

SHEET NUM.										PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
78	99	108	110	126	144					01/IMS/14	02/IMS/14/GAH						
TRAFFIC CONTROL CONT.																	
			0.11							0.11		646	10010	0.11	MILE	EDGE LINE, 6"	
			0.11							0.11		646	10110	0.11	MILE	LANE LINE, 6"	
			0.16							0.16		646	10200	0.16	MILE	CENTER LINE	
			610							610		646	10310	610	FT	CHANNELIZING LINE, 12"	
		0.26								0.26		807	12010	0.26	MILE	WET REFLECTIVE EPOXY PAVEMENT MARKING, EDGE LINE, 6"	
		0.37								0.37		807	12110	0.37	MILE	WET REFLECTIVE EPOXY PAVEMENT MARKING, LANE LINE, 6"	
		287								287		807	12310	287	FT	WET REFLECTIVE EPOXY PAVEMENT MARKING, CHANNELIZING LINE, 12"	
		2.31								2.31		807	14010	2.31	MILE	WET REFLECTIVE THERMOPLASTIC PAVEMENT MARKING, EDGE LINE, 6"	
		2.87								2.87		807	14110	2.87	MILE	WET REFLECTIVE THERMOPLASTIC PAVEMENT MARKING, LANE LINE, 6"	
		1,782								1,782		807	14310	1,782	FT	WET REFLECTIVE THERMOPLASTIC PAVEMENT MARKING, CHANNELIZING LINE, 12"	
		1,323								1,323		807	14410	1,323	FT	WET REFLECTIVE THERMOPLASTIC PAVEMENT MARKING, DOTTED LINE, 6"	
		5.18								5.18		850	10010	5.18	MILE	GROOVING FOR 6" RECESSED PAVEMENT MARKING, (ASPHALT)	
		1,323								1,323		850	10110	1,323	FT	GROOVING FOR 6" RECESSED PAVEMENT MARKING, (ASPHALT)	
		1,782								1,782		850	10130	1,782	FT	GROOVING FOR 12" RECESSED PAVEMENT MARKING, (ASPHALT)	
		0.63								0.63		850	20010	0.63	MILE	GROOVING FOR 6" RECESSED PAVEMENT MARKING, (CONCRETE)	
		287								287		850	20130	287	FT	GROOVING FOR 12" RECESSED PAVEMENT MARKING, (CONCRETE)	
TRAFFIC SIGNALS																	
				2						2		625	00480	2	EACH	CONNECTION, UNFUSED PERMANENT	
				54						54		625	25402	54	FT	CONDUIT, 2", 725.05	
				70						70		625	25500	70	FT	CONDUIT, 3", 725.04	
				6						6		625	25502	6	FT	CONDUIT, 3", 725.05	
928										928		625	25606	928	FT	CONDUIT, 4", 725.052, EPEC-80 HDPE	
644				58						702		625	29000	702	FT	TRENCH	
				1						625		625	30510	1	EACH	PULL BOX, 725.06, SIZE 4	
				2						625		625	31510	7	EACH	PULL BOX REMOVED	
5	5			1						625		625	31600	6	EACH	PULL BOX, MISC.:725.08, 32"	125
				3						625		625	32000	3	EACH	GROUND ROD	
644				58						702		625	36010	702	FT	UNDERGROUND WARNING/MARKING TAPE	
				97						97		632	40500	97	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	
				2						2		632	64010	2	EACH	SIGNAL SUPPORT FOUNDATION	
				61						61		632	69320	61	FT	POWER CABLE, 3 CONDUCTOR, NO. 2 AWG	
				1						1		632	70001	1	EACH	POWER SERVICE, AS PER PLAN	125
				2						2		632	90104	2	EACH	REUSE OF TRAFFIC CONTROL ITEM, VIDEO DETECTION SYSTEM	
				4						4		632	90200	4	EACH	REUSE OF VEHICULAR SIGNAL HEAD	
				2						2		632	90206	2	EACH	REUSE OF SIGNAL SUPPORT	
				1						1		632	90212	1	EACH	REUSE OF CONTROLLER	
				1						1		633	67200	1	EACH	CONTROLLER WORK PAD	
1,678				78						1,756		804	15040	1,756	FT	FIBER OPTIC CABLE, 144 FIBER	
STRUCTURE OVER 20 FOOT SPAN (FRA-270-3694 L)																	
				LS						LS		202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	142
				341						341		202	22900	341	SY	APPROACH SLAB REMOVED	
				341						341		202	23500	341	SY	WEARING COURSE REMOVED	
				LS						LS		503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
				11,107						11,107		509	10000	11,107	LB	EPOXY COATED STEEL REINFORCEMENT	
				100						100		509	20001	100	LB	CONCRETE REINFORCEMENT, REPLACEMENT OF EXISTING CONCRETE REINFORCEMENT, AS PER PLAN	142
				16						16		511	34447	16	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN	144
				2						2		511	34451	2	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN	144
				26						26		511	45711	26	CY	CLASS QC1 CONCRETE, ABUTMENT, AS PER PLAN	144
				1,130						1,130		512	10100	1,130	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
				110						110		512	33000	110	SY	TYPE 2 WATERPROOFING	
				170						170		516	12300	170	FT	STRIP SEAL EXPANSION JOINT ANCHORED WITH ELASTOMERIC CONCRETE	
				34						34		516	45305	34	EACH	REFURBISH BEARING DEVICE, AS PER PLAN	142
				LS						LS		516	47001	LS		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN	142
				18						18		518	12701	18	EACH	SCUPPER, VERTICAL EXTENSION, AS PER PLAN	142
				27						27		518	21200	27	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
				50						50		519	11101	50	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	142
				424						424		526	25011	424	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15'), AS PER PLAN	144
				153						153		526	90010	153	FT	TYPE A INSTALLATION	
				1						1		630	80100	1	SF	SIGN, FLAT SHEET	
				68						68		846	00110	68	CF	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	

CALCULATED
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 GENERAL SUMMARY
 FRA - 270 - 36 - 94
 74
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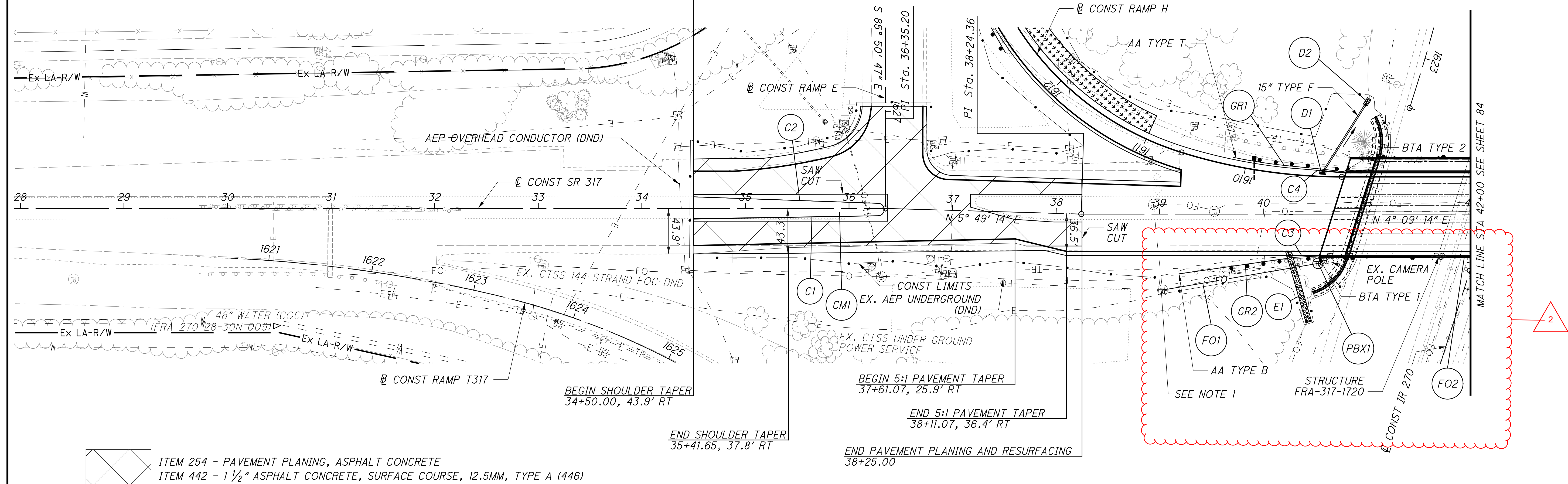
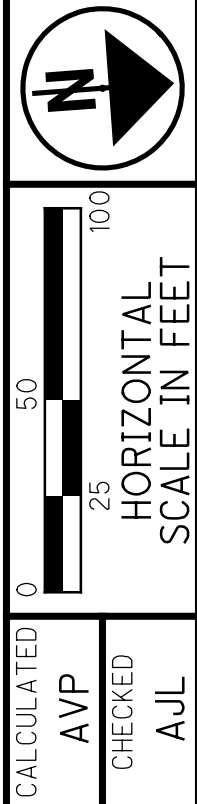
REVISIONS	
DATE	REVISED
2/13/24	1 - ITEM DESCRIPTION REVISED
2/15/24	2 - ITEMS ADDED AND QUANTITIES REVISED

REVISIONS	
DATE	REVISED
2/15/24	2 - PROPOSED FIBER OPTIC ITEMS ADDED

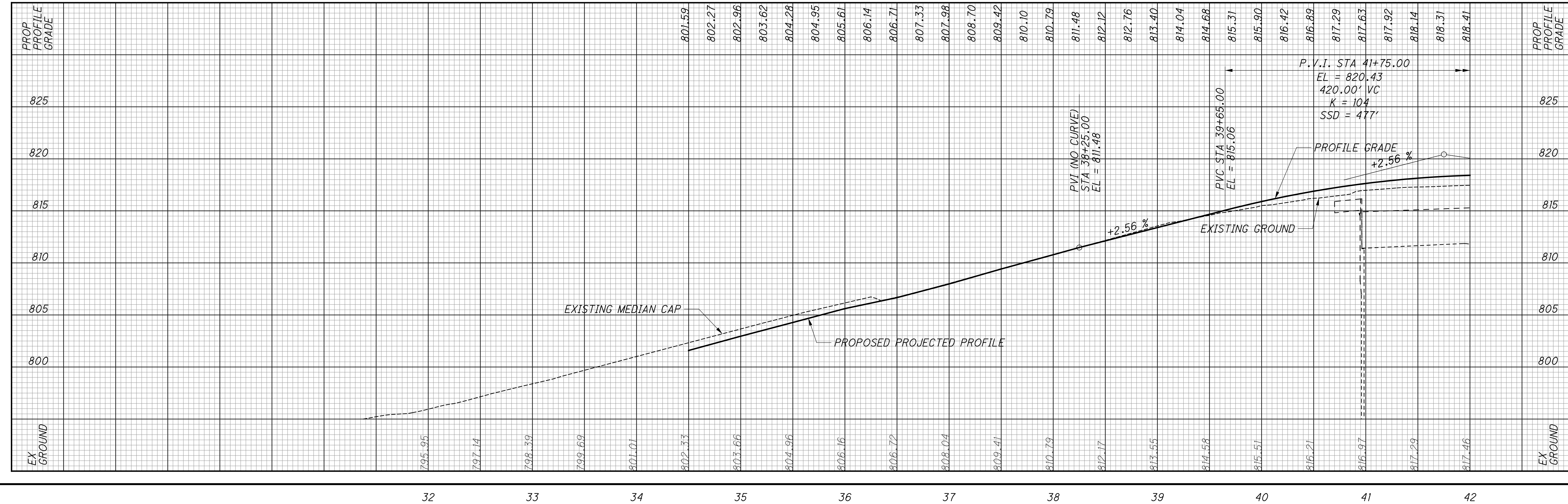
BEGIN WORK
SR 317 (HAMILTON RD)
STA 34+50.00

BEGIN PAVEMENT PLANING AND RESURFACING
BEGIN FULL-DEPTH SHOULDER REPLACEMENT
34+50.00

NOTES:
1. CONTRACTOR TO COORDINATE WITH COLUMBUS FIBERNET BEFORE WORK IS STARTED AND AFTER WORK IS COMPLETED. SEE SHEET 125 FOR ADDITIONAL NOTES.



ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE
ITEM 442 - 1 1/2" ASPHALT CONCRETE, SURFACE COURSE, 12.5MM, TYPE A (446)

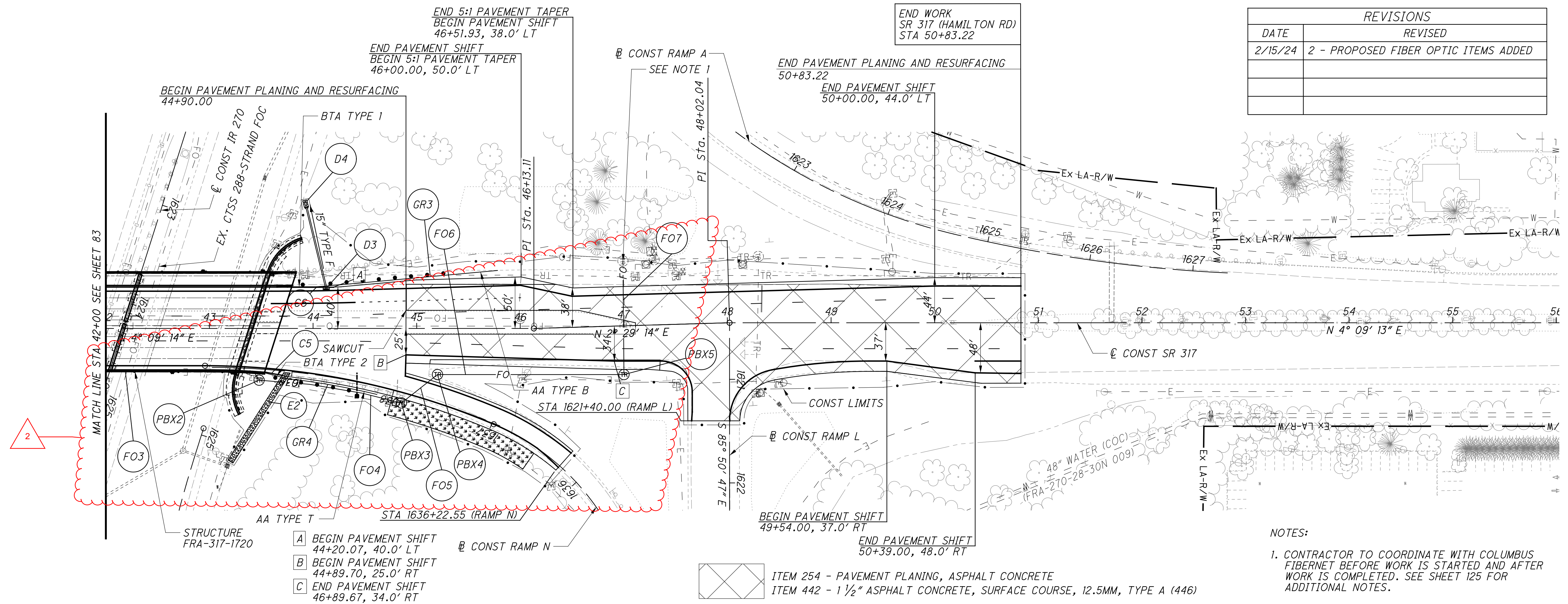
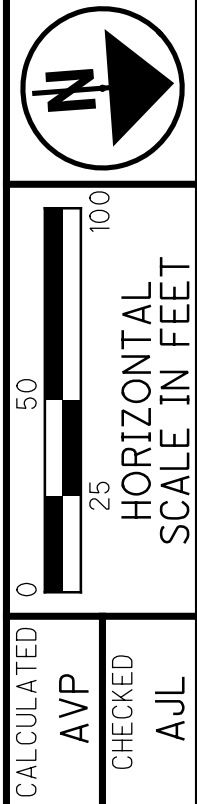


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PLAN AND PROFILE - SR 317
 STA 28+00 TO STA 42+00

FRA - 270 - 36.94

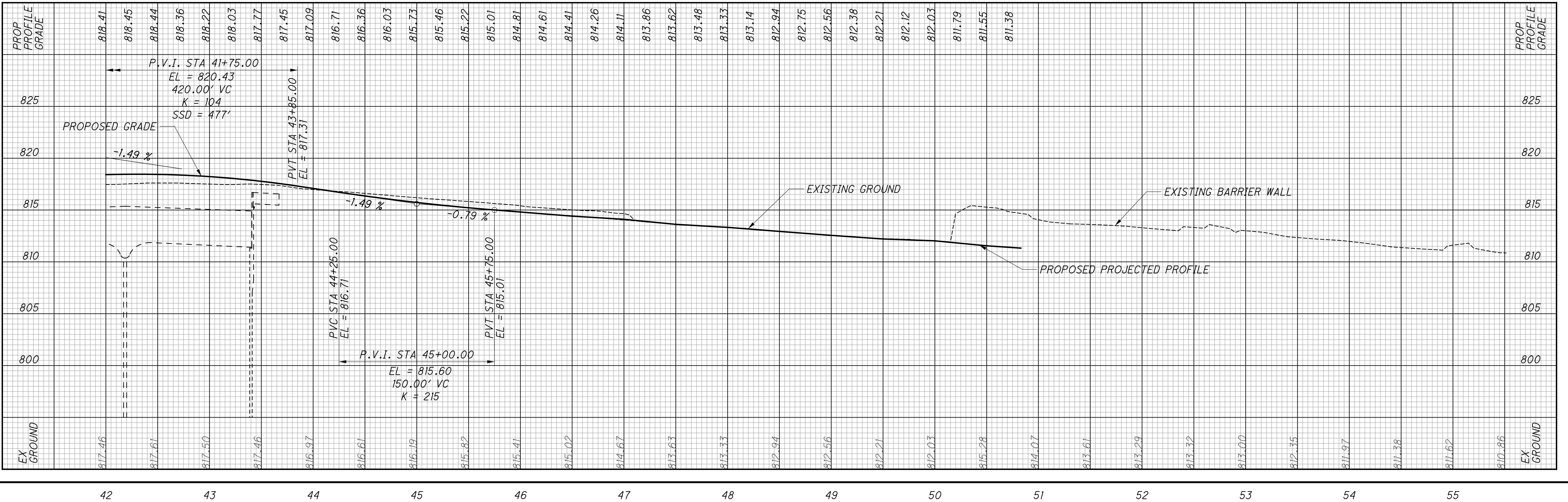
REVISIONS	
DATE	REVISED
2/15/24	2 - PROPOSED FIBER OPTIC ITEMS ADDED



- A BEGIN PAVEMENT SHIFT
44+20.07, 40.0' LT
- B BEGIN PAVEMENT SHIFT
44+89.70, 25.0' RT
- C END PAVEMENT SHIFT
46+89.67, 34.0' RT

ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE
ITEM 442 - 1 1/2" ASPHALT CONCRETE, SURFACE COURSE, 12.5MM, TYPE A (446)

NOTES:
1. CONTRACTOR TO COORDINATE WITH COLUMBUS FIBERNET BEFORE WORK IS STARTED AND AFTER WORK IS COMPLETED. SEE SHEET 125 FOR ADDITIONAL NOTES.



PLAN AND PROFILE - SR 317
STA 42+00 TO STA 56+00

FRA - 270 - 36.94

SHEET NO.	REFERENCE NO.	LOCATION	STATION		SIDE	621			807								850					
			FROM	TO		RPM, 1-WAY (WHITE)	RPM, 2-WAY (WHITE/RED)	RPM, 2-WAY (YELLOW/RED)	WET REFLECTIVE THERMOPLASTIC PAVEMENT MARKING, EDGE LINE, 6" (WHITE)	WET REFLECTIVE THERMOPLASTIC PAVEMENT MARKING, EDGE LINE, 6" (YELLOW)	WET REFLECTIVE THERMOPLASTIC PAVEMENT MARKING, LANE LINE, 6"	WET REFLECTIVE THERMOPLASTIC PAVEMENT MARKING, CHANNELIZING LINE, 12"	WET REFLECTIVE THERMOPLASTIC PAVEMENT MARKING, DOTTED LINE, 6"	WET REFLECTIVE EPOXY PAVEMENT MARKING, EDGE LINE, 6" (WHITE)	WET REFLECTIVE EPOXY PAVEMENT MARKING, EDGE LINE, 6" (YELLOW)	WET REFLECTIVE EPOXY PAVEMENT MARKING, LANE LINE, 6"	WET REFLECTIVE EPOXY PAVEMENT MARKING, CHANNELIZING LINE, 12"	GROOVING FOR 6" RECESSED PAVEMENT MARKING, (ASPHALT)	GROOVING FOR 6" RECESSED PAVEMENT MARKING, (ASPHALT)	GROOVING FOR 12" RECESSED PAVEMENT MARKING, (ASPHALT)	GROOVING FOR 6" RECESSED PAVEMENT MARKING, (CONCRETE)	GROOVING FOR 12" RECESSED PAVEMENT MARKING, (CONCRETE)
						EACH	EACH	EACH	MILE	MILE	MILE	FT	FT	MILE	MILE	MILE	FT	MILE	FT	FT	MILE	FT
116	CH-1	IR 270	1602+13	1605+00	RT												287					287
117	CH-2	IR 270	1605+00	1608+96	RT							396										396
117	CH-3	IR 270	1608+96	1611+28	RT		12					464										464
117	CH-4	IR 270	1606+75	1610+66	LT		10					391										391
118	CH-5	IR 270	1619+50	1622+17	LT		7					267										267
115	LL-2	IR 270	1589+70	1592+00	LT	6				0.13												0.13
115	LL-3	IR 270	1588+90	1592+00	RT	8				0.18												0.18
116	LL-4	IR 270	1592+00	1601+75	LT	8				0.19												0.19
116	LL-5	IR 270	1592+00	1601+70	LT	8				0.18												0.18
116	LL-6	IR 270	1592+00	1602+02	LT	8				0.19												0.19
116	LL-7	IR 270	1592+00	1602+06	RT	8				0.19												0.19
116	LL-8	IR 270	1592+00	1602+10	RT	8				0.19												0.19
116	LL-9	IR 270	1592+00	1602+12	RT	8				0.19												0.19
116	LL-10	IR 270	1602+02	1604+92	LT	2										0.06						0.06
116	LL-11	IR 270	1602+06	1604+94	LT	2										0.06						0.06
116	LL-12	IR 270	1602+10	1604+96	LT	2										0.05						0.05
116	LL-13	IR 270	1603+00	1604+90	LT	2										0.04						0.04
116	LL-14	IR 270	1602+12	1605+02	RT	3										0.06						0.06
116	LL-15	IR 270	1602+10	1605+04	RT	3										0.06						0.06
116	LL-16	IR 270	1602+06	1605+06	RT	3										0.06						0.06
117	LL-17	IR 270	1605+50	1606+75	LT	1				0.02												0.02
117	LL-18	IR 270	1605+50	1618+00	LT	31				0.71												0.71
117	LL-19	IR 270	1605+50	1616+90	RT	29				0.65												0.65
117	LL-20	IR 270	1617+17	1618+00	LT	0				0.02												0.02
118	LL-22	IR 270	1618+00	1619+50	LT	2				0.03												0.03
117	TL-1	IR 270	1608+96	1611+28	RT							264										264
115	WD-1	IR 270	1588+90	1592+00	RT								310									310
116	WD-2	IR 270	1592+00	1602+13	RT								1013									1013
115	WL-2	IR 270	1589+70	1592+00	LT				0.04													0.04
115	WL-3	IR 270	1588+90	1592+00	RT				0.06													0.06
116	WL-4	IR 270	1592+00	1601+25	LT				0.18													0.18
116	WL-5	IR 270	1592+00	1602+00	RT				0.19													0.19
116	WL-6	IR 270	1602+00	1605+10	RT									0.06								0.06
116	WL-7	IR 270	1601+25	1604+95	LT									0.07								0.07
117	WL-8	IR 270	1605+50	1606+74	RT				0.02													0.02
117	WL-9	IR 270	1605+50	1616+74	LT				0.21													0.21
TOTALS CARRIED TO SHEET 108						143	29		0.70		2.87	1782	1323	0.13		0.37	287	3.57	1323	1782	0.50	287

REVISIONS	
DATE	REVISED
2/15/24	2 - ITEMS ADDED

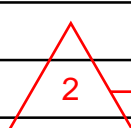
PAVEMENT MARKING SUBSUMMARY

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SHEET NO.	REFERENCE NO.	LOCATION	STATION		SIDE	621			807								850					
			FROM	TO		RPM, 1-WAY (WHITE)	RPM, 2-WAY (WHITE/RED)	RPM, 2-WAY (YELLOW/RED)	WET REFLECTIVE THERMOPLASTIC PAVEMENT MARKING, EDGE LINE, 6" (WHITE)	WET REFLECTIVE THERMOPLASTIC PAVEMENT MARKING, EDGE LINE, 6" (YELLOW)	WET REFLECTIVE THERMOPLASTIC PAVEMENT MARKING, LANE LINE, 6"	WET REFLECTIVE THERMOPLASTIC PAVEMENT MARKING, CHANNELIZING LINE, 12"	WET REFLECTIVE THERMOPLASTIC PAVEMENT MARKING, DOTTED LINE, 6"	WET REFLECTIVE EPOXY PAVEMENT MARKING, EDGE LINE, 6" (WHITE)	WET REFLECTIVE EPOXY PAVEMENT MARKING, EDGE LINE, 6" (YELLOW)	WET REFLECTIVE EPOXY PAVEMENT MARKING, LANE LINE, 6"	WET REFLECTIVE EPOXY PAVEMENT MARKING, CHANNELIZING LINE, 12"	GROOVING FOR 6" RECESSED PAVEMENT MARKING, (ASPHALT)	GROOVING FOR 6" RECESSED PAVEMENT MARKING, (ASPHALT)	GROOVING FOR 12" RECESSED PAVEMENT MARKING, (ASPHALT)	GROOVING FOR 6" RECESSED PAVEMENT MARKING, (CONCRETE)	GROOVING FOR 12" RECESSED PAVEMENT MARKING, (CONCRETE)
						EACH	EACH	EACH	MILE	MILE	MILE	FT	FT	MILE	MILE	MILE	FT	MILE	FT	FT	MILE	FT
117	WL-11	IR 270	1611+28	1616+90	RT				0.11									0.11				
117	WL-12	IR 270	1606+75	1618+00	LT				0.21									0.21				
118	WL-14	IR 270	1618+00	1624+93	LT				0.13									0.13				
115	YL-2	IR 270	1589+70	1592+00	LT					0.04								0.04				
115	YL-3	IR 270	1588+90	1592+00	RT					0.06								0.06				
116	YL-4	IR 270	1592+00	1602+00	LT					0.19								0.19				
116	YL-5	IR 270	1592+00	1601+75	RT					0.19								0.19				
116	YL-6	IR 270	1601+75	1605+10	RT										0.06						0.06	
116	YL-7	IR 270	1601+50	1605+00	LT										0.07						0.07	
116	YL-8	IR 270	1605+00	1605+50	LT					0.01								0.01				
117	YL-9	IR 270	1605+50	1616+90	RT					0.22								0.22				
117	YL-10	IR 270	1605+50	1618+00	LT					0.24								0.24				
117	YL-11	IR 270	1610+66	1616+74	LT			9		0.12								0.12				
118	YL-14	IR 270	1622+17	1627+78	LT			8		0.11								0.11				
TOTALS (THIS SHEET)								17	0.45	1.16					0.13			1.61			0.13	
TOTALS (107)						143	29		0.70	2.87	1782	1323	0.13		0.37	287	3.57	1323	1782	0.50	287	
SUBTOTALS						143	29	17	1.15	1.16	2.87	1782	1323	0.13	0.13	0.37	287	5.18	1323	1782	0.63	287
TOTALS CARRIED TO GENERAL SUMMARY						189			2.31	2.87	1782	1323	0.26		0.37	287	5.18	1323	1782	0.63	287	



REVISIONS	
DATE	REVISED
2/15/24	2 - ITEMS ADDED

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PAVEMENT MARKING SUBSUMMARY

ITEM 625 - PULL BOX, 725.08, 32"

THE PULL BOXES SHALL BE SUPPLIED WITH A STEEL LID WITH THE WORD "TRAFFIC" ON THE SURFACE OF THE LID.

ALL COSTS RESULTING FROM THE ABOVE REQUIREMENTS SHALL BE INCLUDED IN THE UNIT PRICE BID PER EACH FOR ITEM 625 - PULL BOX, 725.08, 32"

ITEM 632 - POWER SERVICE, AS PER PLAN

POWER CABLE SHALL BE PROVIDED AS PER CMS 632.23 BETWEEN THE CONTROL CABINET AND THE SPLICE LOCATION NOTED IN THE PLANS.

THE POWER TAP-IN LOCATION FOR THE EXISTING SIGNALIZED RAMP INTERSECTION SHALL BE LOCATED AT AN EXISTING PULL BOX AT STA. 35+89, 81.6' RT. NEW POWER CABLE SHALL BE INSTALLED BETWEEN THIS POWER TAP-IN LOCATION AND THE RELOCATED EXISTING CONTROLLER.

GUARANTEE

THE CONTRACTOR SHALL GUARANTEE THAT THE TRAFFIC CONTROL SYSTEM INSTALLED AS PART OF THIS CONTRACT SHALL OPERATE SATISFACTORILY FOR A PERIOD OF 90 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 GUARANTEE SHALL COVER THE FOLLOWING ITEMS OF THE TRAFFIC CONTROL SYSTEM: CONTROLLERS AND ASSOCIATED EQUIPMENT, DETECTOR UNITS, INTERCONNECTION ITEMS AND MASTER CONTROL EQUIPMENT.

CUSTOMARY MANUFACTURER'S GUARANTEES FOR THE FOREGOING ITEMS SHALL BE TURNED OVER TO THE STATE OR THE MAINTAINING AGENCY FOLLOWING ACCEPTANCE OF THE EQUIPMENT.

THE COST OF GUARANTEEING THE TRAFFIC CONTROL SYSTEM WILL BE INCIDENTAL TO AND INCLUDED IN THE CONTRACT UNIT PRICE OF THE VARIOUS ITEMS MAKING UP THE SYSTEM.

GROUNDING AND BONDING

THE REQUIREMENTS OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMS) 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 (CONTINUED)

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:

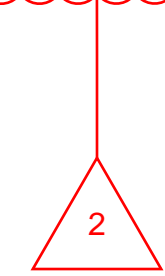
COND. NO.	COLOR	VEHICLE SIGNAL	PEDESTRIAN SIGNAL
1	BLACK	GREEN BALL	#1 WALK
2	WHITE	AC NEUTRAL	AC NEUTRAL
3	RED	RED BALL	#1 DW/FDW
4	GREEN	EQUIPMENT GROUND	EQUIPMENT GROUND
5	ORANGE	YELLOW BALL	#2 DW/FDW
6	BLUE	GREEN ARROW	#2 WALK
7	WHITE/BLACK STRIPE	YELLOW ARROW	NOT USED

GROUNDING AND BONDING (CONTINUED)

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 SPICE.
 - 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.

CONTRACTOR COORDINATION WITH COLUMBUS FIBERNET

COLUMBUS FIBERNET HAS DISCONNECTED THE EXISTING 144 STRAND FIBER OPTIC CABLE ALONG HAMILTON ROAD (SR 317) AS SHOWN IN SHEETS 83 & 84 FROM THE EXISTING SYSTEM. THE CONTRACTOR IS TO COORDINATE WITH COLUMBUS FIBERNET ON EXACT DISCONNECT LOCATIONS ON THIS SYSTEM. THE CONTRACTOR SHALL REMOVE THE DISCONNECTED FIBER, CONDUIT, AND PULL BOXES, AND CONSTRUCT NEW CONDUIT, PULL BOXES, AND FIBER AS SHOWN IN THE PLAN. ONCE INSTALLATION IS COMPLETE, THE CONTRACTOR SHALL COORDINATE WITH COLUMBUS FIBERNET, AND COLUMBUS FIBERNET WILL CONNECT THE NEW 144-STRAND FIBER OPTIC CABLE TO THE EXISTING SYSTEM. ALL COORDINATION TIME AND EFFORT SHALL BE CONSIDERED INCIDENTAL TO THE FIBER OPTIC PAY ITEMS.



REVISIONS	
DATE	REVISED
2/15/24	2 - COORDINATION NOTE ADDED