



MEMORANDUM

DATE: November 5, 2019

PROJECT: Kelly Lane Ph 2; Kelly Lane from Falcon Pointe Blvd to Moorlynch Ave

JMT JOB NO: 19-00306-001

RE: Jakes Hill Road / Hidden Lakes Drive Signal

INTRODUCTION

DKS Associates recently performed a traffic signal warrant analysis for the intersection at Kelly Lane and Jakes Hill Road. From their analysis, DKS recommended installing a traffic signal at the Jakes Hill intersection as soon as possible.

Concurrently (under separate contract), JMT is preparing preliminary route planning and PS&E for Kelly Lane Phase 2 and 3. The City requested that JMT evaluate the proposed signal as part of their work on Kelly Lane. The following is JMT's assessment of the existing condition and steps necessary to constructing the signal as quickly as possible.

Preliminary Investigation

On November 1, 2019 the JMT team collected preliminary survey at the Jakes Hill Rd / Hidden Lake Dr intersection and preliminary QL-C SUE. Utilizing this information, JMT evaluated the existing ROW, existing utilities, and the possible ultimate intersection alternatives for the Jakes Hill/ Hidden Lake Dr intersection.

ROW: The existing ROW along Kelly Lane near the intersection of Jakes Hill is approximately 75'. Based on preliminary review of project information, we anticipate that the ultimate Jakes Hill Rd / Hidden Lake Dr will require approximately 125' of ROW.

Utilities: Our preliminary QL-C SUE and field visits show this intersection to be a heavy utility corridor. There are multiple utilities on each quadrant of the Jakes Hill intersection and a communications tower just southeast of the intersection.

Intersection Alternatives: JMT performed a preliminary alignment alternative analysis and developed two primary alignments: one with reverse curve to avoid the communications tower; and second, a more horizontally desirable tangent alignment that would impact the tower. Also, based on the traffic projections the intersection turn-lane configuration (single or dual lefts) is still being evaluated.

Value Engineering

JMT evaluated three possible signal combinations for the Kelly Lane and Jakes Hill Rd / Hidden Lake Dr signal design: ultimate signals, a hybrid of temporary and ultimate signals, and temporary timber pole signals. See Attachment A for construction cost, ROW required, and schedule for each alternative.

Ultimate Signals: In order for the ultimate signal location to be designed JMT would require final survey and utility QL-B SUE and possible QL-A SUE. This option will require time to determine the final intersection layout, additional ROW requirements, and utility relocations. The ROW acquisition would need to be completed before utility relocations can begin. JMT estimates 6 months for the ROW acquisition process



and an additional 6 months for utility relocations. The approximate lead time for the contractor to obtain the signal poles is 6 months.

Hybrid Signals: JMT explored the possibility of installing ultimate signal poles on the North side of the intersection where there is wider existing ROW and temporary signal poles on the South where the ROW acquisition is expected. This option would not require additional ROW but still requires time to determine the ultimate intersection layout for the permanent pole locations. The Hybrid signal would likely require utility relocation that will take approximately 6 months.

Temporary Timber Poles: This option has the most flexibility because the pole locations can be adjusted to avoid utilities and be located within the existing ROW. This option would require utility investigation and some preliminary TCP design for the ultimate construction to ensure that the temporary poles can be left in place during the first phase of construction. Though temporary in nature, this option has the shortest design and construction schedule.

Summary

JMT does not recommend installing any ultimate signal poles or the hybrid signal design at this time due to the schedule implications, time it would take to develop the final plans, and for construction to be completed. We believe to correct the safety issue at this intersection as soon as possible that the temporary timber poles are the preferred option.



Attachment A

Kelly Lane / Jakes Hill Rd Signal
11/5/2019

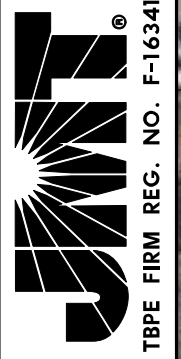
Attachment A: KELLY LANE / JAKES HILL ROAD INTERSECTION OPTIONS					
Intersection Option	Construction Cost	Additional ROW	Design Schedule		Construction Schedule
Permanent Poles	\$350,000.00	0.76 Acres (4 Parcels)	Survey and SUE	Dec 2019	Signal Lead Time April - Sep 2021 Construction Duration Nov - April 2022
			Draft Schematic	Jan 2020	
			Signal Design	Jan - May 2020	
			ROW Acquisition	Feb - Oct 2020	
			Utility Relocations	Oct - April 2021	
Hybrid Poles	\$275,000.00	0.54 Acres (2 Parcels)	Survey and SUE	Dec 2019	Signal Lead Time Dec - May 2021 Construction Duration June - Nov 2021
			Draft Schematic	Jan 2020	
			Signal Design	Jan - May 2020	
			Utility Relocations	June - Nov 2020	
Temporary Poles	\$200,000.00	0.00 Acres	Survey and SUE	Dec 2019	Construction Duration April - May 2020
			Signal Design	Nov - April 2020	

Hybrid Poles
WORK SCHEDULE

ID	Task Name	Duration	Start	Finish	% Complete	Predecessors	
1	Pflugerville Kelly / Jakes Hill Hybrid	85 days	Tue 10/1/19	Mon 1/27/20	0%		Qtr 4, 2019
2	Data Collection	54 days	Tue 10/1/19	Fri 12/13/19	0%		Qtr 1, 2020
3	Field Survey	50 days	Tue 10/1/19	Mon 12/9/19	0%		Qtr 1, 2020
4	SUE Collection QLC	39 days	Tue 10/1/19	Fri 11/22/19	0%		Qtr 1, 2020
5	SUE Collection QLBA	10 days	Mon 12/2/19	Fri 12/13/19	0%		Qtr 1, 2020
6	Draft Schematic PH 3 Design	54 days	Wed 11/13/19	Mon 1/27/20	0%		Qtr 2, 2020
7	Draft Schematic Ph 3 Design	43 days	Wed 11/13/19	Fri 1/10/20	0%		Qtr 2, 2020
8	Submit Draft Schematic	0 days	Fri 1/10/20	Fri 1/10/20	0%	7	Jan 10
9	Draft Schematic Review	10 days	Mon 1/13/20	Fri 1/24/20	0%	8	Jan 27
10	Draft Schematic Meeting	1 day	Mon 1/27/20	Mon 1/27/20	0%	9	Jan 27
11	Utility Investigation	220 days	Mon 1/13/20	Fri 11/13/20	0%		Qtr 2, 2020
12	Budget Approvas, Hire Consultant	20 days	Mon 1/13/20	Fri 2/7/20	0%	7	Qtr 2, 2020
13	Utility Design	40 days	Mon 2/10/20	Fri 4/3/20	0%	12	Qtr 2, 2020
14	Utility Bidding, Permits	40 days	Mon 4/6/20	Fri 5/29/20	0%	13	Qtr 3, 2020
15	Relocation Construction	120 days	Mon 6/1/20	Fri 11/13/20	0%	14	Qtr 3, 2020
16	Signal Design	220 days	Mon 1/13/20	Fri 11/13/20	0%		Qtr 4, 2020
17	60% Design	30 days	Mon 1/13/20	Fri 2/21/20	0%	8	Qtr 4, 2020
18	60% Design Submittal	1 day	Mon 2/24/20	Mon 2/24/20	0%	17	Feb 24
19	60% Review	10 days	Tue 2/25/20	Mon 3/9/20	0%	18	Feb 24
20	60% Meeting	1 day	Tue 3/10/20	Tue 3/10/20	0%	19	Feb 24
21	100% Design	29 days	Tue 2/25/20	Fri 4/3/20	0%	18	Qtr 1, 2021
22	Submit 100% Plans	1 day	Mon 4/6/20	Mon 4/6/20	0%	21	Apr 6
23	100% Review	10 days	Tue 4/7/20	Mon 4/20/20	0%	22	Apr 6
24	100% Meeting	1 day	Tue 4/21/20	Tue 4/21/20	0%	23	Apr 6
25	Final Plans and Bid Book	19 days	Tue 4/7/20	Fri 5/1/20	0%	22	Qtr 1, 2021
26	Final Plans and Bid Book Submittal	1 day	Mon 5/4/20	Mon 5/4/20	0%	25	May 4
27	Advertise for bid	10 days	Mon 10/26/20	Mon 11/9/20	0%	28FF	Qtr 4, 2020
28	Bids Received	0 days	Mon 11/9/20	Mon 11/9/20	0%	29SF	Qtr 4, 2020
29	Bid Recommendations	5 days	Mon 11/9/20	Fri 11/13/20	0%	15FF	Qtr 4, 2020

Temporary Timber Poles
WORK SCHEDULE

ID	Task Name	Duration	Start	Finish	% Complete	Predecessors	Qtr 4, 2019	Qtr 1, 2020	Qtr 2, 2020
1	Pflugerville Kelly / Jakes Hill Hybrid	54 days	Tue 10/1/19	Fri 12/13/19	0%		█		
2	Data Collection	54 days	Tue 10/1/19	Fri 12/13/19	0%		█		
3	Field Survey	50 days	Tue 10/1/19	Mon 12/9/19	0%		█		
4	SUE Collection QLC	39 days	Tue 10/1/19	Fri 11/22/19	0%		█		
5	SUE Collection QLB/A	10 days	Mon 12/2/19	Fri 12/13/19	0%			█	
6	Signal Design	101 days	Mon 11/25/19	Mon 4/13/20	0%		█	█	
7	60% Design	35 days	Mon 11/25/19	Fri 1/10/20	0% 4			█	
8	60% Design Submittal	1 day	Mon 1/13/20	Mon 1/13/20	0% 7				◆ Jan 13
9	60% Review	10 days	Tue 1/14/20	Mon 1/27/20	0% 8				█ Jan 13
10	60% Meeting	1 day	Tue 1/28/20	Tue 1/28/20	0% 9				◆ Jan 28
11	100% Design	29 days	Tue 1/14/20	Fri 2/21/20	0% 8			█	
12	Submit 100% Plans	1 day	Mon 2/24/20	Mon 2/24/20	0% 11				◆ Feb 24
13	100% Review	10 days	Tue 2/25/20	Mon 3/9/20	0% 12				█ Feb 24
14	100% Meeting	1 day	Tue 3/10/20	Tue 3/10/20	0% 13				◆ Mar 10
15	Final Plans and Bid Book	19 days	Tue 2/25/20	Fri 3/20/20	0% 12			█	
16	Final Plans and Bid Book Submittal	1 day	Mon 3/23/20	Mon 3/23/20	0% 15				◆ Mar 23
17	Advertise for bid	10 days	Tue 3/24/20	Mon 4/6/20	0% 16			█	
18	Bids Received	0 days	Mon 4/6/20	Mon 4/6/20	0% 17				◆ Apr 6
19	Bid Recommendations	5 days	Tue 4/7/20	Mon 4/13/20	0% 18			█	

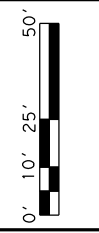


KELLY LANE

JAKES HILL DUEL LEFT PERMANENT POLE LAYOUT

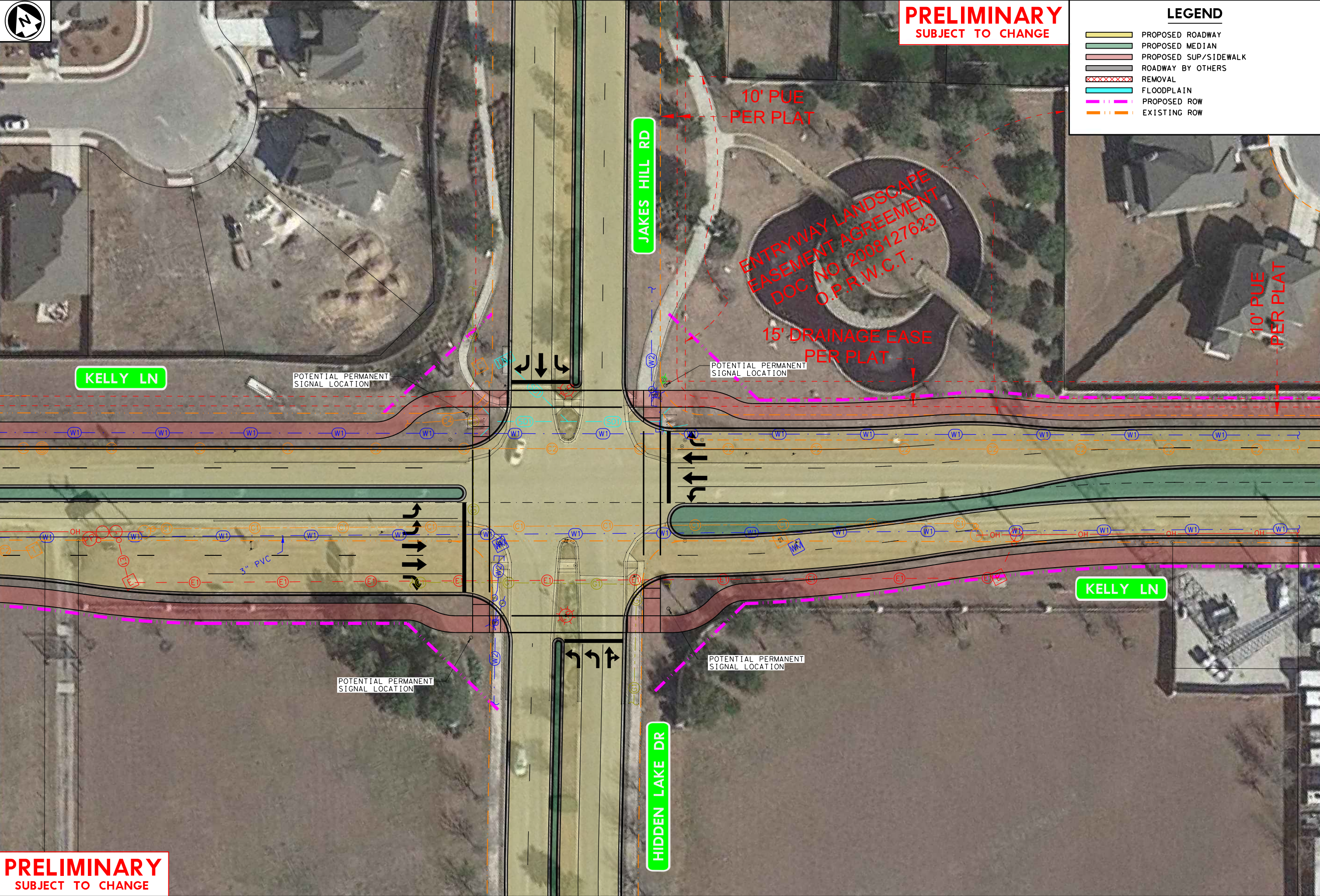
PRELIMINARY
 FOR REVIEW ONLY
 NOT FOR CONSTRUCTION BIDDING
 OR FINAL PURPOSES

JMT
 TBPE FIRM REG. NO. F-16341
 ENGINEER - MICHAEL CUEL
 P.E. NO. 126996 - DATE 11/5/2019

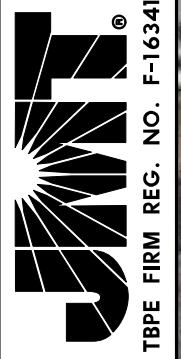


PRELIMINARY
 SUBJECT TO CHANGE

LEGEND	
	PROPOSED ROADWAY
	PROPOSED MEDIAN
	PROPOSED SUP/SIDEWALK
	ROADWAY BY OTHERS
	REMOVAL
	FLOODPLAIN
	PROPOSED ROW
	EXISTING ROW



PRELIMINARY
 SUBJECT TO CHANGE

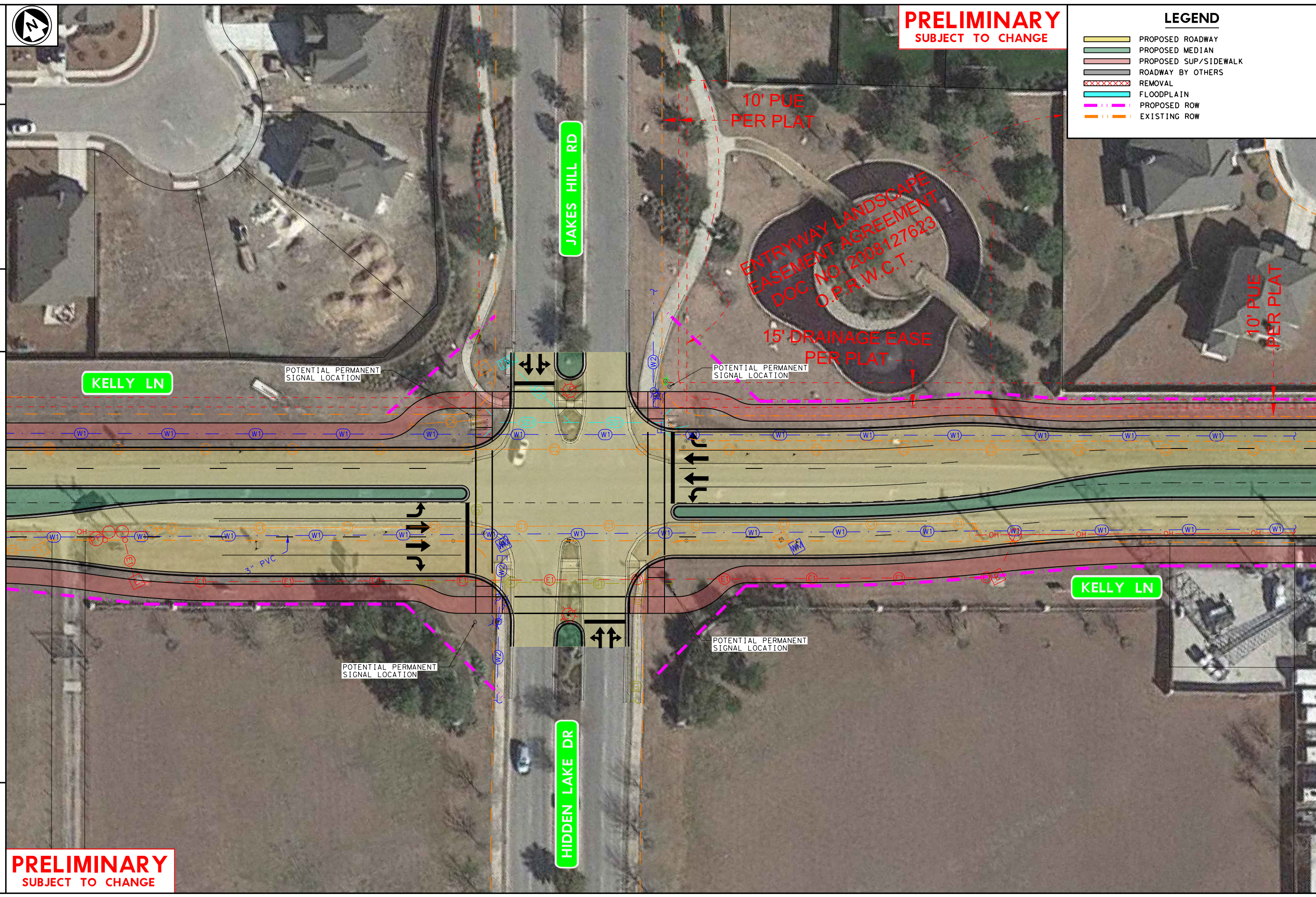


KELLY LANE
JAKES HILL SINGLE LEFT PERMANENT POLE LAYOUT

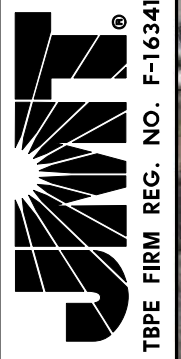
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 P.E. NO. 126996 DATE 11/5/2019

PRELIMINARY
SUBJECT TO CHANGE

LEGEND	
	PROPOSED ROADWAY
	PROPOSED MEDIAN
	PROPOSED SUP/SIDEWALK
	ROADWAY BY OTHERS
	REMOVAL
	FLOODPLAIN
	PROPOSED ROW
	EXISTING ROW



PRELIMINARY
SUBJECT TO CHANGE

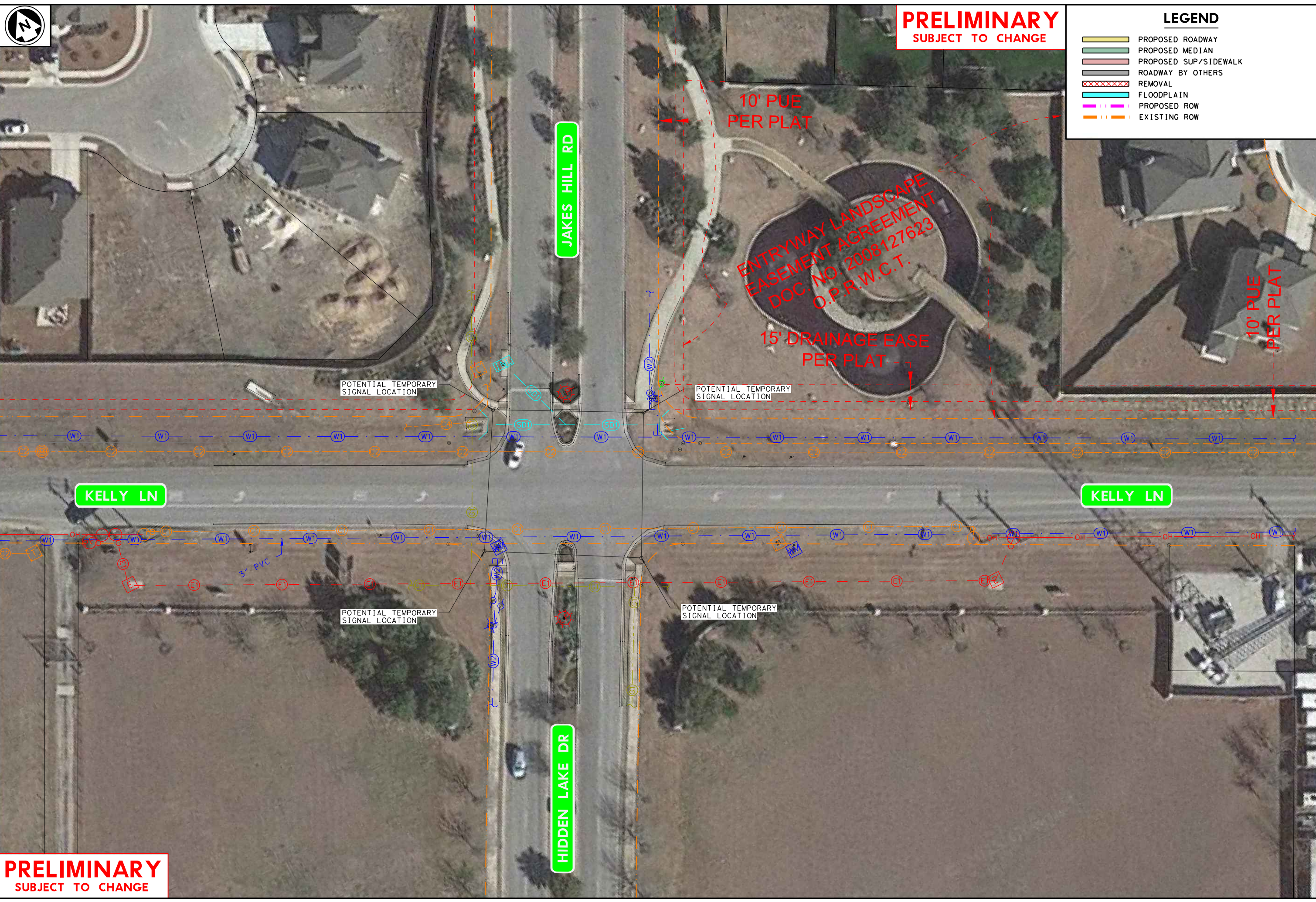


KELLY LANE

JAKES HILL TEMPORARY POLE LAYOUT

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JMT
 TBPE FIRM REG. NO. F-16341
 ENGINEER MICHAEL CUEL
 P.E. NO. 126996 DATE 11/5/2019



PRELIMINARY
 SUBJECT TO CHANGE

LEGEND	
	PROPOSED ROADWAY
	PROPOSED MEDIAN
	PROPOSED SUP/SIDEWALK
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	PROPOSED ROW
	EXISTING ROW

PRELIMINARY
 SUBJECT TO CHANGE