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PROJECT NO.	SHEET NO.	TOTAL NO.
52073.07.301, 52073.07.302		
52073.07.303,		

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	4" CONCRETE SIDEWALK	REMOVE & REPLACE CONCRETE CURB RAMPS	SUPPORTS, 3-LB STEEL U-CHANNEL	SIGN ERECTION, RELOCATE TYPE E	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	PEDESTRIAN SIGNAL HEAD (16", 1 SECTION W/COUNTDOWN)	SIGNAL CABLE	VEHICLE SIGNAL HEAD (12", 3 SECTION)	BACKPLATE	APS DETECTOR STATION	CENTRAL CONTROL UNIT APS DETECTOR STATION	UNPAVED TRENCHING (1.2")	2" RISER WITH WEATHERHEAD	LEAD-IN CABLE (14-2)	TYPE I POST WITH FOUNDATION	TYPE II PEDESTAL WITH FOUNDATION	SIGNAL CABINET FOUNDATION	CONTROLLERS WITH CABINET (TYPE 2070LX, BASE MOUNTED)	DETECTOR CARD (TYPE 170)	CABINET BASE EXTENDER	RECTANGULAR RAPID FLASHING BEACON ASSEMBLY	TEMPORARY TRAFFIC CONTROL	TRAFFIC SIGNAL REMOVAL	24" X 90 M WHITE THERMO	REMOVAL OF PAVEMENT MARKING LINES (8")	REMOVAL OF PAVEMENT MARKING LINES (24")
					SY	EA	LF	EA	EA	EA	LF	EA	EA	EA	EA	LF	EA	LF	EA	EA	EA	EA	EA	EA	EA	LS	EA	LF	LF	LF
52073.07.301	Alamance	1	NORTH FIFTH ST AT KIT LANE/KIT COURT, SOUTH FIFTH ST AT EAST JACKSON ST, SOUTH FIFTH AT EAST ROOSEVELT ST, SOUTH THIRD ST AT CORREGIDOR ST, SOUTH FIFTH ST AT FOUST RD/PROSPECT DR, AND US 70 (SOUTH CHURCH ST) AT WEST WILLOWBROOK DR/CAROLINA AVE	PEDESTRIAN SIGNAL UPGRADES, SIDEWALK AND PAVEMENT MARKINGS AT THE INTERSECTIONS OF NORTH FIFTH ST AT KIT LANE/KIT COURT, SOUTH FIFTH ST AT EAST JACKSON ST, SOUTH FIFTH AT EAST ROOSEVELT ST, SOUTH THIRD ST AT CORREGIDOR ST, SOUTH FIFTH ST AT FOUST RD/PROSPECT DR, AND US 70 (SOUTH CHURCH ST) AT WEST WILLOWBROOK DR/CAROLINA AVE	6	9	54	6	14																24	X	1	1,127		728
TOTAL FOR PROJ NO. 52073.07.301					**6**	**9**	**54**	**6**	**14**																		**24**	**X**	**1**	**1,127**		**728**
52073.07.302	Alamance	2	US 70 (S. CHURCH ST) AT COACHLIGHT TRAIL/FIELDSTONE DR AND SR 1213 (GRAND OAKS BLVD) AT SR 1146 (KIRKPATRICK RD)	SIGNAL UPGRADES AND PAVEMENT MARKINGS AT THE INTERSECTION OF US 70 (S. CHURCH ST) AT COACHLIGHT TRAIL/FIELDSTONE DR AND SR 1213 (GRAND OAKS BLVD) AT SR 1146 (KIRKPATRICK RD)						6	1,120	2	6	10	2	130	4	1,460	3	6							X		664	280	
TOTAL FOR PROJ NO. 52073.07.302										**6**	**1,120**	**2**	**6**	**10**	**2**	**130**	**4**	**1,460**	**3**	**6**							**X**		**664**	**280**	
																130															
52073.07.303	Orange	3	SR 1328 (FAUCETTE MILL RD)/US 70 BUS (REVERE RD) AND US 70 (CORNELIUS ST)	SIGNAL UPGRADES AT THE INTERSECTION OF SR 1328 (FAUCETTE MILL RD)/US 70 BUS (REVERE RD) AND US 70 (CORNELIUS ST)							3,070	4		4	1	10	2	3,600			1	1	4	1		X				
TOTAL FOR PROJ NO. 52073.07.303											**3,070**	**4**		**4**	**1**	**10**	**2**	**3,600**			**1**	**1**	**4**	**1**		**X**				
																10															
GRAND TOTAL					**6**	**9**	**54**	**6**	**14**	**6**	**4,190**	**6**	**6**	**14**	**3**	**140**	**6**	**5,060**	**3**	**6**	**1**	**1**	**4**	**1**	**24**	**1**	**1**	**1,791**	**280**	**728**
																140															

WBS # 52073.07.303,
FA# TA07303,
TIP# BN-0031GC

WBS # 52073.07.302,
FA# TA07302,
TIP# BN-0031GB

WBS # 52073.07.301,
FA# TA07301,
TIP# BN-0031GA

WBS # 52073.07.301,
FA# TA07301,
TIP# BN-0031GA

TIP NO.	SHEET NO.
BN-0031GA	SIGN/PM-1

PROJECT NO.: BN-0031GA

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

SIGNING & PAVEMENT MARKING PLAN

ALAMANCE COUNTY

LOCATION: SEVEN INTERSECTIONS IN MEBANE, GRAHAM, & BURLINGTON

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
	SIGNING
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS
	PAVEMENT MARKINGS
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.08	PAVEMENT MARKINGS - SYMBOLS & WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS

INDEX

GENERAL NOTES

SIGNING

. SIGNS FURNISHED BY STATE

. CONFIRM IN WRITING AT LEAST 4 MONTHS IN ADVANCE, THE ACTUAL DATE THE DEPARTMENT FURNISHED SIGNS WILL BE REQUIRED.

. 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

. 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 MARKING

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 FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
ALL ROADS	THERMOPLASTIC	N/A

B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS.
D) STOP BAR LOCATION AT NON-SIGNALIZED INTERSECTIONS MAY BE ADJUSTED AS DIRECTED 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.

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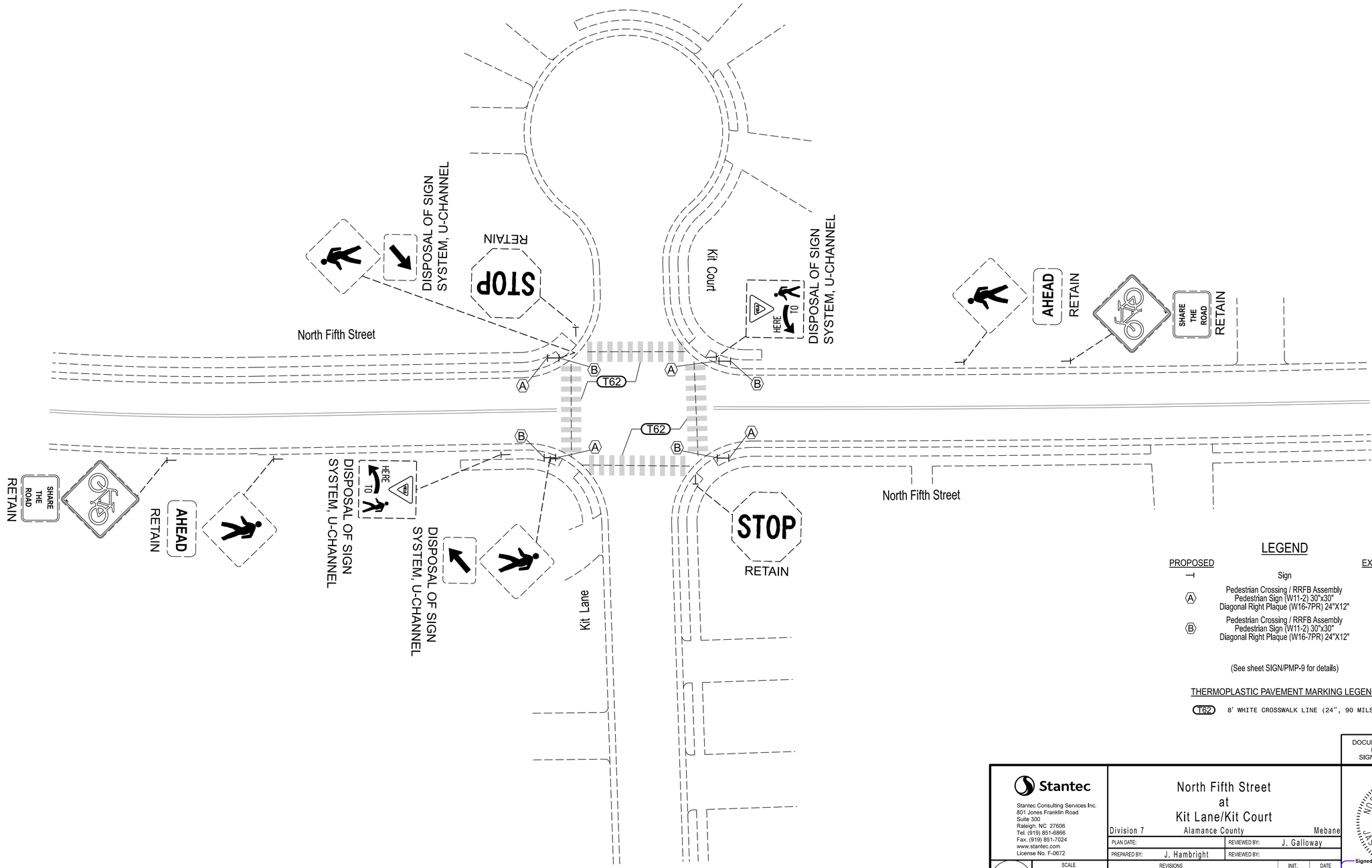
PLAN PREPARED BY: Stantec Consulting Services, Inc.

Jason Galloway PE Senior Traffic Engineer
Regina Muncey, PE Traffic Design Group Lead
James Hambright Senior Transportation Technician

Stantec

PROJECT REFERENCE NO.	SHEET NO.
BN-0031GA	SIGN/PM-2



LEGEND

PROPOSED	Sign	EXISTING
A	Pedestrian Crossing / RRFB Assembly Pedestrian Sign (W11-2) 30"x30" Diagonal Right Plaque (W16-7PR) 24"X12"	A
B	Pedestrian Crossing / RRFB Assembly Pedestrian Sign (W11-2) 30"x30" Diagonal Right Plaque (W16-7PR) 24"X12"	B

(See sheet SIGN/PMP-9 for details)

THERMOPLASTIC PAVEMENT MARKING LEGEND

T62 8' WHITE CROSSWALK LINE (24", 90 MILS)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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North Fifth Street at Kit Lane/Kit Court

Division 7 | Alamance County | Mebane

PLAN DATE:
PREPARED BY: J. Hambright
REVIEWED BY: J. Galloway
REVIEWED BY:

SCALE 0 20 1"=20'

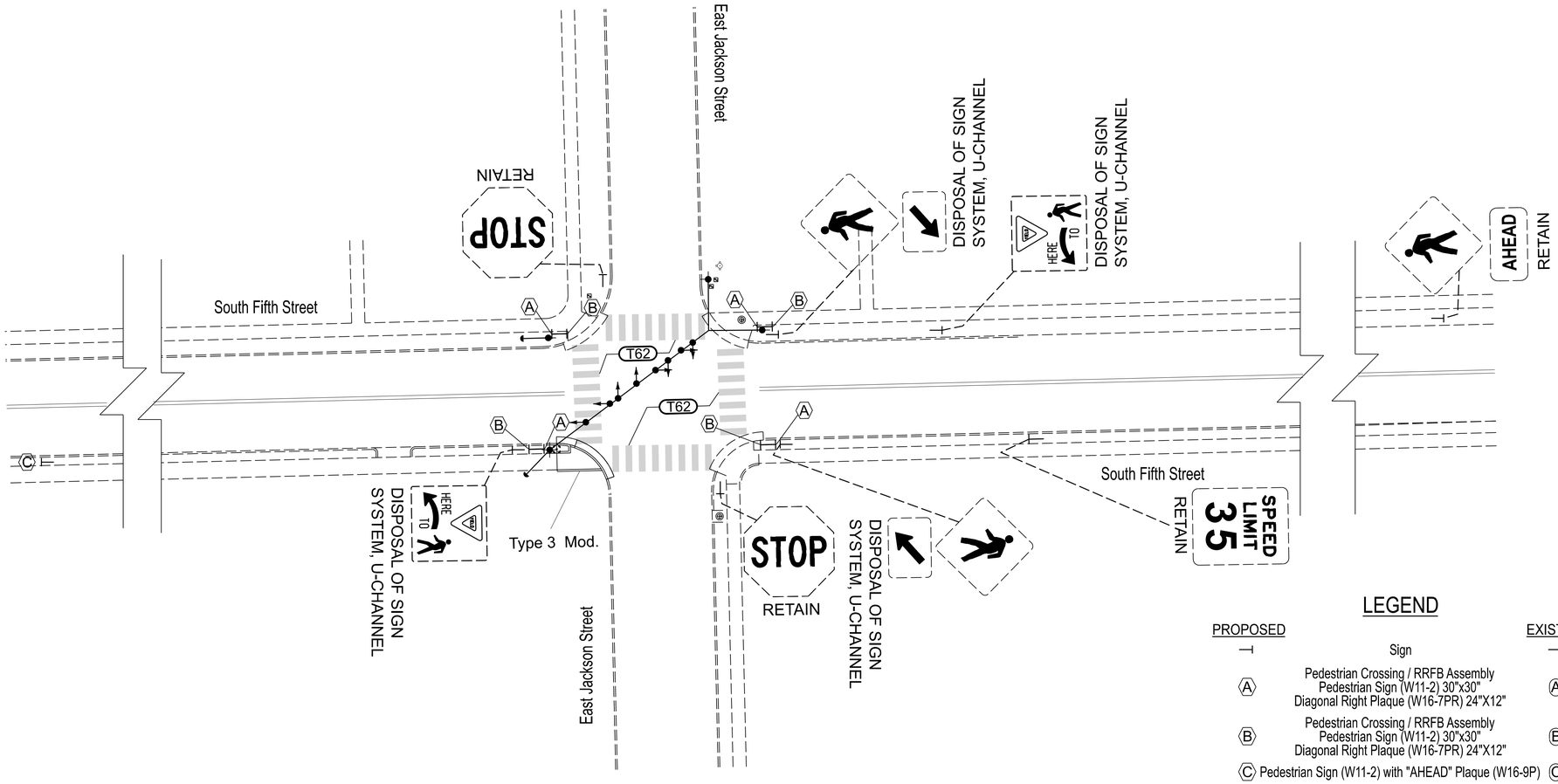
REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029904 ENGINEER JASON P. GALLOWAY

Signed by: Jason Galloway 5/1/2026
10D1E2B40BAB46E... DATE

SIG. INVENTORY NO.

PROJECT REFERENCE NO.	SHEET NO.
BN-0031GA	SIGN/PM-3



LEGEND

PROPOSED		EXISTING
⊣	Sign	⊣
Ⓐ	Pedestrian Crossing / RRFB Assembly Pedestrian Sign (W11-2) 30"x30" Diagonal Right Plaque (W16-7PR) 24"X12"	Ⓐ
Ⓑ	Pedestrian Crossing / RRFB Assembly Pedestrian Sign (W11-2) 30"x30" Diagonal Right Plaque (W16-7PR) 24"X12"	Ⓑ
Ⓒ	Pedestrian Sign (W11-2) with "AHEAD" Plaque (W16-9P)	Ⓒ

(See sheet SIGN/PMP-9 for details)

THERMOPLASTIC PAVEMENT MARKING LEGEND

(T62) 8' WHITE CROSSWALK LINE (24", 90 MILS)

REMOVE EXISTING OVERHEAD FLASHER

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License No. F-0672

SCALE
0 20
1"=20'

South Fifth Street
at
East Jackson Street

Division 7 Alamance County Mebane

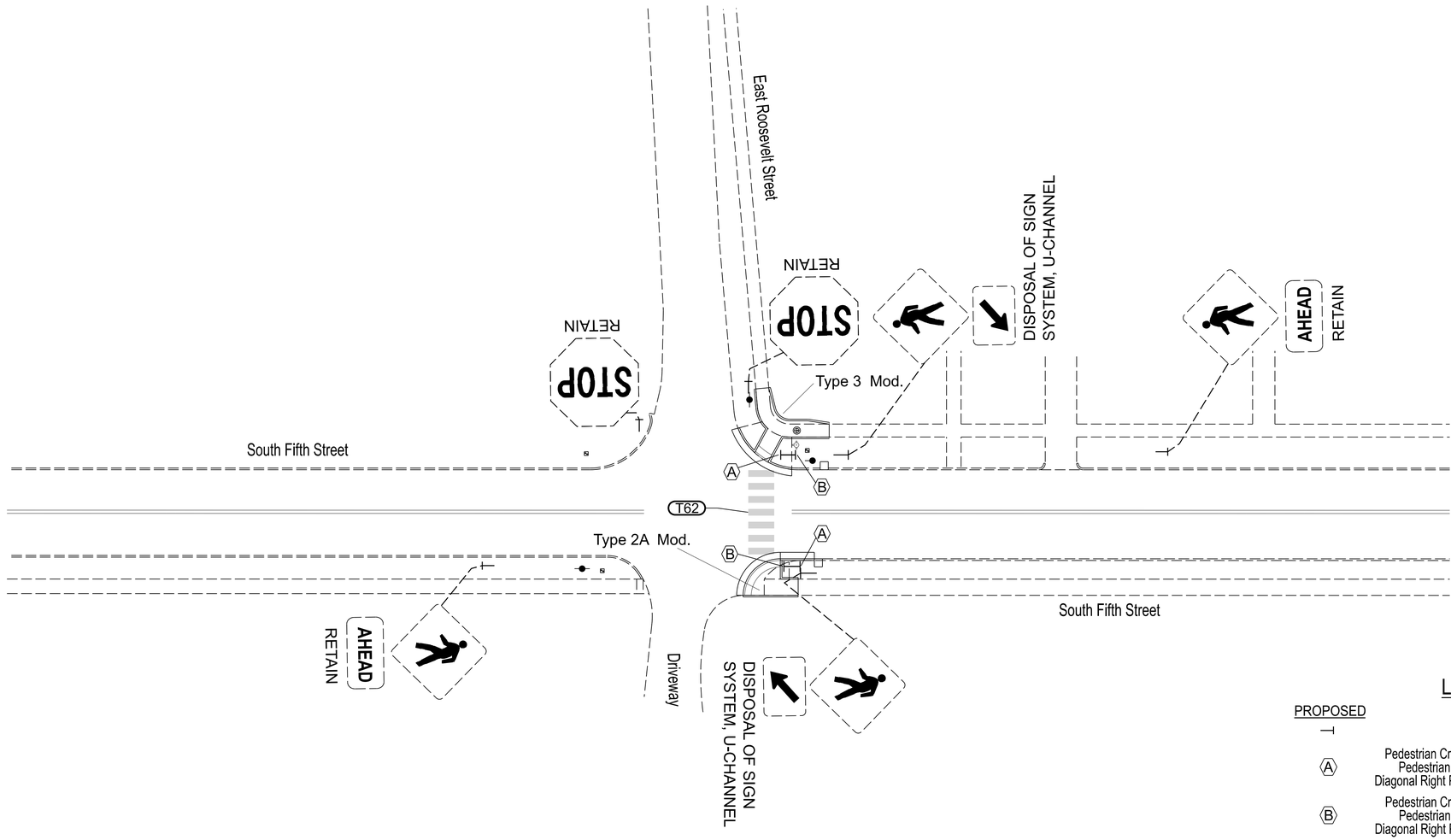
PLAN DATE:	April 2026	REVIEWED BY:	J. Galloway
PREPARED BY:	J. Hambright	REVIEWED BY:	

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029904 ENGINEER JASON P. GALLOWAY

Signed by: Jason Galloway 5/1/2026
10D1E2B40B4B46E DATE

PROJECT REFERENCE NO.	SHEET NO.
BN-0031GA	SIGN/PM-4



LEGEND

PROPOSED		EXISTING
⊣	Sign	⊣
Ⓐ	Pedestrian Crossing / RRFB Assembly Pedestrian Sign (W11-2) 30"x30" Diagonal Right Plaque (W16-7PR) 24"X12"	Ⓐ
Ⓑ	Pedestrian Crossing / RRFB Assembly Pedestrian Sign (W11-2) 30"x30" Diagonal Right Plaque (W16-7PR) 24"X12"	Ⓑ

(See sheet SIGN/PMP-9 for details)

THERMOPLASTIC PAVEMENT MARKING LEGEND

T62 8' WHITE CROSSWALK LINE (24", 90 MILS)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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South Fifth Street
at
East Roosevelt Street

Division 7 Alamance County Mebane

PLAN DATE:	REVIEWED BY: J. Galloway
PREPARED BY: J. Hambright	REVIEWED BY:

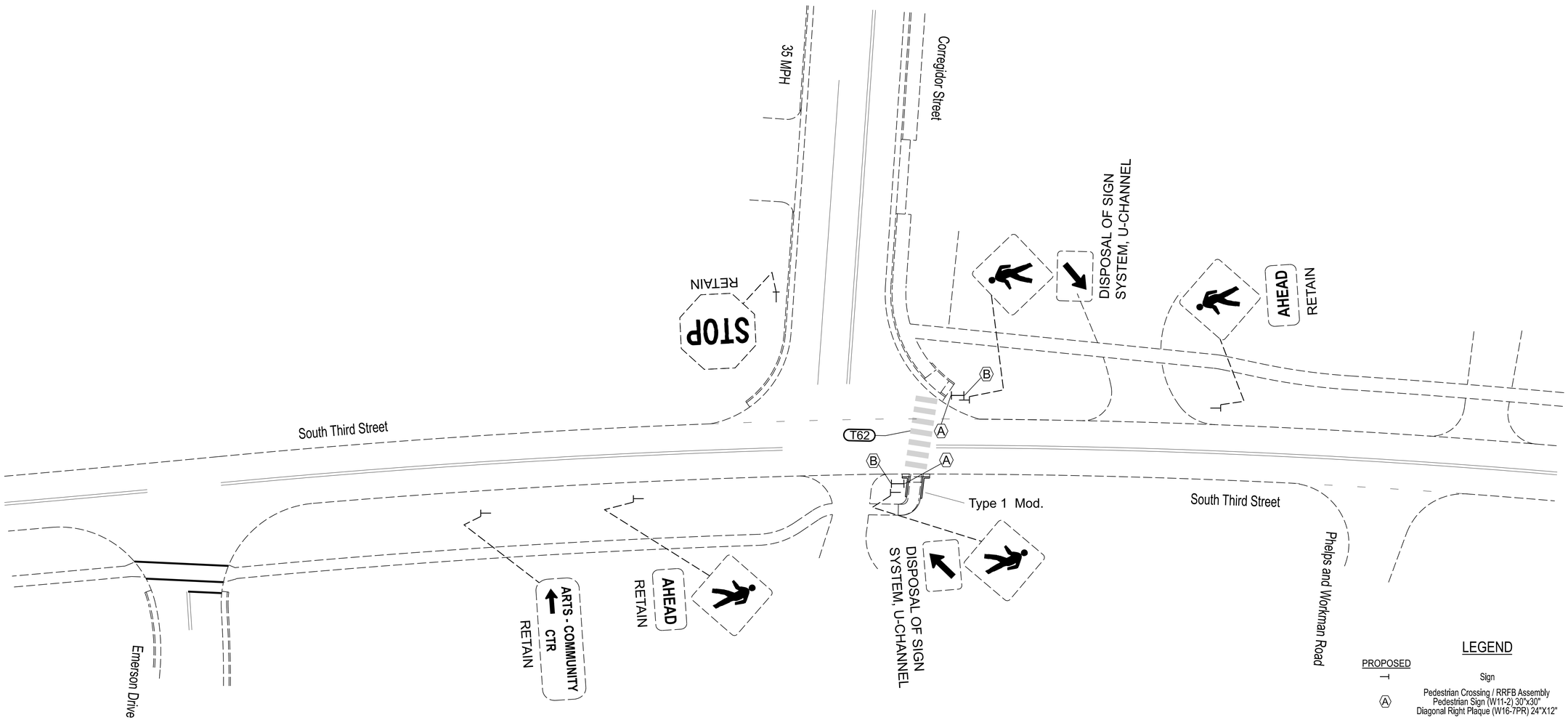
SCALE 0 20 1"=20'

REVISIONS	INT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL
SEAL 029904
ENGINEER
JASON P. GALLOWAY

Signed by: Jason Galloway 5/1/2026
10D1E2B40B4B4BE... DATE

PROJECT REFERENCE NO.	SHEET NO.
BN-0031GA	SIGN/PM-5



LEGEND

PROPOSED	Sign	EXISTING
Ⓐ	Pedestrian Crossing / RRFB Assembly Pedestrian Sign (W11-2) 30"x30" Diagonal Right Plaque (W16-7PR) 24"X12"	Ⓐ
Ⓑ	Pedestrian Crossing / RRFB Assembly Pedestrian Sign (W11-2) 30"x30" Diagonal Right Plaque (W16-7PR) 24"X12"	Ⓑ

(See sheet SIGN/PMP-9 for details)

THERMOPLASTIC PAVEMENT MARKING LEGEND

T62	8' WHITE CROSSWALK LINE (24", 90 MILS) (Existing Markings may be retained at the direction of the Engineer)

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License No. F-0672

SCALE
0 20
1"=20'

South Third Street at Corregidor Street

Division 7 | Alamance County | Mebane

PLAN DATE: | REVIEWED BY: J. Galloway

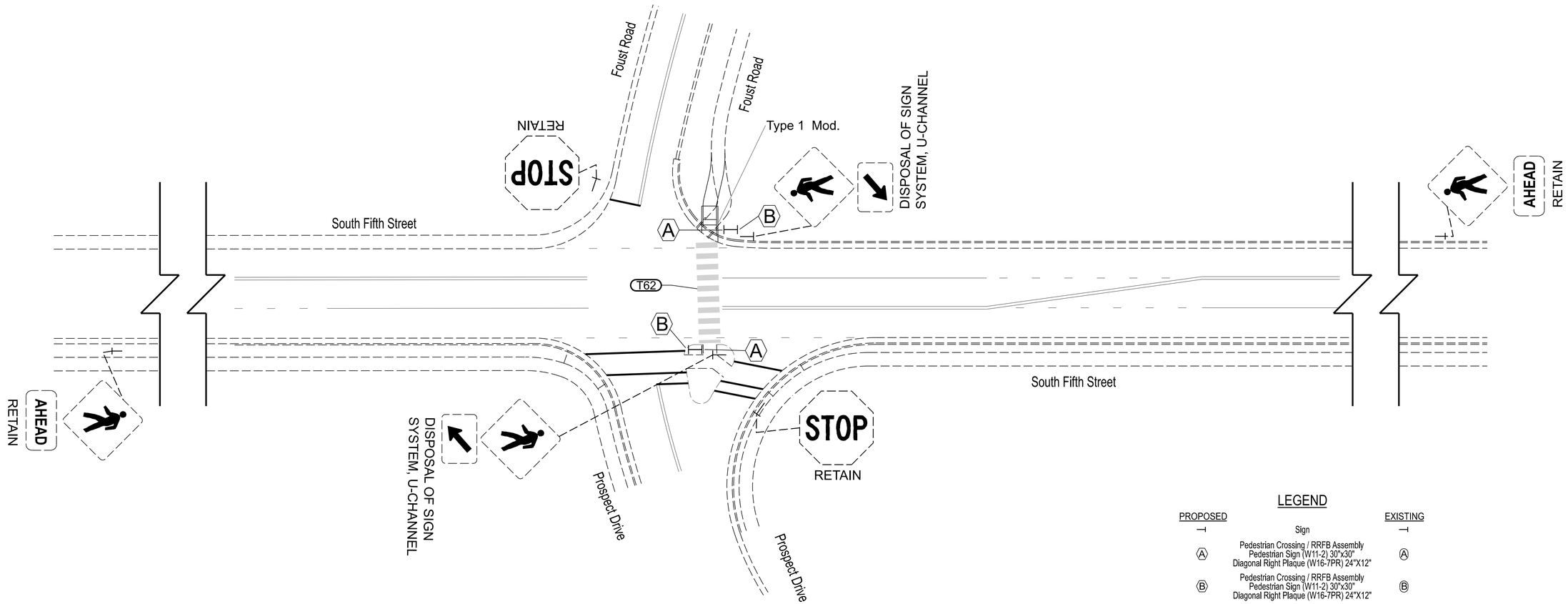
PREPARED BY: J. Hambright | REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029904 ENGINEER JASON P. GALLOWAY

Signed by: Jason Galloway 5/1/2026
DATE

PROJECT REFERENCE NO.	SIGN/PM-7
BN-0031GA	SIGN/PM-6



LEGEND

PROPOSED	Sign	EXISTING
⊣		⊣
Ⓐ	Pedestrian Crossing / RRFB Assembly Pedestrian Sign (W11-2) 30"x30" Diagonal Right Plaque (W16-7PR) 24"X12"	Ⓐ
Ⓑ	Pedestrian Crossing / RRFB Assembly Pedestrian Sign (W11-2) 30"x30" Diagonal Right Plaque (W16-7PR) 24"X12"	Ⓑ

(See sheet SIGN/PMP-9 for details)

THERMOPLASTIC PAVEMENT MARKING LEGEND

T62 8' WHITE CROSSWALK LINE (24", 90 MILS)
(Existing Markings may be retained at the discretion of the Engineer)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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South Fifth Street at Foust Road/Prospect Drive

Division 7 Alamance County Mebane

PLAN DATE:	April 2026	REVIEWED BY:	Muncey
PREPARED BY:	JH/JG	REVIEWED BY:	

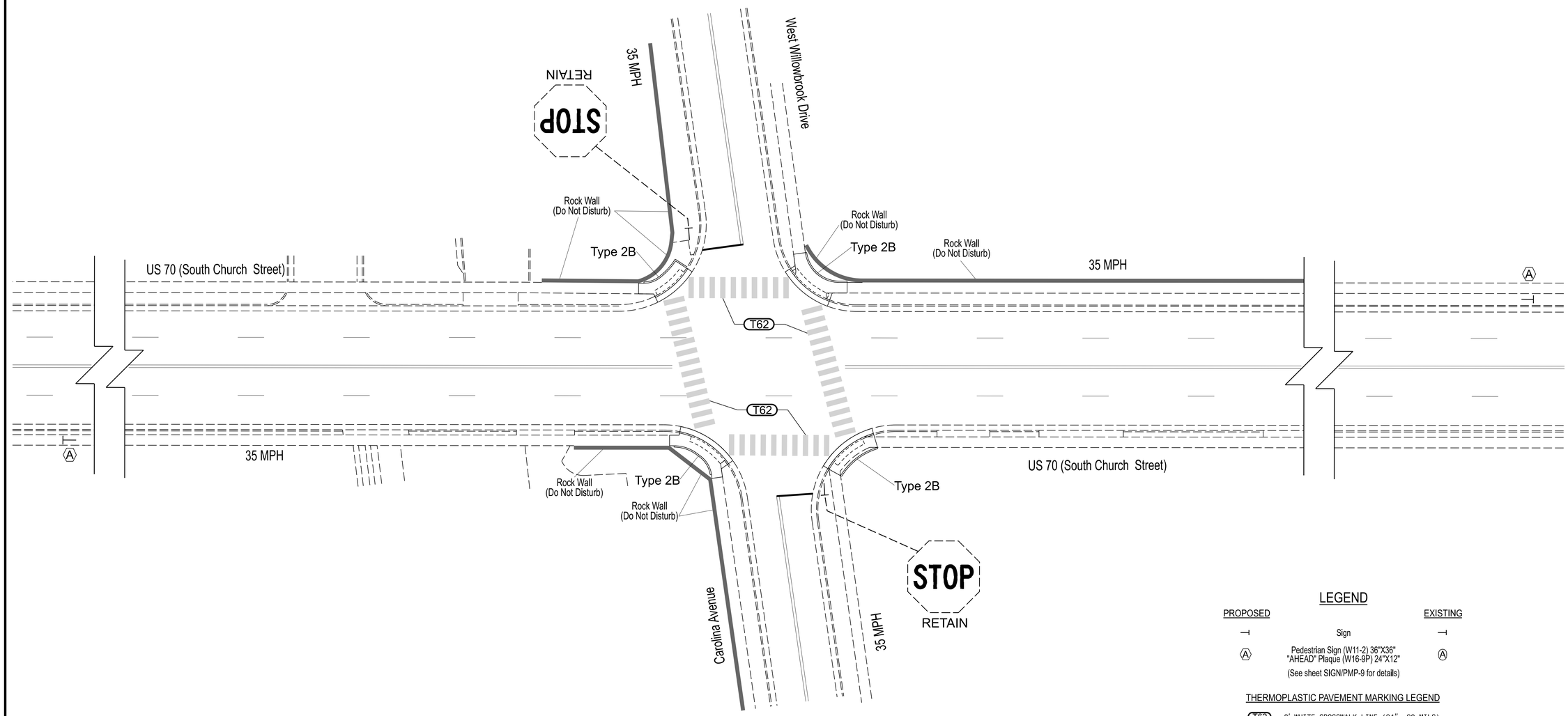
SCALE 0 20 1"=20'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029904 ENGINEER JASON P. GALLOWAY

Signed by: Jason Galloway 5/1/2026
10D1E2B40B4B46E... DATE

PROJECT REFERENCE NO.	SHEET NO.
BN-0031GA	SIGN/PM-7



LEGEND

PROPOSED		EXISTING
⊣	Sign	⊣
Ⓐ	Pedestrian Sign (W11-2) 36"X36" "AHEAD" Plaque (W16-9P) 24"X12" (See sheet SIGN/PMP-9 for details)	Ⓐ

THERMOPLASTIC PAVEMENT MARKING LEGEND

T62 8' WHITE CROSSWALK LINE (24", 90 MILS)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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US 70 (South Church Street) at West Willowbrook Drive/ Carolina Avenue

Division 7 Alamance County Burlington

PLAN DATE:	REVIEWED BY: J. Galloway
PREPARED BY: J. Hambright	REVIEWED BY:

SCALE 0 20 1"=20'

REVISIONS	INIT.	DATE

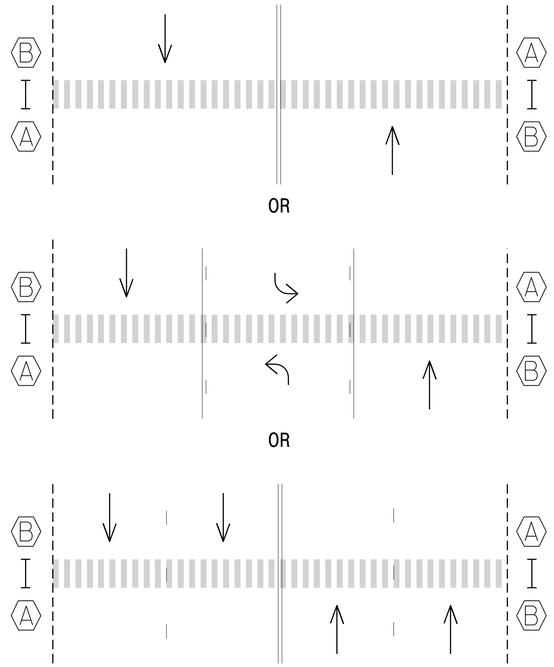
SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029904 JASON P. GALLOWAY

Signed by:
Jason Galloway 5/18/2026
10D1E2B40B4B46E... DATE

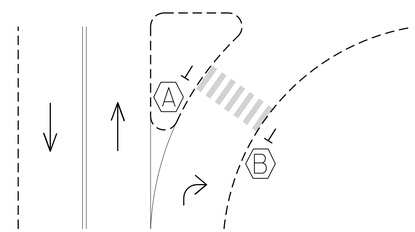
18-MAY-2026 10:09
C:\PSW\Division 7 - Improvements\07_US 70 (South Church St) @ West Willowbrook Dr-Carolina Ave_sig_dsn_2026.dgn
jgalloway

PROJECT REFERENCE NO.	SHEET NO.
BN-0031GA	SIGN/PM-8

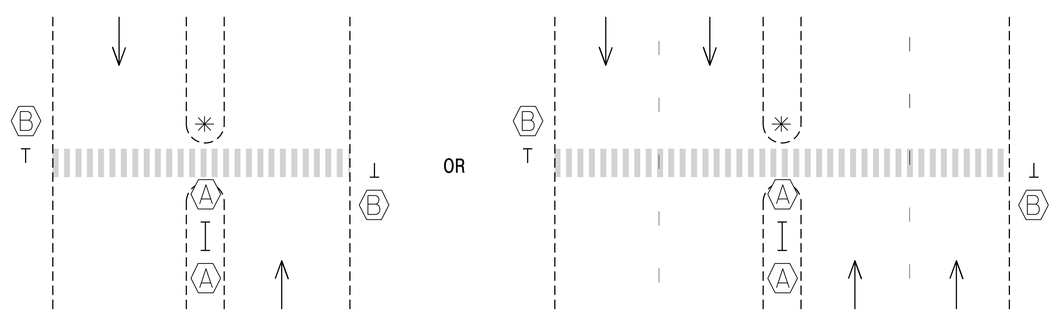
Two to Four Lanes, Undivided



Slip Lanes



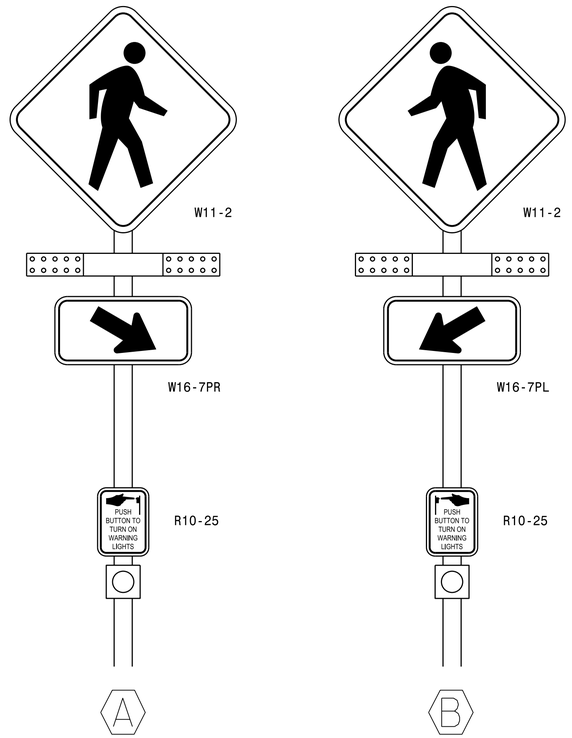
Two or Multi-Lanes, Divided



* See Note 5

* See Note 5

RRFB Sign Detail



Notes

1. Design the RRFB in accordance with the 2023 MUTCD, 11th Edition, Chapter 4L: Rectangular Rapid Flashing Beacons. The Rectangular Rapid Flashing Beacon (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 addtional 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. If an audible information device is used in conjunction with an RRFB, the audible message should be a speech message that says "Warning lights are flashing." The audible message should be spoken twice. The audible information device shall not use vibrotactile or percussive indications.

9. 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.

10. 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 recommened 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:

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.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Standard Drawing for Rectangular Rapid Flashing Beacon

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

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 026486 ENGINEER ROBERT J. ZIEMBA

DocuSigned by: Robert J. Ziemba
SIGNATURE 02/13/2026 DATE

13-FEB-2026 11:25
S:\TEAMS\Traffic Signals\Signal Design Section\Central Region\Rob's Files\RRFB Stds\RRFB Std 2-26.dgn
rjziemba

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

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.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
ALL ROADS	6:00 A.M.-9:00 A.M. MONDAY THRU FRIDAY 4:00 P.M.-7:00 P.M. MONDAY THRU FRIDAY

LANE AND SHOULDER CLOSURE REQUIREMENTS

B) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

C) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRANSPORTATION MANAGEMENT PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

F) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

TRAFFIC PATTERN ALTERATIONS

G) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

H) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

I) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

J) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

K) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES (DRUMS, CONES OR SKINNY DRUMS) PERPENDICULAR TO THE EDGE OF TRAVELWAY ON (XXX FT) CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

PAVEMENT MARKINGS AND MARKERS

L) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

MISCELLANEOUS

M) USE LAW ENFORCEMENT TO DIRECT TRAFFIC AND ENFORCE ROAD CLOSURES. LOCATIONS SHOWN IN THE PLANS ARE APPROXIMATE AND MAY BE REVISED AS THE OFFICER OR THE ENGINEER DEEM NECESSARY.

N) ALL CURB RAMP LOCATIONS SHALL BE DERIVED FROM STATIONING SHOWN ON PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER IN COORDINATION WITH THE SIGNING AND DELINEATION UNIT.

O) CONTRACTOR SHALL MAINTAIN SIDEWALK ACCESS AT ALL TIMES AS STATED IN THE PHASING. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEMPORARY SIDEWALKS (CONCRETE, ASPHALT, OR OTHER SUITABLE MATERIAL AS APPROVED BY THE ENGINEER) AT ALL LOCATIONS WHERE THE OPEN PEDESTRIAN TRAVELWAY HAS BEEN REMOVED FOR CONSTRUCTION OPERATIONS (UTILITIES, DRAINAGE, ETC.).

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

LOCATION - N FIFTH ST & KIT LN/KIT CIR IN MEBANE
- S FIFTH ST & JACKSON ST IN MEBANE
- S FIFTH ST & E ROOSEVELT ST IN MEBANE
- S THIRD ST & CORREGIDOR ST IN MEBANE
- S FIFTH ST & FOUST RD/PROSPECT DR IN MEBANE
- W ELM ST & ONEIDA ST IN GRAHAM
- US 70 (S CHURCH ST) & W WILLOWBROOK DR/CAROLINA AVE IN BURLINGTON

TYPE OF WORK - PAVEMENT MARKING, SIGNALS

PHASING

STEP 1
INSTALL ALL WORK ZONE ADVANCE WARNING SIGNS. SEE RSD 1101.01.

STEP 2
USING RSD 1101.02, CONDUCT ALL PAVEMENT MARKING OPERATION. SEE PM PLANS.

USE LANE CLOSURES AND RSD 1101.02, TO PERFORM SIGNAL WORK.

USE LAW ENFORCEMENT OFFICERS, IF NECESSARY, TO DIRECT TRAFFIC AT SIGNALIZED INTERSECTIONS WHERE OVERHEAD WORK IS REQUIRED. SEE SIGNAL PLANS.

STEP 3
REMOVE ALL TRAFFIC CONTROL DEVICES AND OPEN TRAFFIC TO FINAL PATTERN.

ROADWAY STANDARD DRAWINGS

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
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGERS
1165.01	TRUCK MOUNTED ATTENUATOR
1180.01	SKINNY - DRUM

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY:

J. W. WOOLARD, PE
SENIOR TRANSPORTATION ENGINEER

D. E. RICHARDSON
TRANSPORTATION DESIGNER

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License No. F-0672

NORTH CAROLINA PROFESSIONAL SEAL 19862 ENGINEER JOHN WOOLARD JR.

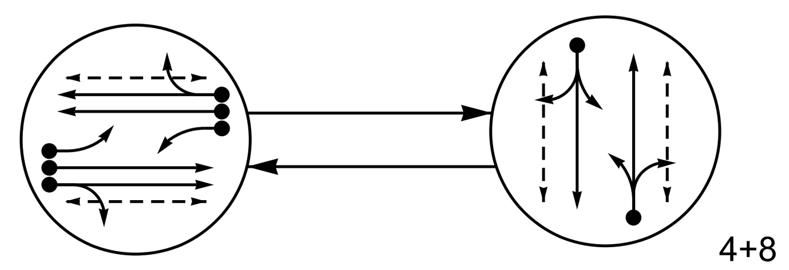
SHEET NO.
TMP-1

TIP PROJECT: BN-0031GA

WBS # 52073.07.302,
FA# TA07302,
TIP# BN-0031GB

PROJECT REFERENCE NO.	SHEET NO.
BN-0031GB	Sig. 1.0

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

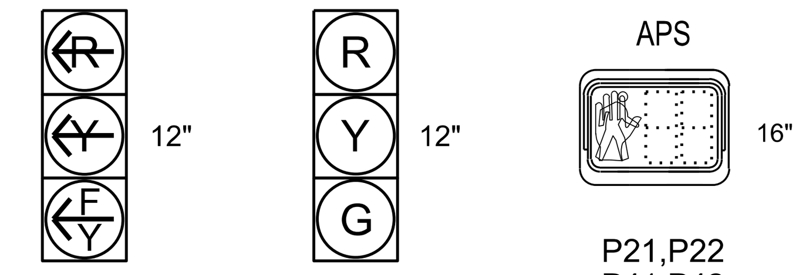
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	2+6	4+8	FLASH
21	←FY	←R	←R
22,23	G	R	R
41,42	R	G	R
61	←FY	←R	←R
62,63	G	R	R
81,82	R	G	R
P21,P22	W	DW	DRK
P41,P42	DW	W	DRK
P61,P62	W	DW	DRK
P81,P82	DW	W	DRK

SIGNAL FACE I.D.

All Heads L.E.D.



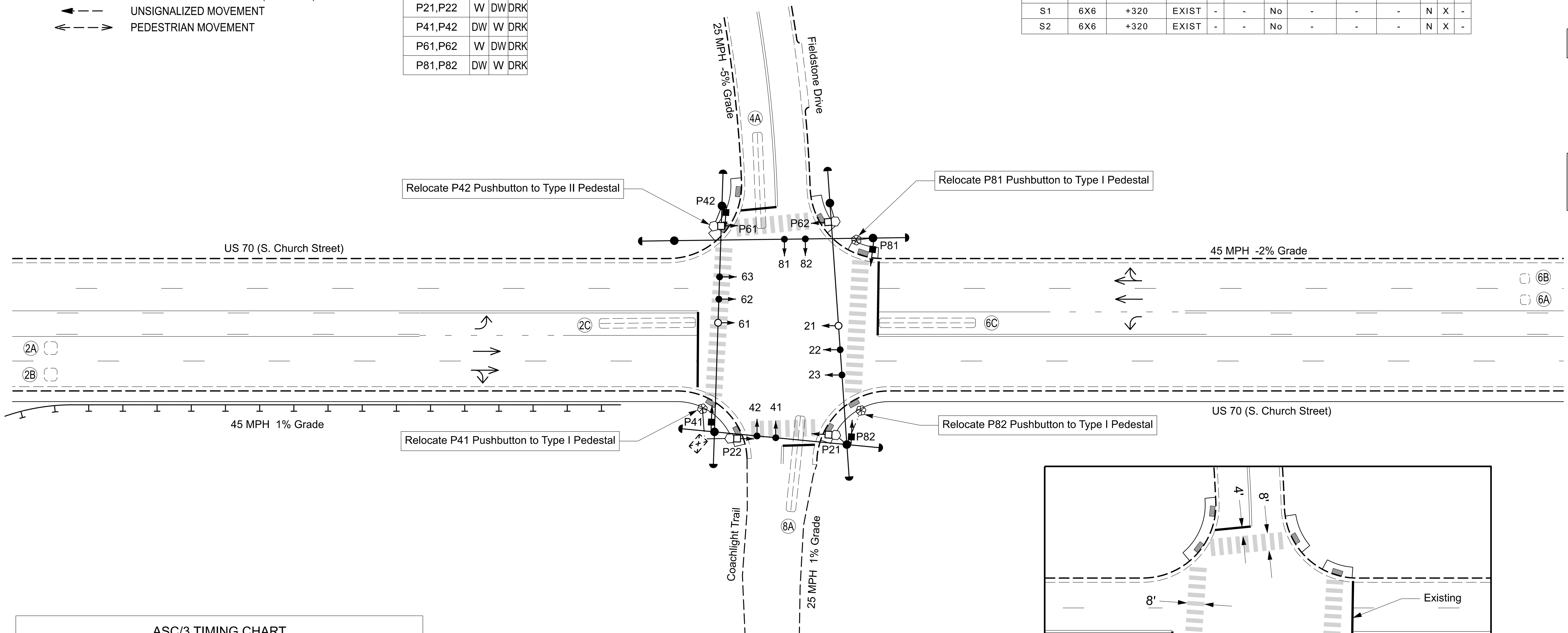
ASC/3 DETECTOR INSTALLATION CHART

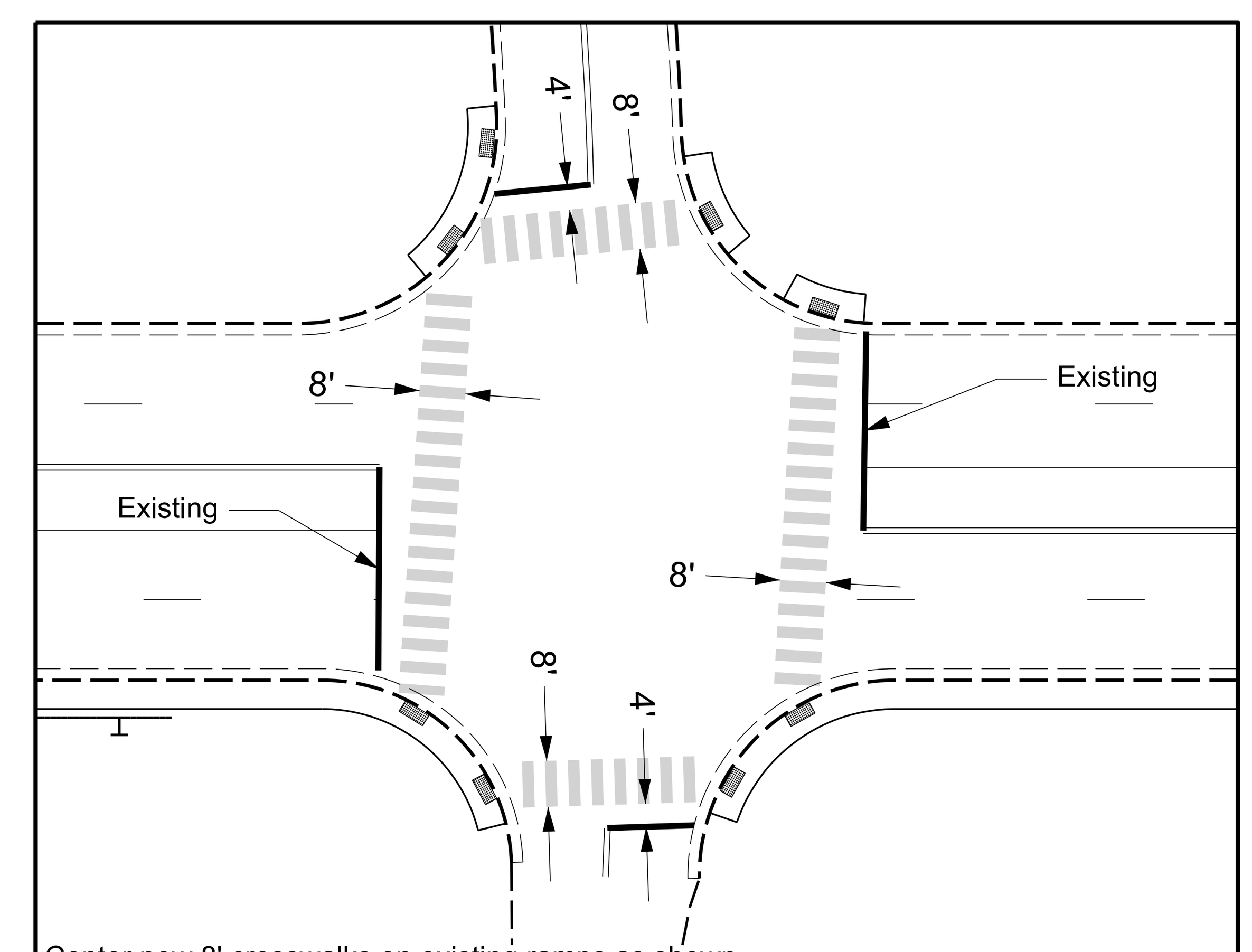
DETECTOR					PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOP LINE (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	SYSTEM LOOP	NEW CARD
2A,2B	6X6	300	EXIST	-	2	Yes	-	-	X	N	-	-
2C	6X60	0	2-4-2	-	2	Yes	-	3	-	G	-	-
4A	6X60	+10	2-4-2	-	4	Yes	-	5	-	N	-	-
6A,6B	6X6	300	EXIST	-	6	Yes	-	-	X	N	-	-
6C	6X60	0	2-4-2	-	6	Yes	-	3	-	G	-	-
8A	6X60	+14	2-4-2	-	8	Yes	-	5	-	N	-	-
S1	6X6	+320	EXIST	-	-	No	-	-	-	N	X	-
S2	6X6	+320	EXIST	-	-	No	-	-	-	N	X	-

2 Phase
Fully Actuated
Burlington-Graham Signal System

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Install backplates for signal heads numbered 21, 22, 23, 61, 62, and 63.
4. Set all detector units to presence mode.
5. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
6. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
7. Replace existing pushbuttons with APS Pushbuttons utilizing percussive tone walk indications and/or speech messages.
8. Pavement markings are existing unless otherwise shown/noted.
9. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.





STOP LINE AND CROSSWALK LOCATIONS

LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
X-UC	2-in Underground Conduit	UC
N/A	Right of Way	
	Directional Arrow	
	Type I Pushbutton Post	
	Type II Signal Pedestal	

ASC/3 TIMING CHART

FEATURE	PHASE 2	PHASE 4	PHASE 6	PHASE 8
Min Green*	12	7	12	7
Delayed Green	6	7	7	6
Walk*	7	4	7	7
Ped Clear	8	20	8	17
Vehicle Extension*	6.0	3.0	6.0	3.0
Max 1*	90	50	90	50
Yellow Clear	4.7	3.5	4.7	3.5
Red Clear	1.7	2.8	1.7	2.8
Actuations Before Add*	0	-	0	-
Seconds Per Actuation*	2.0	-	2.0	-
Max Initial*	34	-	34	-
Time Before Reduction*	15	-	15	-
Time To Reduce*	30	-	30	-
Minimum Gap	3.0	-	3.0	-
Locking Detector	X	-	X	-
Recall Position	VEH. RECALL	-	VEH. RECALL	-
Dual Entry	-	X	-	X
Simultaneous Gap	X	X	X	X

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

ACCESSIBLE PEDESTRIAN SIGNAL OPERATION

SIGNAL FACE	VOICE	TONES	INTERVAL	SPEECH MESSAGE
P21	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk/Don't Walk	Wait. Wait to cross Coachlight.
P22	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk/Don't Walk	Wait. Wait to cross Coachlight.
P41	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk/Don't Walk	Wait. Wait to cross Church.
P42	X	-	Walk	Church. Walk sign is on to cross Church.
	X	-	Flashing Don't Walk/Don't Walk	Wait. Wait to cross Church.
P61	X	-	Walk	Fieldstone. Walk sign is on to cross Fieldstone.
	X	-	Flashing Don't Walk/Don't Walk	Wait. Wait to cross Fieldstone.
P62	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk/Don't Walk	Wait. Wait to cross Fieldstone.
P81	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk/Don't Walk	Wait. Wait to cross Church.
P82	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk/Don't Walk	Wait. Wait to cross Church.

Signal Upgrade

Stantec
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Prepared in the Offices of:
Transportation Mobility and Safety Division
State of North Carolina Department of Transportation
Signal Design Section
750 N. Greenfield Pkwy, Garner, NC 27529

SCALE 0 30 1"=30'

US 70 (S. Church Street)
at
Coachlight Trail/
Fieldstone Drive

Division 7 | Alamance County | Burlington

PLAN DATE:	March 2026	REVIEWED BY:	R Muncey
PREPARED BY:	J Galloway	REVIEWED BY:	

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029904 ENGINEER JASON P. GALLOWAY

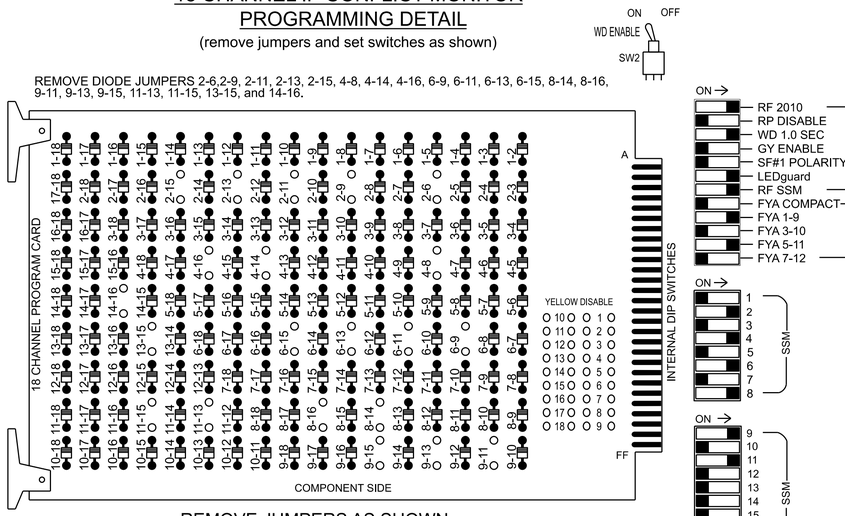
Signed by:
Jason Galloway 5/1/2026
10D1E2B40B4B46E...
DATE

SIG. INVENTORY NO. 07-1612

PROJECT REFERENCE NO.	SHEET NO.
BN-0031GB	Sig. 1.1

18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



REMOVE JUMPERS AS SHOWN

NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that the Red Enable is active at all times during normal operation.
4. Integrate monitor with Ethernet network in cabinet.

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Program phases 4 and 8 for Dual Entry.
3. Program controller to start up in phase 2 Green and 6 Green.
4. The cabinet and controller are part of the Burlington-Graham Signal System.

EQUIPMENT INFORMATION

Controller.....2070LX
Cabinet.....332 w/ Aux
Software.....Econolite ASC/3-2070
Cabinet Mount.....Base
Output File Positions.....18 With Aux. Output File
Load Switches Used.....S2, S3, S5, S6, S8, S9, S11, S12, AUX S1, AUX S4
Phases Used.....2, 2PED,4, 4PED, 6, 6PED, 8, 8PED
Overlap "A".....*
Overlap "B".....NOT USED
Overlap "C".....*
Overlap "D".....NOT USED

*See overlap programming detail on sheet 2

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	NU	22,23	P21, P22	NU	41,42	P41, P42	NU	62,63	P61, P62	NU	81,82	P81, P82	61 ★	NU	NU	21 ★	NU	NU
RED		128			101			134			107							
YELLOW		129			102			135			108							
GREEN		130			103			136			109							
RED ARROW													A121			A114		
YELLOW ARROW													A122			A115		
FLASHING YELLOW ARROW													A123			A116		
GREEN ARROW																		
✋			113			104			119			110						
🚶			115			106			121			112						

NU = Not Used
★See pictorial of head wiring in detail this sheet.

COUNTDOWN PEDESTRIAN SIGNAL OPERATION

Countdown Ped Signals are required to display timing only during Ped Clearance Interval. Consult Ped Signal Module user's manual for instructions on selecting this feature.

INPUT FILE POSITION LAYOUT

(front view)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	SLOT EMPTY	Ø 2 2A,2B	Ø 4 2C	SLOT EMPTY	SLOT EMPTY	Ø 4 4A	SLOT EMPTY	SLOT EMPTY	SYS. DET. S1	SLOT EMPTY	SLOT EMPTY	Ø 2 PED DC ISOLATOR	Ø 6 PED DC ISOLATOR	FS DC ISOLATOR
	L		NOT USED	NOT USED			NOT USED			SYS. DET. S2			Ø 4 PED DC ISOLATOR	Ø 8 PED DC ISOLATOR	ST DC ISOLATOR
FILE "J"	U	SLOT EMPTY	Ø 6 6A,6B	Ø 4 6C	SLOT EMPTY	SLOT EMPTY	Ø 8 8A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
	L		NOT USED	NOT USED			NOT USED								

EX. : 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND TIME	DELAY TIME	ADDED INITIAL	DETECTOR TYPE
2A,2B	TB2-5,6	I2U	39	2	2	YES			X	N
2C	TB2-9,10	I3U	63	32	2	YES		3		G
4A	TB4-9,10	I6U	41	4	4	YES		5		N
* S1	TB6-9,10	I9U	60	11	SYS	NO				N
* S2	TB6-11,12	I9L	62	13	SYS	NO				N
6A,6B	TB3-5,6	J2U	40	6	6	YES			X	G
6C	TB3-9,10	J3U	64	36	6	YES		3		N
8A	TB5-9,10	J6U	42	8	8	YES		5		N
PED PUSH BUTTONS										
P21,P22	TB8-4,6	I12U	67	PED 2	2 PED					
P41,P42	TB8-5,6	I12L	69	PED 4	4 PED					
P61,P62	TB8-7,9	I13U	68	PED 6	6 PED					
P81,P82	TB8-8,9	I13L	70	PED 8	8 PED					

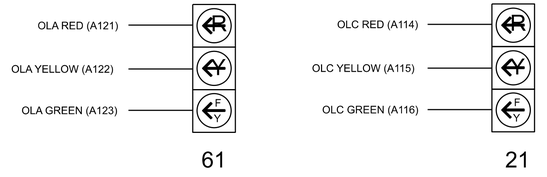
* System detector only. Remove any assigned vehicle phase.

NOTE:
INSTALL DC ISOLATORS IN INPUT FILE SLOTS I12 AND I13.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 07-1612
DESIGNED: March 2026
SEALED: 5/1/2026
REVISED: N/A

Electrical Detail - Sheet 1 of 3

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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www.stantec.com
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Electrical and Programming Details For:

Prepared in the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Traffic Engineering Branch
Traffic & Signals Management Section
750 N. Greenfield Pkwy, Garner, NC 27529

US 70 (S. Church Street)
at
Coachlight Trail/
Fieldstone Drive

Division 7 | Alamance County | Burlington

PLAN DATE:	March 2026	REVIEWED BY:	R Muncey
PREPARED BY:	J Galloway	REVIEWED BY:	

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029904 ENGINEER JASON P. GALLOWAY

Signed by: Jason Galloway 5/8/2026
10D1E2B40B4B46E... DATE

SIG. INVENTORY NO. 07-1612

8-MAY-2026 08:01
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jgalloway

PROJECT REFERENCE NO.	SHEET NO.
BN-0031GB	Sig. 1.2

ACCESSIBLE PEDESTRIAN SIGNAL (APS) INSTALLATION NOTES

1. Install push buttons and APS equipment per manufacturer's instructions.
2. Provide a dedicated cable to each push button per manufacturer's instructions.
3. If APS equipment is mounted in cabinet, use filtered power (i.e., Controller Receptacle) to power APS equipment. Do not use Equipment Receptacle, which is a GFCI outlet.
4. Never attempt to operate a standard contact closure push button with the APS system unless cabinet is re-wired for standard button operation or unless explicitly allowed by the manufacturer.
5. Place manufacturer's instructions in cabinet with cabinet prints, signal plans, and electrical details.
6. An APS push button station that is designed to work without the need for interfacing with a pedestrian signal head shall be installed for applications where a push button is installed in a median without a pedestrian signal head.
7. A push button with a single tactile arrow that point in both directions of travel shall be installed if the median separates two parallel crosswalks.

ECONOLITE ASC/3-2070 PEDESTRIAN DETECTOR PHASE ASSIGNMENT PROGRAMMING DETAIL

(program controller as shown)

1. From Main Menu select [6. DETECTORS]
2. From DETECTOR Submenu select [3. PED DETECTOR INPUT ASSIGNMENT]
3. Press the TOGGLE key to select [ECONOLITE MODE] and press ENTER.

```
PED DET PHASE ASSIGNMENT MODE:ECONOLITEv
PHASE   1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
  D  1 X . . . . . . . . . . . . . . .
  E  2 . X . . . . . . . . . . . . . .
  T  3 . . X . . . . . . . . . . . . .
  E  4 . . . X . . . X . . . . . . . .
  C  5 . . . . X . . . . . . . . . . .
  T  6 . . . . . X . . . . . . . . . .
  O  7 . . . . . . X . . . . . . . . .
  R  8 . . . X . . . X . . . . . . . .
     9 . . . . . . . . X . . . . . . .
    10 . . . . . . . . . X . . . . . .
    11 . . . . . . . . . . X . . . . .
    12 . . . . . . . . . . . X . . . .
    13 . . . . . . . . . . . . X . . .
    14 . . . . . . . . . . . . . X . .
    15 . . . . . . . . . . . . . . X .
    16 . . . . . . . . . . . . . . . X
```

"." = No assignment, disabled
X = Assigns Pedestrian Push Button (PPB) to call the phase or phases
2 = Call for Ped timing 2
B = Allows for the PPB to call for Min Green 2 (BIKE GREEN)

ECONOLITE ASC/3-2070 OVERLAP PROGRAMMING DETAIL

(program controller as shown)

1. From Main Menu select [2. CONTROLLER]
2. From CONTROLLER Submenu select [2. VEHICLE OVERLAPS]

OVERLAP A

Select TMG VEH OVLP [A] and 'OTHER/ECONOLITE'

```
TMG VEH OVLP...[A] TYPE:OTHER/ECONOLITE
  PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . X . . . . . . . . . . . . . .
PROTECT  . . . . . . . . . . . . . . . .
PED PRTC . . . . . . . . . . . . . . . .
NOT OVLP . . . . . . . . . . . . . . . .
FLSH GRN . 1 . . . . . . . . . . . . . .
LAG X PH . . . . . . . . . . . . . . . .
LAG 2 PH . . . . . . . . . . . . . . . .

LAG GRN 0.0 YEL 0.0 RED 0.0 ADV GRN 0.0
```

Toggle Twice

OVERLAP C

Select TMG VEH OVLP [C] and 'OTHER/ECONOLITE'

```
TMG VEH OVLP...[C] TYPE:OTHER/ECONOLITE
  PHASES 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
INCLUDED . . . . . X . . . . . . . . . .
PROTECT  . . . . . . . . . . . . . . . .
PED PRTC . . . . . . . . . . . . . . . .
NOT OVLP . . . . . . . . . . . . . . . .
FLSH GRN . . . . . 1 . . . . . . . . . .
LAG X PH . . . . . . . . . . . . . . . .
LAG 2 PH . . . . . . . . . . . . . . . .

LAG GRN 0.0 YEL 0.0 RED 0.0 ADV GRN 0.0
```

End Programming

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 07-1612
DESIGNED: March 2026
SEALED: 5/1/2026
REVISED: N/A

Electrical Detail - Sheet 2 of 3

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Stantec

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License No. F-0672

Electrical and Programming Details For:

Prepared in the Offices of:
Transportation Mobility and Safety Division
State of North Carolina Department of Transportation
ITS & Signals Management Section
750 N. Greenfield Pkwy, Garner, NC 27529

US 70 (S. Church Street)
at
Coachlight Trail/
Fieldstone Drive

Division 7 | Alamance County | Burlington

PLAN DATE:	March 2026	REVIEWED BY:	R Muncey
PREPARED BY:	J Galloway	REVIEWED BY:	

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029904 ENGINEER JASON P. GALLOWAY

Signed by:
Jason Galloway
10D1E2B40B4B46E...
5/8/2026
DATE

SIG. INVENTORY NO. 07-1612

8-MAY-2026 08:02
U:\TSMU\Signal Design\07\071612_sm_ele_2026.dgn
jgalloway

PROJECT REFERENCE NO.	SHEET NO.
BN-0031GB	Sig. 1.3

ASC/3 FLASH SENSE INPUT CONTROL FOR RED-RED FLASH

*The NCDOT default database is programmed to addresss Yellow-Red flash.
Logic Statement 100 must be modified as shown when running Red-Red flash.

1. From Main Menu select [1. CONFIGURATION]
2. From CONFIGURATION Submenu select [8. LOGIC PROCESSOR]
3. From LOGIC PROCESSOR Submenu select [2. LOGIC STATEMENTS]

Change the "LP" to 100 and move the cursor down. Delete the two "CTR-SET" statements by moving the cursor over them and hitting the "C" key. then hit "ENTER", select "LP SET CIB ON", hit "ENT", and then set the number to 427.

```
LP#:100  COPY FROM:100  ACTIVE: M   FALSE
IF   LP CIB CODE ON                  331  F

THEN LP  DELAY FOR          1.0 SECONDS
     LP  SET CIB ON         427

ELSE
```

THIS STATEMENT IS USED TO CONTROL THE FLASH SENSE INPUT WHEN RUNNING RED-RED FLASH OPERATION.

Hit "ESC", then 1 for "LOGIC STATEMENT CONTROL", next verify that LP#100 is ENABLED.

END PROGRAMMING

ECONOLITE ASC/3-2070 STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

(program controller as shown)

1. From Main Menu select [2. CONTROLLER]
2. From CONTROLLER Submenu select [5. START/FLASH]

```
START/FLASH DATA
------START UP--------------------------
         1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PHASE      G       G
         A B C D E F G H I J K L M N O P
OVERLAP  X X X X X X X X X X X X X X X X
FLASH>MON. NO FL TIME..  0 ALL RED...  6
PWR START SEQ..  1 MUTCD→ YES   Y- G: NO
```

Scroll down on this screen and set "Exit FI" to Green "G"

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 07-1612
DESIGNED: March 2026
SEALED: 5/1/2026
REVISED: N/A

Electrical Detail - Sheet 3 of 3

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Traffic Signals Management Section

750 N. Greenfield Pkwy, Garner, NC 27529

US 70 (S. Church Street)
at
Coachlight Trail/
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Division 7 | Alamance County | Burlington

PLAN DATE:	March 2026	REVIEWED BY:	R Muncey
PREPARED BY:	J Galloway	REVIEWED BY:	

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029904 ENGINEER JASON P. GALLOWAY

Signed by: Jason Galloway 5/8/2026
10D1E3940984465F... DATE

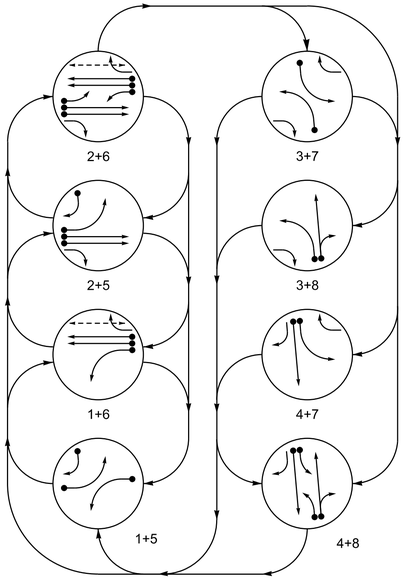
SIG. INVENTORY NO. 07-1612

8-MAY-2026 08:03
U:\Active\gpol Design\07\07-1612_sht_ele_2026.dgn
jgalloway

PROJECT REFERENCE NO.	SHEET NO.
BN-0031GB	Sig. 2.0

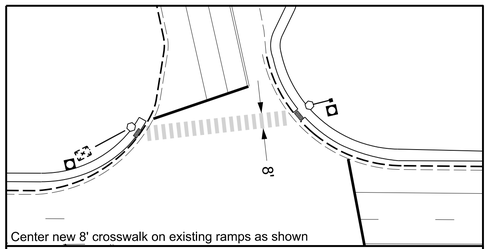
8 Phase Fully Actuated Burlington-Graham Signal System

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT



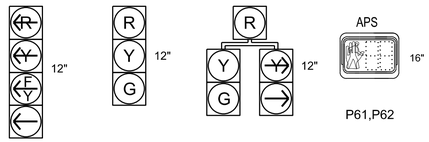
CROSSWALK AND TYPE II PEDESTAL LOCATIONS

TABLE OF OPERATION

SIGNAL FACE	PHASE 1+5	1+6	2+5	2+6	3+7	3+8	4+7	4+8	FLASH
11	←	←	FY	FY	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
21	R	R	G	G	R	R	R	R	R
22	R	R	G	G	R→	R→	R	R	R
31	~~R~~	~~R~~	~~R~~	~~R~~	←	←	FY	FY	~~R~~
41	R	R	R	R	R	R	G	G	R
42	R→	R	R→	R	R	R	G	G	R
51	←	FY	←	FY	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~
61	R	G	R	G	R	R	R	R	R
62	R	G	R	G	R→	R	R→	R	R
71	~~R~~	~~R~~	~~R~~	~~R~~	←	FY	←	FY	~~R~~
81,82	R	R	R	R	R	G	R	G	R
P61,P62	DW	W	DW	W	DW	DW	DW	DW	DRK

SIGNAL FACE I.D.

All Heads L.E.D.



11
31
51
71

21
41
61
81,82

22
42
62

ASC/3 DETECTOR INSTALLATION CHART

DETECTOR LOOP	SIZE (FT)	DISTANCE FROM STOP LINE (FT)	TURNS	NEW LOOP	PROGRAMMING PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	SYSTEM LOOP	NEW CARD
1A	6X40	0	2-4-2	-	1	Yes	-	15	-	N	-	-
					6	Yes	-	3	-	G	-	-
2A	6X6	300	EXIST	-	2	Yes	-	-	X	N	-	-
2B	6X6	300	EXIST	-	2	Yes	-	-	X	N	-	-
3A	6X40	0	2-4-2	-	3	Yes	-	15	-	N	-	-
					8	Yes	-	3	-	N	-	-
4A	6X6	300	EXIST	-	4	No	2.4	-	-	N	-	-
4B	6X40	0	2-4-2	-	4	Yes	-	-	-	N	-	-
5A	6X40	0	2-4-2	-	5	Yes	-	15	-	N	-	-
					2	Yes	-	3	-	G	-	-
5B	6X40	0	2-4-2	-	5	Yes	-	15	-	N	-	-
6A	6X6	310	EXIST	-	6	Yes	-	-	X	N	-	-
6B	6X6	310	EXIST	-	6	Yes	-	-	X	N	-	-
7A	6X40	+5	2-4-2	-	7	Yes	-	15	-	N	-	-
					4	Yes	-	3	-	N	-	-
8A	6X6	300	EXIST	-	8	No	2.4	-	-	N	-	-
8B	6X40	300	2-4-2	-	8	Yes	-	10	-	N	-	-
S1	6X6	+150	EXIST	-	-	No	-	-	-	N	X	-
S2	6X6	+150	EXIST	-	-	No	-	-	-	N	X	-
S3	6X6	+180	EXIST	-	-	No	-	-	-	N	X	-
S4	6X6	+180	EXIST	-	-	No	-	-	-	N	X	-

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 and/or phase 5 may be lagged.
4. Phase 3 and/or phase 7 may be lagged.
5. Set all detector units to presence mode.
6. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
7. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
8. This intersection features accessible pedestrian signals utilizing percussive tone walk indications and/or speech messages.
9. Pavement markings are existing unless otherwise shown/noted.
10. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

LEGEND

PROPOSED		EXISTING
○→	Traffic Signal Head	●→
◐→	Modified Signal Head	N/A
⊣	Sign	⊣
□→	Pedestrian Signal Head	■→
○—	Signal Pole with Guy	●—
○↓	Signal Pole with Sidewalk Guy	●↓
▭	Inductive Loop Detector	▭
⊠	Controller & Cabinet	⊠
□	Junction Box	■
X-UC	2-in Underground Conduit	UC
N/A	Right of Way	
→	Directional Arrow	→
⬡—	Metal Pole with Mastarm	⬡—
⬡	Type II Signal Pedestal	⬢
Ⓐ	"U-TURN YIELD TO RIGHT TURN" Sign (R10-16)	Ⓐ

ASC/3 TIMING CHART

FEATURE	PHASE 1	2	3	4	5	6	7	8
Min Green*	7	12	7	7	7	12	7	7
Delayed Green	-	-	-	-	-	7	-	-
Walk*	-	-	-	-	-	7	-	-
Ped Clear	-	-	-	-	-	20	-	-
Vehicle Extension*	2.0	6.0	2.0	2.0	2.0	6.0	2.0	2.0
Max 1*	25	90	25	30	25	90	25	30
Yellow Clear	3.0	4.4	3.0	4.4	3.0	4.4	3.0	4.4
Red Clear	2.6	2.0	3.7	2.6	3.4	2.0	3.4	2.6
Actuations Before Add*	-	0	-	-	-	0	-	-
Seconds Per Actuation*	-	1.5	-	-	-	1.5	-	-
Max Initial*	-	34	-	-	-	34	-	-
Time Before Reduction*	-	15	-	-	-	15	-	-
Time To Reduce*	-	30	-	-	-	30	-	-
Minimum Gap	-	3.0	-	-	-	3.0	-	-
Locking Detector	-	X	-	-	-	X	-	-
Recall Position	-	VEH. RECALL	-	-	-	VEH. RECALL	-	-
Dual Entry	-	-	-	X	-	-	-	X
Simultaneous Gap	X	X	X	X	X	X	X	X

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

ACCESSIBLE PEDESTRIAN SIGNAL OPERATION

SIGNAL FACE	VOICE	TONES	INTERVAL	SPEECH MESSAGE
P61	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk/Don't Walk	Wait. Wait to cross Kirkpatrick.
P62	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk/Don't Walk	Wait. Wait to cross Kirkpatrick.

Signal Upgrade

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Prepared in the Offices of:
Transportation Mobility and Safety Division
North Carolina Department of Transportation
Signal Design Section
750 N. Greenfield Pkwy, Garner, NC 27529

SCALE 0 50 1"=50'

SR 1213 (Grand Oaks Boulevard) at SR 1146 (Kirkpatrick Road)

Division 7 | Alamance County | Burlington

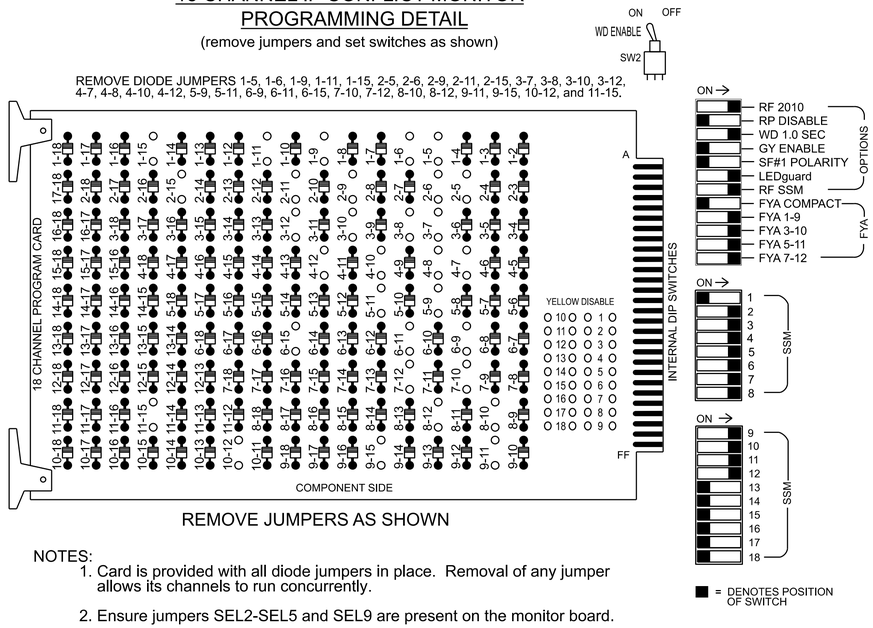
PLAN DATE:	March 2026	REVIEWED BY:	R Muncey
PREPARED BY:	J Galloway	REVIEWED BY:	

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029904 ENGINEER JASON P. GALLOWAY
Signed by: Jason Galloway 5/1/2026
DATE:
SIG. INVENTORY NO. 07-1991

18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



REMOVE JUMPERS AS SHOWN

NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that the Red Enable is active at all times during normal operation.
4. Integrate monitor with Ethernet network in cabinet.

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Program phases 4 and 8 for Dual Entry.
3. Program controller to start up in phase 2 Green and 6 Green.
4. The cabinet and controller are part of the Burlington-Graham Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070LX
CABINET.....332 W/AUX
SOFTWARE..... ECONOLITE ASC/3-2070
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS.....18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED.....S1,S2,S4,S5,S7,S8,S9,S10,S11, AUX S1,AUX S2,AUX S4,AUX S5
PHASES USED.....1,2,3,4,5,6,6PED,7,8
OVERLAP "A".....*
OVERLAP "B".....*
OVERLAP "C"..... *
OVERLAP "D"..... *

*See overlap programming detail on sheet 2

PROJECT REFERENCE NO.	SHEET NO.
BN-0031GB	Sig. 2.1

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4		S5	S6	S7		S8	S9	S10		S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3		4	14	5		6	15	7		8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3		4	4 PED	5		6	6 PED	7		8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11★	21,22	NU	22	31★	41,42	NU	42	51★	61,62	P61, P62	62	71★	81,82	NU	11★	31★	NU	51★	71★	NU
RED		128			*	101			*	134			*	107							
YELLOW	*	129				102				135				108							
GREEN		130				103				136				109							
RED ARROW																A121	A124		A114	A101	
YELLOW ARROW				117				132				123				A122	A125		A115	A102	
FLASHING YELLOW ARROW																A123	A126		A116	A103	
GREEN ARROW	127			118	118			133	133			124	124								
✋											119										
🚶											121										

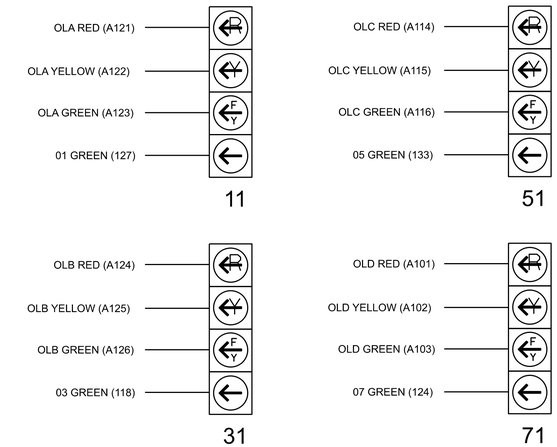
NU = Not Used
★ Denotes install load resistor. See load resistor installation detail this sheet.
★ See pictorial of head wiring in detail this sheet.

COUNTDOWN PEDESTRIAN SIGNAL OPERATION

Countdown Ped Signals are required to display timing only during Ped Clearance Interval. Consult Ped Signal Module user's manual for instructions on selecting this feature.

FYA PPLT SIGNAL WIRING DETAIL

(wire signal heads as shown)



INPUT FILE POSITION LAYOUT

(front view)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	Ø 1 1A	Ø 2 2A	SLOT EMPTY	WIRED INPUT ⊗	Ø 3 3A	Ø 4 4A	SLOT EMPTY	WIRED INPUT ⊗	SYS. DET. S1	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	Ø 6 PED DC ISOLATOR	FS DC ISOLATOR
	L	NOT USED	Ø 2 2B			NOT USED	Ø 4 4B			SYS. DET. S2				NOT USED	ST DC ISOLATOR
FILE "J"	U	Ø 5 5A	Ø 5 5B	Ø 6 6A	WIRED INPUT ⊗	Ø 7 7A	Ø 8 8A	SLOT EMPTY	WIRED INPUT ⊗	SYS. DET. S3	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
	L	NOT USED	NOT USED	Ø 6 6B		NOT USED	Ø 8 8B			SYS. DET. S4					

EX. : 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME

⊗ Wired Input - Do not populate slot with detector card

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND TIME	DELAY TIME	ADDED INITIAL	DETECTOR TYPE
1A [1]	TB2-1,2	I1U	56	1	1	YES		15		N
	-	J4U	48	26	6	YES		3		G
2A	TB2-5,6	I2U	39	2	2	YES			X	N
2B	TB2-7,8	I2L	43	12	2	YES			X	N
3A [2]	TB4-5,6	I5U	58	3	3	YES		15		N
	-	J8U	50	28	8	YES		3		N
4A	TB4-9,10	I6U	41	4	4	NO	2.4			N
4B	TB4-11,12	I6L	45	14	4	YES				N
*S1	TB6-9,10	I9U	60	11	SYS	NO				N
*S2	TB6-11,12	I9L	62	13	SYS	NO				N
5A [3]	TB3-1,2	J1U	55	5	5	YES		15		N
	-	I4U	47	22	2	YES		3		G
5B	TB3-5,6	J2U	40	6	5	YES		15		N
6A	TB3-9,10	J3U	64	36	6	YES			X	N
6B	TB3-11,12	J3L	77	46	6	YES			X	N
7A [4]	TB5-5,6	J5U	57	7	7	YES		15		N
	-	I8U	49	24	4	YES		3		N
8A	TB5-9,10	J6U	42	8	8	NO	2.4			N
8B	TB5-11,12	J6L	46	18	8	YES		10		N
*S3	TB7-9,10	J9U	59	15	SYS	NO				N
*S4	TB7-11,12	J9L	61	17	SYS	NO				N
PED PUSH BUTTONS										
P61,P62	TB8-7,9	I13U	68	PED 6	6 PED					

NOTE:
INSTALL DC ISOLATOR IN INPUT FILE SLOT I13.

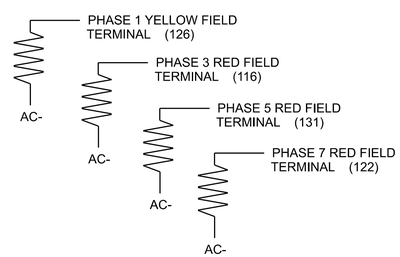
[1] Add jumper from I1-W to J4-W, on rear of input file.
[2] Add jumper from I5-W to J8-W, on rear of input file.
[3] Add jumper from J1-W to I4-W, on rear of input file.
[4] Add jumper from J5-W to I8-W, on rear of input file.
* System detector only. Remove any assigned vehicle phase.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown)

ACCEPTABLE VALUES	
VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 07-1991
DESIGNED: March 2026
SEALED: 5/1/2026
REVISED: N/A

Electrical Detail - Sheet 1 of 3

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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Electrical and Programming Details For:

Prepared in the Offices of:
Traffic Engineering Branch
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Signals Management Section
750 N. Greenfield Pkwy, Garner, NC 27529

SR 1213 (Grand Oaks Boulevard)
at
SR 1146 (Kirkpatrick Road)

Division 7 | Alamance County | Burlington

PLAN DATE:	March 2026	REVIEWED BY:	R Muncey
PREPARED BY:	J Galloway	REVIEWED BY:	

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029904 ENGINEER JASON F. GALLOWAY

Signed by:
Jason Galloway 5/8/2026
DATE

SIG. INVENTORY NO. 07-1991

8-MAY-2026, 07:58
U:\Signals\Projects\Signal Design\07-1991_sm_ele_2026.dgn
jgalloway

PROJECT REFERENCE NO.	SHEET NO.
BN-0031GB	Sig. 2.2

ECONOLITE ASC/3-2070 OVERLAP PROGRAMMING DETAIL

(program controller as shown)

1. From Main Menu select [2. CONTROLLER]
2. From CONTROLLER Submenu select [2. VEHICLE OVERLAPS]

OVERLAP A

Select TMG VEH OVLP [A] and 'PPLT FYA'

```
TMG VEH OVLP...[A] TYPE: .....PPLT FYA

PROTECTED LEFT TURN....   PHASE    1
OPPOSING THROUGH.......   PHASE    2

FLASHING ARROW OUTPUT.....CH9  ISOLATE

DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE........... 0
```

Toggle Once

OVERLAP B

Select TMG VEH OVLP [B] and 'PPLT FYA'

```
TMG VEH OVLP...[B] TYPE: .....PPLT FYA

PROTECTED LEFT TURN....   PHASE    3
OPPOSING THROUGH.......   PHASE    4

FLASHING ARROW OUTPUT.....CH10 ISOLATE

DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE........... 0
```

Toggle Once

OVERLAP C

Select TMG VEH OVLP [C] and 'PPLT FYA'

```
TMG VEH OVLP...[C] TYPE: .....PPLT FYA

PROTECTED LEFT TURN....   PHASE    5
OPPOSING THROUGH.......   PHASE    6

FLASHING ARROW OUTPUT.....CH11 ISOLATE

DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE........... 0
```

Toggle Once

OVERLAP D

Select TMG VEH OVLP [D] and 'PPLT FYA'

```
TMG VEH OVLP...[D] TYPE: .....PPLT FYA

PROTECTED LEFT TURN....   PHASE    7
OPPOSING THROUGH.......   PHASE    8

FLASHING ARROW OUTPUT.....CH12 ISOLATE

DELAY START OF: FYA..0.0 CLEARANCE..0.0
ACTION PLAN SF BIT DISABLE........... 0
```

END PROGRAMMING

FLASHER CIRCUIT MODIFICATION DETAIL

IN ORDER TO INSURE THAT SIGNALS FLASH CONCURRENTLY ON THE SAME APPROACH, MAKE THE FOLLOWING FLASHER CIRCUIT CHANGES:

1. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-4 AND TERMINATE ON T2-2.
2. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-5 AND TERMINATE ON T2-3.
3. REMOVE FLASHER UNIT 2.

THE CHANGES LISTED ABOVE TIES ALL PHASES AND OVERLAPS TO FLASHER UNIT 1.

ACCESSIBLE PEDESTRIAN SIGNAL (APS) INSTALLATION NOTES

1. Install push buttons and APS equipment per manufacturer's instructions.
2. Provide a dedicated cable to each push button per manufacturer's instructions.
3. If APS equipment is mounted in cabinet, use filtered power (i.e., Controller Receptacle) to power APS equipment. Do not use Equipment Receptacle, which is a GFCI outlet.
4. Never attempt to operate a standard contact closure push button with the APS system unless cabinet is re-wired for standard button operation or unless explicitly allowed by the manufacturer.
5. Place manufacturer's instructions in cabinet with cabinet prints, signal plans, and electrical details.
6. An APS push button station that is designed to work without the need for interfacing with a pedestrian signal head shall be installed for applications where a push button is installed in a median without a pedestrian signal head.
7. A push button with a single tactile arrow that point in both directions of travel shall be installed if the median separates two parallel crosswalks.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 07-1991
DESIGNED: March 2026
SEALED: 5/1/2026
REVISED: N/A

Electrical Detail - Sheet 2 of 3

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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License No. F-0672

Electrical and Programming Details For:

Prepared in the Offices of:

Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
ITS & Signals Management Section

750 N. Greenfield Pkwy, Garner, NC 27529

SR 1213 (Grand Oaks Boulevard)
at
SR 1146 (Kirkpatrick Road)

Division 7	Alamance County		Burlington
PLAN DATE: March 2026		REVIEWED BY: R Muncey	
PREPARED BY: J Galloway		REVIEWED BY:	

REVISIONS	INIT.	DATE

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 029904 ENGINEER JASON P. GALLOWAY

Signed by: Jason Galloway 5/8/2026
10D1E2B40B4B46E...
DATE

SIG. INVENTORY NO. 07-1991

PROJECT REFERENCE NO.	SHEET NO.
BN-0031GB	Sig. 2.3

ECONOLITE ASC/3-2070 LOGIC PROCESSOR PROGRAMMING DETAIL FOR LEADING PED INTERVAL (DELAYED GREEN)

(program controller as shown)

The following logic processor configuration holds the FYA's on signal head 51 red for the duration of the delayed green time (leading ped interval) when serving a ped call on the opposing through phase.

1. From Main Menu select [1. CONFIGURATION]
2. From CONFIGURATION Submenu select [8. LOGIC PROCESSOR]
3. From the LOGIC PROCESSOR Submenu select [2. LOGIC STATEMENTS]

ENTER A "1" IN THE LP# FIELD, PRESS 'ENTER', AND PROGRAM AS SHOWN.

```
LP#:   1  COPY FROM:   1  ACTIVE:  M   (T/F)
IF    PED ON PH WALK        6     IS   ON
AND   VEH GREEN ON PH       6     IS   OFF

THEN  SIG SET OLP RED       3          ON
      SIG SET OLP YELLOW    3          OFF
      SIG SET OVLP GREEN    3          OFF

ELSE
```

HOLD SIGNAL HEAD 51 FYA RED DURING THE PHASE 6 DELAYED GREEN TIME (LEADING PED INTERVAL)

1. From Main Menu select [1. CONFIGURATION]
2. From CONFIGURATION Submenu select [8. LOGIC PROCESSOR]
3. From the LOGIC PROCESSOR Submenu select [1. LOGIC STATEMENT CONTROL]

ENABLE LOGIC PROCESSOR STATEMENT 1 BY POSITIONING THE CURSOR OVER THE FIELDS SHOWN BELOW AND USING THE TOGGLE KEY TO ENABLE THEM .

```
LOGIC STATEMENT CONTROL
          1  2  3  4  5  6  7  8  9  0  1  2  3  4  5  6
LP 1-15   E  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 16-30  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 31-45  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 46-60  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 61-75  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LP 76-90  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
```

END PROGRAMMING

ASC/3 FLASH SENSE INPUT CONTROL FOR RED-RED FLASH

*The NCDOT default database is programmed to addresss Yellow-Red flash. Logic Statement 100 must be modified as shown when running Red-Red flash.

1. From Main Menu select [1. CONFIGURATION]
2. From CONFIGURATION Submenu select [8. LOGIC PROCESSOR]
3. From LOGIC PROCESSOR Submenu select [2. LOGIC STATEMENTS]

Change the "LP" to 100 and move the cursor down. Delete the two "CTR-SET" statements by moving the cursor over them and hitting the "C" key. then hit "ENTER", select "LP SET CIB ON", hit "ENT", and then set the number to 427.

```
LP#:100  COPY FROM:100  ACTIVE: M   FALSE
IF   LP CIB CODE ON                  331  F

THEN LP  DELAY FOR          1.0 SECONDS
     LP  SET CIB ON         427

ELSE
```

THIS STATEMENT IS USED TO CONTROL THE FLASH SENSE INPUT WHEN RUNNING RED-RED FLASH OPERATION.

Hit "ESC", then 1 for "LOGIC STATEMENT CONTROL", next verify that LP#100 is ENABLED.

END PROGRAMMING

ECONOLITE ASC/3-2070 STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

(program controller as shown)

1. From Main Menu select [2. CONTROLLER]
2. From CONTROLLER Submenu select [5. START/FLASH]

```
START/FLASH DATA
------START UP----------------------------
          1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
PHASE       G       G
          A B C D E F G H I J K L M N O P
OVERLAP   X X X X X X X X X X X X X X X X
FLASH>MON. NO FL TIME..  0 ALL RED...  6
PWR START SEQ..  1 MUTCD→ YES   Y- G: NO
```

Scroll down on this screen and set "Exit FI" to Green "G"

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 07-1991
DESIGNED: March 2026
SEALED: 5/1/2026
REVISED: N/A

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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Division 7 | Alamance County | Burlington

PLAN DATE:	March 2026	REVIEWED BY:	R Muncey
PREPARED BY:	J Galloway	REVIEWED BY:	

REVISIONS	INT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029904 ENGINEER JASON R. GALLOWAY

Signed by: Jason Galloway 5/8/2026
10D1E2B40B4B46F... DATE

SIG. INVENTORY NO. 07-1991

8-MAY-2026 07:59
U:*SMS\Signal Design\07*07\07191_sm_ele_2026.dgn
Jgalloway

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

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.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
ALL ROADS	6:00 A.M.-9:00 A.M. MONDAY THRU FRIDAY 4:00 P.M.-7:00 P.M. MONDAY THRU FRIDAY

LANE AND SHOULDER CLOSURE REQUIREMENTS

B) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

C) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRANSPORTATION MANAGEMENT PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

F) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

TRAFFIC PATTERN ALTERATIONS

G) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

H) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

I) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

J) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

K) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES (DRUMS, CONES OR SKINNY DRUMS) PERPENDICULAR TO THE EDGE OF TRAVELWAY ON (XXX FT) CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

PAVEMENT MARKINGS AND MARKERS

L) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

MISCELLANEOUS

M) USE LAW ENFORCEMENT TO DIRECT TRAFFIC AND ENFORCE ROAD CLOSURES. LOCATIONS SHOWN IN THE PLANS ARE APPROXIMATE AND MAY BE REVISED AS THE OFFICER OR THE ENGINEER DEEM NECESSARY.

N) ALL CURB RAMP LOCATIONS SHALL BE DERIVED FROM STATIONING SHOWN ON PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER IN COORDINATION WITH THE SIGNING AND DELINEATION UNIT.

O) CONTRACTOR SHALL MAINTAIN SIDEWALK ACCESS AT ALL TIMES AS STATED IN THE PHASING. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEMPORARY SIDEWALKS (CONCRETE, ASPHALT, OR OTHER SUITABLE MATERIAL AS APPROVED BY THE ENGINEER) AT ALL LOCATIONS WHERE THE OPEN PEDESTRIAN TRAVELWAY HAS BEEN REMOVED FOR CONSTRUCTION OPERATIONS (UTILITIES, DRAINAGE, ETC.).

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

LOCATION - US 70 (S CHURCH ST) & COACHLIGHT TR/FIELDSTONE DR IN BURLINGTON

- SR 1213 (GRAND OAKS BLVD) & SR 1146 (KIRKPATRICK RD) IN BURLINGTON

TYPE OF WORK - PAVEMENT MARKING, SIGNALS

PHASING

STEP 1
INSTALL ALL WORK ZONE ADVANCE WARNING SIGNS. SEE RSD 1101.01.

STEP 2
USING RSD 1101.02, CONDUCT ALL PAVEMENT MARKING OPERATION. SEE PM PLANS.

USE LANE CLOSURES AND RSD 1101.02, TO PERFORM SIGNAL WORK.

USE LAW ENFORCEMENT OFFICERS, IF NECESSARY, TO DIRECT TRAFFIC AT SIGNALIZED INTERSECTIONS WHERE OVERHEAD WORK IS REQUIRED. SEE SIGNAL PLANS.

STEP 3
REMOVE ALL TRAFFIC CONTROL DEVICES AND OPEN TRAFFIC TO FINAL PATTERN.

ROADWAY STANDARD DRAWINGS

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
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGERS
1165.01	TRUCK MOUNTED ATTENUATOR
1180.01	SKINNY - DRUM

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PLANS PREPARED BY:

J. W. WOOLARD, PE
SENIOR TRANSPORTATION ENGINEER

D. E. RICHARDSON
TRANSPORTATION DESIGNER

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NORTH CAROLINA PROFESSIONAL SEAL 19862 ENGINEER JOSEPH W WOOLARD JR.

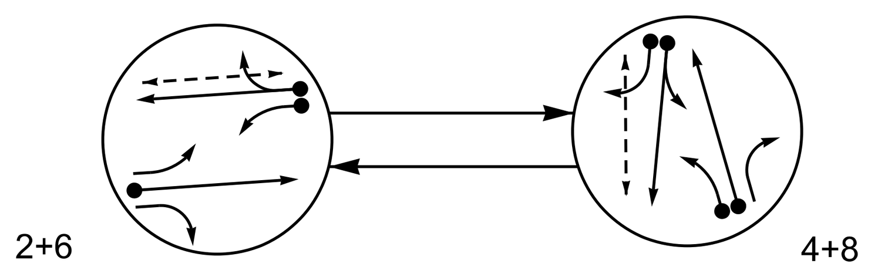
SHEET NO.
TMP-1

TIP PROJECT: BN-0031GB

WBS # 52073.07.303,
FA# TA07303,
TIP# BN-0031GC

PROJECT REFERENCE NO.	SHEET NO.
BN-0031GC	Sig. 1.0

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

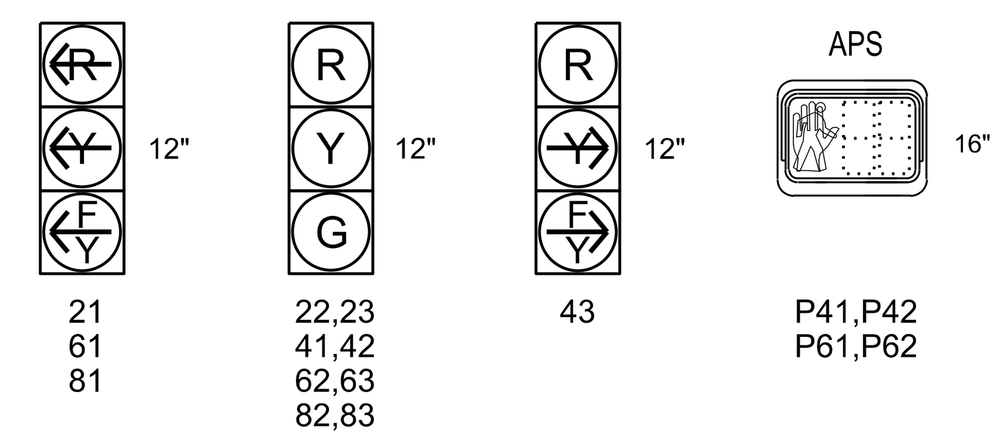
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	2+6	4+8	FLASH
21	F/Y (left arrow)	R (left arrow)	R (left arrow)
22,23	G	R	R
41,42	R	G	R
43	R	F/Y (right arrow)	R
61	F/Y (left arrow)	R (left arrow)	R (left arrow)
62,63	G	R	R
81	R (left arrow)	F/Y (left arrow)	R (left arrow)
82,83	R	G	R
P41,P42	DW	W	DRK
P61,P62	W	DW	DRK

SIGNAL FACE I.D.

All Heads L.E.D.



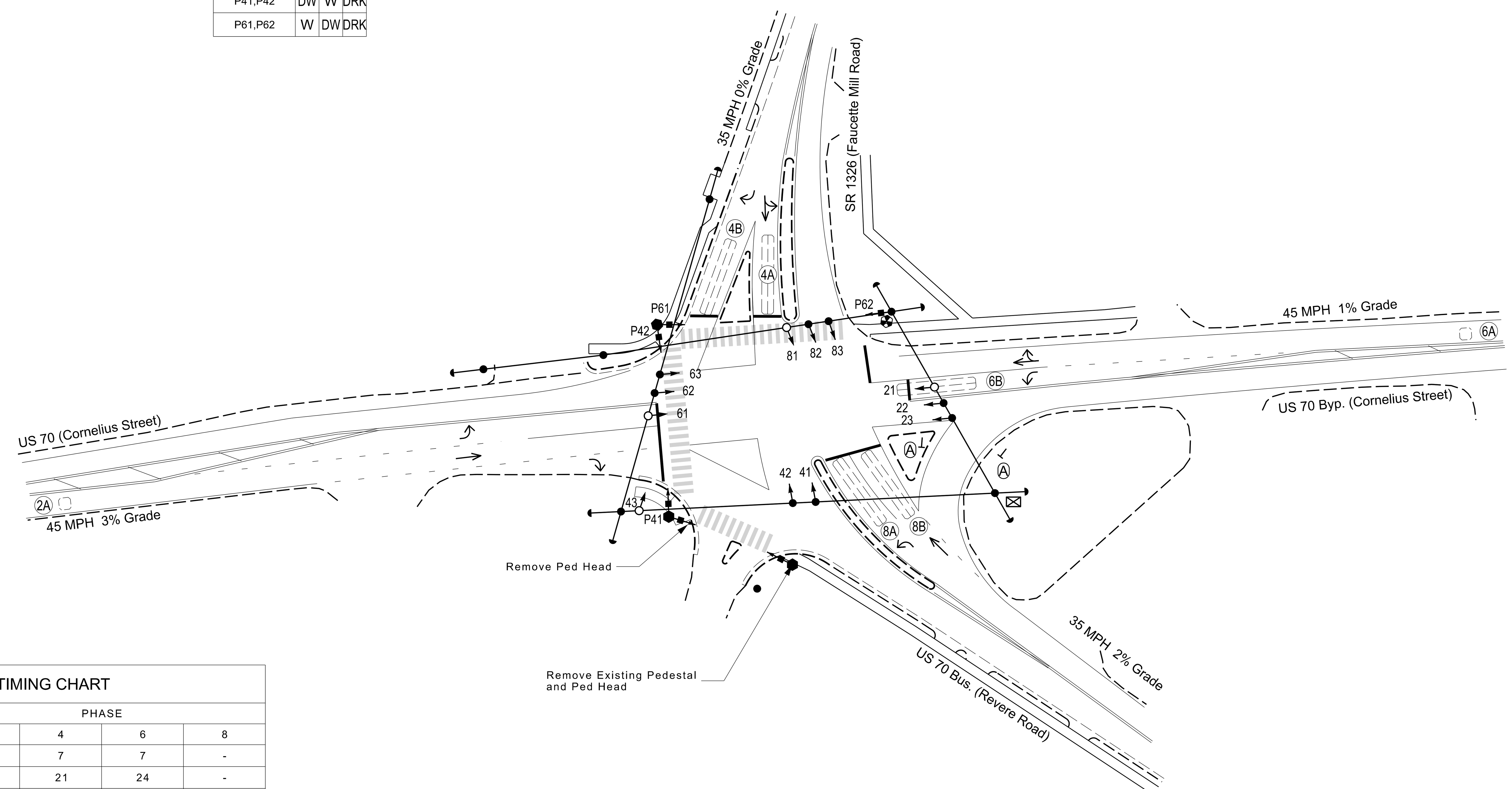
MAXTIME DETECTOR INSTALLATION CHART

DETECTOR					PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOP LINE (FT)	TURNS	NEW LOOP	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN	NEW CARD
2A	6X6	300	4	-	2	-	-	X	X	X	-	X
4A	6X40	0	2-4-2	-	4	-	-	X	-	X	-	X
4B	6X40	0	2-4-2	-	4	15.0	-	X	-	X	-	X
6A	6X6	300	4	-	6	-	-	X	X	X	-	X
6B	6X40	+5	2-4-2	-	6	3.0	-	X	-	X	X	X
8A	6X40	0	2-4-2	-	8	-	-	X	-	X	-	X
8B	6X40	0	2-4-2	-	8	-	-	X	-	X	-	X

2 Phase
Fully Actuated
Isolated

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Reposition existing signal heads numbered 22, 23, 62, 63, 82, and 83.
4. Set all detector units to presence mode.
5. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
6. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
7. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
8. Replace existing pushbuttons with APS Pushbuttons utilizing percussive tone walk indications and/or speech messages.
9. Renumber existing heads as shown.
10. To provide a leading pedestrian interval on phase 4, program FYA head(s) numbered 41 & 81 to delay for 7 seconds after the start of the phase 4 walk interval. See Electrical Details for programming.



LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
X-UC	2-in Underground Conduit	UC
N/A	Right of Way	
	Directional Arrow	
	Type I Pushbutton Post	
	Type II Signal Pedestal	
A	"YIELD" Sign (R1-2)	A

MAXTIME TIMING CHART

FEATURE	PHASE 2	PHASE 4	PHASE 6	PHASE 8
Walk *	-	7	7	-
Ped Clear	-	21	24	-
Min Green *	12	7	12	7
Passage *	6.0	2.0	6.0	2.0
Max 1 *	90	20	90	20
Yellow Change	4.4	3.8	4.4	3.8
Red Clear	1.7	2.4	1.7	2.4
Added Initial *	2.5	-	2.5	-
Maximum Initial *	34	-	34	-
Time Before Reduction *	15	-	15	-
Time To Reduce *	45	-	45	-
Minimum Gap	3.0	-	3.0	-
Advance Walk	-	**	7	-
Non Lock Detector	-	X	-	X
Vehicle Recall	MIN RECALL	-	MIN RECALL	-
Dual Entry	-	X	-	X

* These values may be field adjusted. Do not adjust Min Green and Passage times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.
** See Note 10

ACCESSIBLE PEDESTRIAN SIGNAL OPERATION

SIGNAL FACE	VOICE	TONES	INTERVAL	SPEECH MESSAGE
P41	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk/Don't Walk	Wait. Wait to cross Cornelius.
P42	X	-	Walk	Cornelius. Walk sign is on to cross Cornelius.
	X	-	Flashing Don't Walk/Don't Walk	Wait. Wait to cross Cornelius.
P61	X	-	Walk	Faucette Mill. Walk sign is on to cross Faucette Mill.
	X	-	Flashing Don't Walk/Don't Walk	Wait. Wait to cross Faucette Mill.
P62	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk/Don't Walk	Wait. Wait to cross Faucette Mill.

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Signal Upgrade

Stantec

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Prepared in the Offices of:
Transportation Mobility and Safety Division
State of North Carolina Department of Transportation
Signal Design Section
750 N. Greenfield Pkwy, Garner, NC 27529

SCALE 0 40 1"=40'

US 70 /US 70 Bypass (Cornelius Street)
at
US 70 Bus. (Revere Road)/
SR 1326 (Faucette Mill Road)

Division 7 | Orange County | Hillsborough

PLAN DATE:	March 2026	REVIEWED BY:	R Muncey
PREPARED BY:	J Galloway	REVIEWED BY:	

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029904 ENGINEER JASON P. GALLOWAY

Signed by: Jason Galloway 5/1/2026
10D1E2B40B4B46E...
DATE

SIG. INVENTORY NO. 07-0232

1-MAY-2026 09:13
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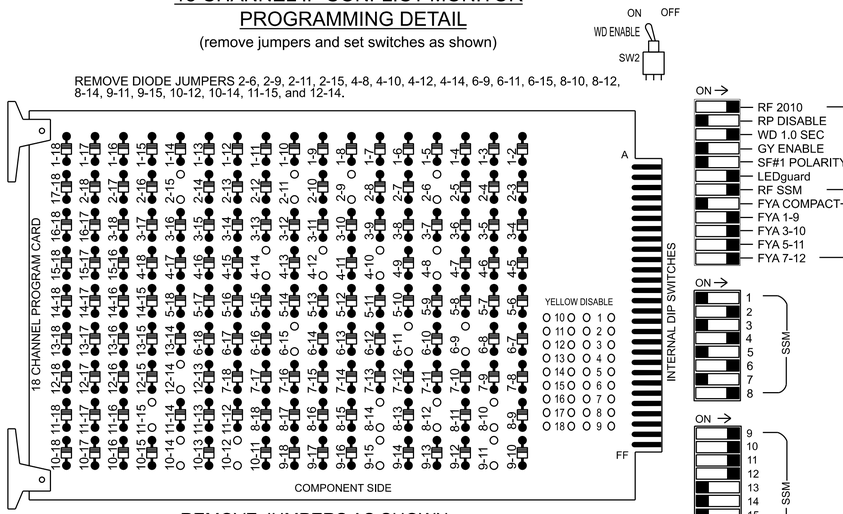
jgalloway

PROJECT REFERENCE NO.	SHEET NO.
BN-0031GC	Sig. 1.1

18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



REMOVE JUMPERS AS SHOWN

NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that the Red Enable is active at all times during normal operation.
4. Integrate monitor with Ethernet network in cabinet.

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the signal plan.
2. Program phases 4 and 8 for Dual Entry.
3. Program controller to start up in phase 2 Green No Walk and 6 Green No Walk.
4. If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.

EQUIPMENT INFORMATION

Controller.....2070LX
Cabinet.....332 w/ Aux
Software.....Q-Free MAXTIME
Cabinet Mount.....Base
Output File Positions.....18 With Aux. Output File
Load Switches Used.....S2, S5, S6, S8, S9, S11, AUX S1, AUX S2, AUX S4, AUX S5
Phases Used.....2, 4, 4PED, 6, 6PED, 8
Overlap "1".....*
Overlap "2".....*
Overlap "3".....*
Overlap "4".....*

*See overlap programming detail on sheet 2

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OL1	OL2	SPARE	OL3	OL4	OL6
SIGNAL HEAD NO.	NU	22,23	NU	NU	41,42	P41, P42	NU	62,63	P61, P62	NU	82,83	NU	61 ★	81 ★	NU	21 ★	43 ★	NU
RED		128			101			134			107						A101	
YELLOW		129			102			135			108							
GREEN		130			103			136			109							
RED ARROW													A121	A124		A114		
YELLOW ARROW													A122	A125		A115	A102	
FLASHING YELLOW ARROW													A123	A126		A116	A103	
GREEN ARROW																		
✋						104			119									
🚶						106			121									

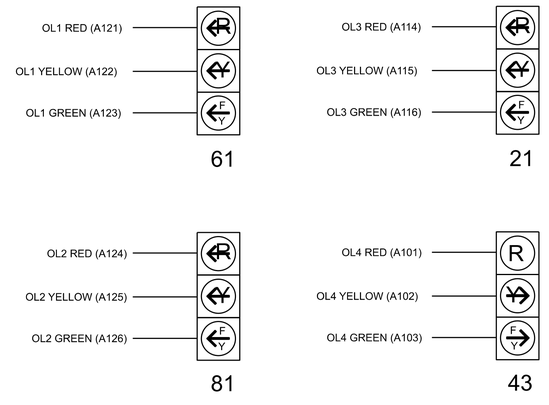
NU = Not Used
★See pictorial of head wiring in detail this sheet.

COUNTDOWN PEDESTRIAN SIGNAL OPERATION

Countdown Ped Signals are required to display timing only during Ped Clearance Interval. Consult Ped Signal Module user's manual for instructions on selecting this feature.

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



INPUT FILE POSITION LAYOUT

(front view)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	SLOT EMPTY	ø 2 2A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	ø 4 4A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	NOT USED	ø 6 PED DC ISOLATOR	FS DC ISOLATOR
	L		NOT USED				ø 4 4B						ø 4 PED DC ISOLATOR	NOT USED	ST DC ISOLATOR
FILE "J"	U	SLOT EMPTY	ø 6 6A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	ø 8 8A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
	L		ø 6 6B				ø 8 8B								

EX. : 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME
PRE = PREEMPT

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT POINT	DETECTOR NO.	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN
2A	TB2-5,6	I2U	39	1	2	2			X	X	X	
4A	TB4-9,10	I6U	41	3	8	4			X		X	
4B	TB4-11,12	I6L	45	7	9	4	15,0		X		X	
6A	TB3-5,6	J2U	40	2	16	6			X	X	X	
6B	TB3-7,8	J2L	44	6	17	6	3.0		X		X	X
8A	TB5-9,10	J6U	42	4	22	8			X		X	
8B	TB5-11,12	J6L	46	8	23	8			X		X	
PED PUSH BUTTONS												
P41,P42	TB8-5,6	I12L	69	35	4	PED 4						
P61,P62	TB8-7,9	I13U	68	34	6	PED 6						

NOTE: INSTALL DC ISOLATORS IN INPUT FILE SLOTS I12 AND I13.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 07-0232
DESIGNED: March 2026
SEALED: 5/1/2026
REVISED: N/A

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Prepared in the Offices of:
Transportation Mobility and Safety Division
Traffic Engineering Branch
Traffic Signal Design-Section
DEPARTMENT OF TRANSPORTATION
750 N. Greenfield Pkwy, Garner, NC 27529

Electrical and Programming Details For:
US 70 /US 70 Bypass (Cornelius Street)
at
US 70 Bus. (Revere Road)/
SR 1326 (Faucette Mill Road)

Division 7 | Orange County | Hillsborough

PLAN DATE:	March 2026	REVIEWED BY:	R Muncey
PREPARED BY:	J Galloway	REVIEWED BY:	

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029904 ENGINEER JASON P. GALLOWAY

Signed by: Jason Galloway 5/8/2026
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SIG. INVENTORY NO. 07-0232

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Electrical Detail - Sheet 1 of 2

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jgalloway

PROJECT REFERENCE NO.	SHEET NO.
BN-0031GC	Sig. 1.2

OVERLAP PROGRAMMING

Front Panel
Main Menu >Controller >Overlap >Overlap Parameters/Overlap Timings

Web Interface
Home >Controller >Overlap Configuration >Overlaps

Overlap Plan 1

Overlap	1	2	3	4
Type	FYA 4 - Section	FYA 4 - Section	FYA 4 - Section	FYA 4 - Section
Included Phases	2	4	6	4
Modifier Phases	-	-	-	-
Modifier Overlaps	-	-	-	-
Trail Green	0	0	0	0
Trail Yellow	0.0	0.0	0.0	0.0
Trail Red	0.0	0.0	0.0	0.0
FYA Ped Delay	0.0	7.0	0.0	7.0

OUTPUT CHANNEL CONFIGURATION

Front Panel
Main Menu >Controller >More>Channels>Channels Config

Web Interface
Home >Controller >Advanced IO>Channels>Channel Configuration

Channel Configuration

Channel	Control Type	Control Source	Flash Yellow	Flash Red	Flash Alt	MMU Channel
1	Phase Vehicle	1		X	X	1
2	Phase Vehicle	2		X		2
3	Phase Vehicle	3		X	X	3
4	Phase Vehicle	4		X		4
5	Phase Vehicle	5		X		5
6	Phase Vehicle	6		X	X	6
7	Phase Vehicle	7		X		7
8	Phase Vehicle	8		X	X	8
9	Overlap	1		X	X	9
10	Overlap	2		X	X	10
11	Overlap	3		X		11
12	Overlap	4		X		12
13	Phase Ped	2				13
14	Phase Ped	4				14
15	Phase Ped	6				15
16	Phase Ped	8				16
17	Overlap	5		X	X	17
18	Overlap	6		X		18

MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel
Main Menu >Controller >Unit

Web Interface
Home >Controller >Unit

Modify parameters as shown below and save changes.

Start Up Parameters

StartUp Clearance Hold
6

Unit Flash Parameters

All Red Flash Exit Time
6

FLASHER CIRCUIT MODIFICATION DETAIL

IN ORDER TO INSURE THAT SIGNALS FLASH CONCURRENTLY ON THE SAME APPROACH, MAKE THE FOLLOWING FLASHER CIRCUIT CHANGES:

1. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-4 AND TERMINATE ON T2-2.
2. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-5 AND TERMINATE ON T2-3.
3. REMOVE FLASHER UNIT 2.

THE CHANGES LISTED ABOVE TIES ALL PHASES AND OVERLAPS TO FLASHER UNIT 1.

THE CHANGES LISTED ABOVE TIES ALL PHASES AND OVERLAPS TO FLASHER UNIT 1.

ACCESSIBLE PEDESTRIAN SIGNAL (APS) INSTALLATION NOTES

1. Install push buttons and APS equipment per manufacturer's instructions.
2. Provide a dedicated cable to each push button per manufacturer's instructions.
3. If APS equipment is mounted in cabinet, use filtered power (i.e., Controller Receptacle) to power APS equipment. Do not use Equipment Receptacle, which is a GFCI outlet.
4. Never attempt to operate a standard contact closure push button with the APS system unless cabinet is re-wired for standard button operation or unless explicitly allowed by the manufacturer.
5. Place manufacturer's instructions in cabinet with cabinet prints, signal plans, and electrical details.
6. An APS push button station that is designed to work without the need for interfacing with a pedestrian signal head shall be installed for applications where a push button is installed in a median without a pedestrian signal head.
7. A push button with a single tactile arrow that point in both directions of travel shall be installed if the median separates two parallel crosswalks.

Electrical Detail - Sheet 2 of 2

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 07-0232
DESIGNED: March 2026
SEALED: 5/1/2026
REVISED: N/A

Electrical and Programming Details For:

US 70 /US 70 Bypass (Cornelius Street)
at
US 70 Bus. (Revere Road)/
SR 1326 (Faucette Mill Road)

Division 7 | Orange County | Hillsborough

PLAN DATE:	March 2026	REVIEWED BY:	R Muncey
PREPARED BY:	J Galloway	REVIEWED BY:	

REVISIONS	INIT.	DATE

Prepared in the Offices of:
Transportation Mobility and Safety Division
NCDEPARTMENT OF TRANSPORTATION
Traffic Engineering Branch
Signal Management Section
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029904 ENGINEER JASON P. GALLOWAY

Signed by: Jason Galloway 5/8/2026
DATE

SIG. INVENTORY NO. 07-0232

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jgalloway

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

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.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
ALL ROADS	6:00 A.M.-9:00 A.M. MONDAY THRU FRIDAY 4:00 P.M.-7:00 P.M. MONDAY THRU FRIDAY

LANE AND SHOULDER CLOSURE REQUIREMENTS

B) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

C) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRANSPORTATION MANAGEMENT PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

F) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

TRAFFIC PATTERN ALTERATIONS

G) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

H) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

I) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

J) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

K) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES (DRUMS, CONES OR SKINNY DRUMS) PERPENDICULAR TO THE EDGE OF TRAVELWAY ON (XXX FT) CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

PAVEMENT MARKINGS AND MARKERS

L) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

MISCELLANEOUS

M) USE LAW ENFORCEMENT TO DIRECT TRAFFIC AND ENFORCE ROAD CLOSURES. LOCATIONS SHOWN IN THE PLANS ARE APPROXIMATE AND MAY BE REVISED AS THE OFFICER OR THE ENGINEER DEEM NECESSARY.

N) ALL CURB RAMP LOCATIONS SHALL BE DERIVED FROM STATIONING SHOWN ON PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER IN COORDINATION WITH THE SIGNING AND DELINEATION UNIT.

O) CONTRACTOR SHALL MAINTAIN SIDEWALK ACCESS AT ALL TIMES AS STATED IN THE PHASING. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEMPORARY SIDEWALKS (CONCRETE, ASPHALT, OR OTHER SUITABLE MATERIAL AS APPROVED BY THE ENGINEER) AT ALL LOCATIONS WHERE THE OPEN PEDESTRIAN TRAVELWAY HAS BEEN REMOVED FOR CONSTRUCTION OPERATIONS (UTILITIES, DRAINAGE, ETC.).

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

LOCATION - US 70/US 70 BYP (CORNELIUS ST)
& US 70 BUS (REVERE RD)/SR 1326 (FAUCETTE MILL RD) IN HILLSBOROUGH

TYPE OF WORK - PAVEMENT MARKING, SIGNALS

PHASING

STEP 1
INSTALL ALL WORK ZONE ADVANCE WARNING SIGNS. SEE RSD 1101.01.

STEP 2
USING RSD 1101.02, CONDUCT ALL PAVEMENT MARKING OPERATION. SEE PM PLANS.

USE LANE CLOSURES AND RSD 1101.02, TO PERFORM SIGNAL WORK.

USE LAW ENFORCEMENT OFFICERS, IF NECESSARY, TO DIRECT TRAFFIC AT SIGNALIZED INTERSECTIONS WHERE OVERHEAD WORK IS REQUIRED. SEE SIGNAL PLANS.

STEP 3
REMOVE ALL TRAFFIC CONTROL DEVICES AND OPEN TRAFFIC TO FINAL PATTERN.

ROADWAY STANDARD DRAWINGS

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
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGERS
1165.01	TRUCK MOUNTED ATTENUATOR
1180.01	SKINNY - DRUM

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PLANS PREPARED BY:

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SENIOR TRANSPORTATION ENGINEER

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NORTH CAROLINA PROFESSIONAL SEAL 19862 ENGINEER JOHN WILLIAM WOOLARD JR.

SHEET NO.
TMP-1

TIP PROJECT: BN-0031GC

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