

LOCATION MAP

LATITUDE: 39°17'07" LONGITUDE: -84°18'35"



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

DESIGN DESIGNATION	CORNELL-KEMPER	KEMPER-FIELDS ERTEL	FIELDS ERTEL-COLUMBIA
CURRENT ADT (2021)	25125	19155	25221
DESIGN YEAR ADT (20 )	N/A	N/A	N/A
DESIGN HOURLY VOLUME (20 )	-	-	-
DIRECTIONAL DISTRIBUTION	-	-	-
TRUCKS (24 HOUR B&C)	541	367	203
DESIGN SPEED	45	45	50
LEGAL SPEED	40	40	45
DESIGN FUNCTIONAL CLASSIFICATION:			
03 PRINCIPAL ARTERIAL (URBAN)			
NHS PROJECT	NO		

DESIGN EXCEPTIONS

ADA DESIGN WAIVERS

**UNDERGROUND UTILITIES**  
Contact Two Working Days Before You Dig

OHIO 811. 8-1-1, or 1-800-362-2764  
(Non members must be called directly)

PLAN PREPARED BY:

CRAWFORD, MURPHY & TILLY, INC.

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION

HAM/WAR US 22  
16.04/0.00 PED  
HAMILTON COUNTY  
WARREN COUNTY

INDEX OF SHEETS:

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REVIEW COMPLETE

PM	Katherine S. DeStefano, P.E. 10/28/2024
BRIDGES	
CONSTRUCT	Jason R. Haus P.E. 10/29/2024
DRAINAGE	Tami Brehm, P.E. 11/15/2024
ENVIRON	L. Keith Smith, P.E. 11/25/2024
GEOTECH	
ITS	
MOT	Scott Kraus, P.E., 12/10/2024
PAVEMENT	
ROADWAY	Katherine S. DeStefano, P.E. 10/28/2024
R/W	Matthew Couch, 11/07/2024
SURVEY	
TRAFFIC	Teri C. Scanlon, P.E. 12/11/2024
UTILITIES	Lucas W. Braun, P.E. 11/27/2024
OTHER	Brianne Hetzel, P.E., 10/29/2024
OTHER	

FEDERAL PROJECT NUMBER

E220595

RAILROAD INVOLVEMENT

NONE

PROJECT DESCRIPTION

RELOCATING EXISTING PED HEADS AND PUSH BUTTONS ONTO PEDESTALS FOR BETTER ACCESSIBILITY, ADDING SIDEWALK AND CURB RAMPS TO MAKE CROSSINGS ADA COMPLIANT. INCLUDES PEDESTALS AND ASSOCIATED CONDUIT, WIRING AND PULLBOXES ALONG US-22 IN HAMILTON AND WARREN COUNTIES

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA:	0.609 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	0.000 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	N/A (NOI NOT REQUIRED)

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

2023 SPECIFICATIONS

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

ENGINEER'S SEAL:

SIGNED: \_\_\_\_\_  
DATE: \_\_\_\_\_

ENGINEER'S SEAL:

SIGNED: \_\_\_\_\_  
DATE: \_\_\_\_\_

STANDARD CONSTRUCTION DRAWINGS		SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
BP-5.1	7/15/22	800-2023 SEE PROPOSAL	
BP-7.1	1/20/23	832 7/15/23	
HL-30.11	1/15/21		
HL-30.22	1/15/21		
MT-95.30	7/19/19		
MT-95.31	7/19/19		
MT-101.90	7/17/20		
MT-110.10	7/19/13		
TC-52.20	1/15/21		
TC-71.10	4/26/23		
TC-74.10	1/20/23		
TC-83.20	7/15/22		
TC-85.10	10/21/22		

needs to include most recent revision date

update

APPROVED \_\_\_\_\_  
DATE \_\_\_\_\_ DISTRICT DEPUTY DIRECTOR

APPROVED \_\_\_\_\_  
DATE \_\_\_\_\_ DIRECTOR, DEPARTMENT OF TRANSPORTATION

DESIGN AGENCY

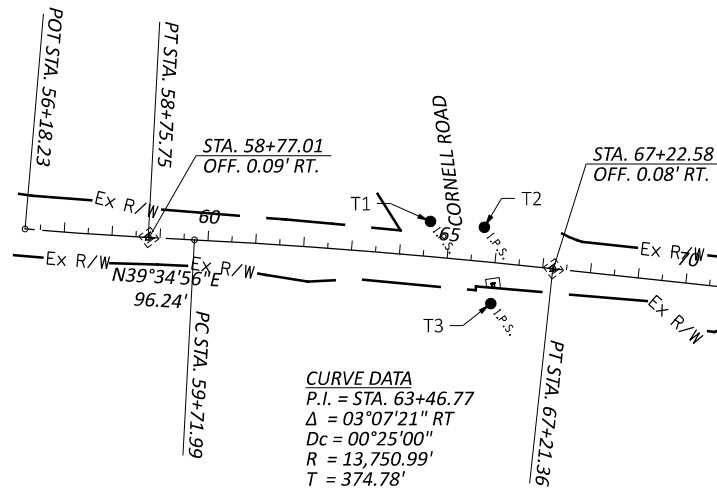
DESIGNER  
LDW

REVIEWER  
JWL 08/15/24

PROJECT ID  
117237

SHEET TOTAL  
P.1 66

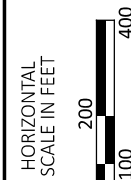
**CURVE DATA**  
 P.I. = STA. 57+47.00  
 $\Delta = 01^{\circ}53'19''$  LT  
 $D_c = 00^{\circ}44'00''$   
 $R = 7,813.06'$   
 $T = 128.77'$   
 $L = 257.52'$   
 $E = 1.06'$



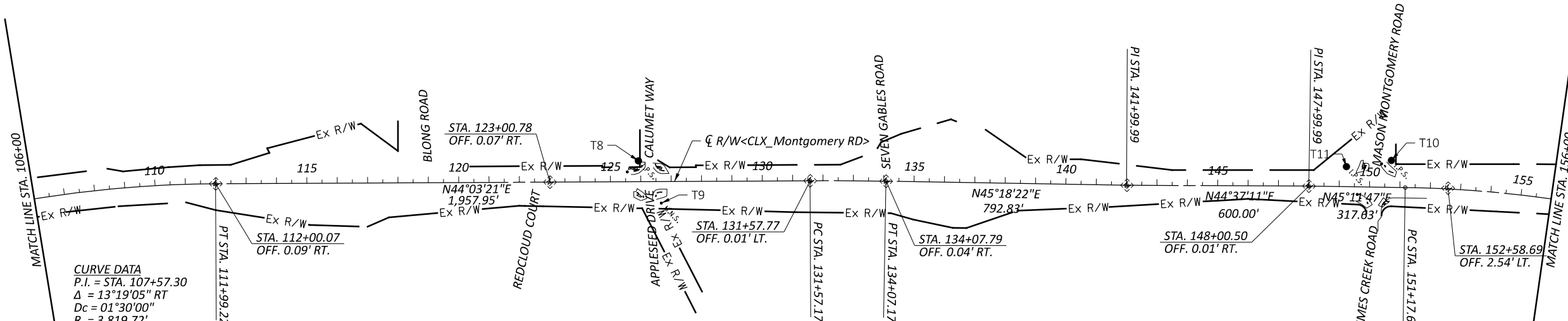
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 P.I. = STA. 63+46.77  
 $\Delta = 03^{\circ}07'21''$  RT  
 $D_c = 00^{\circ}25'00''$   
 $R = 13,750.99'$   
 $T = 374.78'$   
 $L = 749.37'$   
 $E = 5.11'$

**CURVE DATA**  
 P.I. = STA. 81+50.76  
 $\Delta = 11^{\circ}58'07''$  LT  
 $D_c = 02^{\circ}00'00''$   
 $R = 2,864.79'$   
 $T = 300.31'$   
 $L = 598.44'$   
 $E = 15.70'$

**CURVE DATA**  
 P.I. = STA. 107+57.30  
 $\Delta = 13^{\circ}19'05''$  RT  
 $D_c = 01^{\circ}30'00''$   
 $R = 3,819.72'$   
 $T = 445.94'$   
 $L = 887.86'$   
 $E = 25.94'$



SCHEMATIC PLAN



**CURVE DATA**  
 P.I. = STA. 107+57.30  
 $\Delta = 13^{\circ}19'05''$  RT  
 $D_c = 01^{\circ}30'00''$   
 $R = 3,819.72'$   
 $T = 445.94'$   
 $L = 887.86'$   
 $E = 25.94'$

**CURVE DATA**  
 P.I. = STA. 132+82.18  
 $\Delta = 01^{\circ}15'00''$  RT  
 $D_c = 00^{\circ}30'00''$   
 $R = 11,459.16'$   
 $T = 125'$   
 $L = 249.99'$   
 $E = .68'$

**CURVE DATA**  
 P.I. = STA. 157+73.24  
 $\Delta = 19^{\circ}28'43''$  RT  
 $D_c = 01^{\circ}30'00''$   
 $R = 3,819.72'$   
 $T = 655.61'$   
 $L = 1,298.58'$   
 $E = 55.86'$



DESIGN AGENCY



DESIGNER

LDW

REVIEWER

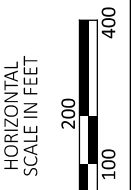
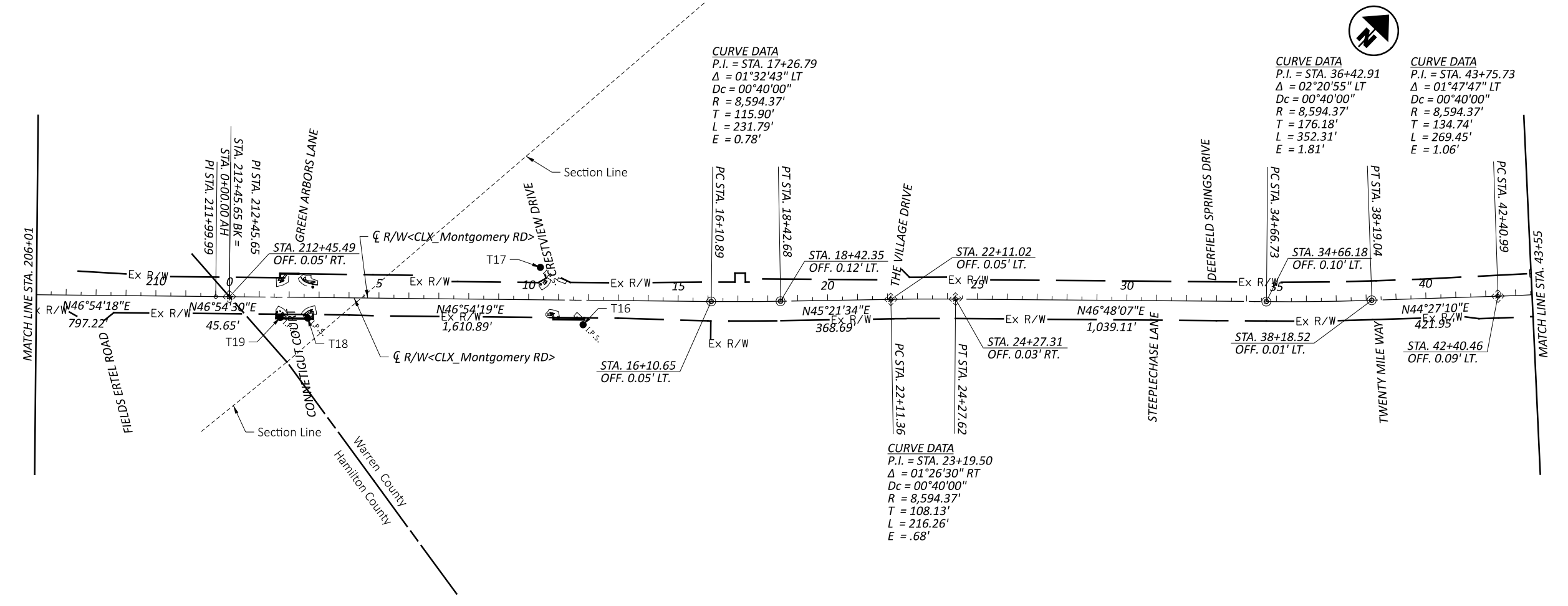
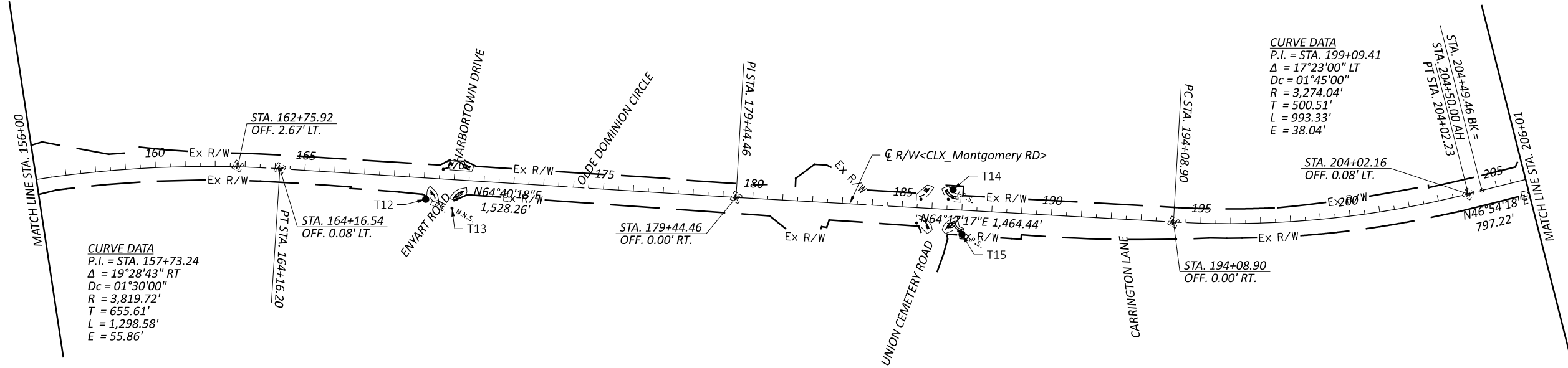
JWL 08/15/24

PROJECT ID

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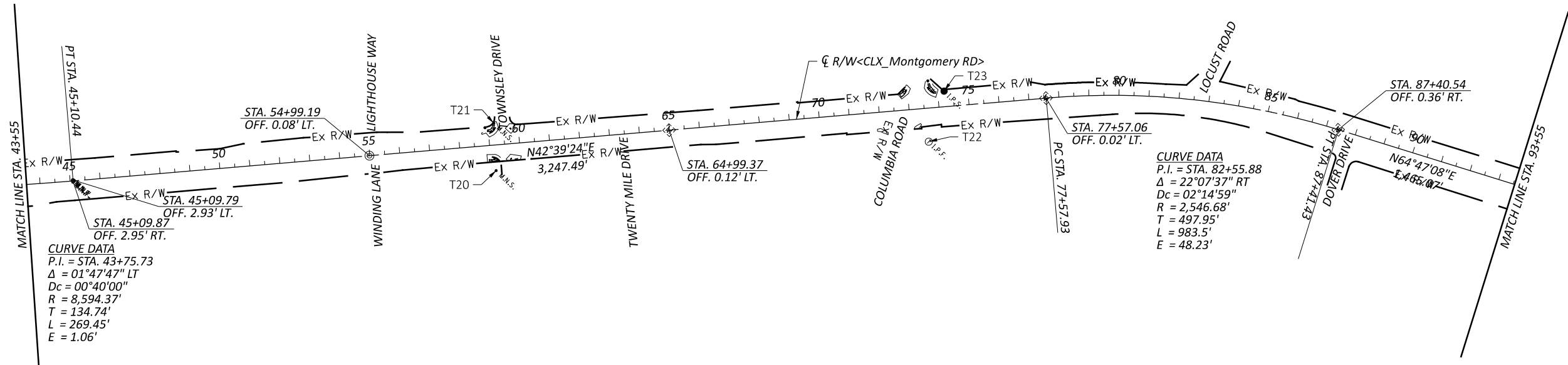
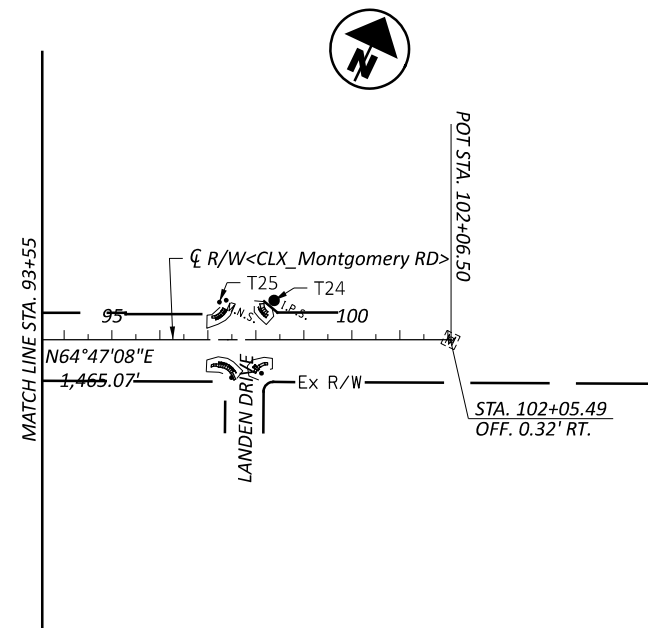
SHEET TOTAL

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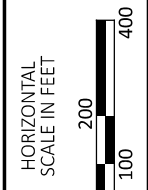


SCHEMATIC PLAN

DESIGN AGENCY	
DESIGNER LDW	
REVIEWER JWL 08/15/24	
PROJECT ID 117237	
SHEET	TOTAL
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Point	Station	Offset	Northing	Easting	Elevation
T1	64+58.65 R1	-73.04	465832.48	1449003.65	798.79
T2	65+70.94 R1	-71.28	465915.39	1449080.26	798.45
T3	65+99.88 R1	85.67	465831.54	1449216.05	797.57
T5	78+55.21 R1	80.22	466757.58	1450062.66	784.79
T4	78+79.89 R1	-45.41	466860.58	1449986.57	785.28
T6	89+80.45 R1	-62.21	467775.88	1450575.80	809.37
T7	90+03.39 R1	67.12	467729.49	1450698.69	806.93
T8	125+92.31 R1	-68.68	470640.70	1452766.88	800.03
T9	126+67.11 R1	70.95	470597.36	1452919.24	800.65
T11	149+22.99 R1	-66.16	472294.93	1454410.49	815.41
T10	150+70.85 R1	-88.80	472415.19	1454499.44	817.99
T12	169+09.19 R1	71.34	473274.04	1456129.09	816.28
T13	169+98.68 R1	95.39	473290.59	1456220.27	816.01
T14	186+66.89 R1	-66.70	474154.93	1457656.28	818.80
T15	187+05.13 R1	80.92	474038.53	1457754.78	817.30
T19	1+70.50 R3	68.01	475618.54	1459956.66	837.56
T18	2+62.67 R3	68.75	475680.97	1460024.47	836.73
T17	10+38.46 R3	-108.40	476340.35	1460469.94	830.54
T16	11+83.18 R3	81.76	476300.37	1460705.54	827.13
T20	59+14.68 R3	85.15	479651.09	1464051.83	849.35
T21	59+20.09 R3	-72.53	479761.92	1463939.53	848.80
T22	73+56.28 R3	111.42	480693.49	1465047.99	838.58
T23	74+21.40 R3	-52.01	480852.12	1464971.92	834.53
T25	97+23.86 R3	-78.39	482132.15	1466881.56	795.61
T24	98+37.77 R3	-82.14	482184.07	1466983.02	796.73



SCHEMATIC PLAN

DESIGN AGENCY  
**CMT**  
 CRAWFORD, MURPHY &  
 WASHINGTON VILLAGE DR  
 1777 WASHINGTON VILLAGE DR  
 DAYTON, OHIO 45459  
 www.cmtinc.com

DESIGNER  
**LDW**

REVIEWER  
**JWL 08/15/24**

PROJECT ID  
**117237**

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**UTILITIES**

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

**TRAFFIC**

ODOT DISTRICT 8 TRAFFIC OPERATIONS  
ATTN: JIM JUDD  
505 SOUTH SR741  
LEBANON, OHIO 45036  
513-933-6692

**ELECTRIC**

DUKE ELECTRIC (DISTRIBUTION)  
2010 DANA AVE  
CINCINNATI, OHIO 45207  
PHONE 513-514-8209 (CHRIS TEPE)  
CHRIS.TEPE@DUKE-ENERGY.COM

DUKE ELECTRIC (TRANSMISSION)  
139 EAST 4TH STREET, ROOM 491-03  
CINCINNATI, OHIO 45202  
513-287-1266 (TIM MEYER)  
TIM.MEYER@DUKE-ENERGY.COM

**GAS**

DUKE ENERGY GAS  
139 EAST 4TH STREET  
CINCINNATI, OHIO 45202  
513-287-4653 (RICHARD HACKER)  
OH/KYHOUSEBILL@DUKE-ENERGY.COM  
RICHARD.HACKER@DUKEENERGY.COM

**TELECOM**

AT&T  
7201 FAR HILLS AVE  
DAYTON, OH 45459  
937-708-1026  
AS1634@ATT.COM33

ALTA FIBER - UNDERGROUND  
221 E. FOURTH STREET, 121-900  
CINCINNATI, OHIO 45202  
513-565-7187 BRECK COWAN  
BRECK.COWAN@ALTA FIBER.COM

ALTA FIBER - AERIAL  
221 E. FOURTH ST  
CINCINNATI, OHIO 45202  
513-566-5120 (JOHN STRAUSS)  
JOHN.STRAUSS@ALTA FIBER.COM

MCI (VERIZON)  
8800 GOVERNOR HILLS DRIVE  
CINCINNATI, OH 45249  
254-721-8977 (BRUCE TURKIEWICZ)  
BRUCE.TURKIEWICZ@VERIZONWIRELESS.COM

CROWN CASTLE  
10188 INTERNATIONAL BOULEVARD  
CINCINNATI, OH 41913  
877-486-9377  
585-445-5825 (CRAIG WHEELER)  
CRAIG.WHEELER@CROWNCastle.COM

**WATER**

CINCINNATI WATER  
4747 SPRING GROVE AVE  
CINCINNATI, OH 45232  
513-3652-3723 (DAN LOUIS)  
DANIEL.LOUIS@GCWW.CINCINNATI-OH.GOV

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

EXISTING UTILITIES ARE SHOWN IN THEIR APPROXIMATE LOCATION ACCORDING TO THE BEST AVAILABLE DATA. THE CONTRACTOR WILL BE RESPONSIBLE FOR LOCATING THEM IN THE FIELD PRIOR TO CONSTRUCTION AND WILL BE RESPONSIBLE FOR ANY DAMAGE DONE TO THEM.

**SURVEYING PARAMETERS**

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE SHEET 4 OF THE PLANS FOR A TABLE CONTAINING PROJECT CONTROL INFORMATION.

USE THE FOLLOWING PROJECT CONTROL, VERTICAL POSITIONING, AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

**PROJECT CONTROL**

POSITIONING METHOD: ODOT VRS  
MONUMENT TYPE: TYPE B (5/8" IRON PIN w/ PLASTIC CAP)

**VERTICAL POSITIONING**

ORTHOMETRIC HEIGHT DATUM: NAVD88  
GEOID: GEOID 12B (CONUS)

**HORIZONTAL POSITIONING**

REFERENCE FRAME: NAD83  
ELLIPSOID: GRS80  
MAP PROJECTION: LAMBERT CONFORMAL CONIC (2-PARALLEL)

COORDINATE SYSTEM: OHIO STATE PLANE SOUTH ZONE  
COMBINED SCALE FACTOR: 1.00 (AT GRID)  
ORIGIN OF COORDINATE SYSTEM: 0,0

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS 623.

UNITS ARE IN U.S. SURVEY FEET.

**WORK LIMITS**

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

**CONSTRUCTION LIMITS**

THE CONTRACTOR SHALL RESTRICT ALL ACTIVITIES, EQUIPMENT STORAGE AND STAGING TO WITHIN THE CONSTRUCTION LIMITS. UNLESS OTHERWISE IDENTIFIED IN THE PLANS OR PROPOSAL, THE ACTUAL CONSTRUCTION LIMITS ARE SHOWN ON THE PLANS OR THE EXISTING OR TEMPORARY RIGHT OF WAY, WHICHEVER IS NEAREST. SHOULD THE CONTRACTOR WISH TO USE ANY AREA OUTSIDE THESE LIMITS, THE CONTRACTOR MUST SUBMIT THE REQUEST IN WRITING TO THE ENGINEER. THE DOCUMENT SUBMITTED MUST CLEARLY IDENTIFY THE AREA THAT THE CONTRACTOR PLANS TO USE AND EXPLAIN THE PROPOSED USE AND RESTORATION OF THE AREA. THE ENGINEER SHALL APPROVE THE REQUEST IN WRITING BEFORE THE CONTRACTOR HAS PERMISSION TO USE THE AREA. PRIOR TO BEGINNING THE WORK, THE CONTRACTOR SHALL REVIEW AND RECORD ALL ADJACENT SITES WITHIN THE RIGHT OF WAY (BOTH WITHIN AND OUTSIDE THE CONSTRUCTION LIMITS). CONTRACTOR SHALL SUBMIT DOCUMENTATION OF EXISTING CONDITIONS TO THE ENGINEER AND THE MAINTAINING AGENCY FOR APPROVAL. A RECORD OF THIS REVIEW WILL BE KEPT IN THE PROJECT ENGINEER'S FILES. PRIOR TO FINAL ACCEPTANCE, A FINAL REVIEW OF THE ADJACENT SITES WILL BE MADE. ANY AREAS DAMAGED BEYOND THE CONSTRUCTION LIMITS AS DEFINED ABOVE SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE. COST FOR DOCUMENTING EXISTING CONDITIONS SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

**CONSTRUCTION NOISE**

ACTIVITIES AND LAND USE ADJACENT TO THIS PROJECT MAY BE AFFECTED BY CONSTRUCTION NOISE. IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, DO NOT OPERATE POWER-OPERATED CONSTRUCTION-TYPE DEVICES BETWEEN THE HOURS OF 8:00 PM AND 7:00 AM. IN ADDITION, DO NOT OPERATE AT ANY TIME ANY DEVICE IN SUCH A MANNER THAT THE NOISE CREATED SUBSTANTIALLY EXCEEDS THE NOISE CUSTOMARILY AND NECESSARILY ATTENDANT TO THE REASONABLE AND EFFICIENT PERFORMANCE OF SUCH EQUIPMENT.

**ITEM 623 CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN**

IN ADDITION TO THE REQUIREMENTS OF ITEM 623-ODOT CMS, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REESTABLISH AND VERIFY ALL HORIZONTAL SURVEY CONTROL POINTS, BENCHMARKS, AND RIGHT-OF-WAY ON ALL SECTIONS OF THE PROJECT.

**CLEARING AND GRUBBING**

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

NO CLEARING OR GRUBBING SHALL OCCUR OUTSIDE THE PROPOSED CONSTRUCTION LIMITS.

**RESTORATION OF DISTURBED AREAS**

THE CONTRACTOR SHALL RESTORE ALL DISTURBED LANDSCAPED AREAS AND PAVEMENT SURFACES TO A CONDITION EQUAL TO, OR BETTER THAN THAT WHICH EXISTED PRIOR TO THE START

OF WORK. THE CONTRACTOR SHALL PERFORM ALL RESTORATION WITH MATERIALS IDENTICAL TO THE EXISTING SURFACE. THE CONTRACTOR SHALL PERFORM ALL RESTORATION WORK IN ACCORDANCE WITH THE PERTINENT SPECIFICATION ITEMS AS DIRECTED BY THE ENGINEER. ALL RESTORATION WORK, INCLUDING MATERIALS, EQUIPMENT, LABOR, INCIDENTALS, AND DISPOSAL OF ALL SURPLUS MATERIALS ARE CONSIDERED AS INCIDENTAL TO THE VARIOUS ITEMS OF UNDERGROUND WORK UNLESS SPECIFICALLY MARKED IN THE PLANS.

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

THE REMOVAL FOR THE CONCRETE WALK/CURB RAMP SHALL INCLUDE THE CONCRETE WALK/CURB RAMP AND ANY MATERIALS BELOW THE WALK NEEDED TO BE REMOVED IN ORDER TO OBTAIN THE PROPER SUBGRADE ELEVATION FOR THE NEW CONCRETE WALK/CURB RAMP TO BE PLACED.

**ITEM 202 CURB REMOVED, AS PER PLAN**

THE REMOVAL FOR THE CURB SHALL INCLUDE THE CURB AND ANY MATERIALS BELOW THE CURB NEEDED TO BE REMOVED IN ORDER TO OBTAIN THE PROPER ELEVATION FOR THE NEW CURB TO BE PLACED.

**ITEM 253 PAVEMENT REPAIR, AS PER PLAN**

IT IS THE INTENT THAT THE EXISTING PAVEMENT SHALL NOT BE REMOVED OR DISTURBED FOR CONSTRUCTION OF THE PROPOSED CURB AND CURB RAMPS. CURB RADII SHOWN SHALL GENERALLY MATCH THE EXISTING LAYOUTS.

AREAS REQUIRING REPAIR NOT DUE TO CONTRACTOR MEANS AND METHODS AND APPROVED BY THE ENGINEER SHALL BE PAID FOR UNDER ITEM 253 PAVEMENT REPAIR, AS PER PLAN. THIS WORK SHALL MEET THE REQUIREMENTS OF ITEM 253 AND INCLUDE THE FOLLOWING: SAWCUTTING, PAVEMENT REMOVAL, BASE COMPACTION AND PLACEMENT OF PAVEMENT TO MATCH THE EXISTING DEPTH. IF THE EXISTING PAVEMENT REQUIRES REPAIR DUE TO CONTRACTOR MEANS AND METHODS, IT SHALL BE REPAIRED AS NOTED ABOVE AT THE COST OF THE CONTRACTOR.

A CONTINGENCY QUANTITY FOR USE AS DIRECTED BY THE ENGINEER HAS BEEN PROVIDED:

ITEM 253 PAVEMENT REPAIR, APP - 97 SY

**PROPOSED CONCRETE WALK AND CURB RAMPS**

IT IS THE INTENT THAT WHERE SHOWN FOR CONSTRUCTION OF NEW PROPOSED OR REPLACEMENT OF EXISTING CONCRETE WALK CURB RAMPS ON THE PLANS, THE WALK AND CURB RAMPS BE REPLACED STARTING AND ENDING AT AN EXISTING EXPANSION OR CONTRACTION JOINT. THE CONTRACTOR SHALL SAW-CUT THE WALK OR CURB RAMP ONLY AT THESE LOCATIONS OR WHERE DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXCAVATION, ADDING OR REMOVING ANY STONE BASE OR GRADING NECESSARY TO OBTAIN THE PROPER SUBBASE ELEVATION PRIOR TO PLACEMENT OF THE PROPOSED CONCRETE WALK OR CURB RAMP. PAYMENT FOR THE ABOVE MATERIALS, LABOR OR EQUIPMENT REQUIRED TO COMPLETE THE WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE FOLLOWING ITEMS:

ITEM 608 4" CONCRETE WALK, AS PER PLAN  
ITEM 608 CURB RAMP, AS PER PLAN

CONCRETE WALK OR CURB RAMPS REQUIRING REPLACEMENT DUE TO WORK OUTSIDE OF THE NOTED REMOVALS AND REPLACEMENTS SHOWN ON THE PLANS SHALL BE CONSIDERED TO BE INCLUDED IN THE COST OF THE ITEM THE REMOVAL WAS REQUIRED FOR. NO ADDITIONAL PAYMENT WILL BE MADE. THE CONCRETE WALK AND CURB RAMP REQUIRING REPLACEMENT SHALL BE REMOVED AND REPLACED TO THE NEAREST JOINT LINE UNLESS OTHERWISE APPROVED BY THE ENGINEER.

**ITEM 608 DETECTABLE WARNING, AS PER PLAN**

EXISTING CURB RAMPS REQUIRING REMOVAL AND REPLACEMENT OF THE DETECTABLE WARNINGS ARE NOTED WITHIN THE PLANS.

THE EXISTING DETECTABLE WARNINGS SHALL BE REMOVED IN A MANNER THE DOES NOT ADVERSELY IMPACT THE SURFACE OF THE SURROUNDING CONCRETE WITHIN THE CURB RAMP. THE CONTRACTOR SHALL REPLACE THE DETECTABLE WARNING PER ODOT CMS 608. ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO REMOVE AND REPLACE THE DETECTABLE WARNING SHALL BE INCLUDED IN THE COST OF ITEM 608 DETECTABLE WARNING, AS PER PLAN.

**ITEM 609 CURB, TYPE 6, AS PER PLAN**

ALL PROPOSED TYPE 6 CURB SHALL BE CONSTRUCTED AS PER ODOT CMS ITEM 609 AND STANDARD CONSTRUCTION DRAWING BP-5.1 EXCEPT TO MATCH EXISTING CURB HEIGHT AND GENERAL SHAPE. CURB HEIGHT AND SHAPE SHALL BE CONSISTENT WITH THE ADJACENT CURB UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

PROPOSED CURB SHALL BE CONSTRUCTED IN A MANNER THAT PROVIDE THE LEAST AMOUNT OF DISTURBANCE TO THE EXISTING PAVEMENT.

**SEEDING AND MULCHING**

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

ITEM 659, TOPSOIL	83	CU. YD.
ITEM 659, SEEDING AND MULCHING	747	SQ. YD.
ITEM 659, REPAIR SEEDING AND MULCHING	37	SQ. YD.
ITEM 659, COMMERCIAL FERTILIZER	0.11	TONS
ITEM 659, LIME	0.15	ACRES
ITEM 659, WATER	4	M. GAL.

APPLY SEEDING AND MULCHING TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT, TEMPORARY EASEMENT,

SIDEWALK EFFECTIVE AUTHORITY OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

**PROPERTY POINTS AND SURVEY MONUMENTS**

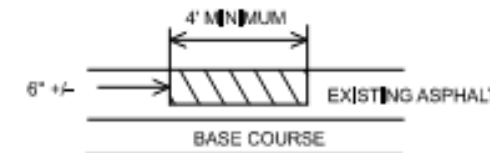
CARE SHALL BE TAKEN BY THE CONTRACTOR TO SAFEGUARD ANY PROPERTY POINTS OR OTHER SURVEY REFERENCE MARKS ENCOUNTERED DURING CONSTRUCTION OF THIS PROJECT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESET ANY PROPERTY POINT OR SURVEY MONUMENT WHICH IS DISTURBED AS A RESULT OF CONSTRUCTION OF THIS PROJECT. THE PROPERTY POINTS AND SURVEY MONUMENTS SHALL BE RESET UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL SURVEYOR.

PAYMENT FOR THIS ITEM SHALL BE INCIDENTAL TO THE OTHER ITEMS PAID FOR IN THIS PROJECT.

Provide detail indicating proposed replacement pavement build-up. Revise text as needed. Here is an example:

**ITEM 253- PAVEMENT REPAIR (A)**

AN ESTIMATED QUANTITY OF 690 CU YDS OF ITEM 253- PAVEMENT REPAIR HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER. THIS OPERATION SHALL BE PERFORMED BEFORE PAVEMENT PLANING OF ROADWAY.



EXISTING DETERIORATED ASPHALT SHALL BE REMOVED TO A MAXIMUM DEPTH OF 6 INCHES OR AS DIRECTED BY THE ENGINEER AND REPLACED WITH ITEM 301, ASPHALT CONCRETE BASE SHALL BE COMPACTED AS PER 401.15 AND IN APPROXIMATELY EQUAL LAYERS. THE LOCATIONS AND SIZE OF THE REPAIRS SHALL BE DETERMINED BY THE ENGINEER. DO NOT DISTURB THE CONCRETE BASE.

DESIGN AGENCY



DESIGNER

LDW

REVIEWER

JWL 08/15/24

PROJECT ID

117237

SHEET TOTAL

P.5 66

**ITEM 614, MAINTAINING TRAFFIC (LANES OPEN DURING HOLIDAYS OR SPECIAL EVENTS)**

A MINIMUM OF 1 LANE(S) OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING PAVEMENT.

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR SPECIAL EVENTS:

- NEW YEAR'S (OBSERVED)
- GENERAL/REGULAR ELECTION DAY (NOV)
- TOTAL SOLAR ECLIPSE (4/8/24)
- THANKSGIVING
- MEMORIAL DAY
- CHRISTMAS (OBSERVED)
- FOURTH OF JULY (OBSERVED)
- (OTHER HOLIDAY OR SPECIAL EVENT)
- LABOR DAY

...all times in accordance with the lane value contract table, by use...

Solar Eclipse is over!

THE PERIOD OF TIME THAT THE LANES ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY OR SPECIAL EVENT FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

DAY OF HOLIDAY TIME ALL LANES OR SPECIAL EVENT MUST BE OPEN TO TRAFFIC

SUNDAY	12:00N	FRIDAY THROUGH 6:00 AM	MONDAY
MONDAY	12:00N	FRIDAY THROUGH 6:00 AM	TUESDAY
MONDAY	(TOTAL SOLAR ECLIPSE)		
	12:00N	MONDAY THROUGH 6:00 AM	WEDNESDAY
TUESDAY	12:00N	MONDAY THROUGH 6:00 AM	WEDNESDAY
TUESDAY	(GEN./REG. ELECTION)		
	5:00 AM	TUESDAY THROUGH 12:00 AM	WEDNESDAY
WEDNESDAY	12:00N	TUESDAY THROUGH 6:00 AM	THURSDAY
THURSDAY	12:00N	WEDNESDAY THROUGH 6:00 AM	FRIDAY
THURSDAY	(THANKSGIVING ONLY)		
	6:00 AM	WEDNESDAY THROUGH 6:00 AM	MONDAY
FRIDAY	12:00N	THURSDAY THROUGH 6:00 AM	MONDAY
SATURDAY	12:00N	FRIDAY THROUGH 6:00 AM	MONDAY

DURING THE SAME PERIODS, MAINTAIN PEDESTRIAN ACCESS IF PEDESTRIAN ACCESS WAS PRESENT PRIOR TO CONSTRUCTION.

~~NEWLY CONSTRUCTED LANE ADDITIONS, ONCE COMPLETED AND INITIALLY OPENED TO TRAFFIC SHALL BE OPEN TO TRAFFIC DURING ALL SUBSEQUENT DESIGNATED HOLIDAYS AND SPECIAL EVENTS, AND RELATED PERIODS OF TIME, SPECIFIED ABOVE.~~

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE PER THE LANE VALUE CONTRACT (PN 127).

LANE VALUE CONTRACT TABLE:

DESCRIPTION OF CRITICAL LANE/ RAMP TO BE MAINTAINED	RESTRICTED TIME PERIOD	TIME UNIT	DISINCENTIVE \$ PER LANE
1 LANE OF US-22 FROM CORNELL ROAD TO MASON MONTGOMERY ROAD	SEE HOURS ABOVE	EACH HOUR	\$7,200.00

US 22 and all sidestreets

1 MIN

\$120

What hours above?

7 AM to 9 AM and 3 PM to 7 PM

At least 1 sidewalk on either side of the road shall be maintained at all times.

**NOTIFICATION OF TRAFFIC RESTRICTIONS**  
THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITTEN NOTIFICATION IS SUBMITTED IN A TIMELY MANNER TO ALLOW THE PROJECT ENGINEER TO MEET THE REQUIRED TIME FRAMES SET FORTH IN THE TABLE BELOW TO INFORM THE SPECIAL HAULING PERMITS SECTION (HAULING.PERMITS@DOT.OHIO.GOV) AND THE DISTRICT PUBLIC INFORMATION OFFICE (PIO). THIS NOTIFICATION SHALL BE RECEIVED BY THE PROJECT ENGINEER PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE SIGNS OR MESSAGE BOARDS.

INFORMATION SHOULD INCLUDE, BUT IS NOT LIMITED TO, ALL CONSTRUCTION ACTIVITIES THAT IMPACT OR INTERFERE WITH TRAFFIC AND SHALL LIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, NUMBER OF LANES CLOSED, MINIMUM VERTICAL CLEARANCE, MINIMUM WIDTH OF DRIVABLE PAVEMENT, DETOUR ROUTES, IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

NOTIFICATION TIME TABLE		
ITEM	DURATION OF CLOSURE	NOTICE DUE TO PERMITS & PIO
RAMP & ROAD CLOSURES	>= 2 WEEKS	21 CALENDAR DAYS PRIOR TO CLOSURE
	> 12 HRS & < 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	< 12 HOURS	4 BUSINESS DAYS PRIOR TO CLOSURE
LANE CLOSURES & RESTRICTIONS	>= 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	< 2 WEEKS	5 BUSINESS DAYS PRIOR TO CLOSURE
START OF CONSTRUCTION & TRAFFIC PATTERN CHANGES	N/A	14 CALENDAR DAYS PRIOR TO IMPLEMENTATION

ANY UNFORESEEN CONDITIONS NOT SPECIFIED IN THE PLANS REQUIRING TRAFFIC RESTRICTIONS SHALL ALSO BE REPORTED TO THE PROJECT ENGINEER USING THE NOTIFICATION TIME TABLE.

**MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION**  
THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC SIGNAL/FLASHER INSTALLATIONS WITHIN THE PROJECT UNDER THE FOLLOWING CONDITIONS:

- EXISTING SIGNAL/FLASHER INSTALLATIONS WHICH THE PLANS REQUIRE THE CONTRACTOR TO ADJUST, MODIFY, ADD ONTO OR REMOVE, OR WHICH THE CONTRACTOR ACTUALLY ADJUSTS, MODIFIES OR OTHERWISE DISTURBS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ENTIRE INSTALLATION (AT AN INTERSECTION) FROM THE TIME HIS OPERATIONS FIRST DISTURB THE INSTALLATION UNTIL THE INSTALLATION HAS BEEN SUBSEQUENTLY REMOVED OR MODIFIED AND THE WORK IS ACCEPTED.
- NEW OR REUSED SIGNAL/FLASHER INSTALLATIONS OR DEVICES, INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THESE FROM THE TIME OF INSTALLATION UNTIL THE WORK IS ACCEPTED.

THE CONTRACTOR SHALL CORRECT AS QUICKLY AS POSSIBLE ALL OUTAGES OR MALFUNCTIONS. HE SHALL PROVIDE THE MAINTAINING AGENCY AND THE ENGINEER SUCH ADDRESSES AND PHONE NUMBERS WHERE HIS MAINTENANCE FORCES CAN BE CONTACTED. THE CONTRACTOR SHALL PROVIDE ONE OR MORE PERSONS TO RECEIVE ALL CALLS AND DISPATCH THE NECESSARY MAINTENANCE FORCES TO CORRECT OUTAGES. SUCH A PERSON OR PERSONS MAY BE USED TO PERFORM OTHER DUTIES AS LONG AS PROMPT ATTENTION IS GIVEN TO THESE CALLS AND A PERSON IS READILY AVAILABLE CONTINUOUSLY 24 HOURS A DAY, 7 DAYS A WEEK. ALL LAMP OUTAGES, CABLE OUTAGES, ELECTRICAL FAILURES, EQUIPMENT MALFUNCTIONS AND MISALIGNED SIGNAL HEADS SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK TO SERVICE WITHIN FOUR HOURS AFTER THE CONTRACTOR HAS BEEN NOTIFIED OF THE OUTAGE.

IN THE EVENT NEW SIGNALS ARE DAMAGED PRIOR TO ACCEPTANCE, ALL DAMAGED EQUIPMENT EXCEPT POLES AND CONTROL EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK IN SERVICE WITHIN 8 HOURS AFTER THE CONTRACTOR'S NOTIFICATION OF THE OUTAGE. THE CONTRACTOR SHALL ARRANGE FOR FULL TRAFFIC CONTROL UNTIL THE SIGNAL IS BACK IN OPERATION. IF POLES AND/OR CONTROL EQUIPMENT ARE DAMAGED AND MUST BE REPLACED, THE CONTRACTOR SHALL MAKE TEMPORARY REPAIRS AS NECESSARY TO BRING THE SIGNAL BACK INTO FULL OPERATION WITHIN THE ALLOWED 8-HOUR PERIOD, AND SHALL MAKE PERMANENT REPAIRS OR REPLACEMENT AS SOON THEREAFTER AS POSSIBLE.

NONE OF THE ABOVE SHALL BE CONSTRUED AS COLLECTIVE OR CONSECUTIVE OUTAGE TIME PERIODS AT ANY ONE LOCATION. THAT IS, WHERE MORE THAN ONE OUTAGE OCCURS AT ANY ONE LOCATION THEN THE ALLOTTED TIME LIMIT SHALL BE FOR THE WORST SINGLE OUTAGE.

WHERE OUTAGES ARE THE DIRECT RESULT OF A VEHICLE ACCIDENT THE RESPONSE OF THE CONTRACTOR SHALL BE AS OUTLINED ABOVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COLLECTION OF ANY COMPENSATION FOR THIS WORK FROM THOSE PARTIES RESPONSIBLE FOR THE DAMAGE.

WHERE THE CONTRACTOR HAS FAILED TO, OR CANNOT RESPOND TO, AN OUTAGE OR SIGNAL EQUIPMENT MALFUNCTION, AT THESE LOCATIONS WITHIN HIS RESPONSIBILITY, WITHIN PERIODS AS SPECIFIED ABOVE, THE ENGINEER MAY INVOKE THE PROVISIONS OF SECTION 105.15 AND ANY SUBSEQUENT BILLINGS TO THE STATE FOR POLICE SERVICES AND MAINTENANCE SERVICES BY CITY FORCES SHALL BE DEDUCTED FROM MONIES DUE OR TO BECOME DUE THE CONTRACTOR IN ACCORDANCE WITH PROVISIONS OF SECTION 105.15.

THE CONTRACTOR SHALL PROVIDE THE MAINTENANCE SERVICE ENTIRELY WITH HIS FORCES OR HE MAY CHOOSE TO ENTER INTO A COOPERATIVE UNDERSTANDING WITH THE LOCAL MAINTAINING AGENCY TO PROVIDE THE MAINTENANCE. THE CONTRACTOR SHALL INFORM THE ENGINEER, IN WRITING, OF THE MAINTENANCE METHOD SELECTED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY TRAFFIC SIGNAL COMPONENTS REQUIRED TO BE HANDLED DURING THE RELOCATION OF POLES AND REVISIONS TO THE SIGNAL SYSTEM. WHEN A TRAFFIC SIGNAL MUST BE TAKEN OUT OF SERVICE BY THE CONTRACTOR, DUE TO CONSTRUCTION PROCEDURES, THIS OUTAGE SHALL NOT EXCEED 24 HOURS AND SHALL NOT INCLUDE THE HOURS OF 7 AM TO 6 PM. ANY SIGNALIZED INTERSECTION, WHERE THE SIGNAL IS OUT OF SERVICE DUE TO CONSTRUCTION PROCEDURES, OR DUE TO AN OUTAGE OR MALFUNCTION OF EQUIPMENT AS DESCRIBED ABOVE, SHALL BE PROTECTED, BY THE CONTRACTOR, BY THE USE OF LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE.

ANY VEHICULAR TRAFFIC SIGNAL HEAD, EITHER NEW OR EXISTING WHICH WILL BE OUT OF OPERATION SHALL BE COVERED IN THE MANNER DESCRIBED IN 632.25.

THE CONTRACTOR SHALL MAINTAIN COMPLETE RECORDS OF MALFUNCTIONS INCLUDING:

- TIME OF NOTIFICATION OF MALFUNCTION;
- TIME OF WORK CREWS ARRIVAL TO CORRECT THE MALFUNCTION;
- ACTIONS TAKEN TO CORRECT THE MALFUNCTION, INCLUDING A LIST OF PARTS REPAIRED OR REPLACED;
- A DIAGNOSIS OF REASON FOR THE MALFUNCTION AND PROBABILITY OF REOCCURRENCE;
- TIME OF COMPLETION OF THE REPAIR AND SYSTEM RESTORED TO FULL SERVICE.

A COPY OF THESE RECORDS SHALL BE PROVIDED TO THE ENGINEER WITHIN THREE (3) WORKING DAYS FOLLOWING COMPLETION OF EACH REPAIR.

ALL COSTS RESULTING FROM THE ABOVE REQUIREMENTS SHALL BE CONSIDERED TO BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614, MAINTAINING TRAFFIC.

**ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS**  
USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHALL BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

DURING A TRAFFIC SIGNAL INSTALLATION WHEN IMPACTING THE NORMAL FUNCTION OF THE SIGNAL OR THE FLOW OF TRAFFIC, OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G., DIRECTING MOTORISTS THROUGH A RED LIGHT).

IN ADDITION TO THE REQUIREMENT OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHOULD BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS AS APPROVED BY THE ENGINEER:

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS OR TEAR DOWN PERIODS

IN GENERAL, LEOS SHOULD BE POSITIONED IN ADVANCE OF AND ON THE SAME SIDE AS THE LANE RESTRICTION (OR AT THE POINT OF ROAD CLOSURE), AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH SIGNALIZED INTERSECTIONS IN WORK ZONES.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

ENSURE PROVIDED LEOS HAVE BEEN TRAINED APPROPRIATE TO THE JOB DECISIONS THEY ARE REQUIRED TO MAKE WHILE ON THE PROJECT, IN ACCORDANCE WITH C&MS 614.03.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE THAT SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LEOS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 94 HOURS


THE HOURS PAID SHALL INCLUDE ANY MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF A LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR

Remove this LEO task, LEOs are not necessary based on the type of facility as detailed in the current edition of this plan note.

SHEET NUM.											PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.	
5		9		10		33					01/SAF/OT	ITEM	EXT	TOTAL	UNIT			
											LS	201	11000	LS			ROADWAY	
		21									21	202	23000	21	SY		CLEARING AND GRUBBING	
		6,046									6,046	202	30001	6,046	SF		PAVEMENT REMOVED	
		977									977	202	32001	977	FT		WALK REMOVED, AS PER PLAN	5
		935									935	608	10001	935	SF		CURB REMOVED, AS PER PLAN	5
																	4" CONCRETE WALK, AS PER PLAN	
		4,755									4,755	608	52000	4,755	SF		CURB RAMP	
		550									550	608	53021	550	SF		DETECTABLE WARNING, AS PER PLAN	5
		997									997	609	26001	997	FT		CURB, TYPE 6, AS PER PLAN	5
																	EROSION CONTROL	
83											83	659	00300	83	CY		TOPSOIL	
747											747	659	10000	747	SY		SEEDING AND MULCHING	
37											37	659	14000	37	SY		REPAIR SEEDING AND MULCHING	
0.11											0.11	659	20000	0.11	TON		COMMERCIAL FERTILIZER	
																	The Erosion Control quantity seems low. It can usually be estimated as 2% of the construction cost or you can use the Temporary Sediment and Erosion Control-BMP Estimator to estimate the quantity: <a href="https://www.transportation.ohio.gov/working/engineering/hydraulic/post-construction-bmp/supplemental-guidance/temporary-sediment-erosion">https://www.transportation.ohio.gov/working/engineering/hydraulic/post-construction-bmp/supplemental-guidance/temporary-sediment-erosion</a>	
0.15											0.15	659	31000	0.15	ACRE		LIME	
4											4	659	35000	4	MGAL		WATER	
											4,000	832	30000	4,000	EACH		EROSION CONTROL	
																	PAVEMENT	
97											97	253	01001	97	SY		PAVEMENT REPAIR, AS PER PLAN	5
																	TRAFFIC CONTROL	
				0.01							0.01	644	00104	0.01	MILE		EDGE LINE, 6", WHITE	
				355							355	644	00500	355	FT		STOP LINE	
				1,715							1,715	644	00620	1,715	FT		CROSSWALK LINE, 12"	
				200							200	644	00630	200	FT		CROSSWALK LINE, 24"	
				1							1	644	01300	1	EACH		LANE ARROW	
																	REMOVAL OF PAVEMENT MARKING	
				2,320							2,320	644	30000	2,320	FT		REMOVAL OF PAVEMENT MARKING	
				1							1	644	30020	1	EACH		REMOVAL OF PAVEMENT MARKING	
																	WATER WORK	
		1									1	638	10800	1	EACH		VALVE BOX ADJUSTED TO GRADE	
																	TRAFFIC SIGNALS	
				948							948	625	25408	948	FT		CONDUIT, 2", 725.051	
				235							235	625	25910	235	FT		CONDUIT CLEANED AND CABLES REMOVED	A note may be needed to fully describe what is included with this pay item.
				948							948	625	29000	948	FT		TRENCH	
				12							12	625	30700	12	EACH		PULL BOX, 725.08, 18"	
				12							12	625	31510	12	EACH		PULL BOX REMOVED	
																	GROUND ROD	
				49							49	625	32000	49	EACH		GROUND ROD	
				948							948	625	36010	948	FT		UNDERGROUND WARNING/MARKING TAPE	
				63.92							63.92	630	80100	63.92	SF		SIGN, FLAT SHEET	
				28							28	630	87500	28	EACH		REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	
				16							16	632	20731	16	EACH		PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN, INSTALLATION ONLY	33
																	Accessible	
				2							2	632	26000	2	EACH		PEDESTRIAN PUSHBUTTON	
				37							37	632	26001	37	EACH		PEDESTRIAN PUSHBUTTON, AS PER PLAN, INSTALLATION ONLY	33
				2,450		1,500					3,950	632	40500	3,950	FT		SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	
				710		1,500					2,210	632	65300	2,210	FT		LOOP DETECTOR LEAD-IN CABLE, 2 CONDUCTOR, NO. 14 AWG	
				49							49	632	64020	49	EACH		PEDESTAL FOUNDATION	
																	PEDESTAL, 5', TRANSFORMER BASE	
				24							24	632	89802	24	EACH		PEDESTAL, 5', TRANSFORMER BASE	
				26							26	632	89904	26	EACH		PEDESTAL, 10', TRANSFORMER BASE	
				24							24	632	90104	24	EACH		REUSE OF TRAFFIC CONTROL ITEM: PULLBOX	
				27							27	632	90202	27	EACH		REUSE OF PEDESTRIAN SIGNAL HEAD	
				29							29	632	90210	29	EACH		REUSE OF PEDESTRIAN PUSHBUTTON	
																	notes needed	
				39							39	632	90400	39	EACH		SIGNALIZATION, MISC.: FILLING AND PLUGGING OF HOLES ON SUPPORT	33
				1,140		600					1,740	632	90400	1,740	EACH		SIGNALIZATION, MISC.: UNLASH AND RELASH MESSENGER WIRE	33

GENERAL SUMMARY

DESIGN AGENCY  
  
**CMT**  
 CONSTRUCTION MANAGEMENT TECHNOLOGIES  
 1777 WASHINGTON VILLAGE DR  
 DAYTON, OHIO 45459  
 www.cmtinc.com

DESIGNER  
**NCB**

REVIEWER  
**JWL 08/15/24**

PROJECT ID  
**117237**

SHEET TOTAL  
**P.7 66**

HAM/WAR US 22 16.04/0.00 PED

SHEET NUM.

PART.

ITEM

ITEM  
EXT

GRAND  
TOTAL

UNIT

DESCRIPTION

SEE  
SHEET  
NO.

6

01/SAF/OT

94

94

614

11110

94

HOUR

MAINTENANCE OF TRAFFIC  
LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE

INCIDENTALS

LS

614

11000

LS

MAINTAINING TRAFFIC

LS

623

10001

LS

CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN

LS

624

10000

LS

MOBILIZATION

5

ADD CONSULANT FOR CONCRETE TESTING NON-QC/QA. With so many curb ramps and pedestal foundations we need to have that.

GENERAL SUMMARY



DESIGNER  
NCB

REVIEWER  
JWL 08/15/24

PROJECT ID  
117237

SHEET TOTAL  
P.8 66



REF NO.	SHEET		STATION TO STATION		SIDE	CAD MEASURED AREA	202	202	202	608	608	608	609	638										
	BEGIN	END	BEGIN	END			SF	SY	SF	SF	SF	SF	SF	FT	EACH									
R1	11		65+96.21	66+04.45	RT				9	4	49	10	9											
R2	12		90+06.07	90+27.50	RT					32		20												
R3	12		90+06.01	90+33.77	LT			267	41	75	240	20	41											
R4	12		90+85.08	91+05.62	RT			52	10	21	44	20	10											
R5	12		90+86.58	91+10.61	LT				8	78	54	10	8											
R6	13		125+59.94	126+05.22	LT			192	18	75	116	20	18											
R7	13		125+86.57	126+09.64	RT					76		20												
R8	13		126+48.12	126+76.36	LT			171	32		89	10	32	1										
R9	13		126+48.45	126+68.37	RT			78	16			10	16											
R10	14		149+67.52	149+96.27	RT							20												
R11	14		149+74.63	149+87.35	LT																			
R12	14		150+41.92	150+53.23	RT				16		36	10	16											
R13	14		150+48.12	150+76.72	LT			44	14			10	14											
R14	15		169+22.25	169+40.00	RT			175	30		57	10	30											
R15	15		169+59.68	169+93.20	LT			123	28		75	10	28											
R16	15		169+99.37	170+34.97	RT			248	48		258	20	48											
R17	15		170+21.76	170+51.64	LT			223	36		167	20	36											
R18	16		185+56.06	185+86.72	LT			155	32		87	10	32											
R19	16		185+60.40	185+93.55	RT			336	47		56	10	47											
R20	16		186+40.44	186+85.00	LT			397	55		341	20	55											
R21	16		186+49.43	187+02.27	RT			442	42	122	290	20	42											
R22	17		1+63.00	1+90.45	LT			255	16		269	10	16											
R23	17		1+66.87	1+87.04	RT			104	15	24	95	20	15											
R24	17		2+39.10	2+92.88	LT			239	62	51	193	20	62											
R25	17		2+48.08	2+80.81	RT			287	38		211	10	38											
R26	18		10+37.49	10+61.14	LT			114	14	26	91	10	14											
R27	18		10+68.00	11+01.75	RT			133	14		130	20	14											
R28	18		11+60.08	11+64.87	RT							10												
R29	19		58+99.97	59+27.18	LT			8	275	26	248	20	26											
R30	19		59+04.10	59+27.15	RT			215	25	13	219	20	25											
R31	19		59+71.36	59+76.22	LT							10												
R32	19		59+65.97	59+70.88	RT					13		10												
R33	20		72+72.62	72+97.29	LT			224	29		236	10	29											
R34	20		73+66.65	73+94.21	LT			279	30	26	250	20	30											
R35	21		97+07.00	97+57.65	RT				435	44	139	339	20	44										
R36	21		97+08.00	97+39.78	LT				271	32	32	241	20	32										
R37	21		97+94.55	98+24.33	RT				285	8	101	108	10	8										
R38	21		98+04.98	98+24.76	LT			13	27	142	27	166	10	142										
TOTALS CARRIED TO GENERAL SUMMARY								21	6046	977	935	4755	550	977	1									

ROADWAY SUBSUMMARY

DESIGN AGENCY  
  
 CMT  
 CONSTRUCTION MANAGEMENT TECHNOLOGIES  
 1777 WASHINGTON VILLAGE DR  
 DAYTON, OHIO 45459  
 www.cmtinc.com

DESIGNER  
 NCB

REVIEWER  
 JWL 08/15/24

PROJECT ID  
 117237

SHEET TOTAL  
 P.9 66

ITEM	DESCRIPTION	UNIT	SHEET NO.											TOTAL CARRIED TO GENERAL SUMMARY
			34	37	40	43	46	49	52	55	58	61	64	
			US-22 INTERSECTION SIDE STREETS											
			CORNELL RD	HARPER STATION	CALUMET WAY	MASON RD	ZEVARTY RD	UNION CEMETERY RD	GREEN ARBORS LN	CRESTVIEW DR	TOWNSLEY DR	COLUMBIA RD	LANDEN DR	
625	CONDUIT, 2", 725.051	FT		65	65	110	63	121	141	87	56	108	141	957
625	CONDUIT CLEANED AND CABLES REMOVED	FT		90	55	55	35							235
625	TRENCH	FT		65	65	110	63	121	141	87	56	108	141	957
625	PULL BOX, 725.08, 18"	EACH		2			2	1	2	1	1	3		12
625	PULL BOX REMOVED	EACH		3	3	2?	4	2						12
625	GROUND ROD	EACH	5	4	3	6	6	5	6	5	4	5	5	49
625	UNDERGROUND WARNING/MARKING TAPE	FT		65	65	110	63	121	141	87	56	108	141	957
630	SIGN, FLAT SHEET	SF	3.76	7.52	5.64	5.64	5.64	5.64	7.52	5.64	5.64	5.64	5.64	63.92
630	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	EACH	4	4	2	2	2	2	4	2	2	2	2	28
632	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN, INSTALLATION ONLY	EACH			2	2	2		2	2	2		4	16
632	PEDESTRIAN PUSHBUTTON	EACH		2			4							2
632	PEDESTRIAN PUSHBUTTON, AS PER PLAN, INSTALLATION ONLY	EACH		2	4	3	4	4	4	4	4	4	4	37
632	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	FT	320	110	45	70	510	250	145	300	340	320	40	2450
632	LOOP DETECTOR LEAD-IN CABLE, 2 CONDUCTOR, NO. 14 AWG	FT		320	55	60	100	50	130	35	50	70	50	920
632	PEDESTAL FOUNDATION	EACH		4	3	6	6	5	6	5	4	5	5	49
632	PEDESTAL, 5', TRANSFORMER BASE	EACH		2	2	5	3	3	3	4	1		2	25
632	PEDESTAL, 10', TRANSFORMER BASE	EACH		4	1	1	3	2	3	1	3	5	3	26
632	REUSE OF TRAFFIC CONTROL ITEM: PULLBOX	EACH		2	3	3	2	3	2	2	2	2	3	24
632	REUSE OF PEDESTRIAN SIGNAL HEAD	EACH	3	5		1	2	3	2	1	3	5	2	27
632	REUSE OF PEDESTRIAN PUSHBUTTON	EACH	4	4	2	3	2	2	4	2	2	2	2	29
632	SIGNALIZATION, MISC.: FILLING AND PLUGGING OF HOLES ON SUPPORT	EACH	4	4	3	3	4	4	4	3	3	4	3	39
632	SIGNALIZATION, MISC.: UNLASH AND RELASH MESSENGER WIRE	FT	240	110			220	150		160	210	160		1250
644	EDGE LINE, 6", WHITE	MILE					0.01							0.01
644	STOP LINE	FT	56		75		12		42	30		90	50	355
644	CROSSWALK LINE, 12"	FT	210	285	330		220		180	200			290	1715
644	CROSSWALK LINE, 24"	FT										200		200
644	LANE ARROW	EACH							1					1
644	REMOVAL OF PAVEMENT MARKING	FT	160	200	420		230		330	220		370	390	2320
644	REMOVAL OF PAVEMENT MARKING	EACH							1					1

I think a note may be needed to describe this what is expected by "conduit cleaned"

pay item for the pole attachment of the new signs or are these to be field drilled and onto the pole?

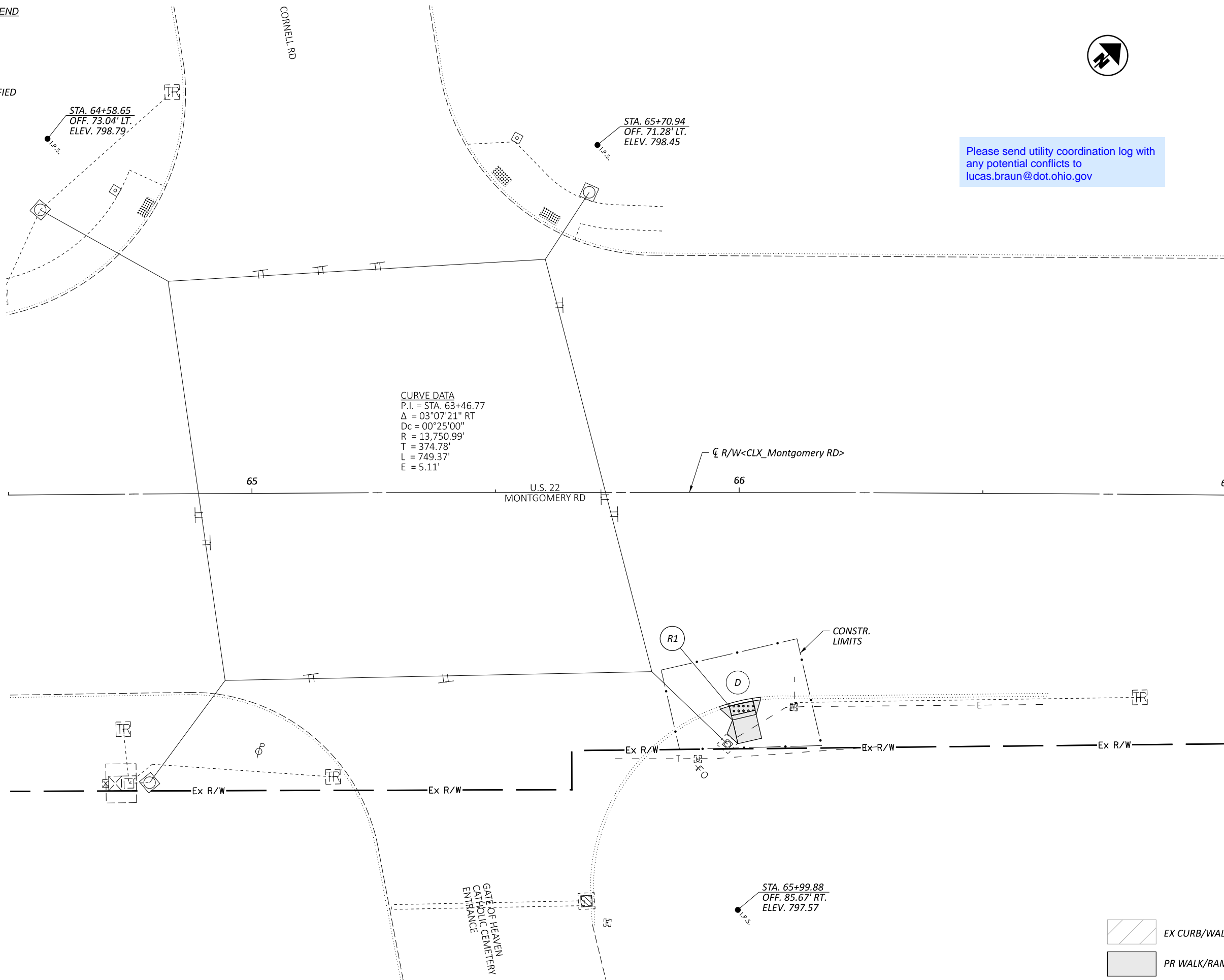
The pull boxes to be reused are labeled in the plans. Some locations include the PB at the controller and some do not. Is there a reason for this? I would think the reuse of the controller pull box would be consistent throughout the plans. If there is a reason to not include it with this pay item, it should be stated in the plans.

Review these quantities. The number of plugs should be roughly equal to the number of items relocated off the support, and the number of items reoriented on the same support

pay items needed for covering of ped heads when installed and not energized.



**CURB RAMP TYPE LEGEND**

- (A) TYPE A1
- (B) TYPE A1 MODIFIED
- (C) TYPE A1/A2 MODIFIED
- (D) TYPE A2
- (E) TYPE A2 MODIFIED
- (F) TYPE B1
- (G) TYPE B1 MODIFIED
- (H) TYPE B2
- (I) TYPE C1
- (J) TYPE C1 MODIFIED
- (K) TYPE C2
- (L) TYPE C2 MODIFIED
- (M) TYPE D MODIFIED

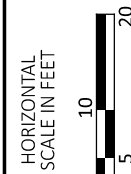


**CURVE DATA**  
 P.I. = STA. 63+46.77  
 Δ = 03°07'21" RT  
 Dc = 00°25'00"  
 R = 13,750.99'  
 T = 374.78'  
 L = 749.37'  
 E = 5.11'

Please send utility coordination log with any potential conflicts to lucas.braun@dot.ohio.gov

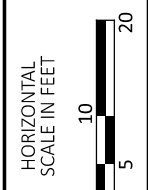
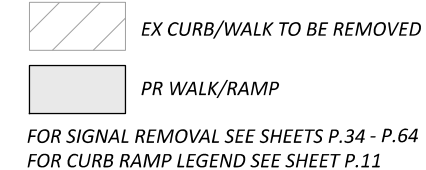
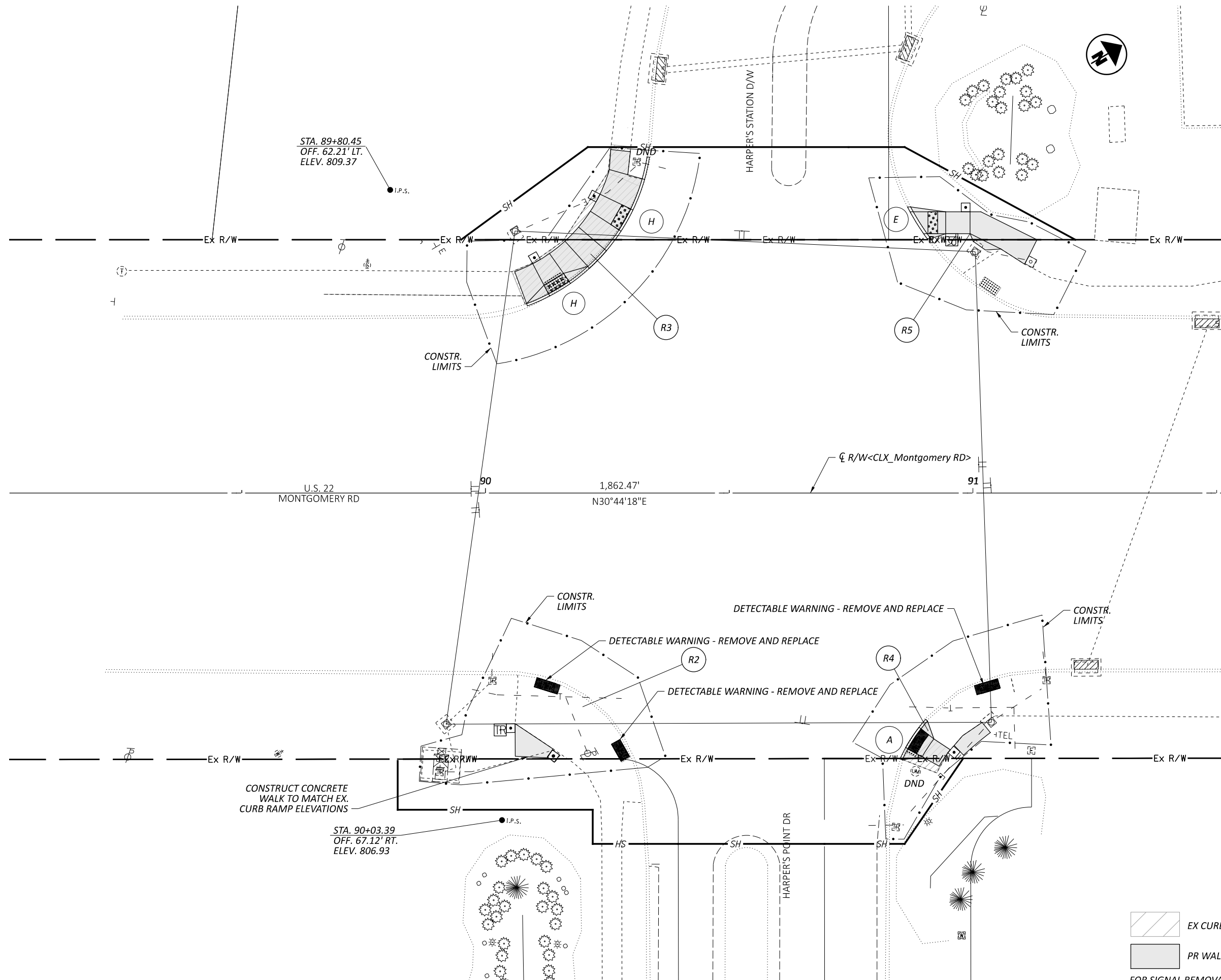
 EX CURB/WALK TO BE REMOVED  
 PR WALK/RAMP

FOR SIGNAL REMOVAL SEE SHEETS P.34 - P.64  
 FOR CURB RAMP LEGEND SEE SHEET P.11



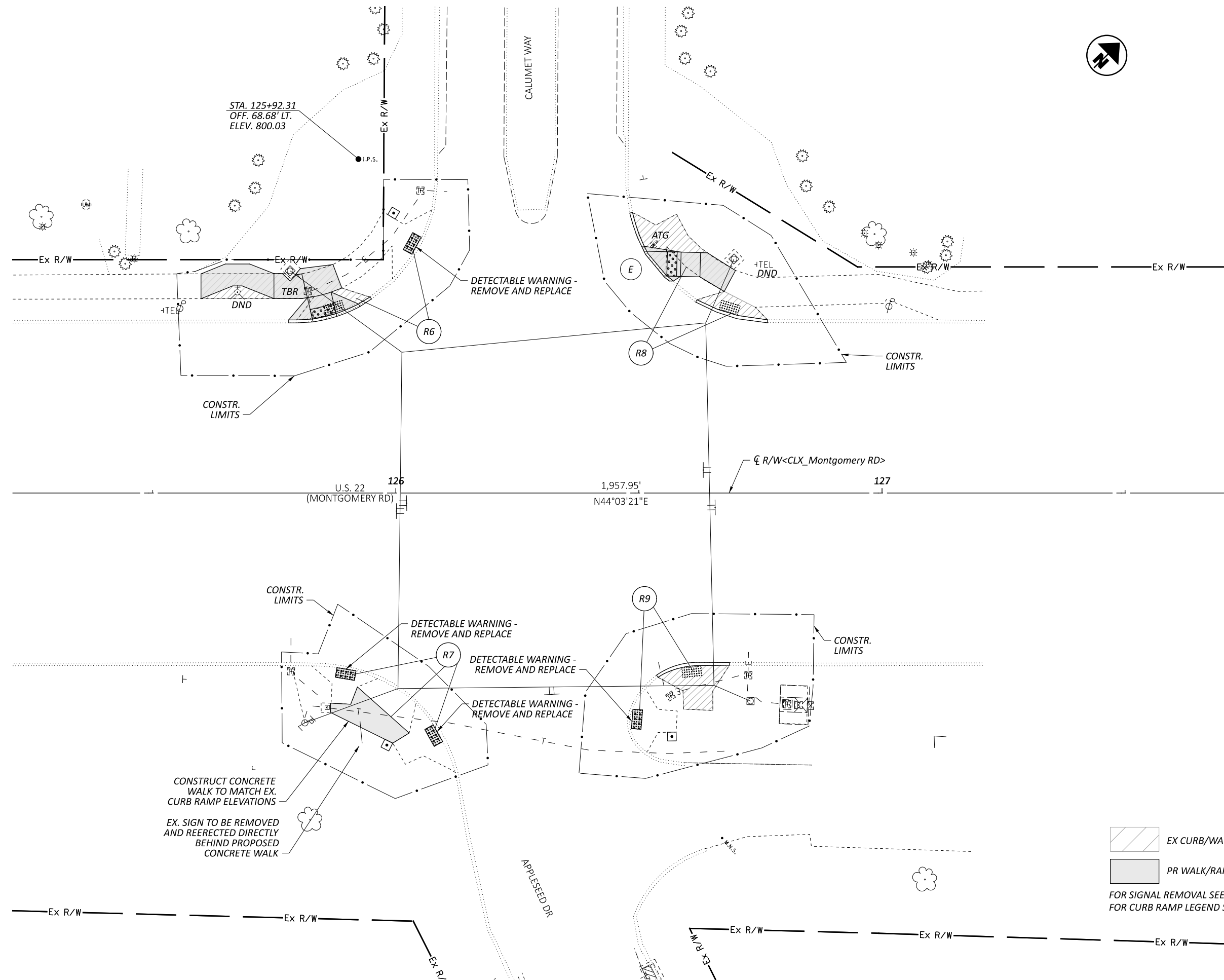
**INTERSECTION DETAIL  
 US 22 AT CORNELL RD**

DESIGN AGENCY	
 CMT CONSULTING ENGINEERS 1777 WASHINGTON VILLAGE DR DAYTON, OHIO 45428 www.cmtinc.com	
DESIGNER	LDW
REVIEWER	JWL
DATE	08/15/24
PROJECT ID	117237
SHEET	TOTAL
P.11	66



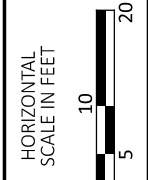
INTERSECTION DETAIL  
 US 22 AT HARPERS POINT DR

DESIGN AGENCY	
 CMT CRIVELLO, MURPHY & O'NEILL 1777 WASHINGTON VILLAGE DR DAYTON, OHIO 45459 www.cmtinc.com	
DESIGNER	LDW
REVIEWER	JWL 08/15/24
PROJECT ID	117237
SHEET	TOTAL
P.12	66



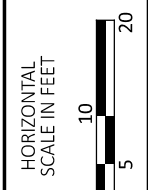
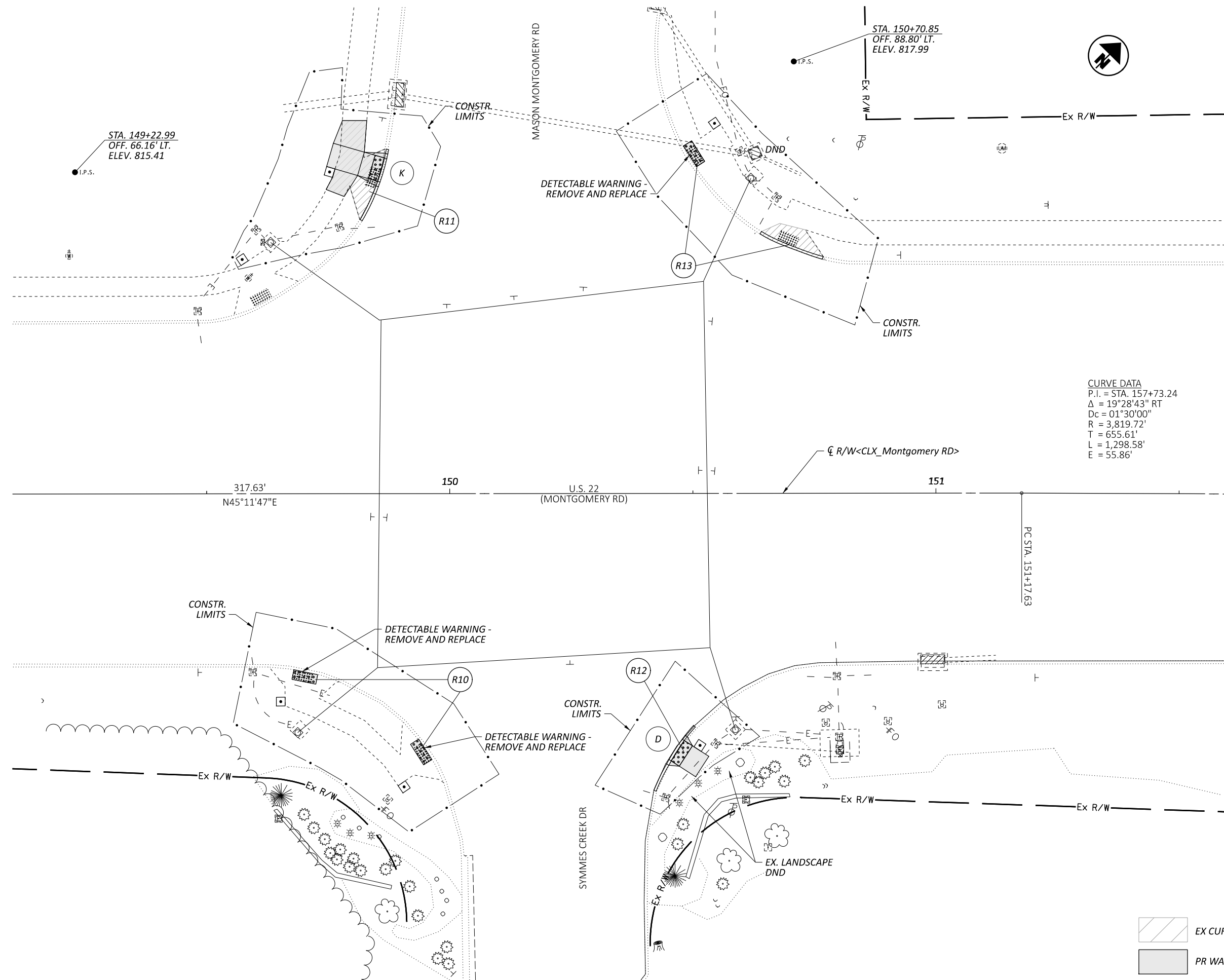
CONSTRUCT CONCRETE WALK TO MATCH EX. CURB RAMP ELEVATIONS  
 EX. SIGN TO BE REMOVED AND REERECTED DIRECTLY BEHIND PROPOSED CONCRETE WALK

EX CURB/WALK TO BE REMOVED  
 PR WALK/RAMP  
 FOR SIGNAL REMOVAL SEE SHEETS P.34 - P.64  
 FOR CURB RAMP LEGEND SEE SHEET P.11



INTERSECTION DETAIL  
 US 22 AT APPEESED DR/CALUMET WAY

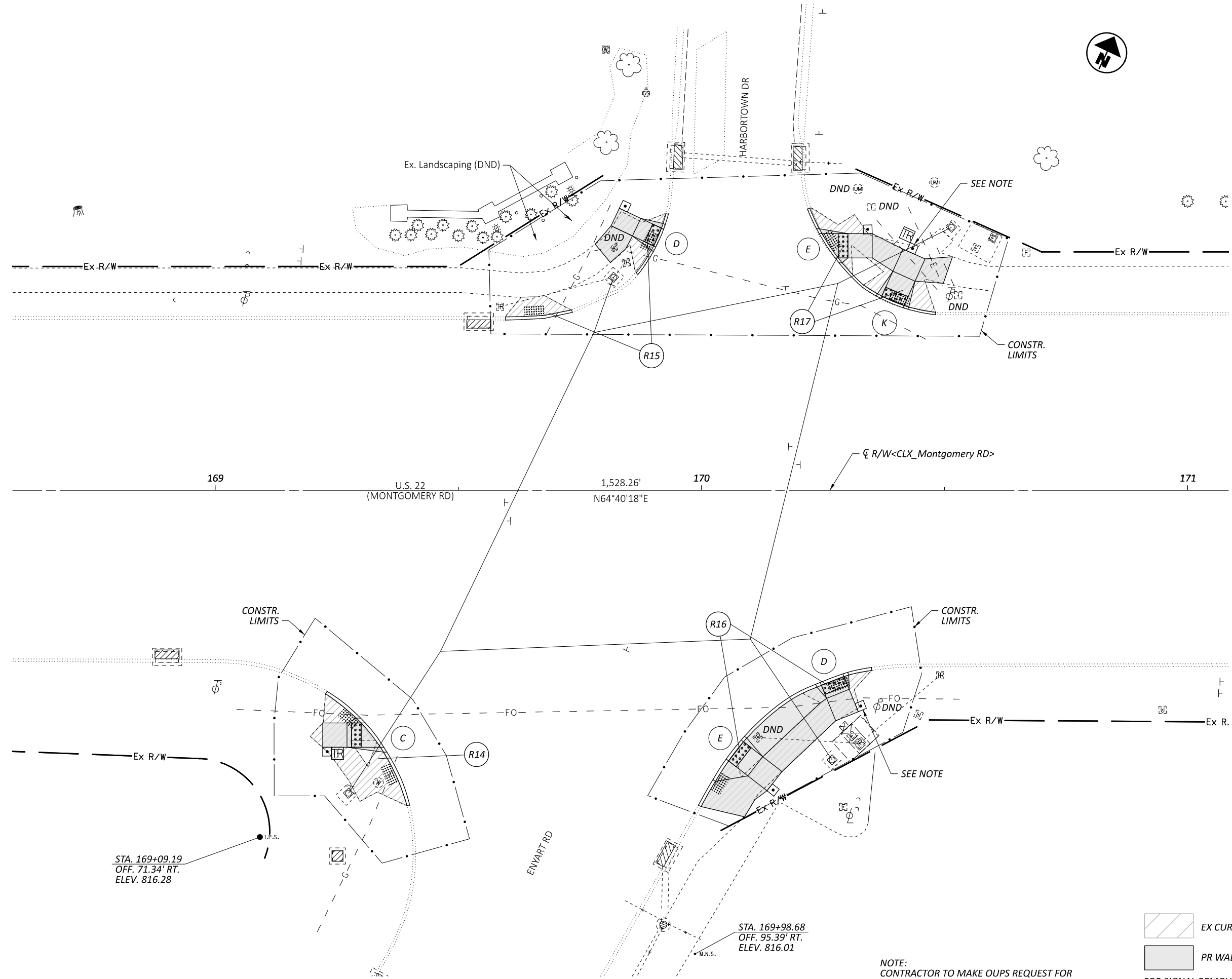
DESIGN AGENCY	
CMT CRAWFORD, MURPHY & CONSULTING ENGINEERS 1777 WASHINGTON VILLAGE DR DAYTON, OHIO 45459 www.cmtinc.com	
DESIGNER	
LDW	
REVIEWER	
JWL 08/15/24	
PROJECT ID	
117237	
SHEET	TOTAL
P.13	66





INTERSECTION DETAIL  
 US 22 AT MASON MONTGOMERY RD/SYMMES CREEK DR

DESIGN AGENCY	
CMT CRAWFORD, MURPHY & CONSULTING ENGINEERS 1777 WASHINGTON VILLAGE DR DAYTON, OHIO 45459 www.cmtinc.com	
DESIGNER	LDW
REVIEWER	JWL 08/15/24
PROJECT ID	117237
SHEET	TOTAL
P.14	66

EX CURB/WALK TO BE REMOVED  
 PR WALK/RAMP  
 FOR SIGNAL REMOVAL SEE SHEETS P.34 - P.64  
 FOR CURB RAMP LEGEND SEE SHEET P.11

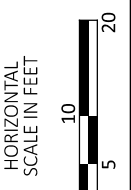


NOTE:  
 CONTRACTOR TO MAKE OUPS REQUEST FOR  
 MARKINGS AND COORDINATE WORK WITH UTILITY  
 PRIOR TO BEGINNING UNDERGROUND WORK.

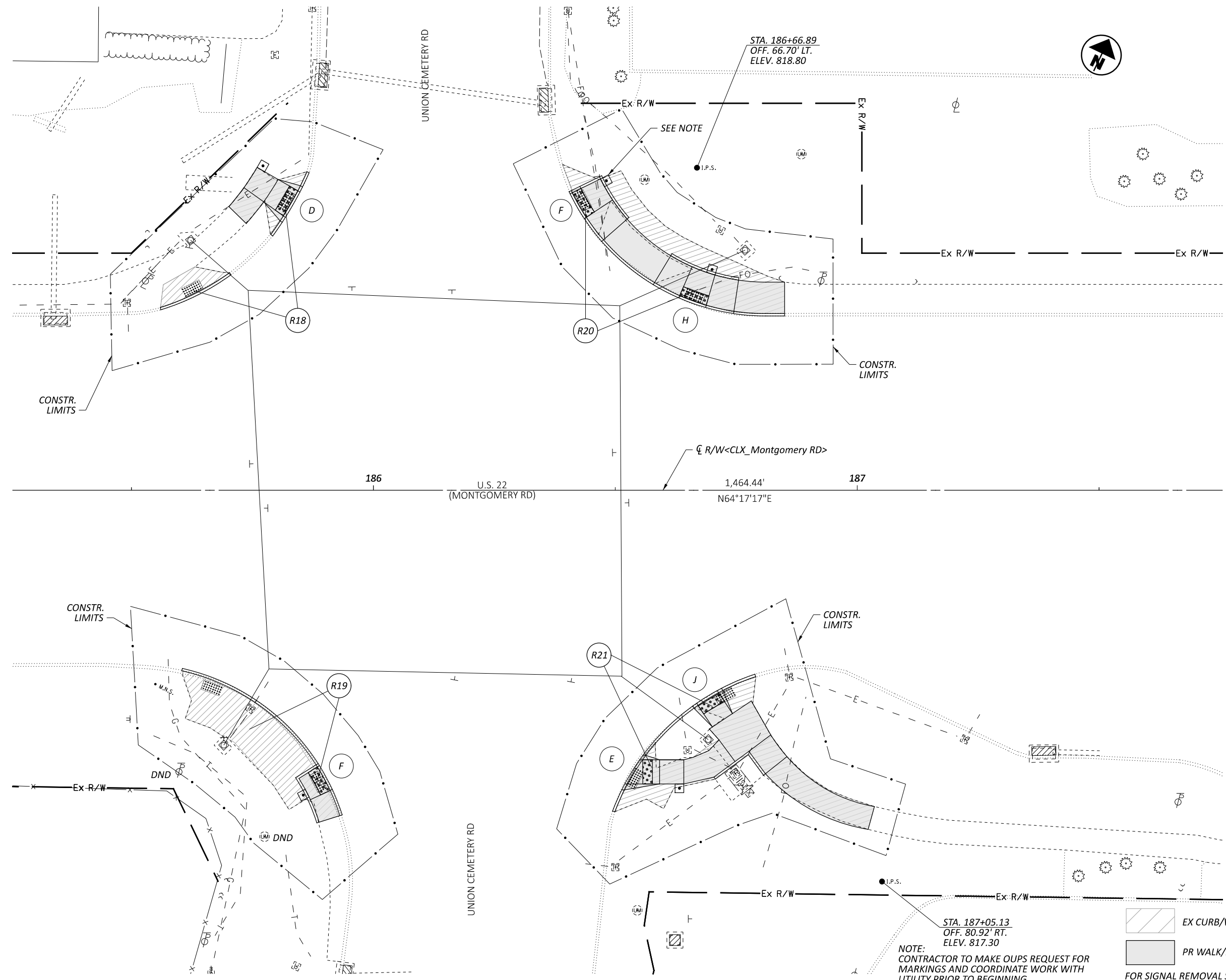
-  EX CURB/WALK TO BE REMOVED
-  PR WALK/RAMP

FOR SIGNAL REMOVAL SEE SHEETS P.34 - P.64  
 FOR CURB RAMP LEGEND SEE SHEET P.11

INTERSECTION DETAIL  
 US 22 AT ENBART RD/HARBORTOWN DR



DESIGN AGENCY	
 CMT CONSTRUCTION MANAGEMENT TECHNOLOGIES 1777 WASHINGTON VILLAGE DR BAYVIEW, OHIO 45459 www.cmtinc.com	
DESIGNER	
LDW	
REVIEWER	
JWL 08/15/24	
PROJECT ID	
117237	
SHEET	TOTAL
P.15	66



CONSTR. LIMITS

CONSTR. LIMITS

CONSTR. LIMITS

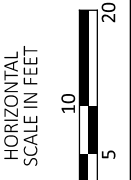
CONSTR. LIMITS

NOTE:  
 CONTRACTOR TO MAKE OUPS REQUEST FOR MARKINGS AND COORDINATE WORK WITH UTILITY PRIOR TO BEGINNING UNDERGROUND WORK.

EX CURB/WALK TO BE REMOVED

PR WALK/RAMP

FOR SIGNAL REMOVAL SEE SHEETS P.34 - P.64  
 FOR CURB RAMP LEGEND SEE SHEET P.11

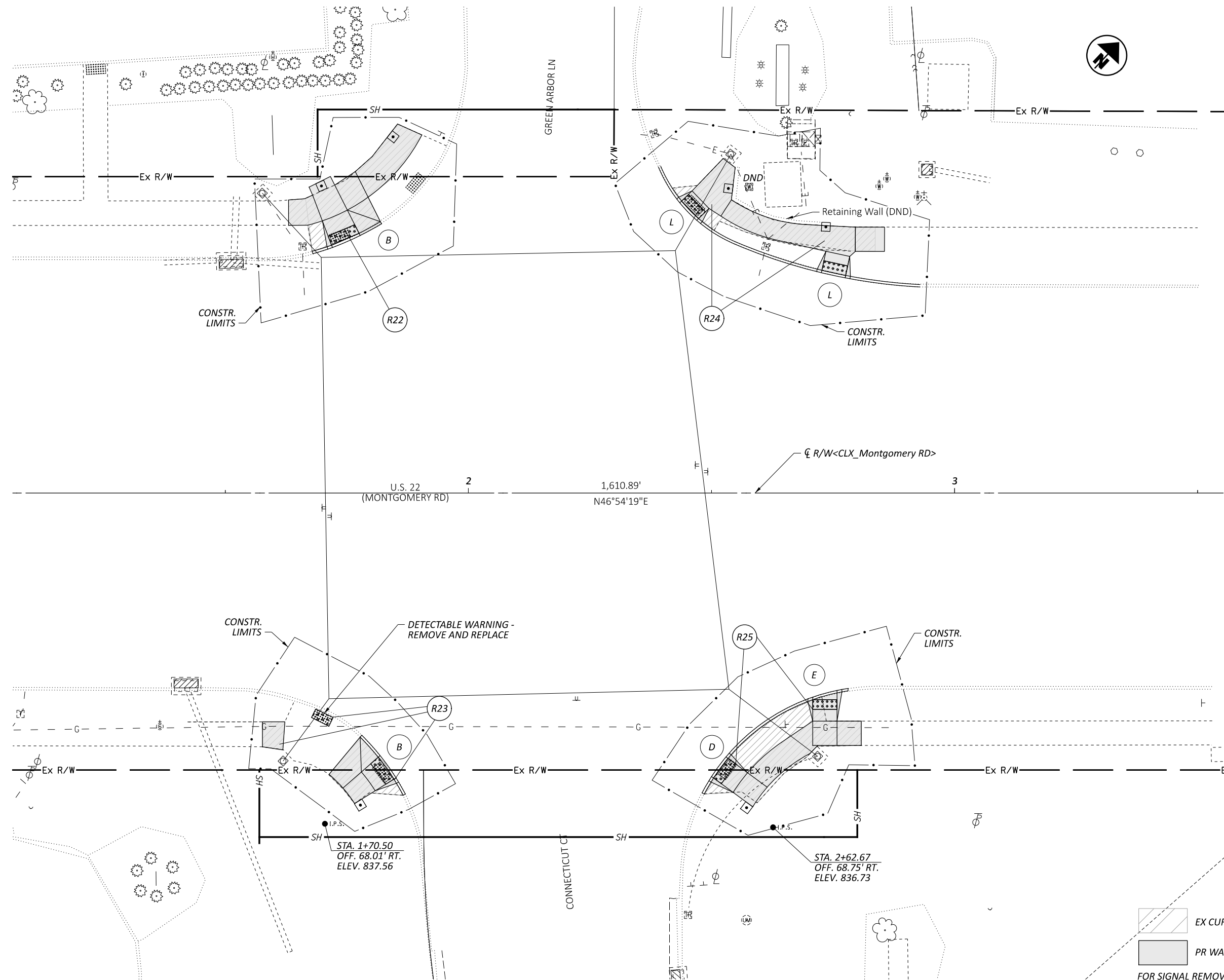


INTERSECTION DETAIL  
 US 22 AT UNION CEMETERY RD

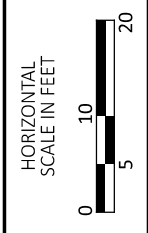
DESIGN AGENCY  
**CMT**  
 CRAWFORD, MURPHY &  
 CONSTRUCTION  
 1777 WASHINGTON VILLAGE DR  
 DAYTON, OHIO 45459  
 www.cmtmcr.com

DESIGNER  
 LDW  
 REVIEWER  
 JWL 08/15/24  
 PROJECT ID  
 117237  
 SHEET TOTAL  
 P.16 66



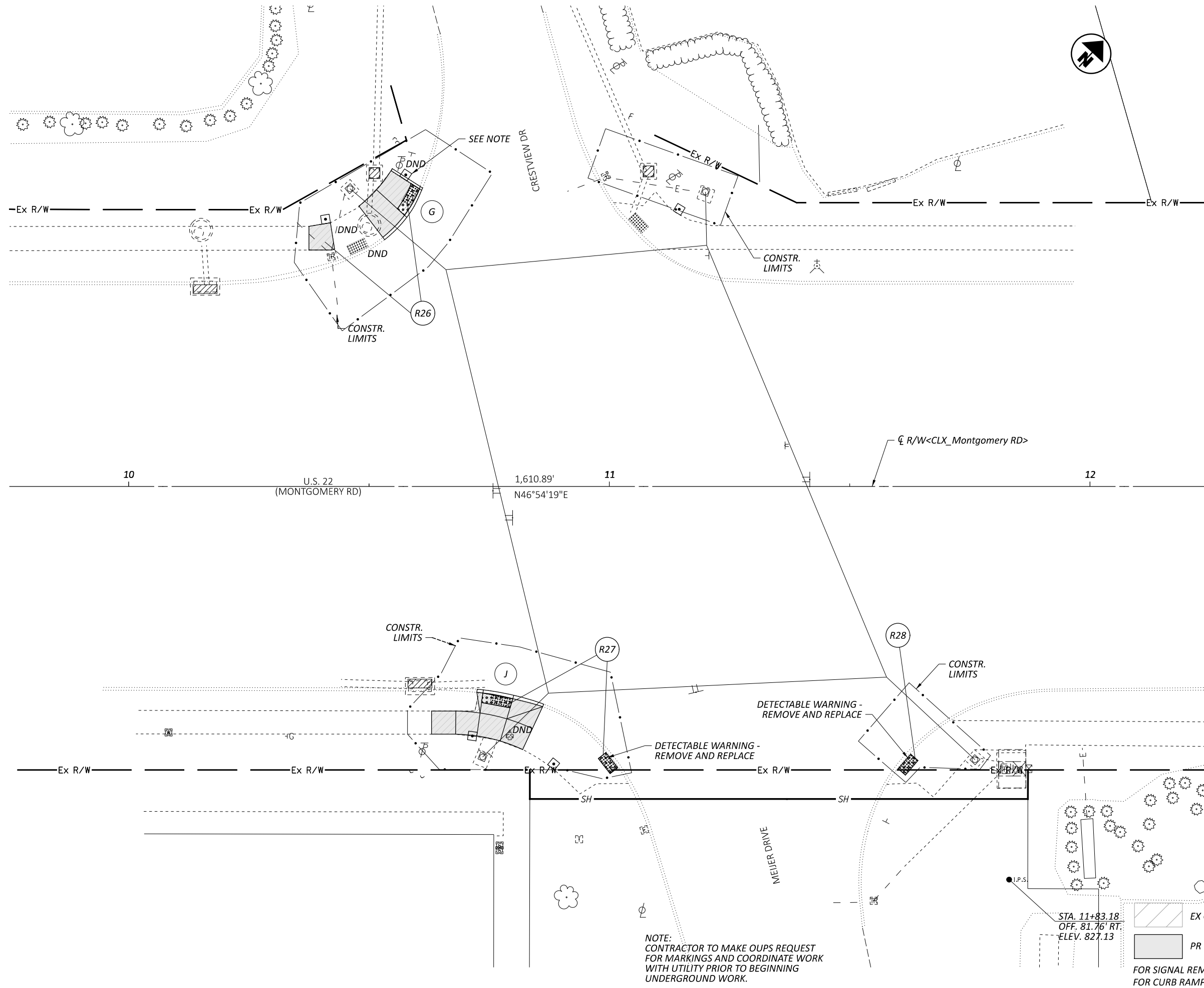


EX CURB/WALK TO BE REMOVED  
 PR WALK/RAMP  
 FOR SIGNAL REMOVAL SEE SHEETS P.34 - P.64  
 FOR CURB RAMP LEGEND SEE SHEET P.11



INTERSECTION DETAIL  
 US 22 AT GREEN ARBORS LN/CONNECTICUT CR

DESIGN AGENCY	
CMT CIVIL & TRANSPORTATION 1777 WASHINGTON VILLAGE DR BAYVIEW, OHIO 44149 www.cmtinc.com	
DESIGNER	LDW
REVIEWER	JWL
PROJECT ID	117237
SHEET	TOTAL
P.17	66

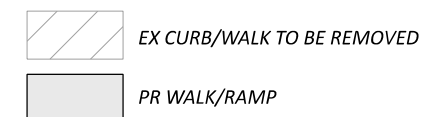
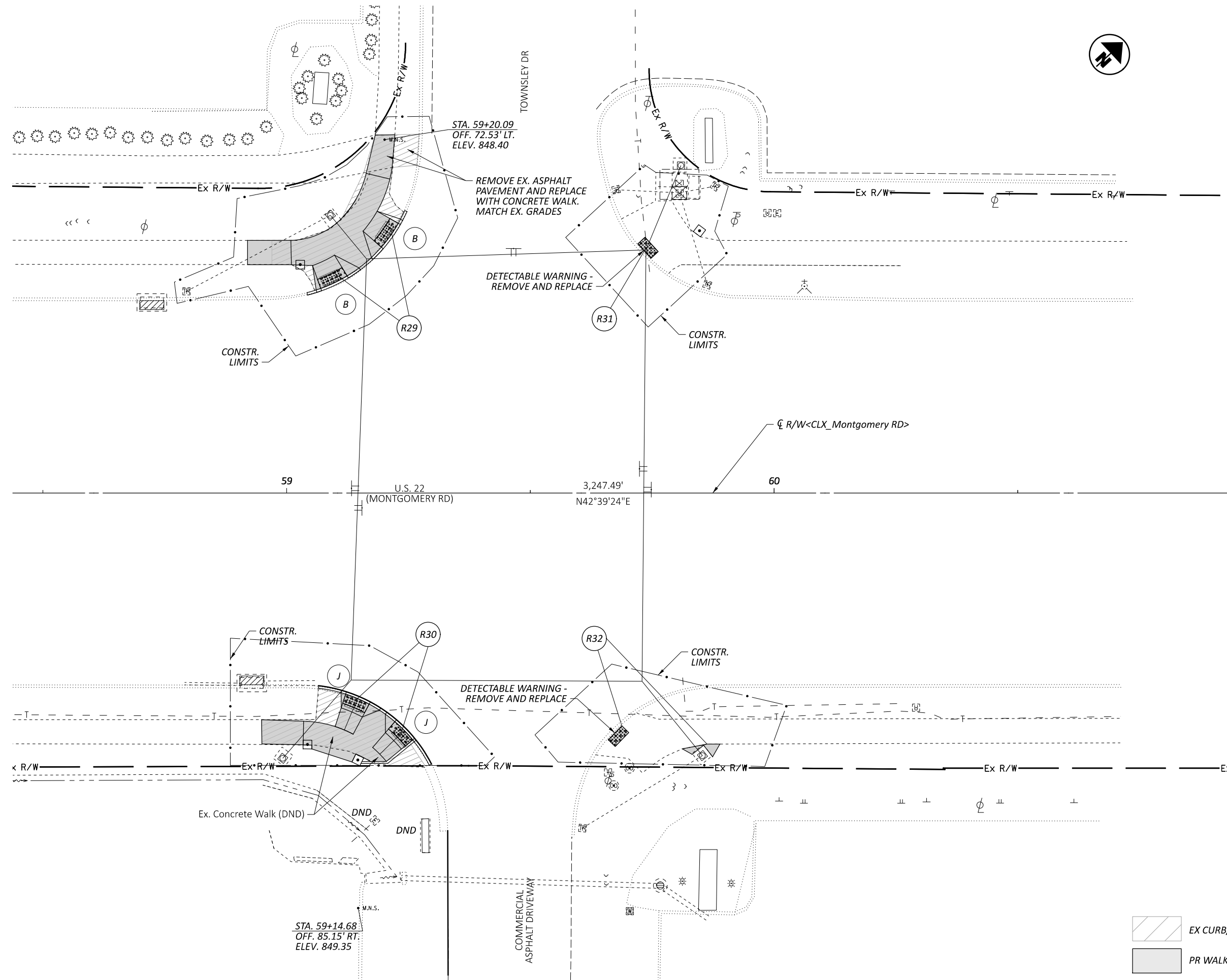


INTERSECTION DETAIL  
 US 22 AT CRESTVIEW DR

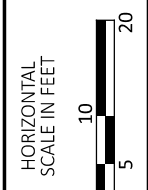
DESIGN AGENCY  
**CMT**  
 CRAWFORD, MURPHY &  
 COMPANY  
 1777 WASHINGTON VILLAGE DR  
 DAYTON, OHIO 45459  
 www.cmtm.com

DESIGNER	LDW
REVIEWER	JWL
PROJECT ID	08/15/24
	117237
SHEET	TOTAL
P.18	66

FOR SIGNAL REMOVAL SEE SHEETS P.34 - P.64  
 FOR CURB RAMP LEGEND SEE SHEET P.11



FOR SIGNAL REMOVAL SEE SHEETS P.34 - P.64  
FOR CURB RAMP LEGEND SEE SHEET P.11



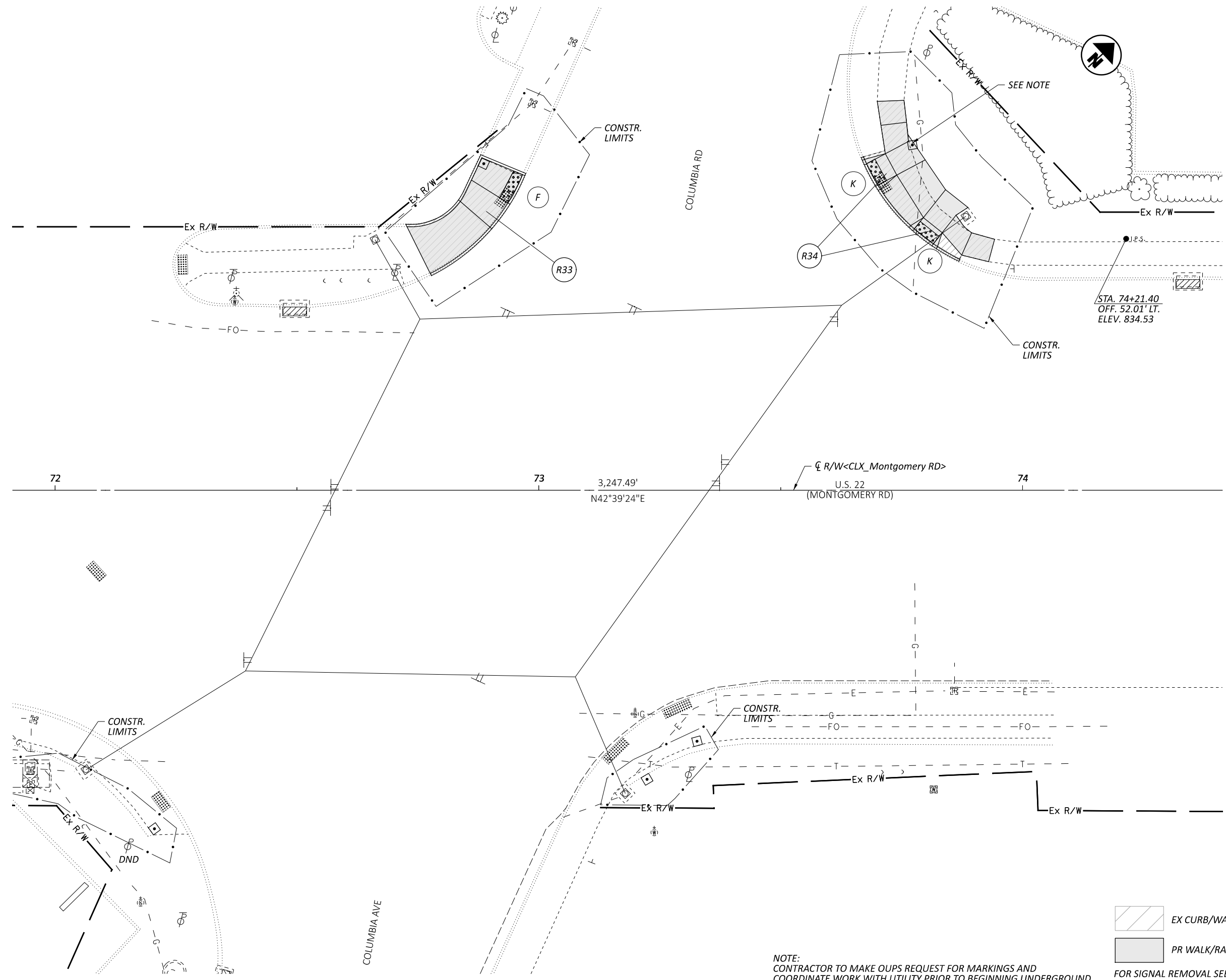
INTERSECTION DETAIL  
US 22 AT TOWNSLEY DR

DESIGN AGENCY  
**CMT**  
CRAWFORD, MURPHY &  
GRIFFIN  
1777 WASHINGTON VILLAGE DR  
DAYTON, OHIO 45459  
www.cmtinc.com



DESIGNER	LDW
REVIEWER	JWL 08/15/24
PROJECT ID	117237
SHEET	P.19
TOTAL	66

**HAM/WAR US 22 16.04/0.00 PED**

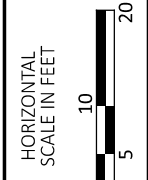
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**NOTE:**  
 CONTRACTOR TO MAKE OUPS REQUEST FOR MARKINGS AND  
 COORDINATE WORK WITH UTILITY PRIOR TO BEGINNING UNDERGROUND  
 WORK.

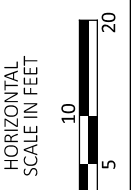
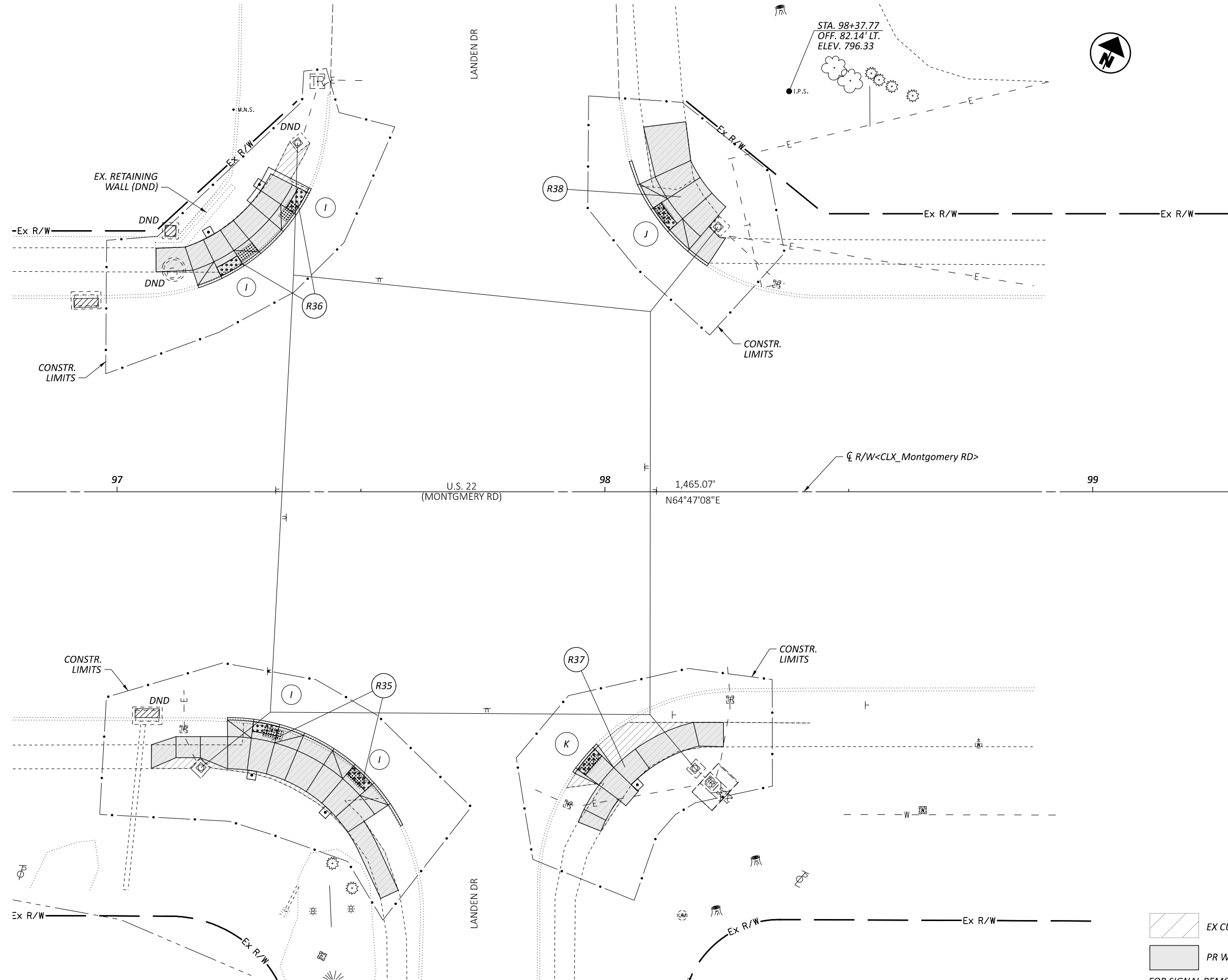
-  EX CURB/WALK TO BE REMOVED
-  PR WALK/RAMP

FOR SIGNAL REMOVAL SEE SHEETS P.34 - P.64  
 FOR CURB RAMP LEGEND SEE SHEET P.11



**INTERSECTION DETAIL  
 US 22 AT COLUMBIA RD**

DESIGN AGENCY	
 CMT CONSTRUCTION MANAGEMENT TECHNOLOGIES 1777 WASHINGTON VILLAGE DR DAYTON, OHIO 45459 www.cmtinc.com	
DESIGNER	
LDW	
REVIEWER	
JWL 08/15/24	
PROJECT ID	
117237	
SHEET	TOTAL
P.20	66



INTERSECTION DETAIL  
 US 22 AT LANDEN DR

- EX CURB/WALK TO BE REMOVED
- PR WALK/RAMP

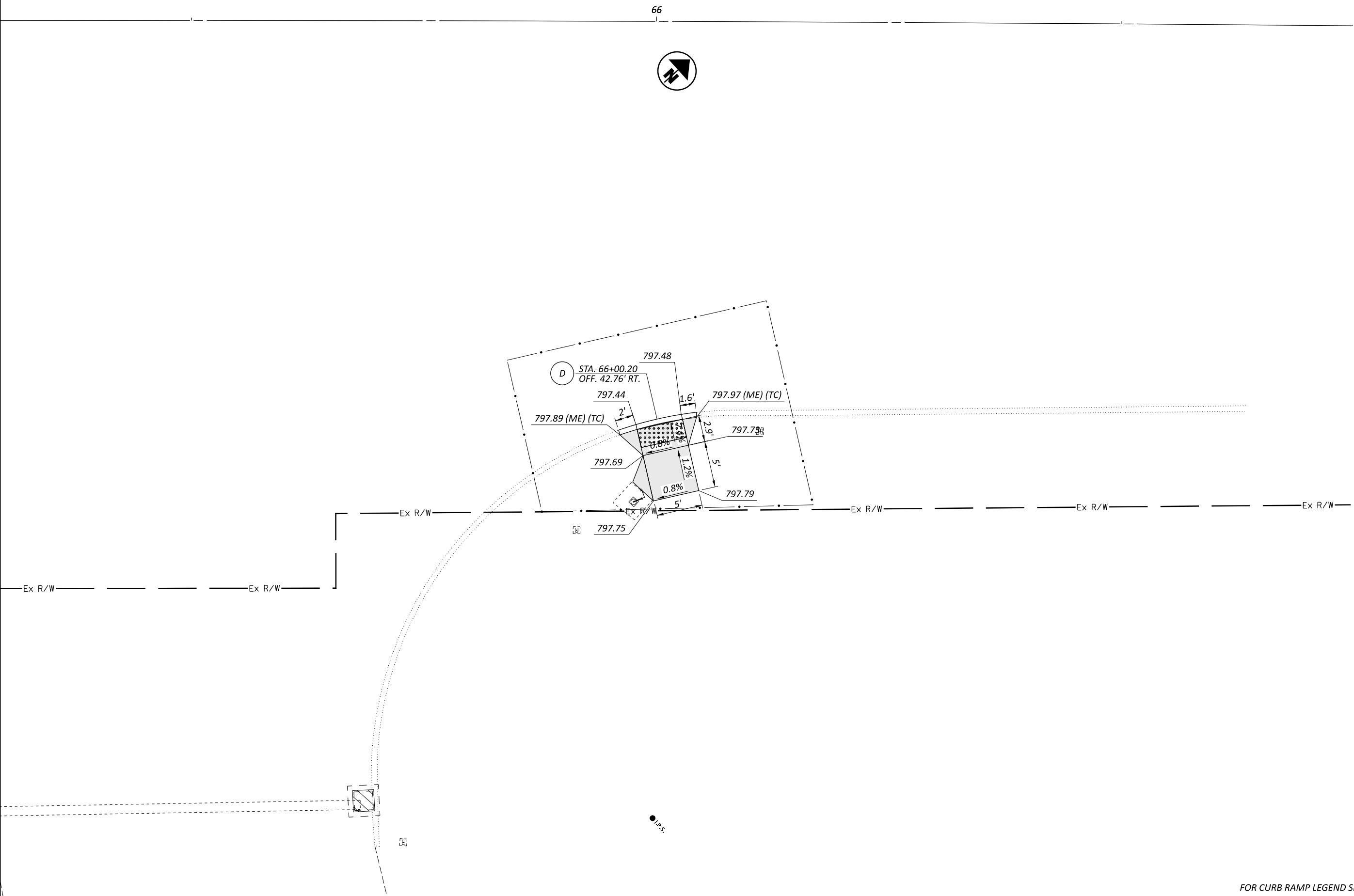
FOR SIGNAL REMOVAL SEE SHEETS P.34 - P.64  
 FOR CURB RAMP LEGEND SEE SHEET P.11

DESIGN AGENCY  
**CMT**  
 CRAWFORD, MURPHY &  
 COMPANY  
 1777 WASHINGTON VILLAGE DR  
 DAYTON, OHIO 45459  
 www.cmtinc.com

DESIGNER	LDW
REVIEWER	JWL 08/15/24
PROJECT ID	117237
SHEET	P.21
TOTAL	66

HAM/WAR US 22 16.04/0.00 PED

MODEL: 117237\_G1201 PAPER SIZE: 17x11 (in.) DATE: 8/16/2024 TIME: 1:56:44 AM USER: jlockhart  
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66

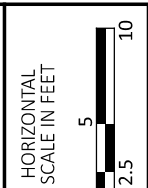
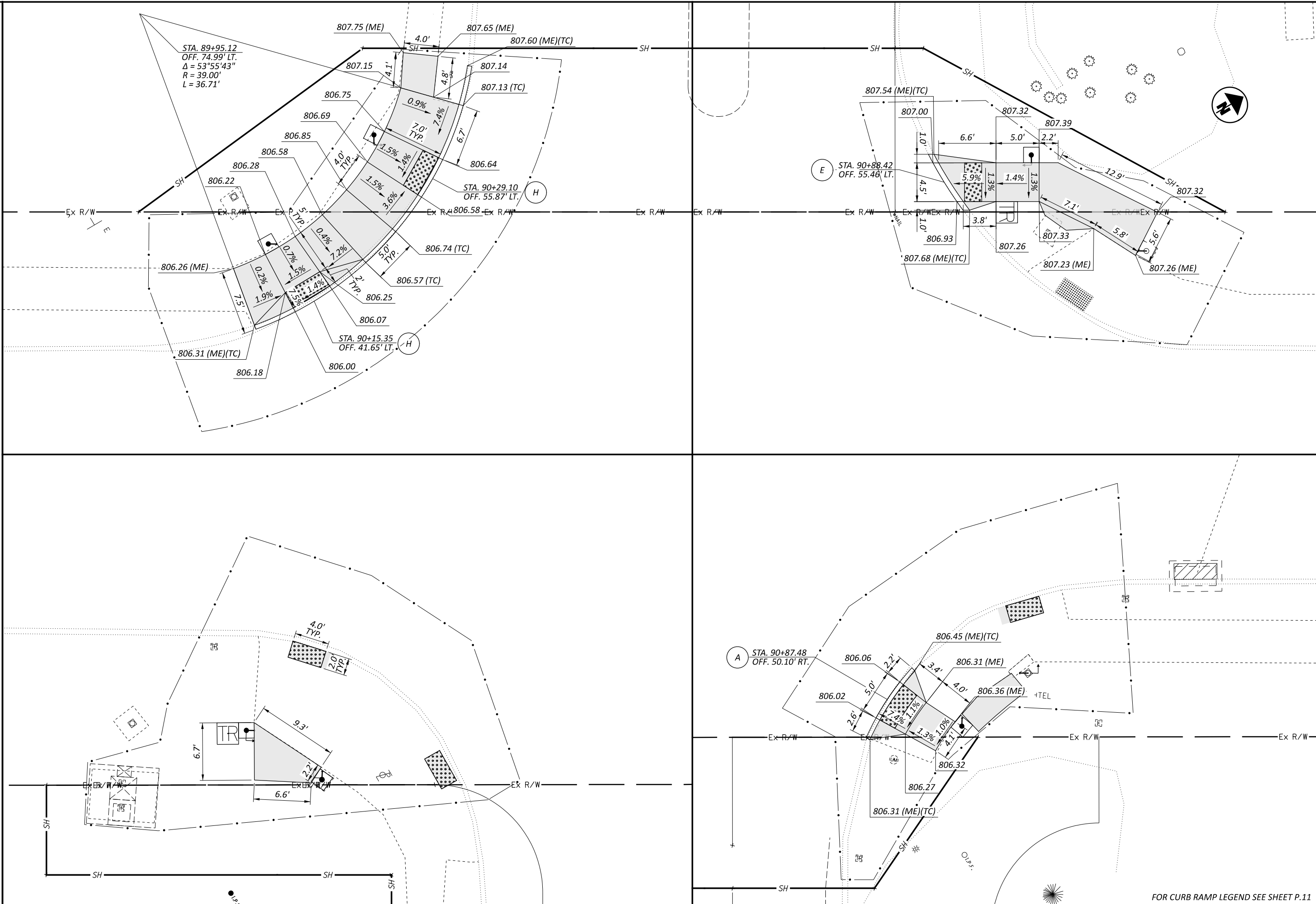


CURB DETAILS  
US 22 AT CORNELL RD

DESIGN AGENCY  
**CMT**  
CROWLEY, MURPHY &  
TODD  
1777 WASHINGTON VILLAGE DR  
DAYTON, OHIO 45459  
www.cmtinc.com

DESIGNER	LDW
REVIEWER	JWL
PROJECT ID	08/15/24
	117237
SHEET	TOTAL
P.22	66

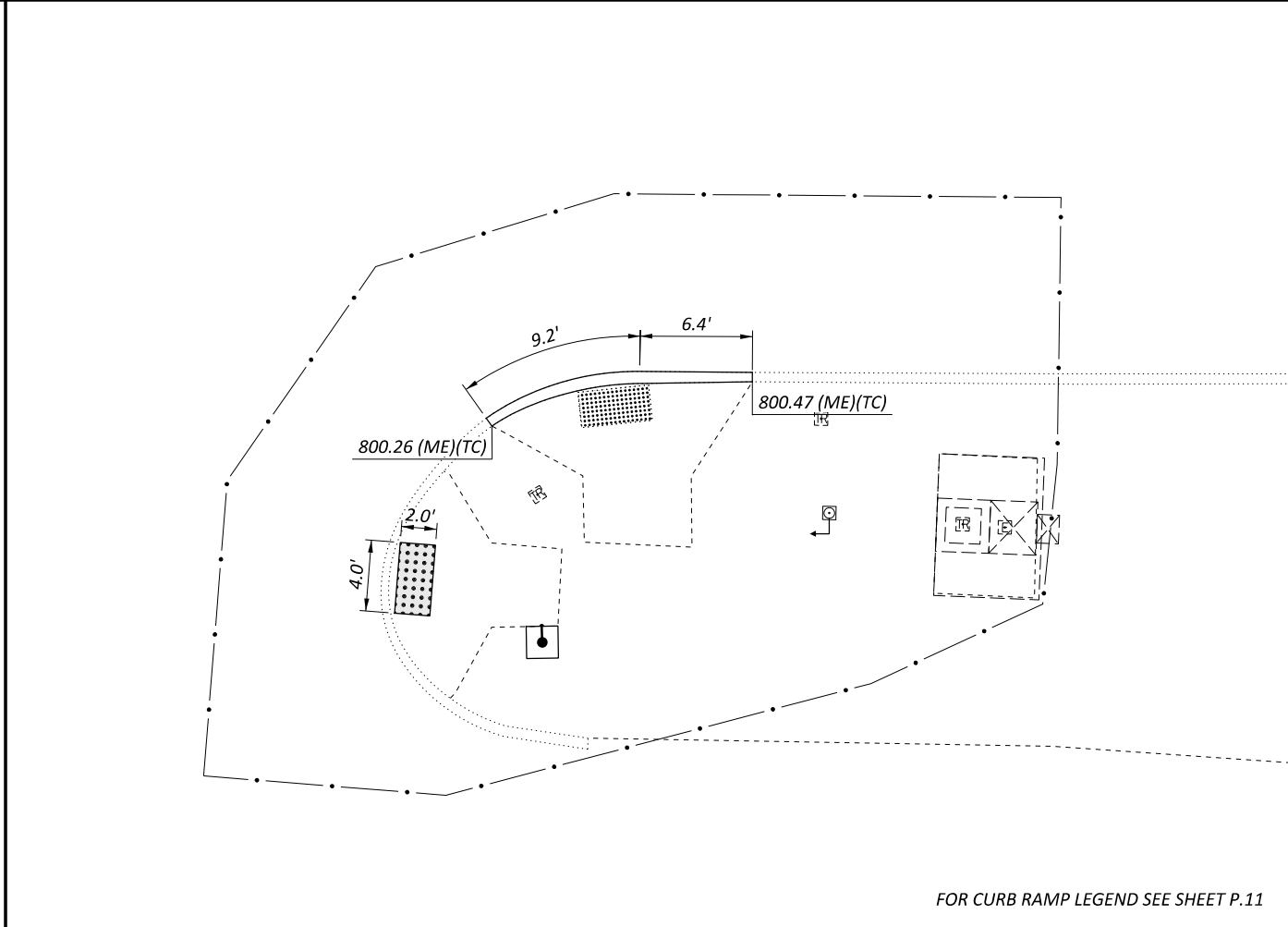
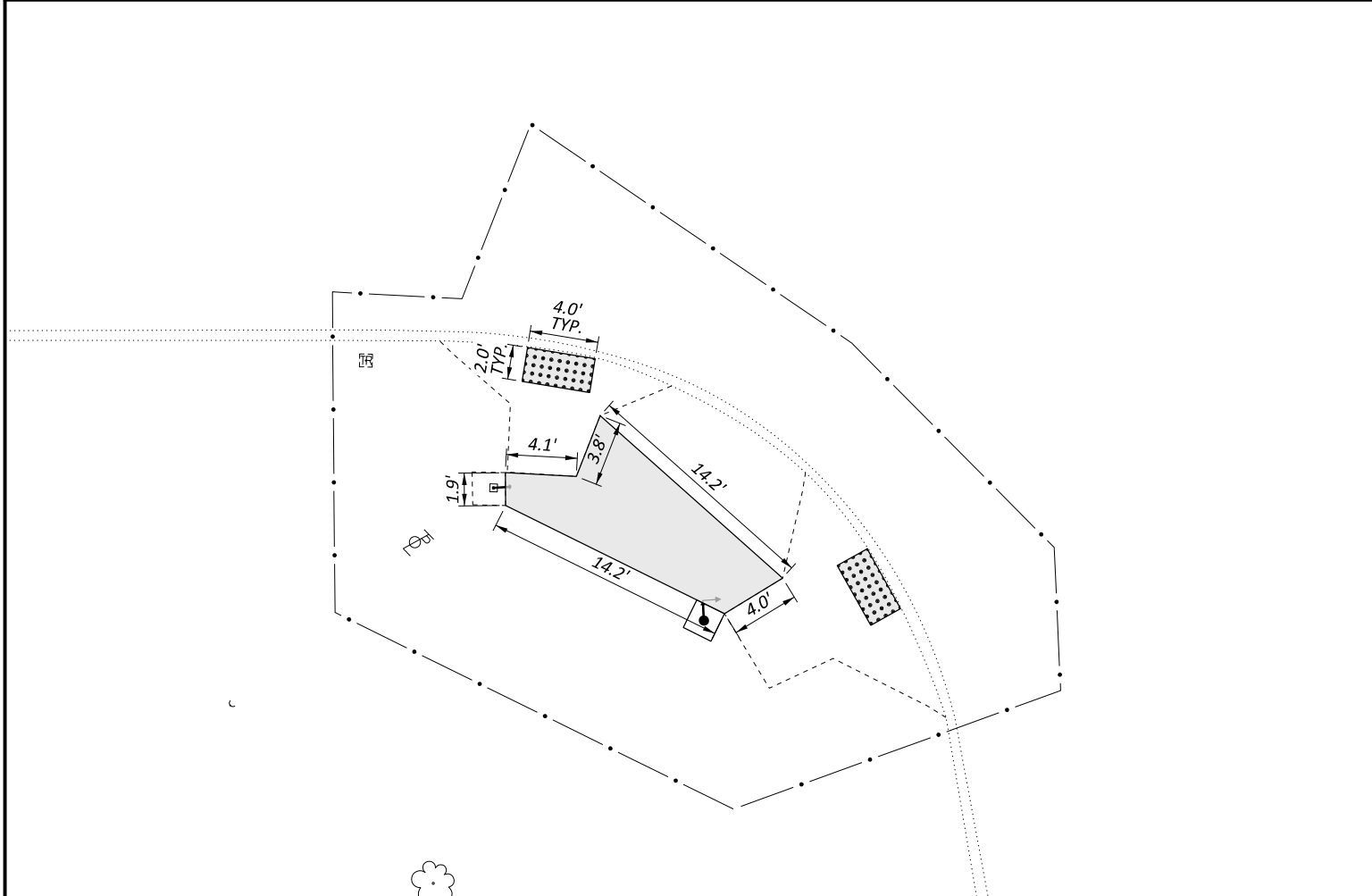
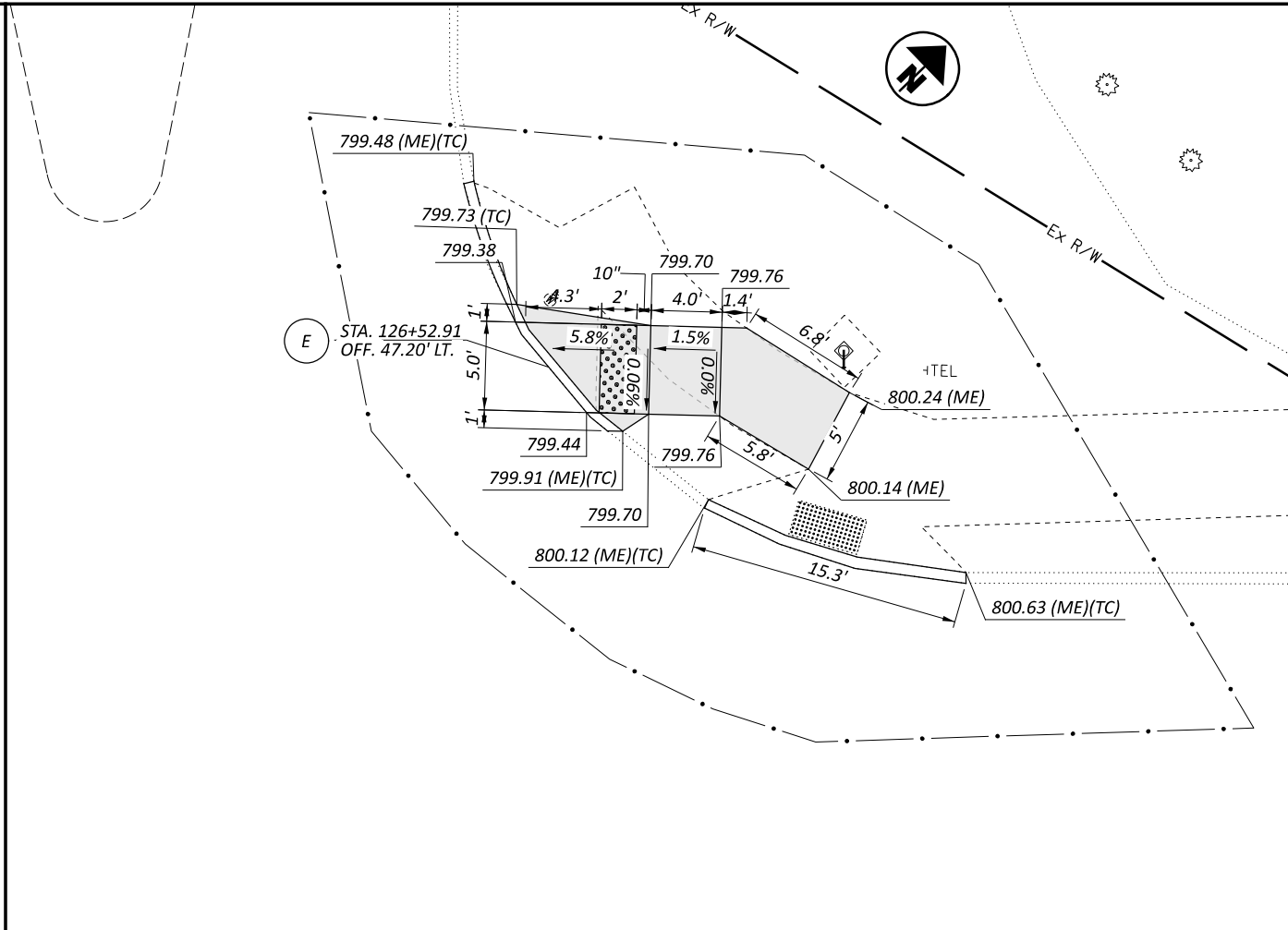
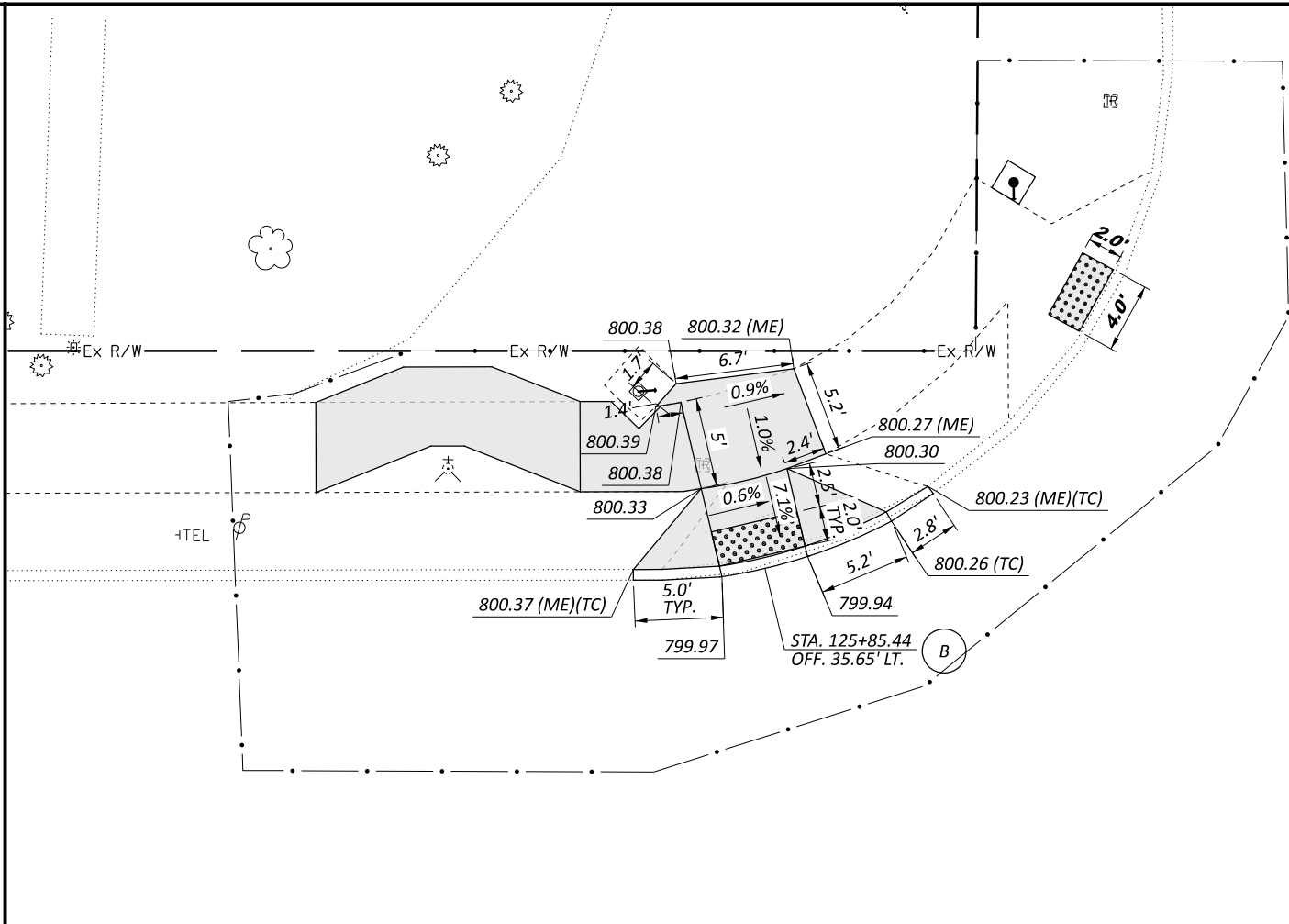
FOR CURB RAMP LEGEND SEE SHEET P.11



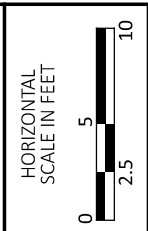
CURB DETAILS  
 US 22 AT HARPERS POINT DR

DESIGN AGENCY	
CMT CIVIL & ENVIRONMENTAL ENGINEERING 1777 WASHINGTON VILLAGE DR DAYTON, OHIO 45428 www.cmtinc.com	
DESIGNER	
LDW	
REVIEWER	
JWL 08/15/24	
PROJECT ID	
117237	
SHEET	TOTAL
P.23	66

FOR CURB RAMP LEGEND SEE SHEET P.11



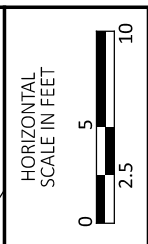
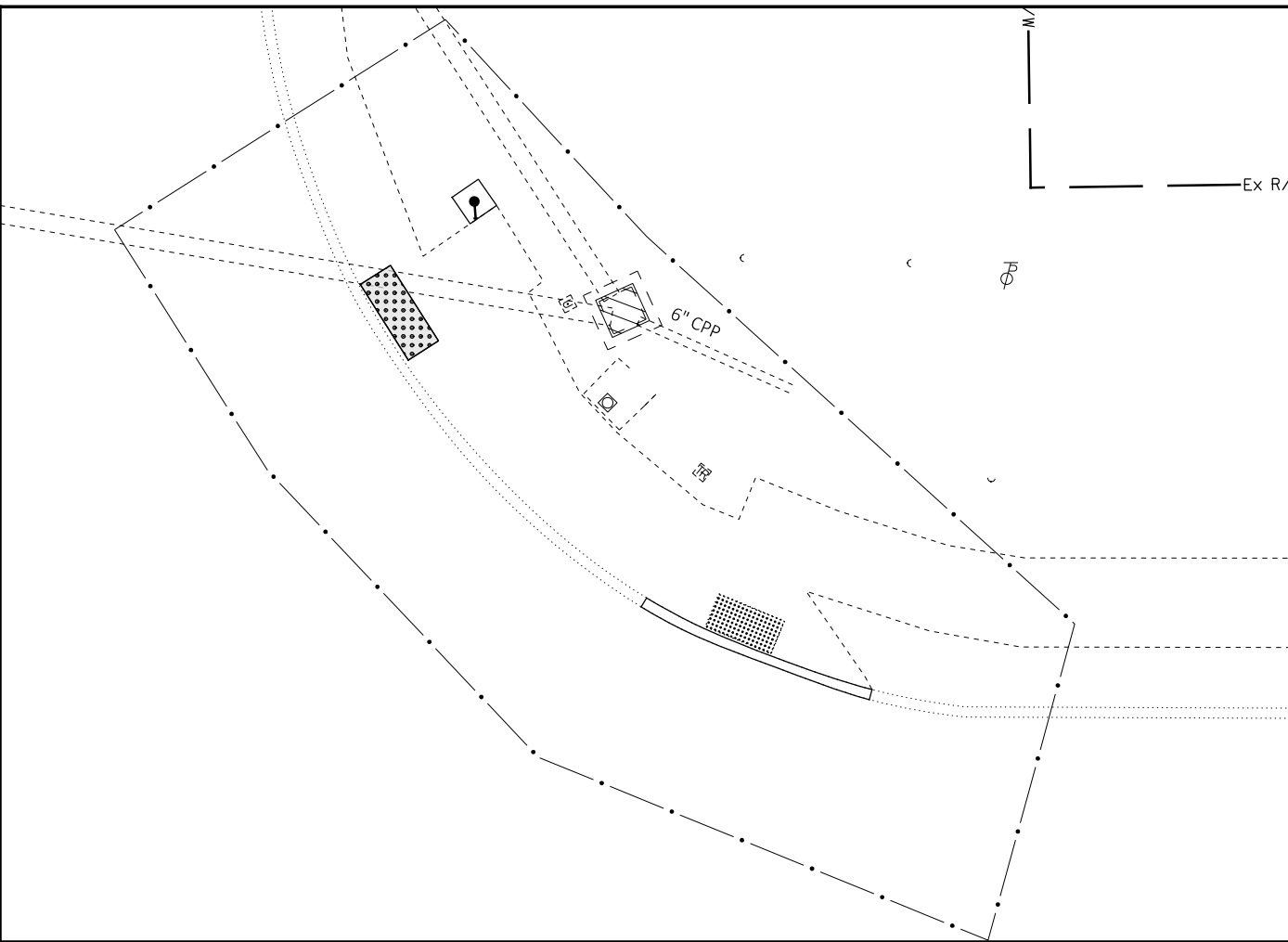
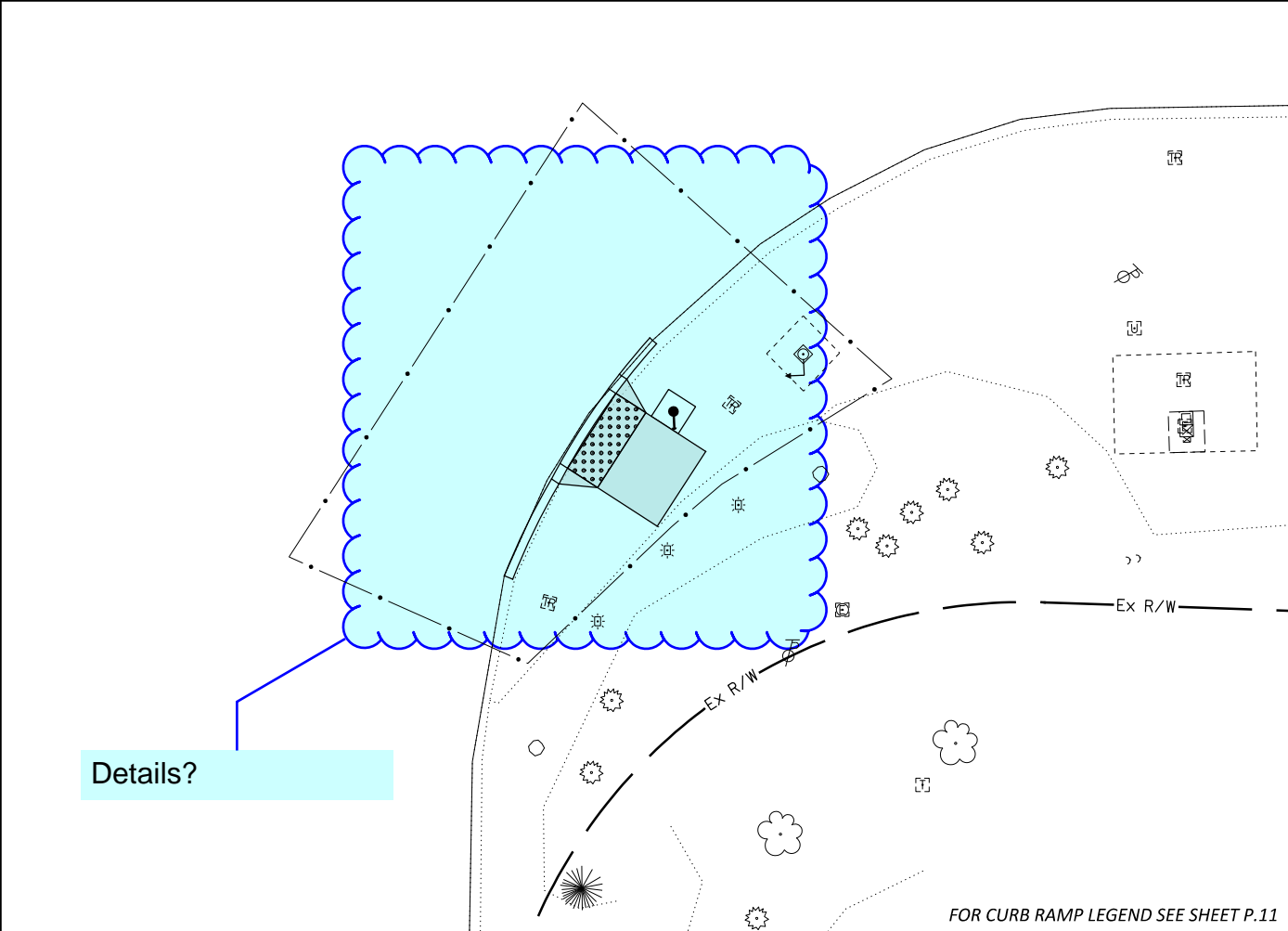
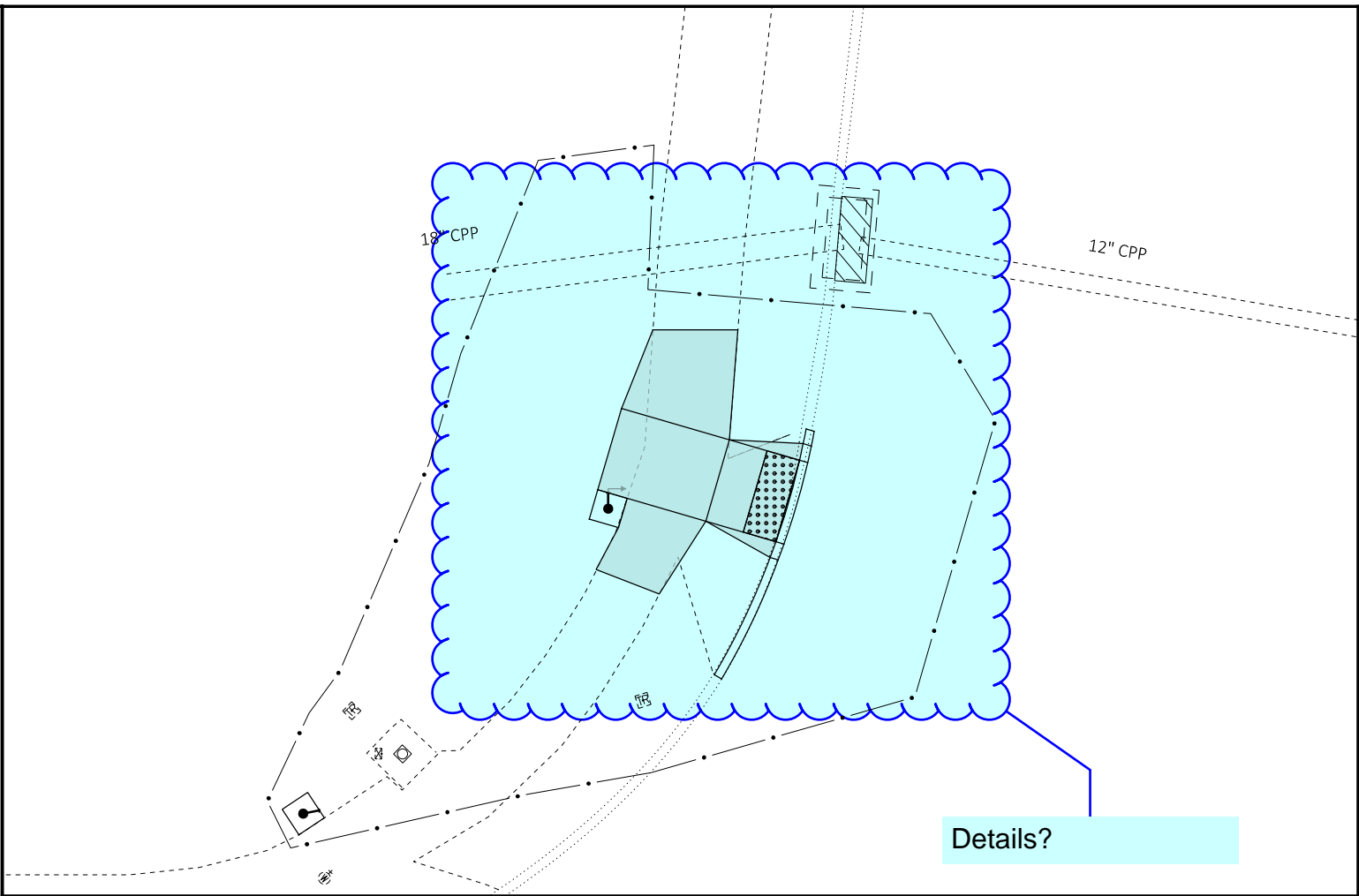
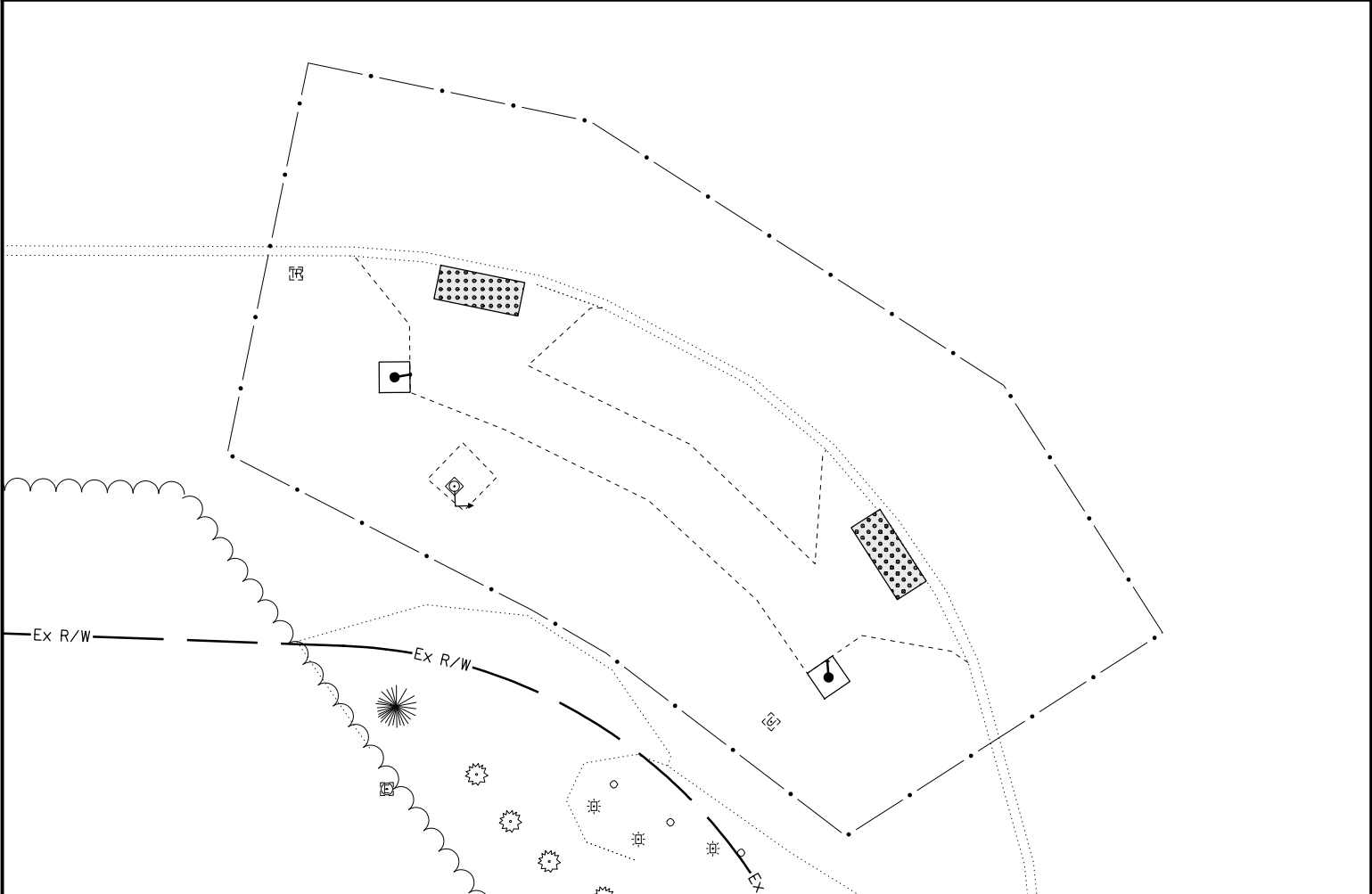
FOR CURB RAMP LEGEND SEE SHEET P.11



CURB DETAILS  
 US 22 AT APPELSEED DR/CALUMET WAY

DESIGN AGENCY	
<b>CMT</b>	CONSTRUCTION MANAGEMENT TECHNOLOGIES, INC.
1777 WASHINGTON VILLAGE DR DAYTON, OHIO 45459 www.cmtinc.com	
DESIGNER	
LDW	
REVIEWER	
JWL 08/15/24	
PROJECT ID	
117237	
SHEET	TOTAL
P.24	66

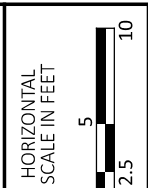
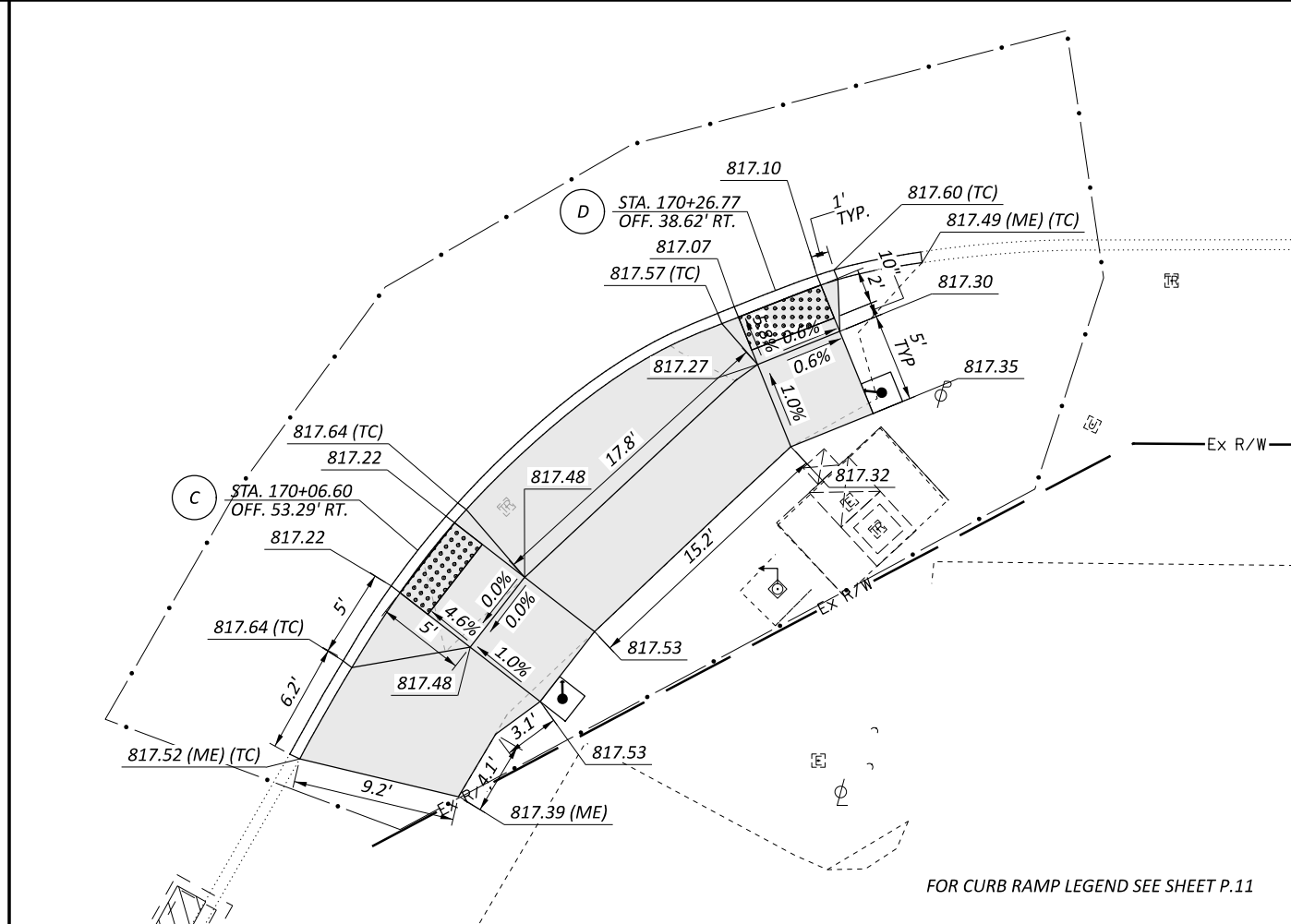
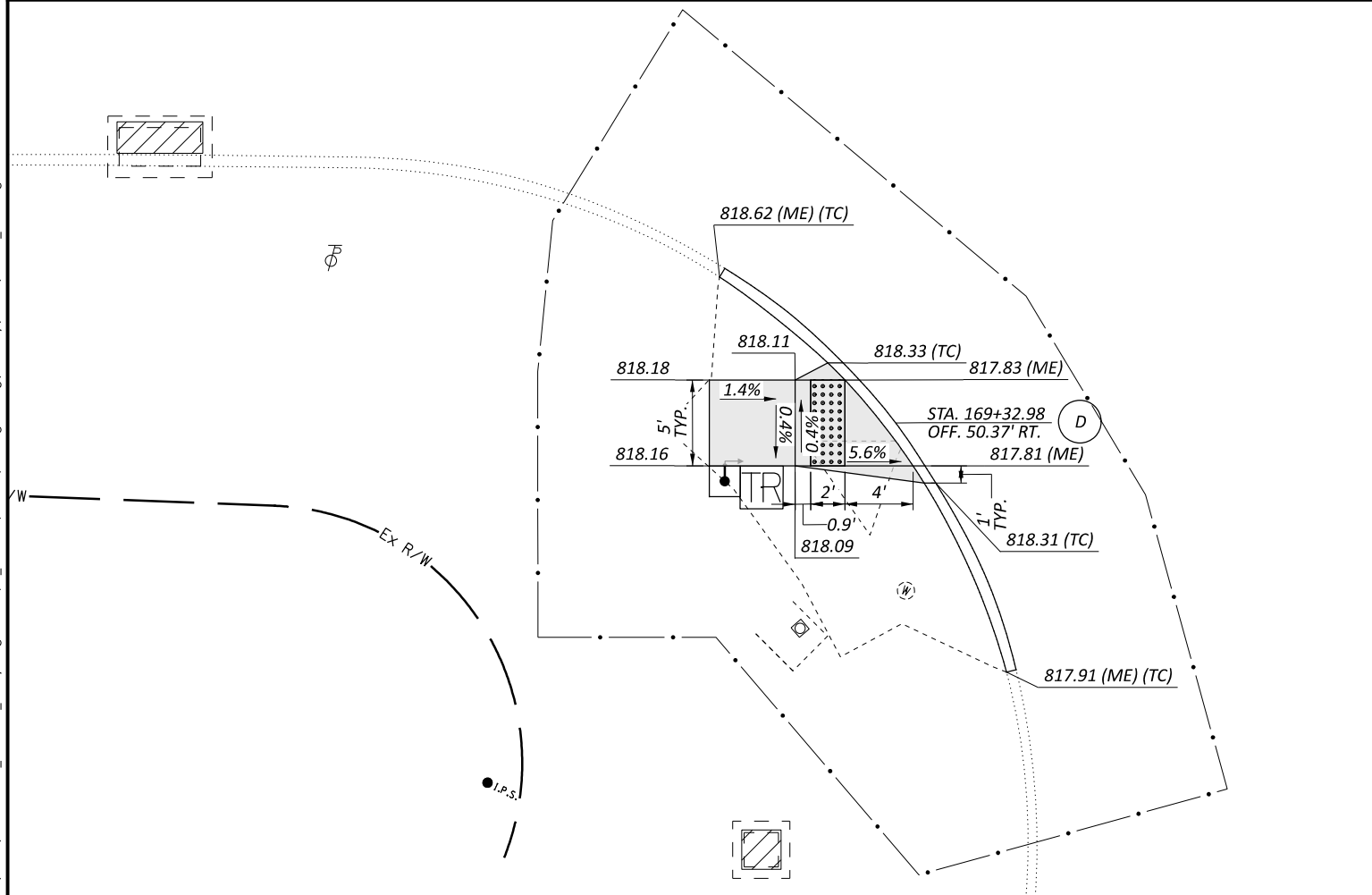
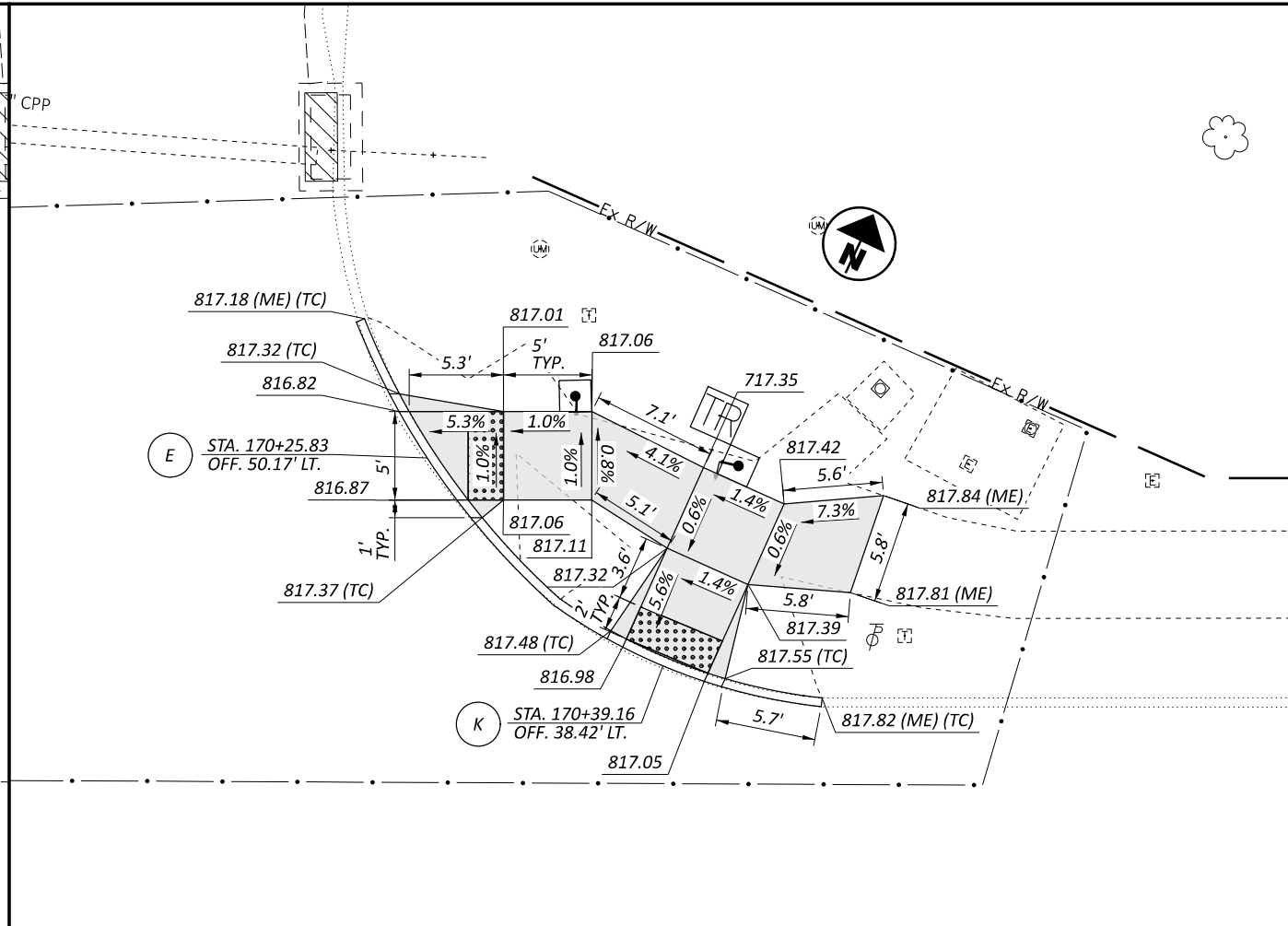
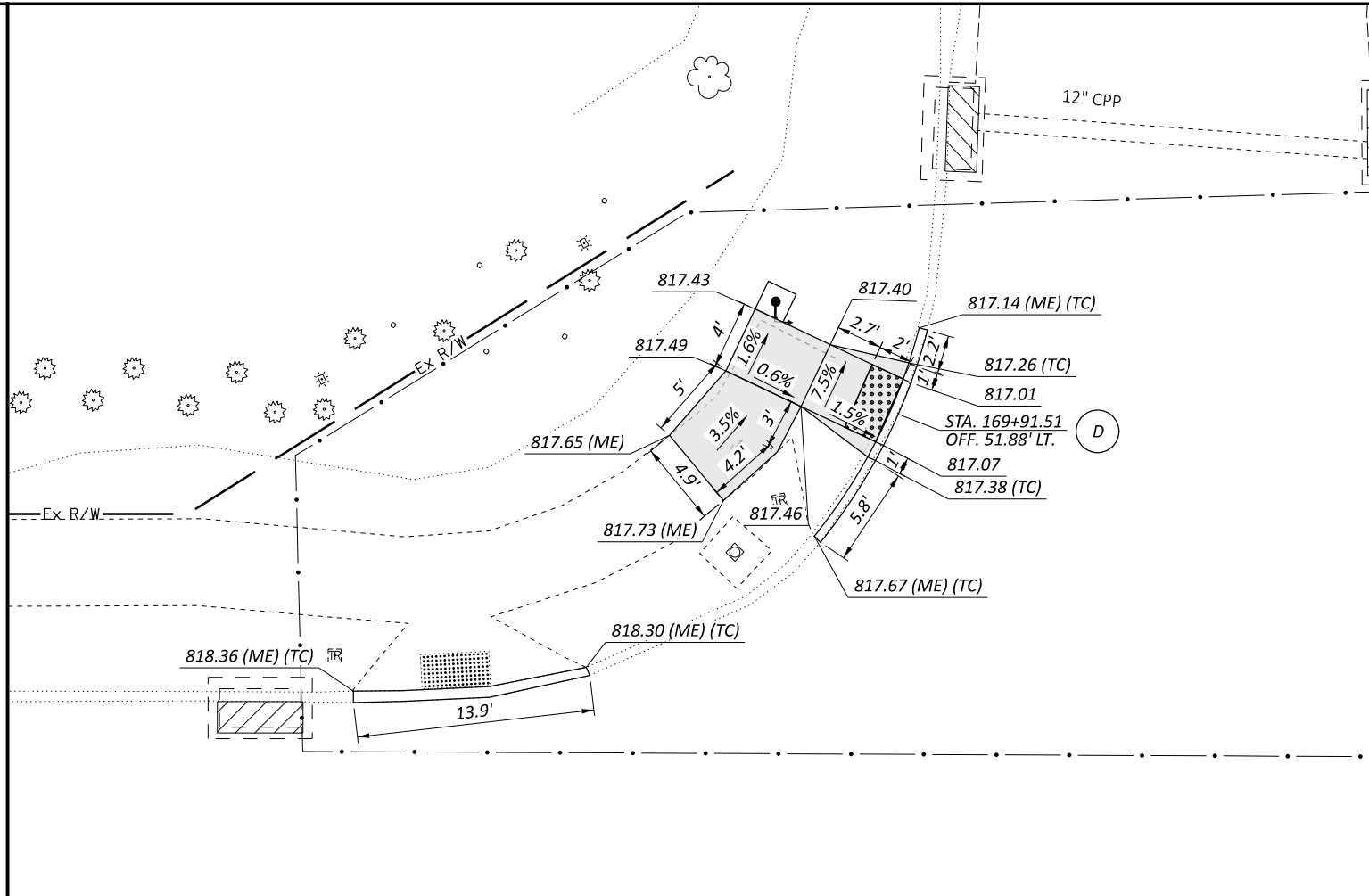




CURB DETAILS  
US 22 AT MASON MONTGOMERY RD/SYMMES CREEK DR

DESIGN AGENCY	
<b>CMT</b> CONSTRUCTION MANAGEMENT TECHNOLOGIES 1777 WASHINGTON VILLAGE DR DAYTON, OHIO 45459 www.cmtinc.com	
DESIGNER	
LDW	
REVIEWER	
JWL 08/15/24	
PROJECT ID	
117237	
SHEET	TOTAL
P.25	66

FOR CURB RAMP LEGEND SEE SHEET P.11



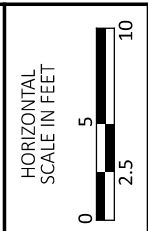
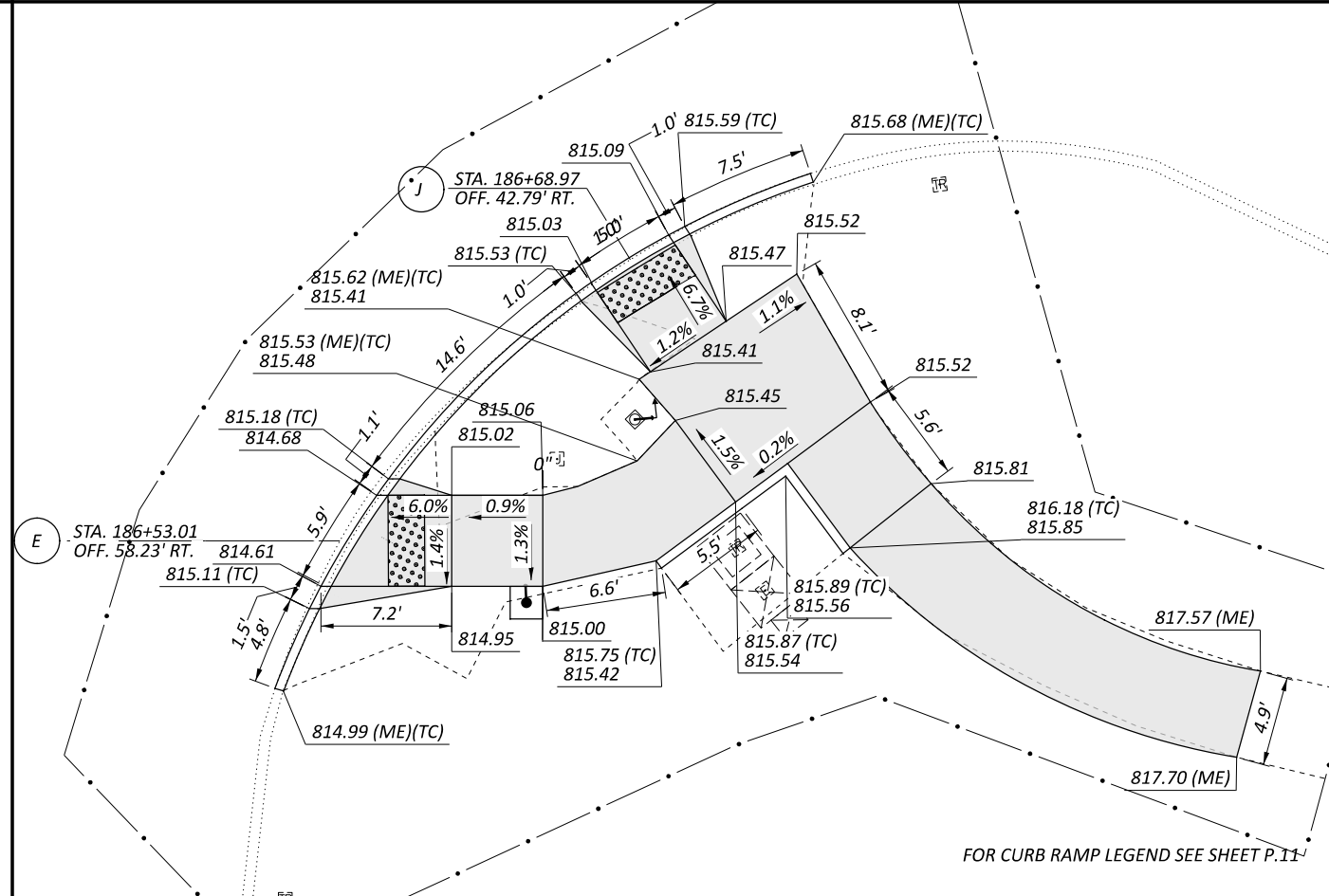
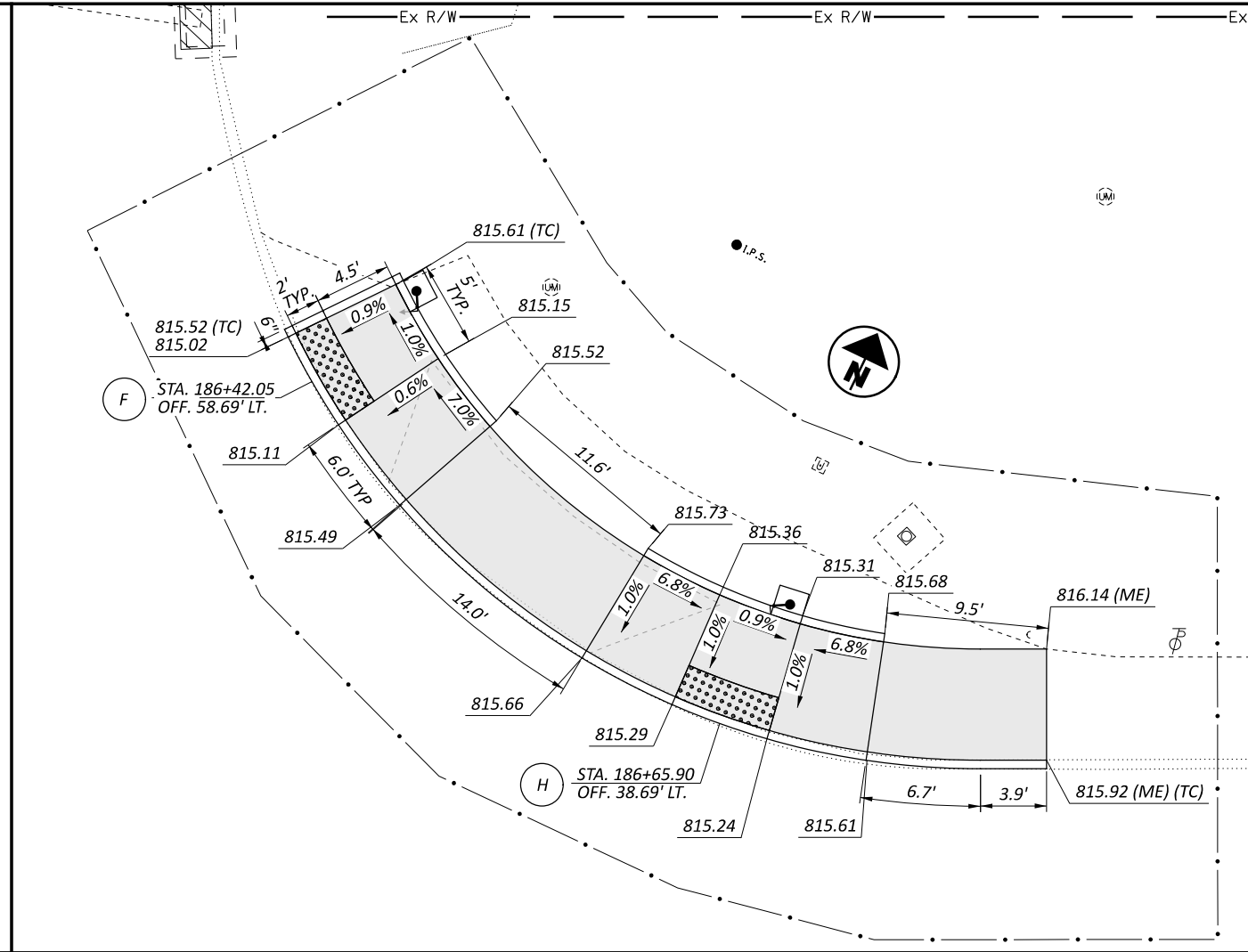
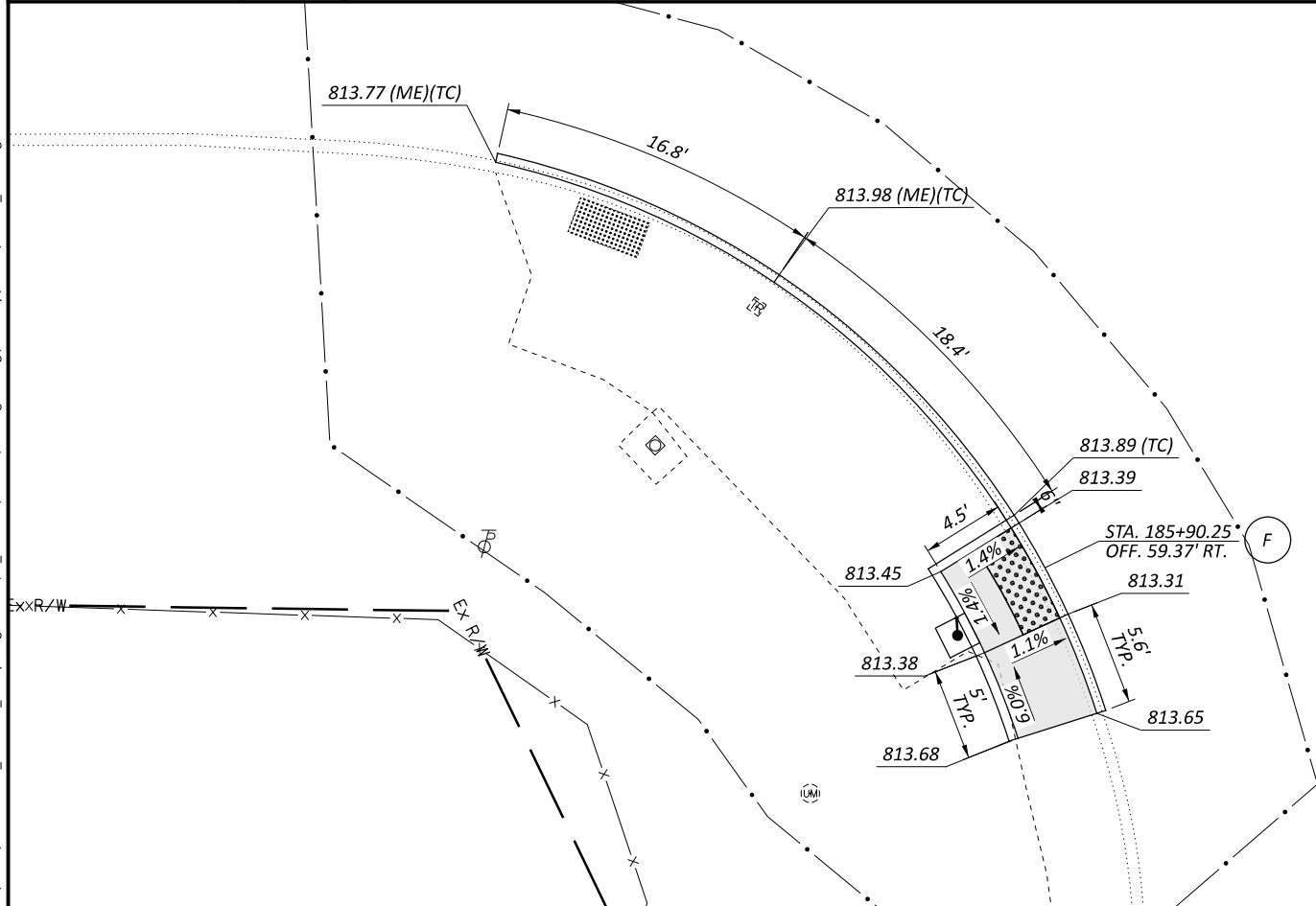
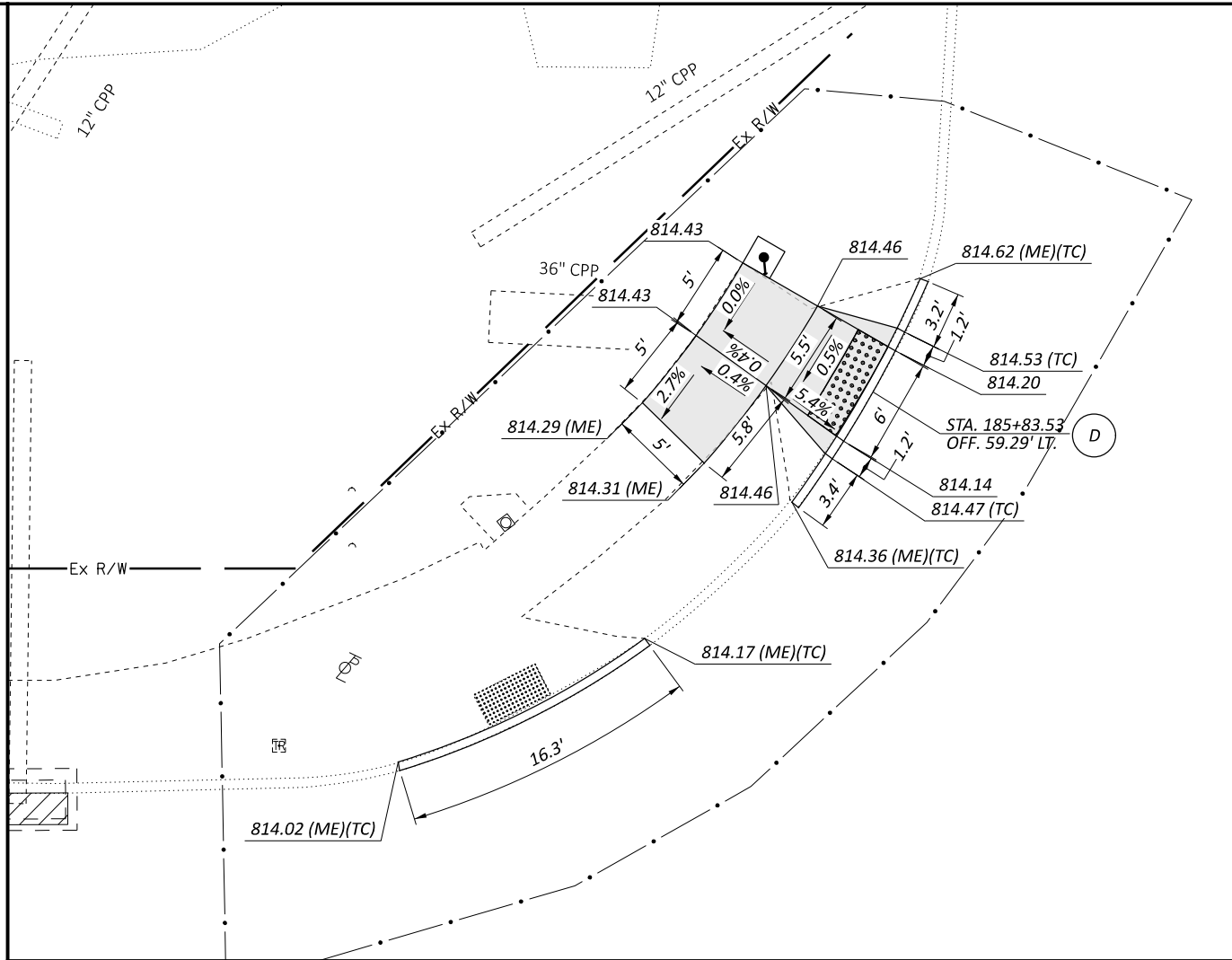
CURB DETAILS  
US 22 AT ENYART RD/HARBORTOWN DR

DESIGN AGENCY	 CMT BRUCE W. MURPHY & CONSULTANTS 1777 WASHINGTON VILLAGE DR DAYTON, OHIO 45424 www.cmtinc.com
DESIGNER	
REVIEWER	LDW
PROJECT ID	117237
SHEET	P.26
TOTAL	66

FOR CURB RAMP LEGEND SEE SHEET P.11

HAM/WAR US 22 16.04/0.00 PED

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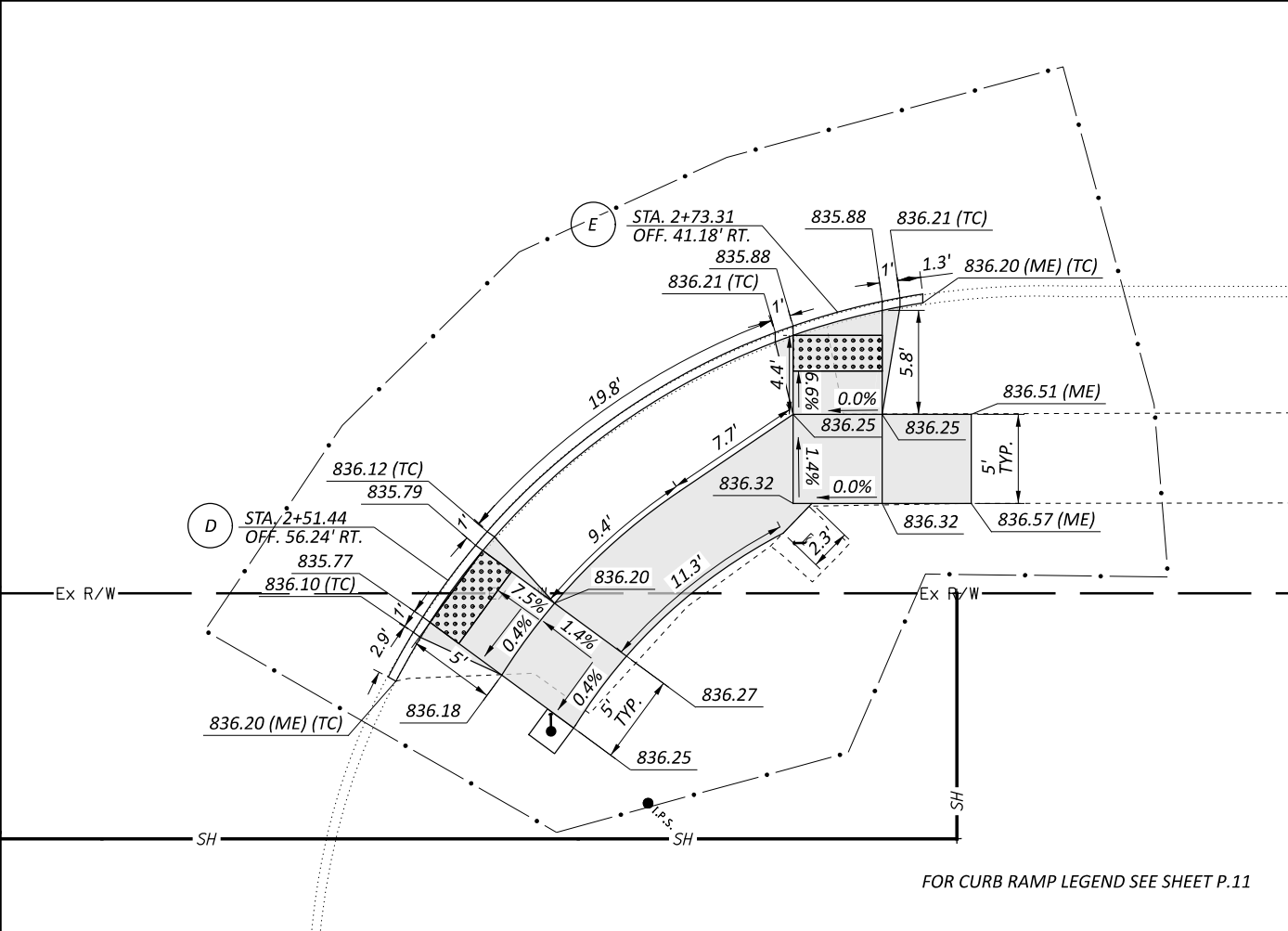
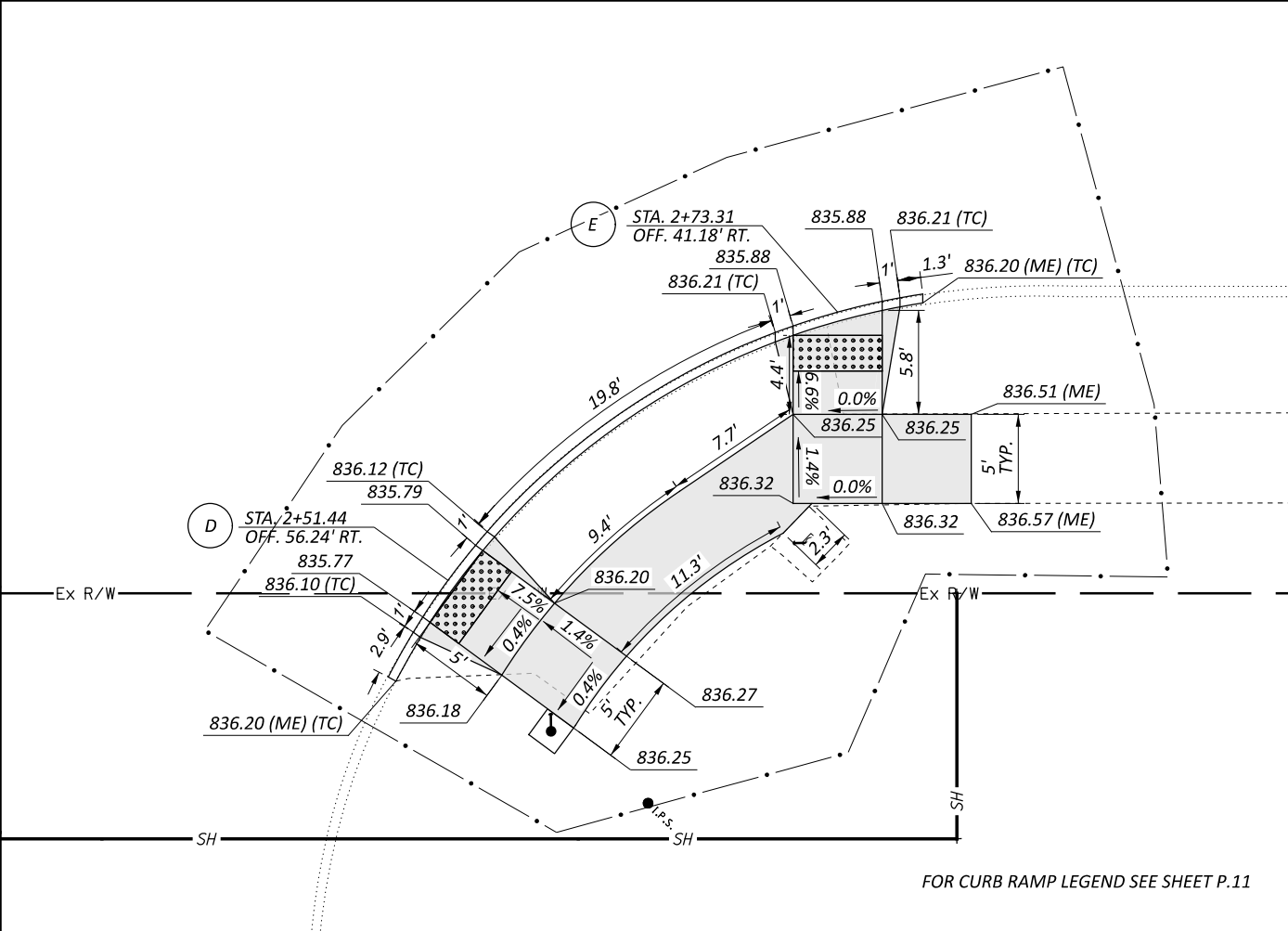
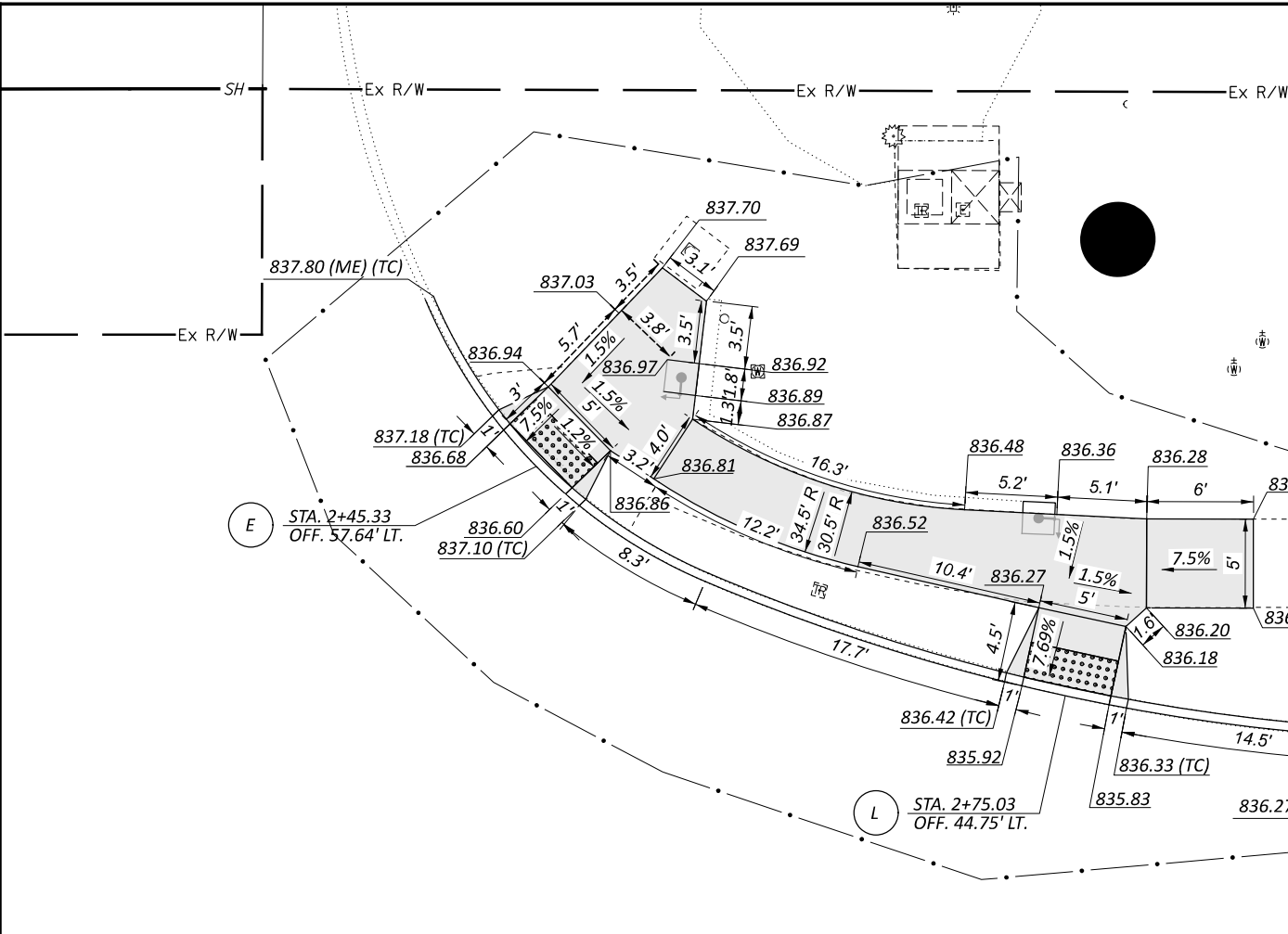
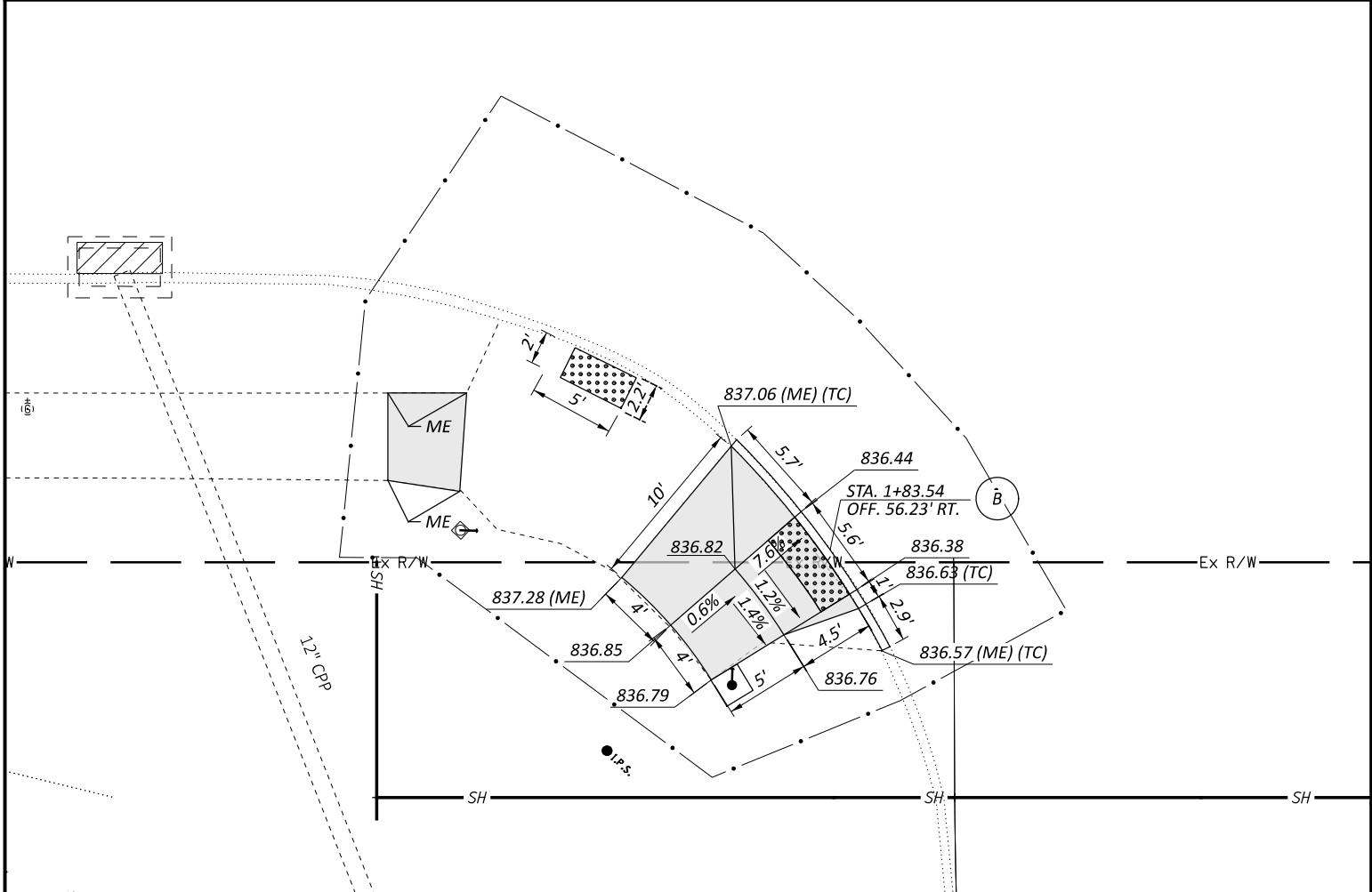
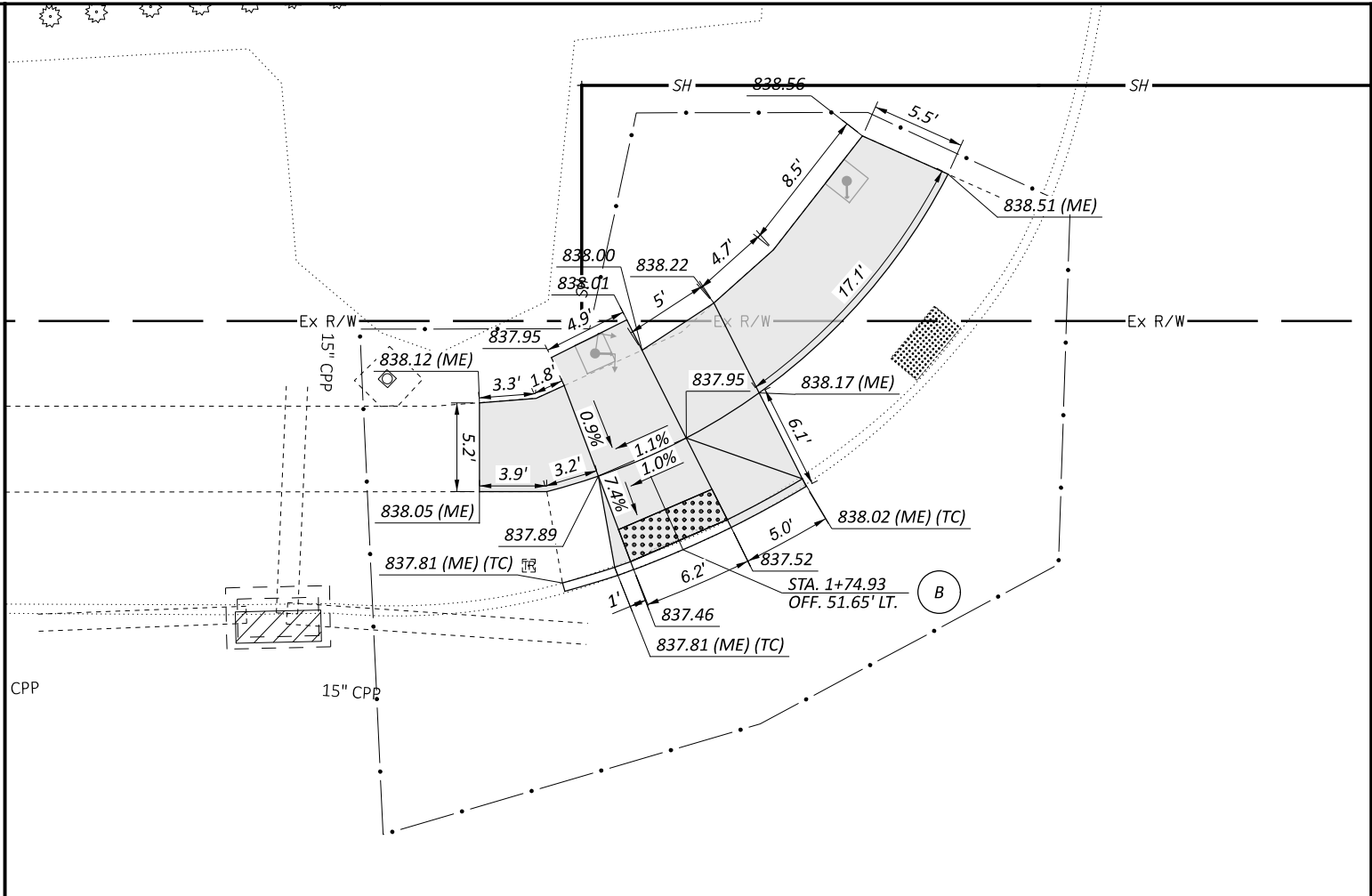
CURB DETAILS  
 US 22 AT UNION CEMETERY RD

DESIGN AGENCY	
BRUCE W. MURPHY & ASSOCIATES, INC. 1777 WASHINGTON VILLAGE DR DAYTON, OHIO 45424 www.cmtinc.com	
DESIGNER	LDW
REVIEWER	JWL 08/15/24
PROJECT ID	117237
SHEET	P.27
TOTAL	66

FOR CURB RAMP LEGEND SEE SHEET P.11

HAM/WAR US 22 16.04/0.00 PED

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HORIZONTAL SCALE IN FEET

CURB DETAILS

US 22 AT GREEN ARBORS LN/CONNECTICUT CR

DESIGN AGENCY



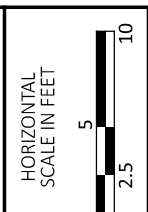
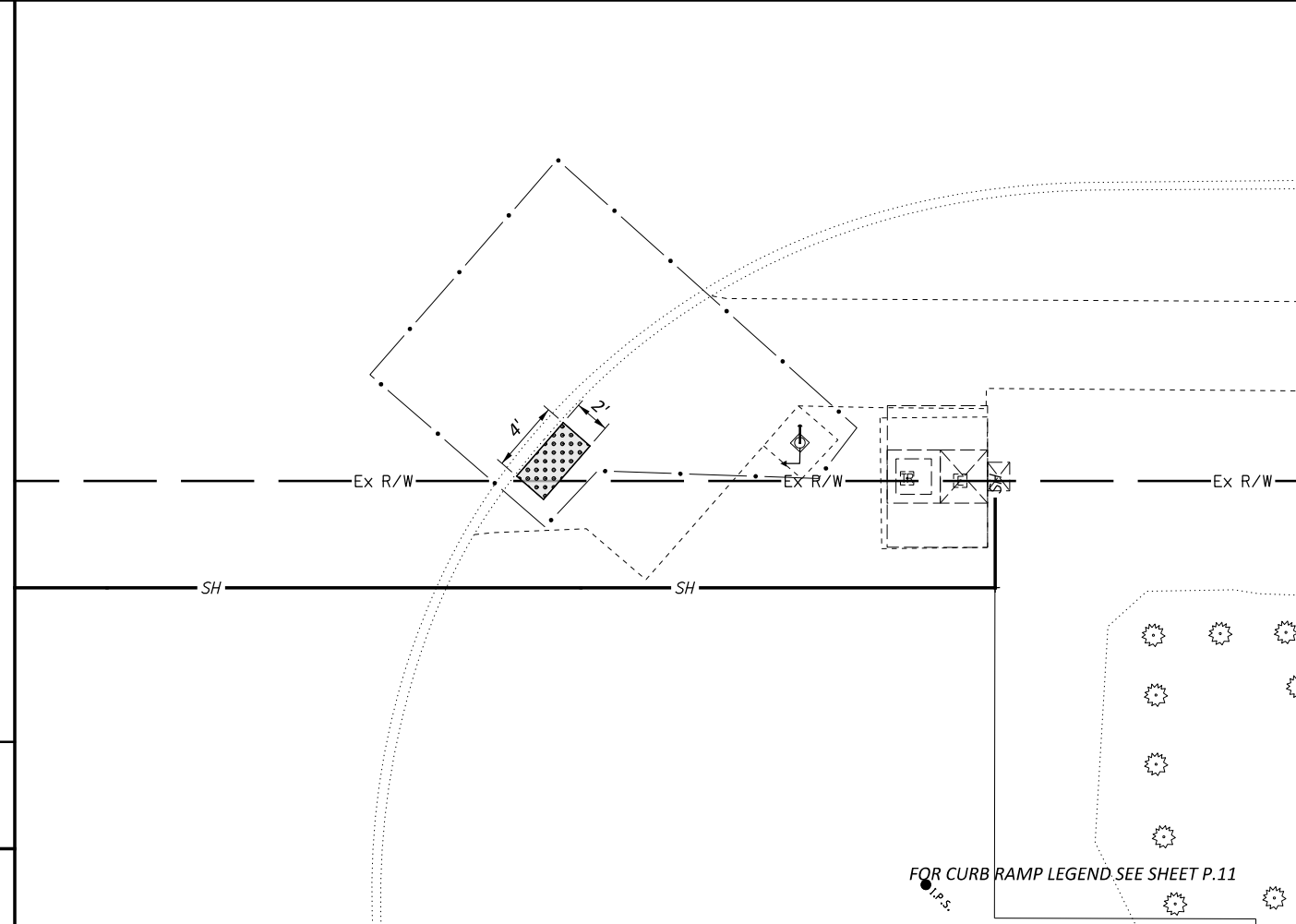
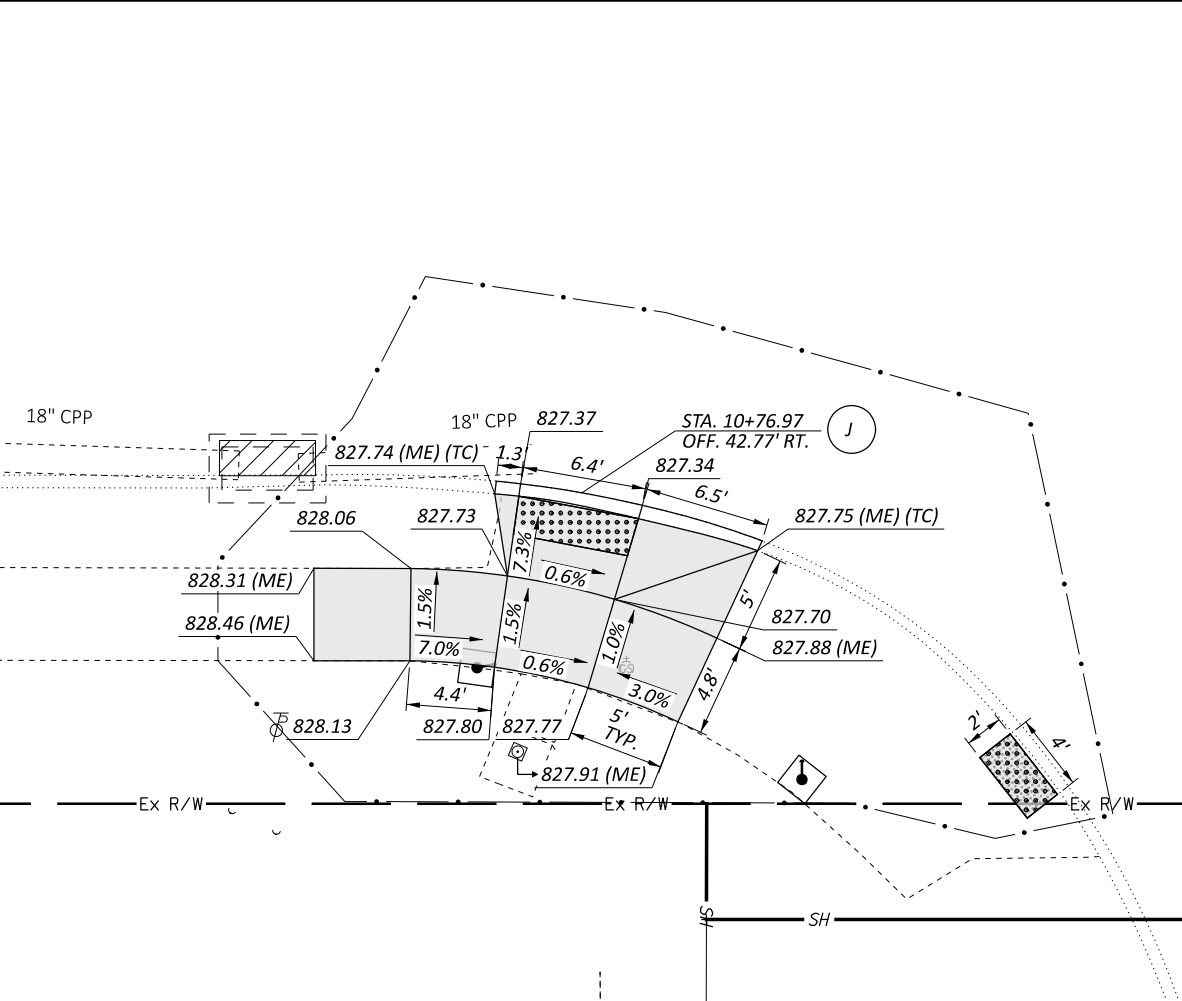
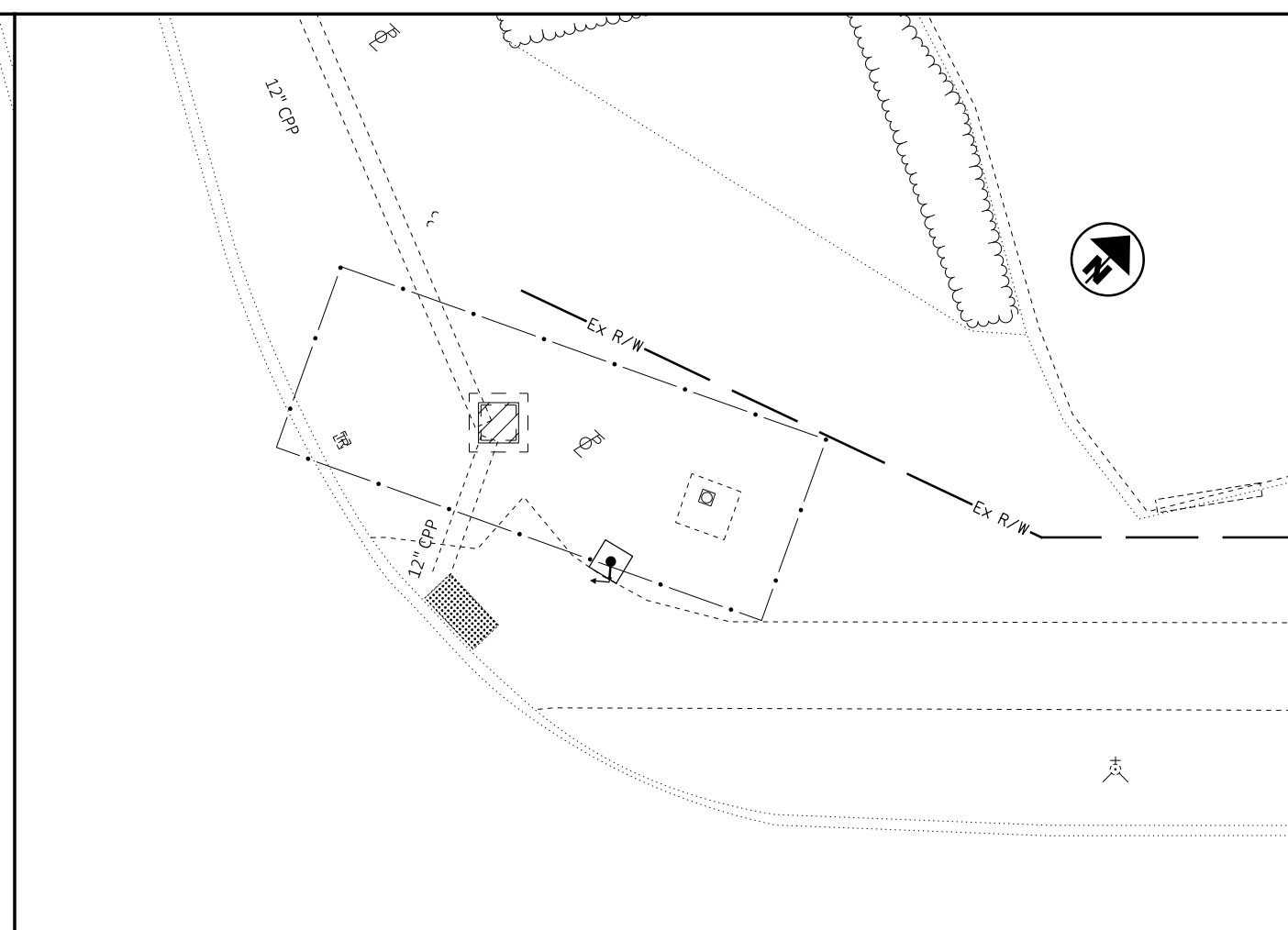
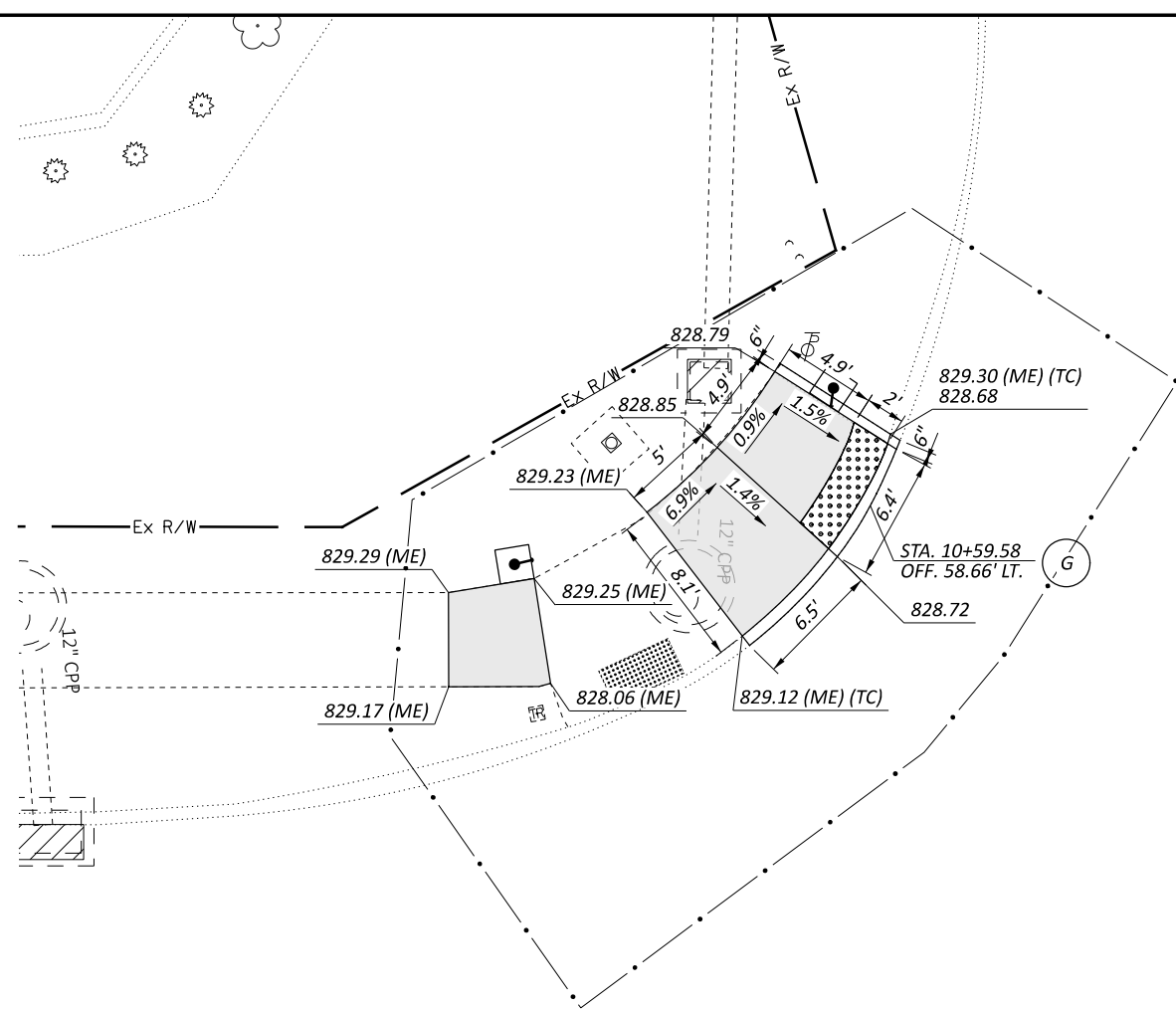
DESIGNER  
LDW

REVIEWER  
JWL 08/15/24

PROJECT ID  
117237

SHEET	TOTAL
P.28	66

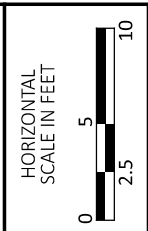
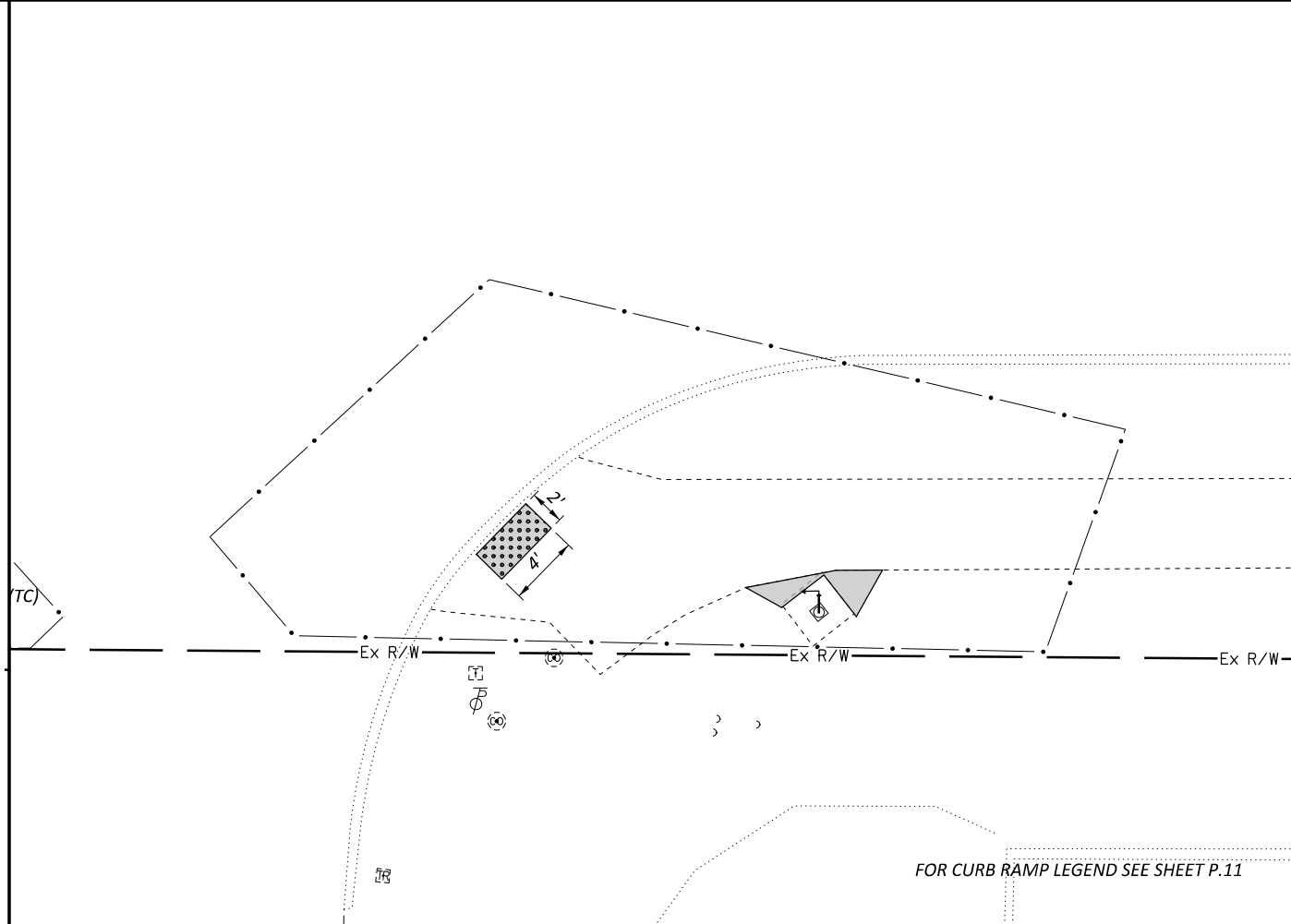
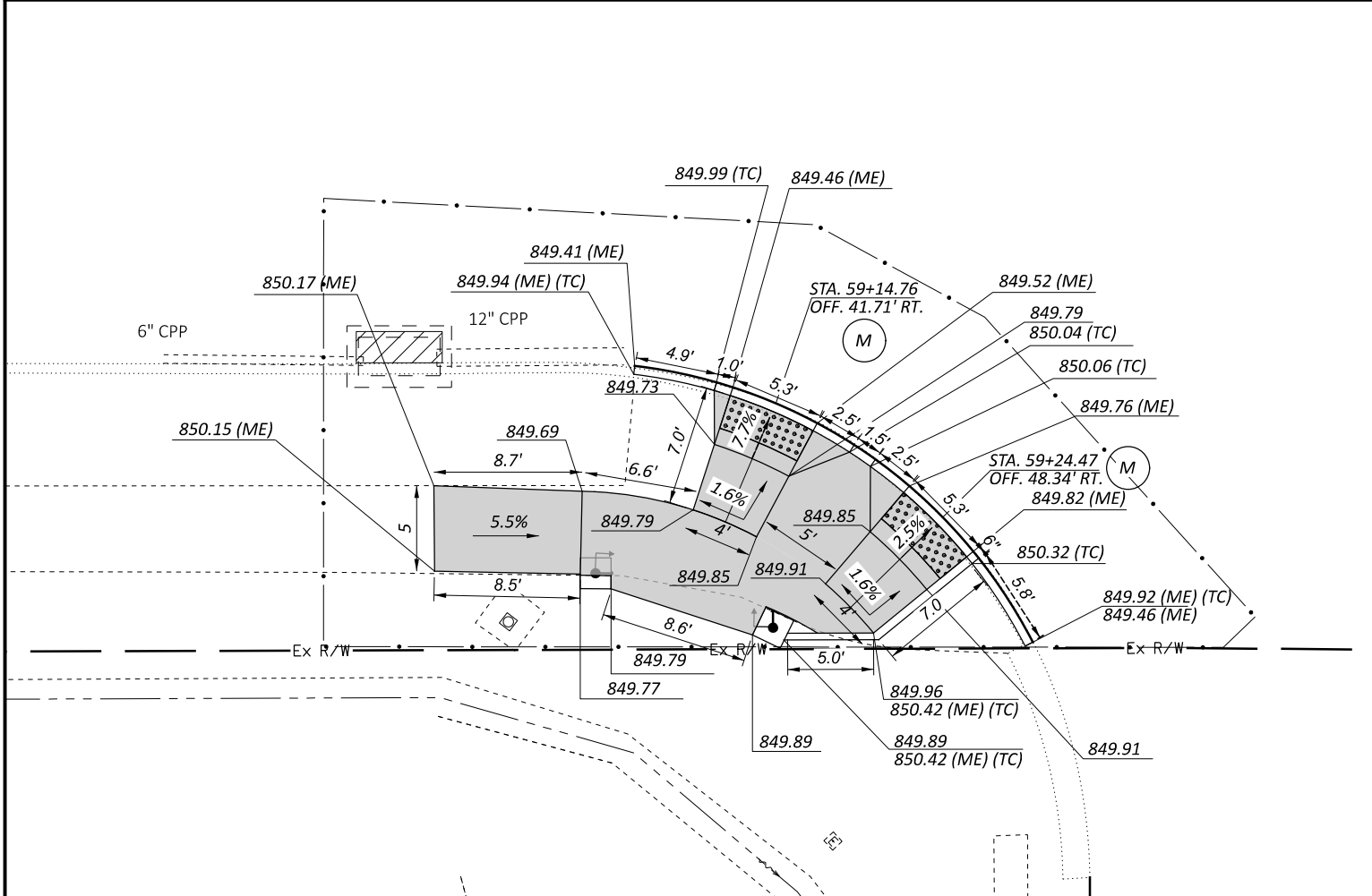
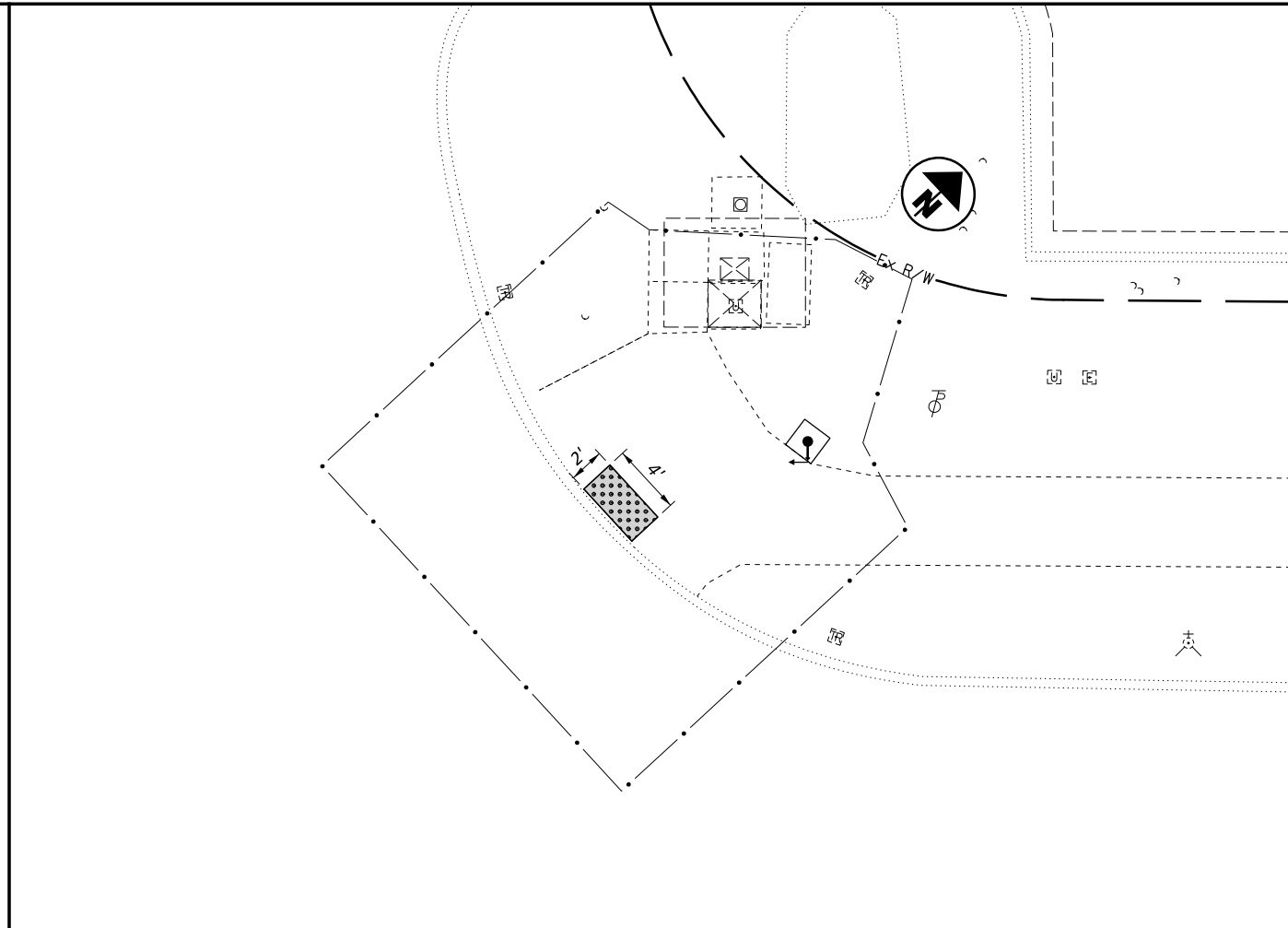
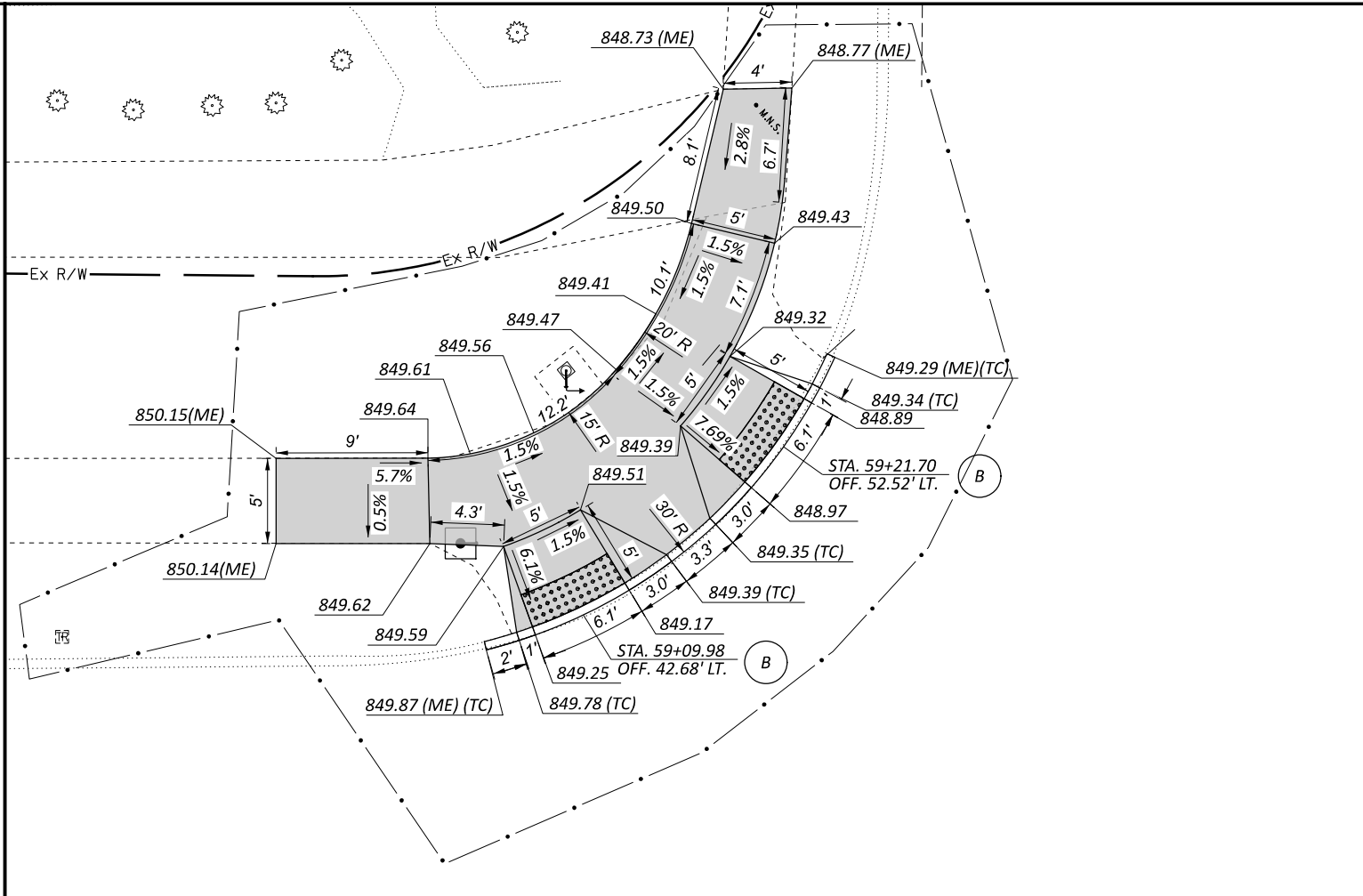
FOR CURB RAMP LEGEND SEE SHEET P.11



CURB DETAILS  
 US 22 AT CRESTVIEW DR

DESIGN AGENCY	
CRESTVIEW RD., MURPHY & 1777 WASHINGTON VILLAGE DR DAYTON, OHIO 45459 www.cmtinc.com	
DESIGNER	
LDW	
REVIEWER	
JWL 08/15/24	
PROJECT ID	
117237	
SHEET	TOTAL
P.29	66

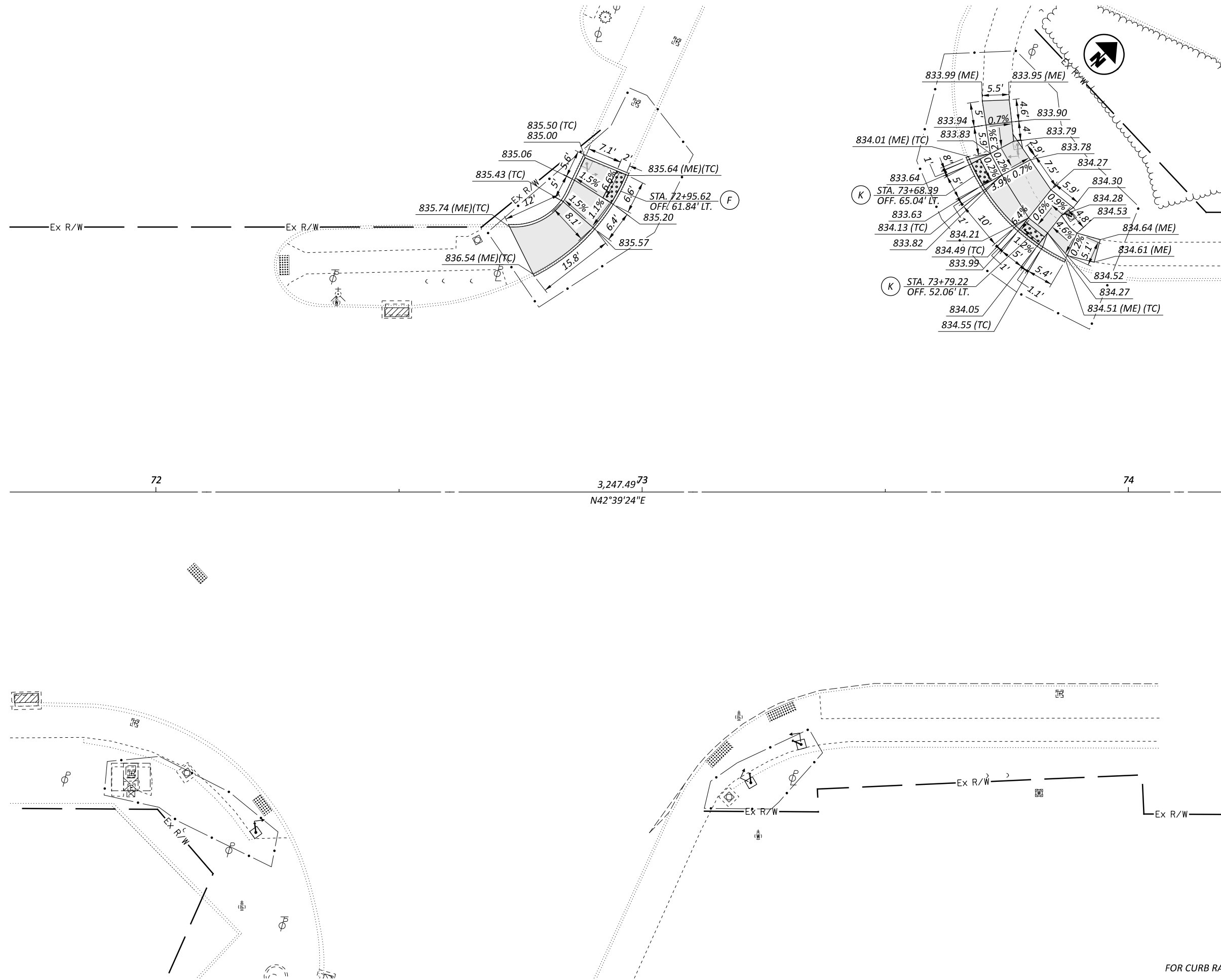
FOR CURB RAMP LEGEND SEE SHEET P.11



CURB DETAILS  
 US 22 AT TOWNSLEY DR

DESIGN AGENCY	
BRUCE D. MURPHY & ASSOCIATES 1777 WASHINGTON VILLAGE DR DAYTON, OHIO 45459 www.cmtinc.com	
DESIGNER	
LDW	
REVIEWER	
JWL 08/15/24	
PROJECT ID	
117237	
SHEET	TOTAL
P.30	66

FOR CURB RAMP LEGEND SEE SHEET P.11



CURB DETAILS  
US 22 AT COLUMBIA RD

DESIGN AGENCY  
**CMT**  
COLUMBIA TOWNSHIP  
1777 WASHINGTON VILLAGE DR  
DAYTON, OHIO 45459  
www.cmtinc.com

DESIGNER  
**LDW**

REVIEWER  
**JWL 08/15/24**

PROJECT ID  
**117237**

SHEET	TOTAL
P.31	66

FOR CURB RAMP LEGEND SEE SHEET P.11





GENERAL REQUIREMENTS

THE PURPOSE OF THIS SPECIFICATION AND THE ASSOCIATED PLANS IS TO ERECT PEDESTALS AND RELOCATE EXISTING PEDESTRIAN SIGNAL FACILITIES AT ELEVEN INTERSECTIONS ON MONTGOMERY ROAD (US-22) CORRIDOR IN HAMILTON COUNTY AND WARREN COUNTY, OHIO. THESE PLANS AND SPECIFICATIONS ARE TO RESULT IN THE COMPLETE INSTALLATION OF FULLY FUNCTIONAL TRAFFIC SIGNALS UTILIZING SIGNAL SUPPORTS (MAST ARMS) AND SHALL OPERATE ACCORDING TO THE REQUIREMENTS OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD).

THE 2023 OHIO DEPARTMENT OF TRANSPORTATION (ODOT) CONSTRUCTION AND MATERIAL SPECIFICATION, LATEST REVISION, SHALL GOVERN THIS PROJECT EXCEPT WHEN OTHERWISE NOTED. ITEMS LISTED SHALL CONFORM TO THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIALS SPECIFICATION MANUAL, TO THE ODOT OFFICE OF ROADWAY ENGINEERING STANDARD CONSTRUCTION DRAWINGS, AND TO ANY SUPPLEMENTAL SPECIFICATIONS AND/OR SPECIFIC REQUIREMENTS NOTED.

BIDDERS SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF THE OHIO REVISED CODE AND ADMINISTRATIVE CODE.

DETECTION MAINTENANCE

IF VEHICLE DETECTION BECOMES UNEXPECTEDLY DISABLED, REQUIRES MODIFICATION, OR IS SCHEDULED TO BE TEMPORARILY REMOVED DURING THE CONSTRUCTION PROJECT, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER.

IF THE LOSS OF VEHICLE DETECTION IS KNOWN PRIOR TO THE START OF CONSTRUCTION, IT SHALL BE DISCUSSED AT THE PRECONSTRUCTION MEETING. AT SUCH TIME, THE DISTRICT TRAFFIC ENGINEER SHALL ADVISE THE PROJECT ENGINEER AND CONTRACTOR ON THE APPROPRIATE ACTION TO RECTIFY ANY LOSS OF VEHICLE DETECTION. THIS MAY INCLUDE PLACING THE TRAFFIC SIGNAL ON MINIMUM OR MAXIMUM RECALL, MODIFYING THE MINIMUM GREEN TIMES, AND REMOVING THE MALFUNCTIONING DETECTION FROM SERVICE. WHERE NON-INTRUSIVE DETECTION (I.E. VIDEO, RADAR) ALREADY EXISTS, THE CONTRACTOR SHALL INSURE THAT DETECTION IS OPERATING AND MAINTAINED BY RECONFIGURING THE DETECTION UNITS ACCORDINGLY DURING ALL CONSTRUCTION PHASES. THIS IS TO AVOID THE SIGNAL FROM MAXING OUT THE EFFECTED SIGNAL PHASE AND CREATING UNNECESSARY DELAYS.

LOCATIONS WHERE NON-INTRUSIVE DETECTION IS PROPOSED AND THE EXISTING VEHICLE DETECTION IS TO BE ABANDON, THE NON-INTRUSIVE VEHICLE DETECTION SHALL BE INSTALLED, CONFIGURED AND MADE FULLY FUNCTIONAL PRIOR TO THE EXISTING DETECTION BEING DISABLED. THE CONTRACTOR SHALL CONTINUE TO MAINTAIN AND MODIFY THE DETECTION UNTIL FINAL ACCEPTANCE OF THE TRAFFIC SIGNAL. THIS IS TO ENSURE VEHICLE DETECTION REMAINS FULLY FUNCTIONAL THROUGHOUT CONSTRUCTION.

WORK INSPECTION

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

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

THE CONTRACTOR SHALL PICK UP THE PEDESTRIAN SIGNAL HEADS AND ASSOCIATED ACCESSORIES FROM 505 STATE ROUTE 741, LEBANON, OHIO 45036 (ODOT DISTRICT 8). THE CONTRACTOR IS TO CONTACT TERI SCANLON, DISTRICT TRAFFIC ENGINEER, AT 513-933-6620 OR AT TERI.SCANLON@DOT.OHIO.GOV TO COORDINATE PICKUP TIME OF EQUIPMENT. PEDESTRIAN SIGNAL HEADS SHALL BE INSTALLED FOLLOWING THE REQUIREMENTS OF C&MS 632.08 AND USING NEW OR COILED 5/C No.14 AWG SIGNAL CABLE AS NOTED IN THE PLANS.

PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID PER EACH AND WILL BE FULL COMPENSATION FOR ALL LABOR, TOOLS, EQUIPMENT AND OTHER INCIDENTALS NECESSARY FOR INSTALLATION OF ITEM 632 PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN, INSTALLATION ONLY.

ITEM 632 PEDESTRIAN PUSHBUTTON, AS PER PLAN, INSTALLATION ONLY

THE CONTRACTOR SHALL PICK UP THE PUSHBUTTONS AND ASSOCIATED ACCESSORIES FROM 505 STATE ROUTE 741, LEBANON, OHIO 45036 (ODOT DISTRICT 8). THE CONTRACTOR IS TO CONTACT TERI SCANLON, DISTRICT TRAFFIC ENGINEER, AT 513-933-6620 OR AT TERI.SCANLON@DOT.OHIO.GOV TO COORDINATE PICKUP TIME OF EQUIPMENT. PUSHBUTTONS SHALL BE INSTALLED FOLLOWING THE REQUIREMENTS OF C&MS 632.09 AND USING NEW OR COILED 2/C NO.14 AWG SIGNAL CABLE AS NOTED IN THE PLANS.

PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID PER EACH AND WILL BE FULL COMPENSATION FOR ALL LABOR, TOOLS, EQUIPMENT AND OTHER INCIDENTALS NECESSARY FOR INSTALLATION OF ITEM 632 PEDESTRIAN PUSHBUTTON, AS PER PLAN, INSTALLATION ONLY.

ITEM 632 SIGNALIZATION, MISC.: FILLING AND PLUGGING OF HOLES ON SUPPORT

THE CONTRACTOR SHALL FILL OR PLUG HOLES LEFT BEHIND ON STRAIN POLE AND PEDESTAL SUPPORT, WHICH ARE ANTICIPATED DUE TO THE RELOCATION OR REORIENTATION OF EXISTING PEDESTRIAN SIGNAL HEADS AND PUSHBUTTONS.

PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID, PER EACH ITEM 632 SIGNALIZATION, MISC.: FILLING AND PLUGGING OF HOLES ON SUPPORT, WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM FOR A STRAIN POLE OR PEDESTAL SUPPORT.

ITEM 632 SIGNALIZATION, MISC.: UNLASH AND RELASH MESSENGER WIRE

UNLESS NOTED OTHERWISE IN THE PLANS, SIGNAL CABLES REQUIRED TO INSTALL PEDESTRIAN SIGNAL HEADS AND PUSHBUTTONS HAVE BEEN PROVIDED WITH SUFFICIENT LENGTH SUCH THAT UNLASHING AND RELASHING OF MESSENGER WIRE IS NOT ANTICIPATED. AT LOCATIONS WHERE NEW SIGNAL CABLE RUN IS REQUIRED BETWEEN TWO SEPARATE QUADRANTS DUE TO THE LACK OF PROVIDED SIGNAL CABLE LENGTH OR IF NONE IS PROVIDED, UNLASHING AND RELASHING OF MESSENGER WIRE SHALL BE PERFORMED ACCORDING TO THE NOTES BELOW. NEW SIGNAL CABLES REQUIRED DUE TO THE CONDITIONS ABOVE SHALL BE BID BY SEPARATE BID ITEMS.

THE CONTRACTOR SHALL REMOVE EXISTING MESSENGER WIRE LASHING RODS AND REINSTALL THEM AS NECESSARY FOR THE INSTALLATION OF ANY NEW CABLES ON THE EXISTING INTERSECTION SIGNAL SPANS. THE CABLES SHALL ENTER THE EXISTING STRAIN POLE THROUGH THE POLE CABLE ENTRANCE FITTING AND USE THE EXISTING AND PROPOSED CONDUIT SYSTEM TO GET TO THE CONTROLLER CABINET. THIS CONTINGENCY IN ADDITION TO THE QUANTITY CALLED OUT AT EACH LOCATION IN THE SUBSUMMARY?

THE FOLLOWING ESTIMATED CONTINGENCY QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

632E90500 – ITEM 632 SIGNALIZATION, MISC.: UNLASH AND RELASH MESSENGER WIRE 600 FT

PAYMENT FOR ITEM 632 SIGNALIZATION MISC.: UNLASH AND RELASH MESSENGER WIRE SHALL BE MADE AT THE CONTRACT UNIT PRICE BID PER FOOT AND SHALL INCLUDE ALL LABOR, MATERIALS, CABLE SUPPORT ASSEMBLIES AND EQUIPMENT TO INSTALL NEW CABLES ON EXISTING SIGNAL SPAN WIRE INSTALLATIONS. THE CONTRACTOR WILL BE COMPENSATED FOR THE ACTUAL LENGTHS OF MESSENGER WIRE UNLASHED AND RELASHED, WHETHER ABOVE OR BELOW THE ESTIMATE.

SIGNAL CABLE

UNLESS NOTED OTHERWISE IN THE PLANS, SIGNAL CABLES REQUIRED TO INSTALL PEDESTRIAN SIGNAL HEADS AND PUSHBUTTONS HAVE BEEN PROVIDED WITH SUFFICIENT LENGTH. THE FOLLOWING ESTIMATED CONTINGENCY QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR LOCATIONS WHERE NEW SIGNAL CABLE RUN IS REQUIRED BETWEEN TWO SEPARATE QUADRANTS DUE TO THE LACK OF PROVIDED SIGNAL CABLE LENGTH OR IF NONE IS PROVIDED.

632E65300 – ITEM 632 LOOP DETECTOR LEAD-IN CABLE, 2 CONDUCTOR, NO. 14 AWG 1500 FT  
632E40500 – ITEM 632 SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG 1500 FT

THE CONTRACTOR WILL BE COMPENSATED FOR THE ACTUAL LENGTHS OF SIGNAL CABLE INSTALLED, WHETHER ABOVE OR BELOW THESE ESTIMATES.

SIGNAL SUPPORT AND PEDESTAL FOUNDATION ELEVATIONS

ELEVATIONS SHOWN IN THE PLANS FOR PEDESTAL FOUNDATIONS ARE FOR COMPUTATIONAL PURPOSES ONLY. THE ACTUAL ELEVATION OF THE FOUNDATION SHALL BE IN ACCORDANCE WITH TRAFFIC SCD TC-21.21 PROVIDED THE EXISTING SLOPE IS LESS THAN 6:1.

AT LOCATIONS WHERE THE EXISTING SLOPE IS 6:1 OR GREATER, THE BURIED DEPTH OF FOUNDATION, AS SHOWN IN SCD TC-21.21 SHALL APPLY TO THE LOW SIDE OF THE SLOPE. THE TOP OF THE FOUNDATION SHALL BE SET 2 INCHES ABOVE THE EXISTING SURFACE ON THE HIGH SIDE OF THE SLOPE. THE ADDITIONAL DEPTH OF FOUNDATION NECESSARY TO MEET THESE REQUIREMENTS SHALL BE ADDED TO THE FORMED TOP.

GUARANTEE

THE CONTRACTOR SHALL GUARANTEE THAT THE TRAFFIC CONTROL SYSTEM INSTALLED AS PART OF THIS CONTRACT SHALL OPERATE SATISFACTORILY FOR A PERIOD OF 120 DAYS FOLLOWING COMPLETION OF THE 10-DAY PERFORMANCE TEST. IN THE EVENT OF UNSATISFACTORY OPERATION, THE CONTRACTOR SHALL CORRECT FAULTY INSTALLATIONS, MAKE REPAIRS AND REPLACE DEFECTIVE PARTS WITH NEW PARTS OF EQUAL OR BETTER QUALITY. EQUIPMENT, MATERIAL AND LABOR COSTS INCURRED IN CORRECTING AN UNSATISFACTORY OPERATION SHALL BE BORNE BY THE CONTRACTOR.

THE GUARANTEE SHALL COVER THE FOLLOWING ITEMS OF THE TRAFFIC CONTROL SYSTEM: CONTROLLER, CABINET, UNINTERRUPTIBLE POWER SUPPLY, VEHICLE DETECTION EQUIPMENT, LED LAMP UNITS, NETWORK AND COMMUNICATION/ INTERCONNECT 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 (C&MS) AND THE TC SERIES OF STANDARD CONSTRUCTION DRAWINGS ARE MODIFIED AS FOLLOWS:

1. ALL METALLIC PARTS CONTAINING ELECTRICAL CONDUCTORS SHALL BE PERMANENTLY JOINED TO FORM AN EFFECTIVE GROUND FAULT CURRENT PATH BACK TO THE GROUNDED CONDUCTOR IN THE POWER SERVICE DISCONNECT SWITCH. A. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN METALLIC CONDUITS (725.04) IN ADDITION TO THE CONDUCTORS SPECIFIED AND BOND THE CONDUIT TO THIS GROUNDING CONDUCTOR.

B. WHEN AN EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED IN PLASTIC CONDUIT (725.05), THE INSTALLATION SHALL INCLUDE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR IN ADDITION TO THE CONDUCTORS SPECIFIED.

C. METALLIC CONDUIT CARRYING THE LOOP WIRES FROM IN THE PAVEMENT TO THE PULL BOX SPLICE LOCATION WILL ONLY BE BONDED AT THE PULL BOX END, AND WILL NOT CONTAIN AN EQUIPMENT GROUNDING CONDUCTOR.

D. IF MULTIPLE CONDUIT RUNS BEGIN AND END AT THE SAME POINTS, ONLY ONE EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED.

E. IF AN EQUIPMENT GROUNDING CONDUCTOR IS NEEDED IN CONDUIT BETWEEN SIGNALIZED INTERSECTIONS FOR UNDERGROUND INTERCONNECT CABLE, THE GROUNDING SYSTEM FOR EACH SIGNALIZED INTERSECTION WILL BE SEPARATED ABOUT MIDWAY BETWEEN THE INTERSECTIONS.

F. THE MESSENGER WIRE AT SIGNALIZED INTERSECTIONS WILL BE USED AS THE CONDUCTIVE PATH FROM CORNER TO CORNER IF CONDUIT IS NOT PROVIDED UNDER THE ROADWAY. WHEN CONDUIT CONNECTS THE CORNERS OF AN INTERSECTION, AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE USED IN THE CONDUIT.

2. CONDUITS.  
A. THE 725.04 CONDUIT SHALL HAVE GROUNDING BUSHINGS INSTALLED AT ALL TERMINATION POINTS. THE BUSHING MATERIAL SHALL BE COMPATIBLE WITH GALVANIZED STEEL CONDUIT AND THE GROUNDING LUG MATERIAL SHALL BE COMPATIBLE FOR USE WITH COPPER WIRE. THREADED OR COMPRESSION TYPE BUSHINGS MAY BE USED.

B. THE 725.05 CONDUIT SHALL HAVE THE INSIDE AND OUTSIDE DIAMETERS OF THE CONDUIT DEBURRED AT ALL TERMINATION POINTS.

C. BOTH ENDS OF METALLIC CONDUIT SHALL BE BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.

D. METALLIC CONDUIT MAY BE BONDED TO METALLIC BOXES THROUGH THE USE OF CONDUIT FITTINGS UL APPROVED FOR THIS TYPE OF CONNECTION, WITH THE BOX BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.

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 No.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/	PED SIGNAL
1/	BLACK/	GREEN BALL/	NO.1 WALK
2/	WHITE/	AC NEUTRAL/	AC NEUTRAL
3/	RED/	RED BALL/	NO.1 DW/FDW
4/	GREEN/	EQUIPMENT GROUND/	EQUIPMENT GROUND
5/	ORANGE/	YELLOW BALL/	NO.2 DW FDW
6/	BLUE/GRN	ARROW/	NO.2 WALK
7/	WHITE W/ BLK STRIPE	YELLOW ARROW/	NOT USED

6. POWER AND DISCONNECT SWITCH.  
A. AT THE POWER SERVICE LOCATION, THE GROUNDING CONDUCTOR (GROUND WIRE) FROM THE DISCONNECT SWITCH NEUTRAL (AC-) BAR TO THE GROUND ROD SHALL BE A CONTINUOUS, UNSPLICED CONDUCTOR. IF SPLICED, IT SHALL BE AN EXOTHERMIC WELD BUTT SPLICE.

B. THE SERVICE NEUTRAL (AC-) SHALL ONLY BE CONNECTED TO GROUND AT THE PRIMARY POWER SERVICE DISCONNECT SWITCH.

I. NEMA CONTROLLER CABINETS: IF A POWER SERVICE DISCONNECT SWITCH IS LOCATED BEFORE THE CONTROLLER CABINET, THE NEUTRAL (AC-) AND THE GROUNDING BARS IN THE CONTROLLER CABINET SHALL NOT BE CONNECTED TOGETHER AS SHOWN IN NEMA TS-2, FIGURE 5-4.

II. IF SECONDARY DISCONNECT SWITCHES ARE CONNECTED AFTER THE PRIMARY DISCONNECT SWITCH, THE NEUTRAL (AC-) SHALL ONLY BE GROUNDED AT THE PRIMARY SWITCH. EQUIPMENT GROUNDING CONDUCTORS SHALL BE BROUGHT TO THE PRIMARY SWITCH, BUT SHALL BE GROUNDED AT BOTH SECONDARY AND PRIMARY SWITCHES.

7. PAYMENT – ALL MATERIALS AND WORK REQUIRED TO COMPLETE THE EFFECTIVE GROUND FAULT CURRENT PATH SYSTEM ARE INCIDENTAL TO THE CONDUCTORS INSTALLED BY CONTRACT.

Add a pay item and note for the programming of the controllers with new ped or Y+AR timing.

Add notes describing the work required for the reuse of a pull box, ped head or ped button.

DESIGN AGENCY



DESIGNER

GSH

REVIEWER

SAK 08/15/24

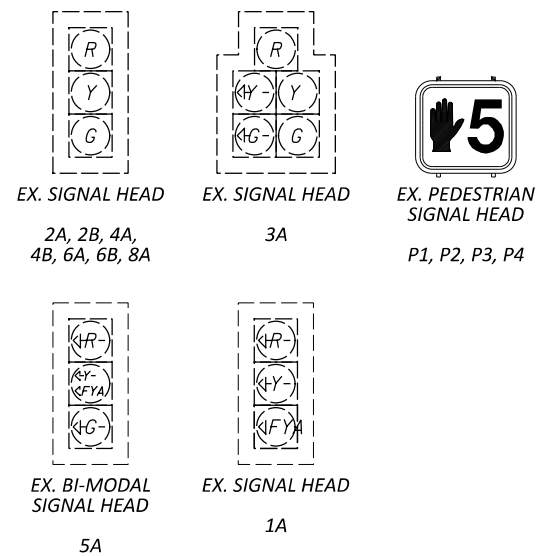
PROJECT ID

117237

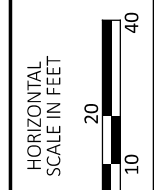
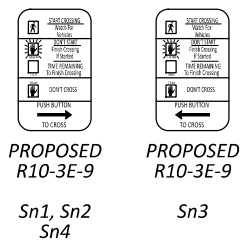
SHEET TOTAL

P.33 66

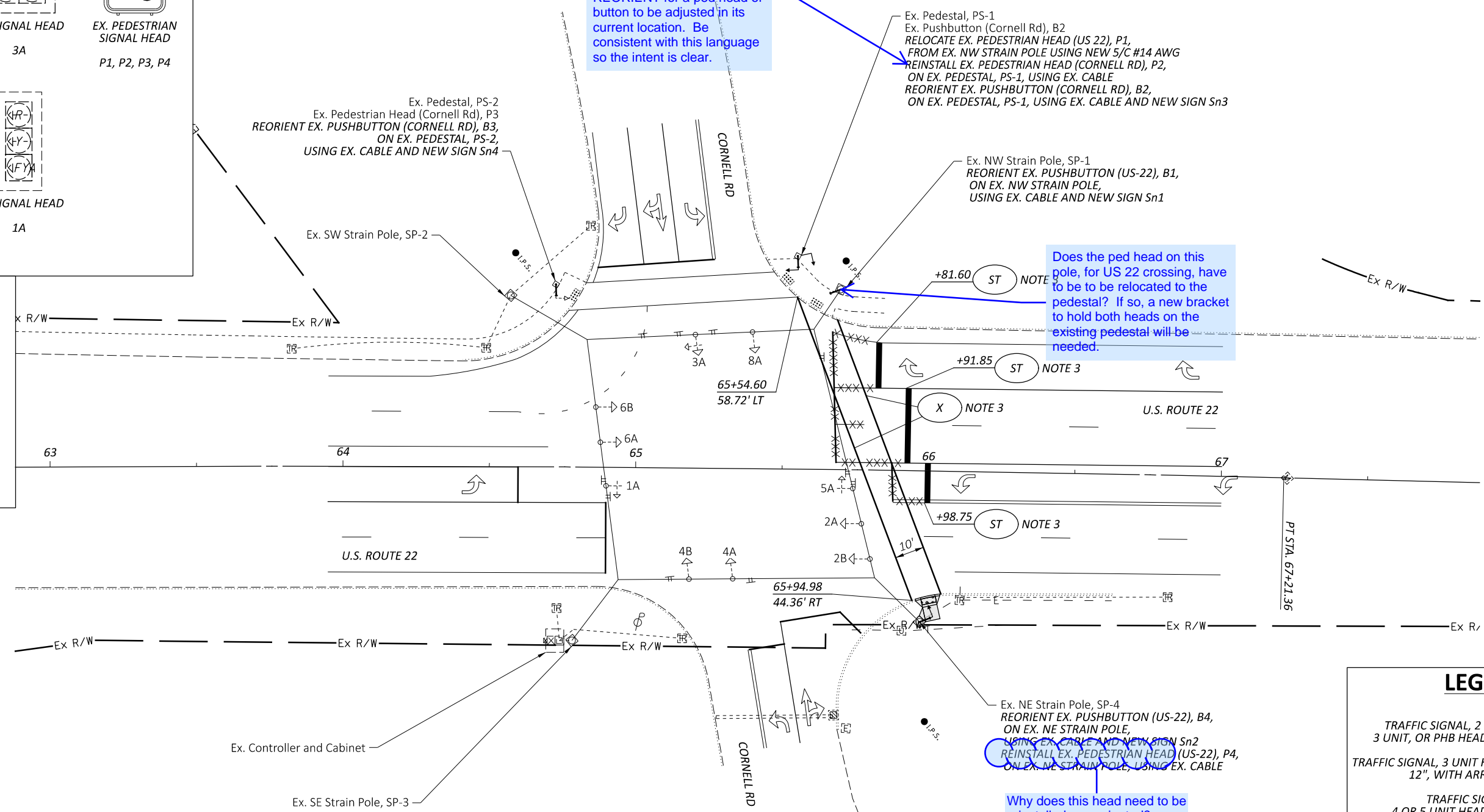
**SIGNAL HEADS**



**SIGNS**



**TRAFFIC SIGNAL PLAN  
 US 22 AT CORNELL RD**



Recommend only using the terms RELOCATE for an ped head or button that is reused elsewhere on the project. Use REORIENT for a ped head or button to be adjusted in its current location. Be consistent with this language so the intent is clear.

Does the ped head on this pole, for US 22 crossing, have to be to be relocated to the pedestal? If so, a new bracket to hold both heads on the existing pedestal will be needed.

Why does this head need to be reinstalled or reoriented?

Add plan notes to clarify the work and which pay item it is covered with:  
 Reuse of Pedestrian Pushbutton - Consists of relocating an existing pushbutton to the proposed location or reorienting the pushbutton at its existing location to the position noted in the plans.  
 Reuse of Pedestrian Signal Head - Consists of relocating an existing ped head to the proposed location or reorienting the ped head at its existing location to the position noted in the plans.

**NOTES:**  
 1. REMOVE ALL EXISTING "PUSH BUTTON FOR WALK SIGNAL" SIGNS - 4 EACH  
 2. EX. SIGNAL EQUIPMENT NOT AFFECTED BY SIGNAL WORK SHALL NOT BE DISTURBED UNLESS NOTED OTHERWISE.  
 3. CONTRACTOR SHALL REMOVE EX. PAVEMENT MARKINGS THAT CONFLICT WITH PROP. PAVEMENT MARKINGS.

LEGEND	
TRAFFIC SIGNAL, 2 UNIT, 3 UNIT, OR PHB HEAD, 12"	PR. EX.
TRAFFIC SIGNAL, 3 UNIT HEAD, 12", WITH ARROWS	
TRAFFIC SIGNAL, 4 OR 5 UNIT HEAD, 12"	
SIGNAL SUPPORT POLE	
PEDESTRIAN HEAD	
PEDESTRIAN PUSH BUTTON	
PEDESTAL SUPPORT	
CONTROLLER AND CABINET	
TRAFFIC PULL BOX	
ITEM 644 CROSSWALK MARKINGS	(X)
ITEM 644 STOP LINE	(ST)
REMOVAL OF PAVEMENT MARKING	XXXX

DESIGN AGENCY  
**CMT**  
 COLUMBIA TRAFFIC CONSULTANTS, INC.  
 1777 WASHINGTON VILLAGE DR  
 BAYVIEW, OHIO 45459  
 www.cmtinc.com

DESIGNER  
 GSH

REVIEWER  
 SAK 08/15/24

PROJECT ID  
 117237

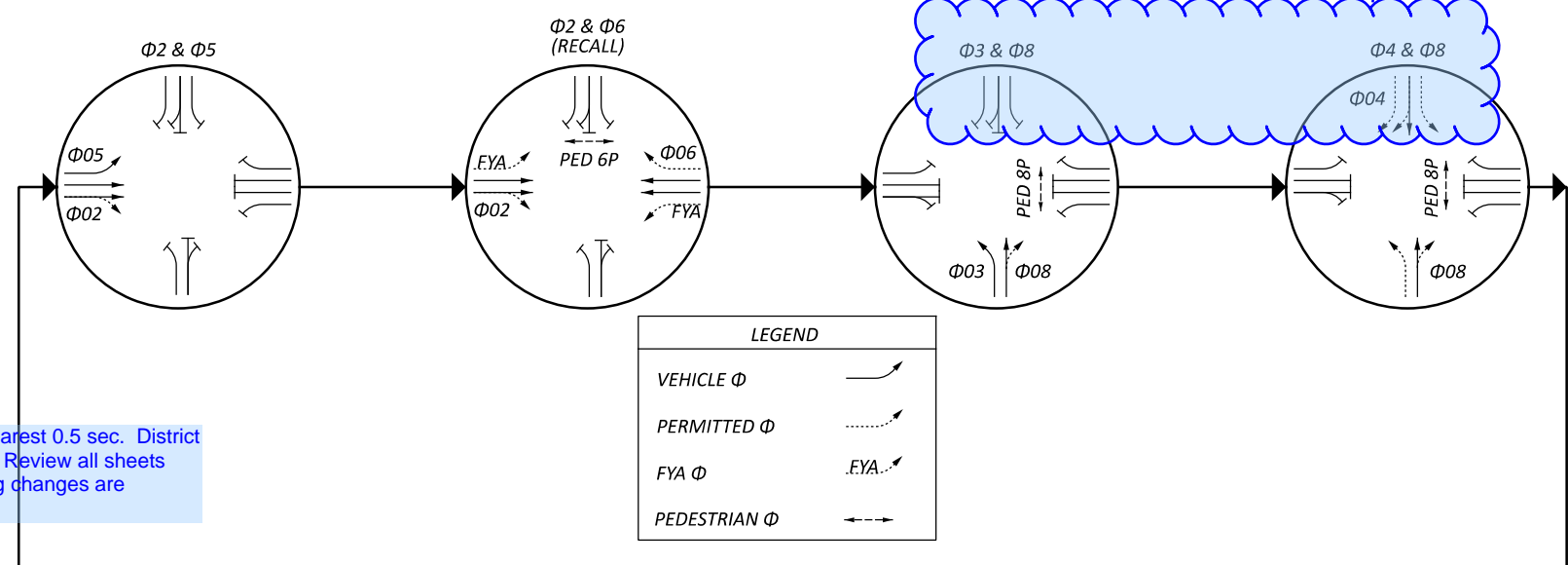
SHEET TOTAL  
 P.34 66

# SIGNAL TIMING CHART (TEM FORM 496-3)

INTERSECTION: US-22 AT CORNELL RD									
MAINTAINING AGENCY: ODOT									
START UP		DUAL ENTRY: ON		PHASES: 2, 4, 6, 8					
START IN: YELLOW/RED FLASH		REST IN RED: RING 1 - RING 2 -		OVERLAP		A	B	C	D
TIME FOR: FLASH, ALL RED (SEC.): 9, 6									
FIRST PHASE(S): 2, 6									
COLOR DISPLAYED: GREEN									
CONTROLLER MOVEMENT NO.									
INTERSECTION MOVEMENT (PHASE)	1	2	3	4	5	6	7	8	
DIRECTION	SBL	NB	WBL	EB	NBL	SB	-	WB	
MINIMUM GREEN (INITIAL) (SEC.)	-	20	7	10	7	20	-	10	
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.)	-	60	15	30	30	60	-	30	
MAXIMUM GREEN II (SEC.)	-	50	10	40	25	50	-	40	
YELLOW CHANGE (SEC.)	4.3**	4.3**	4.0	4.0	4.0	4.3**	-	4.0	
ALL RED CLEARANCE (SEC.)	3.0**	1.0**	3.0	3.0	2.0	1.0**	-	3.0	
DELAYED GREEN (LPI) (SEC.)	-	-	-	-	-	-	-	-	
FLASHING YELLOW ARROW DELAY (SEC.)	3	-	-	-	3	-	-	-	
WALK ** (SEC.)	-	-	-	-	-	7	-	8	
PEDESTRIAN CLEARANCE ** (SEC.)	-	-	-	-	-	16	-	26	
RECALL	MAXIMUM (ON/OFF)	OFF	ON	OFF	OFF	ON	-	OFF	
	MINIMUM (ON/OFF)	OFF	OFF	OFF	OFF	OFF	-	OFF	
	PEDESTRIAN ** (ON/OFF)	OFF	OFF	OFF	OFF	OFF	-	OFF	
MEMORY		OFF	ON	OFF	OFF	ON	-	OFF	

\* VOLUME DENSITY CONTROLS  
 \*\* PROPOSED TIMING PARAMETERS  
 # FOR CROSSINGS WITH PEDESTRIAN PUSHBUTTONS, LPI'S (LEADING PEDESTRIAN INTERVALS) MAY BE IMPLEMENTED (3-6 SEC.) IN ACCORDANCE WITH LPI DURATION TIME PER THE ODOT SIGNAL CALCULATIONS - CLEARANCE INTERVALS SPREADSHEET  
 ^ WHEN IMPLEMENTING FYA, A MINIMUM 3 SEC. DELAY SHALL BE PROGRAMMED PER FYA PHASE.

# PHASING DIAGRAM



Round to nearest 0.5 sec. District preference. Review all sheets where timing changes are proposed.

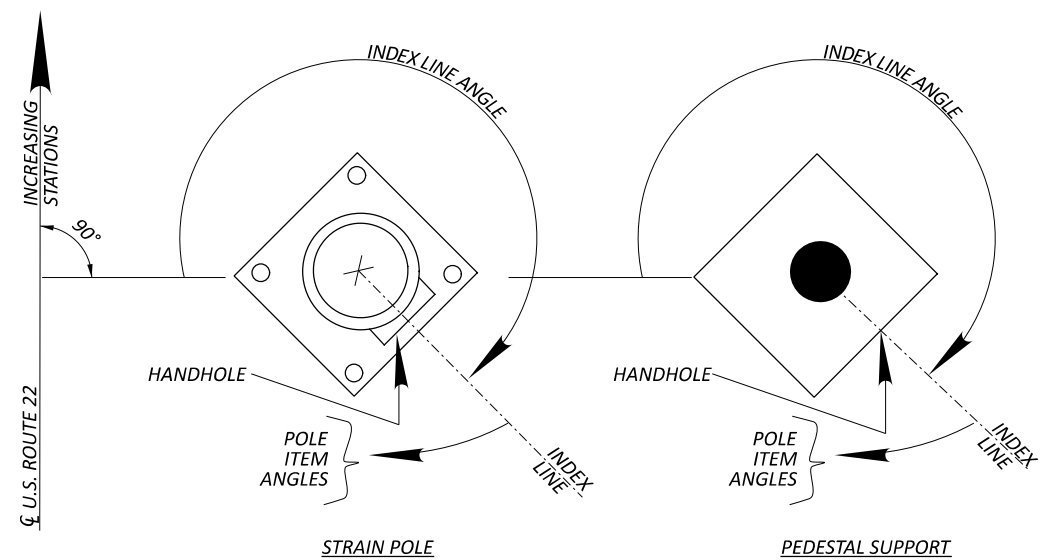
Use 2 sec minimum for AR, District preference. Review all sheets where timing changes are proposed.

### NOTES:

- ALL SIGNAL TIMING PARAMETERS EXCEPT NOTED WITH DOUBLE ASTERISKS (\*\*) AND PHASING DIAGRAM SHOWN ARE BASED ON AVAILABLE RECORD PLANS OR CONTROLLER TIMING OUTPUTS. THE CONTRACTOR SHALL RETAIN ALL EXISTING TIMING AND PHASING PARAMETERS CODED IN THE CONTROLLER AT THE TIME OF CONSTRUCTION UNLESS OTHERWISE AFFECTED BY PROPOSED TIMING.
- EXISTING VEHICLE DETECTION CONFIGURATION AND SETTINGS CODED IN THE CONTROLLER AT THE TIME OF CONSTRUCTION SHALL BE RETAINED.
- COUNTDOWN PEDESTRIAN SIGNAL HEADS SHALL GO TO ZERO ON YELLOW PER OMUTCD FIGURE 4E-2.
- ANGLES SHOWN IN THE STRAIN POLE TABLE ARE FOR REFERENCE ONLY. PEDESTRIAN SIGNAL HEADS AND PUSH BUTTONS SHALL BE INSTALLED PERPENDICULAR TO THE CORRESPONDING CROSSWALK AS SHOWN IN THE PLANS.
- INDEX LINE PASSES THROUGH THE CENTER OF THE HANDHOLE.
- TOP OF PEDESTAL FOUNDATION SHALL BE FLUSH WITH ADJACENT CURB OR SIDEWALK.

# STRAIN POLE TABLE (TEM FIGURE 498-36)

POLE NO.	STATION	OFFSET	TYPE	DESIGN NO.	POLE HEIGHT (FT.)	FOUNDATION ELEV. (SEE NOTE 6)	SPAN WIRE ATTACHED HEIGHT	INDEX LINE ANGLE (DEG.)	PEDESTAL ANGLE (DEG.)	ANGLES (DEG.) FROM INDEX LINE			
										US-22		CORNELL RD	
										PEDESTRIAN SIGNAL	PEDESTRIAN PUSH BUTTON	PEDESTRIAN SIGNAL	PEDESTRIAN PUSH BUTTON
SP-1	EXISTING		SIGNAL			EXISTING			N/A	-	40	-	-
SP-2	EXISTING		SIGNAL			EXISTING			N/A	-	-	-	-
SP-3	EXISTING		SIGNAL			EXISTING			N/A	-	-	-	-
SP-4	EXISTING		SIGNAL			EXISTING			N/A	115	115	-	-
PS-1	EXISTING		PEDESTAL	EX		DOES NOT APPLY			EX	230	-	320	320
PS-2	EXISTING		PEDESTAL	EX		DOES NOT APPLY			EX	-	-	EX	60



# POLE ORIENTATION

HAM/WAR US 22 16.04/0.00 PED

MODEL: Sheet\_SurvFt\_PAPER: 17x11 (in.) DATE: 8/15/2024 TIME: 9:34:45 PM USER: nbrickner  
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SIGNAL TIMING AND POLE DETAILS  
 US 22 AT CORNELL RD

DESIGN AGENCY  
**CMT**  
 CRAWFORD, MURPHY &  
 O'NEILL  
 1777 WASHINGTON VILLAGE DR  
 BAYVIEW, OHIO 45459  
 www.cmtinc.com

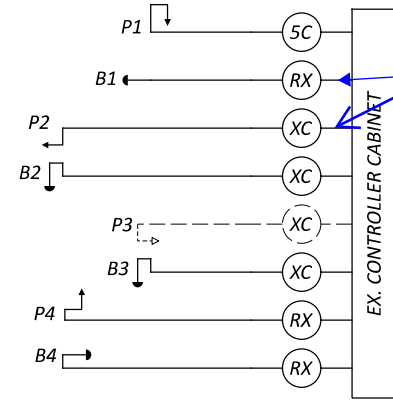
DESIGNER  
 GSH

REVIEWER  
 SAK 08/15/24

PROJECT ID  
 117237

SHEET TOTAL  
 P.35 66

**WIRING DIAGRAM**



Recommend showing existing cable to be reused (XC) (RC) as dashed. Keep the button or head as bold if it is new, or relocated or reoriented.

Call this Ph 6 ped to match with phasing diagram

Ph 8 ped

**FIELD WIRING HOOKUP CHART (TEM FORM 496-16)**

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
<b>PEDESTRIAN MOVEMENTS</b>			
PED WEST	W	Ø6 PED/ LS 6P G	OUT
	DW	Ø6 PED/ LS 6P R	
PED NORTH	W	Ø8 PED/ LS 8P G	OUT
	DW	Ø8 PED/ LS 8P R	
-	-	-	-
-	-	-	-
-	-	-	-
LS = LOAD SWITCH			

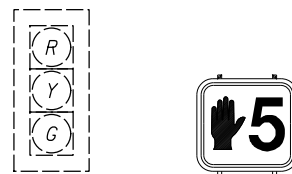
**NOTES:**

- EXISTING VEHICULAR SIGNAL CABLES, POWER CABLES, AND COMMUNICATION CABLES NOT SHOWN IN THE WIRING DIAGRAM SHALL NOT BE DISTURBED.
- FIELD WIRING HOOKUP CHART SHOWN IS FOR REFERENCE ONLY, CONTRACTOR SHALL MAINTAIN EXISTING FIELD WIRING CONNECTIONS.
- ALL OTHER EXISTING FIELD WIRING CONNECTIONS NOT SHOWN IN THE FIELD WIRING HOOKUP CHART SHALL NOT BE DISTURBED.

**LEGEND**

	EX. PEDESTRIAN SIGNAL (DND)		EX. PEDESTRIAN SIGNAL CABLE (DND)
	EX. PEDESTRIAN PUSH BUTTON (DND)		REUSED EX. PEDESTRIAN SIGNAL CABLE
	NEW, RELOCATED, OR REORIENTED PEDESTRIAN SIGNAL		NEW OR COILED SIGNAL CABLE, 2 CONDUCTOR, NO. 14 AWG
	NEW, RELOCATED, OR REORIENTED PEDESTRIAN PUSH BUTTON		NEW OR COILED SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG

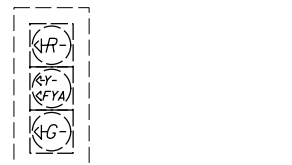
**SIGNAL HEADS**



EX. SIGNAL HEAD  
2A, 2B, 4A, 4B,  
6A, 6B, 8A, 8B

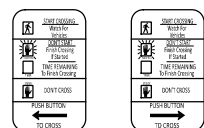


EX. PEDESTRIAN SIGNAL HEAD  
P1, P2, P3, P4,  
P5, P6, P7, P8



EX. BI-MODAL SIGNAL HEAD  
1A, 5A

**SIGNS**



PROPOSED R10-3E-9  
Sn2, Sn4, Sn6, Sn8



PROPOSED R10-3E-9  
Sn1, Sn3, Sn5, Sn7

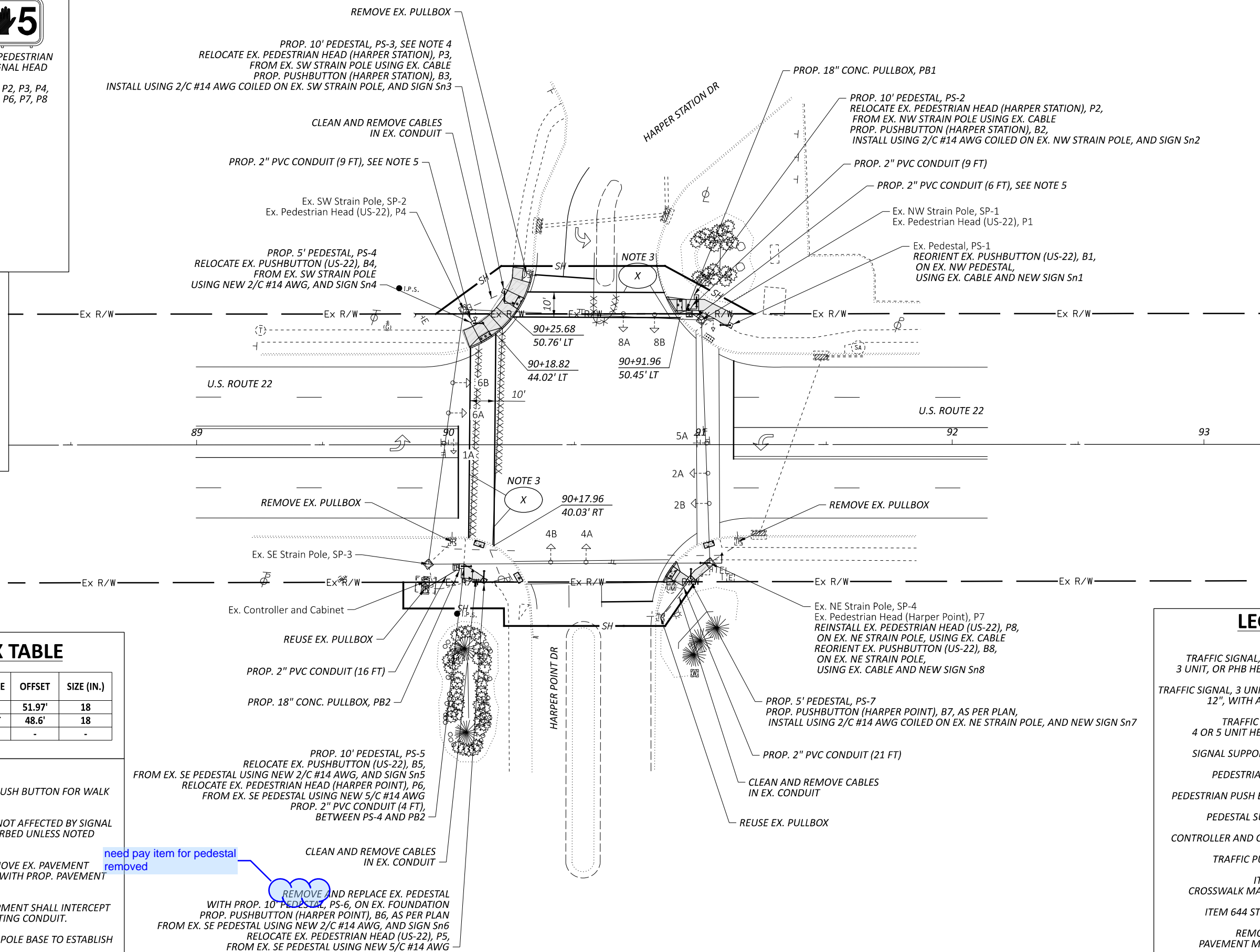
**PULLBOX TABLE**

PULL BOX #	STATION	SIDE	OFFSET	SIZE (IN.)
PB1	90+95.67	LT	51.97'	18
PB2	90+03.03	RT	48.6'	18
-	-	-	-	-

**NOTES:**

- REMOVE ALL EXISTING "PUSH BUTTON FOR WALK SIGNAL" SIGNS - 4 EACH.
- EX. SIGNAL EQUIPMENT NOT AFFECTED BY SIGNAL WORK SHALL NOT BE DISTURBED UNLESS NOTED OTHERWISE.
- CONTRACTOR SHALL REMOVE EX. PAVEMENT MARKINGS THAT CONFLICT WITH PROP. PAVEMENT MARKINGS.
- PROPOSED SIGNAL EQUIPMENT SHALL INTERCEPT AND CONNECT TO THE EXISTING CONDUIT.
- CONTRACTOR TO ACCESS POLE BASE TO ESTABLISH CONDUIT CONNECTIONS.

need pay item for pedestal removed



**LEGEND**

TRAFFIC SIGNAL, 2 UNIT, 3 UNIT, OR PHB HEAD, 12"	PR. →	EX. →
TRAFFIC SIGNAL, 3 UNIT HEAD, 12", WITH ARROWS	→	→
TRAFFIC SIGNAL, 4 OR 5 UNIT HEAD, 12"	→	→
SIGNAL SUPPORT POLE	■	■
PEDESTRIAN HEAD	↓	↓
PEDESTRIAN PUSH BUTTON	—	—
PEDESTAL SUPPORT	□	□
CONTROLLER AND CABINET	⊠	⊠
TRAFFIC PULL BOX	⊞	⊞
ITEM 644 CROSSWALK MARKINGS	(X)	(X)
ITEM 644 STOP LINE	(ST)	(ST)
REMOVAL OF PAVEMENT MARKING	XXXX	XXXX

TRAFFIC SIGNAL PLAN  
US 22 AT HARPERS POINT DR

DESIGN AGENCY  
**CMT**  
CMT INC.  
1777 WASHINGTON VILLAGE DR  
DAYTON, OHIO 45459  
www.cmtinc.com

DESIGNER  
GSH  
REVIEWER  
SAK 08/15/24  
PROJECT ID  
117237  
SHEET TOTAL  
P.37 66

# SIGNAL TIMING CHART (TEM FORM 496-3)

INTERSECTION: US-22 AT HARPERS POINT DR									
MAINTAINING AGENCY: ODOT									
START UP		DUAL ENTRY: ON		PHASES: 2, 4, 6, 8					
START IN: YELLOW/RED FLASH		REST IN RED:		RING 1		RING 2			
TIME FOR FLASH / ALL RED (SEC.): 9, 6		OVERLAP		A	B	C	D		
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		SBL	NB	-	EB	NBL	SB	-	WB
MINIMUM GREEN (INITIAL) (SEC.)		7	20	-	10	7	20	-	10
ADDED INITIAL *(SEC./ACTUATION)		-	-	-	-	-	-	-	-
MAXIMUM INITIAL *(SEC.)		-	-	-	-	-	-	-	-
PASSAGE TIME (PRESET GAP) (SEC.)		3	5	-	3	3	5	-	3
TIME BEFORE REDUCTION *(SEC.)		-	-	-	-	-	-	-	-
MINIMUM GAP *(SEC.)		-	-	-	-	-	-	-	-
TIME TO REDUCE *(SEC.)		-	-	-	-	-	-	-	-
MAXIMUM GREEN I (SEC.)		25	80	-	15	25	80	-	25
MAXIMUM GREEN II (SEC.)		25	80	-	15	25	80	-	25
YELLOW CHANGE (SEC.)		3.0 **	4.0	-	3.0	3.0 **	4.0	-	3.0
ALL RED CLEARANCE (SEC.)		2.1 **	2.0	-	3.0	2.1 **	2.0	-	3.0
DELAYED GREEN (LPI) (SEC.)		-	-	-	-	-	-	-	-
FLASHING YELLOW ARROW DELAY^ (SEC.)		3	-	-	-	3	-	-	-
WALK ** (SEC.)		-	8	-	9	-	8	-	9
PEDESTRIAN CLEARANCE ** (SEC.)		-	14	-	20	-	14	-	20
RECALL	MAXIMUM (ON/OFF)	OFF	ON	-	OFF	OFF	ON	-	OFF
	MINIMUM (ON/OFF)	OFF	OFF	-	OFF	OFF	OFF	-	OFF
	PEDESTRIAN ** (ON/OFF)	OFF	OFF	-	OFF	OFF	OFF	-	OFF
MEMORY (ON/OFF)		OFF	OFF	-	OFF	OFF	OFF	-	OFF

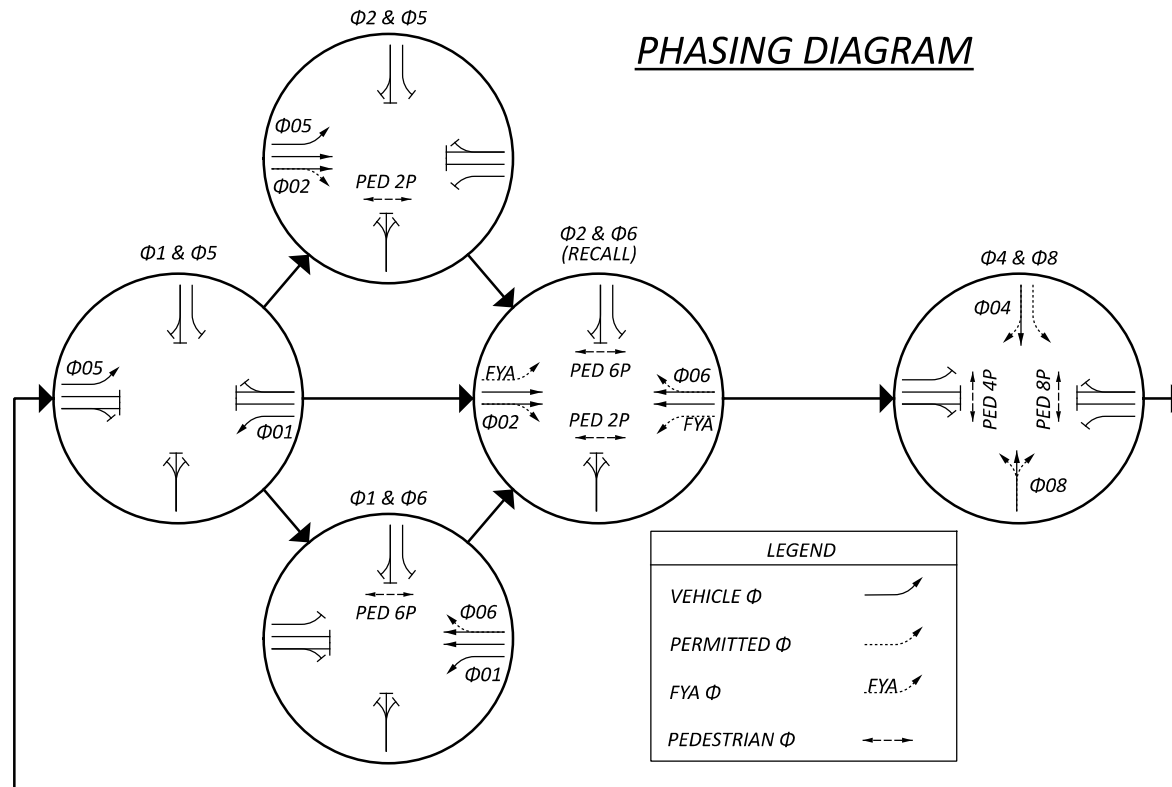
\* VOLUME DENSITY CONTROLS

\*\* PROPOSED TIMING PARAMETERS

# FOR CROSSINGS WITH PEDESTRIAN PUSHBUTTONS, LPI'S (LEADING PEDESTRIAN INTERVALS) MAY BE IMPLEMENTED (3-6 SEC.) IN ACCORDANCE WITH LPI DURATION TIME PER THE ODOT SIGNAL CALCULATIONS - CLEARANCE INTERVALS SPREADSHEET

^ WHEN IMPLEMENTING FYA, A MINIMUM 3 SEC. DELAY SHALL BE PROGRAMMED PER FYA PHASE.

# PHASING DIAGRAM

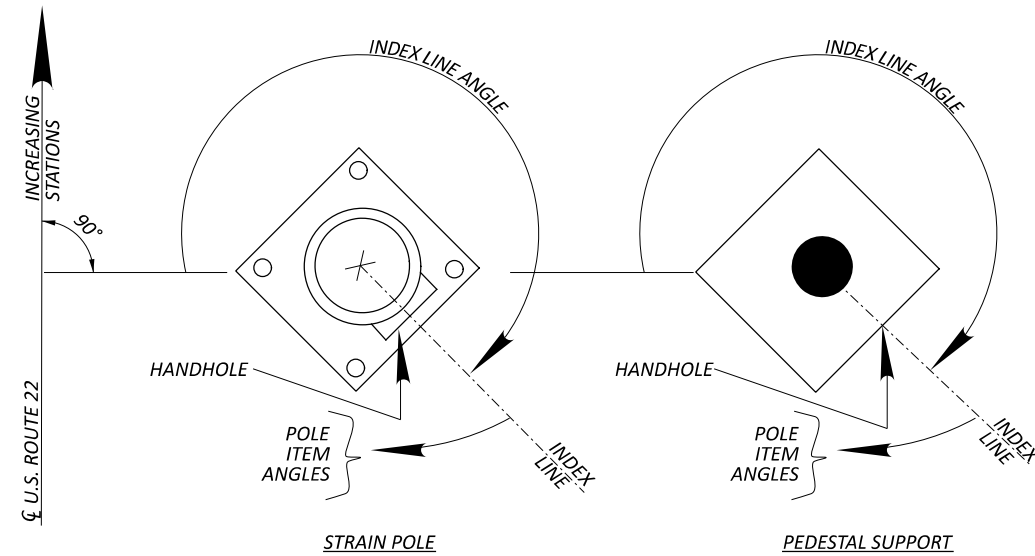


### NOTES:

- ALL SIGNAL TIMING PARAMETERS EXCEPT NOTED WITH DOUBLE ASTERISKS (\*\*) AND PHASING DIAGRAM SHOWN ARE BASED ON AVAILABLE RECORD PLANS OR CONTROLLER TIMING OUTPUTS. THE CONTRACTOR SHALL RETAIN ALL EXISTING TIMING AND PHASING PARAMETERS CODED IN THE CONTROLLER AT THE TIME OF CONSTRUCTION UNLESS OTHERWISE AFFECTED BY PROPOSED TIMING.
- EXISTING VEHICLE DETECTION CONFIGURATION AND SETTINGS CODED IN THE CONTROLLER AT THE TIME OF CONSTRUCTION SHALL BE RETAINED.
- COUNTDOWN PEDESTRIAN SIGNAL HEADS SHALL GO TO ZERO ON YELLOW PER ODOTCD FIGURE 4E-2.
- ANGLES SHOWN IN THE STRAIN POLE TABLE ARE FOR REFERENCE ONLY. PEDESTRIAN SIGNAL HEADS AND PUSH BUTTONS SHALL BE INSTALLED PERPENDICULAR TO THE CORRESPONDING CROSSWALK AS SHOWN IN THE PLANS.
- INDEX LINE PASSES THROUGH THE CENTER OF THE HANDHOLE.
- TOP OF PEDESTAL FOUNDATION SHALL BE FLUSH WITH ADJACENT CURB OR SIDEWALK.

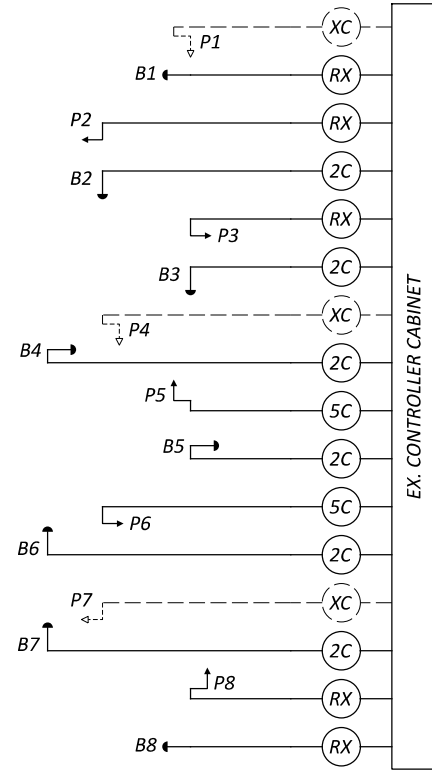
# STRAIN POLE TABLE (TEM FIGURE 498-36)

POLE NO.	STATION	OFFSET	TYPE	DESIGN NO.	POLE HEIGHT (FT.)	FOUNDATION ELEV. (SEE NOTE 6)	SPAN WIRE ATTACHED HEIGHT	INDEX LINE ANGLE (DEG.)	PEDESTAL ANGLE (DEG.)	ANGLES (DEG.) FROM INDEX LINE			
										US-22		HARPERS PT DR	
										PEDESTRIAN SIGNAL	PEDESTRIAN PUSH BUTTON	PEDESTRIAN SIGNAL	PEDESTRIAN PUSH BUTTON
SP-1	EXISTING		SIGNAL			EXISTING			N/A	EX	-	-	-
SP-2	EXISTING		SIGNAL			EXISTING			N/A	EX	270	-	-
SP-3	EXISTING		SIGNAL			EXISTING			N/A	-	-	-	-
SP-4	EXISTING		SIGNAL			EXISTING			N/A	90	270	EX	-
PS-1	EXISTING		PEDESTAL		EX	DOES NOT APPLY			EX	-	60	-	-
PS-2	90+98.52	58.62' LT	PEDESTAL		10	DOES NOT APPLY			0	-	-	0	0
PS-3	90+22.29	60.95' LT	PEDESTAL		10	DOES NOT APPLY			30	-	-	330	330
PS-4	90+10.04	48.29' LT	PEDESTAL		5	DOES NOT APPLY			330	-	300	-	-
PS-5	90+05.17	48.24' RT	PEDESTAL		10	DOES NOT APPLY			0	-	90	180	-
PS-6	90+13.94	53.96' RT	PEDESTAL		10	DOES NOT APPLY			40	230	-	-	320
PS-7	90+96.13	53.20' RT	PEDESTAL		5	DOES NOT APPLY			40	-	-	-	320



# POLE ORIENTATION

**WIRING DIAGRAM**



**NOTES:**

1. EXISTING VEHICULAR SIGNAL CABLES, POWER CABLES, AND COMMUNICATION CABLES NOT SHOWN IN THE WIRING DIAGRAM SHALL NOT BE DISTURBED.
2. FIELD WIRING HOOKUP CHART SHOWN IS FOR REFERENCE ONLY, CONTRACTOR SHALL MAINTAIN EXISTING FIELD WIRING CONNECTIONS.
3. ALL OTHER EXISTING FIELD WIRING CONNECTIONS NOT SHOWN IN THE FIELD WIRING HOOKUP CHART SHALL NOT BE DISTURBED.

**FIELD WIRING HOOKUP CHART (TEM FORM 496-16)**

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
<b>PEDESTRIAN MOVEMENTS</b>			
PED EAST	W	Ø2 PED/ LS 2P G	OUT
	DW	Ø2 PED/ LS 2P R	
PED SOUTH	W	Ø4 PED/ LS 4P G	OUT
	DW	Ø4 PED/ LS 4P R	
PED WEST	W	Ø6 PED/ LS 6P G	OUT
	DW	Ø6 PED/ LS 6P R	
PED NORTH	W	Ø8 PED/ LS 8P G	OUT
	DW	Ø8 PED/ LS 8P R	
LS = LOAD SWITCH			

**LEGEND**

	EX. PEDESTRIAN SIGNAL (DND)		EX. PEDESTRIAN SIGNAL CABLE (DND)
	EX. PEDESTRIAN PUSH BUTTON (DND)		REUSED EX. PEDESTRIAN SIGNAL CABLE
	NEW, RELOCATED, OR REORIENTED PEDESTRIAN SIGNAL		NEW OR COILED SIGNAL CABLE, 2 CONDUCTOR, NO. 14 AWG
	NEW, RELOCATED, OR REORIENTED PEDESTRIAN PUSH BUTTON		NEW OR COILED SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG

### SIGNAL HEADS



EX. SIGNAL HEAD  
2A, 2B, 4A, 4B,  
6A, 6B, 8A, 8B



EX. PEDESTRIAN SIGNAL HEAD  
P1, P2,  
P3, P4,



EX. BI-MODAL SIGNAL HEAD  
1A, 5A

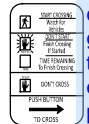


PROP. PEDESTRIAN SIGNAL HEAD  
P5, P6

### SIGNS



PROPOSED R10-3E-9  
Sn1, Sn3,  
Sn5



PROPOSED R10-3E-9  
Sn2, Sn4,  
Sn6

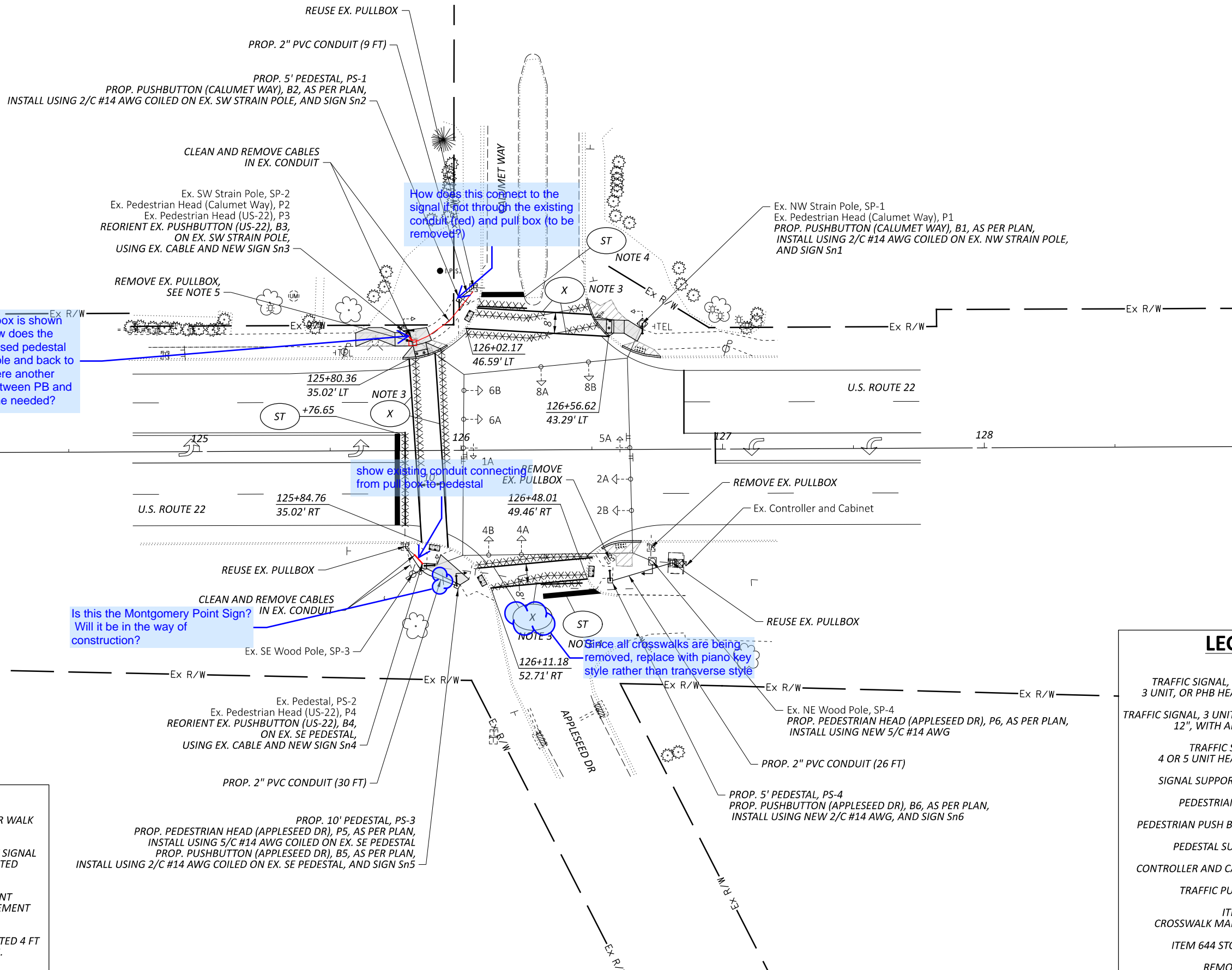
Although this pull box is shown to be removed, how does the conduit from proposed pedestal get to the signal pole and back to the cabinet? Is there another existing conduit between PB and pole or is a new one needed?

Is this the Montgomery Point Sign? Will it be in the way of construction?

How does this connect to the signal if not through the existing conduit (red) and pull box (to be removed?)

show existing conduit connecting from pull box to pedestal

Since all crosswalks are being removed, replace with piano key style rather than transverse style

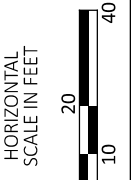


#### NOTES:

1. REMOVE ALL EXISTING "PUSH BUTTON FOR WALK SIGNAL" SIGNS - 2 EACH.
2. EX. SIGNAL EQUIPMENT NOT AFFECTED BY SIGNAL WORK SHALL NOT BE DISTURBED UNLESS NOTED OTHERWISE.
3. CONTRACTOR SHALL REMOVE EX. PAVEMENT MARKINGS THAT CONFLICT WITH PROP. PAVEMENT MARKINGS.
4. PROP. STOP LINE MARKING SHALL BE PAINTED 4 FT OFFSET OF THE PROP. CROSSWALK MARKING.
5. CONNECTION BETWEEN EXISTING CONDUITS SHALL BE RETAINED.

### LEGEND

TRAFFIC SIGNAL, 2 UNIT, 3 UNIT, OR PHB HEAD, 12"	PR. →	EX. →
TRAFFIC SIGNAL, 3 UNIT HEAD, 12", WITH ARROWS	→	→
TRAFFIC SIGNAL, 4 OR 5 UNIT HEAD, 12"	→	→
SIGNAL SUPPORT POLE	■	■
PEDESTRIAN HEAD	↓	↓
PEDESTRIAN PUSH BUTTON	—	—
PEDESTAL SUPPORT	□	□
CONTROLLER AND CABINET	⊠	⊠
TRAFFIC PULL BOX	⊞	⊞
ITEM 644 CROSSWALK MARKINGS	(X)	(X)
ITEM 644 STOP LINE	(ST)	(ST)
REMOVAL OF PAVEMENT MARKING	XXXX	XXXX



## TRAFFIC SIGNAL PLAN US 22 AT APPEESED DR/CALUMET WAY

DESIGN AGENCY  
**CMT**  
COLUMBIAN ENGINEERING & CONSTRUCTION  
1777 WASHINGTON VILLAGE DR  
DAYTON, OHIO 45459  
www.cmtinc.com

DESIGNER  
GSH

REVIEWER  
SAK 08/15/24

PROJECT ID  
117237

SHEET TOTAL  
P.40 66



# SIGNAL TIMING CHART (TEM FORM 496-3)

INTERSECTION: US-22 AT CALUMET WAY		MAINTAINING AGENCY: ODOT						
START UP	DUAL ENTRY: ON	PHASES: 2, 4, 6, 8						
	REST IN RED: RING 1 - RING 2 -							
START IN: YELLOW/RED FLASH	9, 6							
TIME FOR FLASH / ALL RED (SEC.):	2, 6							
FIRST PHASE(S):	GREEN							
COLOR DISPLAYED:								
INTERVAL OR FEATURE	CONTROLLER MOVEMENT NO.							
INTERSECTION MOVEMENT (PHASE)	1	2	3	4	5	6	7	8
DIRECTION	SBL	NB	EB	NBL	SB	WB		
MINIMUM GREEN (INITIAL) (SEC.)	7	20	10	7	20	10		
ADDED INITIAL *(SEC./ACTUATION)	-	-	-	-	-	-	-	-
MAXIMUM INITIAL *(SEC.)	-	-	-	-	-	-	-	-
PASSAGE TIME (PRESET GAP) (SEC.)	3	4	3	3	4	3		
TIME BEFORE REDUCTION *(SEC.)	-	-	-	-	-	-	-	-
MINIMUM GAP *(SEC.)	-	-	-	-	-	-	-	-
TIME TO REDUCE *(SEC.)	-	-	-	-	-	-	-	-
MAXIMUM GREEN I (SEC.)	25	75	35	25	75	35		
MAXIMUM GREEN II (SEC.)	25	75	35	25	75	35		
YELLOW CHANGE ** (SEC.)	3.0	4.5	1.5	3.0	4.5	1.5		
ALL RED CLEARANCE ** (SEC.)	2.2	2.0	1.6	2.2	2.0	1.6		
DELAYED GREEN (LPI) ^ (SEC.)	-	-	-	-	-	-		
FLASHING YELLOW ARROW DELAY ^ (SEC.)	3	-	-	3	-	-		
WALK ** (SEC.)	-	8	8	8	-	-		
PEDESTRIAN CLEARANCE ** (SEC.)	-	10	18	10	-	-		
RECALL	MAXIMUM (ON/OFF)	OFF	ON	OFF	OFF	ON	OFF	OFF
	MINIMUM (ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	OFF
	PEDESTRIAN ** (ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	OFF
MEMORY (ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

Round to nearest 0.5 sec

2 sec min. Round to nearest 0.5 sec

\* VOLUME DENSITY CONTROL

\*\* PROPOSED TIMING PARAMETERS

# FOR CROSSINGS WITH PEDESTRIAN PUSHBUTTONS, LPI'S (LEADING PEDESTRIAN INTERVALS) MAY BE IMPLEMENTED (3-6 SEC.) IN ACCORDANCE WITH LPI DURATION TIME PER THE ODOT SIGNAL CALCULATIONS - CLEARANCE INTERVALS SPREADSHEET

^ WHEN IMPLEMENTING FYA, A MINIMUM 3 SEC. DELAY SHALL BE PROGRAMMED PER FYA PHASE.

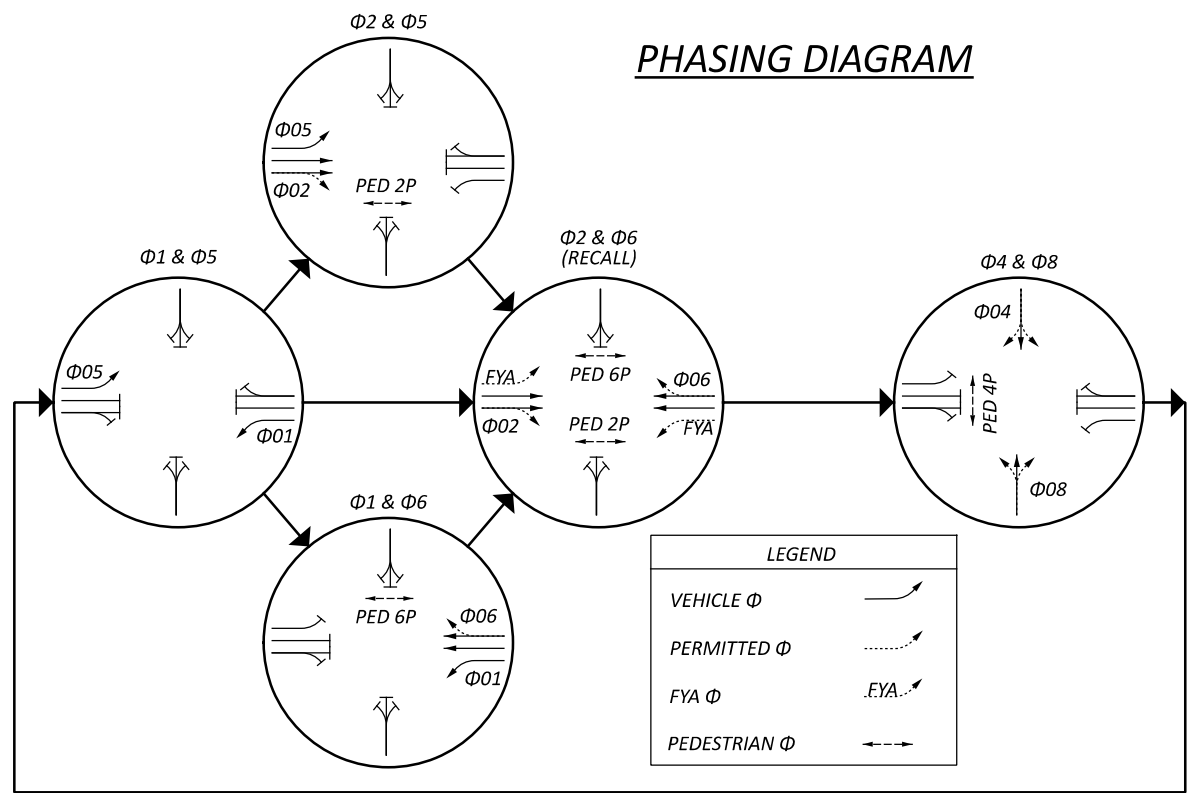
GENERAL COMMENT: It may be easier to discern the proposed work if all existing times to remain are stated as EX (rather than a number) or use a fine linetype. Make the proposed changes stand out in BOLD.

## STRAIN POLE TABLE (TEM FIGURE 498-36)

POLE NO.	STATION	OFFSET	TYPE	DESIGN NO.	POLE HEIGHT (FT.)	FOUNDATION ELEV. (SEE NOTE 6)	SPAN WIRE ATTACHED HEIGHT	INDEX LINE ANGLE (DEG.)	PEDESTAL ANGLE (DEG.)	ANGLES (DEG.) FROM INDEX LINE			
										US-22		CALUMET WAY	
										PEDESTRIAN SIGNAL	PEDESTRIAN PUSH BUTTON	PEDESTRIAN SIGNAL	PEDESTRIAN PUSH BUTTON
SP-1	EXISTING		SIGNAL		EXISTING			N/A	-	-	EX	340	
SP-2	EXISTING		SIGNAL		EXISTING			N/A	EX	320	EX	-	
SP-3	EXISTING		SIGNAL		EXISTING			N/A	-	-	-	-	
SP-4	EXISTING		SIGNAL		EXISTING			N/A	-	-	250	-	
PS-1	125+99.56	57.57' LT	PEDESTAL		5		DOES NOT APPLY	30	-	-	-	330	
PS-2	EXISTING		PEDESTAL		EX		DOES NOT APPLY	EX	EX	90	-	-	
PS-3	125+97.75	50.62' RT	PEDESTAL		10		DOES NOT APPLY	30	-	-	330	330	
PS-4	126+56.78	50.08' RT	PEDESTAL		5		DOES NOT APPLY	0	-	-	-	0	

Review angles in Orange cloud on all sheets. I had a hard time verifying these angles.

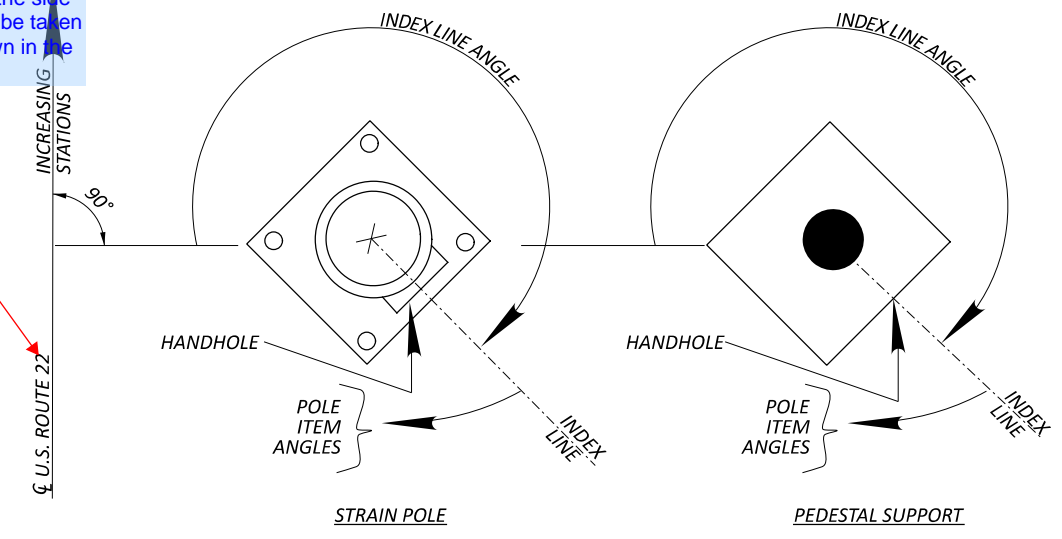
## PHASING DIAGRAM



### NOTES:

1. ALL SIGNAL TIMING PARAMETERS EXCEPT NOTED WITH DOUBLE ASTERISKS (\*\*) AND PHASING DIAGRAM SHOWN ARE BASED ON AVAILABLE RECORD PLANS OR CONTROLLER TIMING OUTPUTS. THE CONTRACTOR SHALL RETAIN ALL EXISTING TIMING AND PHASING PARAMETERS CODED IN THE CONTROLLER AT THE TIME OF CONSTRUCTION UNLESS OTHERWISE AFFECTED BY PROPOSED TIMING.
2. EXISTING VEHICLE DETECTION CONFIGURATION AND SETTINGS CODED IN THE CONTROLLER AT THE TIME OF CONSTRUCTION SHALL BE RETAINED.
3. COUNTDOWN PEDESTRIAN SIGNAL HEADS SHALL GO TO ZERO ON YELLOW PER ODOTCD FIGURE 4E-2.
4. ANGLES SHOWN IN THE STRAIN POLE TABLE ARE FOR REFERENCE ONLY. PEDESTRIAN SIGNAL HEADS AND PUSH BUTTONS SHALL BE INSTALLED PERPENDICULAR TO THE CORRESPONDING CROSSWALK AS SHOWN IN THE PLANS.
5. INDEX LINE PASSES THROUGH THE CENTER OF THE HANDHOLE.
6. TOP OF PEDESTAL FOUNDATION SHALL BE FLUSH WITH ADJACENT CURB OR SIDEWALK.

GENERAL COMMENT: There is no centerlines shown for the side streets, so angles should be taken from US 22 (as also shown in the diagram).



## POLE ORIENTATION

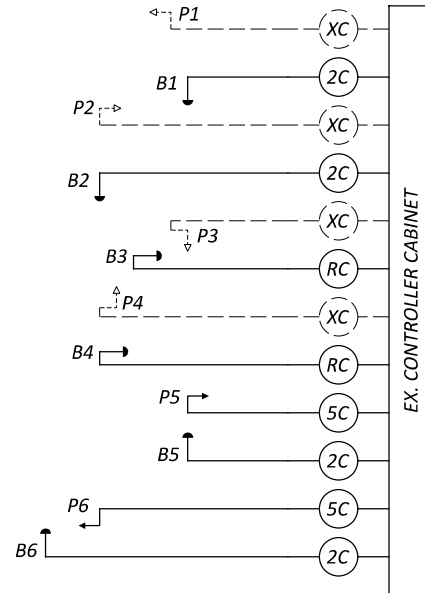
HAM/WAR US 22 16.04/0.00 PED

MODEL: Sheet\_SurvFt\_PAPER SIZE: 17x11 (in.) DATE: 8/15/2024 TIME: 9:34:56 PM USER: nbrickner L:\ODOT\20068303-00\_VAR-STW\_SafetyDesign\2020-6\08\_HAM-22\117237\400-Engineering\Signals\Sheets\117237\_CD104.dgn

SIGNAL TIMING AND POLE DETAILS  
US 22 AT APPESEED DR/CALUMET WAY

DESIGN AGENCY	CMT
DESIGNER	GSH
REVIEWER	SAK
PROJECT ID	117237
SHEET TOTAL	P.41 66

**WIRING DIAGRAM**



**NOTES:**

1. EXISTING VEHICULAR SIGNAL CABLES, POWER CABLES, AND COMMUNICATION CABLES NOT SHOWN IN THE WIRING DIAGRAM SHALL NOT BE DISTURBED.
2. FIELD WIRING HOOKUP CHART SHOWN IS FOR REFERENCE ONLY, CONTRACTOR SHALL MAINTAIN EXISTING FIELD WIRING CONNECTIONS.
3. ALL OTHER EXISTING FIELD WIRING CONNECTIONS NOT SHOWN IN THE FIELD WIRING HOOKUP CHART SHALL NOT BE DISTURBED.

**FIELD WIRING HOOKUP CHART (TEM FORM 496-16)**

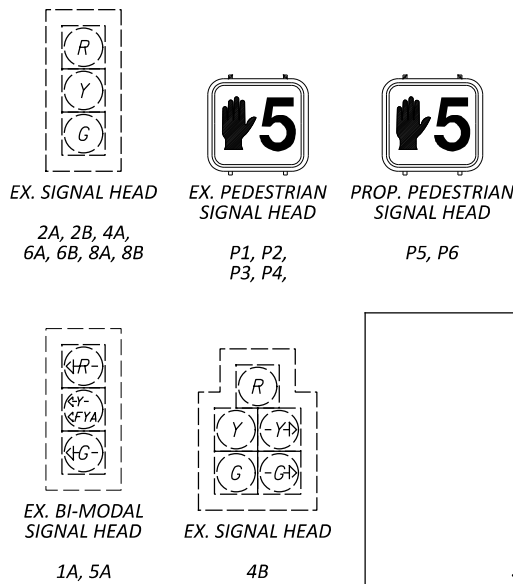
SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
PEDESTRIAN MOVEMENTS			
PED EAST	W	Φ2 PED/ LS 2P G	OUT
PED EAST	DW	Φ2 PED/ LS 2P R	
PED SOUTH	W	Φ4 PED/ LS 4P G	OUT
PED SOUTH	DW	Φ4 PED/ LS 4P R	
PED WEST	W	Φ6 PED/ LS 6P G	OUT
PED WEST	DW	Φ6 PED/ LS 6P R	
LS = LOAD SWITCH			

Match phasing diagram (Ph 2 ped, ph 4 ped, ph 6 ped)

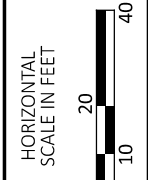
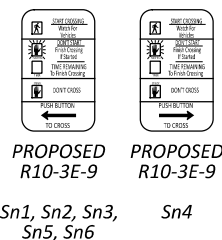
**LEGEND**

	EX. PEDESTRIAN SIGNAL (DND)		EX. PEDESTRIAN SIGNAL CABLE (DND)
	EX. PEDESTRIAN PUSH BUTTON (DND)		REUSED EX. PEDESTRIAN SIGNAL CABLE
	NEW, RELOCATED, OR REORIENTED PEDESTRIAN SIGNAL		NEW OR COILED SIGNAL CABLE, 2 CONDUCTOR, NO. 14 AWG
	NEW, RELOCATED, OR REORIENTED PEDESTRIAN PUSH BUTTON		NEW OR COILED SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG

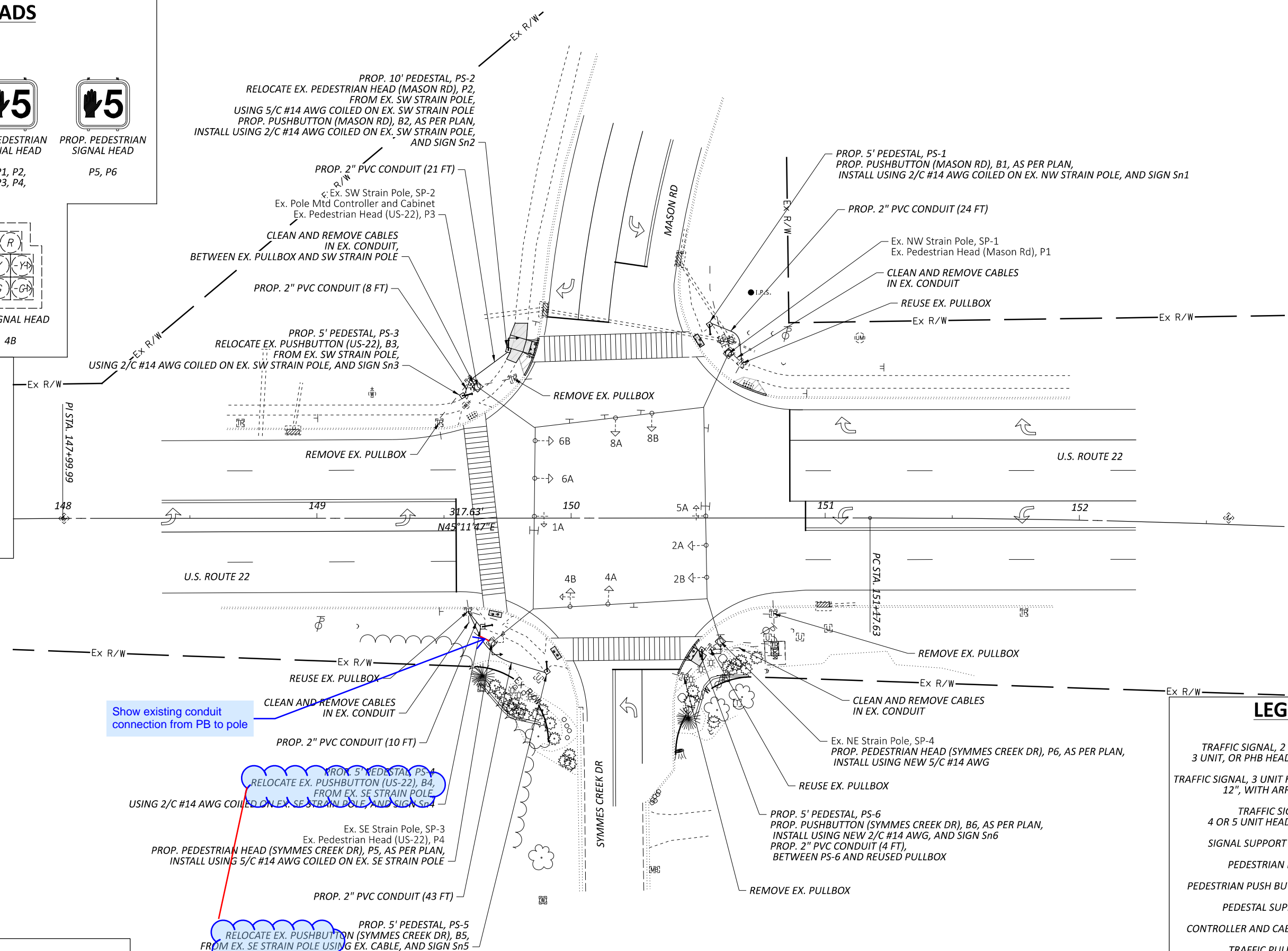
**SIGNAL HEADS**



**SIGNS**



**TRAFFIC SIGNAL PLAN  
 US 22 AT MASON RD/SYMMES CREEK DR**



Show existing conduit connection from PB to pole

FROM 5' PEDESTAL, PS-4 RELOCATE EX. PUSHBUTTON (US-22), B4, FROM EX. SE STRAIN POLE USING 2/C #14 AWG COILED ON EX. SE STRAIN POLE, AND SIGN Sn4

PROP. 5' PEDESTAL, PS-5 RELOCATE EX. PUSHBUTTON (SYMMES CREEK DR), B5, FROM EX. SE STRAIN POLE USING EX. CABLE, AND SIGN Sn5

There is only one existing button on SE strain pole. Can only be relocated once. A new button is needed on one of these installations

- NOTES:**
1. REMOVE ALL EXISTING "PUSH BUTTON FOR WALK SIGNAL" SIGNS - 2 EACH.
  2. EX. SIGNAL EQUIPMENT NOT AFFECTED BY SIGNAL WORK SHALL NOT BE DISTURBED UNLESS NOTED OTHERWISE.

LEGEND	
TRAFFIC SIGNAL, 2 UNIT, 3 UNIT, OR PHB HEAD, 12"	PR. → EX. ○→
TRAFFIC SIGNAL, 3 UNIT HEAD, 12", WITH ARROWS	→ ○→
TRAFFIC SIGNAL, 4 OR 5 UNIT HEAD, 12"	→ ○→
SIGNAL SUPPORT POLE	□
PEDESTRIAN HEAD	↓ ↑
PEDESTRIAN PUSH BUTTON	—
PEDESTAL SUPPORT	□
CONTROLLER AND CABINET	☒
TRAFFIC PULL BOX	☒
ITEM 644 CROSSWALK MARKINGS	(X)
ITEM 644 STOP LINE	(ST)
REMOVAL OF PAVEMENT MARKING	XXXX

DESIGN AGENCY  
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DESIGNER  
 GSH

REVIEWER  
 SAK 08/15/24

PROJECT ID  
 117237

SHEET TOTAL  
 P.43 66

# SIGNAL TIMING CHART (TEM FORM 496-3)

INTERSECTION: US-22 AT MASON RD									
MAINTAINING AGENCY: ODOT									
START UP	DUAL ENTRY: ON		PHASES: 2, 4, 6, 8						
	REST IN RED:		RING 1 -		RING 2 -				
START IN:	YELLOW/RED FLASH								
TIME FOR FLASH / ALL RED (SEC.):	9, 6								
FIRST PHASE(S):	2, 6								
COLOR DISPLAYED:	GREEN								
OVERLAP			A	B	C	D			
PHASES			5	-	-	-			
INTERVAL OR FEATURE	CONTROLLER MOVEMENT NO.								
INTERSECTION MOVEMENT (PHASE)	1	2	3	4	5	6	7	8	
DIRECTION	SBL	NB	-	EB	NBL	SB	-	WB	
MINIMUM GREEN (INITIAL) (SEC.)	7	20	-	10	7	20	-	10	
ADDED INITIAL *(SEC./ACTUATION)	-	-	-	-	-	-	-	-	
MAXIMUM INITIAL *(SEC.)	-	-	-	-	-	-	-	-	
PASSAGE TIME (PRESET GAP) (SEC.)	4	5	-	5	4	5	-	5	
TIME BEFORE REDUCTION *(SEC.)	-	-	-	-	-	-	-	-	
MINIMUM GAP *(SEC.)	-	-	-	-	-	-	-	-	
TIME TO REDUCE *(SEC.)	-	-	-	-	-	-	-	-	
MAXIMUM GREEN I (SEC.)	25	70	-	30	25	70	-	30	
MAXIMUM GREEN II (SEC.)	25	70	-	30	25	70	-	30	
YELLOW CHANGE (SEC.)	4.0	4.5	-	4.5	4.0	4.5	-	4.5	
ALL RED CLEARANCE (SEC.)	2.0	2.0	-	2.0	3.0	2.0	-	2.0	
DELAYED GREEN (LPI) (SEC.)	-	-	-	-	-	-	-	-	
FLASHING YELLOW ARROW DELAY (SEC.)	3	-	-	-	3	-	-	-	
WALK ** (SEC.)	-	7	-	7	-	7	-	-	
PEDESTRIAN CLEARANCE ** (SEC.)	-	14	-	18	-	14	-	-	
RECALL	MAXIMUM (ON/OFF)	OFF	ON	-	OFF	OFF	ON	-	OFF
	MINIMUM (ON/OFF)	OFF	OFF	-	OFF	OFF	OFF	-	OFF
	PEDESTRIAN ** (ON/OFF)	OFF	OFF	-	OFF	OFF	OFF	-	OFF
MEMORY (ON/OFF)	OFF	OFF	-	OFF	OFF	OFF	-	OFF	

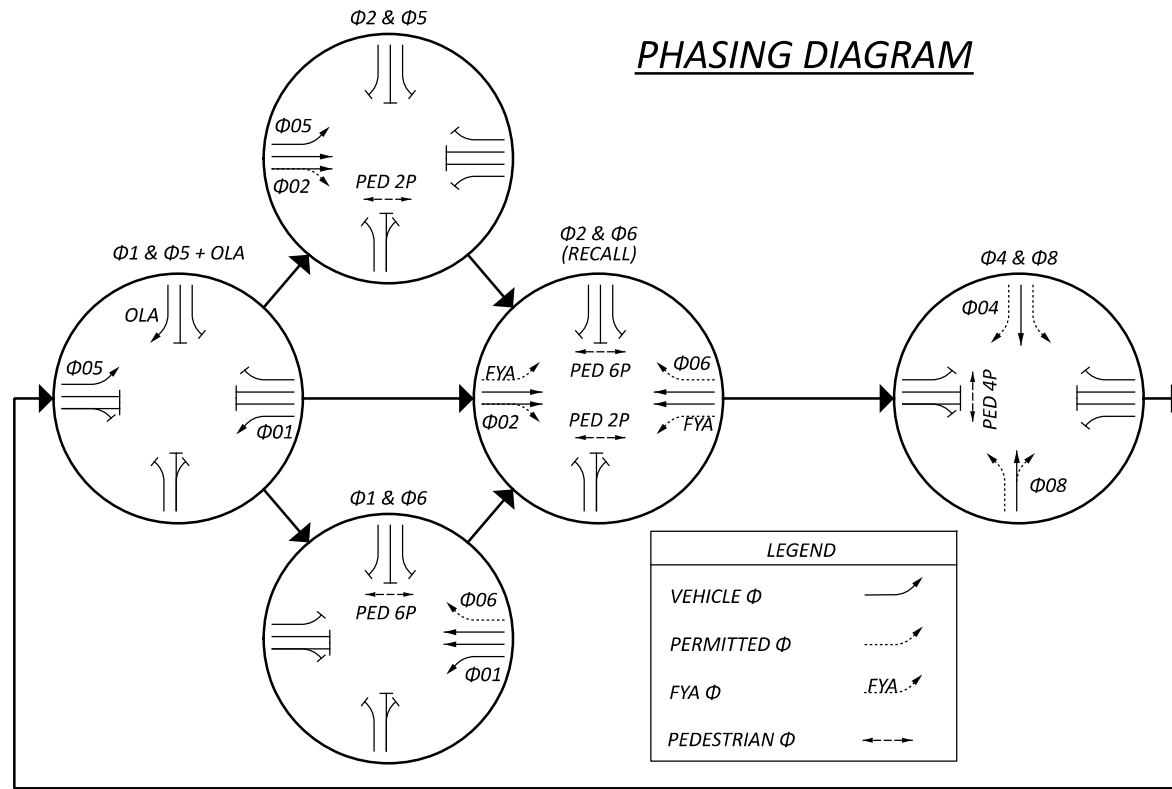
\* VOLUME DENSITY CONTROLS

\*\* PROPOSED TIMING PARAMETERS

# FOR CROSSINGS WITH PEDESTRIAN PUSHBUTTONS, LPI'S (LEADING PEDESTRIAN INTERVALS) MAY BE IMPLEMENTED (3-6 SEC.) IN ACCORDANCE WITH LPI DURATION TIME PER THE ODOT SIGNAL CALCULATIONS - CLEARANCE INTERVALS SPREADSHEET

^ WHEN IMPLEMENTING FYA, A MINIMUM 3 SEC. DELAY SHALL BE PROGRAMMED PER FYA PHASE.

# PHASING DIAGRAM

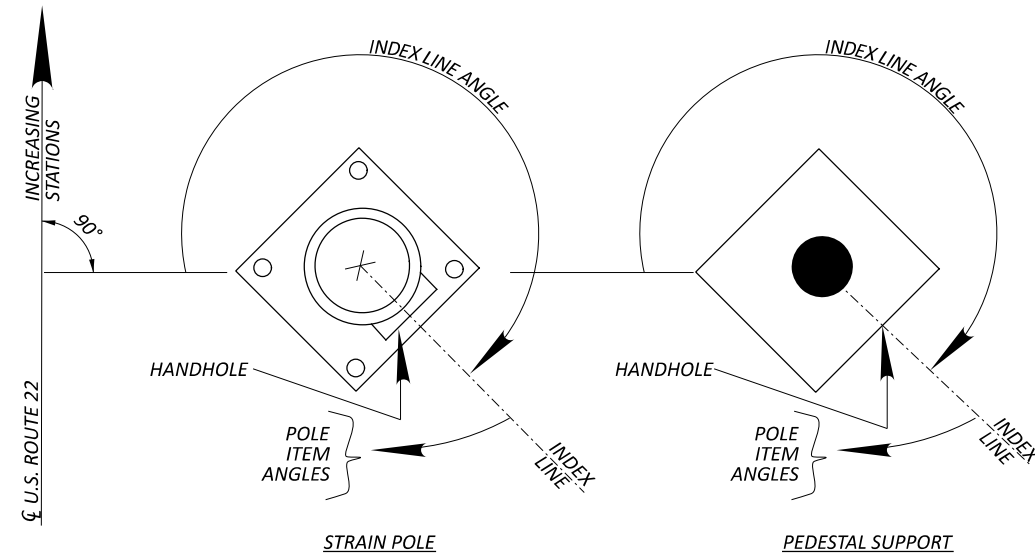


NOTES:

1. ALL SIGNAL TIMING PARAMETERS EXCEPT NOTED WITH DOUBLE ASTERISKS (\*\*) AND PHASING DIAGRAM SHOWN ARE BASED ON AVAILABLE RECORD PLANS OR CONTROLLER TIMING OUTPUTS. THE CONTRACTOR SHALL RETAIN ALL EXISTING TIMING AND PHASING PARAMETERS CODED IN THE CONTROLLER AT THE TIME OF CONSTRUCTION UNLESS OTHERWISE AFFECTED BY PROPOSED TIMING.
2. EXISTING VEHICLE DETECTION CONFIGURATION AND SETTINGS CODED IN THE CONTROLLER AT THE TIME OF CONSTRUCTION SHALL BE RETAINED.
3. COUNTDOWN PEDESTRIAN SIGNAL HEADS SHALL GO TO ZERO ON YELLOW PER ODOTCD FIGURE 4E-2.
4. ANGLES SHOWN IN THE STRAIN POLE TABLE ARE FOR REFERENCE ONLY. PEDESTRIAN SIGNAL HEADS AND PUSH BUTTONS SHALL BE INSTALLED PERPENDICULAR TO THE CORRESPONDING CROSSWALK AS SHOWN IN THE PLANS.
5. INDEX LINE PASSES THROUGH THE CENTER OF THE HANDHOLE.
6. TOP OF PEDESTAL FOUNDATION SHALL BE FLUSH WITH ADJACENT CURB OR SIDEWALK.

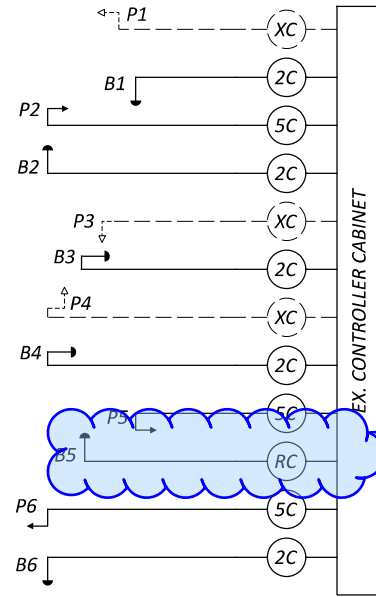
# STRAIN POLE TABLE (TEM FIGURE 498-36)

POLE NO.	STATION	OFFSET	TYPE	DESIGN NO.	POLE HEIGHT (FT.)	FOUNDATION ELEV. (SEE NOTE 6)	SPAN WIRE ATTACHED HEIGHT	INDEX LINE ANGLE (DEG.)	PEDESTAL ANGLE (DEG.)	ANGLES (DEG.) FROM INDEX LINE			
										US-22		MASON RD	
										CONTROLLER AND CABINET	PEDESTRIAN SIGNAL	PEDESTRIAN PUSH BUTTON	PEDESTRIAN SIGNAL
SP-1	EXISTING	SIGNAL		EXISTING	N/A	-	-	-	-	-	-	-	-
SP-2	EXISTING	SIGNAL		EXISTING	N/A	EX	EX	-	-	-	-	-	-
SP-3	EXISTING	SIGNAL		EXISTING	N/A	-	EX	-	130	-	-	-	-
SP-4	EXISTING	SIGNAL		EXISTING	N/A	-	-	-	200	-	-	-	-
PS-1	150+54.52	76.10' LT	PEDESTAL	5	DOES NOT APPLY	330	-	-	-	-	0	-	-
PS-2	149+75.35	66.17' LT	PEDESTAL	10	DOES NOT APPLY	20	-	-	-	160	160	-	-
PS-3	149+57.35	48.18' LT	PEDESTAL	5	DOES NOT APPLY	330	-	-	260	-	-	-	-
PS-4	149+65.21	42.73' RT	PEDESTAL	5	DOES NOT APPLY	0	-	-	80	-	-	-	-
PS-5	149+90.56	60.29' RT	PEDESTAL	5	DOES NOT APPLY	330	-	-	-	-	350	-	-
PS-6	150+51.42	51.82' RT	PEDESTAL	5	DOES NOT APPLY	30	-	-	-	-	180	-	-



# POLE ORIENTATION

**WIRING DIAGRAM**



Confirm wiring of B4 and B5

NOTES:

1. EXISTING VEHICULAR SIGNAL CABLES, POWER CABLES, AND COMMUNICATION CABLES NOT SHOWN IN THE WIRING DIAGRAM SHALL NOT BE DISTURBED.
2. FIELD WIRING HOOKUP CHART SHOWN IS FOR REFERENCE ONLY, CONTRACTOR SHALL MAINTAIN EXISTING FIELD WIRING CONNECTIONS.
3. ALL OTHER EXISTING FIELD WIRING CONNECTIONS NOT SHOWN IN THE FIELD WIRING HOOKUP CHART SHALL NOT BE DISTURBED.

**FIELD WIRING HOOKUP CHART (TEM FORM 496-16)**

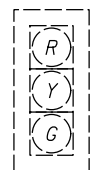
SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
PEDESTRIAN MOVEMENTS			
PED EAST	W	Φ2 PED/ LS 2P G	OUT
PED EAST	DW	Φ2 PED/ LS 2P R	
PED SOUTH	W	Φ4 PED/ LS 4P G	OUT
PED SOUTH	DW	Φ4 PED/ LS 4P R	
PED WEST	W	Φ6 PED/ LS 6P G	OUT
PED WEST	DW	Φ6 PED/ LS 6P R	
LS = LOAD SWITCH			

Rename to match phasing diagram

**LEGEND**

	EX. PEDESTRIAN SIGNAL (DND)		EX. PEDESTRIAN SIGNAL CABLE (DND)
	EX. PEDESTRIAN PUSH BUTTON (DND)		REUSED EX. PEDESTRIAN SIGNAL CABLE
	NEW, RELOCATED, OR REORIENTED PEDESTRIAN SIGNAL		NEW OR COILED SIGNAL CABLE, 2 CONDUCTOR, NO. 14 AWG
	NEW, RELOCATED, OR REORIENTED PEDESTRIAN PUSH BUTTON		NEW OR COILED SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG

**SIGNAL HEADS**



EX. SIGNAL HEAD  
2A, 2B, 4A, 4B  
6A, 6B, 8A, 8B



EX. PEDESTRIAN SIGNAL HEAD  
P1, P2, P3, P6

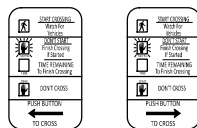


EX. BI-MODAL SIGNAL HEAD  
1A, 5A



PROP. PEDESTRIAN SIGNAL HEAD  
P4, P5

**SIGNS**



PROPOSED R10-3E-9  
Sn2, Sn4, Sn6

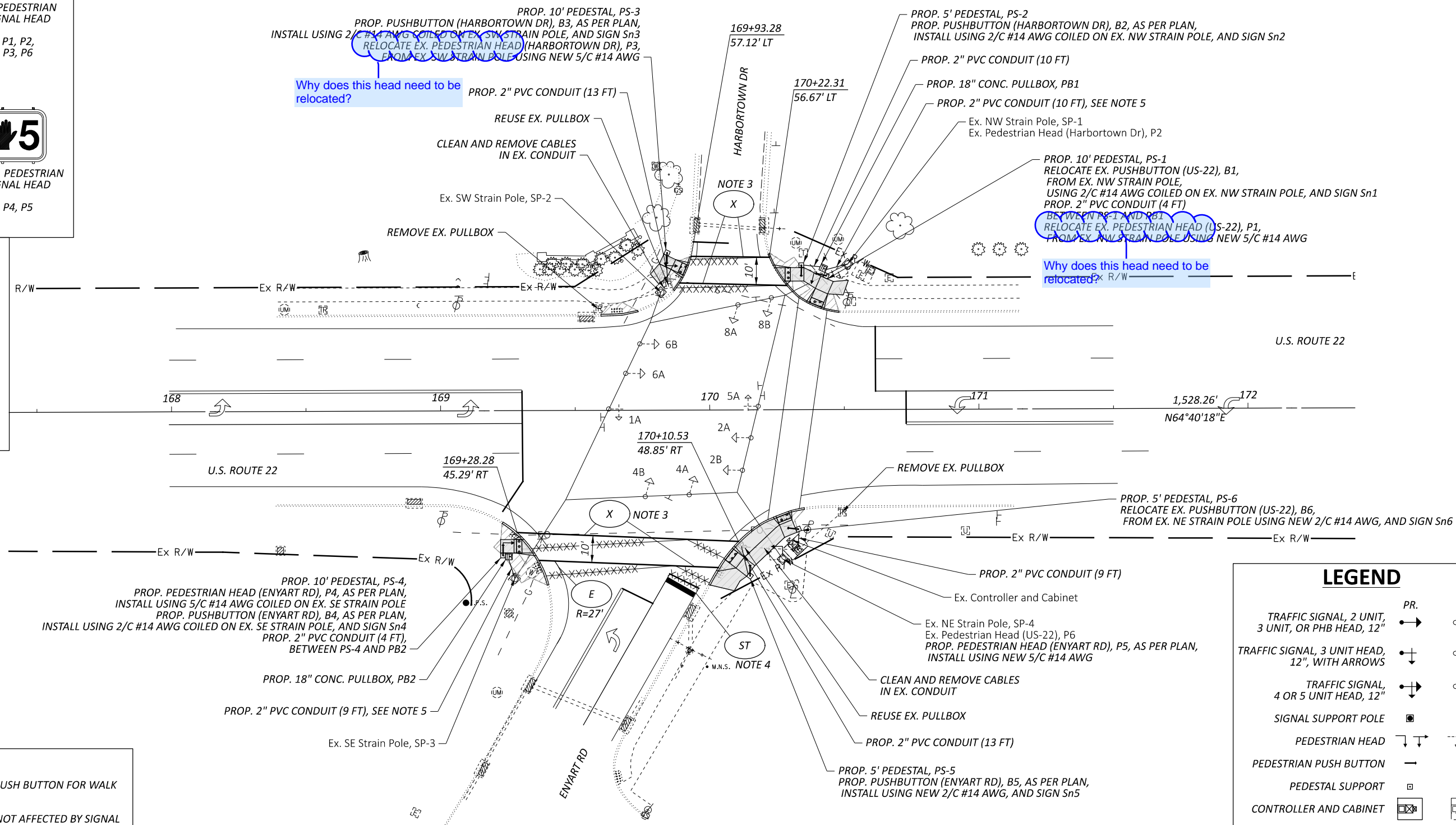
PROPOSED R10-3E-9  
Sn1, Sn3, Sn5

**NOTES:**

1. REMOVE ALL EXISTING "PUSH BUTTON FOR WALK SIGNAL" SIGNS - 2 EACH.
2. EX. SIGNAL EQUIPMENT NOT AFFECTED BY SIGNAL WORK SHALL NOT BE DISTURBED UNLESS NOTED OTHERWISE.
3. CONTRACTOR SHALL REMOVE EX. PAVEMENT MARKINGS THAT CONFLICT WITH PROP. PAVEMENT MARKINGS.
4. PROP. STOP LINE MARKINGS SHALL BE PAINTED 4 FT OFFSET OF THE PROP. CROSSWALK MARKING.
5. CONTRACTOR TO ACCESS POLE BASE TO ESTABLISH CONDUIT CONNECTIONS.

**PULLBOX TABLE**

PULL BOX #	STATION	SIDE	OFFSET	SIZE (IN.)
PB1	170+42.35	LT	52.58'	18
PB2	169+28.28	RT	45.29'	18
-	-	-	-	-



**LEGEND**

TRAFFIC SIGNAL, 2 UNIT, 3 UNIT, OR PHB HEAD, 12"	PR. →	EX. →
TRAFFIC SIGNAL, 3 UNIT HEAD, 12", WITH ARROWS	→	→
TRAFFIC SIGNAL, 4 OR 5 UNIT HEAD, 12"	→	→
SIGNAL SUPPORT POLE	■	■
PEDESTRIAN HEAD	↓	↓
PEDESTRIAN PUSH BUTTON	—	—
PEDESTAL SUPPORT	□	□
CONTROLLER AND CABINET	☒	☒
TRAFFIC PULL BOX	☒	☒
ITEM 644 CROSSWALK MARKINGS	(X)	(X)
ITEM 644 STOP LINE	(ST)	(ST)
ITEM 644 EDGE LINE MARKINGS, 6", WHITE	(E)	(E)
REMOVAL OF PAVEMENT MARKING	XXXX	XXXX



# SIGNAL TIMING CHART (TEM FORM 496-3)

INTERSECTION: US-22 AT ENVART RD								
MAINTAINING AGENCY: ODOT								
START UP	DUAL ENTRY: ON		PHASES: 2, 4, 6, 8					
	REST IN RED:		RING 1 -			RING 2 -		
START IN:	YELLOW/RED FLASH							
TIME FOR FLASH / ALL RED (SEC.):	9, 6							
FIRST PHASE(S):	2, 6							
COLOR DISPLAYED:	GREEN							
OVERLAP			A	B	C	D		
PHASES			-	-	-	-		
INTERVAL OR FEATURE	CONTROLLER MOVEMENT NO.							
INTERSECTION MOVEMENT (PHASE)	1	2	3	4	5	6	7	8
DIRECTION	SBL	NB	-	EB	NBL	SB	-	WB
MINIMUM GREEN (INITIAL) (SEC.)	7	20	-	10	7	20	-	10
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.)	25	50	-	40	25	50	-	40
MAXIMUM GREEN II (SEC.)	25	50	-	40	25	50	-	40
YELLOW CHANGE (SEC.)	4.0	4.0	-	4.2**	4.0	4.0	-	4.2**
ALL RED CLEARANCE (SEC.)	2.0	2.0	-	1.9**	2.0	2.0	-	1.9**
DELAYED GREEN (LPI) (SEC.)	-	-	-	-	-	-	-	-
FLASHING YELLOW ARROW DELAY^ (SEC.)	-	-	-	-	-	-	-	-
WALK** (SEC.)	-	8	-	-	-	8	-	8
PEDESTRIAN CLEARANCE** (SEC.)	-	18	-	-	-	18	-	19
RECALL	MAXIMUM (ON/OFF)	OFF	ON	-	OFF	OFF	ON	OFF
	MINIMUM (ON/OFF)	OFF	OFF	-	OFF	OFF	OFF	OFF
	PEDESTRIAN** (ON/OFF)	OFF	OFF	-	OFF	OFF	OFF	OFF
MEMORY (ON/OFF)	OFF	OFF	-	OFF	OFF	OFF	-	OFF

Round to nearest 0.5 sec. Use 2 sec min for AR

7 and 6 per calculations

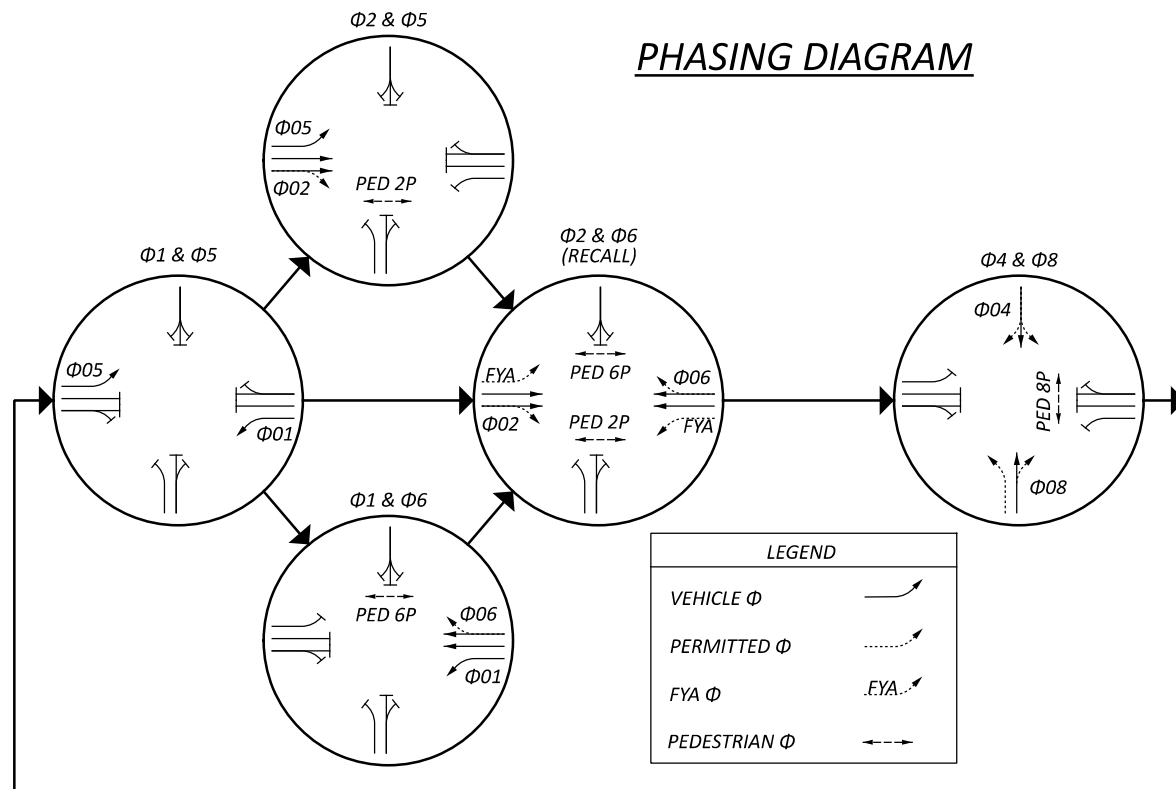
\* VOLUME DENSITY CONTROLS

\*\* PROPOSED TIMING PARAMETERS

# FOR CROSSINGS WITH PEDESTRIAN PUSHBUTTONS, LPI'S (LEADING PEDESTRIAN INTERVALS) MAY BE IMPLEMENTED (3-6 SEC.) IN ACCORDANCE WITH LPI DURATION TIME PER THE ODOT SIGNAL CALCULATIONS - CLEARANCE INTERVALS SPREADSHEET

^ WHEN IMPLEMENTING FYA, A MINIMUM 3 SEC. DELAY SHALL BE PROGRAMMED PER FYA PHASE.

# PHASING DIAGRAM

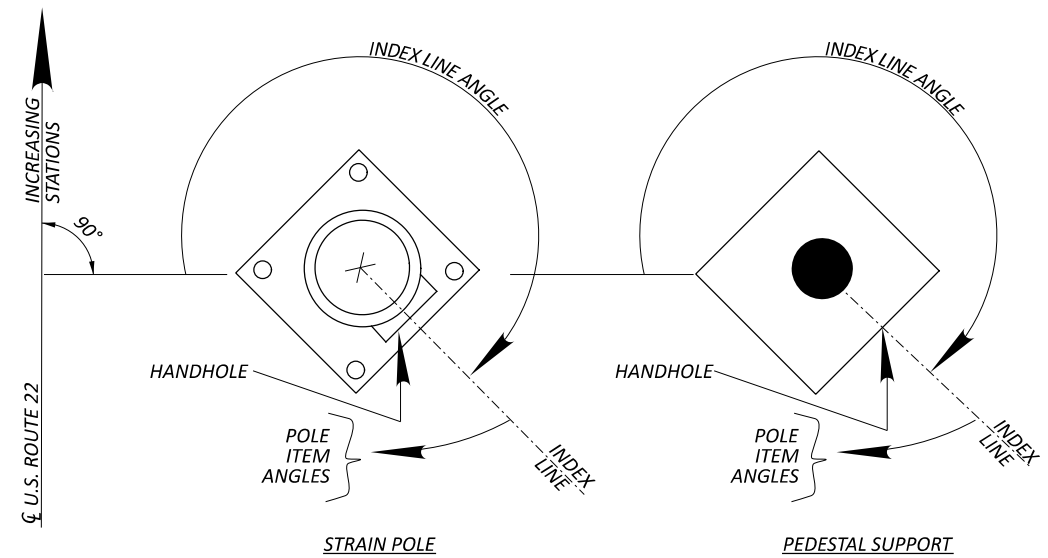


### NOTES:

1. ALL SIGNAL TIMING PARAMETERS EXCEPT NOTED WITH DOUBLE ASTERISKS (\*\*) AND PHASING DIAGRAM SHOWN ARE BASED ON AVAILABLE RECORD PLANS OR CONTROLLER TIMING OUTPUTS. THE CONTRACTOR SHALL RETAIN ALL EXISTING TIMING AND PHASING PARAMETERS CODED IN THE CONTROLLER AT THE TIME OF CONSTRUCTION UNLESS OTHERWISE AFFECTED BY PROPOSED TIMING.
2. EXISTING VEHICLE DETECTION CONFIGURATION AND SETTINGS CODED IN THE CONTROLLER AT THE TIME OF CONSTRUCTION SHALL BE RETAINED.
3. COUNTDOWN PEDESTRIAN SIGNAL HEADS SHALL GO TO ZERO ON YELLOW PER OMUTCD FIGURE 4E-2.
4. ANGLES SHOWN IN THE STRAIN POLE TABLE ARE FOR REFERENCE ONLY. PEDESTRIAN SIGNAL HEADS AND PUSH BUTTONS SHALL BE INSTALLED PERPENDICULAR TO THE CORRESPONDING CROSSWALK AS SHOWN IN THE PLANS.
5. INDEX LINE PASSES THROUGH THE CENTER OF THE HANDHOLE.
6. TOP OF PEDESTAL FOUNDATION SHALL BE FLUSH WITH ADJACENT CURB OR SIDEWALK.

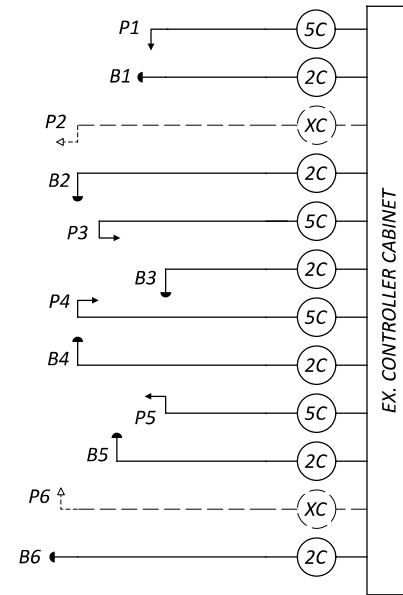
# STRAIN POLE TABLE (TEM FIGURE 498-36)

POLE NO.	STATION	OFFSET	TYPE	DESIGN NO.	POLE HEIGHT (FT.)	FOUNDATION ELEV. (SEE NOTE 6)	SPAN WIRE ATTACHED HEIGHT	INDEX LINE ANGLE (DEG.)	PEDESTAL ANGLE (DEG.)	ANGLES (DEG.) FROM INDEX LINE			
										US-22		ENVART RD	
										PEDESTRIAN SIGNAL	PEDESTRIAN PUSH BUTTON	PEDESTRIAN SIGNAL	PEDESTRIAN PUSH BUTTON
SP-1	EXISTING		SIGNAL		EXISTING			N/A	-	-	EX	-	
SP-2	EXISTING		SIGNAL		EXISTING			N/A	-	-	-	-	
SP-3	EXISTING		SIGNAL		EXISTING			N/A	-	-	-	-	
SP-4	EXISTING		SIGNAL		EXISTING			N/A	EX	80	30	-	
PS-1	170+43.43	49.73' LT	PEDESTAL		10	DOES NOT APPLY		20	80	80	-	-	
PS-2	170+34.20	53.68' LT	PEDESTAL		5	DOES NOT APPLY		0	-	-	0	0	
PS-3	169+84.34	58.45' LT	PEDESTAL		10	DOES NOT APPLY		30	-	-	330	330	
PS-4	169+23.02	53.77' RT	PEDESTAL		10	DOES NOT APPLY		0	-	-	0	0	
PS-5	170+14.76	61.67' RT	PEDESTAL		5	DOES NOT APPLY		40	-	-	-	320	
PS-6	170+32.78	44.39' RT	PEDESTAL		5	DOES NOT APPLY		340	-	300	-	-	



# POLE ORIENTATION

**WIRING DIAGRAM**



**NOTES:**

1. EXISTING VEHICULAR SIGNAL CABLES, POWER CABLES, AND COMMUNICATION CABLES NOT SHOWN IN THE WIRING DIAGRAM SHALL NOT BE DISTURBED.
2. FIELD WIRING HOOKUP CHART SHOWN IS FOR REFERENCE ONLY, CONTRACTOR SHALL MAINTAIN EXISTING FIELD WIRING CONNECTIONS.
3. ALL OTHER EXISTING FIELD WIRING CONNECTIONS NOT SHOWN IN THE FIELD WIRING HOOKUP CHART SHALL NOT BE DISTURBED.

**FIELD WIRING HOOKUP CHART (TEM FORM 496-16)**

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
<b>PEDESTRIAN MOVEMENTS</b>			
PED EAST	W	Φ2 PED/ LS 2P G	OUT
PED WEST	DW	Φ2 PED/ LS 2P R	
PED WEST	W	Φ6 PED/ LS 6P G	OUT
PED NORTH	DW	Φ6 PED/ LS 6P R	
PED WEST	W	Φ8 PED/ LS 8P G	OUT
PED NORTH	DW	Φ8 PED/ LS 8P R	
LS = LOAD SWITCH			

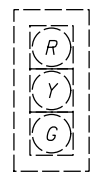
Rename

**LEGEND**

	EX. PEDESTRIAN SIGNAL (DND)		EX. PEDESTRIAN SIGNAL CABLE (DND)
	EX. PEDESTRIAN PUSH BUTTON (DND)		REUSED EX. PEDESTRIAN SIGNAL CABLE
	NEW, RELOCATED, OR REORIENTED PEDESTRIAN SIGNAL		NEW OR COILED SIGNAL CABLE, 2 CONDUCTOR, NO. 14 AWG
	NEW, RELOCATED, OR REORIENTED PEDESTRIAN PUSH BUTTON		NEW OR COILED SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG



**SIGNAL HEADS**



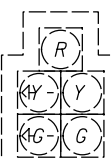
EX. SIGNAL HEAD  
2A, 2B, 4A,  
6A, 6B, 8A



EX. PEDESTRIAN  
SIGNAL HEAD  
P1, P2, P3,  
P4, P5, P6



EX. BI-MODAL  
SIGNAL HEAD  
1A, 5A

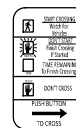


EX. SIGNAL HEAD  
3A, 7A

**SIGNS**



PROPOSED  
R10-3E-9  
Sn2, Sn4



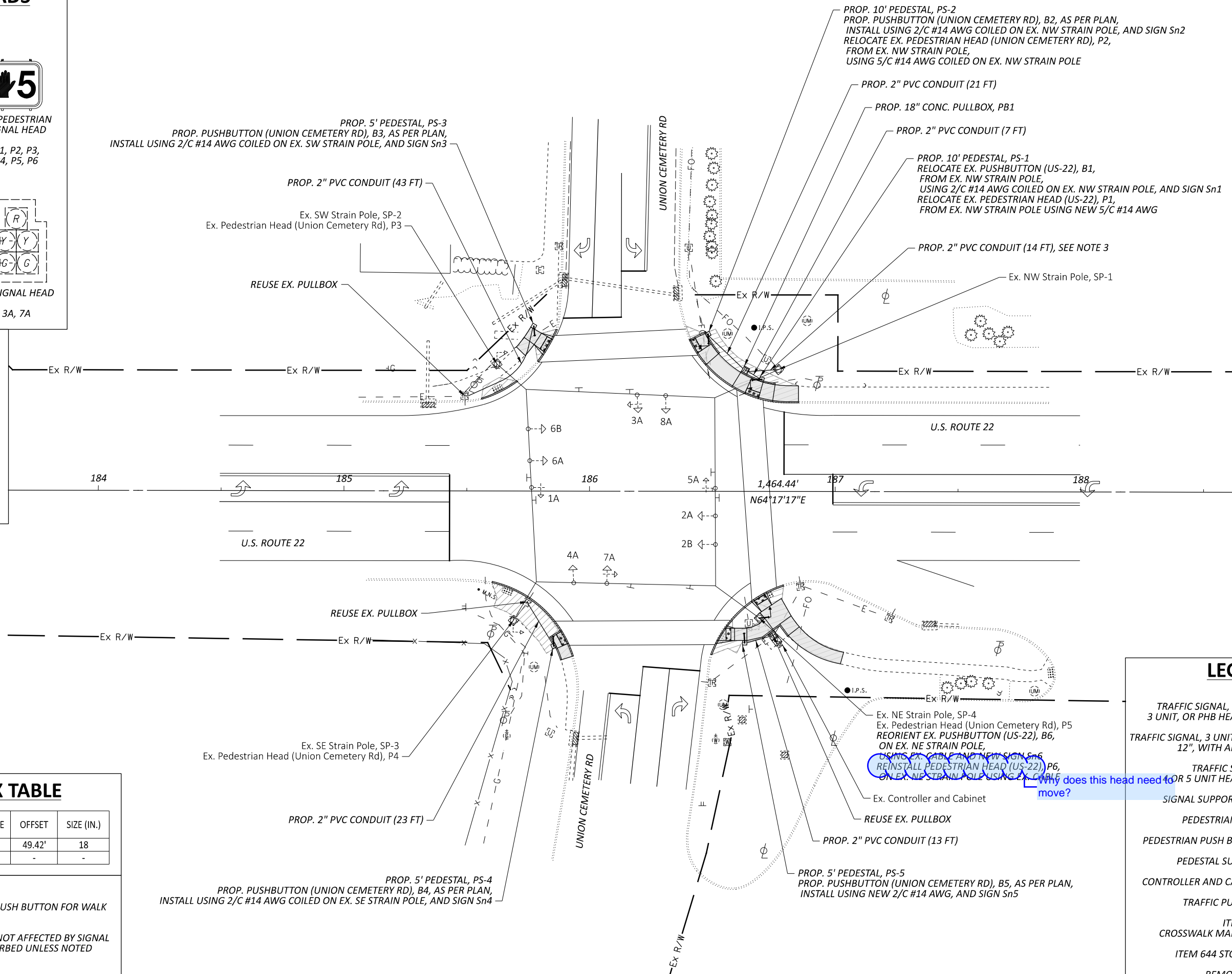
PROPOSED  
R10-3E-9  
Sn1, Sn3,  
Sn5, Sn6

**PULLBOX TABLE**

PULL BOX #	STATION	SIDE	OFFSET	SIZE (IN.)
PB1	186+63.42	LT	49.42'	18
-	-	-	-	-

**NOTES:**

1. REMOVE ALL EXISTING "PUSH BUTTON FOR WALK SIGNAL" SIGNS - 2 EACH.
2. EX. SIGNAL EQUIPMENT NOT AFFECTED BY SIGNAL WORK SHALL NOT BE DISTURBED UNLESS NOTED OTHERWISE.
3. CONTRACTOR TO ACCESS POLE BASE TO ESTABLISH CONDUIT CONNECTIONS.



**LEGEND**

TRAFFIC SIGNAL, 2 UNIT, 3 UNIT, OR PHB HEAD, 12"	PR.	EX.
TRAFFIC SIGNAL, 3 UNIT HEAD, 12", WITH ARROWS	→	→
TRAFFIC SIGNAL, 5 UNIT HEAD, 12"	→	→
SIGNAL SUPPORT POLE	■	■
PEDESTRIAN HEAD	↓	↓
PEDESTRIAN PUSH BUTTON	—	—
PEDESTAL SUPPORT	□	□
CONTROLLER AND CABINET	☒	☒
TRAFFIC PULL BOX	☒	☒
ITEM 644 CROSSWALK MARKINGS	(X)	(X)
ITEM 644 STOP LINE	(ST)	(ST)
REMOVAL OF PAVEMENT MARKING	XXXX	XXXX



**TRAFFIC SIGNAL PLAN  
US 22 AT UNION CEMETERY RD**

DESIGN AGENCY



DESIGNER

GSH

REVIEWER

SAK 08/15/24

PROJECT ID

117237

SHEET

P.49

TOTAL

66

# SIGNAL TIMING CHART (TEM FORM 496-3)

INTERSECTION: US-22 AT UNION CEMETERY RD									
MAINTAINING AGENCY: ODOT									
START UP	DUAL ENTRY: ON		PHASES: 2, 4, 6, 8						
	REST IN RED:		RING 1 -		RING 2 -				
	OVERLAP		A	B	C	D			
START IN:	YELLOW/RED FLASH								
TIME FOR FLASH / ALL RED (SEC.):	9, 6								
FIRST PHASE(S):	2, 6								
COLOR DISPLAYED:	GREEN								
INTERVAL OR FEATURE	CONTROLLER MOVEMENT NO.								
INTERSECTION MOVEMENT (PHASE)	1	2	3	4	5	6	7	8	
DIRECTION	SBL	NB	WBL	EB	NBL	SB	EBL	WB	
MINIMUM GREEN (INITIAL) (SEC.)	7	20	7	10	7	20	7	10	
ADDED INITIAL *(SEC./ACTUATION)	-	-	-	-	-	-	-	-	
MAXIMUM INITIAL *(SEC.)	-	-	-	-	-	-	-	-	
PASSAGE TIME (PRESET GAP) (SEC.)	3	3	3	3	3	3	3	3	
TIME BEFORE REDUCTION *(SEC.)	-	-	-	-	-	-	-	-	
MINIMUM GAP *(SEC.)	-	-	-	-	-	-	-	-	
TIME TO REDUCE *(SEC.)	-	-	-	-	-	-	-	-	
MAXIMUM GREEN I (SEC.)	25	50	25	40	25	50	25	40	
MAXIMUM GREEN II (SEC.)	25	50	25	40	25	50	25	40	
YELLOW CHANGE (SEC.)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
ALL RED CLEARANCE (SEC.)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
DELAYED GREEN (LPI) (SEC.)	-	-	-	-	-	-	-	-	
FLASHING YELLOW ARROW DELAY^ (SEC.)	3	-	-	-	3	-	-	-	
WALK ** (SEC.)	-	7	-	-	-	7	-	7	
PEDESTRIAN CLEARANCE ** (SEC.)	-	14	-	-	-	14	-	20	
RECALL	MAXIMUM (ON/OFF)	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
	MINIMUM (ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
	PEDESTRIAN ** (ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
MEMORY (ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

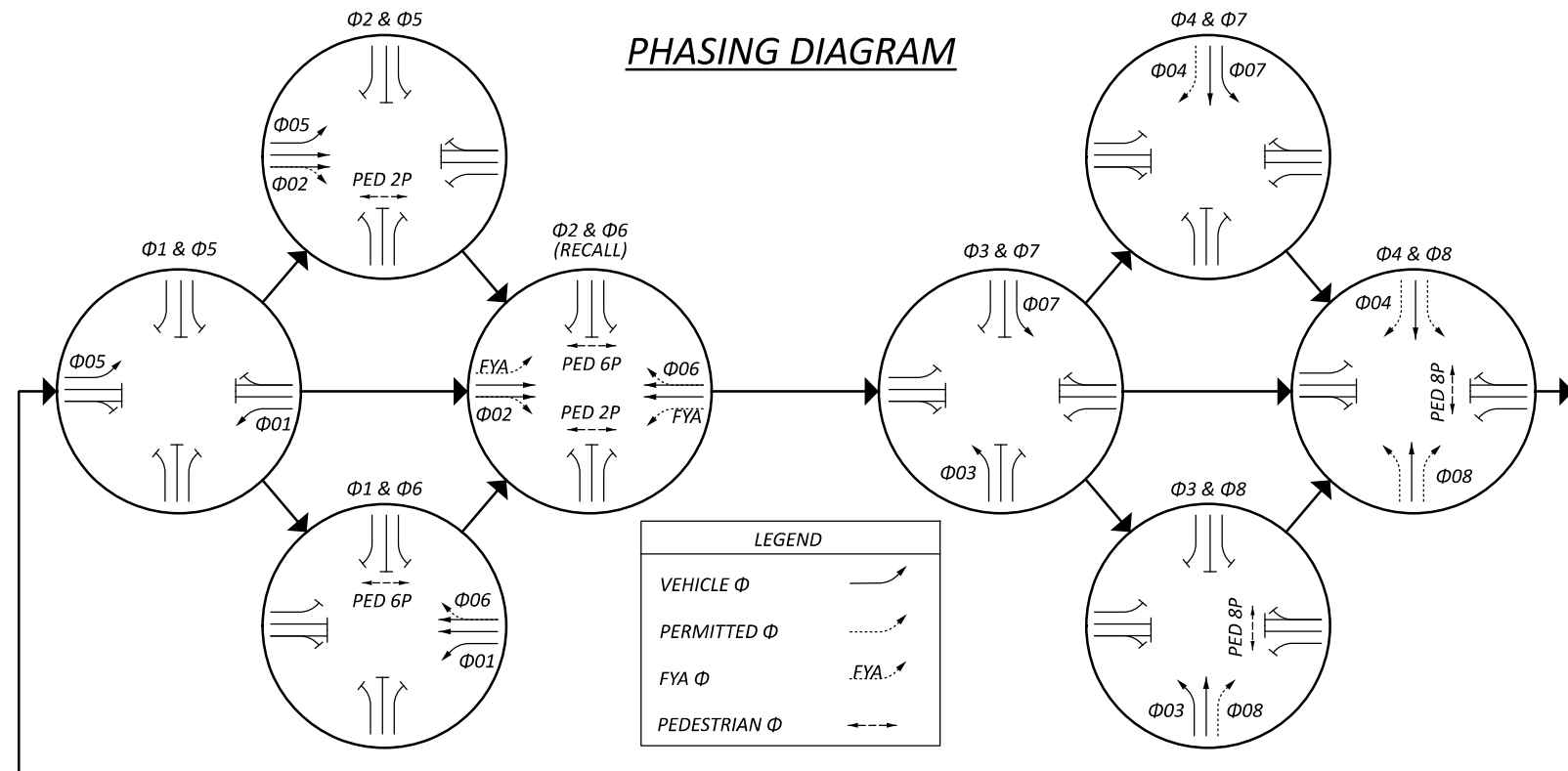
\* VOLUME DENSITY CONTROLS

\*\* PROPOSED TIMING PARAMETERS

# FOR CROSSINGS WITH PEDESTRIAN PUSHBUTTONS, LPI'S (LEADING PEDESTRIAN INTERVALS) MAY BE IMPLEMENTED (3-6 SEC.) IN ACCORDANCE WITH LPI DURATION TIME PER THE ODOT SIGNAL CALCULATIONS - CLEARANCE INTERVALS SPREADSHEET

^ WHEN IMPLEMENTING FYA, A MINIMUM 3 SEC. DELAY SHALL BE PROGRAMMED PER FYA PHASE.

# PHASING DIAGRAM

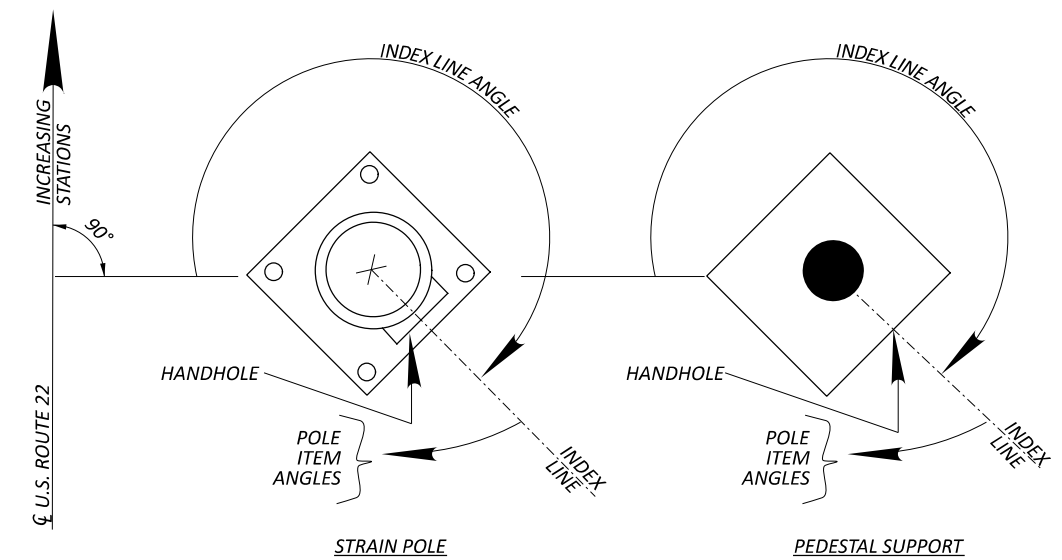


### NOTES:

1. ALL SIGNAL TIMING PARAMETERS EXCEPT NOTED WITH DOUBLE ASTERISKS (\*\*) AND PHASING DIAGRAM SHOWN ARE BASED ON AVAILABLE RECORD PLANS OR CONTROLLER TIMING OUTPUTS. THE CONTRACTOR SHALL RETAIN ALL EXISTING TIMING AND PHASING PARAMETERS CODED IN THE CONTROLLER AT THE TIME OF CONSTRUCTION UNLESS OTHERWISE AFFECTED BY PROPOSED TIMING.
2. EXISTING VEHICLE DETECTION CONFIGURATION AND SETTINGS CODED IN THE CONTROLLER AT THE TIME OF CONSTRUCTION SHALL BE RETAINED.
3. COUNTDOWN PEDESTRIAN SIGNAL HEADS SHALL GO TO ZERO ON YELLOW PER ODOTCD FIGURE 4E-2.
4. ANGLES SHOWN IN THE STRAIN POLE TABLE ARE FOR REFERENCE ONLY. PEDESTRIAN SIGNAL HEADS AND PUSH BUTTONS SHALL BE INSTALLED PERPENDICULAR TO THE CORRESPONDING CROSSWALK AS SHOWN IN THE PLANS.
5. INDEX LINE PASSES THROUGH THE CENTER OF THE HANDHOLE.
6. TOP OF PEDESTAL FOUNDATION SHALL BE FLUSH WITH ADJACENT CURB OR SIDEWALK.

# STRAIN POLE TABLE (TEM FIGURE 498-36)

POLE NO.	STATION	OFFSET	TYPE	DESIGN NO.	POLE HEIGHT (FT.)	FOUNDATION ELEV. (SEE NOTE 6)	SPAN WIRE ATTACHED HEIGHT	INDEX LINE ANGLE (DEG.)	PEDESTAL ANGLE (DEG.)	ANGLES (DEG.) FROM INDEX LINE			
										US-22		UNION CEMETARY RD	
										PEDESTRIAN SIGNAL	PEDESTRIAN PUSH BUTTON	PEDESTRIAN SIGNAL	PEDESTRIAN PUSH BUTTON
SP-1	EXISTING		SIGNAL			EXISTING			N/A	-	-	-	-
SP-2	EXISTING		SIGNAL			EXISTING			N/A	-	-	EX	-
SP-3	EXISTING		SIGNAL			EXISTING			N/A	-	-	EX	-
SP-4	EXISTING		SIGNAL			EXISTING			N/A	140	140	EX	-
PS-1	186+70.01	45.65' LT	PEDESTAL		10	DOES NOT APPLY			20	70	70	-	-
PS-2	186+48.16	63.99' LT	PEDESTAL		10	DOES NOT APPLY			60	-	-	300	300
PS-3	185+77.19	67.10' LT	PEDESTAL		5	DOES NOT APPLY			30	-	-	-	350
PS-4	185+85.51	63.05' RT	PEDESTAL		5	DOES NOT APPLY			60	-	-	-	300
PS-5	186+63.26	61.63' RT	PEDESTAL		5	DOES NOT APPLY			0	-	-	-	0



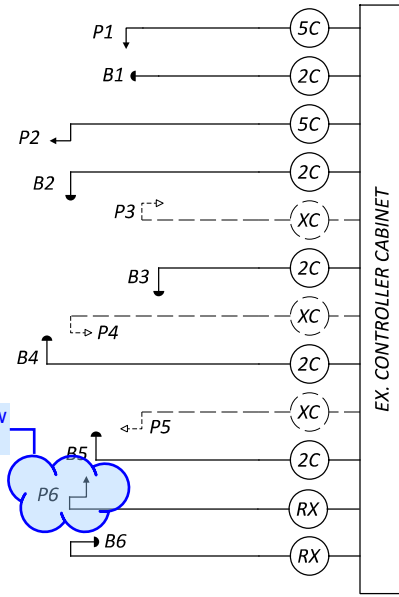
# POLE ORIENTATION

HAM/WAR US 22 16.04/0.00 PED

MODEL: Sheet\_SurvFt\_PAPER SIZE: 17x11 (in.) DATE: 8/15/2024 TIME: 9:35:11 PM USER: nbrickner L:\ODOT\20068303-00\_VAR-STW\_SafetyDesign\2020-6\08\_HAM-22\117237\400-Engineering\Signals\Sheets\117237\_CD107.dgn

SIGNAL TIMING AND POLE DETAILS  
US 22 AT UNION CEMETERY RD

**WIRING DIAGRAM**



Does this need relocating? Show cable dashed as existing? XC

**NOTES:**

1. EXISTING VEHICULAR SIGNAL CABLES, POWER CABLES, AND COMMUNICATION CABLES NOT SHOWN IN THE WIRING DIAGRAM SHALL NOT BE DISTURBED.
2. FIELD WIRING HOOKUP CHART SHOWN IS FOR REFERENCE ONLY, CONTRACTOR SHALL MAINTAIN EXISTING FIELD WIRING CONNECTIONS.
3. ALL OTHER EXISTING FIELD WIRING CONNECTIONS NOT SHOWN IN THE FIELD WIRING HOOKUP CHART SHALL NOT BE DISTURBED.

**FIELD WIRING HOOKUP CHART (TEM FORM 496-16)**

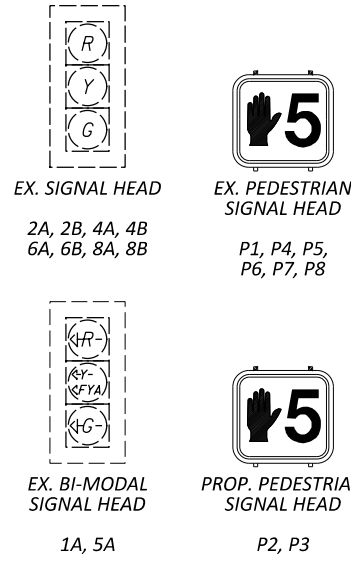
SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
PEDESTRIAN MOVEMENTS			
PED	W	Ø2 PED/ LS 2P G	OUT
EAST	DW	Ø2 PED/ LS 2P R	
PED	W	Ø6 PED/ LS 6P G	OUT
WEST	DW	Ø6 PED/ LS 6P R	
PED	W	Ø8 PED/ LS 8P G	OUT
NORTH	DW	Ø8 PED/ LS 8P R	
LS = LOAD SWITCH			

rename

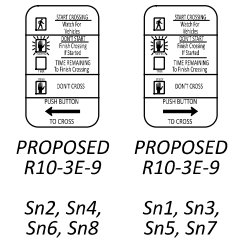
**LEGEND**

	EX. PEDESTRIAN SIGNAL (DND)		EX. PEDESTRIAN SIGNAL CABLE (DND)
	EX. PEDESTRIAN PUSH BUTTON (DND)		REUSED EX. PEDESTRIAN SIGNAL CABLE
	NEW, RELOCATED, OR REORIENTED PEDESTRIAN SIGNAL		NEW OR COILED SIGNAL CABLE, 2 CONDUCTOR, NO. 14 AWG
	NEW, RELOCATED, OR REORIENTED PEDESTRIAN PUSH BUTTON		NEW OR COILED SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG

**SIGNAL HEADS**



**SIGNS**

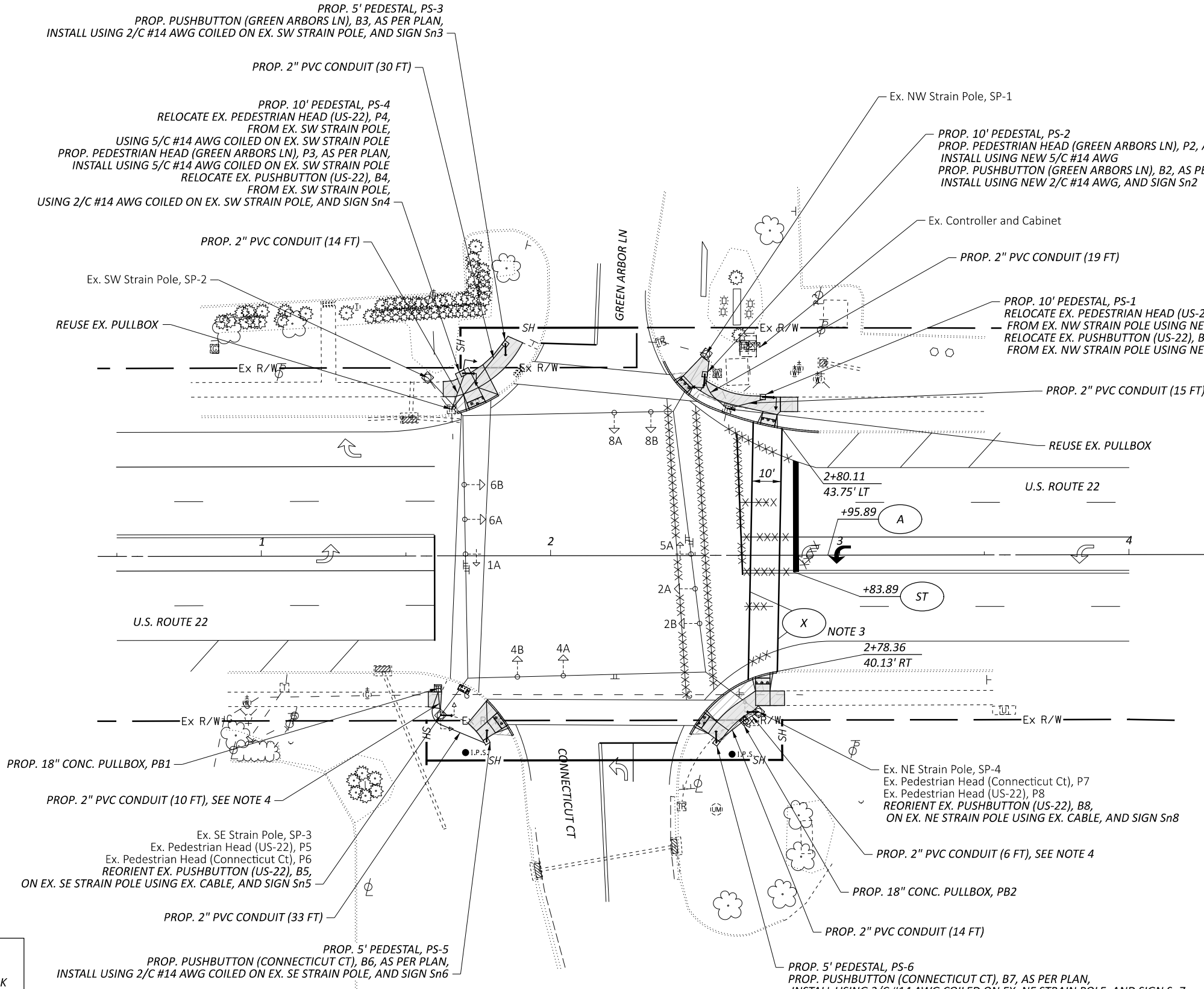


PROP. 5' PEDESTAL, PS-3  
 PROP. PUSHBUTTON (GREEN ARBORS LN), B3, AS PER PLAN,  
 INSTALL USING 2/C #14 AWG COILED ON EX. SW STRAIN POLE, AND SIGN Sn3

PROP. 10' PEDESTAL, PS-4  
 RELOCATE EX. PEDESTRIAN HEAD (US-22), P4,  
 FROM EX. SW STRAIN POLE,  
 USING 5/C #14 AWG COILED ON EX. SW STRAIN POLE  
 PROP. PEDESTRIAN HEAD (GREEN ARBORS LN), P3, AS PER PLAN,  
 INSTALL USING 5/C #14 AWG COILED ON EX. SW STRAIN POLE  
 RELOCATE EX. PUSHBUTTON (US-22), B4,  
 FROM EX. SW STRAIN POLE,  
 USING 2/C #14 AWG COILED ON EX. SW STRAIN POLE, AND SIGN Sn4

PROP. 10' PEDESTAL, PS-2  
 PROP. PEDESTRIAN HEAD (GREEN ARBORS LN), P2, AS PER PLAN,  
 INSTALL USING NEW 5/C #14 AWG  
 PROP. PUSHBUTTON (GREEN ARBORS LN), B2, AS PER PLAN,  
 INSTALL USING NEW 2/C #14 AWG, AND SIGN Sn2

PROP. 10' PEDESTAL, PS-1  
 RELOCATE EX. PEDESTRIAN HEAD (US-22), P1,  
 FROM EX. NW STRAIN POLE USING NEW 5/C #14 AWG  
 RELOCATE EX. PUSHBUTTON (US-22), B1,  
 FROM EX. NW STRAIN POLE USING NEW 2/C #14 AWG, AND SIGN Sn1



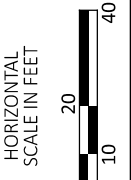
**LEGEND**

TRAFFIC SIGNAL, 2 UNIT, 3 UNIT, OR PHB HEAD, 12"	PR.	EX.
TRAFFIC SIGNAL, 3 UNIT HEAD, 12", WITH ARROWS	→	→
TRAFFIC SIGNAL, 4 OR 5 UNIT HEAD, 12"	→	→
SIGNAL SUPPORT POLE	■	■
PEDESTRIAN HEAD	↓	↓
PEDESTRIAN PUSH BUTTON	—	—
PEDESTAL SUPPORT	□	□
CONTROLLER AND CABINET	⊠	⊠
TRAFFIC PULL BOX	⊞	⊞
ITEM 644 ARROW MARKINGS	(A)	(A)
ITEM 644 CROSSWALK MARKINGS	(X)	(X)
ITEM 644 STOP LINE	(ST)	(ST)
REMOVAL OF PAVEMENT MARKING	XXXX	XXXX

**PULLBOX TABLE**

PULL BOX #	STATION	SIDE	OFFSET	SIZE (IN.)
PB1	1+61.01	RT	45.80'	18
PB2	2+62.12	RT	58.91'	18
-	-	-	-	-

- NOTES:**
- REMOVE ALL EXISTING "PUSH BUTTON FOR WALK SIGNAL" SIGNS - 4 EACH.
  - EX. SIGNAL EQUIPMENT NOT AFFECTED BY SIGNAL WORK SHALL NOT BE DISTURBED UNLESS NOTED OTHERWISE.
  - CONTRACTOR SHALL REMOVE EX. PAVEMENT MARKINGS THAT CONFLICT WITH PROP. PAVEMENT MARKINGS.
  - CONTRACTOR TO ACCESS POLE BASE TO ESTABLISH CONDUIT CONNECTIONS.



**TRAFFIC SIGNAL PLAN  
 US 22 AT GREEN ARBORS LN/CONNECTICUT CR**

DESIGN AGENCY  
**CMT**  
 CRAWFORD, MURPHY &  
 CONSULTANTS  
 1777 WASHINGTON VILLAGE DR  
 BAYVIEW, OHIO 44149  
 WWW.CMTCONSULTANTS.COM

DESIGNER  
 GSH

REVIEWER  
 SAK 08/15/24

PROJECT ID  
 117237

SHEET TOTAL  
 P.52 66

# SIGNAL TIMING CHART (TEM FORM 496-3)

INTERSECTION: US-22 AT GREEN ARBORS LN									
MAINTAINING AGENCY: ODOT									
START UP	DUAL ENTRY: ON		PHASES: 2, 4, 6, 8						
	REST IN RED:		RING 1 -		RING 2 -				
START IN:	YELLOW/RED FLASH								
TIME FOR FLASH / ALL RED (SEC.):	9, 6								
FIRST PHASE(S):	2, 6								
COLOR DISPLAYED:	GREEN								
INTERVAL OR FEATURE	CONTROLLER MOVEMENT NO.								
INTERSECTION MOVEMENT (PHASE)	1	2	3	4	5	6	7	8	
DIRECTION	SBL	NB	-	EB	NBL	SB	-	WB	
MINIMUM GREEN (INITIAL) (SEC.)	7	20	-	10	7	20	-	10	
ADDED INITIAL *(SEC./ACTUATION)	-	-	-	-	-	-	-	-	
MAXIMUM INITIAL *(SEC.)	-	-	-	-	-	-	-	-	
PASSAGE TIME (PRESET GAP) (SEC.)	3	4	-	3	3	4	-	3	
TIME BEFORE REDUCTION *(SEC.)	-	-	-	-	-	-	-	-	
MINIMUM GAP *(SEC.)	-	-	-	-	-	-	-	-	
TIME TO REDUCE *(SEC.)	-	-	-	-	-	-	-	-	
MAXIMUM GREEN I (SEC.)	25	80	-	35	25	80	-	35	
MAXIMUM GREEN II (SEC.)	25	60	-	25	25	60	-	25	
YELLOW CHANGE (SEC.)	3.0 **	4.8 **	-	3.0	3.0 **	4.8 **	-	3.0	
ALL RED CLEARANCE (SEC.)	2.3 **	1.0 **	-	2.0	2.3 **	1.0 **	-	2.0	
DELAYED GREEN (LPI) (SEC.)	-	-	-	-	-	-	-	-	
FLASHING YELLOW ARROW DELAY (SEC.)	3	-	-	-	3	-	-	-	
WALK ** (SEC.)	-	7	-	9	-	7	-	9	
PEDESTRIAN CLEARANCE ** (SEC.)	-	15	-	25	-	15	-	25	
RECALL	MAXIMUM (ON/OFF)	OFF	ON	-	OFF	OFF	ON	-	OFF
	MINIMUM (ON/OFF)	OFF	ON	-	OFF	OFF	ON	-	OFF
	PEDESTRIAN ** (ON/OFF)	OFF	OFF	-	OFF	OFF	OFF	-	OFF
MEMORY (ON/OFF)	OFF	OFF	-	OFF	OFF	OFF	-	OFF	

Round to nearest 0.5 sec. Use 2 sec min for AR

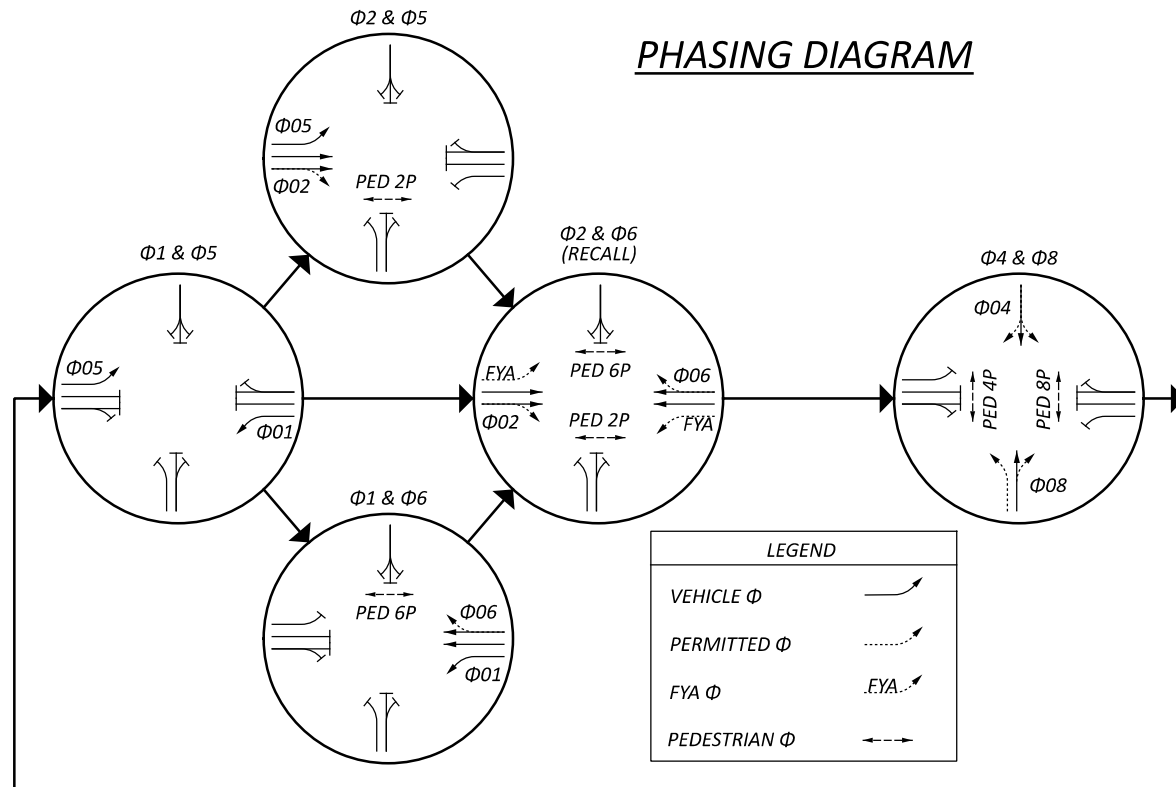
\* VOLUME DENSITY CONTROLS

\*\* PROPOSED TIMING PARAMETERS

# FOR CROSSINGS WITH PEDESTRIAN PUSHBUTTONS, LPI'S (LEADING PEDESTRIAN INTERVALS) MAY BE IMPLEMENTED (3-6 SEC.) IN ACCORDANCE WITH LPI DURATION TIME PER THE ODOT SIGNAL CALCULATIONS - CLEARANCE INTERVALS SPREADSHEET

^ WHEN IMPLEMENTING FYA, A MINIMUM 3 SEC. DELAY SHALL BE PROGRAMMED PER FYA PHASE.

# PHASING DIAGRAM

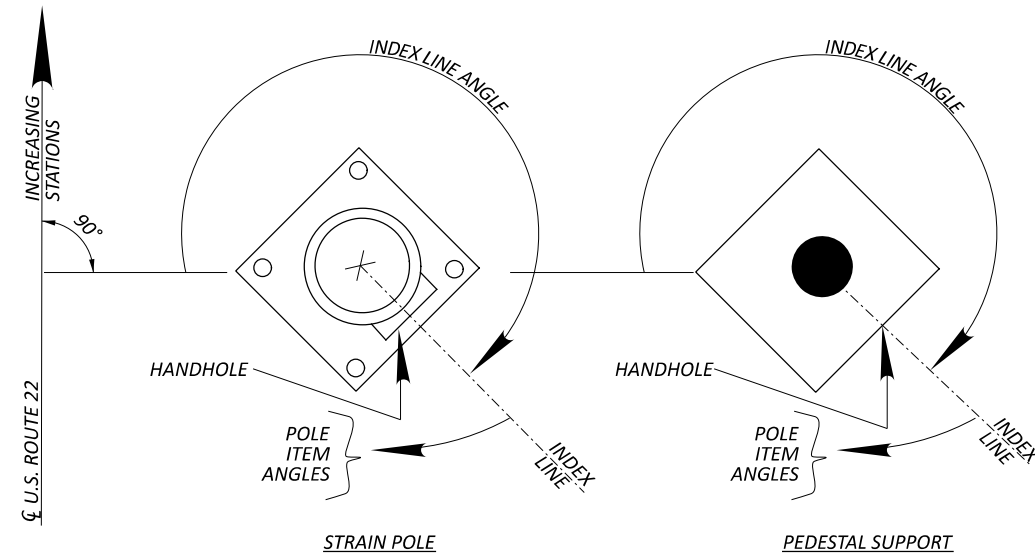


NOTES:

- ALL SIGNAL TIMING PARAMETERS EXCEPT NOTED WITH DOUBLE ASTERISKS (\*\*) AND PHASING DIAGRAM SHOWN ARE BASED ON AVAILABLE RECORD PLANS OR CONTROLLER TIMING OUTPUTS. THE CONTRACTOR SHALL RETAIN ALL EXISTING TIMING AND PHASING PARAMETERS CODED IN THE CONTROLLER AT THE TIME OF CONSTRUCTION UNLESS OTHERWISE AFFECTED BY PROPOSED TIMING.
- EXISTING VEHICLE DETECTION CONFIGURATION AND SETTINGS CODED IN THE CONTROLLER AT THE TIME OF CONSTRUCTION SHALL BE RETAINED.
- COUNTDOWN PEDESTRIAN SIGNAL HEADS SHALL GO TO ZERO ON YELLOW PER ODOTCD FIGURE 4E-2.
- ANGLES SHOWN IN THE STRAIN POLE TABLE ARE FOR REFERENCE ONLY. PEDESTRIAN SIGNAL HEADS AND PUSH BUTTONS SHALL BE INSTALLED PERPENDICULAR TO THE CORRESPONDING CROSSWALK AS SHOWN IN THE PLANS.
- INDEX LINE PASSES THROUGH THE CENTER OF THE HANDHOLE.
- TOP OF PEDESTAL FOUNDATION SHALL BE FLUSH WITH ADJACENT CURB OR SIDEWALK.

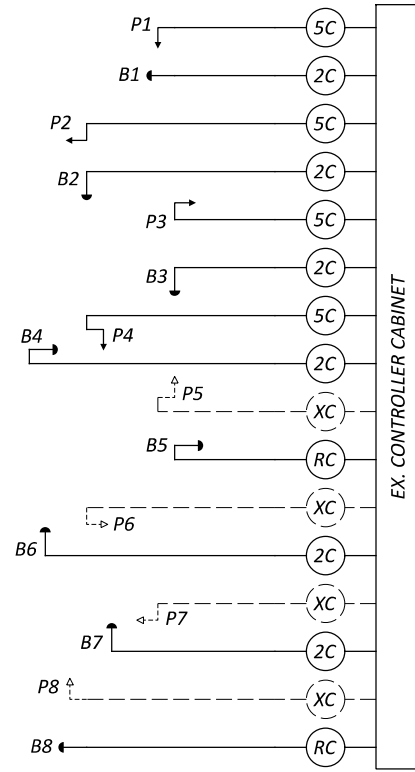
# STRAIN POLE TABLE (TEM FIGURE 498-36)

POLE NO.	STATION	OFFSET	TYPE	DESIGN NO.	POLE HEIGHT (FT.)	FOUNDATION ELEV. (SEE NOTE 6)	SPAN WIRE ATTACHED HEIGHT	INDEX LINE ANGLE (DEG.)	PEDESTAL ANGLE (DEG.)	ANGLES (DEG.) FROM INDEX LINE			
										US-22		GREEN ARBORS LN	
										PEDESTRIAN SIGNAL	PEDESTRIAN PUSH BUTTON	PEDESTRIAN SIGNAL	PEDESTRIAN PUSH BUTTON
SP-1	EXISTING		SIGNAL			EXISTING			N/A	-	-	-	-
SP-2	EXISTING		SIGNAL			EXISTING			N/A	-	-	-	-
SP-3	EXISTING		SIGNAL			EXISTING			N/A	EX	45	EX	-
SP-4	EXISTING		SIGNAL			EXISTING			N/A	EX	320	EX	-
PS-1	2+73.53	54.75' LT	PEDESTAL		10	DOES NOT APPLY			0	270	270	-	-
PS-2	2+53.48	62.63' LT	PEDESTAL		10	DOES NOT APPLY			10	-	-	0	0
PS-3	1+84.52	73.24' LT	PEDESTAL		5	DOES NOT APPLY			40	-	-	-	320
PS-4	1+69.78	63.14' LT	PEDESTAL		10	DOES NOT APPLY			340	300	300	210	-
PS-5	1+77.80	64.17' RT	PEDESTAL		5	DOES NOT APPLY			60	-	-	-	300
PS-6	2+57.22	64.71' RT	PEDESTAL		5	DOES NOT APPLY			40	-	-	-	320



# POLE ORIENTATION

**WIRING DIAGRAM**



**NOTES:**

- EXISTING VEHICULAR SIGNAL CABLES, POWER CABLES, AND COMMUNICATION CABLES NOT SHOWN IN THE WIRING DIAGRAM SHALL NOT BE DISTURBED.
- FIELD WIRING HOOKUP CHART SHOWN IS FOR REFERENCE ONLY, CONTRACTOR SHALL MAINTAIN EXISTING FIELD WIRING CONNECTIONS.
- ALL OTHER EXISTING FIELD WIRING CONNECTIONS NOT SHOWN IN THE FIELD WIRING HOOKUP CHART SHALL NOT BE DISTURBED.

**FIELD WIRING HOOKUP CHART (TEM FORM 496-16)**

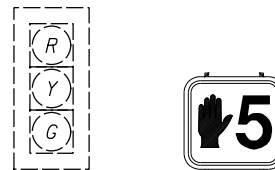
SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
PEDESTRIAN MOVEMENTS			
PED EAST	W	Ø2 PED/ LS 2P G	OUT
	DW	Ø2 PED/ LS 2P R	
PED SOUTH	W	Ø4 PED/ LS 4P G	OUT
	DW	Ø4 PED/ LS 4P R	
PED WEST	W	Ø6 PED/ LS 6P G	OUT
	DW	Ø6 PED/ LS 6P R	
PED NORTH	W	Ø8 PED/ LS 8P G	OUT
	DW	Ø8 PED/ LS 8P R	
LS = LOAD SWITCH			

Rename

**LEGEND**

	EX. PEDESTRIAN SIGNAL (DND)		EX. PEDESTRIAN SIGNAL CABLE (DND)
	EX. PEDESTRIAN PUSH BUTTON (DND)		REUSED EX. PEDESTRIAN SIGNAL CABLE
	NEW, RELOCATED, OR REORIENTED PEDESTRIAN SIGNAL		NEW OR COILED SIGNAL CABLE, 2 CONDUCTOR, NO. 14 AWG
	NEW, RELOCATED, OR REORIENTED PEDESTRIAN PUSH BUTTON		NEW OR COILED SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG

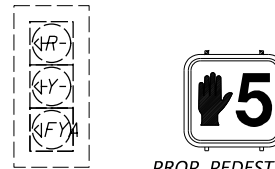
**SIGNAL HEADS**



EX. SIGNAL HEAD  
2A, 2B, 4A, 4B,  
6A, 6B, 8A, 8B



EX. PEDESTRIAN SIGNAL HEAD  
P1, P2,  
P3, P4,

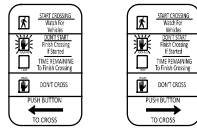


EX. SIGNAL HEAD  
1A, 5A



PROP. PEDESTRIAN SIGNAL HEAD  
P5, P6

**SIGNS**



PROPOSED R10-3E-9  
Sn1, Sn3, Sn5

PROPOSED R10-3E-9  
Sn2, Sn4, Sn6

**PULLBOX TABLE**

PULL BOX #	STATION	SIDE	OFFSET	SIZE (IN.)
PB1	10+70.23	RT	53.57'	18
-	-	-	-	-

**NOTES:**

1. REMOVE ALL EXISTING "PUSH BUTTON FOR WALK SIGNAL" SIGNS - 2 EACH.
2. EX. SIGNAL EQUIPMENT NOT AFFECTED BY SIGNAL WORK SHALL NOT BE DISTURBED UNLESS NOTED OTHERWISE.
3. CONTRACTOR SHALL REMOVE EX. PAVEMENT MARKINGS THAT CONFLICTS WITH PROP. PAVEMENT MARKINGS.
4. CONTRACTOR TO ACCESS POLE BASE TO ESTABLISH CONDUIT CONNECTIONS.

PROP. 5' PEDESTAL, PS-2  
PROP. PUSHBUTTON (CRESTVIEW DR), B2, AS PER PLAN,  
INSTALL USING 2/C #14 AWG COILED ON EX. SW STRAIN POLE, AND SIGN Sn2

PROP. 2" PVC CONDUIT (31 FT)

Ex. SW Strain Pole, SP-2  
Ex. Pedestrian Head (Crestview Dr), P2  
Ex. Pedestrian Head (US-22), P3

PROP. 5' PEDESTAL, PS-3  
RELOCATE EX. PUSHBUTTON (US-22), B3,  
FROM EX. SW STRAIN POLE,  
USING 2/C #14 AWG COILED ON EX. SW STRAIN POLE,  
AND SIGN Sn3

PROP. 2" PVC CONDUIT (9 FT)

REUSE EX. PULLBOX

Can this bend be made?  
would rerouting in RED  
work better?

NOTE 3  
ST +54.90

10+43.62  
46.34' LT

U.S. ROUTE 22

10+71.10  
42.05' RT

PROP. 5' PEDESTAL, PS-4  
RELOCATE EX. PUSHBUTTON (US-22), B4, AS PER PLAN,  
FROM EX. SE STRAIN POLE,  
USING 2/C #14 AWG COILED ON EX. SE STRAIN POLE, AND SIGN Sn4  
PROP. 2" PVC CONDUIT (4 FT),  
BETWEEN PS-4 AND PB1

PROP. 18" CONC. PULLBOX, PB1

PROP. 2" PVC CONDUIT (7 FT), SEE NOTE 4

Ex. SE Strain Pole, SP-3  
Ex. Pedestrian Head (US-22), P4  
PROP. PEDESTRIAN HEAD (MEIJER DR), P5, AS PER PLAN  
INSTALL USING 5/C #14 AWG COILED ON EX. SE STRAIN POLE

PROP. 2" PVC CONDUIT (22 FT)

PROP. 5' PEDESTAL, PS-5  
PROP. PUSHBUTTON (MEIJER DR), B5, AS PER PLAN,  
INSTALL USING 2/C #14 AWG COILED ON EX. SE STRAIN POLE, AND SIGN Sn5

REUSE EX. PULLBOX

PROP. 2" PVC CONDUIT (14 FT)

PROP. 5' PEDESTAL, PS-1  
RELOCATE EX. PEDESTRIAN HEAD (CRESTVIEW DR), P1,  
FROM EX. SW STRAIN POLE USING NEW 5/C #14 AWG  
PROP. PUSHBUTTON (CRESTVIEW DR), B1, AS PER PLAN,  
INSTALL USING 2/C #14 AWG COILED ON EX. NW STRAIN POLE, AND SIGN Sn1

Why does this need to be moved?

Ex. NW Strain Pole, SP-1

U.S. ROUTE 22

Ex. Controller and Cabinet

Ex. NE Strain Pole, SP-4  
PROP. PUSHBUTTON (MEIJER DR), B6, AS PER PLAN  
INSTALL USING NEW 2/C #14 AWG, AND SIGN Sn6  
PROP. PEDESTRIAN HEAD (MEIJER DR), P6, AS PER PLAN  
INSTALL USING NEW 5/C #14 AWG

MEIJER DRIVE

CRESTVIEW DR

**LEGEND**

TRAFFIC SIGNAL, 2 UNIT, 3 UNIT, OR PHB HEAD, 12"	PR. →	EX. →
TRAFFIC SIGNAL, 3 UNIT HEAD, 12", WITH ARROWS	→	→
TRAFFIC SIGNAL, 4 OR 5 UNIT HEAD, 12"	→	→
SIGNAL SUPPORT POLE	■	■
PEDESTRIAN HEAD	↓	↓
PEDESTRIAN PUSH BUTTON	—	—
PEDESTAL SUPPORT	□	□
CONTROLLER AND CABINET	⊠	⊠
TRAFFIC PULL BOX	⊞	⊞
ITEM 644 CROSSWALK MARKINGS	(X)	(X)
ITEM 644 STOP LINE	(ST)	(ST)
REMOVAL OF PAVEMENT MARKING	XXXX	XXXX

DESIGN AGENCY  
**CMT**  
CHRISTOPHER MURPHY & TAYLOR  
1777 WASHINGTON VILLAGE DR  
DAYTON, OHIO 45459  
www.cmtinc.com

DESIGNER  
GSH  
REVIEWER  
SAK 08/15/24  
PROJECT ID  
117237  
SHEET TOTAL  
P.55 66

TRAFFIC SIGNAL PLAN  
US 22 AT CRESTVIEW DR

HORIZONTAL SCALE IN FEET  
0 10 20 40



## SIGNAL TIMING CHART (TEM FORM 496-3)

INTERSECTION: US-22 AT CRESTVIEW DR									
MAINTAINING AGENCY: ODOT									
START UP		DUAL ENTRY: ON		PHASES: 2, 4, 6, 8					
START IN: YELLOW/RED FLASH		REST IN RED:		RING 1		RING 2			
TIME FOR FLASH / ALL RED (SEC.): 9, 6		OVERLAP		A	B	C	D		
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		SBL	NB	-	EB	NBL	SB	-	WB
MINIMUM GREEN (INITIAL) (SEC.)		-	20	-	10	-	20	-	10
ADDED INITIAL *(SEC./ACTUATION)		-	-	-	-	-	-	-	-
MAXIMUM INITIAL *(SEC.)		-	-	-	-	-	-	-	-
PASSAGE TIME (PRESET GAP) (SEC.)		-	3	-	3	-	3	-	3
TIME BEFORE REDUCTION *(SEC.)		-	-	-	-	-	-	-	-
MINIMUM GAP *(SEC.)		-	-	-	-	-	-	-	-
TIME TO REDUCE *(SEC.)		-	-	-	-	-	-	-	-
MAXIMUM GREEN I (SEC.)		-	80	-	35	-	80	-	35
MAXIMUM GREEN II (SEC.)		-	80	-	35	-	80	-	35
YELLOW CHANGE (SEC.)		4.5	4.9 **	-	3.0	4.5	4.9 **	-	3.0
ALL RED CLEARANCE (SEC.)		2.0	1.0 **	-	3.0	2.0	1.0 **	-	3.0
DELAYED GREEN (LPI) (SEC.)		-	-	-	-	-	-	-	-
FLASHING YELLOW ARROW DELAY^ (SEC.)		3	-	-	-	3	-	-	-
WALK ** (SEC.)		-	8	-	8	-	8	-	-
PEDESTRIAN CLEARANCE ** (SEC.)		-	13	-	25	-	13	-	-
RECALL	MAXIMUM (ON/OFF)	OFF	ON	-	OFF	OFF	ON	-	OFF
	MINIMUM (ON/OFF)	OFF	ON	-	OFF	OFF	ON	-	OFF
	PEDESTRIAN ** (ON/OFF)	OFF	OFF	-	OFF	OFF	OFF	-	OFF
MEMORY (ON/OFF)		OFF	OFF	-	OFF	OFF	OFF	-	OFF

\* VOLUME DENSITY CONTROLS

\*\* PROPOSED TIMING PARAMETERS

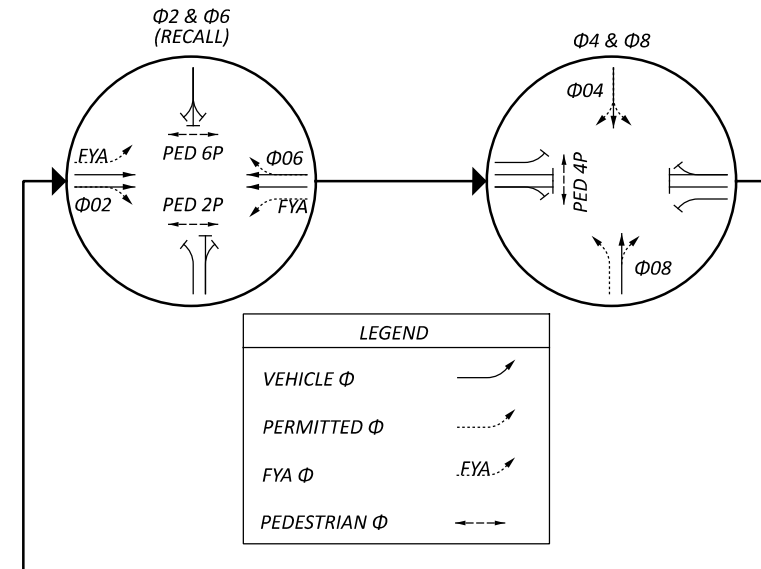
# FOR CROSSINGS WITH PEDESTRIAN PUSHBUTTONS, LPI'S (LEADING PEDESTRIAN INTERVALS) MAY BE IMPLEMENTED (3-6 SEC.) IN ACCORDANCE WITH LPI DURATION TIME PER THE ODOT SIGNAL CALCULATIONS - CLEARANCE INTERVALS SPREADSHEET

^ WHEN IMPLEMENTING FYA, A MINIMUM 3 SEC. DELAY SHALL BE PROGRAMMED PER FYA PHASE.

Round to nearest 0.5 sec. Use 2 sec min for AR

7 and 8 per calcs

## PHASING DIAGRAM



NOTES:

1. ALL SIGNAL TIMING PARAMETERS EXCEPT NOTED WITH DOUBLE ASTERISKS (\*\*) AND PHASING DIAGRAM SHOWN ARE BASED ON AVAILABLE RECORD PLANS OR CONTROLLER TIMING OUTPUTS. THE CONTRACTOR SHALL RETAIN ALL EXISTING TIMING AND PHASING PARAMETERS CODED IN THE CONTROLLER AT THE TIME OF CONSTRUCTION UNLESS OTHERWISE AFFECTED BY PROPOSED TIMING.

2. EXISTING VEHICLE DETECTION CONFIGURATION AND SETTINGS CODED IN THE CONTROLLER AT THE TIME OF CONSTRUCTION SHALL BE RETAINED.

3. COUNTDOWN PEDESTRIAN SIGNAL HEADS SHALL GO TO ZERO ON YELLOW PER ODOTCD FIGURE 4E-2.

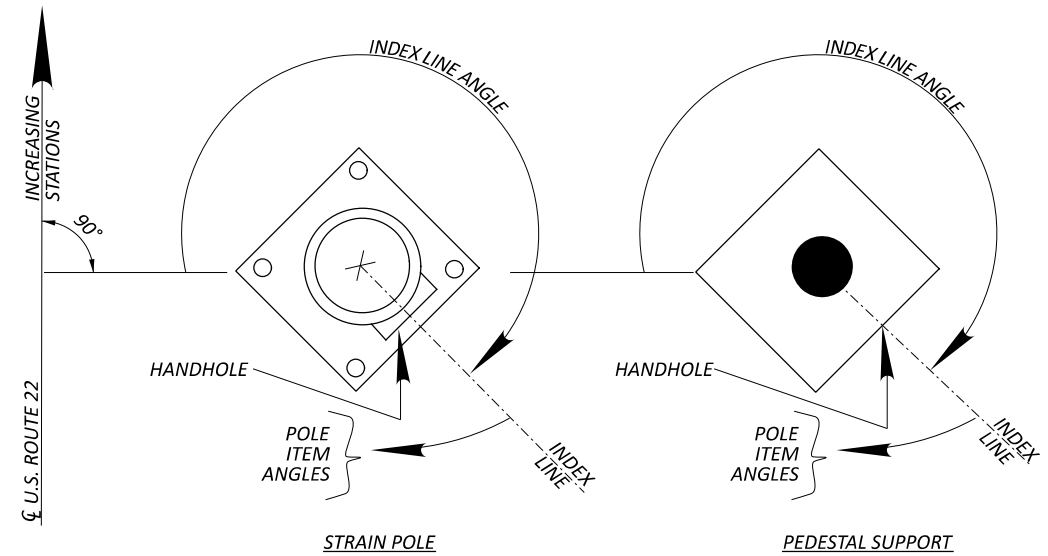
4. ANGLES SHOWN IN THE STRAIN POLE TABLE ARE FOR REFERENCE ONLY. PEDESTRIAN SIGNAL HEADS AND PUSH BUTTONS SHALL BE INSTALLED PERPENDICULAR TO THE CORRESPONDING CROSSWALK AS SHOWN IN THE PLANS.

5. INDEX LINE PASSES THROUGH THE CENTER OF THE HANDHOLE.

6. TOP OF PEDESTAL FOUNDATION SHALL BE FLUSH WITH ADJACENT CURB OR SIDEWALK.

## STRAIN POLE TABLE (TEM FIGURE 498-36)

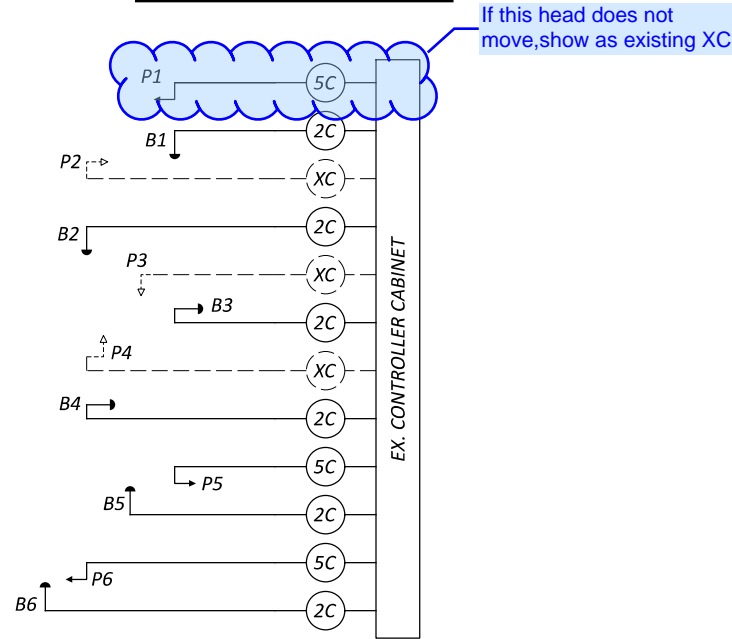
POLE NO.	STATION	OFFSET	TYPE	DESIGN NO.	POLE HEIGHT (FT.)	FOUNDATION ELEV. (SEE NOTE 6)	SPAN WIRE ATTACHED HEIGHT	INDEX LINE ANGLE (DEG.)	PEDESTAL ANGLE (DEG.)	ANGLES (DEG.) FROM INDEX LINE			
										US-22		CRESTVIEW DR	
										PEDESTRIAN SIGNAL	PEDESTRIAN PUSH BUTTON	PEDESTRIAN SIGNAL	PEDESTRIAN PUSH BUTTON
SP-1	EXISTING	SIGNAL			EXISTING				N/A	-	-	-	-
SP-2	EXISTING	SIGNAL			EXISTING				N/A	EX	-	EX	-
SP-3	EXISTING	SIGNAL			EXISTING				N/A	EX	-	130	-
SP-4	EXISTING	SIGNAL			EXISTING				N/A	-	-	45	230
PS-1	11+14.55	54.65' LT	PEDESTAL		10	DOES NOT APPLY			30	-	-	340	340
PS-2	10+57.65	64.81' LT	PEDESTAL		5	DOES NOT APPLY			30	-	-	-	340
PS-3	10+40.95	55.58' LT	PEDESTAL		5	DOES NOT APPLY			350	-	260	-	-
PS-4	10+71.51	51.89' RT	PEDESTAL		5	DOES NOT APPLY			10	-	70	-	-
PS-5	10+88.43	57.71' RT	PEDESTAL		5	DOES NOT APPLY			40	-	-	-	320



## POLE ORIENTATION



**WIRING DIAGRAM**



**NOTES:**

1. EXISTING VEHICULAR SIGNAL CABLES, POWER CABLES, AND COMMUNICATION CABLES NOT SHOWN IN THE WIRING DIAGRAM SHALL NOT BE DISTURBED.

2. FIELD WIRING HOOKUP CHART SHOWN IS FOR REFERENCE ONLY, CONTRACTOR SHALL MAINTAIN EXISTING FIELD WIRING CONNECTIONS.

3. ALL OTHER EXISTING FIELD WIRING CONNECTIONS NOT SHOWN IN THE FIELD WIRING HOOKUP CHART SHALL NOT BE DISTURBED.

**FIELD WIRING HOOKUP CHART (TEM FORM 496-16)**

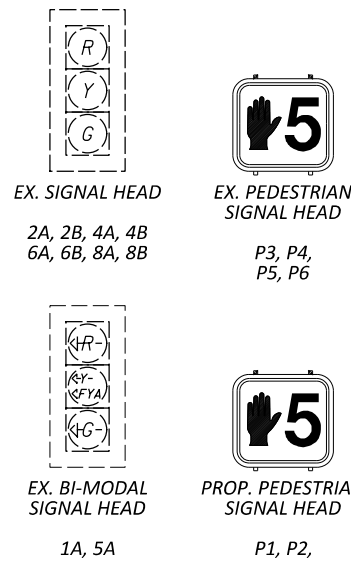
SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
<b>PEDESTRIAN MOVEMENTS</b>			
PED EAST	W	Ø2 PED/ LS 2P G	OUT
PED SOUTH	DW	Ø2 PED/ LS 2P R	
PED WEST	W	Ø4 PED/ LS 4P G	OUT
	DW	Ø4 PED/ LS 4P R	
LS = LOAD SWITCH			

Rename

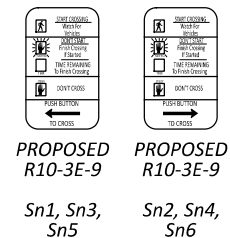
**LEGEND**

	EX. PEDESTRIAN SIGNAL (DND)		EX. PEDESTRIAN SIGNAL CABLE (DND)
	EX. PEDESTRIAN PUSH BUTTON (DND)		REUSED EX. PEDESTRIAN SIGNAL CABLE
	NEW, RELOCATED, OR REORIENTED PEDESTRIAN SIGNAL		NEW OR COILED SIGNAL CABLE, 2 CONDUCTOR, NO. 14 AWG
	NEW, RELOCATED, OR REORIENTED PEDESTRIAN PUSH BUTTON		NEW OR COILED SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG

**SIGNAL HEADS**



**SIGNS**

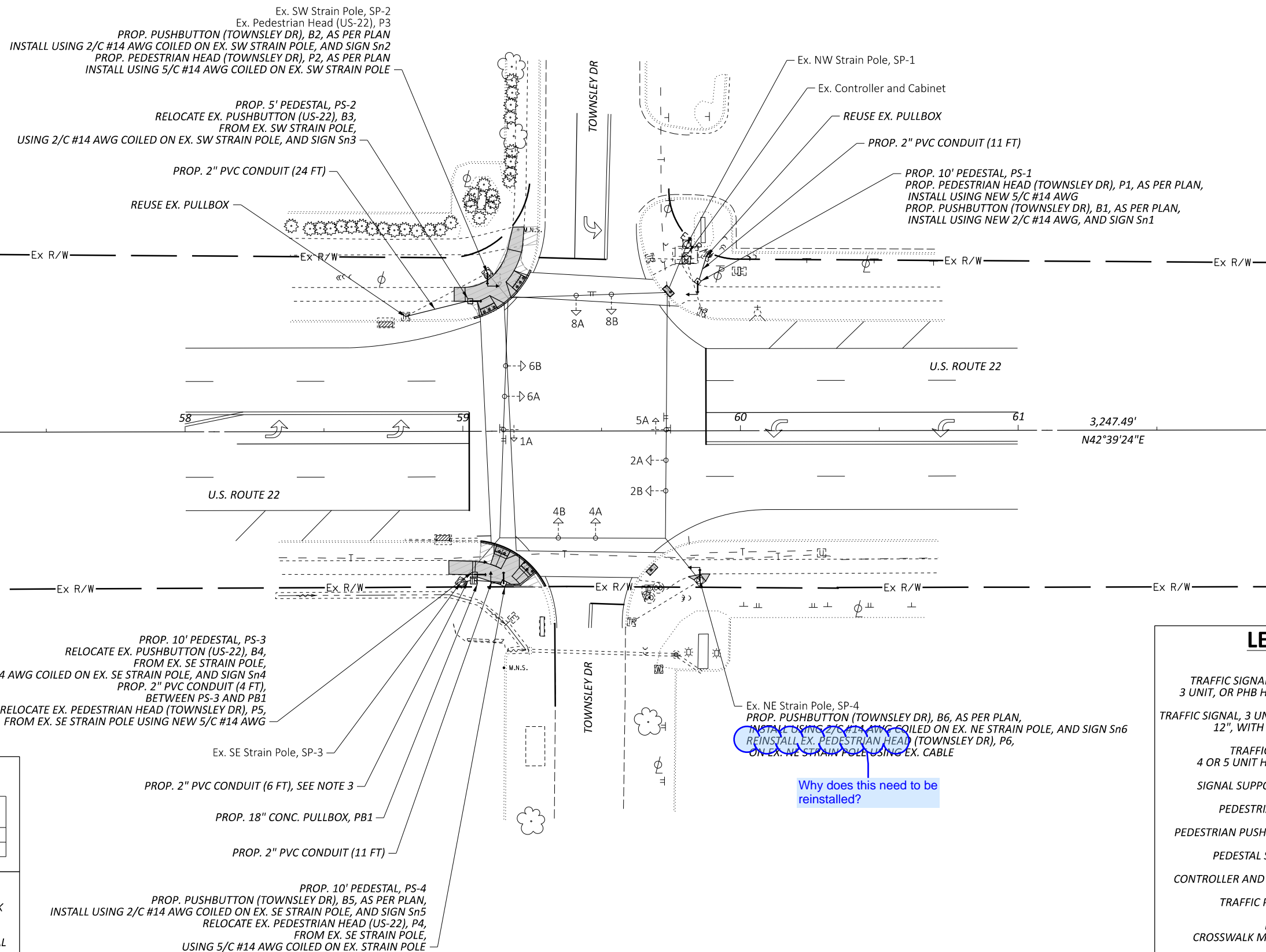


**PULLBOX TABLE**

PULL BOX #	STATION	SIDE	OFFSET	SIZE (IN.)
PB1	59+03.92	RT	53.75'	18
-	-	-	-	-

**NOTES:**

1. REMOVE ALL EXISTING "PUSH BUTTON FOR WALK SIGNAL" SIGNS - 2 EACH.
2. EX. SIGNAL EQUIPMENT NOT AFFECTED BY SIGNAL WORK SHALL NOT BE DISTURBED UNLESS NOTED OTHERWISE.
3. CONTRACTOR TO ACCESS POLE BASE TO ESTABLISH CONDUIT CONNECTIONS.



Why does this need to be reinstalled?

**LEGEND**

TRAFFIC SIGNAL, 2 UNIT, 3 UNIT, OR PHB HEAD, 12"	PR. →	EX. →
TRAFFIC SIGNAL, 3 UNIT HEAD, 12", WITH ARROWS	→	→
TRAFFIC SIGNAL, 4 OR 5 UNIT HEAD, 12"	→	→
SIGNAL SUPPORT POLE	■	■
PEDESTRIAN HEAD	↓	↓
PEDESTRIAN PUSH BUTTON	—	—
PEDESTAL SUPPORT	□	□
CONTROLLER AND CABINET	⊠	⊠
TRAFFIC PULL BOX	⊞	⊞
ITEM 644 CROSSWALK MARKINGS	(X)	(X)
ITEM 644 STOP LINE	(ST)	(ST)
REMOVAL OF PAVEMENT MARKING	XXXX	XXXX



**TRAFFIC SIGNAL PLAN  
US 22 AT TOWNSLEY DR**

DESIGN AGENCY



DESIGNER

GSH

REVIEWER

SAK 08/15/24

PROJECT ID

117237

SHEET TOTAL

P.58 66

# SIGNAL TIMING CHART (TEM FORM 496-3)

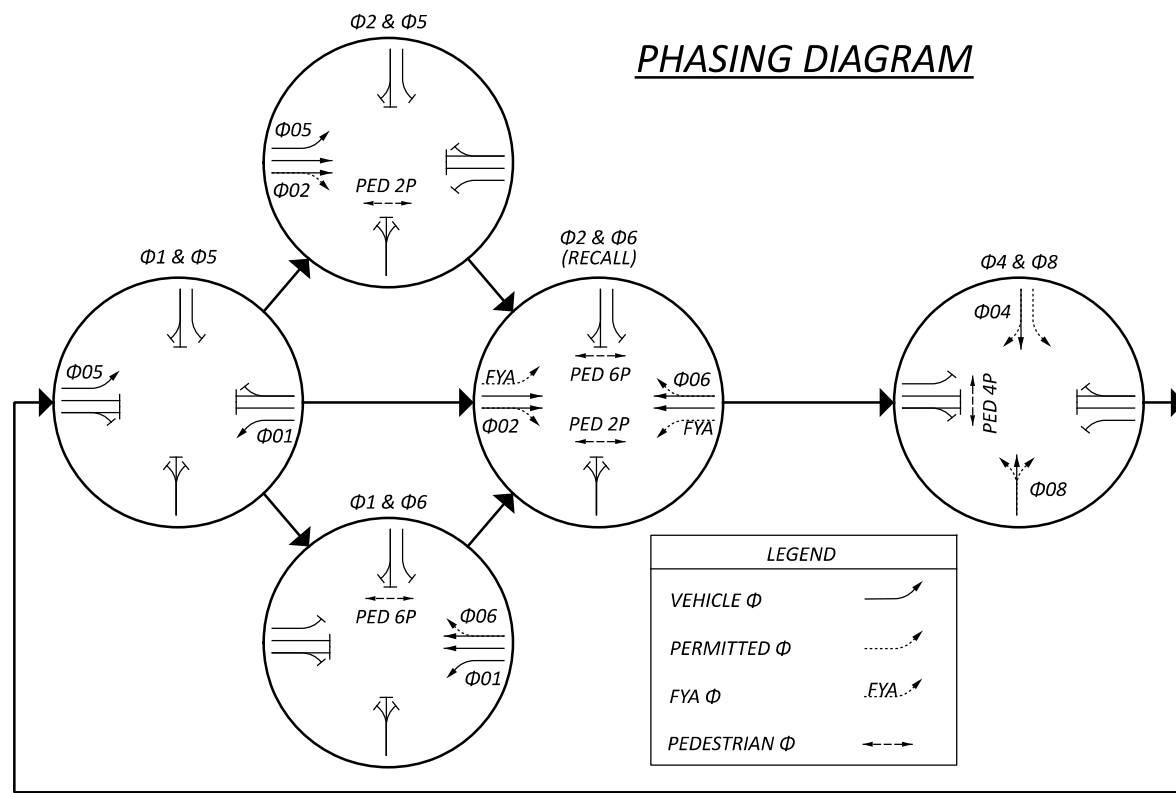
INTERSECTION: US-22 AT TOWNSLEY DR									
MAINTAINING AGENCY: ODOT									
START UP		DUAL ENTRY: ON		PHASES: 2, 4, 6, 8					
START IN: YELLOW/RED FLASH		REST IN RED: RING 1 - RING 2 -		OVERLAP		A	B	C	D
TIME FOR FLASH / ALL RED (SEC.): 9, 6		PHASES							
FIRST PHASE(S): 2, 6		PHASES							
COLOR DISPLAYED: GREEN		PHASES							
INTERVAL OR FEATURE		CONTROLLER MOVEMENT NO.							
INTERSECTION MOVEMENT (PHASE)		1	2	3	4	5	6	7	8
DIRECTION		SBL	NB	-	EB	NBL	SB	-	WB
MINIMUM GREEN (INITIAL) (SEC.)		7	20	-	10	7	20	-	10
ADDED INITIAL *(SEC./ACTUATION)		-	-	-	-	-	-	-	-
MAXIMUM INITIAL *(SEC.)		-	-	-	-	-	-	-	-
PASSAGE TIME (PRESET GAP) (SEC.)		3	5	-	3	3	5	-	3
TIME BEFORE REDUCTION *(SEC.)		-	-	-	-	-	-	-	-
MINIMUM GAP *(SEC.)		-	-	-	-	-	-	-	-
TIME TO REDUCE *(SEC.)		-	-	-	-	-	-	-	-
MAXIMUM GREEN I (SEC.)		20	65	-	25	20	65	-	25
MAXIMUM GREEN II (SEC.)		20	65	-	25	20	65	-	25
YELLOW CHANGE (SEC.)		4.5	4.5	-	3.0	4.5	4.5	-	3.0
ALL RED CLEARANCE (SEC.)		2.0	2.0	-	3.0	2.0	2.0	-	3.0
DELAYED GREEN (LPI) (SEC.)		-	-	-	-	-	-	-	-
FLASHING YELLOW ARROW DELAY (SEC.)		3	-	-	-	-	-	-	-
WALK ** (SEC.)		-	8	-	9	-	8	-	-
PEDESTRIAN CLEARANCE ** (SEC.)		-	10	-	21	-	10	-	-
RECALL	MAXIMUM (ON/OFF)	OFF	DEF	-	DEF	DEF	DEF	-	OFF
	MINIMUM (ON/OFF)	OFF	ON	-	OFF	OFF	ON	-	OFF
	PEDESTRIAN ** (ON/OFF)	OFF	OFF	-	OFF	OFF	OFF	-	OFF
MEMORY (ON/OFF)	OFF	OFF	-	OFF	OFF	OFF	OFF	-	OFF

match calculations

\* VOLUME DENSITY CONTROLS  
 \*\* PROPOSED TIMING PARAMETERS  
 # FOR CROSSINGS WITH PEDESTRIAN PUSHBUTTONS, LPI'S (LEADING PEDESTRIAN INTERVALS) MAY BE IMPLEMENTED (3-6 SEC.) IN ACCORDANCE WITH LPI DURATION TIME PER THE ODOT SIGNAL CALCULATIONS - CLEARANCE INTERVALS SPREADSHEET

^ WHEN IMPLEMENTING FYA, A MINIMUM 3 SEC. DELAY SHALL BE PROGRAMMED PER FYA PHASE.

# PHASING DIAGRAM

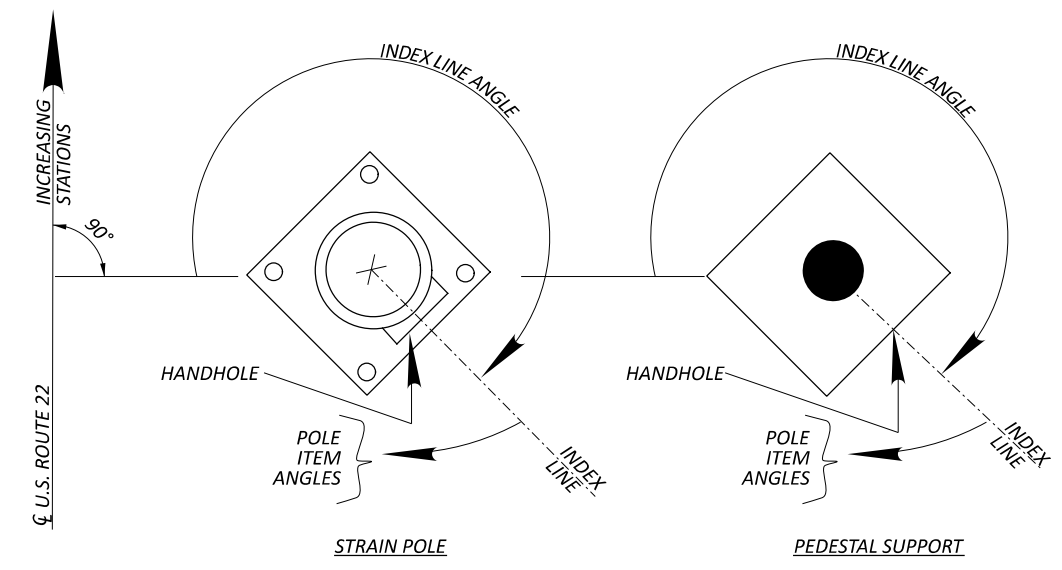


- NOTES:
- ALL SIGNAL TIMING PARAMETERS EXCEPT NOTED WITH DOUBLE ASTERISKS (\*\*) AND PHASING DIAGRAM SHOWN ARE BASED ON AVAILABLE RECORD PLANS OR CONTROLLER TIMING OUTPUTS. THE CONTRACTOR SHALL RETAIN ALL EXISTING TIMING AND PHASING PARAMETERS CODED IN THE CONTROLLER AT THE TIME OF CONSTRUCTION UNLESS OTHERWISE AFFECTED BY PROPOSED TIMING.
  - EXISTING VEHICLE DETECTION CONFIGURATION AND SETTINGS CODED IN THE CONTROLLER AT THE TIME OF CONSTRUCTION SHALL BE RETAINED.
  - COUNTDOWN PEDESTRIAN SIGNAL HEADS SHALL GO TO ZERO ON YELLOW PER ODOTCD FIGURE 4E-2.
  - ANGLES SHOWN IN THE STRAIN POLE TABLE ARE FOR REFERENCE ONLY. PEDESTRIAN SIGNAL HEADS AND PUSH BUTTONS SHALL BE INSTALLED PERPENDICULAR TO THE CORRESPONDING CROSSWALK AS SHOWN IN THE PLANS.
  - INDEX LINE PASSES THROUGH THE CENTER OF THE HANDHOLE.
  - TOP OF PEDESTAL FOUNDATION SHALL BE FLUSH WITH ADJACENT CURB OR SIDEWALK.

# STRAIN POLE TABLE (TEM FIGURE 498-36)

POLE NO.	STATION	OFFSET	TYPE	DESIGN NO.	POLE HEIGHT (FT.)	FOUNDATION ELEV. (SEE NOTE 6)	SPAN WIRE ATTACHED HEIGHT	INDEX LINE ANGLE (DEG.)	PEDESTAL ANGLE (DEG.)	ANGLES (DEG.) FROM INDEX LINE			
										US-22		TOWNSLEY DR	
										PEDESTRIAN SIGNAL	PEDESTRIAN PUSH BUTTON	PEDESTRIAN SIGNAL	PEDESTRIAN PUSH BUTTON
SP-1	EXISTING	SIGNAL			EXISTING			N/A		-	-	-	-
SP-2	EXISTING	SIGNAL			EXISTING			N/A		EX	-	45	45
SP-3	EXISTING	SIGNAL			EXISTING			N/A		-	-	-	-
SP-4	EXISTING	SIGNAL			EXISTING			N/A		-	-	40	40
PS-1	59+84.71	53.82' LT	PEDESTAL		10		DOES NOT APPLY	40		-	-	320	320
PS-2	59+02.78	46.87' LT	PEDESTAL		5		DOES NOT APPLY	0		-	270	-	-
PS-3	59+04.27	51.60' RT	PEDESTAL		10		DOES NOT APPLY	0		0	90	0	-
PS-4	59+14.60	54.77' RT	PEDESTAL		10		DOES NOT APPLY	30		-	-	-	330

typo?



# POLE ORIENTATION

HAM/WAR US 22 16.04/0.00 PED

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SIGNAL TIMING AND POLE DETAILS  
 US 22 AT TOWNSLEY DR

DESIGN AGENCY  
**CMT**  
 CRYSTAL MOUNTAIN TECHNOLOGIES, INC.  
 2777 WASHINGTON VILLAGE DR  
 BAYVIEW, OHIO 44149  
 www.cmtinc.com

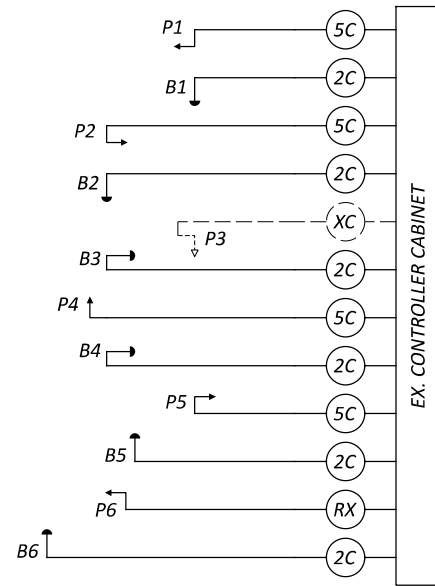
DESIGNER  
 GSH

REVIEWER  
 SAK 08/15/24

PROJECT ID  
 117237

SHEET TOTAL  
 P.59 | 66

**WIRING DIAGRAM**



**NOTES:**

- EXISTING VEHICULAR SIGNAL CABLES, POWER CABLES, AND COMMUNICATION CABLES NOT SHOWN IN THE WIRING DIAGRAM SHALL NOT BE DISTURBED.
- FIELD WIRING HOOKUP CHART SHOWN IS FOR REFERENCE ONLY, CONTRACTOR SHALL MAINTAIN EXISTING FIELD WIRING CONNECTIONS.
- ALL OTHER EXISTING FIELD WIRING CONNECTIONS NOT SHOWN IN THE FIELD WIRING HOOKUP CHART SHALL NOT BE DISTURBED.

**FIELD WIRING HOOKUP CHART (TEM FORM 496-16)**

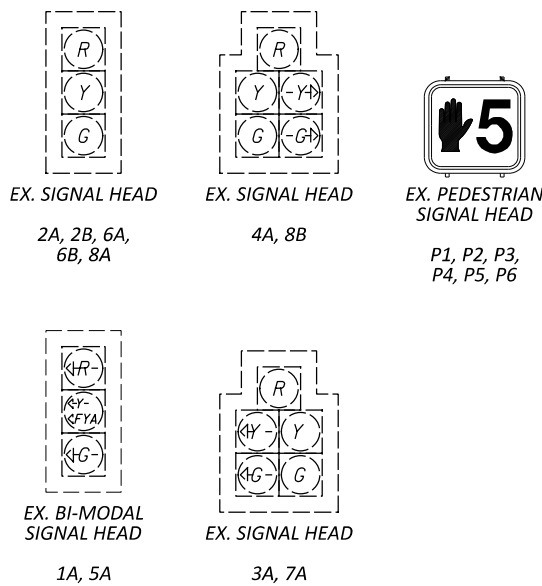
SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
PEDESTRIAN MOVEMENTS			
PED EAST	W	Ø2 PED/ LS 2P G	OUT
PED WEST	DW	Ø2 PED/ LS 2P R	
PED SOUTH	W	Ø4 PED/ LS 4P G	OUT
PED WEST	DW	Ø4 PED/ LS 4P R	
LS = LOAD SWITCH			

Rename

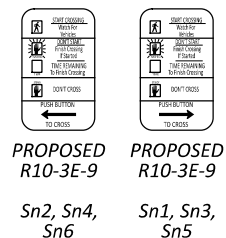
**LEGEND**

	EX. PEDESTRIAN SIGNAL (DND)		EX. PEDESTRIAN SIGNAL CABLE (DND)
	EX. PEDESTRIAN PUSH BUTTON (DND)		REUSED EX. PEDESTRIAN SIGNAL CABLE
	NEW, RELOCATED, OR REORIENTED PEDESTRIAN SIGNAL		NEW OR COILED SIGNAL CABLE, 2 CONDUCTOR, NO. 14 AWG
	NEW, RELOCATED, OR REORIENTED PEDESTRIAN PUSH BUTTON		NEW OR COILED SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG

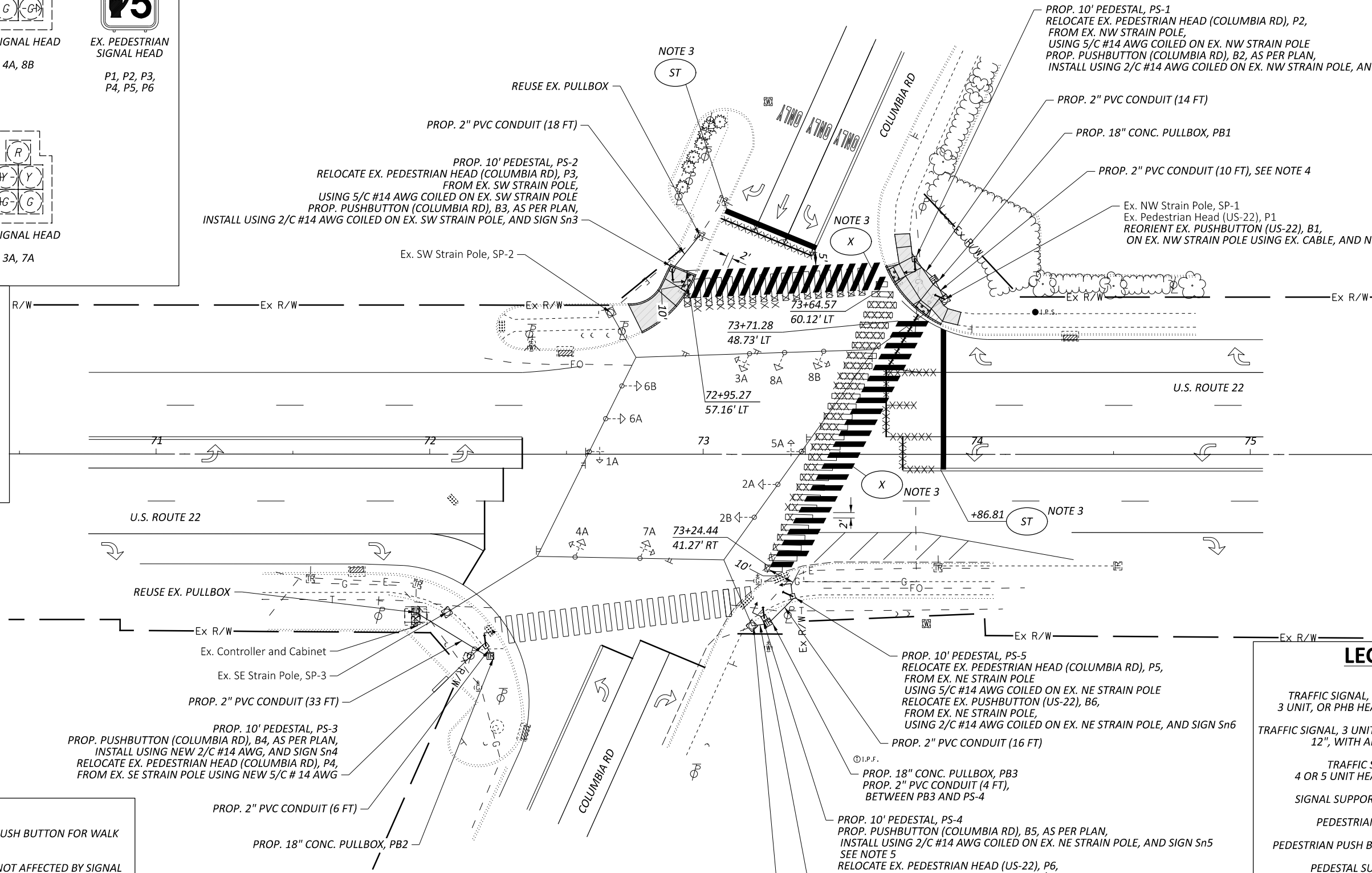
# SIGNAL HEADS



# SIGNS



# TRAFFIC SIGNAL PLAN US 22 AT COLUMBIA RD



## PULLBOX TABLE

PULL BOX #	STATION	SIDE	OFFSET	SIZE (IN.)
PB1	73+82.86	LT	64.01'	18
PB2	72+22.21	RT	73.73'	18
PB3	73+23.75	RT	61.46'	18
-	-	-	-	-

## LEGEND

- TRAFFIC SIGNAL, 2 UNIT, 3 UNIT, OR PHB HEAD, 12"
- TRAFFIC SIGNAL, 3 UNIT HEAD, 12", WITH ARROWS
- TRAFFIC SIGNAL, 4 OR 5 UNIT HEAD, 12"
- SIGNAL SUPPORT POLE
- PEDESTRIAN HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL SUPPORT
- CONTROLLER AND CABINET
- TRAFFIC PULL BOX
- ITEM 644 CROSSWALK MARKINGS
- ITEM 644 STOP LINE
- REMOVAL OF PAVEMENT MARKING

HAM/WAR US 22 16.04/0.00 PED

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DESIGN AGENCY  
  
 CMT  
 1777 WASHINGTON VILLAGE DR  
 COLUMBUS, OHIO 43240  
 614.462.1234  
 www.cmtinc.com

DESIGNER  
 GSH

REVIEWER  
 SAK 08/15/24

PROJECT ID  
 117237

SHEET TOTAL  
 P.61 66

# SIGNAL TIMING CHART (TEM FORM 496-3)

INTERSECTION: US-22 AT COLUMBIA RD									
MAINTAINING AGENCY: ODOT									
START UP	DUAL ENTRY: ON		PHASES: 2, 4, 6, 8						
	REST IN RED:		RING 1 -		RING 2 -				
START IN:	YELLOW/RED FLASH								
TIME FOR FLASH / ALL RED (SEC.):	9, 6								
FIRST PHASE(S):	2, 6								
COLOR DISPLAYED:	GREEN								
INTERVAL OR FEATURE	CONTROLLER MOVEMENT NO.								
INTERSECTION MOVEMENT (PHASE)	1	2	3	4	5	6	7	8	
DIRECTION	SBL	NB	WBL	EB	NBL	SB	EBL	WB	
MINIMUM GREEN (INITIAL) (SEC.)	7	20	5	10	7	20	7	10	
ADDED INITIAL *(SEC./ACTUATION)	-	-	-	-	-	-	-	-	
MAXIMUM INITIAL *(SEC.)	-	-	-	-	-	-	-	-	
PASSAGE TIME (PRESET GAP) (SEC.)	5	3	3	3	3	3	5	6	
TIME BEFORE REDUCTION *(SEC.)	-	-	-	-	-	-	-	-	
MINIMUM GAP *(SEC.)	-	-	-	-	-	-	-	-	
TIME TO REDUCE *(SEC.)	-	-	-	-	-	-	-	-	
MAXIMUM GREEN I (SEC.)	10	50	10	50	20	40	20	40	
MAXIMUM GREEN II (SEC.)	15	50	20	35	15	50	20	35	
YELLOW CHANGE (SEC.)	3.0**	5.0**	4.5	4.5	3.0**	5.0**	4.5	4.5	
ALL RED CLEARANCE (SEC.)	3.5**	1.0**	2.0	2.0	3.5**	1.0**	2.0	2.0	
DELAYED GREEN (LPI)* (SEC.)	-	-	-	-	-	-	-	-	
FLASHING YELLOW ARROW DELAY^ (SEC.)	3	-	-	-	3	-	-	-	
WALK** (SEC.)	-	8	-	-	-	8	-	-	
PEDESTRIAN CLEARANCE** (SEC.)	-	22	-	-	-	22	-	27	
RECALL	MAXIMUM (ON/OFF)	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
	MINIMUM (ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
	PEDESTRIAN** (ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
MEMORY (ON/OFF)	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF	

\* VOLUME DENSITY CONTROLS

\*\* PROPOSED TIMING PARAMETERS

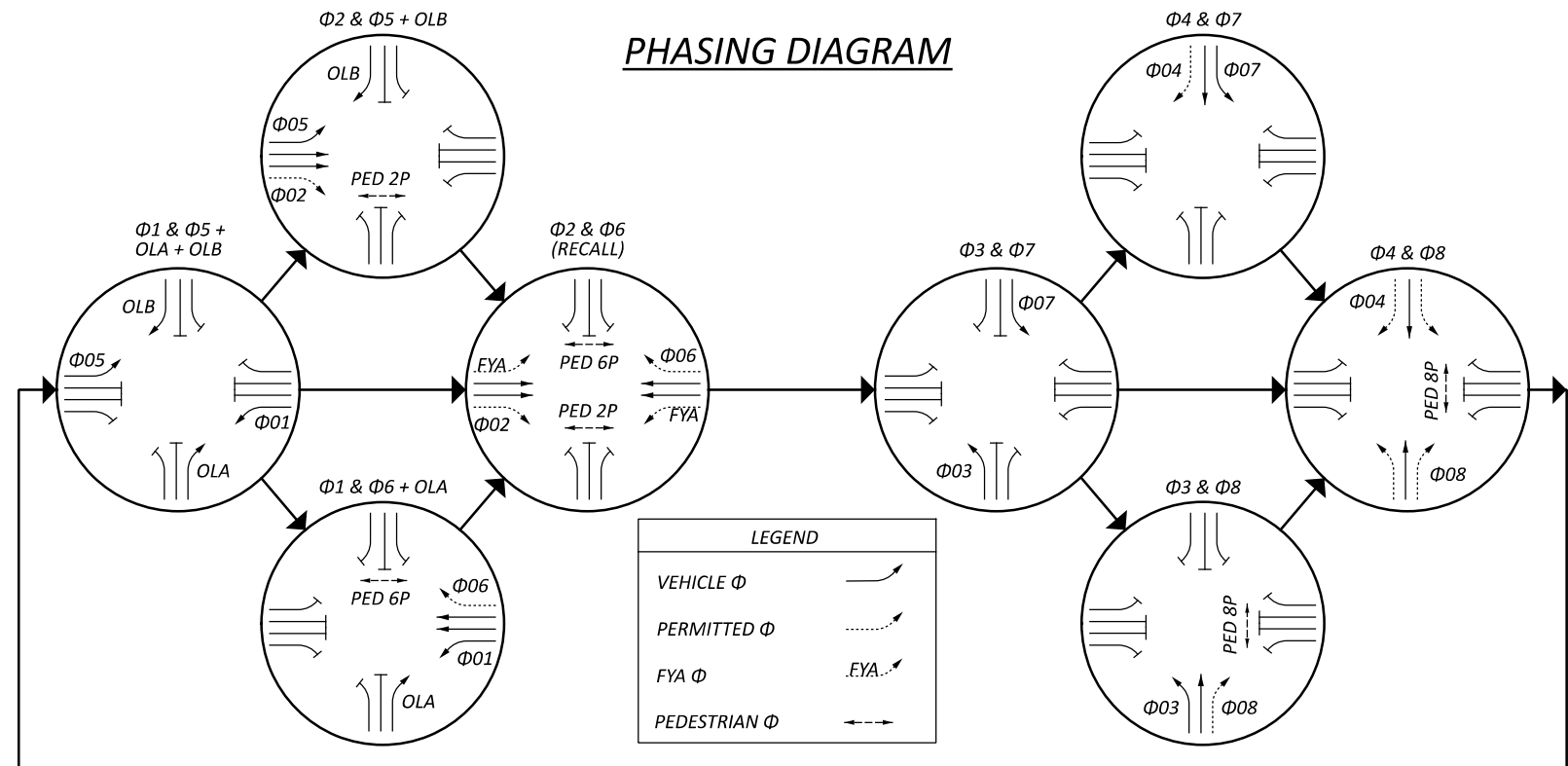
# FOR CROSSINGS WITH PEDESTRIAN PUSHBUTTONS, LPI'S (LEADING PEDESTRIAN INTERVALS) MAY BE IMPLEMENTED (3-6 SEC.) IN ACCORDANCE WITH LPI DURATION TIME PER THE ODOT SIGNAL CALCULATIONS - CLEARANCE INTERVALS SPREADSHEET

^ WHEN IMPLEMENTING FYA, A MINIMUM 3 SEC. DELAY SHALL BE PROGRAMMED PER FYA PHASE.

Use 2 sec min for AR

8 and 16

# PHASING DIAGRAM

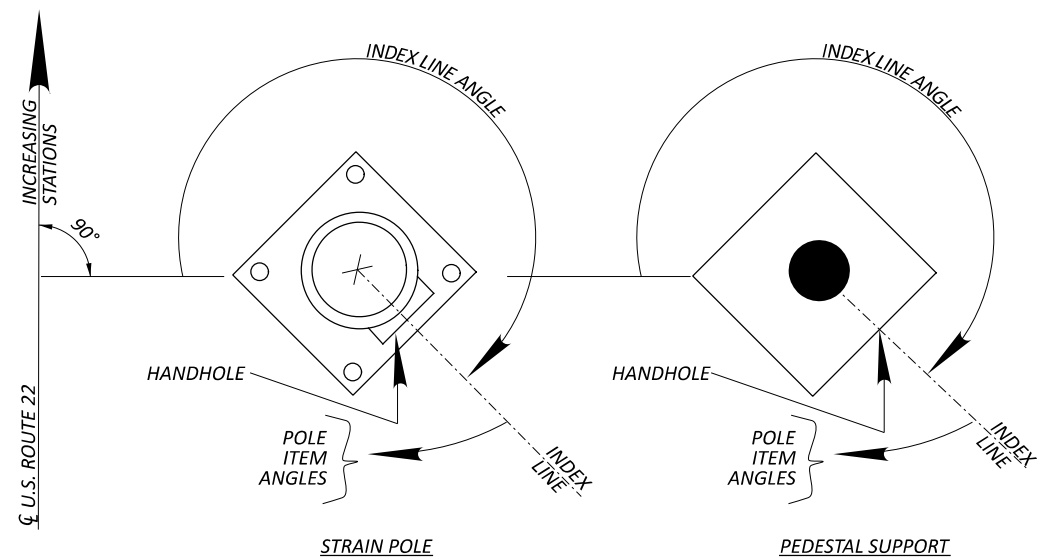


### NOTES:

- ALL SIGNAL TIMING PARAMETERS EXCEPT NOTED WITH DOUBLE ASTERISKS (\*\*) AND PHASING DIAGRAM SHOWN ARE BASED ON AVAILABLE RECORD PLANS OR CONTROLLER TIMING OUTPUTS. THE CONTRACTOR SHALL RETAIN ALL EXISTING TIMING AND PHASING PARAMETERS CODED IN THE CONTROLLER AT THE TIME OF CONSTRUCTION UNLESS OTHERWISE AFFECTED BY PROPOSED TIMING.
- EXISTING VEHICLE DETECTION CONFIGURATION AND SETTINGS CODED IN THE CONTROLLER AT THE TIME OF CONSTRUCTION SHALL BE RETAINED.
- COUNTDOWN PEDESTRIAN SIGNAL HEADS SHALL GO TO ZERO ON YELLOW PER ODOTCD FIGURE 4E-2.
- ANGLES SHOWN IN THE STRAIN POLE TABLE ARE FOR REFERENCE ONLY. PEDESTRIAN SIGNAL HEADS AND PUSH BUTTONS SHALL BE INSTALLED PERPENDICULAR TO THE CORRESPONDING CROSSWALK AS SHOWN IN THE PLANS.
- INDEX LINE PASSES THROUGH THE CENTER OF THE HANDHOLE.
- TOP OF PEDESTAL FOUNDATION SHALL BE FLUSH WITH ADJACENT CURB OR SIDEWALK.

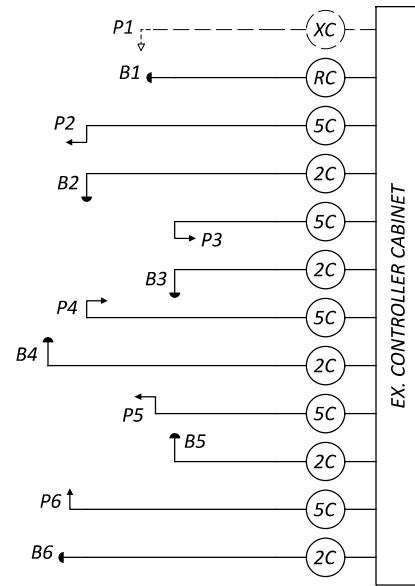
# STRAIN POLE TABLE (TEM FIGURE 498-36)

POLE NO.	STATION	OFFSET	TYPE	DESIGN NO.	POLE HEIGHT (FT.)	FOUNDATION ELEV. (SEE NOTE 6)	SPAN WIRE ATTACHED HEIGHT	INDEX LINE ANGLE (DEG.)	PEDESTAL ANGLE (DEG.)	ANGLES (DEG.) FROM INDEX LINE			
										US-22		COLUMBIA RD	
										PEDESTRIAN SIGNAL	PEDESTRIAN PUSH BUTTON	PEDESTRIAN SIGNAL	PEDESTRIAN PUSH BUTTON
SP-1	EXISTING		SIGNAL			EXISTING			N/A	EX	60	-	-
SP-2	EXISTING		SIGNAL			EXISTING			N/A	-	-	-	-
SP-3	EXISTING		SIGNAL			EXISTING			N/A	-	-	-	-
SP-4	EXISTING		SIGNAL			EXISTING			N/A	-	-	-	-
PS-1	73+77.22	71.41' LT		PEDESTAL	10	DOES NOT APPLY			350	-	-	0	0
PS-2	72+88.63	67.53' LT		PEDESTAL	10	DOES NOT APPLY			20	-	-	340	340
PS-3	72+20.55	70.01' RT		PEDESTAL	10	DOES NOT APPLY			50	-	-	300	300
PS-4	73+22.36	59.79' RT		PEDESTAL	10	DOES NOT APPLY			330	330	-	-	20
PS-5	73+32.70	51.91' RT		PEDESTAL	10	DOES NOT APPLY			350	-	300	0	-



# POLE ORIENTATION

**WIRING DIAGRAM**



**NOTES:**

1. EXISTING VEHICULAR SIGNAL CABLES, POWER CABLES, AND COMMUNICATION CABLES NOT SHOWN IN THE WIRING DIAGRAM SHALL NOT BE DISTURBED.
2. FIELD WIRING HOOKUP CHART SHOWN IS FOR REFERENCE ONLY, CONTRACTOR SHALL MAINTAIN EXISTING FIELD WIRING CONNECTIONS.
3. ALL OTHER EXISTING FIELD WIRING CONNECTIONS NOT SHOWN IN THE FIELD WIRING HOOKUP CHART SHALL NOT BE DISTURBED.

**FIELD WIRING HOOKUP CHART (TEM FORM 496-16)**

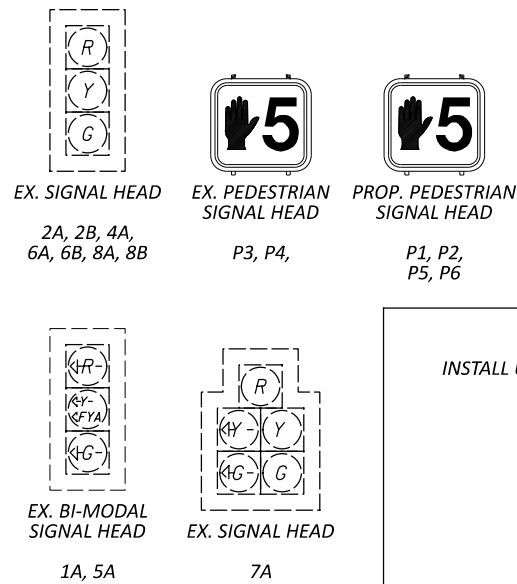
SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
PEDESTRIAN MOVEMENTS			
PED EAST	W	Ø2 PED/ LS 2P G	OUT
PED WEST	DW	Ø2 PED/ LS 2P R	
PED NORTH	W	Ø6 PED/ LS 6P G	OUT
PED NORTH	DW	Ø6 PED/ LS 6P R	
LS = LOAD SWITCH			

rename

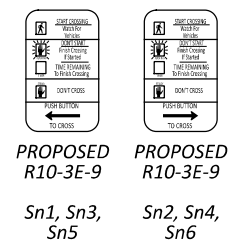
**LEGEND**

	EX. PEDESTRIAN SIGNAL (DND)		EX. PEDESTRIAN SIGNAL CABLE (DND)
	EX. PEDESTRIAN PUSH BUTTON (DND)		REUSED EX. PEDESTRIAN SIGNAL CABLE
	NEW, RELOCATED, OR REORIENTED PEDESTRIAN SIGNAL		NEW OR COILED SIGNAL CABLE, 2 CONDUCTOR, NO. 14 AWG
	NEW, RELOCATED, OR REORIENTED PEDESTRIAN PUSH BUTTON		NEW OR COILED SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG

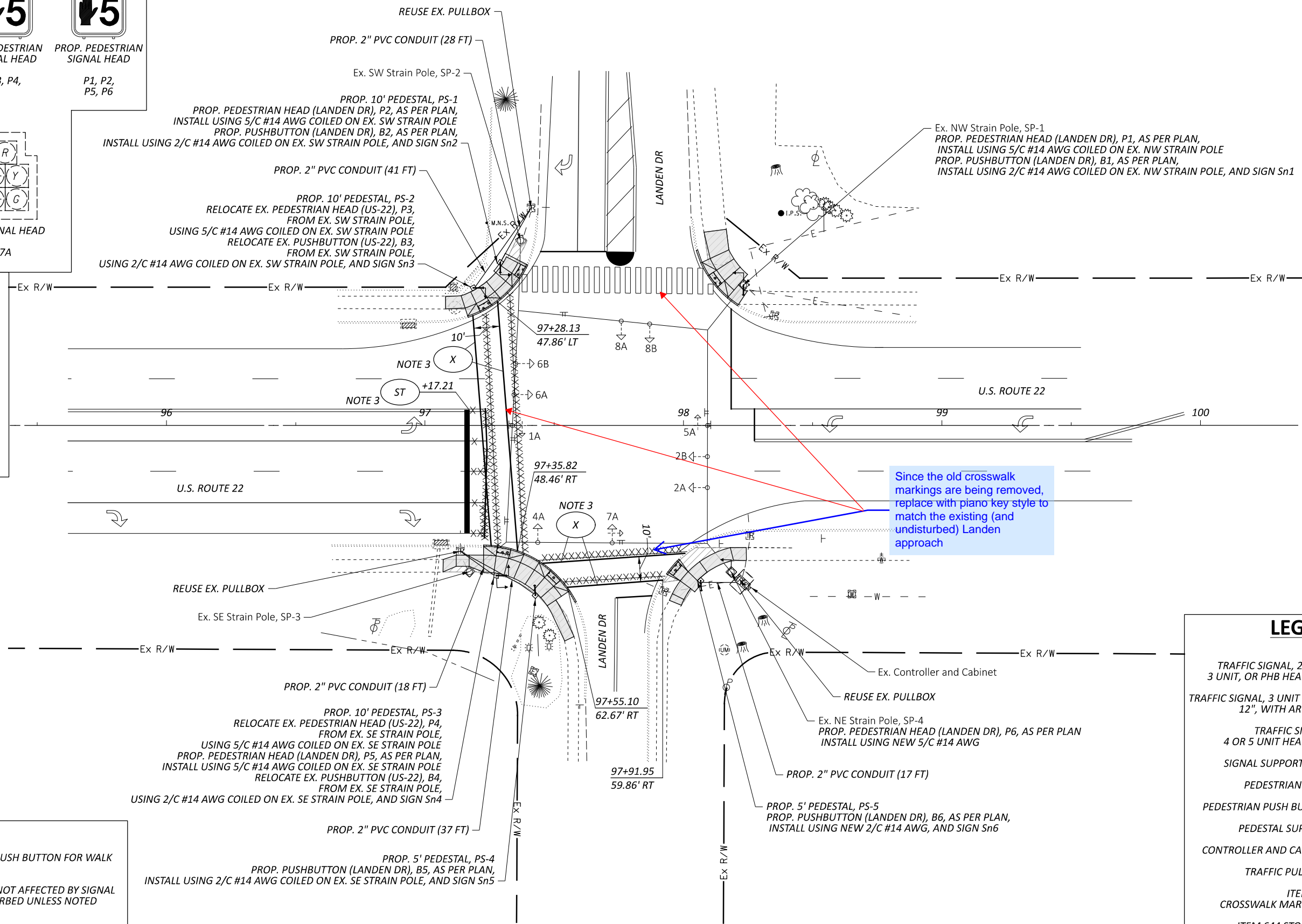
**SIGNAL HEADS**



**SIGNS**



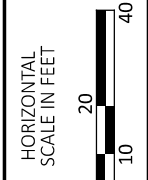
- NOTES:**
1. REMOVE ALL EXISTING "PUSH BUTTON FOR WALK SIGNAL" SIGNS - 2 EACH.
  2. EX. SIGNAL EQUIPMENT NOT AFFECTED BY SIGNAL WORK SHALL NOT BE DISTURBED UNLESS NOTED OTHERWISE.
  3. CONTRACTOR SHALL REMOVE EX. PAVEMENT MARKINGS THAT CONFLICT WITH PROP. PAVEMENT MARKINGS.



Since the old crosswalk markings are being removed, replace with piano key style to match the existing (and undisturbed) Landen approach

**LEGEND**

TRAFFIC SIGNAL, 2 UNIT, 3 UNIT, OR PHB HEAD, 12"	PR. →	EX. →
TRAFFIC SIGNAL, 3 UNIT HEAD, 12", WITH ARROWS	→	→
TRAFFIC SIGNAL, 4 OR 5 UNIT HEAD, 12"	→	→
SIGNAL SUPPORT POLE	■	■
PEDESTRIAN HEAD	↓	↓
PEDESTRIAN PUSH BUTTON	—	—
PEDESTAL SUPPORT	□	□
CONTROLLER AND CABINET	⊠	⊠
TRAFFIC PULL BOX	⊠	⊠
ITEM 644 CROSSWALK MARKINGS	(X)	(X)
ITEM 644 STOP LINE	(ST)	(ST)
REMOVAL OF PAVEMENT MARKING	XXXX	XXXX



**TRAFFIC SIGNAL PLAN  
US 22 AT LANDEN DR**

DESIGN AGENCY

**CMT**  
 COLUMBIA METROPOLITAN TRANSPORTATION CONSULTANTS  
 1777 WASHINGTON VILLAGE DR  
 BAYVIEW, OHIO 44149  
 www.cmtinc.com

DESIGNER

GSH

REVIEWER

SAK 08/15/24

PROJECT ID

117237

SHEET TOTAL

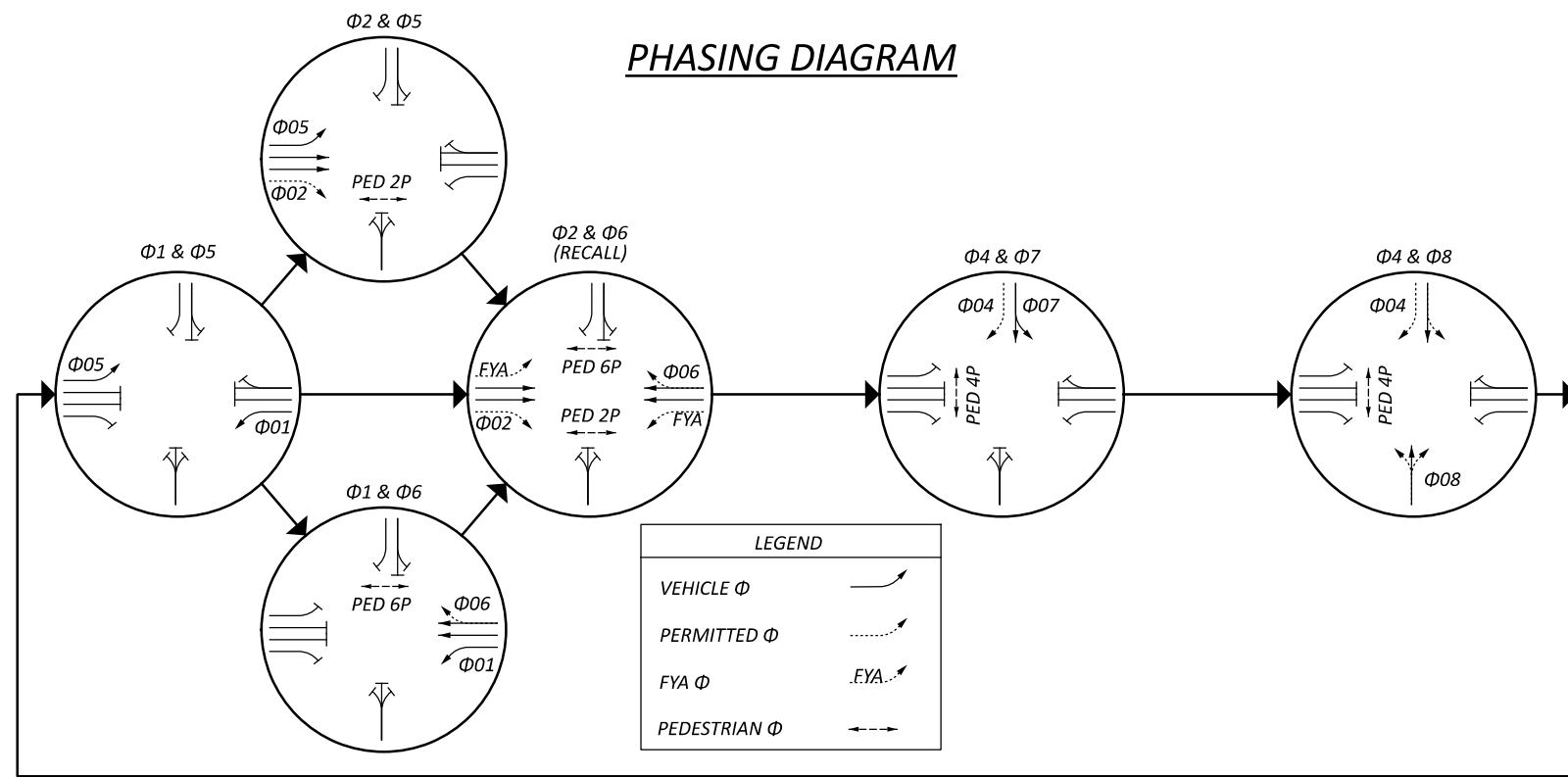
P.64 66



# SIGNAL TIMING CHART (TEM FORM 496-3)

# PHASING DIAGRAM

INTERSECTION: US-22 AT LANDEN DR									
MAINTAINING AGENCY: ODOT									
START UP	DUAL ENTRY: ON		PHASES: 2, 4, 6, 8						
	REST IN RED:		RING 1 -		RING 2 -				
START IN:	YELLOW/RED FLASH								
TIME FOR FLASH / ALL RED (SEC.):	9, 6								
FIRST PHASE(S):	2, 6								
COLOR DISPLAYED:	GREEN								
INTERVAL OR FEATURE	CONTROLLER MOVEMENT NO.								
INTERSECTION MOVEMENT (PHASE)	1	2	3	4	5	6	7	8	
DIRECTION	SBL	NB	-	EB	NBL	SB	EBL	WB	
MINIMUM GREEN (INITIAL) (SEC.)	7	20	-	10	7	20	7	10	
ADDED INITIAL *(SEC./ACTUATION)	-	-	-	-	-	-	-	-	
MAXIMUM INITIAL *(SEC.)	-	-	-	-	-	-	-	-	
PASSAGE TIME (PRESET GAP) (SEC.)	3	3	-	3	3	3	3	3	
TIME BEFORE REDUCTION *(SEC.)	-	-	-	-	-	-	-	-	
MINIMUM GAP *(SEC.)	-	-	-	-	-	-	-	-	
TIME TO REDUCE *(SEC.)	-	-	-	-	-	-	-	-	
MAXIMUM GREEN I (SEC.)	25	50	-	45	25	50	10	45	
MAXIMUM GREEN II (SEC.)	25	50	-	45	25	50	10	45	
YELLOW CHANGE (SEC.)	3.0**	5.1**	-	4.0	3.0**	5.1**	-	4.0	
ALL RED CLEARANCE (SEC.)	2.3**	1.0**	-	2.0	2.3**	1.0**	-	2.0	
DELAYED GREEN (LPI) (SEC.)	-	-	-	-	-	-	-	-	
FLASHING YELLOW ARROW DELAY^ (SEC.)	3	-	-	-	3	-	-	-	
WALK** (SEC.)	-	8	-	9	-	-	-	-	
PEDESTRIAN CLEARANCE** (SEC.)	-	17	-	23	-	17	-	-	
RECALL	MAXIMUM (ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
	MINIMUM (ON/OFF)	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
	PEDESTRIAN** (ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
MEMORY (ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

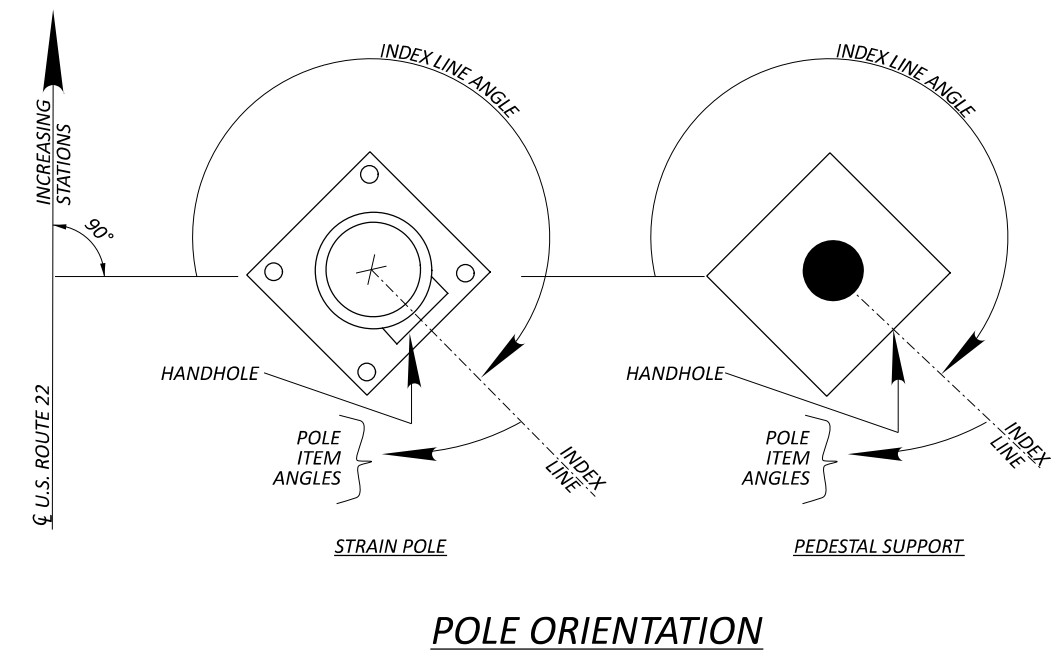


- NOTES:
- ALL SIGNAL TIMING PARAMETERS EXCEPT NOTED WITH DOUBLE ASTERISKS (\*\*) AND PHASING DIAGRAM SHOWN ARE BASED ON AVAILABLE RECORD PLANS OR CONTROLLER TIMING OUTPUTS. THE CONTRACTOR SHALL RETAIN ALL EXISTING TIMING AND PHASING PARAMETERS CODED IN THE CONTROLLER AT THE TIME OF CONSTRUCTION UNLESS OTHERWISE AFFECTED BY PROPOSED TIMING.
  - EXISTING VEHICLE DETECTION CONFIGURATION AND SETTINGS CODED IN THE CONTROLLER AT THE TIME OF CONSTRUCTION SHALL BE RETAINED.
  - COUNTDOWN PEDESTRIAN SIGNAL HEADS SHALL GO TO ZERO ON YELLOW PER ODOTCD FIGURE 4E-2.
  - ANGLES SHOWN IN THE STRAIN POLE TABLE ARE FOR REFERENCE ONLY. PEDESTRIAN SIGNAL HEADS AND PUSH BUTTONS SHALL BE INSTALLED PERPENDICULAR TO THE CORRESPONDING CROSSWALK AS SHOWN IN THE PLANS.
  - INDEX LINE PASSES THROUGH THE CENTER OF THE HANDHOLE.
  - TOP OF PEDESTAL FOUNDATION SHALL BE FLUSH WITH ADJACENT CURB OR SIDEWALK.

\* VOLUME DENSITY CONTROLS  
 \*\* PROPOSED TIMING PARAMETERS  
 # FOR CROSSINGS WITH PEDESTRIAN PUSHBUTTONS, LPI'S (LEADING PEDESTRIAN INTERVALS) MAY BE IMPLEMENTED (3-6 SEC.) IN ACCORDANCE WITH LPI DURATION TIME PER THE ODOT SIGNAL CALCULATIONS - CLEARANCE INTERVALS SPREADSHEET  
 ^ WHEN IMPLEMENTING FYA, A MINIMUM 3 SEC. DELAY SHALL BE PROGRAMMED PER FYA PHASE.

# STRAIN POLE TABLE (TEM FIGURE 498-36)

POLE NO.	STATION	OFFSET	TYPE	DESIGN NO.	POLE HEIGHT (FT.)	FOUNDATION ELEV. (SEE NOTE 6)	SPAN WIRE ATTACHED HEIGHT	INDEX LINE ANGLE (DEG.)	PEDESTAL ANGLE (DEG.)	ANGLES (DEG.) FROM INDEX LINE			
										US-22		LANDEN DR	
										PEDESTRIAN SIGNAL	PEDESTRIAN PUSH BUTTON	PEDESTRIAN SIGNAL	PEDESTRIAN PUSH BUTTON
SP-1	EXISTING		SIGNAL			EXISTING			N/A	-	-	140	320
SP-2	EXISTING		SIGNAL			EXISTING			N/A	-	-	-	-
SP-3	EXISTING		SIGNAL			EXISTING			N/A	-	-	-	-
SP-4	EXISTING		SIGNAL			EXISTING			N/A	-	-	40	-
PS-1	97+30.43	63.29' LT	PEDESTAL		10	DOES NOT APPLY			30	-	-	330	330
PS-2	97+18.73	53.25' LT	PEDESTAL		10	DOES NOT APPLY			330	300	300	-	-
PS-3	97+27.61	58.12' RT	PEDESTAL		10	DOES NOT APPLY			10	80	80	170	-
PS-4	97+42.69	65.75' RT	PEDESTAL		5	DOES NOT APPLY			40	-	-	-	320
PS-5	98+06.66	60.11' RT	PEDESTAL		5	DOES NOT APPLY			50	-	-	-	130



HAM/WAR US 22 16.04/0.00 PED

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SIGNAL TIMING AND POLE DETAILS  
US 22 AT LANDEN DR

DESIGN AGENCY  
**CMT**  
 CRAWFORD, MURPHY &  
 CONSULTING ENGINEERS  
 1777 WASHINGTON VILLAGE DR  
 DAYTON, OHIO 45459  
 www.cmtinc.com

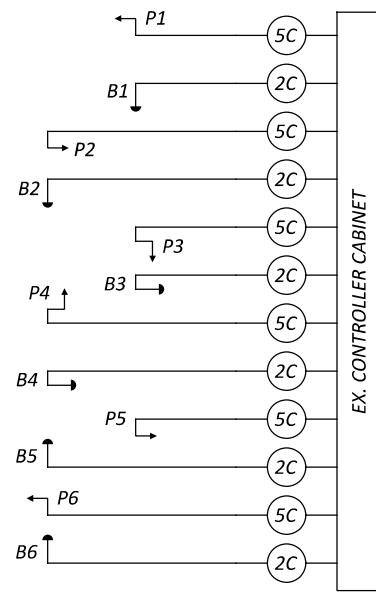
DESIGNER  
 GSH

REVIEWER  
 SAK 08/15/24

PROJECT ID  
 117237

SHEET TOTAL  
 P.65 66

**WIRING DIAGRAM**



**NOTES:**

- EXISTING VEHICULAR SIGNAL CABLES, POWER CABLES, AND COMMUNICATION CABLES NOT SHOWN IN THE WIRING DIAGRAM SHALL NOT BE DISTURBED.
- FIELD WIRING HOOKUP CHART SHOWN IS FOR REFERENCE ONLY, CONTRACTOR SHALL MAINTAIN EXISTING FIELD WIRING CONNECTIONS.
- ALL OTHER EXISTING FIELD WIRING CONNECTIONS NOT SHOWN IN THE FIELD WIRING HOOKUP CHART SHALL NOT BE DISTURBED.

**FIELD WIRING HOOKUP CHART (TEM FORM 496-16)**

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
PEDESTRIAN MOVEMENTS			
PED EAST	W	Ø2 PED/ LS 2P G	OUT
PED SOUTH	DW	Ø4 PED/ LS 4P R	
PED WEST	W	Ø6 PED/ LS 6P G	OUT
	DW	Ø6 PED/ LS 6P R	
LS = LOAD SWITCH			

Rename

**LEGEND**

	EX. PEDESTRIAN SIGNAL (DND)		EX. PEDESTRIAN SIGNAL CABLE (DND)
	EX. PEDESTRIAN PUSH BUTTON (DND)		REUSED EX. PEDESTRIAN SIGNAL CABLE
	NEW, RELOCATED, OR REORIENTED PEDESTRIAN SIGNAL		NEW OR COILED SIGNAL CABLE, 2 CONDUCTOR, NO. 14 AWG
	NEW, RELOCATED, OR REORIENTED PEDESTRIAN PUSH BUTTON		NEW OR COILED SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG