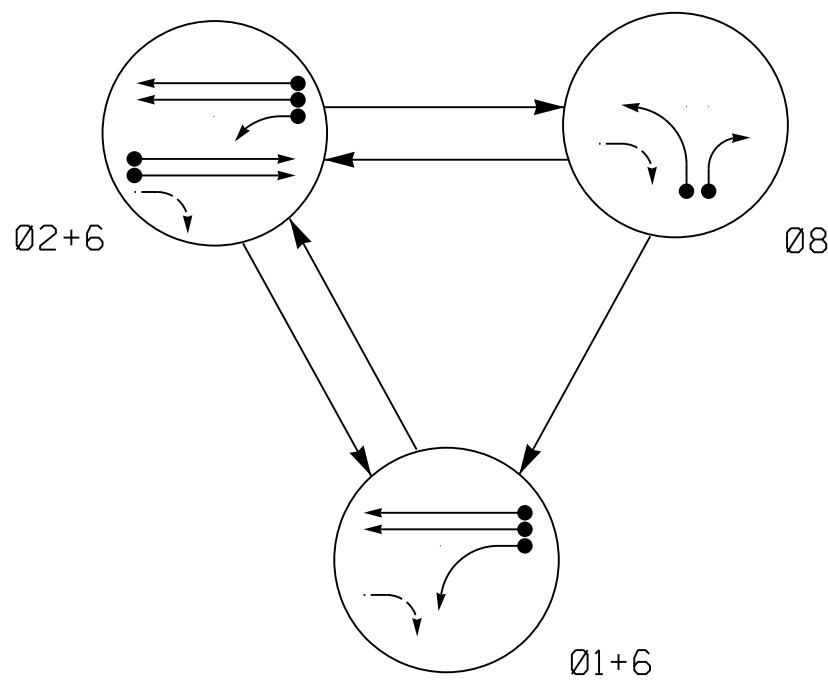
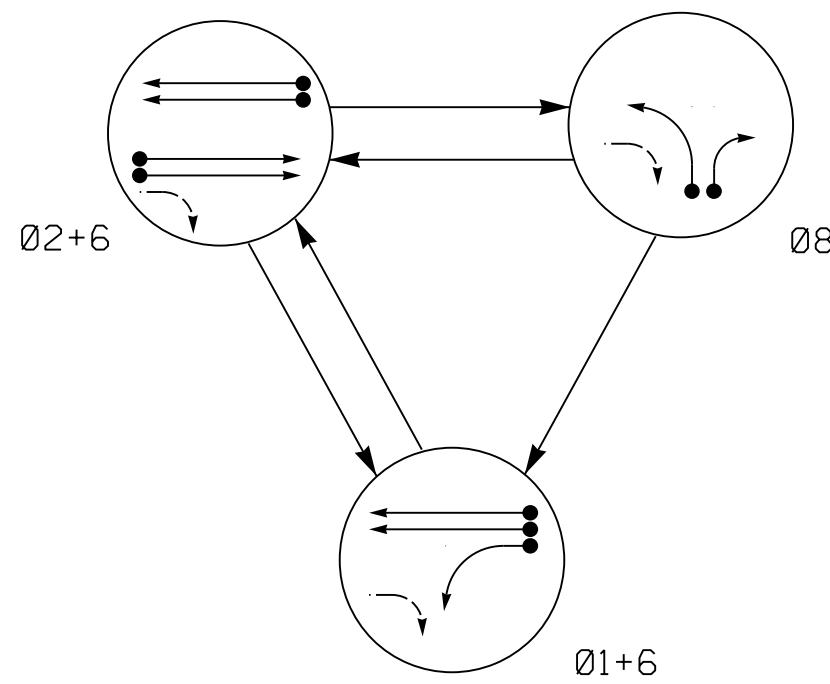


DEFAULT PHASING DIAGRAM



ALTERNATE PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

DEFAULT PHASING		TABLE OF OPERATION			
SIGNAL FACE	PHASE	01	02	08	FLASH
		1	2	8	H
11		←	→	←	→
21,22		R	G	R	R
61,62		G	G	R	R
81,82,83		R	R	G	R

ALTERNATE PHASING		TABLE OF OPERATION			
SIGNAL FACE	PHASE	01	02	08	FLASH
		1	2	8	H
11		←	→	←	→
21,22		R	G	R	R
61,62		G	G	R	R
81,82,83		R	R	G	R

MAXTIME DETECTOR INSTALLATION CHART											
DETECTOR						PROGRAMMING					
ZONE	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	NEW CARD
1A*	6X40	0	*	*	1	15.0#	-	X	-	X	*
6A*	6X40	0	*	*	6##	-	-	X	-	X	*
8A*	6X40	0	*	*	8	3.0	-	X	-	X	*
8B*	6X40	0	*	*	8	15.0	-	X	-	X	*
8C*	6X6	0	*	*	8	15.0	-	X	-	X	*

* Multi-zone Microwave Detection Zone
Disable Delay During Alternate Phasing Operation.
Disable Phase Call for Loop(s) During Alternate Phasing Operation.

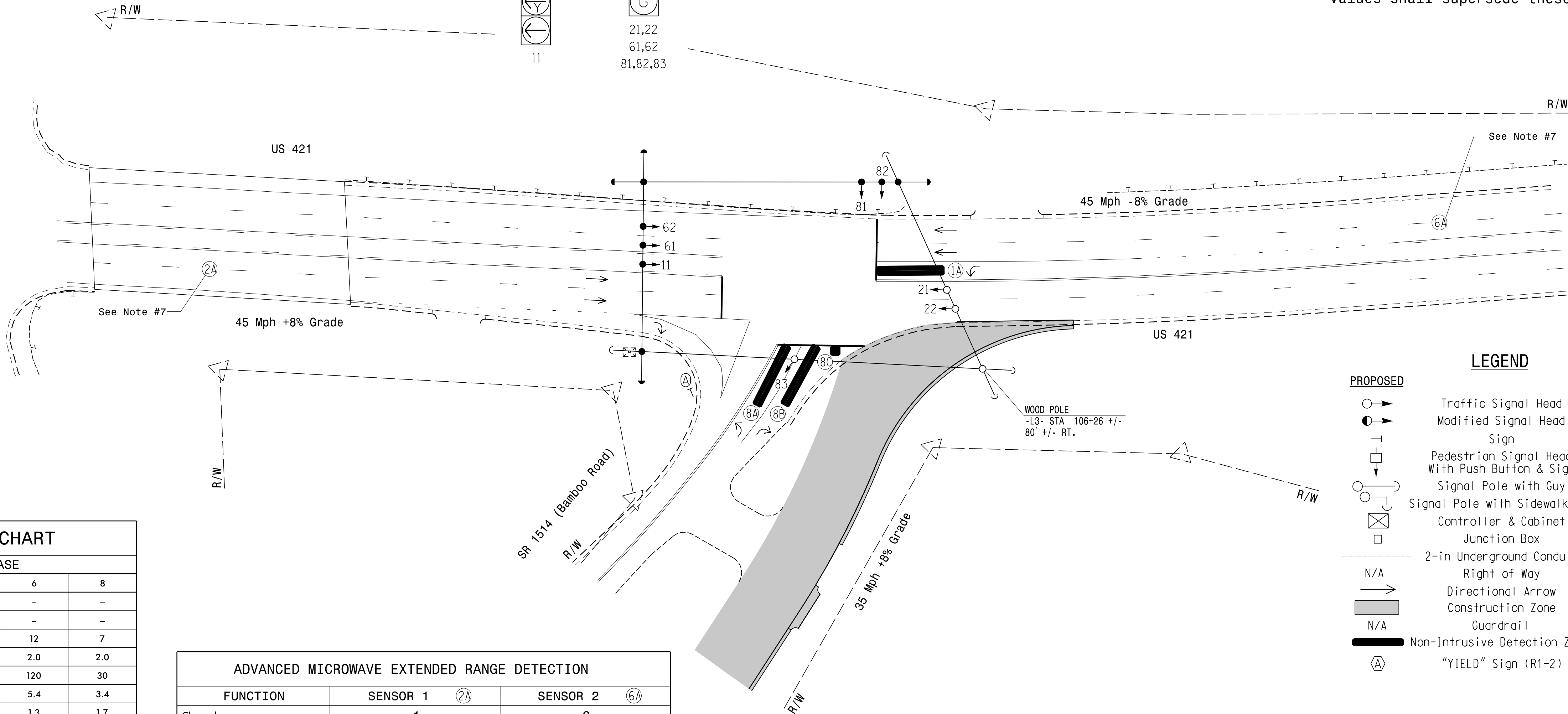
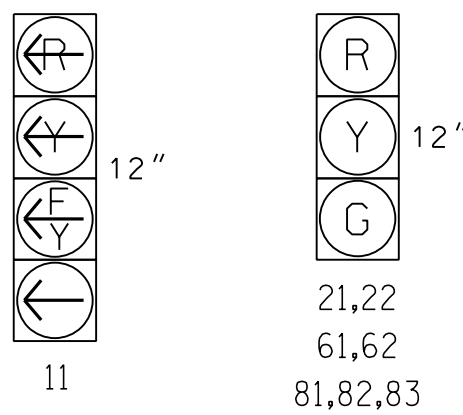
3 Phase
Fully Actuated
w/ Alternate Phasing Operation
Signal System #: D11-03_Boone

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 may be lagged.
- Set all detector units to presence mode.
- See TMP for pavement marking details.
- The Division Traffic Engineer will determine the hours of use for each phasing plan.
- This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.

SIGNAL FACE I.D.

All Heads L.E.D.



MAXTIME TIMING CHART				
FEATURE	PHASE			
	1	2	6	8
Walk *	-	-	-	-
Ped Clear	-	-	-	-
Min Green *	7	12	12	7
Passage *	2.0	2.0	2.0	2.0
Max 1 *	15	120	120	30
Yellow Change	3.3	5.4	5.4	3.4
Red Clear	2.4	1.3	1.3	1.7
Added Initial *	-	-	-	-
Maximum Initial *	-	-	-	-
Time Before Reduction *	-	-	-	-
Time To Reduce *	-	-	-	-
Minimum Gap	-	-	-	-
Advance Walk	-	-	-	-
Non Lock Detector	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.

ADVANCED MICROWAVE EXTENDED RANGE DETECTION				
FUNCTION	SENSOR 1 2A		SENSOR 2 6A	
Channel	1		2	
Phase	2		6	
Direction of Travel	EB		WB	
Type	PRIORITY		PRIORITY	
Level	2	QUEUE	2	QUEUE
Discovery Zone (ft)	<750		<750	
Detection ZoneRange (ft)	600-100	150-100	600-100	150-100
Enable Speed	Y	Y	Y	Y
Speed Range (mph)	35-100	1-35	35-100	1-35
Enable Estimated Time of Arrival	Y	N	Y	N
Estimated Time of Arrival (sec)	2.5-6.5		2.5-6.5	

LEGEND	
PROPOSED	EXISTING

Signal Upgrade - Temporary Signal 1 - TMP Phases II-V

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Engineers | Construction Managers | Planners | Scientists
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Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Design Section
750 N. Greenfield Pkwy, Garner, NC 27529

US 421
at
SR 1514 (Bamboo Road)
Division 11 Watauga County near Boone
PLAN DATE: April 2026 REVIEWED BY: DT Sears
PREPARED BY: WP Erickson-Jones REVIEWED BY: C Silver
REVISIONS
INIT. DATE
SILVER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
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NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 056142
W. PORTER JONES
4/23/2026
SILVER
SIC. INVENTORY NO. II-105511