

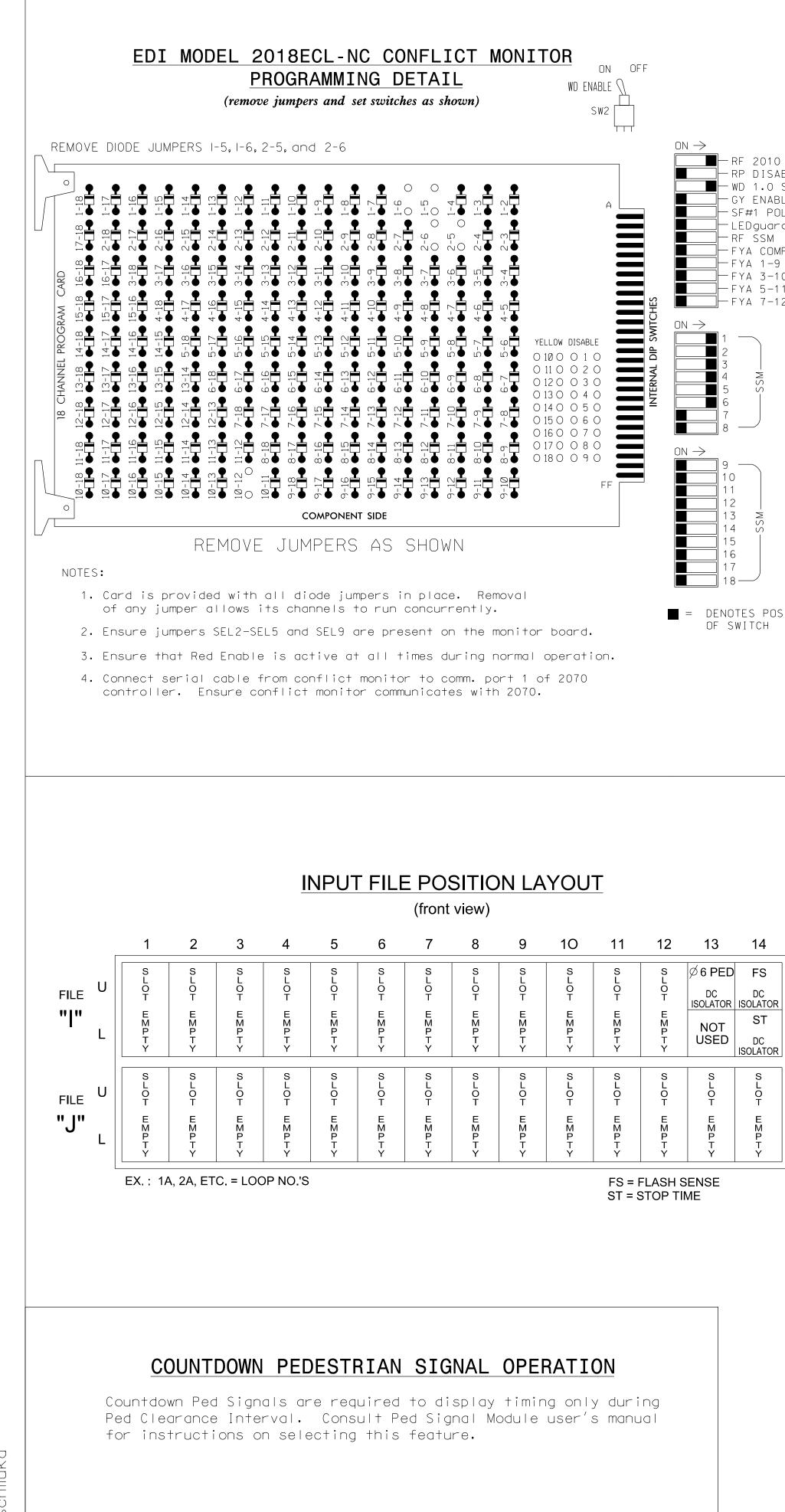
Rd dgn Mill \_dsn\_Winkler \_Sig L ሲ N. 0 .gn\U5312\_1 · ----Des Н na. ō ·H S S ര Ρl  $\subseteq$ ig S Δ 5**0**6 s) al gn \ Sign Sİ 2/14/2012 6:30:44 AM R:\Traffic\Signals\De schiluka

\* 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.

TABLE	OF	- 0	PE	RA <sup>-</sup>	TI(	DN	
			Ρ	HAS	E		
SIGNAL Face	Ø 1 + 5	Ø 1 + 6	Ø 2+ 5	Ø 2 + 6	Ø 3	Ø 4	F L A S H
11, 12	-	-	≺R	<b>-</b> R	<b>-</b> R	<b>-</b> ₽	◄ि
21	R	R	G	G	R	R	Y
22	R	R	G	G	R	R	Y
31	R	R	R	R	G	R	R
32	R	R	R	R	G	R	R
41	R	R	R	R	R	G	R
42	R	R	R	R	R	G	R
51	-	≺R	-	≺R	₹R	<del>∢</del> R	◄₹
61	R	G	R	G	R	R	Y
6.2	R	G	R	G	R	R	Y
P61,P62	DW	W	DW	W	DW	W	DRK

													6	3 Phase	PROJECT REFERENCE NO. U-5312	SHEET NC Sig.9.2
		LOOP		TEC			R	PROGRA			T			y Actuate solated)	ed	
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR	TURNS	NEW LOOP	PHASE	CALLING		STRETCH	I DELAY TIME	SYSTEM LOOP	NEW CARD	1. Refer to "Ro		NOTES	awings NCDOT" da	ted
1A, 1B	*	(FT) +5	*	*	1				-	- SYS	*	<ol> <li>Refer to "Ro January 2018 Roads and St</li> <li>Do not progr</li> </ol>			ecifications for anuary 2018. e night operatic	
1C 2A	*	0 350	*	*	1		Y - Y -		15	-	*	unless other	wise dir	ected by t	the Engineer.	,,,,
2C, 2D 3A	*	90 0	*	*	2 3		Y - Y -		- 3	-	*	<ol> <li>Phase 1 and/</li> <li>The order of</li> </ol>	-		be reversed.	
3B	*	0	*	*	3		Y -		- 3	-	*	5. Set all dete	-	-		
4 A 5 A 6 A	* * *	0 +5 300	* * *	* * *	4 5 6	Ý,	Y - Y -	  - 1.6		-	* * *	detectors ac	cording	to the mar	detection. Insta nufacturer's esitred detectio	
6B Video	* Detec	90 tion Zo	*	*	6	Υ,	Ý -		_	-	*	7. Omit "walk" pedestrian c	and flas	hing "Don'	t Walk" with no	
VIUEO	Derec		JIIE										estrian h	eads to co lv.	ountdown the fla	shing
													vement Ma		ns for proposed	stop
												10. Reposition e plan.		signal hea	ads as shown on	this
													PROPOSE	—	<u>_EGEND</u>	EXISTIN
														(	Curb Ramp	
<u> </u>	5 Mph	+5% Gr	ade										$\bigcirc \rightarrow$	Traff	ic Signal Head	•
												CA		-	e with Sidewalk Guy	
۲	•	•	۲			۲	۲	۲	۲		)		↓ ▼		an Signal Head	¥
	<		<b>6</b> B		_	-				-					Signal Pedestal Detection Zone	● N⁄A
•			• •	© 0	•	)	•	• •	•	•				Inductiv	ve Loop Detector	
		5							_	_						
															nction Box lerground Conduit	
													N/A	– 2-in Und Ri	nction Box lerground Conduit ght of Way	
			NC 16										N/A	- 2-in Und Ri Direc	nction Box lerground Conduit	
		<u> </u>	NC 16										$\rightarrow$	- 2-in Und Ri Direc Cons	nction Box lerground Conduit ght of Way ctional Arrow truction Zone Wood Pole	■ > N/A ●
		<u> </u>	NC 16										$\rightarrow$	- 2-in Und Ri Direc Cons Left Arrow	nction Box lerground Conduit ght of Way ctional Arrow truction Zone Wood Pole "Only" Sign (R3-5L) Through and Left	■ 
		<u> </u>	NC 16										$\xrightarrow{\circ}$	- 2-in Und Ri Direc Cons Left Arrow Combined Arrow Dual Tu	nction Box lerground Conduit ght of Way ctional Arrow truction Zone Wood Pole "Only" Sign (R3-5L)	■
		<u> </u>	NC 16											- 2-in Und Ri Direc Cons Left Arrow Combined Arrow Dual Tu Arrow	Inction Box lerground Conduit ght of Way ctional Arrow truction Zone Wood Pole "Only" Sign (R3-5L) Through and Left Sign (R3-6L) urn and Through	■ N/A ● (C)
		<u> </u>	NC 16										→ () () () () () () () () () ()	- 2-in Und Ri Direc Cons Left Arrow Combined Arrow Dual Tu Arrow	Inction Box lerground Conduit ght of Way ctional Arrow truction Zone Wood Pole "Only" Sign (R3-5L) Through and Left Sign (R3-6L) urn and Through Sign (R3-19)	■ N/A ● (A) (B) (C)
		<u> </u>	NC 16										→ () () () () () () () () () ()	- 2-in Und Ri Direc Cons Left Arrow Combined Arrow Dual Tu Arrow	Inction Box lerground Conduit ght of Way ctional Arrow truction Zone Wood Pole "Only" Sign (R3-5L) Through and Left Sign (R3-6L) urn and Through Sign (R3-19)	■ N/A ● (A) (B) (C)
		<u> </u>	NC 16										→ () () () () () () () () () ()	- 2-in Und Ri Direc Cons Left Arrow Combined Arrow Dual Tu Arrow	Inction Box lerground Conduit ght of Way ctional Arrow truction Zone Wood Pole "Only" Sign (R3-5L) Through and Left Sign (R3-6L) urn and Through Sign (R3-19)	■ N/A ● (A) (B) (C)
		<u> </u>	NC 16										→ () () () () () () () () () ()	- 2-in Und Ri Direc Cons Left Arrow Combined Arrow Dual Tu Arrow	Inction Box lerground Conduit ght of Way ctional Arrow truction Zone Wood Pole "Only" Sign (R3-5L) Through and Left Sign (R3-6L) urn and Through Sign (R3-19)	► N/A A B C D D D D
		<u> </u>	NC 16					Si	jnal	U	bgr	e - Temporary Phase 11)		- 2-in Und Ri Direc Cons Left Arrow Combined Arrow Dual Tu Arrow Right Arrow	Inction Box Herground Conduit ght of Way ctional Arrow truction Zone Wood Pole "Only" Sign (R3-5L) Through and Left Sign (R3-6L) Jurn and Through Sign (R3-19) "Only" Sign (R3-5R) WHB Engineering NC 940 Main Campus D	► N/A A B C D D N/A • • • • • • • • • • • • •
		<u> </u>	NC 16					Prepared					<ul> <li>○</li> <li>④</li> <li>⑥</li> <li>⑥</li> <li>⑦</li> </ul> Design 1 - NC	- 2-in Und Ri Direc Cons Left Arrow Combined Arrow Dual Tu Arrow Right Arrow	Inction Box lerground Conduit ght of Way ctional Arrow truction Zone Wood Pole "Only" Sign (R3-5L) Through and Left Sign (R3-6L) urn and Through Sign (R3-19) "Only" Sign (R3-5R) WHB Engineering NC 940 Main Campus D Raleigh, NC 919.829.02 DOCUMENT NOT OF FINAL UNLE	N/A A B C D D A C D A A A A A A A A A A A A A A
		<u> </u>	NC 16					Prepared	for the Of			<u>Phase 11)</u> US 42 SR 1322 (Win	<ul> <li>○</li> <li>○</li> <li>○</li> <li>○</li> <li>○</li> <li>○</li> <li>○</li> <li>○</li> <li>D</li> <li>Design</li> <li>1 - NC</li> <li>at</li> <li>kler M:</li> </ul>	- 2-in Und Ri Direc Cons Left Arrow Combined Arrow Dual Tu Arrow Right Arrow Right Arrow	Inction Box lerground Conduit ght of Way ctional Arrow truction Zone Wood Pole "Only" Sign (R3-5L) Through and Left Sign (R3-6L) urn and Through Sign (R3-19) "Only" Sign (R3-5R) "Only" Sign (R3-5R) VHB Engineering NC 940 Main Campus D Raleigh, NC 919.829.03 DOCUMENT NOT O FINAL UNLE SIGNATURES C SEAL	N/A A B C D D A C D A A A A A A A A A A A A A A
		<u> </u>	NC 16					Prepared	for the Of			Phase 11) US 42	<ul> <li>○</li> <li>△</li> <li>ⓐ</li> <li>○</li> <li>○</li> <li>ⓐ</li> <li>○</li> <li>○</li> <li>○</li> <li>□</li> <li>Design</li> <li>1 - NC</li> <li>at</li> <li>kler M:</li> <li>st Oaks</li> </ul>	- 2-in Und Ri Direc Cons Left Arrow Combined Arrow Dual Tu Arrow Right Arrow Right Arrow <b>16</b> <b>111 Road</b> <b>5 Pkwy</b> Wilkes	Inction Box lerground Conduit ght of Way ctional Arrow truction Zone Wood Pole "Only" Sign (R3-5L) Through and Left Sign (R3-6L) urn and Through Sign (R3-19) "Only" Sign (R3-5R) "Only" Sign (R3-5R) VHB Engineering NC 940 Main Campus D Raleigh, NC 919.829.02 DOCUMENT NOT OF FINAL UNLE SIGNATURES C SEAL 04725	N/A A B C D D D D D D D D D D D D D D D D D D
		<u> </u>	NC 16				750	Prepared	for the Of obility and WORTH CAR WORTH CAR Design Se de Pkwy, Gan	fices	of:	Phase 11) US 42 SR 1322 (Win Stonecre vsion 11 Wilkes	<ul> <li>O</li> <li>A</li> <li>B</li> <li>C</li> <li>D</li> </ul> Design 1 - NC at kler M: st Oaks County REVIEWED BY	- 2-in Und Ri Direc Cons Left Arrow Combined Arrow Dual Tu Arrow Right Arrow Right Arrow <b>16</b> <b>111 Road</b> <b>s Pkwy</b> Wilkes M.L. Styg J. Ma	Inction Box lerground Conduit ght of Way ctional Arrow truction Zone Wood Pole "Only" Sign (R3-5L) Through and Left Sign (R3-6L) urn and Through Sign (R3-19) "Only" Sign (R3-5R) "Only" Sign (R3-5R) VHB Engineering NC 940 Main Campus D Raleigh, NC 919.829.02 DOCUMENT NOT OF FINAL UNLE SIGNATURES C SEAL 04725	N/A A B C D D D D D D D D D D D D D D D D D D



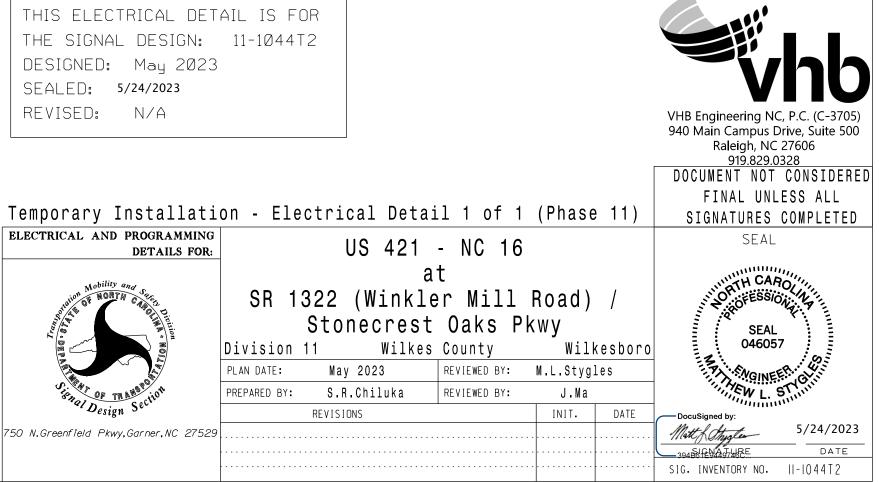


RF 2010 RP DISABLE VD 1.0 SEC SY ENABLE SF#1 POLARITY EDguard RF SSM YA COMPACT YA 1-9 YA 3-10 YA 5-11 YA 7-12 WSSS SSN SSN SSN SSN SSN SSN SS	<ol> <li>NOTES</li> <li>To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.</li> <li>Enable simultaneous Gap-Out for all phases.</li> <li>Program phases 2 and 6 for Startup In Green.</li> <li>Program phase 6 for Startup Ped Call.</li> <li>Program phase 2 and 6 for Yellow Flash.</li> <li>If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.</li> </ol>	LOAD SWITCH NO. PHASE SIGNAL HEAD NO. RED YELLOW GREEN ARROW YELLOW ARROW GREEN ARROW		32	S2 21,22 128 129 130	S2P PED NU	11
WSS WSS TES POSITION WITCH	EQUIPMENT INFORMATION CONTROLLER2070 CABINET	ARROW GREEN ARROW	127	127			

## **INPUT FILE CONNECTION & PROGRAMMING CHART**

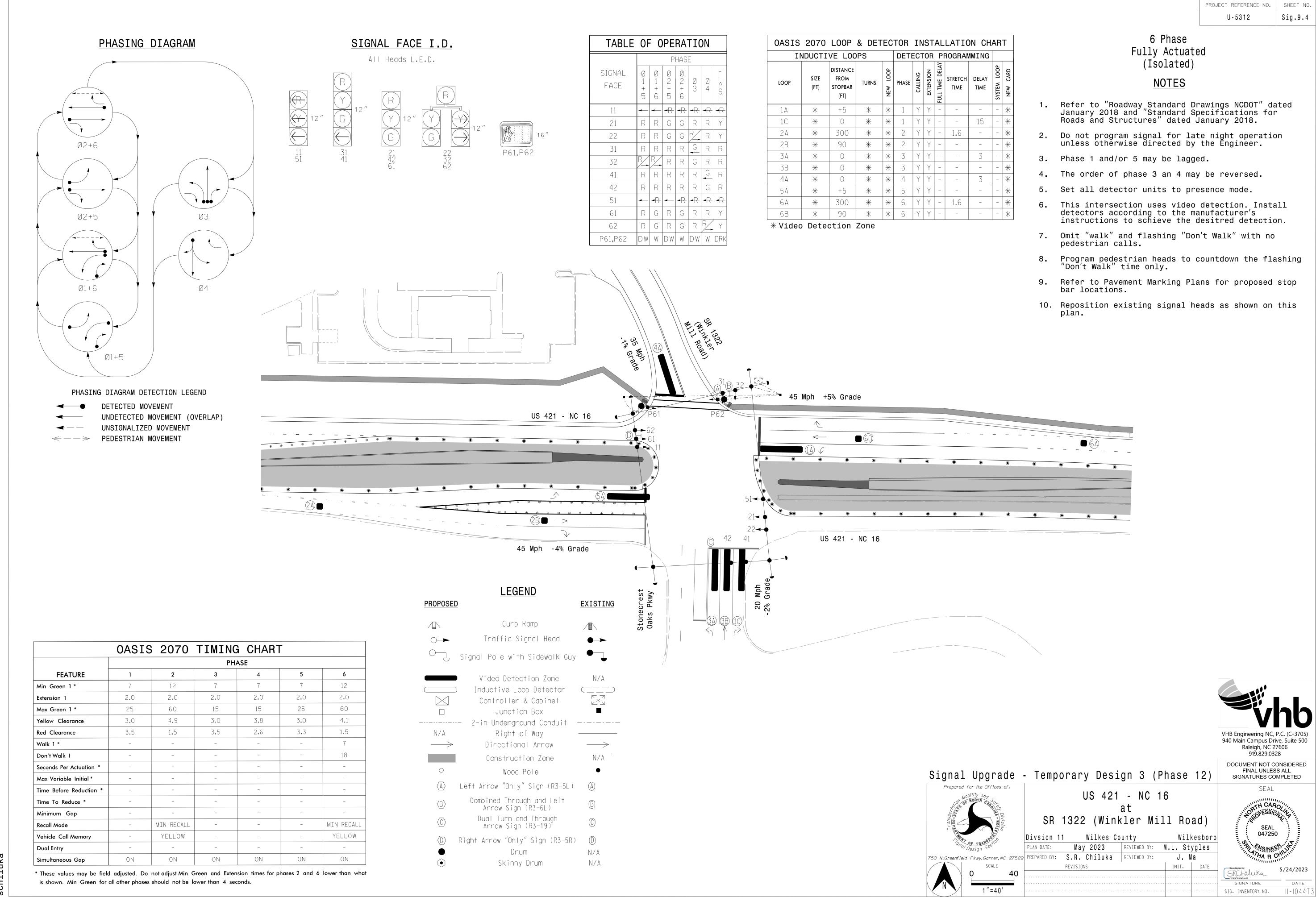
LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT POINT	DETECTOR NO	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	QUEUE	CALL	DELA DURIN GREEI
PED PUSH BUTTONS							NOTE:						
P61;P62	TB8-7,9	I13U	68	34	6	PED 6		L DC ISOLA IT FILE SLC	TOR TI13				
LO	WER												





													PRC	JECT R	EFEREN	CE NO.	SHE	EET NO
														U -	5312		Si	g.9.3
	S.	ΓΩΝ	ΔΙ	НЕ		НО	<u>OK</u>	-UP	CF									
														010		010	010	
	S3			S4		S4P	S5	S6	S6P	S7	S8	S8P	59	S1Ø	S11	S12	S13	S14
	3			4		4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
22	31	32	41	42	62	NU	51	61,62	P61, P62	NU	NU	NU	NU	NU	NU	NU	NU	NU
	116	116	1Ø1	1Ø1				134										
	117	117	102	102				135										
	118	118	1Ø3	103				136										
							131											
17					102		132											
18	118		1Ø3		1Ø3		133											
									119									

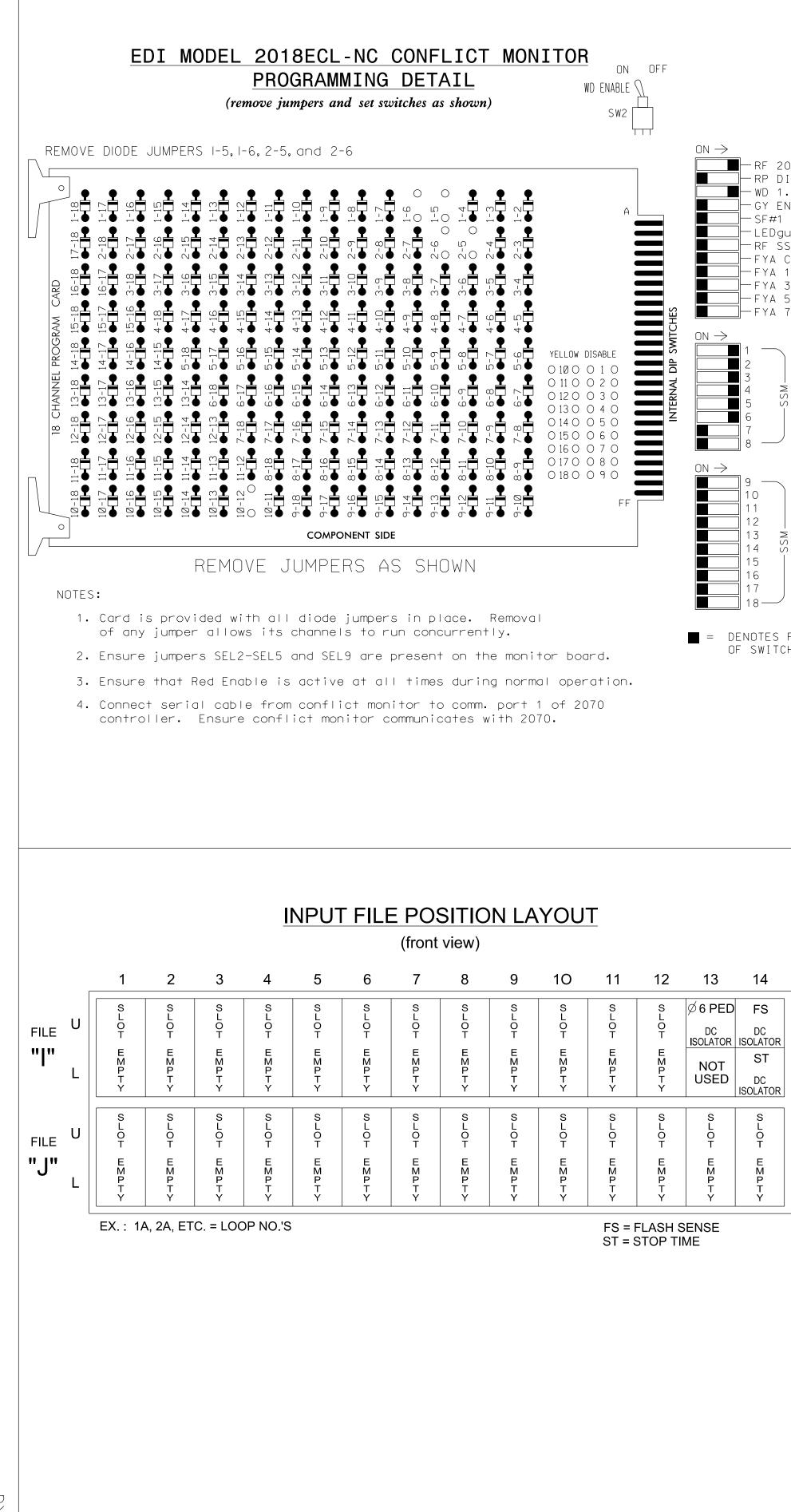
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Rd dgn Mill \_dsn\_Winkler Sig N ∫uĝ Desi Signal ГV പ od ധ Plans/T6 Design 2/14/2012 6:30:44 AM R:\Traffic\Signals\Design\Signals\90% schiluka

TABLE	OF	- 0	PE	RA <sup>.</sup>	TIC	ON	
			Ρ	HAS	E		
SIGNAL Face	Ø 1 + 5	Ø 1 + 6	Ø2+5	Ø2+6	ØЗ	Ø 4	H LANT
11	-	-	<b>-</b> R−	<b>-</b> R−	≺R	<b>-</b> R−	₽
21	R	R	G	G	R	R	Y
22	R	R	G	G	R	R	Y
31	R	R	R	R	G	R	R
32	R	R	R	R	G	R	R
41	R	R	R	R	R	G	R
42	R	R	R	R	R	G	R
51	-	<b>-</b> R	-	◄₹	◄ि	◄ि	<b>-</b> R
61	R	G	R	G	R	R	Y
62	R	G	R	G	R	R	Y
P61,P62	DW	W	DW	W	DW	W	DRK

														PROJECT REFER	RENCE NO.	
														U - 531	12	Sig.9.4
													6 Phase			
		) L00P									-		Fully Actua	۰۵d		
I	NDUCT	IVE LOC	)PS		DETE	ECTOF		ROGRAM	MING				(Isolated			
	SIZE	DISTANCE FROM		LOOP		NG NG	DELAY	STRETCH		LOOP	CARD		,			
LOOP	(FT)	STOPBAR	TURNS	NEW	PHASE	CALLING EXTENSION	TIME	TIME	TIME	-	NEW		NOTES			
		(FT)					FULL					1.	Refer to "Boadway Standard	)rawings NC	DOT"da	ted
1 A	*	+5	*	*	1	YY	-	-	-		*	••	Refer to "Roadway Standard January 2018 and "Standard Roads and Structures" dated	Specificati	ons for	
10	*	0	*	*	1	Y Y V V	-	-	15		*					
2A 2B	*	300 90	*	*	2 2	Y Y	_	1.6	_		*	2.	Do not program signal for 1 unless otherwise directed b	ate night o / the Engin	peratio eer	n
3A	*	0	*	*	3	Y Y	_	-	3		*	3.	Phase 1 and/or 5 may be lag			
3B	*	0	*	*	3	ΥY	-	-	-		*					
4 A	*	0	*	*	4	ΥΥ	-	_	3		*	4.	The order of phase 3 an 4 m			
5A	*	+5	*	*	5	ΥΥ	-	-	-		*	5.	Set all detector units to p	resence mod	е.	
6A	*	300	*	*	6	YY	-	1.6	-		*	6.	This intersection uses vide			11
6B	*	90 ection	* 7000	*	6	YY	-	-	-	-	*		detectors according to the instructions to schieve the	desitred d	etectio	n.
V TUE	U Dele	SCLION	20116									7.	Omit "walk" and flashing "D pedestrian calls.	on't Walk" w	vith no	
												8.	Program pedestrian heads to "Don't Walk" time only.	countdown <sup>·</sup>	the fla	shing
												9.	Refer to Pavement Marking P bar locations.	lans for pro	oposed	stop
												10.	Reposition existing signal plan.	neads as sh	own on	this
	Mph -	+5% Grac	le									10.		neads as sh	own on	this
45	Mph -	+5% Grac	de									10.		neads as sh	own on	this
45	<	_	de 									10.	plan.	neads as sh	own on	this
45		_										10.		neads as sh	own on	this
<ul> <li>45</li> <li></li></ul>	<	_			•			•			· · ·	10.	plan.	neads as sh	own on	this
<ul> <li>45</li> <li>•</li> </ul>	<	_			•	•		•	·		· · · · ·	10.	plan.	neads as sh	own on	this
÷ 45	<	_			•			•			•	10.	plan.	neads as sh	own on	this
•		_	• 6B •		•			•			<ul> <li></li> /ul>	10.	plan.	neads as sh	own on	this
<ul> <li>45</li> <li>•</li> /ul>	<	_			•	•		•	•		<ul> <li></li></ul>		plan.	neads as sh	own on	this
•		•	<ul> <li>6B</li> <li>0</li> </ul>		•			•			<ul> <li></li></ul>		plan.	neads as sh	own on	this
•		_	<ul> <li>6B</li> <li>0</li> </ul>		•			•			<ul> <li></li></ul>		plan.	neads as sh	own on	this
•		•	<ul> <li>6B</li> <li>0</li> </ul>					•			<ul> <li></li></ul>		plan.	neads as sh	own on	this
•		•	<ul> <li>6B</li> <li>0</li> </ul>		<ul> <li>•</li> </ul>			•					plan.	neads as sh	own on	this
•		•	<ul> <li>6B</li> <li>0</li> </ul>		<ul> <li>•</li> </ul>								plan.	heads as sh	own on	this
•		•	<ul> <li>6B</li> <li>0</li> </ul>		•			•					plan.	heads as sh	own on	this
•		•	<ul> <li>6B</li> <li>0</li> </ul>										plan.	heads as sh	own on	this
•		•	<ul> <li>6B</li> <li>0</li> </ul>										plan.	heads as sh	own on	this



Mill Rd.dgn  $\mathbb{N}$ 10\_Sig С Ц 4 T I\_\_ 50 Signal Desi  $\Box$ Plans/Tempo Design ials/90% 5/23/2019 3:15:01 PM R:\Traffic\Signals\Design\Sigr schiluka

	NOTES						
	<ol> <li>To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.</li> </ol>						
RF 2010	2. Enable simultaneous Gap-Out for all phases.	LOAD Switch no.	S	\$1	S2	S2P	
RP DISABLE S ND 1.0 SEC Z GY ENABLE S	3. Program phases 2 and 6 for Startup In Green.	PHASE		1	2	2 PED	
SF#1 POLARITY L _EDguard J	4. Program phase 6 for Startup Ped Call.	SIGNAL HEAD NO.	11,12	32	21,22	NU	2
RF SSM	5. Program phase 2 and 6 for Yellow Flash.	RED			128		
YA     J       YA     J       YA     J       YA     J       YA     J       YA     J	<ol> <li>If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.</li> </ol>	YELLOW			129		
		GREEN RED ARROW	125		130		
- S S M -		YELLOW ARROW	126	126			11
		GREEN ARROW	127	127			11
		₩					
TES POSITION WITCH	EQUIPMENT INFORMATION CONTROLLER	NU = Not * Denot insta	es i	nsta			
	PHASES USED					<u>C(</u>	<u>0</u>
						ntdo Cle	

## **INPUT FILE CONNECTION & PROGRAMMING CHART**

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO	INPUT POINT	DETECTOR NO.	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	QUEUE	CALL	DELAY DURING GREEN
PED PUSH BUTTONS	TD0 7.0	14.011	<u> </u>	24			NOTE: INSTAL	L DC ISOLA	TOR				
P61,P62	TB8-7,9	I13U	68	34	6	PED 6		T FILE SLO					
INPUT FILE	E POSITION L	_EGEND: 、 	J2L 										
	ILE J .OT 2												
LO	WER												

SPECIAL DETECTOR NOTE	
Install a video detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.	

U-5312	Sig.9.5
PROJECT REFERENCE NO.	SHEET NO.

	01				ЛU						1							
	S3			S4		S4P	S5	S6	S6P	S7	S8	S8P	59	S1Ø	S11	S12	S13	S14
	3			4		4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
22	31	32	41	42	62	NU	51	61,62	P61, P62	NU	NU	NU	NU	NU	NU	NU	NU	NU
	116	116	1Ø1	1Ø1				134										
	117	117	102	102				135										
	118	118	1Ø3	1Ø3				136										
							131											
117					102		132											
118	118		1Ø3		103		133											
									119									
									121									

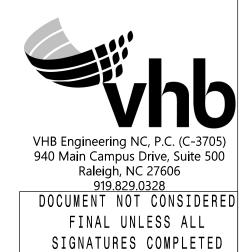
## SIGNAL HEAD HOOK-UP CHART

resistor. See load resistor his sheet.

## OUNTDOWN PEDESTRIAN SIGNAL OPERATION

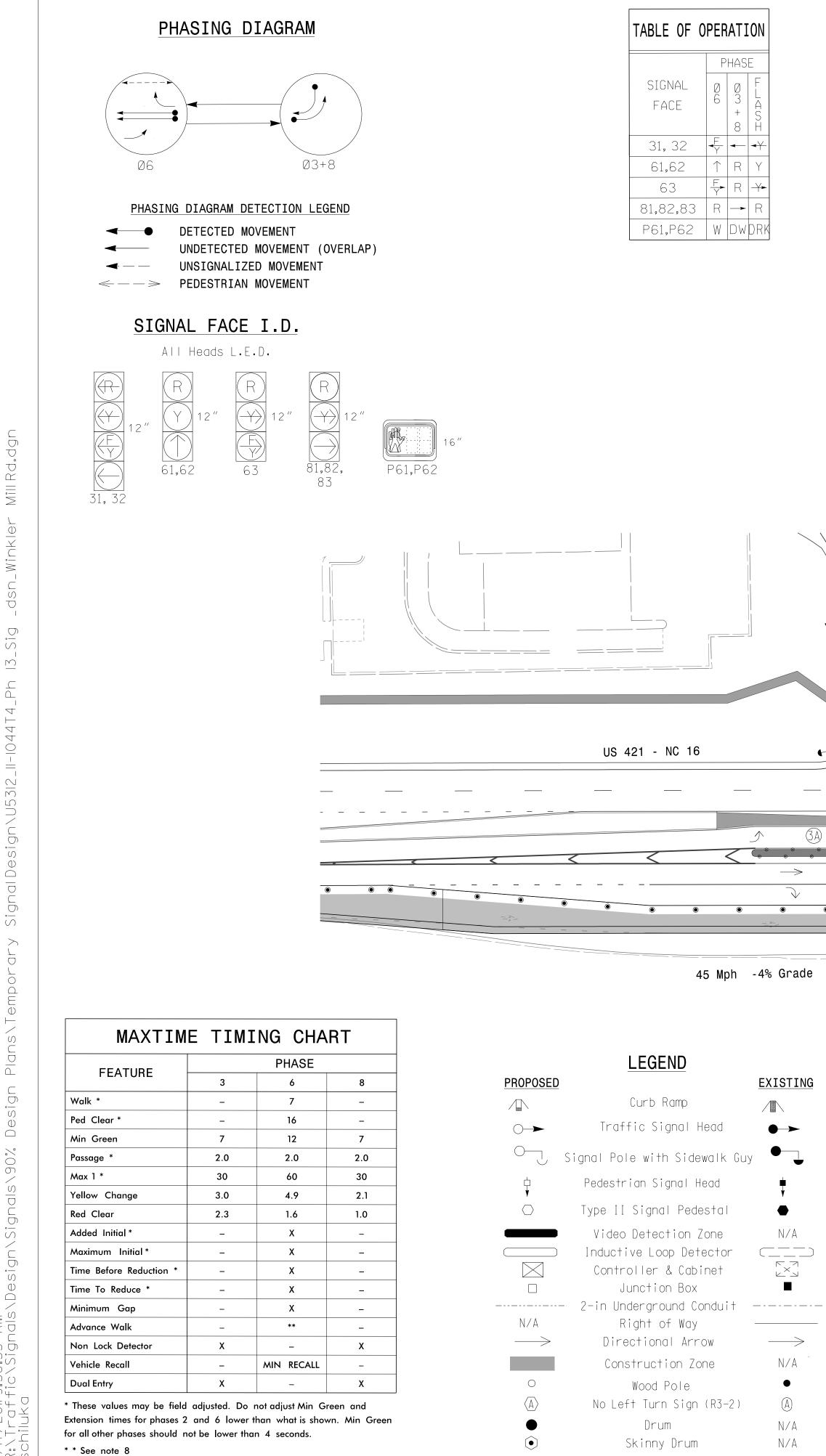
own Ped Signals are required to display timing only during earance Interval. Consult Ped Signal Module user's manual for instructions on selecting this feature.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 11-1044T3 DESIGNED: May 2023 SEALED: 5/24/2023 REVISED: N/A



Temporary Installation - Electrical Detail 1 of 1 (Phase 12)

						OIGNATOREO	
ELECTRICAL AND PROGRAMMING DETAILS FOR:		US 421	- NC 16			SEAL	
Mobility and See			at .er Mill t Oaks P		/	NUMERAL CAL	
	Division 11		s County	-	kesboro	04605	7
	PLAN DATE: N	ay 2023	REVIEWED BY:	M.L.Styg	les	A MGINE	
SEA OF TRANSPORT	PREPARED BY: S	.R.Chiluka	REVIEWED BY:	J.Ma		EW L	STYLIN
Design Sev	REVI	SIONS		INIT.	DATE	DocuSigned by:	•
750 N.Greenfield Pkwy,Garner,NC 27529						Matt & Strigter	5/24/2023
						394B67E9445746E	DATE
						SIG. INVENTORY NO.	II-I044T3



Sig  $\underline{\mathsf{M}}$  $\square$  $\overline{\bigcirc}$ ίΩ. sig  $\bigcirc$ 20%  $\bigcirc$  $\overline{\bigcirc}$ 2011 9:38:53 AM affic\Signals\Designed 

Ρ	HAS	E
00	Ø3 + 8	FLAST
F	┥	<b>-</b> ¥
$\uparrow$	R	Y
F	R	<b>-</b> ¥►
R		R
W	DW	DRK

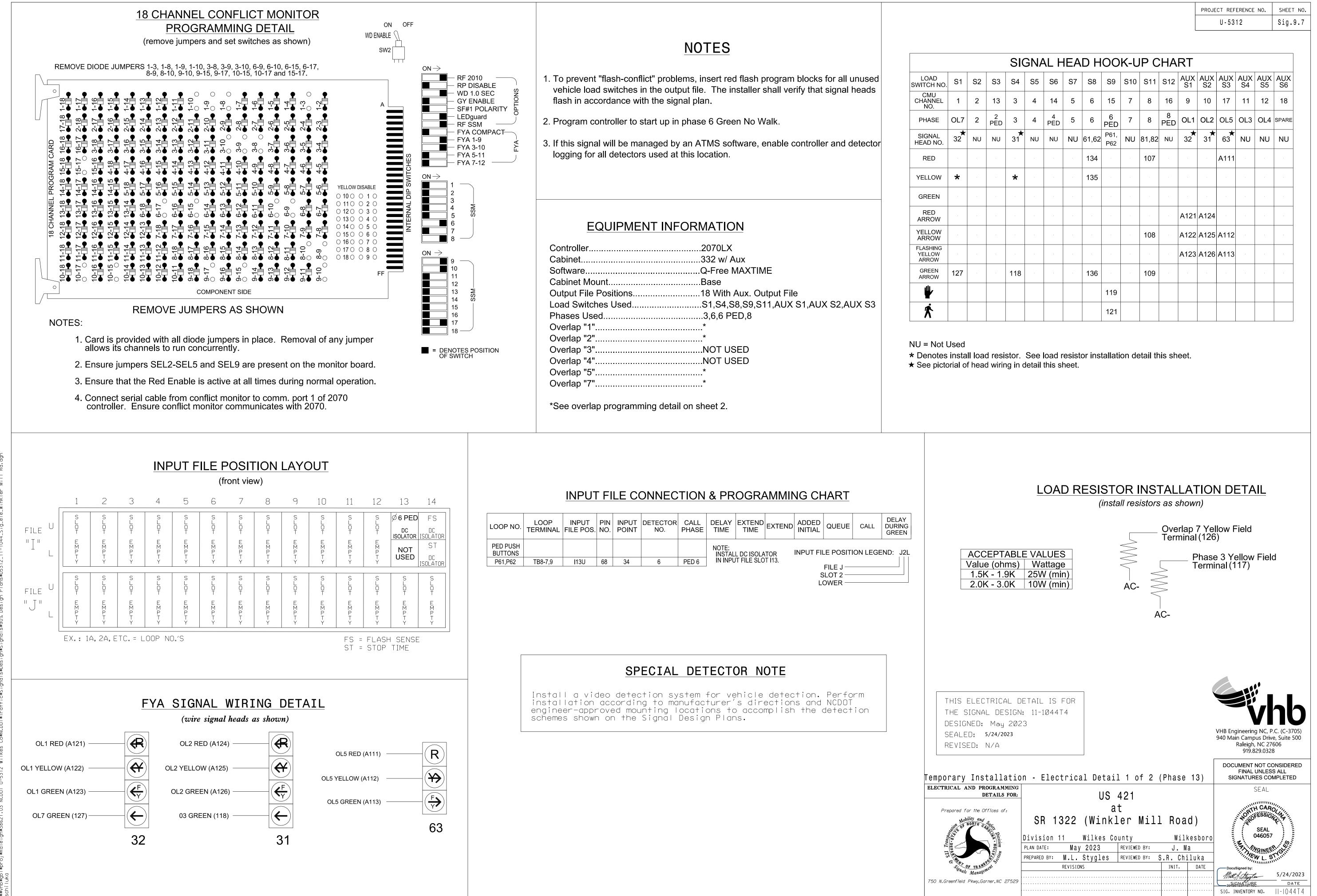
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(A)

TION	1	MAXTIME C	DETECTO	R INS	TALL	ATION	CHA	RT						
ASE		DETECTOR			PF	ROGRAM			EN					
Ø F 3 L + S 8 H ← <del>+</del>		ZE FROM T) STOPBAR (FT)		CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND ADDED INITIAL	CALL	AY DURING GREEN	NEW CARD				
RY	3A -	* 0	* *	÷ 3	15.0	-	X -	X	• DELAY	*			1.	Refer to January : Roads an
$\begin{array}{c} R \\ \hline \end{array} \\ \hline \end{array} \\ \hline \end{array} \\ R \end{array}$		<ul><li>₭ 300</li><li>₭ 90</li></ul>	* *		-		X - X -	X X	-	*			2.	Do not p unless o
DWDRK	8A * *Video Det	₭ 0 ection Zo	* * one	€ 8	15.0	-	Х -	Х	-	*			3.	Set all
													4.	Locate n distance
													5.	This int detector instruct
													6.	Omit "wa pedestri
													7.	Program "Don't Wa
													8.	To provio 2, progra seconds interval
													9.	Refer to bar loca
→ SA	Millin Hieron Bad P62		with a existing	e existing of new cabin foundatio 45 N	lph +	5% Grac								
	••• <u>•</u> — –													
		+												
• • • • • • • • • • • • • • • • • • •									421	- N	C 16			
		20 Mph	-2% Grade	M	 		L	JS ·	МО	MENTS	DURING	CONSTRUCT	TION. USE SIDE STF	TEMPORARY REET.
<ul> <li>-4% Grade</li> <li>Stonecrest</li> <li>EXISTING</li> </ul>		20 Mph	- 2% Grade	M	 		L	JS ·	МО	MENTS	DURING	CONSTRUC	TION. USE SIDE STF	TEMPORARY REET.
-4% Grade EXISTING EXISTING		20 Mph	- 2% Grade	M	 		L	JS ·	МО	MENTS	DURING	CONSTRUCT	TION. USE SIDE STF	TEMPORARY REET.



	PROJE	ECT REFERENCE NO.	SHEET NO.
2 Phase		U-5312	Sig.9.6
Fully Actuated (Isolated)			
NOTES			
efer to "Roadway Standard Drawings NCDOT" dated anuary 2018 and "Standard Specifications for oads and Structures" dated January 2018.			
o not program signal for late night operation nless otherwise directed by the Engineer.			
et all detector units to presence mode.			
ocate new cabinet so as not to obstruct sight istance of vehicles turning right on red.			
his intersection uses video detection. Install etectors according to the manufacturer's nstructions to schieve the desitred detection.			
mit "walk" and flashing "Don't Walk" with no edestrian calls.			
rogram pedestrian heads to countdown the flashing Don't Walk" time only.			
o provide a leading pedestrian interval on phase , program FYA heads 31, 32 and 63 to delay for 3 econds after the start of the phase 6 walk nterval. See electrical details.			
efer to Pavement Marking Plans for proposed stop ar locations.			
a, rooucrong,			
CAT-1			
$\blacksquare \widehat{6B}$			
EMPORARY LANE T.			
		<b>V</b>	hh
		VHB Engineering NC, 940 Main Campus Dr Raleigh, NC 2 919.829.03	ive, Suite 500 7606
Signal Upgrade - Temporary Design 4 (Phase 1	3)	DOCUMENT NOT C FINAL UNLES SIGNATURES CC	ONSIDERED
	-		
Prepared for the Offices of: US 421 - NC 16 at SR 1322 (Winkler Mill Road		SEAL SEAL SEAL 047250	
Divsion 11 Wilkes County Wilke	) sborn	SEAL 04725	
PLAN DATE:       May 2023       REVIEWED BY:       M.L. Styg         750 N.Greenfield Pkwy.Garner.NC 27529       PREPARED BY:       S.R. Chiluka       REVIEWED BY:       J. Ma	les	BIL ATHA R	R. W. T.
Scale     REVISIONS     INIT.       0     40	DATE	Docusigned by: SRChaluka	5/24/2023
N 1"=40'		SIGNATURE SIGNATURE SIG. INVENTORY NO.	Date   - 04474



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Controller	2070LX
Cabinet	332 w/ Aux
Software	Q-Free MAXTIME
Cabinet Mount	Base
Output File Positions	18 With Aux. Output File
Load Switches Used	S1,S4,S8,S9,S11,AUX S1,AUX S2,AUX S3
Phases Used	3,6,6 PED,8
Overlap "1"	*
Overlap "2"	
Overlap "3"	NOT USED
Overlap "4"	NOT USED
Overlap "5"	*
Overlap "7"	*

PROJECT REFERENCE NO.	SHEET NO.	
U - 5312	Sig.9.7	

				SIC	GNA	\L ⊢	IEA	DH	00	K-U	IP C	ΉА	RT					
).	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
	OL7	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PÉD	OL1	OL2			OL4	SPARE
	<b>3</b> 2 <sup>★</sup>	NU	NU	★ 31	NU	NU	NU	61,62	P61, P62	NU	81,82	NU	32 <sup>★</sup>	★ 31	63 <sup>★</sup>	NU	NU	NU
								134			107				A111			
	*			*				135				-						
												-	A121	A124	-			
											108		A122	A125	A112			
													A123	A126	A113			
	127			118				136			109							
									119									
									121									
			1					1		L	1							L

## MAXTIME OVERLAP PROGRAMMING DETAIL FOR DEFAULT PHASING

Front Panel Main Menu >Controller >Overlap >Overlap Parameters/Overlap Timings

Web Interface Home >Controller >Overlap Configuration >Overlaps

Overlap Plan 1

Overlap	1	2	5	
Туре	FYA 4 - Section	FYA 4 - Section	FYA 4 - Section	
Included Phases	6	6	6	
Modifier Phases	3	3	<u>-</u>	
Trail Green	0	0	0	
Trail Yellow	0.0	0.0	0.0	
Trail Red	0.0	0.0	0.0	
FYA Ped Delay	3.0	3.0	3.0	

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7
Normal
3
<u>-</u>
0
0.0
0.0
0.0

## **OUTPUT CHANNEL CONFIGURATION**

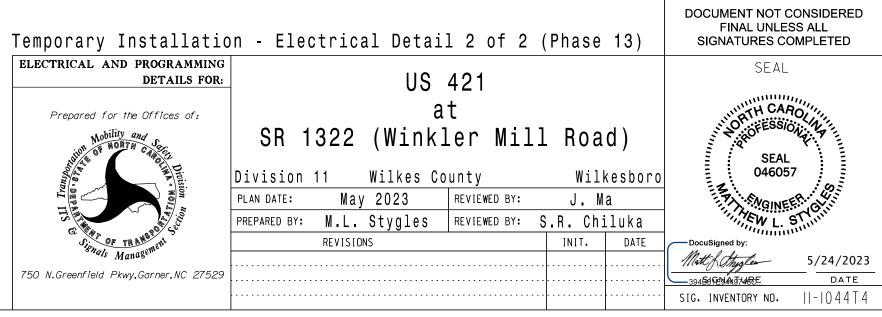
Front Panel Main Menu >Controller >More>Channels>Channels Config

Web Interface Home >Controller >Advanced IO>Channels>Channels Configuration

### Channel Configuration

ASSIGN	Channel	Control Type	Control Source	Flash Yellow	Flash Red	Flash Alt	MMU Channel
CHANNEL 1 TO	· <u>1</u>	Overlap	7		Х	Х	1
OVERLAP 7	2	Phase Vehicle	2	Х			2
	3	Phase Vehicle	3		Х	Х	3
	4	Phase Vehicle	4		Х		4
	5	Phase Vehicle	5		Х		5
	6	Phase Vehicle	6	Х		Х	6
	7	Phase Vehicle	7		Х		7
	8	Phase Vehicle	8		Х	Х	8
	9	Overlap	1	Х		Х	9
	10	Overlap	2	Х		Х	10
	11	Overlap	3	Х			11
	12	Overlap	4		Х	-	12
	13	Phase Ped	2				13
	14	Phase Ped	4				14
	15	Phase Ped	6				15
	16	Phase Ped	8				16
	17	Overlap	5	Х		Х	17
	18	Overlap	6		Х		18

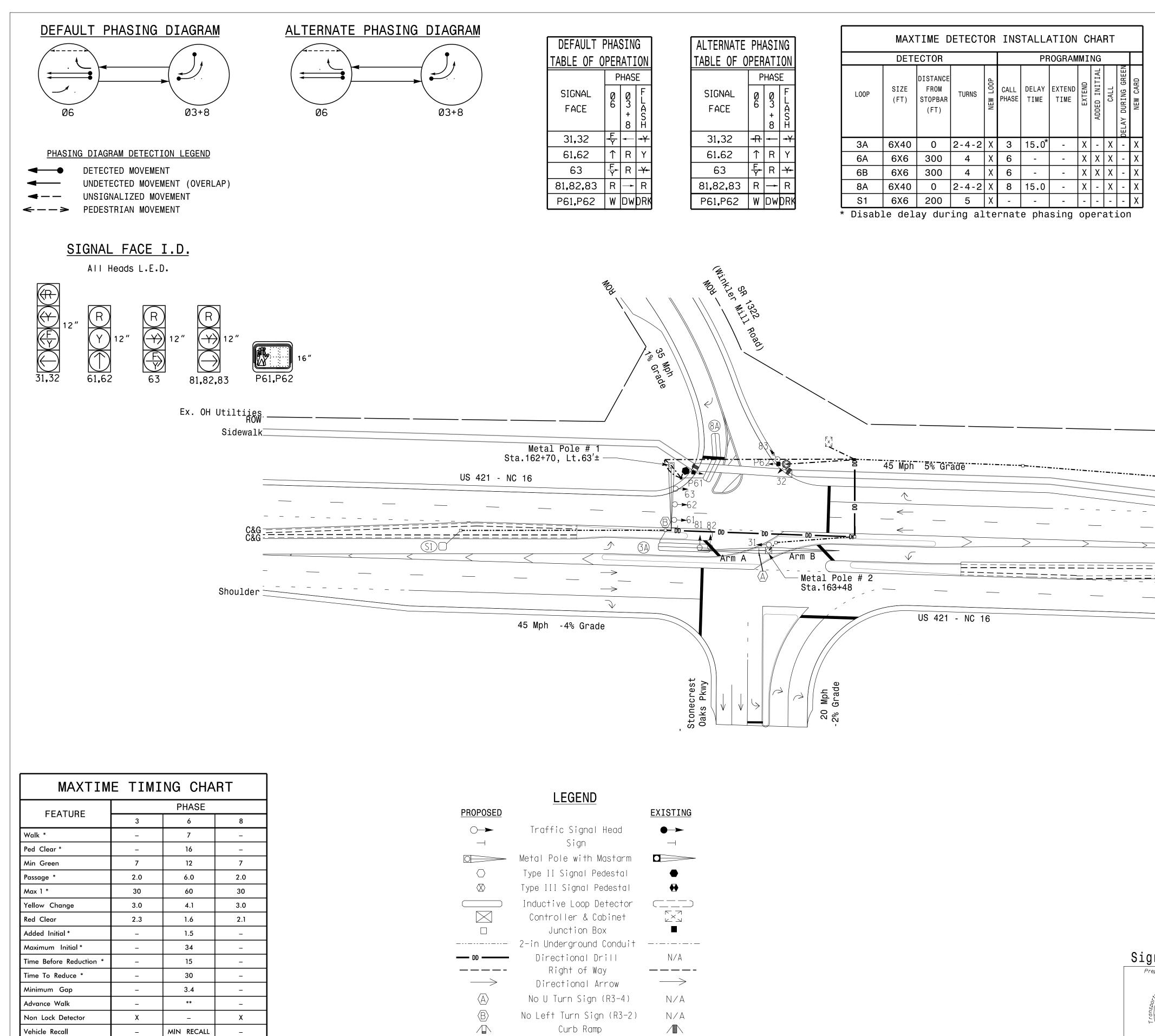




PROJECT REFERENCE NO.	SHEET NO.
U - 5312	Sig 9.8

VHB Engineering NC, P.C. (C-3705) 940 Main Campus Drive, Suite 500 Raleigh, NC 27606 919.829.0328

HIS ELE	CTRICAL	DFT	АП	IS	FOR
HE SIGNA					_
ESIGNED:					
EALED:	2				
EVISED:					
	N/H				



\* 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. \*\* See Note 7

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N N N N N N

Dual Entry

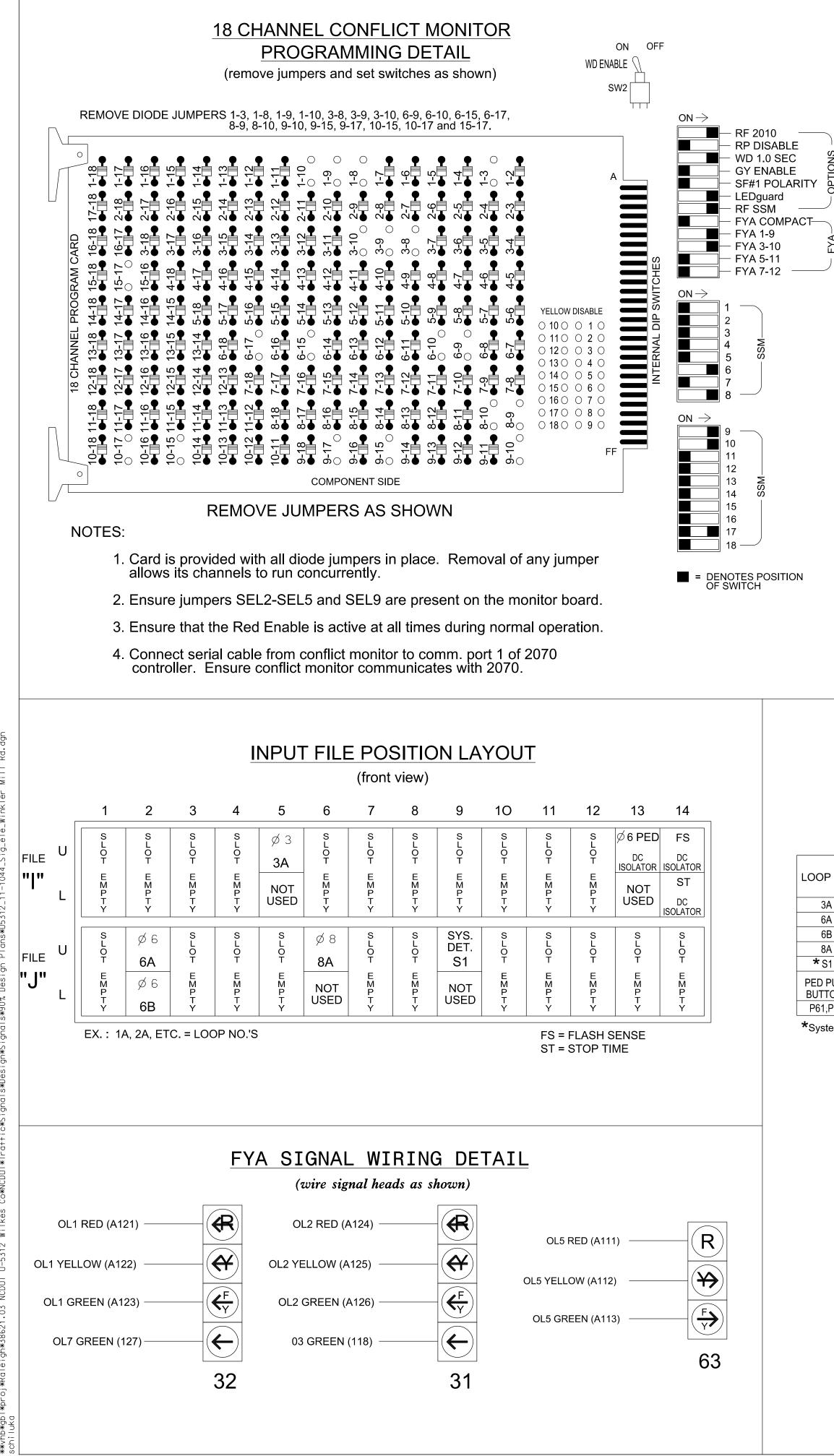
Curb Ramp

EXISTING
—
•
<b>••</b>
N/A
$\longrightarrow$
N⁄A
N⁄A

Sigr Pre



		PROJECT REFERENCE NO.	SHEET NO.
2 Phase		U-5312	Sig.9.9
Fully Actuated W/ Alternate Phasing Ope	ratio	n	
Wilkesboro Closed Loop S NOTES			
<ol> <li>Refer to "Roadway Standard Drawings NCD January 2018 and "Standard Specification Structures" dated January 2018.</li> </ol>	OT″ dat ns for I	ed Roads and	
<ol> <li>Do not program signal for late night fla operation unless otherwise directed by t</li> </ol>	ashing the Eng:	ineer.	
3. Set all detector units to presence mode			
<ol> <li>The Division (Town) Traffic Engineer with the hours of use for each phasing plan.</li> <li>Maximum times shown in timing shart and</li> </ol>			
<ol> <li>Maximum times shown in timing chart are operation only. Coordinated signal syste supersede these values.</li> </ol>	em timi	ng values	
<ol><li>Omit "WALK" and flashing "DON'T WALK" wi pedestrian calls.</li></ol>	ith no		
7. To provide a leading pedestrian interval program FYA heads 31, 32 and 63 to delay after the start of the phase 6 walk inte electrial details.	v for 3	seconds	
<ol> <li>Program pedestrian heads to countdown the "Don't Walk" time only.</li> </ol>	he flas	hing	
9. Refer to Pavement Marking Plans for prop locations.	posed s <sup>.</sup>	top bar	
ROW			
Sidewalk			
$- \qquad - \qquad$			
= = = = = = = = = = = = = C&G $= = = = = = = = = = = = = C&G$			
Shoulder			
			hb
		VHB Engineering NC, 1 940 Main Campus Dri Raleigh, NC 2 919.829.032	ve, Suite 500 7606
nal Upgrade - Final Design		DOCUMENT NOT CO FINAL UNLES SIGNATURES CO	S ALL
US 421 - NC 16		SEAL	"""" """
US 421 - NC 16 at SR 1322 (Winkler Mill	Road		NN THE
DIVSION 11 WILKES COUNTY	Wilkes 1. Stygle	<u> </u>	
eenfield Pkwy, Garner, NC 27529 PREPARED BY: S.R. Chiluka REVIEWED BY: SCALE REVISIONS	J. Ma	DATE Docustigned by:	5/24/2023
		SIGNATURE	DATE
		SIG. INVENTORY NO.	- 044



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## NOTES

- 1. To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the signal plan.
- 2. Program phases 3 and 8 for Dual Entry.
- 3. Program controller to start up in phase 6 Green No Walk.
- 4. If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.
- 5. The cabinet and controller are part of the Wilkesboro Closed Loop System.

## EQUIPMENT INFORMATION

Controller	2070LX
Cabinet	332 w/ Aux
Software	Q-Free MAXTIME
Cabinet Mount	Base
Output File Positions	18 With Aux. Output File
Load Switches Used	S1, S4, S8, S9, S11, AUX S1, AUX S2,
	AUX S3
Phases Used	3, 6, 6 PED, 8
Overlap "1"	*
Overlap "2"	*
Overlap "3"	*
Overlap "4"	NOT USED
Overlap "7"	

\*See overlap programming detail on sheet 2.



FLASHING YELLOW ARROW GREEN ARROW Ŕ

YELLOW

ARROW

NU = Not Used

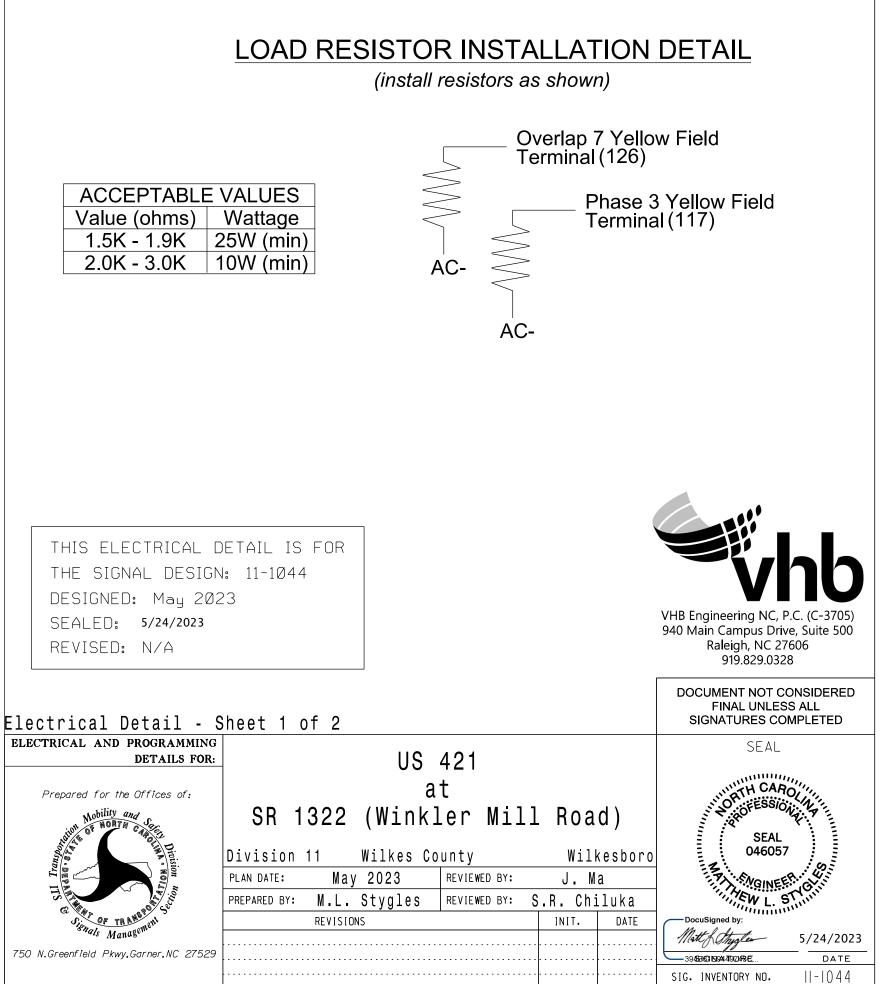
## **INPUT FILE CONNECTION & PROGRAMMING CHART**

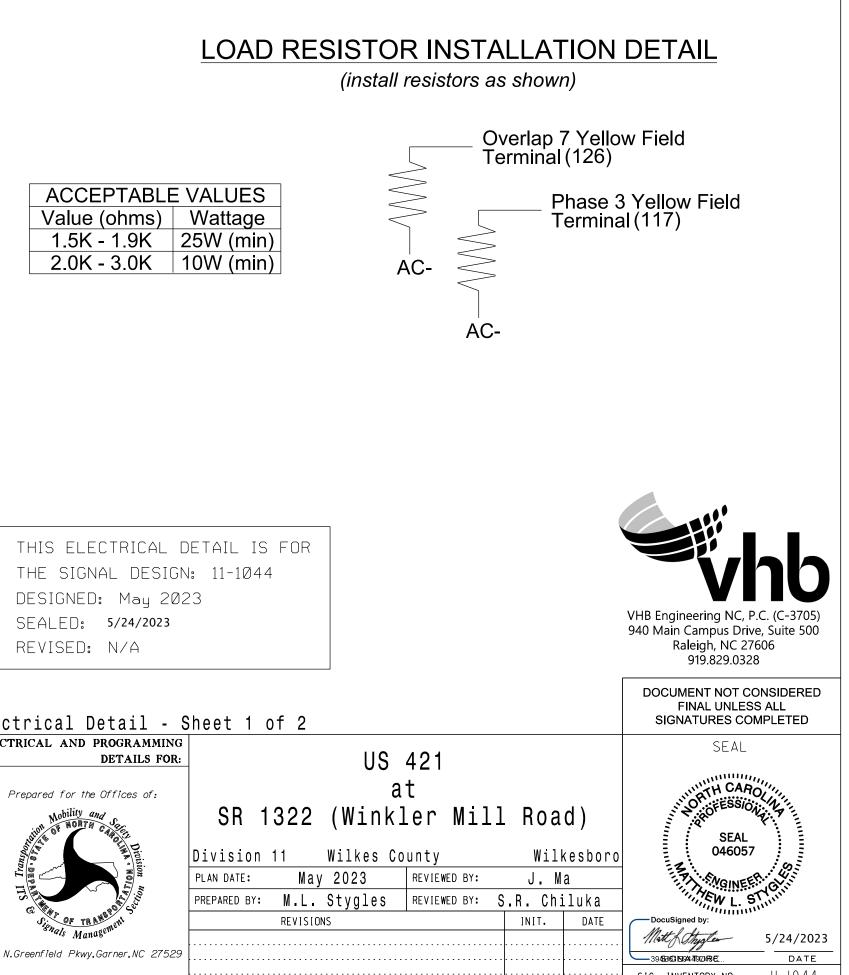
LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT POINT	DETECTOR NO.	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	QUEUE	CALL	DELAY DURING GREEN
3A	TB4-5,6	I5U	58	20	7	3	15		Х			Х	
6A	TB3-5,6	J2U	40	2	16	6			Х	Х		Х	
6B	TB3-7,8	J2L	44	6	17	6			Х	Х		Х	
8A	TB5-9,10	J6U	42	4	22	8	15		Х			Х	
<b>*</b> S1	TB7-9,10	J9U	59	21	27	SYS			Х			Х	
PED PUSH BUTTONS							NOTE: INSTAL	L DC ISOLA	TOR				
P61;P62	TB8-7,9	I13U	68	34	6	PED 6	IN INPL	IT FILE SLC	T <b>I</b> 13.				

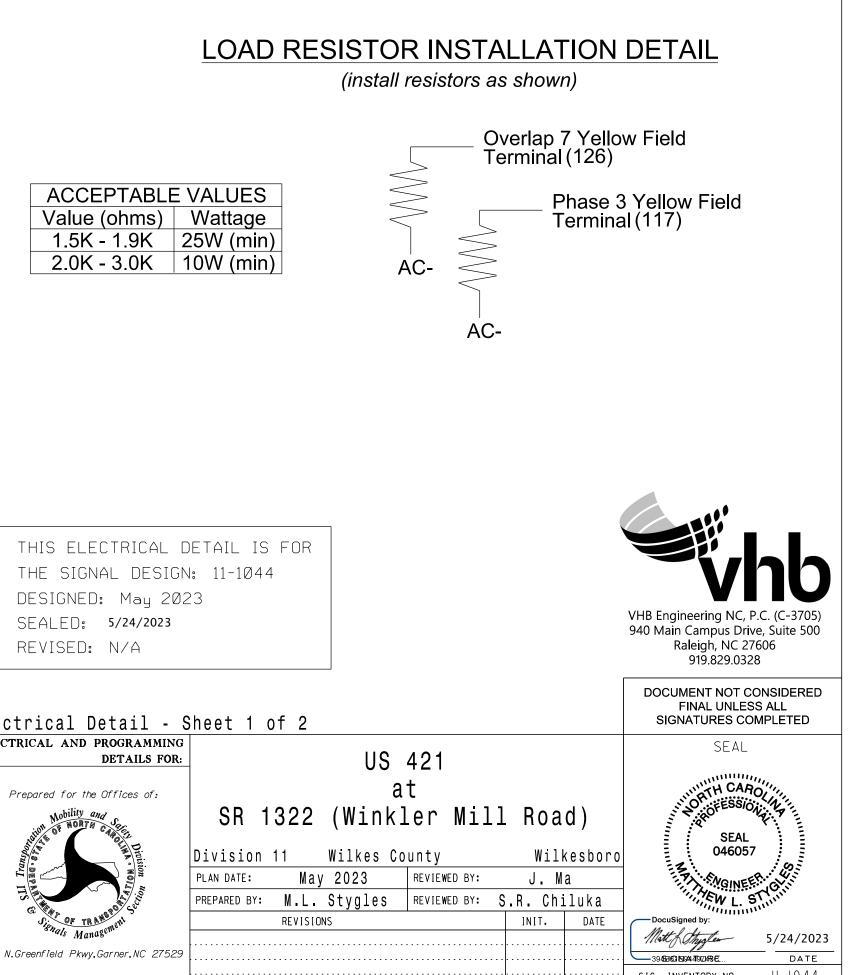
\*System detector only. Remove any assigned vehicle phase.

INPUT FILE POSITION LEGEND: J2L FILE J -SLOT 2 -

LOWER <sup>·</sup>







PR

				SIC	GNA	\L ⊢	IEA	DH	00	K-U	IP C	;HA	RT					
-	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
	1	2	13	3	4	14	5	6	15	7	8	16	9	10	1.7	11	12	18
	OL7	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PÉD	OL1	OL2	OL5	OL3	OL4	SPARE
	32 <b>*</b>	NU	NU	★ 31	NU	NU	NU	61,62	P61, P62	NU	81,82	NU	32 <sup>★</sup>	★ 31	63	NU	NU	NU
					·			134			107				A111			
	*			*	·		·	135		·		÷		·		·		
													A121	A124	-			
		-									108		A122	A125	A112			
													A123	A126	A113			
	127			118				136			109			·				
									119									
									121									

\* Denotes install load resistor. See load resistor installation detail this sheet.

 $\star$  See pictorial of head wiring in detail this sheet.

# MAXTIME ALTERNATE PHASING ACTIVATION DETAIL

To run alternate phasing, select a Pattern that is programmed to run Overlap Plan 2 and Detector Plan 2. A Pattern can be selected through the scheduler or manually by changing the Operational Mode.

### PHASING

ACTIVE PLAN REQUIRED TO RUN DEFAULT PHASI ACTIVE PLAN REQUIRED TO RUN ALTERNATE PHA

### ALTERNATE PHASING CHANGE SUMMARY

THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN OVERLAP 2 AND VEHICLE DETECTOR PLAN 2 ACTIVATE TO CALL THE "ALTERNATE PHASING":

OVERLAP PLAN 2: Modifies overlap included phases for heads 31 and 32 to run protected turns only.

VEH DET PLAN 2: Reduces delay time for phase 3

## MAXTIME OVERLAP PROGRAMMING DETAIL FOR DEFAULT PHASING

Front Panel

Main Menu >Controller >Overlap >Overlap Parameters/Overlap Timings

Web Interface

Home >Controller >Overlap Configuration >Overlaps

Overlap Plan 1

Overlap	1	2	5	7
Туре	FYA 4 - Section	FYA 4 - Section	FYA 4 - Section	Normal
Included Phases	6	6	6	3
Modifier Phases	3	3	<u>-</u>	<u>-</u>
Trail Green	0	0	0	0
Trail Yellow	0.0	0.0	0.0	0:0
Trail Red	0.0	0.0	0.0	0.0
FYA Ped Delay	3.0	3.0	3.0	0:0

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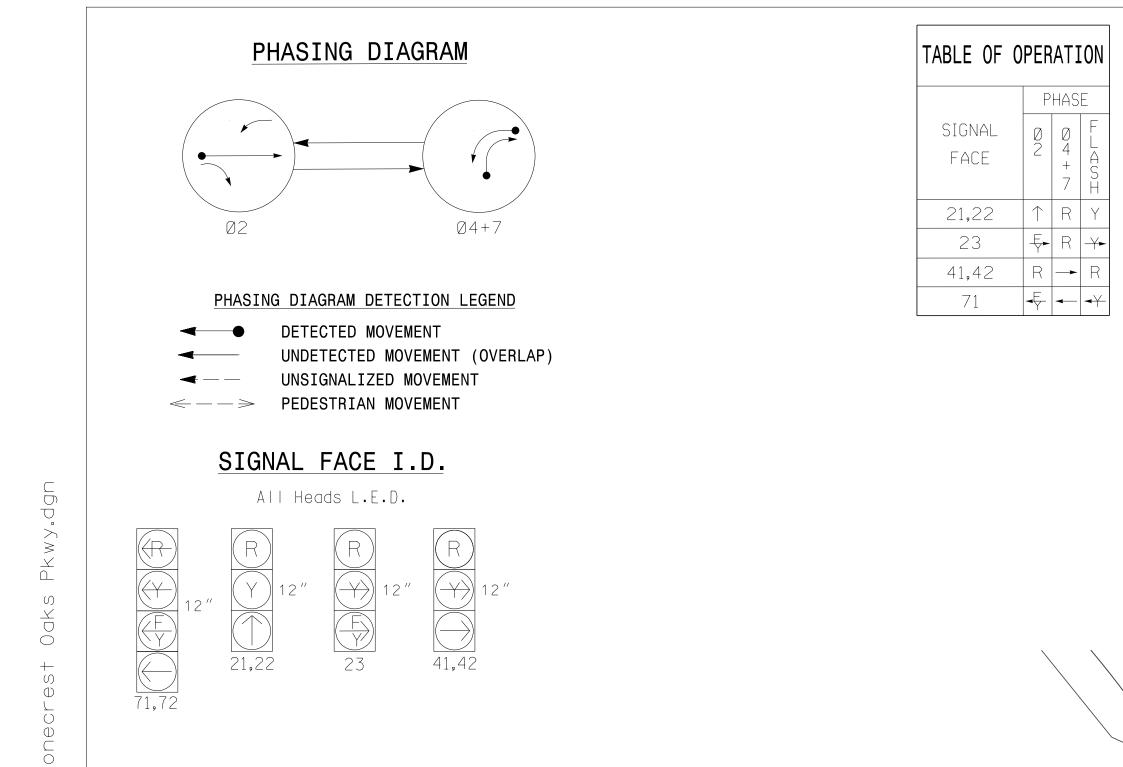
	OVERLAP PLAN	VEH DET PLAN
ING	1	1
	I	Ι
ASING	2	2

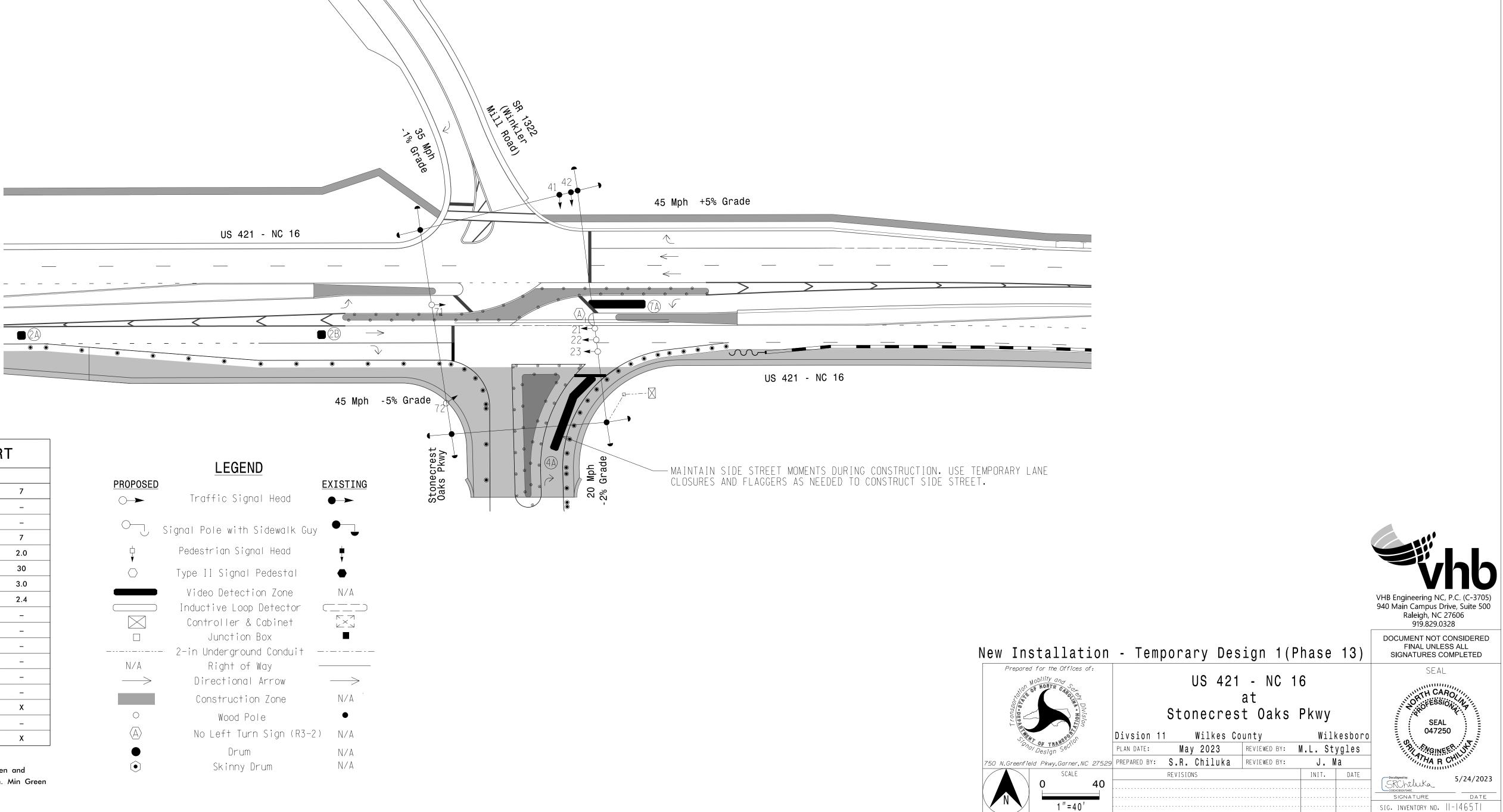
call on loop 3A to 0 seconds.

MAXTIME C	<u> DVERLAI</u>	- PROG	RAMMING	<u>j DETA</u>	
FC	DR ALTE	RNATE I	PHASING		
Front Panel					
Main Menu >	Controller >	Overlap >Ov	verlap Param	eters/Overl	ap Timings
Web Interfac	Э				
Home >Conti	oller >Overl	ap Configur	ation >Overla	ips	
	· · · ·				
In the table v	lew of the wo	eb interface	•		
			table Camert	~ ~	
"Overlap" in t	•				
entire conten	ts of Overlap	o Plan 1. Pa	ste Overlap F	Plan 1	
entire conten into Overlap	ts of Overlar Plan 2. Modi	o Plan 1. Pa ify Overlap F	ste Overlap F	Plan 1	
entire conten	ts of Overlar Plan 2. Modi	o Plan 1. Pa ify Overlap F	ste Overlap F	Plan 1	
entire conten into Overlap	ts of Overlar Plan 2. Modi ve changes	o Plan 1. Pa ify Overlap F	ste Overlap F	Plan 1	
entire conten into Overlap below and sa	ts of Overlar Plan 2. Modi ve changes	o Plan 1. Pa ify Overlap F	ste Overlap F	Plan 1	
entire conten into Overlap below and sa Overlap Plan	ts of Overlag Plan 2. Modi ve changes 2 1	o Plan 1. Pa ify Overlap F	ste Overlap F Plan 2 as sho	Plan 1	
entire conten into Overlap l below and sa Overlap Plan 2 Overlap	ts of Overlag Plan 2. Modi ve changes 2 1 FYA 4 - Section	o Plan 1. Pa ify Overlap F	ste Overlap F Plan 2 as sho	Plan 1 wn 7	NOTICE INCLUDED PHASE
entire conten into Overlap I below and sa Overlap Plan 2 Overlap Type	ts of Overlag Plan 2. Modi ve changes 2 1 FYA 4 - Section	o Plan 1. Pa ify Overlap F	ste Overlap F Plan 2 as sho 5 FYA 4 - Section	Plan 1 wn 7 Normal	NOTICE INCLUDED PHASE
entire conten into Overlap I below and sa Overlap Plan 2 Overlap Type Included Phases Modifier Phases Trail Green	ts of Overlap Plan 2. Modi ve changes 2 1 FYA 4 - Section - 3 0	o Plan 1. Pa ify Overlap F 2 FYA 4 - Section - 3 0	ste Overlap F Plan 2 as sho 5 FYA 4 - Section 6 - 0	Plan 1 wn 7 Normal 3 - 0	NOTICE INCLUDED PHASE
entire conten into Overlap I below and sa Overlap Plan 2 Overlap Type Included Phases Modifier Phases Trail Green Trail Yellow	ts of Overlag Plan 2. Modi ve changes 2 1 FYA 4 - Section - 3 0 0.0	Plan 1. Pa ify Overlap F 2 FYA 4 - Section - 3 0 0.0	ste Overlap F Plan 2 as sho 5 FYA 4 - Section 6 - 0 0.0	Plan 1 wn 7 Normal 3 - 0 0.0	NOTICE INCLUDED PHASE
entire conten into Overlap I below and sa Overlap Plan 2 Overlap Type Included Phases Modifier Phases Trail Green	ts of Overlap Plan 2. Modi ve changes 2 1 FYA 4 - Section - 3 0	o Plan 1. Pa ify Overlap F 2 FYA 4 - Section - 3 0	ste Overlap F Plan 2 as sho 5 FYA 4 - Section 6 - 0	Plan 1 wn 7 Normal 3 - 0	NOTICE INCLUDED PHASE

MAXTIME ALTERNATE PHASING PATTERN PROGRAMMING DETAIL Front Panel	
Front Panel	
Main Menu >Controller >Coordination >Patterns	
Web Interface Home >Controller >Coordination >Patterns Pattern Parameters Pattern Veh Det Plan Overlap Plan * 2 2 * The Pattern number(s) are to be determined by the Division and/or City Traffic Engineer.	
MAXTIME DETECTOR PROGRAMMING DETAIL FOR ALTERNATE PHASING LOOP 3A	
Front Panel Main Menu >Controller >Detector >Veh Det Plans	
Web Interface Home >Controller >Detector Configuration >Vehicle Detectors	
In the table view of web interface right click on "Detector" in the top left corner of the table. Copy the entire contents of Detector Plan 1. Paste Detector Plan 1 into Detector Plan 2. Modify Detector Plan 2 as shown below and save changes. Plan 2 Detector Call Phase Delay	
3A 7 3 -	
THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 11-1044 DESIGNED: May 2023 SEALED: 5/24/2023 REVISED: N/A THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 11-1044 DESIGNED: May 2023 SEALED: 5/24/2023 REVISED: N/A	
ectrical Detail - Sheet 2 of 2       Document not considered Final UNLESS ALL SIGNATURES COMPLETED         ectrical AND PROGRAMMING       SEAL	
DETAILS FOR:     US 421       Prepared for the Offices of:     at	
SR 1322 (Winkler Mill Road) Division 11 Wilkes County Wilkesboro PLAN DATE: May 2023 REVIEWED BY: J. Ma	
PREPARED BY:       M.L. Stygles       REVIEWED BY:       S.R. Chiluka         PREPARED BY:       M.L. Stygles       REVIEWED BY:       S.R. Chiluka         N.Greenfield       Pkwy.Garner, NC 27529       Management       S.Z. Chiluka	

SIG. INVENTORY NO. ||-|()44





MAXTIME TIMING CHART							
		PHASE					
FEATURE	2	4	7				
Walk *	-	_	_				
Ped Clear *	-	_	-				
Min Green	12	7	7				
Passage *	2.0	2.0	2.0				
Max 1 *	60	30	30				
Yellow Change	4.9	3.0	3.0				
Red Clear	1.7	1.8	2.4				
Added Initial *	-	_	-				
Maximum Initial *	-	_	-				
Time Before Reduction *	-	-	-				
Time To Reduce *	-	_	_				
Minimum Gap	-	_	-				
Advance Walk	_	_	_				
Non Lock Detector	_	Х	х				
Vehicle Recall	MIN RECALL	_	-				
Dual Entry	_	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.

<u>PROPOSED</u>	<b>LEGEND</b>
◯─►	Traffic Signal Head
O	Signal Pole with Sidewalk (
₽	Pedestrian Signal Head
, , , , , , , , , , , , , , , , , , ,	Type II Signal Pedestal Video Detection Zone Inductive Loop Detector Controller & Cabinet Junction Box 2-in Underground Conduit Right of Way Directional Arrow
	Construction Zone Wood Pole No Left Turn Sign (R3 Drum Skinny Drum

Sig  $\underline{\frown}$  $\square$ Coll 9:38:53 AM affic\Signals\D

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Ę	R	¥►
R		R
Æ	-	<b>-</b> ¥−

MAXTIME	DETECTOR	INSTALLATION	CHART	

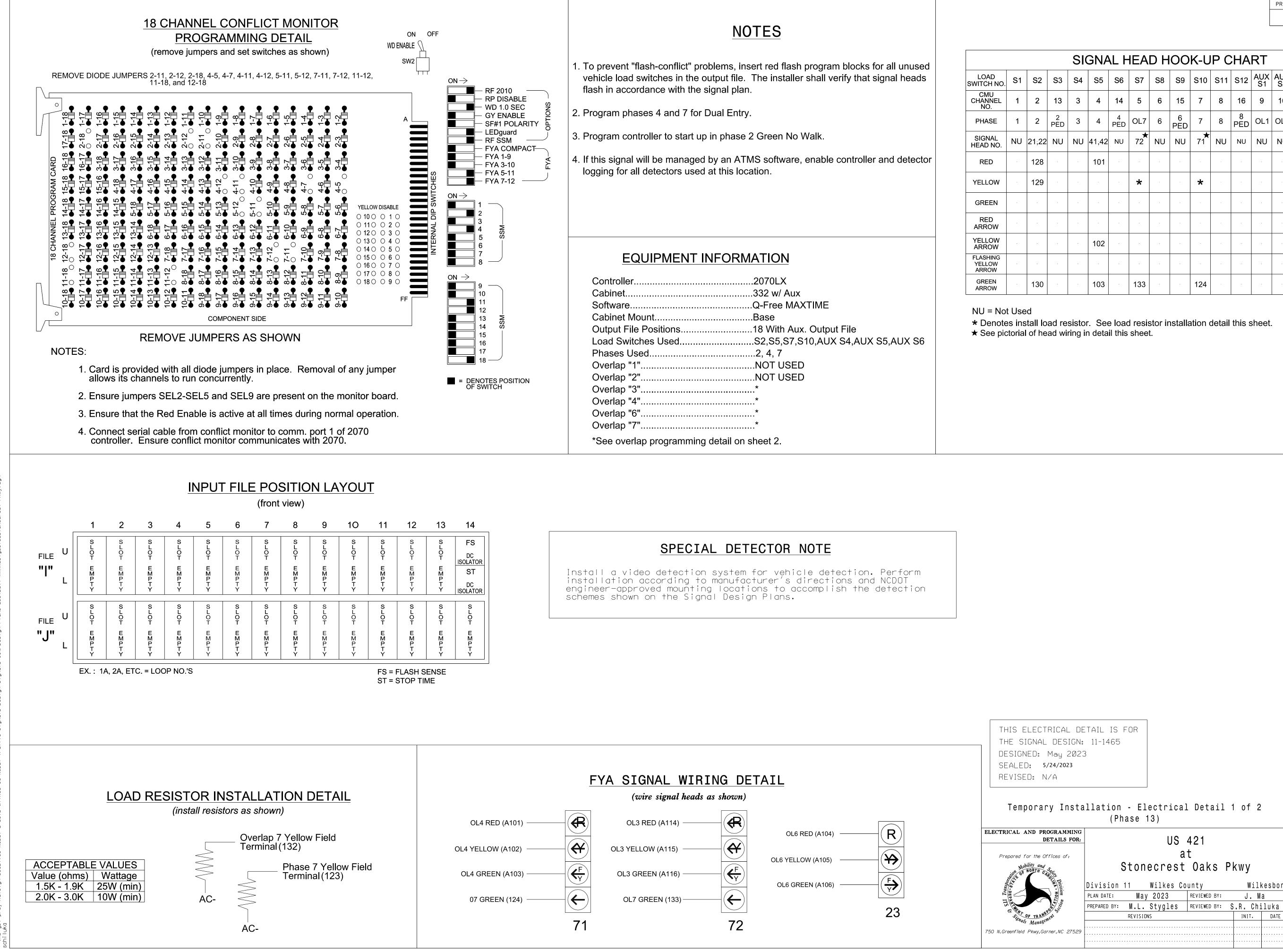
	DET	ECTOR				PF	ROGRAN	MI	NG			
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN	NEW CARD
2A	*	300	*	*	2	-	1.6	Х	-	Х	-	*
2B	*	90	*	*	2	-	-	Х	-	Х	-	*
4A	*	0	*	*	4	15.0	-	Х	-	Х	-	*
7A	*	0	*	*	7	15.0	-	Х	-	Х	-	*
*Video	Detec <sup>-</sup>	tion Zo	one									

1. Refer t January Roads a

- 2. Do not unless
- 3. Set all
- 4. This in
- detecto instruc
- 5. Locate distanc

	PROJECT REFERENCE NO.	SHEET NO.
2 Phase	U - 5312	Sig.9.12
Fully Actuated (Isolated)		
NOTES		
to "Roadway Standard Drawings NCDOT" dated y 2018 and "Standard Specifications for and Structures" dated January 2018.		
program signal for late night operation otherwise directed by the Engineer.		
l detector units to presence mode.		
ntersection uses video detection. Install ors according to the manufacturer's ctions to schieve the desitred detection.		
e new cabinet so as not to obstruct sight ice of vehicles turning right on red.		

Refer to Pavement Marking Plans for proposed stop bar locations.



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Controller	2070LX
Cabinet	
Software	Q-Free MAXTIME
Cabinet Mount	Base
Output File Positions	18 With Aux. Output File
Load Switches Used	
Phases Used	
Overlap "1"	NOT USED
Overlap "2"	NOT USED
Overlap "3"	*
Overlap "4"	*
Overlap "6"	*
Overlap "7"	
*See overlap programming deta	il on sheet 2.



PROJECT REFERENCE NO.	SHEET NO.	
U - 5312	Sig.9.13	

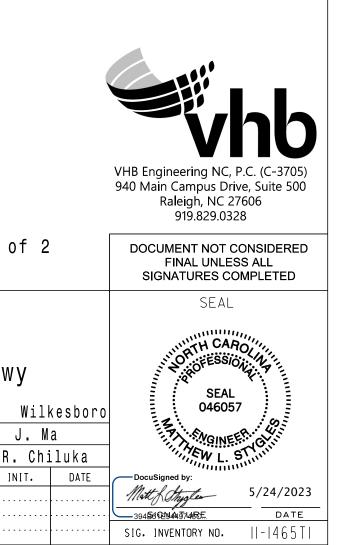
				SI	GNA		IEA	DΗ	00	K-U	ΡC	ΉА	RT					
).	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
	1	2	13	3	4	14	5	6	15	7	8	16	9	10	1.7	11	12	18
	1	2	2 PED	3	4	4 PED	OL7	6	6 PED	7	8	8 PÉD	OL1	OL2	SPARE		OL4	OL6
	NU	21,22	NU	NU	41,42	NU	<b>★</b> 72	NU	NU	<b>★</b> 71	NU	NU	NU	NU	NU	★ 72	<b>7</b> 1 ★	23
		128			101						·				-			A104
		129				-	*			*		-		-	-	-	-	
	·															A114	A101	
					102											A115	A102	A105
																A116	A103	A106
		130			103		133			124					-			

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\* Denotes install load resistor. See load resistor installation detail this sheet.



## **OUTPUT CHANNEL CONFIGURATION**

Front Panel Main Menu >Controller >More>Channels>Channels Config

Web Interface Home >Controller >Advanced IO>Channels>Channels Configuration

Channel Configuration

	Channel	Control Type	Control Source	Flash Yellow	Flash Red	Flash Alt	MMU Channel
	1	Phase Vehicle	1		Х	Х	1
	2	Phase Vehicle	2	Х			2
	3	Phase Vehicle	3		Х	Х	3
	4	Phase Vehicle	4		Х		4
▶	5	Overlap	7		Х		5
	6	Phase Vehicle	6	Х		Х	6
	7	Phase Vehicle	7		Х	-	7
	8	Phase Vehicle	8		Х	Х	8
	9	Overlap	1	Х		Х	9
	10	Overlap	2		Х	Х	10
	11	Overlap	3	Х			11
	12	Overlap	4	Х			12
	13	Phase Ped	2				13
	14	Phase Ped	4				14
	15	Phase Ped	6				15
	16	Phase Ped	8				16
	17	Overlap	5		Х	Х	17
	18	Overlap	6	Х			18

ASSIGN CHANNEL 5 TO OVERLAP 7

⊢ P 5/23/2019 3:15:01 F \*\*vhb\*gb1\*proj\*Ral( schiluka

## MAXTIME OVERLAP PROGRAMMING DETAIL

# Front Panel

Web Interface

### Overlap Plan 1

Overlap	3	4	6	7
Туре	FYA 4 - Section	FYA 4 - Section	FYA 4 - Section	Normal
Included Phases	2	2	2	7
Modifier Phases	7	7	-	-
Trail Green	0	0	0	0
Trail Yellow	0.0	0.0	0.0	0.0
Trail Red	0.0	0.0	0.0	0.0

### ELECTRI



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PROJECT REFERENCE NO.	SHEET NO.
U-5312	Sig 9.14

Main Menu >Controller >Overlap >Overlap Parameters/Overlap Timings

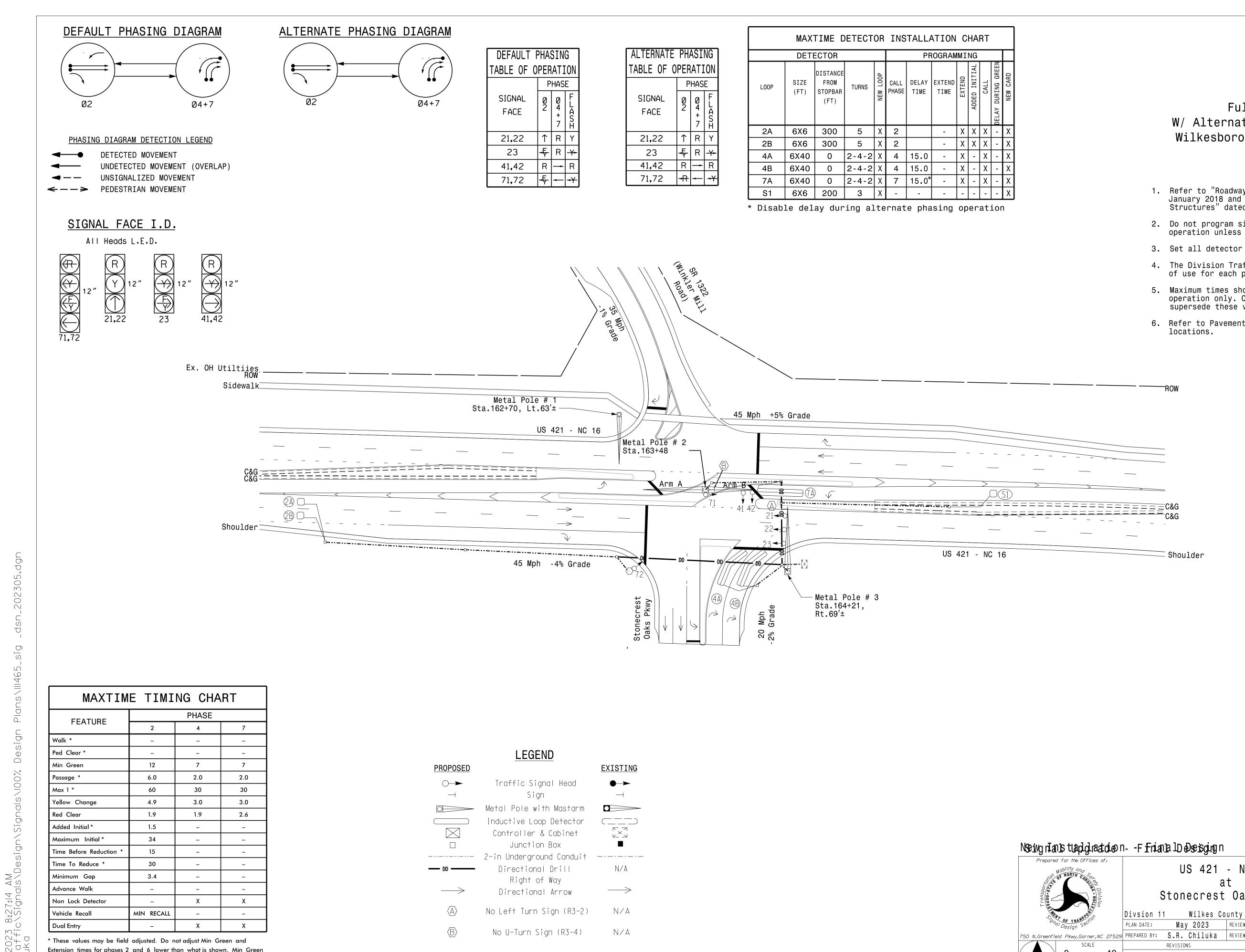
Home >Controller >Overlap Configuration >Overlaps





Temporary Installation - Electrical Detail 2 of 2 (Phase 13)

	(		- /					
RICAL AND PROGRAMMING DETAILS FOR:			US	421				SEAI
repared for the Offices of:		Ston	a	t Oaks	Pkwv		STATION AND	NTH CA
Canon Canon District	Division		Wilkes Co		•	kesboro		SEA 0460
	PLAN DATE:	May	2023	REVIEWED BY:	J.M	а		, ENGIN
H'S C AND A C A C A C A C A C A C A C A C A C A	PREPARED BY:	M.L.	Stygles	REVIEWED BY:	S.R. Chi	luka	111	YEW L
SEA OF TRANSPICIN		REVISION	NS		INIT.	DATE	DocuSigned	by:
Greenfield Pkwy,Garner,NC 27529							Mattfor	ygles
si eeni teidi Fikwy, Gdi tier, NC 21 529							394869129444	97485
							SIC INVENT	



\* 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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5/18/ R:/Ti

Dual Entry

 $\langle A \rangle$  $\langle B \rangle$ 

DEFAULT PHASING									
TABLE OF OPERATION									
SIGNAL FACE	0 2	Ø 4 + 7	F L A S H						
21,22	←	R	Y						
23	₽	R	- <del>Y-</del>						
41,42	R	1	R						
71,72	ŧ	ł	₹Ŷ						

ALTERNATE PHASING									
TABLE OF O	PER	ATI	ON						
	P	HAS	E						
SIGNAL FACE	Ø 2	Ø 4 7	FLANT						
21,22	↑	R	Y						
23	₹	R	≁						
41,42	R	1	R						
71,72	<del>-R</del>	┥	- <del>-</del> ץ-						

	MAX	TIME C	ETECT	OR	INS	TALLA	ATION	С	HA	RT		
DETECTOR PROGRAMMING												
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN	NEW OARD
2A	6X6	300	5	Х	2		-	Х	Х	Х	-	•
2B	6X6	300	5	Х	2		I	Х	Х	Х	I	
4A	6X40	0	2-4-2	Х	4	15.0	I	Х	I	Х	I	
4B	6X40	0	2-4-2	Х	4	15.0	I	Х	I	Х	I	
7A	6X40	0	2-4-2	Х	7	15.0*	-	Х	-	Х	-	
S1	6X6	200	3	Х	-	-	_	-	-	-	_	

Traffic Signal Head Sign
Metal Pole with Mastarm
Inductive Loop Detector
Controller & Cabinet
Junction Box
2-in Underground Conduit
Directional Drill
Right of Way
Directional Arrow
No Left Turn Sign (R3-2)
No U-Turn Sign (R3-4)

●→
$\neg$
N/A
$\longrightarrow$
NZA
N⁄A



PLAN DATE:

REVISIONS

SCALE

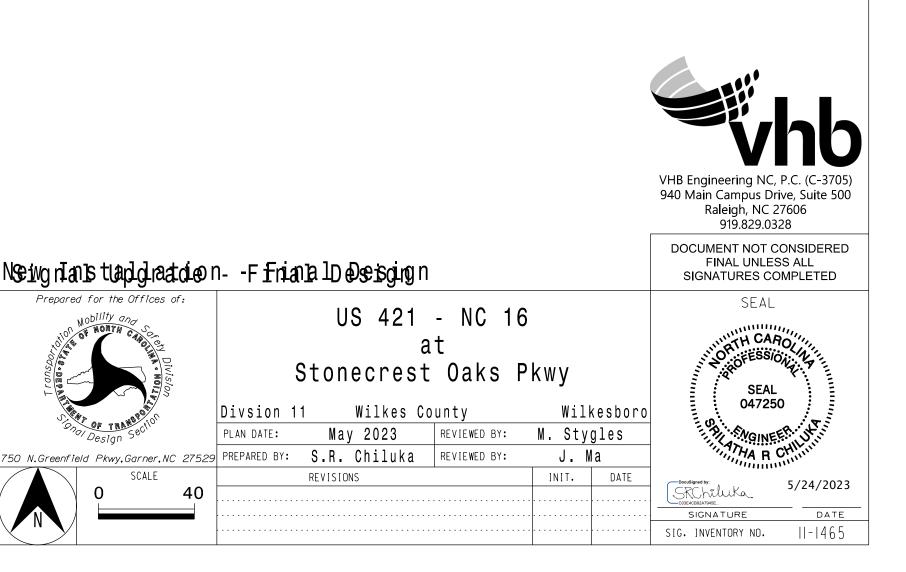
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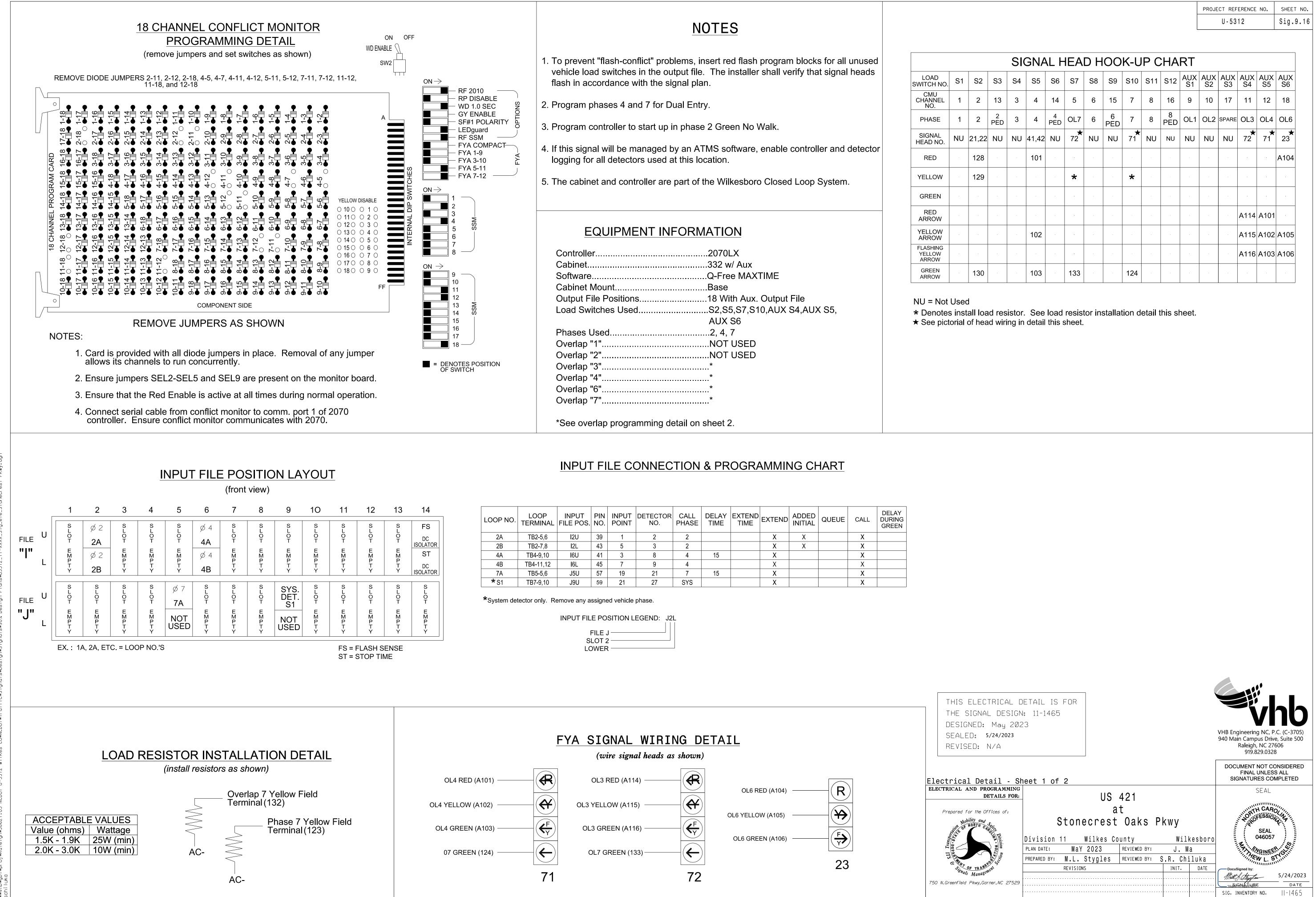
40

## 2 Phase Fully Actuated W/ Alternate Phasing Operation Wilkesboro Closed Loop System

### <u>NOTES</u>

- 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.
- 3. Set all detector units to presence mode.
- The Division Traffic Engineer will determine the hours of use for each phasing plan.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Refer to Pavement Marking Plans for proposed stop bar locations.





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LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT POINT	DETECTOR NO.	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	QUEUE	CALL	DEL/ DURI GRE
2A	TB2-5,6	I2U	39	1	2	2			Х	Х		Х	
2B	TB2-7,8	I2L	43	5	3	2			Х	Х		Х	
4A	TB4-9,10	I6U	41	3	8	4	15		Х			Х	
4B	TB4-11,12	l6L	45	7	9	4			Х			Х	
7A	TB5-5,6	J5U	57	19	21	7	15		Х			Х	
<b>*</b> S1	TB7-9,10	J9U	59	21	27	SYS			Х			Х	

PROJECT REFERENCE NO.	SHEET NO.
U - 5312	Sig.9.16

	SIGNAL HEAD HOOK-UP CHART																	
).	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
	1	2	2 PED	3	4	4 PED	OL7	6	6 PED	7	8	8 PÉD	OL1	OL2	SPARE		OL4	OL6
	NU	21,22	NU	NU	41,42	NU	72 <sup>*</sup>	NU	NU	<b>★</b> 71	NU	NU	NU	NU	NU	<b>★</b> 72	<b>★</b> 71	23
		128			101													A104
		129					*			*		-			-	-	-	
												-			-	A114	A101	
					102							-			-	A115	A102	A105
								·								A116	A103	A106
		130			103		133			124								

# MAXTIME ALTERNATE PHASING ACTIVATION DETAIL

To run alternate phasing, select a Pattern that is programmed to run Overlap Plan 2 and Detector Plan 2. A Pattern can be selected through the scheduler or manually by changing the Operational Mode.

PHASING	OVERLAP PLAN	VEH DET PLAN
ACTIVE PLAN REQUIRED TO RUN DEFAULT PHASING	1	1
ACTIVE PLAN REQUIRED TO RUN ALTERNATE PHASING	2	2

THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN OVERLAP 2 AND VEHICLE DETECTOR PLAN 2 ACTIVATE TO CALL THE "ALTERNATE PHASING":

OVERLAP PLAN 2: Modifies overlap included phases for heads 71 and 72 to run protected turns only.

VEH DET PLAN 2: Reduces delay time for phase 7 call on loop 7A to 0 seconds.

## MAXTIME OVERLAP PROGRAMMING DETAIL FOR DEFAULT PHASING

Front Panel Main Menu >Controller >Overlap >Overlap Parameters/Overlap Timings

Web Interface Home >Controller >Overlap Configuration >Overlaps

### Overlap Plan 1

Overlap	3	4	6	7
Туре	FYA 4 - Section	FYA 4 - Section	FYA 4 - Section	Normal
Included Phases	2	2	2	7
Modifier Phases	7	7	-	-
Trail Green	0	0	0	0
Trail Yellow	0.0	0.0	0.0	0:0
Trail Red	0.0	0.0	0.0	0:0

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## OUTPUT CHANNEL CONFIGURATION

Front Panel Main Menu >Controller >More>Channels>Channels Config

Web Interface Home >Controller >Advanced IO>Channels>Channels Configuration

### Channel Configuration

	Channel	Control Type	Control Source	Flash Yellow	Flash Red	Flash Alt	MMU Channel
	1	Phase Vehicle	1		Х	Х	1
-	2	Phase Vehicle	2	Х			2
-	3	Phase Vehicle	3		Х	Х	3
ASSIGN	4	Phase Vehicle	4		Х		4
CHANNEL 5 TO	5	Overlap	7		Х		5
OVERLAP 7	6	Phase Vehicle	6	Х		Х	6
-	7	Phase Vehicle	7		Х		7
	8	Phase Vehicle	8		Х	Х	8
-	9	Overlap	1	Х		Х	9
-	10	Overlap	2		Х	Х	10
	11	Overlap	3	Х			11
	12	Overlap	4	Х			12
-	13	Phase Ped	2				13
	14	Phase Ped	4				14
	15	Phase Ped	6				15
	16	Phase Ped	8				16
	17	Overlap	5		Х	Х	17
	18	Overlap	6	Х			18

## MAXTIME OVERLAP PROGRAMMING DETAIL FOR ALTERNATE PHASING

### Front Panel

Main Menu >Controller >Overlap >Overlap Parameters/Overlap Timings

### Web Interface

Home >Controller >Overlap Configuration >Overlaps

In the table view of the web interface, right click on "Overlap" in the top left corner of the table. Copy the entire contents of Overlap Plan 1. Paste Overlap Plan 1 into Overlap Plan 2. Modify Overlap Plan 2 as shown below and save changes.

### Overlap Plan 2

Overlap	3	4	6	7
Туре	FYA 4 - Section	FYA 4 - Section	FYA 4 - Section	Normal
Included Phases	÷	÷	2	7
Modifier Phases	7	7	-	-
Trail Green	0	0	0	0
Trail Yellow	0.0	0.0	0.0	0.0
Trail Red	0.0	0.0	0.0	0.0



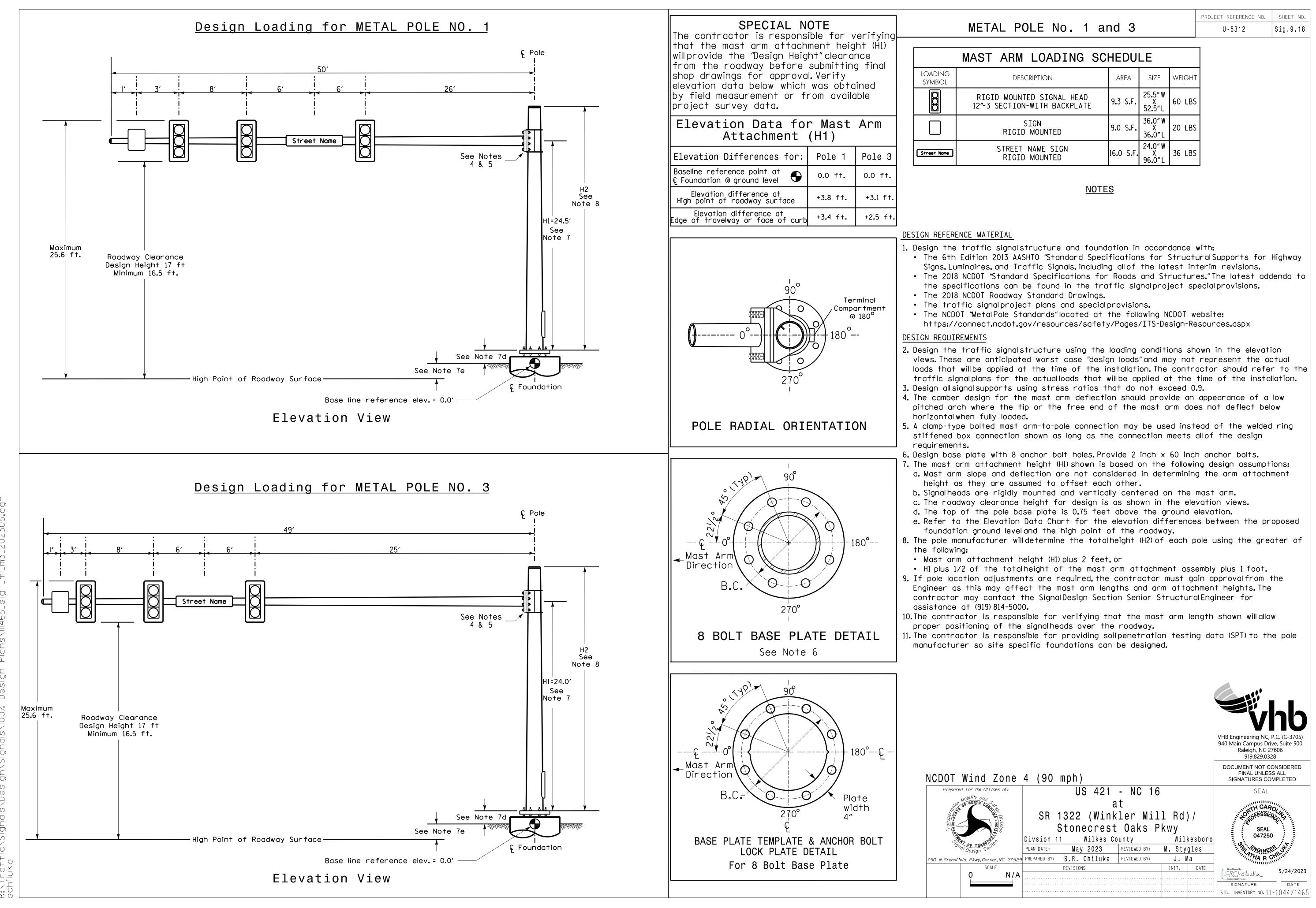




NOTICE INCLUDED PHASE

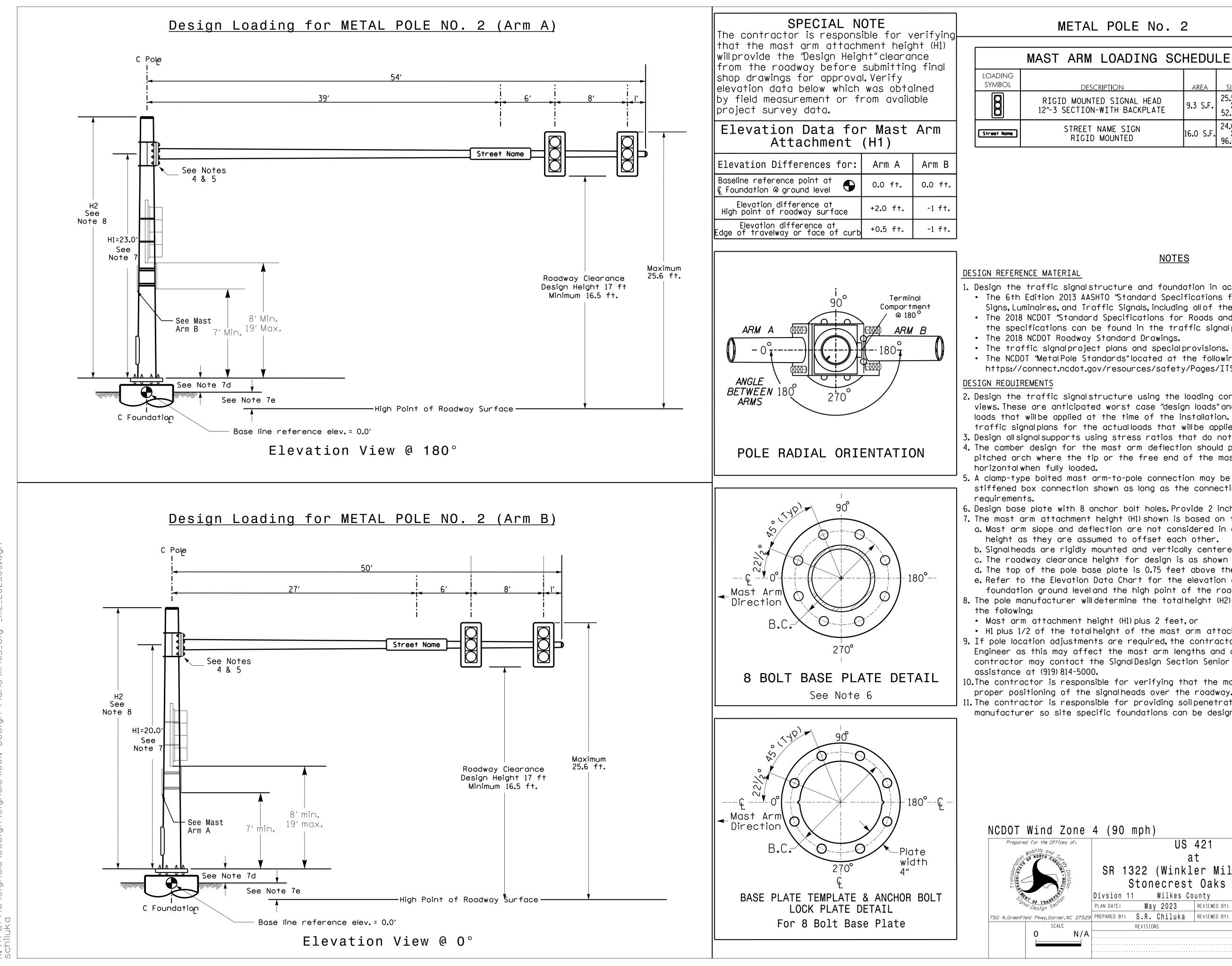
PRO	JECT REFERENCE NO. U-5312	SHEET NO. Sig.9.17
MAXTIME ALTERNATE PHASING PAT PROGRAMMING DETAIL	<u>ITERN</u>	
Front Panel Main Menu >Controller >Coordination >Patterns		
Web Interface Home >Controller >Coordination >Patterns Pattern Parameters Pattern Veh Det Plan Overlap Plan * 2 2 * The Pattern number(s) are to be determined by the Division and/or City Traffic Engineer.		
MAXTIME DETECTOR PROGRAMMING D		
Front Panel Main Menu >Controller >Detector >Veh Det Plans		
Web Interface Home >Controller >Detector Configuration >Vehicle De	tectors	
In the table view of web interface right click on "Detector the top left corner of the table. Copy the entire contents Detector Plan 1. Paste Detector Plan 1 into Detector Plan Modify Detector Plan 2 as shown below and save chang Plan 2 7A Detector Call Phase Delay 21 7 -	of an 2.	
THIS ELECTRICAL DETAIL IS FOR         THE SIGNAL DESIGN: 11-1465         DESIGNED: May 2023         SEALED: 5/24/2023         REVISED: N/A	VHB Engineering NC, F 940 Main Campus Driv Raleigh, NC 27 919.829.032 DOCUMENT NOT CO FINAL UNLES SIGNATURES CO SEAL	re, Suite 500 606 8 ONSIDERED S ALL
Prepared for the Offices of:         At         Stonecrest Oaks Pkwy         Division 11 Wilkes County       Wilkesborg         PLAN DATE: MaY 2023 REVIEWED BY: J. Ma         PREPARED BY: M.L. Stygles       REVIEWED BY: S.R. Chiluka         T50 N.Greenfield Pkwy,Garner,NC 27529	DocuSigned by: Mutt Lature Signa Ture Signa Ture Signa Ture	5/24/2023 DATE

SIG. INVENTORY NO. 11-1465



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	DESCRIPTION	AREA	SIZE	WEIGHT
	RIGID MOUNTED SIGNAL HEAD 12"-3 SECTION-WITH BACKPLATE	9.3 S.F.	25 <b>.</b> 5″₩ X 52 <b>.</b> 5″L	60 LBS
	SIGN RIGID MOUNTED	9.0 S.F.	36.0″W X 36.0″L	20 LBS
כ	STREET NAME SIGN RIGID MOUNTED	16.0 S.F.	24.0″W X 96.0″L	36 LBS



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## METAL POLE No. 2

PROJECT REFERENCE NO. SHEET NO. U-5312 Sig.9.19

## MAST ARM LOADING SCHEDULE

ò				
	DESCRIPTION	AREA	SIZE	WEIGHT
	RIGID MOUNTED SIGNAL HEAD 12"-3 SECTION-WITH BACKPLATE	9.3 S.F.	25 <b>.</b> 5″₩ X 52 <b>.</b> 5″L	60 LBS
D	STREET NAME SIGN RIGID MOUNTED	16.0 S.F.	24.0″W X 96.0″L	36 LBS

### <u>NOTES</u>

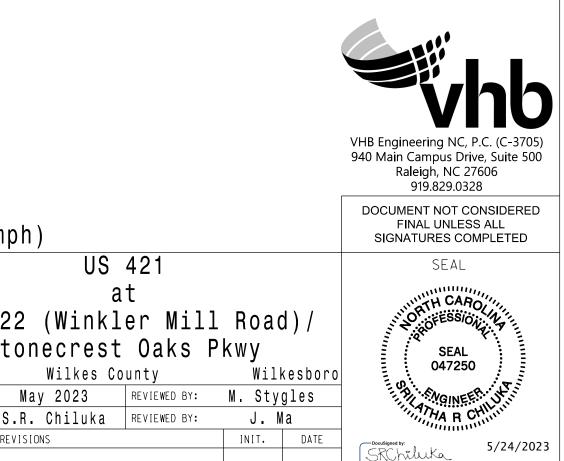
### DESIGN REFERENCE MATERIAL

1. Design the traffic signalstructure and foundation in accordance with:

- The 6th Edition 2013 AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, including all of the latest interim revisions.
- The 2018 NCDOT "Standard Specifications for Roads and Structures." The latest addenda to the specifications can be found in the traffic signal project special provisions. • The 2018 NCDOT Roadway Standard Drawings.
- The traffic signal project plans and special provisions.
- The NCDOT "MetalPole Standards" located at the following NCDOT website:
- https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx

2. Design the traffic signal structure using the loading conditions shown in the elevation views. These are anticipated worst case "design loads" and may not represent the actual loads that will be applied at the time of the installation. The contractor should refer to the traffic signal plans for the actual loads that will be applied at the time of the installation. 3. Design all signal supports using stress ratios that do not exceed 0.9.

- 4. The camber design for the mast arm deflection should provide an appearance of a low pitched arch where the tip or the free end of the mast arm does not deflect below horizontal when fully loaded.
- 5. A clamp-type bolted mast arm-to-pole connection may be used instead of the welded ring stiffened box connection shown as long as the connection meets all of the design
- 6. Design base plate with 8 anchor bolt holes. Provide 2 inch x 60 inch anchor bolts. 7. The mast arm attachment height (H1) shown is based on the following design assumptions: a. Mast arm slope and deflection are not considered in determining the arm attachment height as they are assumed to offset each other.
- b. Signalheads are rigidly mounted and vertically centered on the mast arm.
- c. The roadway clearance height for design is as shown in the elevation views.
- d. The top of the pole base plate is 0.75 feet above the ground elevation.
- e. Refer to the Elevation Data Chart for the elevation differences between the proposed foundation ground leveland the high point of the roadway.
- 8. The pole manufacturer will determine the total height (H2) of each pole using the greater of
- Mast arm attachment height (H1) plus 2 feet, or
- H1 plus 1/2 of the total height of the mast arm attachment assembly plus 1 foot. 9. If pole location adjustments are required, the contractor must gain approval from the Engineer as this may affect the mast arm lengths and arm attachment heights. The contractor may contact the Signal Design Section Senior Structural Engineer for assistance at (919) 814-5000.
- 10. The contractor is responsible for verifying that the mast arm length shown will allow proper positioning of the signalheads over the roadway.
- 11. The contractor is responsible for providing soil penetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.



SIGNATURE

SIG. INVENTORY NO. 11-1044/1465

DATE

Wind Zone	4 (90 mph)
red for the Offices of:	US 421
Mobility Ond Son	at
	SR 1322 (Winkler Mill Ro
NOIL SION	Stonecrest Oaks Pkwy

PLAN DATE:

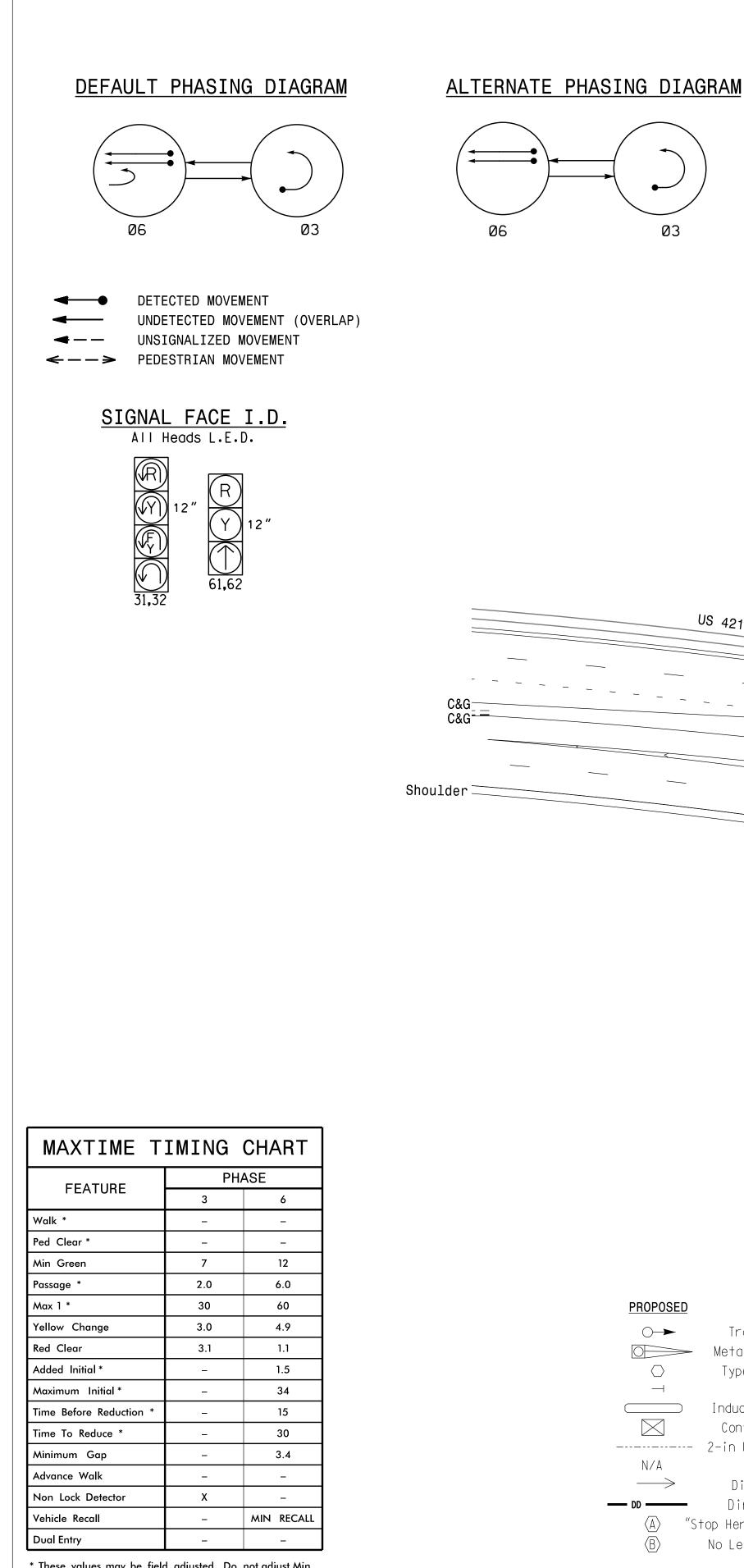
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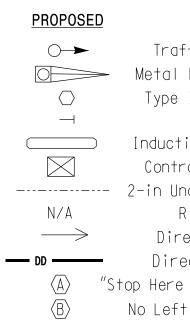
N/A

Divsion 11 Wilkes County

REVISIONS



\* 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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 $\square$ 

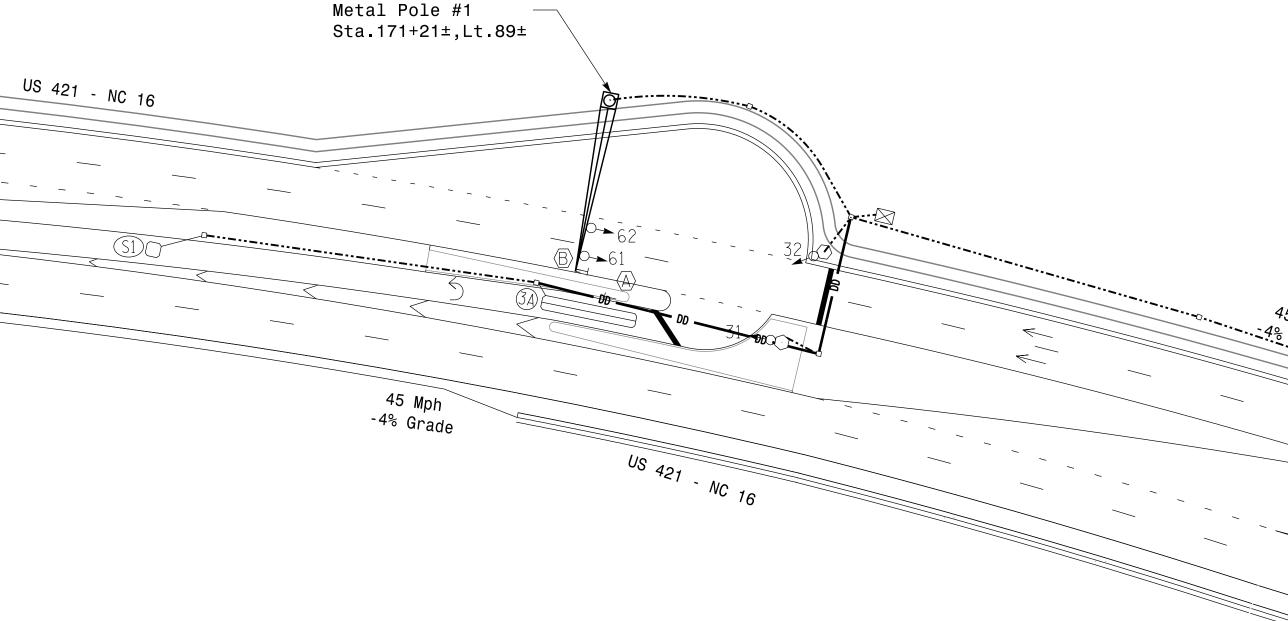
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MAXTIME DETECTOR INSTALLATION CHAR									RT			
	DET	ECTOR				PF	OGRAN	MI	NG			
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN	NEW CARD
ЗA	6X40	0	2-4-2	x	3	15.0*	-	Х	-	Х	-	Х
6A	6X6	300	4	x	6	I	I	Х	Х	Х	I	Х
6B	6X6	300	4	x	6	-	-	Х	Х	Х	-	Х
S1	6X6	200	4	x	-	-	-	-	-	-	-	Х
* Disabl	e delay	, during	g alter	na	te ph	asing			-			

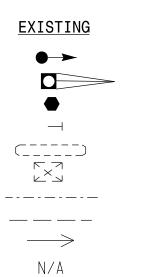
ALTERNATE	PH	ASI	NG
TABLE OF C	PER	ATI	ON
	P	HAS	E
SIGNAL	Ø 3	Ø 6	F
FACE	3	6	LUANT
31,32	$\cap$	R	R
61,62	R	$\uparrow$	Y

DEFAULT F		-	-
TABLE OF O	PER	ATI	ON
	P	HAS	E
SIGNAL	03	Ø 6	Ŀ-
FACE	3	6	LAST
			ъ Н
31,32	$\int$	Æ	$\widehat{\mathbf{M}}$
61,62	R	1	Y

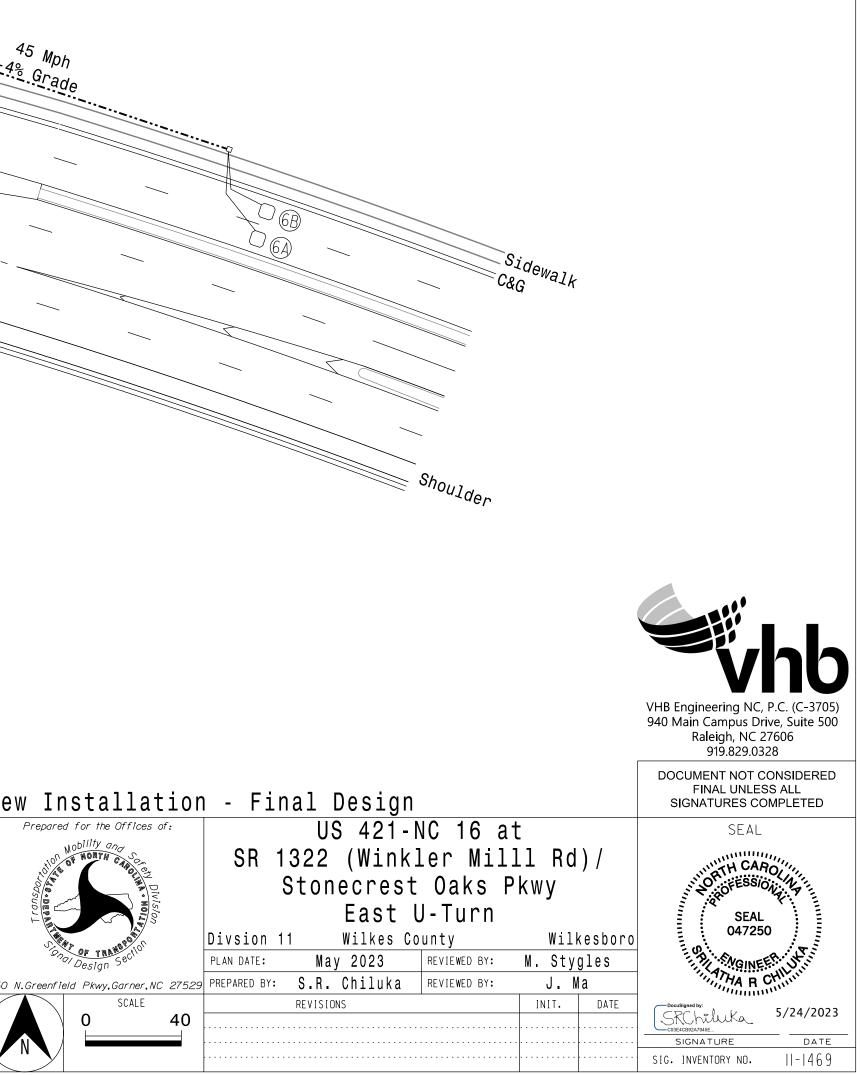


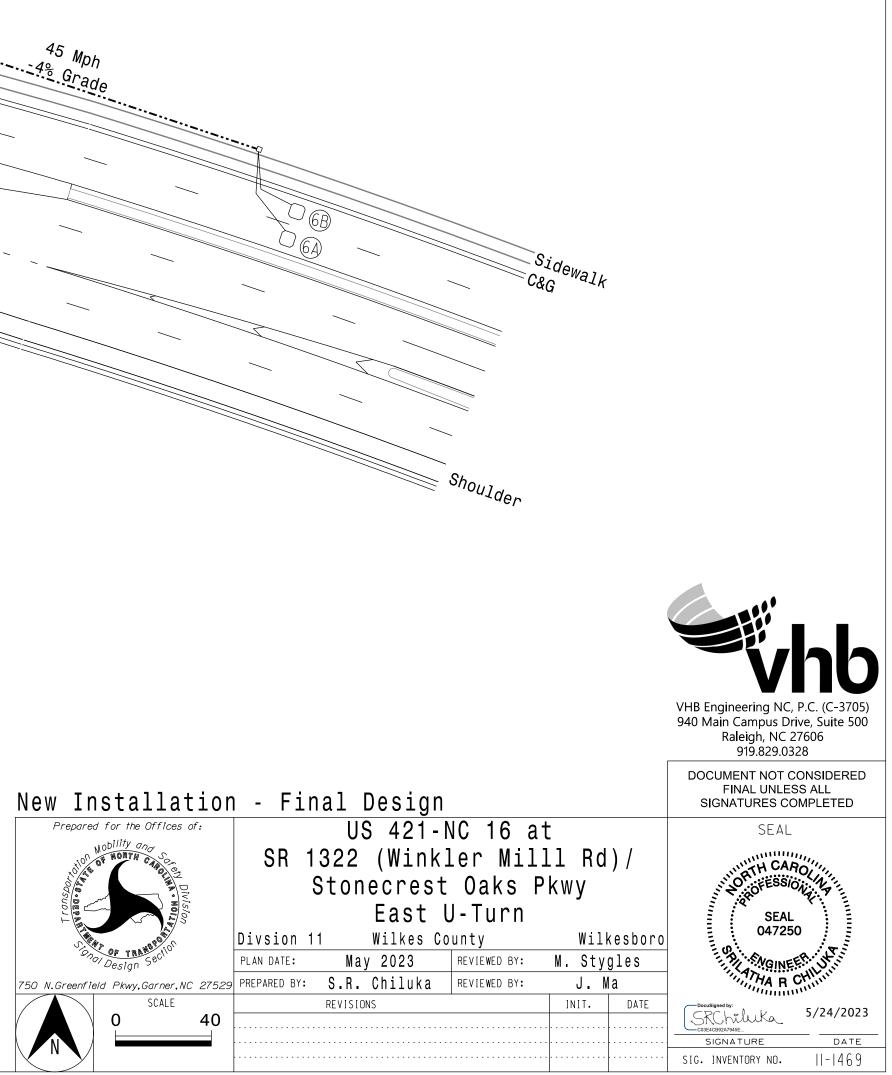
## LEGEND

Traffic Signal Head Metal Pole with Mastarm Type II Signal Pedestal Sign Inductive Loop Detector Controller & Cabinet ----- 2-in Underground Conduit -----Right of Way Directional Arrow Directional Drill "Stop Here on Red" Sign (R10-6) (A) No Left Turn Sign (R3-2)



B



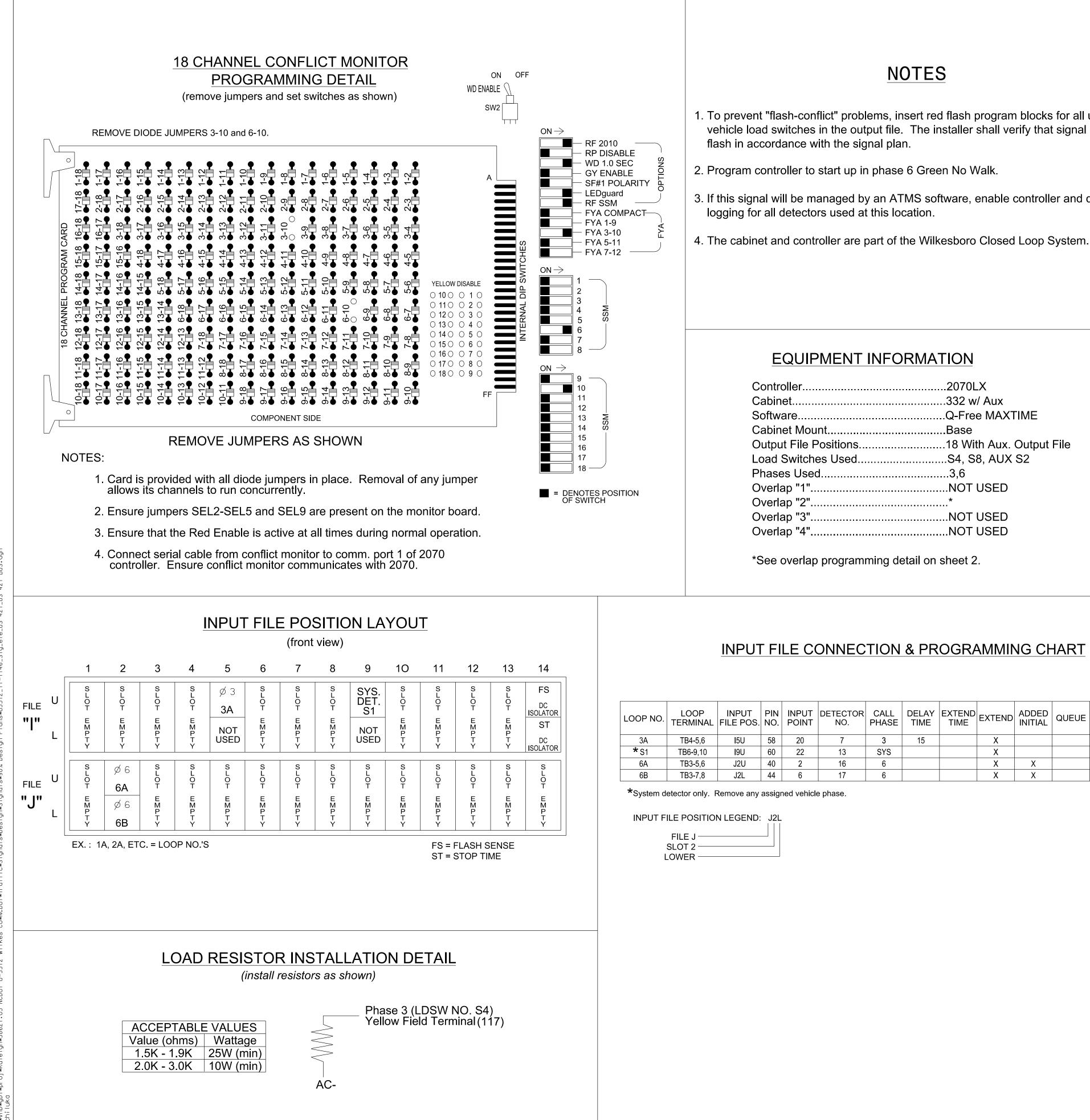


PROJECT REFERENCE NO.	SHEET NO.
U-5312	Sig.10.0

## 2 Phase Fully Actuated W/ Alternate Phasing Operation Wilkesboro Closed Loop System

### <u>NOTES</u>

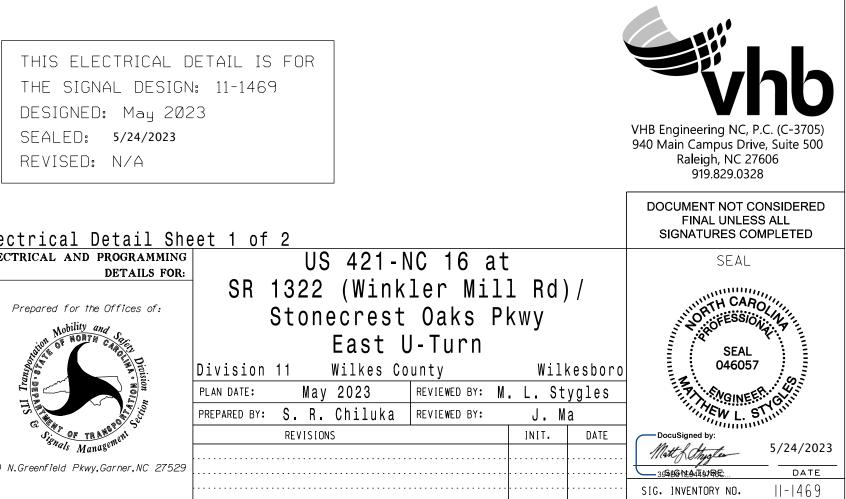
- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- 2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- 3. Set all detector units to presence mode.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- The Division Traffic Engineer will determine the hours of use for each phasing plan.
- 6. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.



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LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT POINT	DETECTOR NO.	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	QUEUE	CALL	DELAY DURING GREEN
3A	TB4-5,6	I5U	58	20	7	3	15		Х			Х	
<b>*</b> S1	TB6-9,10	I9U	60	22	13	SYS			Х			Х	
6A	TB3-5,6	J2U	40	2	16	6			Х	Х		Х	
6B	TB3-7,8	J2L	44	6	17	6			Х	Х		Х	





1. To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads

- 3. If this signal will be managed by an ATMS software, enable controller and detector

Controller	2070LX
Cabinet	332 w/ Aux
Software	Q-Free MAXTIME
Cabinet Mount	Base
Output File Positions	18 With Aux. Output File
Load Switches Used	S4, S8, AUX S2
Phases Used	3,6
Overlap "1"	NOT USED
Overlap "2"	*
Overlap "3"	NOT USED
Overlap "4"	NOT USED

PROJECT REFERENCE NO.	SHEET NO.
U - 5312	Sig.10.1

				SIC	GNA	\L ⊢	IEA	DΗ	00	K-U	IP C	ΉА	RT					
	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PÉD	OL1	OL2	SPARE	OL3	OL4	SPARE
	NU	NU	NU	<b>★</b> 31,32	NU	NU	NU	61,62	NU	NU	NU	NU	NU	<b>★</b> 31,32	NU	NU	NU	NU
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				118														
_														1			1	

### NU = Not Used

LOAD SWITCH NO

CMU CHANNEL

NO.

PHASE

SIGNAL HEAD NO

RED

YELLOW

GREEN

RED ARROW

YELLOW ARROW

FLASHING YELLOW

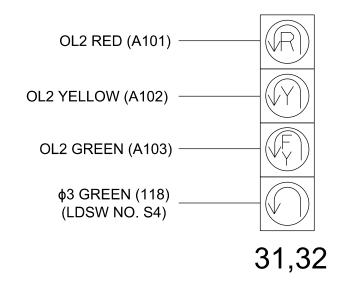
GREEN

ARROW

\* Denotes install load resistor. See load resistor installation detail this sheet.  $\star$  See pictorial of head wiring in detail this sheet.

## FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



## MAXTIME OVERLAP PROGRAMMING DETAIL FOR DEFAULT PHASING

Front Panel

Main Menu >Controller >Overlap >Overlap Parameters/Overlap Timings

Web Interface

Home >Controller >Overlap Configuration >Overlaps

Overlap Plan 1

Overlap	2
Туре	FYA 4 - Section
Included Phases	6
Modifier Phases	3
Trail Green	0
Trail Yellow	0.0
Trail Red	0.0

MAXTIME DETECTOR PROGRAMMING DETAIL FOR ALTERNATE PHASING LOOP 7A

Front Panel Main Menu >Controller >Detector >Veh Det Plans

Web Interface Home >Controller >Detector Configuration >Vehicle Detectors

In the table view of web interface right click on "Detector" in the top left corner of the table. Copy the entire contents of Detector Plan 1. Paste Detector Plan 1 into Detector Plan 2. Modify Detector Plan 2 as shown below and save changes.

	Plan 2		
	Detector	Call Phase	Delay
3A	7	3	÷

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In the table view of the web interface, right click on "Overlap" in the top left corner of the table. Copy the entire contents of Overlap Plan 1. Paste Overlap Plan 1 into Overlap Plan 2. Modify Overlap Plan 2 as shown below and save changes.

Overlap Plan 2

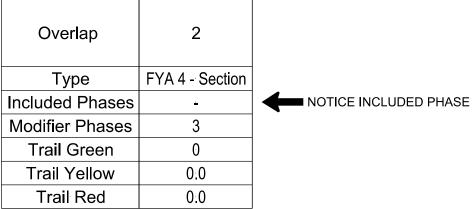
## MAXTIME OVERLAP PROGRAMMING DETAIL FOR ALTERNATE PHASING

### Front Panel

Main Menu >Controller >Overlap >Overlap Parameters/Overlap Timings

### Web Interface

Home >Controller >Overlap Configuration >Overlaps



## MAXTIME ALTERNATE PHASING PATTERN **PROGRAMMING DETAIL**

### Front Panel

Main Menu >Controller >Coordination >Patterns

### Web Interface

Home >Controller >Coordination >Patterns

### Pattern Parameters

allonn ara		
Pattern	Veh Det Plan	Overlap Plan
*	2	2

\* The Pattern number(s) are to be determined by the Division and/or City Traffic Engineer.

# MAXTIME ALTERNATE PHASING ACTIVATION DETAIL

To run alternate phasing, select a Pattern that is programmed to run Overlap Plan 2 and Detector Plan 2. A Pattern can be selected through the scheduler or manually by changing the Operational Mode.

### PHASING

ACTIVE PLAN REQUIRED TO RUN DEFAU ACTIVE PLAN REQUIRED TO RUN ALTERI

### AL

THE FOLLOWING IS **OVERLAP 2 AND VEI** TO CALL THE "ALTEF

OVERLAP PLAN 2: N

VEH DET PLAN 2: R Ca



### Elect ELECTR



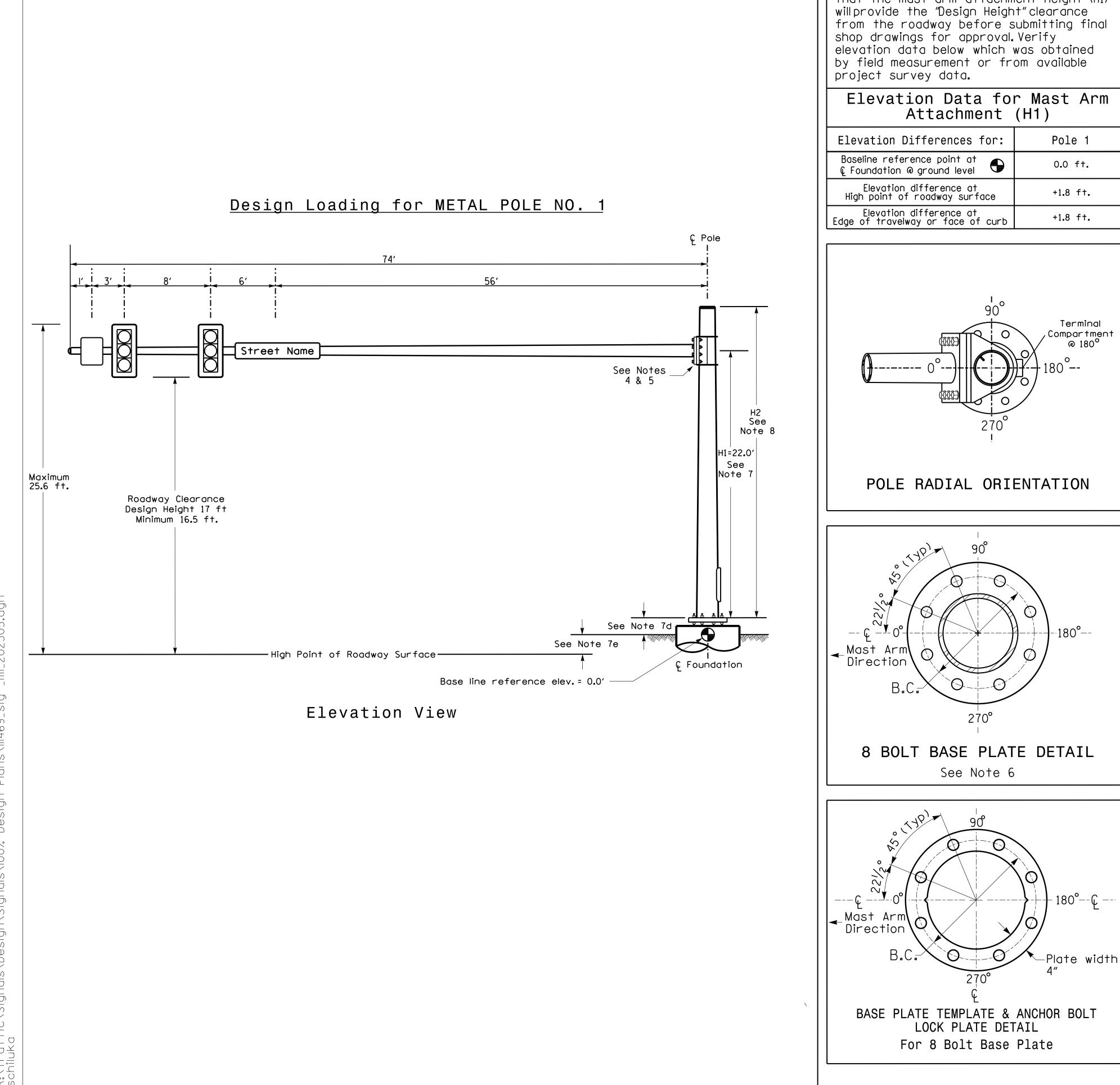
750 N.Greenfield Pkwy,Garner,NC 27529

PROJECT REFERENCE NO.	SHEET NO.
U-5312	Sig.10.2

11-1469

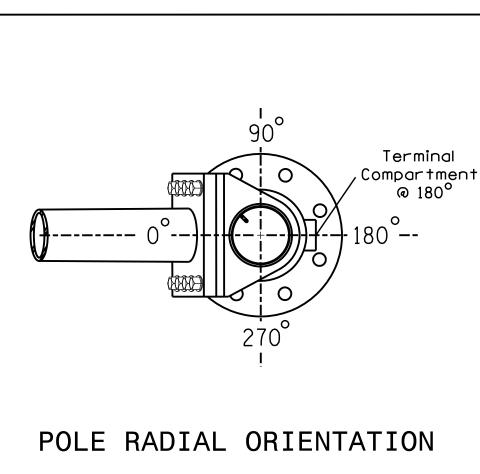
SIG. INVENTORY NO.

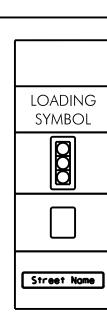
	OVERLAP PLAN	VEH DET	PLAN
ULT PHASING	1	1	
RNATE PHASING	2	2	
LTERNATE PHASING CHANG	E SUMMARY		
S A SUMMARY OF WHAT TAK EHICLE DETECTOR PLAN 2 A ERNATE PHASING":			
Modifies overlap included phas for heads 31 and 32 to run prote			
Reduces delay time for phase 3 call on loop 3A to 0 seconds.			
THIS ELECTRICAL DETAIL THE SIGNAL DESIGN: 11-1 DESIGNED: May 2023			<b>Vir</b> ition
SEALED: 5/24/2023 REVISED: N/A			VHB Engineering NC, P.C. (C-3 940 Main Campus Drive, Suite Raleigh, NC 27606 919.829.0328
trical Detail Sheet 2			DOCUMENT NOT CONSIDE FINAL UNLESS ALL SIGNATURES COMPLETE
TRICAL AND PROGRAMMING DETAILS FOR:	US 421-NC 16 R 1322 (Winkler M		SEAL
Prepared for the Offices of:	Stonecrest Oaks East U-Turi	Pkwy	SEAL
Division PLAN DAT	on 11 Wilkes County	Wilkesboro	O46057
PREPARED	•		DocuSigned by:
I.Greenfield Pkwy,Garner,NC 27529		·····	Matt f Chyglen 5/24/ 3051812614475E D4



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SPECIAL NOTE The contractor is responsible for verifying that the mast arm attachment height (H1) Elevation Data for Mast Arm

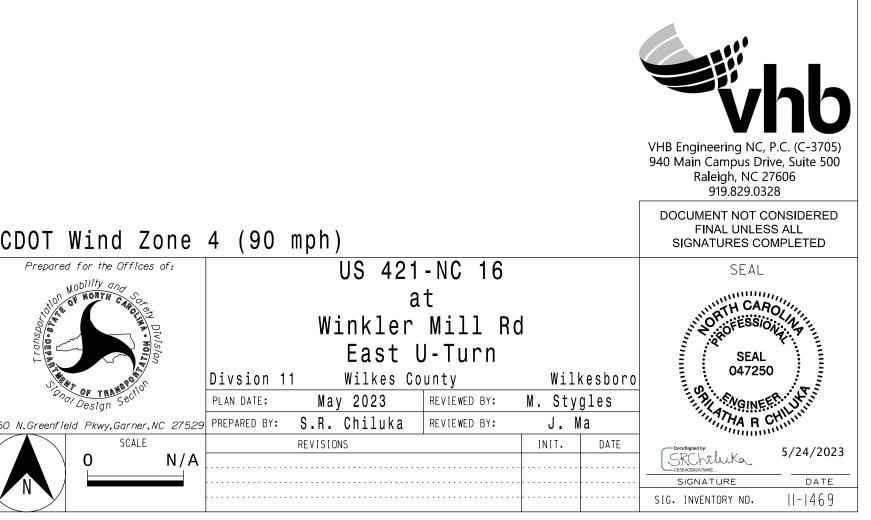


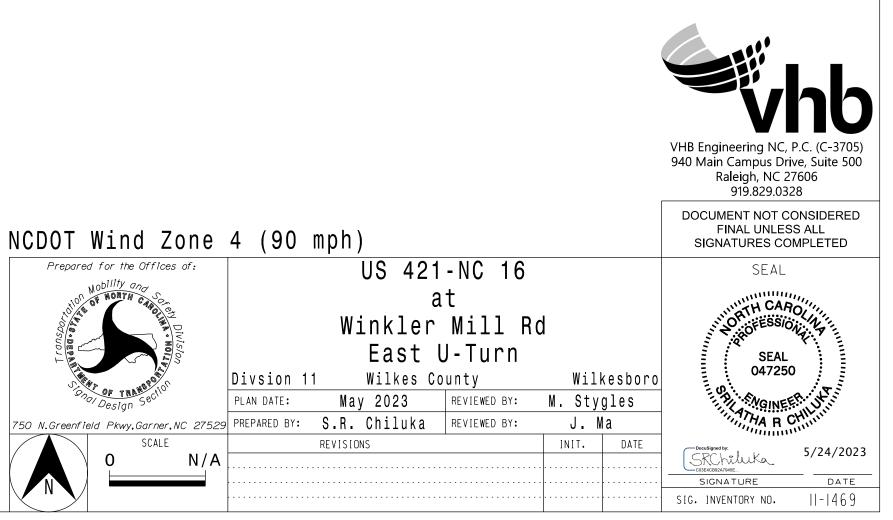


## DESIGN REQUIREMENTS

- requirements.

- the following:





## METAL POLE No. 1

PROJECT REFERENCE NO. SHEET NO. U-5312 Sig.10.3

	MAST ARM LOADING SCHEDULE										
	DESCRIPTION	AREA	SIZE	WEIGHT							
	RIGID MOUNTED SIGNAL HEAD 12"-3 SECTION-WITH BACKPLATE	9.3 S.F.	25 <b>.</b> 5″₩ X 52 <b>.</b> 5″L	60 LBS							
	SIGN RIGID MOUNTED	9.0 S.F.	36.0″W X 36.0″L	20 LBS							
כ	STREET NAME SIGN RIGID MOUNTED	16.0 S.F.	24.0″W X 96.0″L	36 LBS							

### <u>NOTES</u>

### DESIGN REFERENCE MATERIAL

1. Design the traffic signal structure and foundation in accordance with:

• The 6th Edition 2013 AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, including all of the latest interim revisions.

• The 2018 NCDOT "Standard Specifications for Roads and Structures." The latest addenda to the specifications can be found in the traffic signal project special provisions. • The 2018 NCDOT Roadway Standard Drawings.

• The traffic signal project plans and special provisions.

• The NCDOT "MetalPole Standards" located at the following NCDOT website:

https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx

2. Design the traffic signal structure using the loading conditions shown in the elevation views. These are anticipated worst case "design loads" and may not represent the actual loads that will be applied at the time of the installation. The contractor should refer to the traffic signal plans for the actual loads that will be applied at the time of the installation. 3. Design all signal supports using stress ratios that do not exceed 0.9.

4. The camber design for the mast arm deflection should provide an appearance of a low pitched arch where the tip or the free end of the mast arm does not deflect below horizontal when fully loaded.

5. A clamp-type bolted mast arm-to-pole connection may be used instead of the welded ring stiffened box connection shown as long as the connection meets all of the design

6. Design base plate with 8 anchor bolt holes. Provide 2 inch x 60 inch anchor bolts. 7. The mast arm attachment height (H1) shown is based on the following design assumptions: a. Mast arm slope and deflection are not considered in determining the arm attachment

height as they are assumed to offset each other.

b. Signalheads are rigidly mounted and vertically centered on the mast arm. c. The roadway clearance height for design is as shown in the elevation views.

d. The top of the pole base plate is 0.75 feet above the ground elevation.

e. Refer to the Elevation Data Chart for the elevation differences between the proposed foundation around leveland the high point of the roadway.

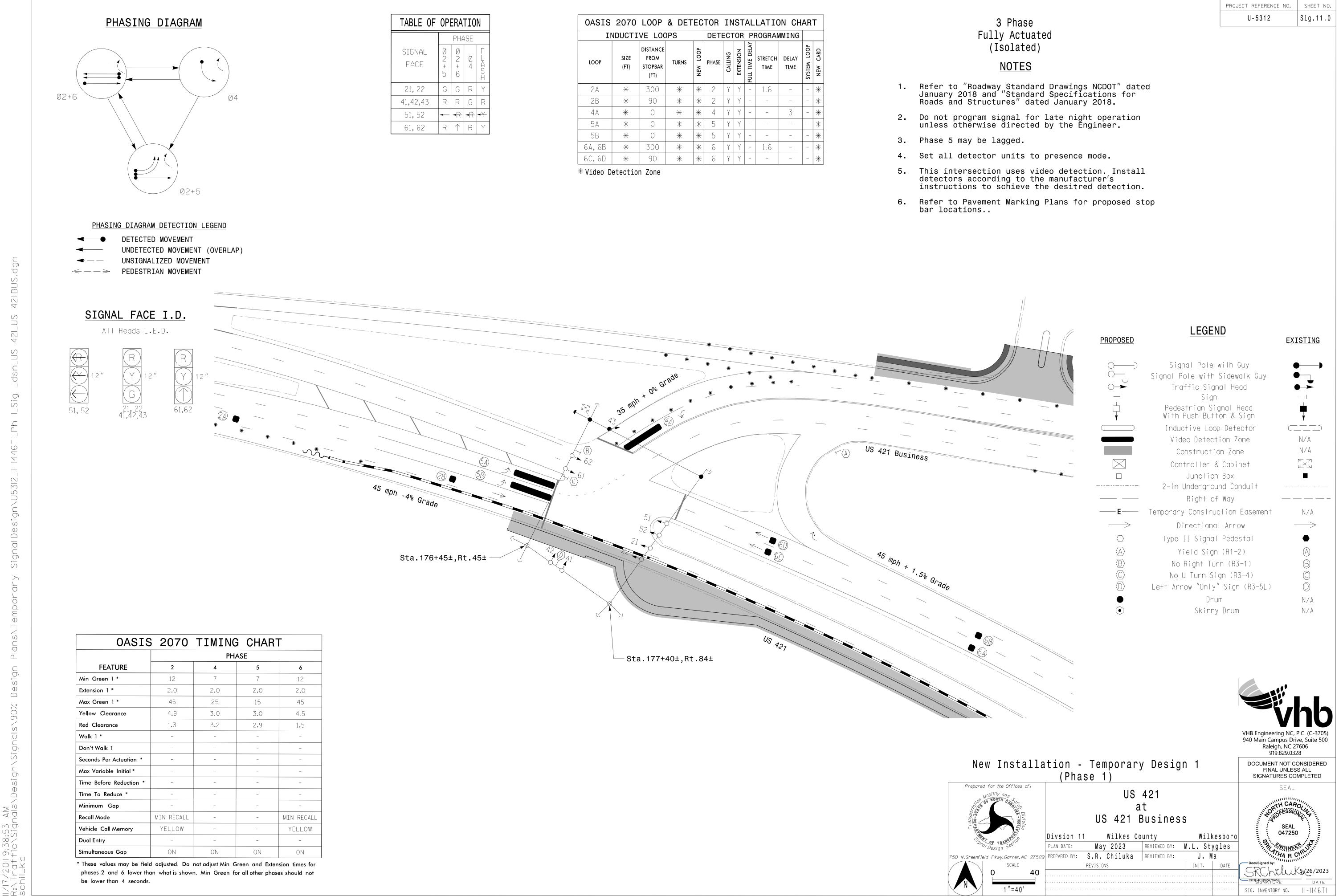
8. The pole manufacturer will determine the total height (H2) of each pole using the greater of

• Mast arm attachment height (H1) plus 2 feet, or

• H1 plus 1/2 of the total height of the mast arm attachment assembly plus 1 foot. 9. If pole location adjustments are required, the contractor must gain approval from the Engineer as this may affect the mast arm lengths and arm attachment heights. The contractor may contact the Signal Design Section Senior Structural Engineer for assistance at (919) 814-5000.

10. The contractor is responsible for verifying that the mast arm length shown will allow proper positioning of the signalheads over the roadway.

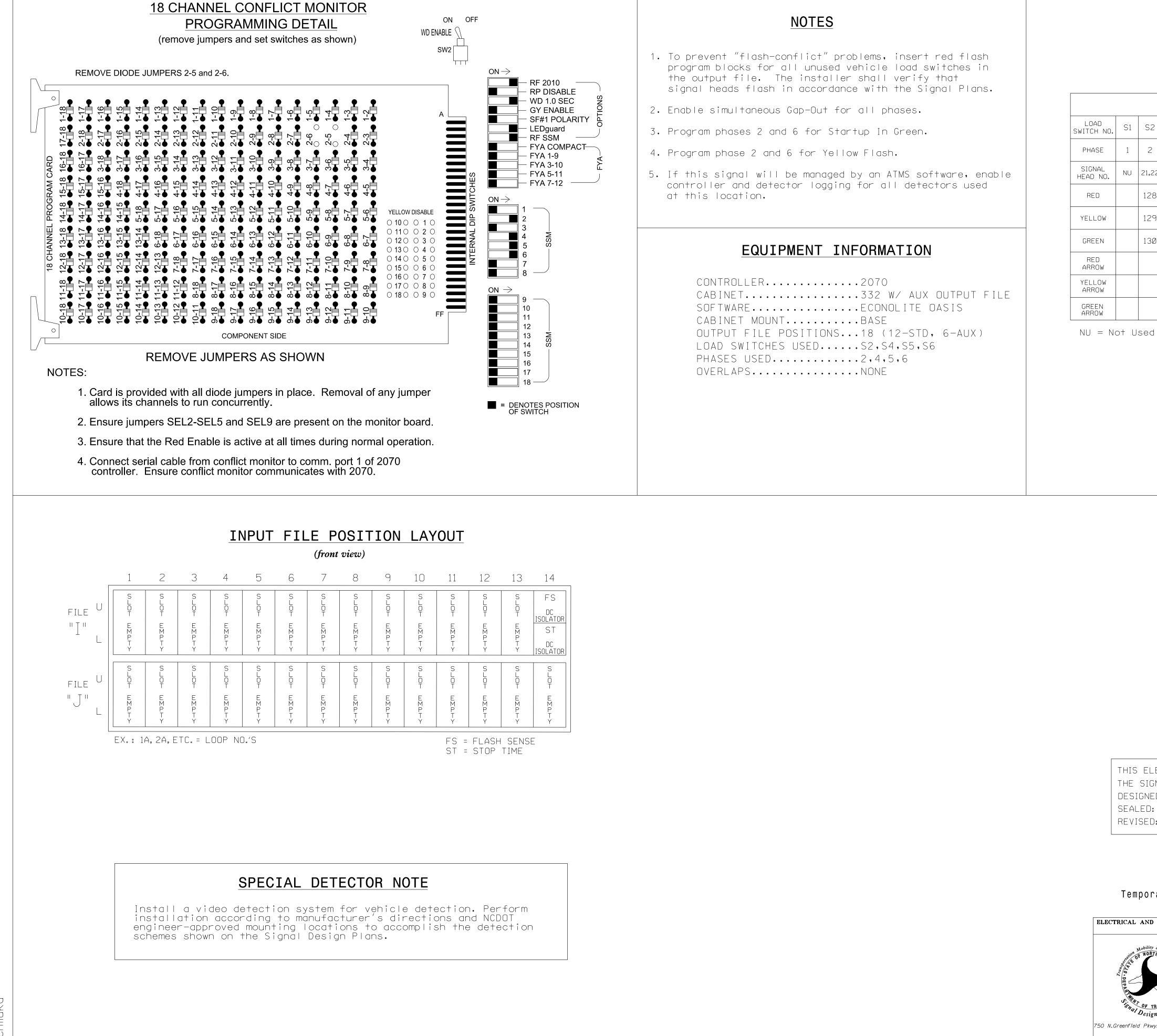
11. The contractor is responsible for providing soil penetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.



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LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	Full Time Delay	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
2 A	*	300	*	*	2	Y	Y	-	1.6	-	-	*
2B	*	90	*	*	2	Y	Y	-	-	-	-	*
4 A	*	0	*	*	4	Y	Y	-	_	3	-	*
5A	*	0	*	*	5	Y	Y	-	_	-	-	*
5B	*	0	*	*	5	Y	Y	-	_	_	_	*
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Temporary Installation - Electrical Detail 1 of 1 (Phase 1) ELECTRICAL AND PROGRAMMING

PROJECT REFERENCE NO.	SHEET NO.
U - 5312	Sig 11 1

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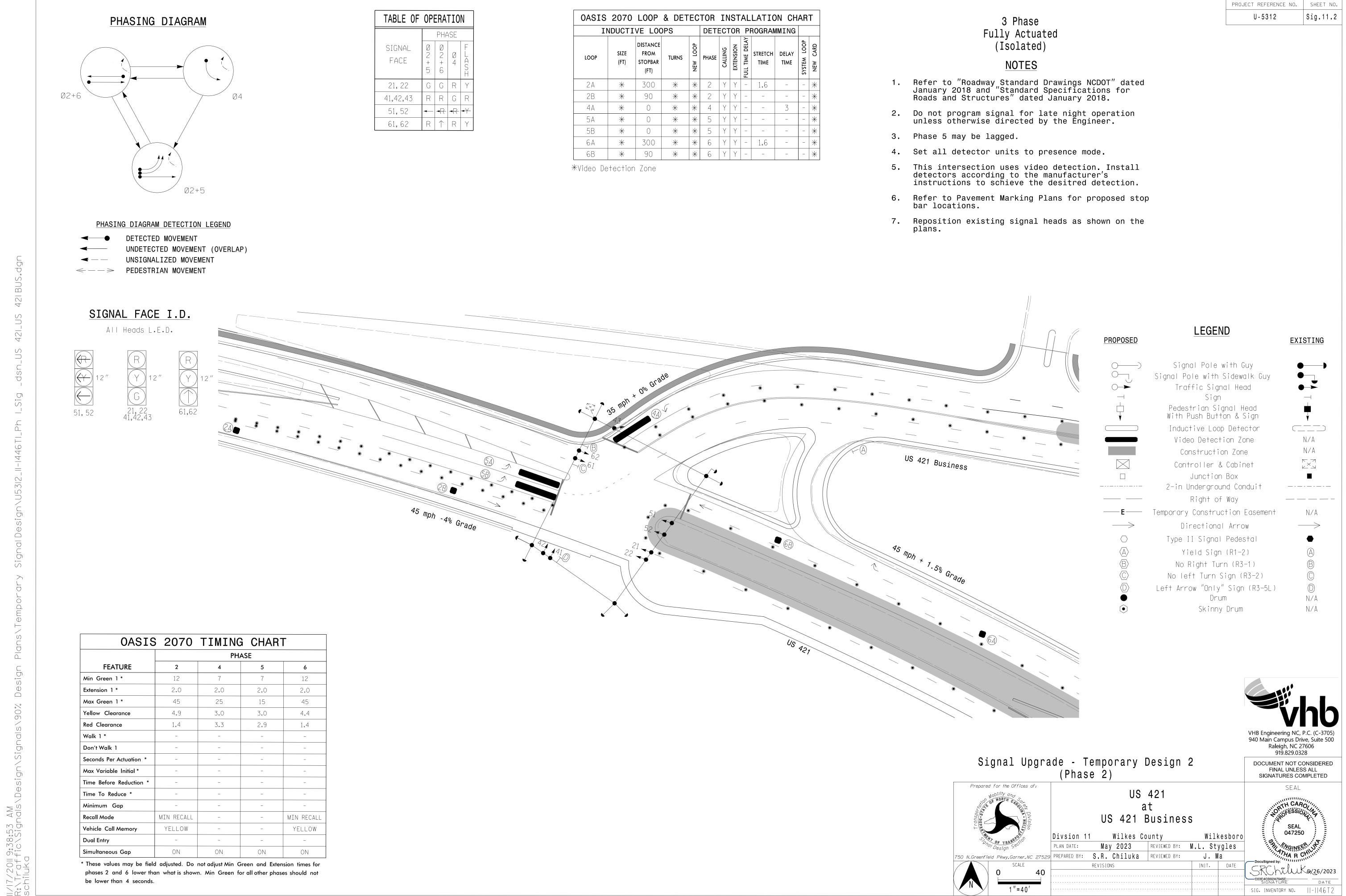
## SIGNAL HEAD HOOK-UP CHART

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 11-1146T1 DESIGNED: May 2023 SEALED: 5/26/2023 REVISED: N/A

VHB Engineering NC, P.C. (C-3705) 940 Main Campus Drive, Suite 500 Raleigh, NC 27606 919.829.0328 DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED SEAL 04605 the this term 5/26/2023 DATE

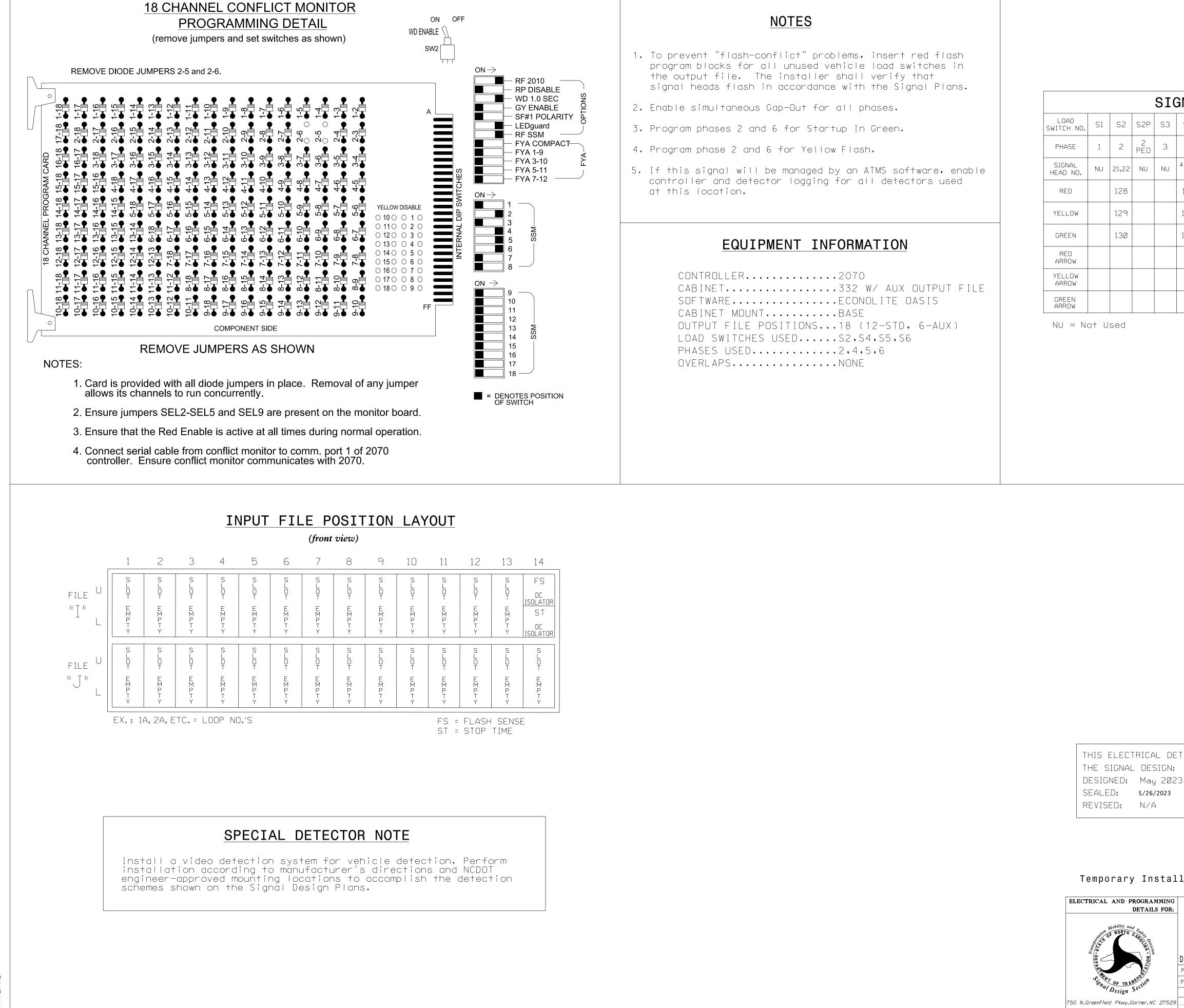
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2 A	*	300	*	*	2	Y	Y	-	1.6	-	-	*
2B	*	90	*	*	2	Y	Y	_	-	-	_	*



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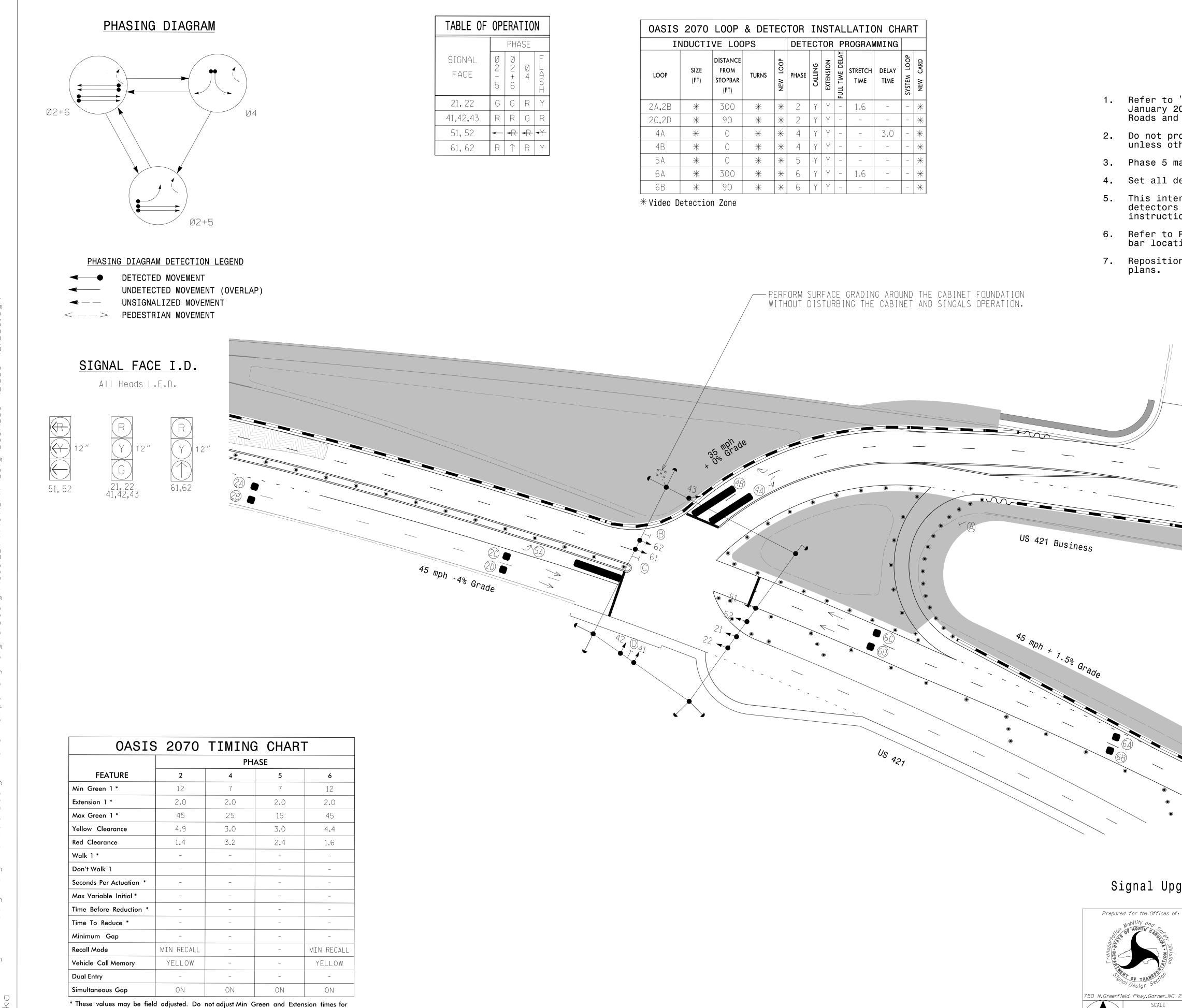
THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 11-1146T2 DESIGNED: May 2023

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## SIGNAL HEAD HOOK-UP CHART

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

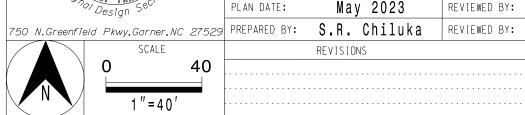
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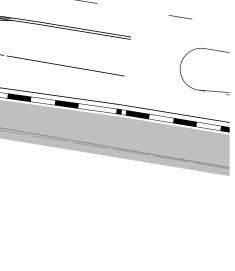
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LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	Full Time Delay	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
2A,2B	*	300	*	*	2	Y	Y	-	1.6	-	-	*
2C,2D	*	90	*	*	2	Y	Y	-	-	-	-	*
4 A	*	0	*	*	4	Y	Y	-	-	3.0	-	*
4B	*	0	*	*	4	Y	Y	-	-	-	-	*
5 A	*	0	*	*	5	Y	Y	-	-	-	_	*
6 A	*	300	*	*	6	Y	Y	-	1.6	-	-	*
6B	*	90	*	*	6	Y	Y	-	-	_	_	*

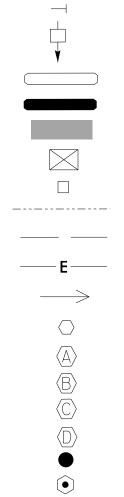
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7.



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•	Refer to "Roadway Star January 2018 and "Star Roads and Structures"	ndard Specif	ications for		
2.	Do not program signal unless otherwise dired	for late ni cted by the	ght operation Engineer		
8.	Phase 5 may be lagged				
<b>.</b>	Set all detector units	s to presenc	e mode.		
	This intersection uses detectors according to instructions to schiev	b the manufa	cturer's		
<b>.</b>	Refer to Pavement Mark bar locations.	king Plans f	or proposed stop	0	
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Construction Zone Controller & Cabinet Junction Box 2-in Underground Conduit Right of Way Temporary Construction Easement Directional Arrow Type II Signal Pedestal Yield Sign (R1-2) No Right Turn (R3-1) No left Turn Sign (R3-2) Left Arrow "Only" Sign (R3-5L) Drum Skinny Drum

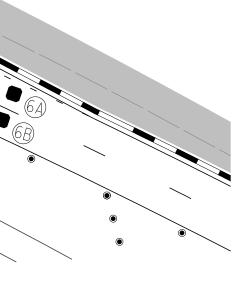
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Signal Upgrade - Temporary Design 3 (Phase 3)

PLAN DATE:

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Divsion 11 Wilkes County

REVISIONS

US 421

at

US 421 Business

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INIT. DATE



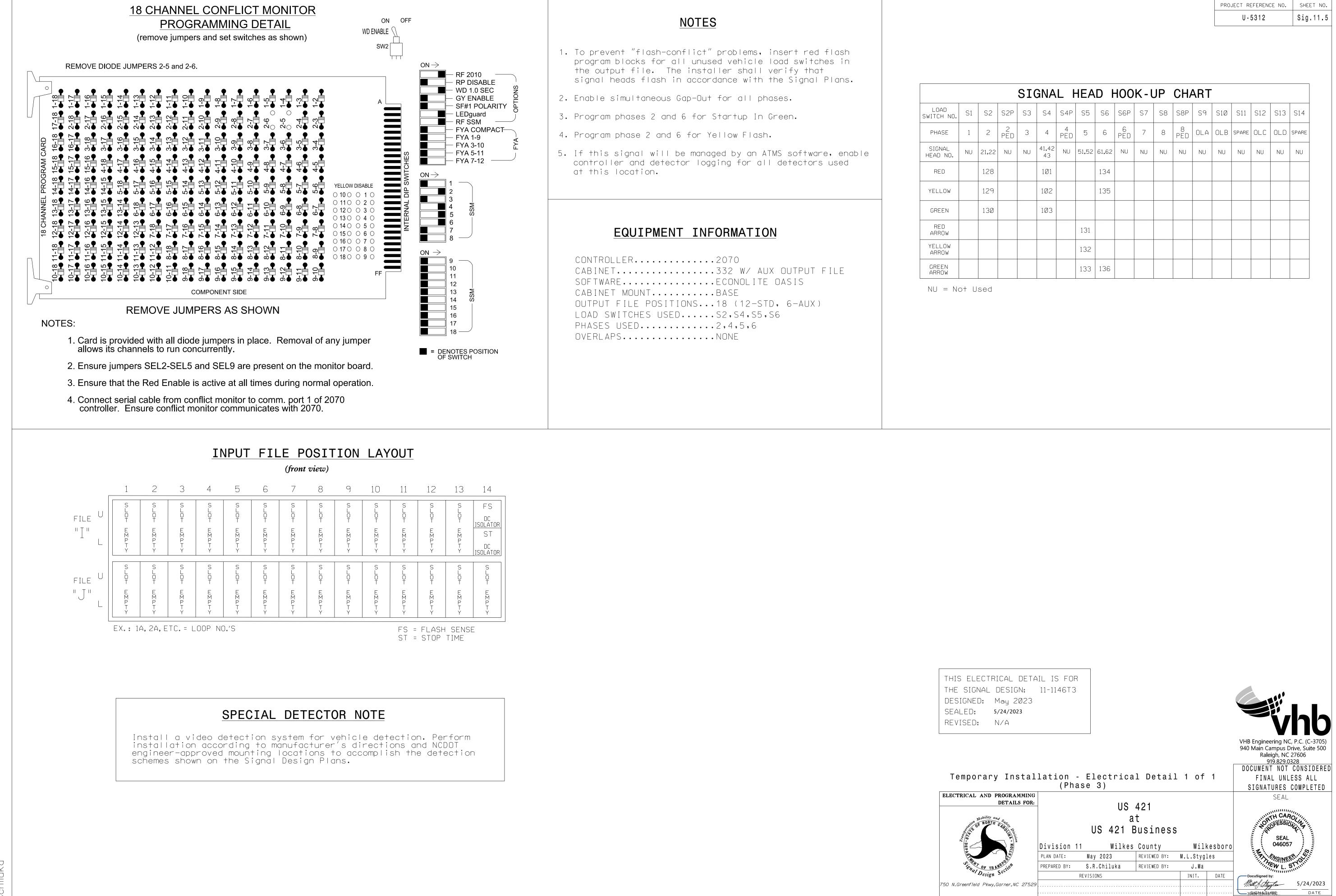
SRChiluka

SIGNATURE

SIG. INVENTORY NO. 11-114673

5/24/2023

DATE

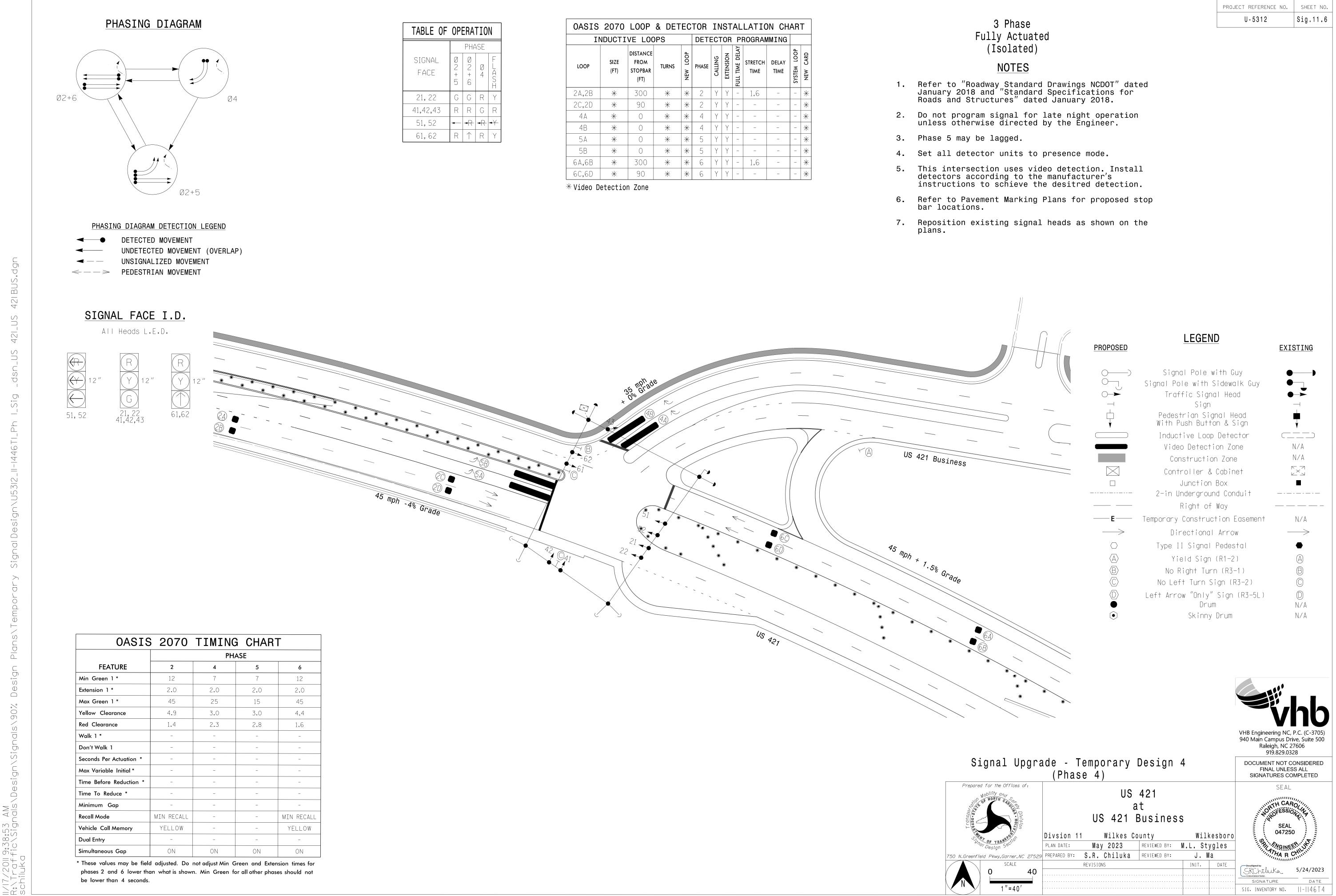


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PROJECT REFERENCE NO.	SHEET NO.
U - 5312	Sig.11.5

SIG. INVENTORY NO. 11-1146T3

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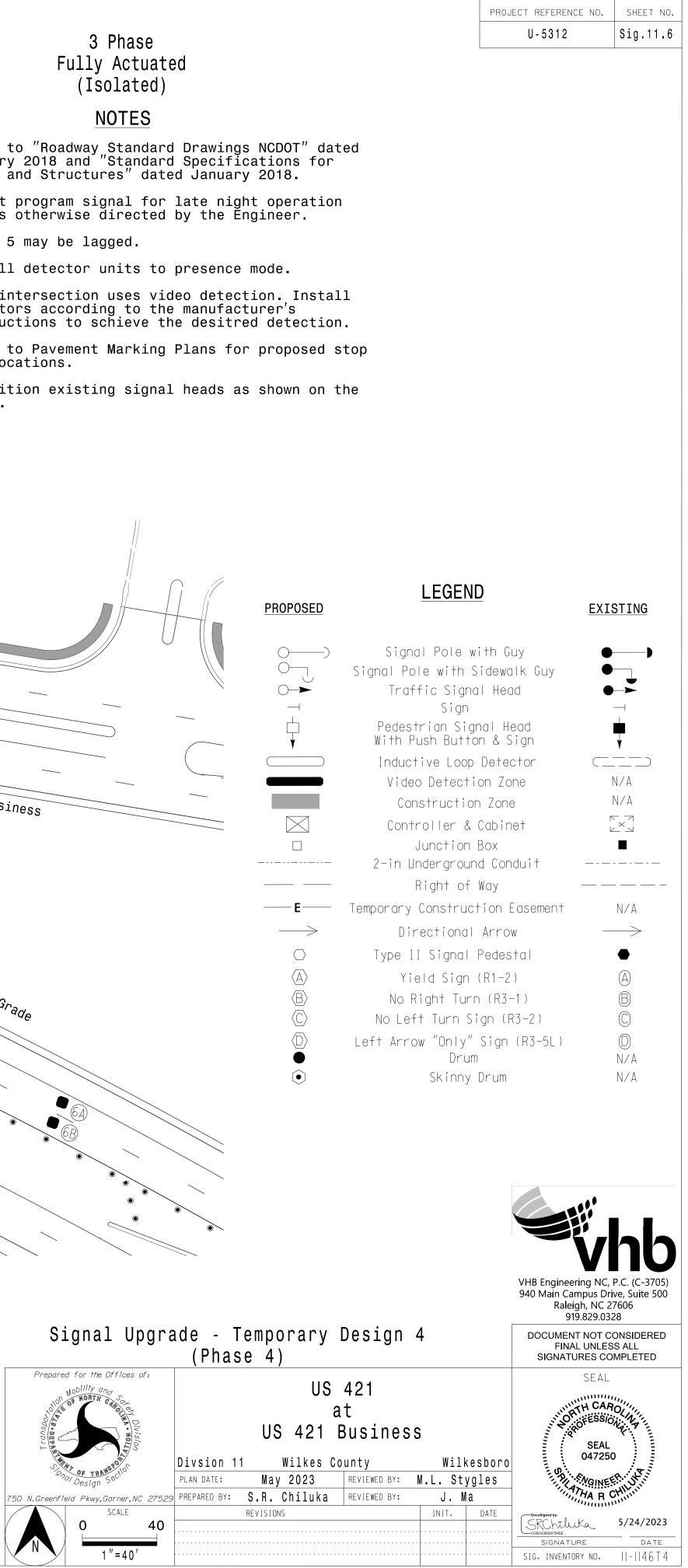


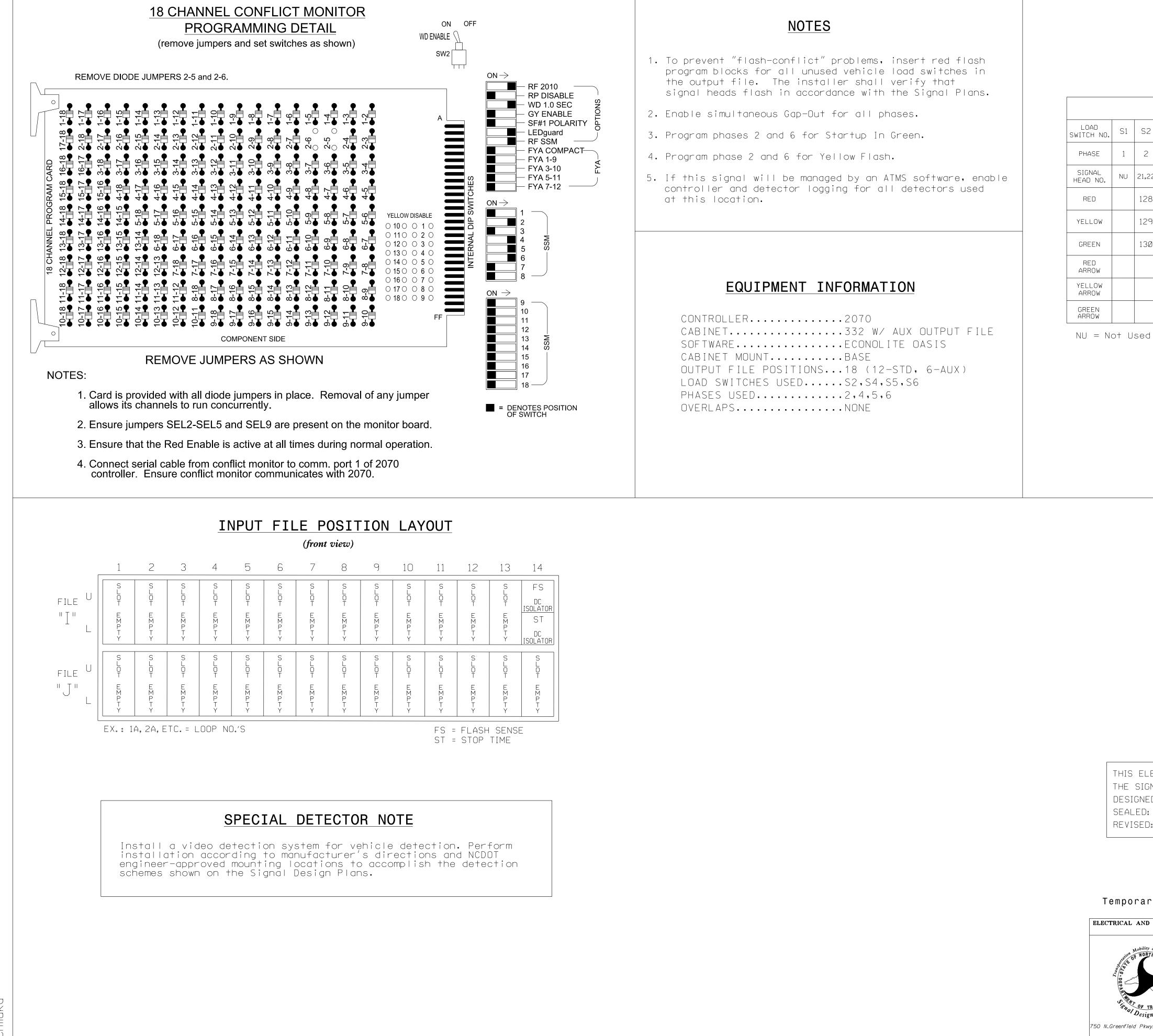
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I	NDUCTI	VE LOC	)PS		DETE	ЕСТ	OR	PI	ROGRAM	MING		
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	Full Time Delay	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
2A,2B	*	300	*	*	2	Y	Y	-	1.6	-	-	*
2C,2D	*	90	*	*	2	Y	Y	-	-	-	-	*
4 A	*	0	*	*	4	Y	Y	-	-	_	-	*
4B	*	0	*	*	4	Y	Y	-	-	-	_	*
5 A	*	0	*	*	5	Y	Y	-	-	-	-	*
5B	*	0	*	*	5	Y	Y	-	-	-	_	*
6A,6B	*	300	*	*	6	Y	Y	-	1.6	-	_	*
6C,6D	*	90	*	*	6	Y	Y	-	_	_	-	*

1.	Refer to "R January 201 Roads and S
2.	Do not prog unless othe
3.	Phase 5 mav





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THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 11-1146T4 DESIGNED: May 2023 SEALED: 5/24/2023 REVISED: N/A

PROJECT REFERENCE NO.	SHEET NO.
U - 5312	Sig 11 7

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S1	S2	S2P	S3	S4	S4P	S5	S6	S6P	S7	S8	S8P	59	S1Ø	S11	S12	S13	S14
1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
NU	21,22	NU	NU	41,42 43	NU	51,52	61,62	NU	NU	NU	NU	NU	NU	NU	NU	NU	NU
	128			1Ø1			134										
	129			102			135										
	130			1Ø3													
						131											
						132											
						133	136										

## STGNAL HEAD HOOK-UP CHART

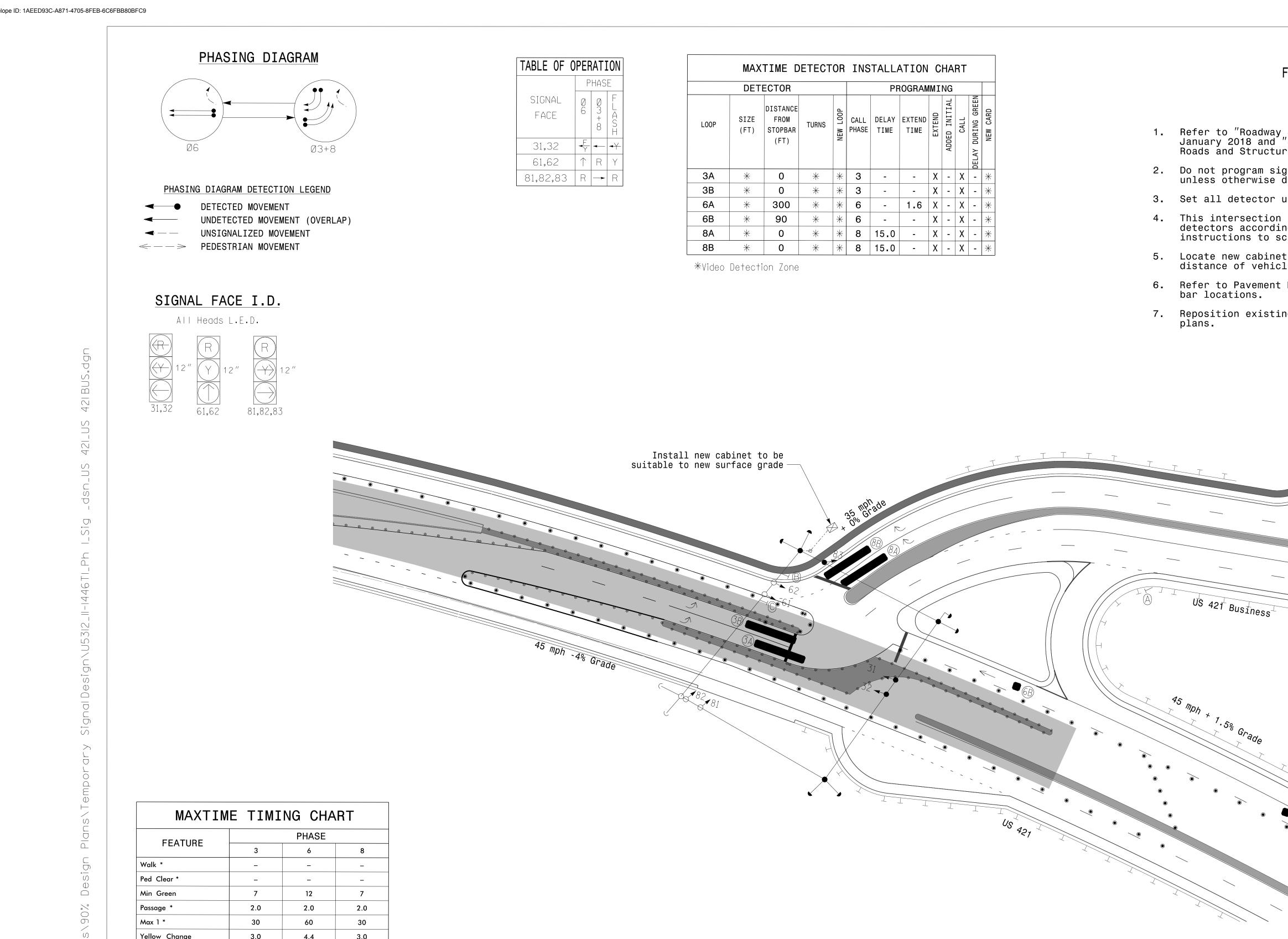
Temporary Installation - Electrical Detail 1 of 1 (Phase 4) ELECTRICAL AND PROGRAMMING DETAILS FOR: US 421 at US 421 Business Division 11 Wilkes County Wilkesboro REVIEWED BY: M.L.Stygles PLAN DATE: May 2023 PREPARED BY: S.R.Chiluka REVIEWED BY: J.Ma REVISIONS INIT. DATE Matt & Strigter 50 N.Greenfield Pkwy,Garner,NC 27529



SIG. INVENTORY NO. 11-1146T4

5/24/2023

DATE



FEATURE	PHASE							
	3	6	8					
Walk *	_	_	_					
Ped Clear *	_	_	_					
Min Green	7	12	7					
Passage *	2.0	2.0	2.0					
Max 1 *	30	60	30					
Yellow Change	3.0	4.4	3.0					
Red Clear	2.4	1.3	1.4					
Added Initial *	_	_	_					
Maximum Initial *	_	_	_					
Time Before Reduction *	-	-	_					
Time To Reduce *	_	_	_					
Minimum Gap	_	_	_					
Advance Walk	_	-	_					
Non Lock Detector	Х	-	Х					
Vehicle Recall	_	MIN RECALL	_					
Dual Entry	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.

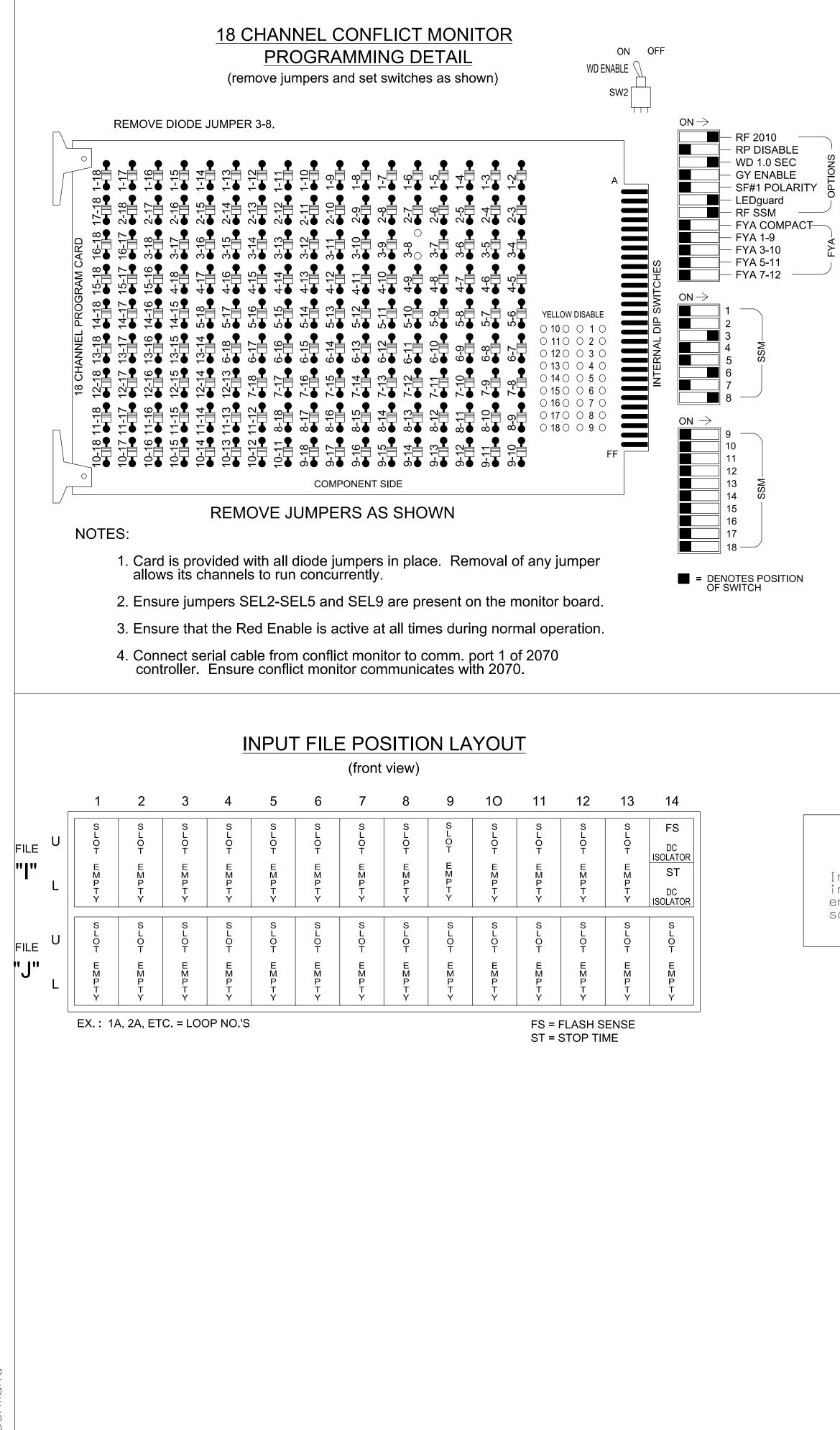
II/17/2011 9:38:53 AM R:\Traffic\Signals\D schiluka

MAXTIME DETECTOR INSTALLATION CHART												
	DETI	ECTOR	PROGRAMMING									
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN	NEW CARD
ЗA	*	0	*	*	3	-	-	Х	-	Х	-	*
3B	*	0	*	*	3	-	-	Х	-	Х	-	*
6A	*	300	*	*	6	-	1.6	Х	-	Х	-	*
6B	*	90	*	*	6	-	-	Х	-	Х	-	*
8A	*	0	*	*	8	15.0	-	Х	-	Х	-	*
8B	*	0	*	*	8	15.0	-	Х	-	Х	-	*





			PROJECT REFERE	NCE NO. SHEET NO.
3 Phase			U-5312	Sig.11.8
Fully Actuated				
(Isolated)				
NOTES				
y Standard Drawings NCI "Standard Specificatio ures" dated January 20 <sup>-</sup>	ons for			
ignal for late night op directed by the Engine	peration			
units to presence mode	Э.			
n uses video detection ing to the manufacture schieve the desitred de	r's			
et so as not to obstruc cles turning right on r	ct sight			
t Marking Plans for pro				
ing signal heads as sho	Jwn on the			
	PROPOSED	LEGEND		EXISTING
	<u>()                                    </u>	Signal Pole wit		••
		Signal Pole with Sic Traffic Signal Sign		
	$\bigcup_{\mathbf{v}}$	Pedestrian Signa With Push Button	l Head & Sian	
		Inductive Loop D		
		Video Detection Construction		N/A N/A
		Controller & Co		
		Junction Bo 2-in Underground		■
		Right of Wc		
	—— E——	Temporary Constructi	on Easement	N/A
	$\longrightarrow$	Directional A		$\rightarrow$
	$\langle A \rangle$	Type II Signal Pe Yield Sign (R		A
	A> B> C>	No Right Turn		B
	$\langle \mathbb{C} \rangle$	No Left Turn Sign	n (R3-2)	$\bigcirc$
~	$\mathbf{\bullet}$	Drum Skinny Dr	rum	N/A N/A
	Ť			
•				
			VHB Enaine	Deering NC, P.C. (C-3705)
			940 Main C Ral	Campus Drive, Suite 500 eigh, NC 27606 919.829.0328
Signal Upgrade - T (Phas	Femporary e 12)	Design 5	DOCUME	ENT NOT CONSIDERED JAL UNLESS ALL TURES COMPLETED
pared for the Offices of:		421		SEAL
hobility as				N'CH CARA
pared for the Offices of:		at	L'AND CONTRACTOR	WITH CAROLY
Nobility and Society Division	US 421	at Business		SEAL 047250
Divsion 1 PLAN DATE:	<b>US 421</b> 1 Wilkes May 2023	at Business County Wilke REVIEWED BY: M.L. Styg	sboro	SEAL
Mobility on a second bivsion 1	US 421 1 Wilkes	at Business <sup>County</sup> Wilke	sboro	SEAL



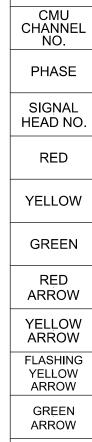
Rd.dgn N∷ Sig  $\bigcirc$ ഗ Signal Dea  $\oplus$  $\vdash$ S Design 1061 5/23/2019 3:15:01 PM R:\Traffic\Signals\Design\Sign schiluka

## NOTES

- 1. To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the signal plan.
- 2. Program phases 3 and 8 for Dual Entry.
- 3. Program controller to start up in phase 6 Green No Walk.
- 4. If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.

### EQUIPMENT INFORMATION

Load Switches Used Phases Used Overlap "1" Overlap "2" Overlap "3"	
Overlap "4"	





NU = Not Used

## SPECIAL DETECTOR NOTE

Install a video detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

THIS THE DES SEAL REV]

Temporary Installation - Electrical Detail 1 of 1 (Phase 12) ELECTRICAL AND PROGRAMMING



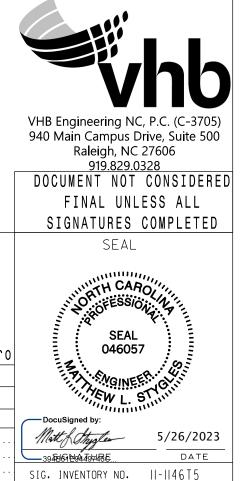
-	U-5312	Sig.11.9
	PROJECT REFERENCE NO.	SHEET NO.

SIGNAL HEAD HOOK-UP CHART																		
LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PÉD	OL1	OL2	SPARE	OL3	OL4	SPARE
SIGNAL HEAD NO	NU	NU	NU	31,32	NU	NU	NU	61,62 63	NU	NU	81,82 83	NU	NU	NU	NU	NU	NU	NU
RED								134			107					-		
YELLOW								135								-		
GREEN																		
RED ARROW				116														
YELLOW ARROW				117							108							
FLASHING YELLOW ARROW																		
GREEN ARROW				118				136			109							
₩																		
Ŕ																		

\* Denotes install load resistor. See load resistor installation detail this sheet.

 $\star$  See pictorial of head wiring in detail this sheet.

6 ELECT	RICAL DETAIL IS FOR
SIGNAL	DESIGN: 11-1146T5
IGNED:	May 2023
LED:	5/26/2023
ISED:	N/A



ICAL A	ND P	ROGRAM	IMING	
		DETAILS	FOR:	
	2	Solution Division		[
S. Shal D	FTRA	NSPOR Section		
*/D	esign	500		
enfield .	Pkwy,C	Garner,NC	27529	

		t	a	US	
kesboro	Wilł	County	Wilkes	11	Division
les	M L Styg.	REVIEWED BY:	2023	May 20	PLAN DATE:
	J.Ma	REVIEWED BY:	Chiluka	S.R.Ch	PREPARED BY:
DATE	INIT.	·	S	REVISIONS	
	les	Wilkesboro M.L.Stygles J.Ma	t Susiness County Wilkesboro REVIEWED BY: M.L.Stygles REVIEWED BY: J.Ma	WilkesCountyWilkesboro023REVIEWED BY:M.L.StyglesilukaREVIEWED BY:J.Ma	at US 421 Business11Wilkes CountyWilkesboroMay 2023REVIEWED BY:M.L.StyglesS.R.ChilukaREVIEWED BY:J.Ma

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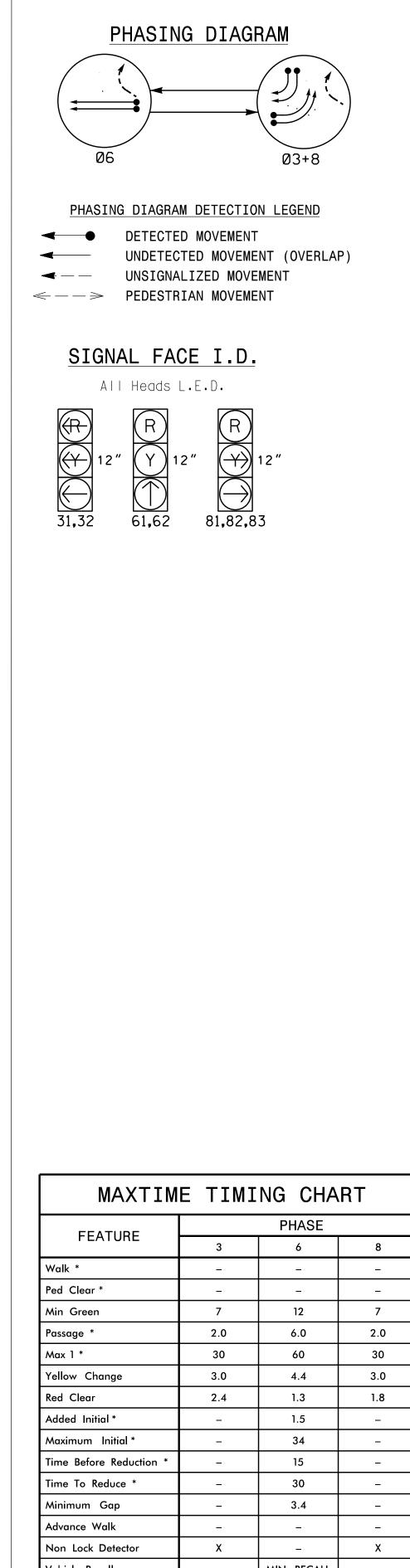
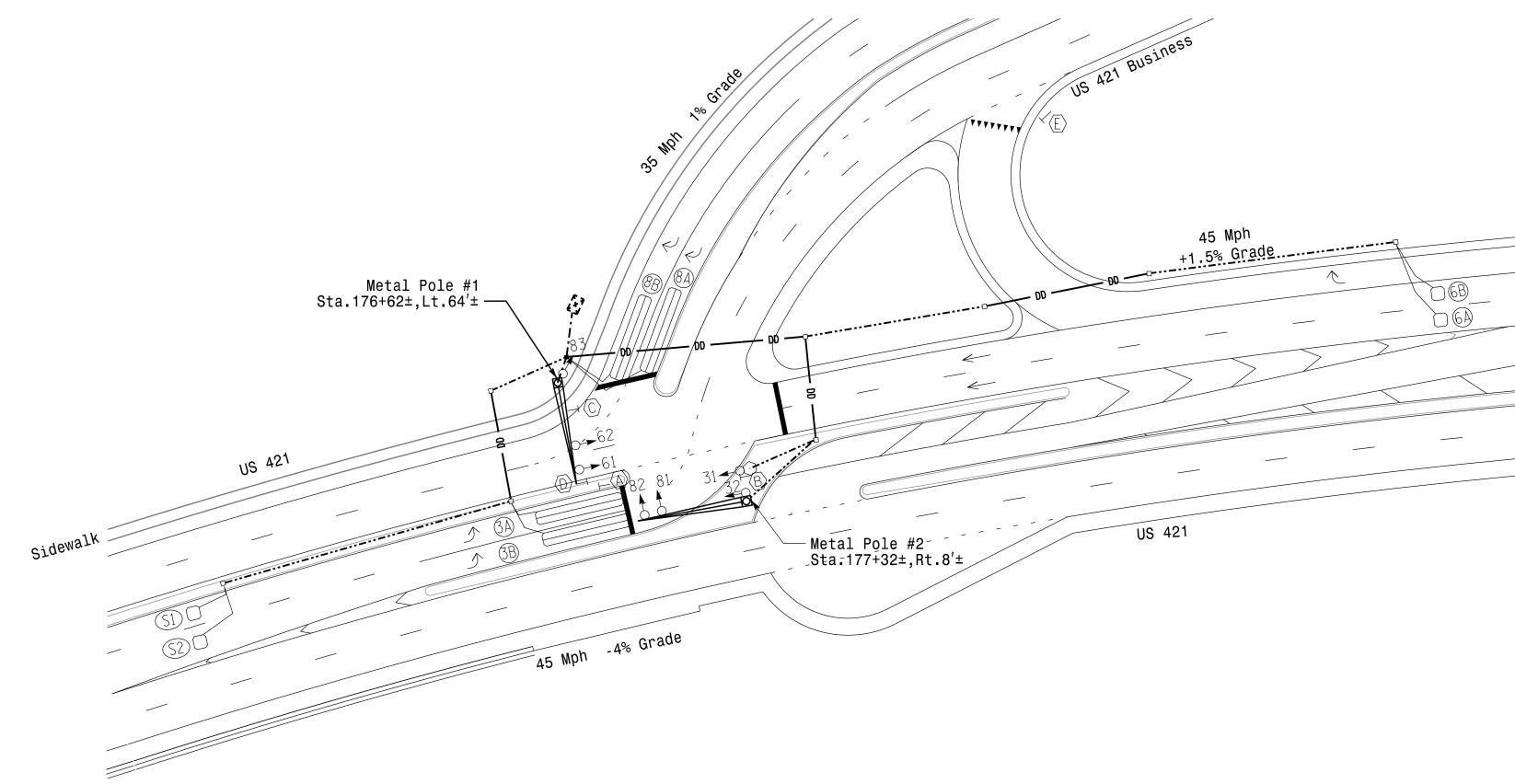


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	P	HAS	E
SIGNAL FACE	Ø6	യന + യ	FLANT
31,32	<del>-R</del>	ļ	┽
61,62	↑	R	Y
81,82,83	R	$\rightarrow$	R



PROPOSED	LEGEND
THURUSED	
$\bigcirc \rightarrow$	Traffic Signal H
—	Sign
$\bigcirc$	Type II Signal Ped
Ċ ▼	Pedestrian Signal With Push Button &
0	Metal Pole with Mas
	Inductive Loop Dete
$\square$	Controller & Cabi
	Junction Box
	2-in Underground Cc
DD	Directional Dril
	Right of Way
$\longrightarrow$	Directional Arro
(A) "S	top Here on Red" Sigr
$\langle B \rangle$	No U-Turn Sign (R
$\langle C \rangle$	No Right Turn Sign (
$\langle D \rangle$	No Left Turn Sign (
Æ	"YIELD" Sign (R1-

S U Wilk U-53I2 NCDOT aleigh\38621.03 25/2023 I2:16:18 PM .vhb.com/gbl/proj/Re hiluka  $\backslash$  $\Omega / ($ 

Vehicle Recall MIN RECALL -— Dual Entry 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.

MAXTIME DETECTOR INSTALLATION CHART												
	DETE		PF	OGRAM	MI	NG						
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN	NEW CARD
ЗA	6X40	0	2-4-2	х	3	15.0*	-	Х	-	Х	-	Х
3B	6X40	0	2-4-2	х	3	15.0*	-	Х	-	Х	-	Х
6A	6X6	300	5	Х	6	-	-	Х	Х	Х	-	Х
6B	6X6	300	5	Х	6	-	-	Х	Х	Х	-	Х
8A	6X40	0	2-4-2	х	8	15.0	-	Х	-	Х	-	Х
8B	6X40	0	2-4-2	Х	8	15.0	-	Х	-	Х	-	Х
S1	6X6	200	3	Х	-	-	-	-	-	Х	-	-
S2	6X6	200	3	Х	-	-	-	-	-	-	-	-

\* Disable delay during alternate phasing operation

<u>EXISTING</u> ignal Head ●→ gn nal Pedestal Signal Head utton & Sign ith Mastarm 🛛 🖳 🚽 oop Detector & Cabinet on Box ound Conduit ------N/A al Drill f Way \_\_\_\_  $\longrightarrow$ hal Arrow ed" Sign (R10-6) N/A N/A Sign (R3-4) N/A n Sign (R3-1) Sign (R3-2) N/A N/A ign (R1-2)

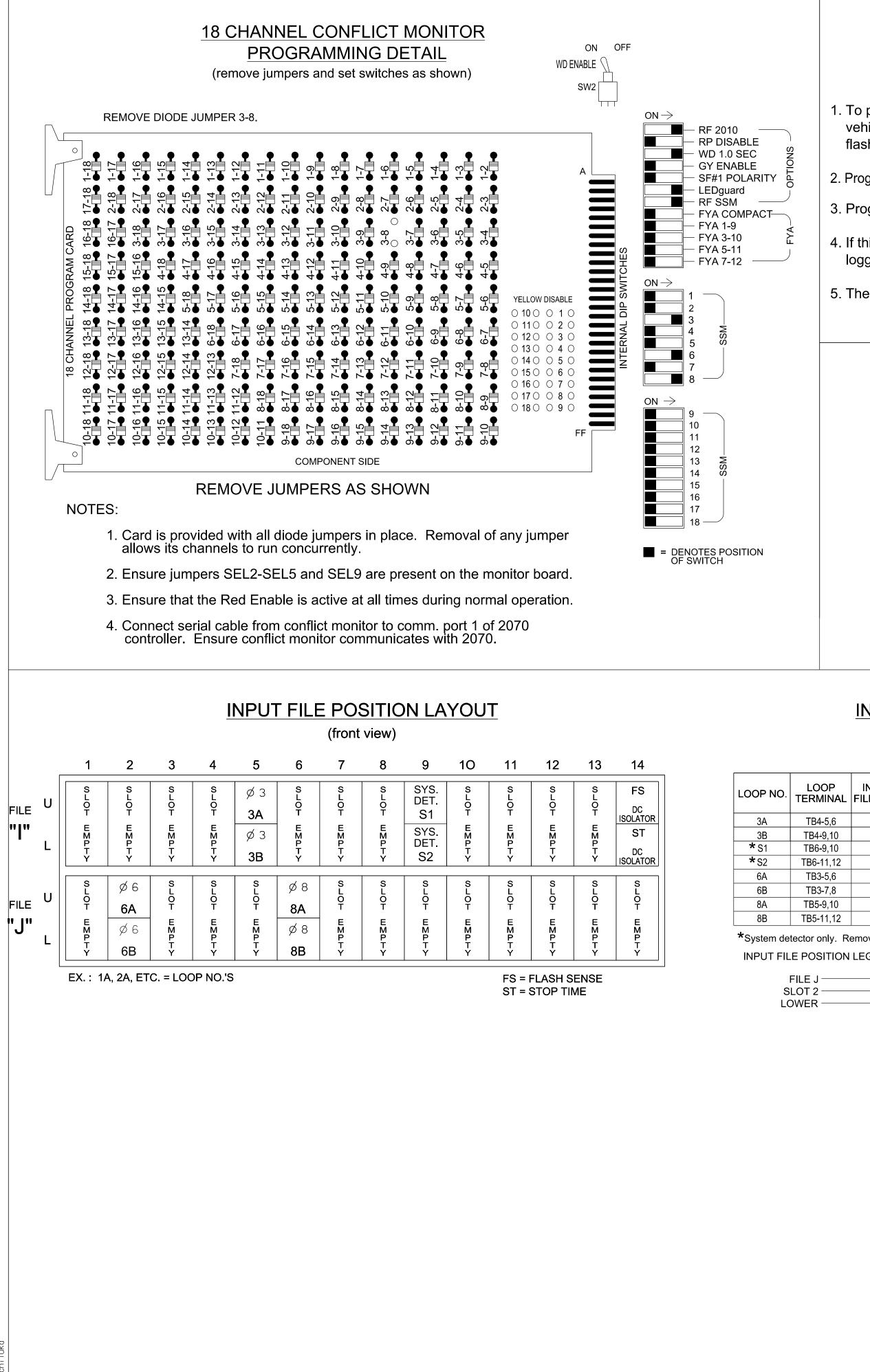
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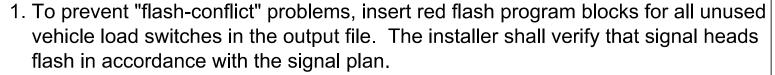


	PROJECT REFERENCE NO.	SHEET NO.
2 Phase	U - 5312	Sig.11.10
Fully Actuated		1
-		
Wilkesboro Closed Loop System		
NOTES		
<ol> <li>Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads a</li> </ol>	nd	
Structures" dated January 2018.		
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.		
<ol> <li>Set all detector units to presence mode.</li> <li>Maximum times shown in timing chart are for free run.</li> </ol>		
<ol> <li>Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing valu supersede these values.</li> </ol>	es	
5. Refer to Pavement Marking Plans for proposed stop bar		
locations.		
Sidewalk		
_		
		▋■
		hh
	V	
	VHB Engineering NC, 940 Main Campus Dr	ive, Suite 500
	Raleigh, NC 2 919.829.03	27606
	DOCUMENT NOT C FINAL UNLES	
nal Upgrade - Final Design	SIGNATURES CO	
US 421	SEAL	<i>u</i> .
	UNITH CAN	
US 421 Business	2 .Q.	
Divsion 11 Wilkes County Wilkes	SEAL	
PLAN DATE: May 2023 REVIEWED BY: M. Stygle	< ( <b>0</b> , •	ERINA
eenfield Pkwy.Garner.NC 27529 PREPARED BY: S.R. Chiluka REVIEWED BY: J. Ma	DATE	
0 40 REVISIONS INIT.	SKChilu	K50×26/2023
	SIGNATURE SIGNATURE	DATE



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- 2. Program phases 3 and 8 for Dual Entry.
- 3. Program controller to start up in phase 6 Green No Walk.
- 4. If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.
- 5. The cabinet and controller are part of the Wilkesboro Closed Loop System.

### EQUIPMENT INFORMATION

Controller Cabinet Software Cabinet Mount Output File Positions Load Switches Used Phases Used	332 w/ Aux Q-Free MAXTIME Base 18 With Aux. Output File S3, S8, S11
Overlap "1" Overlap "2" Overlap "3" Overlap "4"	NOT USED NOT USED NOT USED

## LOAD SWITCH NO. CMU CHANNEL NO. PHASE SIGNAL HEAD NO. RED YELLOW GREEN RED ARROW

YELLOW ARROW FLASHING YELLOW ARROW GREEN ARROW Ŕ

NU = Not Used

### **INPUT FILE CONNECTION & PROGRAMMING CHART**

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	pin No.	INPUT POINT	DETECTOR NO.	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	QUEUE	CALL	DELAY DURING GREEN
3A	TB4-5,6	<b>I</b> 5U	58	20	7	3	15		Х			Х	
3B	TB4-9,10	I5L	41	3	4	3			Х			Х	
<b>*</b> S1	TB6-9,10	19U	60	22	13	SYS			Х		Х		
<b>*</b> S2	TB6-11,12	19L	62	24	14	SYS			Х		Х		
6A	TB3-5,6	J2U	40	2	16	6			Х			Х	
6B	TB3-7,8	J2L	44	6	17	6			Х		Х		
8A	TB5-9,10	J6U	42	4	22	8	15		Х			Х	
8B	TB5-11,12	J6L	46	8	23	8	15		Х			Х	

\*System detector only. Remove any assigned vehicle phase.

INPUT FILE POSITION LEGEND: J2L

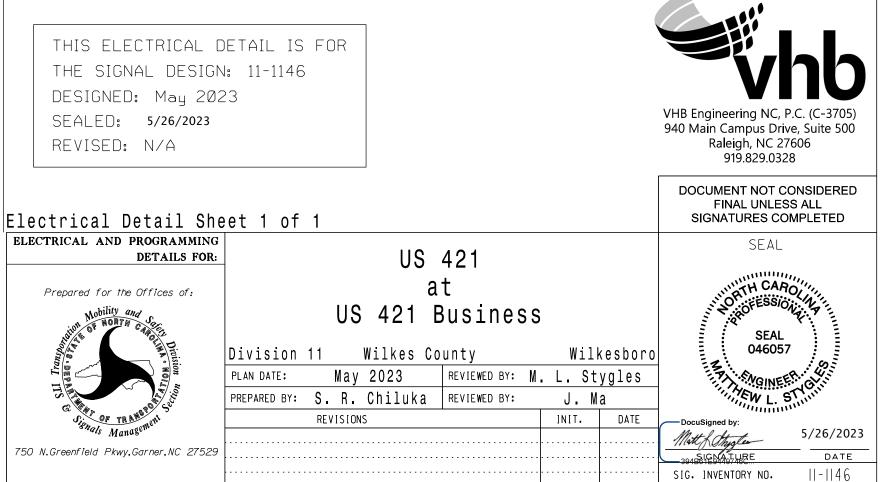
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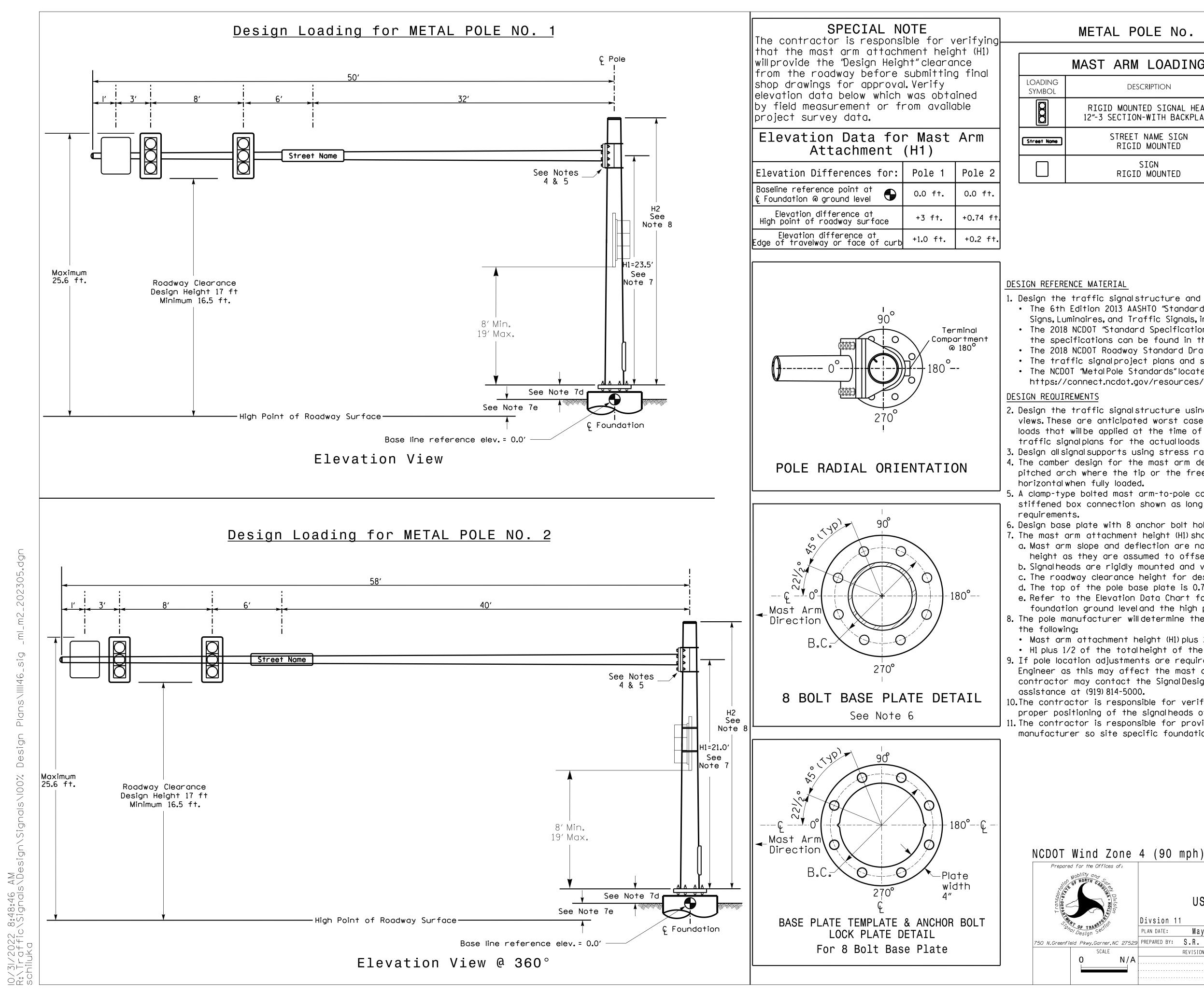
PROJECT REFERENCE NO.	SHEET NO.
U - 5312	Sig.11.11

	SIGNAL HEAD HOOK-UP CHART																
S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AŲX S6
1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
1	2	2 PED	3	4	4 PÉD	5	6	6 PED	7	8	8 PED	OL1	OL2	SPARE	OL3	OL4	SPARE
NU	NU	NU	31,32	NU	NU	NU	61,62, 63	NU	NU	81,82 83	NU	NU	NU	NU	NU	NU	NU
							134			107		-					
						-	135	-	-	-		-					
			116														
			117							108							
			118				136			109		-					
	1 NU	1       2         1       2         NU       NU         NU       NU	1       2       13         1       2       PED         NU       NU       NU	S1       S2       S3       S4         1       2       13       3         1       2 $P_{ED}^2$ 3         NU       NU       NU       31,32         NU       NU       NU       31,32         NU       NU       NU       116         I       I       I       I         I       I       I       I         I       I       I       I         I       I       I       I         I       I       I       I         I       I       I       I         I       I       I       I         I       I       I       I         I       I       I       I         I       I       I       I         I       I       I       I         I       I       I       I         I       I       I       I         I       I       I       I         I       I       I       I         I       I       I       I         I       I       I       I	S1       S2       S3       S4       S5         1       2       13       3       4         1       2 $P_{ED}^2$ 3       4         NU       NU       NU       31,32       NU <th>S1S2S3S4S5S61213341412<math>P_{ED}^2</math>34<math>P_{ED}^4</math>NUNUNU31,32NUNU</th> <th>S1       S2       S3       S4       S5       S6       S7         1       2       13       3       4       14       5         1       2       <math>P_{ED}^2</math>       3       4       <math>P_{ED}^4</math>       5         NU       NU       NU       31,32       NU       NU       NU   </th> <th>S1       S2       S3       S4       S5       S6       S7       S8         1       2       13       3       4       14       5       6         1       2       <math>P_{ED}^2</math>       3       4       <math>P_{ED}^4</math>       5       6         NU       NU       NU       31,32       NU       NU       NU       <math>^{61,62}</math>         NU       NU       NU       31,32       NU       NU       NU       <math>^{61,62}</math> <math>^{61,62}</math> <math>^{61,62}</math> <math>^{61,62}</math> <math>^{61,62}</math> <math>^{61,62}</math> <t< th=""><th>S1       S2       S3       S4       S5       S6       S7       S8       S9         1       2       13       3       4       14       5       6       15         1       2       <math>p_{ED}^2</math>       3       4       <math>p_{ED}^4</math>       5       6       <math>p_{ED}^6</math>         NU       NU       NU       31,32       NU       NU       NU       <math>61,62</math>       NU         NU       NU       NU       31,32       NU       NU       NU       <math>61,62</math>       NU               NU       <math>61,62</math>       NU  </th><th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10         1       2       13       3       4       14       5       6       15       7         1       2       <math>P_{ED}^2</math>       3       4       <math>P_{ED}^4</math>       55       6       <math>P_{ED}^6</math>       7         NU       NU       S1,32       NU       NU       NU       <math>P_{ED}^6</math>       NU       <math>S16</math>         NU       NU       NU       31,32       NU       NU       NU       <math>P_{ED}^6</math>       NU       NU         NU       NU       S1,32       NU       NU       NU       <math>P_{ED}^6</math>       NU       NU       NU         NU       NU       S1,32       NU       NU       NU       <math>P_{ED}^6</math>       NU       NU         NU       NU       S1,32       NU       NU       NU       S1,33       A       I         NU       NU       S1,32       NU       NU       NU       S1,33       I       I         NU       I       I       I       I       I       I       I       I       I         NU       I       I<!--</th--><th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11         1       2       13       3       4       14       5       6       15       7       8         1       2       <math>P_{ED}^2</math>       3       4       <math>P_{ED}^4</math>       55       6       <math>P_{ED}^6</math>       7       8         NU       NU       NU       31,32       NU       NU       NU       <math>61,62</math>       NU       NU       <math>81,82</math>             NU       31,32       NU       NU       <math>61,62</math>       NU       NU       <math>81,82</math> </th><th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12         1       2       13       3       4       14       5       6       15       7       8       16         1       2       <math>2^2_{PED}</math>       3       4       <math>4^4_{PED}</math>       5       6       <math>6^6_{PED}</math>       7       8       <math>8^8_{PED}</math>         NU       NU       NU       31,32       NU       NU       <math>NU</math> <math>61,62</math>       NU       NU       <math>81,82</math>       NU         NU       NU       NU       <math>31,32</math>       NU       NU       <math>NU</math> <math>61,62</math>       NU       NU       <math>81,82</math>       NU         NU       NU       <math>31,32</math>       NU       NU       <math>NU</math> <math>61,63</math>       NU       NU       <math>81,83</math>       NU         NU       NU       <math>31,32</math>       NU       NU       NU       <math>61,63</math>       NU       NU       <math>81,83</math>       NU         NU       NU       <math>31,32</math> <math>1.0</math> !--</th--><th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12       <math>AUX_{S1}</math>         1       2       13       3       4       14       5       6       15       7       8       16       9         1       2       <math>P_{ED}^2</math>       3       4       <math>P_{ED}^4</math>       5       6       15       7       8       <math>P_{ED}^6</math>       0.1         NU       NU       NU       31,32       NU       NU       <math>P_{ED}^6</math>       NU       NU       <math>8_{83}^8</math>       NU       NU         NU       NU       NU       31,32       NU       NU       <math>NU</math> <math>6_{162}^6</math>       NU       NU       <math>8_{83}^8</math>       NU       NU         .       .       .       .       .       NU       NU       <math>8_{83}^8</math>       NU       NU         .</th><th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12       <math>AUX</math> <math>AUX</math>         1       2       13       3       4       14       5       6       15       7       8       16       9       10         1       2       <math>PED</math>       3       4       <math>PED</math>       5       6       <math>PED</math>       7       8       <math>PED</math> <math>OL</math> <math>OL</math>         1       2       <math>PED</math>       3       4       <math>PED</math>       5       6       <math>PED</math>       7       8       <math>PED</math> <math>OL</math> <math>OL</math>         NU       NU       NU       <math>31,32</math>       NU       NU       <math>NU</math> <math>BB</math> <math>NU</math> /th><th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12       <math>AUX</math> /th><th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12       AUX S1       AUX S2       AUX S3       AUX S4         1       2       13       3       4       14       5       6       15       7       8       16       9       10       17       11         1       2       <math>p_{ED}^2</math>       3       4       <math>p_{ED}^4</math>       5       6       <math>p_{ED}^6</math>       7       8       <math>p_{ED}^8</math>       0L1       0L2       <math>spare</math>       0L3         NU       NU       NU       31,32       NU       NU       <math>p_{ED}^6</math>       7       8       <math>p_{ED}^8</math>       NU       NU       NU       NU       NU       NU       <math>p_{ED}^8</math>       NU       NU       <math>p_{ED}^8</math>       NU       NU       NU       NU       NU       NU       NU       <math>p_{ED}^8</math>       NU       NU       <math>p_{ED}^8</math>       NU       NU       NU       NU       NU       NU       NU       <math>p_{ED}^8</math>       NU       NU<!--</th--><th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12       AUX S1       AUX S2       AUX S3       AUX S4       AUX S5         1       2       13       3       4       14       5       6       15       7       8       16       9       10       17       11       12         1       2       PED       3       4       PED       5       6       PED       7       8       16       9       10       17       11       12         1       2       PED       3       4       PED       5       6       PED       7       8       PED       0L1       0L2       SPARE       0L3       0L4         NU       NU       31,32       NU       NU       NU       61,63       NU       NU       81,83       NU       NU</th></th></th></th></t<></th>	S1S2S3S4S5S61213341412 $P_{ED}^2$ 34 $P_{ED}^4$ NUNUNU31,32NUNU	S1       S2       S3       S4       S5       S6       S7         1       2       13       3       4       14       5         1       2 $P_{ED}^2$ 3       4 $P_{ED}^4$ 5         NU       NU       NU       31,32       NU       NU       NU	S1       S2       S3       S4       S5       S6       S7       S8         1       2       13       3       4       14       5       6         1       2 $P_{ED}^2$ 3       4 $P_{ED}^4$ 5       6         NU       NU       NU       31,32       NU       NU       NU $^{61,62}$ NU       NU       NU       31,32       NU       NU       NU $^{61,62}$ $^{61,62}$ $^{61,62}$ $^{61,62}$ $^{61,62}$ $^{61,62}$ <t< th=""><th>S1       S2       S3       S4       S5       S6       S7       S8       S9         1       2       13       3       4       14       5       6       15         1       2       <math>p_{ED}^2</math>       3       4       <math>p_{ED}^4</math>       5       6       <math>p_{ED}^6</math>         NU       NU       NU       31,32       NU       NU       NU       <math>61,62</math>       NU         NU       NU       NU       31,32       NU       NU       NU       <math>61,62</math>       NU               NU       <math>61,62</math>       NU  </th><th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10         1       2       13       3       4       14       5       6       15       7         1       2       <math>P_{ED}^2</math>       3       4       <math>P_{ED}^4</math>       55       6       <math>P_{ED}^6</math>       7         NU       NU       S1,32       NU       NU       NU       <math>P_{ED}^6</math>       NU       <math>S16</math>         NU       NU       NU       31,32       NU       NU       NU       <math>P_{ED}^6</math>       NU       NU         NU       NU       S1,32       NU       NU       NU       <math>P_{ED}^6</math>       NU       NU       NU         NU       NU       S1,32       NU       NU       NU       <math>P_{ED}^6</math>       NU       NU         NU       NU       S1,32       NU       NU       NU       S1,33       A       I         NU       NU       S1,32       NU       NU       NU       S1,33       I       I         NU       I       I       I       I       I       I       I       I       I         NU       I       I<!--</th--><th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11         1       2       13       3       4       14       5       6       15       7       8         1       2       <math>P_{ED}^2</math>       3       4       <math>P_{ED}^4</math>       55       6       <math>P_{ED}^6</math>       7       8         NU       NU       NU       31,32       NU       NU       NU       <math>61,62</math>       NU       NU       <math>81,82</math>             NU       31,32       NU       NU       <math>61,62</math>       NU       NU       <math>81,82</math> </th><th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12         1       2       13       3       4       14       5       6       15       7       8       16         1       2       <math>2^2_{PED}</math>       3       4       <math>4^4_{PED}</math>       5       6       <math>6^6_{PED}</math>       7       8       <math>8^8_{PED}</math>         NU       NU       NU       31,32       NU       NU       <math>NU</math> <math>61,62</math>       NU       NU       <math>81,82</math>       NU         NU       NU       NU       <math>31,32</math>       NU       NU       <math>NU</math> <math>61,62</math>       NU       NU       <math>81,82</math>       NU         NU       NU       <math>31,32</math>       NU       NU       <math>NU</math> <math>61,63</math>       NU       NU       <math>81,83</math>       NU         NU       NU       <math>31,32</math>       NU       NU       NU       <math>61,63</math>       NU       NU       <math>81,83</math>       NU         NU       NU       <math>31,32</math> <math>1.0</math> !--</th--><th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12       <math>AUX_{S1}</math>         1       2       13       3       4       14       5       6       15       7       8       16       9         1       2       <math>P_{ED}^2</math>       3       4       <math>P_{ED}^4</math>       5       6       15       7       8       <math>P_{ED}^6</math>       0.1         NU       NU       NU       31,32       NU       NU       <math>P_{ED}^6</math>       NU       NU       <math>8_{83}^8</math>       NU       NU         NU       NU       NU       31,32       NU       NU       <math>NU</math> <math>6_{162}^6</math>       NU       NU       <math>8_{83}^8</math>       NU       NU         .       .       .       .       .       NU       NU       <math>8_{83}^8</math>       NU       NU         .</th><th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12       <math>AUX</math> <math>AUX</math>         1       2       13       3       4       14       5       6       15       7       8       16       9       10         1       2       <math>PED</math>       3       4       <math>PED</math>       5       6       <math>PED</math>       7       8       <math>PED</math> <math>OL</math> <math>OL</math>         1       2       <math>PED</math>       3       4       <math>PED</math>       5       6       <math>PED</math>       7       8       <math>PED</math> <math>OL</math> <math>OL</math>         NU       NU       NU       <math>31,32</math>       NU       NU       <math>NU</math> <math>BB</math> <math>NU</math> /th><th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12       <math>AUX</math> /th><th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12       AUX S1       AUX S2       AUX S3       AUX S4         1       2       13       3       4       14       5       6       15       7       8       16       9       10       17       11         1       2       <math>p_{ED}^2</math>       3       4       <math>p_{ED}^4</math>       5       6       <math>p_{ED}^6</math>       7       8       <math>p_{ED}^8</math>       0L1       0L2       <math>spare</math>       0L3         NU       NU       NU       31,32       NU       NU       <math>p_{ED}^6</math>       7       8       <math>p_{ED}^8</math>       NU       NU       NU       NU       NU       NU       <math>p_{ED}^8</math>       NU       NU       <math>p_{ED}^8</math>       NU       NU       NU       NU       NU       NU       NU       <math>p_{ED}^8</math>       NU       NU       <math>p_{ED}^8</math>       NU       NU       NU       NU       NU       NU       NU       <math>p_{ED}^8</math>       NU       NU<!--</th--><th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12       AUX S1       AUX S2       AUX S3       AUX S4       AUX S5         1       2       13       3       4       14       5       6       15       7       8       16       9       10       17       11       12         1       2       PED       3       4       PED       5       6       PED       7       8       16       9       10       17       11       12         1       2       PED       3       4       PED       5       6       PED       7       8       PED       0L1       0L2       SPARE       0L3       0L4         NU       NU       31,32       NU       NU       NU       61,63       NU       NU       81,83       NU       NU</th></th></th></th></t<>	S1       S2       S3       S4       S5       S6       S7       S8       S9         1       2       13       3       4       14       5       6       15         1       2 $p_{ED}^2$ 3       4 $p_{ED}^4$ 5       6 $p_{ED}^6$ NU       NU       NU       31,32       NU       NU       NU $61,62$ NU         NU       NU       NU       31,32       NU       NU       NU $61,62$ NU               NU $61,62$ NU	S1       S2       S3       S4       S5       S6       S7       S8       S9       S10         1       2       13       3       4       14       5       6       15       7         1       2 $P_{ED}^2$ 3       4 $P_{ED}^4$ 55       6 $P_{ED}^6$ 7         NU       NU       S1,32       NU       NU       NU $P_{ED}^6$ NU $S16$ NU       NU       NU       31,32       NU       NU       NU $P_{ED}^6$ NU       NU         NU       NU       S1,32       NU       NU       NU $P_{ED}^6$ NU       NU       NU         NU       NU       S1,32       NU       NU       NU $P_{ED}^6$ NU       NU         NU       NU       S1,32       NU       NU       NU       S1,33       A       I         NU       NU       S1,32       NU       NU       NU       S1,33       I       I         NU       I       I       I       I       I       I       I       I       I         NU       I       I </th <th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11         1       2       13       3       4       14       5       6       15       7       8         1       2       <math>P_{ED}^2</math>       3       4       <math>P_{ED}^4</math>       55       6       <math>P_{ED}^6</math>       7       8         NU       NU       NU       31,32       NU       NU       NU       <math>61,62</math>       NU       NU       <math>81,82</math>             NU       31,32       NU       NU       <math>61,62</math>       NU       NU       <math>81,82</math> </th> <th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12         1       2       13       3       4       14       5       6       15       7       8       16         1       2       <math>2^2_{PED}</math>       3       4       <math>4^4_{PED}</math>       5       6       <math>6^6_{PED}</math>       7       8       <math>8^8_{PED}</math>         NU       NU       NU       31,32       NU       NU       <math>NU</math> <math>61,62</math>       NU       NU       <math>81,82</math>       NU         NU       NU       NU       <math>31,32</math>       NU       NU       <math>NU</math> <math>61,62</math>       NU       NU       <math>81,82</math>       NU         NU       NU       <math>31,32</math>       NU       NU       <math>NU</math> <math>61,63</math>       NU       NU       <math>81,83</math>       NU         NU       NU       <math>31,32</math>       NU       NU       NU       <math>61,63</math>       NU       NU       <math>81,83</math>       NU         NU       NU       <math>31,32</math> <math>1.0</math> !--</th--><th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12       <math>AUX_{S1}</math>         1       2       13       3       4       14       5       6       15       7       8       16       9         1       2       <math>P_{ED}^2</math>       3       4       <math>P_{ED}^4</math>       5       6       15       7       8       <math>P_{ED}^6</math>       0.1         NU       NU       NU       31,32       NU       NU       <math>P_{ED}^6</math>       NU       NU       <math>8_{83}^8</math>       NU       NU         NU       NU       NU       31,32       NU       NU       <math>NU</math> <math>6_{162}^6</math>       NU       NU       <math>8_{83}^8</math>       NU       NU         .       .       .       .       .       NU       NU       <math>8_{83}^8</math>       NU       NU         .</th><th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12       <math>AUX</math> <math>AUX</math>         1       2       13       3       4       14       5       6       15       7       8       16       9       10         1       2       <math>PED</math>       3       4       <math>PED</math>       5       6       <math>PED</math>       7       8       <math>PED</math> <math>OL</math> <math>OL</math>         1       2       <math>PED</math>       3       4       <math>PED</math>       5       6       <math>PED</math>       7       8       <math>PED</math> <math>OL</math> <math>OL</math>         NU       NU       NU       <math>31,32</math>       NU       NU       <math>NU</math> <math>BB</math> <math>NU</math> /th><th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12       <math>AUX</math> /th><th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12       AUX S1       AUX S2       AUX S3       AUX S4         1       2       13       3       4       14       5       6       15       7       8       16       9       10       17       11         1       2       <math>p_{ED}^2</math>       3       4       <math>p_{ED}^4</math>       5       6       <math>p_{ED}^6</math>       7       8       <math>p_{ED}^8</math>       0L1       0L2       <math>spare</math>       0L3         NU       NU       NU       31,32       NU       NU       <math>p_{ED}^6</math>       7       8       <math>p_{ED}^8</math>       NU       NU       NU       NU       NU       NU       <math>p_{ED}^8</math>       NU       NU       <math>p_{ED}^8</math>       NU       NU       NU       NU       NU       NU       NU       <math>p_{ED}^8</math>       NU       NU       <math>p_{ED}^8</math>       NU       NU       NU       NU       NU       NU       NU       <math>p_{ED}^8</math>       NU       NU<!--</th--><th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12       AUX S1       AUX S2       AUX S3       AUX S4       AUX S5         1       2       13       3       4       14       5       6       15       7       8       16       9       10       17       11       12         1       2       PED       3       4       PED       5       6       PED       7       8       16       9       10       17       11       12         1       2       PED       3       4       PED       5       6       PED       7       8       PED       0L1       0L2       SPARE       0L3       0L4         NU       NU       31,32       NU       NU       NU       61,63       NU       NU       81,83       NU       NU</th></th></th>	S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11         1       2       13       3       4       14       5       6       15       7       8         1       2 $P_{ED}^2$ 3       4 $P_{ED}^4$ 55       6 $P_{ED}^6$ 7       8         NU       NU       NU       31,32       NU       NU       NU $61,62$ NU       NU $81,82$ NU       31,32       NU       NU $61,62$ NU       NU $81,82$	S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12         1       2       13       3       4       14       5       6       15       7       8       16         1       2 $2^2_{PED}$ 3       4 $4^4_{PED}$ 5       6 $6^6_{PED}$ 7       8 $8^8_{PED}$ NU       NU       NU       31,32       NU       NU $NU$ $61,62$ NU       NU $81,82$ NU         NU       NU       NU $31,32$ NU       NU $NU$ $61,62$ NU       NU $81,82$ NU         NU       NU $31,32$ NU       NU $NU$ $61,63$ NU       NU $81,83$ NU         NU       NU $31,32$ NU       NU       NU $61,63$ NU       NU $81,83$ NU         NU       NU $31,32$ $1.0$ $1.0$ $1.0$ $1.0$ $1.0$ $1.0$ $1.0$ $1.0$ $1.0$ $1.0$ $1.0$ $1.0$ $1.0$ </th <th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12       <math>AUX_{S1}</math>         1       2       13       3       4       14       5       6       15       7       8       16       9         1       2       <math>P_{ED}^2</math>       3       4       <math>P_{ED}^4</math>       5       6       15       7       8       <math>P_{ED}^6</math>       0.1         NU       NU       NU       31,32       NU       NU       <math>P_{ED}^6</math>       NU       NU       <math>8_{83}^8</math>       NU       NU         NU       NU       NU       31,32       NU       NU       <math>NU</math> <math>6_{162}^6</math>       NU       NU       <math>8_{83}^8</math>       NU       NU         .       .       .       .       .       NU       NU       <math>8_{83}^8</math>       NU       NU         .</th> <th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12       <math>AUX</math> <math>AUX</math>         1       2       13       3       4       14       5       6       15       7       8       16       9       10         1       2       <math>PED</math>       3       4       <math>PED</math>       5       6       <math>PED</math>       7       8       <math>PED</math> <math>OL</math> <math>OL</math>         1       2       <math>PED</math>       3       4       <math>PED</math>       5       6       <math>PED</math>       7       8       <math>PED</math> <math>OL</math> <math>OL</math>         NU       NU       NU       <math>31,32</math>       NU       NU       <math>NU</math> <math>BB</math> <math>NU</math> /th> <th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12       <math>AUX</math> /th> <th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12       AUX S1       AUX S2       AUX S3       AUX S4         1       2       13       3       4       14       5       6       15       7       8       16       9       10       17       11         1       2       <math>p_{ED}^2</math>       3       4       <math>p_{ED}^4</math>       5       6       <math>p_{ED}^6</math>       7       8       <math>p_{ED}^8</math>       0L1       0L2       <math>spare</math>       0L3         NU       NU       NU       31,32       NU       NU       <math>p_{ED}^6</math>       7       8       <math>p_{ED}^8</math>       NU       NU       NU       NU       NU       NU       <math>p_{ED}^8</math>       NU       NU       <math>p_{ED}^8</math>       NU       NU       NU       NU       NU       NU       NU       <math>p_{ED}^8</math>       NU       NU       <math>p_{ED}^8</math>       NU       NU       NU       NU       NU       NU       NU       <math>p_{ED}^8</math>       NU       NU<!--</th--><th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12       AUX S1       AUX S2       AUX S3       AUX S4       AUX S5         1       2       13       3       4       14       5       6       15       7       8       16       9       10       17       11       12         1       2       PED       3       4       PED       5       6       PED       7       8       16       9       10       17       11       12         1       2       PED       3       4       PED       5       6       PED       7       8       PED       0L1       0L2       SPARE       0L3       0L4         NU       NU       31,32       NU       NU       NU       61,63       NU       NU       81,83       NU       NU</th></th>	S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12 $AUX_{S1}$ 1       2       13       3       4       14       5       6       15       7       8       16       9         1       2 $P_{ED}^2$ 3       4 $P_{ED}^4$ 5       6       15       7       8 $P_{ED}^6$ 0.1         NU       NU       NU       31,32       NU       NU $P_{ED}^6$ NU       NU $8_{83}^8$ NU       NU         NU       NU       NU       31,32       NU       NU $NU$ $6_{162}^6$ NU       NU $8_{83}^8$ NU       NU         .       .       .       .       .       NU       NU $8_{83}^8$ NU       NU         .	S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12 $AUX$ $AUX$ 1       2       13       3       4       14       5       6       15       7       8       16       9       10         1       2 $PED$ 3       4 $PED$ 5       6 $PED$ 7       8 $PED$ $OL$ $OL$ 1       2 $PED$ 3       4 $PED$ 5       6 $PED$ 7       8 $PED$ $OL$ $OL$ NU       NU       NU $31,32$ NU       NU $NU$ $BB$ $NU$	S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12 $AUX$	S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12       AUX S1       AUX S2       AUX S3       AUX S4         1       2       13       3       4       14       5       6       15       7       8       16       9       10       17       11         1       2 $p_{ED}^2$ 3       4 $p_{ED}^4$ 5       6 $p_{ED}^6$ 7       8 $p_{ED}^8$ 0L1       0L2 $spare$ 0L3         NU       NU       NU       31,32       NU       NU $p_{ED}^6$ 7       8 $p_{ED}^8$ NU       NU       NU       NU       NU       NU $p_{ED}^8$ NU       NU $p_{ED}^8$ NU       NU       NU       NU       NU       NU       NU $p_{ED}^8$ NU       NU $p_{ED}^8$ NU       NU       NU       NU       NU       NU       NU $p_{ED}^8$ NU       NU </th <th>S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12       AUX S1       AUX S2       AUX S3       AUX S4       AUX S5         1       2       13       3       4       14       5       6       15       7       8       16       9       10       17       11       12         1       2       PED       3       4       PED       5       6       PED       7       8       16       9       10       17       11       12         1       2       PED       3       4       PED       5       6       PED       7       8       PED       0L1       0L2       SPARE       0L3       0L4         NU       NU       31,32       NU       NU       NU       61,63       NU       NU       81,83       NU       NU</th>	S1       S2       S3       S4       S5       S6       S7       S8       S9       S10       S11       S12       AUX S1       AUX S2       AUX S3       AUX S4       AUX S5         1       2       13       3       4       14       5       6       15       7       8       16       9       10       17       11       12         1       2       PED       3       4       PED       5       6       PED       7       8       16       9       10       17       11       12         1       2       PED       3       4       PED       5       6       PED       7       8       PED       0L1       0L2       SPARE       0L3       0L4         NU       NU       31,32       NU       NU       NU       61,63       NU       NU       81,83       NU       NU

\* Denotes install load resistor. See load resistor installation detail this sheet.

 $\star$  See pictorial of head wiring in detail this sheet.





METAL POLE No. 1 and 2

## MAST ARM LOADING SCHEDULE

	DESCRIPTION	AREA	SIZE	WEIGHT
	RIGID MOUNTED SIGNAL HEAD 12"-3 SECTION-WITH BACKPLATE	9.3 S.F.	25 <b>.</b> 5″₩ X 52 <b>.</b> 5″L	60 LBS
)	STREET NAME SIGN RIGID MOUNTED	16.0 S.F.	24.0″W X 96.0″L	36 LBS
	SIGN RIGID MOUNTED	9.0 S.F.	36.0″W X 36.0″L	20 LBS

### <u>NOTES</u>

### DESIGN REFERENCE MATERIAL

1. Design the traffic signalstructure and foundation in accordance with:

• The 6th Edition 2013 AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, including all of the latest interim revisions. • The 2018 NCDOT "Standard Specifications for Roads and Structures." The latest addenda to

PROJECT REFERENCE NO.

U-5312

SHEET NO.

Sig 11 12

the specifications can be found in the traffic signal project special provisions. • The 2018 NCDOT Roadway Standard Drawings.

• The traffic signal project plans and special provisions.

• The NCDOT "MetalPole Standards" located at the following NCDOT website:

https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx

2. Design the traffic signal structure using the loading conditions shown in the elevation views. These are anticipated worst case "design loads" and may not represent the actual loads that will be applied at the time of the installation. The contractor should refer to the traffic signal plans for the actual loads that will be applied at the time of the installation. 3. Design all signal supports using stress ratios that do not exceed 0.9.

4. The camber design for the mast arm deflection should provide an appearance of a low pitched arch where the tip or the free end of the mast arm does not deflect below horizontal when fully loaded.

5. A clamp-type bolted mast arm-to-pole connection may be used instead of the welded ring stiffened box connection shown as long as the connection meets all of the design

6. Design base plate with 8 anchor bolt holes. Provide 2 inch x 60 inch anchor bolts. 7. The mast arm attachment height (H1) shown is based on the following design assumptions: a. Mast arm slope and deflection are not considered in determining the arm attachment height as they are assumed to offset each other.

b. Signalheads are rigidly mounted and vertically centered on the mast arm.

c. The roadway clearance height for design is as shown in the elevation views.

d. The top of the pole base plate is 0.75 feet above the ground elevation.

e. Refer to the Elevation Data Chart for the elevation differences between the proposed foundation ground leveland the high point of the roadway.

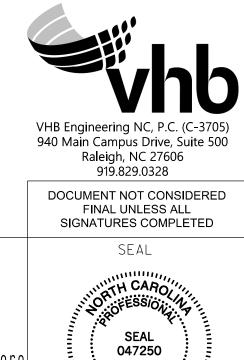
8. The pole manufacturer will determine the total height (H2) of each pole using the greater of

• Mast arm attachment height (H1) plus 2 feet, or

• H1 plus 1/2 of the total height of the mast arm attachment assembly plus 1 foot. 9. If pole location adjustments are required, the contractor must gain approval from the Engineer as this may affect the mast arm lengths and arm attachment heights. The contractor may contact the Signal Design Section Senior Structural Engineer for assistance at (919) 814-5000.

10. The contractor is responsible for verifying that the mast arm length shown will allow proper positioning of the signalheads over the roadway.

11. The contractor is responsible for providing soil penetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.



	Division	US 421	Business	6			• -
		Divsion 11 Wilkes (	County	Wilk	esboro	04725	0
200	Design Section	PLAN DATE: May 2023	REVIEWED BY:	M. Styę	gles	PIL	ERIN
fie	eld Pkwy,Garner,NC 27529	PREPARED BY: S.R. Chiluka	REVIEWED BY:	J. M	a	HA R	CHILL
	SCALE	REVISIONS		INIT.	DATE	- DocuSigned by:	F /24 /2022
	O N/A					SRChiluka	5/24/2023
						SIGNATURE	DATE
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US 421

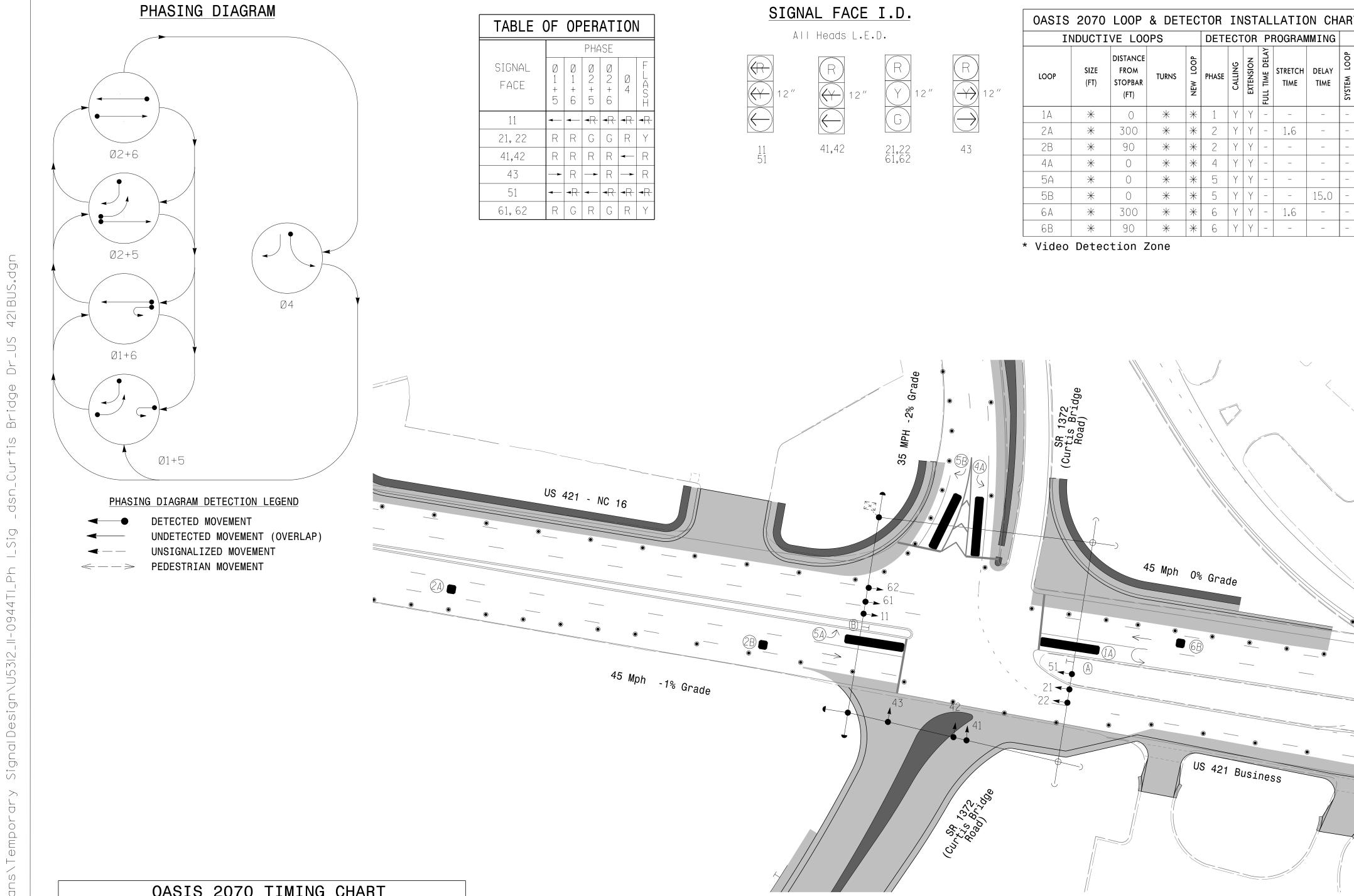
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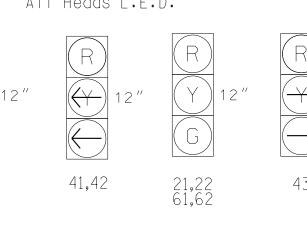
II/17/2011 9:38:53 AM R:\Traffic\Signals\De schiluka



0/	ASIS 2	070 TI	MING C	HART	
			PHASE		
FEATURE	1	2	4	5	6
Min Green 1 *	7	12	7	7	12
Extension 1 *	2.0	2.0	2.0	2.0	2.0
Max Green 1 *	15	45	25	20	45
Yellow Clearance	3.0	4.6	3.0	3.0	4.5
Red Clearance	3.4	1.3	3.3	3.2	1.4
Walk 1 *	-	-	-	-	-
Don't Walk 1	-	-	-	_	-
Seconds Per Actuation *	-	-	-	-	-
Max Variable Initial *	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-
Time To Reduce *	-	-	-	-	-
Minimum Gap	-	-	-	-	-
Recall Mode	-	MIN RECALL	-	-	MIN RECALL
Vehicle Call Memory	-	YELLOW	-	-	YELLOW
Dual Entry	-	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON	ON

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

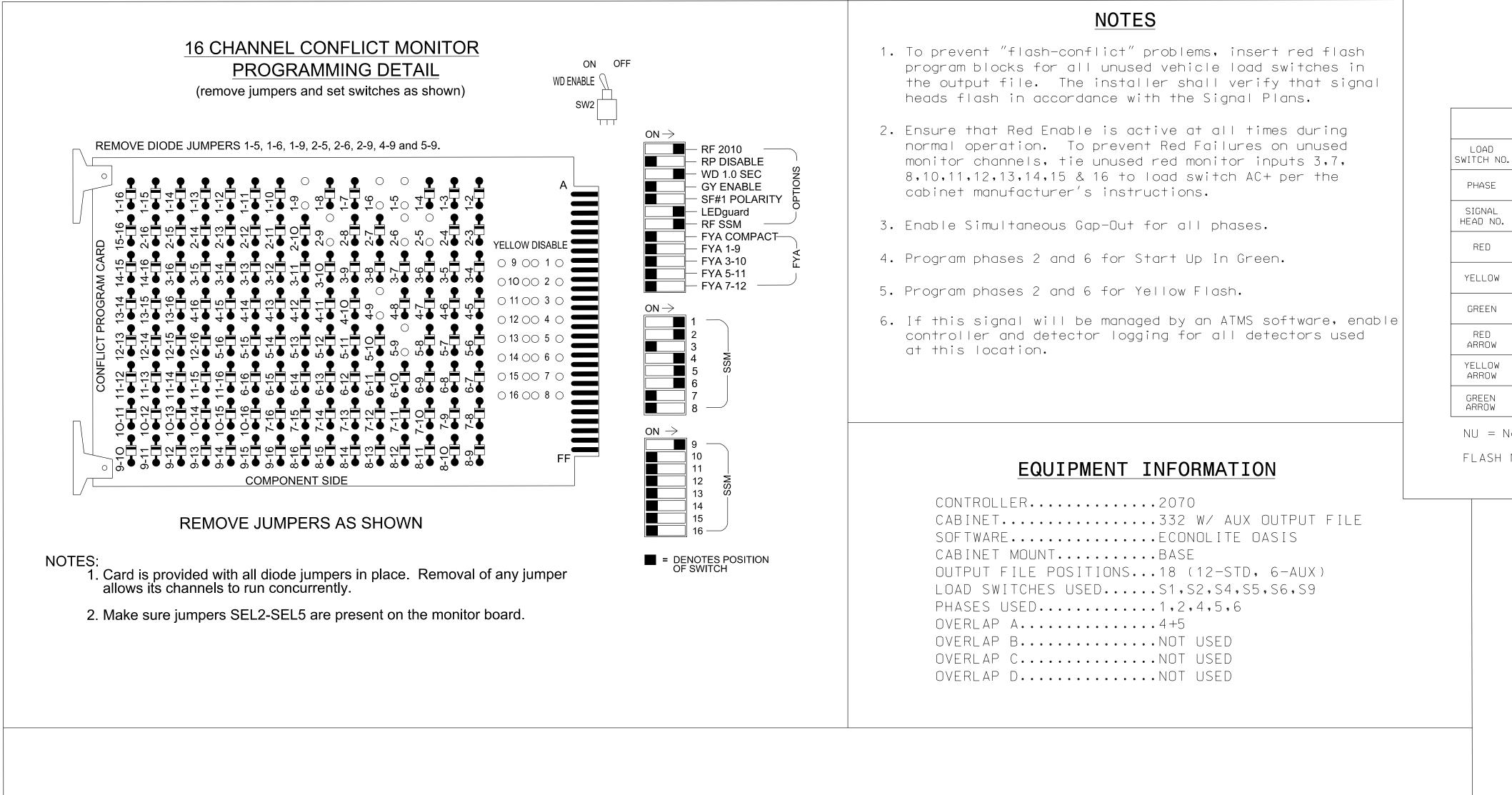


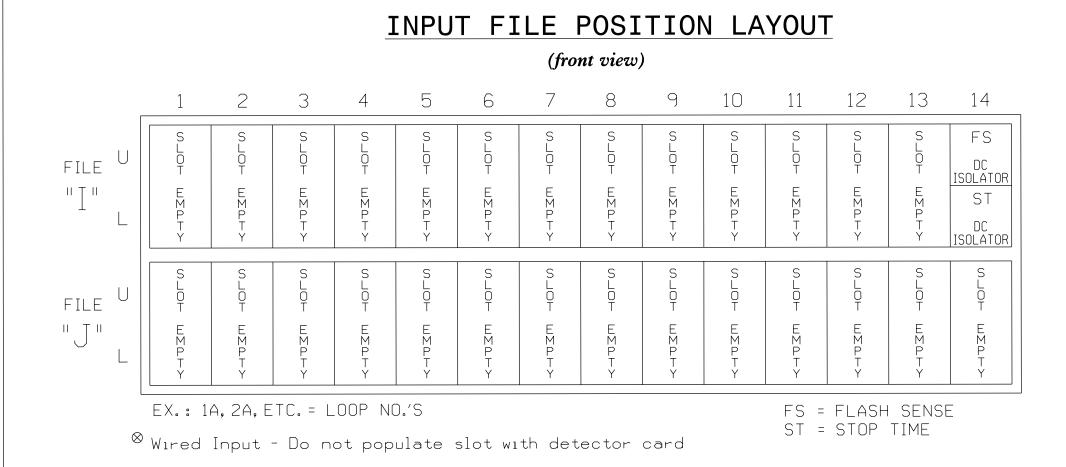


												PROJECT REFERENCE NO. SHEET NO. U-5312 Sig.12.0
OASIS II LOOP 1A 2A 2B 4A 5A 5B 6A 6B * Video	NDUCT I SIZE (FT) * * * * * * *	VE         LOC           DISTANCE         FROM           STOPBAR         (FT)           0         0           300         90           0         0           300         90           0         0           300         90           0         0           0         0           90         0           0         0           90         0	DPS TURNS * * * * * * * *	IEC Memory New Loop		OTDE GATENCION FALENCION F	R PI FORTUTION OF CONTRACTOR	LATIC ROGRAN STRETCH TIME - 1.6 - 1.6 - 1.6 -	MMING	ARI         AB         AB <th>2. 3. 4. 5.</th> <th><ul> <li>S Phase Fully Actuated (Isolated)</li> <li>NOTES</li> <li>Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.</li> <li>Do not program signal for late night operation unless otherwise directed by the Engineer.</li> <li>Phase 1 and/or Phase 5 may be lagged.</li> <li>Set all detector units to presence mode.</li> <li>This intersection uses video detection. Install detectors according to the manufacturer's instructions to schieve the desitred detection.</li> <li>Refer to Pavement Marking Plans for proposed stop bar locations.</li> </ul></th>	2. 3. 4. 5.	<ul> <li>S Phase Fully Actuated (Isolated)</li> <li>NOTES</li> <li>Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.</li> <li>Do not program signal for late night operation unless otherwise directed by the Engineer.</li> <li>Phase 1 and/or Phase 5 may be lagged.</li> <li>Set all detector units to presence mode.</li> <li>This intersection uses video detection. Install detectors according to the manufacturer's instructions to schieve the desitred detection.</li> <li>Refer to Pavement Marking Plans for proposed stop bar locations.</li> </ul>
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										Prepared f	or the Offices of sility and NORTH CARCEL DIVISION NORTH CARCEL DIVISION NORTH CARCEL DIVISION NORTH CARCEL DIVISION NORTH CARCEL DIVENTIAL DIVISION NORTH CARCEL DIVENTI DIVISION NORTH CARCEL DIVISI	tion - Temporary Design 1(Phase 1) US 421 Business at Curtis Bridge Road Divsion 11 Wilkes County Wilkesboro PLAN DATE: May 2023 REVIEWED BY: N.L. Stygles HEPARED BY: S.R. Chiluka REVIEWED BY: J. Ma AU AU AU AU AU AU AU AU AU AU











SPECIAL DETECTOR NOTE

Install a video detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

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U-5312	Sig 12 1
PROJECT REFERENCE NO.	SHEET NO.

SIGNAL HEAD HOOK-UP CHART																	
S1	S2	S2P	S3	S4	S4P	S5	S6	S6P	S7	S8	S8P	59	S1Ø	S11	S12	S13	S14
1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
11	21,22	NU	NU	41,42	NU	51	61,62	NU	NU	NU	NU	43	NU	NU	NU	NU	NU
	128			1Ø1			134					A121					
	129						135										
	13Ø						136										
125						131											
126				102		132						A122					
127				1Ø3		133						A123					

NU = Not Used

FLASH NOTE: rewire OLA to flash on Flasher Unit #2, Circuit #2.



(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS).

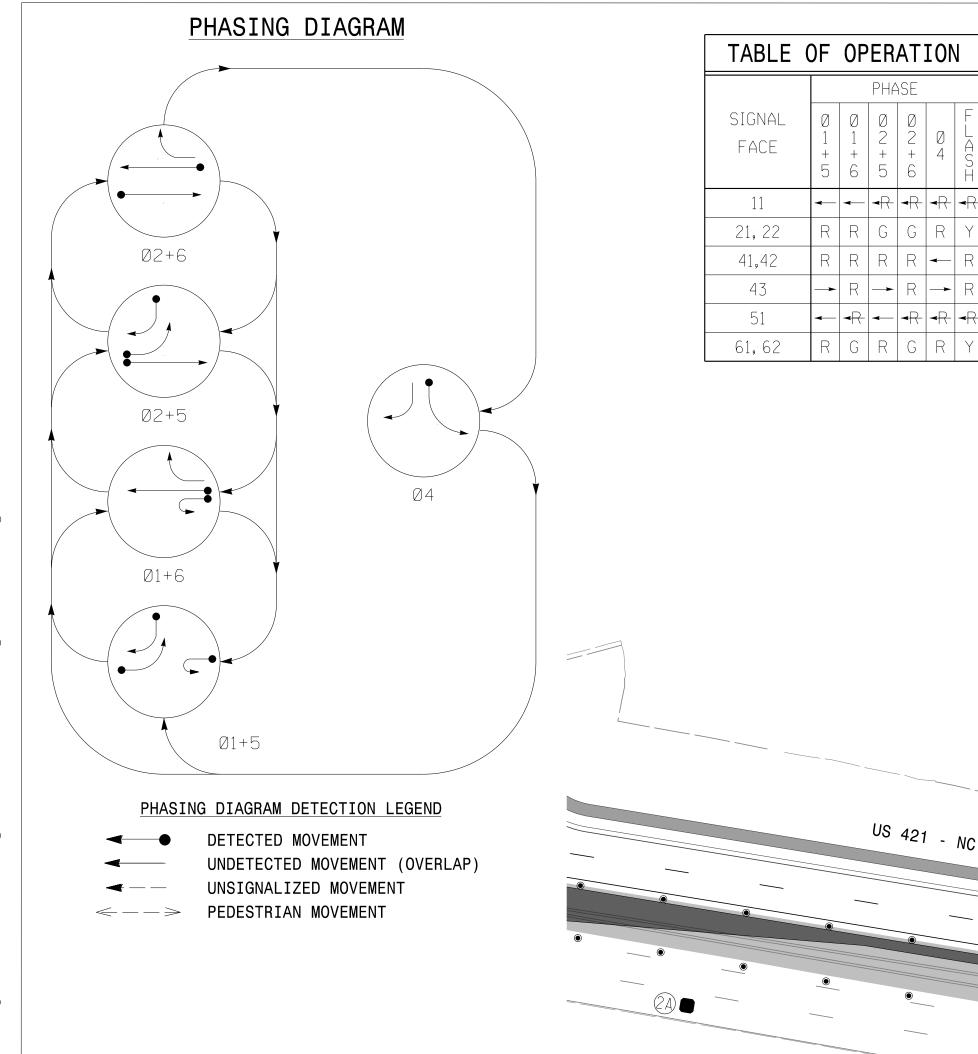
PAGE 1: VEHICLE OVERLAP 'A' SETTINGS PHASE:  12345678910111213141516 VEH OVL PARENTS:   XX VEH OVL NOT VEH:   VEH OVL NOT PED:   VEH OVL GRN FXT:
STARTUP COLOR: _ RED _ YELLOW _ GREEN FLASH COLORS: _ RED _ YELLOW _ GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N) FLASH YELLOW IN CONTROLLER FLASH?N GREEN EXTENSION (0-255 SEC)0 YELLOW CLEAR (0=PARENT,3-25.5 SEC)0.0 RED CLEAR (0=PARENT,0.1-25.5 SEC)0.0 OUTPUT AS PHASE # (0=NONE, 1-16)0

OVERLAP PROGRAMMING COMPLETE

6 ELECTE	RICAL DETAIL IS FOR
SIGNAL	DESIGN:11-0944T1
IGNED:	May 2023
LED:	5/26/2023
ISED:	N/A

				940 Main Campus Drive, Suite 500 Raleigh, NC 27606 919.829.0328
Temporary Install	Lation -Electrical (Phase 1)	Detail 1	of 1	DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
ELECTRICAL AND PROGRAMMING DETAILS FOR: Prepared for the Offices of: Nobility and Nobility and		t		SEAL SEAL
Transport	Divsion 11 Wilkes C PLAN DATE: May 2023 PREPARED BY: S.R. Chiluka	SEAL 046057		
750 N.Greenfield Pkwy,Garner,NC 27529	REVISIONS		INIT. DAT	DocuSigned by:         5/26/2023           Matt for this feature         5/26/2023           304B01E0440748E         DATE           SIG. INVENTORY NO.         II-09441

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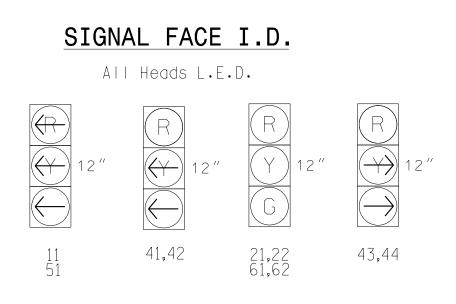


OASIS 2070 TIMING CHART										
			PHASE							
FEATURE	1	2	4	5	6					
Min Green 1 *	7	12	7	7	12					
Extension 1 *	2.0	2.0	2.0	2.0	2.0					
Max Green 1 *	15	45	25	20	45					
Yellow Clearance	3.0	4.6	3.0	3.0	4.5					
Red Clearance	4.2	1.4	3.5	3.3	1.1					
Walk 1 *	-	_	-	-	-					
Don't Walk 1	-	-	-	-	-					
Seconds Per Actuation *	-	-	-	-	-					
Max Variable Initial *	-	-	-	-	-					
Time Before Reduction *	-	_	-	-	-					
Time To Reduce *	-	-	-	-	-					
Minimum Gap	_	-	-	_	-					
Recall Mode	-	MIN RECALL	-	-	MIN RECALL					
Vehicle Call Memory	-	YELLOW	-	-	YELLOW					
Dual Entry	-	-	_	-	-					
Simultaneous Gap	ON	ON	ON	ON	ON					
* These values may be field	d adjusted Do	not adjust Min. G	reen and Exten	sion times for n	hases 2 and 6					

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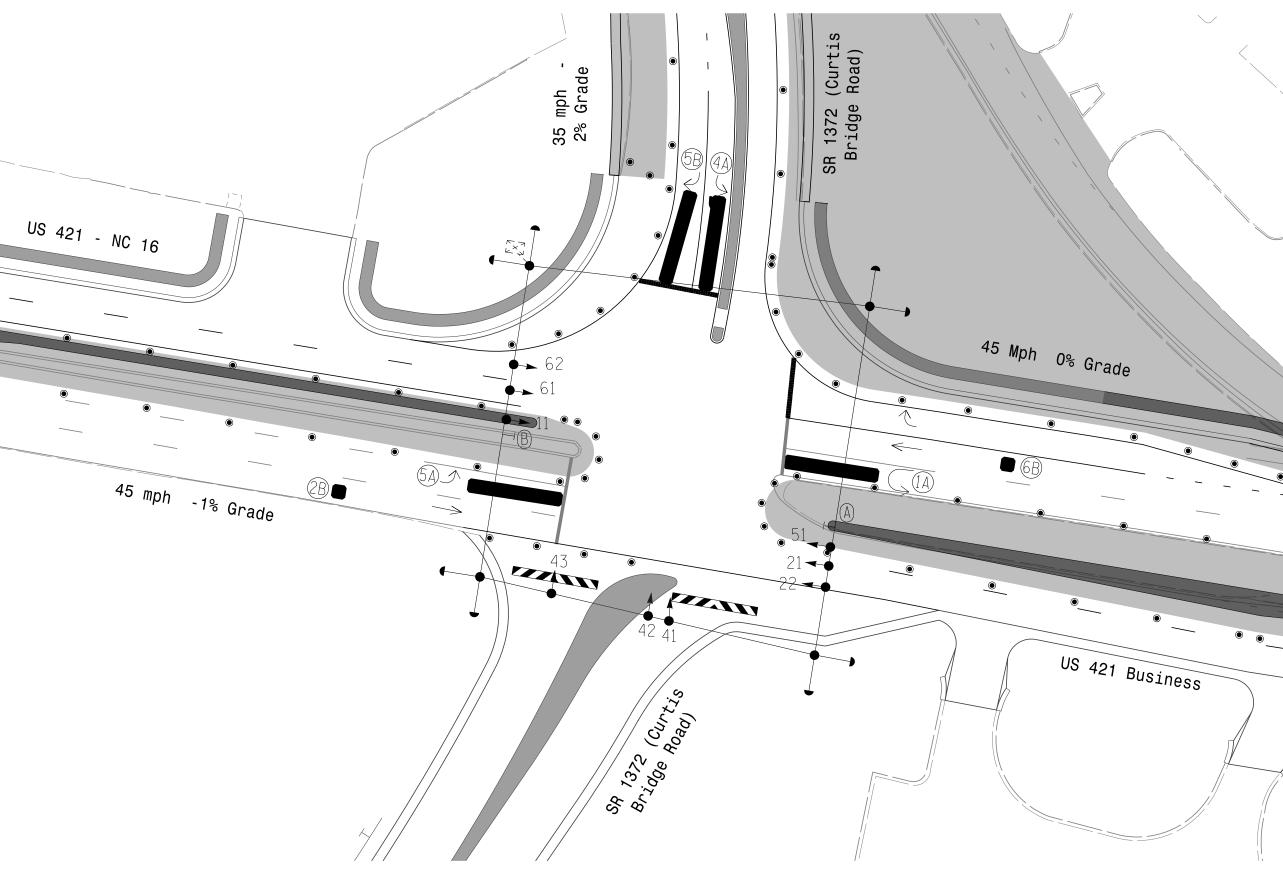
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field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 These values lower than what is shown. Min Green for all other phases should not be lower than 4 seconds



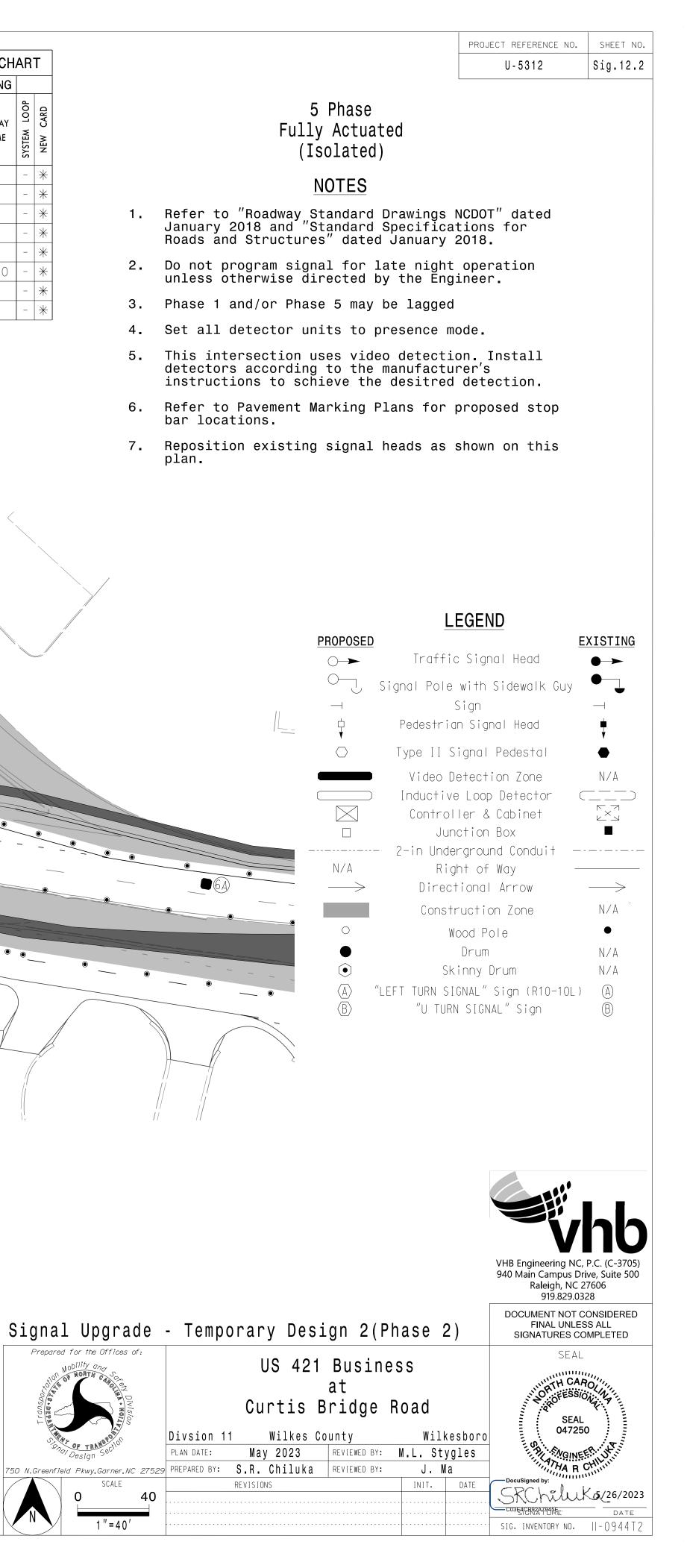
OASIS 2070 LOOP & DETECTOR INSTALLATION CHART												
INDUCTIVE LOOPS DETECTOR PROGRAMMING												
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1 A	*	0	*	*	1	Y	Y	-	-	-	-	*
2 A	*	300	*	*	2	Y	Y	-	1.6	-	-	*
2B	*	90	*	*	2	Y	Y	-	-	-	-	*
4 A	*	0	*	*	4	Y	Y	-	-	-	-	*
5A	*	0	*	*	5	Y	Y	-	-	_	_	*
5B	*	0	*	*	5	Y	Y	-	-	15.0	-	*
6A	*	300	*	*	6	Y	Y	-	1.6	-	-	*
6B	*	90	*	*	6	Y	Y	-	-	-	-	*
	•											

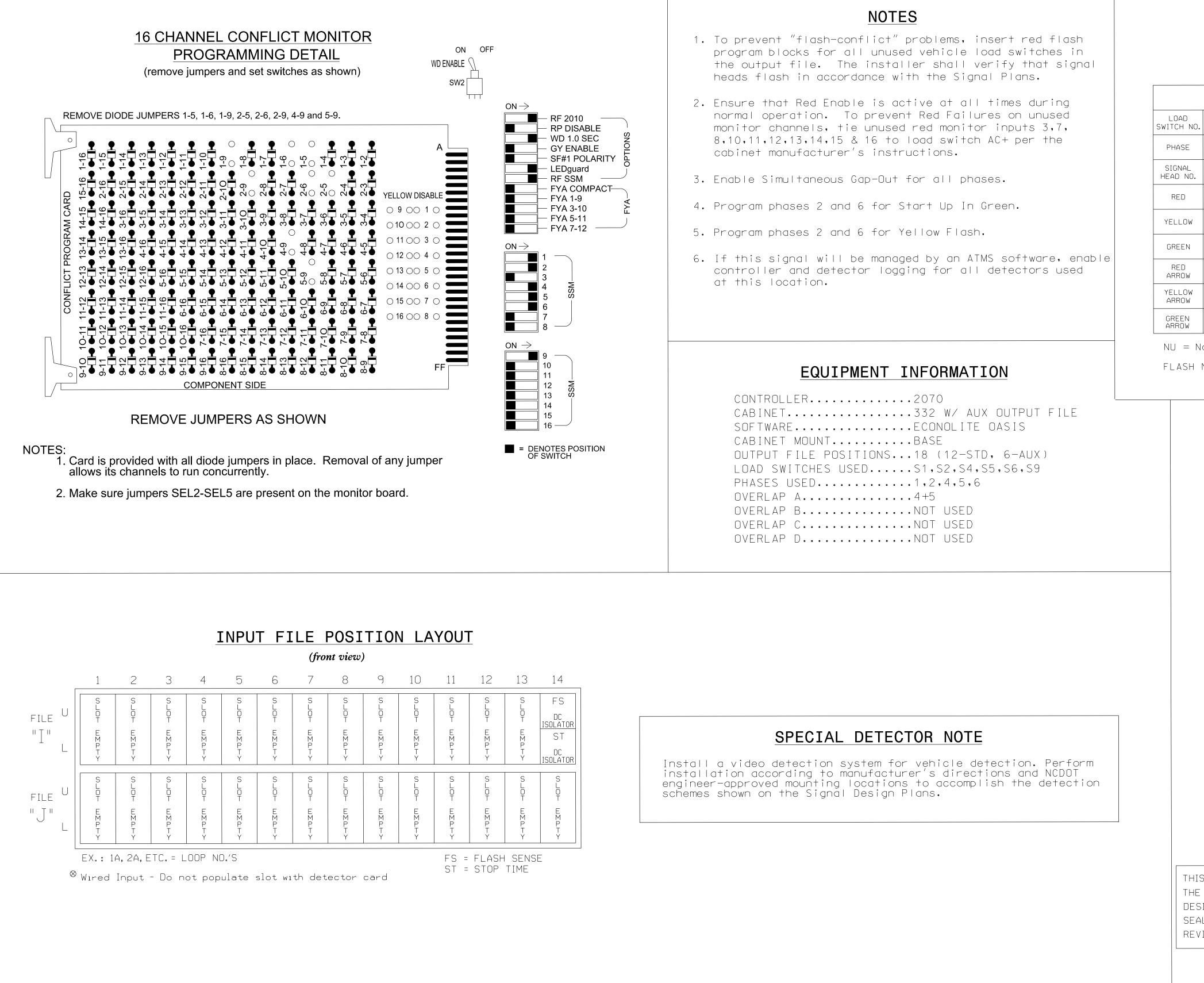
\*Video Detection Zone











THIS THE SEAL REVIS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED Temporary Installation -Electrical Detail 1 of 1 (Phase 1) ELECTRICAL AND PROGRAMMING SEAL Us 421 Business DETAILS FOR: at Prepared for the Offices of: Curtis Bridge Road SEAL 046057 Divsion 11 Wilkes County Wilkesboro May 2023 REVIEWED BY: M. Stygles PLAN DATE: PREPARED BY: S.R. Chiluka REVIEWED BY: J. Ma REVISIONS INIT. DATE Matt & Strigter 5/26/2023 750 N.Greenfield Pkwy, Garner, NC 27529 DATE SIG. INVENTORY NO. 11-0944T2

VHB Engineering NC,

940 Main Campus Drive, Suite 500 Raleigh, NC 27606 919.829.0328

Sig.12.3
SHEET NO.

	SIGNAL HEAD HOOK-UP CHART																	
).	S1	S2	S2P	53	S4	S4P	S5	S6	S6P	S7	S8	S8P	59	S1Ø	S11	S12	S13	S14
	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
	11	21,22	NU	NU	41,42	NU	51	61,62	NU	NU	NU	NU	43,44	NU	NU	NU	NU	NU
		128			1Ø1			134					A121					
		129						135										
		13Ø						136										
	125						131											
	126				102		132						A122					
	127				1Ø3		133						A123					

NU = Not Used

FLASH NOTE: rewire OLA to flash on Flasher Unit #2, Circuit #2.

### OVERLAP PROGRAMMING DETAIL

### (program controller as shown below)

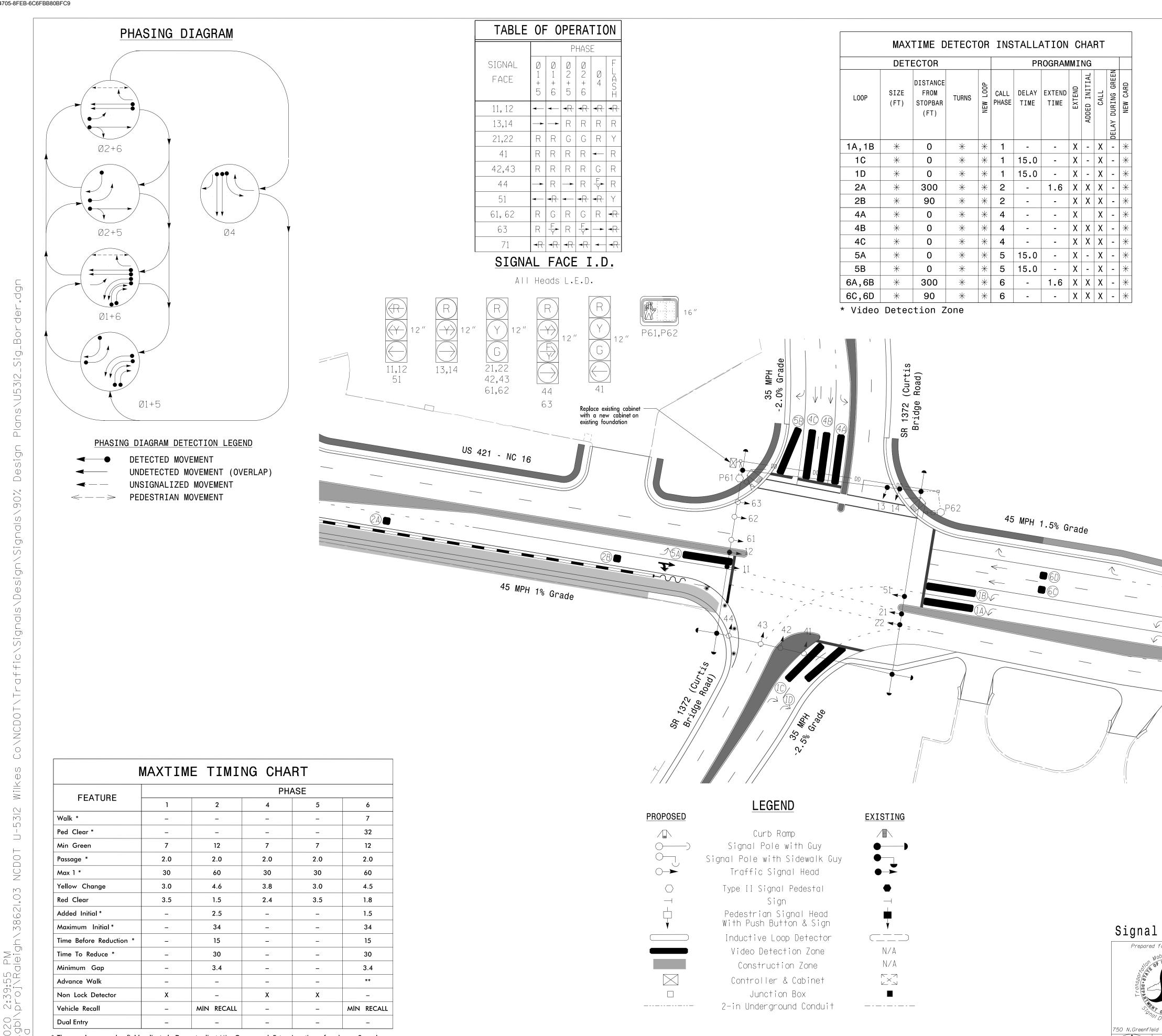
FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS).

PAGE 1: VEHICLE OVERLAP 'A' SETTINGS PHASE: 12345678910111213141516
VEH OVL PARENTS:   XX VEH OVL NOT VEH:   VEH OVL NOT PED:
VEH OVL GRN EXT: Startup color: _ red _ yellow _ green
FLASH COLORS: _ RED _ YELLOW _ GREEN SELECT VEHICLE OVERLAP OPTIONS: (Y/N) FLASH YELLOW IN CONTROLLER FLASH?N
GREEN EXTENSION (0-255 SEC) YELLOW CLEAR (0=PARENT,3-25.5 SEC)0.0
RED CLEAR (O=PARENT,0.1-25.5 SEC)0.0 OUTPUT AS PHASE # (O=NONE, 1-16)0

### OVERLAP PROGRAMMING COMPLETE

S ELECTA	RICAL DETAIL IS FOR
SIGNAL	DESIGN:11-0944T2
IGNED:	May 2023
LED:	5/26/2023
ISED:	N/A

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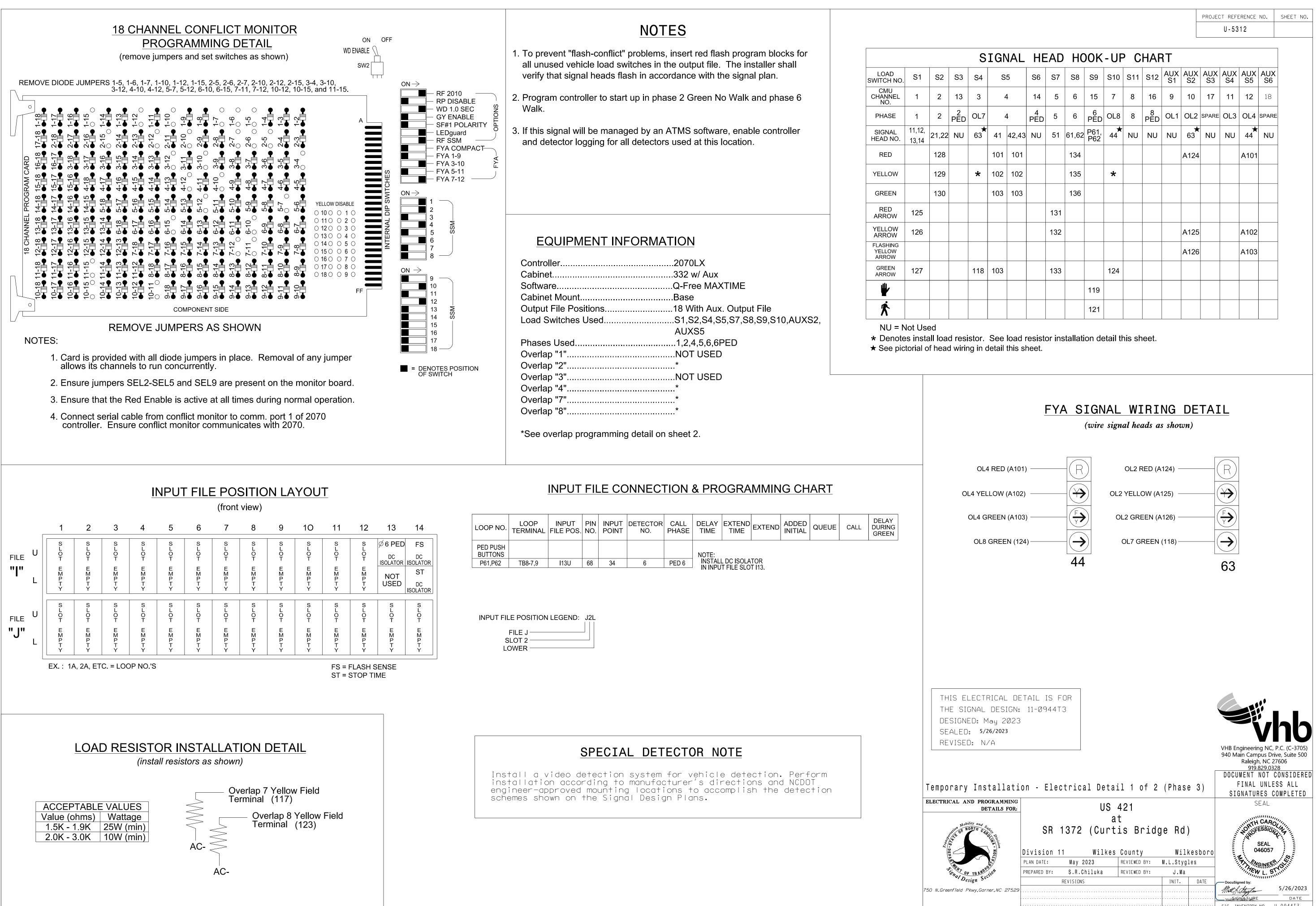
	MAXTIM	E TIMI	NG CHA	RT	
			PH	ASE	
FEATURE	1	2	4	5	6
Walk *	_	_	_	_	7
Ped Clear *	_	_	_	_	32
Min Green	7	12	7	7	12
Passage *	2.0	2.0	2.0	2.0	2.0
Max 1 *	30	60	30	30	60
Yellow Change	3.0	4.6	3.8	3.0	4.5
Red Clear	3.5	1.5	2.4	3.5	1.8
Added Initial *	_	2.5	_	_	1.5
Maximum Initial *	_	34	_	_	34
Time Before Reduction *	_	15	_	_	15
Time To Reduce *	-	30	_	_	30
Minimum Gap	_	3.4	_	_	3.4
Advance Walk	_	_	_	_	**
Non Lock Detector	Х	_	Х	Х	_
Vehicle Recall	_	MIN RECALL	_	_	MIN RECAL
Dual Entry	_	_	_	_	_

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.

\* \* See note 7

 $\sim > \Box$ 

		PROJECT REFERENCE NO. U-5312	SHEET NO
	6 Phase		
	Fully Actuated		
	(Isolated) NOTES		
1.	NUIES Refer to "Roadway Standard Drawings NG January 2018 and "Standard Specificat:	CDOT" dated	
	January 2018 and "Standard Specificat: Roads and Structures" dated January 20	lons for )18.	
2.	Do not program signal for late night o unless otherwise directed by the Engir	operation neer.	
3. 4.	Set all detector units to presence mod		
4.	This intersection uses video detection detectors according to the manufacture instructions to schieve the desitred o	er's	
5.	Omit "walk" and flashing "Don't Walk" pedestrian calls.	with no	
6.	Program pedestrian heads to countdown "Don't Walk" time only	the flashing	
7.	To provide a leading pedestrian interv 2, program FYA heads 51 and 22 to dela	/al on phase	
	seconds after the start of the phase 6 interval. See electrical details.	S walk	
8.	Refer to Pavement Marking Plans for pr bar locations.	roposed stop	
9.	Reposition existing signal heads as sh plans.	nown on the	
			hb
		VHB Engineering NC, 940 Main Campus Dr Raleigh, NC 2	ive, Suite 500 27606
		940 Main Campus Dr Raleigh, NC 2 919.829.03 DOCUMENT NOT C	rive, Suite 500 27606 228 CONSIDERED
	e - Temporary Design 3(Phase 3)	940 Main Campus Dr Raleigh, NC 2 919.829.03 DOCUMENT NOT C	ive, Suite 500 27606 228 CONSIDERED SS ALL DMPLETED
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for the Offices of: billity and NORTH CARLES OF NORTH CARLES OF NORTH CARLES OF NORTH CARLES OF NORTH CARLES OF	e - Temporary Design 3(Phase 3) US 421 Business at Curtis Bridge Road Divsion 11 Wilkes County Wilkes	940 Main Campus Dr Raleigh, NC 2 919.829.03 DOCUMENT NOT C FINAL UNLES SIGNATURES CO SEAL SEAL O4725	rive, Suite 500 27606 228 CONSIDERED SS ALL DMPLETED
for the Offices of: billity and NORTH Design Sector Design Sector Bkwy, Garner, NC 2 SCALE	e - Temporary Design 3(Phase 3) US 421 Business at Curtis Bridge Road Divsion 11 Wilkes County Wilkes PLAN DATE: May 2023 REVIEWED BY: W.L. Styg PREPARED BY: S.R. Chiluka REVIEWED BY: J. Ma REVISIONS INIT	940 Main Campus Dr Raleigh, NC 2 919.829.03 DOCUMENT NOT C FINAL UNLES SIGNATURES CO SEAL SEAL O4725	ive, Suite 500 27606 28 CONSIDERED SS ALL DMPLETED
for the Offices of: bility and NORTH Society Design Section SCALE	e - Temporary Design 3(Phase 3) US 421 Business at Curtis Bridge Road Divsion 11 Wilkes County Wilkes PLAN DATE: May 2023 REVIEWED BY: M.L. Styg 27529 PREPARED BY: S.R. Chiluka REVIEWED BY: J. Ma	940 Main Campus Dr Raleigh, NC 2 919.829.03 DOCUMENT NOT C FINAL UNLES SIGNATURES CC SEAL SEAL 04725 1es	rive, Suite 500 27606 228 CONSIDERED SS ALL DMPLETED



LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO	INPUT POINT	DETECTOR NO	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	QUEUE	CALL	DELAY DURING GREEN
PED PUSH BUTTONS							NOTE:						
P61,P62	TB8-7,9	I13U	68	34	6	PED 6		L DC ISOLA IT FILE SLO					

INPUT FILE POSITION LEGEND:	J2L
SLOT 2	

SPECIAL	DETECTOR	NOTE

PROJECT REFERENCE NO.

SHEET NO.

		S	IGN	IAL	HE	EAD	HC	)0K	- UF	<b>°</b> C	HAF	۲۲					
	S3	S4	S	5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
	13	3	2	1	14	5	6	15	7	8	16	9	10	17	11	12	18
	2 PED	OL7	2	1	4 PED	5	6	6 PED	OL8	8	8 PED	OL1		SPARE	OL3		SPARE
2	NU	63 <sup>★</sup>	41	42,43	NU	51	61,62	P61, P62	<b>4</b> 4	NU	NU	NU	63 <sup>*</sup>	NU	NU	<b>★</b> 44	NU
			101	101			134						A124			A101	
		*	102	102			135		*								
			103	103			136										
						131											
						132							A125			A102	
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		118	103			133			124								
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Normal States	Division	11 W	ilkes	County	Will	kesboro		SEAL 046057	
	PLAN DATE:	May 2023		REVIEWED BY:	M.L.Styg	les	E.		
Singl Design Section	PREPARED BY:	S.R.Chilu	ka	REVIEWED BY:	J.Ma		111	YEW L S	TUILIN
*Design See		REVISIONS			INIT.	DATE		by:	
eenfield Pkwy,Garner,NC 27529							Matt f Shy	gles	5/26/2023
							394B6199449	5468E	DATE
							SIG. INVEN	TORY NO.	II-0944T3