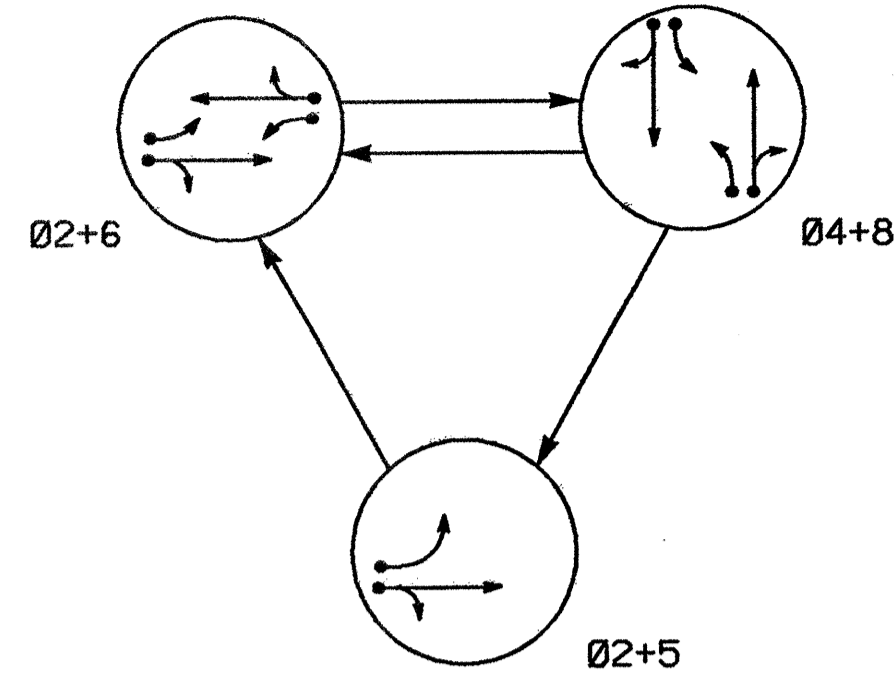


3 Phase Fully Actuated (Durham Signal System)

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2002 and "Standard Specifications for Roads and Structures" dated January 2002.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Program phase 5 as protected/permissive.
- Program controller to clear from phase 2+6 to phase 2+5 by progressing through phase 4+8 (see Electrical Details).
- Set all detector units to presence mode.
- Program all timing information into phase banks 1, 2, and 3 unless otherwise noted.
- Set phase bank 3 maximum limit to 250 seconds for phases used.
- Pavement markings are existing.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Modify all existing signal heads to include yellow L.E.D. sections.

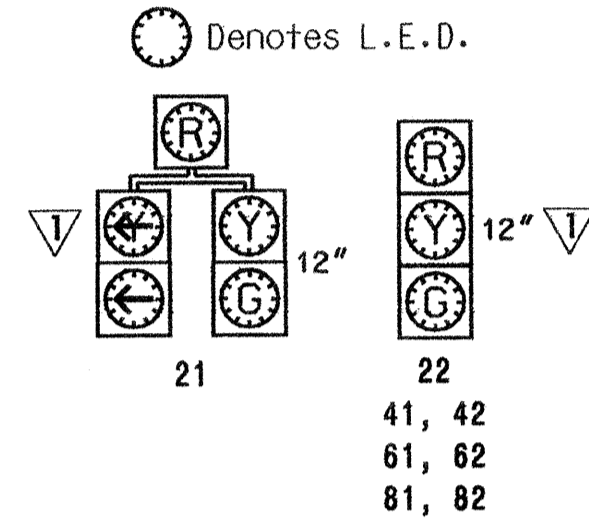
PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND
 ← ● DETECTED MOVEMENT

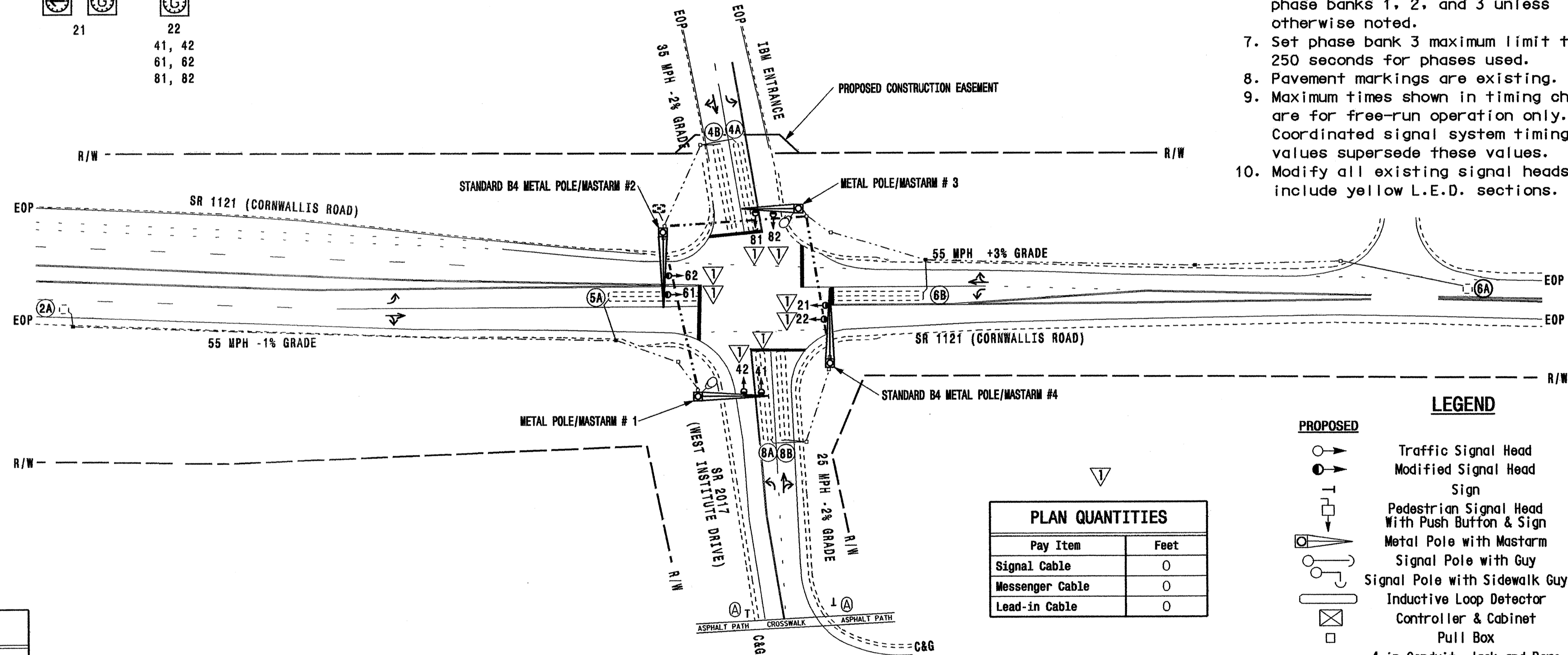
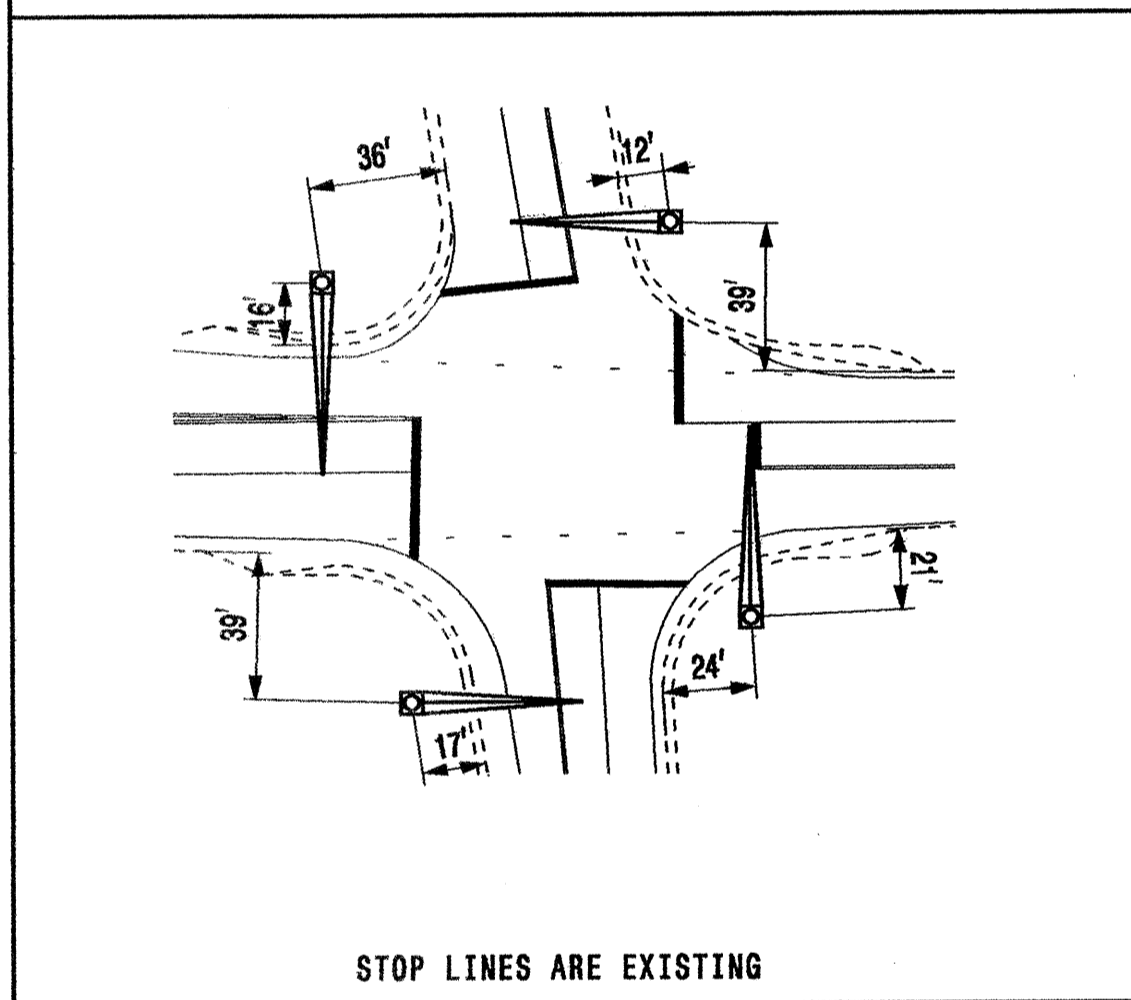
SIGNAL FACE	PHASE			
	02+5	02+6	04+8	FLASH
21	G	R	Y	
22	G	R	Y	
41, 42	R	R	G	R
61, 62	R	R	G	Y
81, 82	R	R	G	R

SIGNAL FACE I.D.



INDUCTIVE LOOPS		DETECTOR UNIT INSTALLATION CHART 170 CONTROLLER AND CABINET																		
LOOP NO.	SIZE (ft)	TURNS	DIST. FROM STOPBAR (ft)	NEW	EXISTING	NEMA PHASE	TIMING		ATTRIBUTES								STATUS			
							DELAY	CARRY (STRETCH)	1	2	3	4	5	6	7	8	NEW	EXISTING		
2A	6X6	4	420		X	2	- SEC.	- SEC.				X	X						X	
4A	6X60	2-4-2	0		X	4	3 SEC.	- SEC.				X	X						X	
4B	6X60	2-4-2	0		X	4	10 SEC.	- SEC.				X	X						X	
5A	6X60	2-4-2	0		X	2	3 SEC.	- SEC.	X			X	X						X	
							5	15 SEC.	- SEC.			X	X							
6A	6X6	4	420		X	6	- SEC.	- SEC.				X	X						X	
							6	3 SEC.	- SEC.	X			X	X						
8A	6X60	2-4-2	0		X	8	3 SEC.	- SEC.				X	X					X		
8B	6X60	2-4-2	0		X	8	10 SEC.	- SEC.				X	X					X		

STOP LINE AND POLE LOCATION DIAGRAM



LEGEND

	Proposed Traffic Signal Head		Existing Traffic Signal Head
	Proposed Modified Signal Head		Existing Modified Signal Head
	Proposed Pedestrian Signal Head With Push Button & Sign		Existing Pedestrian Signal Head
	Proposed Metal Pole with Mastarm		Existing Metal Pole with Mastarm
	Proposed Signal Pole with Guy		Existing Signal Pole with Guy
	Proposed Signal Pole with Sidewalk Guy		Existing Signal Pole with Sidewalk Guy
	Proposed Inductive Loop Detector		Existing Inductive Loop Detector
	Proposed Controller & Cabinet		Existing Controller & Cabinet
	Proposed Pull Box		Existing Pull Box
	Proposed 4-in Conduit-Jack and Bore		Existing 4-in Conduit-Jack and Bore
	Proposed 2-in Underground Conduit		Existing 2-in Underground Conduit
	Proposed Right of Way with Marker		Existing Right of Way with Marker
	Proposed Directional Arrow		Existing Directional Arrow
	Proposed Pavement Marking Arrow		Existing Pavement Marking Arrow
	Proposed Luminaire		Existing Luminaire
	Proposed "DO NOT BLOCK CROSSWALK" Sign (24"x30")		Existing "DO NOT BLOCK CROSSWALK" Sign

TIMING CHART
170 CONTROLLER

PHASE	02	04	05	06	08
MINIMUM INITIAL *	14 SEC.	7 SEC.	7 SEC.	14 SEC.	7 SEC.
VEHICLE EXTENSION *	6.0 SEC.	1.0 SEC.	1.0 SEC.	6.0 SEC.	1.0 SEC.
YELLOW CHANGE INT.	5.3 SEC.	4.0 SEC.	4.0 SEC.	5.2 SEC.	4.0 SEC.
RED CLEARANCE	1.0 SEC.	2.0 SEC.	2.0 SEC.	1.0 SEC.	2.0 SEC.
MAXIMUM LIMIT *	70 SEC.	30 SEC.	20 SEC.	70 SEC.	30 SEC.
RECALL POSITION	VEH. RECALL	NONE	NONE	VEH. RECALL	NONE
VEHICLE CALL MEMORY	YELLOW LOCK	NONE	NONE	YELLOW LOCK	NONE
DOUBLE ENTRY	OFF	ON	OFF	OFF	ON
WALK *	- SEC.	- SEC.	- SEC.	- SEC.	- SEC.
FLASHING DON'T WALK	- SEC.	- SEC.	- SEC.	- SEC.	- SEC.
TYPE 3 LIMIT	- SEC.	- SEC.	- SEC.	- SEC.	- SEC.
ALTERNATE EXTENSION	- SEC.	- SEC.	- SEC.	- SEC.	- SEC.
ADD PER VEHICLE *	2.5 SEC.	- SEC.	- SEC.	2.5 SEC.	- SEC.
MAXIMUM INITIAL *	46 SEC.	- SEC.	- SEC.	46 SEC.	- SEC.
MAXIMUM GAP *	7.0 SEC.	1.0 SEC.	1.0 SEC.	7.0 SEC.	1.0 SEC.
REDUCE 0.1 SEC EVERY *	1.5 SEC.	- SEC.	- SEC.	1.5 SEC.	- SEC.
MINIMUM GAP	3.4 SEC.	1.0 SEC.	1.0 SEC.	3.4 SEC.	1.0 SEC.

* 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.

Signal Upgrade Final Design

SR 1121 (Cornwallis Road) at SR 2017 (West Institute Drive) and IBM Entrance

Division 5 Durham County RTP

PLAN DATE: MAY 2001 REVIEWED BY: CA HULTGREN
 PREPARED BY: SP PENNINGTON REVIEWED BY: DE MARCEAU

REVISIONS

NO.	DATE	INIT.	DATE
1	03/21/05	SP	3/21/05

ADD YELLOW LEADS, MODIFY NOTES AND CLEARANCE TIMES - RAZ

SCALE 0 50' 1"=50'

PLANS PREPARED IN THE OFFICE OF:

 Kimley-Horn and Associates, Inc.
 P.O. Box 33068 Raleigh, NC 27636 (919) 677-2000

REVISION SEAL

122 N. McDowell St., Raleigh, NC 27603

Not a certified document as to the Original document but only as to the Revisions - This document originally issued and sealed by Daren E. Marceau, 02490, on 1/23/04. This document is only certified as to the revisions.

SIG. INVENTORY NO. 05-0234