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SHEET NUM.												PART.			ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	
26	115	118	132	134	135	147	148					01/ENH/PV	02/ENH/PV	03/NFP/PV							
															TRAFFIC CONTROL						
				4								4			630	79101	4	EACH	SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN	131	
	79											69	1	9	630	79500	79	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED		
	611			4								524.9	17.1	72.7	630	80100	614.7	SF	SIGN, FLAT SHEET		
	24											24			630	80500	24	EACH	SIGN, DOUBLE FACED, STREET NAME		
				4								4			630	80511	4	EACH	SIGN, STREET NAME, AS PER PLAN	131	
20														20	630	83000	20	SF	COVERING OF SIGN		
	64											52		12	630	84900	64	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL		
	2											2			630	85100	2	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION		
	43											33		10	630	86002	43	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL		
	86											69		17	630	87500	86	EACH	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL		
	12											5		7	630	87520	12	EACH	REMOVAL OF POLE MOUNTED SIGN AND REERECTION		
	1											1			630	89702	1	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL		
			2									2			630	97700	2	EACH	SIGNING, MISC.: RECTANGULAR RAPID FLASHING BEACON (RRFB) SIGN ASSEMBLY	130	
	1											1			631	92990	1	EACH	SCHOOL SPEED LIMIT SIGN ASSEMBLY, 24" X 36"		
		1.18										1.18			644	00100	1.18	MILE	EDGE LINE, 4" (WHITE)		
		0.74										0.74			644	00300	0.74	MILE	CENTER LINE (DOUBLE SOLID)		
		119										119			644	00400	119	FT	CHANNELIZING LINE, 8"		
		309										269		40	644	00500	309	FT	STOP LINE		
		1,840										1,672		168	644	00620	1,840	FT	CROSSWALK LINE, 12"		
		336										336			644	00630	336	FT	CROSSWALK LINE, 24" (LADDER STYLE)		
		1,091										867		224	644	00700	1,091	FT	TRANSVERSE/DIAGONAL LINE (WHITE)		
		4										4			644	01300	4	EACH	LANE ARROW		
		316										316			644	01500	316	FT	DOTTED LINE, 4"		
		37										26		11	644	19000	37	EACH	SHARED LANE MARKING		
						4,133	113					4,246			647	50110	4,246	SF	PAVEMENT MARKING, MISC.: DECORATIVE CROSSWALK	142	
															TRAFFIC SIGNALS						
			138									138			625	25408	138	FT	CONDUIT, 2", 725.051		
				530								530			625	25504	530	FT	CONDUIT, 3", 725.051		
			59	125								184			625	29000	184	FT	TRENCH		
			79	194								273			625	29400	273	FT	TRENCH IN PAVED AREA		
			4	5								9			625	30520	9	EACH	PULL BOX, 725.06, SIZE 7	130	
				1								1			625	30530	1	EACH	PULL BOX, 725.06, SIZE 18	130	
	1		2									3			625	32000	3	EACH	GROUND ROD		
				7								5	2		625	32001	7	EACH	GROUND ROD, AS PER PLAN	131	
				12								12			632	05007	12	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	129	
				8								8			632	20731	8	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	129	
				12								12			632	25000	12	EACH	COVERING OF VEHICULAR SIGNAL HEAD		
				8								8			632	25010	8	EACH	COVERING OF PEDESTRIAN SIGNAL HEAD		
				4								4			632	26001	4	EACH	PEDESTRIAN PUSHBUTTON, AS PER PLAN	128	
			73	597								670			632	40300	670	FT	SIGNAL CABLE, 3 CONDUCTOR, NO. 14 AWG		
				1,150								1,150			632	40500	1,150	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG		
				1,241								1,241			632	40700	1,241	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG		
				4								4			632	64011	4	EACH	SIGNAL SUPPORT FOUNDATION, AS PER PLAN	129	
	1		2	2								5			632	64020	5	EACH	PEDESTAL FOUNDATION		
			146		49							195			632	68300	195	FT	POWER CABLE, 3 CONDUCTOR, NO. 6 AWG		
				197								197			632	69700	197	FT	SERVICE CABLE, 3 CONDUCTOR, NO. 8 AWG		
			1	1								2			632	70001	2	EACH	POWER SERVICE, AS PER PLAN	129	
			1									1			632	70400	1	EACH	CONDUIT RISER, 2" DIAMETER		
				1								1			632	70600	1	EACH	CONDUIT RISER, 3" DIAMETER		
				1								1			632	80203	1	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 2, AS PER PLAN	129	
				1								1			632	80403	1	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 4, AS PER PLAN	129	
				1								1			632	80603	1	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 12, AS PER PLAN	129	
				1								1			632	80621	1	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 13, AS PER PLAN	129	
				1								1			632	89601	1	EACH	PEDESTAL, 8', AS PER PLAN	130	
	1											1			632	89750	1	EACH	PEDESTAL, 15'		
												1			632	89751	1	EACH	PEDESTAL, 15', AS PER PLAN	130	
												1			632	90101	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN	128	

GENERAL SUMMARY

CUY-EAST 185TH STREET

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REF NO.	SHEET NO.	STATION TO STATION		PARTICIPATION CODE	202	203	203	204	254	254	255	301	305	304	407	407	441	441	441	452	638	638	638	638	638	638
					PAVEMENT REMOVED, AS PER PLAN	EXCAVATION	EMBANKMENT	SUBGRADE COMPACTION	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN (T = 2")	PAVEMENT PLANING, PORTLAND CEMENT CONCRETE (T = 2")	FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS QC1, AS PER PLAN	ASPHALT CONCRETE BASE, PG64-22 (T = 4")	8" CONCRETE BASE, CLASS QC 1P	AGGREGATE BASE, AS PER PLAN (T = 6")	TACK COAT, 702.13	NON-TRACKING TACK COAT	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), AS PER PLAN, PG70-22M (T = 1.5")	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), AS PER PLAN, PG64-22 (T = 1")	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), AS PER PLAN, PG64-22 (LEVELING)	10" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P	6" FIRE HYDRANT, AS PER PLAN	FIRE HYDRANT REMOVED, AS PER PLAN	VALVE BOX ADJUSTED TO GRADE	WATER WORK, MISC.: WATER METER VAULT ADJUSTED TO GRADE	WATER WORK, MISC.: WATER MANHOLE ADJUSTED TO GRADE	SERVICE BOX ADJUSTED TO GRADE
		TO			SY	CY	CY	SY	SY	SY	CY	SY	CY	GAL	GAL	CY	CY	CY	SY	EACH	EACH	EACH	EACH	EACH	EACH	
RESURF	44	546+00.00	RT/LT	549+50.00	RT/LT		88																			
RESURF	44	546+00.00	RT/LT	549+50.00	RT/LT	01/ENH/PV																				
RESURF	44	549+50.00	RT/LT	554+50.00	RT/LT	03/NFP/PV			1158	258	232				283	106	59	39	31							
RESURF	44	549+50.00	RT/LT	554+50.00	RT/LT	03/NFP/PV			2193	231	439				485	182	101	67	39							
RESURF	45	554+50.00	RT/LT	559+00.00	RT/LT	01/ENH/PV	257																			
RESURF	45	554+50.00	RT/LT	559+00.00	RT/LT	03/NFP/PV			1678	264	336				388	146	81	54	45							
RESURF	45	559+00.00	RT/LT	563+50.00	RT/LT	01/ENH/PV	222																			
RESURF	45	559+00.00	RT/LT	563+50.00	RT/LT	03/NFP/PV			1938	58	388				399	150	83	55	43							
RESURF	46	563+50.00	RT/LT	568+50.00	RT/LT	03/NFP/PV	1		2268	52	454				464	174	97	64	39							
RESURF	46	568+50.00	RT/LT	573+50.00	RT/LT	03/NFP/PV			2725	114	545				568	213	118	79	72							
RESURF	47	573+50.00	RT/LT	578+00.00	RT/LT	03/NFP/PV			1600		320				320	120	67	44	56							
RESURF	47	578+00.00	RT/LT	582+50.00	RT/LT	03/NFP/PV			1446		289				289	108	60	40	82							
RESURF	48	582+50.00	RT/LT	584+18.82	RT/LT	03/NFP/PV	112	3	539		108				108	40	22	15	11							
NEW	49	0+00.00	RT/LT	2+96.52	RT/LT	02/ENH/PV	957	43	103	780		80		120	72		30									
NEW	47	575+70.00	LT	576+70.00	LT	01/ENH/PV		46		103				17					86							
NEW	47-48	581+90.00	LT	582+90.00	LT	01/ENH/PV		46		103				17					86							
NEW	47-48	579+46.74	RT	583+88.35	RT	01/ENH/PV	358	74	9	154		154		43	31		6	4								
FH1	47	575+67.00	LT	576+12.60	LT	03/NFP/PV														1	1					
FH2	47	581+87.00	LT	582+24.93	LT	03/NFP/PV														1	1					
Water	44	546+00.00	RT/LT	549+50.00	RT/LT	03/NFP/PV																1			7	
Water	44	549+50.00	RT/LT	554+50.00	RT/LT	03/NFP/PV																13	6		9	
Water	45	554+50.00	RT/LT	559+00.00	RT/LT	03/NFP/PV																9	2		10	
Water	45	559+00.00	RT/LT	563+50.00	RT/LT	03/NFP/PV																16	3		10	
Water	46	563+50.00	RT/LT	568+50.00	RT/LT	03/NFP/PV																6	4	1	5	
Water	46, 49	568+50.00	RT/LT	573+50.00	RT/LT	03/NFP/PV																12	1	1	1	
Water	47	573+50.00	RT/LT	578+00.00	RT/LT	03/NFP/PV																			2	
Water	47	578+00.00	RT/LT	582+50.00	RT/LT	03/NFP/PV																5	3		1	
Water	48	582+50.00	RT/LT	584+18.82	RT/LT	03/NFP/PV																1	2	1	1	
TOTALS CARRIED TO GENERAL SUMMARY					2,117	212	425	1,140	15,545	977	3,111	80	154	197	3,407	1,239	724	461	418	172	2	2	63	21	3	46

ROADWAY SUB-SUMMARY

CUY-EAST 185TH STREET

39
173

CALCULATED
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AKM

ITEM 614 - MAINTAINING TRAFFIC, MISC.: MAINTENANCE OF TRAFFIC SIGNAL INSTALLATIONS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC SIGNAL INSTALLATIONS WITHIN THE PROJECT UNDER THE FOLLOWING CONDITIONS:

1. EXISTING SIGNAL DEVICES - THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL TRAFFIC SIGNAL DEVICES ONCE ANY PROJECT SIGNAL WORK HAS STARTED. IF, IN THE COURSE OF WORK, THE GENERAL CONTRACTOR OR ANY PROJECT SUBCONTRACTOR CAUSED DAMAGE TO ANY EXISTING TRAFFIC SIGNAL DEVICE, THEN THE CONTRACTOR, AT THE CONTRACTOR'S COST, SHALL REPAIR AND/OR REPLACE THE DAMAGED DEVICE TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EXISTING SIGNAL DEVICES 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 CONTRACTOR SHALL CORRECT AS QUICKLY AS POSSIBLE ALL OUTAGES OR MALFUNCTIONS. THE CONTRACTOR SHALL PROVIDE THE CITY OF CLEVELAND AND THE ENGINEER SUCH ADDRESSES AND PHONE NUMBERS WHERE THE CONTRACTOR'S 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 THE OUTAGES. SUCH A PERSON OR PERSONS MAY BE USED TO PERFORM THE 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 TWO (2) 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 EIGHT (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 CONSTRUCTED 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 THE WORK FROM THOSE PARTIES RESPONSIBLE FOR THE DAMAGE.

WHERE THE CONTRACTOR HAS FAILED TO, OR CANNOT RESPOND TO, AND 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 STATE OR THE CITY OF UPPER ARLINGTON FOR POLICE SERVICES AND MAINTENANCE SERVICES BY CITY FORCES SHALL BE DEDUCTED FROM MONIES DUE OR TO BECOME DUE THE CONTRACTOR IN ACCORDANCE WITH PROVISIONS OF SECTION 105.15.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY TRAFFIC SIGNAL COMPONENTS REQUIRED TO BE HANDLED DURING THE REVISIONS OF THE SIGNAL SYSTEM.

ITEM 614 - MAINTAINING TRAFFIC, MISC.: MAINTENANCE OF TRAFFIC SIGNAL INSTALLATIONS (CONTINUED)

WHEN A TRAFFIC SIGNAL MUST BE TAKEN OUT OF SERVICE BY THE CONTRACTOR, DUE TO CONSTRUCTION PROCEDURES, THIS OUTAGE SHALL NOT EXCEED EIGHT (8) HOURS AND SHALL NOT INCLUDE THE HOURS OF 7:00 AM TO 9:00 AM AND 4:00 PM 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.

SIGNAL ACTIVATION

PRIOR TO ACTIVATING THE NEW TRAFFIC SIGNAL TO STOP-AND-GO MODE AND/OR REMOVING THE EXISTING TRAFFIC SIGNAL FROM SERVICE, ALL ITEMS IN THE PROPOSED SIGNAL PLAN SHALL BE FULLY COMPLETED, (I.E., VEHICLE DETECTION, PEDESTRIAN SIGNAL HEADS, ETC.) IF THERE ARE CONSTRUCTION ISSUES (I.E., CURB RAMP INSTALLATION, ETC.) THAT PREVENT THE SIGNAL FROM BEING COMPLETED PRIOR TO ACTIVATION, IT SHALL BE BROUGHT TO THE ATTENTION OF ANDREW CROSS, CITY OF CLEVELAND TRAFFIC ENGINEER. THE TRAFFIC ENGINEER WILL THEN REVIEW, APPROVE OR REJECT PROPOSALS TO ACTIVATE THE TRAFFIC SIGNAL PRIOR TO COMPLETION.

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AND TRAFFIC ENGINEER AT LEAST TEN (10) WORKING DAYS PRIOR TO SCHEDULING THE FINAL INSPECTION OF THE SIGNAL INSTALLATION. FINAL INSPECTION IS NOT CONSIDERED COMPLETE UNTIL DESIGNATED CITY OF CLEVELAND PERSONNEL INSPECT THE TRAFFIC SIGNAL AND ISSUES WRITTEN APPROVAL. IF ISSUES ARE FOUND DURING THE FINAL INSPECTION THAT EFFECT THE SAFETY OF THE INTERSECTION, THE SIGNAL SHALL NOT BE ACTIVATED ON THE PROPOSED DATE. ANY PUNCH LIST ITEMS THAT ARE FOUND SHALL BE CORRECTED AND RE-INSPECTED BY CITY OF CLEVELAND PERSONNEL PRIOR TO FINAL ACCEPTANCE. CITY FORCES SHALL ONLY ASSUME DAY TO DAY MAINTENANCE OF THE TRAFFIC SIGNAL AFTER FINAL WRITTEN ACCEPTANCE HAS BEEN ISSUED.

WORK INSPECTION

THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER WITH 72 HOUR NOTICE OF ANY SIGNAL WORK TO BE PERFORMED AT THE INTERSECTION SITE(S) SO THAT INSPECTION SERVICES CAN BE SUPPLIED.

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 FOLLOWING COMPLETION OF THE 10-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.

EQUIPMENT, MATERIAL AND LABOR COSTS INCURRED IN CORRECTING AN UNSATISFACTORY OPERATION SHALL BE BORNE BY THE CONTRACTOR.

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.

ITEM 632 - REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN

TRAFFIC SIGNAL INSTALLATIONS, INCLUDING SIGNAL HEADS, CABLE, MESSENGER WIRE, STRAIN POLES, PULL BOXES, INTERCONNECT, ETC., SHALL BE REMOVED IN ACCORDANCE WITH CMS 632.26 AND AS INDICATED ON THE PLANS.

THE CONTRACTOR IS TO RETURN ALL EXISTING SIGNAL ITEMS NOTED FOR SALVAGE, INCLUDING, BUT NOT LIMITED TO, CONTROLLER CABINET AND COMPONENTS, SIGNAL HEADS, SIGNAL POLES, PEDESTRIAN SIGNAL HEADS, SIGNS, PUSHBUTTONS, PULL BOXES AND PEDESTAL POLES. ITEMS SHALL BE DELIVERED TO THE CITY OF CLEVELAND TRAFFIC SIGNAL SHOP, 4150 E. 49TH STREET. CONTRACTOR SHALL PROVIDE AT LEAST 48 HOURS NOTICE TO ANDREW CROSS, TRAFFIC ENGINEER AT (216) 664-3197 PRIOR TO DELIVERY OF SALVAGED ITEMS.

IN THE EVENT THE ITEMS STORED ON THE PROJECT FOR SALVAGE BY THE CITY OF CLEVELAND 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.

THIS ITEM INCLUDES REMOVAL OF THE EXISTING TRAFFIC SIGNAL AT THE FOLLOWING INTERSECTION:

E. 185TH ST. AT LAKESHORE BLVD.

TRENCH

ALL TRENCHING SHALL CONFORM TO SECTIONS 625.13 AND 625.20 OF THE ODOT CMS. THE MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO REMOVE AND REPLACE PAVED SURFACES IN AREAS OUTSIDE OF PROPOSED WORK SHALL BE INCLUDED IN THE BID QUANTITY FOR TRENCH IN PAVED AREAS, TYPE A OR TYPE B, AS DEFINED IN ODOT CMS 625.13.

WHEN TRENCHING OPERATIONS PASS THROUGH OR INTO CONCRETE CURB AND GUTTER, THE CONCRETE CURB AND GUTTER SHALL BE REMOVED AND REPLACED UP TO THE CONSTRUCTION JOINT ON EACH SIDE OF THE TRENCH. WHEN TRENCHING OPERATIONS PASS INTO OR THROUGH A BLOCK OF SIDEWALK, THE ENTIRE BLOCK OF SIDEWALK SHALL BE REMOVED AND REPLACED. WHEN TRENCHING OPERATIONS PASS INTO OR THROUGH A DRIVEWAY APPROACH, THE DRIVEWAY APPROACH SHALL BE REMOVED AND REPLACED TO THE NEAREST EXISTING CONSTRUCTION JOINT ON EACH SIDE OF THE TRENCH.

UNDERGROUND CONDUIT INSTALLATION

THIS PROJECT INCLUDES CONSTRUCTION OF UNDERGROUND CONDUIT IN LOCATIONS THAT CONTAIN NUMEROUS EXISTING UNDERGROUND FACILITIES. IF A UTILITY CONFLICT IS IDENTIFIED THE CONTRACTOR SHALL REPOSITION THE CONDUIT TO AVOID SAID CONFLICT WITH THE APPROVAL OF THE ENGINEER. NO ADDITIONAL COMPENSATION SHALL BE AWARDED FOR ADDITIONAL WORK REQUIRED.

ITEM 632 - SIGNALIZATION, MISC.: PLASTIC CAUTION TAPE

THE LOCATION OF THE CONDUIT IN THE TRENCH SHALL BE MARKED BY THE USE OF A CONTINUOUSLY IDENTIFYING TAPE BURIED IN THE TRENCH ABOVE THE CONDUIT LINE. THE IDENTIFYING TAPE SHALL BE AN INERT MATERIAL APPROXIMATELY 6 INCHES WIDE COMPOSED OF POLYETHYLENE PLASTIC AND SHALL BE HIGHLY RESISTANT TO ALKALIS, ACIDS, OR OTHER CHEMICAL COMPONENTS LIKELY TO BE ENCOUNTERED IN SOILS. THE TYPE SHALL BE RED WITH THE WORDS "ELECTRIC LINE BURIED BELOW" PRINTED IN BLACK LETTERING ON ONE SIDE ONLY. IT SHALL BE SUPPLIED IN CONTINUOUS ROLLS WITH THE IDENTIFYING LETTERS REPEATED FOR THE FULL LENGTH OF THE TAPE. THE CONTRACTOR SHALL BURY THE TAPE IN THE TRENCH WITH ONE STRIP PLACED APPROXIMATELY DOWN THE CENTERLINE AND 8 INCHES TO 12 INCHES BELOW THE FINAL GRADE.

IT SHALL BE PLACED IN THE TRENCH WITH THE PRINTED SIDE UP AND SHALL BE ESSENTIALLY PARALLEL TO THE FINISHED SURFACE. THE CONTRACTOR SHALL TAKE ANY NECESSARY PRECAUTIONS TO ENSURE THE TAPE IS NOT PULLED, DISTORTED, OR OTHERWISE MISPLACED IN COMPLETING THE TRENCH BACKFILLING. THE TAPE SHALL BE "TERRA TAPE", "ALLEN SYSTEMS", OR APPROVED EQUAL BY THE ENGINEER IN ADVANCE.

ITEM 632 - PEDESTRIAN PUSH BUTTON, AS PER PLAN

IN ADDITION TO CMS ITEM 632 AND 732, THE PUSHBUTTON SHALL BE POLARA BULLDOG, PELCO SE-2005-08, OR APPROVED EQUAL PRESSURE ACTIVATED ADA COMPLIANT PEDESTRIAN PUSHBUTTON. THE FOLLOWING SHALL ALSO APPLY:

1. PUSH BUTTON MUST BE HIGHLY VANDAL RESISTANT AND PRESSURE ACTIVATED WITH ESSENTIALLY NO MOVING PARTS. BUTTON MUST BE ABLE TO WITHSTAND AN IMPACT FROM A BASEBALL BAT OR HAMMER.
2. BUTTON HOUSING MUST BE CAST ALUMINUM POWDER COATED.
3. BUTTON CAP MUST BE MADE OF 316 STAINLESS STEEL.
4. SWITCH MUST BE SOLID STATE ELECTRONIC PIEZO SWITCH RATED FOR 100 MILLION CYCLES WITH NO MOVING PLUNGER OR MOVING ELECTRICAL CONTACTS.
5. BUTTON MUST BE ACTIVATED WITH 3 LBS. OF FORCE OR LESS.
6. BUTTON MUST HAVE LED TO GIVE INDICATION OF BUTTON BEING PUSHED.
7. BUTTON MUST GIVE A TWO-TONED BEEP INDICATION OF BUTTON BEING PUSHED (ONE TONE FOR PUSH, ONE TONE FOR RELEASE)
8. BUTTON MUST HAVE BUILT IN SURGE PROTECTION
9. BUTTON MUST BE ABLE TO HOLD THE CALL FOR A MINIMUM OF 5 SECONDS.
10. BUTTON MUST OPERATE IMMEDIATELY AFTER BEING PUSHED COMPLETELY IMMERSED IN WATER FOR 5 MINUTES.
11. BUTTON MUST NOT BE ABLE TO ALLOW ICE TO FORM SUCH THAT IT WOULD IMPEDE FUNCTION OF BUTTON OR BUTTON CAP.
12. ALL SWITCH ELECTRONICS MUST BE SEALED WITHIN THE CAST ALUMINUM HOUSING.
13. TOTAL DEPTH OF BUTTON, FROM FACE OF BUTTON CAP TO BACK OF BUTTON TERMINAL, MUST BE LESS THAN 1.75 INCHES.
14. BUTTON MUST HAVE RAISED EDGES TO PROTECT THE BUTTON FROM SIDE IMPACTS.

ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO PERFORM THE REQUIRED WORK SHALL BE INCLUDED IN THE CONTRACT BID PRICE PER EACH ITEM 632 - PEDESTRIAN PUSHBUTTON, AS PER PLAN.

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TRAFFIC SIGNAL NOTES

CUY-EAST 185TH STREET

ITEM 614 - MAINTAINING TRAFFIC, MISC.: MAINTENANCE OF TRAFFIC SIGNAL INSTALLATIONS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC SIGNAL INSTALLATIONS WITHIN THE PROJECT UNDER THE FOLLOWING CONDITIONS:

1. EXISTING SIGNAL DEVICES - THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL TRAFFIC SIGNAL DEVICES ONCE ANY PROJECT SIGNAL WORK HAS STARTED. IF, IN THE COURSE OF WORK, THE GENERAL CONTRACTOR OR ANY PROJECT SUBCONTRACTOR CAUSED DAMAGE TO ANY EXISTING TRAFFIC SIGNAL DEVICE, THEN THE CONTRACTOR, AT THE CONTRACTOR'S COST, SHALL REPAIR AND/OR REPLACE THE DAMAGED DEVICE TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EXISTING SIGNAL DEVICES 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 CONTRACTOR SHALL CORRECT AS QUICKLY AS POSSIBLE ALL OUTAGES OR MALFUNCTIONS. THE CONTRACTOR SHALL PROVIDE THE CITY OF CLEVELAND AND THE ENGINEER SUCH ADDRESSES AND PHONE NUMBERS WHERE THE CONTRACTOR'S 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 THE OUTAGES. SUCH A PERSON OR PERSONS MAY BE USED TO PERFORM THE 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 TWO (2) 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 EIGHT (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 CONSTRUCTED 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 THE WORK FROM THOSE PARTIES RESPONSIBLE FOR THE DAMAGE.

WHERE THE CONTRACTOR HAS FAILED TO, OR CANNOT RESPOND TO, AND 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 STATE OR THE CITY OF UPPER ARLINGTON FOR POLICE SERVICES AND MAINTENANCE SERVICES BY CITY FORCES SHALL BE DEDUCTED FROM MONIES DUE OR TO BECOME DUE THE CONTRACTOR IN ACCORDANCE WITH PROVISIONS OF SECTION 105.15.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY TRAFFIC SIGNAL COMPONENTS REQUIRED TO BE HANDLED DURING THE REVISIONS OF THE SIGNAL SYSTEM.

ITEM 614 - MAINTAINING TRAFFIC, MISC.: MAINTENANCE OF TRAFFIC SIGNAL INSTALLATIONS (CONTINUED)

WHEN A TRAFFIC SIGNAL MUST BE TAKEN OUT OF SERVICE BY THE CONTRACTOR, DUE TO CONSTRUCTION PROCEDURES, THIS OUTAGE SHALL NOT EXCEED EIGHT (8) HOURS AND SHALL NOT INCLUDE THE HOURS OF 7:00 AM TO 9:00 AM AND 4:00 PM 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.

SIGNAL ACTIVATION

PRIOR TO ACTIVATING THE NEW TRAFFIC SIGNAL TO STOP-AND-GO MODE AND/OR REMOVING THE EXISTING TRAFFIC SIGNAL FROM SERVICE, ALL ITEMS IN THE PROPOSED SIGNAL PLAN SHALL BE FULLY COMPLETED, (I.E., VEHICLE DETECTION, PEDESTRIAN SIGNAL HEADS, ETC.) IF THERE ARE CONSTRUCTABILITY ISSUES (I.E., CURB RAMP INSTALLATION, ETC.) THAT PREVENT THE SIGNAL FROM BEING COMPLETED PRIOR TO ACTIVATION, IT SHALL BE BROUGHT TO THE ATTENTION OF ANDREW CROSS, CITY OF CLEVELAND TRAFFIC ENGINEER. THE TRAFFIC ENGINEER WILL THEN REVIEW, APPROVE OR REJECT PROPOSALS TO ACTIVATE THE TRAFFIC SIGNAL PRIOR TO COMPLETION.

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AND TRAFFIC ENGINEER AT LEAST TEN (10) WORKING DAYS PRIOR TO SCHEDULING THE FINAL INSPECTION OF THE SIGNAL INSTALLATION. FINAL INSPECTION IS NOT CONSIDERED COMPLETE UNTIL DESIGNATED CITY OF CLEVELAND PERSONNEL INSPECT THE TRAFFIC SIGNAL AND ISSUES WRITTEN APPROVAL. IF ISSUES ARE FOUND DURING THE FINAL INSPECTION THAT EFFECT THE SAFETY OF THE INTERSECTION, THE SIGNAL SHALL NOT BE ACTIVATED ON THE PROPOSED DATE. ANY PUNCH LIST ITEMS THAT ARE FOUND SHALL BE CORRECTED AND RE-INSPECTED BY CITY OF CLEVELAND PERSONNEL PRIOR TO FINAL ACCEPTANCE. CITY FORCES SHALL ONLY ASSUME DAY TO DAY MAINTENANCE OF THE TRAFFIC SIGNAL AFTER FINAL WRITTEN ACCEPTANCE HAS BEEN ISSUED.

WORK INSPECTION

THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER WITH 72 HOUR NOTICE OF ANY SIGNAL WORK TO BE PERFORMED AT THE INTERSECTION SITE(S) SO THAT INSPECTION SERVICES CAN BE SUPPLIED.

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 FOLLOWING COMPLETION OF THE 10-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.

EQUIPMENT, MATERIAL AND LABOR COSTS INCURRED IN CORRECTING AN UNSATISFACTORY OPERATION SHALL BE BORNE BY THE CONTRACTOR.

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.

ITEM 632 - REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN

TRAFFIC SIGNAL INSTALLATIONS, INCLUDING SIGNAL HEADS, CABLE, MESSENGER WIRE, STRAIN POLES, PULL BOXES, INTERCONNECT, ETC., SHALL BE REMOVED IN ACCORDANCE WITH CMS 632.26 AND AS INDICATED ON THE PLANS.

THE CONTRACTOR IS TO RETURN ALL EXISTING SIGNAL ITEMS NOTED FOR SALVAGE, INCLUDING, BUT NOT LIMITED TO, CONTROLLER CABINET AND COMPONENTS, SIGNAL HEADS, SIGNAL POLES, PEDESTRIAN SIGNAL HEADS, SIGNS, PUSHBUTTONS, PULL BOXES AND PEDESTAL POLES. ITEMS SHALL BE DELIVERED TO THE CITY OF CLEVELAND TRAFFIC SIGNAL SHOP, 4150 E. 49TH STREET. CONTRACTOR SHALL PROVIDE AT LEAST 48 HOURS NOTICE TO ANDREW CROSS, TRAFFIC ENGINEER AT (216) 664-3197 PRIOR TO DELIVERY OF SALVAGED ITEMS.

IN THE EVENT THE ITEMS STORED ON THE PROJECT FOR SALVAGE BY THE CITY OF CLEVELAND 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.

THIS ITEM INCLUDES REMOVAL OF THE EXISTING TRAFFIC SIGNAL AT THE FOLLOWING INTERSECTIONS:

- E. 185TH ST. AT VILLAVIEW RD.
- E. 185TH ST. AT NEFF RD.

TRENCH

ALL TRENCHING SHALL CONFORM TO SECTIONS 625.13 AND 625.20 OF THE ODOT CMS. THE MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO REMOVE AND REPLACE PAVED SURFACES IN AREAS OUTSIDE OF PROPOSED WORK SHALL BE INCLUDED IN THE BID QUANTITY FOR TRENCH IN PAVED AREAS, TYPE A OR TYPE B, AS DEFINED IN ODOT CMS 625.13.

WHEN TRENCHING OPERATIONS PASS THROUGH OR INTO CONCRETE CURB AND GUTTER, THE CONCRETE CURB AND GUTTER SHALL BE REMOVED AND REPLACED UP TO THE CONSTRUCTION JOINT ON EACH SIDE OF THE TRENCH. WHEN TRENCHING OPERATIONS PASS INTO OR THROUGH A BLOCK OF SIDEWALK, THE ENTIRE BLOCK OF SIDEWALK SHALL BE REMOVED AND REPLACED. WHEN TRENCHING OPERATIONS PASS INTO OR THROUGH A DRIVEWAY APPROACH, THE DRIVEWAY APPROACH SHALL BE REMOVED AND REPLACED TO THE NEAREST EXISTING CONSTRUCTION JOINT ON EACH SIDE OF THE TRENCH.

UNDERGROUND CONDUIT INSTALLATION

THIS PROJECT INCLUDES CONSTRUCTION OF UNDERGROUND CONDUIT IN LOCATIONS THAT CONTAIN NUMEROUS EXISTING UNDERGROUND FACILITIES. IF A UTILITY CONFLICT IS IDENTIFIED THE CONTRACTOR SHALL REPOSITION THE CONDUIT TO AVOID SAID CONFLICT WITH THE APPROVAL OF THE ENGINEER. NO ADDITIONAL COMPENSATION SHALL BE AWARDED FOR ADDITIONAL WORK REQUIRED.

ITEM 632 - SIGNALIZATION, MISC.: PLASTIC CAUTION TAPE

THE LOCATION OF THE CONDUIT IN THE TRENCH SHALL BE MARKED BY THE USE OF A CONTINUOUSLY IDENTIFYING TAPE BURIED IN THE TRENCH ABOVE THE CONDUIT LINE. THE IDENTIFYING TAPE SHALL BE AN INERT MATERIAL APPROXIMATELY 6 INCHES WIDE COMPOSED OF POLYETHYLENE PLASTIC AND SHALL BE HIGHLY RESISTANT TO ALKALIS, ACIDS, OR OTHER CHEMICAL COMPONENTS LIKELY TO BE ENCOUNTERED IN SOILS. THE TAPE SHALL BE RED WITH THE WORDS "ELECTRIC LINE BURIED BELOW" PRINTED IN BLACK LETTERING ON ONE SIDE ONLY. IT SHALL BE SUPPLIED IN CONTINUOUS ROLLS WITH THE IDENTIFYING LETTERS REPEATED FOR THE FULL LENGTH OF THE TAPE. THE CONTRACTOR SHALL BURY THE TAPE IN THE TRENCH WITH ONE STRIP PLACED APPROXIMATELY DOWN THE CENTERLINE AND 8 INCHES TO 12 INCHES BELOW THE FINAL GRADE.

IT SHALL BE PLACED IN THE TRENCH WITH THE PRINTED SIDE UP AND SHALL BE ESSENTIALLY PARALLEL TO THE FINISHED SURFACE. THE CONTRACTOR SHALL TAKE ANY NECESSARY PRECAUTIONS TO ENSURE THE TAPE IS NOT PULLED, DISTORTED, OR OTHERWISE MISPLACED IN COMPLETING THE TRENCH BACKFILLING. THE TAPE SHALL BE "TERRA TAPE", "ALLEN SYSTEM'S", OR APPROVED EQUAL BY THE ENGINEER IN ADVANCE.

ITEM 632 - PEDESTRIAN PUSH BUTTON, AS PER PLAN

IN ADDITION TO CMS ITEM 632 AND 732, THE PUSHBUTTON SHALL BE POLARA BULLDOG, PELCO SE-2005-08, OR APPROVED EQUAL, PRESSURE ACTIVATED ADA COMPLIANT PEDESTRIAN PUSHBUTTON. THE FOLLOWING SHALL ALSO APPLY:

1. PUSH BUTTON MUST BE HIGHLY VANDAL RESISTANT AND PRESSURE ACTIVATED WITH ESSENTIALLY NO MOVING PARTS. BUTTON MUST BE ABLE TO WITHSTAND AN IMPACT FROM A BASEBALL BAT OR HAMMER.
2. BUTTON HOUSING MUST BE CAST ALUMINUM POWDER COATED.
3. BUTTON CAP MUST BE MADE OF 316 STAINLESS STEEL.
4. SWITCH MUST BE SOLID STATE ELECTRONIC PIEZO SWITCH RATED FOR 100 MILLION CYCLES WITH NO MOVING PLUNGER OR MOVING ELECTRICAL CONTACTS.
5. BUTTON MUST BE ACTIVATED WITH 3 LBS. OF FORCE OR LESS.
6. BUTTON MUST HAVE LED TO GIVE INDICATION OF BUTTON BEING PUSHED.
7. BUTTON MUST GIVE A TWO-TONED BEEP INDICATION OF BUTTON BEING PUSHED (ONE TONE FOR PUSH, ONE TONE FOR RELEASE)
8. BUTTON MUST HAVE BUILT IN SURGE PROTECTION
9. BUTTON MUST BE ABLE TO HOLD THE CALL FOR A MINIMUM OF 5 SECONDS.
10. BUTTON MUST OPERATE IMMEDIATELY AFTER BEING PUSHED COMPLETELY IMMERSSED IN WATER FOR 5 MINUTES.
11. BUTTON MUST NOT BE ABLE TO ALLOW ICE TO FORM SUCH THAT IT WOULD IMPEDE FUNCTION OF BUTTON OR BUTTON CAP.
12. ALL SWITCH ELECTRONICS MUST BE SEALED WITHIN THE CAST ALUMINUM HOUSING.
13. TOTAL DEPTH OF BUTTON, FROM FACE OF BUTTON CAP TO BACK OF BUTTON TERMINAL, MUST BE LESS THAN 1.75 INCHES.
14. BUTTON MUST HAVE RAISED EDGES TO PROTECT THE BUTTON FROM SIDE IMPACTS.

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TRAFFIC SIGNAL NOTES

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