



## **Consulting**

1396 White Bridge Road  
Chittenango, NY 13037  
Tel: (315) 391-5110

May 6, 2024

ABD Engineers & Surveyors  
411 Union Street  
Schenectady, NY 12305

Attn: Mr. John E. Hitchcock, Jr.

**Re: Traffic Operations Review – Proposed Additional Development – Finelli Development  
76-78 North Greenbush Road & 11 Glenmore Road, North Greenbush, NY**

Dear Mr. Hitchcock:

I have completed my review of traffic operations associated with the proposed additional development at the Finelli Development LLC site located at 76-78 North Greenbush Road & 11 Glenmore Road in the Town of North Greenbush, NY. This letter summarizes the work completed in this review as well as my findings.

### *Project Understanding*

The existing development on the project site includes a 2,000 SF Dunkin' with drive through operations and 3,940 SF of retail/commercial space. Existing access to the site is provided via one full access driveway to Glenmore Road located approximately 130 feet to the west of the North Greenbush Road (US Route 4)/Glenmore Road/Williams Road roundabout, and one right in/right out only driveway to North Greenbush Road located approximately 130 feet south of the roundabout.

The proposed additional development of the site includes 3,200 SF fast food restaurant with drive through operations to the south of the existing development and conversion of an existing house to 1,000 SF of retail/commercial space to the west of the existing development. A new full access driveway to North Greenbush Road is proposed approximately 290 feet to the south of the roundabout with the existing right in/right out only driveway being converted to a right out only. There are no changes proposed to the existing driveway on Glenmore Road.

A conceptual site sketch plan prepared by ABD Engineers has been attached.

### *Existing Operations*

#### North Greenbush Road (US Route 4)

North Greenbush Road is classified as a principal urban arterial roadway in the area with one lane in each direction to the south of the roundabout passing the site. The roadway has two lanes southbound with one lane northbound to the north of the roundabout, widening to two lanes in each direction to the north of South Drive. Based on traffic data taken from the NYSDOT Traffic Data Viewer website, the average daily traffic volume on North Greenbush Road passing the site is approximately 11,294 vehicles per day. Historical directional traffic counts on North Greenbush Road from Tuesday,

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September 27<sup>th</sup>, 2022 through Thursday, September 29<sup>th</sup>, 2022 indicate that there are approximately 388 vehicles northbound/508 vehicles southbound passing the site during the weekday morning peak hour and approximately 605 vehicles northbound/503 vehicles southbound passing the site during the weekday evening peak hour.

These volume levels equate to one vehicle per lane passing the site in each direction every 7-9 seconds during the morning peak hour and every 6-7 seconds during the highest volume evening peak hour. The average vehicle requires a 6-9 second minimum gap in traffic to turn in or out of the site driveway. Therefore the average gaps based on existing traffic volumes are within the acceptable range to safely allow full access at the proposed driveway on North Greenbush Road. There are no significant concerns with available gaps in traffic to accommodate traffic accessing the proposed site driveway under free flow traffic conditions.

It is understood that there are existing congestion concerns on North Greenbush Road associated with northbound traffic queuing from poorly coordinated traffic signals to the north of the roundabout, which can queue through the roundabout in front of the site. Providing a full access driveway as far south on the site as possible with avoid these queues to maximum extent possible. In the event that these queues do temporarily block the driveway, motorists exiting the site have the option of circling around the existing development to the Glenmore Road access, where they can then access the roundabout directly to turn onto North Greenbush Road.

The posted speed limit on North Greenbush Road is 45 mph to the south of the site, however, the roundabout creates reduced speed as motorist can only circulate at speeds between 15-20 mph. Therefore the assumed operating speed passing the site is anticipated to be approximately 30 mph. Based on design guidelines from the AASHTO A Policy on Geometric Design of Highways and Streets, the recommended design sight distances at a 30 mph operating speed are approximately 335 feet in each direction exiting the proposed site driveway. The sight distances looking north from the proposed driveway location are over 350 feet into the roundabout and over 700 feet looking to the south along North Greenbush Road. There are no concerns with available site lines to provide safe ingress and egress from the site on North Greenbush Road.

The historical count data has been attached.

*Trip Generation Estimate*

The existing development includes a 2,000 SF Dunkin' with drive through operations and 3,940 SF of retail/commercial space. The proposed additional development includes a 3,200 SF fast food restaurant with drive through operations and 1,000 SF of retail/commercial space. The trip generation potential for both the existing development and proposed additional development was estimated using the ITE Trip Generation, 11<sup>th</sup> Edition, which is the industry accepted standard for estimating traffic generated. Land Use 937 – Coffee/Donut Shop with Drive-Through Window, Land Use 822 – Strip

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Retail Plaza (<40K), and Land Use 934 – Fast Food Restaurant with Drive-Through Window were used.

A significant portion of the traffic generated by both the existing and additional development will be drawn from traffic already passing the site on North Greenbush Road, Glenmore Road or Williams Road and is referred to as pass-by traffic. These vehicles are already traveling on the roadway and will stop at the proposed development on their way to another location such as stopping on their way to work or on their way home. Based on the ITE Trip Generation, the average pass-by percentage for a coffee/donut shop without indoor seating is 90% during the morning peak hour and 98% during the evening peak hour. A more conservative 50% pass-by trip rate was assumed during both peak hours for this review. The average pass-by trip rate for retail space is 40% during the evening peak hour. A 20% pass-by rate during the morning peak hour was assumed. The average pass-by rate for a fast food restaurant is 50% during the morning peak hour and 55% during the evening peak hour.

The following tables summarize the trip generation potential for the both the existing and proposed additional development on the site.

**Trip Generation Potential – Existing Development**

	<b>Morning Peak Hour</b>		<b>Evening Peak Hour</b>	
	<b>Entering</b>	<b>Exiting</b>	<b>Entering</b>	<b>Exiting</b>
	Coffee/Donut Shop – 2,000 SF	88	84	39
Retail/Commercial – 3,940 SF	<u>5</u>	<u>4</u>	<u>13</u>	<u>13</u>
<b>Total Trips Generated</b>	<b>93</b>	<b>88</b>	<b>52</b>	<b>52</b>
<i>Coffee/Donut Pass-by Trips – AM/PM – 50%</i>	-43	-43	-19	-19
<i>Retail Pass-by Trips – AM – 20%, PM – 40%</i>	<u>-1</u>	<u>-1</u>	<u>-5</u>	<u>-5</u>
<b>Total Pass-by Trips</b>	<b><u>-44</u></b>	<b><u>-44</u></b>	<b><u>-24</u></b>	<b><u>-24</u></b>
<b>Total Primary Trips Generated</b>	<b>49</b>	<b>44</b>	<b>28</b>	<b>28</b>

**Trip Generation Potential – Proposed Additional Development**

	<b>Morning Peak Hour</b>		<b>Evening Peak Hour</b>	
	<b>Entering</b>	<b>Exiting</b>	<b>Entering</b>	<b>Exiting</b>
	Fast Food Restaurant – 3,200 SF	73	70	55
Retail/Commercial – 1,000 SF	<u>1</u>	<u>1</u>	<u>3</u>	<u>4</u>
<b>Total Trips Generated</b>	<b>74</b>	<b>71</b>	<b>58</b>	<b>55</b>
<i>Fast Food Pass-by Trips – AM – 50%, PM – 50%</i>	-35	-35	-29	-29
<i>Retail Pass-by Trips – AM – 20%, PM – 40%</i>	<u>0</u>	<u>0</u>	<u>-1</u>	<u>-1</u>
<b>Total Pass-by Trips</b>	<b><u>-35</u></b>	<b><u>-35</u></b>	<b><u>-30</u></b>	<b><u>-30</u></b>
<b>Total Primary Trips Generated</b>	<b>39</b>	<b>36</b>	<b>28</b>	<b>25</b>

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Overall, the proposed additional development will not significantly increase traffic volumes in the area given that approximately 50% or more of the trips generated will be drawn from traffic already driving through the area. The additional development is only expected to generate an additional 35-40 total vehicles entering and exiting the area during the morning peak hour and 25-30 total vehicles entering and exiting the area during the evening peak hour. This increase in net traffic equates to 1 additional vehicle entering and exiting the area every 1½ minutes during the morning peak hour and 1 additional vehicle entering and exiting the area every 2 minutes during the evening peak hour. This minor increase in traffic will generally not even be noticeable to motorists in the area.

The detailed trip generation calculations have been attached.

*Site Circulation / Drive Through Operations*

The proposed additional development layout will utilize the rear and southern sides of the parcel for the fast food drive through operations which will eliminate any potential for traffic backing out on North Greenbush Road or Glenmore Road, or impacting access to/from the site. There are no concerns noted with the proposed site layout.

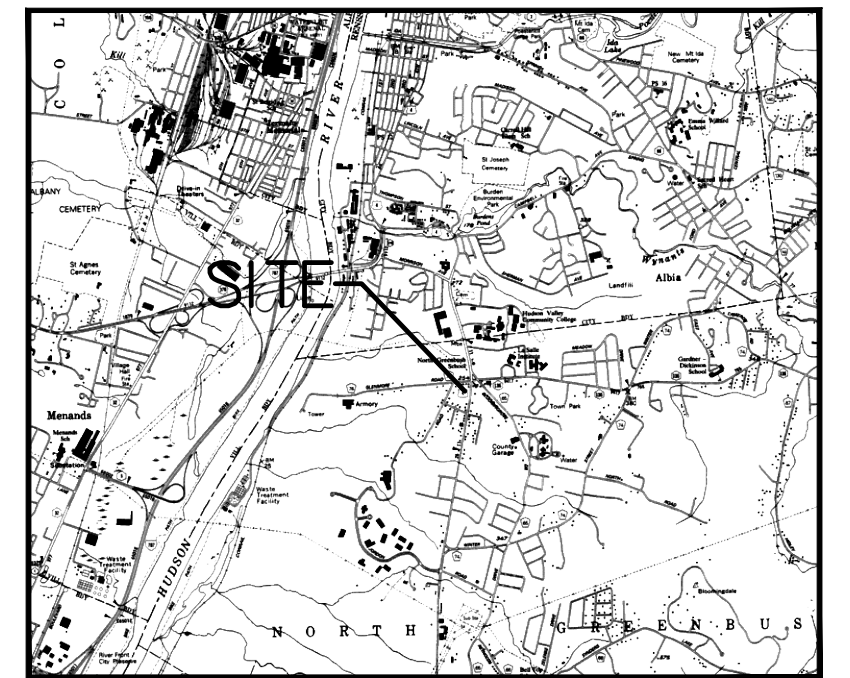
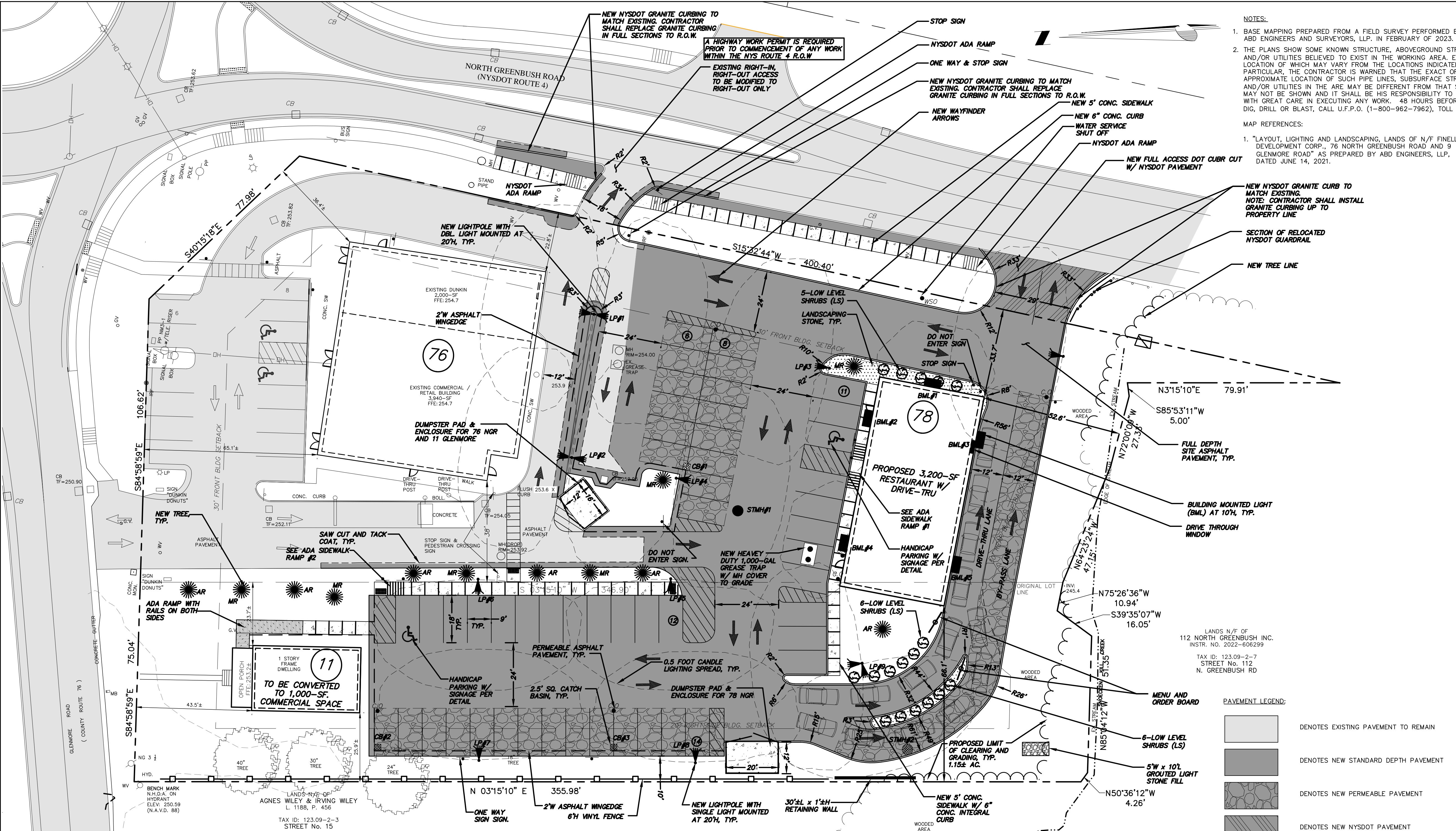
*Conclusions*

The additional traffic generated by the proposed additional development on the Finelli property at 76-78 North Greenbush Road & 11 Glenmore Road will be predominantly drawn from traffic already passing the site on North Greenbush Road or Glenmore Road. The actual increase in traffic traveling to/from the area will be minor and generally not noticeable to existing motorists in the area, equating to approximately 1 additional vehicle entering and exiting the area every 1½ – 2 minutes. Based on existing traffic volumes passing the site on North Greenbush Road, the average gap between vehicles is sufficient to accommodate full access operations at the proposed driveway, and there are adequate sight lines to provide safe access.

It is noted that there are congestion concerns along North Greenbush Road as northbound traffic sometimes queues from poorly coordinated traffic signals to the north of the roundabout into the roundabout and in front of the site. The proposed driveway is located as far south as possible to avoid this conflict, however, if the queuing traffic does block exiting traffic, they do have the option of using the Glenmore Road driveway to access the roundabout directly on North Greenbush Road. Any delay in exiting the site will be internal to the site and will not impact traffic operations on the adjacent streets.







**SITE LOCATION MAP**  
N.T.S.

- NOTES:**
- BASE MAPPING PREPARED FROM A FIELD SURVEY PERFORMED BY ABD ENGINEERS AND SURVEYORS, LLP, IN FEBRUARY OF 2023.
  - THE PLANS SHOW SOME KNOWN STRUCTURE, ABOVEGROUND STRUCTURES AND/OR UTILITIES BELIEVED TO EXIST IN THE WORKING AREA. EXACT LOCATION OF WHICH MAY VARY FROM THE LOCATIONS INDICATED. IN PARTICULAR, THE CONTRACTOR IS WARNED THAT THE EXACT OR EVEN APPROXIMATE LOCATION OF SUCH PIPE LINES, SUBSURFACE STRUCTURES AND/OR UTILITIES IN THE AREA MAY BE DIFFERENT FROM THAT SHOWN OR MAY NOT BE SHOWN AND IT SHALL BE HIS RESPONSIBILITY TO PROCEED WITH GREAT CARE IN EXECUTING ANY WORK. 48 HOURS BEFORE YOU DIG, DRILL OR BLAST, CALL U.P.F.O. (1-800-962-7962), TOLL FREE.
- MAP REFERENCES:**
- "LAYOUT, LIGHTING AND LANDSCAPING, LANDS OF N/F FINELLI DEVELOPMENT CORP., 76 NORTH GREENBUSH ROAD AND 9 GLENMORE ROAD" AS PREPARED BY ABD ENGINEERS, LLP, DATED JUNE 14, 2021.

**ZONING - BG (GENERAL BUSINESS DISTRICT)**

REQUIRED	PROVIDED
LOT AREA: 20,000 SF MIN.	73,680 SF (1.69 AC)
LOT WIDTH AT SETBACK: 110' MIN.	162'
LOT COVERAGE: 75% MAX.	73.8%
BUILDING HEIGHT: 3 STORIES MAX.	16'±
<b>BUILDING SETBACKS:</b>	
FRONT: 30'	65.1' & 22.8'
SIDE: 20'	25.9'
REAR: 30'	52.6'
<b>PARKING SETBACKS:</b>	
FRONT: 10' MIN.	0' (PRE EXISTING)
SIDE: 10' MIN.	< 10'
REAR: 10' MIN.	< 10'

**LOT COMBINATION:**

- PARCEL 123.09-2-4 & 123.09-2-6 TO BE COMBINED INTO SINGLE LOT.

PARCEL	AREA
123.09-2-5	0.61 AC
123.09-2-6	1.08 AC
<b>NEW AREA</b>	<b>(1.69 AC)</b>

**PROPOSED SITE STATISTICS**

	AREA	PERCENTAGE	PERCENTAGE
BUILDING	10,140± SF	0.23± AC	13.8%
PAVEMENT	44,161± SF	1.01± AC	60.0%
GREEN SPACE	19,379± SF	0.44± AC	26.2%
<b>TOTAL</b>	<b>73,680± SF</b>	<b>1.69± AC</b>	<b>100.0%</b>

**TOTAL SITE DISTURBANCE: 1.15± AC.**

**PARKING REQUIREMENTS \* VARIANCE GRANTED OCTOBER 11, 2023**

	REQUIRED
RESTAURANT - DRIVE THRU (5,200-SF)	1/45 SF = 116 SPACES
RETAIL / COMMERCIAL (4,940SF)	1/150 SF = 33 SPACES
<b>TOTAL REQUIRED =</b>	<b>149 SPACES</b>
<b>TOTAL PROVIDED =</b>	<b>64 SPACES</b>

- SITE NOTES:**
- SNOWfall ACCUMULATION IN EXCESS OF 4" SHALL BE REMOVED FROM ALL PARKING AREAS/WALKWAYS WITHIN 48 HOURS. SNOW SHALL BE REMOVED FROM SITE WHEN IT IMPEDES ACCESS/PARKING NEEDS.
  - PROPOSED BUILDING DOOR LOCATIONS ARE SHOWN CONCEPTUALLY. IT SHALL BE THE OWNER / CONTRACTORS RESPONSIBILITY TO PROVIDE THE ENGINEER WITH FINAL FOUNDATION AND FLOOR PLANS DEPICTING DOOR LOCATIONS. FAILURE TO PROVIDE CAN RESULT IN THE REMOVAL OF PAVEMENT AND CONCRETE AT THE OWNERS EXPENSE.

**TOWN OF NORTH GREENBUSH PLANNING BOARD APPROVAL**

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE TOWN OF NORTH GREENBUSH, NEW YORK ON SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION AND THE TOWN OF NORTH GREENBUSH CODE. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS SUBDIVISION PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED: MARK LACIVITA, CHAIRMAN DATE: \_\_\_\_\_

OWNER:  
FINELLI DEVELOPMENT CORP.  
359 BROADWAY  
TROY, NY 12180  
TAX MAP #: 123.09-2-5 & 123.09-2-6

ALTERATION OF THIS DOCUMENT EXCEPT BY A LICENSED PROFESSIONAL ENGINEER IS ILLEGAL.

STATE OF NEW YORK  
Professional Engineer  
JOSEPH J. BIANCHINI, P.E.  
N.Y.S. LICENSE NO. 50228

**ALTERNATIVE SITE PLAN**  
LANDS NOW OR FORMERLY OF  
**FINELLI DEVELOPMENT, LLC**  
76 & 78 NORTH GREENBUSH ROAD & 11 GLENMORE ROAD

TOWN OF NORTH GREENBUSH COUNTY OF RENSSELAER

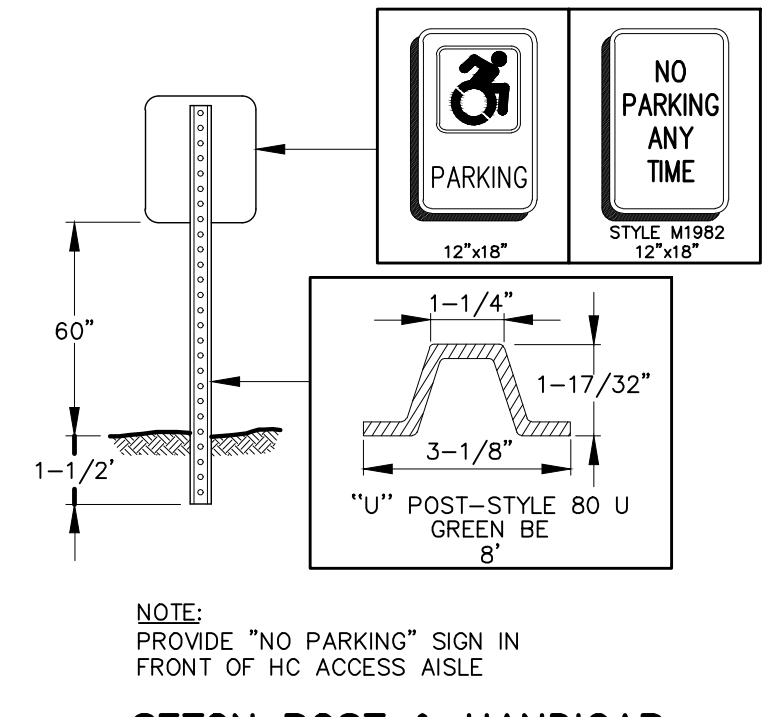
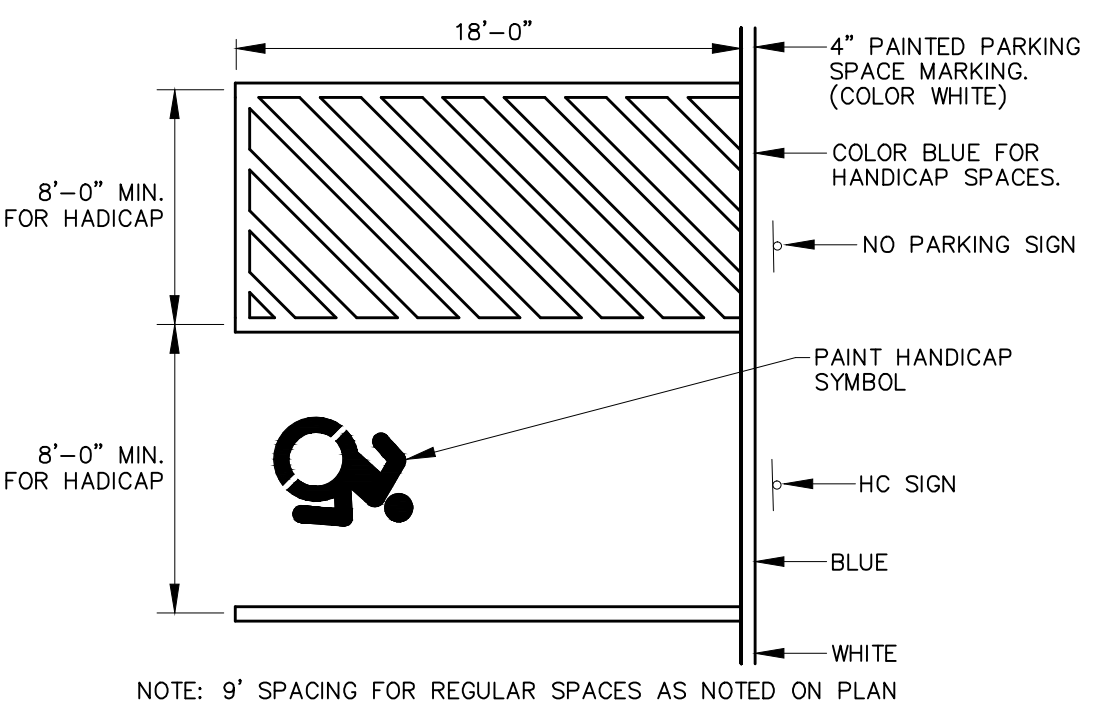
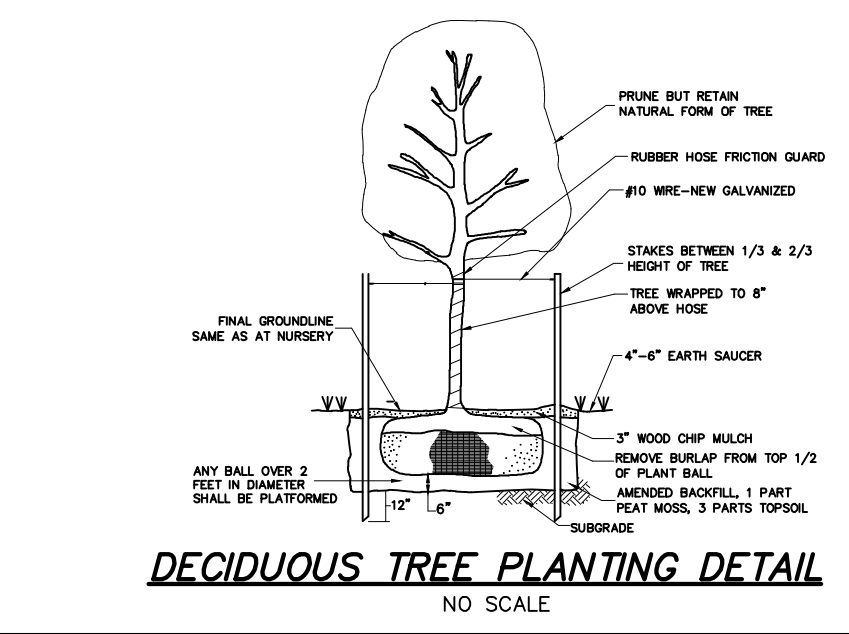
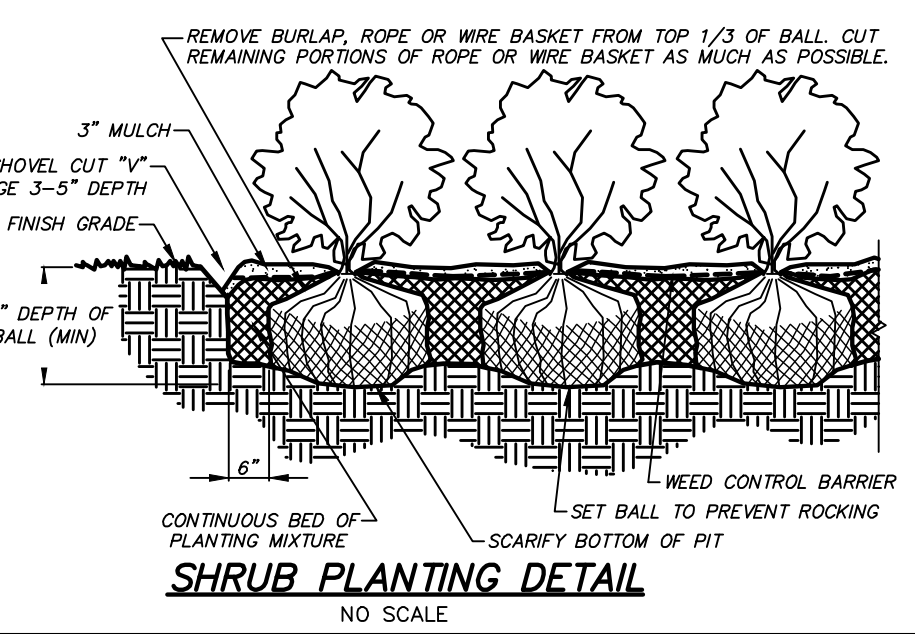
STATE OF NEW YORK  
**ABD ENGINEERS, LLP**  
411 Union Street  
Schenectady, NY 12305  
518-377-0315 Fax 518-377-0379  
www.abdeng.com

DATE: FEBRUARY 16, 2024 SCALE: 1" = 20' DWG. 5300A-S4-ALT. SHEET OF 1 1

**PLANTING SCHEDULE**

KEY	SCIENTIFIC NAME	COMMON NAME	QUANTITY	SIZE	COMMENTS
AR	ACER RUBRUM	RED MAPLE	6	3" C	B&B
MR	MALLUS ROYALTY	ROYALTY CRAB	7	3" C	B&B
LS	LOW LEVEL SHRUBS	SHRUBS	25		B&B

TOPSOIL AND SEED ALL DISTURBED AREAS  
C = CALIPER HT = HEIGHT S = SPREAD B & B = BALLED & BURLAPPED  
-ALL TREES SHALL HAVE A MINIMUM HEIGHT OF 8' PER CLIFTON PARK FBC SECTION 7.5.D.1.



**PAVEMENT LEGEND:**

[Pattern]	DENOTES EXISTING PAVEMENT TO REMAIN
[Pattern]	DENOTES NEW STANDARD DEPTH PAVEMENT
[Pattern]	DENOTES NEW PERMEABLE PAVEMENT
[Pattern]	DENOTES NEW NYSDOT PAVEMENT
[Pattern]	DENOTES SAWCUT AND TAC COAT

**PAINT STRIPING DETAIL & HANDICAP MARKING**  
NO SCALE

**SETON POST & HANDICAP SIGN DETAIL**  
NO SCALE



**Hourly Direction Report NYSDOT\_SC 140023000000 Tuesday, September 27, 2022 to Thursday, September 29, 2022**

Site Name 140023  
 Site ID 140023000000  
 Description US4 from WINTER ST EXT to RT 136 JCT  
 Region 1  
 County Rensselaer  
 DOTID 100366  
 County Order 1

Exclude data: None

Time	NB	SB	Total
00:00:00	21	13	34
01:00:00	11	5	15
02:00:00	7	6	13
03:00:00	17	13	30
04:00:00	25	31	56
05:00:00	38	65	104
06:00:00	106	174	280
07:00:00	388	508	896
08:00:00	355	538	893
09:00:00	347	354	701
10:00:00	344	364	708
11:00:00	398	400	799
12:00:00	458	486	944
13:00:00	392	489	880
14:00:00	400	515	916
15:00:00	468	508	976
16:00:00	605	503	1108
17:00:00	534	436	969
18:00:00	336	335	671
19:00:00	242	258	500
20:00:00	141	173	314
21:00:00	98	110	208
22:00:00	70	57	127
23:00:00	43	33	76
7am-7pm	5025	5436	10461
6am-10pm	5611	6151	11762
6am-12am	5725	6241	11965
12am-12am	5845	6372	12217
am Peak	11:00:00	8:00:00	7:00:00
Peak Volume	398	538	896
pm Peak	16:00:00	14:00:00	16:00:00
Peak Volume	605	515	1108

**Proposed Additional Development - Finelli Development LLC  
76 & 78 North Greenbush Road & 11 Glenmore Road, North Greenbush, NY**

**Trip Generation Estimate**

Existing Development	2,000 SF - Dunkin' 3,940 SF - Retail / Commercial Space
Proposed Additional Development	3,200 SF - Fast Food Restaurant with Drive Through Operations 1,000 SF - Retail / Commercial Space

**ITE Trip Generation - 11th Edition**

Land Use 937 - Coffee/Donut Shop with Drive-Through Window

Morning Peak Hour	85.88 Trips/1,000 SF	51% Enter	49% Exit
Evening Peak Hour	38.99 Trips/1,000 SF	50% Enter	50% Exit

Land Use 822 - Strip Retail Plaza (<40K)

Morning Peak Hour	2.36 Trips/1,000 SF	60% Enter	40% Exit
Evening Peak Hour	6.59 Trips/1,000 SF	50% Enter	50% Exit

Land Use 934 - Fast-Food Restaurant with Drive-Through Window

Morning Peak Hour	44.61 Trips/1,000 SF	51% Enter	49% Exit
Evening Peak Hour	33.03 Trips/1,000 SF	52% Enter	48% Exit

Pass-by Trip Percentages

Land Use - 937 - No Data - Average for Land Use 938 (without indoor seating) - 89% - Assume AM and PM - 50%

Land Use 934 - AM - 50%, PM - 55%

Land Use 821 - PM 40%, Assume AM - 20%

**Trip Generation Summary - Existing Development**

Development	Size	Morning Peak Hour			Evening Peak Hour		
		Total	Entering	Exiting	Total	Entering	Exiting
Dunkin'	2,000 SF	172	88	84	78	39	39
Retail/Commercial	3,940 SF	9	5	4	26	13	13
<b>Total Trips Generated</b>		<b>181</b>	<b>93</b>	<b>88</b>	<b>104</b>	<b>52</b>	<b>52</b>
<i>Dunkin Pass-by Trips - 50%</i>		-86	-43	-43	-38	-19	-19
<i>Retail Pass-by-AM-20%, PM-40%</i>		-2	-1	-1	-10	-5	-5
<b>Total Pass-by Trips Generated</b>		<b>-88</b>	<b>-44</b>	<b>-44</b>	<b>-48</b>	<b>-24</b>	<b>-24</b>
<b>Primary Trips Generated</b>		<b>93</b>	<b>49</b>	<b>44</b>	<b>56</b>	<b>28</b>	<b>28</b>

**Trip Generation Summary - Proposed Additional Development**

Development	Size	Morning Peak Hour			Evening Peak Hour		
		Total	Entering	Exiting	Total	Entering	Exiting
Fast Food	3,200 SF	143	73	70	106	55	51
Retail/Commercial	1,000 SF	2	1	1	7	3	4
<b>Total Trips Generated</b>		<b>145</b>	<b>74</b>	<b>71</b>	<b>113</b>	<b>58</b>	<b>55</b>
<i>Fast Food Pass-by Trips - 50%</i>		-70	-35	-35	-58	-29	-29
<i>Retail Pass-by-AM-20%, PM-40%</i>		0	0	0	-2	-1	-1
<b>Total Pass-by Trips Generated</b>		<b>-70</b>	<b>-35</b>	<b>-35</b>	<b>-60</b>	<b>-30</b>	<b>-30</b>
<b>New Trips Generated</b>		<b>75</b>	<b>39</b>	<b>36</b>	<b>53</b>	<b>28</b>	<b>25</b>