

Traffic Analysis Maps & Correspondence

East Village at Meadowlands

Contents:

- Email response confirming findings
- Email to NCDOT (includes project narrative)
- Trip generation summary table
- Plan submitted to estimate traffic
- Average Annual Daily Traffic Map
- Turn lane calculations

From: Edwards, Charles N <cnedwards@ncdot.gov>
Sent: Tuesday, May 5, 2020 5:11 PM
To: Randy Hall; Jones, DeAngelo J
Cc: Edward Sirgany, PE; James Parker, PE, PLS; Tim Smith, PE, PLS; Tom King
Subject: RE: [External] FW: Parton Townhouses - US Hwy. 70A (20-0044)
Attachments: Turn warrant charts -Parton TH on US70A Orange Cty.pdf; US70A-Meadowlands townhomes trip gen summary.pdf; Parton TH's 4-28-2020.pdf

Randy,

Based on the information provided and the apparent conservative, worst-case approach used to evaluate turn lane warrants based upon distribution of 100% of site ingress trips to either the right or left movements, NCDOT turn lane warrants are not satisfied and would not be required by this office as a condition of the pending driveway permit for the site access as currently proposed. I do recommend that dual egress lanes consisting of an exclusive left and an exclusive right be provided on the access stem to mitigate anticipated side street delays. Also, I have concern about the location of the mail kiosk. It is very close to the development entrance and may create operational and safety issues. NCDOT CBU policy requires 100' separation from minor streets and 200' from primary routes. 200' relative to US 70A is applicable here. The local jurisdiction may have different or additional requirements relative to these issues. We look forward to your next submittal. Feel free to contact me if you have any questions. Stay well.

C. N. Edwards Jr., PE (Chuck)

District Engineer
North Carolina Department of Transportation
Division of Highways
Division 7, District 1

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From: Randy Hall <randy.hall@summitde.net>
Sent: Tuesday, May 5, 2020 4:07 PM
To: Edwards, Charles N <cnedwards@ncdot.gov>; Jones, DeAngelo J <dijones1@ncdot.gov>
Cc: Edward Sirgany, PE <ed.sirgany@summitde.net>; James Parker, PE, PLS <james.parker@summitde.net>; Tim Smith, PE, PLS <tim.smith@summitde.net>
Subject: [External] FW: Parton Townhouses - US Hwy. 70A (20-0044)
Importance: High

From: Randy Hall <randy.hall@summitde.net>
Sent: Wednesday, April 29, 2020 2:36 PM
To: Edwards, Charles N <cnedwards@ncdot.gov>
Cc: Edward Sirgany, PE <ed.sirgany@summitde.net>; James Parker, PE, PLS <james.parker@summitde.net>; Tim Smith, PE, PLS <tim.smith@summitde.net>
Subject: FW: Parton Townhouses - US Hwy. 70A (20-0044)
Importance: High

Good afternoon Chuck,
I hope this email finds you doing well and you, your family and staff are healthy and safe.

We have a new Habitat for Humanity townhouse development that is to be submitted to the Town of Hillsborough in mid-May and are hoping you will give us your take on whether any road improvements along Hwy. 70A will be required by your office. Please see the attached sketch map to get an idea of what we are planning. Also, please see Ed's email below and his two PDF's, attached.

We look forward to hearing back from you soon, to allow us to move forward with our design.
Thank you and best regards,
Randy

Randy Hall
Project Coordinator
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Fax: 919-732-6676
Cell: 919-428-0978



From: Edward Sirgany, PE <ed.sirgany@summitde.net>
Sent: Wednesday, April 29, 2020 2:22 PM
To: Randy Hall <randy.hall@summitde.net>
Cc: James Parker, PE, PLS <james.parker@summitde.net>; Tim Smith, PE, PLS <tim.smith@summitde.net>
Subject: RE: Parton Townhouses - US Hwy. 70A (20-0044)

Randy,

See attached documents, I have a trip gen summary and the turn warrant charts for this site.

I checked the ITE trip gen using 80 townhomes, assuming it drops that far, but with a relatively low number like that, it will not change trips much if you end up with 81 or even 79. The maximum trips generated (entering) is in the PM peak hour, at 30 trips, which of course would be split using some distribution from either direction on US 70A. For arguments sake, I just used the full 30 coming from one direction to show potential worse case scenario. I estimated the ADT from NCDOT website with current ADT volumes, then applied peak hour factor of 11% to estimate a peak hour volume (2

way). From there, I derived a potential split of 60/40 % to come up with an opposing volume for the turn warrant charts, which worked out to be about 715 (2 way peak hour, and 430 one direction)

I plotted the points on the two widely used charts, and am coming up with plots that do not reach the areas of the graphs to determine either a storage length of a turn lane, or in the case of the driveway manual chart, barely making the minimum limit for including a taper. Again, this would be based on worse case scenario that all the entering traffic came from one direction, and was opposed by the higher main street volumes, just to be conservative in this estimate.

If you need me to provide further information, or if we need to do more detailed analysis with actual traffic counts, please advise accordingly.

Thanks.

Edward Sirgany, PE

Senior Project Engineer

Tel: 919-732-3883

Fax: 919-732-6676



Trip Generation Summary

Alternative: Alternative 1

Phase:

Open Date: 4/29/2020

Project: US70A Townhomes

Analysis Date: 4/29/2020

ITE	Land Use	Weekday Average Daily Trips				Weekday AM Peak Hour of Adjacent Street Traffic				Weekday PM Peak Hour of Adjacent Street Traffic			
		*	Enter	Exit	Total	*	Enter	Exit	Total	*	Enter	Exit	Total
220	LOW-RISE 1		282	282	564		9	30	39		30	18	48
	80 Dwelling Units												
Unadjusted Volume			282	282	564		9	30	39		30	18	48
Internal Capture Trips			0	0	0		0	0	0		0	0	0
Pass-By Trips			0	0	0		0	0	0		0	0	0
Volume Added to Adjacent Streets			282	282	564		9	30	39		30	18	48

Total Weekday Average Daily Trips Internal Capture = 0 Percent

Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

* - Custom rate used for selected time period.

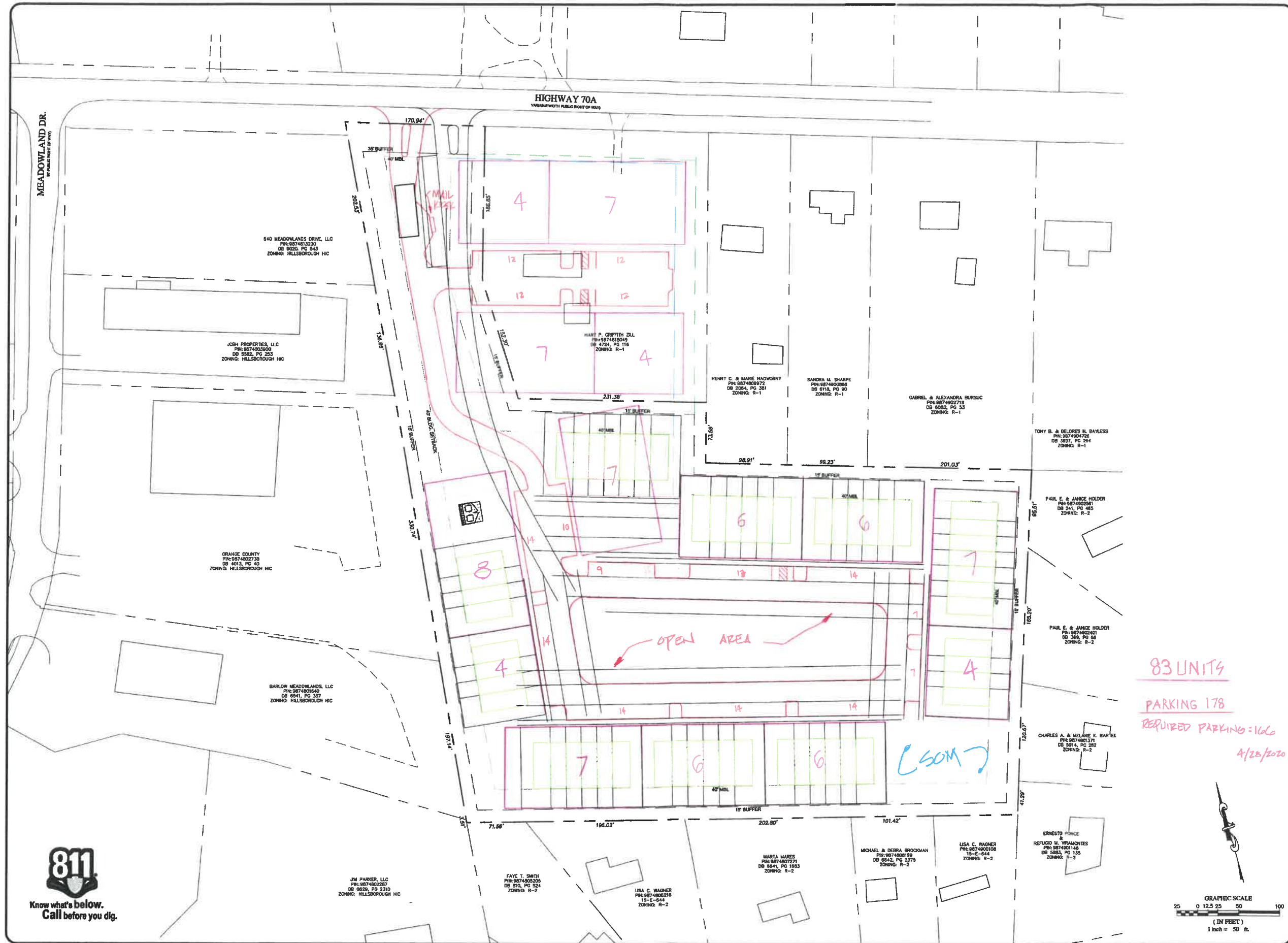
Source: Institute of Transportation Engineers, Trip Generation Manual 10th Edition

TRIP GENERATION 10, TRAFFICWARE, LLC

P. 1



Know what's below.
Call before you dig.



83 UNITS
PARKING 178
REQUIRED PARKING = 166
4/28/2020

7

6

5

4

3

2

1

DATE

BY

7

6

5

4

3

2

1

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FIRST ISSUE DATE
12/28/2019

NOT FOR CONSTRUCTION

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SITE DEVELOPMENT PLANS FOR
HIGHWAY 70A TOWNHOMES
US 70A
HILLSBOROUGH, NORTH CAROLINA 27278

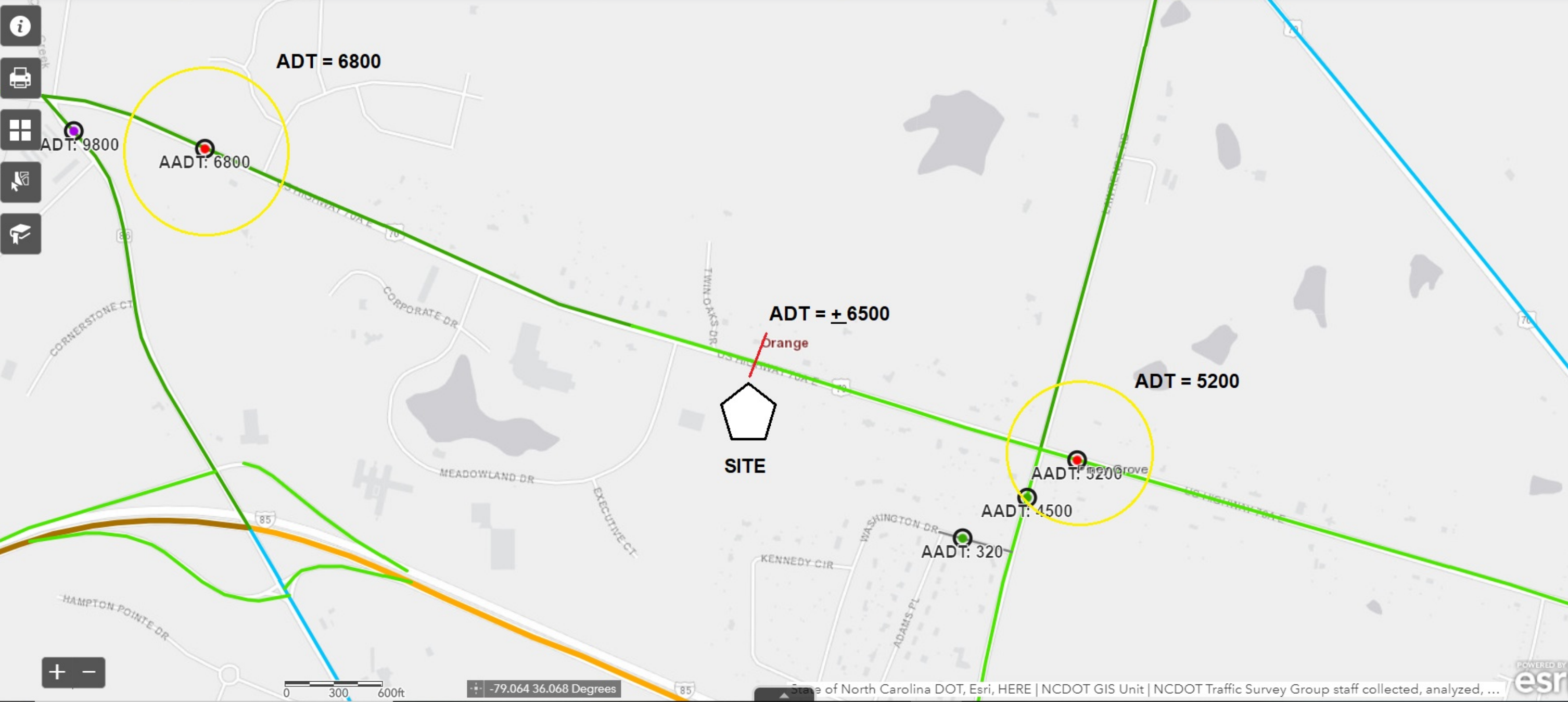
SITE PLAN

PROJECT NO.
20-0044

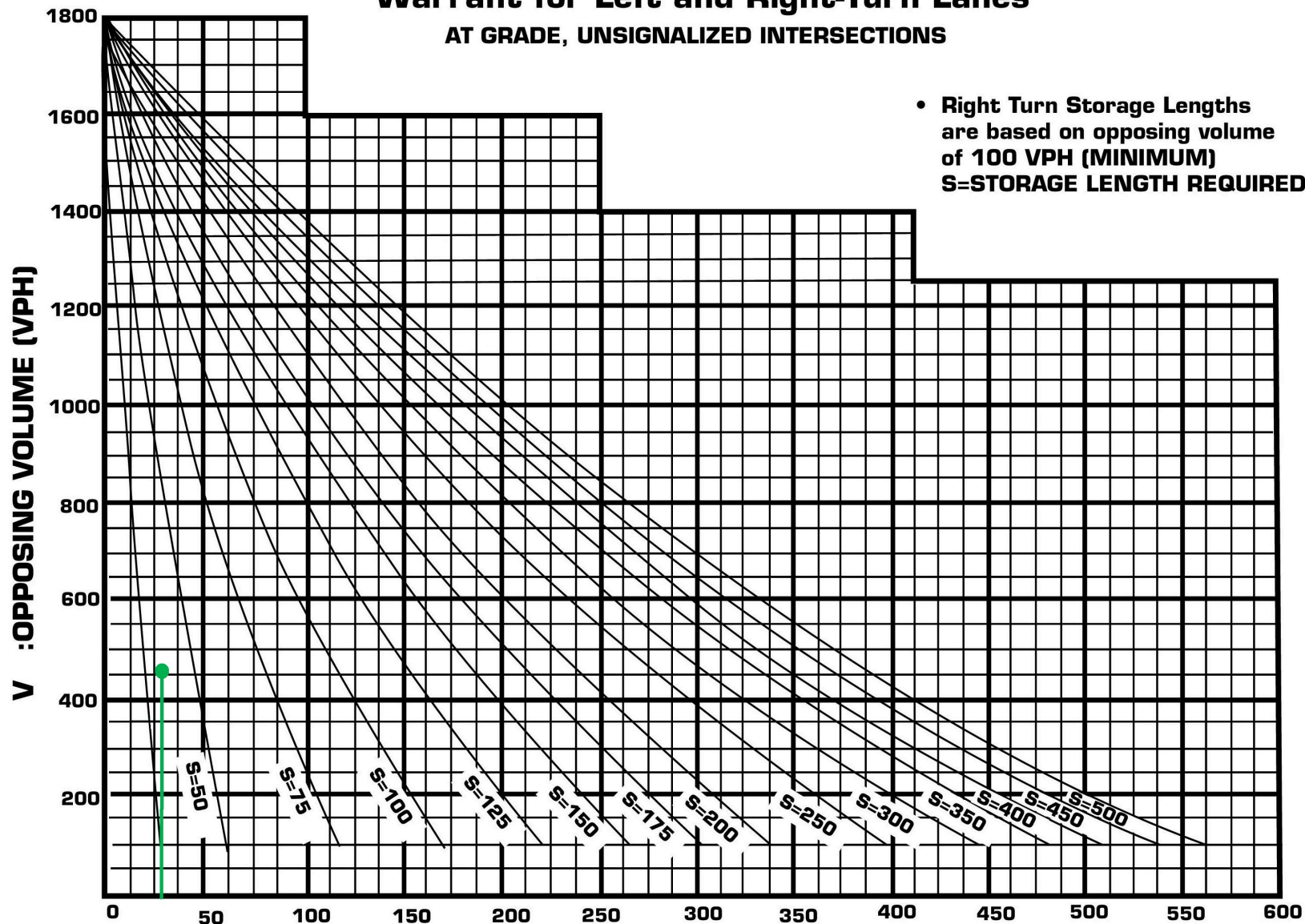
DRAWING NAME:
20-0044_S.dwg

SHEET NO.
C-3

NCDOT Annual Average Daily Traffic (AADT) Mapping Application



Warrant for Left and Right-Turn Lanes AT GRADE, UNSIGNALIZED INTERSECTIONS



V_L : LEFT TURNING VOLUME (VPH)
 V_R : RIGHT TURNING VOLUME (VPH)

Note: Where adjacent signalization may provide opportunities for gaps in the traffic stream a reduction in the above storage values can be considered on a case by case basis.

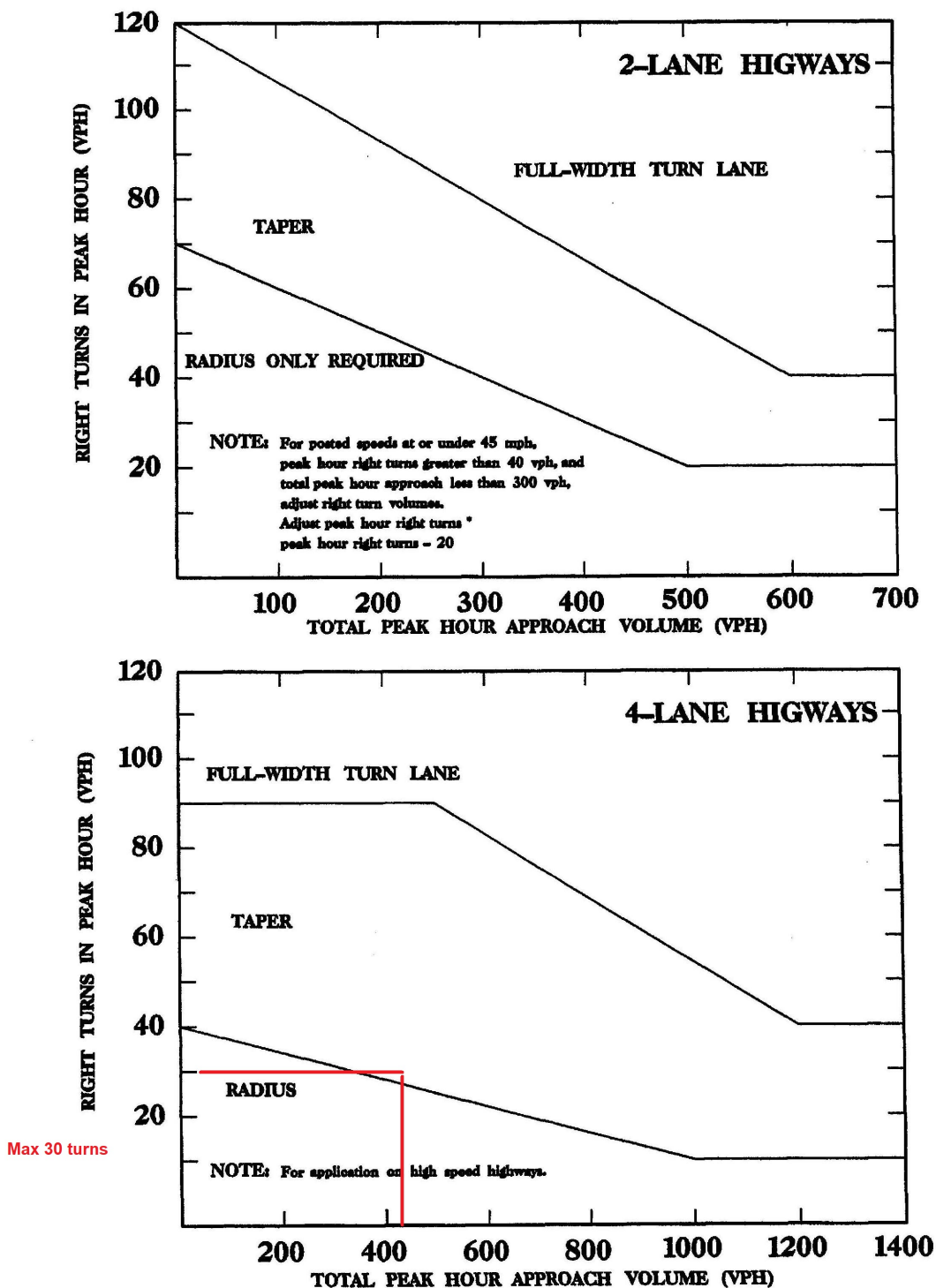
PM PEAK HR ENTERING TRIPS

PEAK HR VOLUME ESTIMATED AT 11% of ADT = 715 VPH
DIRECTIONAL SPLIT AT 60 / 40 YIELDS MAX OPPOSING VOL = 430 VPH

FIGURE 4

9 - 1
F - 4 C

RIGHT TURN LANE WARRANTS



Parton Townhomes - US 70A
Orange County