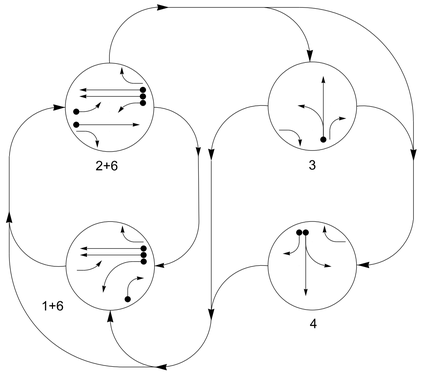
Docusign Envelope ID: E237D0F0-9E2A-4677-A80C-647C717DF96C

PROJECT REFERENCE NO.	SHEET NO.
R-4463A	Sig-3.0

4 Phase
Fully Actuated
US 17 Bus. (MLK Blvd) CLS
D02-15_New Bern

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

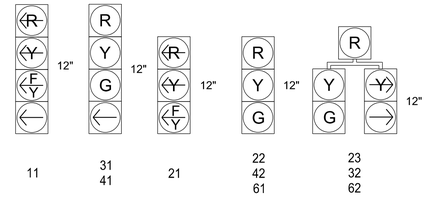
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE 1+6	PHASE 2+6	PHASE 3	PHASE 4	FLASH
11	←	F Y	R	R	R
21	F Y	F Y	R	R	R
22	R	G	R	R	R
23	R	G	R/←	R	R
31	R	R	G ←	R	R
32	R/←	R	G	R	R
41	R	R	R	G ←	R
42	R	R	R	G	R
61	G	G	R	R	R
62	G	G	R	R/←	R

SIGNAL FACE I.D.

All Heads L.E.D.



MAXTIME DETECTOR INSTALLATION CHART

DETECTOR					PROGRAMMING							
ZONE(S)	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN	NEW CARD
1A	6X40	0	@	@	1	15.0*	-	X	-	X	-	@
					6#	-	-	X	-	X	-	@
1B	6X40	0	@	@	1	15.0	-	X	-	X	-	@
2B	6X40	0	@	@	2	-	-	X	-	X	-	@
3A	6X40	0	@	@	3	3.0	-	X	-	X	-	@
4A	6X40	0	@	@	4	3.0	-	X	-	X	-	@
4B	6X40	0	@	@	4	15.0	-	X	-	X	-	@

@ Multizone Microwave Detection
# Disable Phase call for loop during Alternate Phasing operation.
* Disable Delay during Alternate Phasing operation.

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 may be lagged.
4. The order of phase 3 and phase 4 may be reversed.
5. Set all detector units to presence mode.
6. Reposition existing signal heads 31, 32, 41, and 42.
7. Activate beacons 24, 25, 26, and 27 to flash 3 seconds prior to the end of phase 2 green. These beacons shall remain flashing until the beginning of phase 2 green.
8. Activate beacons 63, 64, 65, and 66 to flash 3 seconds prior to the end of phase 6 green. These beacons shall remain flashing until the beginning of phase 6 green.
9. Relocate existing southbound (right side of roadway) "BE PREPARED TO STOP" (W3-4) assembly (see Figure 1) and Signal Ahead sign (W3-3) to final design location (see sheet 6.0).
10. This intersection uses multi-zone microwave detection. Monitor and maintain detectors according to the manufacturer's instructions to achieve desired detection.
11. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

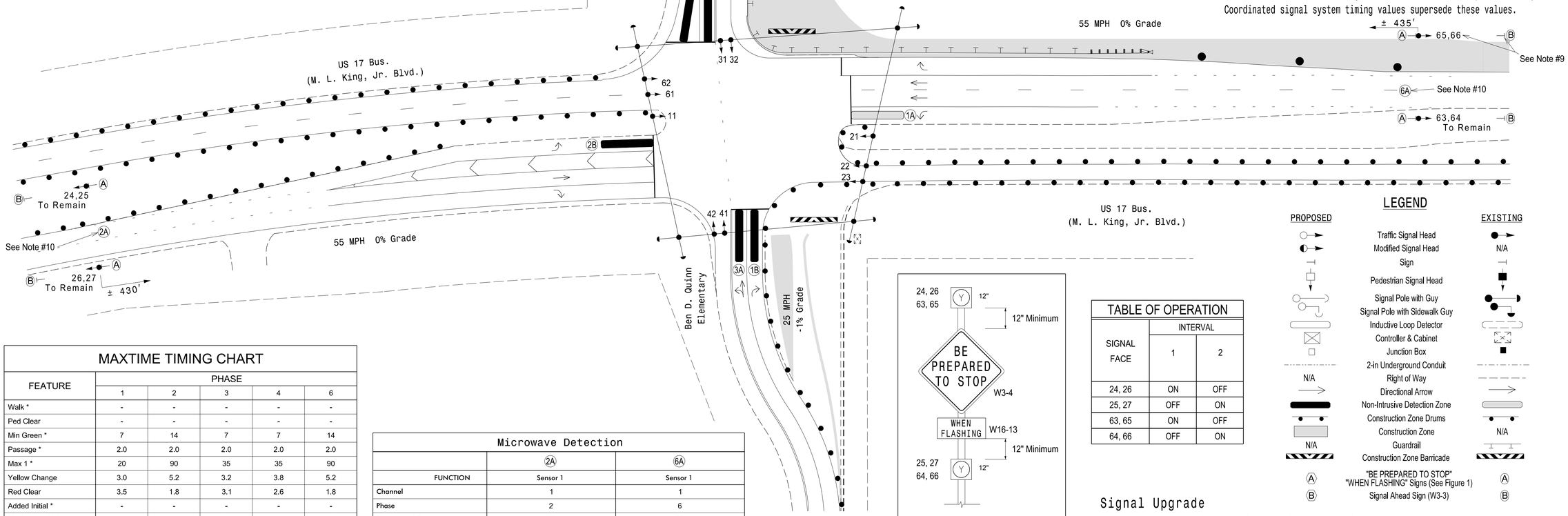


FIGURE 1

TABLE OF OPERATION

SIGNAL FACE	INTERVAL 1	INTERVAL 2
24, 26	ON	OFF
25, 27	OFF	ON
63, 65	ON	OFF
64, 66	OFF	ON

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	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
	Non-Intrusive Detection Zone	
	Construction Zone Drums	
	Construction Zone	N/A
N/A	Guardrail	
	Construction Zone Barricade	
A	"BE PREPARED TO STOP" "WHEN FLASHING" Signs (See FIgure 1)	A
B	Signal Ahead Sign (W3-3)	B

MAXTIME TIMING CHART

FEATURE	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 6
Walk *	-	-	-	-	-
Ped Clear	-	-	-	-	-
Min Green *	7	14	7	7	14
Passage *	2.0	2.0	2.0	2.0	2.0
Max 1 *	20	90	35	35	90
Yellow Change	3.0	5.2	3.2	3.8	5.2
Red Clear	3.5	1.8	3.1	2.6	1.8
Added Initial *	-	-	-	-	-
Maximum Initial *	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-
Time To Reduce *	-	-	-	-	-
Minimum Gap	-	-	-	-	-
Advance Walk	-	-	-	-	-
Pre Clearance	–	3.0	–	–	3.0
Non Lock Detector	X	-	X	X	-
Vehicle Recall	-	MIN RECALL	-	-	MIN RECALL
Dual Entry	-	-	-	-	-

* 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.

Microwave Detection

	2A			6A		
FUNCTION	Sensor 1			Sensor 1		
Channel	1			1		
Phase	2			6		
Direction of Travel	NB			SB		
Type	Priority			Priority		
Level	1	2	QUEUE	1	2	QUEUE
Discovery Zone (ft)	>= 750	< 750	-	>= 750	< 750	-
Range (ft)	900-100	600-100	150-100	900-100	600-100	150-100
Enable Speed	Y	Y	Y	Y	Y	Y
Speed Range (mph)	35-100	35-100	1-35	35-100	35-100	1-35
Enable Estimated Time of Arrival	Y	Y	N	Y	Y	N
Estimated Time of Arrival (sec)	2.5-10.0	2.5-6.5	-	2.5-10.0	2.5-6.5	-

Signal Upgrade
Temporary Design 2 (TMP Phase 1, Step 2)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Plans Prepared By:

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

SCALE 0 40 1"=40'

US 17 Business
(M. L. King, Jr. Blvd.)
at
NC 43/Ben D. Quinn Elementary

Division 2 Craven County New Bern

PLAN DATE: April 2025	REVIEWED BY: BN Groome		
PREPARED BY: DS Griffith	DRMP PROJ. NO.: 17359 (040)		
REVISIONS		INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 052936 ENGINEER BRITTANY N GROOME

Signed by: Brittany N Groome 4/24/2025
DOCUSIGNED BY:
DATE

SIG. INVENTORY NO. 02-0629T2

23-APR-2025 19:21
C:\pwworking\drmp\d0629\RKA_Projects#2017 Projects#17359 R-4463A - Craven County, NC#Signal#04-Design#02-0629#02-0629T2.sig.dgn
kjones AT CHA-KJONES