITIES**

THE FOLLOWING QUANTITIES ARE FORWARDED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

**ITEM 203 - EXCAVATION 10 CY**

**ITEM 203 - EMBANKMENT 2 CY**

**ITEM 253 - PAVEMENT REPAIR, MISC.: STREET OPENING REPAIR, TYPE A OR TYPE B 20 SY**

**EROSION CONTROL**

**ITEM 832 - EROSION CONTROL, AS PER PLAN**

ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES AS SPECIFIED HEREIN OR DIRECTED BY THE ENGINEER SHALL BE IN PLACE PRIOR TO ANY EXCAVATION.

CONTRACTOR SHALL PLACE INLET PROTECTION ON ALL EXISTING OR PROPOSED CATCH BASINS DOWNSTREAM FROM UNSTABILIZED AREAS. REFER TO THE OHIO RAINWATER AND LAND DEVELOPMENT MANUAL, CHAPTER 6 FOR DETAILS.

THE FOLLOWING ESTIMATED QUANTITY IS TO BE USED AS PLACED BY THE CONTRACTOR WITH THE ENGINEER'S CONCURRENCE FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES:

**ITEM 832 - EROSION CONTROL, AS PER PLAN - 8400 EACH**

**WATER SUPPLY**

WATER WILL BE SUPPLIED TO THE CONTRACTOR AT THE NEAREST HYDRANT. THE COST OF THE WATER SUPPLY SHALL BE BORNE BY THE CONTRACTOR. THE CONTRACTOR SHALL OBTAIN THE NECESSARY PERMIT FROM THE CITY OF CLEVELAND WATER DEPARTMENT.

THE CONTRACTOR WILL BE REQUIRED TO PROVIDE APPROVED STANDARD TIGHT HOSE AND FITTINGS WITH WHICH TO MAKE CONNECTIONS TO HYDRANTS AND OUTLETS. NO IMPROPER, WASTEFUL OR UNDUE USE OF WATER WILL BE PERMITTED.

**SEEDING AND MULCHING, CLASS 1**

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

659, TOPSOIL	3.33 CU. YD.
659, SEEDING AND MULCHING	30 SQ. YD.
659, REPAIR SEEDING AND MULCHING	1.5 SQ. YD.
659, INTER-SEEDING	1.5 SQ. YD.
659, COMMERCIAL FERTILIZER	0.004 TON
659, LIME	0.001 ACRES
659, WATER	0.081 M. GAL.

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

**DRAINAGE**

**PROPOSED STORM SEWER CONDUIT AND STRUCTURES**

ALL PROPOSED STORM SEWER STRUCTURES IN THE PLANS SHALL BE CONSTRUCTED AS CLOSELY AS POSSIBLE TO THE PROPOSED PLAN LOCATION. IF ADJUSTMENTS ARE NEEDED TO AVOID UTILITY CONFLICTS OR ENSURE PROPER DRAINAGE, CONTRACTOR SHALL REVIEW REVISED LAYOUT WITH ENGINEER FOR APPROVAL PRIOR TO INSTALLATION. THE INTENT AT MOST LOCATIONS IS FOR THE PROPOSED STRUCTURE AND PIPE TO BE INSTALLED AT OR NEAR EXISTING STRUCTURE LOCATIONS AND PIPE ALIGNMENT AND PROFILE. WHERE THE PLANS PROVIDE FOR NEW PIPE TO BE CONNECTED TO AN EXISTING SEWER/STRUCTURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CREATING A NEW OPENING AT THE PROPER SIZE, ALIGNMENT, AND ELEVATION FOR THE CONNECTION. THE OPENING SHALL BE MADE LARGE ENOUGH TO RECEIVE AND JOIN THE PROPOSED PIPE. NO DIRECT PAYMENT SHALL BE MADE. ALL COSTS ASSOCIATED WITH THIS WORK SHALL BE INCLUDED IN THE UNIT PRICED FOR THE PERTINENT 611 ITEMS.

**REVIEW OF DRAINAGE FACILITIES**

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE CITY, REPRESENTATIVES OF THE CITY AND THE CONTRACTOR SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCES SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE CITY.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE CITY.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

ADDITIONALLY, SOME EXISTING DRAINAGE INFORMATION SHOWN ON THESE PLANS IS FROM RECORD PLAN INFORMATION AND COULD NOT BE FIELD VERIFIED. PRIOR TO THE ORDERING OF ANY PRECAST MATERIALS, THE CONTRACTOR SHALL VERIFY AND RECORD THE DEPTHS OF THE EXISTING DRAINAGE STRUCTURES WHICH ARE BEING REMOVED AND REPLACED WITH NEW.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE 611 ITEMS INCLUDED IN THE PLANS.

**BICYCLE-SAFE CATCH BASIN GRATES**

EXISTING CATCH BASINS SHALL BE MODIFIED BY REPLACING THE EXISTING GRATES WITH BICYCLE SAFE GRATES. SPECIFIC LOCATIONS HAVE NOT BEEN IDENTIFIED IN THE PLANS AND SHALL BE LEFT TO THE DISCRETION OF THE ENGINEER. PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED IN ITEM SPECIAL, MISCELLANEOUS METAL.

**ITEM SPECIAL - MISCELLANEOUS METAL**

EXISTING CASTINGS MAY PROVE TO BE UNSUITABLE FOR REUSE, AS DETERMINED BY THE ENGINEER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE CASTINGS OF THE REQUIRED TYPE, SIZE AND STRENGTH (HEAVY DUTY OR LIGHT DUTY) FOR THE PARTICULAR STRUCTURE IN QUESTION. FOR AN CASTINGS THAT REQUIRE REPLACEMENT AND ANY WATER WORK ITEMS, THE CONTRACTOR SHALL USE CITY OF CLEVELAND STANDARDS, EXCEPT THAT ALL MATERIAL SHALL CONFORM TO ITEM 106.09 OF THE CONSTRUCTION AND MATERIALS SPECIFICATION MANUAL AND SHALL HAVE THE PRIOR APPROVAL OF THE ENGINEER.

THE CONTRACTOR IS CAUTIONED TO USE EXTREME CARE IN THE REMOVAL, STORAGE AND REPLACEMENT OF ALL EXISTING CASTINGS. CASTING DAMAGED BY THE NEGLIGENCE OF THE CONTRACTOR, AS DETERMINED BY THE ENGINEER, SHALL BE REPLACED WITH THE PROPER NEW CASTINGS AT THE EXPENSE OF THE CONTRACTOR.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER.

**ITEM SPECIAL - MISCELLANEOUS METAL 500 LB**

**MANHOLE ADJUSTED TO GRADE, AS PER PLAN**

MANHOLES SHALL BE ADJUSTED TO GRADE IN ACCORDANCE WITH PARAGRAPH D.1 OF SECTION 611.10 BY REMOVING THE FRAME AND ADJUSTING THE HEIGHT OF THE SUPPORTING WALLS. ADJUSTING DEVICES THAT SIT ON OR WITHIN THE FRAME ARE NOT ACCEPTABLE.

GENERAL NOTES

CUY-US6/20-21.10

MODEL: Sheet PAPER SIZE: 17x11 (in.) DATE: 2/17/2022 TIME: 4:25:38 PM USER: lane P:\PRG9820\115439\400-Eng\theefing\Roadway\Sheets\115439\_GN002.dgn

DESIGN AGENCY



DESIGNER	SAF
REVIEWER	ARL 02/14/22
PROJECT ID	115339
SHEET	TOTAL
5	34

**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:

1. 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.
  - A. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN METALLIC CONDUITS (725.04) IN ADDITION TO THE CONDUCTORS SPECIFIED AND BOND THE CONDUIT TO THIS GROUNDING CONDUCTOR.
  - B. 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.
  - C. 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.
  - D. IF MULTIPLE CONDUIT RUNS BEGIN AND END AT THE SAME POINTS, ONLY ONE EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED.
  - E. 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.
  - F. 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.
  - A. 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.
  - B. THE 725.05 CONDUIT SHALL HAVE THE INSIDE AND OUTSIDE DIAMETERS OF THE CONDUIT DEBURRED AT ALL TERMINATION POINTS.
  - C. BOTH ENDS OF METALLIC CONDUIT SHALL BE BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.
  - D. 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.

**GROUNDING AND BONDING (CONT'D)**

3. WIRE FOR GROUNDING AND BONDING.
  - A. 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:
    - I. USE 4 AWG BETWEEN THE POWER SERVICE AND SUPPORTS, POLES, PEDESTALS, CONTROLLER OR FLASHER CABINETS.
    - II. 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.
    - III. 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.
    - IV. 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.
  - B. 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.
4. GROUND ROD.
  - A. 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.
  - B. THE TYPICAL GROUNDING CONDUCTOR (GROUND WIRE) SHALL BE 4 AWG INSULATED, COPPER.
5. 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	VEH. 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	YELLOW ARROW	NOT USED

**GROUNDING AND BONDING (CONT'D)**

6. POWER SERVICE AND DISCONNECT SWITCH.
  - A. 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.
  - B. THE SERVICE NEUTRAL (AC-) SHALL ONLY BE CONNECTED TO GROUND AT THE PRIMARY POWER SERVICE DISCONNECT SWITCH.
    - I. 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.
    - II. 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.
7. PAYMENT - ALL MATERIALS AND WORK REQUIRED TO COMPLETE THE EFFECTIVE GROUND FAULT CURRENT PATH SYSTEM ARE INCIDENTAL TO THE CONDUCTORS INSTALLED BY CONTRACT.

**ITEM 644 - PAVEMENT MARKING, MISC.: REMOVAL OF PAVEMENT MARKING**

ALL PAVEMENT MARKINGS TO BE REMOVED SHALL BE PER ODOT C&MS 644, 646 & 614.11.G; HOWEVER THE METHOD OF REMOVAL SHALL BE WATER BLASTING IN ORDER TO MINIMIZE PAVEMENT SCARING. ALL ODOT C&MS SPECIFICATIONS FOR WATER BLASTING SHALL BE FOLLOWED.

CONTRACTOR MAY PROPOSE AN ALTERNATIVE METHOD OR MODIFICATION OF REMOVAL LIMITS BASED ON FIELD CONDITIONS TO INCREASE VIABILITY AND DURABILITY OF NEW MARKINGS. CHANGE SHALL BE APPROVED IN ADVANCE BY THE ENGINEER.

PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE BID.

**ITEM 809 - ATC CONTROLLER, AS PER PLAN**

THE CONTROLLER UNIT SHALL BE FURNISHED AND INSTALLED PER SS 809 AND BE LISTED ON THE TRAFFIC AUTHORIZED PRODUCTS (TAP) LIST

THE CONTROLLER SHALL BE AN ECONOLITE COBALT AND COMPATIBLE WITH THE CABINET TYPE BEING INSTALLED.

**ITEM 633 - CABINET, TYPE TS-2, AS PER PLAN**

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

THE POLE-MOUNTED CABINET SHALL BE A NEMA TS-2, TYPE 1, CABINET SIZE 7 WITH 16 LOAD SWITCH BAYS, LED UNDER-SHELF LIGHTING, POWER HARNESSSES FOR BOTH TS2 TYPE 1 AND TYPE 2 CONTROLLERS AND SHALL HAVE A MINIMUM OF THREE SHELVES.

EACH CABINET SHALL COME EQUIPPED WITH TWO 16-CHANNEL CABINET DETECTOR RACKS (CDR) INCLUDING BUS INTERFACE UNITS (BIU). THE LOOP DETECTOR TERMINATION PANEL FOR THE SECOND DETECTOR RACK SHALL BE OMITTED.

THE CABINET SHALL BE FURNISHED WITH AN EDI MMU AS ALLOWED ON THE TAP/APPROVED PRODUCTS LIST.

PAYMENT FOR ITEM 633 CABINET, TYPE TS-2, AS PER PLAN WILL BE AT THE CONTRACT BID PRICE PER EACH COMPLETE AND IN PLACE INCLUDING ALL CONNECTIONS TESTED AND ACCEPTED.



DESIGNER	BPT
REVIEWER	JTP 02/14/22
PROJECT ID	115439
SHEET	8
TOTAL	34





ITEM	EXTENSION	ROXBURY RD	EMILY ST	HOLYOKE AVE BELMORE RD	WINDMERE ST	ROSEMONT RD	LEE BLVD	BURNETTE AVE COLLAMER AVE	TOTAL	UNIT	DESCRIPTION	SEE SHEET
620	00500	6		6	6	6	6	6	36	EACH	DELINEATOR, POST GROUND MOUNTED	
625	25402	42	30	36	104	52	80	82	426	FT	CONDUIT, 2", 725.05	
625	25802	76	76	70	77	74	76	78	527	FT	CONDUIT, CONCRETE ENCASED, 2-2/725.05	
625	29400	97	91	88	129	100	116	119	740	FT	TRENCH IN PAVED AREA	
625	30540	2	2	2	2	2	2	2	14	EACH	PULL BOX, 725.06, SIZE 4	
625	32000	2	3	3	3	3	3	3	20	EACH	GROUND ROD	
625	34000	1	1	1	1	1	1	1	7	EACH	POWER SERVICE	
630	02100	38.0	38.5	26.0	26.0	38.0	50.0	38.0	254.5	FT	GROUND MOUNTED SUPPORT, NO. 2 POST	
630	79200	2	2	2	2	2	2	2	14	EACH	SIGN ATTACHMENT ASSEMBLY, MAST ARM	
630	79500	5	4	4	4	4	4	5	30	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED	
630	80100	45.0	42.0	43.5	45.0	46.5	46.5	45.0	313.5	SF	SIGN, FLAT SHEET	
630	85100	1	1					2	4	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	
630	86002	1	1					1	3	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
632	20731	2	2	2	2	2	2	2	14	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	7
632	25000	4	4	4	4	4	4	4	28	EACH	COVERING OF VEHICULAR SIGNAL HEAD	
632	25010	2	2	2	2	2	2	2	14	EACH	COVERING OF PEDESTRIAN SIGNAL HEAD	
632	26000	2	2	2	2	2	2	2	14	EACH	PEDESTRIAN PUSHBUTTON	
632	40500	144	144	140	174	153	164	171	1090	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	
632	40700	240	241	236	274	247	260	270	1768	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	
632	64011	2	2	2	2	2	2	2	14	EACH	SIGNAL SUPPORT FOUNDATION, AS PER PLAN	7
632	65200	140	139	131	168	142	155	162	1037	FT	LOOP DETECTOR LEAD-IN CABLE	
632	68200	33	46	42	33	48	43	47	292	FT	POWER CABLE, 2 CONDUCTOR, NO. 6 AWG	
632	69800	580	227	122	325	275	202	23	2236	FT	SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG	
632	70400	1	1	1	1	1	1	1	7	EACH	CONDUIT RISER, 2" DIAMETER	
632	72101	1	2	2	2	1	1	1	10	EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 2, AS PER PLAN	7
632	72111	1				1	1	1	4	EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 4, AS PER PLAN	7
632	90020		1						1	EACH	REMOVAL OF MISCELLANEOUS TRAFFIC SIGNAL ITEM, SIGNAL SUPPORT	7
632	90400								10	EACH	SIGNALIZATION, MISC.: TEST HOLE PERFORMED	7
632	90400	4	4	4	4	4	4	4	28	EACH	SIGNALIZATION, MISC.: PEDESTRIAN HYBRID BEACON	7
633	65511	1	1	1	1	1	1	1	7	EACH	CABINET, TYPE TS-2, AS PER PLAN	8
633	67100		1	1	1	1	1	1	6	EACH	CABINET FOUNDATION	
809	69123	1	1	1	1	1	1	1	7	EACH	ATC CONTROLLER, AS PER PLAN	8
644	00100	0.02	0.01	0.02	0.04	0.02	0.07	0.04	0.22	MILE	EDGE LINE, 4"	
644	00300	0.02		0.02	0.02	0.02	0.01	0.03	0.12	MILE	CENTER LINE, DOUBLE SOLID	
644	00300						0.06		0.06	MILE	CENTER LINE, SOLID/DASHED	
644	00500	42	48	40	40	41	46	40	297	FT	STOP LINE	
644	00620		148						148	FT	CROSSWALK LINE, 12"	
644	00630	100	70	100	120	100	110	120	720	FT	CROSSWALK LINE, 24"	
644	00700	77	16	84	132	75	108	122	614	FT	TRANSVERSE/DIAGONAL LINE	
644	50100			1			2	1	4	EACH	PAVEMENT MARKING, MISC.:REMOVAL OF PAVEMENT MARKING	8
644	50300			41		15	333	56	445	FT	PAVEMENT MARKING, MISC.:REMOVAL OF PAVEMENT MARKING	8

SIGNAL SUBSUMMARY

DESIGN AGENCY



DESIGNER

BPT

REVIEWER

JTP 02/14/22

PROJECT ID

115439

SHEET

13

TOTAL

34