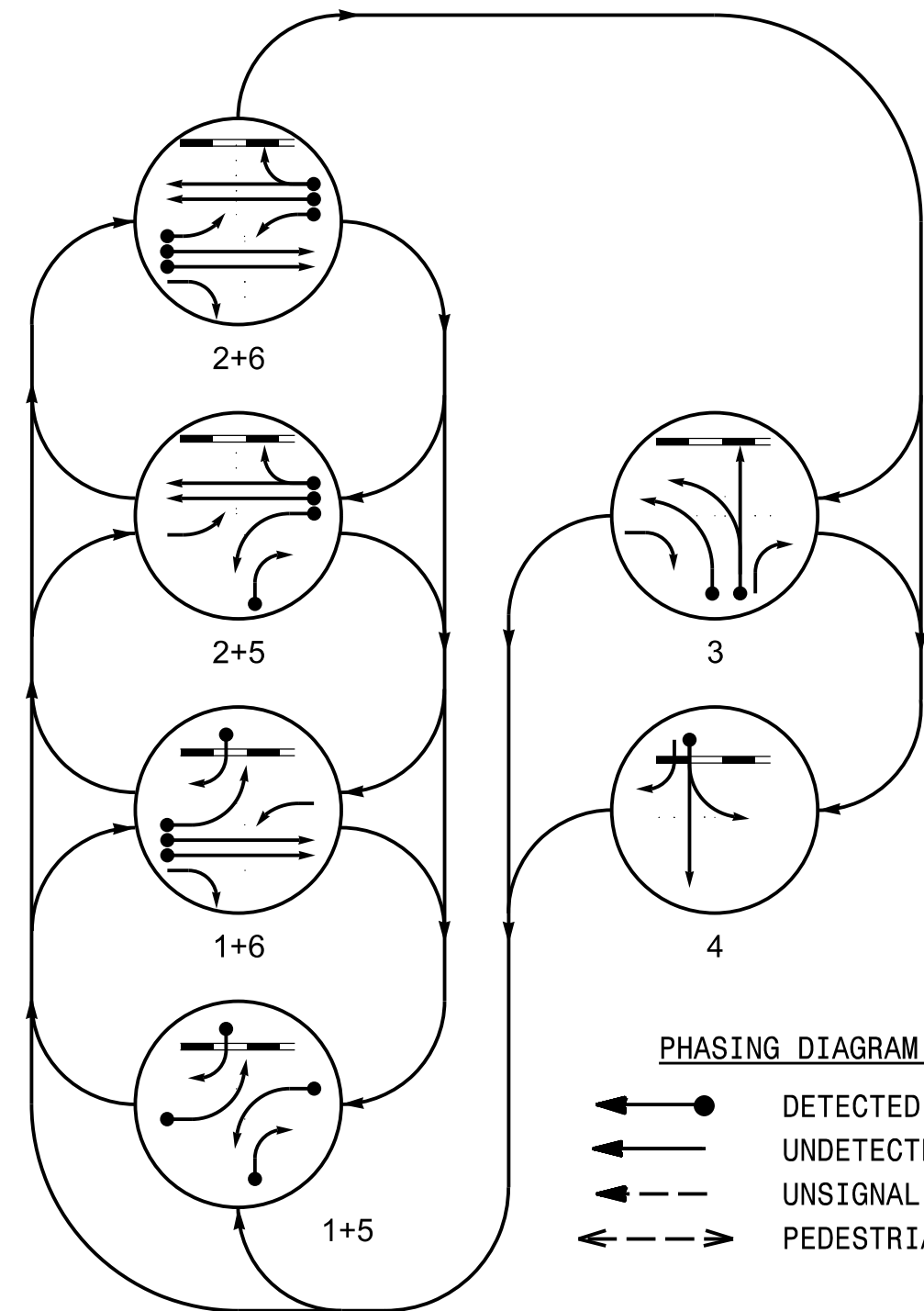
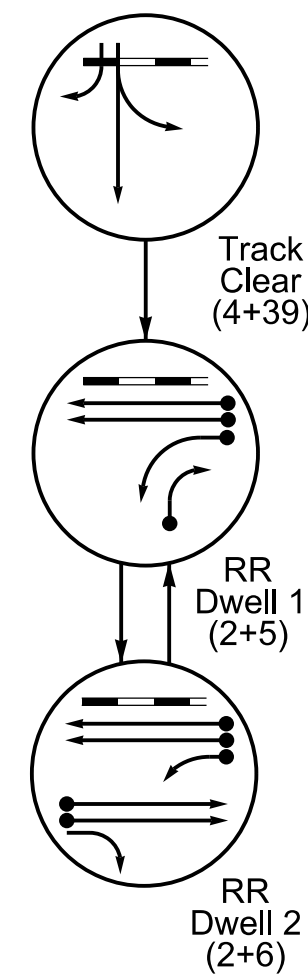


PHASING DIAGRAM



RAIL PREEMPT PHASES (High Priority)



PHASING DIAGRAM DETECTION LEGEND

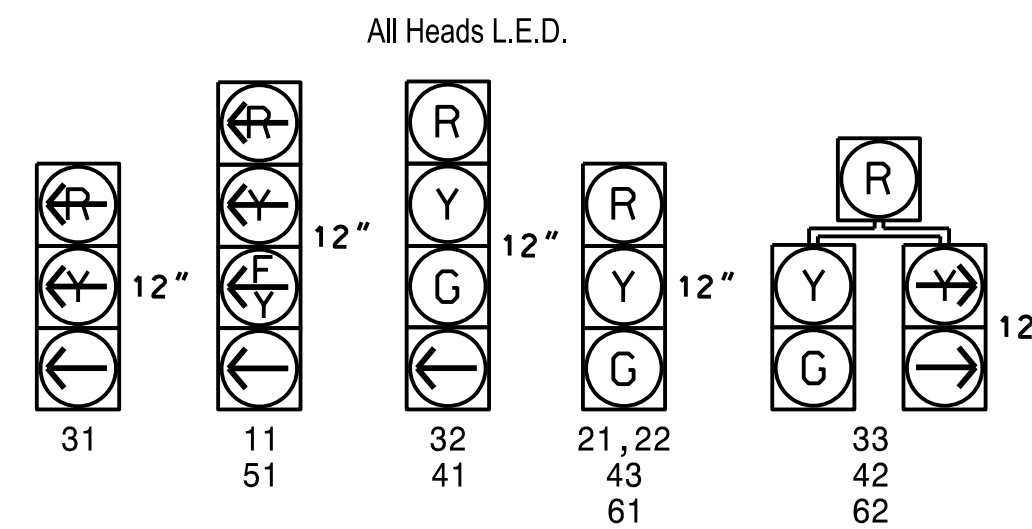
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE											
	1+5	1+6	2+5	2+6	3	4	TRUCK	TRUCK	TRUCK	TRUCK	TRUCK	TRUCK
11												
21,22	R	R	G	G	R	R	R	G	G	R		
31	R	R	R	R	R	R	R	R	R	R		
32	R	R	R	R	R	R	R	R	R	R		
33	R	R	R	R	R	R	R	R	R	R		
41	R	R	R	R	R	R	R	R	R	R		
42	R	R	R	R	R	R	R	R	R	R		
43	R	R	R	R	R	R	R	R	R	R		
51												
61	R	G	R	G	R	R	R	R	R	G	R	
62	R	G	R	G	R	R	R	R	R	G	R	
Sign B	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	*	

\* See Note 6

SIGNAL FACE I.D.



MAXTIME DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PROGRAMMING					
					CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND ADDED INITIAL	CALL DELAY DURING GREEN	NEW CARD
1A	6X40	0	2-4-2	X	1	15.0	-	X	X	X
1B	6X40	# +5	EXIST	-	1	15.0	2.0	X	X	-
1C	6X20	0	2-4-2	X	1	15.0	-	X	X	-
2A	6X6	300	5	X	2	-	-	X	X	-
2B	6X6	300	5	X	2	-	-	X	X	-
3A	6X40	0	2-4-2	X	3	3.0	-	X	X	-
3B	6X40	0	2-4-2	X	3	-	-	X	X	-
4A	6X40	# +5	EXIST	-	4	-	2.0	X	X	-
4B	6X20	0	2-4-2	X	4	3.0	-	X	X	-
5A	6X40	0	2-4-2	X	5	15.0	-	X	X	-
5B	6X40	0	2-4-2	X	5	15.0	-	X	X	-
6A	6X6	300	5	X	6	-	-	X	X	-
6B	6X6	300	5	X	6	-	-	X	X	-

# Located at Stopbar at RR Gate

6 Phase Fully Actuated W/ Railroad Preemption (Isolated)

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- This location contains railroad preemption phasing. Do not program signal for late night flashing operation.
- Phase 1 and/or phase 5 may be lagged.
- The order of phase 3 and phase 4 may be reversed.
- Set all detector units to presence mode.
- Ensure flashing operation does not alter operation of blankout signs.
- Program phase 40 to run concurrently with all phases during normal operation. Phase 39 must be incompatible with Phase 40 and included as a track clear phase.

MAXTIME PREEMPTION CHART

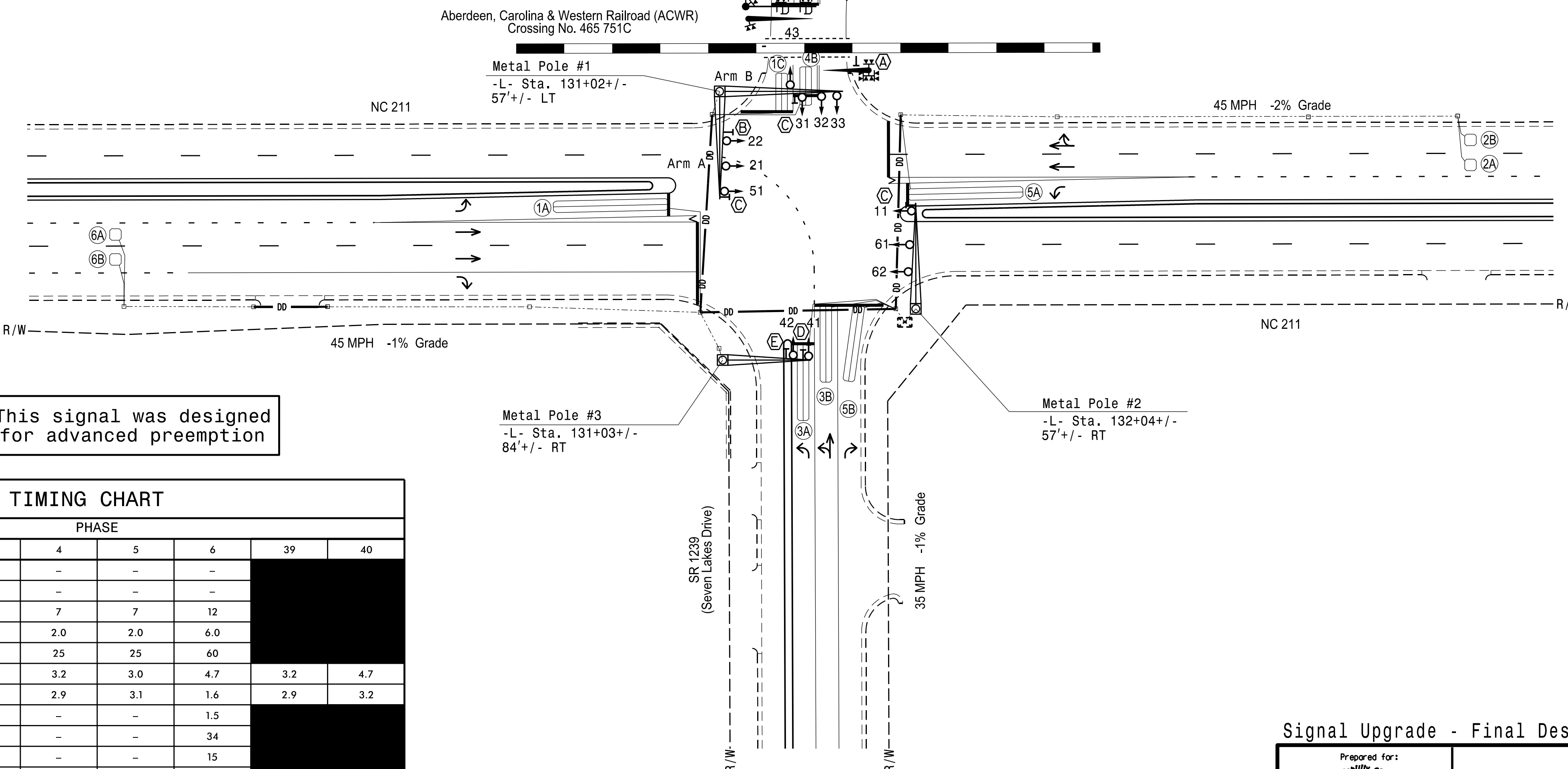
FUNCTION	PRE 1
Type	RAIL ROAD
Exit Phases	4
Delay	0
Max Presence	0
Enter Min Green	1
Enter Walk	0
Enter Ped Clear	0
Enter Yellow Change	4.7*
Enter Red Clear	3.2*
Track Green	22
Track Yellow Change	3.2
Track Red Clear	2.9
Dwell Green	0
Exit Min Green	25.5*
Exit Yellow Change	25.5*
Exit Red Clear	25.5*
Call Extend Time	1.0
Exit Type	EXIT PHASES
Ped Clear Through Yellow	-
Require All Red Entry	-

This signal was designed for advanced preemption

MAXTIME TIMING CHART

FEATURE	PHASE							
	1	2	3	4	5	6	39	40
Walk *	-	-	-	-	-	-		
Ped Clear *	-	-	-	-	-	-		
Min Green *	7	12	7	7	7	12		
Passage *	2.0	6.0	2.0	2.0	2.0	6.0		
Max 1 *	25	60	30	25	25	60		
Yellow Change	3.0	4.7	3.9	3.2	3.0	4.7	3.2	4.7
Red Clear	3.2	1.6	2.2	2.9	3.1	1.6	2.9	3.2
Added Initial *	-	1.5	-	-	-	1.5		
Maximum Initial *	-	34	-	-	-	34		
Time Before Reduction *	-	15	-	-	-	15		
Time To Reduce *	-	30	-	-	-	30		
Minimum Gap	-	3.0	-	-	-	3.0		
Advance Walk	-	-	-	-	-	-		
Non Lock Detector	X	-	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.



LEGEND

- | PROPOSED | EXISTING |
|----------|----------|
|          |          |
|          | N/A      |
|          |          |
|          |          |
|          |          |
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|          |          |
|          |          |
|          |          |
|          | N/A      |
|          |          |
|          |          |
|          |          |
|          |          |
|          |          |
|          |          |

Signal Upgrade - Final Design

MOTT MACDONALD

Prepared for: NC 211 at SR 1239 (Seven Lakes Drive) and SR 1190 (Lakeway Drive)

Division 8 Moore County Seven Lakes

PLAN DATE: June 2024 REVIEWED BY: R. Mullinax

PREPARED BY: LD Stouchko REVIEWED BY:

SCALE: 1" = 40'

REVISIONS: INIT. DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL: LOUIE D. STOUCHKO, PROFESSIONAL ENGINEER, No. 034437

SIGNATURE: DATE

SIG. INVENTORY NO. 08-0410