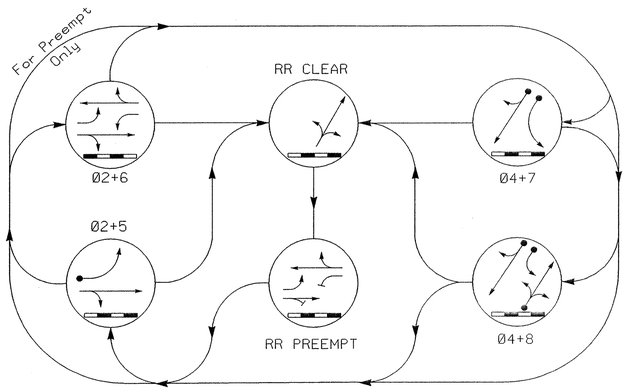
METRIC	PROJECT REFERENCE NO.	SHEET NO.
	U-2408	SIG. 2

4 PHASE SEMI ACTUATED RAILROAD PREEMPTION ISOLATED

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

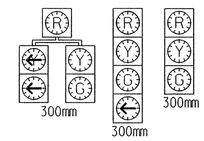
TABLE OF OPERATION

SIGNAL FACE	PHASE 02+5	02+6	04+7	04+8	RR CLEAR	RR PREEMPT	FLASH
21	G	G	R	R	R	G	Y
22	G	G	R	R	R	G	Y
41	R	R	G	G	R	R	R
42	R	R	G	G	R	R	R
61,62	R	G	R	R	R	G	Y
81	R	R	R	G	G	R	R
82	R	R	R	G	G	R	R
SIGN Ⓑ	OFF	OFF	OFF	OFF	ON	ON	*
SIGN Ⓒ	OFF	OFF	OFF	OFF	ON	ON	*

* - SEE NOTE 6

SIGNAL FACE I.D.

Denotes L.E.D.



21
41

81

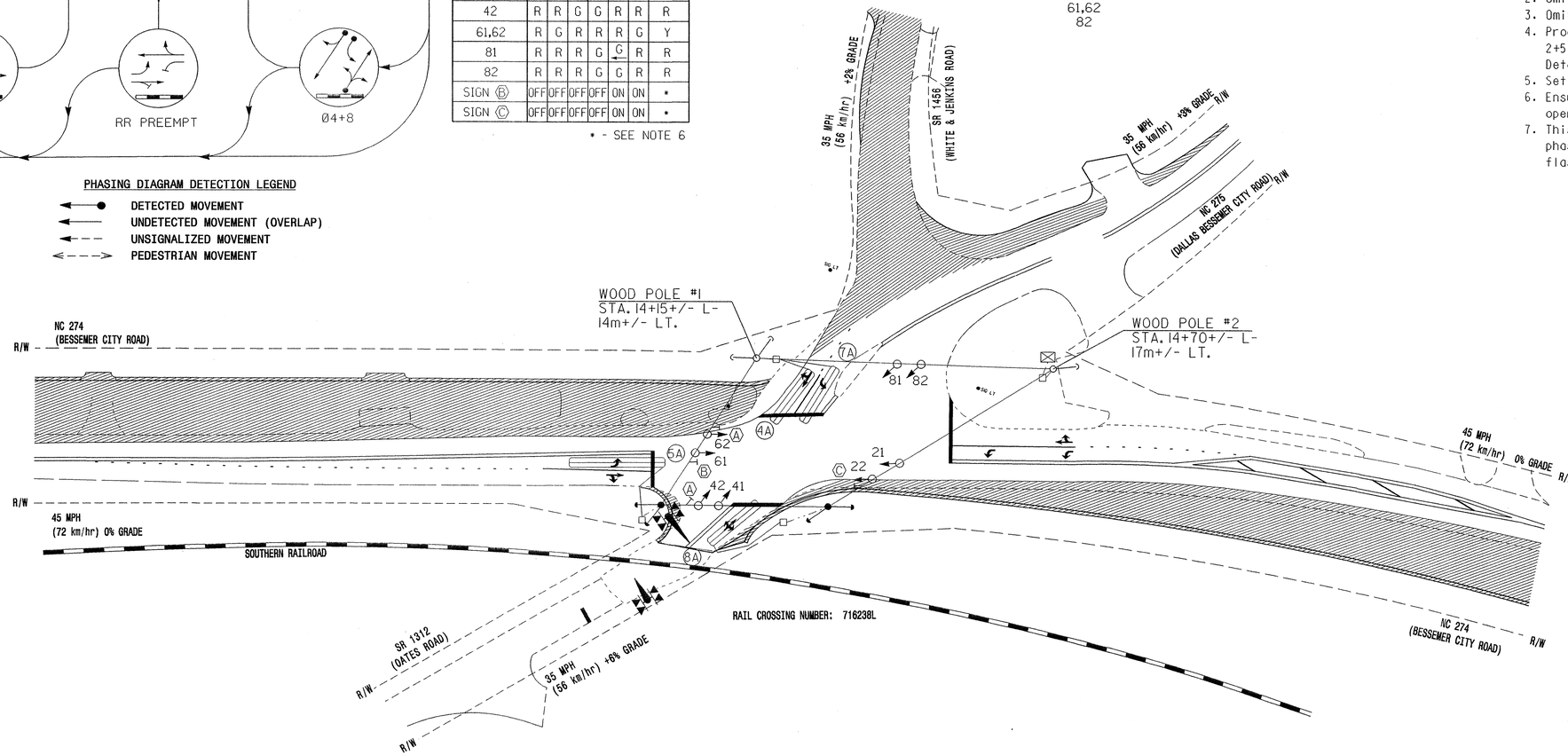
22
42
61,62
82

PLAN QUANTITIES

Pay Item	Meters
Signal Cable	480
Messenger Cable	165
Loop Lead-in Cable	390

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2002 and "Standard Specifications for Roads and Structures" dated January 2002.
2. Omit Phase 5 during Phase 6 on.
3. Omit Phase 7 during Phase 8 on.
4. Program controller to clear from phase 2+6 to phase 2+5 by progressing through phase 4+8 (see Electrical Details).
5. Set all detector units to presence mode.
6. Ensure flashing operation does not alter operation of blankout signs.
7. This location contains railroad preemption phasing. Do not program signal for late night flashing operation.



LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	50mm Underground Conduit	
N/A	Right of Way with Marker	
	Directional Arrow	
	Pavement Marking Arrow	
N/A	Railroad Gate and Flasher	
N/A	Railroad Tracks	
Ⓐ	"NO TURN ON RED" Sign (R10-11A)	Ⓐ
Ⓑ	"NO LEFT TURN - TRAIN" LED Blankout Sign	Ⓑ
Ⓒ	"NO RIGHT TURN - TRAIN" LED Blankout Sign	Ⓒ
	Construction Zone	

2070L TIMING CHART

FEATURE	PHASE 2	4	5	6	7	8
Min Green 1 *	12	7	7	12	7	7
Extension 1 *	0.0	1.0	1.0	0.0	1.0	1.0
Max Green 1 *	45	20	15	45	15	20
Yellow Clearance	4.7	4.0	4.0	4.7	4.0	4.0
Red Clearance	2.5	1.5	3.0	2.5	1.0	1.5
Walk 1 *	-	-	-	-	-	-
Don't Walk 1	-	-	-	-	-	-
Seconds Per Actuation *	-	-	-	-	-	-
Max Variable Initial *	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-
Recall Mode	MAX RECALL	-	-	MAX RECALL	-	-
Vehicle Call Memory	YELLOW	-	-	YELLOW	-	-
Dual Entry	-	ON	-	-	-	ON
Simultaneous Gap	ON	ON	ON	ON	ON	ON

* 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.

2070 RAIL PREEMPTION

Interval 1 – Track Clearance Green	18
Interval 1 – Track Clearance Yellow	4.0
Interval 1 – Track Clearance Red	1.5
Interval 2 – Dwell Green	255
Interval 2 – Dwell Yellow	0.0*
Interval 2 – Dwell Red	0.0*
Interval 5 – Exit Green	0
Interval 5 – Exit Yellow	0.0*
Interval 5 – Exit Red	0.0*
Delay Time	0
Min Green Before Pre	1
Ped Clear Before Pre	0
Yellow Clear Before Pre	4.7
Red Clear Before Pre	3.0
Dwell Min Time	10
Ped Clear Through Yellow	N

* Clearance time defaults to time used for phase during normal operation.

2070L LOOP & DETECTOR INSTALLATION

INDUCTIVE LOOPS					DETECTOR PROGRAMMING						
LOOP	SIZE (m)	TURNS	DISTANCE FROM STOPBAR (m)	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	SYSTEM LOOP	STRETCH TIME	DELAY TIME	NEW CARD
4A	1.8 X 12	2-4-2	+1	Y	4	Y	Y	-	-	-	10	Y
5A	1.8 X 18	2-4-2	+2	Y	5	Y	Y	-	-	-	15	Y
7A	1.8 X 12	2-4-2	+1	Y	7	Y	Y	-	-	-	15	Y
					4	Y	Y	-	-	-	3	Y
8A	1.8 X 12	2-4-2	0	Y	8	Y	Y	-	-	-	10	Y

Prepared in the Office of:

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Raleigh, North Carolina 27609

SIGNAL UPGRADE - TEMPORARY DESIGN 1

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION Traffic Engineering and Safety Systems Branch Signals and Geometric Section

NC 274 (BESSEMER CITY ROAD)
AT
NC 275 (DALLAS-BESSEMER CITY ROAD)
AND SR 1312 (OATES ROAD)

DIVISION 12 GASTON COUNTY GASTONIA

PLAN DATE: OCT. 30, 2003 REVIEWED BY: R.DUBNICKA,P.E.
PREPARED BY: RGL REVIEWED BY:

SCALE 5 0 10 1:500

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 027742 ENGINEER ROBERT J. DUBNICKA

Robert Dubnicka 8-9-04
SIGNATURE DATE

SIG. INVENTORY NO. 12-0012T1

09-AUG-2004 12:28
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rdubnicka