

TIMING CHART							
		PHASE					
FEATURE	2	4	6				
Min Green *	10	7	10				
Walk *	-	4	4				
Ped Clear	-	12	11				
Veh. Extension *	-	1.0	-				
Max 1 *	35	20	35				
Yellow	4.1	3.0	4.1				
Red Clear	1.7	2.1	1.7				
Red Revert	2.0	2.0	2.0				
Actuations B4 Add *	-	-	-				
Seconds /Actuation *	-	-	-				
Max Initial *	-	-	-				
Time Before Reduction *	-	-	-				
Time To Reduce *	-	_	-				
Minimum Gap	-	-	-				
Locking Detector	-	-	-				
Recall Position	MAX RECALL	-	PED / MAX				
Dual Entry	-	-	-				
Simultaneous Gap	Х	Х	Х				

* 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.



PROJECT REFERENCE NO.	SHEET NO.
C - 5703	Sig.28.0

TYPE	SYSTEM LOOP	NEW CARD	
Ν	-	Х	

2 Phase Semi-Actuated Gastonia Signal System

NOTES

- 1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- 2. Do not program signal for late night flashing
- operation unless otherwise directed by the Engineer.
- 3. Reposition existing signal head(s) numbered 22 & 23.
- 4. Set all detector units to presence mode.
- 5. In the event of loop replacement, refer to the current ITS and Signal Design Manual and submit a Plan of Record to the Signal Design Section.
- 6. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- 7. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls on phase 4.
- 8. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- 9. Pavement markings are existing.
- 10. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
- 11. Install new cabinet on a new cabinet foundation.
- 12. Existing signal heads 21 & 22 have been relabeled to 22 & 23, respectively.
- 13. Rewire all intersection equipment to new cabinet.
- 14. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
- 15. All proposed signal heads shall be black in color. See Project Special Provisions for details.
- 16. All proposed pedestrian pedestals and pushbutton posts shall be black in color. See Project Special Provisions for details. 17. City of system data:
- Controller Asset #0058.

LEGEND PROPOSED <u>EXISTING</u> Traffic Signal Head $\bigcirc \rightarrow$ ●→ Modified Signal Head N/A ● Sign ----Pedestrian Signal Head With Sign \bigcirc Type II Signal Pedestal • Signal Pole with Guy \bigcirc Signal Pole with Sidewalk Guy Inductive Loop Detector \sum Controller & Cabinet Junction Box ----- 2-in Underground Conduit _____ N/A Right of Way _____ \longrightarrow \longrightarrow Directional Arrow N/A Curb Ramp $\langle A \rangle$ Street Name Sign (D3-1) (A)

Signal Upgrade			DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
Prepared For:		t Street n County Gastonia	SEAL 044434
"Design 5"		REVIEWED BY: SL Phillips	P. BAU
750 N.Greenfield Pkwy,Garner,NC 27529	PREPARED BY: CF Davis	REVIEWED BY: KP Baumann	DocuSigned by:
SCALE	REVISIONS	INIT. DATE	11 B
0 30			Kan Vanan 3/11/2022
			SIGNATURE DATE
1 "=30'			SIG. INVENTORY NO. 12-0058

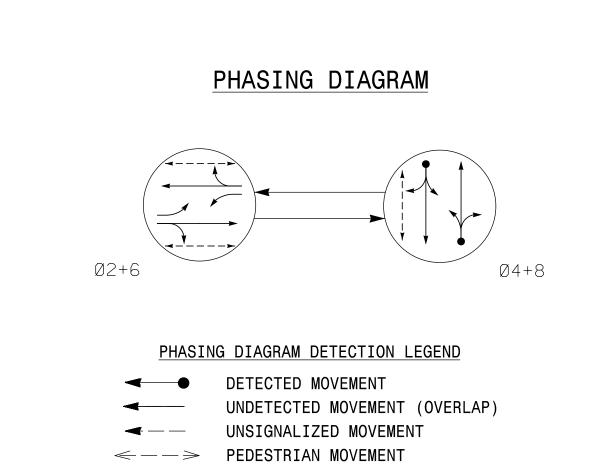
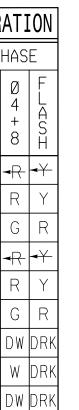


TABLE OF O	PER	A
	Ρ	H
SIGNAL FACE	Ø2+6	(
21	►	-
22,23	G	f
41,42	R	(
61		*
62,63	G	f
81,82	R	(
P21,P22	W	C
P41,P42	D·W	١
P61,P62	W	D

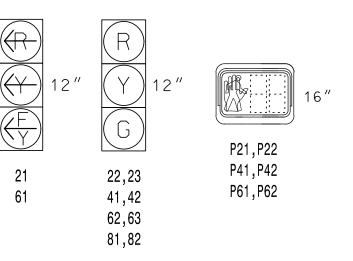
TIMING CHART							
		PH	ASE				
FEATURE	2	4	6	8			
Min Green *	10	7	10	7			
Walk *	4	4	4	-			
Ped Clear	7	11	8	-			
Veh. Extension *	-	2.0	-	3.0			
Max 1 *	45	25	45	25			
Yellow	3.8	4.1	3.8	4.1			
Red Clear	1.5	2.1	1.5	2.1			
Red Revert	2.0	2.0	2.0	2.0			
Actuations B4 Add *	-	_	-	-			
Seconds /Actuation *	-	-	-	-			
Max Initial *	-	_	-	-			
Time Before Reduction *	-	-	-	-			
Time To Reduce *	-	-	-	-			
Minimum Gap	-	-	-	-			
Locking Detector	-	-	-	-			
Recall Position	MAX RECALL	_	MAX RECALL	_			
Dual Entry	-	Х	-	Х			
Simultaneous Gap	Х	Х	Х	Х			
* These values may be fiel	d adjusted. Do	not adjust Min 🤇	Green and Exten	sion times for			

phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

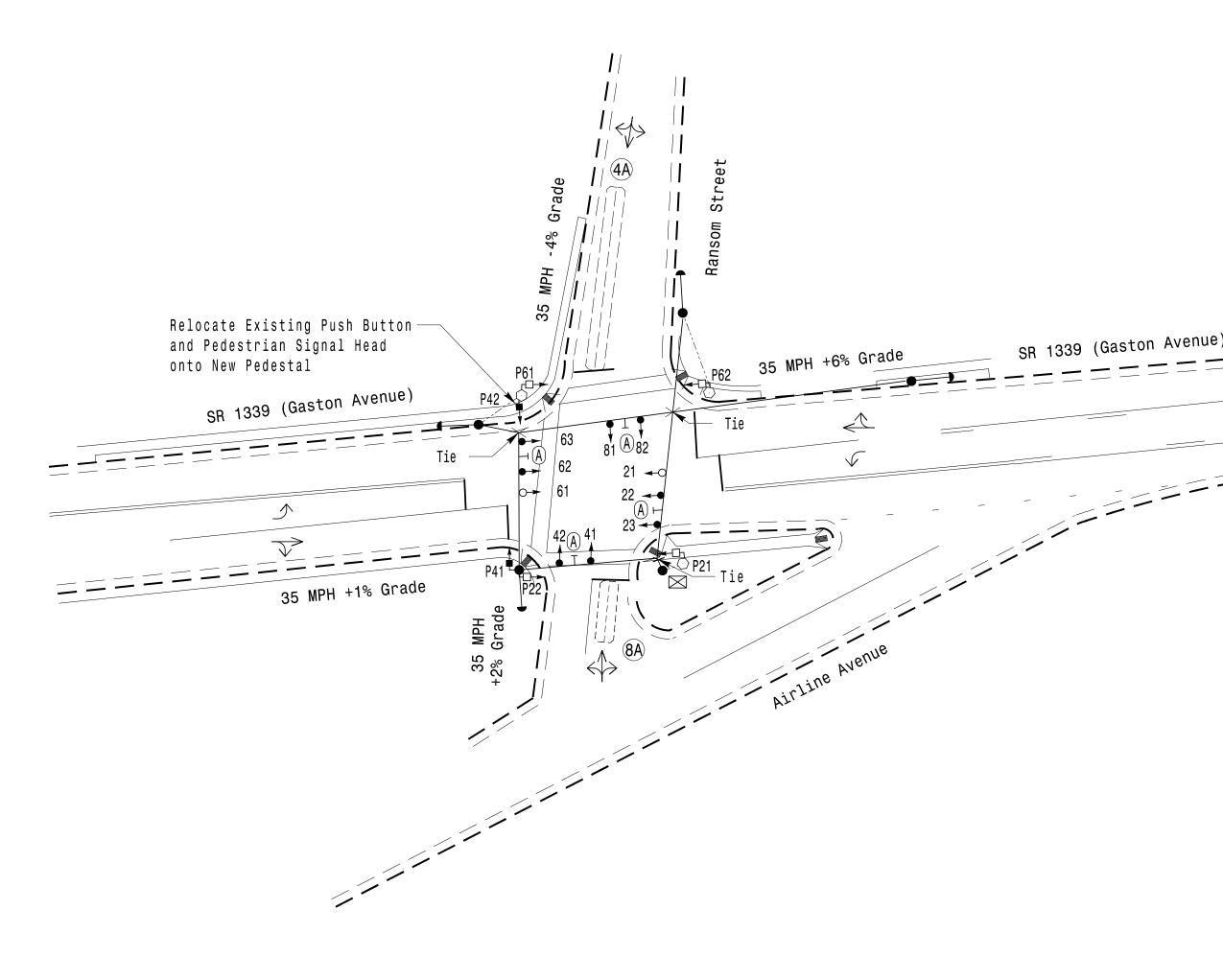


SIGNAL FACE I.D.

All Heads L.E.D.



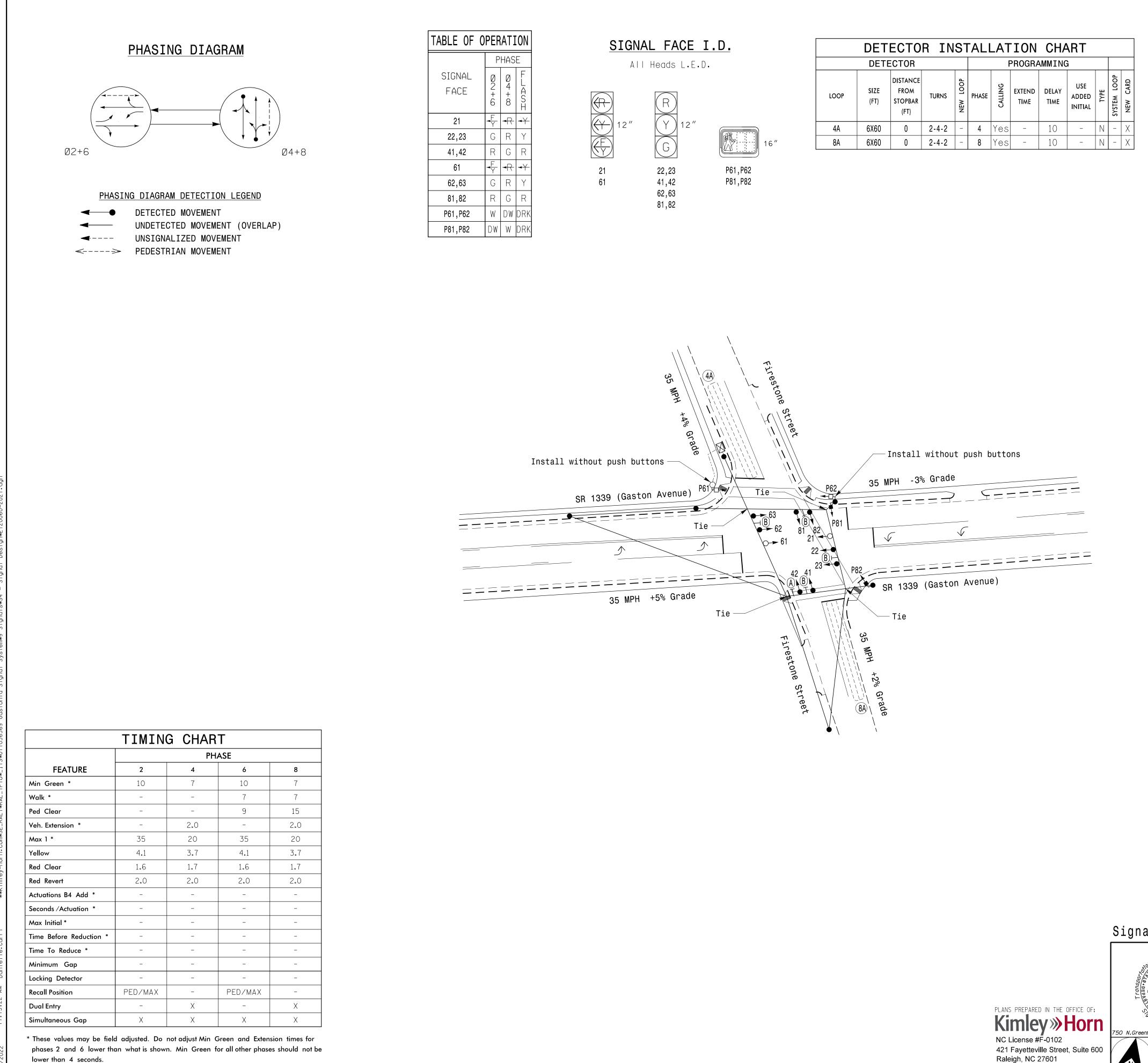
DETECTOR INSTALLATION CHART										
	DETE	CTOR				F	PROGRA	MMING	j	
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TUVT
4A	6X60	0	2-4-2	-	4	Yes	-	-	-	1
8A	6X20	0	2-4-2	-	8	Yes	_	÷	-	
	4A	LOOP SIZE (FT) 4A 6X60	DETECTORLOOPSIZEDISTANCE(FT)FROMSTOPBAR(FT)(FT)(FT)4A6X600	DETECTORLOOPSIZE (FT)DISTANCE FROM (FT)TURNS4A6X6002-4-2	DETECTORLOOPSIZE (FT)DISTANCE FROM (FT)TURNSO O M M4A6X6002-4-2-	DETECTORLOOPSIZE (FT)DISTANCE FROM (FT)TURNSD 	DETECTORLOOPSIZE (FT)DISTANCE FROM STOPBAR (FT)TURNSOO AU TURNSOO AU AUPHASEDI AU AU4A6X6002-4-2-4Yes	DETECTORPROGRALOOPSIZE (FT)DISTANCE FROM STOPBAR (FT)TURNS0 N LURNS0 N N N NPHASEN N N N N N NN N N N N N NN N N N N N N N N NN N	DETECTORPROGRAMMINGLOOPSIZE (FT)DISTANCE FROM STOPBAR (FT)TURNSO A MPHASEO M MO M MPHASEO M MO M MDELAY TIME4A6X6002-4-2-4Yes	DETECTORPROGRAMMINGLOOPSIZE (FT)DISTANCE FROM STOPBAR (FT)TURNSO O MPHASEVI MEXTEND TIMEDELAY TIMEUSE ADDED INITIAL4A6X6002-4-2-4Yes







	PROJEC	CT REFERENCE NO.	
		C - 5703	SHEET NO. Sig.29.0
			01912010
USE ZARD CARD NEW CARD	2 Phase Semi-Actuated Gastonia Signal System		
- N - X	NOTES		
<u>- N - X</u> <u>- N - X</u>	 Refer to "Roadway Standard Drawings NCDU January 2018 and "Standard Specifications f and Structures" dated January 2018. Do not program signal for late night flashing operation unless otherwise directed by the E Reposition existing signal heads numbered 22, 23, 62, and 63. Set all detector units to presence mode. Locate new cabinet so as not to obstruct sigh of vehicles turning right on red. Omit "WALK" and flashing "DON'T WALK" w pedestrian calls. Program pedestrian heads to countdown the "Don't Walk" time only. Pavement markings are existing. Maximum times shown in timing chart are for operation only. Coordinated signal system tin shall supersede these values. Existing signal heads 21, 22, 61, and 62 have relabeled to 22, 23, 62, and 63, respectively. Install new cabinets on the exisiting foundation All new cabinets and base extenders shall be See Project Special Provisions for details. All proposed signal heads shall be black in co Special Provisions for details. All proposed pedestrian pedestals and pusht be black in color. See Project Special Provisi 5. City system data: Controller Asset #0059. 	or Roads ngineer. nt distance ith no flashing free-run ning values e been n. e black in color olor. See Proje	ect nall
	LEGEND		
	PROPOSED EXIS Traffic Signal Head Modified Signal Head S		
	PROPOSED EXIS Traffic Signal Head Modified Signal Head Modified Signal Head Signal Pedestrian Signal Head Pedestrian Signal Head Type II Signal Pedestal Signal Pole with Guy Signal Pole with Sidewalk Guy Inductive Loop Detector Inductive Loop Detector Inductive Loop Detector Inductive Loop Detector Induction Box Induction Box Junction Box Induction Box Induction Box		
nal Upgrade	PROPOSED EXIS Traffic Signal Head Modified Signal Head Modified Signal Head Signal Pedestrian Signal Head Pedestrian Signal Head Type II Signal Pedestal Signal Pole with Guy Signal Pole with Sidewalk Guy Inductive Loop Detector Inductive Loop Detector Inductive Loop Detector Inductive Loop Detector Induction Box Induction Box Junction Box Induction Box Induction Box		SS ALL



lower than 4 seconds.

(919) 677-2000

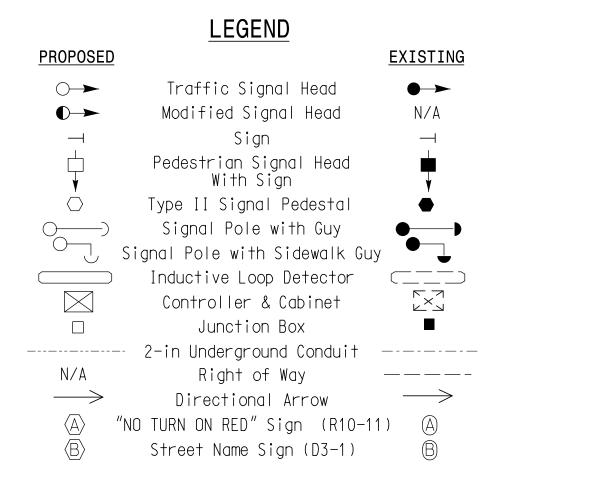
PROJECT REFERENCE NO.	SHEET NO.
C-5703	Sig.30.0

2 Phase Semi-Actuated Gastonia Signal System

NOTES

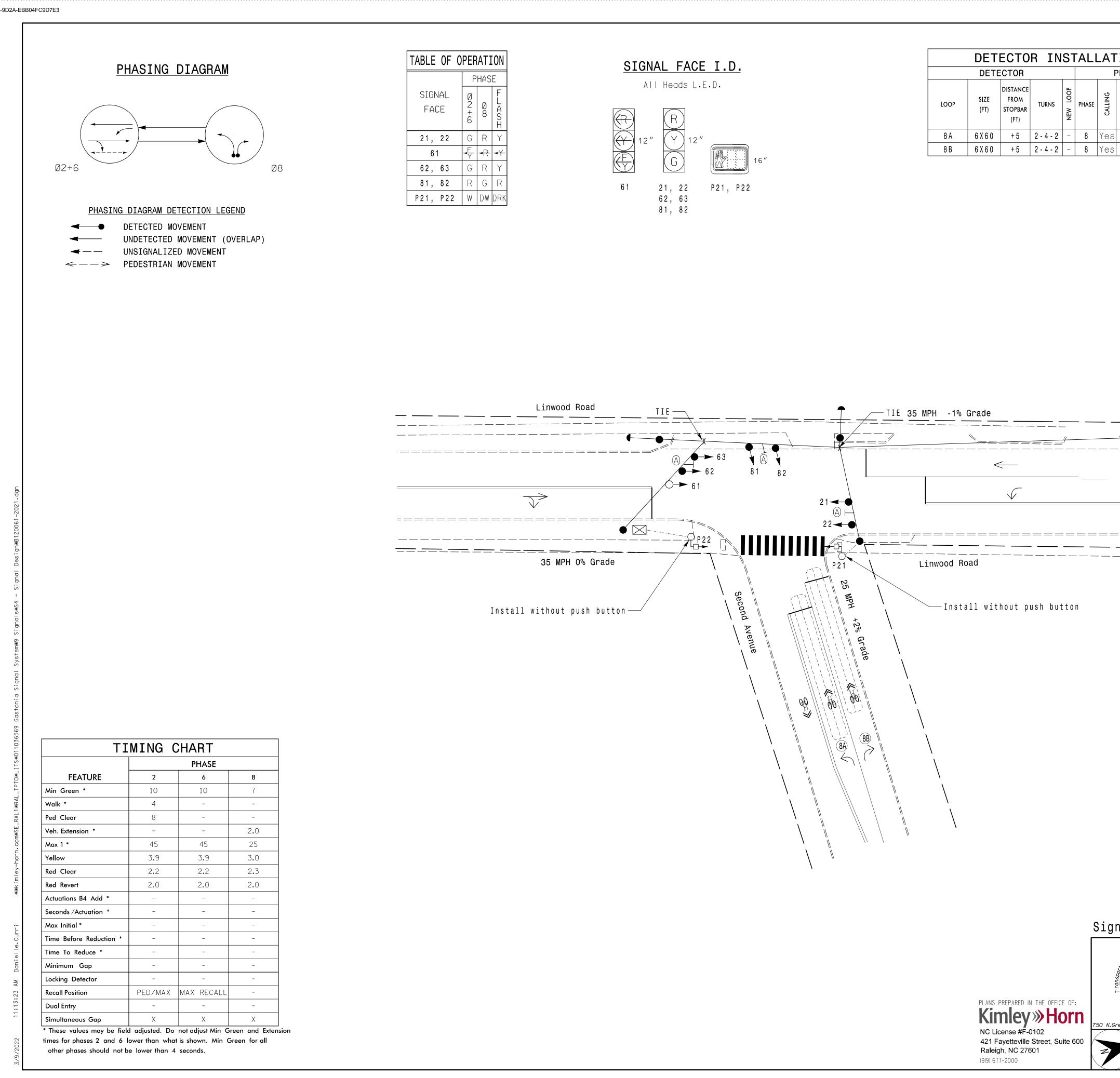
- 1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- 2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- 3. Reposition existing signal heads numbered 22, 23, 62, 63, and P81.
- 4. Set all detector units to presence mode.
- 5. In the event of loop replacement, refer to the current ITS and Signal Design Manual and submit a Plan of Record to the Signal Design Section.
- 6. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- 7. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls on phase 8.
- 8. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- 9. Pavement markings are existing.
- 10. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
- 11. Install new cabinet on the existing cabinet foundation.
- 12. Existing signal heads 21, 22, 61, & 62 have been relabeled to 22, 23, 62, & 63, respectively.
- 13. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
- 14. All proposed signal heads shall be black in color. See Project Special Provisions for details.
- 15. All proposed pedestrian pedestals and pushbutton posts shall
- be black in color. See Project Special Provisions for details. 16. City of system data:

Controller Asset #0060.



na.	L Upgrade			DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
	Prepared For: Nobility and No MORTH CARCO	SR 1339 (Gasto	on Avenue)	CARO
Transport	DIVISION NIME + WOIL	Firestone	SEAL 044434	
S	A A A A A A A A A A A A A A A A A A A	Division 12 Gaston Co	ounty Gastonia	ETC. KNGINEER
00	Design Section	PLAN DATE: May 2021 REVI	IEWED BY: SL Phillips	P BAUMAN
Greenfi	eld Pkwy,Garner,NC 27529	PREPARED BY: CF Davis REVI	iewed by: KP Baumann	
	SCALE	REVISIONS	INIT. DATE	DocuSigned by:
	0 30			Ken Vana 3/11/2022
				SIGNATURE DATE
V	1 "=30'			SIG. INVENTORY NO. 12-0060

DocuSign Envelope ID: EE0A7A97-01F5-4BA9-9D2A-EBB04FC9D7E3

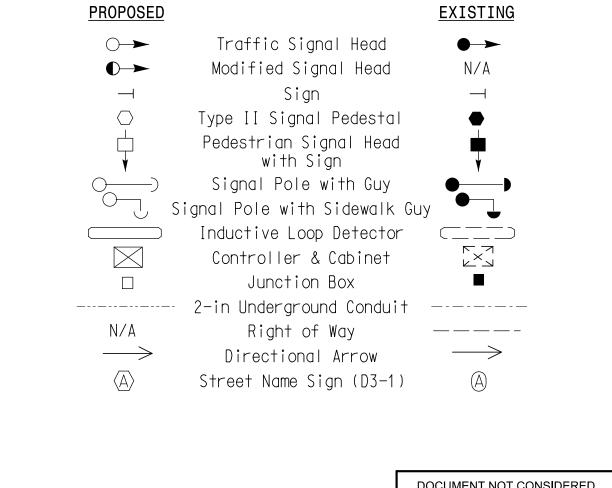


DETECTOR INSTALLAT									
			F	י					
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING			
8 A	6 X 6 0	+ 5	2 - 4 - 2	-	8	Yes			
8 B	6 X 6 0	+ 5	2 - 4 - 2	_	8	Yes			

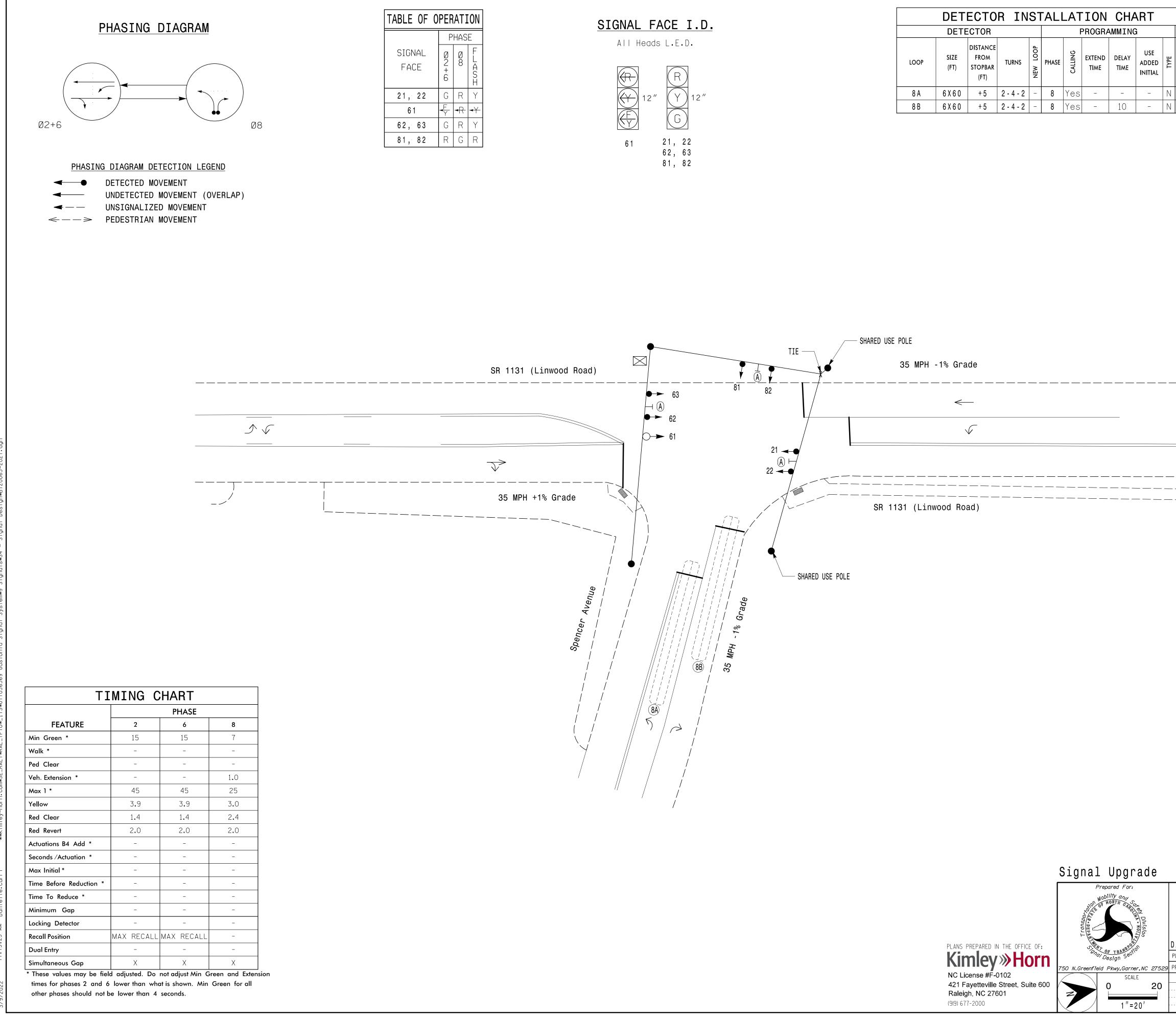
								PROJECT REFERENCE NO.	SHEET NO.
								C-5703	Sig.31.0
	_			1			0 Dh	260	
UGRA	AMMING	ג 		4			2 Ph Semi-Ac		
XTEND DELAY TIME TIME TIME TIME INITIAL INITIAL				1			Gastonia Sig		
-	-	_	Ν	-	Х				
-		_	N	_	Х				
						Ja an 2. Do op 3. Se 4. In ITS Pla 5. Lo of 6. Pro "D 7. Ex	NOTES efer to "Roadway Standard nuary 2018 and "Standard d Structures" dated Januar o not program signal for late eration unless otherwise di et all detector units to prese the event of loop replacem S and Signal Design Manua an of Record to the Signal I cate new cabinet so as not vehicles turning right on re- ogram pedestrian heads to on't Walk" time only.	Specifications for Road y 2018. e night flashing rected by the Engineer. nce mode. ent, refer to the current al and submit a Design Section. to obstruct sight distan d. countdown the flashing	s ce I is
						pe the 8. Pa 9. Ma op	an. Change all signal heads destrian push buttons, and e phasing shown. evement markings are exist aximum times shown in timi eration only. Coordinated s all supersede these values	loops as needed to ach ing. ing chart are for free-run ignal system timing valu	nieve

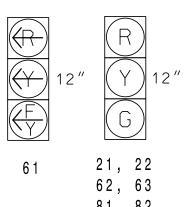
- 10. Install new cabinet on the existing cabinet foundation.
- 11. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
- 12. All proposed pedestrian signal heads and pedestals shall be black in color. See Project Special Provisions for details.
- 13. City system data:
- Controller Asset: #0061





nal	Upgrade							DOCUMENT NOT CONSIDERE FINAL UNLESS ALL SIGNATURES COMPLETED	D
	Arepared For: Aphility and NORTH CARD DUISION		Linwoo a Second	-				SEAL 044434	
Signa	Destan Section	Division PLAN DATE:	12 Gastor May 2021	n County REVIEWED BY:	SL	Ga Phil	istonia lips	EFT ANGINEER	
Greenfle	Id Pkwy,Garner,NC 2752	PREPARED BY:	SP Pennington	REVIEWED BY:	ΚP	Baum	ann		
	SCALE 0 20 1 "=20'		REVISIONS			NIT.	DATE	DocuSigned by: Ken Barren 3/11/2 50 GREARE DATE SIG. INVENTORY NO. 12-00	<u> </u>





	DET	ЕСТО	R IN	S1	ALI	_AT	•
	DETE	CTOR				F	2
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	
8 A	6 X 6 0	+ 5	2 - 4 - 2	-	8	Yes	
8 B	6 X 6 0	+ 5	2 - 4 - 2	-	8	Yes	

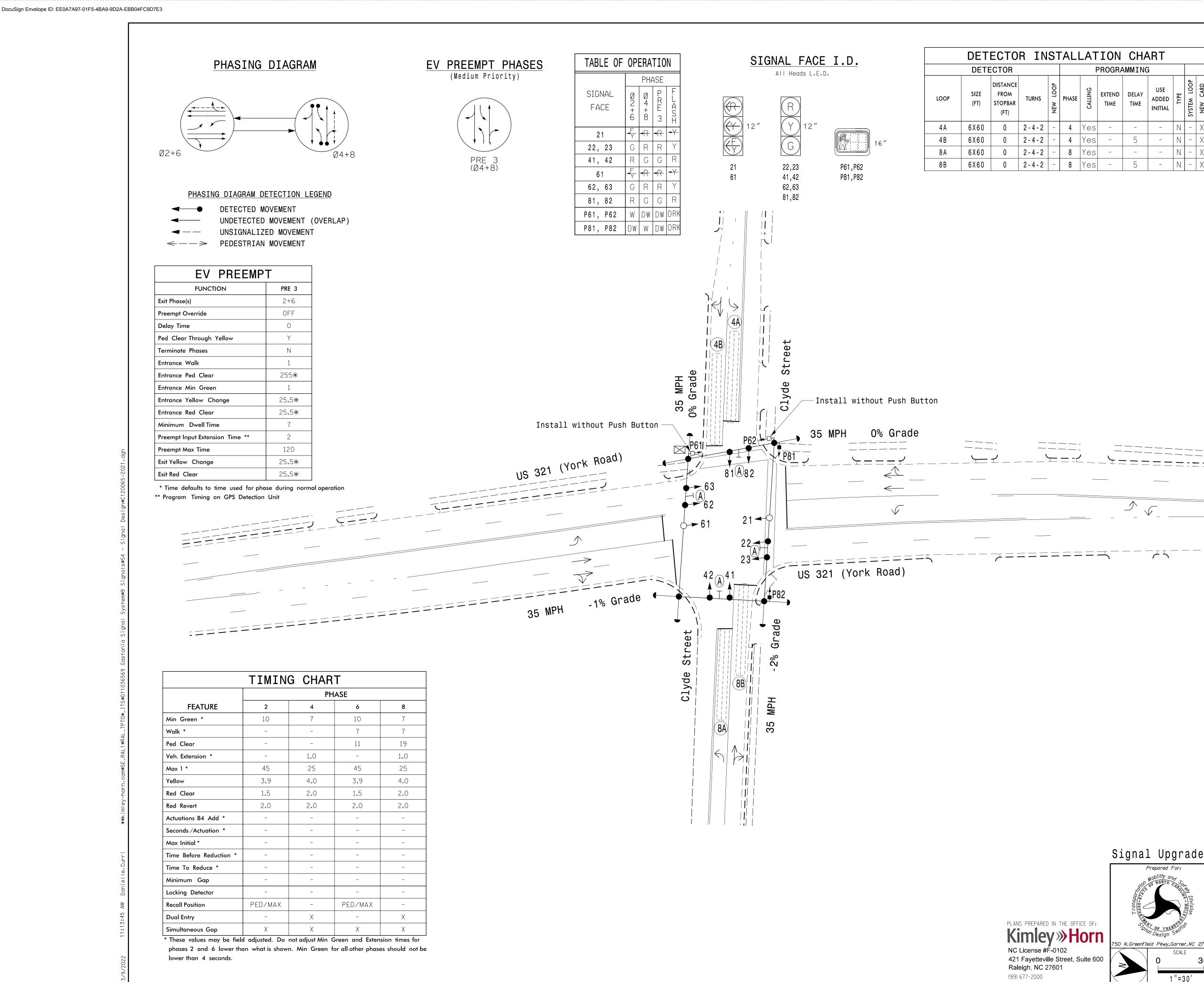
					PROJECT	REFERENCE NO.	SHEET NO
ION CHA					C	-5703	Sig.32.0
ROGRAMMING					2 Phase		
	a 		₽.		Semi-Actuated		
EXTEND DELAY TIME TIME	USE ADDED INITIAL	ТҮРЕ	SYSTEM LOOP	NEW CARD	Gastonia Signal Sy		
	-	Ν	-	Х			
- 10	_	N	_	Х			
					 NOTES Refer to "Roadway Standard Drawings NC January 2018 and "Standard Specification and Structures" dated January 2018. Do not program signal for late night flashin operation unless otherwise directed by the Set all detector units to presence mode. In the event of loop replacement, refer to the ITS and Signal Design Manual and submite Plan of Record to the Signal Design Section Locate new cabinet so as not to obstruct so of vehicles turning right on red. Existing phase 4 has been changed to phaplan. Change all signal heads, pedestrian push buttons, and loops as needed. 	ng e Engineer. he current t a on. sight distance ase 8 on this signal heads,	

- 7. Pavement markings are existing.
- 8. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
- 9. Install new cabinet on the existing cabinet foundation.
- 10. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
- 11. City system data Controller Asset: #0063

<u>LEGEND</u>

<u>PROPOSED</u>		<u>EXISTING</u>
$\bigcirc \rightarrow$	Traffic Signal Head	●→
●→	Modified Signal Head	N/A
—1	Sign	_
Ļ ▼	Pedestrian Signal Head With Push Button & Sign	ui de la constante de la cons
	Signal Pole with Guy	•
S C	ignal Pole with Sidewalk Gu	y •
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N⁄A	Right of Way	
\longrightarrow	Directional Arrow	\rightarrow
$\langle A \rangle$	Street Name Sign (D3-1)	\bigcirc

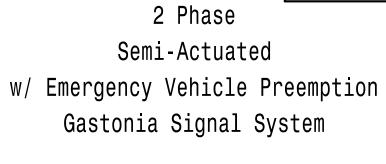
nal	. Upgrade				DOCUMENT NOT CO FINAL UNLESS SIGNATURES COM	ALL
	Prepared For: Nobility and Screet Division	Spencer	at ^ Avenue		SEAL 044434	
S.	A CONNER TO	Division 12 Gasto	on County	Gastonia	ENGINEER.	
Ung	Design Sect	PLAN DATE: May 2021	REVIEWED BY: S	SL Phillips	P BAU	WALL
Greenfle	eld Pkwy,Garner,NC 27529	PREPARED BY: SP Pennington	REVIEWED BY:	(P Baumann		
	SCALE	REVISIONS		INIT. DATE	DocuSigned by:	
	0 20				Ken Daman	3/11/2022
					5DG7R9A86BGB#4Z	DATE
	1 "=20'	• • • • • • • • • • • • • • • • • • • •			SIG. INVENTORY NO.	12-0063



Min Green *	10	7	10	7
Walk *	-	-	7	7
Ped Clear	-	-	11	19
Veh. Extension *	-	1.0	-	1.0
Max 1 *	45	25	45	25
Yellow	3.9	4.0	3.9	4.0
Red Clear	1.5	2.0	1.5	2.0
Red Revert	2.0	2.0	2.0	2.0
Actuations B4 Add *	_	_	-	_
Seconds / Actuation *	-	-	-	-
Max Initial *	-	-	-	-
Time Before Reduction *	-	-	-	-
Time To Reduce *	-	-	-	-
Minimum Gap	_	_	-	-
Locking Detector	_	-	-	-
Recall Position	PED/MAX	_	PED/MAX	-
Dual Entry	_	Х	_	Х
Simultaneous Gap	Х	Х	Х	Х

PROJECT REFERENCE NO.	SHEET NO.
C - 5703	Sig.33.0

HART										
à										
USE ADDED INITIAL	ТҮРЕ	SYSTEM LOOP	NEW CARD							
-	Ν	-	Х							
-	Ν	-	X X X							
-	N	_	Х							
_	Ν	-	Х							
	USE	USE ADDED INITIAL - N - N - N	USE ADDED INITIAL - N - - N - - N -							

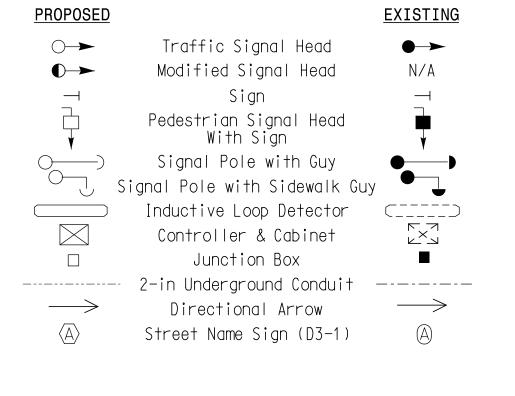


NOTES

- 1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- 2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- 3. Reposition existing signal heads numbered 22, 23, 62, and 63.
- 4. Set all detector units to presence mode.
- 5. In the event of loop replacement, refer to the current ITS and Signal Design Manual and submit a Plan of Record to the Signal Design Section.
- 6. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- 7. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls on phase 8.
- 8 Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- 9. Remove existing "Yield" signs-(R1-2).
- 10. Pavement markings are existing.
- 11. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
- 12. Install new cabinet on the existing cabinet foundation.
- 13. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
- 14. All proposed pedestrian signal heads shall be black in color. See Project Special Provisions for details.
- 15. Reconnect lead-in cable to separate loops 4A, 4B, 8A, & 8B as shown.
- 16. Install GPS emergency preemption system per manufacturer's instructions to achieve preemption needed, as shown in phasing diagram.
- 17. City system data:

Controller Asset #0065.

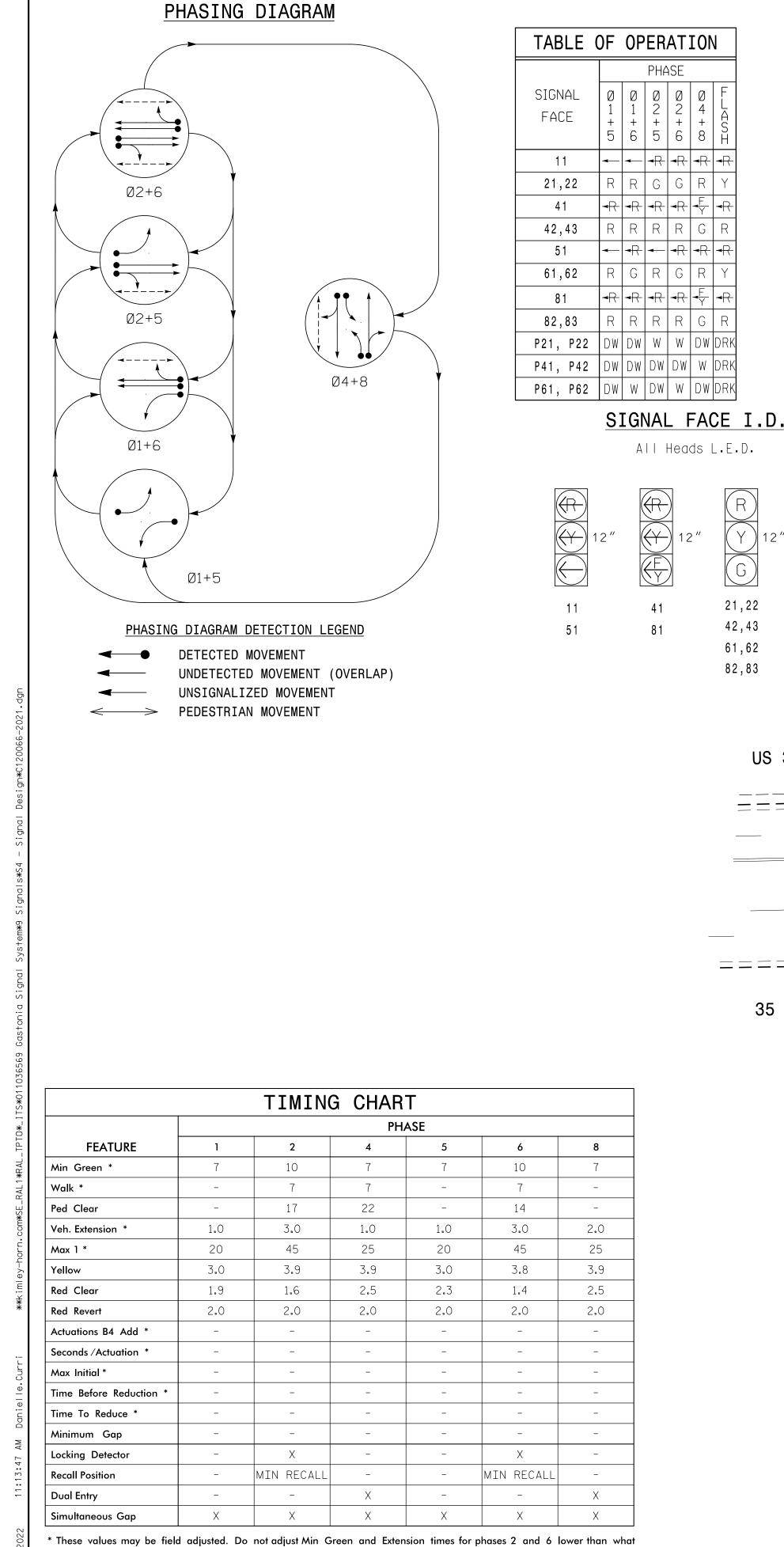
LEGEND



nal Upgrade		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
Prepared For: Mobility and Sole Division MORTH CARD DIVISION	US 321 (York Road) at Clyde Street	SEAL 044434
	Division 12 Gaston County Gas	tonia
Grou Design Section	PLAN DATE: May 2021 REVIEWED BY: SL Philli	ps P. BAUMAN
reenfield Pkwy,Garner,NC 27529	PREPARED BY: DM Curri REVIEWED BY: KP Bauman	
SCALE	REVISIONS INIT.	DATE DocuSigned by:
0 30		Kan Vanan 3/11/2022
		······ <u>SIGNATURE</u> DATE
1 "=30'		SIG. INVENTORY NO. 12-0065

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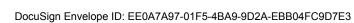
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* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower the is shown. Min Green for all other phases should not be lower than 4 seconds.

			ECTO ECTOR	R IN	IS1	TALI						
	LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	ТҮРЕ	SYSTEM LOOP NFW CARD
	1 A 2 A 2 B	6X60 6X6 6X6	0 7 [.] 0 7 [.] 0	2-4-2 EXIST EXIST	-	1 2 2	Yes Yes Yes		3 - -	-	N N N	- X - X - X
	4 A 4 B 5 A 6 A	6X60 6X60 6X60 6X6	0 0 0 70	2-4-2 2-4-2 2-4-2 EXIST	-	4 4 5 6	Yes Yes Yes Yes	-	- 10 3 -	_	N N N	- X - X - X - X
	6B 8A 8B	6X6 6X60 6X60	70 70 0 0	EXIST EXIST 2-4-2 2-4-2	-	6 8 8	Yes Yes Yes	-	- - 10	-	N N N N	- X - X - X
$12''$ $P21, P22 \\ P41, P42 \\ P61, P62$ $3321 (York Street) P42 \\ P61$	A 62 81 82 83	A) P 6 2 1		35 MF	РН ————————————————————————————————————	0%		de 6 6 6 6 6 7 6 7 6 7				
→ (2A) → (2B) P2 35 MPH -1% Grade TI	A3 42 41 2 A3 42 41 2 A A P41 IE Carolina Avenue 8		35 MPH +3% Grade	TIE			32	21 (Y	 York	Stre	et)
								K NC 42 Ra	ANS PREPAR C License 21 Fayette aleigh, NC 9) 677-2000	e #F-0102 eville Stre C 27601	H	or

	PF	ROJECT REFERENCE NO.	SHEET NO.
		C-5703	Sig.34.0
	5 Phase		
	Fully Actuated		
	Gastonia Signal System		
	1. Refer to "Roadway Standard Drawings NCD	batch "TO(
	January 2018 and "Standard Specifications		
	and Structures" dated January 2018.		
	2. Do not program signal for late night flashing		
	operation unless otherwise directed by the E	Engineer.	
	3. Phase 1 and/or phase 5 may be lagged.		
	4. Reposition existing signal heads numbered	42, 43,	
	82,and 83.		
	5. Set all detector units to presence mode.	- ourroat	
	In the event of loop replacement, refer to the ITS and Signal Design Manual and submit a		
	Plan of Record to the Signal Design Section		
	7. Omit "WALK" and flashing "DON'T WALK" v		
	pedestrian calls.	-	
	8. Program pedestrian heads to countdown the	e flashing	
	"Don't Walk" time only.	-	
	9. Remove existing "Left Turn Only" sign (R3-5	5L).	
	10. Pavement markings are existing	undation	
	11. Install new cabinet on the existing cabinet for 12. Existing signal heads 41, 42, 81, and 82 have		
	to 42, 43, 82, and 83, respectively.		
	13. All new cabinets and base extenders shall b	e black in color.	
	See Project Special Provisions for details.		
	14. All proposed pedestrian signal heads shall b	be black in color.	
	See Project Special Provisions for details.		
	15. City system data:		
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	15. City system data: Controller Asset #0066.		
	15. City system data:	EXISTING	
	15. City system data: Controller Asset #0066. <u>LEGEND</u>	EXISTING •-•	
	15. City system data: Controller Asset #0066. <u>LEGEND</u> <u>PROPOSED</u>	EXISTING N/A	
	15. City system data: Controller Asset #0066. <u>LEGEND</u> <u>PROPOSED</u> Traffic Signal Head Modified Signal Head Sign	•->	
	15. City system data: Controller Asset #0066. <u>LEGEND</u> <u>PROPOSED</u>	•->	
	15. City system data: Controller Asset #0066. <u>LEGEND</u> <u>PROPOSED</u> Traffic Signal Head Modified Signal Head Sign	•->	
	15. City system data: Controller Asset #0066. <u>LEGEND</u> <u>PROPOSED</u> → Traffic Signal Head → Modified Signal Head → Pedestrian Signal Head With Push Button & Sign	N/A 	
	15. City system data: Controller Asset #0066. <u>PROPOSED</u> Traffic Signal Head Modified Signal Head Sign Pedestrian Signal Head With Push Button & Sign Signal Pole with Sidewalk G Inductive Loop Detector	N/A H	
	15. City system data: Controller Asset #0066. <u>LEGEND</u> <u>PROPOSED</u> Traffic Signal Head Modified Signal Head Sign Pedestrian Signal Head With Push Button & Sign Signal Pole with Sidewalk G Signal Pole with Sidewalk G Inductive Loop Detector Controller & Cabinet	N/A 	
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Prepared For:	15. City system data: Controller Asset #0066. PROPOSED → Traffic Signal Head → Modified Signal Head → Modified Signal Head → Sign Pedestrian Signal Head With Push Button & Sign Signal Pole with Guy Signal Pole with Sidewalk G Inductive Loop Detector Controller & Cabinet N/A Curb Ramp A Street Name Sign (D3-1) US 321 (York Street) at Carolina Avenue	N/A N/A N/A N/A DOCUMENT NOT C FINAL UNLES SIGNATURES CO SEAL 044434	SS ALL DMPLETED
Prepared For:	15. City system data: Controller Asset #0066. PROPOSED PROPOSED Traffic Signal Head Modified Signal Head Pedestrian Signal Head Signal Pole with Guy Signal Pole with Sidewalk G Inductive Loop Detector Controller & Cabinet N/A US 321 (York Street) at	N/A N/A N/A N/A DOCUMENT NOT C FINAL UNLES SIGNATURES CO SEAL 044434	SS ALL DMPLETED
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Prepared For: NobIlity and NobETH CARE POINTS CONTRACT OF DIVISION CONTRACT OF DIVIS	15. City system data: Controller Asset #0066. PROPOSED PROPOSED	N/A N/A N/A N/A DOCUMENT NOT C FINAL UNLESSIGNATURES CO SIGNATURES CO SEAL O44434 SEAL O44434 SEAL O44434	SS ALL DMPLETED
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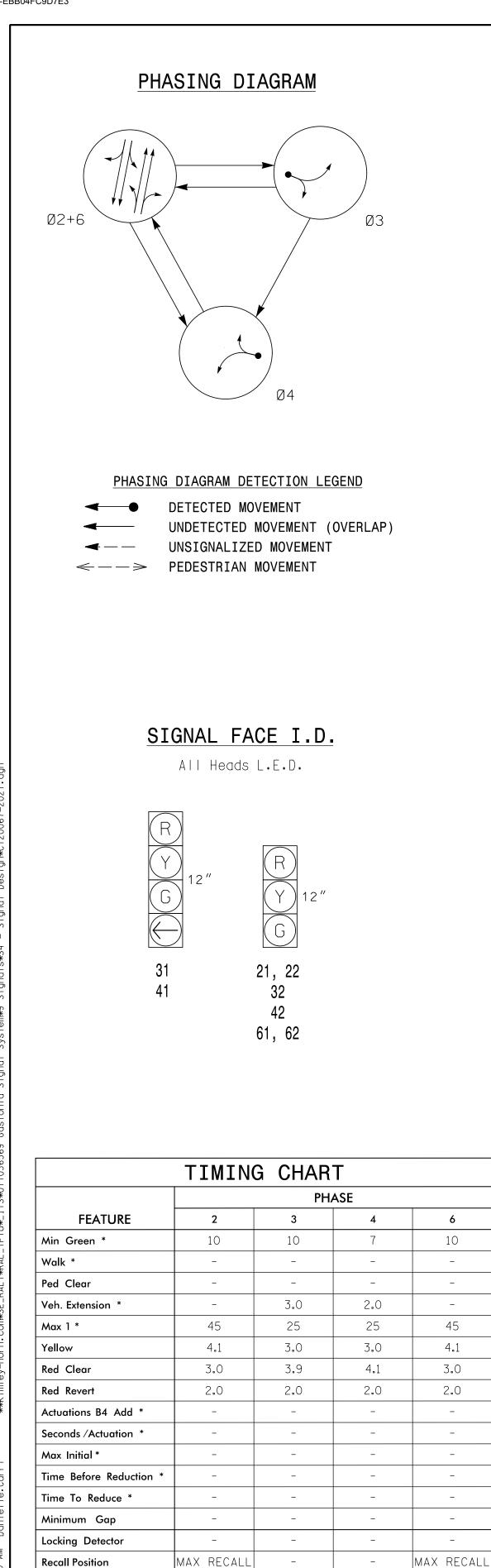


TABLE OF	OPE	ERA	TIO	N				
PHASE								
SIGNAL FACE	Ø2+6	Ø 3	Ø 4	LUANI				
21, 22	G	R	R	Y				
31	R	G	R	R				
32	R	G	R	R				
41	R	R	G	R				
42	R	R	G	R				
61, 62	G	R	R	Y				

* 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.

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Simultaneous Gap

Dual Entry

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-45

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3.0

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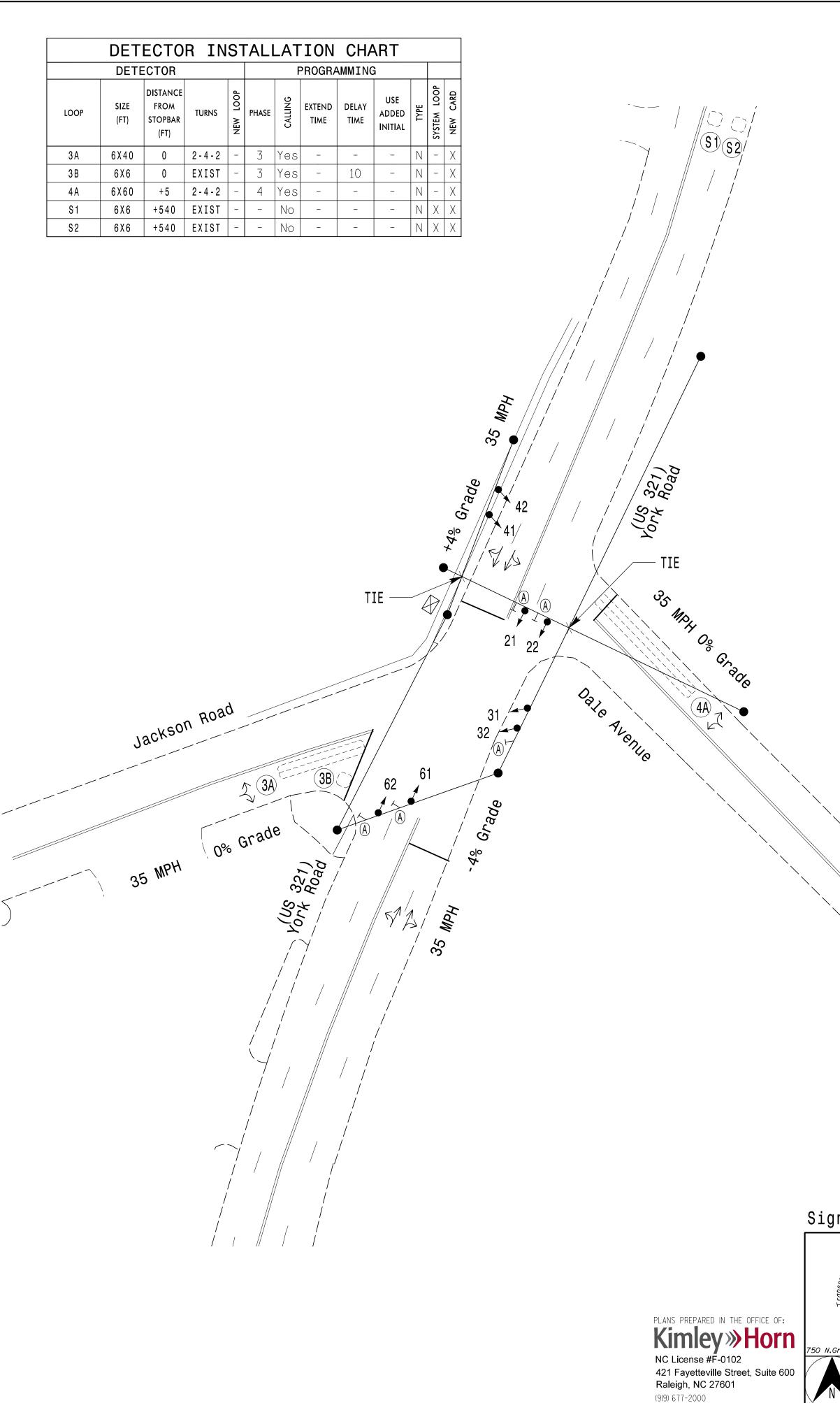
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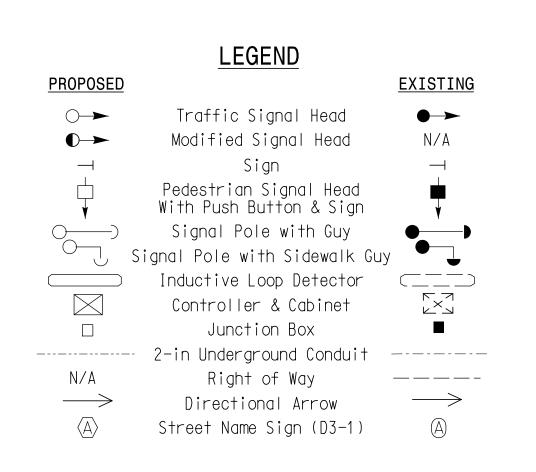


C-5703	Sig.35.0
PROJECT REFERENCE NO.	SHEET NO.

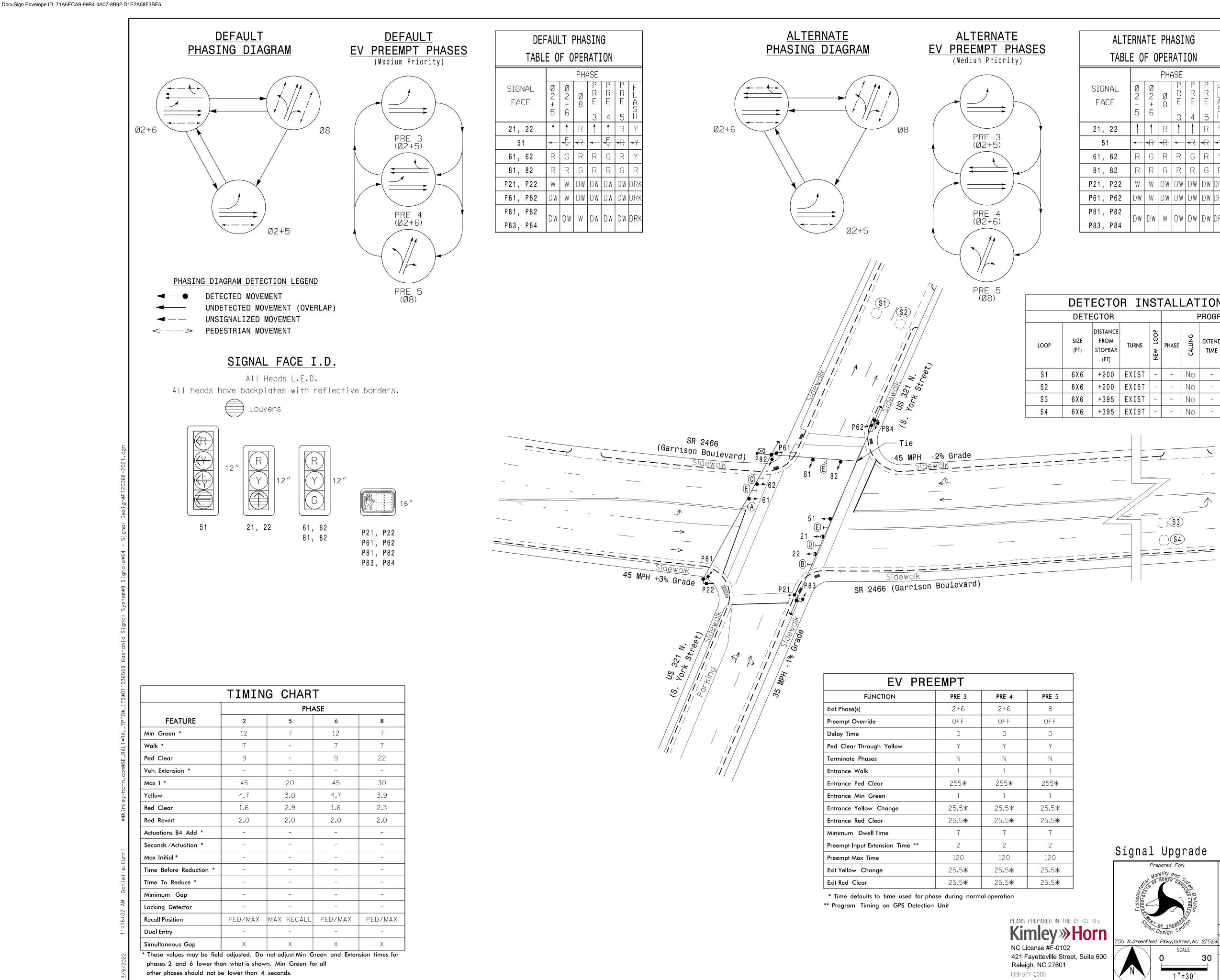
3 Phase Semi-Actuated Gastonia Signal System

NOTES

- 1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- 2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- 3. The order of phase 3 and phase 4 may be reversed.
- 4. Set all detector units to presence mode.
- 5. In the event of loop replacement, refer to the current ITS and Signal Design Manual and submit a Plan of Record to the Signal Design Section.
- 6. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- 7. Pavement markings are existing.
- 8. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
- 9. Install new cabinet on the existing cabinet foundation.
- 10. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
- 11. City system data: Controller Asset: #0067



gna]	L Upgrad	е								DOCUMENT NOT CO FINAL UNLESS SIGNATURES COM	ALL
	Prepared For: Nobility ond WORTH CAROLINE OUTSION		J	(US 32 ackson	a	York H t /Dale		e.		SEAL 044434	
S.			Division	12 G	aston	County		G	astonia		
Sno	Design Section		PLAN DATE:	May 2021		REVIEWED BY:	SL	Phil	lips	P BAN	MATT
Greenfie	eld Pkwy,Garner,NC	27529	PREPARED BY:	CF Davis		REVIEWED BY:	KP I	Baum	ann		\` \
	SCALE			REVISIONS			IN	IT.	DATE	DocuSigned by:	
	0	30								Nem Jaman	3/11/2022
										SIGNATURE	DATE
·y	1 "=30'									SIG. INVENTORY NO.	12-0067



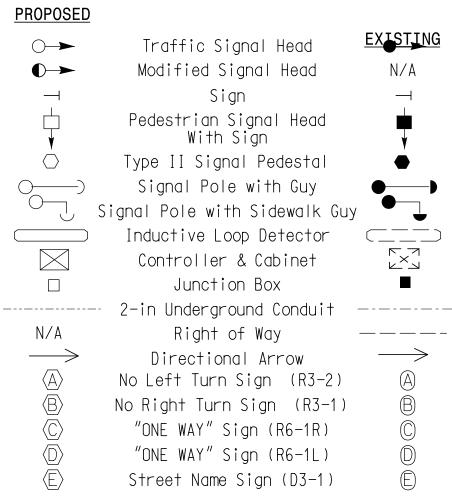
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OF OPERATION									
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N	W	DW	DW	DW	DW	DRK			
N	DW	W	DW	DW	DW	DRK			

ΙN	INSTALLATION CHART								
PROGRAMMING									
NS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	ТҮРЕ	SYSTEM LOOP	NEW CARD
ST	-	-	No	-	-	-	Ν	Х	Х
ST	-	-	No	-	-	-	Ν	Х	Х
ST		_	No	_	_	_	Ν	Х	Х
ST	-	_	No	_	_	_	Ν	Х	Х

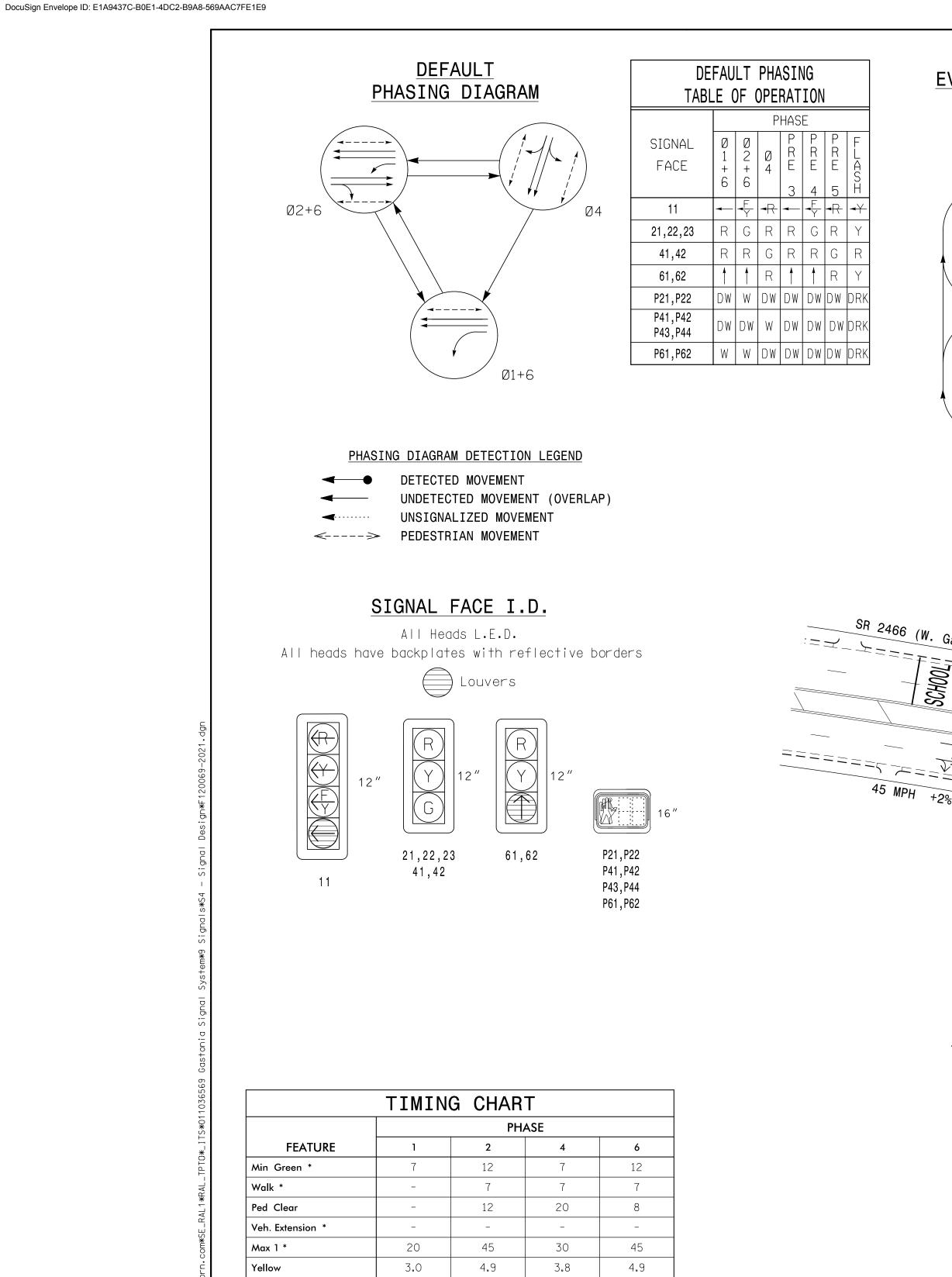
PROJECT REFERENCE NO. SHEET NO. C-5703 Sig.36.0 3 Phase Pre-Timed w/ Alternate Phasing Operation and Emergency Vehicle Preemption Gastonia Signal System NOTES 1. Refer to "Roadway Standard Drawings NCDOT" dated

- January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- 2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer. 3. Phase 5 may be lagged.
- 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.
- 8. The City Engineer or their representative will determine the hours of use for each phasing plan.
- 9. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
- 10. Install new cabinet on the existing cabinet foundation. 11. All new cabinets and base extenders shall be black in
- color. See Project Special Provisions for details. 12. Existing signal heads 41 and 42 have been relabeled to 81 and 82, respectively.
- 13. Install GPS emergency preemption system per manufacturer's instructions to achieve preemption needed, as shown in phasing diagram.
- 14. City system data:

Controller Asset #0068.



nal Upgrade		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
Prepared For:	US 321 N. (S. York Street)	
Nobility and Sol Division	at SR 2466 (Garrison Boulevard) Division 12 Gaston County Gaston	SEAL 044434
CF TRANSPORTO	PLAN DATE: May 2021 REVIEWED BY: SL Phillips	La ENGINEER A
^{roy} Design ^{56°} Greenfield Pkwy,Garner,NC 27529		
SCALE 0 30	REVISIONS INIT. DATE	DocuSigned by: Kan Barran 3/11/2022
1 "=30'		SIG. INVENTORY NO. 12-0068



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PED/MAX

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PED/MAX

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* 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.

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MAX RECALL

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PED/MAX

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Simultaneous Gap

Red Clear

Red Revert

Max Initial *

Actuations B4 Add *

Seconds /Actuation

Time To Reduce *

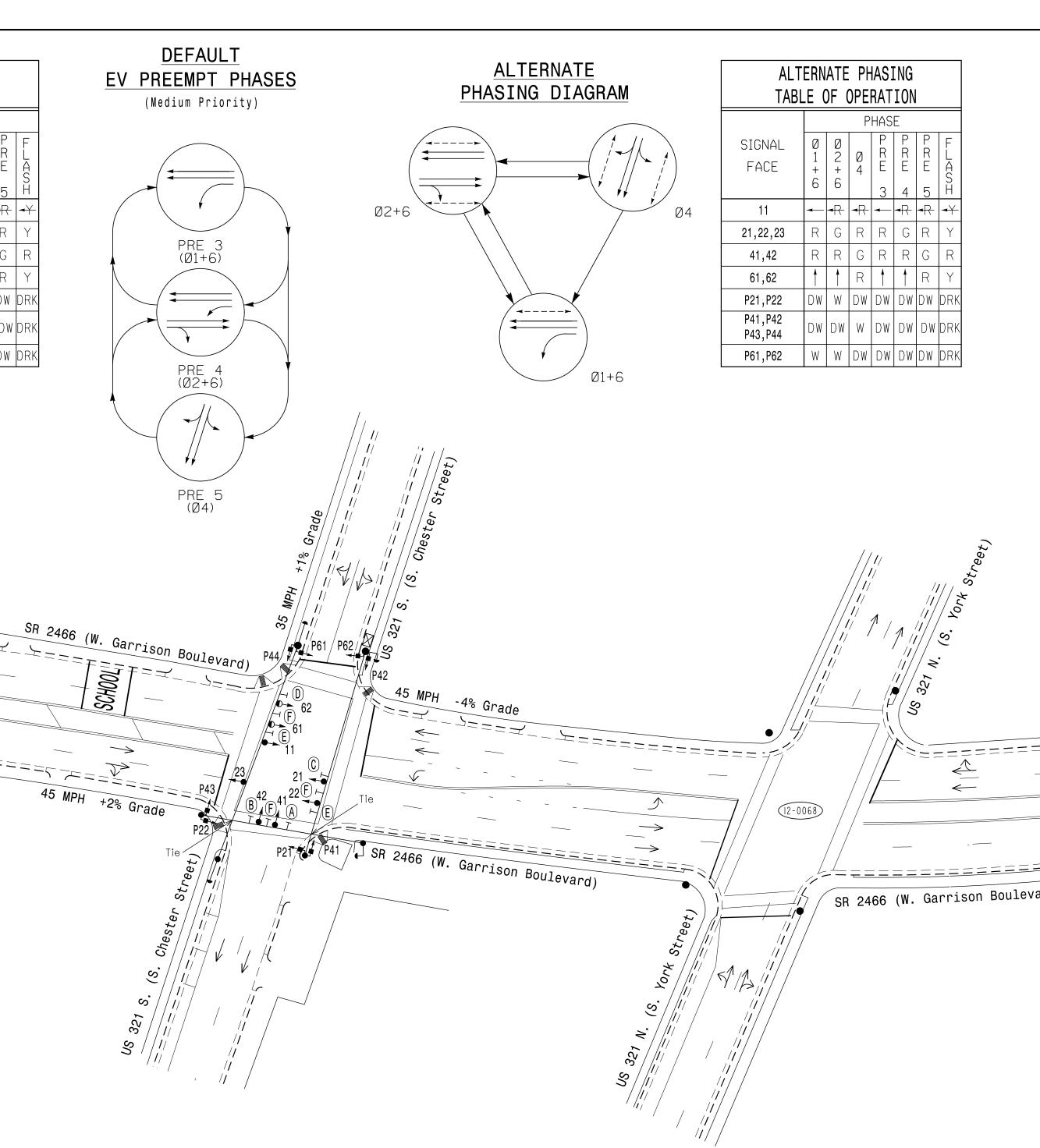
Minimum Gap

Locking Detector

Recall Position

Dual Entry

Time Before Reduction



EV PREEMPT						
FUNCTION	PRE 3	PRE 4	PRE 5			
Exit Phase(s)	2+6	2+6	4			
Preempt Override	OFF	OFF	OFF			
Delay Time	0	0	0			
Ped Clear Through Yellow	Y	Y	Y			
Terminate Phases	Ν	Ν	N			
Entrance Walk	1	1	1			
Entrance Ped Clear	255 米	255 米	255 米			
Entrance Min Green	1	1	1			
Entrance Yellow Change	25.5 米	25.5 米	25.5 米			
Entrance Red Clear	25.5 米	25.5 米	25.5 米			
Minimum Dwell Time	7	7	7			
Preempt Input Extension Time **	2	2	2			
Preempt Max Time	120	120	120			
Exit Yellow Change	25.5 米	25.5 米	25.5 米			
Exit Red Clear	25 . 5 *	25 . 5 *	25 . 5 *			

* Time defaults to time used for phase during normal operation

** Program Timing on GPS Detection Unit





			
ALTERNATE		PROJECT REFERENCE NO. C-5703	SHEET NO
EV PREEMPT PHASES		0-5705	Sig.37.
(Medium Priority)	3 Phase	`	
	Pre-Time	-	
	w/ Alternate Phasi		
	and Emergency Vehic	•	
	Gastonia Signa		
		-	
PRE 3 (Ø1+6)			
	NOTES		
	NOTEO		
	1 Defer to "Deedway Standard I	Drowingo NCDOT" dot	ad
	1. Refer to "Roadway Standard January 2018 and "Standard Standard	•	
PRE 4	and Structures" dated January	•	
(Ø2+6)	2. Do not program signal for late	• •	
	operation unless otherwise di	rected by the Engineer	•
	 Phase 1 may be lagged. Locate new cabinet so as not 	to obstruct sight distar	
	of vehicles turning right on rec	Ŭ	
PRE 5	5. Program pedestrian heads to		g
(Ø4)	"Don't Walk" time only.		
	 Pavement markings are existing. The City Engineer or their reputational content of the content of th	0	ino
	the hours of use for each pha		
	8. Maximum times shown in timi	•	n
	operation only. Coordinated s	• • •	ues
	shall supersede these values.		_
	 Install new cabinet on the exist All new cabinets and base exist 	J	
	See Project Special Provision		
	11. Install GPS emergency preem		ufacturer's
	instructions to achieve preem	ption needed, as show	n in
	phasing diagram. 12. City of system data:		
	Controller Asset #	40069.	
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vard)	LEGEN	—	
varay	PROPOSED	EXISTI	<u>NG</u>
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	Signal Pole with S	· ·	,
	Inductive Loop		\Box
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This plan signed and	supersedes sealed on	the plan 3/11/2022

al	. U	pgrad	е					DOCUMENT NOT CO FINAL UNLESS SIGNATURES COM	ALL
	Nobility Nobility	ad For: Sole of Division Sole of Marker NOW				at	r Street) Boulevard)	SEAL 044434	
S	· · · · · · · · · · · · · · · · · · ·	AN A		Division 12	Gast	on County	Gastonia	E F KNGINEER	NN.
Sono	Desig	an Section		PLAN DATE:	May 2021	REVIEWED BY:	SL Phillips	P BAU	MATIN
enfie	ld Pkv	vy,Garner,NC	27529	PREPARED BY:	CF Davis	REVIEWED BY:	KP Baumann		· · ·
	_	SCALE		RE	EVISIONS		INIT. DATE	DocuSigned by:	
	0		40					Ken Varian	4/7/2022
								5DC709A86BCB447 SIGNATURE	DATE
У		1 "=40'						SIG. INVENTORY NO.	12-0069

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N/A

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N/A

 $\langle A \rangle$

 $\langle B \rangle$

 $\langle C \rangle$

 $\langle E \rangle$

 $\langle F \rangle$

Controller & Cabinet

Junction Box

2-in Underground Conduit

Right of Way

Directional Arrow

Curb Ramp

Combined Through and Left Arrow Sign (R3-6L)

Combined Through and Right Arrow Sign (R3-6R)

No Left Turn Sign (R3-2)

No Right Turn Sign (R3-1)

One Way Sign (R6-1L)

Street Name Sign (D3-1)

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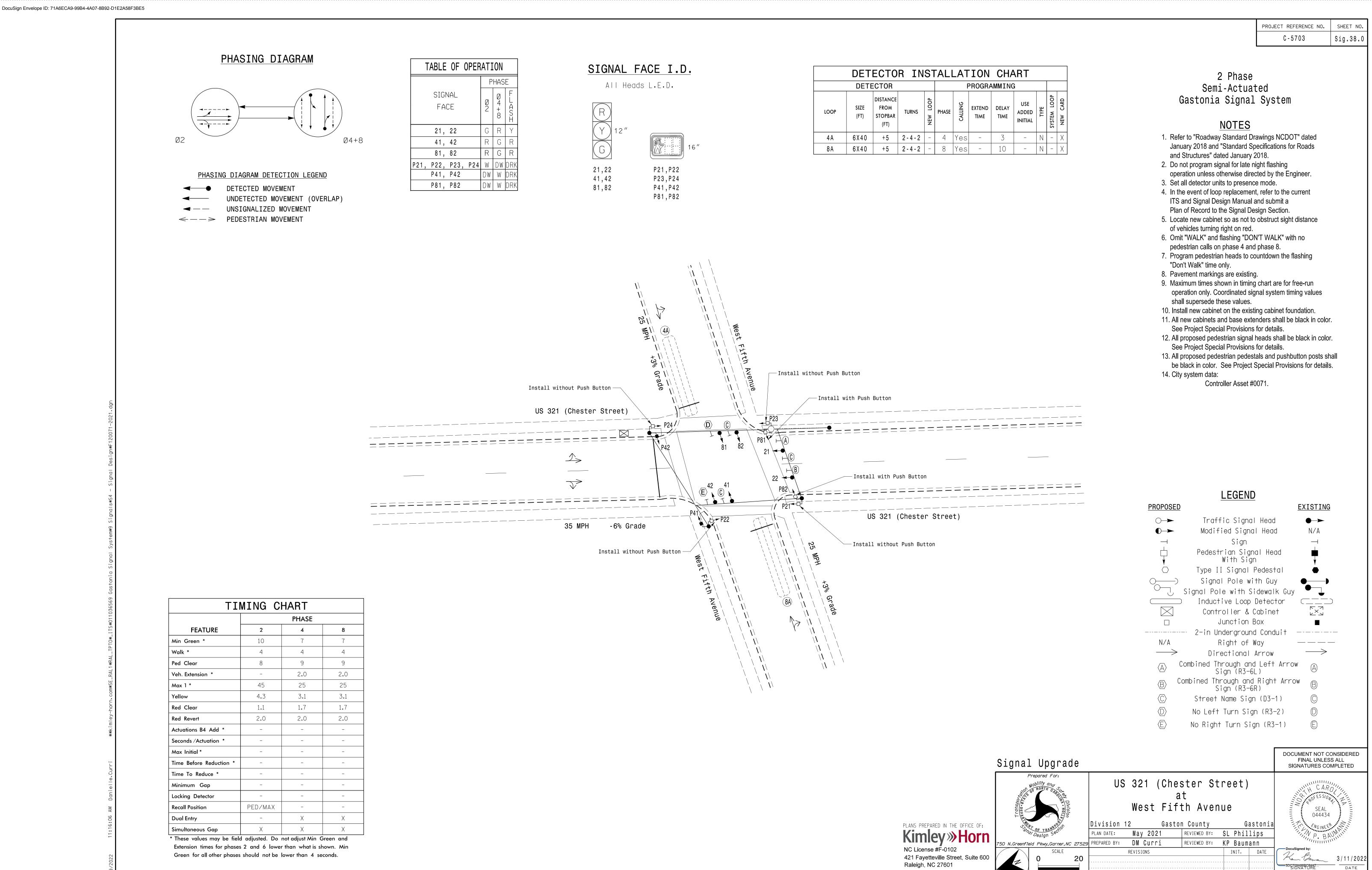
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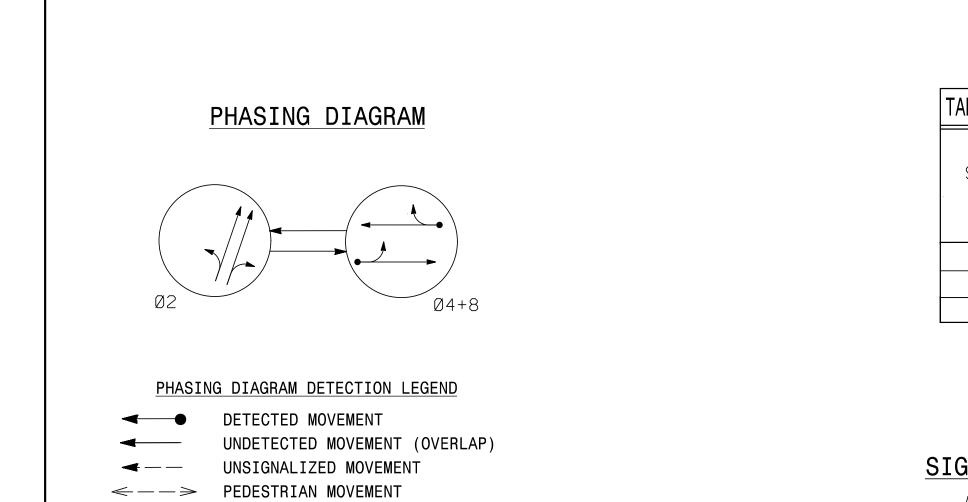


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SIG. INVENTORY NO.

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Danielle.Curri ***timlev-horn.com*SF RAL1*RAL
7972022 111:13:27 AM Danielle.Curri ***timlev-horn.com*SF Ral 1*Ral

TIMING CHART					
		PHASE			
FEATURE	2	4	8		
Min Green *	10	7	7		
Walk *	-	-	-		
Ped Clear	-	-	-		
Veh. Extension *	-	2.0	2.0		
Max 1 *	45	25	25		
Yellow	3.7	3.9	3.9		
Red Clear	1.2	1.5	1.5		
Red Revert	2.0	2.0	2.0		
Actuations B4 Add *	-	-	-		
Seconds /Actuation *	-	-	-		
Max Initial *	-	-	-		
Time Before Reduction *	-	-	_		
Time To Reduce *	-	-	_		
Minimum Gap	-	-	-		
Locking Detector	-	-	_		
Recall Position	MAX RECALL	-	_		
Dual Entry	-	Х	Х		
Simultaneous Gap	Х	Х	Х		
* These values may be field					

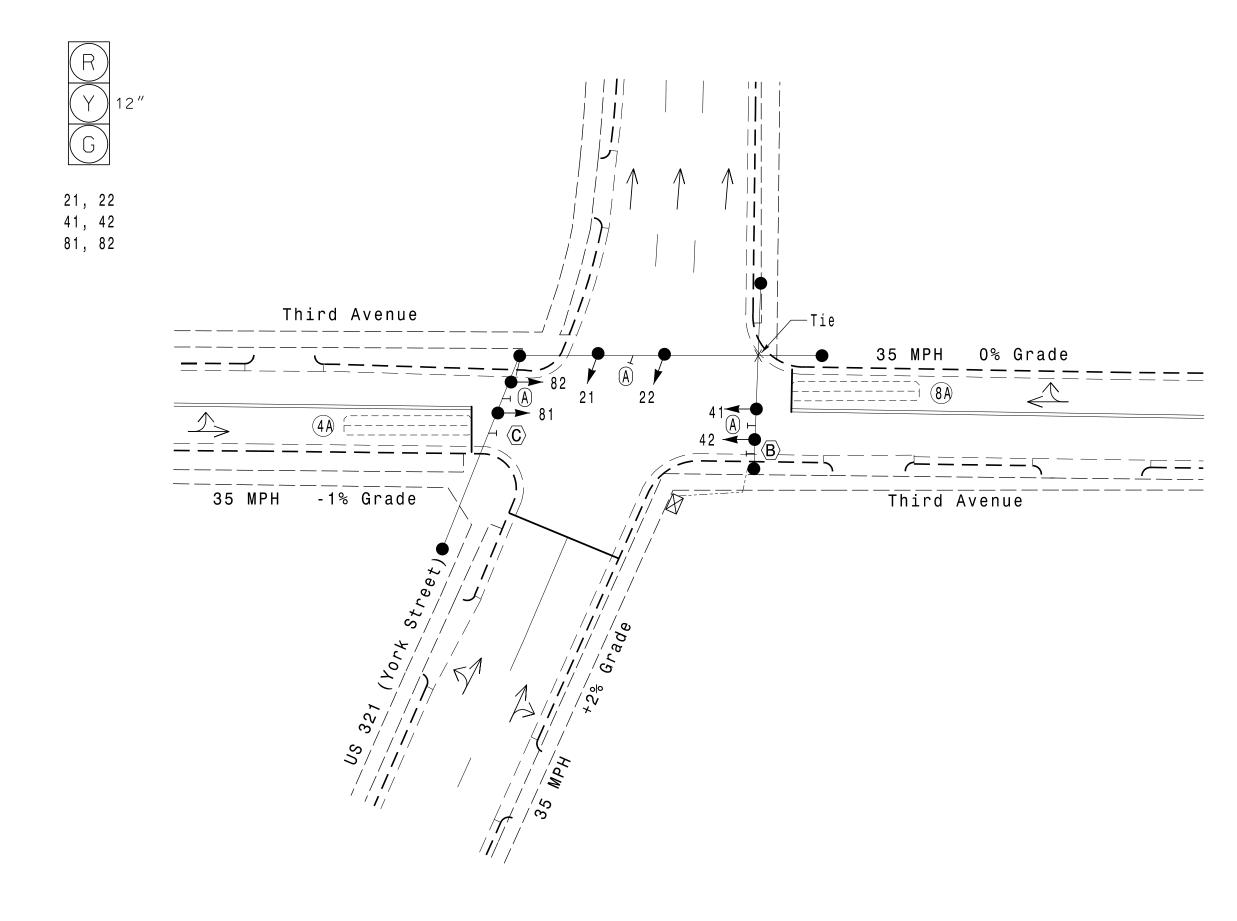
Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

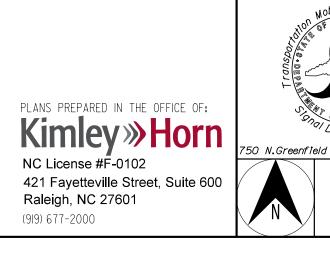
ABLE OF OPERATION						
	P	HAS	E			
SIGNAL FACE	ØN	Ø 4+ 8	FLASH			
21, 22	G	R	Y			
41, 42	R	G	R			
81, 82	R	G	R			

	DET	ЕСТО	R IN	S1	ALI	_AT	ΊΟ
	DETE	CTOR				F	PROG
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEI TIM
4A	6X40	0	2-4-2	-	4	Yes	-
8A	6X40	0	2-4-2	-	4	Yes	_

SIGNAL FACE I.D.

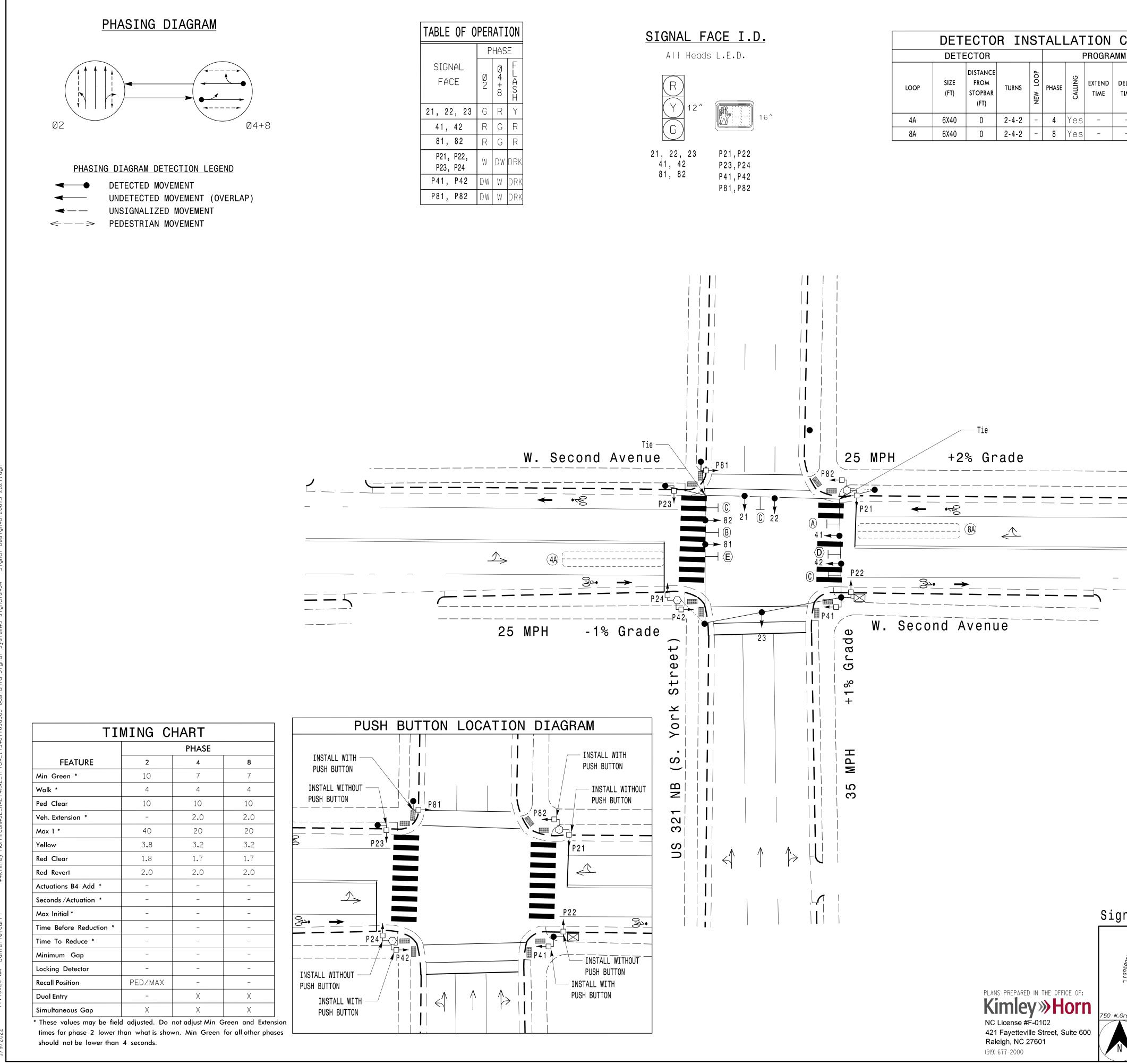
All Heads L.E.D.





		-
		PROJECT REFERENCE NO.SHEET NO.C-5703Sig.39.0
FALLATION CHART PROGRAMMING		
	PE LOOP CARD	
PHASE STEND DELAY ADDED TIME TIME INITIAL	TYPE SYSTEM L NEW CA	2 Phase Semi-Actuated
4 Yes 4 Yes	N - X N - X	Gastonia Signal System
		NOTES
	2. 3. 4. 5. 6. 7. 8. 9.	Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018. Do not program signal for late night flashing operation unless otherwise directed by the Engineer. Set all detector units to presence mode. In the event of loop replacement, refer to the current ITS and Signal Design Manual and submit a Plan of Record to the Signal Design Section. Install new cabinet on a new cabinet foundation. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red. Pavement markings are existing. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.). Rewire all intersection equipment to new cabinet. I. City system data: Controller Asset: #0072
		PROPOSED EXISTING Image: Constraint of the stress of the stres
		PROPOSED EXISTING
Signal Upgrade		PROPOSED EXISTING

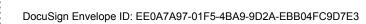
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11:13:29 AM Danielle.Curri ***kimley-horn.com*SE_RAL1*RAL_TPT0*_ITS*011036569 Gastonia Signal System*9 Signals*S4 - Signal Design*B120073-2

	SHEET NO Sig.40.	
CHART Etrix US Etrix ADDED	Sig.40.	
ING 2 Phase Semi-Actuated Gastonia Signal System Introduction N		
Live 0 9 <td></td>		
Image: Normal State NOTES 1 Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018. 0. Do not program signal for late right flashing operation unless otherwise directed by the Engineer. 2. Sea Id detector units to presence mode. 1. Instal new cabinets and base extenders shall be black in color. See Project Special Provisions for details. 3. Cont director and flashing 'DONT WALK" with no pedestrian calls. 0. Ontit 'WALK" and flashing 'DONT WALK" with no pedestrian calls. 0. Pavement markings are existing. 1. Review all intersection equipment to new cabinet. 2. See Pedestrian Push Buiton Location Diagram for additional details. 1. Review all intersection coupling reprovisions for details.		
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Signal Pole with Guy	—)	
Inductive Loop Detector	_	
Controller & Cabinet		
2-in Underground Conduit N/A Right of Way	- 	
$ \longrightarrow \qquad \text{Directional Arrow} \qquad \longrightarrow \\ \overline{\langle A \rangle} \qquad \text{"One Way" Sign (R6-1L)} \qquad \overline{\langle A \rangle} $	• 	
$\langle A \rangle$ "One Way" Sign (R6-1L) (A) (B) "One Way" Sign (R6-1R) (B)	 → → → → 	
$\langle \overline{\mathbb{C}} \rangle$ Street Name Sign (D3-1) $\langle \overline{\mathbb{C}} \rangle$	► 	
$\langle D \rangle$ No Right Turn Sign (R3-1) $\langle D \rangle$ $\langle E \rangle$ No Left Turn Sign (R3-2) $\langle E \rangle$	► 	
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Prepared For: US 321 NB (South York Street) at West Second Avenue US 321 NB (South York Street) at West Second Avenue Division 12 Gaston County Gastonia PLAN DATE: May 2021 REVIEWED BY: SL Phillips SCALE REVISIONS INIT. DATE	DNSIDERED S ALL MPLETED	

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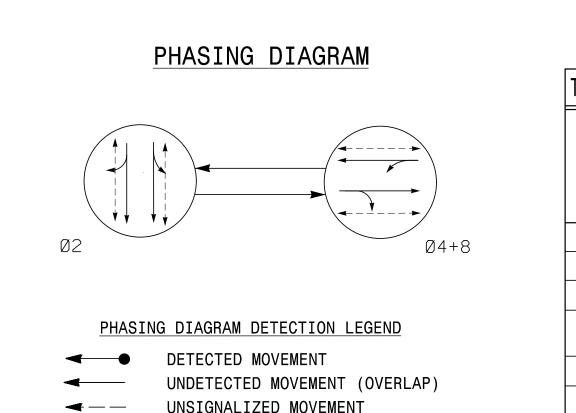
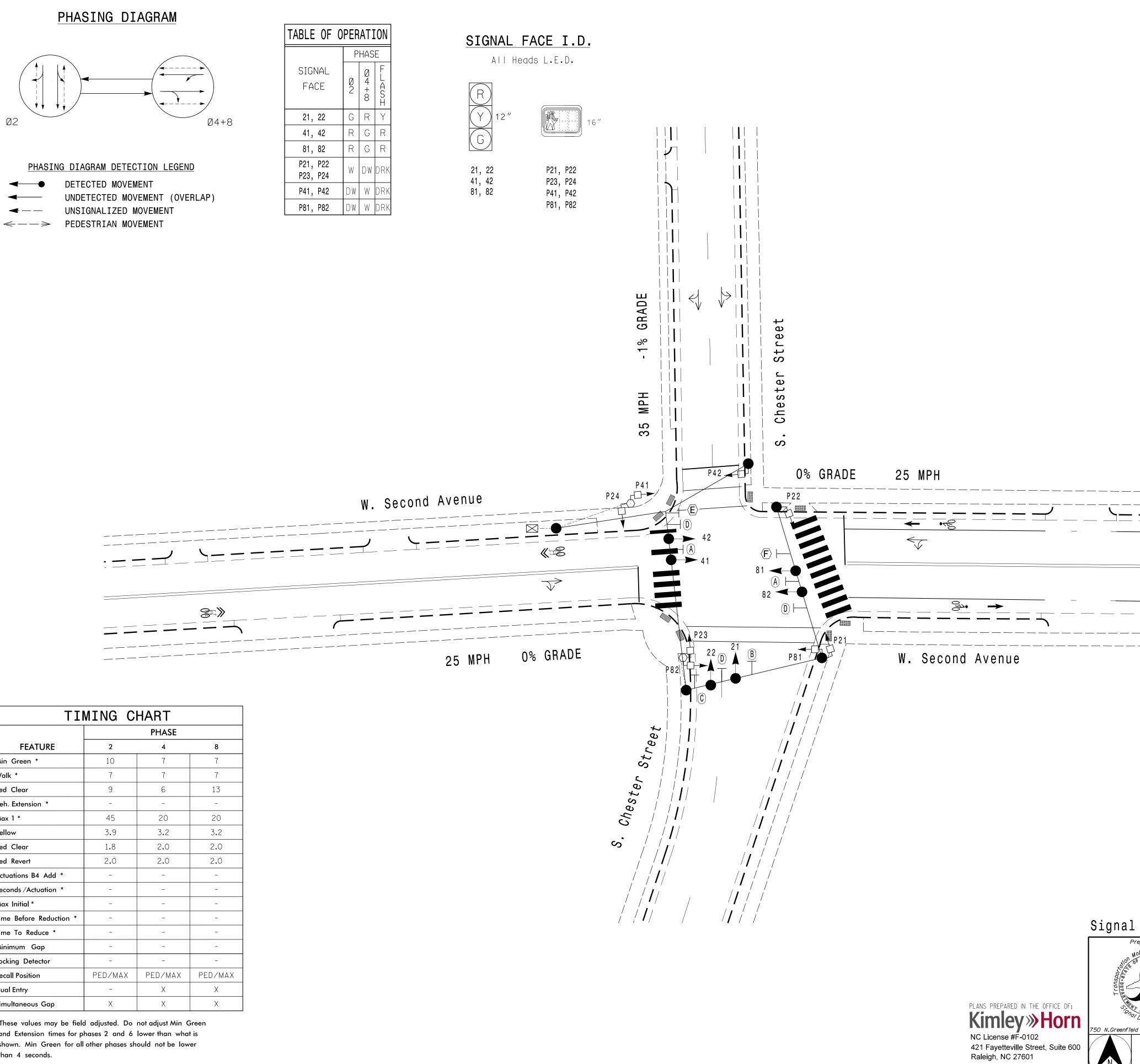


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SIGNAL FACE	Ø 2	Ø 4 + 8	FLANI
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41, 42	R	G	R
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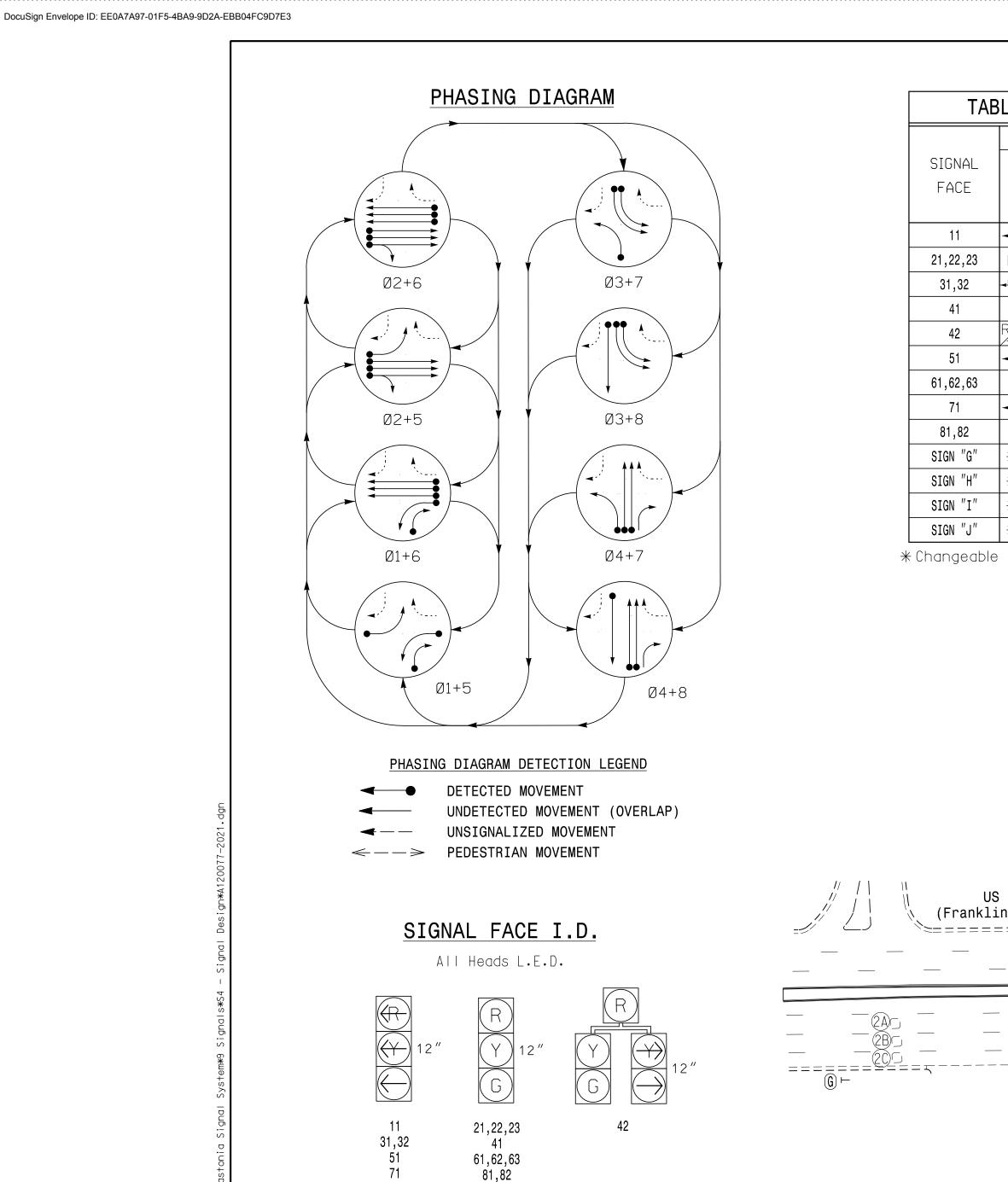
TII	MING C	HART	
		PHASE	
FEATURE	2	4	8
Min Green *	10	7	7
Walk *	7	7	7
Ped Clear	9	6	13
Veh. Extension *	_	-	-
Max 1 *	45	20	20
Yellow	3.9	3.2	3.2
Red Clear	1.8	2.0	2.0
Red Revert	2.0	2.0	2.0
Actuations B4 Add *	-	-	-
Seconds /Actuation *	_	-	-
Max Initial *	-	-	-
Time Before Reduction *	-	-	-
Time To Reduce *	_	-	-
Minimum Gap	_	-	-
Locking Detector	-	-	-
Recall Position	PED/MAX	PED/MAX	PED/MAX
Dual Entry	-	Х	Х
Simultaneous Gap	Х	Х	Х

* 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.

1999 199 199 1999 1999 199 199 199 199 199 199 199 199 199 199 199 199 199 199 199 199 199			PROJECT REFERENCE	NO. SHEET N
Pre-Fined Castonia Signal System NOTES 9. Refer to 'Roadway Standard Drawings NCDOT' dated January 2018 and 'Standard Specifications for Roads and Structures' dated January 2018. 9. Do not program signal for late night fashing operation unless otherwise directed by the Engineer. 9. Install new cabinet on a new cabinet foundation. 9. Install new cabinet on a new cabinet foundation. 9. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red. 9. Program pedestrian heads to countdown the flashing "Don't Walk" time only. 9. Program pedestrian heads to countdown the flashing "Don't Walk" time only. 9. Program pedestrian signal heads and pedestals shall be stall supersed three values. 10. All proposed pedestrian signal heads and pedestals shall be black in color. See Project Special Provisions for details. 10. All proposed pedestrian signal heads and pedestals shall be black in color. See Project Special Provisions for details. 10. All proposed pedestrian signal heads and pedestals shall be black in color. See Project Special Provisions for details. 10. All proposed pedestrian signal heads and pedestals shall be black in color. See Project Special Provisions for details. 10. All proposed pedestrian signal heads and pedestals shall be black in color. See Project Special Provisions for details. 10. All proposed pedestrian signal heads and pedestals shall be black in color. See Project Special Provisions for details. 10. All proposed pedestrian signal heads and pedestals shall be 10. All proposed pedestrian signal heads and pedestals shall be 10. All proposed pedestrian signal heads and pedestals shall be 10. All proposed pedestrian signal heads and pedestals shall be 10. All proposed pedestrian signal heads and pedestals shall be 10. All proposed pedestrian signal heads and pedestals shall be 10. All proposed pedestrian signal heads and pedestals shall be 10. All proposed pedestrian signal heads and pedestals 10. All proposed pedestrian signal heads			C-5703	Sig.41
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Signal Pole with Sidewalk Guy Inductive Loop Detector Inductive Loop Detector Image: Signal Pole with Sidewalk Guy Inductive Loop Detector Image: Signal Pole with Sidewalk Guy Image: Signal Pole Way	10. All proposed peo black in color. So 11. City system data Controller A	destrian signal he ee Project Specia a: sset: #0074 <u>LEGEN</u> Traffic Sign Modified Sign Sign	Eads and pedesta al Provisions for a ND EX nal Head nal Head	details. <u><isting< u=""> ●►</isting<></u>
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 → Directional Arrow → Pavement Marking Arrow → "One Way" Sign (R6-1) △ (A) "One Way" Sign (R6-1) (A) Combined Through and Left Arrow Sign (R3-6L) (B) Combined Through and Right C (C) Combined Through and Right Arrow Sign (R3-6R) (D) Street Name Sign (D3-1) (E) No Right Turn Sign (R3-1) 	10. All proposed per black in color. So 11. City system data Controller A	destrian signal he ee Project Specia a: sset: #0074 Traffic Sign Modified Sig Sign Pedestrian Si with S Signal Pole gnal Pole with Inductive Loop Controller & Junction	EXAMPLE AND PROVISIONS FOR CALL ALPROVISIONS FOR CALL AND EX AND EX AND EX AND AND AND AND AND AND AND AND AND AND	A A A A A A A A A A A A A A A A A A A
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Design Section	PLAN DATE:	May 2021	REVIEWED BY:	SL Phill	lips	IN P. BA	MALIN
Greenfield Pkwy,Garner,NC 2752	9 PREPARED BY:	DM Curri	REVIEWED BY:	KP Bauma	ann		//,
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0 20						Ken Barrow	3/11/2022
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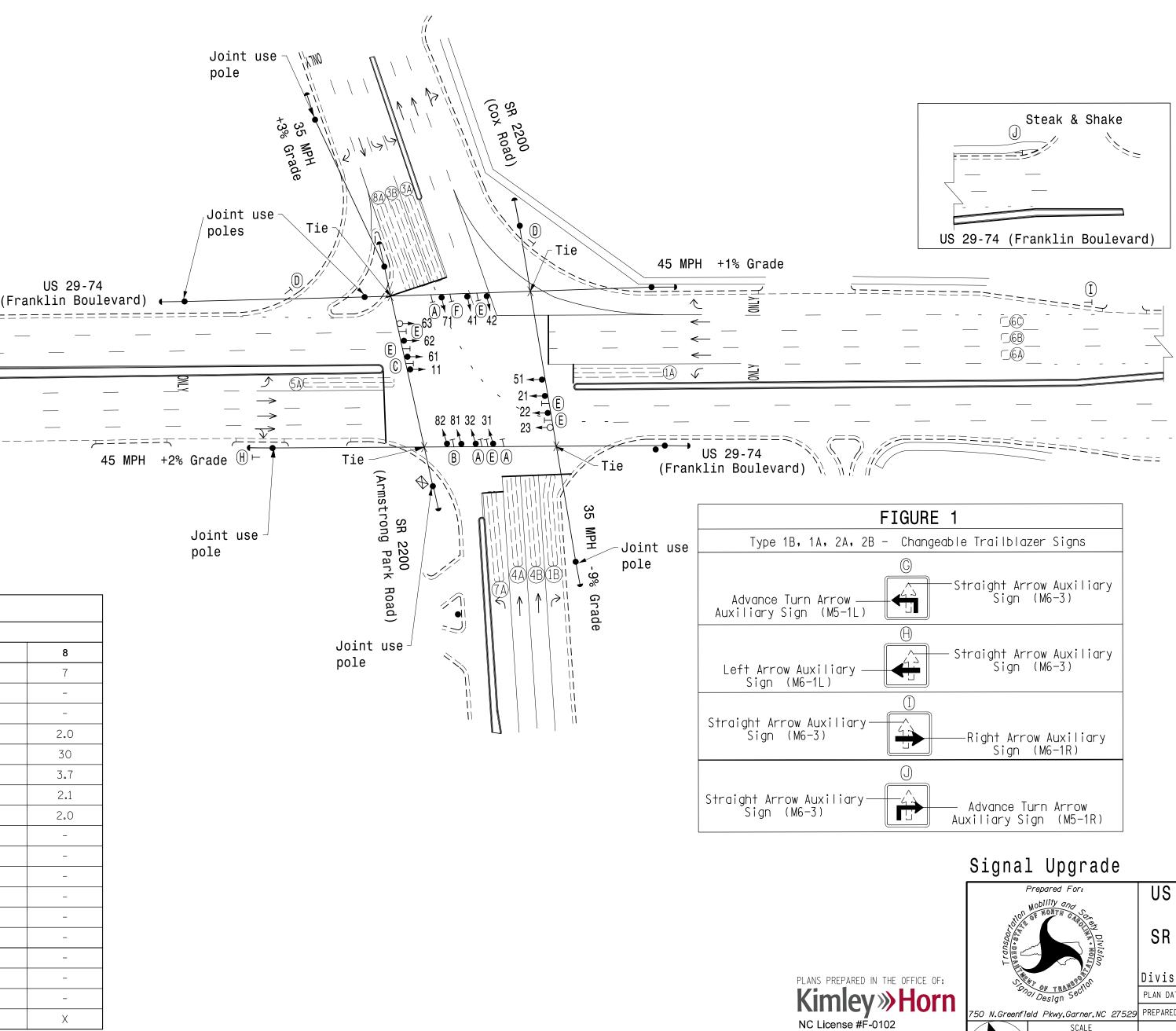
TIMING CHART										
FEATURE	1	2	3	4	5	6	7	8		
Min Green *	7	12	7	7	7	12	7	7		
Walk *	-	_	-	-	-	-	-	-		
Ped Clear	-	_	-	-	-	-	-	-		
Veh. Extension *	2.0	6.0	2.0	2.0	2.0	6.0	2.0	2.0		
Max 1 *	20	90	20	30	20	90	20	30		
Yellow	3.0	4.3	3.0	4.6	3.0	4.4	3.3	3.7		
Red Clear	2.9	2.2	3.6	2.2	2.4	2.2	3.3	2.1		
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		
Actuations B4 Add *	-	_	_	-	-	-	-	-		
Seconds /Actuation *	-	1.5	_	-	-	1.5	-	-		
Max Initial *	-	32	_	-	-	34	-	-		
Time Before Reduction *	-	15	_	-	-	15	-	-		
Time To Reduce *	-	30	-	-	-	30	-	-		
Minimum Gap	-	3.0	_	-	-	3.0	-	-		
Locking Detector	-	Х	_	-	-	Х	-	-		
Recall Position	-	MIN RECALL	_	-	-	MIN RECALL	-	-		
Dual Entry	-	-	_	-	-	-	-	_		
Simultaneous Gap	Х	Х	Х	Х	Х	Х	Х	Х		

Inese values may be tield 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

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	PHASE											
Ø 1 + 5	Ø 1 + 6	Ø2+5	Ø2+6	Ø 3 + 7	Ø ↔ + 8	Ø 4 + 7	Ø4+8	LUANT				
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	DET	ЕСТО	R IN	S1	ALI	_AT	ION	CHA	ART			
	DETE	ECTOR PROGRAMMING										
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	ТҮРЕ	SYSTEM LOOP	NEW CARD
1 A	6X60	0	2 - 4 - 2	-	1	Yes	-	_	-	Ν	-	Х
1·B	6 X 6 0	0	2 - 4 - 2	-	1	Yes	-	15	-	Ν	-	Х
2 A	6 X 6	277	EXIST	-	2	Yes	-	_	Х	Ν	-	Х
2 [.] B	6X6	277	EXIST	-	2	Yes	-	-	Х	N	-	Х
2 [.] C	6X6	277	EXIST	-	2	Yes	-	_	Х	N	-	Х
3 A	6X60	0	2 - 4 - 2	-	3	Yes	-	-	-	N	-	Х
3 [.] B	6X60	0	2 - 4 - 2	-	3	Yes	_	_	-	Ν	-	Х
4∙A	6 X 6 0	0	2 - 4 - 2	-	4	Yes	-	_	-	Ν	-	Х
4 B	6X60	0	2 - 4 - 2	-	4	Yes	-	-	_	Ν	1	Х
5 A	6X60	+ 5	2 - 4 - 2	-	5	Yes	1	-	-	Ν	1	Х
6 A	6 X 6	300	EXIST	-	6	Yes	-	_	Х	Ν	-	Х
6 B	6 X 6	300	EXIST	-	6	Yes	_	_	Х	Ν	1	Х
6 C	6 X 6	300	EXIST	-	6	Yes	_	_	Х	Ν	-	Х
7∙A	6X60	0	2 - 4 - 2	-	7	Yes	_	_	-	N	1	Х
8A	6 X 6 0	0	2 - 4 - 2	-	8	Yes	-	-	-	Ν	+	Х

* Changeable Trailblazer Sign controlled remotely



	Sig 42 0
PROJECT REFERENCE NO.	SHEET NO.

421 Fayetteville Street, Suite 600

Raleigh, NC 27601

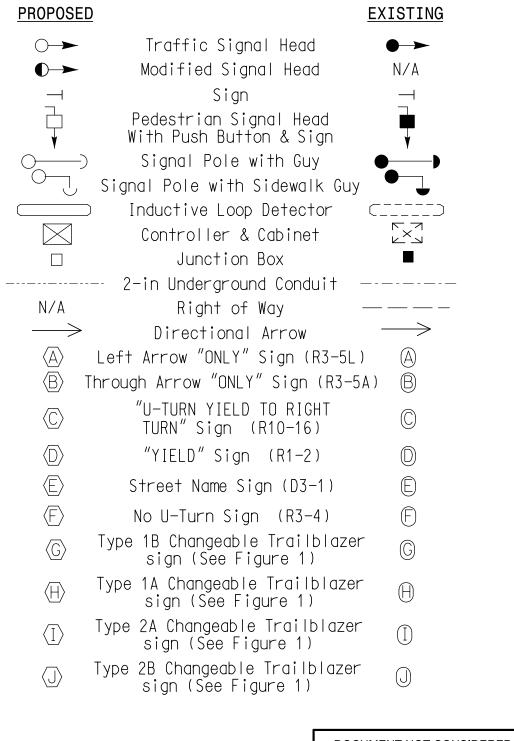
(919) 677-2000

8 Phase Fully Actuated Gastonia Signal System

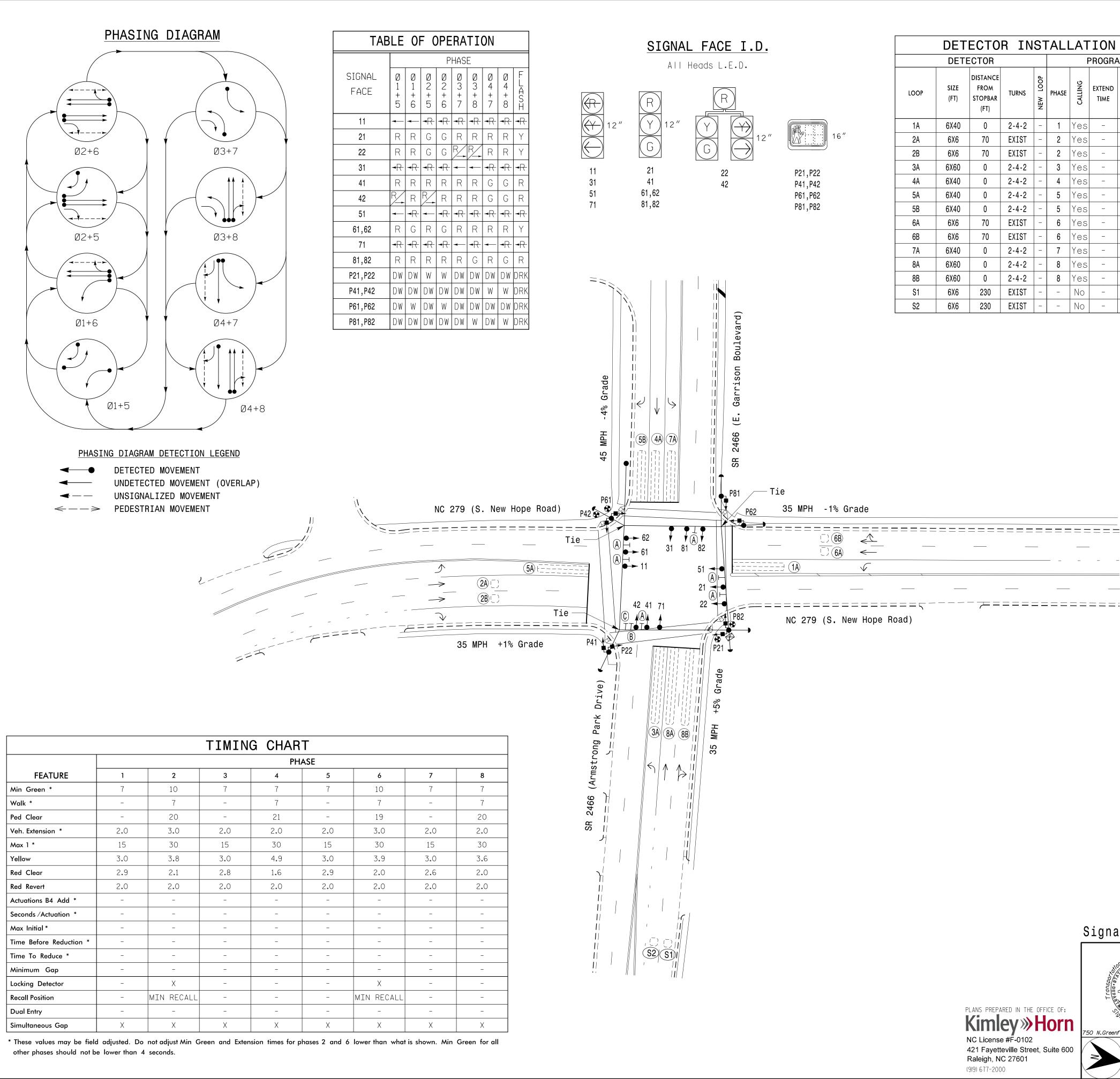
NOTES

- 1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- 2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- 3. Phase 1 and/or phase 5 may be lagged.
- 4. Phase 3 and/or phase 7 may be lagged.
- 5. Reposition existing signal heads numbered 21, 22, 61, and 62.
- 6. Set all detector units to presence mode.
- 7. In the event of loop replacement, refer to the current ITS and Signals Design Manual and submit a Plan of Record to the Signal Design Section.
- 8. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- 9. Pavement markings are existing.
- 10. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
- 11. Install new cabinet on the existing cabinet foundation.
- 12. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
- 13. City system data:

Controller Asset #0077



nal Upgrade			DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
Prepared For:	US 29-74 (Franklin Boulevar at SR 2200 (Armstrong Park Roa Cox Road)	,	SEAL 044434
CONCETRANSE TON	Division 12 Gaston County Gas	stonia	044434
Grai Design Section	PLAN DATE: May 2021 REVIEWED BY: SL Phill:		P. BAUMIN
Greenfield Pkwy,Garner,NC 27529	PREPARED BY: DM Curri REVIEWED BY: KP Bauman	nn	— DocuSigned by:
SCALE	REVISIONS INIT.	DATE	11 B
0 50			Ken Vana 3/11/2022
		·····	SIGNATURE DATE
1″=50′		····· S	SIG. INVENTORY NO. 12-0077



			TIMIN	G CHAR	T			
				PH	IASE			
FEATURE	1	2	3	4	5	6	7	
Min Green *	7	10	7	7	7	10	7	
Walk *	-	7	-	7	-	7	-	
Ped Clear	-	20	-	21	-	19	-	
Veh. Extension *	2.0	3.0	2.0	2.0	2.0	3.0	2.0	
Max 1 *	15	30	15	30	15	30	15	
Yellow	3.0	3.8	3.0	4.9	3.0	3.9	3.0	
Red Clear	2.9	2.1	2.8	1.6	2.9	2.0	2.6	
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Actuations B4 Add *	-	-	-	-	-	-	-	
Seconds /Actuation *	-	-	-	-	-	-	-	
Max Initial *	_	-	-	-	-	-	-	
Time Before Reduction *	-	-	-	-	-	-	-	
Time To Reduce *	_	-	-	-	-	-	-	
Minimum Gap	-	-	-	-	-	-	-	
Locking Detector	-	Х	-	-	-	Х	-	
Recall Position	-	MIN RECALL	-	-	-	MIN RECALL	-	
Dual Entry	-	-	-	-	-	-	-	
Simultaneous Gap	Х	Х	Х	Х	Х	Х	Х	

DocuSign Envelope ID: 71A6ECA9-99B4-4A07-8B92-D1E2A58F3BE5

PROJECT REFERENCE NO.	SHEET NO.
C-5703	Sig.43.0

Ν	CHA	RT			
R/	MMING	ì			
1D ≣	DELAY TIME	USE ADDED INITIAL	ТҮРЕ	SYSTEM LOOP	NEW CARD
	Ŋ	I	Ν	-	Х
	-	_	Ν	_	Х
	-	-	Ν	-	Х
	L.	-	Ν	-	Х
	-	-	Ν	_	Х
	3	-	Ν	-	Х
	15	-	Ν	-	Х
	-	-	Ν	-	Х
	-	-	Ν	-	Х
	Ŋ	-	Ν	_	Х
	-	-	Ν	-	Х
	10	-	Ν	-	X X X X X X X X X X X X X X X X X
	-	-	Ν	Х	Х
	.	-	Ν	Х	Х

8 Phase Fully Actuated Gastonia Signal System

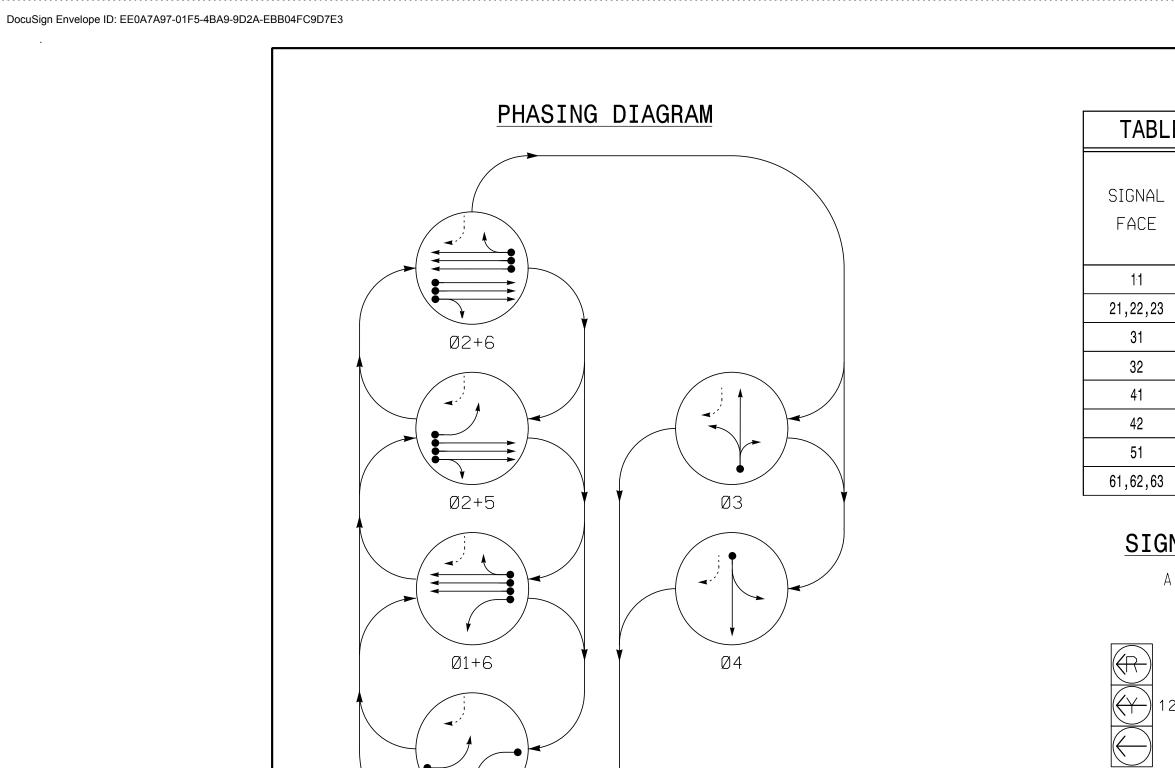
NOTES

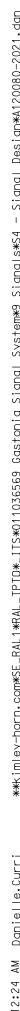
- 1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- 2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- 3. Phase 1 and/or phase 5 may be lagged.
- 4. Phase 3 and/or phase 7 may be lagged.
- 5. Set all detector units to presence mode.
- 6. In the event of loop replacement, refer to the current ITS and Signal Design Manual and submit a Plan of Record to the Signal Design Section.
- 7. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- 8. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- 9. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- 10. Pavement markings are existing.
- 11. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
- 12. Install new cabinet on the existing cabinet foundation.
- 13. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
- 14. City of system data:

Controller Asset #0079.

LEGEND PROPOSED <u>EXISTING</u> Traffic Signal Head ●→ \longrightarrow Modified Signal Head N/A ● Sign -Pedestrian Signal Head With Push Button & Sign Type I Pushbutton Post Type II Signal Pedestal \bigcirc Signal Pole with Guy ()Signal Pole with Sidewalk Guy Inductive Loop Detector L____ \sum Controller & Cabinet Junction Box 2-in Underground Conduit _----_----N/A Right of Way ____ \longrightarrow \longrightarrow Directional Arrow Curb Ramp N/A $\langle A \rangle$ (A)Street Name Sign "NO TURN ON RED" Sign (R10-11) (B) $\langle B \rangle$ Right Arrow "ONLY" Sign (R3-5R) $\langle C \rangle$ (C)

		_		
nal Upgrade			DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared For:	NC 279 (S. New Hope Road)		
MODILITY OND	at		LINH CARO	
	SR 2466 (E. Garrison Boulev	ard/	C PFESSION T	
I LOUSD	Armstrong Park Drive)		SEAL = 044434 = 5	
	•	astonia	EXCLASSING INEER	
Design Section	PLAN DATE: May 2021 REVIEWED BY: SL Phil	lips	N P. BAUMAN	
Greenfield Pkwy,Garner,NC 27529	PREPARED BY: CF Davis REVIEWED BY: KP Baum	ann		
SCALE	REVISIONS INIT.	DATE	DocuSigned by:	
0 40			Ken Daman 3/11/202	.2
			5DSIGNATURE DATE	_
1 "=40'			SIG. INVENTORY NO. 12-0079	Э





PHASING DIAGRAM DETECTION LEGEND DETECTED MOVEMENT UNDETECTED MOVEMENT (OVERLAP) UNSIGNALIZED MOVEMENT **-** $<\!-\!\!>$ PEDESTRIAN MOVEMENT _____ (2A)((2B)_____ ____ ____ (20)_____

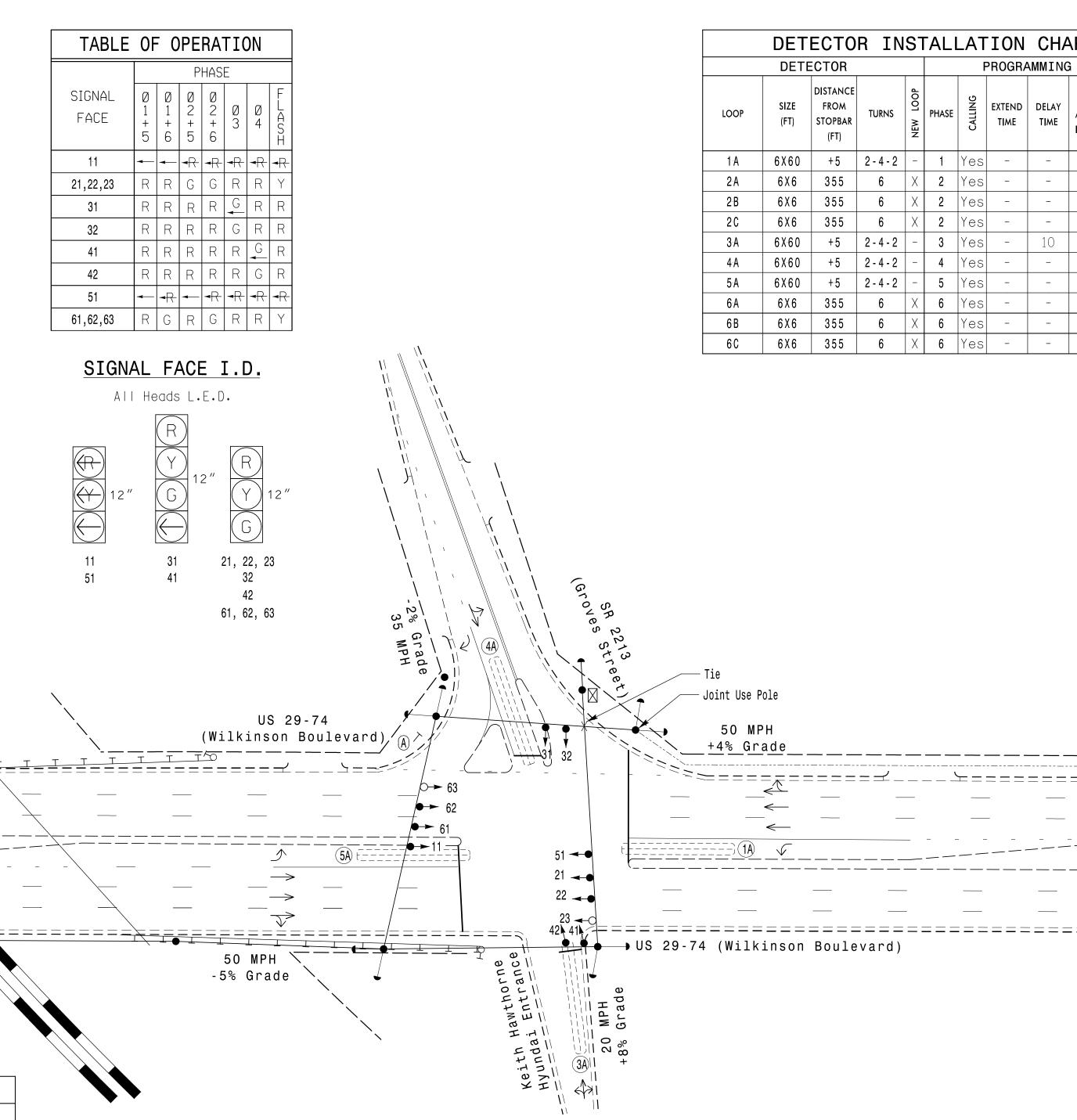
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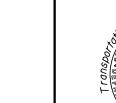
11

51

		TIMIN	G CHAR	Т							
		PHASE									
FEATURE	1	2	3	4	5	6					
Min Green *	7	14	7	7	7	14					
Walk *	-	-	_	-	-	-					
Ped Clear	-	-	-	-	-	-					
Veh. Extension *	1.0	6.0	2.0	1.0	1.0	6.0					
Max 1 *	20	70	25	25	20	70					
Yellow	3.0	5.4	3.0	4.0	3.1	4.5					
Red Clear	2.3	1.9	3.2	2.4	2.6	1.9					
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0					
Actuations B4 Add *	_	-	_	-	-	-					
Seconds /Actuation *	_	1.0	_	-	-	1.0					
Max Initial *	_	40	_	-	-	40					
Time Before Reduction *	_	15	-	-	-	15					
Time To Reduce *	_	30	-	-	_	30					
Minimum Gap	_	3.1	_	-	-	3.1					
Locking Detector	_	Х	_	-	-	Х					
Recall Position	_	MIN RECALL	_	-	-	MIN RECALL					
Dual Entry	_	-	_	-	-	-					
Simultaneous Gap	Х	Х	Х	Х	Х	Х					

* 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.





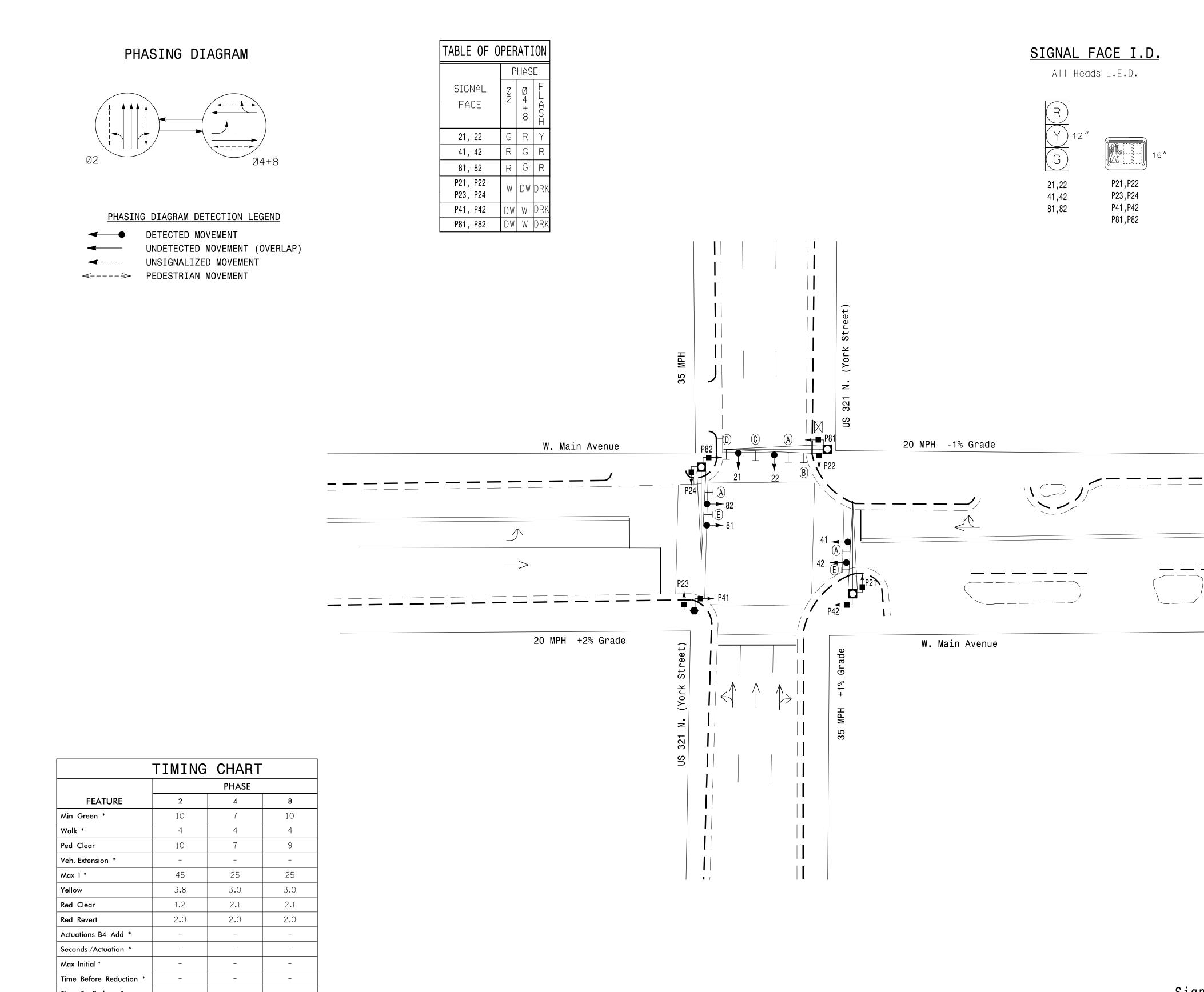
1″=40′



						F	PROJECT REFERENCE NO.	SHEET NO.
							C - 5703	Sig.44.0
D	DELAY	USE ADDED	ТҮРЕ	M LOOP	/ CARD			
	TIME	INITIAL		SYSTE	NEW			
		- X	N N	-	X X	6 Phase		
_	-	X X	N N	-	XX	Fully Actuat Gastonia Signal		
_	10	_	N	-	XX		
	-	- X	N	-	XX	NOTES 1. Refer to "Roadway Standard Drawin	ngs NCDOT" dated	
_	_	Х	N	-	Х	January 2018 and "Standard Specifi and Structures" dated January 2018	ications for Roads	
	_	X	<u> </u> N	-	Х	2. Do not program signal for late night operation unless otherwise directed	flashing	
						 Phase 1 and/or phase 5 may be lage Reposition existing signal heads nur 	-	
						61, and 62. 5. Set all detector units to presence mo		
						6. In the event of loop replacement, ref ITS and Signal Design Manual and s Plan of Pocord to the Signal Design	submit a	
						Plan of Record to the Signal Design 7. Locate new cabinet so as not to obs of vehicles turning right on red.		
						 8. Pavement markings are existing. 9. Maximum times shown in timing cha 	art are for free-run	
						operation only. Coordinated signal s shall supersede these values.		
						10. Install new cabinet on the existing c 11. All new cabinets and base extender	rs shall be black in color.	
						See Project Special Provisions for c 12. City system data: Controller Asset #0080		
= :	= = = 	= = =						
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	===	= = = :		=	==:	=======================================		
						LEGEND		
						PROPOSED ○→ Traffic Signal Head	EXISTING	
						● → 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		
						Junction Box		
						2-in Underground Conduit N/A Right of Way with Marker		
							À	
							DOCUMENT NOT C	
ſ	Sigr	nal			ade		FINAL UNLES SIGNATURES CC	SS ALL
			ared 11ty a, JORTH		×. 0	US 29-74 (Wilkinson Blvd.) at	WITH CAR	
	ransna	Nobi Nor PER		effe.	N DIVISIC	SR 2213 (Groves St.)/Keith Hawthorne Hyundai Entrance	SEAL	N. T. T.
	F	S G D C	F TRA	NSPOR	5 5	Division 12 Gaston County Gaston		R
	750 N.Gr	reenfield F	Jaryn					
ľ)		4		L Ken Barron 500709A80BCB447	3/11/202

12-0080

SIG. INVENTORY NO.



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7972022 11:15:24 AM Dunielle.Curri ***kimlev-horn.com*SF R

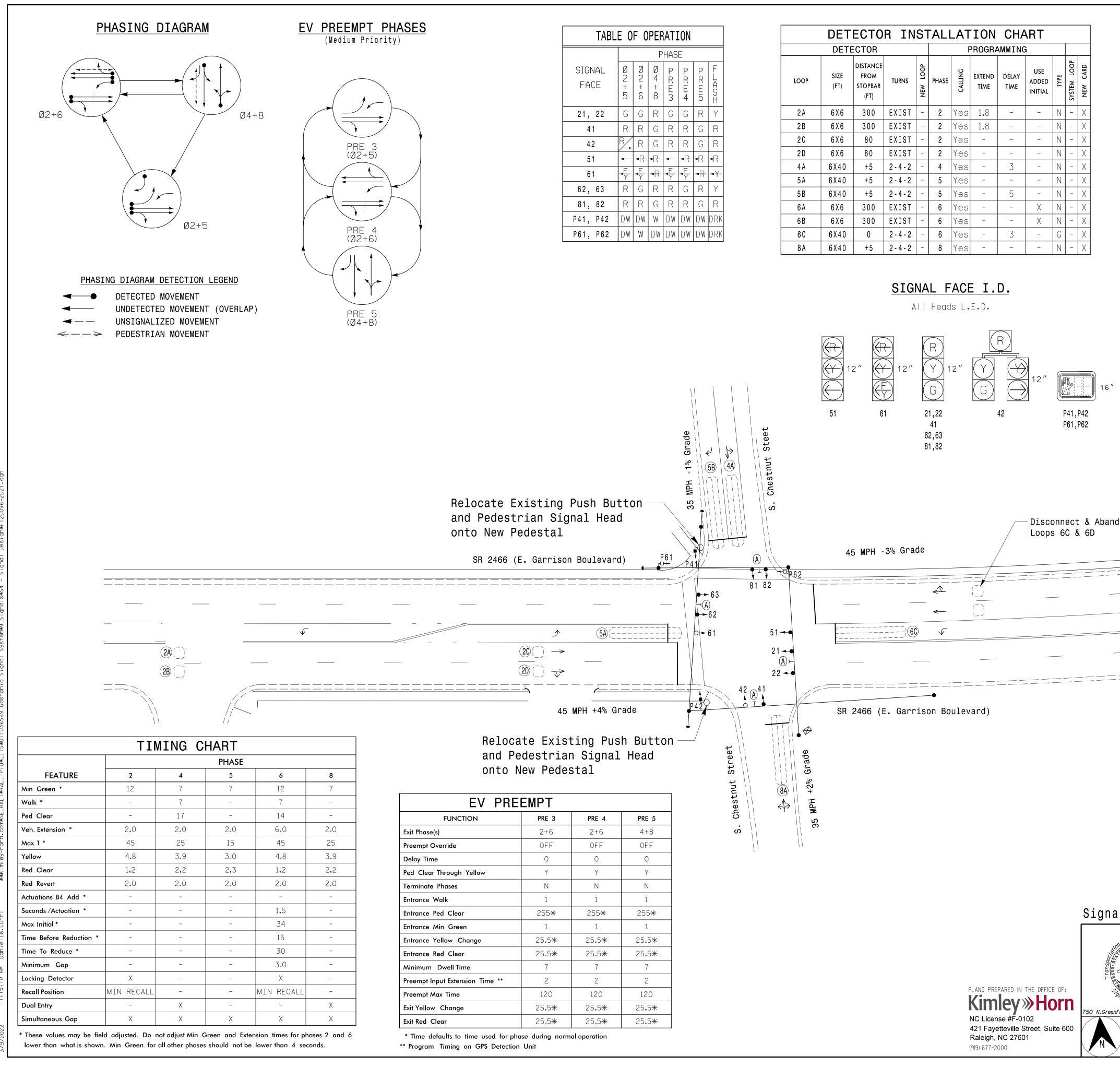
		_	
		PHASE	
FEATURE	2	4	8
Min Green *	10	7	10
Walk *	4	4	4
Ped Clear	10	7	9
Veh. Extension *	-	-	-
Max 1 *	45	25	25
Yellow	3.8	3.0	3.0
Red Clear	1.2	2.1	2.1
Red Revert	2.0	2.0	2.0
Actuations B4 Add *	-	-	-
Seconds /Actuation *	-	-	-
Max Initial *	-	-	-
Time Before Reduction *	-	-	-
Time To Reduce *	-	-	-
Minimum Gap	-	-	-
Locking Detector	-	-	-
Recall Position	PED/MAX	PED/MAX	PED/MAX
Dual Entry	-	Х	Х
Simultaneous Gap	Х	Х	Х

for all other phases should not be lower than 4 seconds.



Sigr

			PROJE	CT REFERENCE NO.	SHEET NO.
				C-5703	Sig.45.0
	Coot.	2 Phase Pre-Time	d		
	Gasto	onia Signa	L SYSTEM		
	and Structure 2. Do not progra operation unle 3. Locate new ca of vehicles tur 4. Program ped "Don't Walk" t 5. Pavement ma 6. Maximum tim operation onl shall superse 7. Install new ca 8. All new cabine See Project S 9. City system of	and "Standard s" dated Januar im signal for late ess otherwise di abinet so as not rning right on re estrian heads to ime only. arkings are exis nes shown in tim y. Coordinated ede these values abinet on the ex ets and base ex pecial Provisior	Specifications y 2018. e night flashin rected by the to obstruct si d. o countdown t ting. ning chart are signal system s. isting cabinet tenders shall ns for details.	s for Roads g Engineer. ght distance he flashing for free-run timing values foundation.	·
			ND		
	<u>PROPOSED</u>	<u>LEGE</u>		<u>EXISTING</u>	
	PROPOSED	Traffic Sig Modified Sig	nal Head Inal Head	EXISTING N/A	
		Traffic Sig	nal Head gnal Head ign il Pedestal th Mastarm op Detector & Cabinet n Box	•->	
		Traffic Sig Modified Sig Sigr Pedestrian Si With S Type II Signo Metal Pole wi Inductive Loo Controller Junctio	nal Head anal Head ign ignal Head ign il Pedestal th Mastarm op Detector & Cabinet n Box und Conduit f Way il Arrow Sign (D3-1) gh and Righ (R3-6R) .Y" Sign (R3 ugh and Left	 ► ►	
	$ \begin{array}{c} $	Traffic Sig Modified Sig Pedestrian Si With S Type II Signo Metal Pole wi Inductive Loo Controller Junctio 2-in Undergro Right o Directiono Street Name S ombined Throu Arrow Sign Jgh Arrow "ONL Combined Throu	nal Head gnal Head ign ignal Head ign il Pedestal th Mastarm op Detector & Cabinet n Box und Conduit f Way il Arrow Sign (D3-1) gh and Righ (R3-6R) .Y" Sign (R3 ugh and Left (R3-6L)	 ► ►	
al Upgrade		Traffic Sig Modified Sig Pedestrian Si With S Type II Signo Metal Pole wi Inductive Loo Controller Junctio 2-in Undergro Right o Directiono Street Name S ombined Throu Arrow Sign Jgh Arrow "ONL Combined Throu Arrow Sign	nal Head gnal Head ign ignal Head ign il Pedestal th Mastarm op Detector & Cabinet n Box und Conduit f Way il Arrow Sign (D3-1) gh and Righ (R3-6R) .Y" Sign (R3 ugh and Left (R3-6L)	$ \begin{array}{c} \bullet \\ N/A \\ \neg \\ \neg \\ \bullet \\ \bullet$	S ALL
Prepared For: Mobility and NORTH CARCEL DUSS Condition of the sector Design Sector P	US 321 N. (Y US 321 N. (Y A US 321 N. (Y a W. Main ivision 12 Gaston LAN DATE: May 2021	Traffic Sig Modified Sig Sigr Pedestrian Si With S Type II Signo Metal Pole wi Inductive Loo Controller Junctio 2-in Undergro Right o Directiono Street Name S ombined Throu Arrow Sign Jgh Arrow "ONL Combined Throu Arrow Sign One Way Sig One Way Sig	nal Head anal Head ign al Pedestal th Mastarm op Detector & Cabinet n Box und Conduit f Way al Arrow Sign (D3-1) gh and Right (R3-6R) LY" Sign (R3 ugh and Left (R3-6L) gn (R6-1)	N/A 	S ALL MPLETED

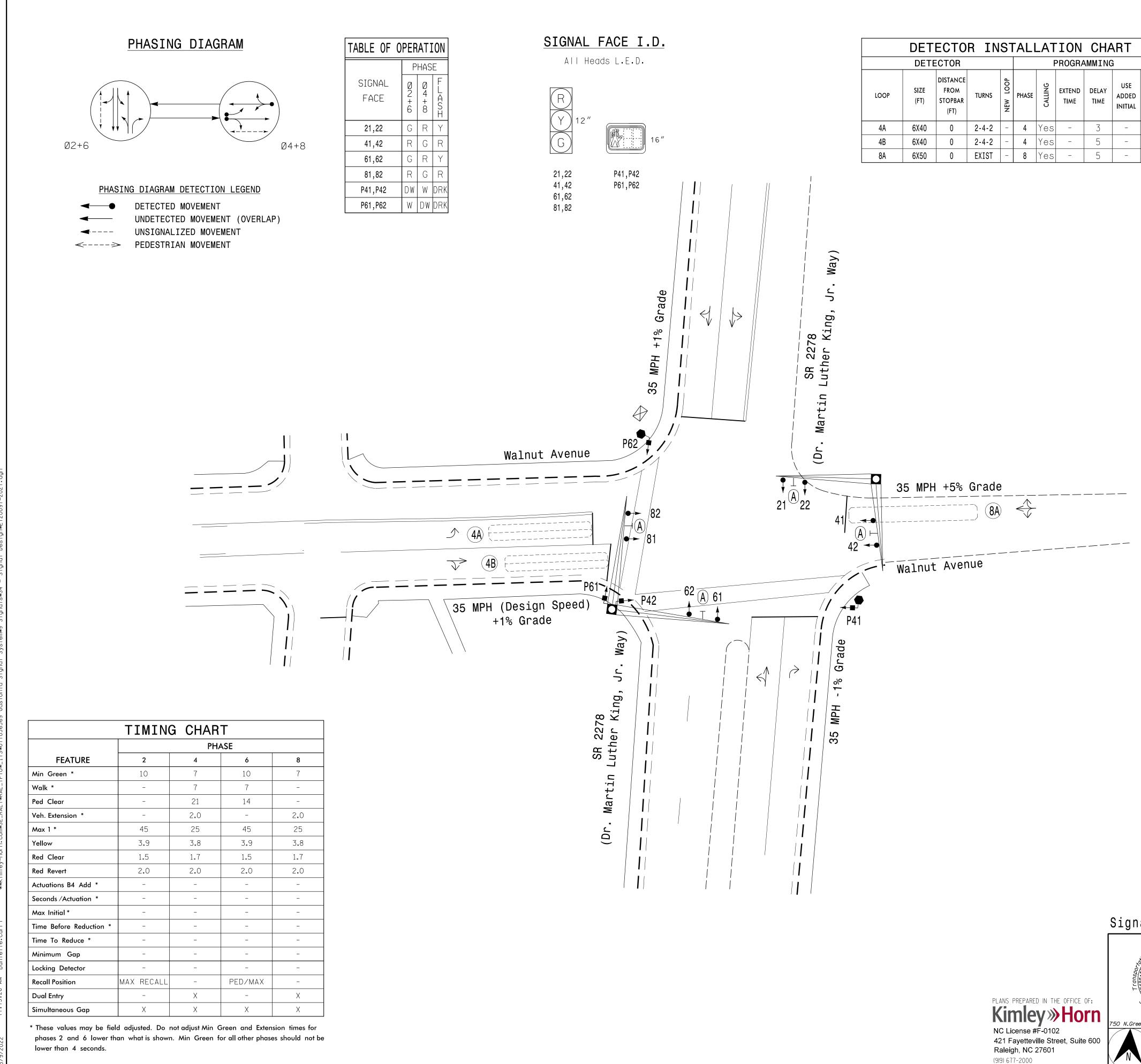


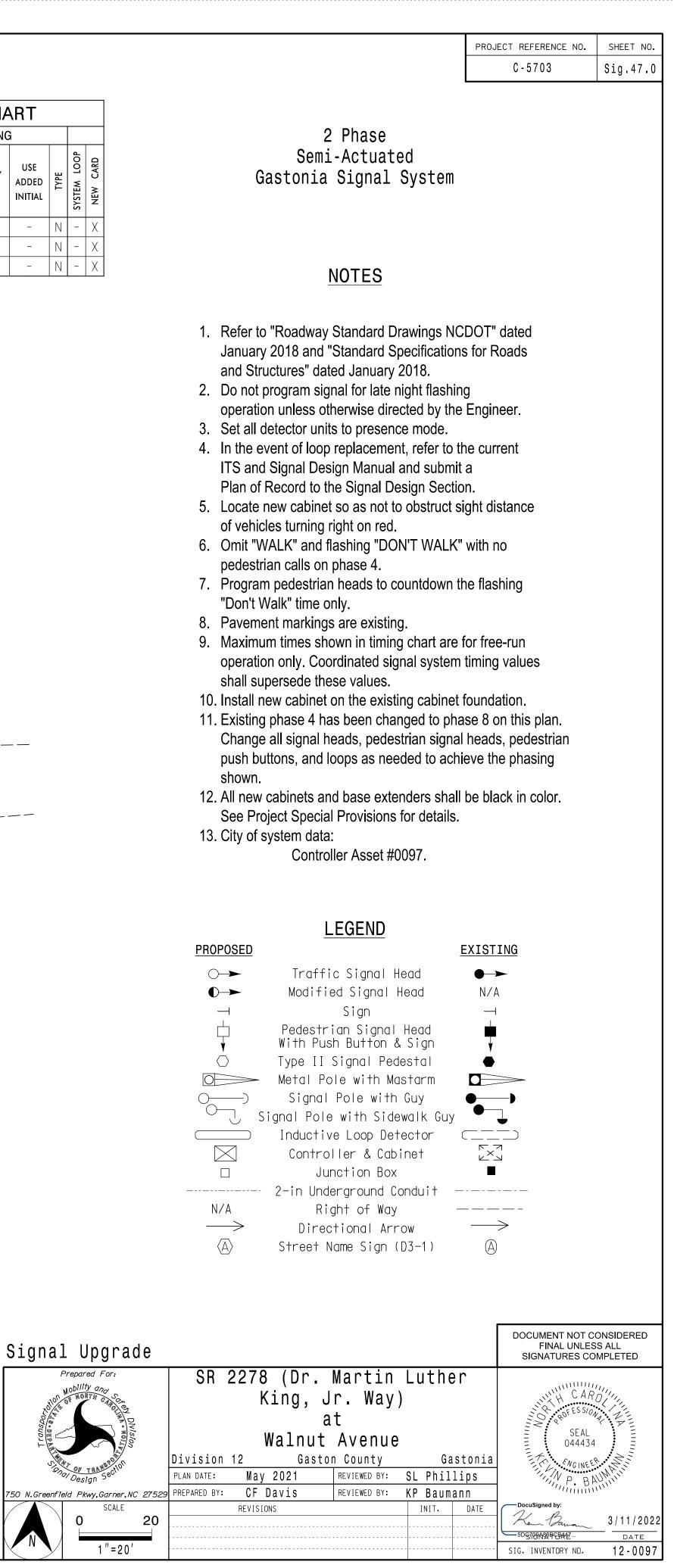
DocuSign Envelope ID: 71A6ECA9-99B4-4A07-8B92-D1E2A58F3BE5

TABLE OF OPERATION										
		PHASE								
SIGNAL FACE	Ø 2 + 5	Ø 2 + 6	Ø 4 + 8	P R E 3	P R E 4	P R E S	FLANT			
21, 22	G	G	R	G	G	R	Y			
41	R	R	G	R	R	G	R			
42	R	R	G	R	R	G	R			
51	-	⊸R	≺R	-	≺R	≺R	≺R			
61	- F Y	- F Y	≺R	- F Y	- F Y	≺R	- ¥-			
62, 63	R	G	R	R	G	R	Y			
81, 82	R	R	G	R	R	G	R			
P41, P42	D·W	DW	W	DW	D·W	DW	DRK			
P61, P62	DW	W	DW	DW	D·W	DW	DRK			

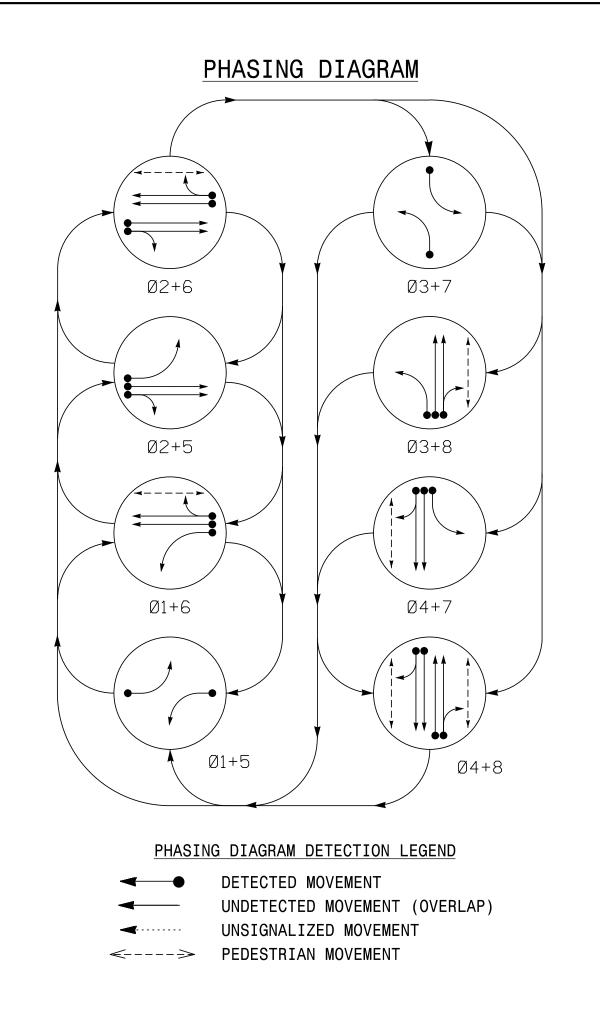
	DET	ЕСТО	R IN	S1	FALI	_AT	ION	CHA	ART			
	DETE	ECTOR				F	PROGRA	MMING	à			
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	ТҮРЕ	SYSTEM LOOP	NEW CARD
2 A	6 X 6	300	EXIST	-	2	Yes	1.8	-	-	Ν	-	Х
2 B	6 X 6	300	EXIST	-	2	Yes	1.8	-	-	N	-	Х
20	6X6	80	EXIST	-	2	Yes	-	_	-	N	-	Х
2 D	6 X 6	8.0	EXIST	-	2	Yes	-	-	-	Ν	-	Х
4 A	6 X 4 0	+ 5	2 - 4 - 2	-	4	Yes	-	3	-	Ν	-	Х
5 A	6 X 4 0	+ 5	2 - 4 - 2	-	5	Yes	-	-	-	Ν	-	Х
5 B	6 X 4 0	+.5	2 - 4 - 2	-	5	Yes	-	5	-	N	-	Х
6 A	6 X 6	300	EXIST	-	6	Yes	-	-	Х	N	-	Х
6 B	6 X 6	300	EXIST	-	6	Yes	-	-	Х	Ν	-	Х
6 C	6 X 4 0	0	2 - 4 - 2	-	6	Yes	-	3	-	G	-	Х
8 A	6 X 4 0	+ 5	2 - 4 - 2	-	8	Yes	_	_	_	Ν	-	Х

						_
		3 Phase)	PROJE	C 5702	SHEET NO.
		Fully Actu	ated		C-5703	Sig.46.0
	W /	Emergency Vehicl Gastonia Signa		n		
		NOTES				
	1.	Refer to "Roadway Standard and "Standard Specifications	-		-	
	2	January 2018. Do not program signal for late				
		otherwise directed by the Eng				
	4.	Phase 5 may be lagged. Reposition existing signal hea		63.		
		Set all detector units to present in the event of loop replacement		nt ITS an	d Signal	
		Design Manual and submit a Section.	Plan of Record to the	Signal D	esign	
	7.	Locate new cabinet so as not turning right on red.	to obstruct sight dista	ance of v	ehicles	
		Omit "WALK" and flashing "D		-		
		time only.		ng "Don"		
		. Remove existing "Left Turn O . Pavement markings are existi				
		. Maximum times shown in timi Coordinated signal system tin	ng chart are for free-r	•	•	
		. Disconnect and abandon exis	ting loops 6C and 6D			
		. Install new cabinet on the exist. All new cabinets and base exist.	tenders shall be black		See Project	
	16	Special Provisions for details. Reconnect lead-in cable to se		2C, 2D,	6A & 6B,	
		as shown. . Existing signal heads 61 and				
		respectively. . Existing loops 4B and 6E hav				
		respectively.				
	19	. Install GPS emergency preem instructions to achieve preem			er's	
	20	phasing diagram. . All proposed pedestrian signa	I heads shall be black	k in color	. See	
		Project Special Provisions for All proposed pedestrian pede	details.			
		black in color. See Project Sp . City system data:	-	-		
lon Existing		Controller Asset	#0096.			
			(_)(6B)			
			(_)(6 A)			
			_			
	_		. —			
		============	LEGEN	D		
		PROPOSED	Traffic Sign		EXISTI	<u>NG</u>
			Traffic Signo Modified Sign			-
			Sign Pedestrian Sig	IDAL UA	ead 🗕	
			With Push Butto	on & S	ign 🕇	
		·)	Type II Signal Signal Pole v			-)
		Si	gnal Pole with Inductive Loop			
			Controller &			/ 1 1
			Junction 2-in Undergrour		∎ +	
		N/A	Right of			
		$ \longrightarrow $	Directional Street Name Si			>
				gir (D.	(A)	
l Upgrade					DOCUMENT NOT C FINAL UNLE SIGNATURES CO	SS ALL
Nobility and	SR 24	466 (E. Garris	on Bouleva	rd)		
NORTH CARDEN		at		,	POFESSIC	10/11,1 NA, 1
Wision		S. Chestnut	Street		SEAL 04443	4
TO DE TRANSPORTO	Divisio Plan date:		•	tonia	ENGINE CNGINE	P. M.
nov Design Section		Y: DM Curri REVIEW	VED BY: KP Bauman	n		AU'''''
SCALE 30		REVISIONS	INIT.	DATE	- DocuSigned by: Kenn Barron	3/11/2022
1 "= 3 0 '				· · · · · · · · · · · · · · · · · · ·	SIG. INVENTORY NO.	DATE 12-0096





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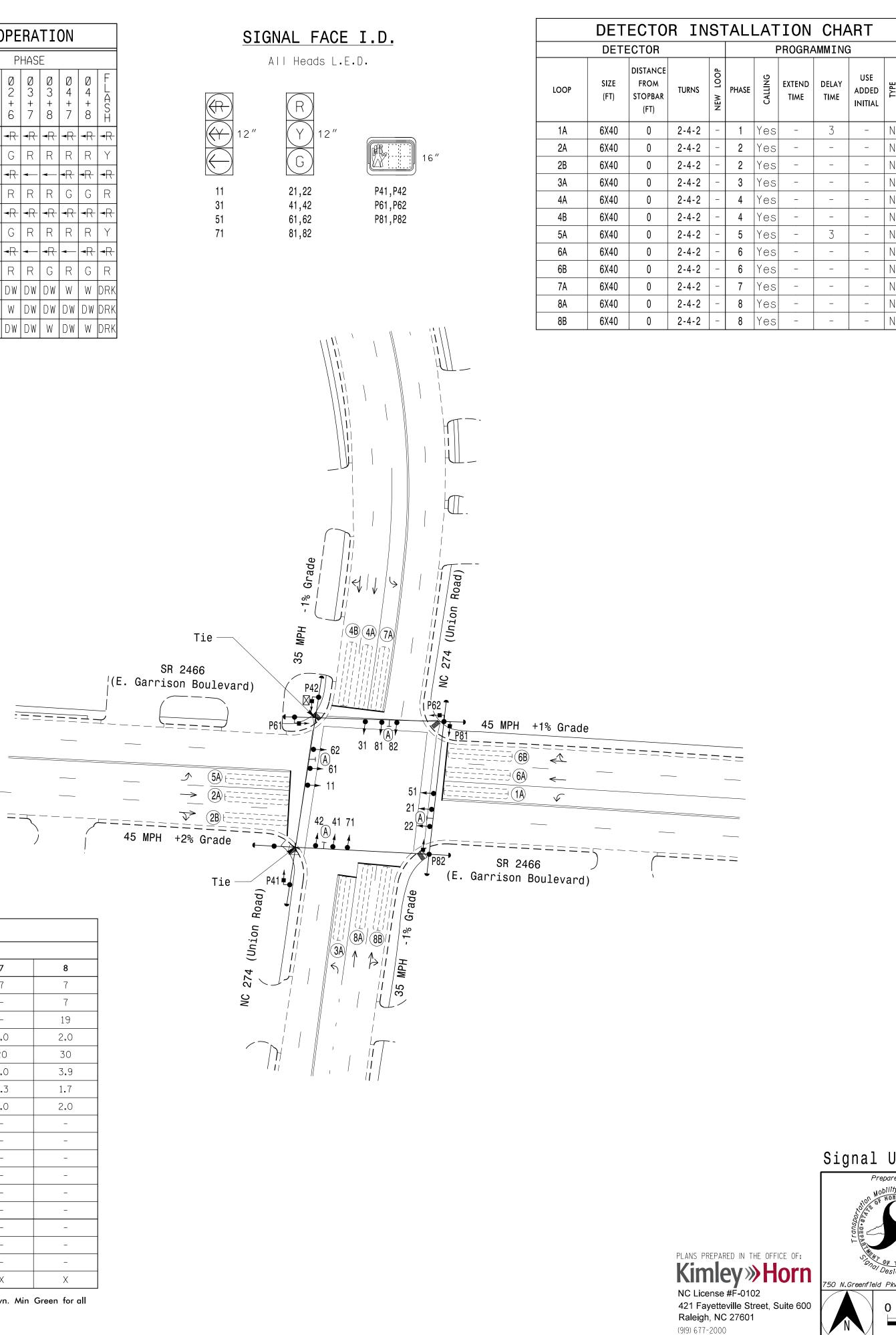


TAB	LE	0	- ()PE	RA	TI(
				Ρ	HAS	E	
SIGNAL FACE	Ø 1 + 5	Ø 1 + 6	Ø2+5	Ø2+6	Ø 3 + 7	Ø3+8	
11	┥	┥	╉	╉	╉	♣	
21,22	R	R	G	G	R	R	
31	≺R	≺R	≺R	≺R	+	+	
41,42	R	R	R	R	R	R	
51	-	≺R	-	≺R	≺R	₽	
61,62	R	G	R	G	R	R	
71	≺R	≺R	≺R	≺R	4	₹R	
81,82	R	R	R	R	R	G	
P41,P42	DW	D·W	DW	DW	DW	DW	
P61,P62	DW	W	DW	W	DW	DW	
P81,P82	DW	DW	DW	DW	DW	W	

TIMING CHART PHASE FEATURE 1 2 3 4 5 6 7 8 Min Green * 7 12 7 7 7 12 7 7 Walk * 7 7 7 7 7 7 Ped Clear - - 21 - 16 - 19											
	PHASE										
FEATURE	1	2	3	4	5	6	7	8			
Min Green *	7	12	7	7	7	12	7	7			
Walk *	-	-	-	7	-	7	-	7			
Ped Clear	_	-	-	21	-	16	-	19			
Veh. Extension *	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0			
Max 1 *	20	45	20	30	20	45	20	30			
Yellow	3.0	4.3	3.0	3.9	3.0	4.4	3.0	3.9			
Red Clear	2.6	1.3	2.6	1.7	2.4	1.3	2.3	1.7			
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0			
Actuations B4 Add *	-	-	-	-	-	-	-	-			
Seconds /Actuation *	_	-	-	-	-	-	-	-			
Max Initial *	_	_	-	-	-	-	-	-			
Time Before Reduction *	_	_	-	-	-	-	-	-			
Time To Reduce *	-	-	-	-	-	-	-	-			
Minimum Gap	-	-	-	-	-	-	-	-			
Locking Detector	_	Х	-	-	-	Х	-	-			
Recall Position	_	MIN RECALL	-	-	-	MIN RECALL	-	-			
Dual Entry	_	-	-	-	-	-	-	-			
Simultaneous Gap	Х	Х	Х	X	Х	Х	Х	X			

* 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.

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USE

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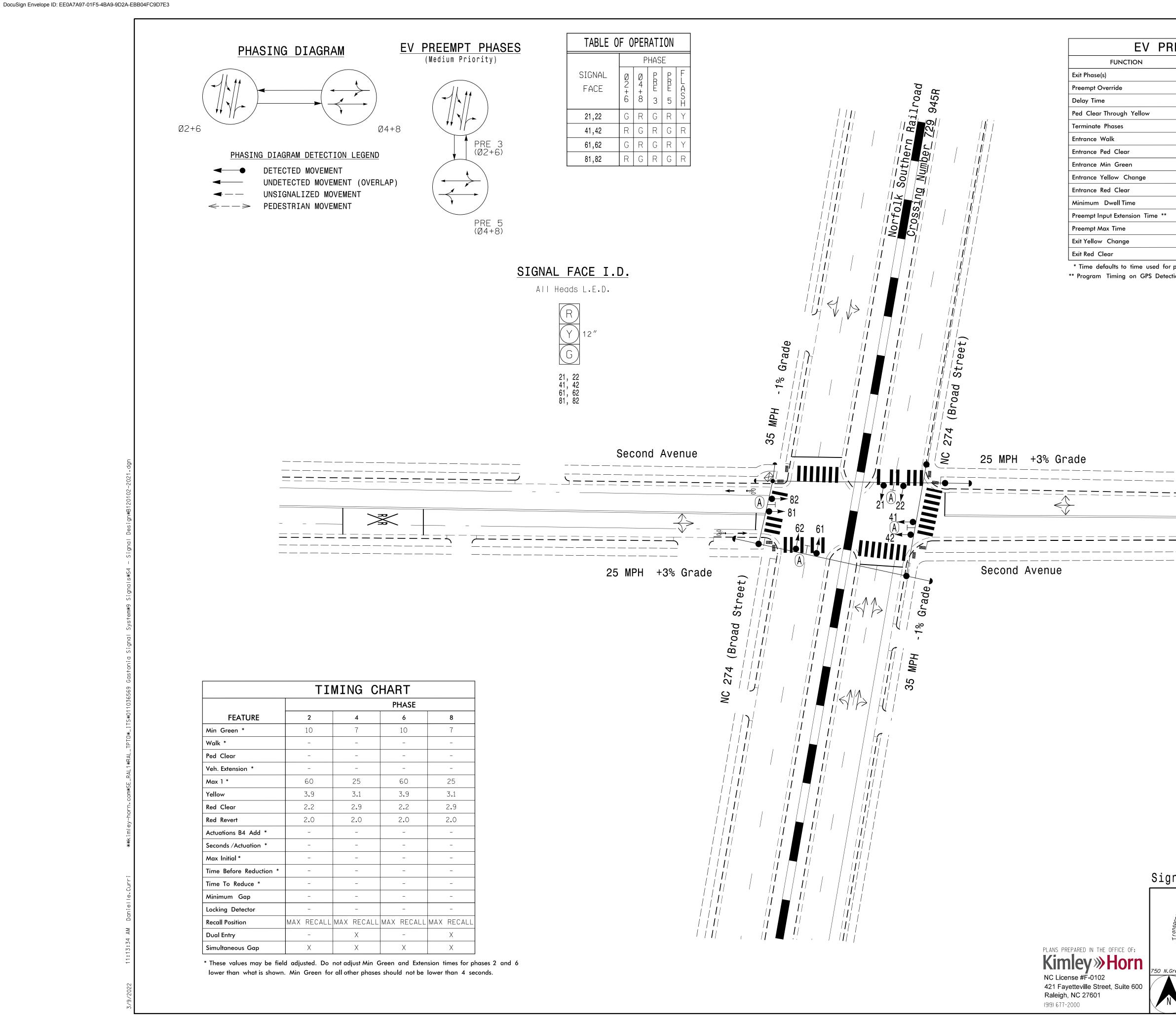
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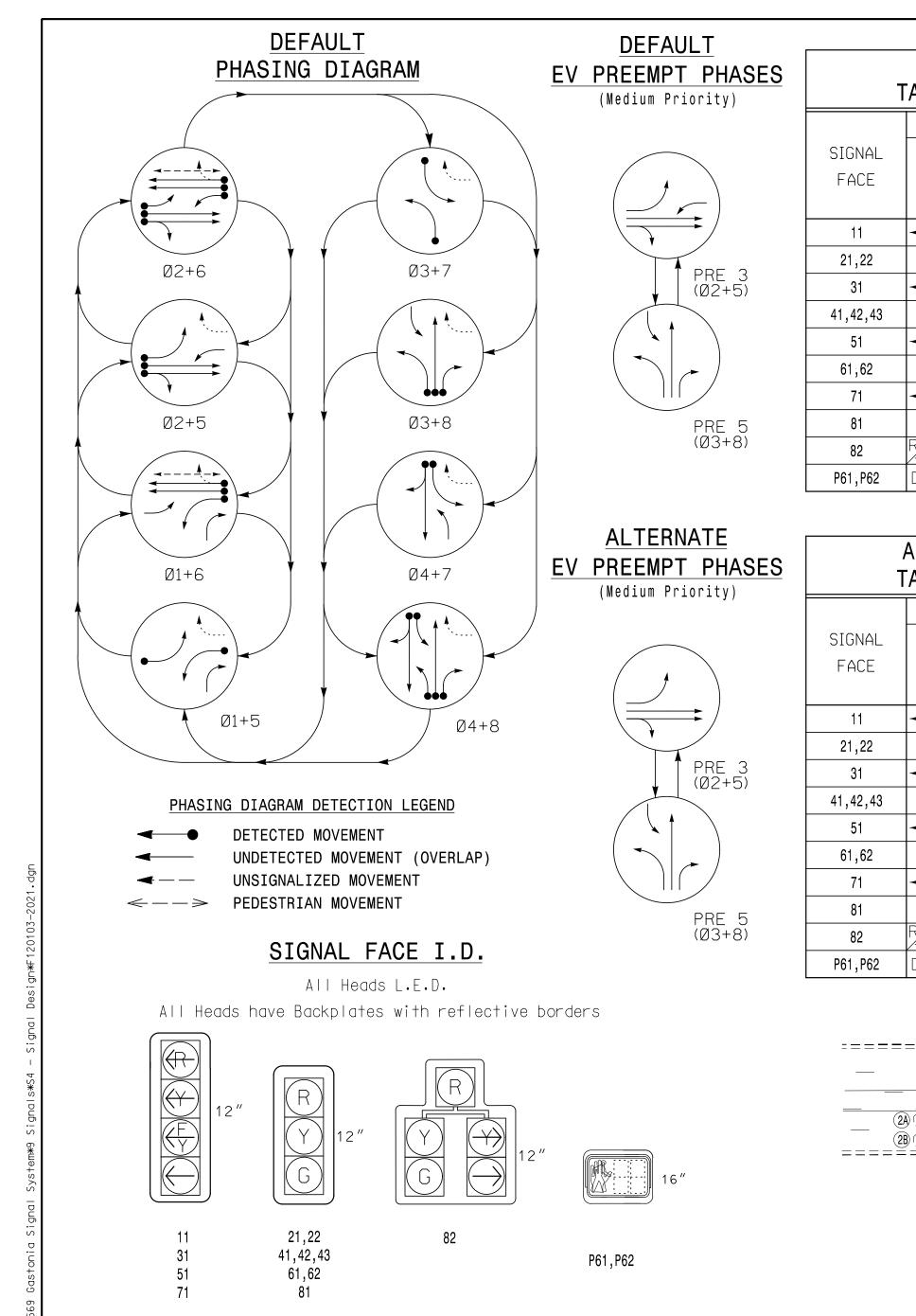
	C-5703	SHEET NO.
L	0-0700	J⊥Y • 4 O • U
8 Phase Fully Actuate Gastonia Signal S		
<u>NOTES</u>		
 Refer to "Roadway Standard Draw January 2018 and "Standard Spec and Structures" dated January 201 Do not program signal for late nigh operation unless otherwise directed Phase 1 and/or phase 5 may be la Phase 3 and/or phase 7 may be la Set all detector units to presence in In the event of loop replacement, in ITS and Signal Design Manual and Plan of Record to the Signal Desig Locate new cabinet so as not to ob of vehicles turning right on red. All new cabinets and base extended See Project Special Provisions for Omit "WALK" and flashing "DON'T pedestrian calls. Program pedestrian heads to coun "Don't Walk" time only. Pavement markings are existing. Maximum times shown in timing ch operation only. Coordinated signal shall supersede these values. Install new cabinet on the existing Existing phases 3, 4, 7, & 8 have b 7, 8, 3 & 4 respectively on this plar pedestrian signal heads, pedestrian needed to achieve the phasing shot City of system data: Controller Asset #0095 	ifications for Roads 8. It flashing d by the Engineer. gged. gged. gged. node. efer to the current d submit a in Section. ostruct sight distance ers shall be black in colo details. WALK" with no itdown the flashing hart are for free-run system timing values cabinet foundation. been changed to phases in Change all signal hea in push buttons, and loo own.	s ids,
LEGEND		
PROPOSED	<u>EXISTING</u>	
○→ Traffic Signal H		
●→ Modified Signal H	lead N/A	
→ Sign ☆ Pedestrian Signal	Head 📥	
$\overline{\mathbf{v}}$ With Push Button &	Sign 🗸	
, Signal Pole with Side		
Inductive Loop Det	ector ()	
Controller & Cab	inet	
□ Junction Box 2-in Underground Co	■ ∎	
N/A Right of Way		
> Directional Arr	ow	
N/A Curb Ramp $\langle \overline{A} \rangle$ Street Name Sign (D3-1) (A)	
	\bigcirc	

nal Upgrade		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
XION OF CAR CAR	SR 2466 (E. Garrison Boulevar at	d)
ADOGUDIT	NC 274 (Union Road)	SEAL 044434
Star and star and star	Division 12 Gaston County Gasto	Onla ENGINEER
Design Section	PLAN DATE: May 2021 REVIEWED BY: SL Phillip	S P BAUMAN
reenfield Pkwy,Garner,NC 27529	PREPARED BY: CF Davis REVIEWED BY: KP Baumann	
SCALE	REVISIONS INIT. D	ATE DocuSigned by:
0 40		Ken Barran 3/11/2022
		DATE
1 "=40'		SIG. INVENTORY NO. 12-0098



					PROJE	CT REFERENCE NO	. SHEET NO
EMPT						C-5703	Sig.49
PRE 3	PRE 5						
2+6	4+8			2 Pha	ase		
OFF	OFF			Pre-Ti	imed		
0	0		w/ Emei	rgency Vehi	icle	Preemptic	on
Ν	N			stonia Sig			
Ν	N			•		•	
-	-		efer to "Roadwa	•	•		
-	-	Ja	anuary 2018 and	l "Standard Sp	ecific	ations for Roa	ads
1	1	ar	nd Structures" d	ated January 2	2018.		
25.5*	25.5*	2. D	o not program s	ignal for late ni	ight fla	ashing	
25.5*	25.5*	op	peration unless of	otherwise direc	cted b	y the Enginee	er.
7	2	3. Lo	ocate new cabin	et so as not to	obstr	uct sight dista	ance
120	120	of	^r vehicles turning	g right on red.			
25 . 5 *	25.5*	4. Pa	avement markin	gs are existing			
25 . 5 *	25.5*	5. M	aximum times s	hown in timing	chart	are for free-	run
e during norn	nal operation	Oľ	peration only. Co	pordinated sign	nal sys	stem timing v	alues
			Controller As	ουι. π υ ΙυΖ			
				Traffic : Modified	Signa	- <u>E</u> I Head	EXISTING ●→→ N/A
				Traffic Modified S Pedestriar	Signa Signa Sign Sigr	<u>E</u> I Head II Head II Head	•->
				Traffic S Modified S Pedestrian Signal Pole w Inductive I Controlle	Signa Sign Sign Sign Sign Sign Sign Sign Sign	E I Head I Head th Guy idewalk Guy Detector (abinet ox I Conduit — Yay — Arrow acks	•->
	ade		$ \begin{array}{c} $	Traffic Modified S Pedestrian Signal Pole w Inductive I Controlle Junct 2-in Underg Right Directio Railro	Signa Sign Sign Sign Sign Sign Sign Sign Sign	E I Head I Head th Guy idewalk Guy Detector (abinet ox I Conduit — Yay — Arrow acks	N/A I I I CONSIDERED ESS ALL

Division 12 Gaston County Gastonia May 2021 REVIEWED BY: SL Phillips PLAN DATE: REVIEWED BY: KP Baumann 750 N.Greenfield Pkwy,Garner,NC 27529 PREPARED BY: DM Curri SCALE REVISIONS INIT. DATE Ken Barran 3/11/2022 30 0 -5DC709A86BCB447... SIGNATURE DATE 1″=30′ 12-0102 SIG. INVENTORY NO.



	DEFAL PHASING [<u>DEFAULT</u> <u>EV PREEMPT PHA</u> (Medium Priority)	SES		_T PHASING F OPERATION			ALTERNATE PHASING DIAGRAM	DETECTOR DETECTOR	INSTALLATION CHA	
Image: Definition of the second for	Ø2+6 Ø2+5 Ø2+5 Ø2+5 Ø1+6 Ø1+6 Ø1+5 Ø1+5 <t< th=""><th>Ø3+8 Ø3+8 Ø4+7 Ø4+7 Ø4+7 Ø4+8 TECTION LEGEND VEMENT MOVEMENT (OVERLAP) D MOVEMENT MOVEMENT AL FACE I.D.</th><th>PRE S (Ø2+5) PRE S (Ø3+8) ALTERNATE EV PREEMPT PHA (Medium Priority)</th><th>FACE 11 21,22 31 41,42,4 51 61,62 71 81 82 P61,P6 SIGNA FACE 11 21,22 31 81 82 P61,P6 51 61,62 71 81 51 61,62 71 81 82 P61,P6 51 61,62 71 81 82 961,P6 81 71 81 82 961,P6 81 82 961,P6 81 82 961,P6 81 82 961,P6 81 82 961,P6 81 81 82 961,P6 81 81 82 961,P6 81 81 81 82 961,P6 81 81 81 82 961,P6 81 81 82 961,P6 81 81 82 961,P6 81 81 81 82 961,P6 81 81 81 82 961,P6 81 81 82 81 81 82 81 81 81 81 81 81 81 81 81 81</th><th>I I I</th><th>PHASE Ø Ø Ø Ø Ø P P F 2 3 3 4 4 R R R R 6 7 8 7 8 3 5 H 6 7 8 7 8 3 5 H G R R R R R R Y G R R R R R R Y G R R R R R R R G R R R R R R R G R R R R R R R G R R R R R R R R G R R R G R R R R V DW DW DW DW DW DW DW DW G R R</th></t<> <th></th> <th></th> <th></th> <th>LOOP SIZE (FT) DISTANCE FROM STOPBAR (FT) DISTANCE FROM STOPBAR (FT) 1A 6X60 +5 2 2A 6X6 300 E 2B 6X6 300 E 3A 6X60 +5 2 4A 6X40 +5 2 5A 6X60 0 2 6A 6X6 300 E 6B 6X6 300 E 7A 6X40 +5 2 8A 6X60 +5 2 8A 6X60 +5 2 * Reduce Delay to 3 seconds du # Disable Phase call for loop</th> <th>ORNS ORNS ORNS OPHASE OPHASE OPHASE OPHASE OPHASE OPHASE EXTEND DELAY -4-2 - 1 Yes - 5* -4-2 - 1 Yes - - XIST - 2 Yes - - -4-2 - 3 Yes - - -4-2 - 3 Yes - - -4-2 - 4 Yes - - -4-2 - 4 Yes - 3 -4-2 - 4 Yes - 3 -4-2 - 5 Yes - - XIST - 6 Yes - - -4-2 - 8 Yes - - -4-2 - 8 Yes - 10 ring Alternate Phasing operation. during Alternate Phasing operation. - 10</th> <th>USE ADDED INITIAL J.A. Q.Y. - N - X - N - X - G - X X N - X X N - X X N - X X N - X X N - X - N - X - N - X - N - X - N - X - N - X - N - X X N - X X N - X X N - X - N - X - N - X - N - X - N</th>	Ø3+8 Ø3+8 Ø4+7 Ø4+7 Ø4+7 Ø4+8 TECTION LEGEND VEMENT MOVEMENT (OVERLAP) D MOVEMENT MOVEMENT AL FACE I.D.	PRE S (Ø2+5) PRE S (Ø3+8) ALTERNATE EV PREEMPT PHA (Medium Priority)	FACE 11 21,22 31 41,42,4 51 61,62 71 81 82 P61,P6 SIGNA FACE 11 21,22 31 81 82 P61,P6 51 61,62 71 81 51 61,62 71 81 82 P61,P6 51 61,62 71 81 82 961,P6 81 71 81 82 961,P6 81 82 961,P6 81 82 961,P6 81 82 961,P6 81 82 961,P6 81 81 82 961,P6 81 81 82 961,P6 81 81 81 82 961,P6 81 81 81 82 961,P6 81 81 82 961,P6 81 81 82 961,P6 81 81 81 82 961,P6 81 81 81 82 961,P6 81 81 82 81 81 82 81 81 81 81 81 81 81 81 81 81	I I	PHASE Ø Ø Ø Ø Ø P P F 2 3 3 4 4 R R R R 6 7 8 7 8 3 5 H 6 7 8 7 8 3 5 H G R R R R R R Y G R R R R R R Y G R R R R R R R G R R R R R R R G R R R R R R R G R R R R R R R R G R R R G R R R R V DW DW DW DW DW DW DW DW G R R				LOOP SIZE (FT) DISTANCE FROM STOPBAR (FT) DISTANCE FROM STOPBAR (FT) 1A 6X60 +5 2 2A 6X6 300 E 2B 6X6 300 E 3A 6X60 +5 2 4A 6X40 +5 2 5A 6X60 0 2 6A 6X6 300 E 6B 6X6 300 E 7A 6X40 +5 2 8A 6X60 +5 2 8A 6X60 +5 2 * Reduce Delay to 3 seconds du # Disable Phase call for loop	ORNS ORNS ORNS OPHASE OPHASE OPHASE OPHASE OPHASE OPHASE EXTEND DELAY -4-2 - 1 Yes - 5* -4-2 - 1 Yes - - XIST - 2 Yes - - -4-2 - 3 Yes - - -4-2 - 3 Yes - - -4-2 - 4 Yes - - -4-2 - 4 Yes - 3 -4-2 - 4 Yes - 3 -4-2 - 5 Yes - - XIST - 6 Yes - - -4-2 - 8 Yes - - -4-2 - 8 Yes - 10 ring Alternate Phasing operation. during Alternate Phasing operation. - 10	USE ADDED INITIAL J.A. Q.Y. - N - X - N - X - G - X X N - X X N - X X N - X X N - X X N - X - N - X - N - X - N - X - N - X - N - X - N - X X N - X X N - X X N - X - N - X - N - X - N - X - N
TIMING CHART PHASE FATURE INCOM INCOM TIMING CHART PHASE PHASE PHASE INCOM	$ \begin{array}{c} \hline \hline \\ \hline \\ \\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ $	12" P G 82	12"		 2B = = = = = = = = = = = = = = = = =	e=====================================	========= 		$\begin{array}{c ccccccccccccccccccccccccccccccccccc$			
FATURE 1 2 8 4 9 6 7 8 Min Green · 7 1.2 7 7 1.2 7 7 1.2 7 7 Visit // Sine - - - 4 -		TIMIN	IG CHART						\mathcal{S} $ $			
Min Green * 7 2 7 <th< td=""><td>FEATURE 1</td><td></td><td>4 5</td><td>6 7</td><td>8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	FEATURE 1		4 5	6 7	8							
1 above					7		1					/
Max 1 · 15 45 20 25 15 45 20 25 16 27 25 Yelow 3.0 4.6 3.0 4.7 3.0 4.6 3.0 4.7 0 <td></td>												
Indian	Max 1 * 15	45 20	25 15	45 20	25		OFF O	OFF O	_			
Red Revert 2.0							Y	Y				
Activities is Actual - - <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>N</td> <td>N</td> <td>_</td> <td></td> <td></td> <td></td>							N	N	_			
Image: Second Synchronic Synchronis Synchronis Synchronic Synchronic Synchronic Synchronic							1 255 *	1 255 *	-		- · · -	
Time Before Reduction * - 15 - - - - - - NC 275 Time To Reduce * - 30 - - - - - Reduction * 25.5* 25							1	1				
Immento Neadee 0.0	Time Before Reduction * -	15 -		15 -	-	-			_		Nobility and	NC 279
Locking Detector - X - - X -							<u>∠5.5</u> ₩ 7	<u>∠5.5</u> ₩ 7	-		CONTRACTION CARGON	SR 1255
Recall Position - MIN RECALL - X - - X - - X - - X - - X </td <td>· · · · · · · · · · · · · · · · · · ·</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>2</td> <td>2</td> <td></td> <td></td> <td>I Lans</td> <td></td>	· · · · · · · · · · · · · · · · · · ·						2	2			I Lans	
Simultaneous Gap X		MIN RECALL -	MIN	RECALL -	-	· · · · · · · · · · · · · · · · · · ·			_			Division 12
Simultaneous Gap A						Exit Yellow Change	25.5*	25.5*		Kimley» Hor	" Design 50"	
** Program Timing on GPS Detection Unit				X V		Exit Red Clear	25.5 *	25.5 米			TSO N.GI EETII TEIU FKWY, GUI HEI, NC ZI SZS	PREPARED BY: CF D

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Sig.50.0 C-5703 8 Phase Fully Actuated w/ Alternate Phasing Operation and Emergency Vehicle Preemption Gastonia Signal System

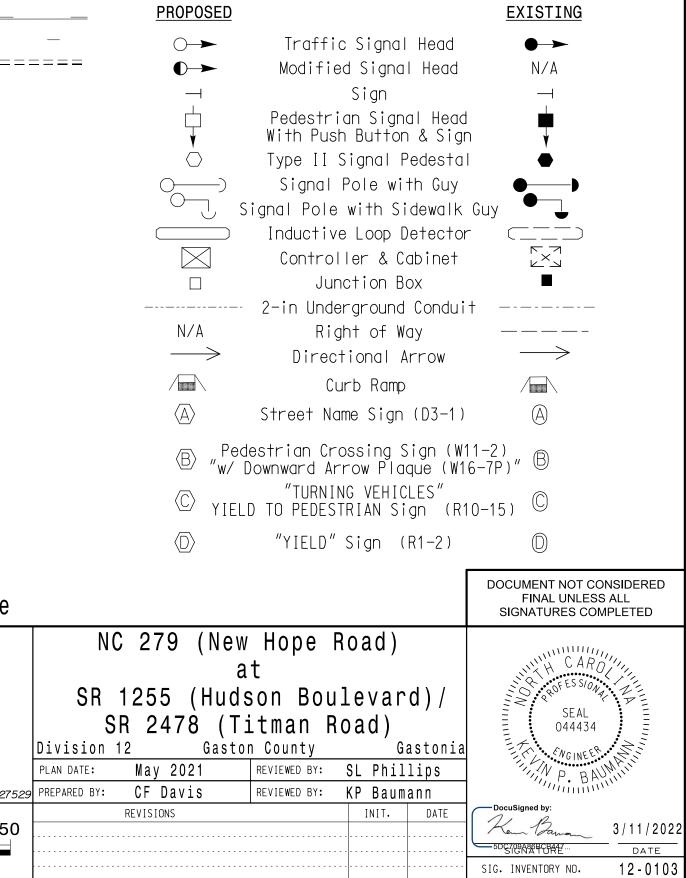
PROJECT REFERENCE NO.

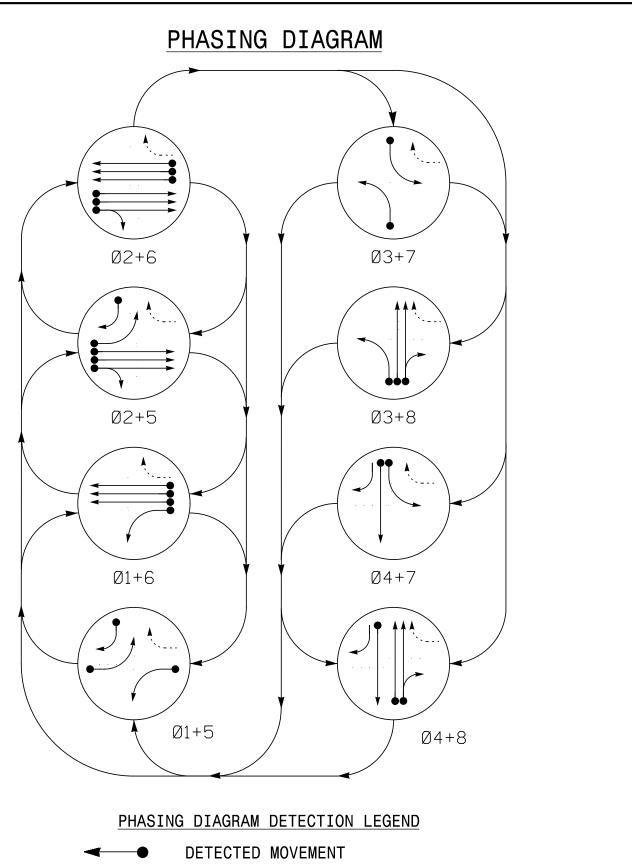
SHEET NO.

NOTES

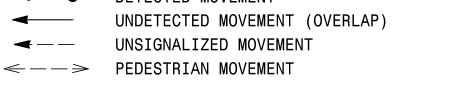
- . Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- 2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- 3. Phase 1 and/or phase 5 may be lagged. 4. Phase 3 and/or phase 7 may be lagged.
- 5. Set all detector units to presence mode.
- 6. In the event of loop replacement, refer to the current ITS and Signal Design Manual and submit a Plan of Record to the Signal Design Section.
- 7. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- 8. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- 9. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- 10. Pavement markings are existing.
- 11. The City Engineer or their representative will determine the hours of use for each phasing plan.
- 12. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
- 13. Disconnect and abandon existing loops 2C, 2D, 6C, & 6D.
- 14. Install new cabinet on the existing cabinet foundation.
- 15. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
- 16. Install GPS emergency preemption system per manufacturer's instructions to achieve preemption needed, as shown in phasing diagram.
- 17. City of system data:

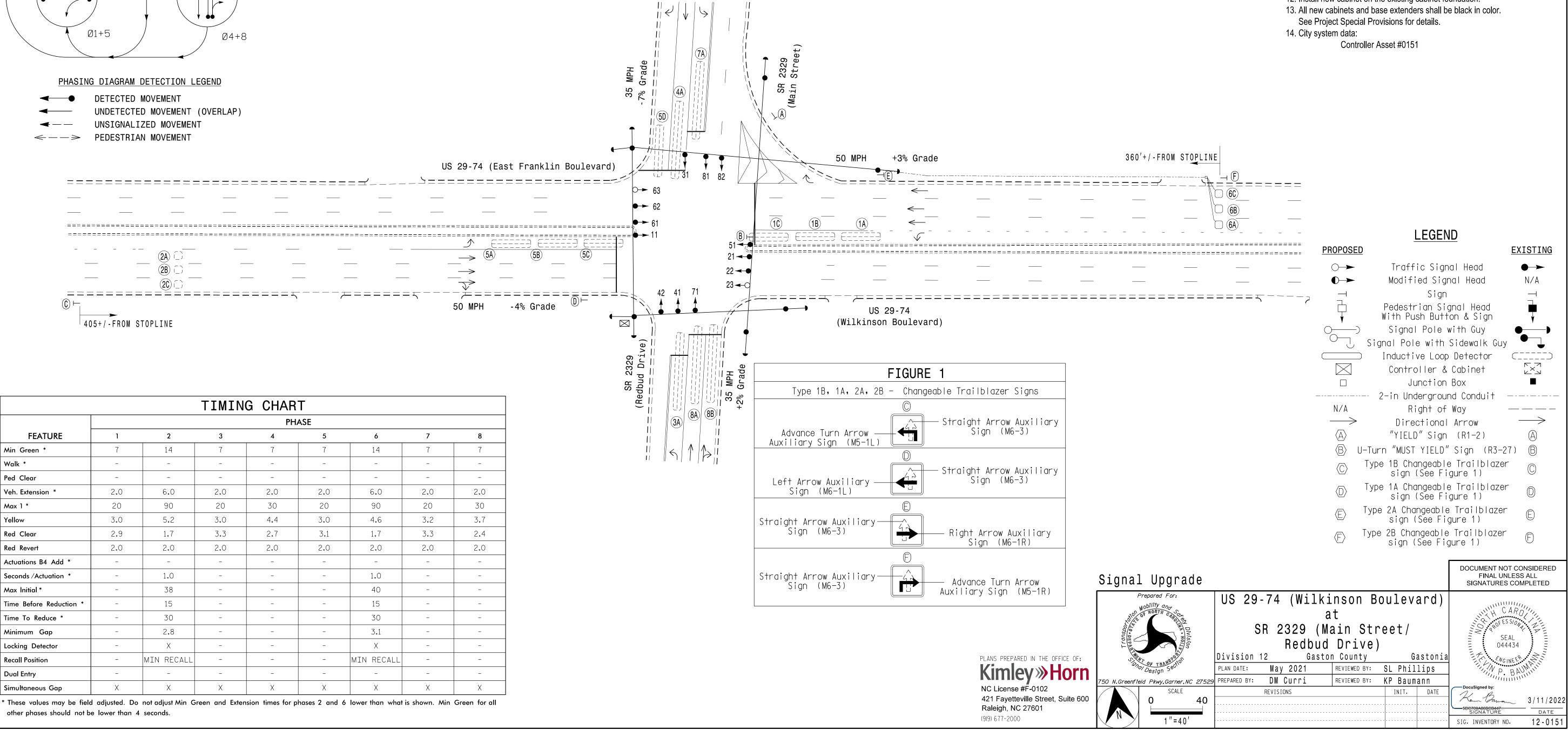
Controller Asset #0103.





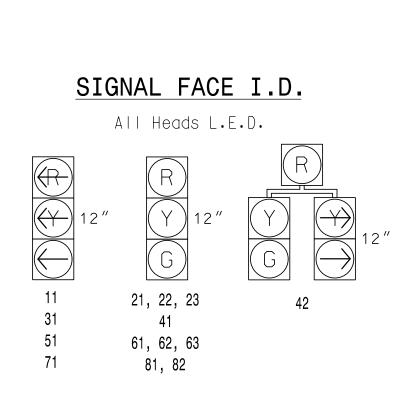
TAB	LE	0	F ()PE	RA	TI	ON		
				Ρ	HAS	E			
SIGNAL FACE	Ø 1 + 5	Ø 1 + 6	Ø 2+ 5	Ø2+6	Ø 3 + 7	Ø 3 + 8	Ø 4 + 7	Ø 4 + 8	F L A S H
11	-	┥	≺R	◄ि	≺R	≺R	≺R	- ₽	≺R
21, 22, 23	R	R	G	G	R	R	R	R	Y
31	R	≺R	≺R	≺R	-	-	- R−	- ₽	≺R
41	R	R	R	R	R	R	G	G	R
42	R	R	R	R	R	R	G	G	R
51	-	≺R	-	≺R	≺R	≺R	≺R	-R	≺R
61, 62, 63	R	G	R	G	R	R	R	R	Y
71	≺R	≺R	- R	∢R	-	- R	-	-R	- R
81, 82	R	R	R	R	R	G	R	G	R
SIGN 'C'	*	*	*	*	*	*	*	*	OFF
SIGN 'D'	*	*	*	*	*	*	*	*	OFF
SIGN 'E'	*	*	*	*	*	*	*	*	OFF
SIGN 'F'	*	*	*	*	*	*	*	*	OFF





			TIMIN	G CHAF	۲			
				PH	IASE			
FEATURE	1	2	3	4	5	6	7	8
Min Green *	7	14	7	7	7	14	7	7
Walk *	-	-	_	-	-	-	-	-
Ped Clear	-	-	_	-	-	-	_	-
Veh. Extension *	2.0	6.0	2.0	2.0	2.0	6.0	2.0	2.0
Max 1 *	20	90	20	30	20	90	20	30
Yellow	3.0	5.2	3.0	4.4	3.0	4.6	3.2	3.7
Red Clear	2.9	1.7	3.3	2.7	3.1	1.7	3.3	2.4
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Actuations B4 Add *	-	-	_	-	-	-	_	-
Seconds /Actuation *	-	1.0	_	-	-	1.0	_	-
Max Initial *	-	38	_	-	-	40	_	-
Time Before Reduction *	-	15	_	-	-	15	_	-
Time To Reduce *	-	30	_	-	-	30	_	-
Minimum Gap	-	2.8	_	-	-	3.1	_	-
Locking Detector	-	Х	_	-	-	Х	_	-
Recall Position	-	MIN RECALL	_	-	-	MIN RECALL	_	-
Dual Entry	-	-	_	-	-	_	_	-
Simultaneous Gap	Х	Х	Х	Х	Х	Х	Х	Х

other phases should not be lower than 4 seconds.



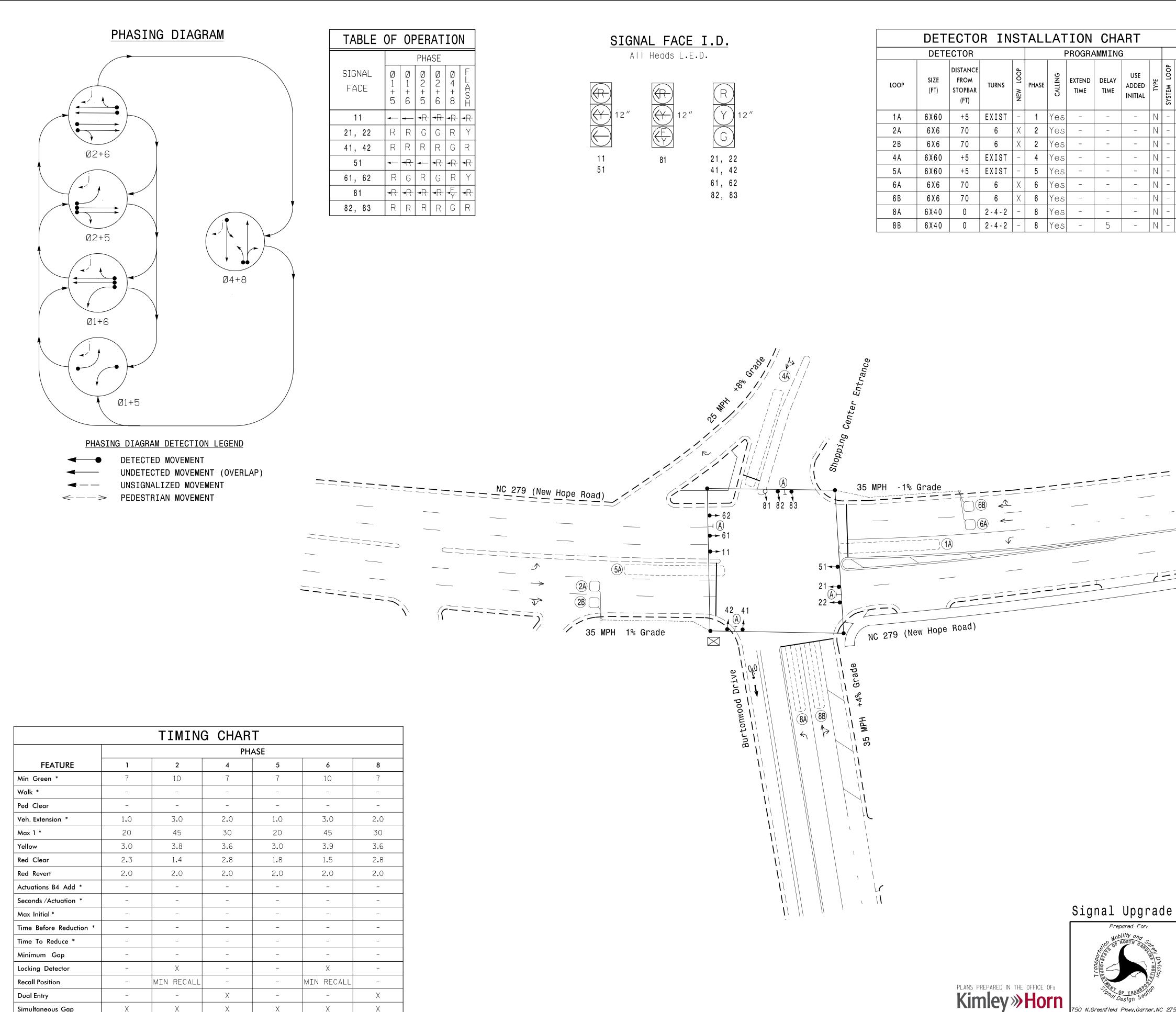
	DETE	CTOR	INS	ST/	4LL/	AT]	[ON	CHA	RT			
	DETE	CTOR			PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	TYPE	SYSTEM LOOP	NEW CARD
1A	6X30	65	2-4-2	-	1	Yes	-	-	-	Ν	-	Х
1B	6X30	30	2-4-2	-	1	Yes	-	-	-	N	-	Х
10	6X30	+5	2-4-2	-	1	Yes	-	-	-	N	-	Х
2A	6X6	335	EXIST	-	2	Yes	-	-	Х	N	-	Х
2B	6X6	335	EXIST	-	2	Yes	-	-	Х	N	_	Х
20	6X6	335	EXIST	-	2	Yes	_	_	Х	Ν	_	Х
3A	6X60	20	2-4-2	-	3	Yes	-	-	_	Ν	-	Х
4A	6X60	+5	2-4-2	-	4	Yes	-	1	-	Ν	-	Х
5A	6X30	65	2-4-2	-	5	Yes	-	1	-	Ν	-	Х
5B	6X30	30	2-4-2	-	5	Yes	-	-	-	N	-	Х
5C	6X30	+5	2-4-2	-	5	Yes	-	-	-	N	_	Х
5D	6X40	+5	2-4-2	-	5	Yes	-	10	_	Ν	-	Х
6A	6X6	355	6	X	6	Yes	-	-	Х	N	-	Х
6B	6X6	355	6	Х	6	Yes	-	-	Х	Ν	-	Х
60	6X6	355	6	Х	6	Yes	-	-	Х	Ν	-	Х
7A	6X60	+5	2-4-2	-	7	Yes	-	-	_	N	-	Х
8A	6X60	+5	2-4-2	-	8	Yes	_	-	_	Ν	_	Х
8B	6X60	+5	2-4-2	-	8	Yes	_	5	-	Ν	_	Х

PROJECT REFERENCE NO.	SHEET NO.
C-5703	Sig.51.0

8 Phase Fully Actuated Gastonia Signal System

NOTES

- 1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- 2. Do not program signal for late night flashing
- operation unless otherwise directed by the Engineer.
- 3. Phase 1 and/or phase 5 may be lagged.
- 4. Phase 3 and/or phase 7 may be lagged. 5. Reposition existing signal heads numbered 21, 22, 61, and 62.
- 6. Set all detector units to presence mode.
- 7. Relabel existing loop 4B as 5D.
- 8. In the event of loop replacement, refer to the current ITS and Signals Design Manual and submit a Plan of Record to the Signal Design Section.
- 9. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- 10. Pavement markings are existing.
- 11. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
- 12. Install new cabinet on the existing cabinet foundation.



DocuSign Envelope ID: 71A6ECA9-99B4-4A07-8B92-D1E2A58F3BE5

* 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

Х

Х

Simultaneous Gap

NC License #F-0102 421 Fayetteville Street, Suite 600 Raleigh, NC 27601 (919) 677-2000

PROJECT REFERENCE NO.	SHEET NO.
C-5703	Sig.52.0

CHART									
MMING	à								
DELAY TIME	USE ADDED INITIAL	ТҮРЕ	SYSTEM LOOP	NEW CARD					
-	-	Ν	-	Х					
-	-	Ν	I	Х					
-	-	N	1	Х					
-	-	N	-	Х					
-	-	N	-	Χ					
-	-	Ν	-	Х					
-	-	Ν	-	Х					
-	-	Ν	-	X X X X X X X X X X X					
5	_	N	-	Х					

Prepared For:

SCALE

1"=30'

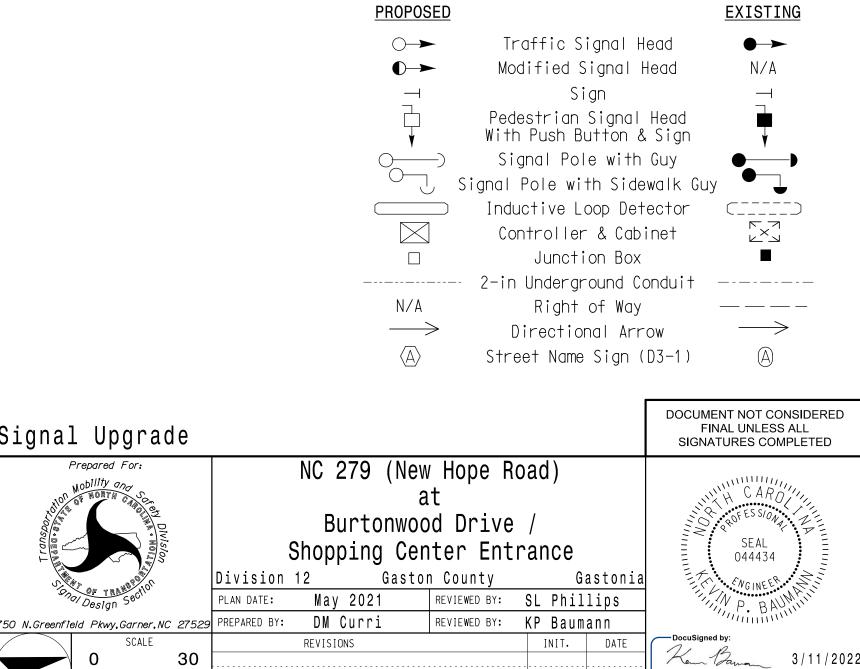
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5 Phase Fully Actuated Gastonia Signal System

NOTES

- 1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- 2. Do not program signal for late night flashing
- operation unless otherwise directed by the Engineer. 3. Phase 1 and/or phase 5 may be lagged.
- 4. Reposition existing signal heads numbered 82 and 83.
- 5. Set all detector units to presence mode.
- 6. In the event of loop replacement, refer to the current ITS and Signal Design Manual and submit a Plan of Record to the Signal Design Section.
- 7. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- 8. Remove existing "Left Turn" "Yield" Combination Sign (R1-2)
- 9. Pavement markings are existing.
- 10. Maximum times shown in timing chart are for free-run
- operation only. Coordinated signal system timing values
- 11. Install new cabinet on the existing cabinet foundation. 12. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
- 13. Existing signal heads 81 and 82 have been relabeled to 82 and 83, respectively.
- 14. City system data: Controller Asset #0152.

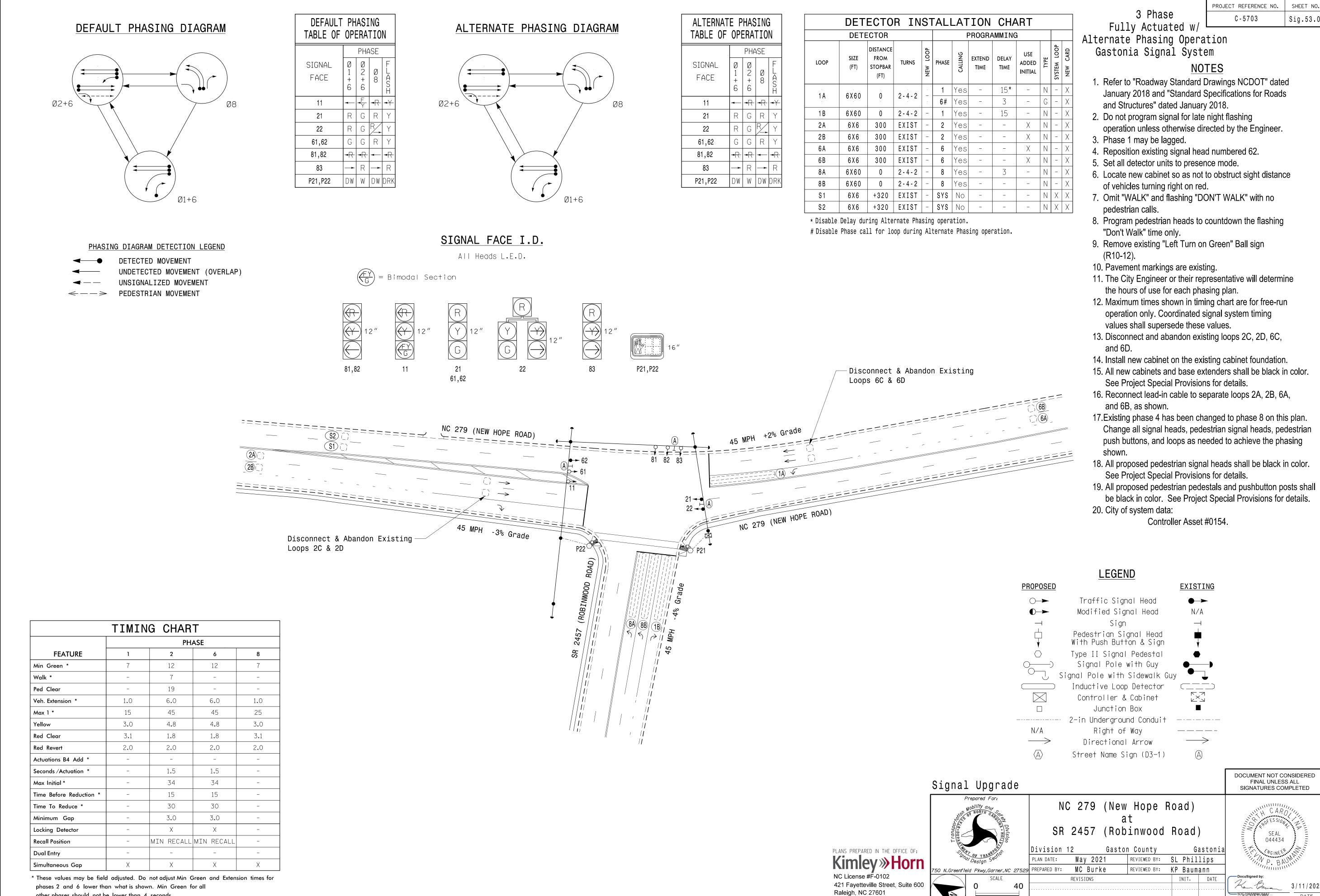
LEGEND



SIG. INVENTORY NO.

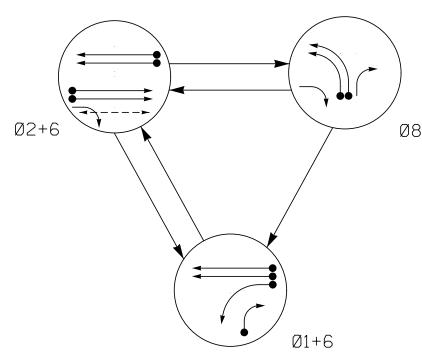
DATE

12-0152



other phases should not be lower than 4 seconds.

DocuSign Envelope ID: 71A6ECA9-99B4-4A07-8B92-D1E2A58F3BE5

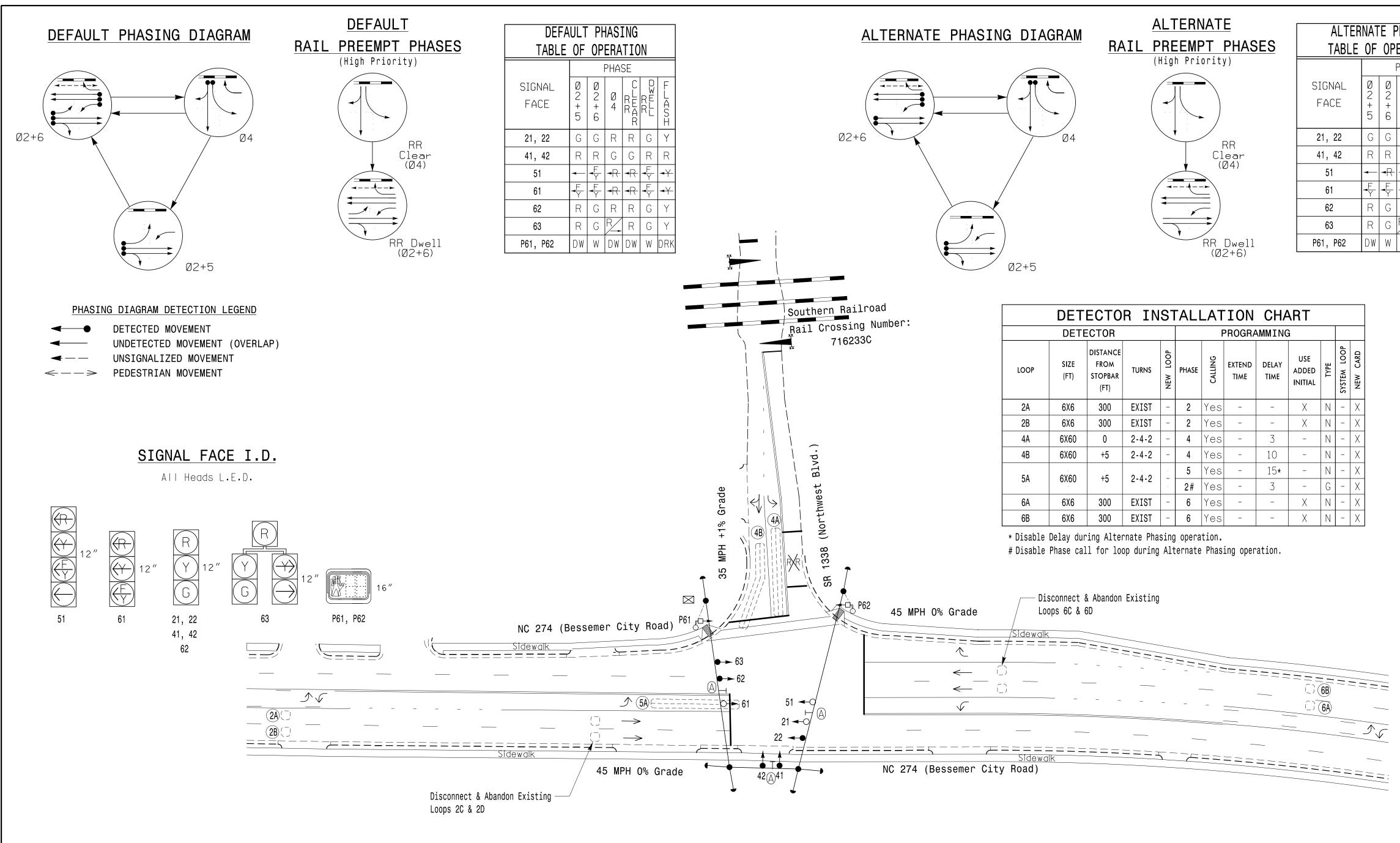


ALTERNAT TABLE OF				
		PHA	чSЕ	
SIGNAL FACE	Ø 1 + 6	Ø 2+6	Ø 8	FLAST
11	+	−R	≺R	- ¥-
21	R	G	R	Y
22	R	G	R	Y
61,62	G	G	R	Y
81,82	≺R	≺R	•	- R
83		R	->	R
P21,P22	D·W	W	D·W	DRK

	DETECTOR INSTALLATION CHART											
	DETECTOR PROGRAMMING											
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	ТҮРЕ	SYSTEM LOOP	NEW CARD
1 A	6X60	·	2 - 4 - 2		1	Yes	-	15 *	-	Ν	-	Х
1 A	0,00	0	2-4-2		6#	Yes	-	3	-	G	-	Х
1 B	6 X 6 0	0	2 - 4 - 2	-	1	Yes	-	15	-	N	-	Х
2 A	6X6	300	EXIST	-	2	Yes	-	-	Х	Ν	-	Х
2 B	6X6	300	EXIST	-	2	Yes	-	-	Х	N	-	Х
6 A	6X6	300	EXIST	-	6	Yes	_	_	Х	Ν	-	Х
6 B	6X6	300	EXIST	-	6	Yes	-	_	Х	Ν	-	Х
8 A	6 X 6 0	0	2 - 4 - 2	-	8	Yes	-	3	-	Ν	-	Х
8 B	6X60	0	2 - 4 - 2	-	8	Yes	_	_	-	Ν	_	Х
S 1	6X6	+ 3 2 0	EXIST	-	SYS	No	-	_	-	Ν	Х	Х
S 2	6X6	+320	EXIST	-	SYS	No	-	_	_	Ν	Х	Х

(919) 677-2000

Transport	N Division	SR	2457 (Rob	-	Road)	SEAL 044434	
S	A AN A A A A A A A A A A A A A A A A A	Division	12 Gastor	n County	G	astonia	= K	
Ono	Design Section	PLAN DATE:	May 2021	REVIEWED BY:	SL Phil	lips	NP BA	MAIN
reenfie	ld Pkwy,Garner,NC 27529	PREPARED BY:	MC Burke	REVIEWED BY:	KP Baum	ann		
	SCALE		REVISIONS		INIT.	DATE	DocuSigned by:	
	0 40						Kenn Daman	3/11/2022
≷│							5DC709A86BCB447	DATE
\checkmark	1 "=40'						SIG. INVENTORY NO.	12-0154



	TIMI	NG CHA	RT	
		PH	ASE	
FEATURE	2	4	5	6
Min Green *	12	7	7	12
Walk *	-	-	-	7
Ped Clear	-	-	-	20
Veh. Extension *	6.0	2.0	1.0	6.0
Max 1 *	100	30	20	100
Yellow	4.5	3.0	3.0	4.5
Red Clear	1.7	2.8	2.4	1.7
Red Revert	2.0	2.0	2.0	2.0
Actuations B4 Add *	-	_	-	-
Seconds /Actuation *	1.5	_	-	1.5
Max Initial *	34	_	-	34
Time Before Reduction *	15	-	-	15
Time To Reduce *	40	-	-	40
Minimum Gap	3.0	_	-	3.0
Locking Detector	Х	_	-	Х
Recall Position	MIN RECALL	_	-	MIN RECALL
Dual Entry	-	_	-	-
Simultaneous Gap	Х	Х	Х	Х

Inese values may be tield 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.

RR PREEMPT	
FUNCTION	PRE 1
Exit Phase(s)	4
Preempt Override	ON
Delay Time	0
Ped Clear Trough Yellow	Y
Terminate Phases	Ν
Track Clear Reservice	Y
Entrance Walk	1
Entrance Ped Clear	5
Entrance Min Green	1
Entrance Yellow Change	4.5
Entrance Red Clear	2.8
Track Clear Min Green	30
Track Clear Yellow Change	3.0
Track Clear Red Clear	2.8
Min Dwell Time	7
Exit Yellow Change	25 . 5 *
Exit Red Clear	25.5 *

* Time defaults to time used for phase during normal operation

THIS SIGNAL WAS DESIGNED FOR ADVANCE PREEMPTION



ALTERNATE PHASING TABLE OF OPERATION							
			PHA	SE			
SIGNAL FACE	Ø 2+5	Ø 2 + 6	Ø 4	C REA R R R R	D WELL RR	LUZNI	
21, 22	G	G	R	R	G	Y	
41, 42	R	R	G	G	R	R	
51	-	≺R	≺R	≺R	≺R	- ¥-	
61	- F Y	- F Y	- ₽	≺R	- F Y	- ¥-	
62	R	G	R	R	G	Y	
63	R	G	R	R	G	Y	
P61, P62	DW	W	DW	D·W	W	DRK	

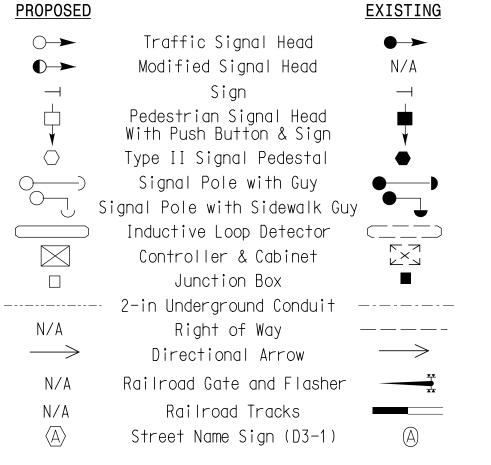
RT			
USE ADDED INITIAL	ТҮРЕ	SYSTEM LOOP	NEW CARD
Х	Ν	-	Х
X X	N	-	Х
-	Ν	-	Х
_	Ν	-	Х
-	Ν	-	Х
-	G	-	Х
Х	Ν	-	× × × × × × ×
X X	N	_	Х

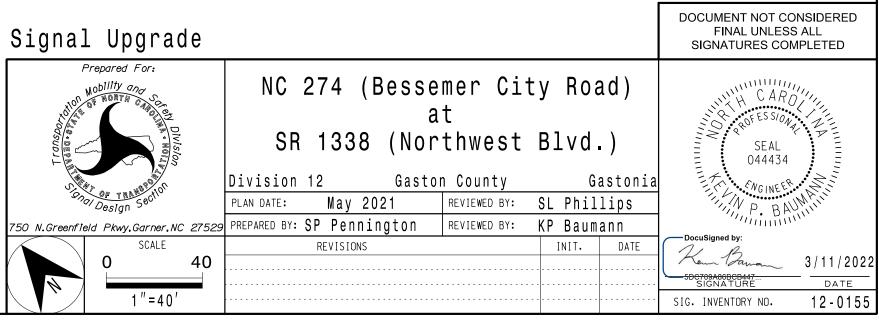
PROJECT REFERENCE NO. SHEET NO. C-5703 Sig.54.0

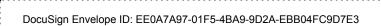
3 Phase Fully Actuated w/ Railroad Preemption and Alternate Phasing Operation Gastonia Signal System

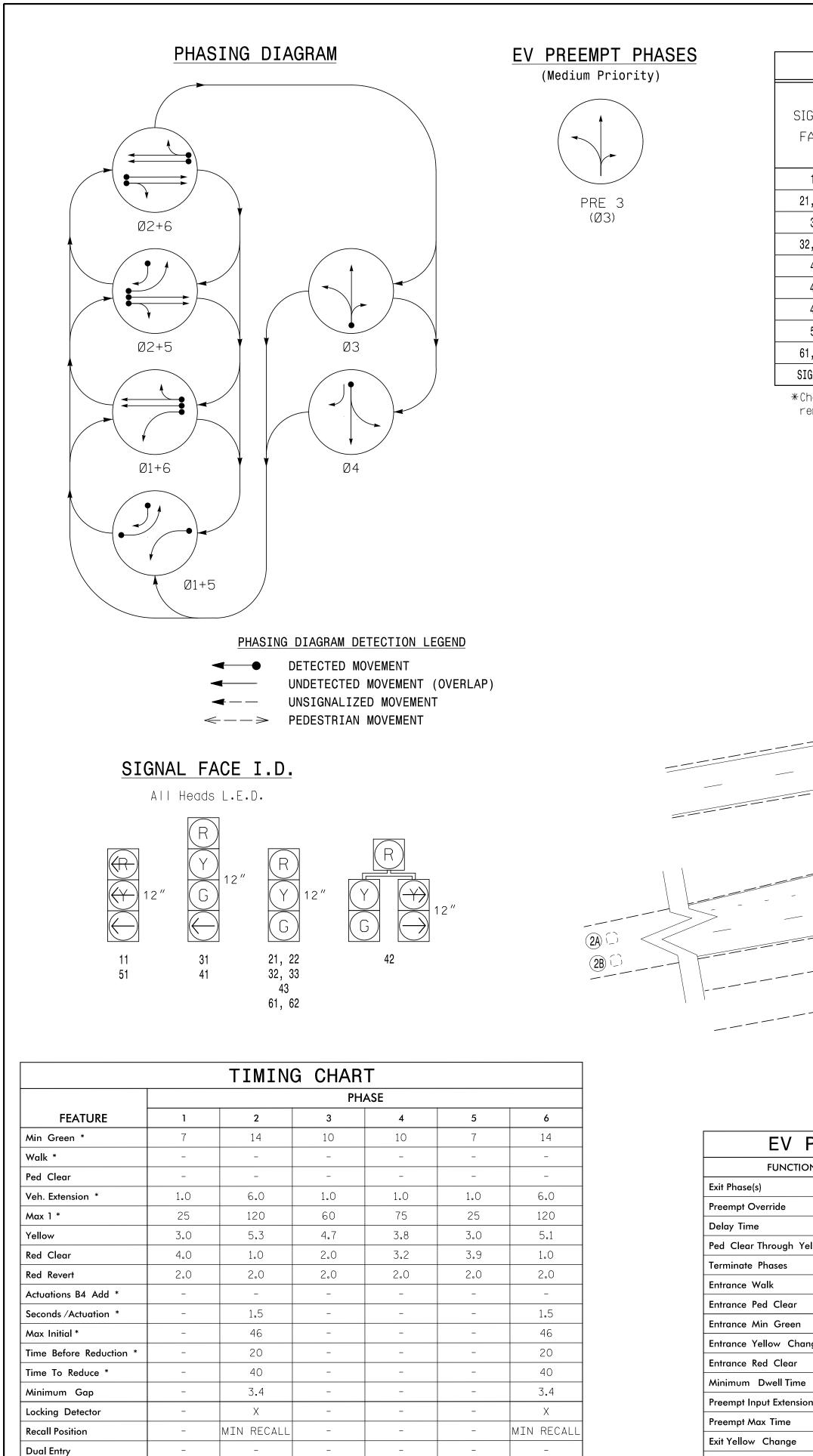
NOTES

- 1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- 2. This location contains railroad preemption phasing. Do not program for late night flashing operation.
- 3. Phase 5 may be lagged.
- 4. Set all detector units to presence mode. 5. In the event of loop replacement, refer to the current ITS and Signal Design Manual and submit a Plan of Record to the Signal Design Section.
- 6. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- 7. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- 8. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- 9. Pavement markings are existing.
- 10. The City Engineer or their representative will determine the hours of use for each phasing plan.
- 11. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
- 12. Disconnect and abandon existing loops 2C, 2D, 6C and 6D.
- 13. Install new cabinet on the existing cabinet foundation.
- 14. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
- 15. All proposed pedestrian signal heads shall be black in color. See Project Special Provisions for details.
- 16. All proposed pedestrian pedestals and pushbutton posts shall be black in color. See Project Special Provisions for details.
- 17. Reconnect lead-in cable to separate loops 2A, 2B and 6A, 6B as shown.
- 18. City system data:
 - Controller Asset #0155.









Simultaneous Gap

* 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.

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	TABL	E OF (OPERA	TION								DETECTOR INS				IST	ALI		ISTALLATION CHART PROGRAMMING					
			PHASE										DEIE					P	ROGRA				•	
	SIGNAL FACE	Ø Ø 1 1 + + 5 6	ØØ 222 +++ 56	Ø Ø 3 4	PRE SH							LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	ТҮРЕ	SYSTEM LOOP	
	11			ıR ≤ R	3 H 							1 A	6 X 2 5	+ 5	2 - 4 - 2	-	1	Yes	_	-	_	N	-	
	21, 22			R R	R Y							1 B	6X25	3.0	EXIST	-	1	Yes	_	-	-	N	-	
	31			GR	GR							1 C	6 X 2 5	60	EXIST	-	1	Yes	_	-	-	Ν	-	
	32, 33			G R	G R							2 A	6X6	420	EXIST	-	2	Yes	_	-	-	N	-	
	41			R <u>G</u>	RR							2 B 3 A	6X6 6X80	420	EXIST	-	2	Yes		- 10	-	N N	-	
		R R F		R G	R R							3'A 3'B	6X20	+ 5	EXIST EXIST	-	3 3	Yes Yes		10		N	_	
	43		RR	R G	R R							4 A	6X80	+5	EXIST	-	4	Yes	-	-	-	N	-	
	51		← <mark>∢</mark> R ┥	$R \sim R$	-R - R							5 A	6 X 2 5	+5	2 - 4 - 2	-	5	Yes	_	-	-	Ν	-	
	61, 62	R G	RG	r r	RY							5 B	6X25	3.0	EXIST	-	5	Yes	_	_	-	Ν	-	
	SIGN 'B'	* *	* *	* *	* OFF							5 C	6X25	6.0	EXIST	-	5	Yes	_	-	-	N	-	
	*Changeabl	e Trailb	lazer Si	gn con	trollec	t						5 D	6X35	+5	EXIST	-	5	Yes		10	-	N	-	
	remotely											6 A 6 B	6X6 6X6	420 420	EXIST EXIST	-	6 6	Yes Yes		-	-	N	_	
							% Grade	$\langle \rangle$		1 1	SR 13U/ Edgewoo Rnad)	2												
		S 29-74	(W. Fr 50 (n Boul	evard	%1+ HdW SE 62 62 61 61 62 61 6	11/ 5 5 42			2% Grade	US 29-7		<u>) (10</u>	n Boul		rd)							
FV					% Gra	evard	81+ HdW SE 62 62 62 61 62 62 62 62 62 64 61 62 62 62 64 61 62 62 64 64 64 64 64 64 64 64 64 64 64 64 64	43 11/ 5A 42	41 33			US 29-7		10 Ade	n Boul		FI		<u>_</u>		er Sig			
EV					% Gra	evard	81+ HdW SE 62 62 62 61 62 62 62 62 62 64 61 62 62 62 64 61 62 62 64 64 64 64 64 64 64 64 64 64 64 64 64	Mhitesides	41 33	1A 51 21 22 3B	MPH - 2% Grade	US 29-7	+1% Gra	10 Ade	pe 1A		FI	eable	e Trai		er Sign (

	I
FUNCTION	PRE 3
Exit Phase(s)	2+6
Preempt Override	OFF
Delay Time	0
Ped Clear Through Yellow	Ν
Terminate Phases	Ν
Entrance Walk	_
Entrance Ped Clear	_
Entrance Min Green	1
Entrance Yellow Change	25.5 米
Entrance Red Clear	25.5 米
Minimum Dwell Time	7
Preempt Input Extension Time $stst$	2
Preempt Max Time	120
Exit Yellow Change	25.5 *
Exit Red Clear	25.5 米

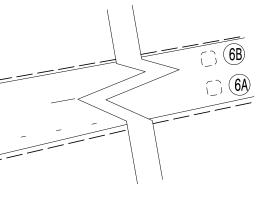
* Time defaults to time used for phase during normal operation. ** Program Timing on GPS Detection Unit.

NC License #F-0102 421 Fayetteville Street, Suite 600 Raleigh, NC 27601 (919) 677-2000

PLANS PREPARED IN THE OFFICE OF:

Kimley»Horn





6 Phase Fully Actuated Gastonia City System w/ Emergency Vehicle Preemption

PROJECT REFERENCE NO.

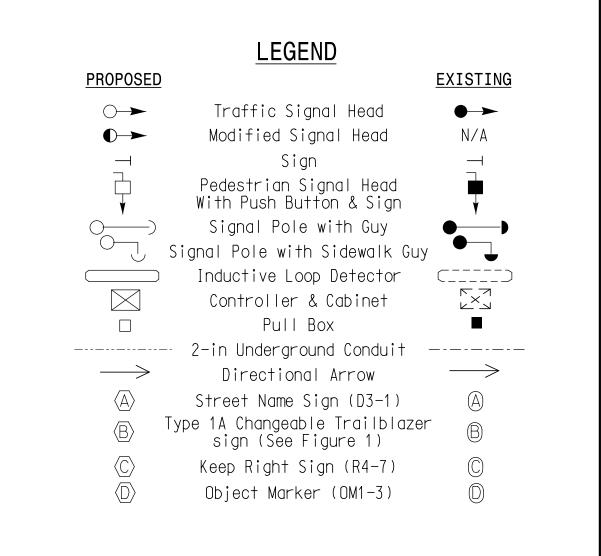
C-5703

SHEET NO.

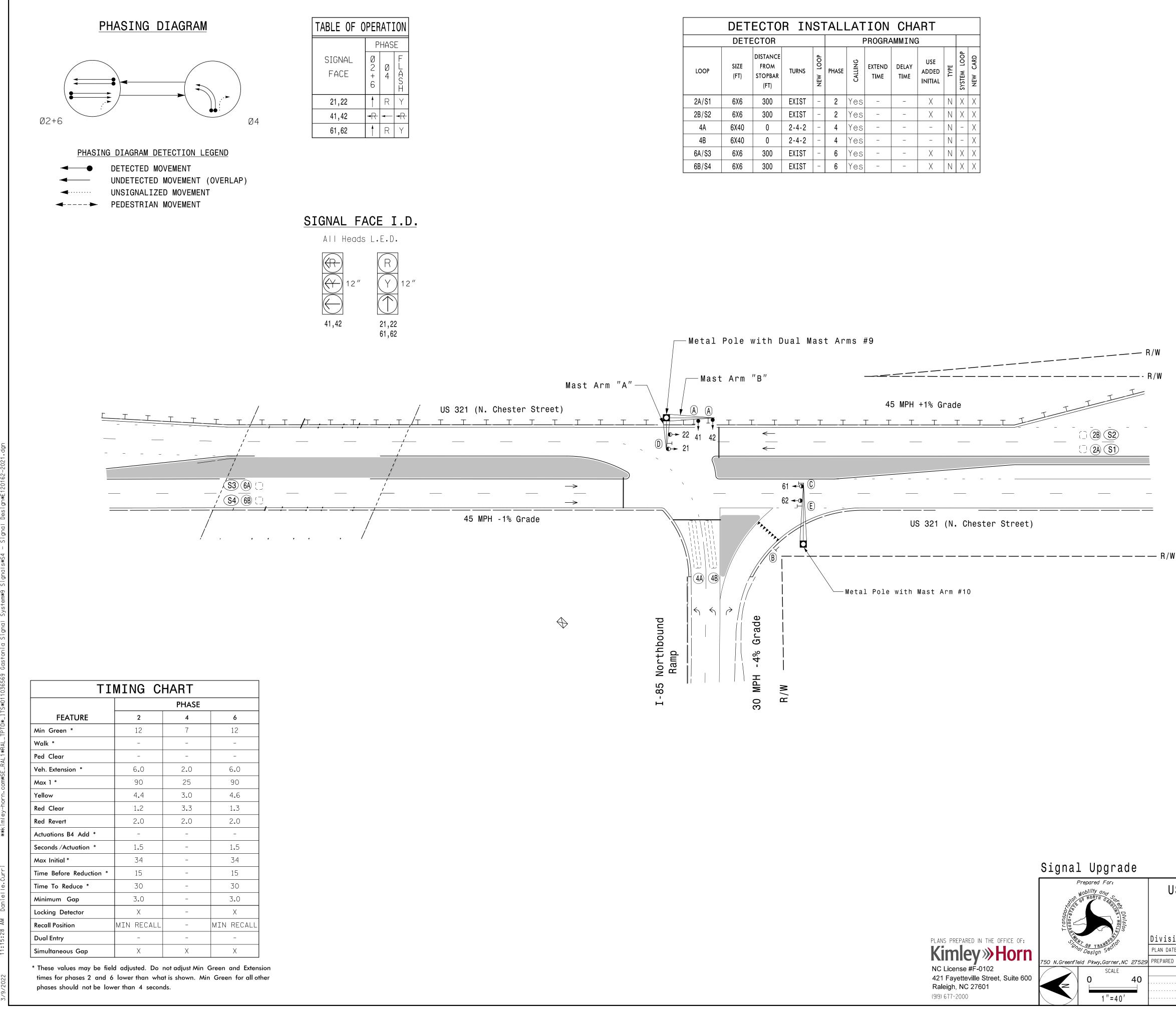
Sig.55.0

NOTES

- 1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- 2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- 3. Phase 1 and/or phase 5 may be lagged.
- 4. The order of phase 3 and phase 4 may be reversed.
- 5. Set all detector units to presence mode.
- 6. In the event of loop replacement, refer to the current ITS and Signal Design Manual and submit a Plan of Record to the Signal Design Section.
- 7. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- 8. Pavement markings are existing.
- 9. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
- 10. Existing loop 4B has been relabled to 5D.
- 11. Install new cabinet on the existing cabinet foundation.
- 12. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
- 13. Install GPS emergency preemption system per manufacturer's instructions to achieve preemption needed, as shown in phasing diagram.
- 14. City system data:
 - Controller Asset: #0157



Signal Upgrade			DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
Prepared For:	US 2	9-74	
MODIFY CARD	(W. Franklin	Boulevard) at	LINIT CARO
DIVE SECOND	SR 1307 (Edg	ewood Road /	C Q OFESSION T
LI COLOR		l itesides) n County Gastonia	SEAL 044434
Not the second sec	Division 12 Gasto	n County Ó Gastonia	F. C. WGINEER
Design Section	PLAN DATE: May 2021	REVIEWED BY: SL Phillips	P. BAUMIN
750 N.Greenfleld Pkwy,Garner,NC 27529	PREPARED BY: CF Davis	REVIEWED BY: KP Baumann	
SCALE	REVISIONS	INIT. DATE	DocuSigned by:
			Ken Jama 3/11/2022
			SIGNATURE DATE
1 "=40'			SIG. INVENTORY NO. 12-0157



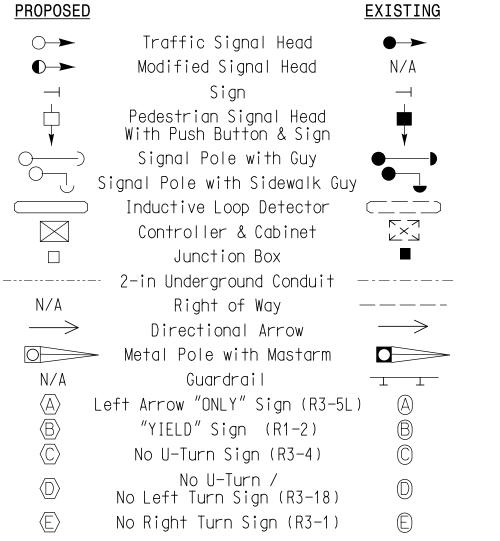
	DET	ЕСТО	R IN	S1	ALI	_AT	ION	CHA	ART			
	DETE	CTOR		F	PROGRA	AMMINO	à					
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	ТҮРЕ	SYSTEM LOOP	NEW CARD
2A/S1	6X6	300	EXIST	-	2	Yes	-	-	Х	Ν	Х	Х
2B/S2	6X6	300	EXIST	-	2	Yes	-	-	Х	N	Х	Х
4A	6X40	0	2-4-2	-	4	Yes	-	-	-	N	-	Х
4B	6X40	0	2-4-2	-	4	Yes	-	-	-	Ν	-	Х
6A/S3	6X6	300	EXIST	-	6	Yes	-	-	Х	N	Х	Х
6B/S4	6X6	300	EXIST	-	6	Yes	-	_	Х	Ν	Х	Х

PROJECT REFERENCE NO.	SHEET NO.
C-5703	Sig 56.0

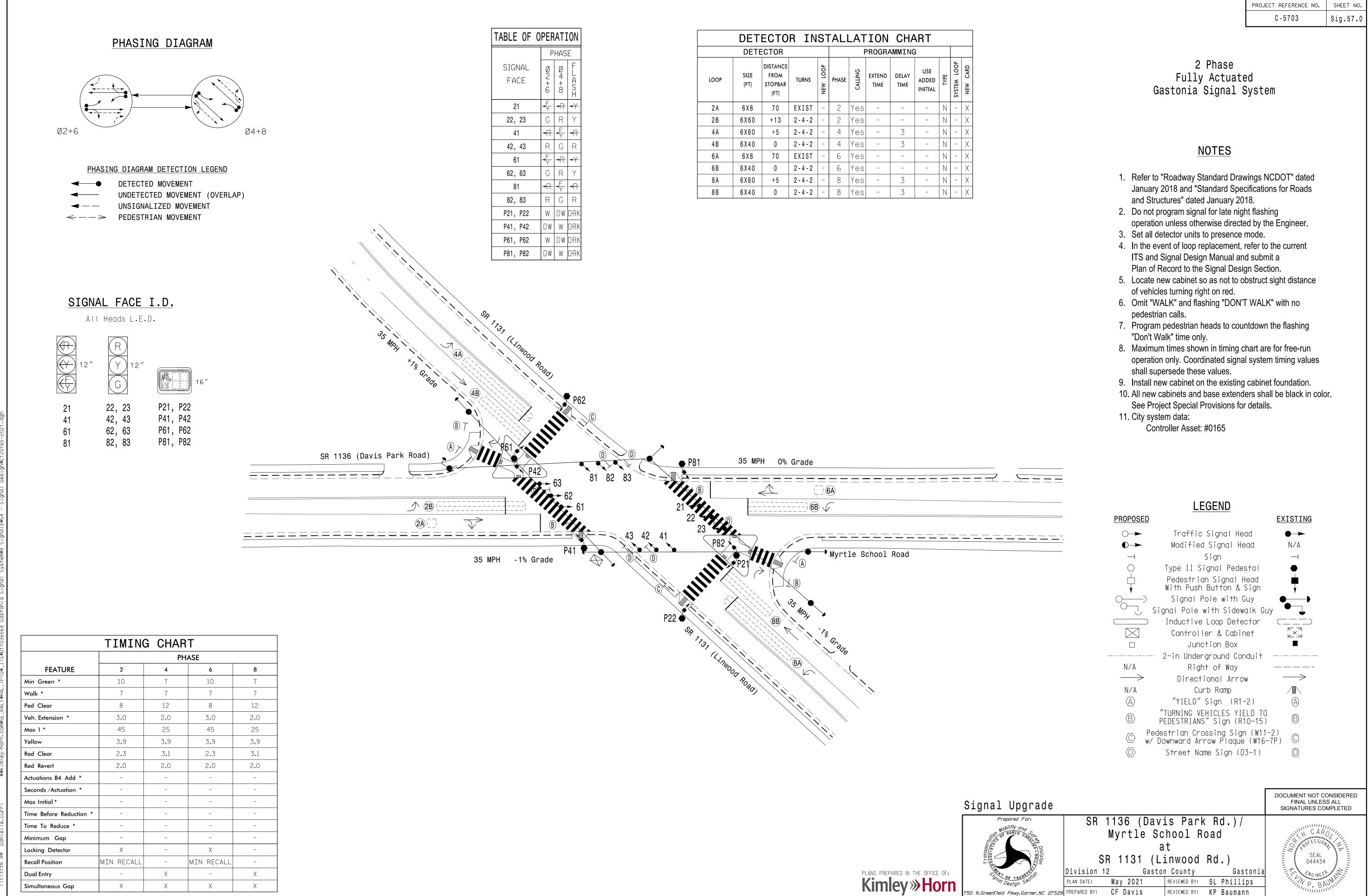
2 Phase Fully Actuated Gastonia Signal System

NOTES

- 1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- 2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer. 3. Set all detector units to presence mode.
- 4. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- 5. Modify signal heads numbered 21, 22, 61, and 62, as shown.
- 6. Pavement markings are existing.
- 7. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
- 8. Install new cabinet on the existing cabinet foundation.
- 9. Existing signal heads 62 & 61 have been relabeled to 61 & 62, respectively.
- 10. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
- 11. City of system data:
 - Controller Asset #0162.



nal Upgrade		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
Prepared For: Mobility and	US 321 (N. Chester Street) at	CARO
Division	I-85 Northbound Ramp	SEAL 044434
S CALL S AND ALON	, , , , , , , , , , , , , , , , , , ,	E C NGINEER
Design Sector	PLAN DATE: May 2021 REVIEWED BY: SL Phillips	N P BAUMIN
reenfield Pkwy,Garner,NC 27529	PREPARED BY: CF Davis REVIEWED BY: KP Baumann	
SCALE	REVISIONS INIT, DATE	DocuSigned by:
0 40		Kam Daman 3/11/2022
1 "=40'		SIG. INVENTORY NO. 12-0162



* 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.

DocuSign Envelope ID: EE0A7A97-01F5-4BA9-9D2A-EBB04FC9D7E3

TABLE OF OPERATION							
	P	HAS	E				
SIGNAL FACE	Ø2+6	Ø 4 + 8	FLAST				
21	F	R	≺ ¥				
22, 23	G	R	Y				
41	R	Ŧ	≺R				
42, 43	R	G	R				
61	F	-R	- ¥−				
62, 63	G	R	Y				
81	-R	Ŧ	≺R				
82, 83	R	G	R				
P21, P22	W	D-W	DRK				
P41, P42	DW	W	DRK				
P61, P62	W	D-W	DRK				
P81, P82	DW	W	DRK				

	DETECTOR INSTALLATION CHART											
	DETE	ECTOR				F	PROGRA	AMMING	à			
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	ТҮРЕ	SYSTEM LOOP	NEW CARD
2·A	6X6	7.0	EXIST	-	2	Yes	-	-	-	Ν	-	Х
2 B	6X60	+13	2 - 4 - 2	-	2	Yes	-	-	-	N	-	Х
4 A	6X60	+ 5	2 - 4 - 2	-	4	Yes	-	3	-	Ν	-	Х
4 B	6 X 4 0	0	2 - 4 - 2	-	4	Yes	-	3	-	Ν	-	Х
6 A	6X6	7.0	EXIST	-	6	Yes	-	_	-	Ν	-	Х
6 B	6 X 4 0	0	2 - 4 - 2	-	6	Yes	-	-	-	Ν	-	Х
8 A	6X60	+ 5	2 - 4 - 2	-	8	Yes	-	3	-	N	-	Х
8 B	6 X 4 0	0	2 - 4 - 2	-	8	Yes	-	3	-	N	-	Х



SCALE

1"=30'

0

30

REVISIONS

C-5703	Sig 57 0
PROJECT REFERENCE NO.	SHEET NO.

INIT. DATE

Ken Barran

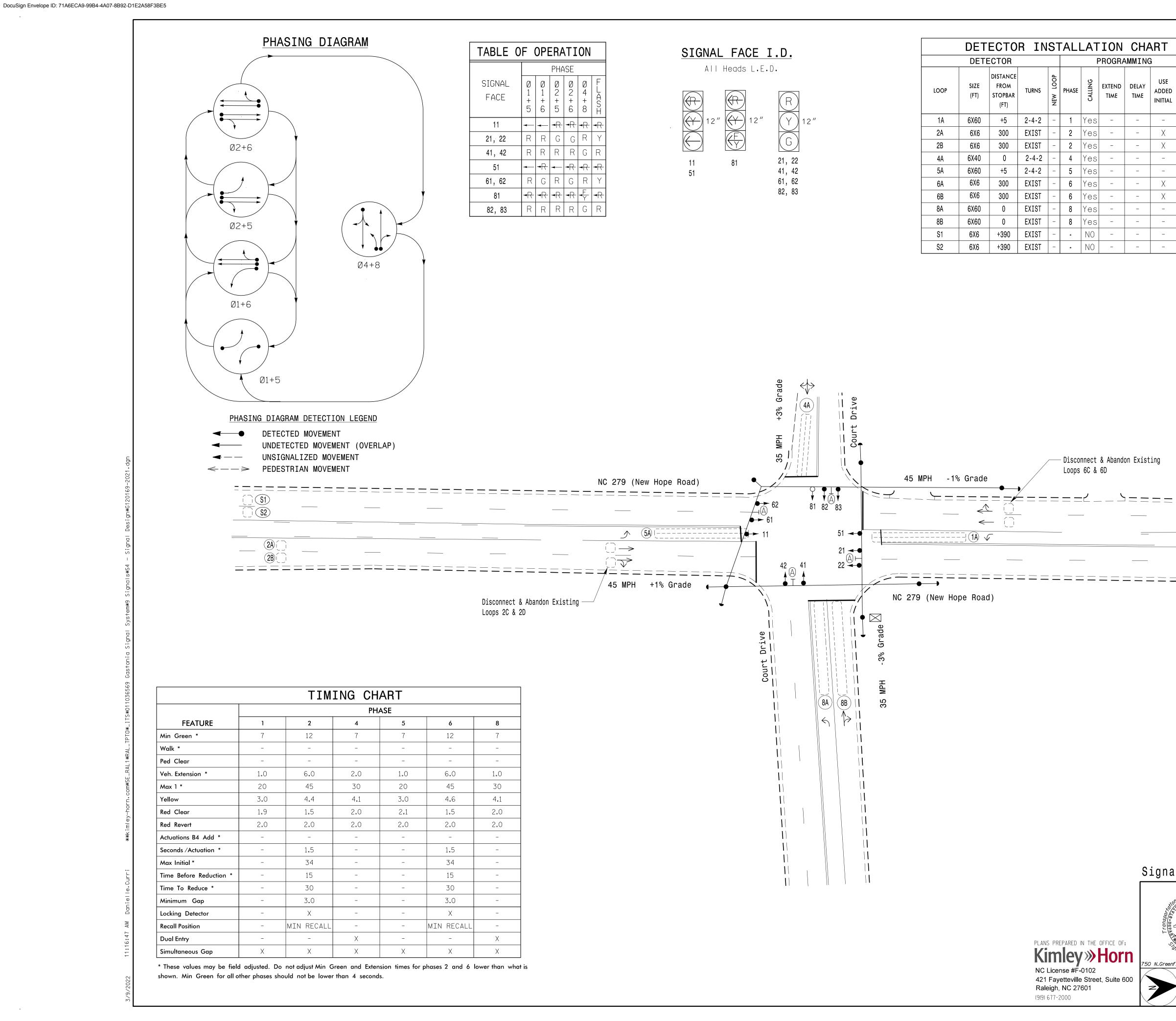
-5DC709A86BCB447 SIGNATURE

SIG. INVENTORY NO.

3/11/2022

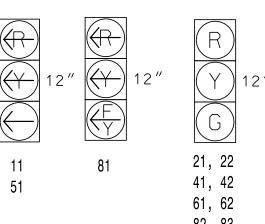
DATE

12-0165









DETECTOR INSTALLATION CHART												
	DETE	ECTOR				F	PROGRA	MMING	à			
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	ТҮРЕ	SYSTEM LOOP	NEW CARD
1A	6X60	+5	2-4-2	-	1	Yes	-	-	-	Ν	-	Х
2A	6X6	300	EXIST	-	2	Yes	-	-	Х	N	-	Х
2B	6X6	300	EXIST	-	2	Yes	-	-	Х	N	-	Х
4A	6X40	0	2-4-2	_	4	Yes	-	-	-	Ν	-	Х
5A	6X60	+5	2-4-2	_	5	Yes	-	-	-	N	-	Х
6A	6X6	300	EXIST	-	6	Yes	-	-	Х	N	-	Х
6B	6X6	300	EXIST	-	6	Yes	-	-	Х	Ν	-	Х
8A	6X60	0	EXIST	-	8	Yes	-	-	-	N	-	Х
8B	6X60	0	EXIST	-	8	Yes	-	-	-	N	-	Х
\$1	6X6	+390	EXIST	_	-	NO	-	-	-	Ν	Х	Х
S2	6X6	+390	EXIST	_	-	NO	_	_	_	Ν	Х	Х

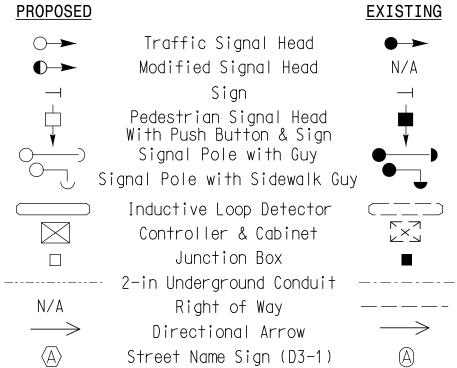
PROJECT REFERENCE NO.	SHEET NO.
C - 5703	Sig.58.0

5 Phase Fully Actuated Gastonia Signal System

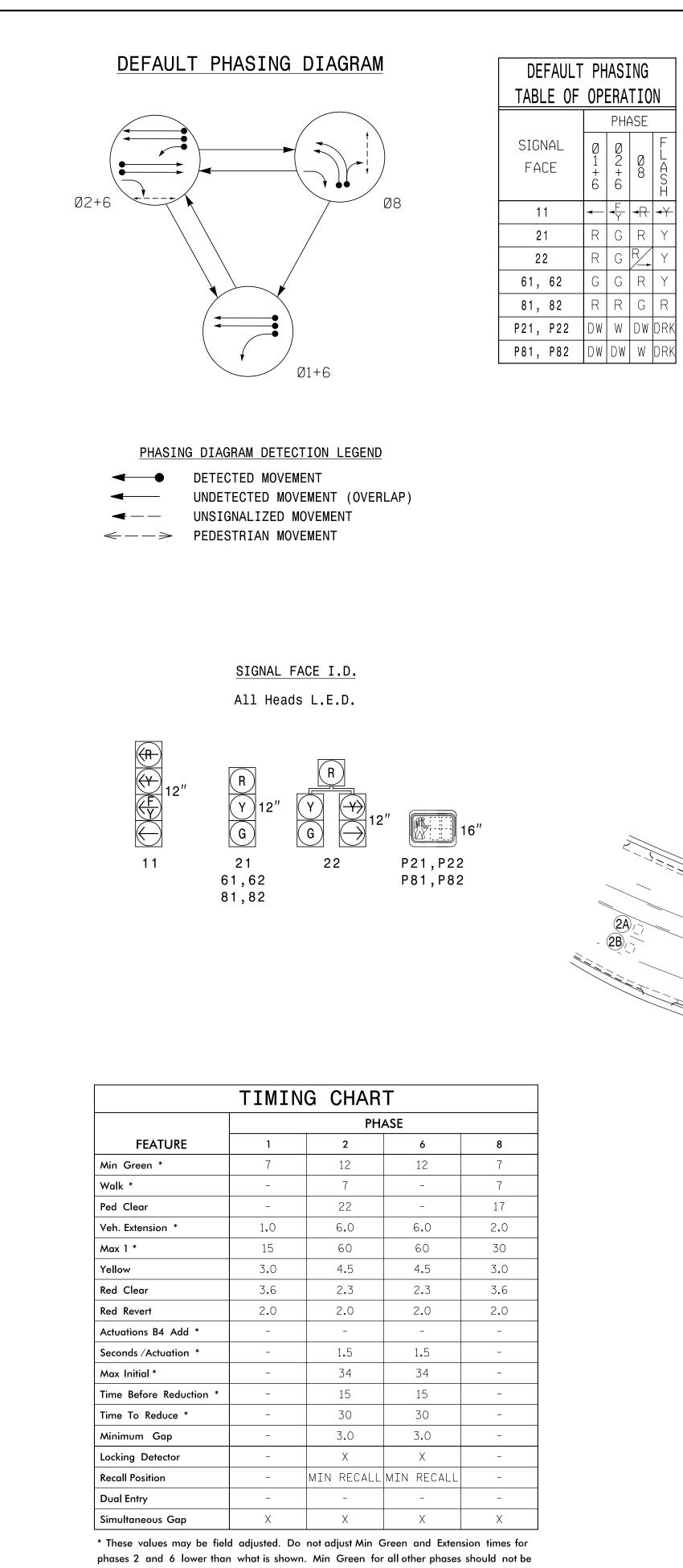
NOTES

- 1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- 2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- 3. Phase 1 and/or phase 5 may be lagged.
- 4. Reposition existing signal head numbered 82.
- 5. Set all detector units to presence mode.
- 6. In the event of loop replacement, refer to the current ITS and Signal Design Manual and submit a Plan of Record to the Signal Design Section.
- 7. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- 8. Pavement markings are existing.
- 9. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
- 10. Disconnect and abandon existing loops 2C, 2D, 6C & 6D.
- 11. Install new cabinet on the existing cabinet foundation.
- 12. Reconnect lead-in cable to separate loops 2A & 2B and 6A & 6B, as shown.
- 13. Existing signal head 81 and 82 have been relabeled to 82 and 83, respectively.
- 14. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
- 15. Remove existing signs R1-2 and R3-5L.
- 16. City system data:
 - Controller Asset #0169.

	'' (6A)
 	0



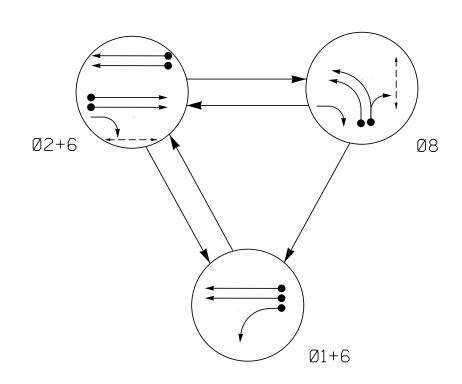
nal Upgrade		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
Prepared For:	NC 279 (New Hope Road) at	CARO
Division R - Nolly Country	Court Drive Division 12 Gaston County Gastonia	SEAL 044434
Grand Contraction Section	PLAN DATE: May 2021 REVIEWED BY: SL Phillips	P BAUNIN
Greenfield Pkwy,Garner,NC 275		DocuSigned by:
	REVISIONS INIT. DATE	Kan Barran 3/11/2022
		5DS/COASEFCEAT DATE
1 "=30'		SIG. INVENTORY NO. 12-0169



DocuSign Envelope ID: 71A6ECA9-99B4-4A07-8B92-D1E2A58F3BE5

lower than 4 seconds.

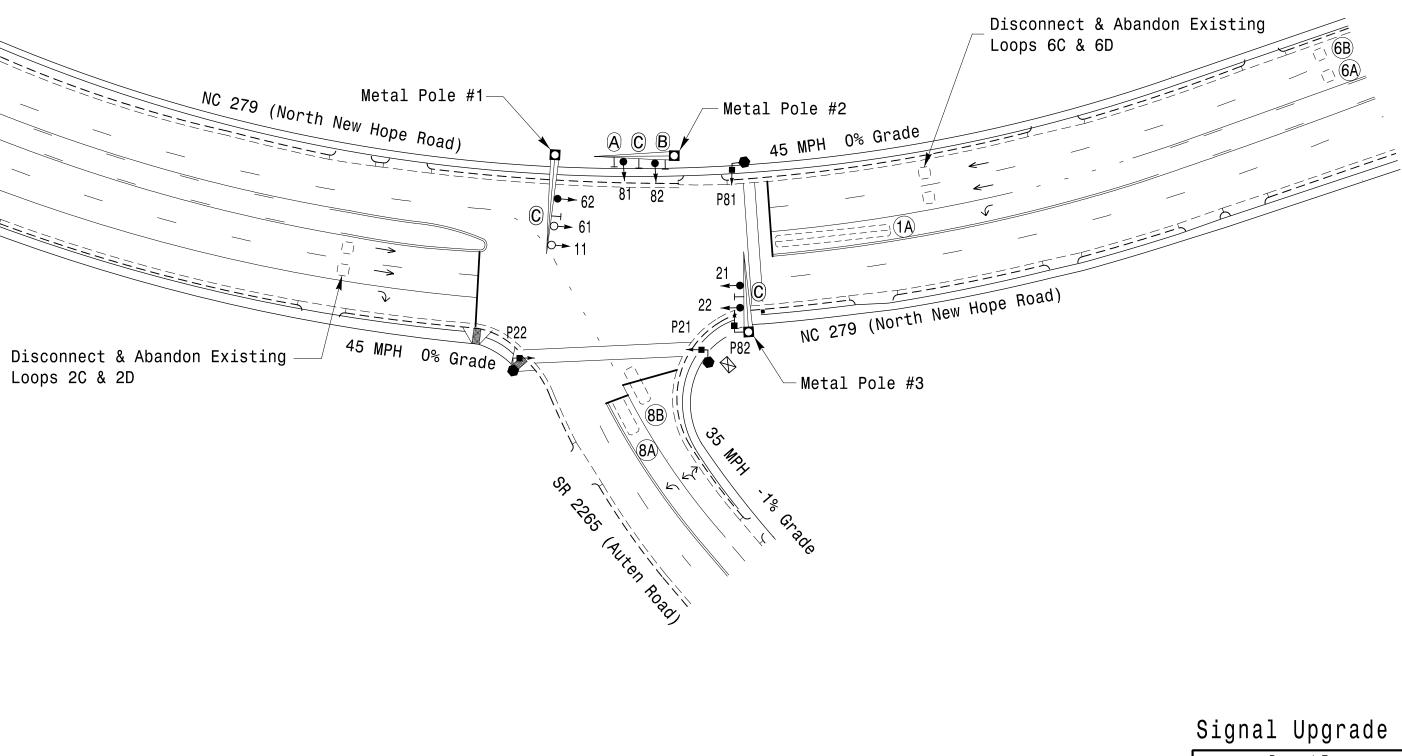
ALTERNATE PHASING DIAGRAM



ALTERNATE PHASING							
TABLE OF	OP	ERA	<u>TI0</u>	N			
		PHA	ASE				
SIGNAL FACE	Ø 1 + 6	Ø2+6	Ø 8	FLANT			
11	◄	- R−	- ₽	- ¥-			
21	R	G	R	Y			
22	R	G	R	Y			
61, 62	G	G	R	Y			
81, 82	R	R	G	R			
P21, P22	DW	W	DW	DRK			
P81, P82	DW	DW	W	DRK			

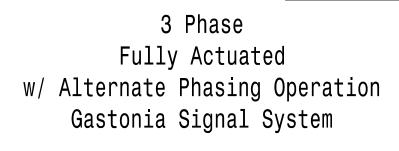
DETECTOR INSTALLATION CHART												
	DETE	ECTOR				F	PROGRA	AMMING	j			
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	ТҮРЕ	SYSTEM LOOP	NEW CARD
- - -	CV CO	O	0 1 0		1	Yes	-	10*	-	Ν	-	Х
1 A	6X60	0	2 4 2		6.#	Yes	-	3	-	G	-	Х
2 A	6X6	300	EXIST	-	2	Yes	-	-	Х	Ν	_	Х
2 B	6X6	300	EXIST	-	2	Yes	-	-	Х	Ν	-	Х
6 A	6X6	300	EXIST	-	6	Yes	-	-	Х	Ν	-	Х
6 B	6X6	300	EXIST	-	6	Yes	-	-	Х	N	-	Х
8 A	6X20	0	EXIST	-	8	Yes	-	3	-	N	_	Х
8 B	6X20	+ 5	EXIST	-	8	Yes	_	5	_	N	_	Х

* Disable Delay during Alternate Phasing operation. # Disable Phase call for loop during Alternate Phasing operation.





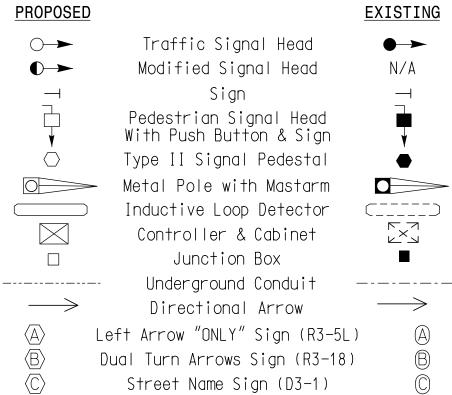
PROJECT REFERENCE NO.	SHEET NO.
C-5703	Sig.59.0



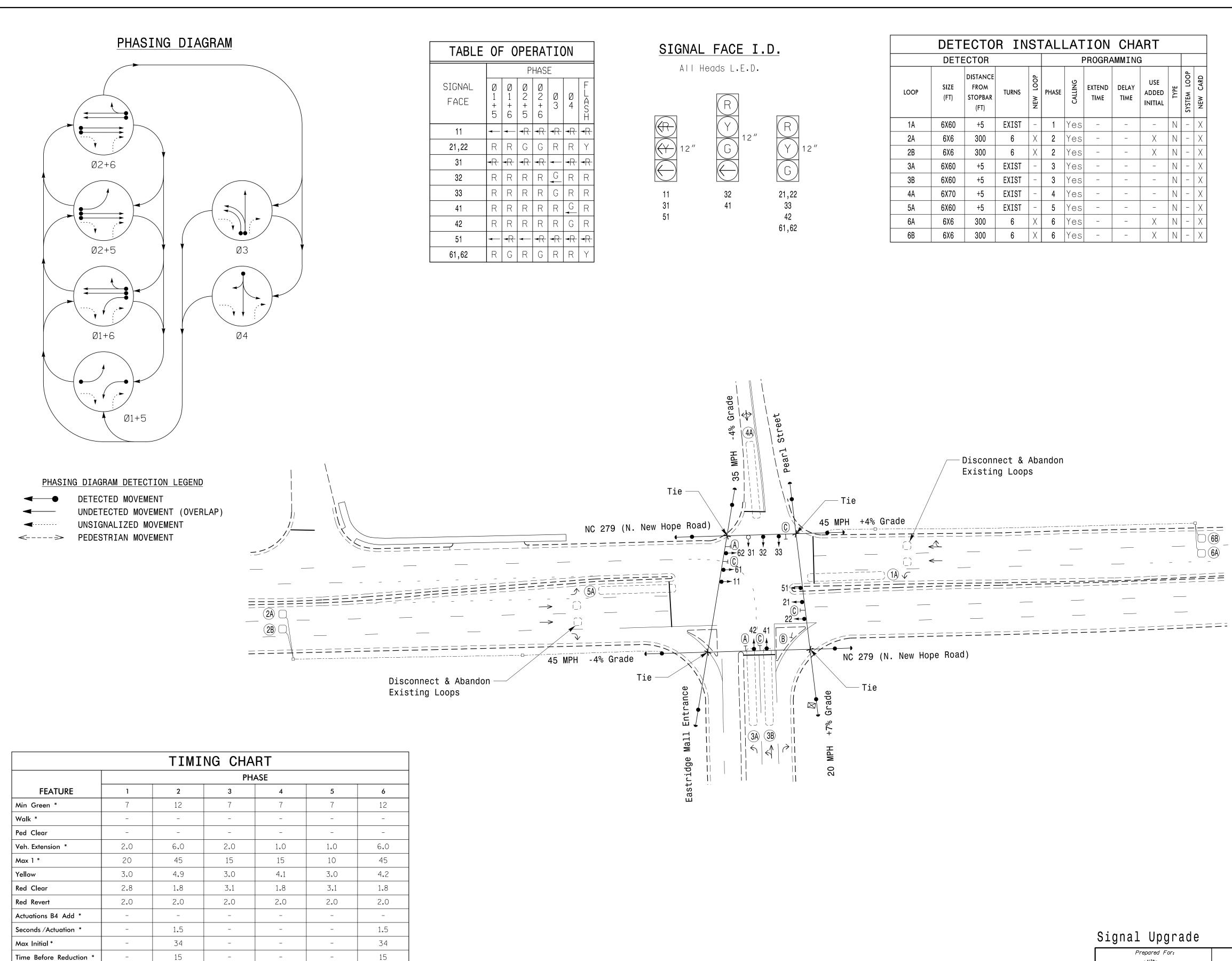
NOTES

- 1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- 2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- 3. Phase 1 may be lagged.
- 4. Reposition existing signal head numbered 62.
- 5. Set all detector units to presence mode.
- 6. In the event of loop replacement, refer to the current ITS and Signal Design Manual and submit a Plan of Record to the Signal Design Section.
- 7. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- 8. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- 9. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- 10. Pavement markings are existing.
- 11. The City Engineer or their representative will determine the hours of use for each phasing plan.
- 12. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
- 13. Disconnect and abandon existing loops 2C, 2D, 6C, & 6D.
- 14. Install new cabinet on the existing cabinet foundation.
- 15. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
- 16. Reconnect lead-in cable to separate loops 2A, 2B, 6A, & 6B, as shown.
- 17. Do NOT install backplates on Metal Pole #1.
- 18. Existing phase 4 has been changed to phase 8 on this plan. Change all signal heads, pedestrian signal heads, pedestrian push buttons, and loops as needed to achieve the phasing shown.
- 19. City system data:
 - Controller Asset #0173.





]na]	L Upgrade		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
	Prepared For: Nobility and Society Division	NC 279 (North New Hope Road) at SR 2265 (Auten Road)	SEAL 044434
S	A OF TRAMERAL	Division 12 Gaston County Gastonia	EWGINE ER
° 70	Design Sect	PLAN DATE: May 2021 REVIEWED BY: SL Phillips	P. BAUNIN
Greenfie	eld Pkwy,Garner,NC 27529	PREPARED BY: EE Dogbe REVIEWED BY: KP Baumann	
	SCALE	REVISIONS INIT. DATE	DocuSigned by:
	0 50		Ken Dana 3/11/2022
		·····	DATE DATE
	1 "=50'		SIG. INVENTORY NO. 12-0173



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Time Before Reduction ³

Time To Reduce *

Minimum Gap

Locking Detector

Simultaneous Gap

Recall Position

Dual Entry

_

-

_

_

X

* 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.

30

3.0

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MIN RECALL

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3.0

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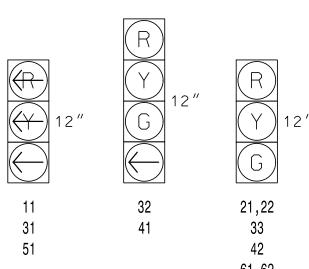
MIN RECAL

-

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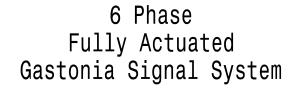
	OF	- 0	PE	RA ⁻	TIC	ON	
PHASE							
	Ø1+Б	Ø 1 + 6	Ø2+5	Ø 2+ 6	Ø 3	Ø 4	LLANI
	◄—	-	≺R	≺R	≺R	≺R	≺R
	R	R	G	G	R	R	Y
	≺R	≺R	≺R	≺R	-	≺R	R
	R	R	R	R	G	R	R
	R	R	R	R	G	R	R
	R	R	R	R	R	G	R
	R	R	R	R	R	G	R
	•	≺R	•	- R	≺R	₹R	►R
	R	G	R	G	R	R	Y





	DETECTOR INSTALLATION CHART											
	DETE		F	PROGRA	AMMING	à						
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	ТҮРЕ	SYSTEM LOOP	NEW CARD
1A	6X60	+5	EXIST	-	1	Yes	-	-	-	Ν	-	Х
2A	6X6	300	6	Х	2	Yes	-	-	Х	Ν	-	Х
2B	6X6	300	6	Х	2	Yes	-	-	Х	N	-	Х
3A	6X60	+5	EXIST	-	3	Yes	-	-	-	N	-	Х
3B	6X60	+5	EXIST	-	3	Yes	-	-	-	N	-	Х
4A	6X70	+5	EXIST	-	4	Yes	-	-	-	Ν	-	Х
5A	6X60	+5	EXIST	-	5	Yes	_	-	-	Ν	_	Х
6A	6X6	300	6	Х	6	Yes	-	_	Х	N	_	Х
6B	6X6	300	6	Х	6	Yes	_	_	Х	Ν	-	Х





PROJECT REFERENCE NO.

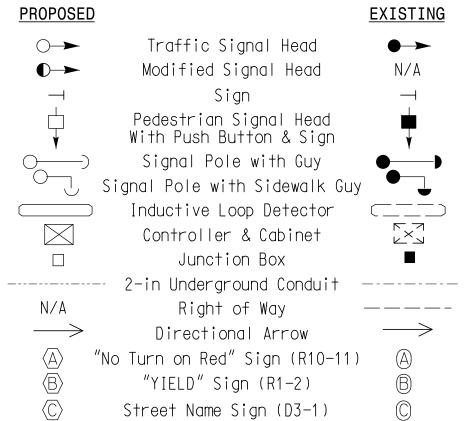
C-5703

SHEET NO.

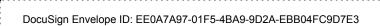
Sig.60.0

NOTES

- 1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- 2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- 3. Phase 1 and/or phase 5 may be lagged.
- 4. The order of phase 3 and phase 4 may be reversed.
- 5. Reposition existing signal heads numbered 32 & 33.
- 6. Set all detector units to presence mode.
- 7. In the event of loop replacement, refer to the current ITS and Signal Design Manual and submit a Plan of Record to the Signal Design Section.
- 8. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- 9. Remove existing Left Arrow "ONLY" sign-(R3-5L) and existing Combined Through and Left Arrow sign-(R3-6L).
- 10. Pavement markings are existing.
- 11. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
- 12. Install new cabinet on the existing cabinet foundation.
- 13. Disconnect and abandon existing loops 2A, 2B, 6A, & 6B and re-cut new loops as shown on plan.
- 14. Existing signal heads 31 & 32 have been relabeled to 32 & 33, respectively.
- 15. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
- 16. Reconnect lead-in cable to separate loops 2A, 2B, 6A & 6B, as shown.
- 17. City of system data:
 - Controller Asset #0176.



nal	. Upgrad	е							DOCUMENT NOT CO FINAL UNLESS SIGNATURES COM	S ALL
	Prepared For: Mobility and NORTH CASE		NC	279	(N. Ne a	ew Hope †	Road)	WH CAR	
Transport	Contraction of the second seco		Pea		reet	and Eas ntrance	•	ge	SEAL 044434	
S	A A A A A A A A A A A A A A A A A A A		Division	12	Gastoı	n County	G	astonia	F. F. WGINEER	
Sng	Design Section		PLAN DATE:	May 2	2021	REVIEWED BY:	SL Phil	lips	NP RA	MAIN
reenfie	d Pkwy,Garner,NC	27529	PREPARED BY:	CF Da	avis	REVIEWED BY:	KP Baum	ann		///
\sum	SCALE			REVISIONS			INIT.	DATE	DocuSigned by:	
	0	40							Ken Daman	3/11/2022
									5DC709A86BCB447	DATE
	1 "=40'								SIG. INVENTORY NO.	12-0176



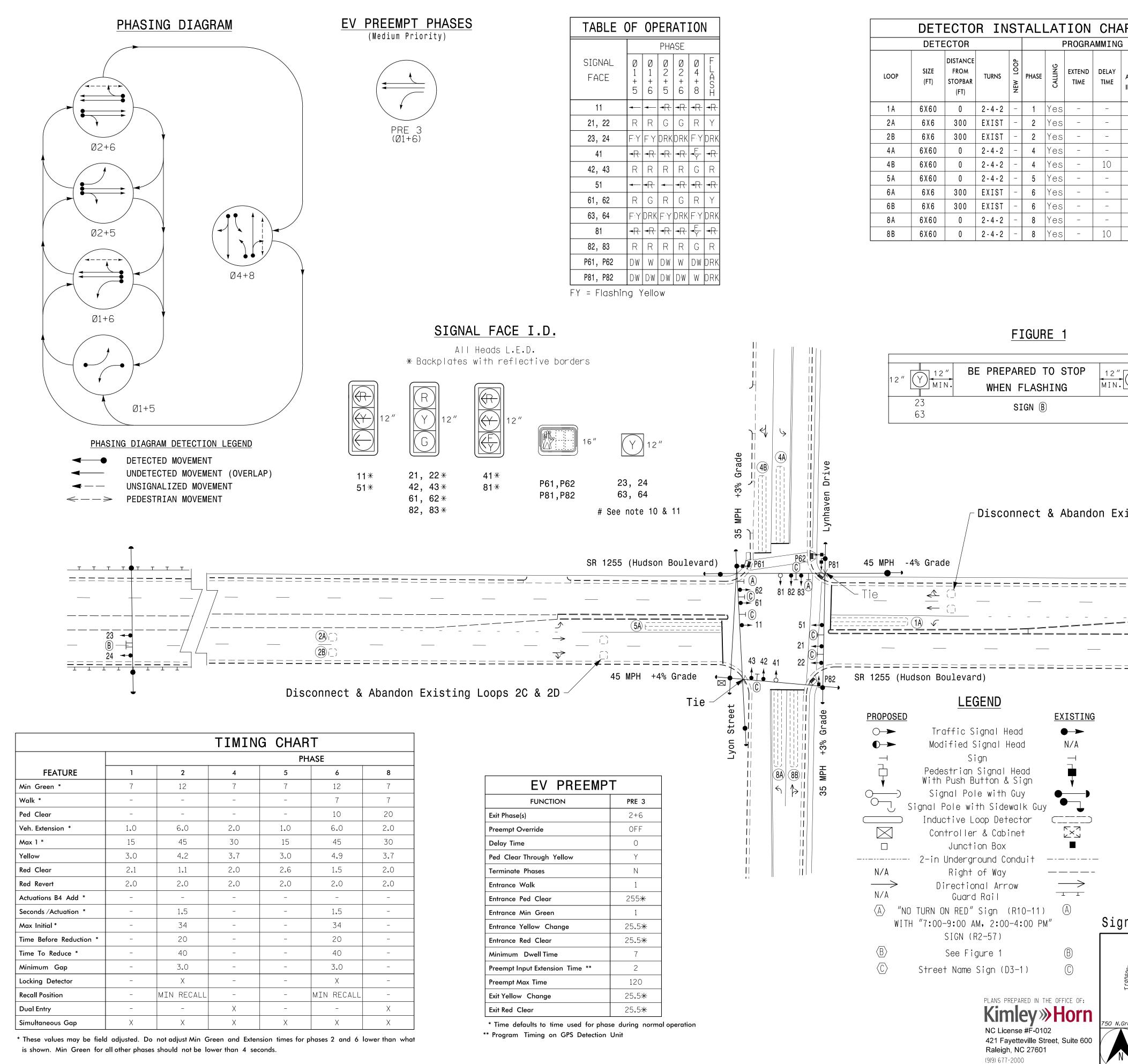
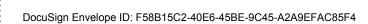
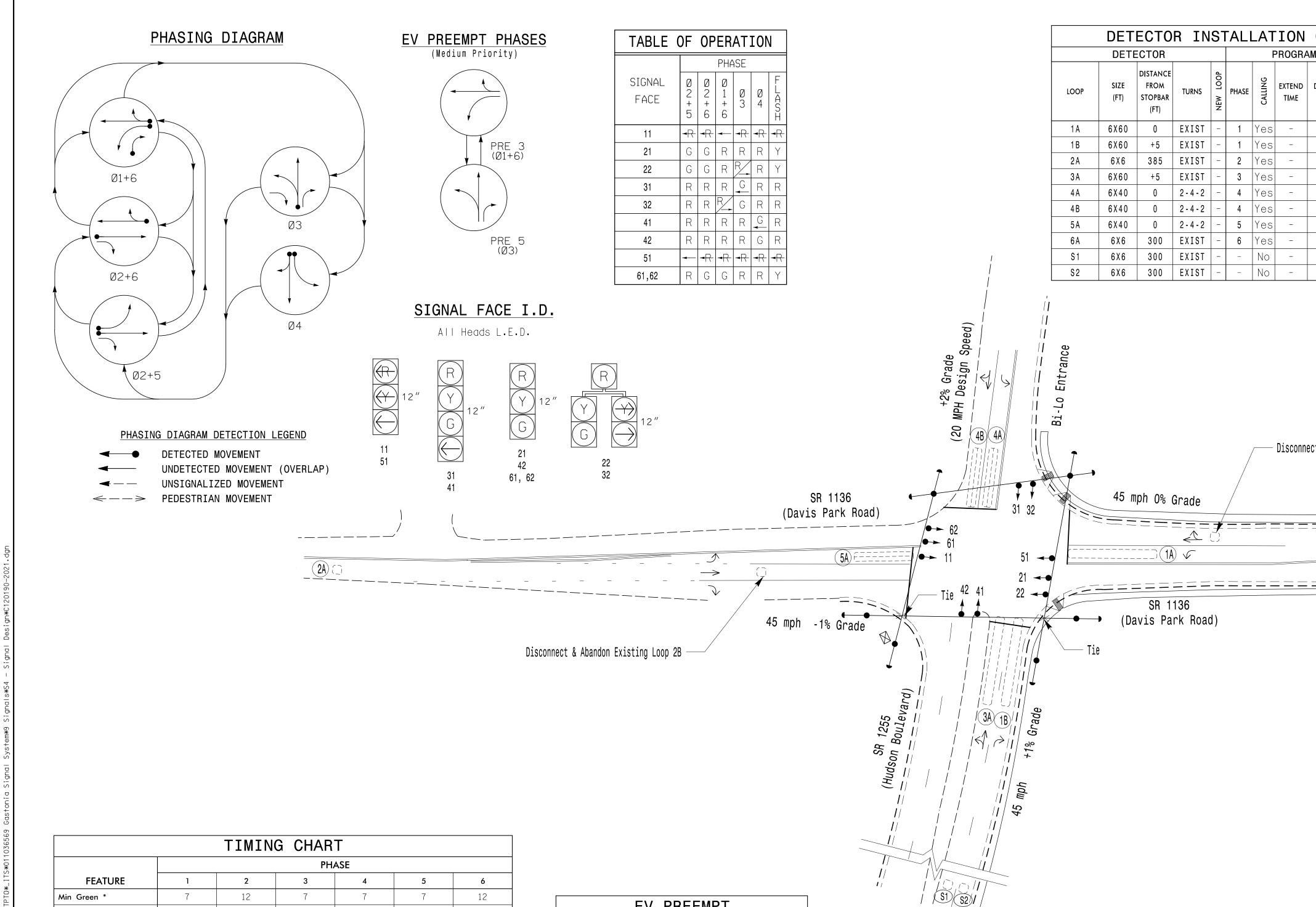


TABLE	0F	0P	ER	AT:	ION	I
			PHA	SE		
SIGNAL FACE	Ø 1 + 5	Ø 1 + 6	Ø 2+5	Ø2+6	Ø 4 + 8	FLAST
11	-	-	≺R	₹R	≺R	- R
21, 22	R	R	G	G	R	Y
23, 24	F·Y	FΥ	DRK	DRK	F·Υ	DRK
41	≺R	≺R	≺R	≺R	F	- R
42, 43	R	R	R	R	G	R
51	-	≺R	-	₳	╉	- R
61, 62	R	G	R	G	R	Y
63, 64	F·Y	DRK	F·Y	DRK	F·Y	DRK
81	R	- R-	≺R	₳	⊢ } ≻	- R
82, 83	R	R	R	R	G	R
P61, P62	D [.] W	W	D·W	W	DW	DRK
P81, P82	D·W	D·W	D·W	D'W	W	DRK

DETECTOR INSTALLATION CHAR PROGRAMMING

						1
				PRO	DJECT REFERENCE NO. C-5703	SHEET NO. Sig.61.0
RT				5 Phase		
USE ADDED INITIAL	ТҮРЕ	SYSTEM LOOP	NEW CARD	Fully Actuat w/ Emergency Vehicle Gastonia City S	Preemption	
_	N	- -	Х	NOTES		
X X -	N N N	-	X X X	 Refer to "Roadway Standard Drawings N 2018 and "Standard Specifications for Ro 		•
- - X	N N N	-	X X X	dated January 2018. 2. Do not program signal for late night flash otherwise directed by the Engineer.	ing operation unle	SS
X -	N N	-	X X	 Phase 1 and/or phase 5 may be lagged. Set all detector units to presence mode. 		
-	Ν	-	Х	 In the event of loop replacement, refer to Signal Design Manual and submit a Plan Design Section. 		
				 Locate new cabinet so as not to obstruct turning right on red. 	•	
				 Omit "WALK" and flashing "DON'T WALF Program pedestrian heads to countdown time only. 	the flashing "Don	't Walk"
				 Disconnect and abandon existing loops 2 10. Flash beacons 23 & 24 six seconds prior green. 		
24	12″			11. Flash beacons 63 & 64 six seconds prior green.12. Pavement markings are existing.	to the end of phas	se 6
64				13. Maximum times shown in timing chart are only. Coordinated signal system timing v	•	
				these values. 14. Install new cabinet on the existing cabine 15. All new cabinets and base extenders sha		r. See
isti	na	I	oor	Project Special Provisions for details. 16. Install GPS emergency preemption syste	em per manufactur	er's
	9		0 0 r	instructions to achieve preemption neede diagram. 17. City system data:	ed, as snown in pn	asing
				Controller Asset: #0181	Ţ	
===:		=	==		= = = = = = = = = = = = = = = = = = =	
					$ = - \underbrace{\begin{array}{c} \\ B \\ \bullet \end{array}}_{63} \underbrace{\begin{array}{c} \\ 63 \\ \bullet \end{array}}_{63} \underbrace{\begin{array}{c} \\ \end{array}}_{63} \underbrace{\end{array}}_{63} \underbrace{\begin{array}{c} \\ \end{array}}_{63} \underbrace{\begin{array}{c} \\ \end{array}}_{63} \underbrace{\end{array}}_{63} \underbrace{\end{array}}_{63} \underbrace{\begin{array}{c} \\ \end{array}}_{63} \underbrace{\end{array}}_{63} \underbrace{\end{array}}_{63} \underbrace{\end{array}}_{63} \underbrace{\begin{array}{c} \\ \end{array}}_{63} \underbrace{\end{array}}_{63} _{63$	
					_	
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nal	Up	рg	ra	de	DOCUMENT NOT C FINAL UNLES SIGNATURES CC	SS ALL
	epared bility NORT		Solot	SR 1255 (Hudson Boulevard) at	UNIT CAR	
Transport			A TION * WH	Lynhaven Drive/Lyon Street	SEAL 044434	
Greenfleld	OF TT Desig Pkwy		ner. M	Division 12Gaston CountyGastoniPLAN DATE:May 2021REVIEWED BY:SL PhillipsC 27529PREPARED BY:CF DavisREVIEWED BY:KP Baumann	a Experimentary	MALIN MALIN
	0		ALE	40	DocuSigned by: Ken Barron 5DC709A00BCB447	3/11/2022
		1″	=40		SIGNATURE SIGNATURE SIG. INVENTORY NO.	DATE 12-0181





		TIMIN	G CHAF	RT.		
			PH	HASE		
FEATURE	1	2	3	4	5	6
Min Green *	7	12	7	7	7	12
Walk *	_	-	-	-	-	-
Ped Clear	-	-	-	-	-	-
Veh. Extension *	2.0	6.0	1.0	1.0	2.0	6.0
Max 1 *	20	45	25	25	20	45
Yellow	3.0	4.6	4.4	3.0	3.0	4.5
Red Clear	2.6	1.3	1.2	2.1	2.3	1.3
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0
Actuations B4 Add *	_	-	-	-	-	-
Seconds /Actuation *	-	2.5	-	-	-	2.5
Max Initial *	_	43	-	-	-	34
Time Before Reduction *	_	20	-	-	-	20
Time To Reduce *	_	40	-	-	-	40
Minimum Gap	-	4.5	-	-	-	3.0
Locking Detector	-	Х	-	-	-	X
Recall Position	-	MIN RECALL	-	-	-	MIN RECALL
Dual Entry	-	-	-	-	-	-
Simultaneous Gap	Х	Х	Х	Х	Х	Х

Pree Exit Y Exit Re

* 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.

EV PREEMPT										
FUNCTION	PRE 3	PRE 5								
Exit Phase(s)	2+5	4								
Preempt Override	OFF	OFF								
Delay Time	0	0								
Ped Clear Through Yellow	Ν	Ν								
Terminate Phases	Ν	Ν								
Entrance Walk	-	_								
Entrance Ped Clear	-	_								
Entrance Min Green	1	1								
Entrance Yellow Change	25 . 5 *	25.5 米								
Entrance Red Clear	25.5 *	25.5 米								
Minimum Dwell Time	7	7								
Preempt Input Extension Time **	2	2								
Preempt Max Time	120	120								
Exit Yellow Change	25.5 米	25.5 米								
Exit Red Clear	25.5 米	25.5 米								

* Time defaults to time used for phase during normal operation ** Program Timing on GPS Detection Unit

PLANS PREPARED IN THE OFFICE OF: **Kimley»Horn** 750 N.Greenfield Pkwy, Garner, NC 27529 PREPARED BY: LL Matney NC License #F-0102 421 Fayetteville Street, Suite 600 Raleigh, NC 27601

(919) 677-2000

		יחי						C - 5	703	Sig 62 C
					_					
	DELAY TIME	USE ADDED INITIAL	ТҮРЕ	5			5 Phase Fully Actua rgency Vehicl stonia Signal	e Preempt	ion	
-	<u> </u>	-	N	-	(64	•	. Oyocom		
_	-	Х	N	-	· /		NOTES			
-	- 10 - - - -	- - - X - -	N N N N N N	- - - X X		January and Stru 2. Do not p operatic 3. The ord 4. Set all c 5. Disconr	Provide the second standard of the second standard	ecifications for R 2018. ght flashing xted by the Engin 4 may be revers e mode. g loops 2B and 6	eer. Sed.	
conne	ect & Ab	andon Ex	(isti	.ng L	oop 6B	Plan of 8. Install n 9. All new See Pro 10. Paveme 11. Maximu operation shall su 12. Install G instructi phasing	I Signal Design Manual a Record to the Signal De ew cabinet on the existin cabinets and base exter oject Special Provisions to ent markings are existing on only. Coordinated sign persede these values. GPS emergency preemptions to achieve preemption diagram.	sign Section. ng cabinet founda iders shall be bla or details. chart are for free nal system timing ion system per m	ack in color. e-run ı values nanufacturer'	S
							system data: Controller Asset #0	190.		
							-	190.		
							-			
							Controller Asset #0	ID	EXISTIN •-•	<u>G</u>
							Controller Asset #0	ID hal Head	EXISTIN N/A H	<u>G</u>
							Controller Asset #0 <u>LEGEN</u> Traffic Sign Modified Sig	ID Nal Head Nal Head	• •	<u>G</u>
							Controller Asset #0 <u>LEGEN</u> Traffic Sign Modified Sig Sign Pedestrian Si	ID Mal Head Mal Head gnal Head on & Sign with Guy		G
							Controller Asset #0 <u>LEGEN</u> Traffic Sign Modified Sig Sign Pedestrian Si With Push Butt Signal Pole	ID nal Head nal Head on & Sign with Guy Sidewalk Guy		<u>G</u>
							Controller Asset #0 Controller Asset #0 <u>LEGEN</u> Traffic Sign Modified Sig Sign Pedestrian Si With Push Butt Signal Pole Signal Pole with Inductive Loop Controller & Junction	ID Mal Head hal Head on & Sign with Guy Sidewalk Guy Sidewalk Guy Detector Cabinet Box	N/A N/A	<u>G</u>
							Controller Asset #0 Controller Asset #0 <u>LEGEN</u> Traffic Sign Modified Sig Sign Pedestrian Si With Push Butt Signal Pole Signal Pole with Inductive Loop Controller & Junction Controller &	D al Head hal Head gnal Head on & Sign with Guy Sidewalk Guy Sidewalk Guy Detector Cabinet Box hd Conduit Way	N/A N/A	<u>G</u>
							Controller Asset #0 Controller Asset #0 <u>LEGEN</u> Traffic Sign Modified Sig Sign Pedestrian Si With Push Butt Signal Pole Signal Pole with Inductive Loop Controller & Junction - 2-in Undergrou	D al Head hal Head gnal Head on & Sign with Guy Sidewalk Guy Sidewalk Guy Detector Cabinet Box hd Conduit Way	N/A N/A	<u>G</u>
							Controller Asset #0 Controller Asset #0 <u>LEGEN</u> Traffic Sign Modified Sig Sign Pedestrian Si With Push Butt Signal Pole Signal Pole with Inductive Loop Controller & Junction Controller &	D al Head hal Head gnal Head on & Sign with Guy Sidewalk Guy Sidewalk Guy Detector Cabinet Box hd Conduit Way	N/A N/A	<u>G</u>
in							Controller Asset #0 Controller Asset #0 <u>LEGEN</u> Traffic Sign Modified Sig Sign Pedestrian Si With Push Butt Signal Pole Signal Pole with Inductive Loop Controller & Junction Controller &	D al Head hal Head gnal Head on & Sign with Guy Sidewalk Guy Detector Cabinet Box hd Conduit Way Arrow		ONSIDERED
ig	Pre			le	SR 1		Controller Asset #0 Controller Asset #0 <u>LEGEN</u> Traffic Sign Modified Sig Sign Pedestrian Si With Push Butt Signal Pole Signal Pole with Inductive Loop Controller & Junction Controller &	ID nal Head nal Head al Head al Head on & Sign with Guy Sidewalk Guy Detector Cabinet Box nd Conduit Way Arrow		ONSIDERED
ig	Prey Mot			le		$\frac{PROPOSED}{\bigcirc}$	Controller Asset #0 EEGEN Traffic Sigr Modified Sig Sign Pedestrian Si With Push Butt Signal Pole Signal Pole with Inductive Loop Controller & Junction - 2-in Undergrou Right of Directional	ID nal Head nal Head al Head al Head on & Sign with Guy Sidewalk Guy Detector Cabinet Box nd Conduit Way Arrow		ONSIDERED SS ALL
ig	Pre	pared For		le		$\frac{PROPOSED}{\bigcirc}$	Controller Asset #0 Controller Asset #0 <u>LEGEN</u> Traffic Sign Modified Sig Sign Pedestrian Si With Push Butt Signal Pole Signal Pole with Inductive Loop Controller & Junction 2-in Undergrou Right of Directional	ID nal Head nal Head al Head al Head on & Sign with Guy Sidewalk Guy Detector Cabinet Box nd Conduit Way Arrow	JMENT NOT C FINAL UNLES SNATURES CC	ONSIDERED SS ALL MPLETED

1″=40′

REVISIONS

SCALE

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INIT. DATE

Ken Barrow

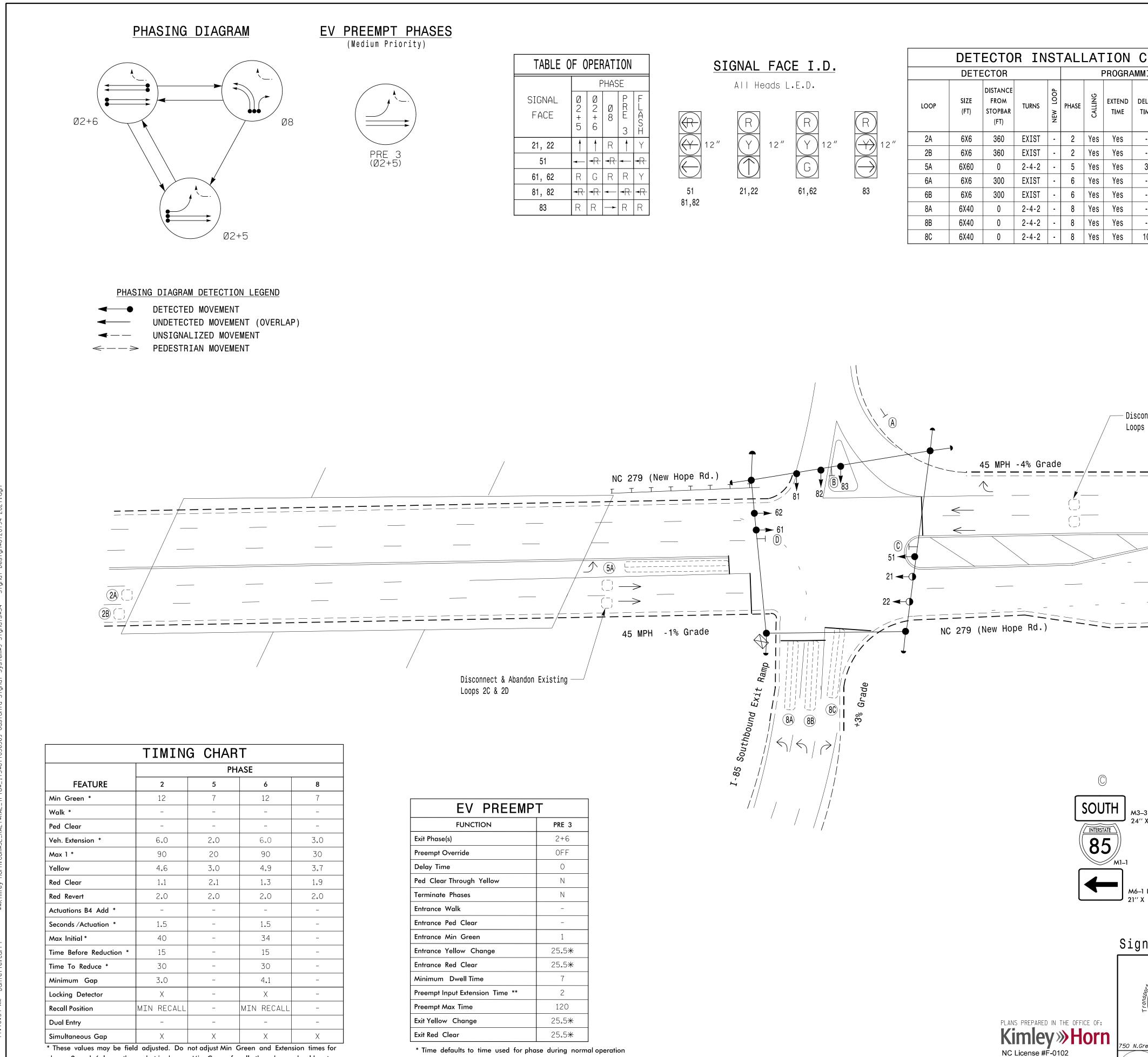
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SIG. INVENTORY NO.

3/11/2022

DATE

12-0190



* 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.

DocuSign Envelope ID: 71A6ECA9-99B4-4A07-8B92-D1E2A58F3BE5

* Time defaults to time used for phase during normal operation

** Program Timing on GPS Detection Unit

					3 Phase	PROJECT REFERENCE NO.	SHEET NO.
					Fully Actuated w/	C-5703	Sig.63.0
<u></u>				_	Emergency Vehicle Preemption	0750	
	ART				5 5 =	<u>OTES</u>	
MING	ג 		٩C		1. Refer to "Roadway Stand January 2018 and "Stand	•	
ELAY	USE ADDED	ТҮРЕ	SYSTEM LOOP	CARD	and Structures" dated Ja	•	odus
IME	INITIAL	L L	SYSTEA	NEW	2. Do not program signal fo		r
-	Х	N	-	X	operation unless otherwis 3. Phase 5 may be lagged.	se alrected by the Engine	eer.
-	Х	N	-	Х	4. Set all detector units to p		
3	_	Ν	-	Х	5. In the event of loop repla ITS and Signal Design M		ent
-	X	N	-	X	Plan of Record to the Sig		
-	X _	N	-	X X	6. Locate new cabinet so as	s not to obstruct sight dis	stance
-		N	-	X	of vehicles turning right c 7. Pavement markings are		
10	-	N	-	Х	8. Maximum times shown in	•	-run
					operation only. Coordina	• • •	values
					shall supersede these va 9. Disconnect and abandon		C. 2D.
					6C and 6D.		0,20,
					10. Install new cabinet on the	0	
					11. All new cabinets and bas See Project Special Prov		UK IN COIOF.
					12. Install GPS emergency p	reemption system per m	
					instructions to achieve pr	eemption needed, as sh	own in
					phasing diagram. 13. Existing phase 4 has bee	en changed to phase 8 o	n this plan.
					Change all signal heads,	pedestrian signal heads	, pedestrian
		ما ہے۔	 '	+ ;	push buttons, and loops shown.	as needed to achieve the	e phasing
nnect 6C 8	t & Aban & 6D	IUUN	CX18	rtuð	14. City system data:		
					Controller As	sset #0194.	
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					LEGEND		
					PROPOSED	EXISTIN	<u>G</u>
					○→ Traffic Signal		
					O→ Modified Signal	Head N/A	
					→ Sign ☆ Pedestrian Signc	ul Head 📥	
					↓ With Push Button	& Sign	
					Signal Pole with Signal		
			\square		U Signal Pole with Signal Pole with Signal Pole		<u>م</u>
	r				Inductive Loop D		ل
3 X 12′	,	N	OR	TΗ	M3-1 Junction Bc		
X I/	L		NTERSTA	E	24" X 12" 2-in Underground		
X 12			85	5))	N/A Right of Wo		
X 12					N/A Directional Al N/A Guardrail		_
X 12			.EFT		A "YIELD" Sign ((R1-2) (A)	
	ĺ		AN		21" x 15" (B) Street Name Sign	ő	
L		L				<u> </u>	
L		L					
L 15''						DOCUMENT NOT (
15″ 151	L Up	gr		9		DOCUMENT NOT (FINAL UNLE SIGNATURES CO	SS ALL
15″ nal	Prepared I	gr For:		e	NC 279 (New Hope Rd.)	FINAL UNLE	SS ALL
15″ 15″ 1al	Prepared F	gr For:		9	NC 279 (New Hope Rd.) at	FINAL UNLE	SS ALL
15″ 15″ 1al	Prepared F	gr For:		9		FINAL UNLE SIGNATURES CO	SS ALL DMPLETED
15″ 15″	Prepared F	gr For:		9	at I-85 Southbound Ramp	FINAL UNLE SIGNATURES CO C A A C A A SEAL 04443	SS ALL DMPLETED
ניי זי זי זי	Prepared H Mobility and ROBING	gr For:		9	at I-85 Southbound Ramp Division 12 Gaston County Gast PLAN DATE: May 2021 REVIEWED BY: SL Philli	FINAL UNLE SIGNATURES CO C A A SEAL 04443 ps	SS ALL DMPLETED
L 15″	Prepared H Nobility an Nobility an Nobilit	gr For: To Solution	ad		at I-85 Southbound Ramp Division 12 Gaston County Gast PLAN DATE: May 2021 REVIEWED BY: SL Philli PREPARED BY: SP Pennington REVIEWED BY: KP Bauman	FINAL UNLE SIGNATURES CO CAA SEAL 04443 PS	SS ALL DMPLETED

1″=30′

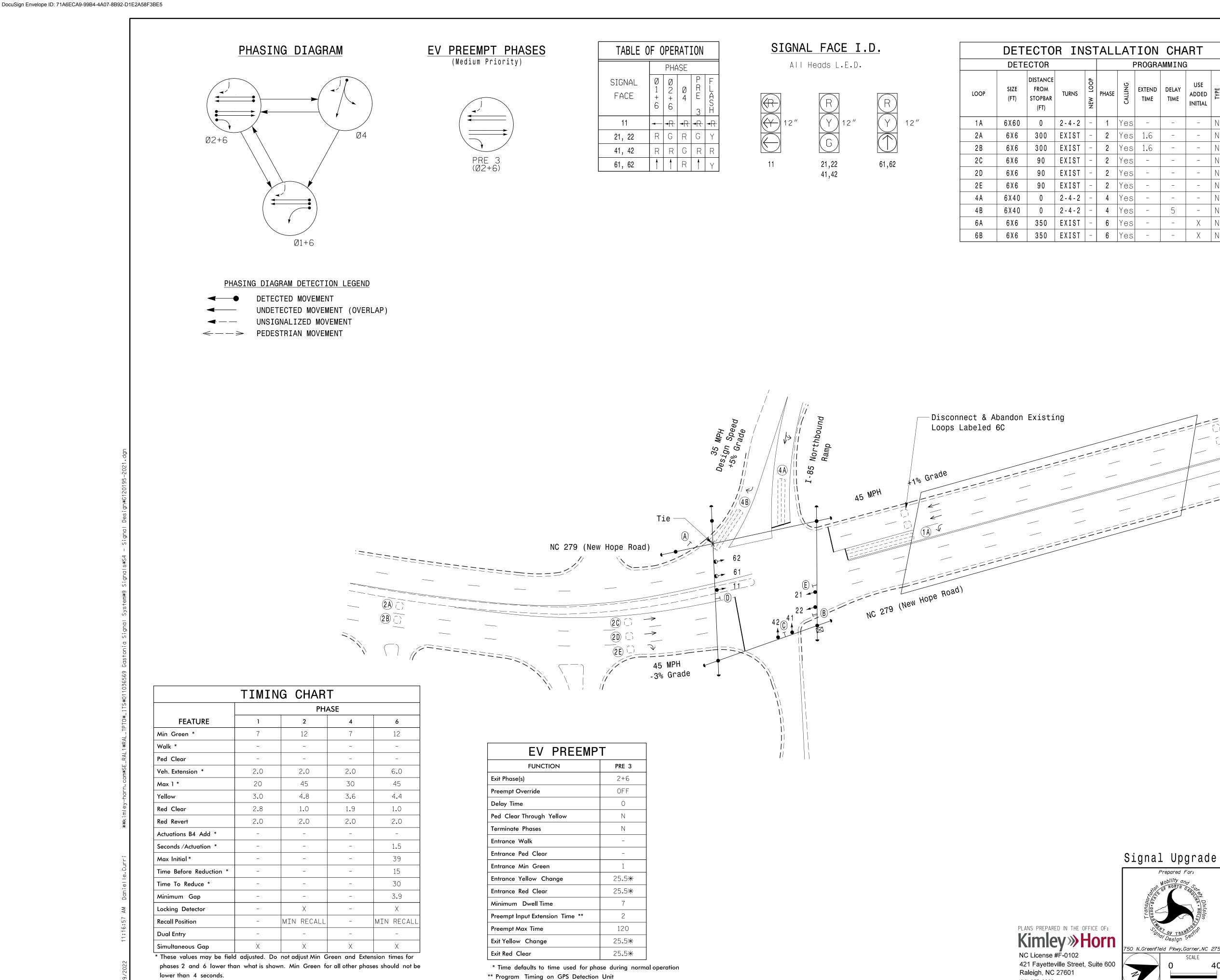
421 Fayetteville Street, Suite 600

Raleigh, NC 27601

(919) 677-2000

12-0194

SIG. INVENTORY NO.



r		1									_
	TABLE ()F OPERATION	SIGNAL FACE I.D.		DET	ЕСТО	R IN	ST	ALI	LAT	Γ
Ī		PHASE	All Heads L.E.D.		DETE	ECTOR					Ρ
	SIGNAL FACE		$\begin{array}{c} \hline \hline$	LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	
	11	- - - R -	$((\Upsilon)$ 12" (Υ) 12" (Υ)	12″ 1A	6X60	0	2 - 4 - 2	-	1	Yes	
	21, 22	RGRGY		2 A	6 X 6	300	EXIST	-	2	Yes	
	41, 42	RRGRR	(G)	2 B	6 X 6	300	EXIST	-	2	Yes	
	61, 62		11 21,22 61,62	2.0	6 X 6	9.0	EXIST	-	2	Yes	
l	01, 02		41,42	2 D	6 X 6	90	EXIST	-	2	Yes	
				2E	6 X 6	90	EXIST	-	2	Yes	
				4 A	6 X 4 0	0	2 - 4 - 2	-	4	Yes	
				4 B	6 X 4 0	0	2 - 4 - 2	-	4	Yes	
				6 A	6 X 6	350	EXIST	-	6	Yes	
											-

		пт							
ON									
GRAMMING									
END ME	DELAY TIME	USE ADDED INITIAL	TYPE	SYSTEM LOOP	NEW CARD				
	1	-	Ν	1	Х				
6	-	_	Ν	_	Х				
.6	_	-	Ν	-	Х				
	-	-	N	-	Х				
_	_	-	Ν	_	X X X				
-	-	-	N	_	Х				
	_	-	Ν	-	Х				
-	5	_	Ν	_	Х				
_	_	Х	Ν	_	Х				
-	_	X X	Ν	-	Х				

PROJECT REFERENCE NO. SHEET NO. Sig.64.0 C-5703

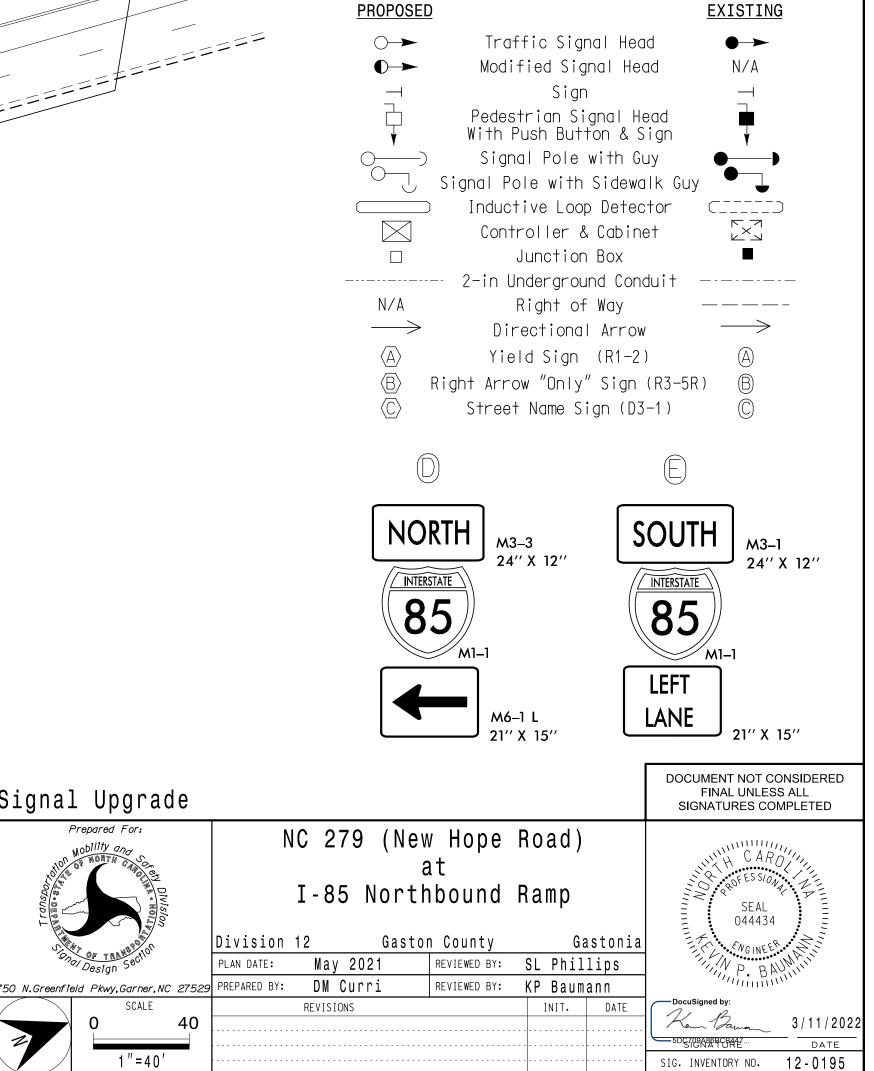
3 Phase Fully Actuated w/ Emergency Vehicle Preemption Gastonia Signal System

NOTES

- 1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- 2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- 3. Phase 1 may be lagged.
- 4. Set all detector units to presence mode.
- 5. In the event of loop replacement, refer to the current ITS and Signal Design Manual and submit a Plan of Record to the Signal Design Section.
- 6. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- 7. Pavement markings are existing.
- 8. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
- 9. Disconnect and abandon existing loops labeled 6C.
- 10. Install new cabinet on the existing cabinet foundation.
- 11. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
- 12. Reconnect lead-in cable to separate loops 2A, 2B, 2C, 2D, 2E, 6A & 6B, as shown.
- 13. Install GPS emergency preemption system per manufacturer's instructions to achieve preemption needed, as shown in phasing diagram.
- 14. City system data:
 - Controller Asset #0195.

PROPOSED

LEGEND



Prepared For:

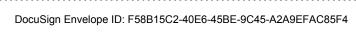
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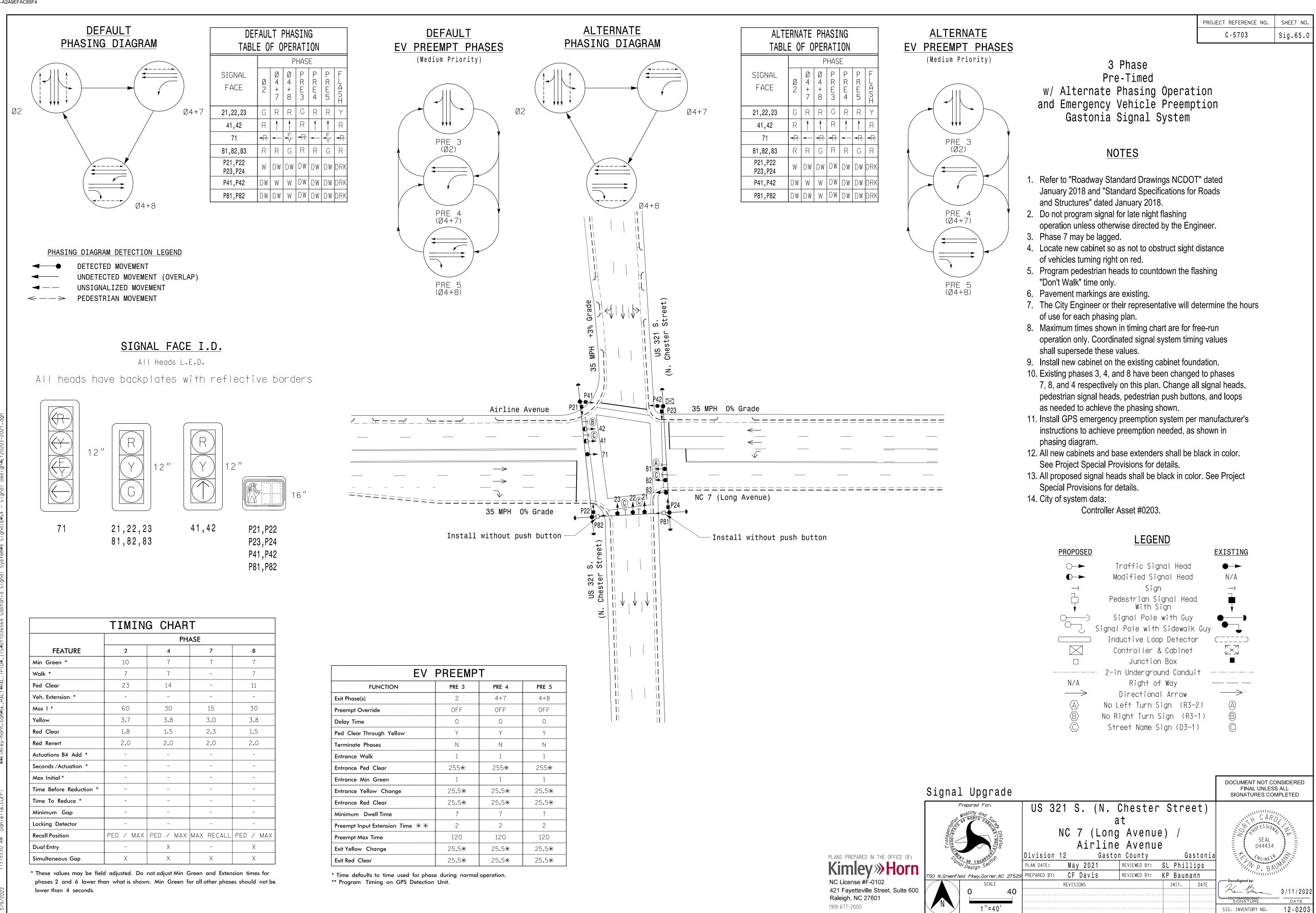
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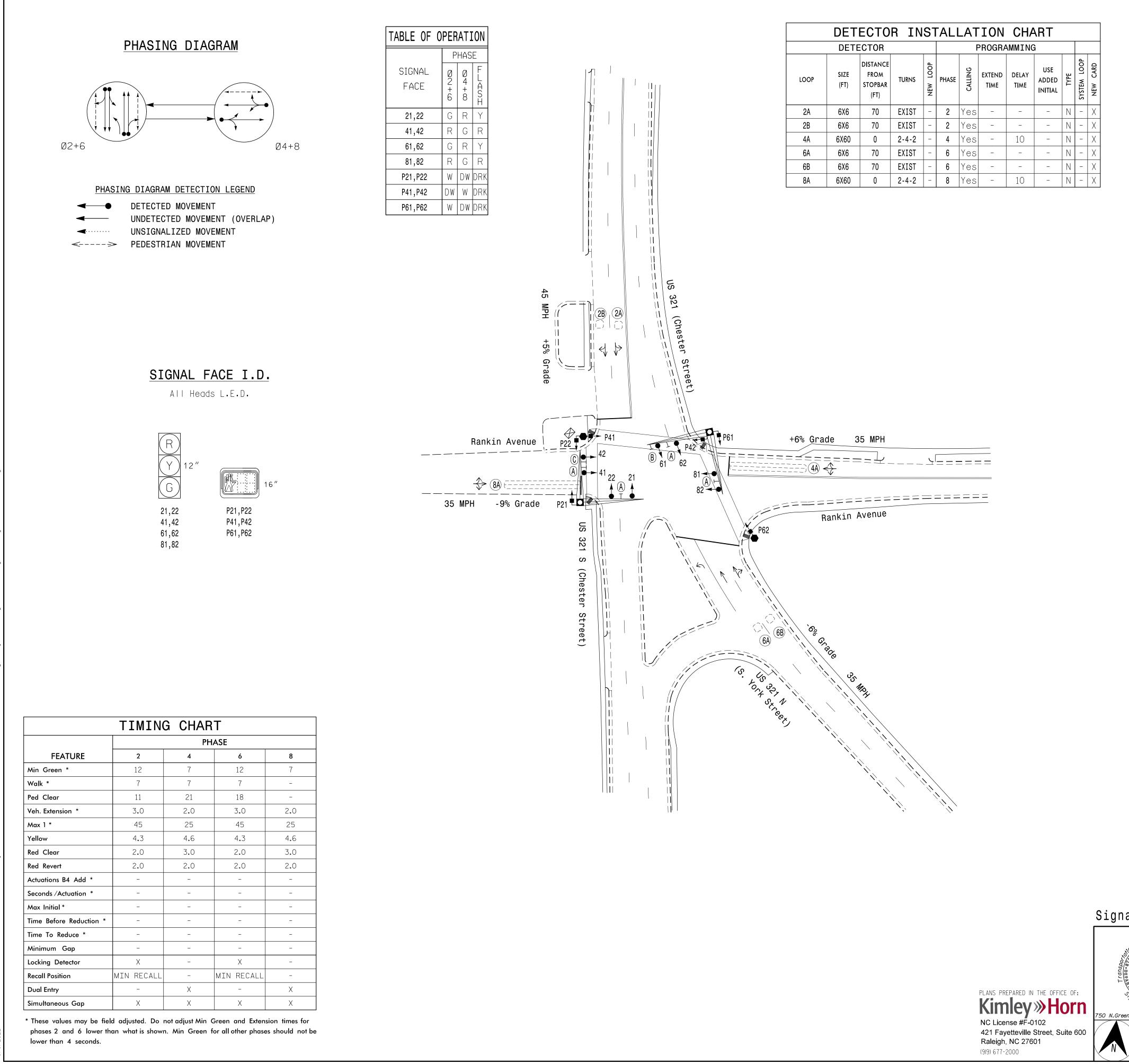
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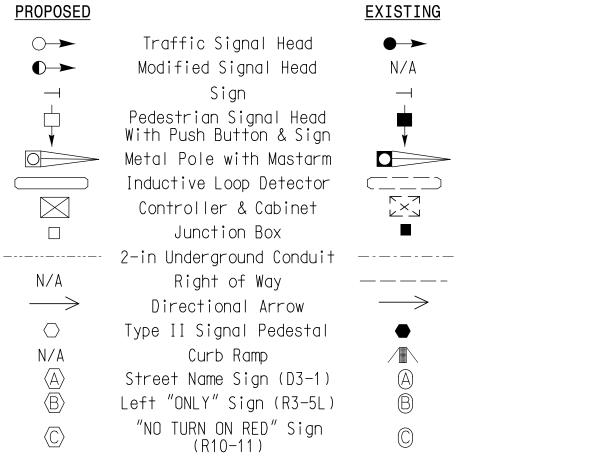


2 Phase Fully Actuated Gastonia Signal System

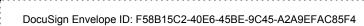
NOTES

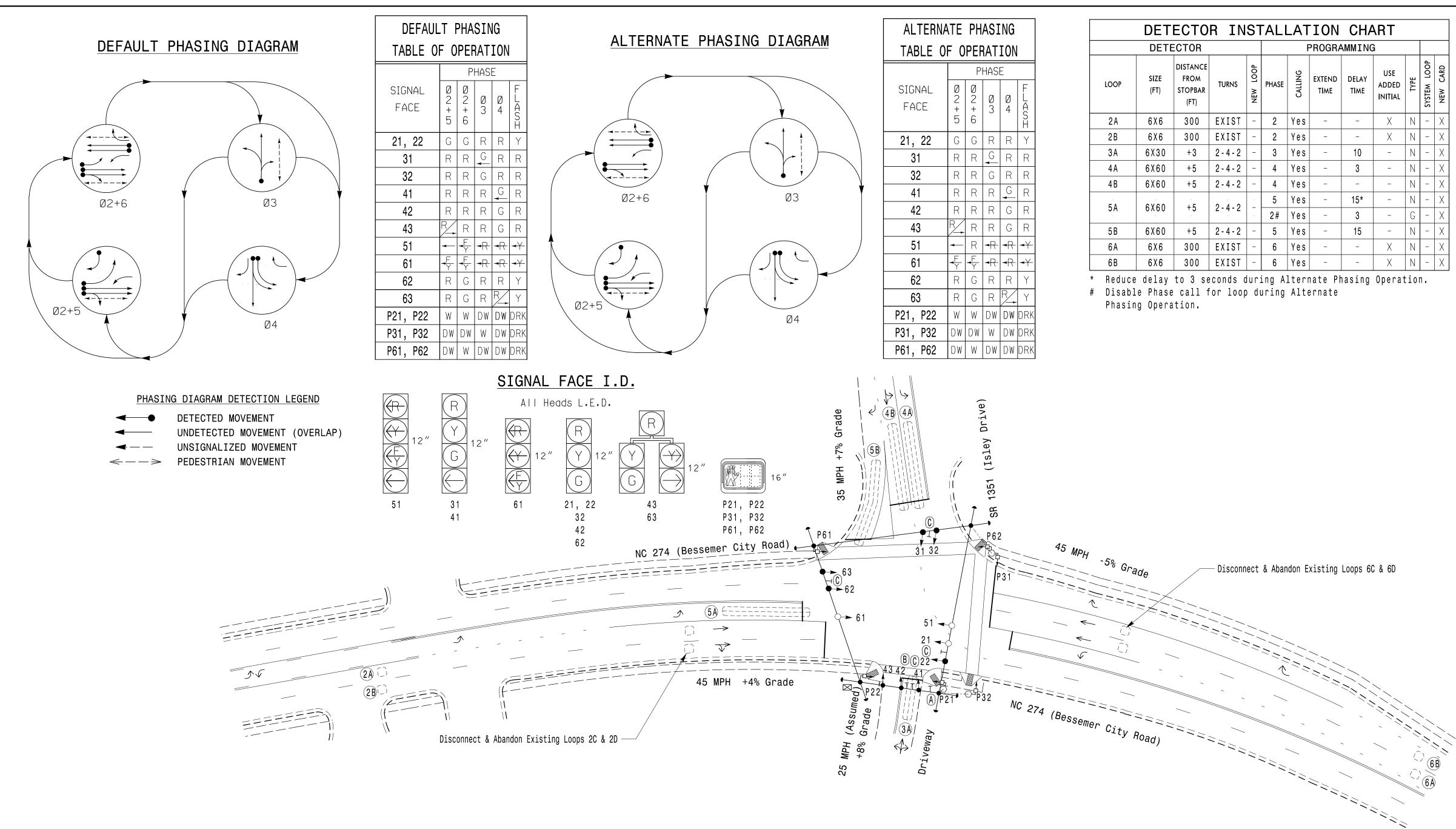
- 1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- 2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- 3. Set all detector units to presence mode.
- 4. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- 5. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- 6. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- 7. Pavement markings are existing.
- 8. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
- 9. Install new cabinet on the existing cabinet foundation.
- 10. Reconnect lead-in cable to separate loops 2A, 2B, 6A, & 6B, as shown.
- 11. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details.
- 12. City of system data:
 - Controller Asset #0213.

PROPOSED



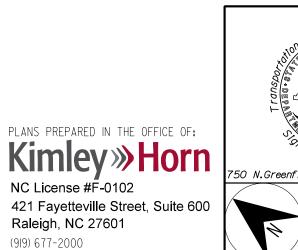
nal Upgrade		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
Prepared For: Nobility and	US 321 S. (Chester Street)/	
NOUTH CAR	US 321 N. (S. York Street)	CARO
NO DIV	at	CO POFESSION T
Solstaria	Rankin Avenue	SEAL 044434
CONTRACTOR DE LON	Division 12 Gaston County Gastonia	ENGINEER .
Design Section	PLAN DATE: May 2021 REVIEWED BY: SL Phillips	P. BAUMIN
Greenfield Pkwy,Garner,NC 27529	PREPARED BY: CF Davis REVIEWED BY: KP Baumann	
SCALE	REVISIONS INIT. DATE	DocuSigned by:
0 40		Kam Jana 3/11/2022
		SIGNATURE DATE
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TIMING CHART								
	PHASE							
FEATURE	2	3	4	5	6			
Min Green *	12	7	7	7	12			
Walk *	7	7	_	-	7			
Ped Clear	6	23	-	-	27			
Veh. Extension *	6.0	2.0	2.0	2.0	6.0			
Max 1 *	55	20	20	15	55			
Yellow	5.0	3.0	3.5	3.0	5.0			
Red Clear	2.1	2.6	3.1	3.3	2.1			
Red Revert	2.0	2.0	2.0	2.0	2.0			
Actuations B4 Add *	-	-	-	-	-			
Seconds /Actuation *	1.5	-	-	-	1.5			
Max Initial *	34	-	-	-	34			
Time Before Reduction *	15	-	_	-	15			
Time To Reduce *	30	-	_	-	30			
Minimum Gap	3.0	-	_	-	3.0			
Locking Detector	Х	-	-	-	Х			
Recall Position	MIN RECALL	-	-	-	MIN RECALL			
Dual Entry	-	-	-	-	-			
Simultaneous Gap	Х	Х	Х	Х	Х			

* 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.



ALLATION CHART									
HASE	CALLING	EXTEND TIME	DELAY TIME	USE ADDED INITIAL	ТҮРЕ	SYSTEM LOOP	NEW CARD		
2	Yes	-	1	Х	Ν	1	Х		
2	Yes	-	-	Х	Ν	1	Х		
3	Yes	-	10	-	N	-	Х		
4	Yes	-	3	-	N	-	Х		
4	Yes	-	-	_	N	-	Х		
5	Yes	-	15*	-	Ν	1	Х		
2 #	Yes	-	3	-	G	I	Х		
5	Yes	-	15	-	N	+	Х		
6	Yes	-	-	Х	Ν	-	Х		
6	Yes	_	_	Х	N	-	Х		

4 Phase Fully Actuated w/ Alternate Phasing Operation Gastonia Signal System

PROJECT REFERENCE NO.

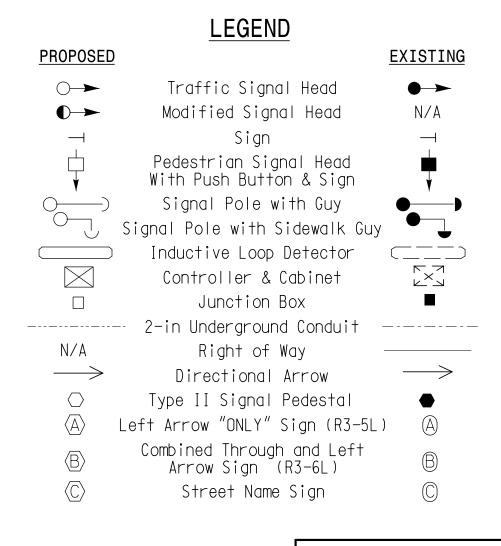
C-5703

SHEET NO.

Sig.67.0

NOTES

- 1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- 2. Do not program signal for late night flashing
- operation unless otherwise directed by the Engineer.
- 3. Phase 5 may be lagged.
- 4. The order of phase 3 and phase 4 may be reversed.
- 5. Reposition existing signal head numbered 22. 6. Set all detector units to presence mode.
- 7. In the event of loop replacement, refer to the current ITS and Signal Design Manual and submit a Plan of Record to the Signal Design Section.
- 8. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- 9. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- 10. The City Engineer or their representative will determine the hours of use for each phasing plan.
- 11. Pavement markings are existing.
- 12. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
- 13. Abandon and disconnect existing loops 2C, 2D, 6C, and 6D.
- 14. Install new cabinet on the existing cabinet foundation.
- 15. All new cabinets and base extenders shall be black in color. See Project Special Provisions for details. 16. All proposed pedestrian signal heads shall be black in color.
- See Project Special Provisions for details.
- 17. All proposed pedestrian pedestals and pushbutton posts shall be black in color. See Project Special Provisions for details.
- 18. Reconnect lead-in cable to separate loops 2A, 2B, 6A, and 6B, as shown.
- 19. City system data:
 - Controller Asset #0234



Signal Upgrade		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		
Prepared For: Nobility and Society Division	NC 274 (Bessemer City Road) at SR 1351 (Isley Drive)	SEAL 044434		
	Division 12 Gaston County Gastonia			
Design Section	PLAN DATE: May 2021 REVIEWED BY: SL Phillips	N P. BAUMAN		
750 N.Greenfield Pkwy,Garner,NC 27529	PREPARED BY: DM Curri REVIEWED BY: KP Baumann			
SCALE	REVISIONS INIT. DATE	DocuSigned by:		
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		SIGNATURE DATE		
1 "=40'		SIG. INVENTORY NO. 12-0234		