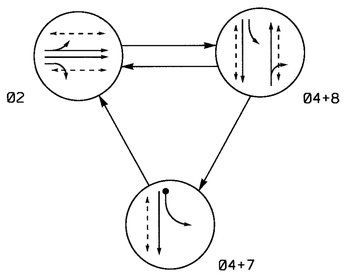
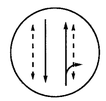
PROJECT REFERENCE NO.	SHEET NO.
SS-4905BT	Sig. 1

PHASING DIAGRAM



OVERHEIGHT PREEMPT PHASE



PHASING DIAGRAM DETECTION LEGEND

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

TABLE OF OPERATION

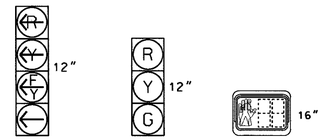
SIGNAL FACE	PHASE Ø2	Ø4+8	Ø4+7	EVA	FLASH
21, 22	G	R	R	R	Y
41, 42	R	G	G	G	R
71	~~R~~	~~E Y~~	~~-~~	~~R~~	~~R~~
81, 82	R	G	R	G	R
P21, P22	W	DW	DW	DW	DRK
P23, P24	DW	W	W	W	DRK
P41, P42	W	DW	DW	DW	DRK
P81, P82	DW	W	DW	W	DRK
SIGN A	*	*	*	*	*

W - Walk
DW - Don't Walk
DRK - Dark

*See Notes 9 & 10

SIGNAL FACE I.D.

All Heads L.E.D.



2033 OVERHEIGHT PREEMPTION

FUNCTION	EVA
DELAY BEFORE PREEMPT	0
PED. CLEAR BEFORE PREEMPT	*
MIN. GREEN BEFORE PREEMPT	1
CLEARANCE TIME	25
MAX EV PREEMPT TIME	120
BLANKOUT SIGN ON DURATION	60

* See Min Ped Clear in Timing Chart

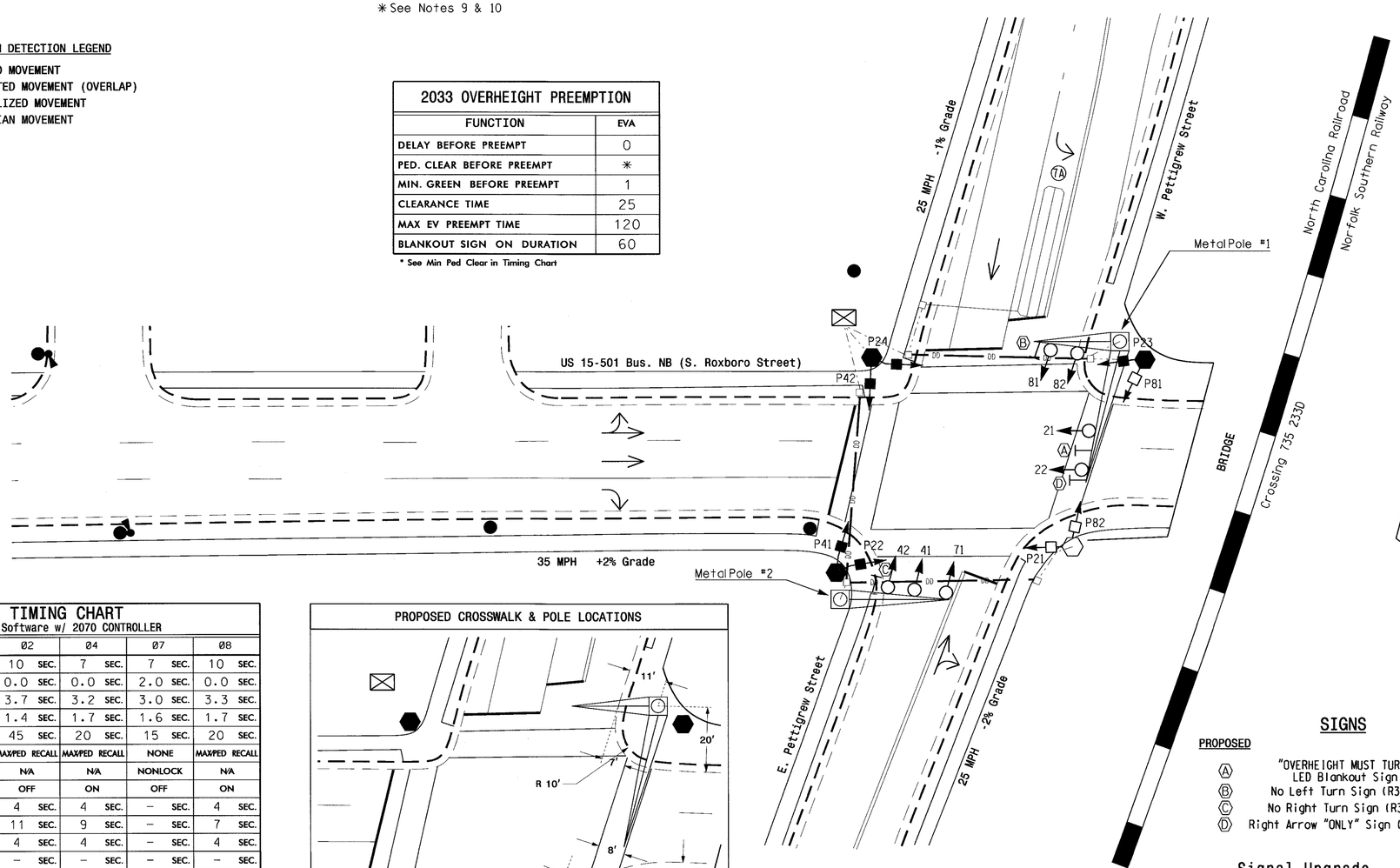
3 Phase
Semi-Actuated
w/ Overheight Vehicle Preemption
(Durham Signal System)

2033 SOFTWARE w/ 2070 CONTROLLER LOOP & DETECTOR UNIT INSTALLATION CHART

INDUCTIVE LOOPS						DETECTOR PROGRAMMING														
							TIMING		ATTRIBUTES									STATUS	
LOOP NO.	SIZE (ft)	TURNS	DIST. FROM STOPBAR (ft)	NEW	EXISTING	NEMA PHASE	DELAY	CARRY (STRETCH)	1 FULL TIME DELAY	2 PEDESTRIAN CALL	3 RESERVED	4 COUNT	5 EXTENSION	6 TYPE 3	7 CALLING	8 ALTERNATE	SYSTEM LOOPS	NEW	EXISTING
7A	6X40	2-4-2	0	X	-	7	15 SEC.	- SEC.	-	-	-	-	X	-	X	-	-	X	-

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 7 may lead.
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. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
7. Pavement markings are existing unless otherwise shown.
8. This intersection features an overheight vehicle detection preemption system. Shown location of overheight vehicle detectors are conceptual only. See ITS plans for exact location.
9. Ensure flashing operation does not alter operation of blankout sign.
10. Blankout sign shall illuminate ON immediately upon detection of overheight vehicle and remain ON for 60 seconds irregardless of signal phasing display.
11. Upon completion of Overheight Vehicle Preemption, controller returns to normal operation based on vehicle demand.
12. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
13. All signal heads shall be black in color with black visors.

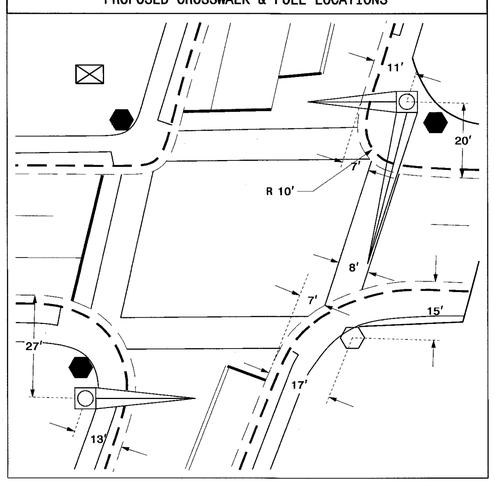


TIMING CHART
2033 Software w/ 2070 CONTROLLER

PHASE	Ø2	Ø4	Ø7	Ø8
MINIMUM INITIAL *	10 SEC.	7 SEC.	7 SEC.	10 SEC.
VEHICLE EXTENSION *	0.0 SEC.	0.0 SEC.	2.0 SEC.	0.0 SEC.
YELLOW CHANGE INT.	3.7 SEC.	3.2 SEC.	3.0 SEC.	3.3 SEC.
RED CLEARANCE	1.4 SEC.	1.7 SEC.	1.6 SEC.	1.7 SEC.
MAXIMUM LIMIT *	45 SEC.	20 SEC.	15 SEC.	20 SEC.
RECALL POSITION	MAX/PED RECALL	MAX/PED RECALL	NONE	MAX/PED RECALL
VEHICLE CALL MEMORY	N/A	N/A	NONLOCK	N/A
DOUBLE ENTRY	OFF	ON	OFF	ON
WALK *	4 SEC.	4 SEC.	– SEC.	4 SEC.
FLASHING DON'T WALK	11 SEC.	9 SEC.	– SEC.	7 SEC.
MIN PED CLEAR *	4 SEC.	4 SEC.	– SEC.	4 SEC.
TYPE 3 LIMIT	– SEC.	– SEC.	– SEC.	– SEC.
ALTERNATE EXTENSION	– SEC.	– SEC.	– SEC.	– SEC.
ADD PER VEHICLE *	– SEC.	– SEC.	– SEC.	– SEC.
MAXIMUM INITIAL *	– SEC.	– SEC.	– SEC.	– SEC.
MAXIMUM GAP*	– SEC.	– SEC.	2.0 SEC.	– SEC.
REDUCE 0.1 SEC EVERY *	– SEC.	– SEC.	– SEC.	– SEC.
MINIMUM GAP	– SEC.	– SEC.	2.0 SEC.	– SEC.

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

PROPOSED CROSSWALK & POLE 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	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
N/A	Railroad Tracks	
	Metal Pole with Mastarm	
	Overheight Detector	
	Type II Signal Pedestal	
	Directional Drill	N/A

SIGNS

PROPOSED		EXISTING
A	"OVERHEIGHT MUST TURN" LED Blankout Sign	A
B	No Left Turn Sign (R3-2)	B
C	No Right Turn Sign (R3-1)	C
D	Right Arrow "ONLY" Sign (R3-5R)	D

Signal Upgrade

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

US 15-501 Business NB (S. Roxboro Street) at Pettigrew Street

Division 5 Durham County Durham

PLAN DATE: December 2013 REVIEWED BY:
PREPARED BY: R.N. Zinser REVIEWED BY:

SCALE 0 20 1"=20'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 026486 ENGINEER ROBERT J. ZIEMBA
SIGNATURE DATE 7/1/14
SIG. INVENTORY NO. 05-0998

28-JUL-2014 17:46
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