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10-SEP-2024 15:14 S:\DDC\Projects\HS-2006N SR 1596 (Glensford Drive) Pavement Markings and Signs\Cumberland\Revised DDC Design\HS-20060\_Rdy\_rsh\_.dgn  
 \$\$\$USERNAME\$\$\$

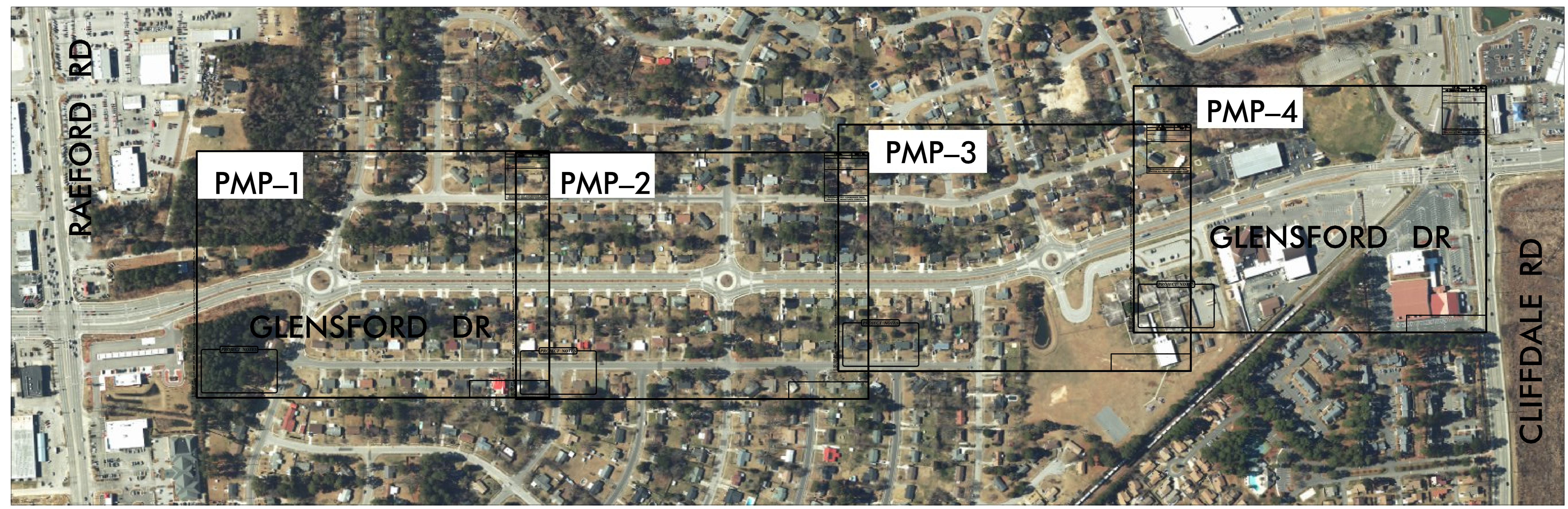
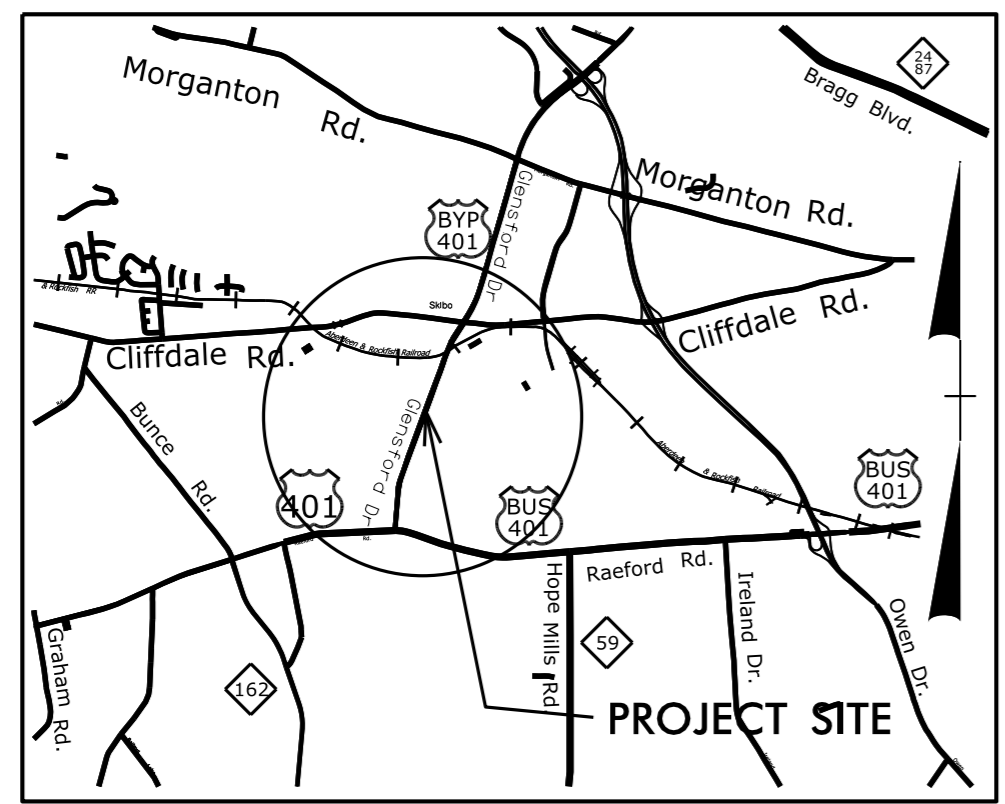
**CONTRACT: DF00497 TIP PROJECT: HS-2006N&HS20060**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

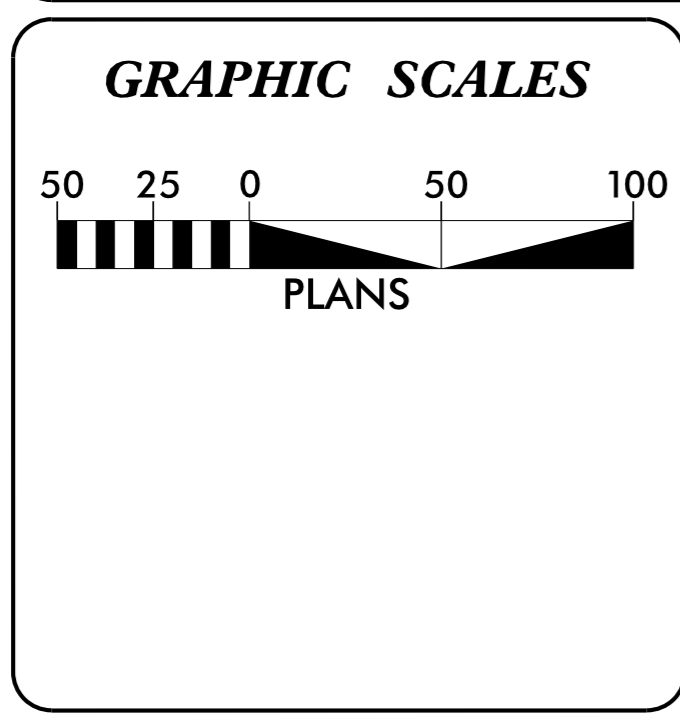
# CUMBERLAND COUNTY

**LOCATION: GLENSFORD DRIVE AT BEREAN BAPTIST ACADEMY  
 AND AT CHAMBERSBURG ROAD. GLENSFORD DRIVE  
 FROM RAEFORD ROAD TO CLIFFDALE ROAD**  
**TYPE OF WORK: INSTALL RECTANGULAR RAPID FLASHING  
 BEACONS WITH REFUGE ISLAND  
 PAVEMENT MARKING AND SIGNING IMPROVEMENTS.**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	HS-2006N & O	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
49312.1.18	1596(005)	HS-2006N PE	
49312.1.19	1596(006)	HS-2006O PE	
49312.3.18	1596(005)	HS-2006N CONST	
49312.3.19	1596(006)	HS-2006O CONST	



DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



**PROJECT LENGTH**

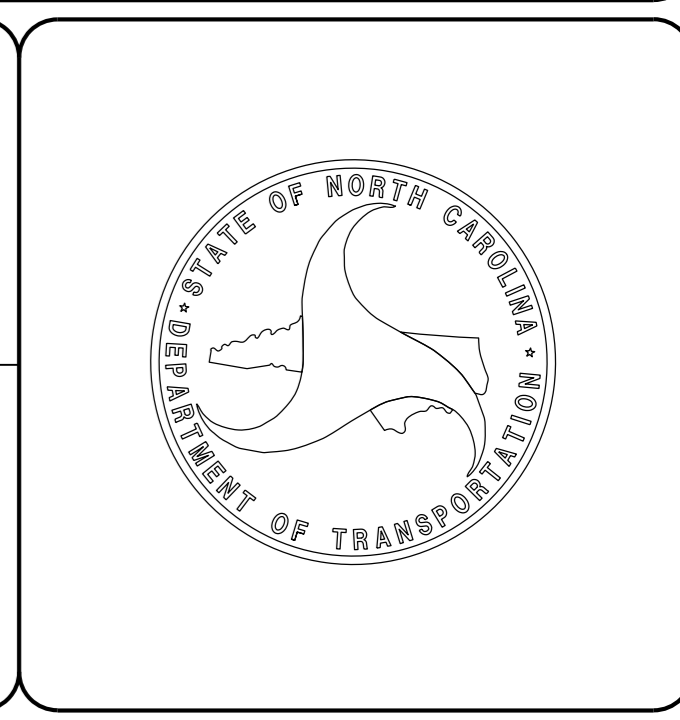
Prepared in the Office of:  
**DIVISION OF HIGHWAYS**  
431 Transportation Dr. Fayetteville NC, 28301

<b>2024 STANDARD SPECIFICATIONS</b>	
<b>RIGHT OF WAY DATE:</b> N/A	<b>JOHN GAUTHIER</b> PROJECT ENGINEER
<b>LETTING DATE:</b> OCTOBER 2, 2024	<b>ALEX HENDERSON</b> PROJECT DESIGN ENGINEER

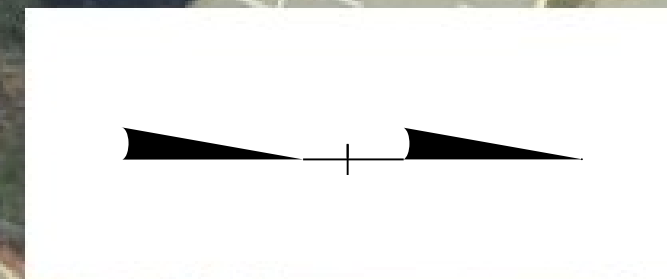
SIGNATURE: \_\_\_\_\_ P.E.

SIGNATURE: \_\_\_\_\_ P.E.



PROJECT REFERENCE NO. HS-2006N/HS-2006O	SHEET NO. 2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



REMOVE CONCRETE AND CURB RAMP. FILL IN WITH BORROW. PAYMENT SHALL BE INCLUDED IN LUMP SUM GRADING

REMOVE AND DISPOSE OF CHAIN LINK FENCE

SR 1596 (GLENSFORD DRIVE)

SR 1400 (CLIFFDALE ROAD)

INSTALL 2 NEW CURB RAMPS TO MATCH THE WIDTH OF THE EXISTING CURB RAMPS CROSSING THE SOUTH BOUND LANES. RAMPS OFFSET 10'.

REPLACE 1'-6" & 2'-6" CURB AND GUTTER AS NEEDED/DIRECTED BY THE ENGINEER.

REMOVE CURB RAMP AND FILL IN WITH BORROW. PAYMENT SHALL BE INCLUDED IN LUMP SUM GRADING

REVISIONS

26 JUN 2024 12:33 HS-2006N SR 1596 (Glensford Drive) Pavement Markings and Signs\_Cumberland\Revised DDC Design VHS-2006N\_Rdy.psh.dgn 8/17/99

**STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION**

**SIGNING AND PAVEMENT MARKING PLAN  
CUMBERLAND COUNTY**

**LOCATION: GLENSFORD DRIVE, FAYETTEVILLE, NC**

**ROADWAY STANDARD DRAWING**

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
903.10	GROUND MOUNTED SIGN SUPPORTS
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS
910.20	SCHOOL MARKED AND UNMARKED CROSSWALKS / SPEED REDUCTION REQUIREMENTS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.10	PAVEMENT MARKINGS - SCHOOL AREAS
1205.14	PAVEMENT MARKINGS - ROUNDABOUTS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

**GENERAL NOTES**

SIGNING

- . SIGNS FURNISHED BY CONTRACTOR.
- . ALL TYPE 'D' SIGNS SHALL BE MOUNTED ON TWO U-CHANNEL POSTS UNLESS OTHERWISE INDICATED ON THE PLANS.
- . IF REMOVAL OR RELOCATION OF SIGNS ON PRIVATE STREET (NON-STATE MAINTAINED) IS REQUIRED DUE TO CONSTRUCTION, THE CONTRACTOR SHALL INFORM THE ENGINEER. THE WORK WILL BE COMPLETED BY OTHERS.
- . WHEN NOT STATIONED OR DIMENSIONED ON PLANS, ALL 'E' AND 'F' SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER
- . ALL EXISTING SIGNS ON "U" CHANNEL POST WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS OTHERWISE NOTED ON PLANS.
- . WHEN EXISTING SIGNS ARE REMOVED AND INSTALLED ON NEW SUPPORTS, THE RE-ERECTION SHALL IMMEDIATELY FOLLOW THE REMOVAL.
- . THE BACKGROUND FOR TYPE E & F SIGNS SHALL BE TYPE C REFLECTIVE SHEETING.

PAVEMENT MARKINGS

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

- A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE EXISTING SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
GLENSFORD DRIVE	THERMOPLASTIC	PERMENENT RAISED
- B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
- D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.
- E) UNLESS OTHERWISE SPECIFIED, HEATED-IN-PLACE THERMOPLASTIC MAY BE USED IN LIEU OF EXTRUDED THERMOPLASTIC FOR STOP BARS, SYMBOLS, CHARACTERS AND DIAGONALS. IF HEATED-IN-PLACE IS USED, IT SHALL BE PAID FOR USING THE EXTRUDED THERMOPLASTIC PAY ITEM.

**SUMMARY OF QUANTITIES**

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT
DESC. NO.	SECT. NO.			
4025000000	901	CONTRACTOR FURNISHED, TYPE D SIGN	99	S.F
4025000000	901	CONTRACTOR FURNISHED, TYPE E SIGN	88	S.F
4072000000	903	SUPPORTS, 3 LB STEEL U-CHANNEL	165	L.F
4096000000	904	SIGN ERECTION, TYPE D	24	EA.
4102000000	904	SIGN ERECTION, TYPE E	16	EA.
4155000000	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	10	EA.
4685000000	1205	WHITE SOLID LANE LINE (4", 90 MILS)	765	L.F.
4685000000	1205	10 FT. WHITE SKIP (4", 90 MILS)	10	L.F.
4695000000	1205	WHITE GORELINE (8", 90 MILS)	367	L.F.
4695000000	1205	WHITE DIAGONAL (8", 90 MILS)	203	L.F.
4891000000	1205	WHITE CROSSWALK LINE (24", 90 MILS)	72	L.F.
4725000000	1205	24" YIELD LINE TRIANGLES (90 MILS)	32	EA.
4725000000	1205	COMBO.LEFT/STRAIGHT ARROW(90 MILS)	6	EA.
4725000000	1205	COMBO.RIGHT/STRAIGHT ARROW(90 MILS)	6	EA.
4720000000	1205	ALPHANUMERIC CHAR. (90MILS)	75	EA.

**INDEX**

SHEET NO.	DESCRIPTION
SIGN-1	TITLE SHEET
SIGN-2	E ANF F SHEET
SIGN-3	SIGN DESIGNS SHEET
SIGN-4 THRU 6	SIGNING PLAN SHEETS
PMP 1 THRU 4	PAVEMENT MARKING PLAN SHEETS

401 QUANTITY REQ'D - 8 -

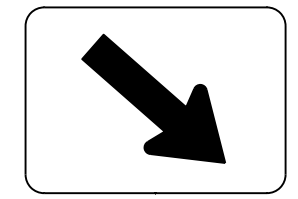


36 X 36  
S1-1

FLUORESCENT YELLOW GREEN SHEETING

ONE "U" POSTS PER SIGN

402 QUANTITY REQ'D - 4 -



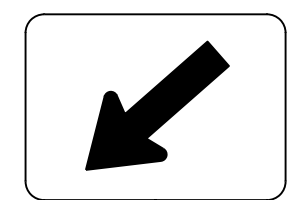
24 X 12  
W16-7

FLUORESCENT YELLOW GREEN SHEETING

MOUNT BELOW SIGN 401  
IN 4 INSTALLATIONS

ONE "U" POSTS PER SIGN

405 QUANTITY REQ'D - 4 -



24 X 12  
W16-7

FLUORESCENT YELLOW GREEN SHEETING

MOUNT BELOW SIGN 401  
IN 4 INSTALLATIONS

ONE "U" POSTS PER SIGN

TYPE "E" SIGNS

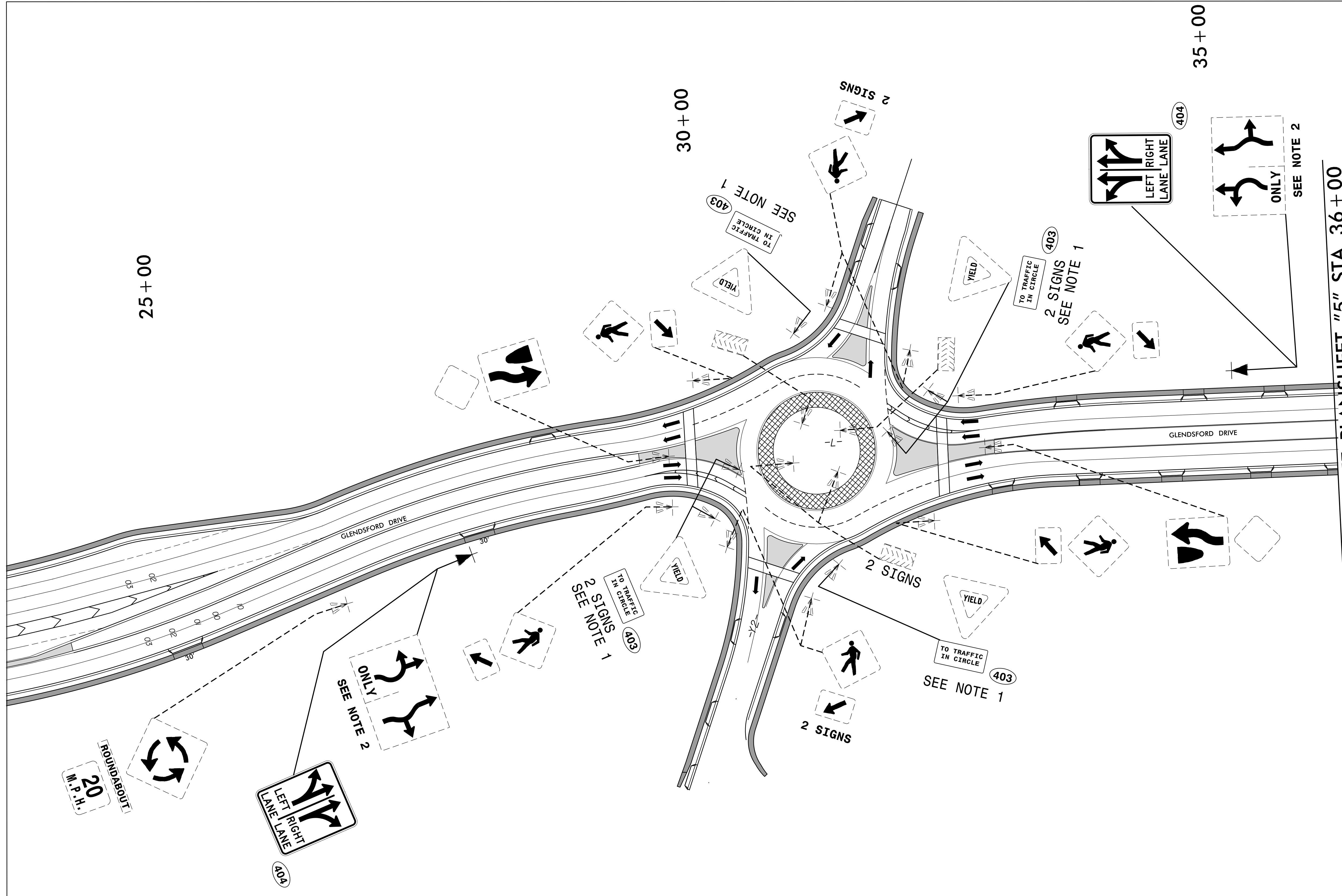
19 JUN 2024 09:36 HS-2006N SR 1596 (Glensford Drive) Pavement Markings and Signs\_Cumberland\Revised DDC Design\Engseed\_Templates\_Signing.dgn

<p><b>SIGN NUMBER:</b> 403 <b>TYPE:</b> D <b>QUANTITY:</b> 18</p> <p><b>SIGN WIDTH:</b> 2'-0" <b>HEIGHT:</b> 1'-0" <b>TOTAL AREA:</b> 2.0 Sq.Ft.</p> <p><b>BORDER TYPE:</b> FLUSH <b>RECESS:</b> 0.38" <b>WIDTH:</b> 0.44" <b>RADII:</b> 1.5"</p> <p><b>NO. Z BARS:</b> <b>LENGTH:</b></p>	<p><b>BACKG COLOR:</b> White <b>COPY COLOR:</b> Black</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>SYMBOL</th> <th>X</th> <th>Y</th> <th>WID</th> <th>HT</th> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table> <p><b>MAT'L:</b> 0.063" (1.6 mm) ALUMINUM</p>	SYMBOL	X	Y	WID	HT																																				<p><b>DESIGN BY:</b> A. SCOTT <b>PROJECT ID:</b> N/A</p> <p><b>CHECKED BY:</b> A. ALQUDWAH <b>LOCATION:</b> GLENSFORD DRIVE</p> <p><b>Oct 26, 2021</b> <b>DIV:</b> 6</p> <div style="text-align: center;"> </div>																																																
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<p>FILENAME: Engseed_Templates Signing</p> <p style="text-align: right;">NORTH CAROLINA D.O.T. SIGN DETAIL</p>																																																																																										

<p><b>SIGN NUMBER:</b> 404 <b>TYPE:</b> D <b>QUANTITY:</b> 6</p> <p><b>SIGN WIDTH:</b> 3'-0" <b>HEIGHT:</b> 3'-6" <b>TOTAL AREA:</b> 10.5 Sq.Ft.</p> <p><b>BORDER TYPE:</b> FLUSH <b>RECESS:</b> 0.63" <b>WIDTH:</b> 0.88" <b>RADII:</b> 2.25"</p> <p><b>NO. Z BARS:</b> <b>LENGTH:</b></p>	<p><b>BACKG COLOR:</b> White <b>COPY COLOR:</b> Black</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>SYMBOL</th> <th>X</th> <th>Y</th> <th>WID</th> <th>HT</th> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table> <p><b>MAT'L:</b> 0.080" (2.0 mm) ALUMINUM</p>	SYMBOL	X	Y	WID	HT																																				<p><b>DESIGN BY:</b> A. SCOTT <b>PROJECT ID:</b> ID</p> <p><b>CHECKED BY:</b> A. ALQUDWAH <b>LOCATION:</b> GLENSFORD DRIVE</p> <p><b>Dec 17, 2021</b> <b>DIV:</b> 6</p> <div style="text-align: center;"> </div>																																																																																																												
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19 JUN 2024 09:37 HS-2006N SR 1596 (Glensford Drive) Pavement Markings and Signs\_Cumberland\Revised DDC Design\Engseed\_Templates\_Signing.dgn

19-JUN-2024 09:58  
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 \$\$\$USERNAME\$\$\$



**NOTES:**

1. MOUNT SIGN 403 UNDER EXISTING YIELD SIGN
2. DISPOSAL OF SIGN SYSTEM, U CHANNEL

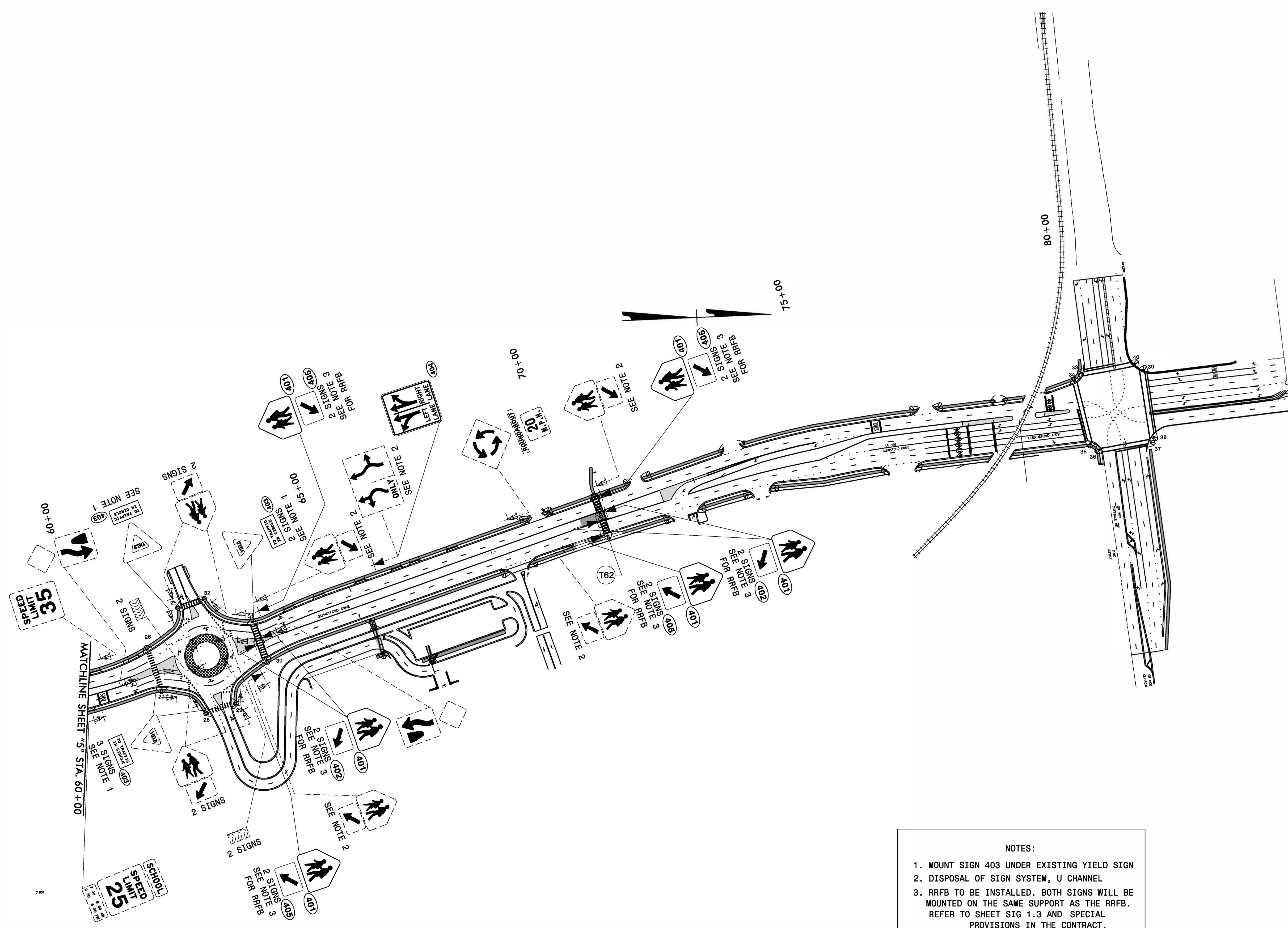
# SIGNING DETAIL

MATCHLINE SEE PLANSHEET "5" STA. 36+00





18-SEP-2024 08:21  
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 \$\$\$\$SUBSERNAME\$\$\$\$



**NOTES:**

1. MOUNT SIGN 403 UNDER EXISTING YIELD SIGN
2. DISPOSAL OF SIGN SYSTEM, U CHANNEL
3. RRFB TO BE INSTALLED. BOTH SIGNS WILL BE MOUNTED ON THE SAME SUPPORT AS THE RRFB. REFER TO SHEET SIG 1.3 AND SPECIAL PROVISIONS IN THE CONTRACT. ALL RRFB SHOULD BE INSTALLED ON TYPE II PEDESTALS.

**PAVEMENT MARKING CODES:**  
 T62: WHITE CROSSWALK LINE (24", 90 MILS)

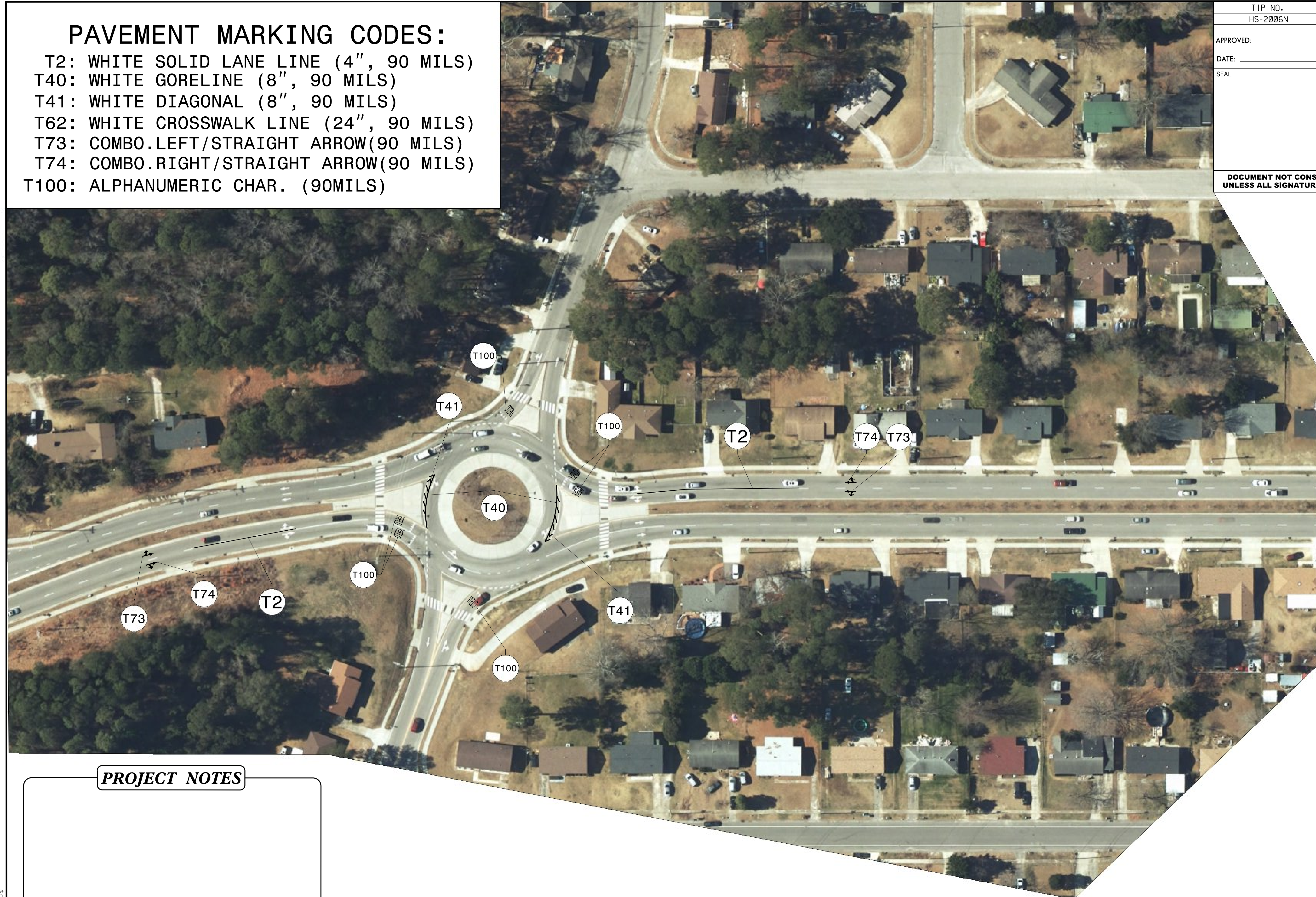
# SIGNING DETAIL

APPROVED: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 SEAL: \_\_\_\_\_

**DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED**

### PAVEMENT MARKING CODES:

- T2: WHITE SOLID LANE LINE (4", 90 MILS)
- T40: WHITE GORELINE (8", 90 MILS)
- T41: WHITE DIAGONAL (8", 90 MILS)
- T62: WHITE CROSSWALK LINE (24", 90 MILS)
- T73: COMBO.LEFT/STRAIGHT ARROW(90 MILS)
- T74: COMBO.RIGHT/STRAIGHT ARROW(90 MILS)
- T100: ALPHANUMERIC CHAR. (90MILS)



MATCHLINE

### PROJECT NOTES

Blank area for project notes.

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TIP NO. HS-2006N	SHEET NO. PMP-2
APPROVED: _____	
DATE: _____	
SEAL	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

### PAVEMENT MARKING CODES:

- T2: WHITE SOLID LANE LINE (4", 90 MILS)
- T40: WHITE GORELINE (8", 90 MILS)
- T41: WHITE DIAGONAL (8", 90 MILS)
- T62: WHITE CROSSWALK LINE (24", 90 MILS)
- T73: COMBO.LEFT/STRAIGHT ARROW(90 MILS)
- T74: COMBO.RIGHT/STRAIGHT ARROW(90 MILS)
- T100: ALPHANUMERIC CHAR. (90MILS)



MATCHLINE

MATCHLINE

### PROJECT NOTES

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# PAVEMENT MARKING CODES:

- T2: WHITE SOLID LANE LINE (4", 90 MILS)
- T40: WHITE GORELINE (8", 90 MILS)
- T41: WHITE DIAGONAL (8", 90 MILS)
- T62: WHITE CROSSWALK LINE (24", 90 MILS)
- T73: COMBO.LEFT/STRAIGHT ARROW(90 MILS)
- T74: COMBO.RIGHT/STRAIGHT ARROW(90 MILS)
- T100: ALPHANUMERIC CHAR. (90MILS)
- UN: 24" YIELD LINE TRIANGLES (90MILS)

APPROVED: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 SEAL

**DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED**



MATCHLINE

MATCHLINE

## PROJECT NOTES

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TIP NO.	SHEET NO.
HS-2006N/HS-2006O	PMP-4
APPROVED: _____	
DATE: _____	
SEAL: _____	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

### PAVEMENT MARKING CODES:

- T2: WHITE SOLID LANE LINE (4", 90 MILS)
- T3: 10 FT. WHITE SKIP (4", 90 MILS)
- T40: WHITE GORELINE (8", 90 MILS)
- T41: WHITE DIAGONAL (8", 90 MILS)
- T62: WHITE CROSSWALK LINE (24", 90 MILS)
- T73: COMBO.LEFT/STRAIGHT ARROW(90 MILS)
- T74: COMBO.RIGHT/STRAIGHT ARROW(90 MILS)
- T100: ALPHANUMERIC CHAR. (90MILS)
- UN: 24" YIELD LINE TRIANGLES (90MILS)

MATCHLINE

**PROJECT NOTES**



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Notes

1. Design the RRFB in accordance with the 2023 MUTCD, 11th Edition, Chapter 4L: Rectangular Rapid-Flashing Beacons. The RRFB unit associated with a post-mounted sign and plaque should be located between the pedestrian crossing warning (W11-2) sign and the supplemental downward diagonal arrow plaque (W16-7p).
2. If needed, a supplemental RRFB with an "AHEAD" (W16-9P) or distance (W16-2P) plaque may be installed on the approach in advance of the crosswalk. The additional RRFB shall be a supplemental to and not a replacement for the RRFB at the actual crosswalk.
3. When practical, the RRFB and mounting post on the right side of the road shall be mounted on the approach side of the crosswalk closest to approaching traffic.
4. When practical, the RRFB and mounting post on the left side of the road may be mounted on the back of the post for the opposing approach.
5. A RRFB on the left side of the roadway or in the median may be individually mounted on the approach side of the crosswalk closest to approaching traffic, or, when practical, may be mounted back to back on the same post and mounted on either side of the crosswalk in the median.
6. Locate push button sign (R10-25) and push button to face crosswalk, even if it is mounted on the back side of the sign.
7. All RRFB units associated with a given crosswalk (including those with an advance crossing sign) shall, when actuated, simultaneously commence operation of their rapid-flashing indications and shall cease operation simultaneously.
8. For quantitative purposes, a single sided, post mounted RRFB is one assembly unit. A double sided RRFB mounted on the same post is counted as two (2) assemblies.
9. For additional information, see Version 24 of the Transportation Systems Management and Operations (TSMO) Unit Project Special Provisions (PSP).

Timing of RRFBs

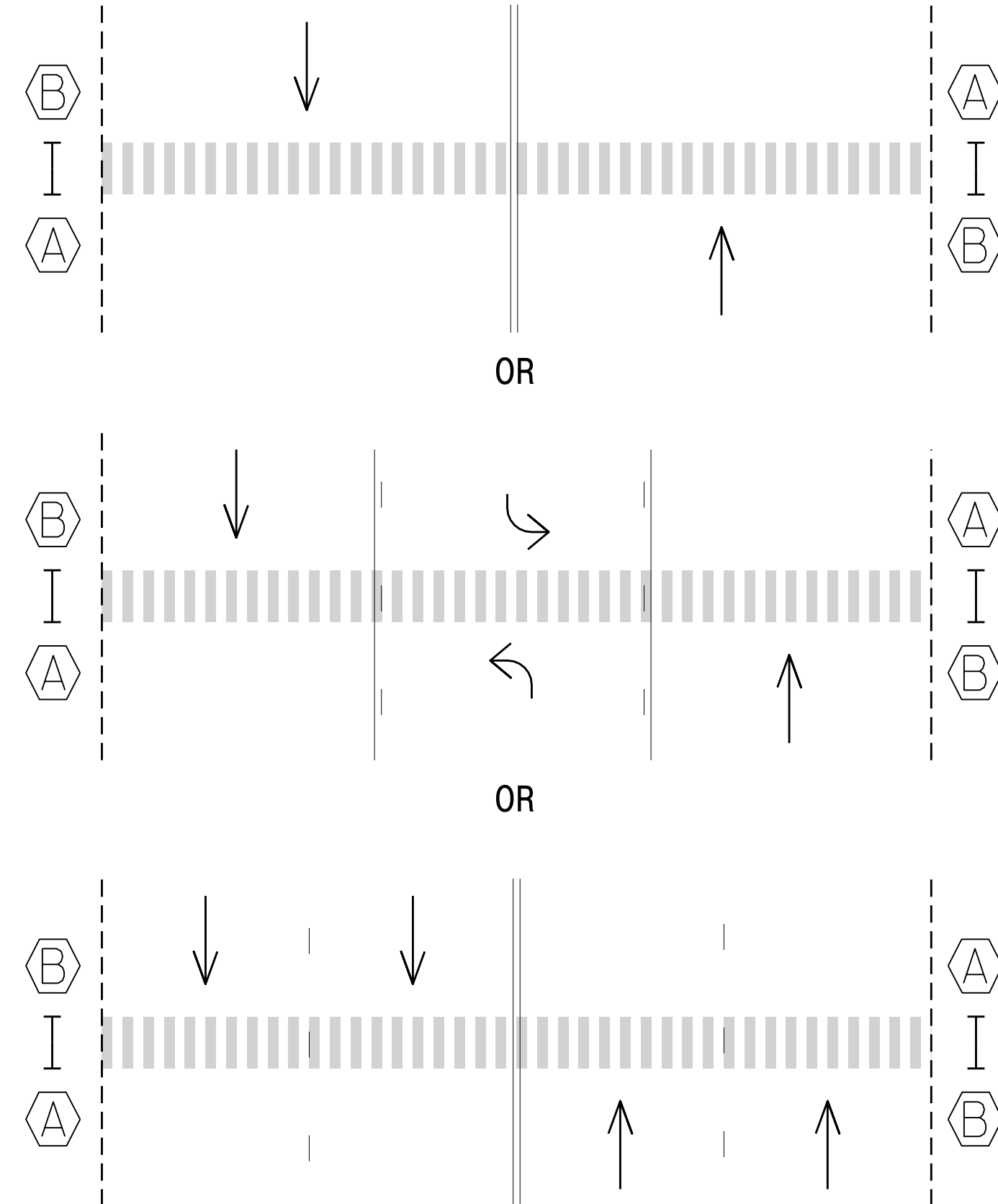
When actuated, the two yellow indications in each RRFB unit shall flash in a rapidly flashing sequence. The RRFB shall flashing sequence shall provide enough time for pedestrians to cross from curb to curb. It is recommended to be a minimum of 7 seconds plus the crossing distance (D) divided by 3.5 feet/per sec., rounded up to the next whole second:

$$\text{Flash Time (sec.)} = 7 + D/3.5$$

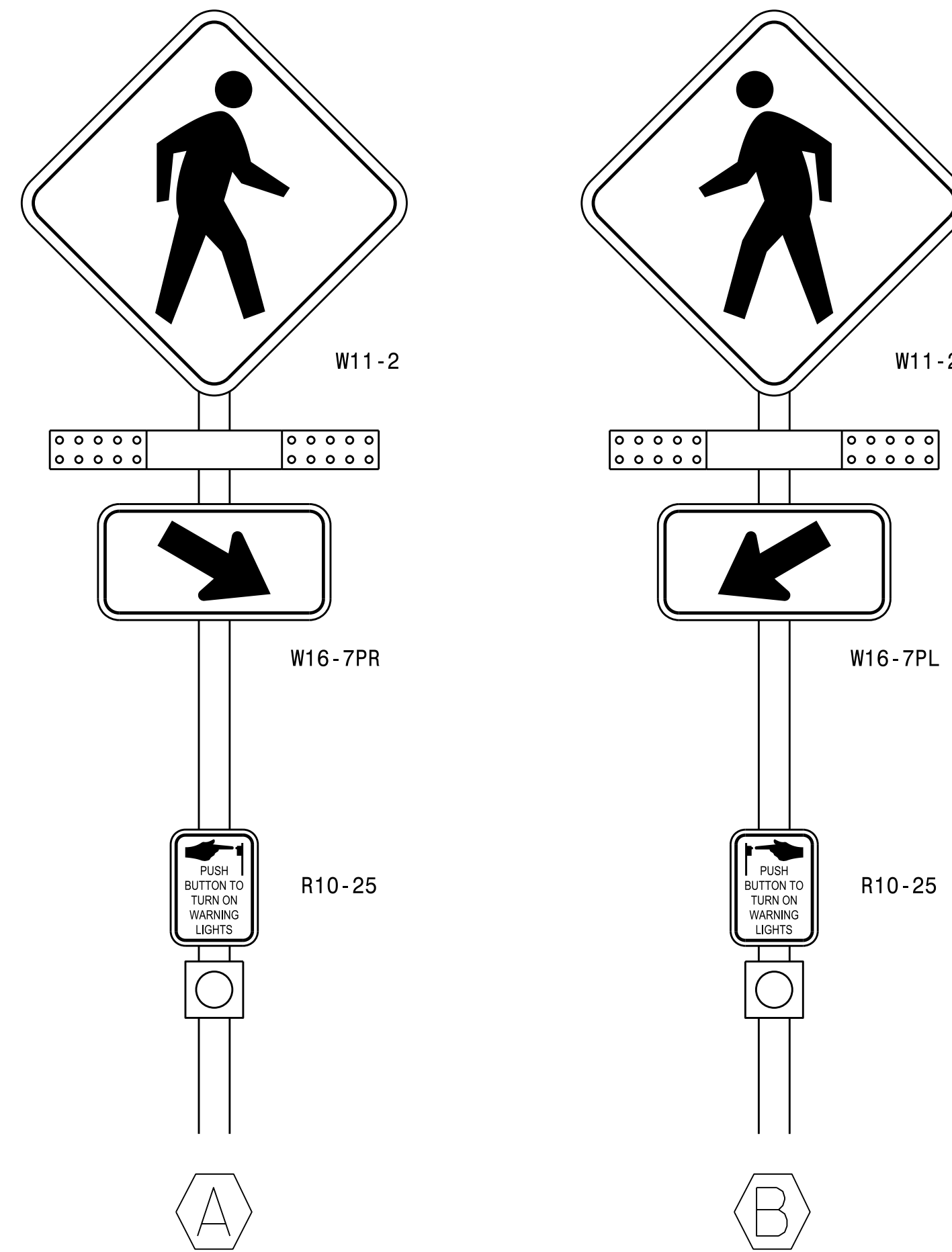
Per Section 4L.03 of the 2023 MUTCD, RRFBs shall provide 75 flashing sequences per minute. During each 800 millisecond flashing sequence, the left and right RRFB indications shall operate using the following sequence:

- The RRFB indication on the left-hand side shall be illuminated for approximately 50 milliseconds. Both RRFB indications shall be dark for approximately 50 milliseconds.
- The RRFB indication on the right-hand side shall be illuminated for approximately 50 milliseconds. Both RRFB indications shall be dark for approximately 50 milliseconds.
- The RRFB indication on the left-hand side shall be illuminated for approximately 50 milliseconds. Both RRFB indications shall be dark for approximately 50 milliseconds.
- The RRFB indication on the right-hand side shall be illuminated for approximately 50 milliseconds. Both RRFB indications shall be dark for approximately 50 milliseconds.
- Both RRFB indications shall be illuminated for approximately 50 milliseconds. Both RRFB indications shall be dark for approximately 50 milliseconds.
- Both RRFB indications shall be illuminated for approximately 50 milliseconds. Both RRFB indications shall be dark for approximately 250 milliseconds.

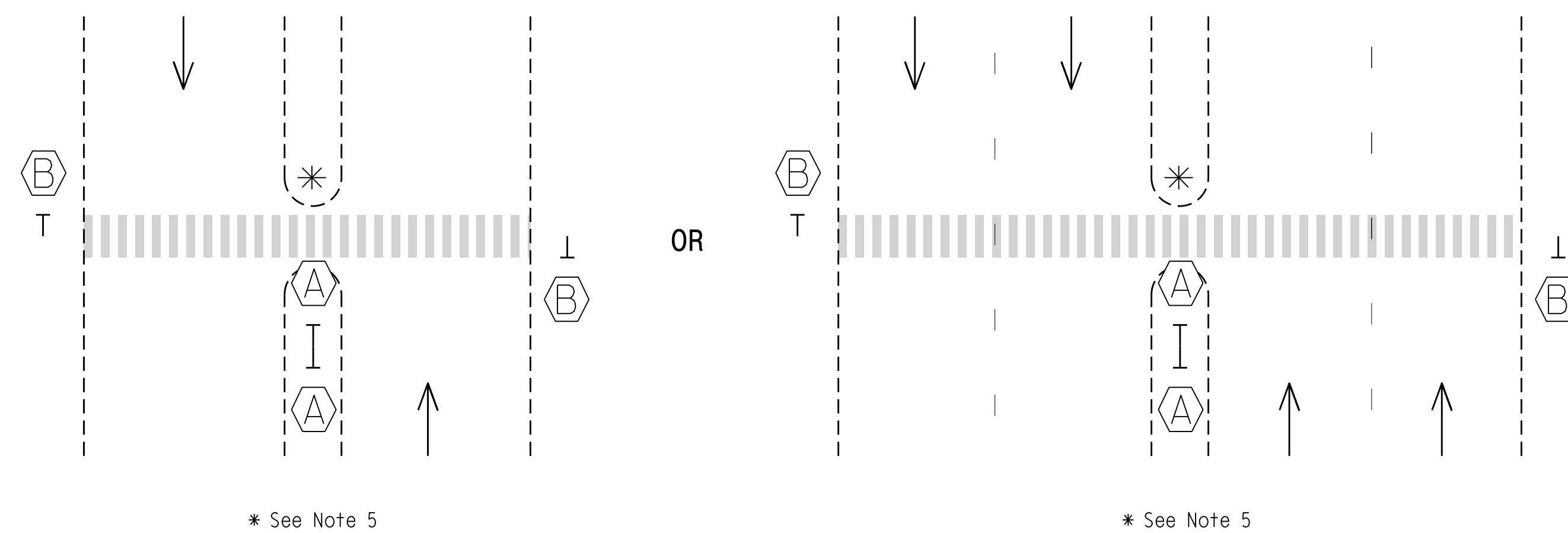
Two to Four Lanes, Undivided



RRFB Sign Detail



Two or Multi-Lanes, Divided



Standard Drawing for Rectangular Rapid Flashing Beacon

Prepared in the Offices of:  
 Transportation Mobility and Safety Division  
 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 TSMO Unit  
 750 N. Greenfield Parkway  
 Garner, NC 27529

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 SEAL 026486  
 ROBERT J. ZIEMBA  
 DiscSigned by: [Signature]  
 DATE: 05/30/2024