	SHEET NUM.												PART.		TTEN4	ITEM	GRAND	LINIT	DESCRIPTION		ILATED 4M CKED 7B
			10	11	12	50	51	52	53	55	56	184	01/MPO/P V	02/S>2>P V	ITEM	EXT	TOTAL	UNIT	DESCRIPTION	SHEET NO.	CALCU EA CHE
																			EROSION CONTROL CONTINUED		/
				180									180		659	35000	180	MGAL	WATER	11	/ I
				1,200								4.000	1,200		670	00500	1,200	SY	SLOPE EROSION PROTECTION	11	<i>i</i> 1
			1.0									1,200	1,200		SPECIAL	69098300	1,200	SY	HIGH PERFORMANCE FLEXIBLE GROWTH MEDIUM STORM WATER POLLUTION PREVENTION PLAN	183	/ I
			LS LS							-			LS LS	-	832 832	15000 15002	LS LS		STORM WATER POLLUTION PREVENTION PLAN STORM WATER POLLUTION PREVENTION INSPECTIONS	10 10	/ I
		1	LO										LO		032	13002	LO		STORIN WATER FOLLOTION FREVENTION INSPECTIONS	10	/ I
			LS										LS		832	15010	LS		STORM WATER POLLUTION PREVENTION INSPECTION SOFTWARE	10	<i>i</i>
0			180,000										180,000		832	30000	180,000	EACH	EROSION CONTROL	10	/ I
Ŭ																					<i>i</i> I
																			ENVIRONMENTAL / REMEDIATION		1 I
					LS								LS		SPECIAL	69098400	LS	TON	MONITORING FOR PETROLEUM CONTAMINATED SOILS	12	/ I
		-			500					-			500	-	SPECIAL	69098800	500	TON	DISPOSAL OF PETROLEUM CONTAMINATED SOILS	12	<i>i</i> I
		-			-														DRAINAGE	-	/
		 						228	30	 			258	 	209	10001	258	FT	DITCH CLEANOUT, AS PER PLAN	11	/ I
										40			40	†	601	34200	40		ROCK CHANNEL PROTECTION, TYPE C WITHOUT FILTER		/ I
			2							3.1			5.1		602	20000	5.1	CY	CONCRETE MASONRY	10	/ I
0						275							275		605	05200	275	FT	4" UNCLASSIFIED PIPE UNDERDRAINS		/ l
						2,300	3,162	2,551	1,336				9,349		605	06000	9,349	FT	4" BASE PIPE UNDERDRAINS		<i>i</i> I
						040	000	70	400				200		044	20.400	200		ALCONDUIT TYPE F		≿
			F0			210	220	70	120				620		611	00406	620	FT	4" CONDUIT, TYPE F 8" CONDUIT, TYPE C	10	SUMMARY
			50 50										50 50		611 611	02000 03300	50 50		10" CONDUIT, TYPE C	10 10	≥
			30							1	~32~		32	1	611	04200	32	FT	12" CONDUIT, TYPE A, 706.02	10	≥
										95	\sim		95		611	04400	(95)	FT	12" CONDUIT, TYPE B		. I S
											~~~~		$\sim$				$\sim$				/ I
			50							206	<b>}</b>		( 256 )		611	04600	256	FT	12" CONDUIT, TYPE C	10	ERA
										70	~~~		70		611	04900	70		12" CONDUIT, TYPE D, 706.02		1
										1,424			1,424		611	05900	1,424		15" CONDUIT, TYPE B		GEN
			F0							54 576			54		611	05900	54		15" CONDUIT, TYPE B, 706.02 15" CONDUIT, TYPE C	10	ا ا
		-	50							5/6			626	-	611	06100	626	FT	IS CONDUIT, TYPE C	10	/ I
										283			283		611	07400	283	FT	18" CONDUIT, TYPE B		1 <b>1</b>
			50							73			123		611	07600	123		18" CONDUIT, TYPE C	10	/ I
										21			21		611	08900	21	FT	21" CONDUIT, TYPE B		/ I
										291			291		611	09100	291	FT	21" CONDUIT, TYPE C		/ I
										568			568		611	10400	568	FT	24" CONDUIT, TYPE B		/ <b> </b>
														ļ					OUT CONDUCT TYPE B. 700.00		/ I
			50							103 323			103 373		611 611	10400	103 373		24" CONDUIT, TYPE B, 706.02 24" CONDUIT. TYPE C	10	<i>i</i> I
			30							71			71		611	10600 11900	71	FT	27" CONDUIT, TYPE B	10	1 <b>1</b>
									1	52			52		611	13400	52		30" CONDUIT, TYPE B		<i>i</i> I
										1,044			1,044		611	16400	1,044		36" CONDUIT, TYPE B		1 <b>I</b>
િ																					<i>i</i> I
o Xref										15			15		611	98150	15		CATCH BASIN, NO. 3		/ I
M.										17			17		611	98180	17		CATCH BASIN, NO. 3A		1 <b>1</b>
0 4:23									-	1			1 4	-	611	98370	1		CATCH BASIN, NO. 6		1 <b>I</b>
0 %										9			9	-	611 611	98450 98470	4 9		CATCH BASIN, NO. 2-2A CATCH BASIN, NO. 2-2B		1 <b>I</b>
ji, 8										<b>⊢</b>				<del>                                     </del>	011	30470	3	LACIT	O/(10/1 D/(0)(1), (10). 2 2D		<i>i</i> I
15		t e							l	4			4	1	611	98510	4	EACH	CATCH BASIN, NO. 2-3		ı
By: No									1				1		611	98630	1		CATCH BASIN ADJUSTED TO GRADE		/ I
rinted							1						1		611	98634	1	EACH	CATCH BASIN RECONSTRUCTED TO GRADE AS CB-6		/ I
Last P										1			1		611	98690	1		CATCH BASIN, MISC.:CB-3/MH COMBO CATCH BASIN	160	84-1.36 F GATEWAY
80 PR										16			16		611	99574	16	EACH	MANHOLE, NO. 3		∐ <u>"</u> ≩
20 4:1							10		<u> </u>				1.0		211	20054	40	=			1 8 E
/6/20						6	10	2	1				19 1		611	99654	19 1		MANHOLE ADJUSTED TO GRADE		-
O i									<u>'</u>	1			1		611 611	99660 99854	1	EACH EACH	MANHOLE RECONSTRUCTED TO GRADE WATER QUALITY BASIN, DETENTION	-	% o
e A		<del>                                     </del>	1			1			<del>                                     </del>	<del>-</del>	1	1	1	1	SPECIAL	69098000	1		ROCK VANE	183, 185	l ∺ ΓS
B pan		1			1,000	l			l e	1		<u> </u>	1,000	1	SPECIAL	69098100	1,000		PIPE CLEANOUT, 24" AND UNDER	12	ا کا کا
S Past S													<u></u>								FRA-CR 8 NORTHEAST
- ¢wp.					100								100		SPECIAL	69098100	100	FT	PIPE CLEANOUT, 27" TO 48"	12	Л _≖ Б
366001												LS	LS		SPECIAL	69098400	LS		DEWATERING, AS PER PLAN	183	ıI ⊡
160403		ļ	ļ	ļ		ļ			ļ	ļ		LS	LS	ļ	SPECIAL	69098400	LS		PROOF SURVEY (RUSH RUN)	183	ıl ^z
ets\20		1	1	<b></b>	380				<u> </u>	1		<u> </u>	380	4	SPECIAL	69098700	380		CLAY LINER	12 257	<i>i</i> I
,04She		1	-	<b> </b>	<del>- '-</del>	1	1		<del> </del>	1	<del> </del>	<b> </b>	<b> </b>	<del>  '</del>	SPECIAL	90011000	1	EACH	BASIN FOUNTAIN	12, 257	
3\D*g		1				1			<del> </del>	<del>                                     </del>	1			1	<b> </b>						41
116040		1	1										1								347
25/20		-	_	-	-	-	-	•	•	•	-	-	•	•	-	-	-	•			

	SHEET NUM.												PART.		TTEM	ITEM	GRAND	LINIT	DECCRIPTION		JLATED  4M  CKED
							48	56	213	215	219	240	01/MPO/P V	02/S>2>P V	ITEM	EXT	TOTAL	UNIT	DESCRIPTION	SHEET NO.	CALCU E CHE
l																			LIGHTING CONTINUED		
												9,194	9,194		625	98100	9,194		LIGHTING, MISC.:2" CONDUIT, CONCRETE ENCASED (MIS-700)	240	
												130	130		625	98100	130	FT	LIGHTING MISC :3" CONDUIT JACKED OR DRILLED (MIS-702)	240	1
												547	547		625	(98100)	547	<pre>/ FT }{</pre>	LIGHTING, MISC.:CIRCUIT CABLE, TWO #4 AWG, CU, 5KV (MIS-403)	240	4
												9,866	9,866		625	كر 98100 <u>9</u>	9,866	(FT)	LIGHTING, MISC::CIRCUIT CABLE, THREE #4 AWG, CU, 5KV	240	4
												LS	LS		625	98200	LS		LIGHTING, MISC.:EXISTING UNDERGROUND STREET LIGHTING SYSTEM REMOVAL, AS PER PLAN	240	-
- 1																			El FOTDIA I		4
$\sim$ 1														1.0	605	98200	1.0		ELECTRICAL LIGHTING, MISC.:LANDSCAPE ELECTRICAL POWER SYSTEM	254, 257	-
0														LS	625	96200	LS		LIGHTING, MISC.:LANDSCAFE ELECTRICAL FOWER STSTEM	254, 257	-
ŀ		- t																	TRAFFIC CONTROL		1
ŀ									42				42		621	54000	42	EACH	RAISED PAVEMENT MARKER REMOVED	+	1
								240	<del></del>	927.5			·	1,167.5	630	03101	1,167.5		GROUND MOUNTED SUPPORT, NO. 3 POST, AS PER PLAN	200	1
l										87.5				87.5	630	08005	87.5	FT	ONE WAY SUPPORT, NO. 3 POST, AS PER PLAN	200	1
								40.5		413.49				453.99	630	80101	453.99	SF	SIGN, FLAT SHEET, AS PER PLAN	200	
										36			36		630	84900	36	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL		
Ī																					
_ [							2						2		630	85100	2	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION		
0 [										39			39		630	86002	39	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL		
								70					70		644	00900	70	SF	ISLAND MARKING		_
									4				4		644	01000	4		RAILROAD SYMBOL MARKING		<b>↓</b> ≿
									53				53		644	01300	53	EACH	LANE ARROW		SUMMAR
- 1									40				40		044	0.4000	- 10	- A O. I.	MODD ON DAVIENENT 40"		ĮÈ
									12				12		644	01382	12		WORD ON PAVEMENT, 48"	_	Į
ŀ									19 5,559				19 5,559		644	50100 50300	19 5,559		PAVEMENT MARKING, MISC.:BIKE SYMBOL MARKING PAVEMENT MARKING, MISC.:CENTER LINE, DOUBLE SOLID, 5"	_	ન જ
ł									2,390				2,390	-	644 644	50300	2,390		PAVEMENT MARKING, MISC.:CENTER LINE, BOUBLE SOLID, 5  PAVEMENT MARKING, MISC.:CENTER LINE, SOLID-DASHED, 5"	-	- <u>`</u>
ŀ	1	-						300	3,716		<b>-</b>		4,016		644	50300	4,016		PAVEMENT MARKING, MISC.:CHANNELIZING LINE, 10"		┨┋
ŀ								300	3,710				4,010		044	30300	4,010		TAVENENT MANNING, MIGG. GHANNELIZING LINE, 10		— Ш
ŀ									188				188		644	50300	188	FT	PAVEMENT MARKING, MISC.:CHEVRON MARKING, WHITE, 20"		
ŀ									1,570				1,570		644	50300	1,570		PAVEMENT MARKING, MISC.:CROSSWALK LINE, 10"		1 5
l									1,565				1,565		644	50300	1,565		PAVEMENT MARKING, MISC.:DOTTED LINE, WHITE, 5"	1	1
ľ									10,420				10,420		644	50300	10,420		PAVEMENT MARKING, MISC :EDGE LINE, WHITE, 5"		
ı								200	2,343				2,543		644	50300	2,543		PAVEMENT MARKING, MISC.:EDGE LINE, YELLOW, 5"		1
									5,245				5,245		644	50300	5,245	FT	PAVEMENT MARKING, MISC.:LANE LINE, 5"		
								84	474				558		644	50300	558		PAVEMENT MARKING, MISC.:STOP LINE, 20"		
									504				504		644	50300	504	FT	PAVEMENT MARKING, MISC.:TRANSVERSE LINE, WHITE, 20"		
- 1									781				781		644	50300	781	FT	PAVEMENT MARKING, MISC.:TRANSVERSE LINE, YELLOW, 20"		_
									3				3		647	20930	3	EACH	SHARED LANE MARKING, TYPE A90		
- 1																					-
- 1													- 44		005	00450		- A O. I	TRAFFIC SIGNALS		-
-											11		11		625	00450	11	EACH	CONNECTION, FUSED PULL APART CONNECTION, UNFUSED PULL APART		-
_ }											11 1,989		11 1,989		625 625	00460 23001	11 1,989	EACH FT	NO. 4 AWG 600 VOLT DISTRIBUTION CABLE, AS PER PLAN	216	-
Xrefs		<u> </u>									2,586		2,586		625	23304	2,586		NO. 8 AWG 600 VOLT DISTRIBUTION CABLE	210	-
N) N				-					<u> </u>		836		836	<b>-</b>	625	23304	836		DISTRIBUTION CABLE, MISC.:POLE AND BRACKET CABLE, NO. 10 AWG, 600 VOLT	216	1
3:21 P											000		- 000		020	20000	- 555	' '		210	1
0 %											2,073		2,073		625	25409	2,073	FT	CONDUIT, 2", 725.051, AS PER PLAN	216	1
											396		396		625	25505	396	FT	CONDUIT, 3", 725.051, AS PER PLAN	216	
, Eric,											1,164		1,164		625	25740	1,164	FT	CONDUIT, MULTICELL 4", JACKED OR DRILLED, AS PER PLAN	216	1
Morris											215		215		625	25803	215	FT	CONDUIT, CONCRETE ENCASED, AS PER PLAN, 2", 725.051	216	
i di											465		465		625	25903	465	FT	CONDUIT, JACKED OR DRILLED, 725.04, AS PER PLAN, 2"	216	1
Printe																					] [
Lost											388		388		625	25903	388	FT	CONDUIT, JACKED OR DRILLED, 725.04, AS PER PLAN, 3"	216	]
20 Pk											8,608		8,608		625	25920	8,608	FT	CONDUIT, MISC.:4", MULTICELL, AS PER PLAN	216	1.36 \TEW
020 3:											11			11	625	27600	11	EACH	LUMINAIRE, MISC.:LED, 120 VOLT, TEAR DROP, AS PER PLAN	216	ᅟᅵᇎ
3/6/2											5,917		5,917		625	29000	5,917	FT	TRENCH		
											3		3		625	31600	3	EACH	PULL BOX, MISC.:12" X 18", 725.06, AS PER PLAN	216	<b>7</b> 8 0
Ē.																					-CR AST
B pave											9		9		625	31600	9		PULL BOX, MISC.:27", 725.08, AS PER PLAN	216	≱ ۲
ost Si											22		22		625	31600	22		PULL BOX, MISC.:32", 725.08, AS PER PLAN	216	┨╬╫
.6wb											31		31		625	32000	31	EACH	GROUND ROD	0.10	┨╚╔
001.6	<del> </del>							<b>!</b>	<u> </u>		1		1	1	630	79101	1	EACH	SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN	216	FRA- NORTHE
ల ∎								ļ	<del>                                     </del>		9		9	-	630	80101	9	SF	SIGN, FLAT SHEET, AS PER PLAN	216	- Ž
:0403GG									<b> </b>		15		15	1	620	Q0514	15	EACH	SIGN, STREET NAME, AS PER PLAN	246	1
.\20160403GG	I							<del></del>	<u> </u>		15 3	<del>                                     </del>	15 3	1	630 630	80511 97700	15 3	EACH EACH	SIGNING, MISC.:TRAFFIC SIGNAL SIGNS	216 216	<u> </u>
Sheets/20160403GG													,	-			J	LAUI	promise, inicontrivia i lo cicrate cicra		1 —
*g\Q4Sheetb\20160403GG																	23	FACH	VEHICULAR SIGNAL HEAD, MISC.:(LED). 3-SECTION. 12" I FNS. WITH BACKPLATE (BLACK). AS PER PLAN		
00K040810X/she4EX0/&m/K0H											23 8		23		632 632	04000 04000	23 8		VEHICULAR SIGNAL HEAD, MISC.:(LED), 3-SECTION, 12" LENS, WITH BACKPLATE (BLACK), AS PER PLAN VEHICULAR SIGNAL HEAD, MISC.:(LED), 5-SECTION, 12" LENS, WITH BACKPLATE (BLACK), AS PER PLAN	216 216	43

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[	SHEET NUM.												PART.			ITEM	GRAND				LATED IM KED KEB
								11	15	(16)	39	163	01/MPO/P V	02/S>2>P V	ITEM	EXT	TOTAL	UNIT	DESCRIPTION	SHEET NO.	CALCULA EAM CHECKE
																			STRUCTURE 20 FOOT SPAN AND UNDER (E. WILSON BRIDGE ROAD) CONTINUED		_
-												40 127	40 127		512 512	10050 33001	40 127	SY SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)  TYPE 2 WATERPROOFING, AS PER PLAN	162	-
-												63	63		512	33011	63	SY	TYPE 3 WATERPROOFING, AS PER PLAN	162	-
												32	32		516	13600	32	SF	1" PREFORMED EXPANSION JOINT FILLER		-
Ī												29	29		518	21200	29	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC		
																					]
												130	130		518	40000	130	FT	6" PERFORATED CORRUGATED PLASTIC PIPE		_
												11	11		601	32200 97400	11 70	CY FT	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER CONDUIT, MISC.:9'X4' CONDUIT, TYPE A, 706.05		-
-												70	70		611	97400	70	ГІ	CONDUIT, MISC.: 9 X4 CONDUIT, TTPE X, 700.03		-
																			STRUCTURE 20 FOOT SPAN AND UNDER (S. WORTHINGTON-GALENA ROAD)		-
												LS	LS		503	11100	LS		COFFERDAMS AND EXCAVATION BRACING		
												LS	LS		503	21301	LS		UNCLASSIFIED EXCAVATION, AS PER PLAN	162	_
												8,386	8,386	-	509	10000	8,386	LB	EPOXY COATED REINFORCING STEEL		-
-												26 46	26 46		511 511	46011 46510	26 46	CY CY	CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING, AS PER PLAN CLASS QC1 CONCRETE, FOOTING	162	-
-												40	40		311	40310	40	U1	CEASS QCT CONCINETE, TOOTING		-
0												68	68		512	10050	68	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)		-
İ												228	228		512	33001	228	SY	TYPE 2 WATERPROOFING, AS PER PLAN	162	]
												41	41		516	13600	41	SF	1" PREFORMED EXPANSION JOINT FILLER		<b>⊣</b> ≿ ˈ
-												56 258	56 258		518 518	21200 40000	56 258	CY FT	POROUS BACKFILL WITH GEOTEXTILE FABRIC  6" PERFORATED CORRUGATED PLASTIC PIPE		AR A
-												250	200		310	40000	230	ГІ	0 PERFORATED CORROGATED PLASTIC PIPE		SUMMA
												6	6		518	40010	6	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS		1 5
												22	22		601	32200	22	CY	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER		၂ တ
												101	101		611	94800	101	FT	8' X 4' CONDUIT, TYPE A, 706.05		<b>⋰</b> ₹
-																			STRUCTURE 20 FOOT SRAN AND UNDER (BRIVATE DRIVE)		E.
-												LS	LS		202	11000	LS		STRUCTURE 20 FOOT SPAN AND UNDER (PRIVATE DRIVE) STRUCTURE REMOVED		
ŀ												LS	LS		503	11100	LS		COFFERDAMS AND EXCAVATION BRACING		- B
Ī												LS	LS		503	21301	LS		UNCLASSIFIED EXCAVATION, AS PER PLAN	162	_
												3,937	3,937		509	10000	3,937		EPOXY COATED REINFORCING STEEL		
-												12	12		511	46011	12	CY	CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING, AS PER PLAN	162	_
-												24	24		511	46510	24	CY	CLASS QC1 CONCRETE, FOOTING		-
-												40	40		512	10050	40	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)		-
												164	164		512	33001	164	SY	TYPE 2 WATERPROOFING, AS PER PLAN	162	1
												34	34		516	13600	34	SF	1" PREFORMED EXPANSION JOINT FILLER		]
												30	30		518	21200	30	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC		_ '
-												12	12		601	32200	12	CY	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER		-
-												72	72		611	94800	72	FT	8' X 4' CONDUIT, TYPE A, 706.05		-
refs)										$\sim\sim$			$\sim$		~~~			~~~~	WAINTENANCE OF TRAFFIC	$\sim$	
ž & -										1,500			(1,500) LS		614	12000	1,500 LS	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B MAINTAINING TRAFFIC	£16)	
.02 AM											LS 120		120		614	11000 11110	120	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	16	-
0 \$\\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \											3		3		SPECIAL	61411300	3	EACH	WORK ZONE TRAFFIC SIGNAL	16	-
O %											1.69		1.69		614	21000	1.69	MILE	WORK ZONE CENTER LINE, CLASS I		-
is, Eric,																					]
7. Morri									0.19		4.00		0.19		614	21550	0.19	MILE	WORK ZONE CENTER LINE, CLASS III, 642 PAINT		
nted By									0.19		1.93		1.93 0.19		614 614	22000 22350	1.93 0.19	MILE MILE	WORK ZONE EDGE LINE, CLASS II, 4" WORK ZONE EDGE LINE, CLASS III, 4", 642 PAINT	+	-
ast Pr									0.19		819		819		614	23000	819	FT	WORK ZONE CHANNELIZING LINE, CLASS II, 8"		┤
00 AM											58		58		614	24000	58	FT	WORK ZONE DOTTED LINE, CLASS I		<b>1</b>
720 8:5																					84-1.36   GATEWA
72/9/8											222		222		614	25000	222	FT	WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS I		7. ₹
O "i."									100		197		197 100	-	614 614	26000 26610	197 100	FT FT	WORK ZONE STOP LINE, CLASS I WORK ZONE STOP LINE, CLASS III, 642 PAINT	-	1 % L
									100		812		812		614	27000	812	FT	WORK ZONE STOP LINE, CLASS III, 042 PAINT WORK ZONE CROSSWALK LINE, CLASS I	+	FRA-CR 8
Saved											11		11		614	30000	11	EACH	WORK ZONE ARROW, CLASS I	$\top$	<b>1</b> ₹ ₩
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ITEM 625- LUMINAIRE, UNDERPASS, SOLID STATE (LED), AS PER PLAN, 480V In addition to the requirements of ODOT's Construction and Material Specifications, luminaires for underpass lighting shall be as follows:

Luminaires for underpass lighting units shall be 480V, 3000K and shall be Evolve LED Area Light, Scalable Wall Pack EWS3-5-A7-D1-30-1-BLCK, Holophane Wallpack Full Cutoff LED HLWPC2-P10-30K-AH-T3M-BKSDP, or equal are approved by the Engineer.

Luminaires for underpass lighting unit which are wall mounted shall be furnished with an integral fuse holder and 10-ampere fuses.

Luminaires shall be painted black to match the light poles.

Payment will be made at the unit price bid under C&MS Item 625, "Luminaire, Underpass, Solid State (LED), As Per Plan, 480V" for each luminaire which shall be full compensation for all labor, materials and incidentals required to complete this item in a satisfactory and workmanlike manner.

#### ITEM 625 - SERVICE TO UNDERPASS LIGHTING, AS PER PLAN

This item shall consist of providing complete electrical power, except for luminaires, for underpass lighting systems. This installation work shall include disconnect switch, conduits, grounding, mountings, fittings, junction boxes, cables, splice kits, connection kits, and all incidentals necessary to complete, ready for use, the service as detailed on the plans.

The price bid for Item 625, Service to Underpass Lighting, As Per Plan, shall include payment for all equipment, labor and materials necessary to complete the work as specified, component parts not specifically mentioned, but required for satisfactory operation of this item, shall be furnished and considered paid for as part of the item.

ITEM 625 - LUMINAIRE, DECORATIVE, SOLID STATE (LED), AS PER PLAN, 480V Tear Drop luminaires shall conform with all of the specifications of ODOT Item 625, with the following exceptions:

- Luminaire shall be manufactured by Spring City Electrical Mfg. Co., Columbia Series, catalog bumber
- ALMCLU-LE155/EV2/X2-22-CR3-YLC3-FED-LACLB-CB. - Luminaires shall be painted black to match the light poles.

Payment shall be as per Item 625.

### ITEM 625 - LIGHTING, MISC.:POLE TO BE WIRED, 3 WIRE

Poles shall be wired in accordance with MIS-501, except that they shall be designed for a three wire, 480V single phase power, with ground, lighting system. The Contractor shall wire each pole as shown on the detail contained herein.

Payment shall be as per Item 625.

ITEM 625- LIGHTING, MISC.:240/480V PAD MOUNTED CONTROL SITE, COMPLETE Pad mount control site shall be as per MIS-603, except that it shall be designed for a three wire, 240/480V plus ground, single phase power system with a separate insulated neutral bus and a ground bar. The Contractor shall install three #4. 5 kV cables from the line terminals of the control panel to the CT cabinet and from the CT cabinet to the power company's around mounted service transformer, leaving 10' of cable coiled for the final connection to be made by the power company.

Provide an Arc Flash Hazard Warning sign on the outside front door of the enclosure, CT cabinet, and meter socket in accordance with the current National Electrical Code paragraph 110.16.

Provide an Available Fault Current sign on the outside of the front door of the service disconnect enclosure in accordance with the current National Electrical Code paragraph 110.24.

All lighting control enclosures, including CT cabinet, meter socket and disconnect switch, exposed conduits/fittings, mounting supports, etc. shall be painted black to match the light poles.

All labor and equipment required to provide a metered power service per AEP's requirements including meter, socket mounting, CT cabinet, mounting supports, foundations, and disconnect switch shall be considered incidental to this item. Additional compensation for coordination with the power supply agency shall not be made.

Payment shall be as per Item 625.

ITEM 625 - Lighting Misc.: LIGHT POLE, DECORATIVE, AS PER PLAN Light poles for teardrop lighting shall be manufactured by Spring City Electrical Mfg. Co., catalog number SSHOC-G17-07.88-29.00-TN3.50/8.00-CB, with base DWBWRT-23-CB and upper cross arm SARCMB-1S-72.00-TN2.38/-CB similar in appearance with Spring City drawing number LP-29139. All elements of the light

pole shall be a classic black finish, prime paint then finish Sherwin Williams Acrolon. Light poles shall include a warranty not less than five years.

In addition to the requirements of Item 625, light pole structures shall be designed and constructed by the supplier to support the loads that the plan requires to Contractor to install. The use of standard design designations and any details provided in this plan are intended to promote uniformity of design and are not warranted to be structurally adequate. The Contractor shall verify the anchor bolt circle, anchor bolt diameter, and orientation pattern with the light pole manufacturer. The manufacturer shall be responsible for verifying the pole design, and shall prepare shop drawings and structural design calculations stamped by an Ohio Professional Engineer. The shop drawings and calculations shall be submitted to the City of Worthington for approval prior to fabrication.

Payment shall be made per Item 625.

ITEM 625 - LIGHTING, MISC.: PULL BOX, MEDIUM DUTY, 13" X 24" (MIS-54) Lighting pull boxes installed for use associated with existing City of Columbus street lighting circuits near the intersection of Worthington-Galena Road and Sancus Boulevard shall be installed as per City of Columbus MIS-54.

Payment shall be as per Item 625 for each pull box furnished and installed by

<u>ITEM 625 - LIGHTING, MISC.: 6' STREET LIGHT FOUNDATION (MIS-201)</u> Street light pole foundations installed for this project shall be as per City of Columbus MIS-201.

Payment shall be as per Item 625 for each foundation furnished and installed by the Contractor.

ITEM 625 - LIGHTING, MISC.: POLE TO BE WIRED, 2 WIRE (MIS-500) Existing light poles to be wired and remain wired on an existing City of Columbus maintained circuit near the intersection of Worthington-Galena Road and Sancus Boulevard shall be wired in accordance with City of Columbus

Payment shall be made for each existing light pole to be wired and shall include all labor and materials listed in MIS-500.

ITEM 625 - LIGHTING, MISC.: CIRCUIT CABLE, TWO #4 AWG, CU, 5KV (MIS-403) Proposed lighting circuit cable installed as part of a modification to an existing City of Columbus lighting circuit near the intersection of Worthington-Galena Road and Sancus Boulevard shall be furnished and installed as per City of Columbus MIS-403.

Payment shall be made per linear foot of circuit, which shall include both #4

ITEM 625 - LIGHTING, MISC.: 2" CONDUIT, CONCRETE ENCASED (MIS-700) ITEM 625 - LIGHTING, MISC.: 3" CONDUIT, JACKED OR DRILLED (MIS-702) Lighting conduit shall be furnished and installed per the associated City of Columbus MIS drawing.

Payment shall be made per linear foot of conduit furnished and installed by the

## GROUNDING AND BONDING

The requirements of the State of Ohio Department of Transportation Construction and Material Specifications (C&MS) and the HL 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 arounding 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) Metal pull box lids shall be bonded by attachment of the equipmen grounding conductor to the frame diagonal as provided on HL-30.11.

# 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.
- 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: 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 minimum conductor size of 4 AWG. Bonding jumpers shall be minimum size 4 AWG.

#### 4. Ground rod.

- (a) A 3/4 inch Schedule 40 PVC conduit shall 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,
- 5. 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 spice.
  - (b) The service neutral shall only be connected to ground at the main power service disconnect switch.
- 6. Payment for grounding and bonding shall be considered incidental to the conductors installed by the project.

ITEM 625- LIGHTING, MISC.: CIRCUIT CABLE, THREE #4 AWG, CU, 5KV In addition to the requirements of MIS-404 circuit cable for this project shall contain three (3) #4 AWG, 5 kV cables.

Payment shall be made per linear foot of circuit, which shall include three #4 AŴG cables. 

ITEM 625 - LIGHTING, MISC.:EXISTING STREET LIGHTING SYSTEM REMOVAL In addition to the requirements of MIS-901 and MIS-902, the Contractor shall coordinate with AEP and the City of Columbus, Division of Power prior to the removal of all conduits, wire, aerial cable, insulators, cross arms and hardware, street light fixtures and lamps, mast arms, coils, transformers, poles, miscellaneous hardware, and appurtenances that have been designated for removal in the plans. Pole foundations shall be removed in accordance with MIS-900 and shall be incidental to this item. The Contractor shall ensure that all poles and luminaires that are removed remain the property of the original

This item of work shall also include decommissioning two light poles on Lakeview Plaza Boulevard to remove them from the City of Columbus public lighting circuit. Decommissioning a light pole shall consist of removing:

- -all underground wire leading up to or departing from the pole
- -all connector kits in the base of the pole
- -all pole and bracket cable

625

625

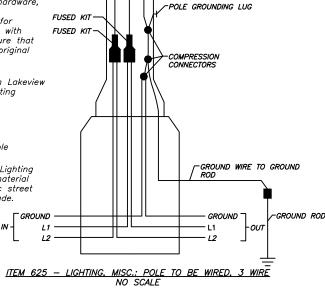
625

130

FT

-all City of Columbus pole identification tags/stickers from the pole

Payment shall be made per Item 625 - Lighting, MISC.:Existing Street Lighting System Removal, shall include all coordination, equipment, labor, and material necessary to remove the designated components of the existing electric street lighting system. No separate payment for itemized removal shall be made.



#### **ITEM TOTAL** UNIT ITEM DESCRIPTION NO. 625 EACH | LUMINAIRE, UNDERPASS, SOLID STATE (LED), AS PER PLAN, 480V 625 EACH SERVICE TO UNDERPASS LIGHTING, AS PER PLAN 625 3 EACH LIGHTING, MISC.:PULL BOX, MEDIUM DUTY, 13"X24" (MIS-54) 625 9 EACH | PULL BOX, 18", 725.06 EACH PULL BOX, 24", 725.06 625 3 EACH | LIGHTING, MISC.:6' STREET LIGHT FOUNDATION (MIS-201) 625 32 625 32 EACH LIGHT POLE, DECORATIVE, AS PER PLAN 625 32 EACH LUMINAIRE, DECORATIVE, SOLID STATE (LED), AS PER PLAN, 480V EACH | LIGHTING, MISC.:POLE TO BE WIRED, 2 WIRE (MIS-500) 625 3 EACH LIGHTING, MISC.:POLE TO BE WIRED, 3 WIRE 625 34 625 547 \LIGHTING, MISC.:CIRCUIT CABLE, TWO #4 AWG, CU, 5KV (MIS-403) LIGHTING, MISC.:CIRCUIT CABLE, THREE #4 AWG, CU, 5KV 625 9866 9194 FT LIGHTING, MISC.: 2" CONDUIT, CONCRETE ENCASED (MIS-700) 625

LIGHTING, MISC.:3" CONDUIT, JACKED OR DRILLED (MIS-702)

LIGHTING, MISC.: EXISTING STREET LIGHTING SYSTEM REMOVAL

LIGHTING, MISC.:240/480V PAD MOUNTED CONTROL SITE, COMPLETE

**SUB-SUMMARY OF LIGHTING ITEMS** 

NOTES LIGHTING

84-1.36 GATEWAY

FRA-CR 8 NORTHEAST (