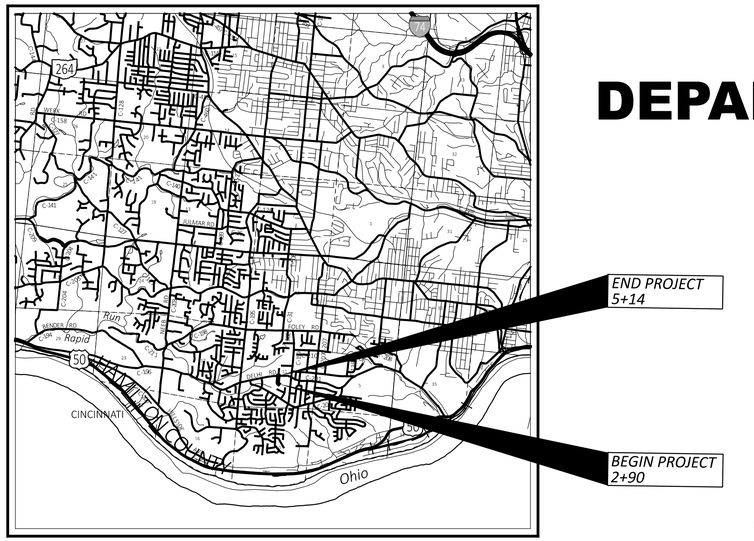
STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

HAM-CR196-1.89

DELHI TOWNSHIP

HAMILTON COUNTY



LOCATION MAP

LATITUDE: 39°05'42" LONGITUDE: -84°36'32"

PORTION TO BE IMPROVED
INTERSTATE HIGHWAY
FEDERAL ROUTES
STATE ROUTES
COUNTY & TOWNSHIP ROADS
OTHER ROADS

DESIGN DESIGNATION

	DELHI ROAD	KLEMME DRIVE
CURRENT ADT (2026)	15,520	76
DESIGN YEAR ADT (2046)	17,000	84
DESIGN HOURLY VOLUME (2046)	1,700	8
DIRECTIONAL DISTRIBUTION	0.51	0.50
TRUCKS (24 HOUR B&C)	1%	0.5%
DESIGN SPEED	35	25
LEGAL SPEED	35	25
DESIGN FUNCTIONAL CLASSIFICATION:	URBAN MINOR ARTERIAL	URBAN LOCAL
NHS PROJECT	NO	

DESIGN EXCEPTIONS

NONE

ADA DESIGN WAIVERS

REQUIRED

UNDERGROUND UTILITIES
Contact Two Working Days Before You Dig
OHIO811.org Before You Dig
OHIO811, 8-1-1, or 1-800-362-2764
(Non members must be called directly)

PLAN PREPARED BY:
TEC ENGINEERING, INC.
7288 CENTRAL PARKE BLVD,
MASON, OH 54040

INDEX OF SHEETS:

FEDERAL PROJECT NUMBER

E250067

RAILROAD INVOLVEMENT

NONE

PROJECT DESCRIPTION

THIS PROJECT INCLUDES A WIDENED APPROACH OF KLEMME DR SOUTH OF DELHI PIKE AND TRAFFIC SIGNAL REBUILDS AT DELHI PIKE/KLEMME DR AND DELHI PIKE/DELHI TOWNE SQUARE.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA:	0.309 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	0.125 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	N/A

2023 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS, CHANGES LISTED IN THE PROPOSAL, AND THE SUPPLEMENTAL SPECIFICATION 800 VERSION INDICATED ON THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

CLOUDED REVISIONS - 2/24/26
-INVERT CHANGE FOR STORM CONDUIT, P-3
-SIGNAL ITEM NUMBER CHANGE FOR PEDESTAL WITH TRANSFORMER BASE

DATES UPDATED

ENGINEER'S SEAL

STATE OF OHIO · KELLIE L. LINVILLE · E-80232 · REGISTERED PROFESSIONAL ENGINEER

STANDARD CONSTRUCTION DRAWINGS								SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS
BP-4.1	7/19/13	MT-95.31	7/18/25	TC-12.31	1/16/26			800	1/16/26	
BP-5.1	1/16/26	MT-97.10	7/18/25	TC-21.21	7/18/25			809	1/16/26	
BP-7.1	1/16/26	MT-101.90	7/17/20	TC-41.20	10/18/13			813	7/21/23	
		MT-105.10	1/17/20	TC-41.30	4/21/23			832	7/18/25	
CB-3A	1/16/26	MT-110.10	7/19/13	TC-41.40	1/16/26			870	7/18/25	
MH-3	7/19/24			TC-42.20	10/18/13			909	1/16/26	
DM-1.1	1/17/25	HL-10.11	1/16/26	TC-52.10	10/18/13			913	4/16/21	
DM-4.3	1/15/16	HL-10.12	1/16/26	TC-52.20	1/15/21			916	7/19/24	
DM-4.4	1/15/16	HL-30.11	1/16/26	TC-71.10	1/16/26					
		HL-40.10	1/16/26	TC-74.10	1/16/26					
		HL-60.11	7/21/17	TC-81.22	1/16/26					
				TC-83.10	1/16/26					
				TC-83.20	1/16/26					
				TC-85.10	1/16/26					
				TC-85.20	4/21/23					

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY EXCEPT AS NOTED ON SHEET 06, AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

Douglas A. Gruver, P.E.
District 08 Deputy Director

Pamela Boratyn
Director, Department of Transportation

TITLE SHEET

DESIGN AGENCY
PLAN PREPARED BY:
TEC Engineering, Inc.
7288 Central Parke Blvd.
Mason, OH 45040

DESIGNER JMD
REVIEWER KLL 02/24/26
PROJECT ID 119070
SHEET 01 TOTAL 47

SHEET NUM.										PART.	ALT	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
5	6	12	13	14	31	32	34	39	44	01/MPO/ DELH	(X)		EXT	TOTAL			
																TRAFFIC CONTROL	
						1				1		630	08600	1	EACH	SIGN POST REFLECTOR	
								8	10	18		630	79100	18	EACH	SIGN HANGER ASSEMBLY, MAST ARM	
								2	2	4		630	79500	4	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED	
						10				10		630	84900	10	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
						8				8		630	86002	8	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
						51.5				51.5		630	03100	51.5	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
						21.8		60.5	89	171.3		630	80100	171.3	SF	SIGN, FLAT SHEET	
					0.05					0.05		644	00300	0.05	MILE	CENTER LINE	
					192					192		644	00400	192	FT	CHANNELIZING LINE, 8"	
					71					71		644	00500	71	FT	STOP LINE	
					413					413		644	00620	413	FT	CROSSWALK LINE, 12"	
					3					3		644	01300	3	EACH	LANE ARROW	
					160					160		644	30000	160	FT	REMOVAL OF PAVEMENT MARKING	
																TRAFFIC SIGNALS	
								1	3	4		625	00450	4	EACH	CONNECTION, FUSED PULL APART	
								2	6	8		625	00460	8	EACH	CONNECTION, UNFUSED PULL APART	
								1	3	4		625	00480	4	EACH	CONNECTION, UNFUSED PERMANENT	
								1		1		625	18401	1	EACH	BRACKET ARM, 20', AS PER PLAN	36
								1	3	4		625	18511	4	EACH	BRACKET ARM, 30', AS PER PLAN	36
								36	972	1,008		625	23304	1,008	FT	NO. 8 AWG 600 VOLT DISTRIBUTION CABLE	
								258	495	753		625	23400	753	FT	NO. 10 AWG POLE AND BRACKET CABLE	
								30	36	66		625	25408	66	FT	CONDUIT, 2", 725.051	
								30	65	95		625	25604	95	FT	CONDUIT, 4", 725.051	
								248	217	465		625	25908	465	FT	CONDUIT, JACKED OR DRILLED, 725.052, 4"	
								2	3	5		625	26253	5	EACH	LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), AS PER PLAN, 120V, 16000-21000 LUMENS	36
								51	96	147		625	29002	147	FT	TRENCH, 24" DEEP	
								5	5	10		625	30706	10	EACH	PULL BOX, 725.08, 24"	
								7	8	15		625	32000	15	EACH	GROUND ROD	
								2	2	4		632	05007	4	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN, BLACK	36
								2		2		632	05086	2	EACH	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, BLACK	
								2	4	6		632	64010	6	EACH	SIGNAL SUPPORT FOUNDATION	
								6	8	14		632	05006	14	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, BLACK	
								6	6	12		632	20731	12	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	36
								10	10	20		632	25000	20	EACH	COVERING OF VEHICULAR SIGNAL HEAD	
								6	6	12		632	25010	12	EACH	COVERING OF PEDESTRIAN SIGNAL HEAD	
								966	848	1,814		632	40500	1,814	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	
								1,079	1,103	2,182		632	40700	2,182	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	
								4	3	7		632	64021	7	EACH	PEDESTAL FOUNDATION, AS PER PLAN	36
								936	818	1,754		632	65300	1,754	FT	LOOP DETECTOR LEAD-IN CABLE, 2 CONDUCTOR, NO. 14 AWG	
								32	15	47		632	66104	47	FT	POWER CABLE, 3 CONDUCTOR, NO. 10 AWG	
								101	123	224		632	69800	224	FT	SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG	
								1	1	2		632	70001	2	EACH	POWER SERVICE, AS PER PLAN	36
								1		1		632	71389	1	EACH	SIGNAL SUPPORT, TYPE TC-12.31 DESIGN 10 POLE, WITH MAST ARMS TC-81.22 DESIGN 14 AND DESIGN 12, AS PER PLAN	36
									1	1		632	72141	1	EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 13, AS PER PLAN	36
								1		1		632	78349	1	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC-12.31 DESIGN 10 POLE, WITH MAST ARMS TC-81.22 DESIGN 12 AND DESIGN 12, AS PER PLAN	36
									3	3		632	79111	3	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 4, AS PER PLAN	36
								4	3	7		632	89921	7	EACH	PEDESTAL, 10.7' TALL, TRANSFORMER BASE, AS PER PLAN	36
								1	1	2		632	90101	2	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN	36
							4			4		632	90400	4	EACH	SIGNALIZATION, MISC.: VACUUM EXCAVATION OF FOUNDATION	36
								1	1	2		633	67101	2	EACH	CABINET FOUNDATION, AS PER PLAN	37
								1	1	2		633	65521	2	EACH	CABINET, TYPE 332, AS PER PLAN	37
								1	1	2		633	67200	2	EACH	CONTROLLER WORK PAD	
																TRAFFIC SIGNALS ALTERNATES	
								6	6	12	X	632	20750	12	EACH	ACCESSIBLE PEDESTRIAN PUSHBUTTON, (ALTERNATE 1)	
								6	6	12	X	632	20750	12	EACH	ACCESSIBLE PEDESTRIAN PUSHBUTTON, (POLARA) (ALTERNATE 2)	36

ITEM NUMBER CHANGED

GENERAL SUMMARY

DESIGN AGENCY

TEC

PLAN PREPARED BY:
TEC Engineering, Inc.
7288 Central Park Blvd.
Mason, OH 45040

DESIGNER
JMD

REVIEWER
KLL 02/24/26

PROJECT ID
119070

SHEET 10 TOTAL 47

HAM-CR196-1.89

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\\10.1.1.4\projects\2023 Projects\23351 Delhi Township\001 HAM CR 196\23351-001\400-Engineering\Roadway\Sheets\23351-001_GG001.dgn

LEGEND

PR. FULL DEPTH ASPHALT PAVEMENT
PR. ASPHALT DRIVE
PR. WALK

ATG - ADJUST TO GRADE
TBR - TO BE REMOVED
RBO - REMOVAL BY OTHERS
DND - DO NOT DISTURB

NOTE:
FUTURE PROJECT (BY OTHERS) WILL INCLUDE FULL WIDTH/FULL DEPTH PAVEMENT TO STA. 2+90.00. ALL WORK FOR FUTURE PROJECT WILL BE COMPLETED PRIOR TO THE START OF CONSTRUCTION OF KLEMME DRIVE.

BEGIN WORK STA. 02+24.91
BEGIN PROJECT STA. 02+90.00
END PROJECT STA. 05+13.95
END WORK STA. 06+00.00

DO NOT DISTURB STAMPED CONCRETE BUFFER BEYOND STA. 4+97.69, OFF. 49.74' LT
DO NOT DISTURB EX. CONCRETE WALK BEYOND STA. 4+99.67, OFF. 33.44' LT
EX. SIGNAL/ UTILITY POLE, RBO
PR. UTILTY POLE, BY OTHERS
END RETAINING WALL STA. 04+95.20
CR8, PR. CURB RAMP, TYPE B2, WITH RETAINING WALL AT THE BACK OF WALK. THE BACK OF WALK/FACE OF WALL SHOULD BE SET AT 4.5' INSIDE THE R/W
BEGIN RETAINING WALL STA. 03+60.0

PR. WALK AT BACK OF CURB. PR. CURB (BY OTHERS) TO INCLUDE DEPRESSED CURB.
EX. FENCE, DND
PR. CB-3A, D-54
EX. FIRE HYDRANT, TO BE REMOVED
EX. GAS VALVE, ATG
PR. EOP
TIE LINE
PR. MH-3, D-50
EX. MANHOLE, TBR
PR. CB-3A, D-52
PR. 7.0' WALK
UD OUTLET
6" UD, UD1
℄ CONSTRUCTION KLEMME DRIVE
EX. EOP
6" UD, UD2
← 18" TYPE B
PR. MH-3, D-51
6" UD, UD3
EX. FENCE, TBR
EX. DRIVEWAY, TBR
EX. CB-2-2B, DND
EX. GAS VALVE, ATG
EX. MAILBOX, DND
EX. UTILITY POLE, DND
EX. MAIL BOX, DND
EX. TEMPORARY PAVEMENT TO BE REMOVED
SAWCUT
PR. MH-3, D-53 (BY OTHERS)
EX. UTILITY POLE, DND
EX. GAS VALVE, DND
EX. GAS VALVE, ATG
EX. CB-3A, DND
PR. SIGNAL POLE
EX. PULL BOX, TBR
EX. SIGNAL CABINET, TBR
CR9, PR. CURB RAMP, TYPE B2
EX. SIGNAL POLE, TBR
PR. PEDESTAL
CR5, PR. CURB RAMP, TYPE B3
EX. WATER MANHOLE, ATG
CR6, PR. CURB RAMP, TYPE B2
EX. 8" Private San. Se

EX. 8" WATER MAIN
EX. 15" STORM (REMOVED BY OTHERS)
EX. 6" WATER MAIN, TBA
EX. 12" SAN. SEWER
EX. SAN MH, ATG
EX. 2" GAS MAIN
EX. 15" STM. TBR
EX. 12" STM. TBR
EX. 12" SAN. SEWER
EX. 12" GAS MAIN
EX. 18" STM.
EX. 12" STM.
EX. 6" WATER
EX. 2" GAS

℄ COMM. ASPH. DRIVE
℄ (FUTURE) COMM ASPH. DRIVE
℄ RES. ASPH. DRIVE
℄ DELHI PIKE

MICHAEL D LEEN
KLEMME DR
0540-0041-0758
0.260 ACRES

MICHAEL D LEEN
384 KLEMME DR
0540-0041-0334
0.604 ACRES

BRIAN ANNIS
388 KLEMME DR
0540-0041-0432
0.540 ACRES

SANDREIA JONES
4995 DELHI PK
0540-0041-0143
0.164 ACRES

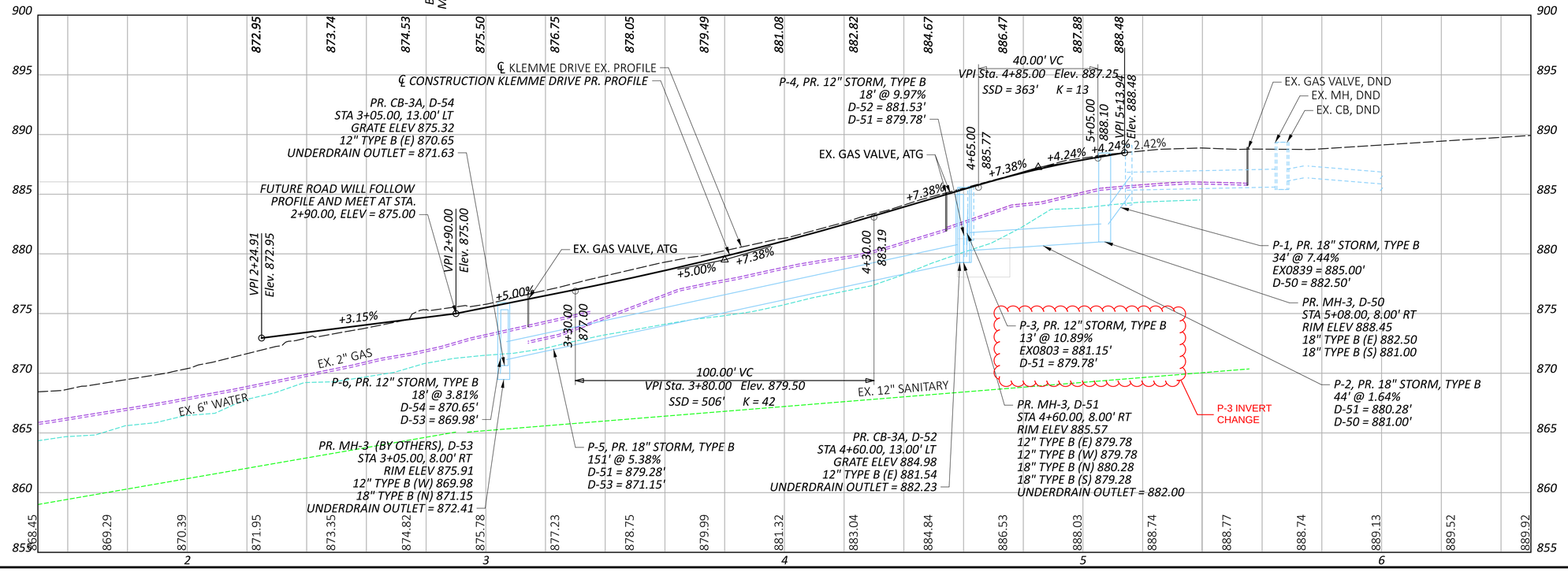
BATUKBHA

VALDS USA LLC
0 DELHI PK
)-0042-0012
429 ACRES

1,042.80'
N06°03'53"E
pi STA. 7+79.51

HORIZONTAL SCALE IN FEET
0 10 20 40

PLAN AND PROFILE
KLEMME DRIVE



DESIGN AGENCY
PLAN PREPARED BY:
TEC Engineering, Inc.
7288 Central Parke Blvd.
Mason, OH 45040

DESIGNER JMD
REVIEWER KLL 02/24/26
PROJECT ID 119070
SHEET 16 TOTAL 47

HAM-CR196-1.89

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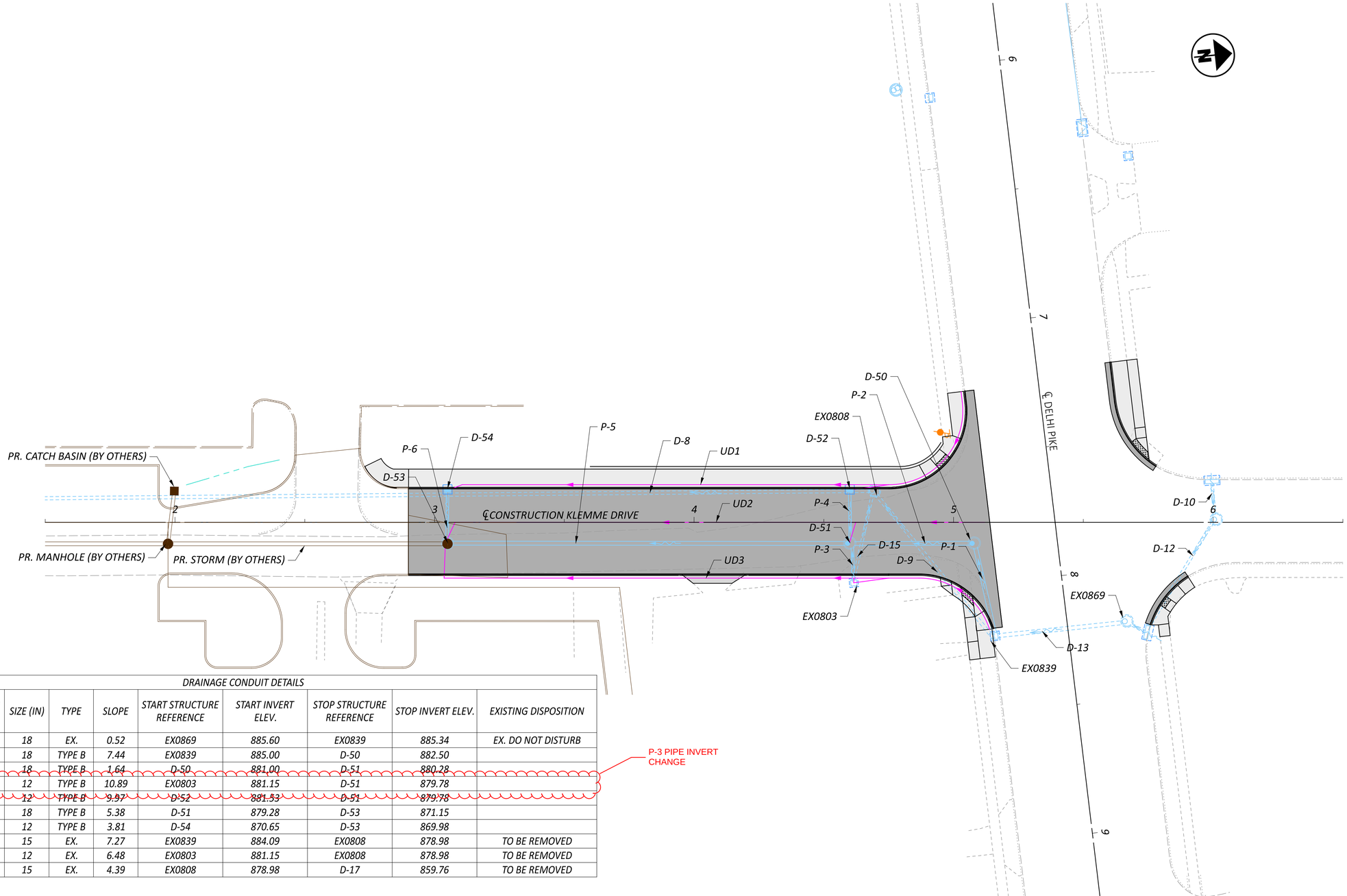

HORIZONTAL SCALE IN FEET
0 10 20 40

STORM SEWER SCHEMATIC PLAN

DRAINAGE CONDUIT DETAILS

REFERENCE	LENGTH (FT)	SIZE (IN)	TYPE	SLOPE	START STRUCTURE REFERENCE	START INVERT ELEV.	STOP STRUCTURE REFERENCE	STOP INVERT ELEV.	EXISTING DISPOSITION
D-13	50	18	EX.	0.52	EX0869	885.60	EX0839	885.34	EX. DO NOT DISTURB
P-1	34	18	TYPE B	7.44	EX0839	885.00	D-50	882.50	
P-2	44	18	TYPE B	1.64	D-50	881.00	D-51	880.28	
P-3	13	12	TYPE B	10.89	EX0803	881.15	D-51	879.78	
P-4	18	12	TYPE B	9.97	D-52	881.53	D-51	879.78	
P-5	151	18	TYPE B	5.38	D-51	879.28	D-53	871.15	
P-6	18	12	TYPE B	3.81	D-54	870.65	D-53	869.98	
D-9	70	15	EX.	7.27	EX0839	884.09	EX0808	878.98	TO BE REMOVED
D-15	33	12	EX.	6.48	EX0803	881.15	EX0808	878.98	TO BE REMOVED
D-8	188	15	EX.	4.39	EX0808	878.98	D-17	859.76	TO BE REMOVED

P-3 PIPE INVERT CHANGE

DRAINAGE STRUCTURE DETAILS

REFERENCE	REFERENCE ALIGNMENT	STATION	OFFSET	SIDE	TYPE	GRATE/RIM ELEV.	INVERT ELEV.	CONNECTED PIPES	EXISTING DISPOSITION
EX0869	CONSTRUCTION KLEMME DR	5+66.83	38.04	RT	EX. MH	889.35	885.60	(OUT) D-13 EX. 18" S 885.60	
EX0839	CONSTRUCTION KLEMME DR	5+15.65	43.84	RT	EX. CB-3A	889.09	885.00	(IN) D-13 EX. 18" N 885.34, (OUT) P-1 18" SW 885.00	REMOVE EX. PIPE TO THE SOUTHEAST
D-50	CONSTRUCTION KLEMME DR	5+08.00	8.00	RT	MH-3	888.45	881.00	(IN) P-1 18" NE 882.50, (OUT) P-2 18" S 881.00	
EX0803	CONSTRUCTION KLEMME DR	4+61.53	23.30	RT	EX. CB2-2B	885.64	882.80	(OUT) P-3 12" W 881.15, 6" UD3 882.90	REMOVE EX. CONNECTING PIPE
D-51	CONSTRUCTION KLEMME DR	4+60.00	8.00	LT	MH-3	885.57	879.28	(IN) P-2 18" N 880.28, (IN) P-3 12" E 879.78, (IN) P-4 12" W 879.78, (OUT) P-5 18" S 879.28, 6" UD2 882.00	
D-52	CONSTRUCTION KLEMME DR	4+60.00	13.00	LT	CB-3A	884.98	881.54	(OUT) P-4 12" E 881.54, 6" UD1 882.23	
D-54	CONSTRUCTION KLEMME DR	3+05.00	13.00	LT	CB-3A	875.32	870.65	(OUT) P-6 12" E 870.65, 6" UD1 871.63	
D-53-BYOTHER	CONSTRUCTION KLEMME DR	3+05	8.00	RT	MH-3	875.91	869.48	(IN) P-5 18" N 871.15, (IN) P-6 12" W 869.98, 6" UD2 AND UD3 872.42	TO BE CONSTRUCTED BY OTHERS
EX0808	CONSTRUCTION KLEMME DR	4+70.14	12.20	LT	EX. MH	889.09	878.98		TO BE REMOVED

P-3 PIPE INVERT CHANGE

DESIGN AGENCY
TEC Engineering, Inc.
PLAN PREPARED BY:
TEC Engineering, Inc.
7288 Central Parke Blvd.
Mason, OH 45040

DESIGNER JMD
REVIEWER KLL 02/24/26
PROJECT ID 119070
SHEET 27 TOTAL 47

HAM-CR196-1.89

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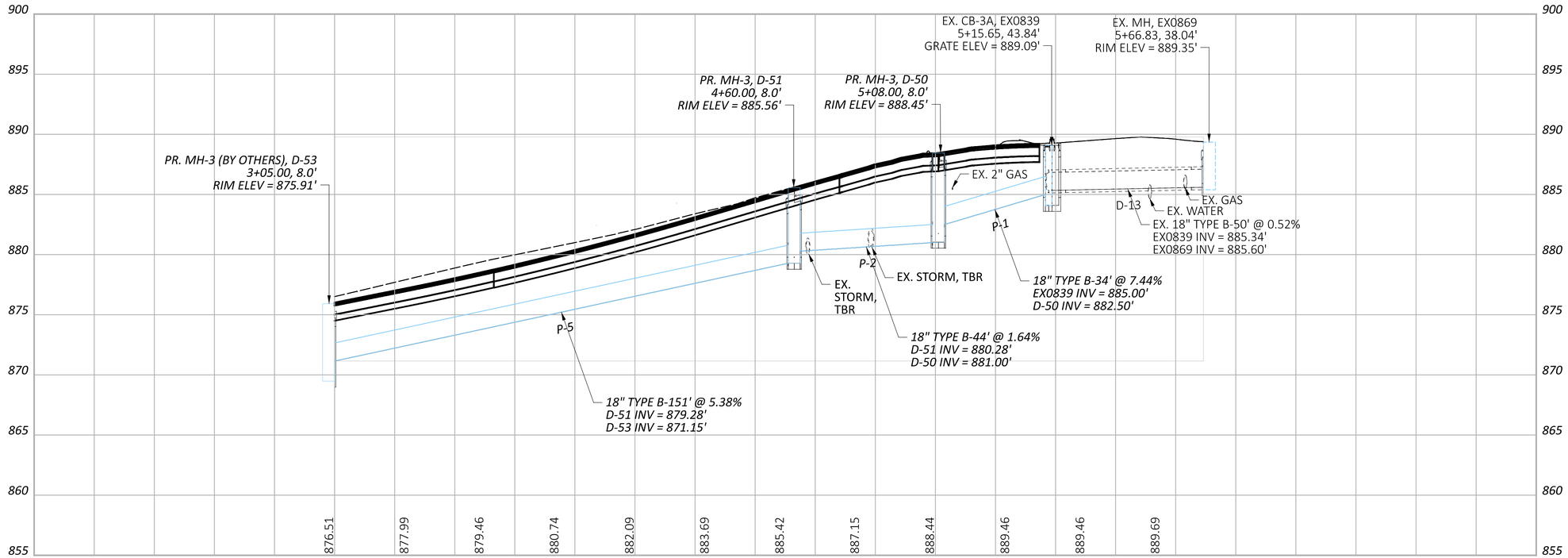
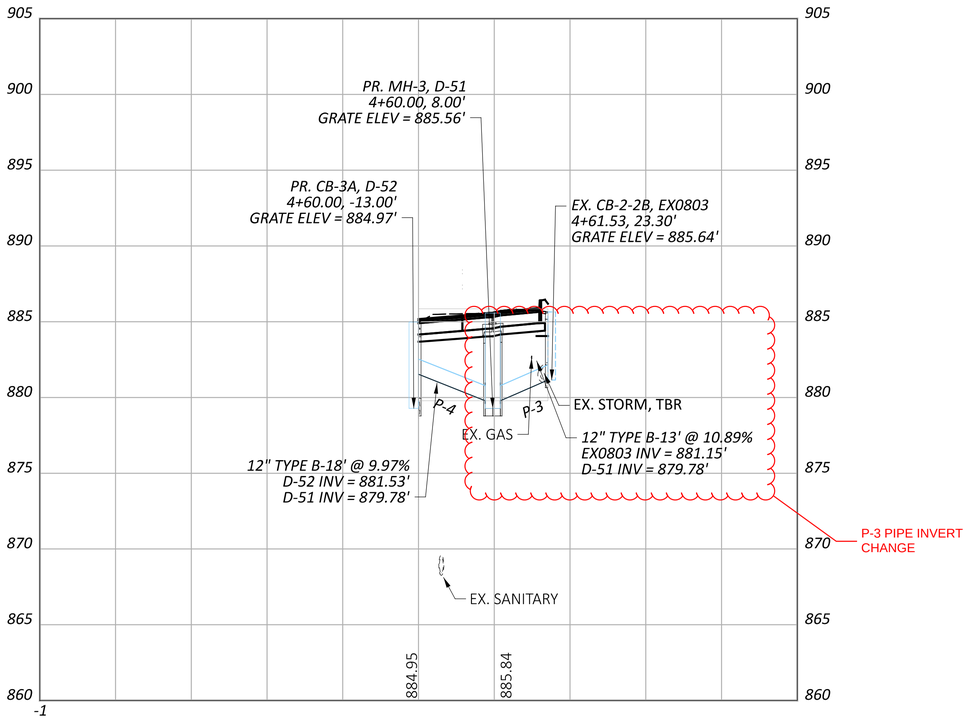
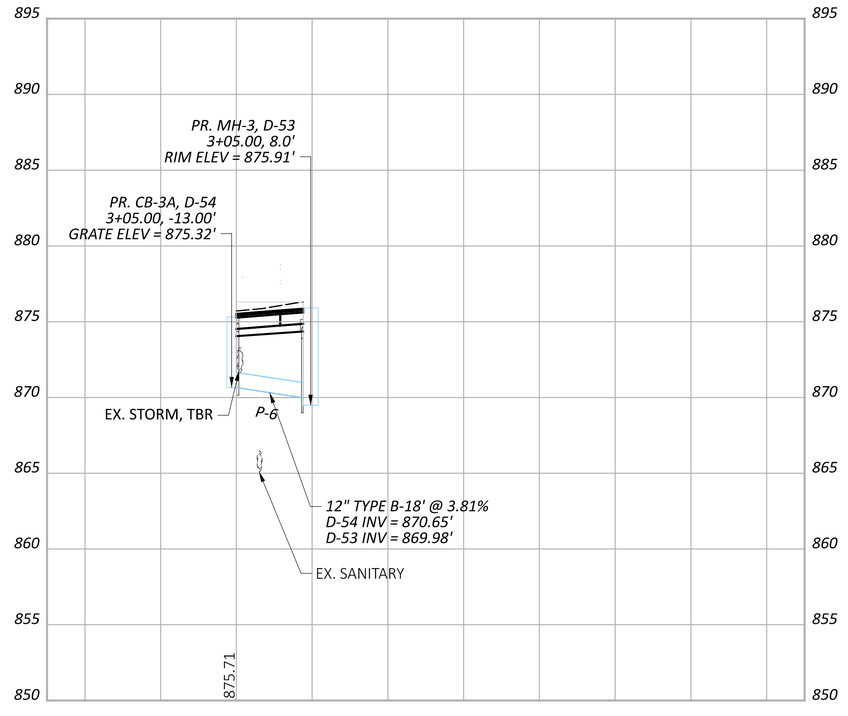
\\10.11.4\projects\2023 Projects\23351 Delhi Township\001 HAM CR 196\23351-001\400-Engineering\Drainage\Sheets\23351-001_DF001.dgn







HORIZONTAL SCALE IN FEET
0 10 20 40

STORM SEWER PROFILES

HAM-CR196-1.89

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DESIGN AGENCY
PLAN PREPARED BY:
TEC Engineering, Inc.
7286 Central Parke Blvd.
Mason, OH 45040

DESIGNER JMD
REVIEWER KLL 02/24/26
PROJECT ID 119070
SHEET 28 TOTAL 47

625, BRACKET ARM, BY LENGTH, AS PER PLAN

IN ADDITION TO THE PROVISIONS OF THE ODOT C&MS, THE BRACKET ARM SHALL BE POWDER COAT SEMI-GLOSS BLACK IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 916.

ARMS SHALL BE ODOT STYLE HIGH RISE, TRUSS ARM PER HL-10.11 AND SHALL PROVIDE A FINAL LUMINAIRE MOUNTING HEIGHT OF 36.5'.

PAYMENT FOR ITEM 625 "BRACKET ARM, BY LENGTH, AS PER PLAN" SHALL BE MADE AT THE CONTRACT UNIT PRICE PER EACH COMPLETE AND IN PLACE AND SHALL INCLUDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.

ITEM 625 - LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), AS PER PLAN PLAN, 120V, 16000-21000 LUMENS

IN ADDITION TO THE REQUIREMENTS OF THE ODOT C&MS, CONVENTIONAL LUMINAIRES WITH TYPE II DISTRIBUTION INSTALLED ON THIS PROJECT SHALL BE AS FOLLOWS:

LUMINAIRES FOR CONVENTIONAL LIGHTING UNITS SHALL BE ONE OF THE FOLLOWING:

1. EVOLVE ERL2 AS MANUFACTURED BY CURRENT LIGHTING SOLUTIONS, LLC (CATALOG #: ERL2-0-21-C5-30-GRAY)
2. AUTOBAHN ATBM AS MANUFACTURED BY AMERICAN ELECTRIC LIGHTING (CATALOG #: ATBM-P40-MVOLT-R3-3K)
3. ROADFOCUS PLUS (RPM) AS MANUFACTURED BY LUMEC/SIGNIFY (CATALOG #: RPM-110W80LED-730-G1-R2M-UNV-GY3)
4. OR APPROVED EQUAL

LUMINAIRES SHALL HAVE A COLOR TEMPERATURE OF 3000K.

ANY SUBMITTED EQUALS MUST BE APPROVED BY THE ENGINEER.

PAYMENT WILL BE MADE AT THE CONTRACT UNIT BID PRICE FOR EACH "ITEM 625 - LUMINAIRE, CONVENTIONAL, SOLID-STATE (LED), AS PER PLAN, 120V, 16000-21000 LUMENS" WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

632, SIGNAL SUPPORT, (BY TYPE), AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF THE ODOT C&MS, FURNISH AND INSTALL SIGNAL POLES AS SPECIFIED IN THE PLANS.

ALL SIGNAL SUPPORTS SHALL BE POWDER COAT SEMI-GLOSS BLACK IN ACCORDANCE WITH ODOT SS 916.

PAYMENT FOR ITEM 632 "SIGNAL SUPPORT, (BY TYPE), AS PER PLAN" SHALL BE MADE AT THE CONTRACT UNIT PRICE PER EACH COMPLETE AND IN PLACE AND SHALL INLCUDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.

632, COMBINATION SIGNAL SUPPORT, (BY TYPE), AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF THE ODOT C&MS, FURNISH AND INSTALL SIGNAL POLES AS SPECIFIED IN THE PLANS

ALL SIGNAL SUPPORTS SHALL BE POWDER COAT SEMI-GLOSS BLACK IN ACCORDANCE WITH ODOT SS 916.

PAYMENT FOR ITEM 632 "COMBINATION SIGNAL SUPPORT, (BY TYPE), AS PER PLAN" SHALL BE MADE AT THE CONTRACT UNIT PRICE PER EACH COMPLETE AND IN PLACE AND SHALL INCLUDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.

ITEM - 632 PEDESTRIAN SIGNAL HEAD (LED), (COUNTDOWN), TYPE D2, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF C&MS 632 AND 732 THE FOLLOWING SHALL APPLY:

1. SIGNAL HEADS AND VISORS SHALL BE CONSTRUCTED OF BLACK POLYCARBONATE PLASTIC AND MEET ITE SPECIFICATIONS.
2. PROPER EXTERIOR COLORS SHALL BE OBTAINED BY USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING.
3. PIPE, SPACERS AND FITTINGS CONSTRUCTED OF POLYCARBONATE PLASTIC MAY BE USED IN LIEU OF GALVANIZED STEEL OR ALUMINUM.
4. THE PEDESTRIAN SIGNAL HEAD SHALL BE OF THE LED COUNTDOWN TYPE.
5. NEW ATTACHMENT HARDWARE AND FITTINGS SHALL BE USED.
6. THE LIGHT EMITTING DIODE (LED) MODULES SHALL MEET THE REQUIREMENTS OF C&MS 732.04. THE CONTRACTOR SHALL PROVIDE ODOT, IN WRITING, WITH THE LED MANUFACTURER NAME, SERIAL NUMBER, PART NUMBER, DESCRIPTION OF LAMP, AND DATE OF MANUFACTURE FOR ALL LED UNITS THAT ARE TO BE USED IN THE SIGNAL HEAD PRIOR TO INSTALLATION, FOR ACCEPTANCE AND WARRANTY PURPOSES.

PAYMENT FOR ITEM 632 PEDESTRIAN SIGNAL HEAD (LED), (COUNTDOWN), TYPE D2, AS PER PLAN SHALL BE MADE FOR THE NUMBER OF COMPLETE SIGNAL HEAD FURNISHED AND INSTALLED, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS AND NEW ATTACHMENT HARDWARE.

PAYMENT FOR ITEM 632 PEDESTRIAN SIGNAL HEAD (LED), (COUNTDOWN), TYPE D2, AS PER PLAN SHALL BE MADE FOR THE NUMBER OF COMPLETE SIGNAL HEAD FURNISHED AND INSTALLED, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS AND NEW ATTACHMENT HARDWARE.

ITEM 632 - SIGNAL SUPPORT FOUNDATION

PRIOR TO ORDERING THE SIGNAL SUPPORTS, THE CONTRACTOR SHALL CONTACT OUPS TO HAVE ALL THE UTILITIES LOCATED IN THE FIELD. THEN THE CONTRACTOR SHALL MEET THE PROJECT ENGINEER TO LOCATE THE PROPOSED SUPPORT LOCATIONS TO ENSURE THERE ARE NO CONFLICTS WITH UTILITIES. IF THERE ARE ISSUES, THE PROJECT ENGINEER SHALL PROVIDE GUIDANCE AS TO THE RELOCATION OF THE SUPPORTS.

DUE TO THE FURTHER POSSIBILITY OF CONFLICT WITH EXISTING OR PROPOSED UNDERGROUND OBSTRUCTIONS (INCLUDING THE POSSIBILITY OF UNRECORDED OBSTRUCTIONS) WHICH COULD AFFECT THE LOCATION OF THE FOUNDATION FOR THIS ITEM, AND CONSEQUENTLY, THE DESIGN OF THE SUPPORT AND/OR ARMS, THE CONTRACTOR SHALL NOT PLACE FINAL ORDERS FOR THE ITEM UNTIL THE FOUNDATIONS HAVE BEEN INSTALLED, AT FINAL GRADE, AND THE CONTRACTOR HAS RECEIVED, FROM ENGINEER, WRITTEN NOTICE TO PROCEED WITH THE ORDERS FOR THE ITEM.

IF ANY FOUNDATION LOCATIONS MUST BE ADJUSTED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND MAINTAINING AGENCY, WHO WILL DETERMINE THE REVISED LOCATION AND IF NEEDED, THE SUPPORT DESIGN. THE CONTRACTOR WILL NOT BE RESPONSIBLE FOR DETERMINING THE REVISED DESIGN. THE ENGINEER WILL INFORM THE CONTRACTOR OF ANY CHANGES NECESSARY AND AUTHORIZE THE CONTRACTOR TO ORDER THE SUPPORT.

THE CONTRACTOR SHALL, WHEN DEVELOPING THE PROGRESS SCHEDULE, AND THOSE OF SUBCONTRACTORS, ENSURE THAT THE FOUNDATIONS ARE INSTALLED AT THE EARLIEST TIME AS IS FEASIBLE AND PRACTICAL, AND SHALL INCLUDE SUFFICIENT TIME IN THE PROGRESS SCHEDULE FOR ORDERING, MANUFACTURING, DELIVERY, AND INSTALLATION OF THE SUPPORT ITEMS AFTER THE FOUNDATIONS ARE IN PLACE.

NO PAYMENTS FOR DELIVERED MATERIALS FOR THE FOUNDATION OR SUPPORT ITEMS SHALL BE MADE UNTIL THE FOUNDATIONS ARE IN PLACE, AND IF CHANGES IN THE DESIGN OF THIS ITEM ARE REQUIRED, NO PAYMENT SHALL BE MADE FOR THE ITEMS MANUFACTURED TO THE ORIGINAL DESIGN.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE AND WILL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND OTHER INCIDENTALS NECESSARY FOR EACH SUPPORT FURNISHED, IN PLACE, COMPLETE AND ACCEPTED.

ITEM 632 - POWER SERVICE, AS PER PLAN

CONSTRUCT A COMPLETE AND OPERATIONAL POWER SERVICE FOR INTERSECTION SIGNALS IN ACCORDANCE WITH THE RULES AND REGULATIONS SET FORTH BY THE OHIO ELECTRIC CODE, DUKE ENERGY AND ODOT SCD TC-83.10. ALL NECESSARY MATERIAL AND LABOR, INCLUDING BUT NOT LIMITED TO ELECTRIC METER, RISER, HOUSING, AND SEPERATE DISCONNECTS FOR LIGHTING AND SIGNALS, SHALL BE SUPPLIED BY THE CONTRACTOR AS PART OF THIS ITEM.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE FOR EACH POWER SERVICE FURNISHED AND INSTALLED INLCUDING ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR INSTALLATION.

ITEM 632 - SIGNALIZATION, MISC.: VACUUM EXCAVATION OF FOUNDATION

THIS ITEM SHALL BE APPLIED AT THE DISCRETION OF THE ENGINEER AT FOUNDATIONS IN PROXIMITY TO UTILITIES. VACUUM EXCAVATION SHALL BE COMPLETED BY A QUALIFIED CONTRACTOR ONLY AT SPECIFIED FOUNDATIONS AT THE ENGINEER'S DISCRETION.

PAYMENT SHALL BE ON A CONTINGENCY BASIS AND INCLUDE ALL LABOR MATERIALS, TOOLS, EQUIPMENT AND INCIDENTALS REQUIRED TO FULLY EXCAVATE THE AREA AROUND A FOUNDATION.

A QUANTITY OF 4 FOUNDATIONS ARE CARRIED TO THE GENSUM FOR USE AT THE ENGINEER'S DISCRETION.

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

TRAFFIC SIGNAL INSTALLATIONS, INCLUDING SIGNAL HEADS, CABLE, MESSENGER WIRE, SIGNAL SUPPORTS, CABINET(S), CONTROLLER, ETC., SHALL BE REMOVED IN ACCORDANCE WITH C&MS 632.26 AND AS INDICATED ON THE PLANS. UNLESS NOTED, POWER SERVICES SHALL BE REMOVED IN ACCORDANCE WITH C&MS 625.21.F. REMOVED ITEMS SHALL BE REUSED AS PART OF A NEW INSTALLATION ON THE PROJECT OR STORED ON THE PROJECT FOR SALVAGE BY THE HAMILTON COUNTY ENGINEER'S OFFICE IN ACCORDANCE WITH THE LISTING GIVEN HEREIN.

ITEMS TO BE REMOVED FOR STORAGE: CONTROLLER, CABINET (INCLUDING ALL CONTENTS), DETECTORS, UPS WITH CABINET, SIGNAL & PEDESTRIAN HEADS

REMOVED ITEMS SHALL BE DELIVERED TO THE NEAREST COUNTY FACILITY WHOSE ADDRESS IS LISTED BELOW:

HAMILTON COUNTY ENGINEERS OFFICE, ATTN: 513-946-4250

223 WEST GALBRAITH RD.
CINCINNATI, OH 45215

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

SIGNAL ITEM NUMBER CHANGE

ITEM 632 - PEDESTAL, 10.7' TALL, TRANSFORMER BASE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF THE ODOT C&MS, FURNISH AND INSTALL PEDESTALS AS SPECIFIED IN THE PLANS.

ALL PEDESTALS SHALL BE POWDER COAT SEMI-GLOSS BLACK IN ACCORDANCE WITH ODOT SS 916.

PAYMENT FOR ITEM 632 "PEDESTAL, 10.7' TALL, TRANSFORMER BASE, AS PER PLAN" SHALL BE MADE AT THE CONTRACT PRICE PER EACH COMPLETE AND IN PLACE AND SHALL INCLUDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.

ITEM 632 - PEDESTAL FOUNDATION, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 632 "PEDESTAL FOUNDATION", THIS ITEM SHALL CONFORM TO THE REQUIREMENTS PROVIDED IN ITEM 632 " SIGNAL SUPPORT FOUNDATION."

ITEM - 632 ACCESSIBLE PEDESTRIAN PUSHBUTTON (POLARA) (ALTERNATE 2)

IN ADDITION TO THE REQUIREMENTS OF ITEM 632 "ACCESSIBLE PEDESTRIAN PUSHBUTTON", THIS ITEM SHALL BE A POLARA ACCESSIBLE PUSHBUTTON.

ITEM - 632 VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, BLACK, AS PER PLAN

THIS ITEM SHALL CONFORM TO THE REQUIREMENTS OF ITEM 632 "VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, BLACK" WITH THE ADDITIONAL REQUIREMENT THAT THE FLASHING YELLOW ARROW SHALL HAVE A BI-MODAL HEAD TO ALLOW FOR BOTH SOLID YELLOW ARROW AND FLASHING YELLOW ARROW OPERATION.

TRAFFIC SIGNAL NOTES

DESIGN AGENCY

PLAN PREPARED BY:
TEC Engineering, Inc.
7288 Central Parke Blvd.
Mason, OH 45040

DESIGNER AFS

REVIEWER KLL 02/24/26

PROJECT ID 119070

SHEET 36 TOTAL 47

HAM-CR196-1.89

MODEL: CN002 PAPERSIZE: 34x22 (in.) DATE: 2/24/2026 TIME: 10:29:36 AM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: klinville@teceng.com WORKSPACE: OHDOTCEv02 WORKSET: 23351-001 PRODUCT: OpenRoadsDesigner 24.00.00.205
\\10.1.1.4\projects\2023 Projects\23351 Delhi Township\001 HAM CR 196\23351-001400-Engineering\Signals\Sheets\23351-001_CN001.dgn

SIGNAL TIMING CHART

INTERSECTION: DELHI PIKE & DELHI TOWNE SQUARE
MAINTAINING AGENCY: HAMILTON COUNTY ENGINEER'S OFFICE

START UP
START IN: ALL-RED-FLASH
TIME FOR FLASH OR ALL RED: 6,9
FIRST PHASE(S): 2 & 6
COLOR DISPLAYED: GREEN

DUAL ENTRY: YES | PHASES: 2&6
REST IN RED: RING 1 - | RING 2 -

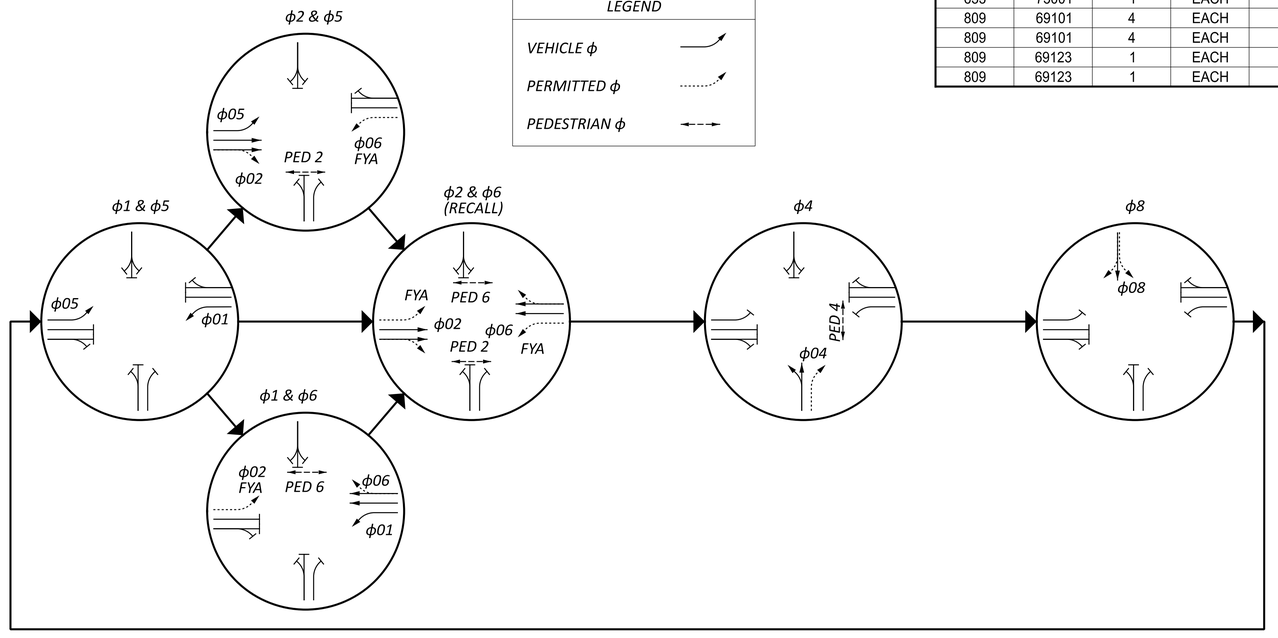
OVERLAP	A	B	C	D
PHASES	-	-	-	-

INTERVAL OR FEATURE			CONTROLLER MOVEMENT NO.							
INTERSECTION MOVEMENT (PHASE)			1	2	3	4	5	6	7	8
DIRECTION			WBLT	EB	-	NB	EBLT	WB	-	SB
MINIMUM GREEN (INITIAL)		(SEC.)	7	15	-	15	7	15	-	15
ADDED INITIAL		*(SEC./ACTUATION)	-	-	-	-	-	-	-	-
MAXIMUM INITIAL		(SEC.)	-	-	-	-	-	-	-	-
PASSAGE TIME (PRESET GAP)		(SEC.)	3	3	-	3	3	3	-	3
TIME BEFORE REDUCTION		*(SEC.)	-	-	-	-	-	-	-	-
MINIMUM GAP		*(SEC.)	-	-	-	-	-	-	-	-
TIME TO REDUCE		*(SEC.)	-	-	-	-	-	-	-	-
MAXIMUM GREEN I		(SEC.)	15	45	-	30	15	45	-	30
MAXIMUM GREEN II		(SEC.)	-	-	-	-	-	-	-	-
YELLOW CHANGE		(SEC.)	3.2	4.1	-	3.4	3.2	4.1	-	3.4
ALL RED CLEARANCE		(SEC.)	2	1	-	1.2	2	1	-	1.2
DELAYED GREEN (LPI)		(SEC.)	-	-	-	-	-	-	-	-
FLASHING YELLOW ARROW DELAY		(SEC.)	3	-	-	-	3	-	-	-
WALK		(SEC.)	-	7	-	5	-	7	-	-
PEDESTRIAN CLEARANCE		(SEC.)	-	18	-	14	-	6	-	-
RECALL	MAXIMUM	(ON/OFF)	OFF	OFF	-	OFF	OFF	OFF	-	OFF
	MINIMUM	(ON/OFF)	OFF	ON	-	OFF	OFF	ON	-	OFF
	PEDESTRIAN	(ON/OFF)	-	OFF	-	OFF	-	OFF	-	OFF
MEMORY		(ON/OFF)	-	-	-	-	-	-	-	-

*VOLUME DENSITY CONTROLS

OMIT CALLS TO ϕ1 & ϕ5 DURING ϕ2 & ϕ6 GREEN.

PHASING DIAGRAM



ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	SEE SHEET
625	00450	1	EACH	CONNECTION, FUSED PULL APART	
625	00460	2	EACH	CONNECTION, UNFUSED PULL APART	
625	00480	1	EACH	CONNECTION, UNFUSED PERMANENT	
625	18401	1	EACH	BRACKET ARM, 20', AS PER PLAN	36
625	18511	1	EACH	BRACKET ARM, 30', AS PER PLAN	36
625	23304	36	FT	NO. 8 AWG 600 VOLT DISTRIBUTION CABLE	
625	23400	258	FT	NO. 10 AWG POLE AND BRACKET CABLE	
625	25408	30	FT	CONDUIT, 2", 725.051	
625	25604	30	FT	CONDUIT, 4", 725.051	
625	25908	248	FT	CONDUIT, JACKED OR DRILLED, 725.052, 4"	
625	26253	2	EACH	LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), AS PER PLAN, 120V, 16000-21000 LUMENS	36
625	29002	51	FT	TRENCH, 24" DEEP	
625	30706	5	EACH	PULL BOX, 725.08, 24"	
625	32000	7	EACH	GROUND ROD	
630	79100	8	EACH	SIGN HANGER ASSEMBLY, MAST ARM	
630	79500	2	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED	
630	80100	60.5	SF	SIGN, FLAT SHEET	
632	05006	6	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, BLACK	
632	05007	2	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN, BLACK	36
632	05086	2	EACH	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, BLACK	
632	20731	6	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	36
632	25000	10	EACH	COVERING OF VEHICULAR SIGNAL HEAD	
632	25010	6	EACH	COVERING OF PEDESTRIAN SIGNAL HEAD	
632	40500	966	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	
632	40700	1079	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	
632	64010	2	EACH	SIGNAL SUPPORT FOUNDATION	36
632	64021	4	EACH	PEDESTAL FOUNDATION, AS PER PLAN	36
632	65300	936	FT	LOOP DETECTOR LEAD-IN CABLE, 2 CONDUCTOR, NO. 14 AWG	
632	66104	32	FT	POWER CABLE, 3 CONDUCTOR, NO. 10 AWG	
632	69800	101	FT	SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG	
632	70001	1	EACH	POWER SERVICE, AS PER PLAN	
632	71389	1	EACH	SIGNAL SUPPORT, TYPE TC-12.31 DESIGN 10 POLE, WITH MAST ARMS TC-81.22 DESIGN 14 AND DESIGN 12, AS PER PLAN	36
632	78349	1	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC-12.31 DESIGN 10 POLE, WITH MAST ARMS TC-81.22 DESIGN 12 AND DESIGN 12, AS PER PLAN	36
632	89921	4	EACH	PEDESTAL, 10.7' TALL, TRANSFORMER BASE, AS PER PLAN	34
632	90101	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN	36
633	65521	1	EACH	CABINET, TYPE 332, AS PER PLAN	37
633	67101	1	EACH	CABINET FOUNDATION, AS PER PLAN	37
633	67200	1	EACH	CONTROLLER WORK PAD	
				ALTERNATE ITEMS	
632	20750	6	EACH	ACCESSIBLE PEDESTRIAN PUSHBUTTON, (ALTERNATE 1)	
632	20750	6	EACH	ACCESSIBLE PEDESTRIAN PUSHBUTTON, (POLARA) (ALTERNATE 2)	36
633	45000	1	EACH	GPS (GLOBAL POSITIONING SYSTEM) CLOCK ASSEMBLY, (ALTERNATE 1)	37
633	45000	1	EACH	GPS (GLOBAL POSITIONING SYSTEM) CLOCK ASSEMBLY, (Q-FREE) (ALTERNATE 2)	37
633	75001	1	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN, (ALTERNATE 1)	37
633	75001	1	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN, (ALPHA) (ALTERNATE 2)	37
809	69101	4	EACH	STOP LINE RADAR DETECTION, AS PER PLAN, (ALTERNATE 1)	37
809	69101	4	EACH	STOP LINE RADAR DETECTION, AS PER PLAN, (WAVETRONIX) (ALTERNATE 2)	37
809	69123	1	EACH	ATC CONTROLLER, AS PER PLAN, (ALTERNATE 1)	37
809	69123	1	EACH	ATC CONTROLLER, AS PER PLAN, (INTELIGHT) (ALTERNATE 2)	37

SIGNAL ITEM NUMBER CHANGE

RADAR DETECTION CHART

DETECTION ZONE	MOVEMENT	PULSE OR PRESENCE	ASSOCIATED PHASE	RADAR NUMBER	DELAY IN CONTROLLER (SEC)	EXTENSION PROGRAMMED IN CONTROLLER (SEC.)	PURPOSE	DETECTION ZONE LENGTH (FT)
RDZ1	WBLT	PRESENCE	ϕ1	RD4	-	-	STOP BAR	50
RDZ4A	NBRT	PRESENCE	ϕ4	RD3	-	-	STOP BAR	50
RDZ4B	NBTL	PRESENCE	ϕ4	RD3	-	-	STOP BAR	50
RDZ5	EBLT	PRESENCE	ϕ5	RD2	-	-	STOP BAR	50
RDZ8	SBTRL	PRESENCE	ϕ8	RD1	-	-	STOP BAR	50

NOTE: DILEMMA ZONE SPEED THRESHOLD >30 MPH

DELHI PIKE & DELHI TOWNE SQUARE
SIGNAL DETAIL

DESIGN AGENCY
PLAN PREPARED BY:
TEC Engineering, Inc.
7288 Central Parke Blvd.
Mason, OH 45040

DESIGNER AFS
REVIEWER KLL 02/24/26
PROJECT ID 119070
SHEET 39 TOTAL 47

HAM-CR196-1.89

MODEL: CD003 PAPERSIZE: 34x22 (in.) DATE: 2/24/2026 TIME: 10:29:40 AM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: klinville@teceng.com WORKSPACE: OHDOTCEv02 WORKSET: 23351-001 PRODUCT: OpenRoadsDesigner 24.00.00.205
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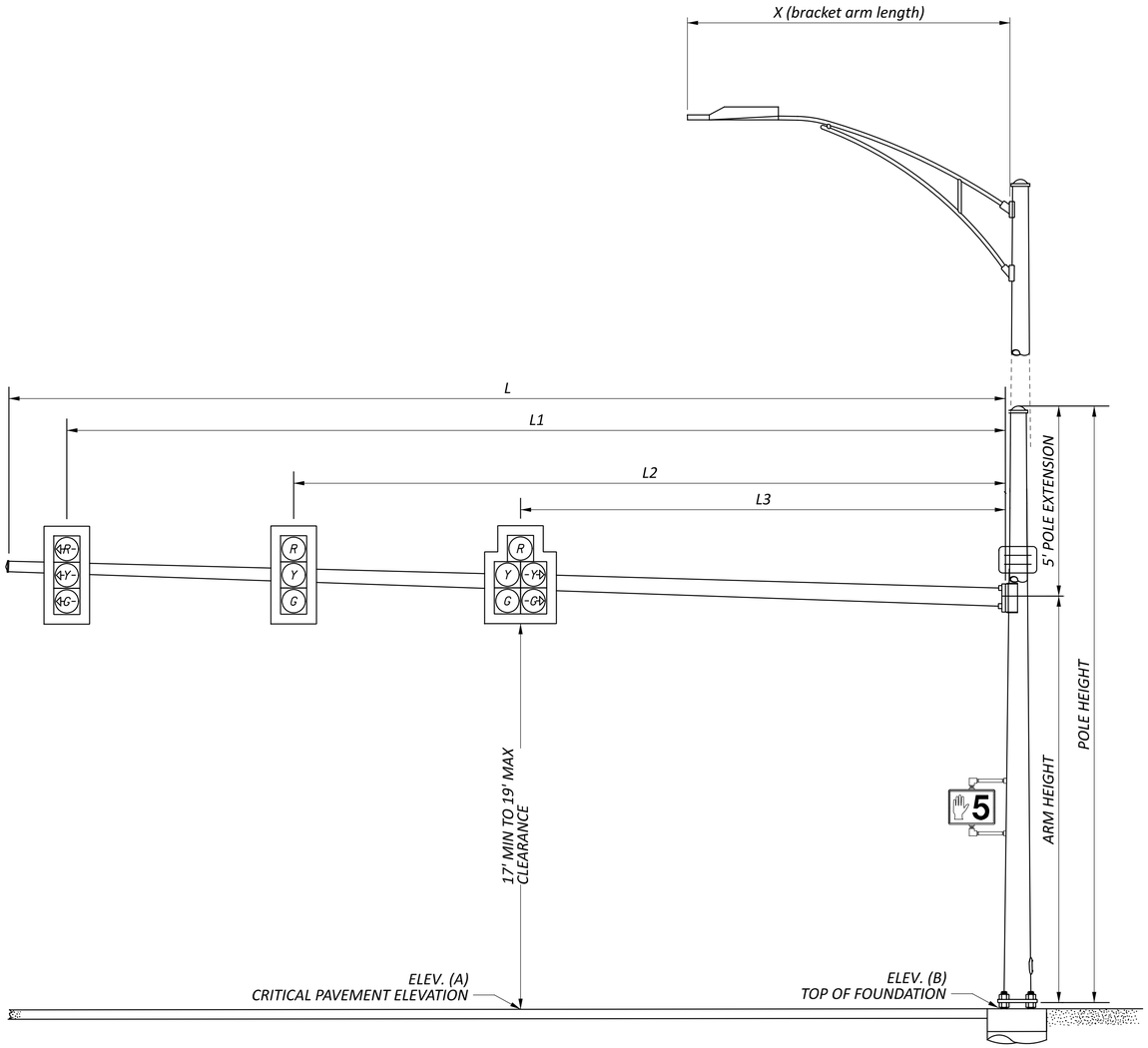
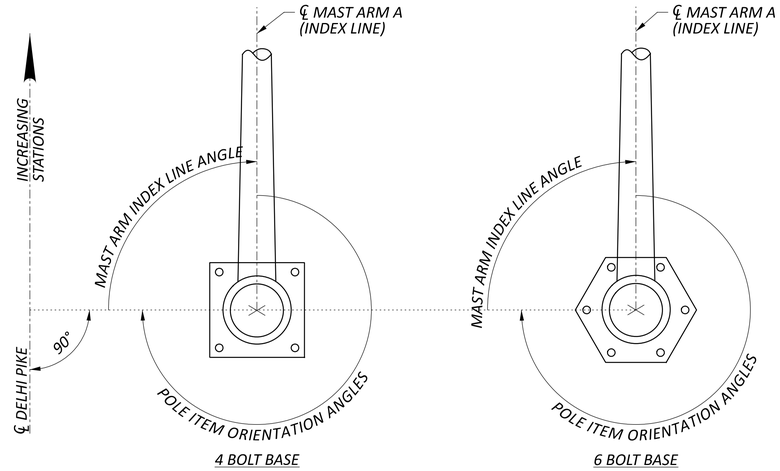


SIGNAL SUPPORT ELEVATION
(TYPICAL)



NOTE:
1. ALL ANGLES ARE MEASURED CLOCKWISE.
2. BASE PLATE IS ORIENTED SQUARE TO MAST ARM A, EVEN IF THE SUPPORT HAS TWO ARMS.

POLE ORIENTATION

MAST ARM TABLE

SUPPORT NO.	STATION	OFFSET	ELEVATION		SIGNAL SUPPORT DETAILS													ORIENTATION ANGLES FROM MAST ARM A							
			A	B	DESIGN TYPE	POLE DESIGN NO.	ARM DESIGN NO.	POLE HEIGHT	ARM HEIGHT	L	L1	L2	L3	L4	L5	L6	BRACKET ARM MOUNTING HEIGHT	X	MAST ARM A ANGLE	MAST ARM B ANGLE	PEDESTRIAN SIGNAL	PEDESTRIAN BUTTON	POWER SERVICE	CONTROLLER	SIGN	BRACKET ARM	HANDHOLE
								FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	DEG	DEG	DEG	DEG	DEG	DEG	DEG	DEG	DEG
SP-1	4+51.7	37.9' LT	884.53	883.99	TC-12.31	10	12	30.5	20.5	45	42	33	12	-	-	-	30	20	270	-	-	-	180	-	90	0	180
			883.62				12		20.5	41	38	38	34	27	19	-	29	30	-	90	-	-	-	-	-	90	-
SP-2	5+23.5	37.6' RT	883.26	885.19	TC-12.31	10	14	21.5	17.5	65	62	53	53	42	42	-	-	-	270	-	-	-	-	-	-	-	180
			884.80				12		20	40	37	37	33	26	16	-	-	-	-	90	-	-	-	-	-	-	-
PS-1	4+59.9	38.9' LT	-	884.23	TC-83.20	-	-	10.7	-	-	-	-	-	-	-	-	-	-	0	-	0	0	-	-	-	-	-
PS-2	5+11.8	34.1' LT	-	884.86	TC-83.20	-	-	10.7	-	-	-	-	-	-	-	-	-	-	0	-	90/180	90/180	-	-	-	-	-
PS-3	4+07.5	34.3' RT	-	883.16	TC-83.20	-	-	10.7	-	-	-	-	-	-	-	-	-	-	0	-	180	180	-	-	-	-	-
PS-4	5+11.9	34.4' RT	-	884.94	TC-83.20	-	-	10.7	-	-	-	-	-	-	-	-	-	-	0	-	180/270	180/270	-	-	-	-	-

HEIGHT CHANGE DUE TO ITEM NUMBER CHANGE

HAM-CR196-1.89

MODEL: CE003 PAPERSIZE: 34x22 (in.) DATE: 2/24/2026 TIME: 10:29:41 AM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: klinville@teceng.com WORKSPACE: OHDOTCEv02 WORKSET: 23351-001 PRODUCT: OpenRoadsDesigner 24.00.00.205
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DELHI PIKE & DELHI TOWNE SQUARE
SIGNAL DETAIL

DESIGN AGENCY
PLAN PREPARED BY:
TEC Engineering, Inc.
7288 Central Parke Blvd.
Mason, OH 45040

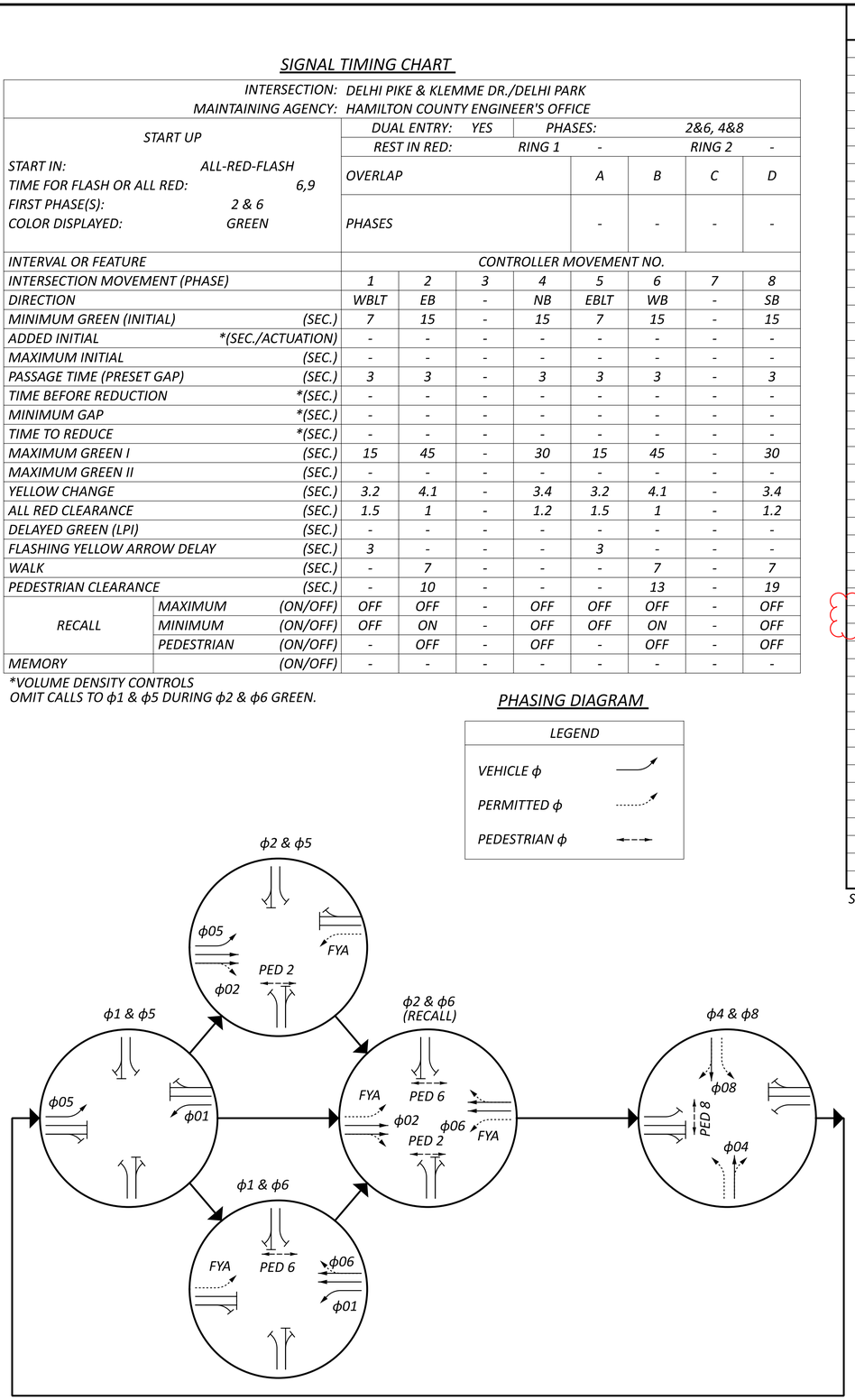
DESIGNER AFS
REVIEWER KLL 02/24/26
PROJECT ID 119070
SHEET 41 TOTAL 47

SIGNAL TIMING CHART

INTERSECTION: DELHI PIKE & KLEMME DR./DELHI PARK									
MAINTAINING AGENCY: HAMILTON COUNTY ENGINEER'S OFFICE									
START UP			DUAL ENTRY: YES		PHASES:			2&6, 4&8	
			REST IN RED:		RING 1 -			RING 2 -	
START IN: ALL-RED-FLASH			OVERLAP			A	B	C	D
TIME FOR FLASH OR ALL RED: 6,9									
FIRST PHASE(S): 2 & 6			PHASES			-	-	-	-
COLOR DISPLAYED: GREEN									
INTERVAL OR FEATURE			CONTROLLER MOVEMENT NO.						
INTERSECTION MOVEMENT (PHASE)			1	2	3	4	5	6	7	8
DIRECTION			WBLT	EB	-	NB	EBLT	WB	-	SB
MINIMUM GREEN (INITIAL)		(SEC.)	7	15	-	15	7	15	-	15
ADDED INITIAL		*(SEC./ACTUATION)	-	-	-	-	-	-	-	-
MAXIMUM INITIAL		(SEC.)	-	-	-	-	-	-	-	-
PASSAGE TIME (PRESET GAP)		(SEC.)	3	3	-	3	3	3	-	3
TIME BEFORE REDUCTION		*(SEC.)	-	-	-	-	-	-	-	-
MINIMUM GAP		*(SEC.)	-	-	-	-	-	-	-	-
TIME TO REDUCE		*(SEC.)	-	-	-	-	-	-	-	-
MAXIMUM GREEN I		(SEC.)	15	45	-	30	15	45	-	30
MAXIMUM GREEN II		(SEC.)	-	-	-	-	-	-	-	-
YELLOW CHANGE		(SEC.)	3.2	4.1	-	3.4	3.2	4.1	-	3.4
ALL RED CLEARANCE		(SEC.)	1.5	1	-	1.2	1.5	1	-	1.2
DELAYED GREEN (LPI)		(SEC.)	-	-	-	-	-	-	-	-
FLASHING YELLOW ARROW DELAY		(SEC.)	3	-	-	-	3	-	-	-
WALK		(SEC.)	-	7	-	-	-	7	-	7
PEDESTRIAN CLEARANCE		(SEC.)	-	10	-	-	-	13	-	19
RECALL	MAXIMUM	(ON/OFF)	OFF	OFF	-	OFF	OFF	OFF	-	OFF
	MINIMUM	(ON/OFF)	OFF	ON	-	OFF	OFF	ON	-	OFF
	PEDESTRIAN	(ON/OFF)	-	OFF	-	OFF	-	OFF	-	OFF
MEMORY		(ON/OFF)	-	-	-	-	-	-	-	-

*VOLUME DENSITY CONTROLS
OMIT CALLS TO ϕ1 & ϕ5 DURING ϕ2 & ϕ6 GREEN.

PHASING DIAGRAM



ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	SEE SHEET
SPECIAL	61411300	1	EACH	WORK ZONE TRAFFIC SIGNAL	7
625	00450	3	EACH	CONNECTION, FUSED PULL APART	
625	00460	6	EACH	CONNECTION, UNFUSED PULL APART	
625	00480	3	EACH	CONNECTION, UNFUSED PERMANENT	
625	18511	3	EACH	BRACKET ARM, 30', AS PER PLAN	36
625	23304	972	FT	NO. 8 AWG 600 VOLT DISTRIBUTION CABLE	
625	23400	495	FT	NO. 10 AWG POLE AND BRACKET CABLE	
625	25408	36	FT	CONDUIT, 2", 725.051	
625	25604	65	FT	CONDUIT, 4", 725.051	
625	25908	217	FT	CONDUIT, JACKED OR DRILLED, 725.052, 4"	
625	26253	3	EACH	LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), AS PER PLAN, 120V, 16000-21000 LUMENS	36
625	29002	96	FT	TRENCH, 24" DEEP	
625	30706	5	EACH	PULL BOX, 725.08, 24"	
625	32000	8	EACH	GROUND ROD	
630	79100	10	EACH	SIGN HANGER ASSEMBLY, MAST ARM	
630	79500	2	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED	
630	80100	89	SF	SIGN, FLAT SHEET	
632	05006	8	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, BLACK	
632	05007	2	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN, BLACK	36
632	20731	6	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	36
632	25000	10	EACH	COVERING OF VEHICULAR SIGNAL HEAD	
632	25010	6	EACH	COVERING OF PEDESTRIAN SIGNAL HEAD	
632	40500	848	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	
632	40700	1103	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	
632	64010	4	EACH	SIGNAL SUPPORT FOUNDATION	36
632	64021	3	EACH	PEDESTAL FOUNDATION, AS PER PLAN	36
632	65300	818	FT	LOOP DETECTOR LEAD-IN CABLE, 2 CONDUCTOR, NO. 14 AWG	
632	66104	15	FT	POWER CABLE, 3 CONDUCTOR, NO. 10 AWG	
632	69800	123	FT	SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG	
632	70001	1	EACH	POWER SERVICE, AS PER PLAN	36
632	72141	1	EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 13, AS PER PLAN	36
632	79111	3	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 4, AS PER PLAN	36
632	89921	3	EACH	PEDESTAL, 10.7' TALL, TRANSFORMER BASE, AS PER PLAN	36
632	90101	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN	36
633	65521	1	EACH	CABINET, TYPE 332, AS PER PLAN	37
633	67101	1	EACH	CABINET FOUNDATION, AS PER PLAN	37
633	67200	1	EACH	CONTROLLER WORK PAD	
				ALTERNATE ITEMS	
632	20750	6	EACH	ACCESSIBLE PEDESTRIAN PUSHBUTTON, (ALTERNATE 1)	
632	20750	6	EACH	ACCESSIBLE PEDESTRIAN PUSHBUTTON, (POLARA) (ALTERNATE 2)	36
633	45000	1	EACH	GPS (GLOBAL POSITIONING SYSTEM) CLOCK ASSEMBLY, (ALTERNATE 1)	
633	45000	1	EACH	GPS (GLOBAL POSITIONING SYSTEM) CLOCK ASSEMBLY, (Q-FREE) (ALTERNATE 2)	37
633	75001	1	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN, (ALTERNATE 1)	37
633	75001	1	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN, (ALPHA) (ALTERNATE 2)	37
809	69101	4	EACH	STOP LINE RADAR DETECTION, AS PER PLAN, (ALTERNATE 1)	37
809	69101	4	EACH	STOP LINE RADAR DETECTION, AS PER PLAN, (WAVETRONIX) (ALTERNATE 2)	37
809	69123	1	EACH	ATC CONTROLLER, AS PER PLAN, (ALTERNATE 1)	37
809	69123	1	EACH	ATC CONTROLLER, AS PER PLAN, (INTELIGHT) (ALTERNATE 2)	37

SIGNAL ITEM NUMBER CHANGE

SEE SHEET 8 FOR WORK ZONE TRAFFIC SIGNAL LAYOUT AND DETAILS

RADAR DETECTION CHART

DETECTION ZONE	MOVEMENT	PULSE OR PRESENCE	ASSOCIATED PHASE	RADAR NUMBER	DELAY IN CONTROLLER (SEC)	EXTENSION PROGRAMMED IN CONTROLLER (SEC.)	PURPOSE	DETECTION ZONE LENGTH (FT)
RDZ1	WBLT	PRESENCE	ϕ1	RD4	-	-	STOP BAR	50
RDZ4A	NBTR	PRESENCE	ϕ4	RD3	-	-	STOP BAR	50
RDZ4B	NBLT	PRESENCE	ϕ4	RD3	-	-	STOP BAR	50
RDZ5	EBLT	PRESENCE	ϕ5	RD1	-	-	STOP BAR	50
RDZ8A	SBTR	PRESENCE	ϕ8	RD2	-	-	STOP BAR	50
RDZ8B	SBLT	PRESENCE	ϕ8	RD2	-	-	STOP BAR	50

NOTE: DILEMMA ZONE SPEED THRESHOLD >30 MPH

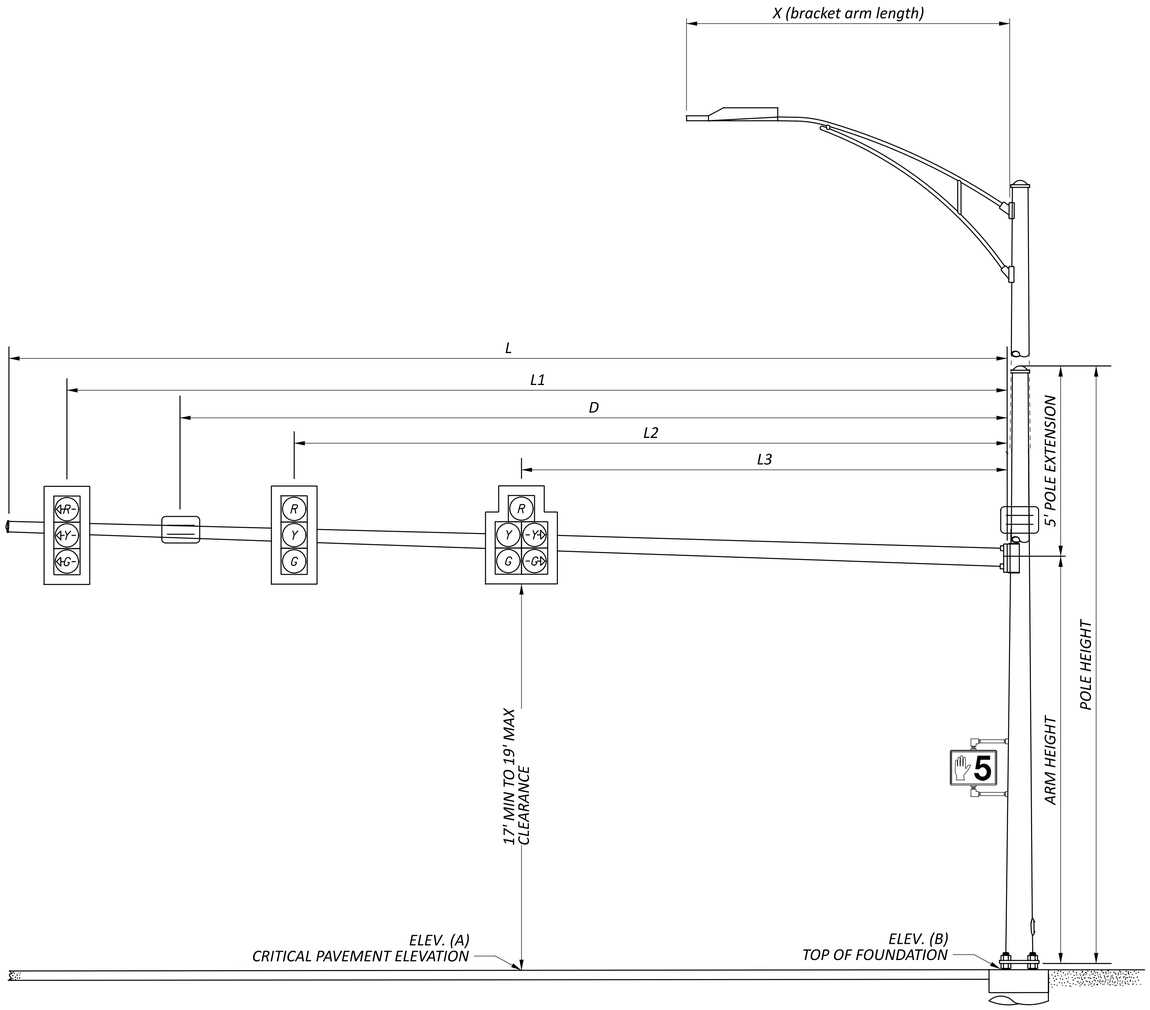
DELHI PIKE & KLEMME DR/DELHI PARK
SIGNAL DETAIL

DESIGN AGENCY
PLAN PREPARED BY:
TEC Engineering, Inc.
7288 Central Parke Blvd.
Mason, OH 45040

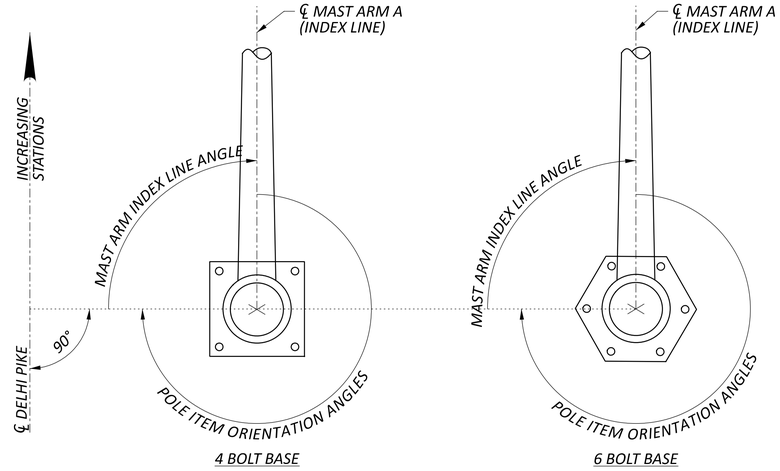
DESIGNER AFS
REVIEWER KLL 02/24/26
PROJECT ID 119070
SHEET 44 TOTAL 47

HAM-CR196-1.89

MODEL: CD001 PAPERSIZE: 34x22 (in.) DATE: 2/24/2026 TIME: 10:29:42 AM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: klinville@tecengg.com WORKSPACE: OHDOTCEv02 WORKSET: 23351-001 PRODUCT: OpenRoadsDesigner 24.00.00.205
\\10.1.1.4\projects\2023 Projects\23351 Delhi Township\001 HAM CR 196\23351-001\400-Engineering\Signals\Sheets\23351-001_CP001.dgn



SIGNAL SUPPORT ELEVATION (TYPICAL)



NOTE:
1. ALL ANGELS ARE MEASURED CLOCKWISE.
2. BASE PLATE IS ORIENTED SQUARE TO MAST ARM A, EVEN IF THE SUPPORT HAS TWO ARMS.

POLE ORIENTATION

MAST ARM TABLE

SUPPORT NO.	STATION	OFFSET	ELEVATION		SIGNAL SUPPORT DETAILS												MAST ARM A ANGLE	ORIENTATION ANGLES FROM MAST ARM A								
			A	B	DESIGN TYPE	DESIGN NO.	POLE HEIGHT	ARM HEIGHT	L	L1	L2	L3	L4	L5	L6	L7	X		MAST ARM B ANGLE	PEDESTRIAN SIGNAL	PEDESTRIAN BUTTON	POWER SERVICE	CONTROLLER	SIGN	BRACKET ARM	HANDHOLE	CABLE ENTRANCE 12" FROM TOP
							FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	DEG	DEG	DEG	DEG	DEG	DEG	DEG	DEG	DEG	DEG
SP-1	7+34.2	33.3' LT	887.76	888.15	TC-81.22	4	35	20	34	31	31	27	22	14	8	-	20	0	-	-	-	-	-	-	0	180	-
SP-2	8+14.9	46.3' LT	890.73	889.85	TC-81.22	4	33.5	19	32	30	23	15	8	-	-	-	20	90	-	270	270	-	-	270	0	180	-
SP-3	7+28.0	33.7' RT	888.14	888.00	TC-81.22	13	21	19.5	52	50	43	32	8	-	-	-	-	90	-	-	-	-	-	-	-	180	-
SP-4	8+14.1	33.6' RT	889.66	889.78	TC-81.22	4	30.5	20.5	35	32	32	28	23	14	7	-	20	0	-	180	180	180	-	0	0	180	-
PS-1	7+46.5	33.6' LT	-	888.21	TC-83.20	-	10.7	-	-	-	-	-	-	-	-	-	-	0	-	270	270	-	-	-	-	-	-
PS-2	7+55.4	39.4' LT	-	888.22	TC-83.20	-	10.7	-	-	-	-	-	-	-	-	-	-	0	-	0	0	-	-	-	-	-	-
PS-3	7+42.6	38.9' RT	-	888.22	TC-83.20	-	10.7	-	-	-	-	-	-	-	-	-	-	0	-	0/90	0/90	-	-	-	-	-	-

HEIGHT CHANGE DUE TO ITEM NUMBER CHANGE

HAM-CR196-1.89

MODEL: CE001 PAPERSIZE: 34x22 (in.) DATE: 2/24/2026 TIME: 10:29:43 AM PLTDRV: OHDOT_PDF.pltcfg PENTBL: OHDOT_Pen.tbl USER: Klinville@tececng.com WORKSPACE: OHDOTCEv02 WORKSET: 23351-001 PRODUCT: OpenRoadsDesigner 24.00.00.205
\\10.1.1.4\projects\2023 Projects\23351 Delhi Township\001 HAM CR 196\23351-001\400-Engineering\Signals\Sheets\23351-001_CP001.dgn

DELHI PIKE & KLEMME DR/DELHI PARK
SIGNAL DETAIL

DESIGN AGENCY
PLAN PREPARED BY:
TEC Engineering, Inc.
7288 Central Parke Blvd.
Mason, OH 45040

DESIGNER AFS
REVIEWER KLL 02/24/26
PROJECT ID 119070
SHEET 46 TOTAL 47