



Salem St at Tingen Rd/Lynch St Improvements & Temporary Signal

Town Council - New Business Item

June 22, 2021

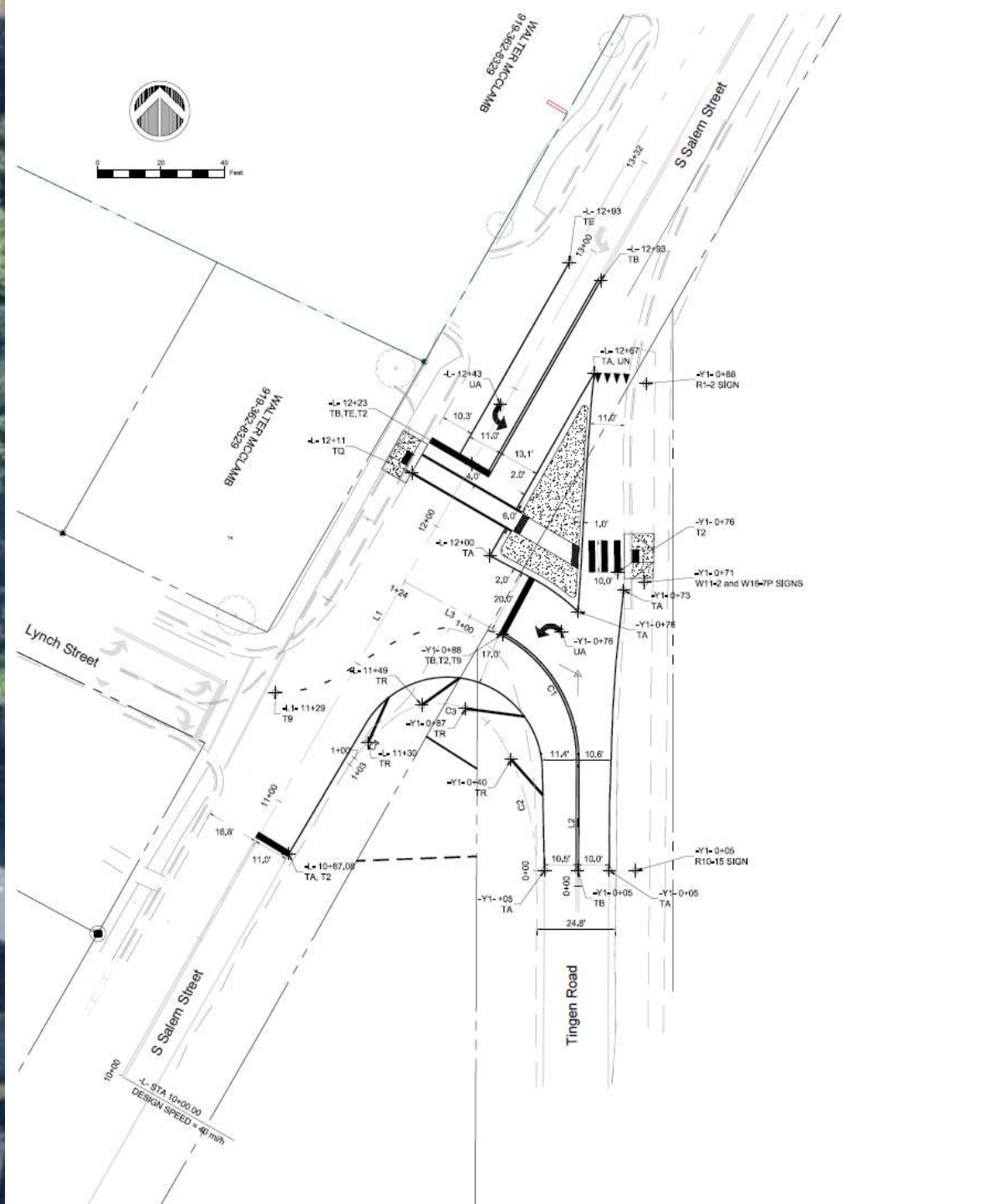
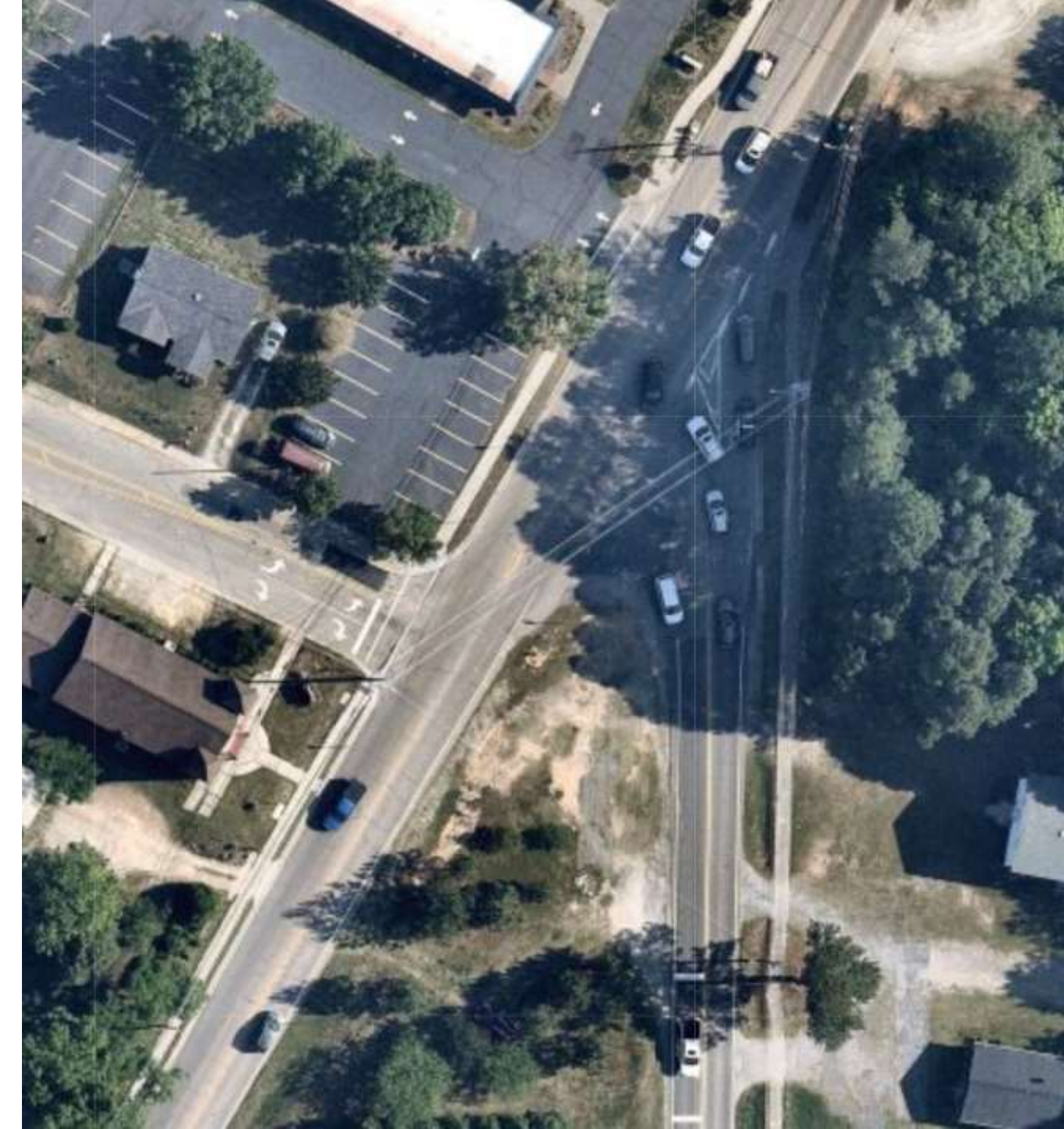


Project Background (2019-)

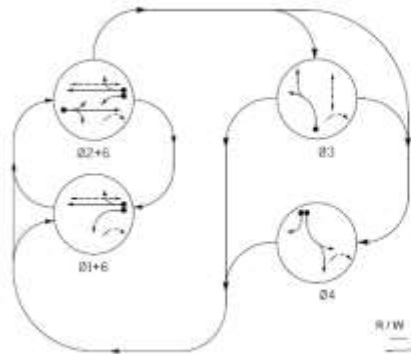
- May 7, 2019 presentation of design options to Council for realignment with traffic signal vs. roundabout (decision to “do nothing” at this point and wait for Peakway completion)
- 2020-21 CIP work session (2019): Council directs staff to proceed with “temporary” traffic signal without realignment of Tingen Rd at Lynch St, and Lynch St extension delayed in CIP
- May 22, 2020: NCDOT approves traffic signal plan
- April 9, 2021: NCDOT approves roadway plan
- April 13: Council approves ROW dedication on Town parcel for radius widening

5-Year Crash Data & Warrant Study

- 18 reported crashes between 7/2015 and 8/2020
- Average of 2 “preventable” crashes per year with a traffic signal based on crash type
- Intersection does not meet crash warrant threshold for signal installation
- Intersection was permitted by NCDOT based on traffic volume warrants, not crash history



PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

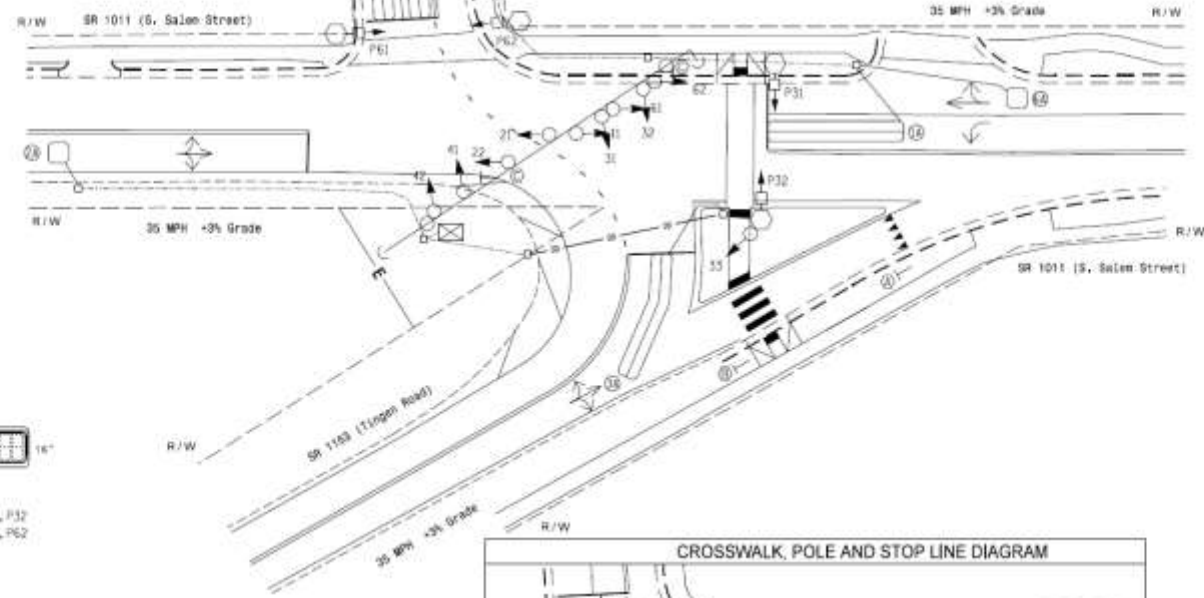
SIGNAL FACE	PHASE			
	RT+LB	LT+LB	RT	LT
11	-	-	-	-
21, 22	R	G	R	Y
31	R	R	G	R
32, 33	R	R	G	R
41	R	R	R	L
42	R	R	R	D
61, 62	C	C	R	Y
P31, P32	DN	DN	W	DN
P61, P62	W	W	DN	DN

OASIS 2070 LOOP & DETECTOR INSTALLATION CHART										
INDUCTIVE LOOPS				DETECTOR PROGRAMMING						
LOOP	NO. FT.	ORIENT. FROM STOPLINE	TYPE	PHASE	CHUNK	EXTENSION	STRETCH	DELAY TIME	STARTUP LOOP	REP. CODE
1A	ERAC	0	2-6-2	Y	Y	Y	-	15	-	Y
2A	SXS	0	4	Y	Y	Y	-	-	-	Y
3A	ERAC	0	3-6-2	Y	Y	Y	-	5	-	Y
4A	ERAC	0	2-6-2	Y	Y	Y	-	3	-	Y
4B	ERAC	0	2-6-2	Y	Y	Y	-	15	-	Y
6A	SXS	0	4	Y	Y	Y	-	-	-	Y

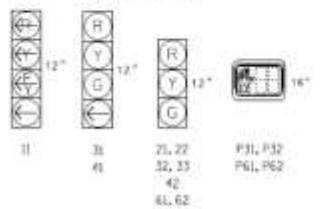
4 Phase Fully Actuated (Isolated)

NOTES

- Refer to "Roadway Standard Drawings W000" dated January 2016, "Standard Specifications for Roads and Structures" dated January 2016 and all applicable sections of the latest version of the generic Project Special Provisions. The PSP can be accessed at the following website: connect.ncdot.gov/resources/safety/pages/ITS-Design-Resources.aspx
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Enable Backup Protect for phase 6 to allow the controller to clear from phase 2+6 to phase 1+6 by progressing through an all red display.
- The order of phase 3 and phase 4 may be reversed.
- Set all detector units to presence mode.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.

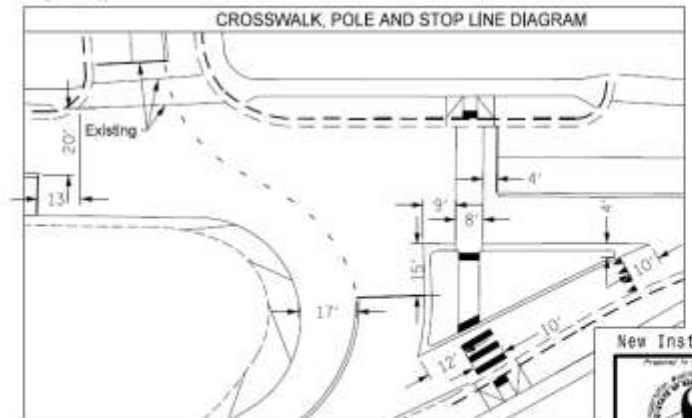


SIGNAL FACE I.D.



FEATURE	PHASE			
	1	2	3	4
Min Green 1"	7	10	7	7
Extension 1"	2.0	2.0	2.0	2.0
Max Green 1"	25	35	20	25
Yellow Clearance	3.0	3.7	3.7	3.7
Red Clearance	1.8	2.5	3.7	3.4
Red Recall	2.0	2.0	2.0	2.0
Walk 1"	-	-	7	7
Don't Walk 1"	-	-	8	8
Seconds Per Actuator *	-	-	-	-
Max Variable Initial *	-	-	-	-
Save Before Reduction *	-	-	-	-
Save To Release *	-	-	-	-
Minimum Gap	-	-	-	-
Recall Heads	-	MIN RECALL	-	MIN RECALL
Vehicle Call Memory	-	YELLOW	-	YELLOW
Queue Delay	-	-	-	-
Start/Release Gap	ON	ON	ON	ON

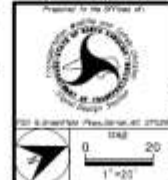
* These values may be field adjusted. Do not adjust Min. Green and Extension times for phases 2 and 4 lower than what is shown. Min. Green for all other phases should not be lower than 4 seconds.



NC Dept of Transportation
Division of Highways
Final Drawing Date: 6/22/2020
[Signature]
ITS & Signal Unit

PROPOSED	LEGEND	EXISTING
	Traffic Signal Head	
	Modified Signal Head	
	Sign	
	Pedestrian Signal Head	
	Signal Pole with Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
	Right of Way	
	Directional Arrow	
	Curb Ramp	
	Directional Drift	
	Permanent Maintenance Easement	
	Type II Signal Pedestal	
	"YIELD" Sign (R1-2)	
	Pedestrian Sign (W11-2) with Diagonal Arrow (W16-1a)	
	"NO TURN ON RED" Sign (R10-11a)	

New Installation



SR 1011 (S. Salem Street) at SR 1153 (Tingen Road)/Lynch Street	
Division 5	Wake County
DATE: May 2020	DESIGNED BY: WJ HULLIETT
DRAWN BY: JF BILLY	CHECKED BY: WJ HULLIETT
REVISIONS	DATE



Summary

- Low bid: \$186,348.15 (pending award – need funds allocated)
- Traffic signal equipment would have around 3 years of useful life before crossing closure (based on Peakway bridge construction in 2022-2024)
- Roadway improvements provide pedestrian crossing and refuge island; could be converted to his-vis/RRFB crossing after signal removal for longer term benefit
- Roadway improvements adjust Tingen Rd approach alignment and northbound radius for Salem St right turns for longer term benefit

Requested Council Action

- Possible motion to approve Capital Project Ordinance Amendment 2021-16 and Budget Ordinance Amendment 17 for the construction of Salem & Tingen intersection improvements