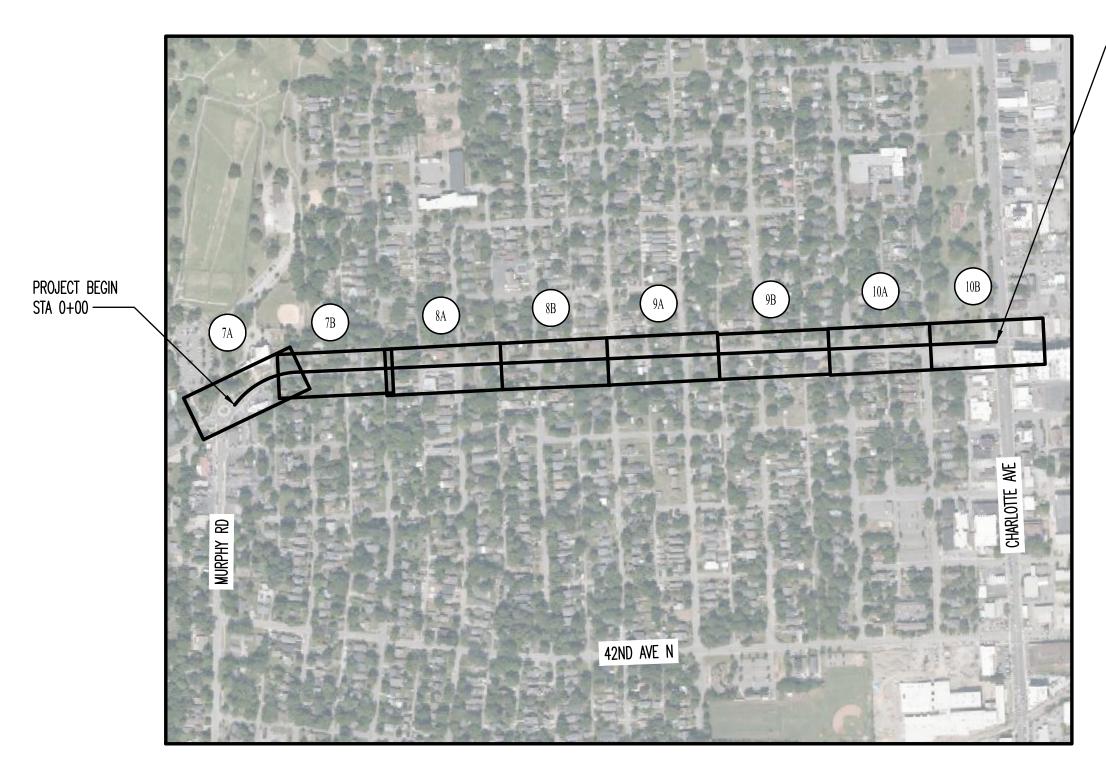
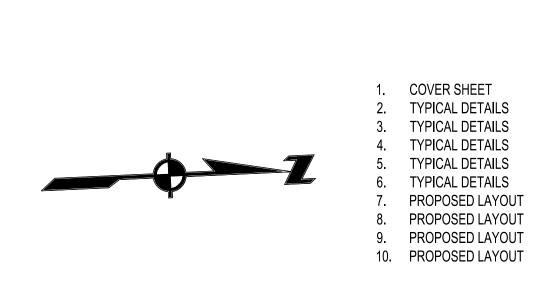
METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY, TENNESSEE

46TH AVENUE NORTH BIKEWAY IMPROVEMENTS FROM MURPHY ROAD TO CHARLOTTE AVENUE SEPTEMBER 2024



LOCATION MAP: SCALE: 1"=500'



DISTRICT NUMBER: 24
COUNCIL MEMBER: BRENDA GADD



DESIGNED BY:

SHEET TITLE:

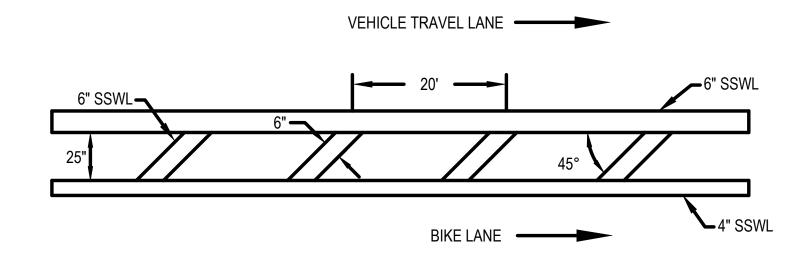
COVER

SHEET

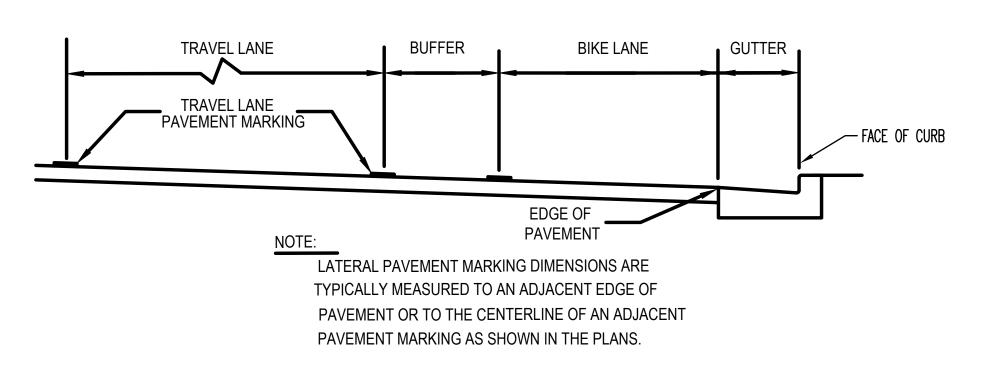
SHEET 1 OF 10



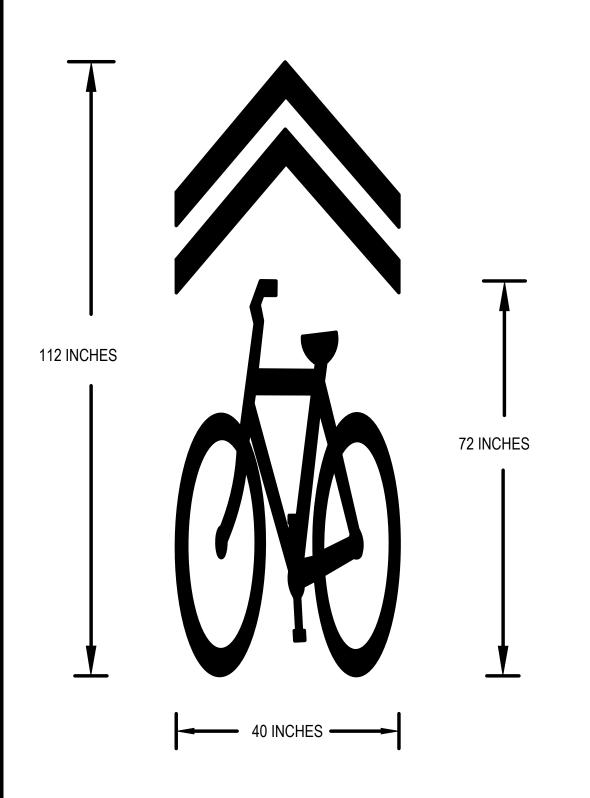
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BIKE LANE BUFFER PAVEMENT MARKINGS



TYPICAL LATERAL STRIPING LAYOUT



SHARROW SYMBOL

SHARROW MARKING DETAIL

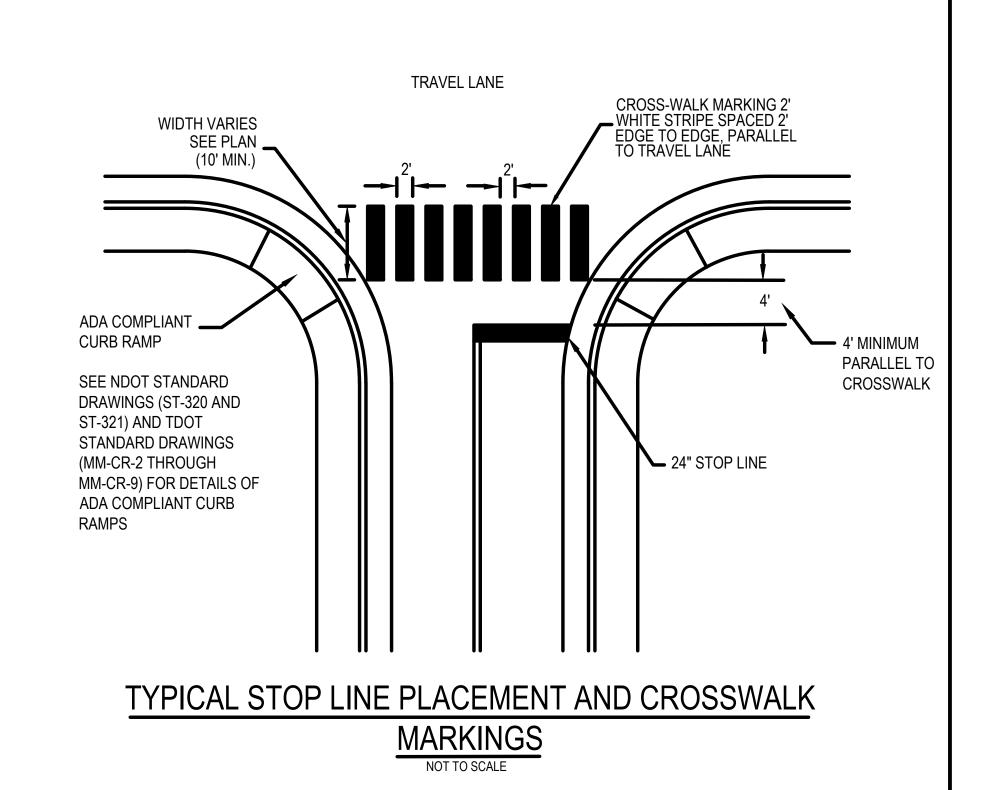
NOT TO SCALE

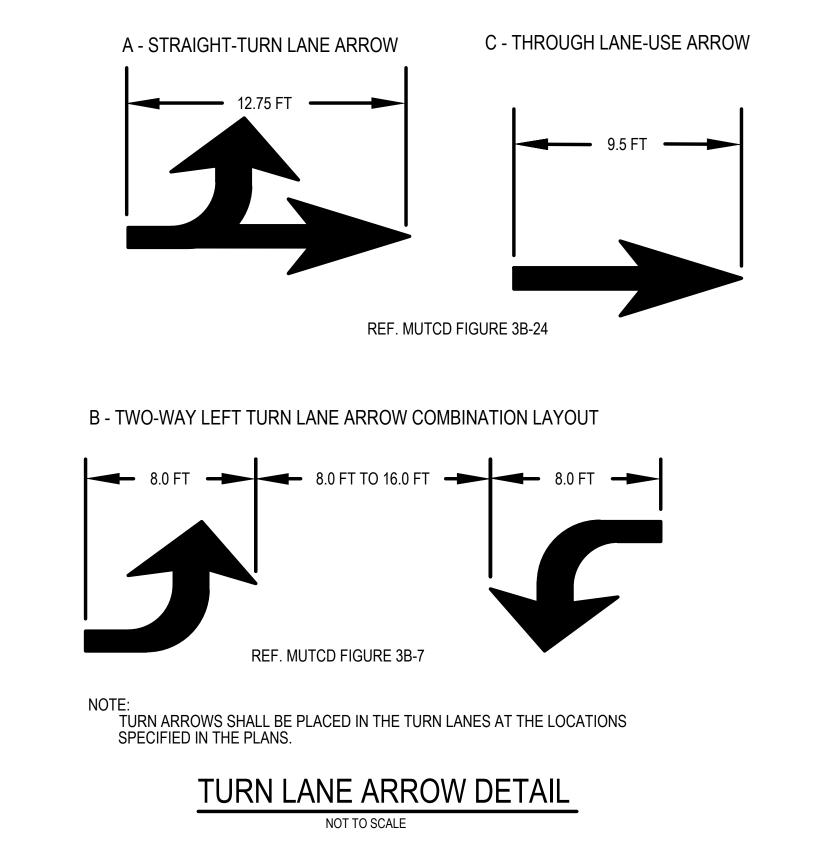
NOTES:

- REFER TO MUTCD 2023 EDITION PART 9 FIGURE 9E-1 WORD, SYMBOL, AND ARROW PAVEMENT MARKINGS FOR BICYCLE LANES. REDUCED SIZE MARKINGS TO BE USED WHERE REQUIRED IN THE FIELD. REFER TO FIGURE 9E-9 FOR SHARED LANE MARKINGS.
- IF USED IN A SHARED LANE WITH ON-STREET PARALLEL PARKING, SHARED LANE MARKINGS SHOULD BE PLACED SO THAT THE CENTERS OF THE MARKINGS ARE AT LEAST 12 FEET FROM THE FACE OF THE CURB, OR FROM THE EDGE OF THE PAVEMENT WHERE THERE IS NO CURB. (2023 MUTCD, SECTION 9E.09)
- IF USED ON A STREET WITHOUT ON-STREET PARKING THAT HAS AN OUTSIDE TRAVEL LANE THAT IS LESS THAN 14 FEET WIDE, THE CENTERS OF THE SHARED LANE MARKINGS SHOULD BE AT LEAST 4 FEET FROM THE FACE OF THE CURB, OR FROM THE EDGE OF THE PAVEMENT WHERE THERE IS NO CURB. (2023 MUTCD, SECTION 9E.09)

METROPOLITAN GOVERNMENT OF NASHVILL AND DAVIDSON COUNTY, TENNESSEE 46TH AVENUE NORTH BIKEWAY IMPROVEMENTS FROM MURPHY ROAD TO CHARLOTTE AVENUE

U





**SPECIAL NOTES:

- ALL PAVEMENT MARKINGS AND SIGNAGE SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (2023 MUTCD)
- CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ROADWAY MARKINGS AND SIGNS.
- BIKEWAY SIGNAGE SHALL BE PLACED PER DIRECTION OF THE FIELD ENGINEER.
- SHARROW AND BIKE LANE PAVEMENT MARKING SHALL BE PLACED PER DIRECTION OF METRO REPRESENTATIVE.
- SHARROW AND BIKE LANE PAVEMENT MARKING SHALL NOT BE PLACED IN FRONT OF DRIVEWAYS.
- BIKEWAY PROJECTS SHALL COORDINATE WITH METRO TRAFFIC DEPARTMENT.
- THE DESIGN IS BASED ON AERIAL IMAGERY FROM BING MAPS USING AUTODESK CIVIL 3D SOFTWARE; ALL SPACING AND DIMENSIONS MUST BE FIELD VERIFIED BY THE CONTRACTOR.
- THE CONTRACTOR MUST NOTIFY THE ENGINEER AFTER PLACING TEMPORARY MARKINGS. THE ENGINEER WILL VERIFY DIMENSIONS BEFORE PERMANENT STRIPING IS APPLIED.



PROJECT NUMBER: NDT418

DATE: 9-2024 SCALE:

DRAWN BY: DESIGNED BY:

JWC ZDB

SHEET TITLE:

TYPICAL DETAILS

SHEET 2 OF 10

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BIKE CONFLICT LINE (BCL) AT INTERSECTIONS

NOT TO SCALE

•BIKE LANE WIDTH AND BUFFER WIDTH SPECIFIED ON THE PLANS. BIKE LANE WIDTH DIMENSION SHOWN ON THE PLANS INCLUDES THE EXIST. GUTTER PAN IF APPLICABLE.

•36" WHITE FLEXIBLE DELINEATOR POSTS TO BE INSTALLED WITHIN THE BUFFER AT 20' SPACING CONTRACTOR TO COORDINATE WITH

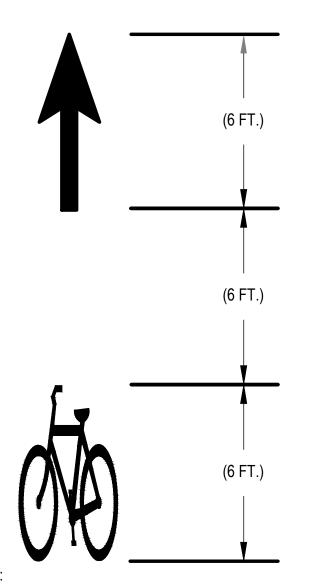
END BUFFER STRIPING THROUGH **GREEN COLORED** THE CONFLICT AREA PAVEMENT(SEE NOTE) _ FLEXIBLE WHITE DELINEATOR (TYP.) 0 BIKE CONFLICT LINE BIKE LANE PAVEMENT MARKING (TYP.) TO BE **DRIVEWAY INSTALLED AS SPECIFIED IN** OR ALLEY THE PLANS OR PER METRO REPRESENTATIVE

TRAVEL LANE

GREEN COLORED PAVEMENT IS NOT REQUIRED AT DRIVEWAY LOCATIONS BUT MAY BE INSTALLED AS NEEDED (SEE PLANS) 2. GREEN COLORED PAVEMENT SHALL FILL IN AREA NEXT TO DOTTED LONGITUDINAL LINE ACROSS CONFLICT ZONE (2023 MUTCD, SECTION 3H.06)

SIGHT TRIANGLE & BIKE CONFLICT LINE (BCL) DETAIL AT DRIVEWAYS/ALLEYS

NOT TO SCALE

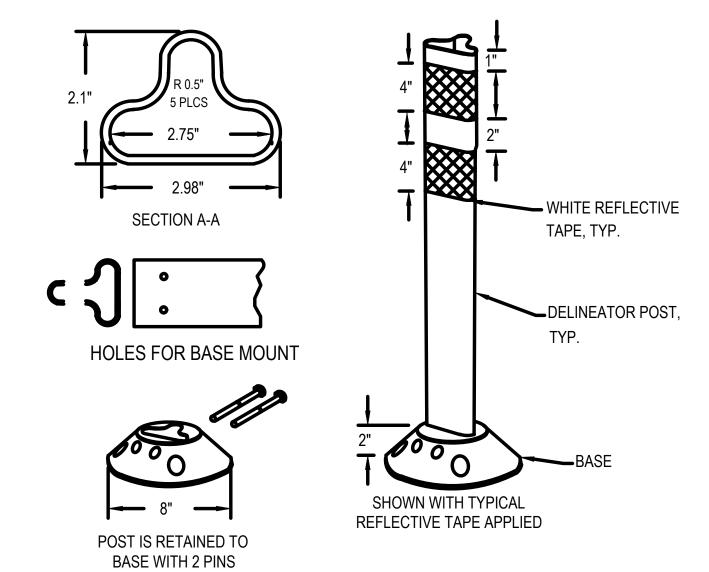


MPW PRIOR TO INSTALLATION.

- 1. REFER TO MUTCD 2023 EDITION PART 9 FIGURE 9E-1 WORD, SYMBOL, AND ARROW PAVEMENT MARKINGS FOR BICYCLE LANES. REDUCED SIZE MARKINGS TO BE USED WHERE REQUIRED IN THE FIELD, SCALE AS NEEDED.
- 2. BIKE LANE PAVEMENT MARKING SYMBOLS SHALL BE INSTALLED AT 800' SPACING OR IMMEDIATELY FOLLOWING A CONFLICT ZONE AS SHOWN IN THE PLANS.

BIKE LANE PAVEMENT MARKING

DETAIL



INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH

REQUIRED AT ALL INTERSECTIONS

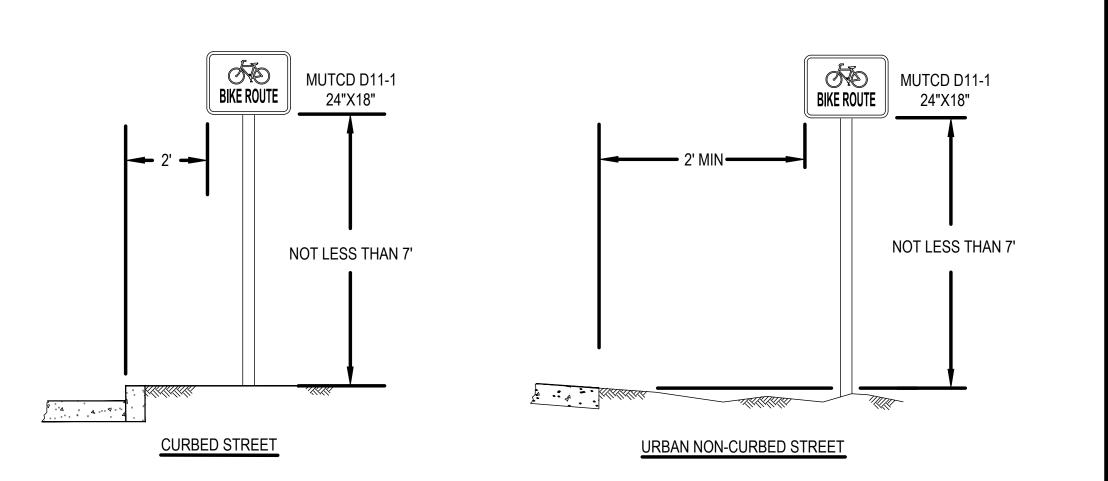
SECTION 3H.06)

GREEN COLORED PAVEMENT SHALL FILL IN AREA NEXT TO DOTTED LONGITUDINAL LINE

ACROSS CONFLICT ZONE (2023 MUTCD,

- MANUFACTURER'S SPECIFICATIONS. DIMENSIONS, MATERIALS, AND ATTACHMENTS MAY VARY BETWEEN MANUFACTURERS.
- COLOR OF POST SHALL MATCH COLOR OF APPLICABLE EDGE LINE AS NOTED IN PLANS.
- SUGGESTED MANUFACTURERS INCLUDE: PEXCO DAVIDSON TRAFFIC CONTROL, SUPERIOR TRAFFIC CONTROL OR APPROVED BY METRO REPRESENTATIVE
- DELINEATORS SHALL BE SPACED 20' CENTER-TO-CENTER OR AS OTHERWISE SPECIFIED IN THE PLANS
- CONTRACTOR TO COORDINATE WITH MPW PRIOR TO INSTALLATION.

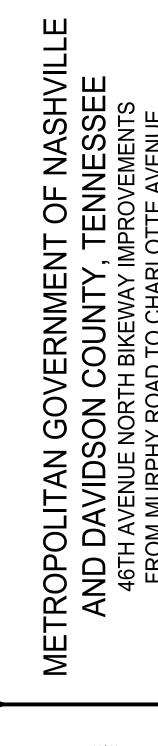
36" FLEXIBLE DELINEATOR POST DETAIL



SIGN INSTALLATION NOTES:

- 1. ALL SIGNS SHALL BE INSTALLED IN THE APPROXIMATE LOCATIONS SHOWN ON PLAN SHEETS. ANY DEVIATION MUST BE APPROVED BY THE METROPOLITAN DEPARTMENT OF PUBLIC WORKS.
- 2. SIGNS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (2023 MUTCD), AND SHALL HAVE THE HEIGHT AND CLEARANCE SPECIFICATIONS SHOWN ON THIS SHEET.
- 3. ALL SIGNING EQUIPMENT AND INSTALLATION PROCEDURES SHALL COMPLY WITH THE T.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, SECTION 713 - HIGHWAY SIGNING, AND WITH THE SPECIFICATIONS OF METROPOLITAN NASHVILLE AND DAVIDSON COUNTY.
- 4. IF A SECOND SIGN IS MOUNTED BELOW AN EXISTING SIGN, IT SHALL BE 7' ABOVE TOP OF CURB
- 5. FOR IN-STREET SCHOOL CROSSING SIGN (R1-6B ON SHEET 8), MOUNTING HEIGHT AND SPECIAL MOUNTING SUPPORT REQUIREMENTS SHALL COMPLY WITH SECTION 2B.20 OF THE 2023 MUTCD

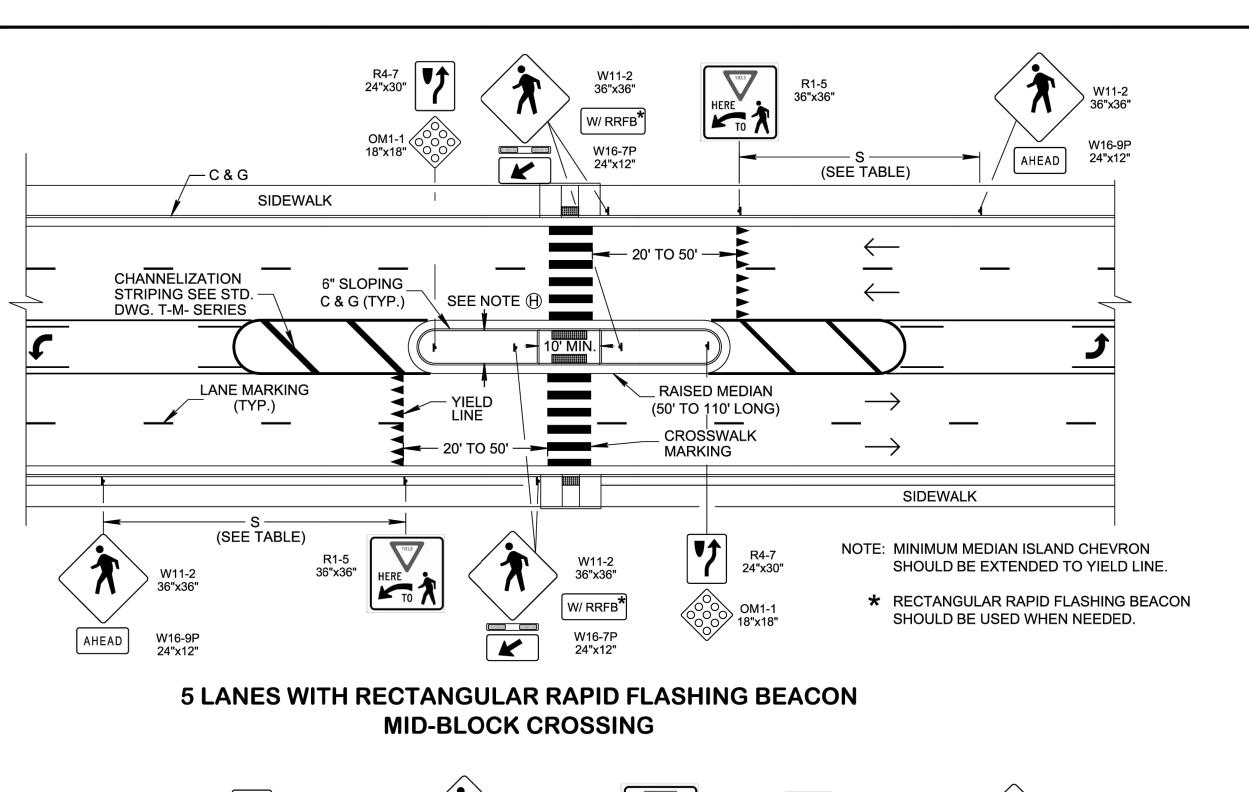
HEIGHT AND LATERAL LOCATION OF SIGNS - TYPICAL INSTALLATIONS

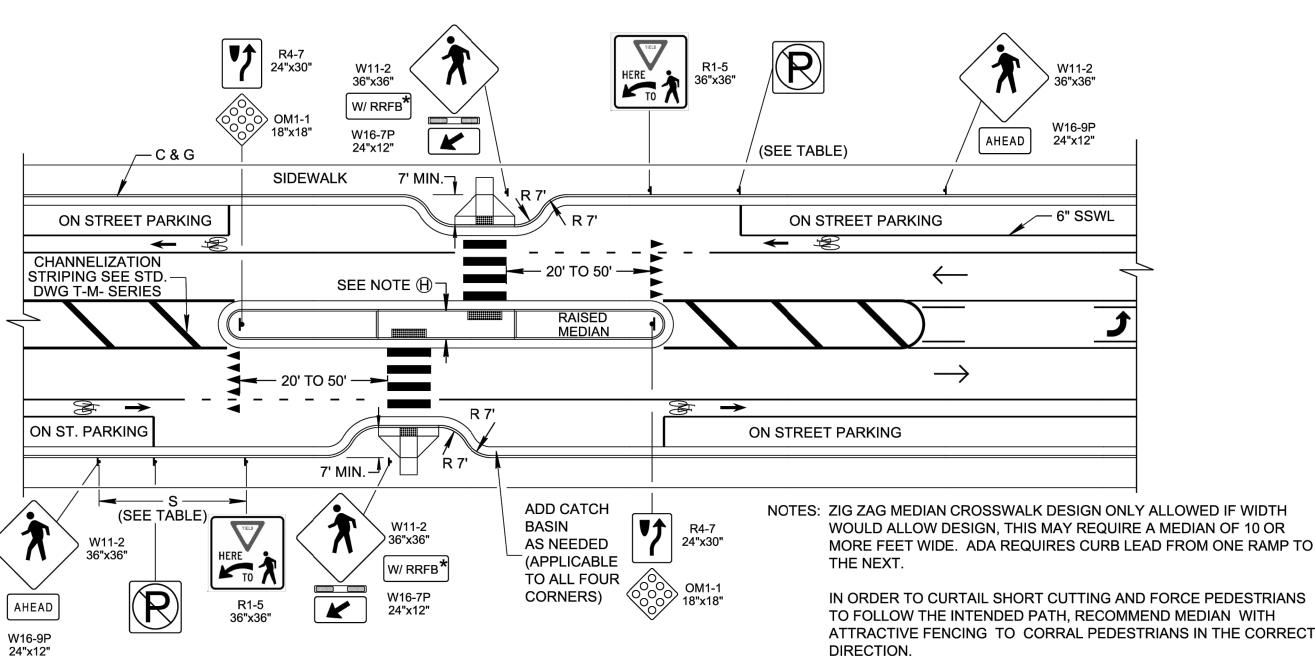


PROJECT NUMBER: NDT418 **DATE**: 9-2024 SCALE: **DESIGNED BY:** DRAWN BY: SHEET TITLE: **TYPICAL**

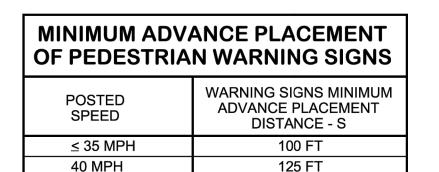
DETAILS

SHEET 3 OF 10





2 LANES WITH RECTANGULAR RAPID FLASHING BEACON ALT. MID-BLOCK CROSSING



NOTE: WHERE THE SPEED LIMIT EXCEEDS 40 MPH, MARKED CROSSWALKS ALONE SHOULD NOT BE **USED AT UNSIGNALIZED (NO SIGNAL) LOCATIONS.**

NOT TO SCALE

LEGEND **GROUND MOUNT SIGN** DETECTABLE WARNING SURFACE RECTANGULAR RAPID FLASHING **BEACON** PAVEMENT MARKING SYMBOLS

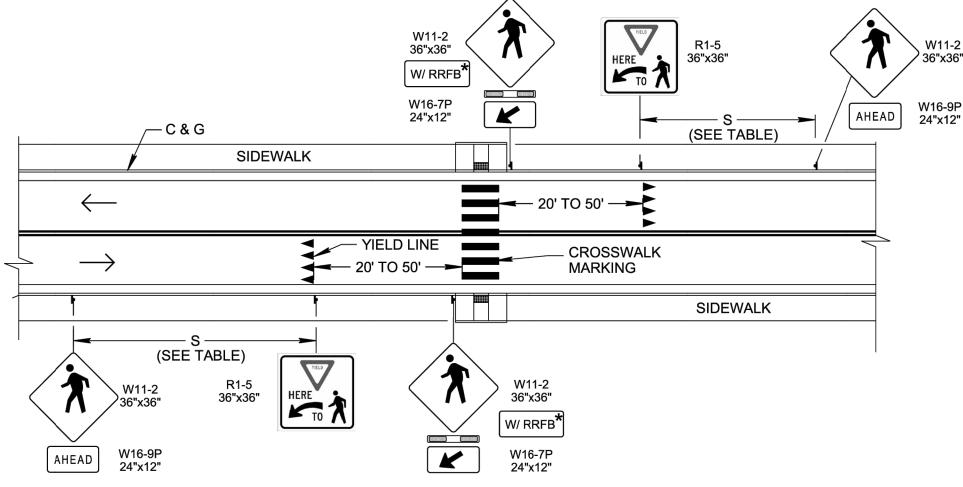
→ DIRECTION OF TRAFFIC

RECOMMENDED YIELD LINE LAYOUTS

NOTES: YIELD LINES MAY BE SMALLER THAN SUGGESTED WHEN INSTALLED ON MUCH NARROWER, SLOW SPEED FACILITIES SUCH AS SHARED -USE PATHS.

- 12' TRAVEL LANE -

AREA OF EACH TRIANGLE A BASE OF 24 INCHES AND A HEIGHT OF 36 INCHES IS = 3 SF.



2 LANES WITH RECTANGULAR RAPID FLASHING BEACON MID-BLOCK CROSSING

GENERAL NOTES

- DETAILS SHOWN ON THIS STANDARD DRAWING APPLY TO THE CONSTRUCTION OR RECONSTRUCTION OF MID-BLOCK CROSSINGS AND MODIFICATION OF STREETS, CURBS, OR SIDEWALKS ASSOCIATED WITH IT. SEE TDOT-RDG FOR ADDITIONAL INFORMATION FOR SITE SELECTION, NEW CONSTRUCTION OR RECONSTRUCTION DURING PEDESTRIAN SAFETY INITIATIVE, SPOT SAFETY IMPROVEMENTS AT LOCATIONS MAX 45 MPH. OTHER LOCATIONS WILL NEED SITE SPECIFIC ANALYSIS.
- FOR NEW CONSTRUCTION A TRAFFIC ENGINEERING STUDY WILL HAVE TO BE CONDUCTED TO DETERMINE IF A MID-BLOCK CROSSING IS WARRANTED. MID-BLOCK CROSSINGS SHALL BE INSTALLED DURING RECONSTRUCTION PROJECTS AND REPAVING PROJECTS AT LOCATIONS WHERE EXISTING PEDESTRIAN SAFETY IS A CONCERN
- PEDESTRIAN IN CROSSWALK SIGNS (W11-2) SHALL BE INSTALLED AT EACH END OF THE CROSSWALK LOCATION. THE SIGNS SHALL BE PLACED IN ADVANCE OF THE CROSSWALK ADJACENT TO THE TRAVEL LANE AND FACING THE DRIVER. REFER TO THE MUTCD FOR ADDITIONAL WARNING SIGNS, TYPE AND LOCATION
- FOR CURB RAMPS, THE DETECTABLE WARNING SURFACE, PAVEMENT MARKINGS, AND CROSSWALK MARKING DETAILS, SEE STD. DWG. SERIES MM-CR AND MM-PM RESPECTIVELY. FOR MARKING STANDARDS AND CONCRETE CURB AND GUTTER SEE STD. DWG T-M- SERIES AND RP-VC SERIES RESPECTIVELY.
- WHILE LOCATION OF SIGN OR PEDESTRIAN SIGNAL MAY VARY BASED ON SITE CONDITIONS, ANY PDESTRIAN PUSHBUTTON SHALL MEET ALL REQUIREMENTS FOR HEIGHT AND REACH RANGE PER PROWAG. 4FT BY 4FT LANDINGS (MAX 2% SLOPE) SHALL BE ADJACENT TO ANY PUSHBUTTON. PEDESTRIAN PUSHBUTTON SHALL BE INSTALLED IN COMPLIANCE WITH SECTION 4E.08 OF THE MUTCD. AND RETER TO STANDARD DRAWING T-SG-6 FOR PEDESTRIAN PUSHBUTTON POST DETAILS
- (F) SEE SECTION 3B.18 OF THE MUTCD FOR UNSIGNALIZED MIDBLOCK CROSSWALKS.
- G A DEVICE THAT MAY BE USED TO ASSIST PEDESTRIANS CROSSING IN A MARKED CROSSWALK AT AN UNSIGNALIZED INTERSECTION IS A RECTANGULAR RAPID FLASHING BEACON (RRFB). RRFB'S ARE PARTICULARLY EFFECTIVE AT MULTILANE CROSSINGS WITH SPEED LIMITS LESS THAN 40 MPH. CONSIDER THE PEDESTRIAN HYBRID BEACON (PHB) INSTEAD OF RRFBS FOR ROADWAYS SPEED LIMITS ARE EQUAL TO OR GREATER THAN 40 MPH SEE STANDARD DRAWING T-M-4B FOR SIGNALIZED MID-BLOCK CROSSING.
- (H) A MEDIAN SHOULD BE AT LEAST 8.0 FEET WIDE TO ALLOW THE PEDESTRIAN TO WAIT COMFORTABLY IN THE CENTER IF THE DESIRED 8 FEET CANNOT BE ACHIEVED, USE A MINIMUM WIDTH OF 6 FEET. THE PEDESTRIAN CROSSWALK MEDIAN ISLAND ARE ADA-APPROVED RAMPS (1:12 GRADE) SHOULD BE USED. IT IS BEST TO PROVIDE A SLIGHT GRADE 2 PERCENT TO PERMIT WATER AND SILT TO DRAIN FROM THE AREA. DRAINAGE STRUCTURES SHALL NOT BE PLACED IN LINE WITH RAMPS. INSTALL CATCH BASINS ON UPSTREAM SIDE OF RAMP FOR ROADS WITH GRADES LESS THAN 2%.
- PARKING AND OTHER SIGHT OBSTRUCTIONS SHOULD BE PROHIBITED FOR AT LEAST 100 FEET IN ADVANCE OF AND AT LEAST 20 FEET BEYOND THE MARKED CROSSWALK, OR SITE ACCOMMODATIONS SHOULD BE MADE THROUGH CURB EXTENSIONS OR OTHER TECHNIQUES TO PROVIDE ADEQUATE SIGHT DISTANCE. THE INSTALLATION SHOULD INCLUDE SUITABLE STANDARD SIGNS AND PAVEMENT MARKINGS.
- DESIGNERS OF MIDBLOCK CROSSINGS SHOULD ALSO CONSIDER ADDING OR ENHANCING STREET ILLUMINATION TO IMPROVE PEDESTRIAN SAFETY.
- (K) MIDBLOCK CROSSWALKS SHOULD BE LOCATED AT LEAST 100 FEET FROM THE NEAREST SIDE STREET OR DRIVEWAY SO THAT DRIVERS TURNING ONTO THE MAJOR STREET HAVE A CHANCE TO NOTICE PEDESTRIANS AND PROPERLY YIELD TO PEDESTRIANS WHO ARE CROSSING THE STREET.
- ADD CHANNELIZING DEVICES AT MID-BLOCK PEDESTRIAN CROSSINGS IN CONJUNCTION WITH IN STREET PEDESTRIAN CROSSING (R1-6 SERIES) SIGNS AS NEEDED.

M PAYMENT

702-01,	CONCRETE CURB,	PER C.Y.,
702-03,	CONCRETE COMBINED CURB AND GUTTER,	PER C.Y.,
713-15.40,	SIGN INSTALLATION (DESCRIPTION),	PER LS,
716-02.03	PLASTIC PAVEMENT MARKING (CRÓSS-WALK),	PER L.F.,
716-02.04,	PLASTIC PAVEMENT MARKING (CHANNELIZATION STRIPNG),	PER S.Y.,
716-02.05,	PLASTIC PAVEMENT MARKING (STOP LINE),	PER L.F.,
716-04.12,	PLASTIC PAVEMENT MARKING (YIELD LINE),	PER S.F.,
730-26.07,	FLASHING WARNING BEACON (DESCRIPTION),	PER EACH.
730-50.20,	RECTANGULAR RAPID FLASHING BEACON ASSEMBLY (SOLAR POWERED),	PER EACH,
730-50.21,	RECTANGULAR RAPID FLASHING BEACON ASSEMBLY (HARD-WIRED),	PER EACH

REV. 07-17-20: REMOVED RIGHT TURN ARROWS FROM THE MIDDLE LANE.

REV. 11-30-20: REVISED CROSSWALK SIGN ON GENERAL NOTE (C). ADDED GENERAL NOTE (M)

REV. 06-15-21: REVISED GENERAL NOTE

REV. 05-04-22: REVISED DOWNWARD DIAGONAL ARROW SIGN DESIGNATION.

REV. 03-01-23: ITEM NUMBERS 730-50.20 AND 730-50.21 WERE ADDED ON GENERAL NOTE M. ADDED DIRECTION OF TRAFFIC AND PM SYMBOLS UNDER LEGEND. CHANGED W11-2 SIZE FROM 30"X30" TO 36"X36" FOR SINGLE LANE ROADS. ADDED RRFB CELL ON THE DRAWINGS. REMOVED YIELD AHEAD PM.

REVISED GENERAL NOTES (E), (F),(H) AND (K). DELETED GENERAL NOTE (G) AND REARRANGED GENERAL NOTE NUMBERS

> \cap TROPOLITA AND DAVI

SHVII

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PROJECT NUMBER: NDT418 SCALE: **DATE**: 9-2024 DESIGNED BY: **DRAWN BY:**

MID-BLOCK CROSSING

T-M-4A 04-08-2020

STATE OF TENNESSEE

STANDARD DRAWING

DEPARTMENT OF TRANSPORTATION

STANDARD

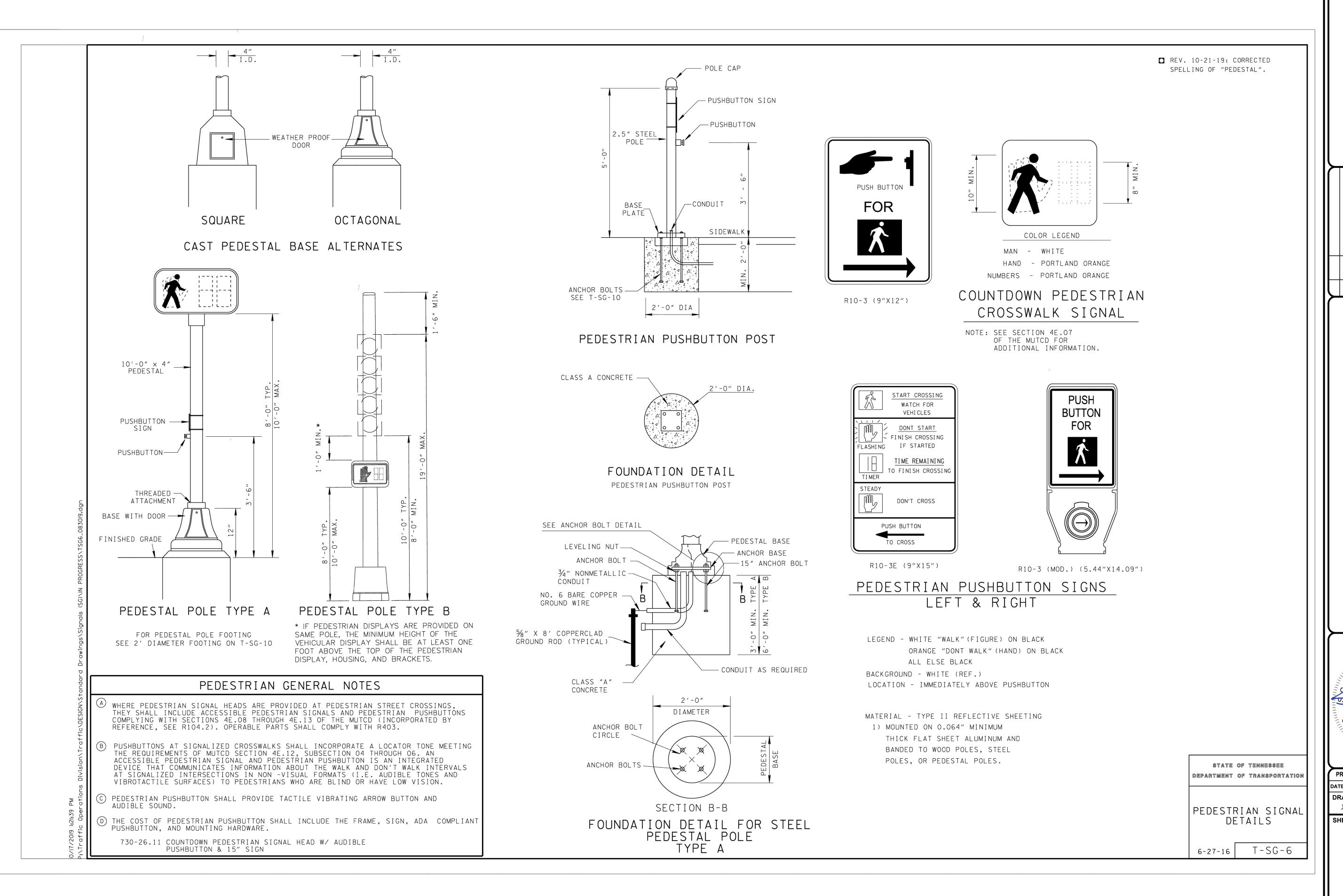
UNSIGNALIZED

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ZDB SHEET TITLE:

> **TYPICAL DETAILS**

SHEET 4 OF 10



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REV DATE REVISION DESCRIPTION

ETROPOLITAN GOVERNMENT OF NASHVIL AND DAVIDSON COUNTY, TENNESSEE

46TH AVENUE NORTH BIKEWAY IMPROVEMENTS
FROM MURPHY ROAD TO CHARLOTTE AVENUE

AGRICULTURE POR 115453 AGRICULTURE POR 115553 AGRICULTURE POR 115553

PROJECT NUMBER: NDT418

ATE: 9-2024 SCALE:

TYPICAL

DETAILS

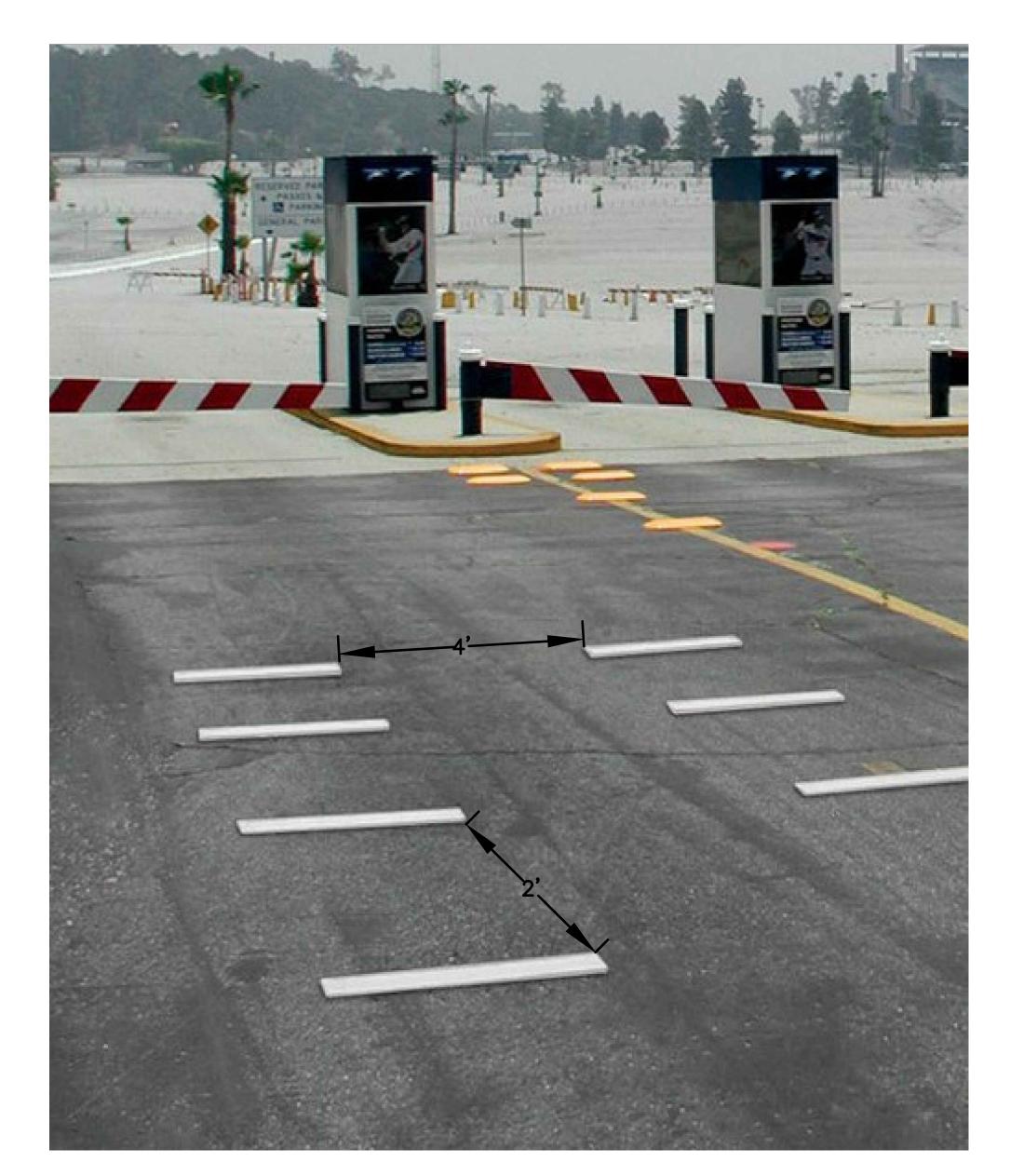
DATE: 9-2024 SCALE:

DRAWN BY: DESIGNED BY:

JWC ZDB

SHEET TITLE:

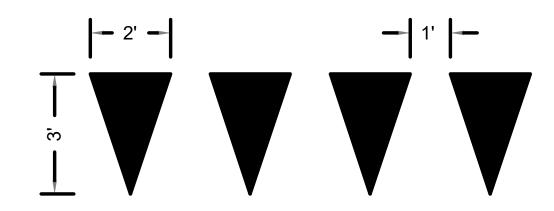
SHEET 5 OF 10



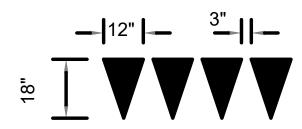
TAPCO RUMBLE STRIP DETAIL

NOT TO SCALE

YIELD LINE FOR VEHICLE LANE



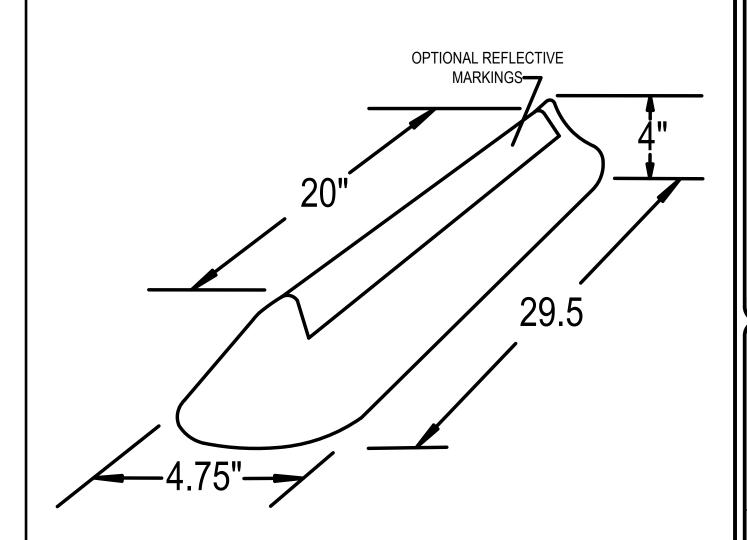
YIELD LINE FOR BIKE LANE



NOTE: REFER TO MUTCD 2023 EDITION SECTION 3B.19 AND FIGURE 3B-16. FOR RECOMMENDED YIELD LINE LAYOUTS. ALSO SEE TDOT T-M-4A, SHEET 4

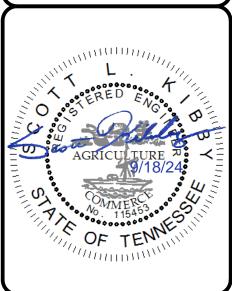
YIELD LINE DETAIL

NOT TO SCALE



CYCLE LANE **DETAIL**

		•				
SIGN SCHEDULE						
SIGN	SIGN ID	DIMENSIONS	AREA (S.F.)	QUANTITY	TOTAL AREA (S.F.)	
ALLOWED USE OF FULL LANE	R9-20	30"X30"	6.25	5	32	
BIKE LANE	R3-17	24"X18"	3	10	30	
ENDS	R3-17bP	24"X8"	1.33	1	2	
	W11-2	36"X36"	9	6	54	
	W16-7PL	21"X15"	2.19	6	14	
AHEAD	W16-9P	24"X12"	2	2	4	
HERE TO TO	R1-5	36"X36"	9	4	36	
BIKE ROUTE	D11-1	24"X18"	3	3	9	
	M6-3P	12"X9"	0.75	2	2	
	M6-4P	12"X9"	0.75	3	3	
CROSS TRAFFIC DOES NOT STOP	W4-4P	24"X12"	2	4	8	
	W16-7PR	21"X15"	2.19	2	5	
M	S1-1	36"X36"	9	4	36	
STATE LAW TO A CONSTRUE	R1-6b	12"X36"	3	2	6	



PROJECT NUMBER: NDT418							
ATE : 9-2024	SCALE:						
DRAWN BY:	DESIGNED BY						
JWC	ZDB						
SHEET TITLE:							
TYPICAL DETAILS							

SHEET 6 OF 10

NOT TO SCALE

Made from a specially formulated, glass-filled polymer. These strips provide both a physical and audible warning for motorists. They also have a raised dot grip system and special grooves for improved adhesion. 4" W x 24" L x .5" H 1 quart of epoxy will install 6 strips

